TOSHIBA
Leading Innovation

UM-OISPLUS-E002

Programmable Logic Controllers

USER'S MANUAL
Display Programming

CONTENTS

OIS PLUS
Operator Interface Stations

Toshiba International Corporation

Thank you for purchasing the V200 Series PLC (Programmable Logic Controller) product from Toshiba International Corp. V200 Series products are versatile PLCs which are configured with Microsoft Windows® based software.

Manual's Purpose and Scope

This manual provides information on how to safely install, operate, and maintain your TIC V200 Series PLC. This manual includes a section of general safety instructions that describes the warning labels and symbols that are used throughout the manual. Read the manual completely before installing, operating, or performing maintenance on this equipment.

This manual and the accompanying drawings should be considered a permanent part of the equipment and should be readily available for reference and review. Dimensions shown in the manual are in metric and/or the English equivalent.

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Printed in the U.S.A.

Important Notice

The instructions contained in this manual are not intended to cover all details or variations in equipment types, nor may it provide for every possible contingency concerning the installation, operation, or maintenance of this equipment. Should additional information be required contact your Toshiba representative.

The contents of this manual shall not become a part of or modify any prior or existing agreement, commitment, or relationship. The sales contract contains the entire obligation of Toshiba International Corporation. The warranty contained in the contract between the parties is the sole warranty of Toshiba International Corporation and any statements contained herein do not create new warranties or modify the existing warranty.

Any electrical or mechanical modifications to this equipment without prior written consent of Toshiba International Corporation will void all warranties and may void the 3rd party (CE, UL, CSA, etc) safety certifications. Unauthorized modifications may also result in a safety hazard or equipment damage.

Contacting Toshiba's Customer Support Center

Toshiba's Customer Support Center may be contacted to obtain help in resolving any system problems that you may experience or to provide application information.

The center is open from 8 a.m. to 5 p.m. (CST), Monday through Friday. The Support Center's toll free number is US 800-231-1412 Fax 713-466-8773 — Canada 800-527-1204 — Mexico 01-800-527-1204.

You may also contact Toshiba by writing to:

Toshiba International Corporation
13131 West Little York Road
Houston, Texas 77041-9990
Attn: PLC Marketing
Or email

Manual Revisions

Please have the following information available when contacting Toshiba International Corp. about this manual.

Name: OIS PLUS Display Programming
Document: UM-OISPLUS-E002
Revision:

Rev No.	Date	Description
0	2012/02/14	Initial Issue

Related Manuals

UM-OISPLUS-E001: Hardware and Specifications
UM-OISPLUS-E003: Networking
UM-OISPLUS-E004: Universal Serial (ASCII) Driver
UM-V200-E001: Setup and Operation (for ladder logic programming)
UM-V200-E002: Ladder Logic (how to use the ladder instructions)

Table of Contents

0. General Safety Instructions and Information

0.1 WARNING LABLES WITHIN MANUAL

DO NOT attempt to install, operate, maintain, or dispose of this equipment until you have read and understood all of the product warnings and user directions that are contained in this instruction manual.

Listed below are the signal words that are used throughout this manual followed by their descriptions and associated symbols. When the words **DANGER**, **WARNING**, and **CAUTION** are used in the manual, they will be followed by important safety information that must be carefully adhered to.

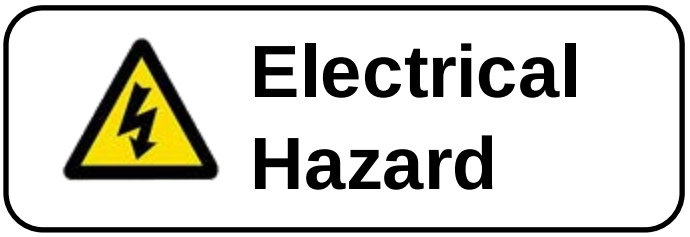
DANGER — The danger symbol is an exclamation mark enclosed in a triangle that precedes the word DANGER. The danger symbol is used to indicate an imminently hazardous situation that will result in serious injury, possible severe property and equipment damage, or death if the instructions are not followed.

WARNING — The warning symbol is an exclamation mark enclosed in a triangle that precedes the word WARNING. The warning symbol is used to indicate a potentially hazardous situation that can result in serious injury, or possibly severe property and equipment damage, or death, if the instructions are not followed.

CAUTION — The caution symbol is an exclamation mark enclosed in a triangle that precedes the word CAUTION. The caution symbol is used to indicate situations that can result in minor or moderate operator injury, or equipment damage if the instructions are not followed.

To identify special hazards, other symbols may appear in conjunction with the **DANGER**, **WARNING**, and **CAUTION** symbols. These warnings describe areas that require special care and/or strict adherence to the procedures to prevent serious injury and possible death.

Electrical Hazard — The electrical hazard symbol is a lightning bolt enclosed in a triangle. The electrical hazard symbol is used to indicate high voltage locations and conditions that may cause serious injury or death if the proper precautions are not observed.



Explosion Hazard — The explosion hazard symbol is an explosion image enclosed in a triangle. The explosion hazard symbol is used to indicate locations and conditions where molten exploding parts may cause serious injury or death if the proper precautions are not observed.

0.2 Equipment Warning Labels.

DO NOT attempt to install, operate, maintain, or dispose of this equipment until you have read and understood all of the product warnings and user directions that are contained in this instruction manual.

Shown below are examples of warning labels that may be found attached to the equipment. **DO NOT** remove or cover any of the labels. If the labels are damaged or if additional labels are required, contact your Toshiba representative for additional labels.

The following are examples of the warning labels that may be found on the equipment and are there to provide useful information or to indicate an imminently hazardous situation that may result in serious injury, severe property and equipment damage, or death if the instructions are not followed.

Examples of labels that may be found on the equipment.

0.3 Preparation

Qualified Person

A **Qualified Person** is one that has the skills and knowledge relating to the construction, installation, operation, and maintenance of the electrical equipment and has received safety training on the hazards involved (Refer to the latest edition of NFPA 70E for additional safety requirements).

Qualified Personnel shall:

- Have carefully read the entire operation manual.
- Be trained and authorized to safely energize, de-energize, ground, lockout and tag circuits and equipment, and clear faults in accordance with established safety practices.
- Be trained in the proper care and use of protective equipment such as safety shoes, rubber gloves, hard hats, safety glasses, face shields, flash clothing, etc., in accordance with established safety practices.
- Be trained in rendering first aid.

For further information on workplace safety visit www.osha.gov.

Equipment Inspection

- Upon receipt of the equipment inspect the packaging and equipment for shipping damage.
- Carefully unpack the equipment and check for parts that were damaged from shipping, missing parts, or concealed damage. If any discrepancies are discovered, it should be noted with the carrier prior to accepting the shipment, if possible. File a claim with the carrier if necessary and immediately notify your Toshiba representative.
- **DO NOT** install or energize equipment that has been damaged. Damaged equipment may fail during operation resulting in further equipment damage or personal injury.
- Check to see that the model number specified on the nameplate conforms to the order specifications.
- Modification of this equipment is dangerous and must not be performed except by factory trained representatives. When modifications are required contact your Toshiba representative.
- Inspections may be required before and after moving installed equipment.
- Keep the equipment in an upright position as indicated on the shipping carton.
- Contact your Toshiba representative for assistance if required.

Handling and Storage

- Use proper lifting techniques when moving the OIS; including properly sizing up the load, and getting assistance if required.
- Store in a well-ventilated covered location and preferably in the original carton if the equipment will not be used upon receipt.
- Store in a cool, clean, and dry location. Avoid storage locations with extreme temperatures, rapid temperature changes, high humidity, moisture, dust, corrosive gases, or metal particles.
- Do not store the unit in places that are exposed to outside weather conditions (i.e., wind, rain, snow, etc.).
- Store in an upright position as indicated on the shipping carton.
- Include any other product-specific requirements.

Disposal

Never dispose of electrical components via incineration. Contact your state environmental agency for details on disposal of electrical components and packaging in your area.

0.4 Installation Precautions

Location and Ambient Requirements

- Adequate personnel working space and adequate illumination must be provided for adjustment, inspection, and maintenance of the equipment (refer to NEC Article 110-34).
- Avoid installation in areas where vibration, heat, humidity, dust, fibers, steel particles, explosive/corrosive mists or gases, or sources of electrical noise are present.
- The installation location shall not be exposed to direct sunlight.
- Allow proper clearance spaces for installation. Do not obstruct the ventilation openings. Refer to the recommended minimum installation dimensions as shown on the enclosure outline drawings.
- The ambient operating temperature shall be between 0° and 50° C (32° and 122° F).

Mounting Requirements

- Only **Qualified Personnel** should install this equipment.
- Install the unit in a secure upright position in a well-ventilated area.
- A noncombustible insulating floor or mat should be provided in the area immediately surrounding the electrical system at the place where maintenance operations are to be performed.
- As a minimum, the installation of the equipment should conform to the NEC Article 110 Requirements For Electrical Installations, OSHA, as well as any other applicable national, regional, or industry codes and standards.
- Installation practices should conform to the latest revision of NFPA 70E Electrical Safety Requirements for Employee Workplaces.

Conductor Routing and Grounding

- Use separate metal conduits for routing the input power, and control circuits.
- A separate ground cable should be run inside the conduit with the input power, and control circuits.
- **DO NOT** connect control terminal strip return marked CC to earth ground.
- Always ground the unit to prevent electrical shock and to help reduce electrical noise.

The Metal Of Conduit Is Not An Acceptable Ground.

0.5 Connection, Protection & Setup

Personnel Protection

- Installation, operation, and maintenance shall be performed by **Qualified Personnel Only**.
- A thorough understanding of the OIS will be required before the installation, operation, or maintenance of the OIS.
- Rotating machinery and live conductors can be hazardous and shall not come into contact with humans. Personnel should be protected from all rotating machinery and electrical hazards at all times. Depending on its program, the OIS can initiate the start and stop of rotating machinery.
- Insulators, machine guards, and electrical safeguards may fail or be defeated by the purposeful or inadvertent actions of workers. Insulators, machine guards, and electrical safeguards are to be inspected (and tested where possible) at installation and periodically after installation for potential hazardous conditions.
- Do not allow personnel near rotating machinery. Warning signs to this effect shall be posted at or near the machinery.
- Do not allow personnel near electrical conductors. Human contact with electrical conductors can be fatal. Warning signs to this effect shall be posted at or near the hazard.
- Personal protection equipment shall be provided and used to protect employees from any hazards inherent to system operation or maintenance.

System Setup Requirements

- When using the OIS as an integral part of a larger system, it is the responsibility of the OIS installer or maintenance personnel to ensure that there is a fail-safe in place (i.e., an arrangement designed to switch the system to a safe condition if there is a fault or failure).
- System safety features should be employed and designed into the integrated system in a manner such that system operation, even in the event of system failure, will not cause harm or result in personnel injury or system damage (i.e., E-Off, Auto-Restart settings, System Interlocks, etc.).
- The programming setup and system configuration of the OIS may allow it to start a motor unexpectedly. A familiarity with Auto-restart settings is a requirement to use this product.
- Improperly designed or improperly installed system interlocks may render the motor unable to start or stop on command.

The failure of external or ancillary components may cause intermittent system operation, i.e., the system may start a motor without warning or may not stop on command.

- There may be thermal or physical properties, or ancillary devices integrated into the overall system that may allow the OIS to start a motor without warning. Signs at the equipment installation must be posted to this effect.
- The operating controls and system status indicators should be clearly readable and positioned where the operator can see them without obstruction.
- Additional warnings and notifications shall be posted at the equipment installation location as deemed required by **Qualified Personnel**.

0.6 System Integration Precautions

The following precautions are provided as general guidelines for using an OIS in an industrial or process control system.

- The Toshiba PLC is a general-purpose product. It is a system component and is used in conjunction with other items of industrial equipment such as PLCs, Loop Controllers, Adjustable Speed Drives, etc.
- **A detailed system analysis and job safety analysis should be performed by the systems designer or systems integrator before including the OIS in any new or existing system**. Contact Toshiba for options availability and for application-specific system integration information if required.
- The PLC may be used to control an adjustable speed drive connected to high voltage sources and rotating machinery that is inherently dangerous if not operated safely. Interlock all energy sources, hazardous locations, and guards in order to restrict the exposure of personnel to hazards. The adjustable speed drive may start the motor without warning. Signs at the equipment installation must be posted to this effect. A familiarity with Auto-restart settings is a requirement when controlling adjustable speed drives. Failure of external or ancillary components may cause intermittent system operation, i.e., the system may start the motor without warning or may not stop on command. **Improperly designed or improperly installed system interlocks and permissives may render a motor unable to start or stop on command**
- Control through serial communications can fail or can also override local controls, which can create an unsafe condition. System safety features should be employed and designed into the integrated system in a manner such that system operation, even in the event of system failure, will not cause harm or result in personnel injury or system damage. Use of the built-in system protective features and interlocks of the equipment being controlled is highly recommended (i.e., emergency-off, overload protection, etc.)
- **Never use the PLC units to perform emergency stops**. Separate switches outside the OIS, the PLC, and the ASD should be used for emergency stops.
- Changes or modifications to the PLC program should not be made without the approval of the system designer or systems integrator. Minor changes or modifications could cause the defeat of safety interlocks and permissives. Any changes or modifications should be noted and included with the system documentation.

0.7 3rd Party Safety Certifications.

CE Marking

The V200 Series Programmable Controllers conform to the directive and standards of ISO/IEC Guide 22 and EN 45014.

Conforms to the following Product Specifications

EMI(Electro Magnetic Interference)	:	
Conducted*/Radiated	:	EN61131-2:2007/EN55011
EMS(Electro Magnetic Susceptibility)	:	
ESD	:	EN61131-2:2007/EN61000-4-2
RF EM field	:	EN61131-2:2007/EN61000-4-3
Fast Transient	:	EN61131-2:2007/EN61000-4-4
Surge Immunity	:	EN61131-2:2007/EN61000-4-5
Conducted Disturbances	:	EN61131-2:2007/EN61000-4-6
Magnetic Field Immunity **	:	EN61131-2:2007/EN61000-4-8
Voltage dips & Interruptions*	:	EN61131-2:2007/EN61000-4-11
Electrical Safety	:	EN61131-2: 2007

UL Certification

The UL Mark on a product means that UL has tested and evaluated representative samples of that product and determined that they meet UL requirements. The basic standards used to investigate this category are UL 508, the Standard of Safety for Industrial Control Equipment and UL Standard for Safety for Programmable Controllers. V200 Programmable Logic Controllers are certified NRAG &NRAG7 for use in hazardous locations

ONLINE CERTIFICATIONS DIRECTORY

Home Quick Guide Contact Us UL.com

Search results

You may choose to Refine Your Search.

Company Name	Category Name	Link to File
TOSHIBA CORP	Programmable Controllers for Use in Hazardous Locations	NRAG.E184034
TOSHIBA CORP	Programmable Controllers for Use in Hazardous Locations Certified for Canada	NRAG7.E184034

RoHS Product Certification

The V200 Series PLCs meet the European Directive on the Restriction of Hazardous Substances (RoHS) in electrical and electronic equipment companies This insures the chemical compliance of the V200.

INTRODUCTION

- Purpose of this Manual

  OIS PLUS Basics

  Hardware Configuration

- OIS PLUS Overview

  What is an OIS PLUS?

  How does the OIS PLUS Work?

1.1 Purpose of this Manual

Thank you for purchasing Flexi Panel Series Products. OIS PLUS Series Products are versatile operator interfaces with Microsoft® Windows based configuration Software.

This Manual explains the operation of the OIS PLUS Series and how to implement available features using the OIL-DS Configuration Software. This manual will help you to install, configure and operate your OIS PLUS product.

1.1.1 OIS PLUS Basics

Operator Interface Terminals (OIS PLUSs) provide much more versatility than traditional mechanical control panels. An OIS PLUS allows a plant floor operator to monitor current conditions of a control system and, if necessary, to initiate a change in the operation of the system. OIS PLUSs connect to programmable logic controllers (PLCs) typically through the serial communications port. The OIS PLUS can be programmed to monitor and/or change current values stored in the data memory of the PLC.

OIS PLUSs are having graphics based displays with touch screen and keypad having function keys. Thus OIS PLUS provides much more flexibility in preparing application. Keys can be created in a touch screen OIS PLUS that can be made visible only when needed.

What is a *Project*?

A project is created using the OIL-DS Configuration Software. A project contains information such as OIS PLUS model, Network Configuration, Screen information, Task information etc.

What is a *Screen*?

A screen is a visual representation of objects placed on the unit screen. Any partially sized window is usually referred to as a popup screen or window. The user can create his customized screen according to his require-ments. Popup windows can also appear on the OIS PLUS display by pressing buttons on the touch screen . The maximum number of screens in an application is only limited by the application memory size. A more in depth discussion on screens is covered in “Screens” section.

What is an *Object*?

An object placed on OIS PLUS screen can perform actions such as displaying text messages, writing a value to a
PLC register, or displaying an alarm. An object can be classified as a text or graphical object.
A text object is used to display the text on the OIS PLUS and can also be used to perform some action. For example, a data entry object tells the OIS PLUS to continuously monitor a PLC register and allows the user to change the value in the register. Some objects can display graphics whose shape depends on the value of a register. These objects may also change the value of a PLC tag. An example is a Bit Button Object that creates a graphic object on the OIS PLUS. When pressed, it activates a bit in the PLC.

1.1.2 Hardware Requirements

The following basic PC hardware configuration is needed to configure and operate your OIL-DS Configuration Software. Minimal PC configuration for Windows2000 / XP/:

DEVICE	RECOMMENDED
Processor	800MHz Pentium processor OR equivalent processor
Operating System	Microsoft Windows 2000 with SP4 Microsoft Windows XP Professional / Home Edition with SP2
RAM	256MB
Hard Disk Space	800MB (including 200MB for the .NET Framework Redistributable)
Display	1024 x 768 High Color 16-bit
Mouse/Keyboard	Required

Minimal PC configuration for Vista:

DEVICE	RECOMMENDED
Processor	1GHz Pentium processor or equivalent processor
Operating System	Microsoft Windows Vista Home and Vista Business edition
RAM	1GB
Hard Disk Space	800MB (including 200MB for the .NET Framework Redistributable)
Display	1024 x 768 High Color 16-bit
Mouse/Keyboard	Required

These are the minimum system requirements for a computer running the OIL-DS Configuration software.

1.1.3 What is an OIS PLUS Series?

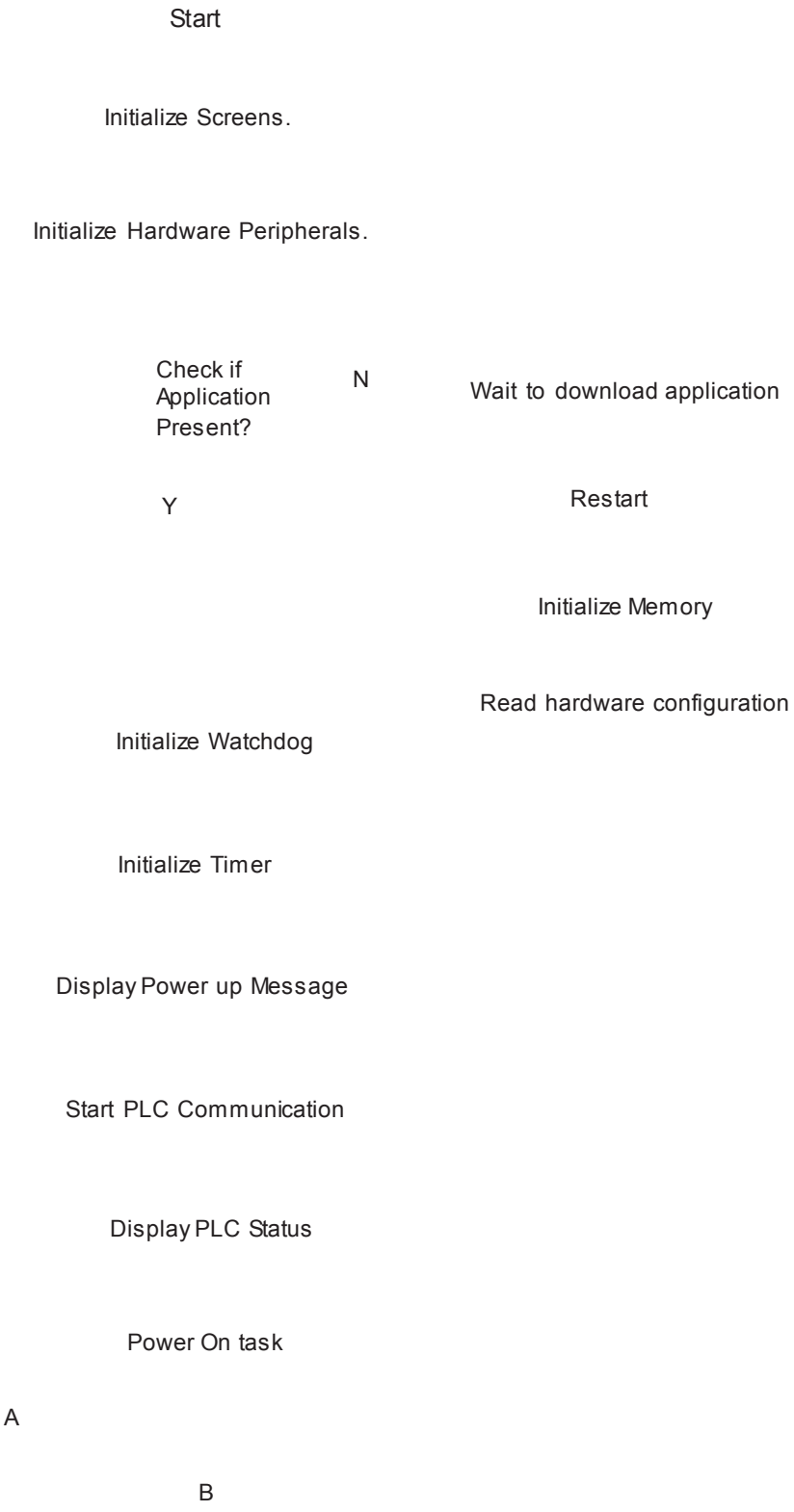
OIS PLUS product line provides Human-Machine Interface to the Programmable Logic Controller. These OIS PLUSs communicate with PLCs using their serial communications ports.

Configuration of OIS PLUS unit:
Each OIS PLUS unit has to be configured using the OIL-DS Configuration Software before connecting it to the PLC.

Normal Operation:
Connect OIS PLUS unit to PLC using the correct PLC-OIS PLUS cable. The OIS PLUS can communicate with any device without making any additional hardware settings on the unit.

1.1.4 How the OIS PLUS Works?

The OIS PLUS follows a specific sequence for performing the tasks defined by the user in the application. The sequence is as shown below:



B

Request for IBM Com?

Y

Complete IBM Communication

N

Restart

Fill Alarm Container

If RTC changed by 1 sec

Y

If any groups defined for logging then lock the data

N

Global Task

If New screen?

N

D

Y

Upload Block list

After Hiding task (Last screen)

Before showing task

D

Display / Print screen

Display Associated screen

Display If Popup screen

While showing screen task

C

C

While showing task for
Popup screen

Check
Press?

N

Y

Serve Key task

Check
PLC
com
error?

Y

Reestablish PLC Communication

N

Flush SPI FIFO

A

BEFORE YOU BEGIN

- Connecting an OIS PLUS to a Computer
- Starting OIL-DS Configuration Software
- Setting Network Configuration

2.1 Connecting an OIS PLUS to a Computer

Before you start your first project, the unit should be connected to the computer so that the project can be downloaded after creating it.

To connect your unit to the computer

1) Connect a +24VDC power supply to the unit.
2) Connect the programming cable to the computer and OIS PLUS.
   Connect programming cable to the communication port of the unit.
   Download Firmware i.e. driver for the PLC. The unit cannot communicate with PLC till the required driver is downloaded.
3) Apply power to the unit.

To connect your PLC to unit

A unit can communicate with any PLC without any change in the OIS PLUS unit hardware. To communicate with a
PLC, the unit needs:

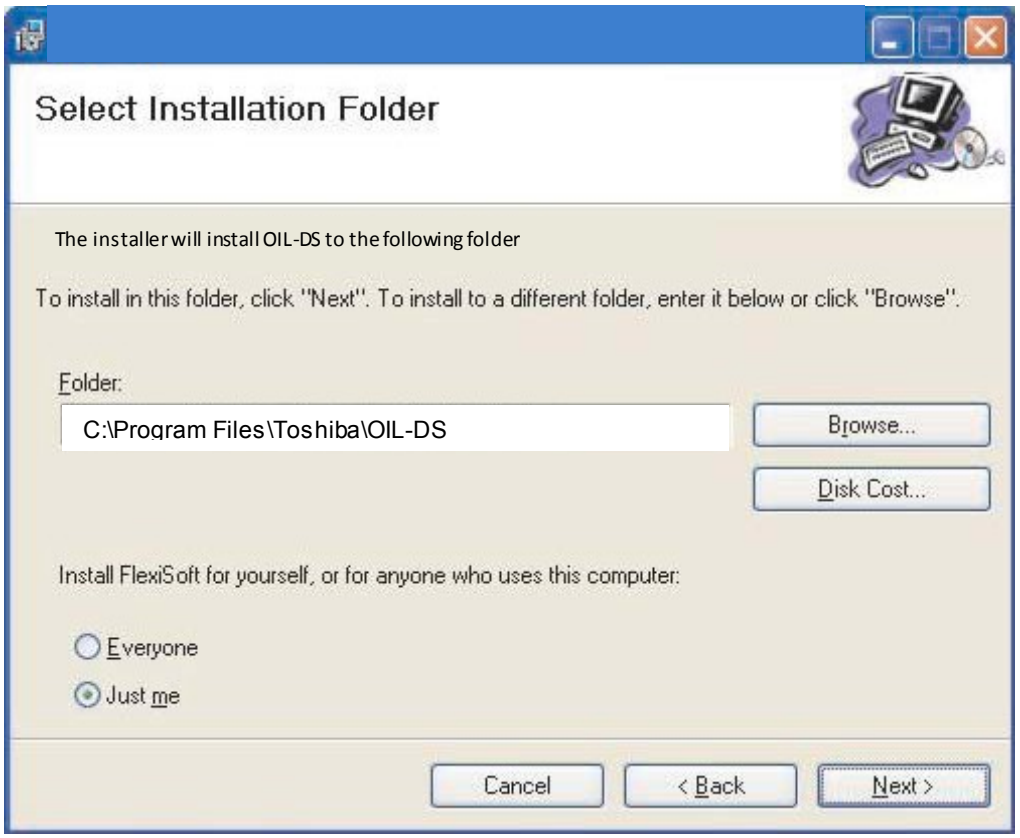
1) Proper Communication Driver for the PLC
   Each PLC has a defined protocol for communicating with any device. The communication driver is down loaded into the unit along with the firmware. The communications driver varies from PLC to PLC. This driver enables the unit to talk to a specific PLC.
2) OIS PLUS unit - PLC communication cable
   A proper OIS PLUS unit - PLC cable is required for error free communication with any PLC.

2.2 Installing OIL-DS Configuration Software:

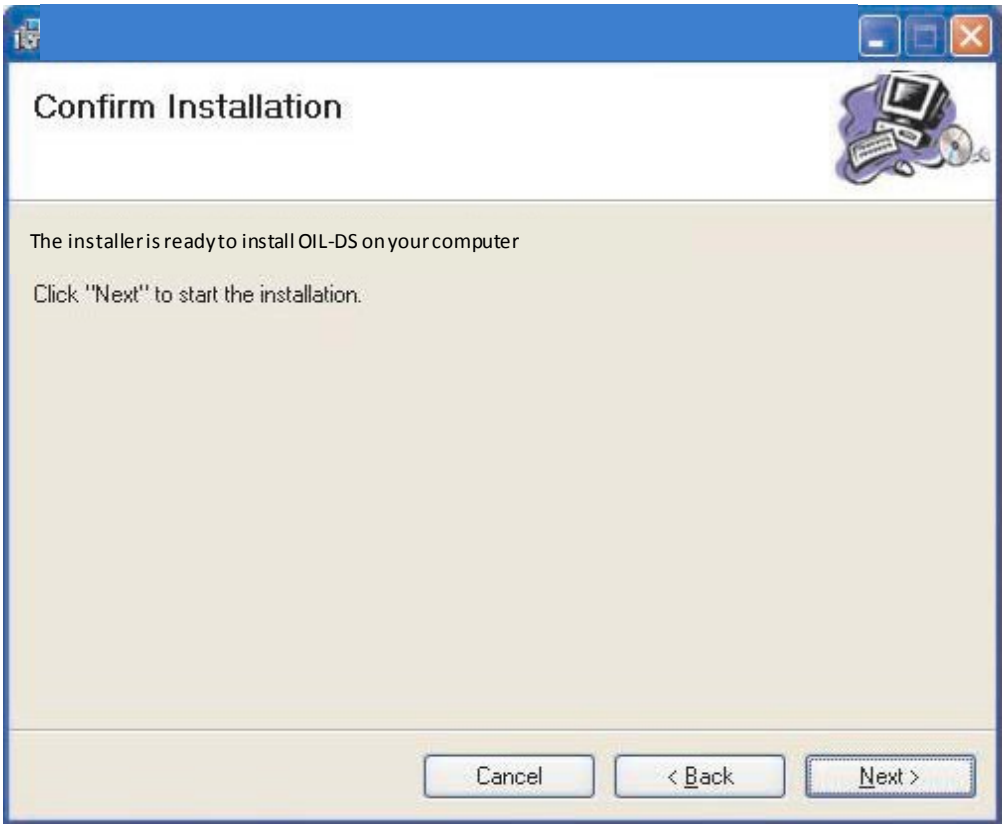
To install OIL-DS configuration Software:

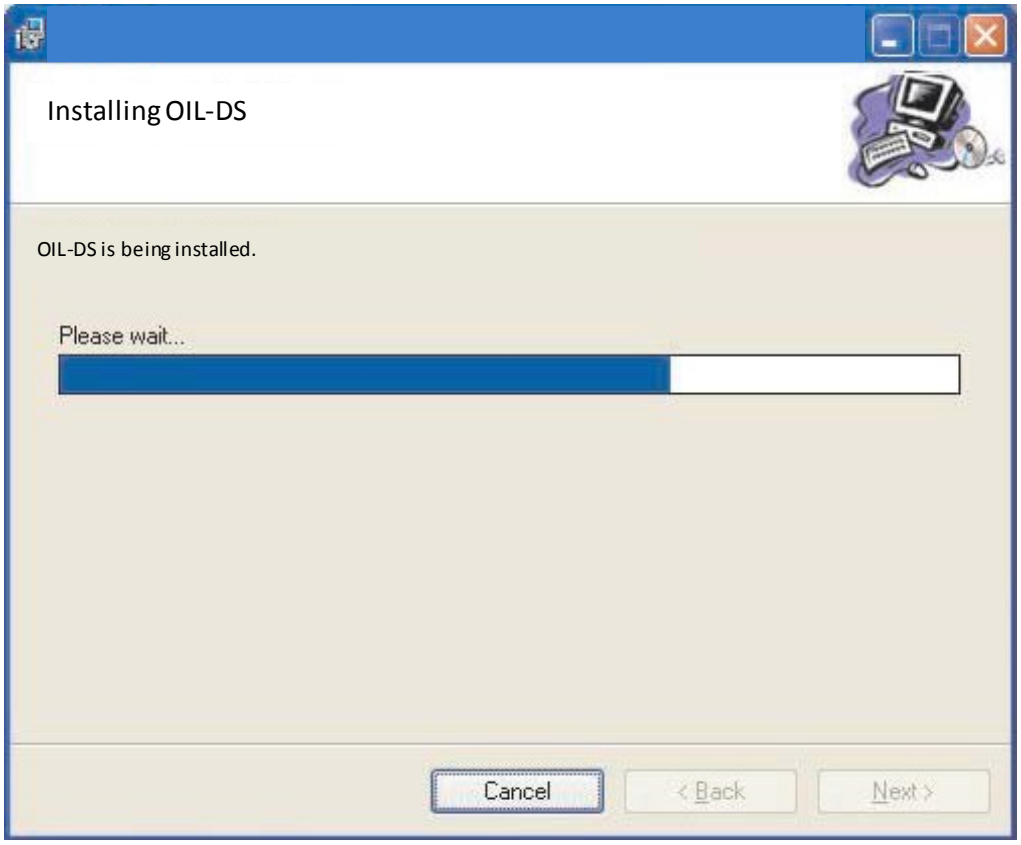
1. Open Microsoft® Windows.
2. Select Run and Pop up window appears. Type the path for installing the Setup.
   This will install OIL-DS Configuration Setup Software.
3. When you click on OK, Welcome window appears on the screen. Click on Next.

4. Select the destination folder where setup will install the files.

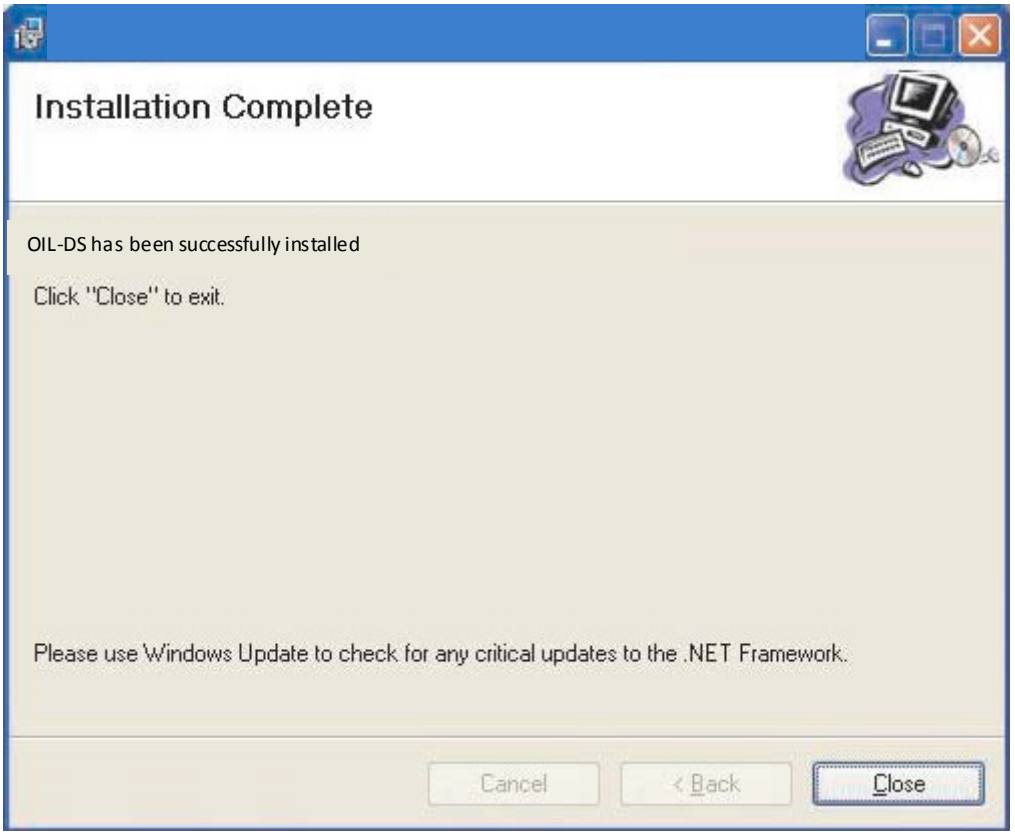


5. Click on “NEXT”, installation starts. A dialog box indicating the status of progress of installation will display.





6. A screen is displayed to inform you when installation is completed.



This procedure installs OIL-DS Software in start menu (in selected folder).

2.3 Steps for Starting OIL-DS Software

1. In Windows click the Start button.
2. Select Programs.
3. Select “Toshiba”.
4. Select OIL-DS
5. Select New Application either from Tool station or from File Menu.
6. Select the model and product type that you would like to set by clicking on picture of the product in the list.
7. Define the Unit Settings.
8. Next step is to define Tag Database and then define the screens according to your application.

2.4 Uninstalling OIL-DS Software

1. In Windows click the Start button.
2. Select Programs.
3. Select OIL-DS.
4. Select Uninstall.

Following screen will display. The screen will ask you for the confirmation for uninstalling OIL-DS configuration software.

2.5 Setting Network Configuration

You can communicate between OIS PLUS and any PLC without changes in the hardware. To communicate with a PLC a proper communication driver must be selected for the PLC Each PLC has a defined protocol for communicating with any device. A PLC driver is downloaded into unit along with the firmware. This driver enables the unit to talk to a specific PLC.

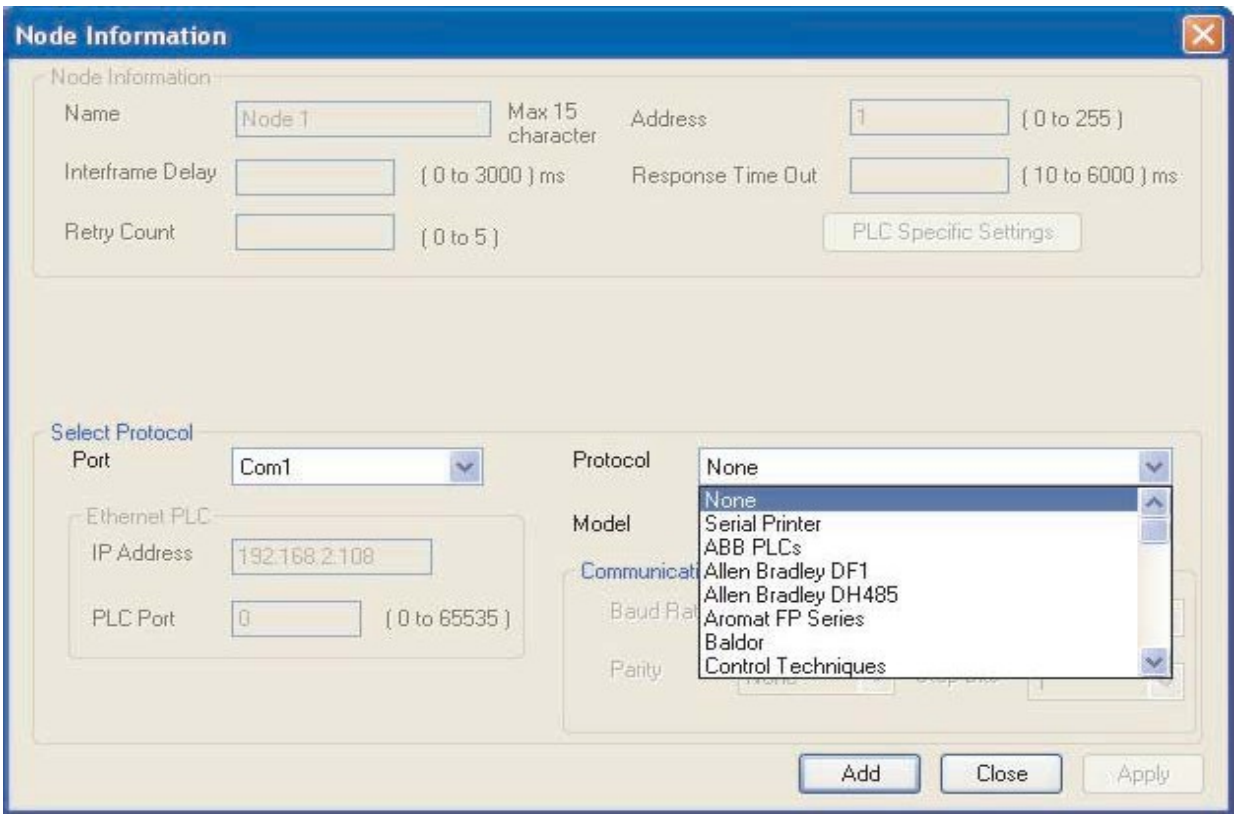
Using this configuration screen you can set the node address (0 to 255), node name for each port. You can change default values generated by editing these two fields.

When you are working on “Nodes” section from project information area; right click on the application window. You will find “Add” option there; which shows a Protocol selection box as shown below:

Step -1 Go to “Network configuration”

Step -2 Right click on the working application window

Step -3 Select protocols from protocol list



By clicking this selection box you can see list of Model Numbers in PLC Model selection Box. Select PLC Name from Protocol drop down list and PLC Model name from Model drop down list.
PLC specific data button is activated only if selected PLC has Special PLC specific data to be set.

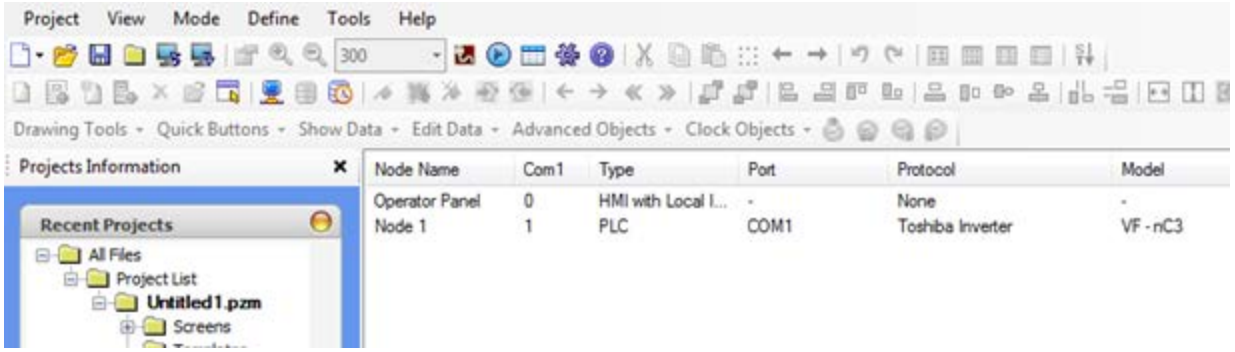
Unit can be configured in following ways:
1. For Serial Printing
2. For PLC Communication

**
Either of the ports can be configured for the ways mentioned above. Depending on the type of communication, the user may be required to define certain parameters.
The following screen displays the number of nodes connected on COM1, and COM2 with their node addresses, node name, node type (unit/PLC) and total number of blocks used in application.

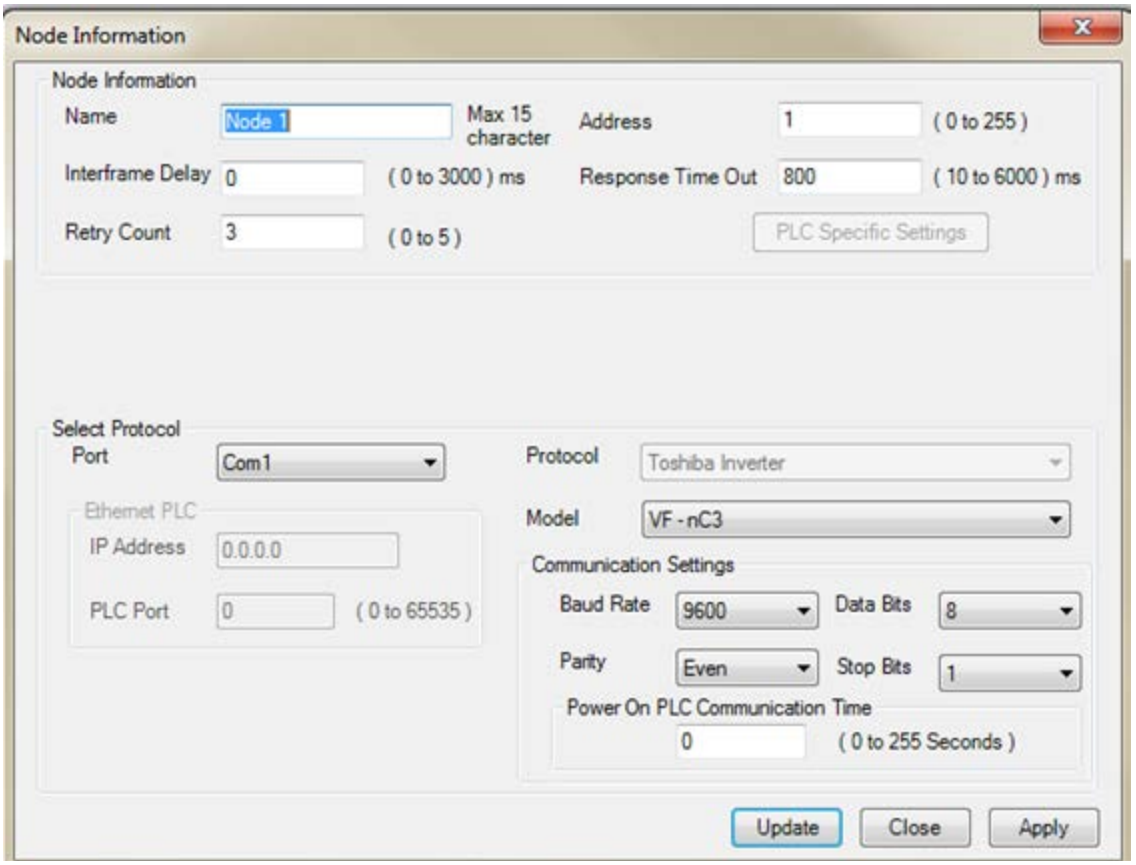
**

Refer section 2.4 (Communication Ports); in some models only one Com port is present and in other models two Com ports are present.

The OIS PLUS is always Node 0. Node 1 is selected from the protocol list. Additional Nodes maybe added but must the same Protocol and the same Model as Node 1.

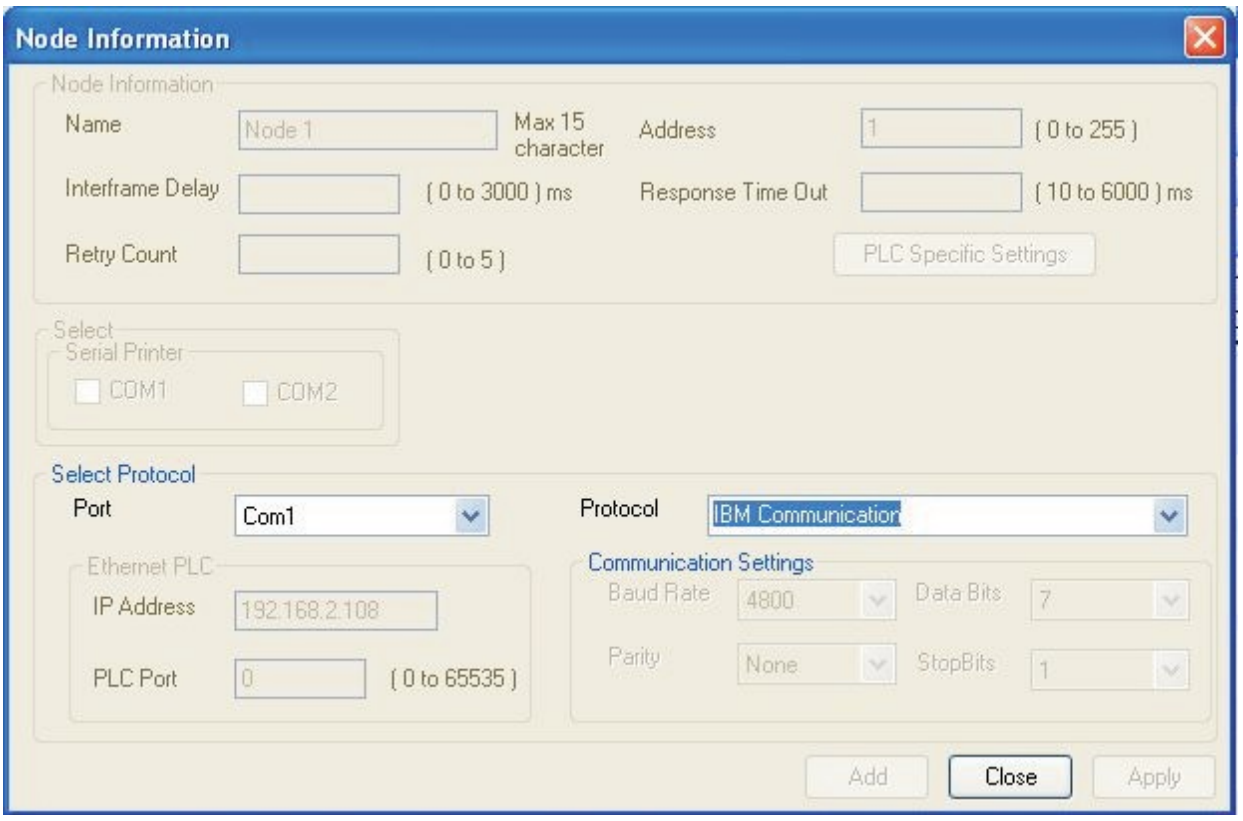


Alternate click on the Node to setup the Node.



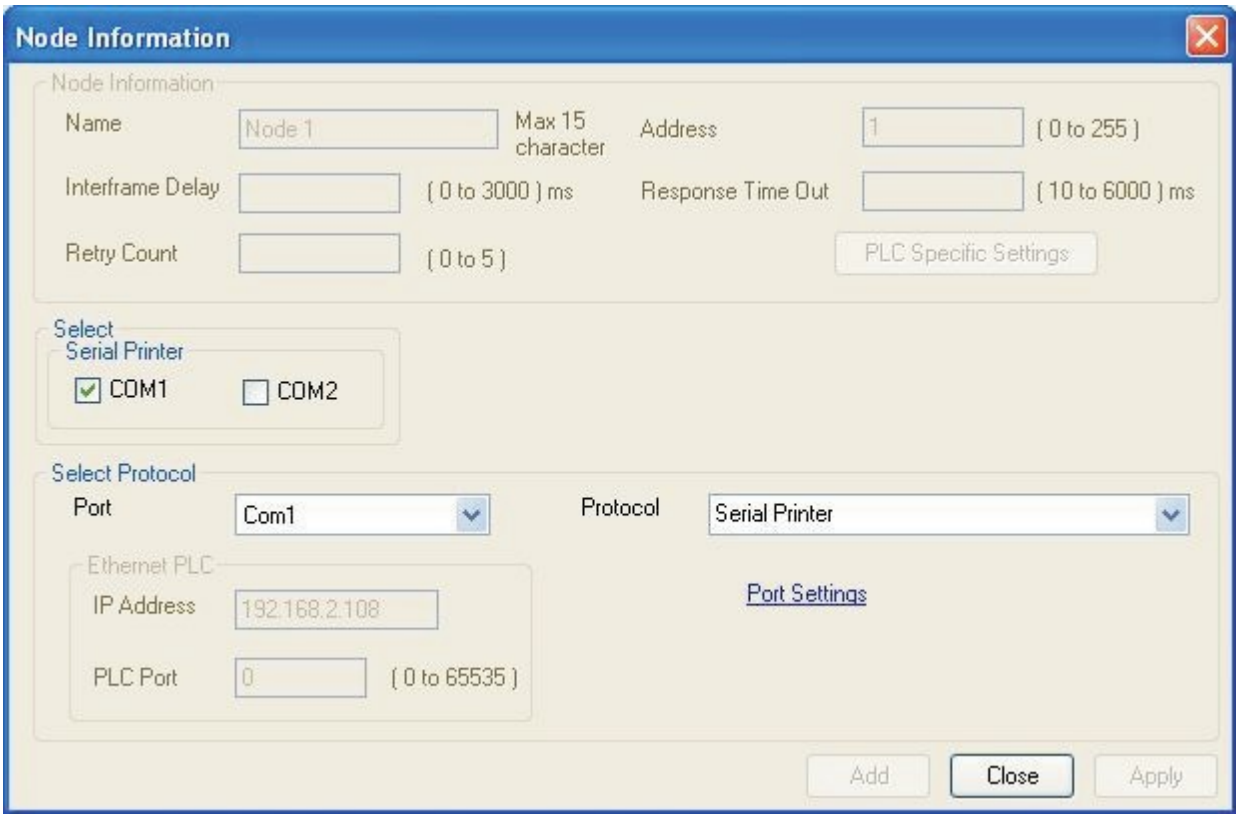
Note: The OIS PLUS default unit address is 0 for COM1, COM2.1fthe default address of a PLC connected to COM1, COM2 is 0 then the OIS PLUS address must be changed to a nonzero number.

1. For IBM Communication:



These are the default communication settings. If user wants IBM Communication, no other setting is required. In this case both communication ports can be used for downloading or uploading purpose.

2. For Serial Printing:



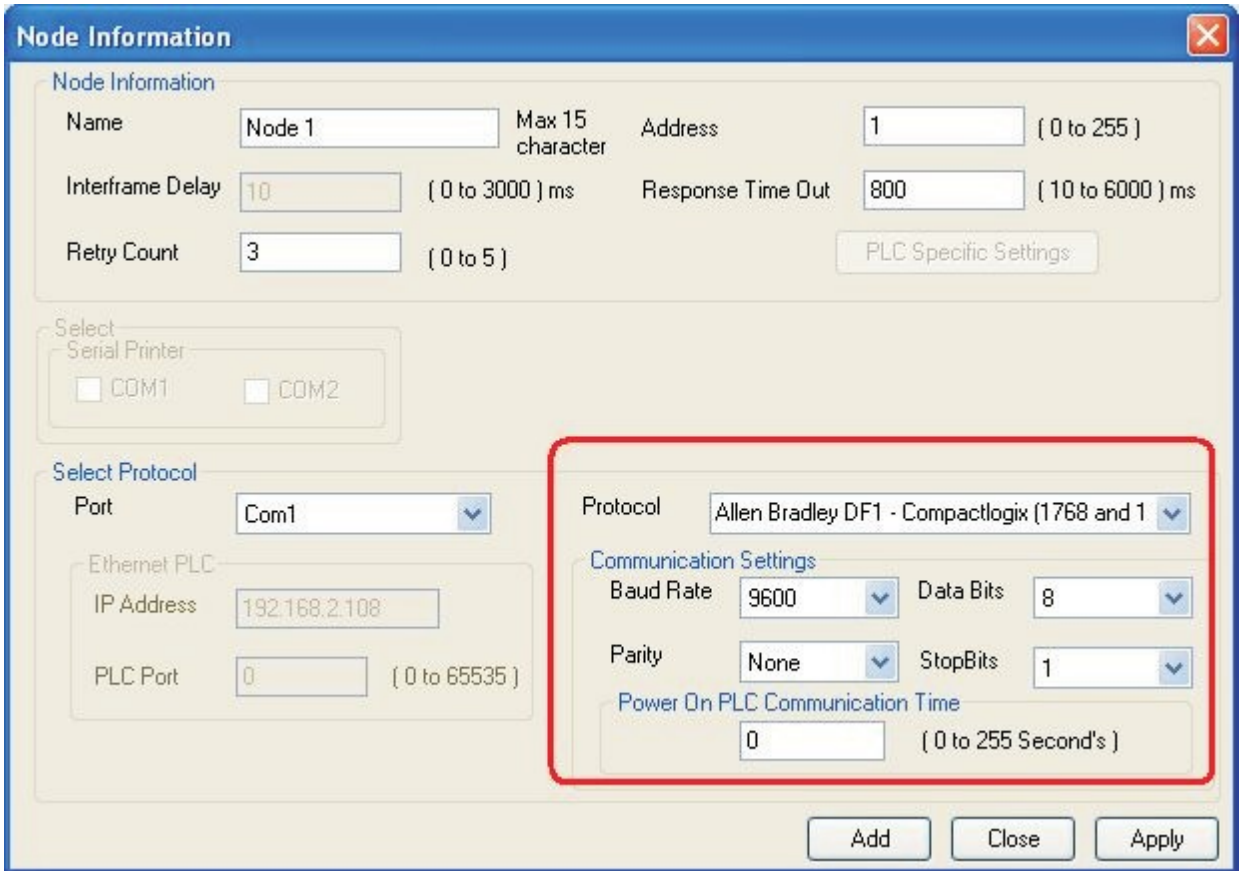
The user can use either of the ports for serial printing. This is done by selecting Protocol as “Serial Printer”. In the above example, the user has configured COM1 for serial printing. However, when this port is not being used for printing, it can be used for IBM communication.
The user can change the serial printing parameters by selecting the “Port Settings” option. Before that you must select port option from “Select” window as shown below:

The following parameters can be modified for serial printing:

Baud Rate:	Supported baud rates are 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K, and 187.5
Parity:	Parity can be None, Even or Odd.
Number of bits:	Number of bits can be 7 or 8.
Number of Columns:	Number of columns can be minimum 1 to maximum 256.
Terminating Character:	Can be None, CR (Carriage Return), LF (Line Feed) or CR+LF.
Number of characters to print:	Can be from minimum 1 to maximum 256.

Click “Ok” to set printer setting.

3. For PLC Communication:



1. Protocol - You can select desired PLC from the list of available drivers. In the example shown above, user has selected Allen Bradley DF1 at COM1.

2. Port Settings -

You can set PLC communication parameters like Baud Rate, Parity, Data Bits and Stop Bits. The PLC Communication parameters are:

i. **Baud Rate**: Baud Rate is the measure of number of times per second a signal in a communication channel changes state. For OIS PLUS units, Baud rate are 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K, 187.5K.

ii. **Parity:** Parity bit is included to check that data has been transmitted accurately. For OIS PLUS
units, Parity bits are None, Odd and Even.

iii. **Data Bits**: Data bits are number of bits used to represent one character of data. For OIS PLUS
units, Data bits are either 7 or 8.

iv. **Stop Bits**: Stop bits are inserted into the data frame to inform the receiving end that the transmission of byte of data is complete. For OIS PLUS units, Stop bits are either 1 or 2.

3. Address: Enter a unique PLC node address (0 to 255)

4. Name: Specify a name for the node name up to 15 characters in length.

5. Inter Frame Delay:

Inter Frame Delay is the delay between the response received of last query and the next query that is to be transmitted.

6. Response timeout:

Response time out is the maximum time in which slave should respond to a master query. If slave does not respond to a master query within this time, the master will declare that the slave has been timed out.

7. Retry Count: Retry count is the number of retry queries master will send to slave, if slave is timed out. When all retries are finished, the master will declare a communication break and will show "!!!!".

8. Add Node: This will add the node to the network.

9. Change Node: The user can change PLC or PLC related information. This is done by highlighting the node, changing the information and finally clicking the button 'Change a Node'.

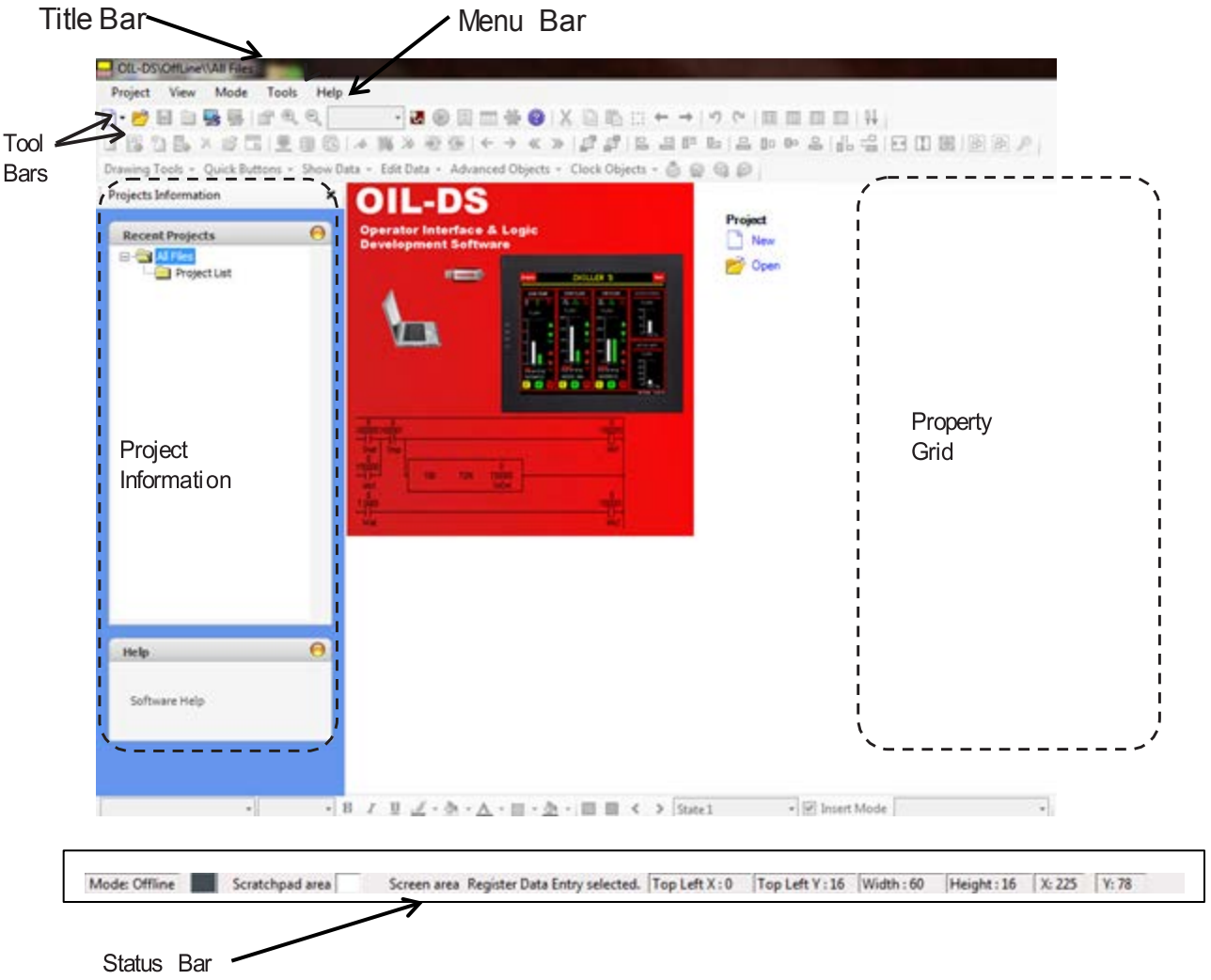
WORKSPACE TOUR

- OIL-DS Configuration Window
- Standard Toolbar
- Creating a New Project
- Tag Database

3.1 OIL-DS Configuration Window

When you launch OIL-DS Configuration software, the application window opens with standard toolbars and working platform. The rectangle in the center of the window is the working space where you create your application. Although more than one drawing window can be opened, you can apply commands to the active drawing window only.

The OIL-DS configuration software application window appears below. A description of its parts follows:



Part	Description
Menu bar	The area containing pull-down menu options
Toolbar	A detachable bar that contains shortcuts to menu and other commands
Title bar	The area displaying the title of the currently open drawing
Status bar	An area at the bottom of the application window that contains information about current running application e.g. current menu string OR if mouse is on application screen; this will show current operation property
Project Information	An area at the left of the application window that contains information of the application going on.
Property Grid	Appears at the right side of the application window which appears after clicking on screen or working with object. This is a navigator for creating screen applications.

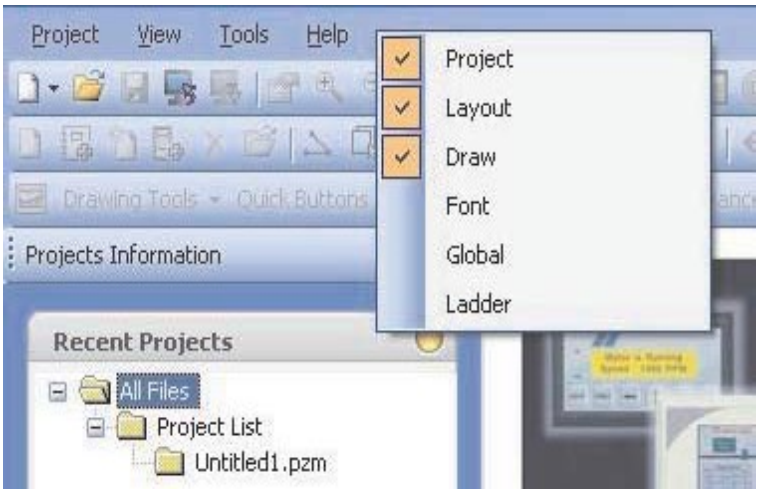
3.1.1 Menu Bar

The menu bar operates like any standard Windows Menu bar. To open a particular Menu, click it with the mouse or use key along with the ALT key. When no application is opened, the menu bar shown above will be displayed.

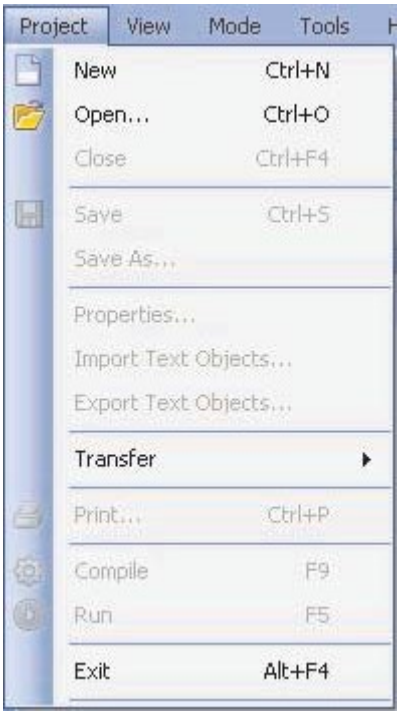
Here we can select either create new project or Open project.

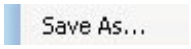
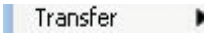
To drop down:
Use mouse OR
Alt+P, Alt+V, Alt+T, Alt+H
accordingly

These can be achieved by right clicking on "toolbar"



3.1.2 Project Menu



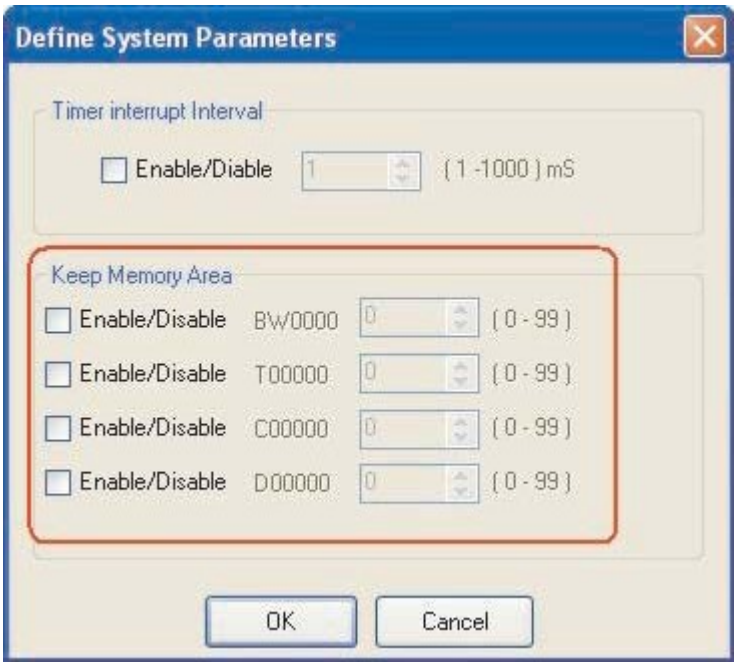
Click this button	To
	Start a new application
	Open an application
	Close an application
	Save an application
	Save an application with different name.
	Open a project configuration window , where user can report details about the project
	Import a text data associated with the wizards (on/off text, labels etc.)
	Export a data from OIS PLUS projects and put it into a user specified file.
	Download an application project from OIL-DS Software to the unit.
	Upload an application project from unit to PC OIL-DS Software.
	Print current application information such as Project information, Unit settings, OIS PLUS nodes, tags, screens, application tasklist, screen tasklist, alarms either by selecting 'All' or selecting specific attributes.
	Compile an application project with Warning or Error messages
	Simulate an application
	project. Exit from OIL-DS
	Software.

3.1.3 View Menu

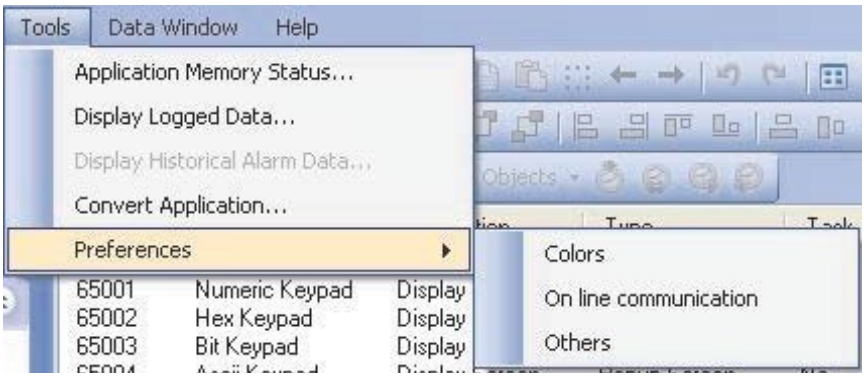
Click this button	To
Data Monitor Window F10	To view device data or to initialize unit memory data
Device Information	To detect the information such as model name, bootblock, H/W, F/W versions of the base and expansion models as well as can upgrade firmware of expansion models.
Icons	Shows screen previews.
Lists	Shows all available screen lists.
Details	Shows screen details
Arrange By	Arranged screen list by numbers or name or destination or type or task & or by description
Screen Information	Gives screen information in terms of name, type, no of objects present, task etc.
Errors and Warnings	After compilation, if error occurs, gives details of the error.
Refresh	Refresh the contents of the screen.
	Shows “Project Information” explorer to the left side of the application window.

3.1.4 Define Menu

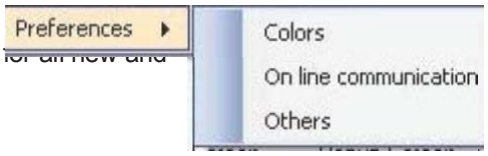
Click this button	To
Data Logger	To switch to data logger setting parameter window
Global Keys	To switch to Global Key's Tasks.
Nodes	To switch to "Node" section
Tag Database	To switch to list of all Tags present in the project
Alarm Database	To switch to "Alarm Project Configuration Properties" window
	To switch to "Languages" section from "Project Information" explorer.
System parameters	To launch "Define System Parameters" window. Here "Keep Memory Area" is seen. This is user defined Memory Area which is retained even after Power Cycle. User can declare specific registers from List of Device registers provided under system parameter List as keep Memory. Addition of BW, T, C and D should not exceed 100.



3.1.5 Tools Menu



Click this button	To
Application Memory Status...	Displays memory status (memory distribution)
Display Logged Data...	Displays total logger memory allotted by user for data logging
Display Historical Alarm Data...	Displays number of alarms stored in history
Convert Application...	Convert application of lower version product to the higher version product or similar



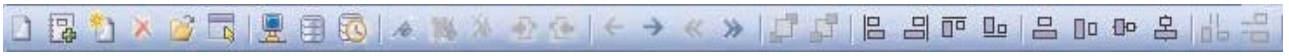
It defines ladder editor global settings (once set, it applies to opened projects)

3.1.6 Help Menu

Click this button	To
Contents	Display a table of content of help file
Index	Display an index of help file
Search	Display a search of content of help file
About...	Displays version number and version date of the OILI-DS software

3.2 Exploring Toolbars

3.2.1 Project Toolbar



Tools

Tool	Description
	The **New Project** tool lets you start with new application
	The **Open** tool lets you open a saved / already created application
	The **Save** tool lets you save a running application
	The **Upload** tool lets you upload an application project from unit to PC OIL-DS Software
	The **Download** tool lets you upload an application project from unit to PC OIL-DS Software
	The **Toggle Properties** tool lets you hide or un-hide the Screen Properties that appears on the right side of the configuration software window
	The **Zoom In Screen** tools let you increase the magnification level in the running window
	The **Zoom Out Screen** tools let you decrease the magnification level in the running window
	The **Zoom Factor (%)** tools let you set a zoom level
	The **Run** tool lets you simulate an application project
	The **Compile** tool lets you compile an application project with Warning or Error message
	The **Help** tool lets you run a help file induced in setup software
	The **Refresh** tool lets you refresh the objects from running window
	The **Cut** tool lets you cut selected object/s to the clipboard
	The **Copy** tool lets you copy selected object/s to the clipboard
	The **Paste** tool lets you paste the Clipboard contents on a screen
	The **Previous Object** tool lets you select the last selected/modified/created object on screen
	The **Next Object** tool lets you select the next modified/created object on screen
	The **Undo** tool lets you undo an action
	The **Redo** tool lets you restore an action that was undone

 The **Large Icons** tool lets you showed the screen in large thumbnail format

 The **Small Icons** tool lets you showed the screen in small thumbnail format

 The **List** tool lets you display a list of screens available in running application

 The **Details** tool lets you display a list of screens with preview available in running application

3.2.2 Layout Toolbar

Tools

Tool	Description
	The **Selector** tool lets you select and size objects
	The **New Base Screen** tool lets you open a blank new screen for creating application
	The **New Popup Screen** tool lets you open a new popup (particularly sized window) screen
	The **Delete Screen** tool lets you delete the selected screen
	The **Open** tool lets you open a desire screen from a docker window which lists the screens along with screen preview
	The **Open** tool lets you switch to "Nodes" docker of application where you can add / delete / edit the tags
	The **Show Screen** tool lets you display all the screens on application window
	The **Tag Database** tools lets you open a list of tags used in application
	The **Alarm Database** tools lets you open a list of alarm tags used in application
	The **Add Bookmark** tools lets you define a particular screen/s as a bookmark
	The **Clear Bookmark** tools lets you clear the bookmark defined to screen
	The **Clear All Book Marks** tools let you clear all the defined bookmarks in the application
	The **Next Bookmark** tools lets you switch to next bookmarked screen directly
	The **Previous Bookmark** tools lets you switch to previous bookmarked screen directly
	The **Next Screen** tools lets you switch to next screen from working screen
	The **Previous Screen** tools lets you switch to previous screen from working screen
	The **First Screen** tools lets you switch to first screen
	The **Last Screen** tools lets you switch to last screen
	The **Bring To Front** tools let you move the selected object to the front of all other objects
	The **Bring To Back** tools let you move the selected object to the behind of all other objects
	The **Align Left** tools lets you align the active objects left with respect to left most point of object
	The **Align Right** tools let you align the active objects right with respect to right most point of object
	The **Align Top** tools let you align the active objects top with respect to top most point of object

The **Align Bottom** tools let you align the active objects bottom with respect to bottom most point of object

The **Align Middle Horizontal** tools lets you align the centers of active objects to screen horizontally

The **Align Middle Vertical** tools lets you align the centers of active objects to screen vertically

The **Align middle horizontal shape** tool lets you align the centers of active objects horizontally

The **Align middle vertical shape** tool lets you align the centers of active objects vertically

The **Place Equal Horizontal** tool lets you equal the width between all active objects

The **Place Equal Vertical** tool lets you equal the vertical distance between all active objects

The **Make Equal Width** tool lets you change a width of object equal to a first drawn object.

The **Make Equal Height** tool lets you change a height of object equal to a first drawn object.

The **Make Equal size** tool lets you change dimension (length x width) of object equal to a first drawn object

The **Make Group** tool lets you group the active objects and act as a single object

The **Break Group** tool lets you un-group the grouped objects and act as a separate object on screen

3.2.3 Draw Toolbar

Tools

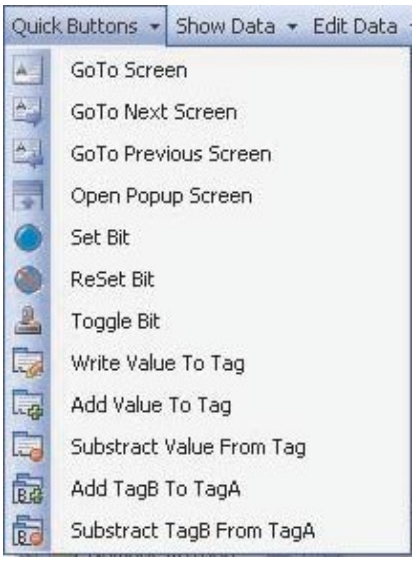
Fly outs open to display a set of related DRAW tools. A small arrow in the middle, right corner of a toolbox button indicates a fly out  . Clicking and dragging the grab handles at the end of the fly out sets the fly out in its expanded form.

This toolbar is divided into various sub-categories described as below:

Drawing Tools:

Tool	Description
	The **Selector** tool lets you select an object
	The **Line** tool lets you draw a line
	The **Rectangle** tool lets you draw a filled rectangle
	The **Ellipse** tool lets you draw an ellipse
	The **Multilingual Text** tool lets you enable text box
	The **Picture** tool lets you insert a picture from the defined destination
	The **Text** tool lets you type a word

Quick Buttons:



 The **Go To Screen** tool lets you jump to any available screen from list of screens

 The **Go To Next Screen** tool lets you jump to next available screen

 The **Go To Previous Screen** tool lets you jump to previous available screen

 The **Open popup Screen Button** tool lets you open a selected screen from available popup screen in touch screen products only

 The **Set Bit Button** tool lets you switch the PLC coil or register bit to on state

 The **Reset Bit Button** tool lets you switch the PLC coil or register bit to off state

 The **Toggle Bit Button** tool lets you toggle a state of PLC coil (read/write) or register bit (read/write).

 The **Write Value To Tag Button** tool lets you write a constant value to a tag

 The **Add Value To Tag Button** tool lets you add a constant value to the current value of the tag

 The **Subtract Value From Tag Button** tool lets you subtract a constant value from the current value of a tag

 The **Add Tag B To Tag A Button** tool lets you add two PLC tags

The **Subtract Tag B From Tag A Button** tool lets you subtract two PLC tag

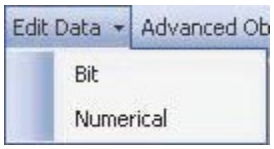
Show Data:

Numerical Data The **Numerical Data** displays only numeric data register value. (Can't be editable)

Message Data The **Message Data** displays only text data register value. (Can't be editable)

Bit Data The **Bit Data** displays only bit text data register value. (Can't be editable)

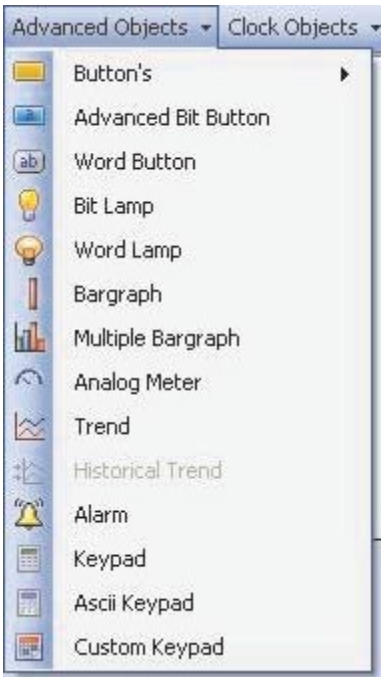
Edit Data:



The **Bit** can edit bit data

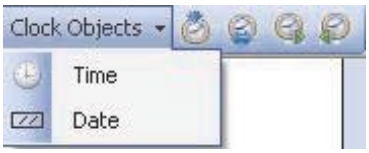
The **Numerical** can edit numeric data register value.

Advanced Objects:



Tools	Description
	The **Advanced Bit Button** displays wizard having list of various pre-defined tasks & can be performed through it.
	The **Word Button** displays multiple states and performs action on different value ranges on a single numeric tag.
	The **Bit Lamp** displays ON state and OFF state of a coil type tag.
	The **Word Lamp** displays multiple states of different value ranges of a single numerical tag
	The **Bargraph** lets you change bar height and width according to the value in the register
	The **Multiple Bargraph** lets you change bar height and width according to the value in the register (up to 4) simultaneously
	The **Analog Meter** lets you represent the parameter values viz.: temperature or pressure from OIS PLUS unit or PLC tag
	The **Trend** displays a graphical representation of a tag's value
	The **Historical Trend** displays a graphical representation of a tag's value
	The **Alarm** lets you define alarms in the application
	The **Keypad** lets you enter the data in a touch screen product
	The **ASCII Keypad** lets you enter the data in ASCII format
	The **Custom Keypad** lets you set

Clock Objects & Alarms:



Tools	Description
	The **Time** tool lets you display system time
	The **Date** tool lets you display system date
	The **Alarm acknowledge** tool lets you acknowledge the top alarm displayed in Display Alarm object. Provided any particular / all alarms are not set / defined to be acknowledged by any specific bit in Alarm Configurator Dialog
	The **Acknowledge All** tool lets you acknowledge all alarms at a time from display Alarm object. Provided any particular / all alarms are not set / defined to be acknowledged by any specific bit in Alarm Configurator Dialog
	The **Next Alarm** tool lets you to switch to next alarm from list of the alarms displayed in Alarm Display Window
	The **Previous Alarm** tool lets you to switch to previous alarm from list of the alarms dis played in Alarm Display Window

3.2.4 Font Toolbar

Tool	Description
	The **Font List** tool lets you define a text style (i.e. font type). For example, you can create a text style that applies an Avant Grade Bk BT font.
	The **Font Size List** tool lets you define a text style (i.e. font size). For example, you can create a text style that applies a 36 point font size.
	The **Bold** tool lets you change an appearance of a font from normal to bold
	The **Italics** tool lets you change an appearance of a font from normal to *Italics*
	The **Underline** tool lets you underlines a defined font
	The **Line color** tool lets you change the outline color of a text box.
	The **Fill Color** tool lets you change a background color of a textbox
	The **Font Color** tool lets you change a text color
	The **Pattern** tool lets you define a text style (i.e. fill pattern) For example, you can fill a text style with defined pattern
	The **Pattern Color** tool lets you define a text style (i.e. fill color pattern) For example, you change color of a text with filled pattern

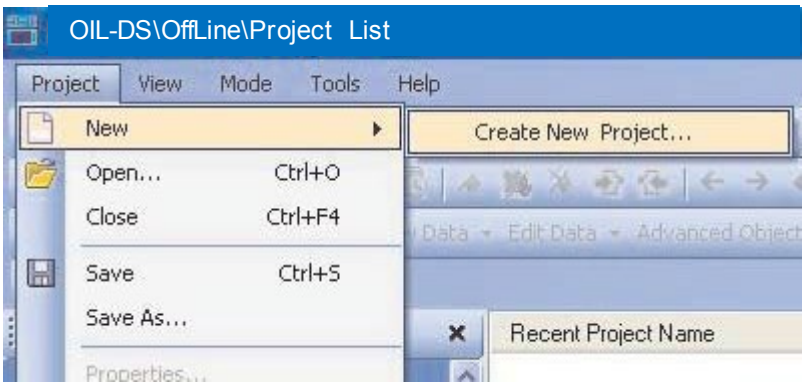
3.2.5 Global Toolbar

Tool	Description
	The **On State** tool lets you display the parameters of bit button defined in on status
	The **Off State** tool lets you display the parameters of bit button defined in off status
	The **Previous State** tool lets you jump to previous available state applicable for word button only
	The **Next State** tool lets you jump to next available state applicable for word button only
State 1	The **State** tool lets you defined the current state of word buttons on the screen
	The **Language** tool lets you display the list of languages added in project

3.3 Creating a New Project

You can create a new application either from “Project” menu bar or from tool bar.

- Create a new application from menu bar:
  To create a new application either choose **Project->New** option or click on **New Application** icon as shown below:

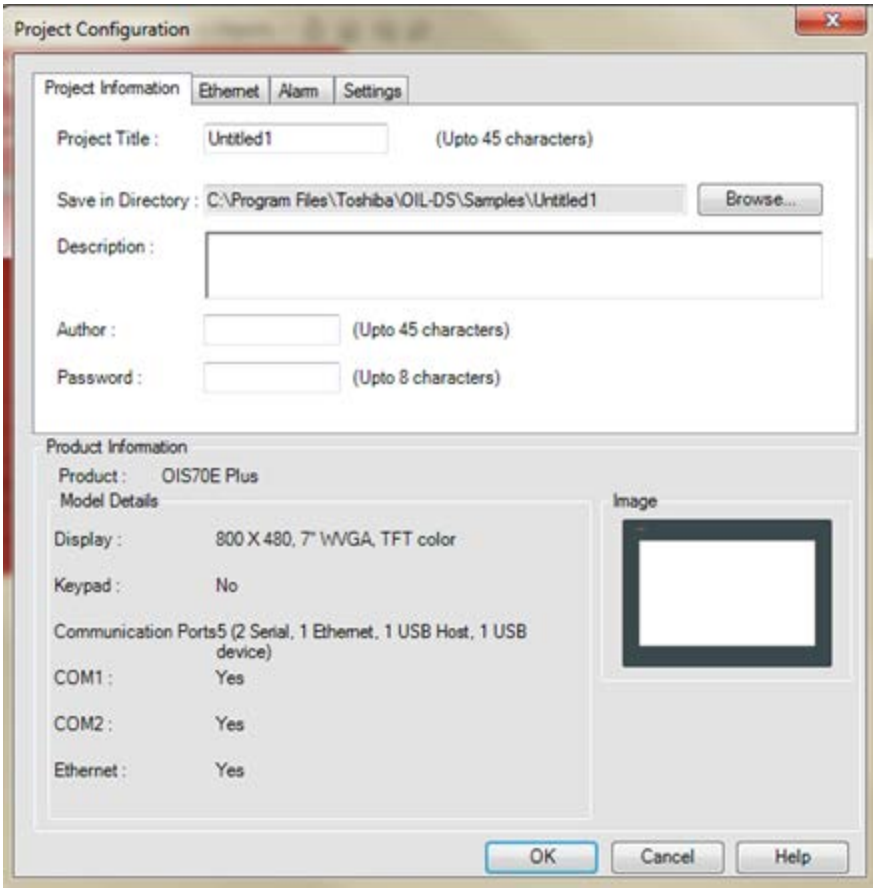


or

Following screen will appear:

This screen shows a list of all OIS PLUS models. Select the product to be programmed by clicking on the product part in the list. Then respective models will appear in the following string. Choose the model.

On clicking “Ok” button project configuration screen will appear as shown below:



Steps for creating a new application are as follows:

1) Start a new project using either Project Menu or Tool section New Project command.
2) Define unit’s settings from Project configuration docker window.
3) Define Network Configuration for selected unit and PLCs.
4) Define tags required for the application in the Tag Database.
5) Define screens.
6) Define Power-on, Global and Screen tasks.
7) Save your application.
8) Download firmware to the unit.
9) Download your application into the unit.

3.4 Creating a Sample Project

This section explains you a creation of sample project once downloaded to the unit, this basic configuration allows the unit to connect to the PLC, display a startup screen, and display a screen containing one PLC register monitor when a switch on the startup screen is pressed.

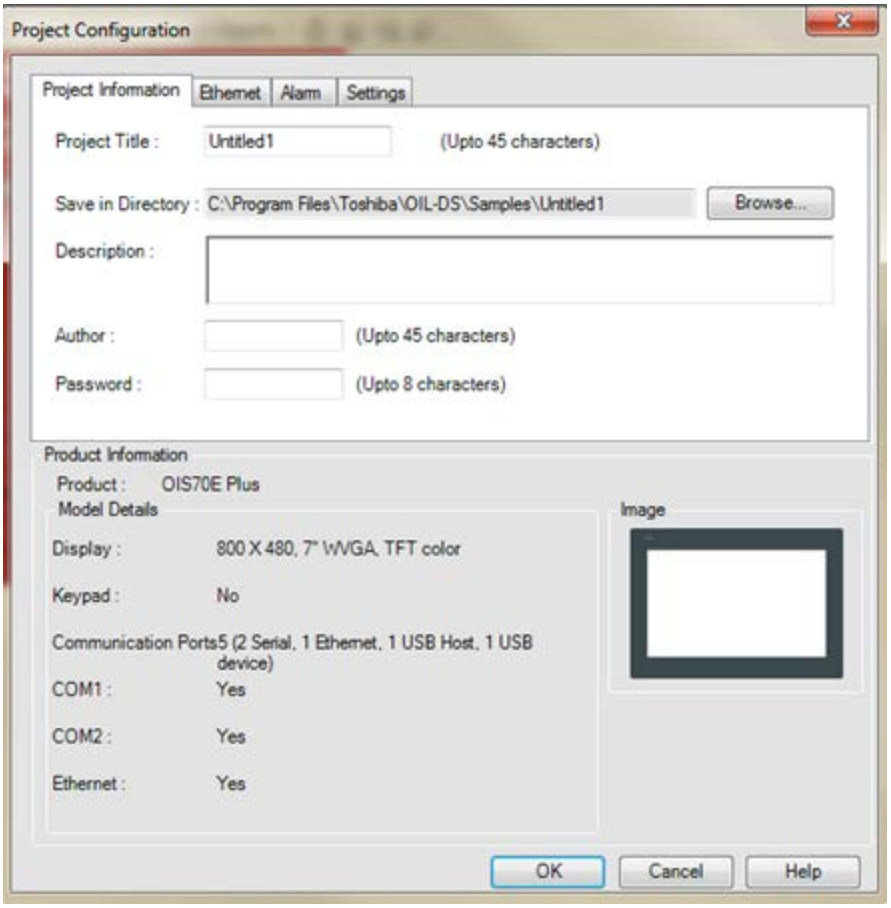
Although we strongly recommend that you perform the following steps to create this sample project.

Setting the system parameters:

Whenever you begin a new project, you should always set the system parameters before you create any windows. System parameters define the basic operating conditions of the OIS PLUS unit such as what type of PLC it is connecting to.

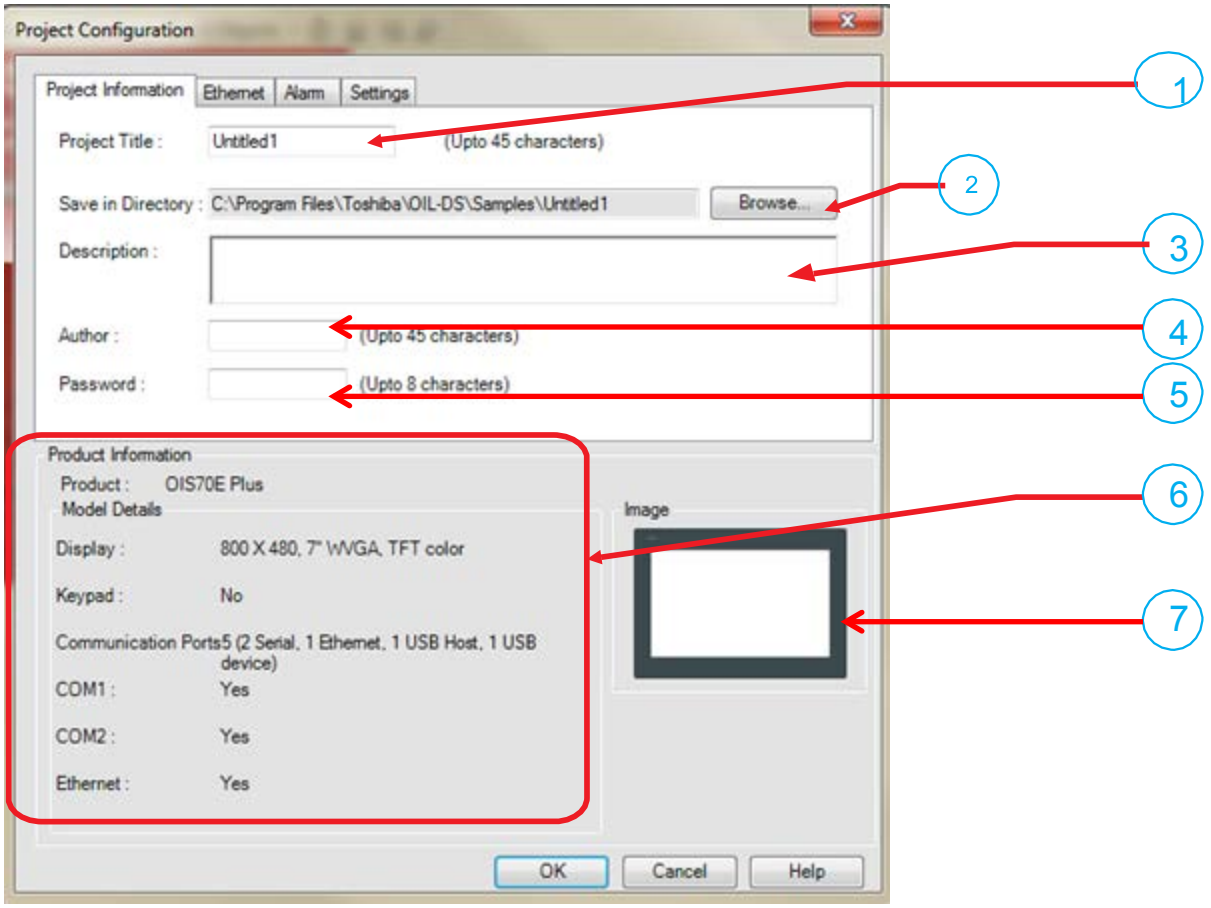
To edit system parameters:

1. Click the "New Project" button. "Click "OK"; the "Project Configuration" dialog box appears.



2. The dialog box has five (5) tabs: Project Information, COM1, COM2, Ethernet, Expansion port, Alarm and, Settings. Select the **Project Information** tab.

Note: The tabs "COM1", "COM2" and "Ethernet" will appear with respect to the unit you select from the list. These are optional & can appear in this dialog box when having compatibility in selected model.



In this dialog box section:
Point 1: You can define project name or can keep “Untitled” as default. Point 2: You can define path for the project to be saved.
Point 3: You can mention any special note; if required.
Point 4: You can define author name.
Point 5: You can define “password” for the project you created.
Point 6: You can see the information of the model selected.
Point 7: You can see the image of the model you selected.
Note: Point 6 and 7 will appear with all tabs of “Project Configuration” docker.

3. Set the parameters from “Alarm” and “Setting” tabs and press “OK” button.

You can see an application window listing information as Screens, nodes, tags and users.

After setting macro level parameters from these project items, your application is ready for downloading.

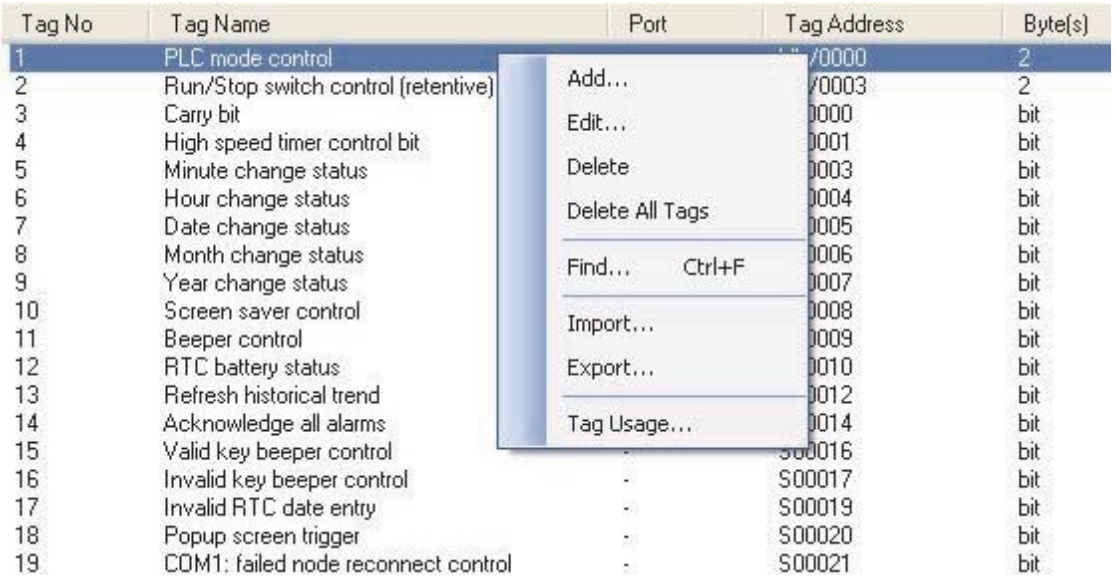
3.5 Tag Database

This is the central database for the tags that need to be used in the application. Once the tags are defined (as registers or coils) and their attributes selected, the tags can be used in the application on screens, tasks, alarms etc. This screen helps you to define Tags associated with defined Nodes. A tag is a register, coil or an individual bit of a register. Select the type of tag from the Tag Type field.

If the type of tag selected is a register then the number of bytes required can also be selected. For displaying or editing a floating point data number, the number of bytes must be 4. The Tag Name field is user definable. A tag is not added to the tag list unless a tag name is defined. Once these fields are defined, click on the Add button. The Block field in the tag database defines the starting address of the tag block followed by the block size.

For example : Tag M0214 is within a block (M0214 : 1) whose starting address is M0214 and block size is 1.

This block size is optimized automatically depending on the address of PLC Tag.
Default block size is either 1 or 16. This setting varies from PLC to PLC.
The attributes of existing tag can be changed by highlighting the tag, making the changes, and clicking the Change Tag button. An existing tag can be removed from tag list by clicking on Delete Tag button. Note that removal of tags is possible only if they are not used in any screen.



Add - Use this button to add a tag. After clicking this button, the user has to define the following:
1. Node : Where the tag is located.
2. Register, coil or a bit within a register. Registers can be read only or read/write.
3. The address limits are shown and vary from PLC model to model.
4. Tag name : Each tag needs to have a unique name. The name can be up to 40 characters in length.
5. Byte(s) : If the selected tag is a register, the tag can be defined as a 1 byte (either high or low byte), a 2 byte, or a 4 byte tag.

Edit – Select the tag. Edit the information and then click on the Update button.

Delete - Select the tag and click on Delete button to delete the tag. Before deleting any tag, the user must delete any references to the tag in screens and tasks. Otherwise it cannot be deleted.

Default System Tags

Note: Please do not attempt to modify read only system tags in the ladder. This could affect the functionality of the product.

System Registers:

Register / Coil	Tag Name	Read / Write	Description
SW0001	Language	Read / Write	Writing a value will changes languages used in wizards
SW0002	Logger Memory % Usage	Read only	Shows percentage use of logger memory. (0 to 100)
SW0003_00	Logger Memory full Status	Read only	1 = Memory full
SW0003_01	Logger Memory clear Status	Read only	1 = Memory clear routing being executed
SW0003_02	RTC Status	Read only	RTC fail
SW0003_13	COM3 Status	Read only	0 = Communication Error; 1= Communicating with PLC
SW0003_14	COM1 Status	Read only	0 = Communication Error; 1= Communicating with PLC
SW0003_15	COM2 Status	Read only	0 = Communication Error; 1= Communicating with PLC
SW0004	Historical Alarm count	Read only	Shows no of alarm stored in history
SW0005	Screen Trigger Register	Read / Write	Shows active screen no. You can change screen by writing any valid screen no in this register
SW0006	Screen saver time	Read / Write	You can change screen time in run time
SW0007_00	RTC Battery Status	Read only	Indicates battery voltage in #.# format
SW0008	IP Conflict Status Register	Read only	If there is an IP Conflict, then 1 is written to this register. If there is no IP conflict then by default it is zero.
SW0009	Driver Scan time register for port3		Shows time required to execute Screen blocks for port3 in milliseconds. Use ####.# format for display.
SW0010	RTC Day of Month	Read only	RTC day in integer format
SW0011	RTC Month	Read only	RTC month in integer format
SW0012	RTC Year	Read only	RTC year in integer format
SW0013	RTC Hour	Read only	RTC hour in integer format
SW0014	RTC Min	Read only	RTC minute in integer format
SW0015	RTC Sec	Read only	RTC sec in integer format
SW0016	RTC Day of week	Read only	RTC Day of week in integer format
SW0017	Scan time register	Read only	Shows time required to execute Screen, Screen task and global task in millisecond Use ####.# format for display
SW0018	COM1 failed node reconnect time (Sec)	Read / write	Shows time in sec recover the communication with failed nodes for port1.the default value is 60Sec
SW0019	COM2 failed node reconnect time (Sec)	Read / write	Shows time in sec recover the communication with failed nodes for port1.the default value is 60Sec
SW0020	Driver Scan time register for port1	Read only	Shows time required to execute Screen blocks in milliseconds. Use ####.# format for display
SW0021	Driver Scan time register for port2	Read only	Shows time required to execute Screen blocks in milliseconds. Use ####.# format for display
SW0022	COM3 failed node reconnect time (Sec)	Read / write	Shows time in sec recover the communication with failed nodes for port3.the default value is 60 Sec
SW0023	Popup Screen number	Read / Write	Value stored in this register triggers the popup screen on s20 bit

Register / Coil	Tag Name	Read / Write	Description
SW0024	Status Word1 for Siemens micromaster	Read	Displays the status word1 of the drive
SW0025	Status Word2 for Siemens micro master	Read	Displays the status word1 of the drive
SW0026	Control Word1 for Siemens micro master	Read / Write	Displays the Control word1 of the drive
SW0027	Control Word2 for Siemens micro master	Read / Write	Displays the control word1 of the drive
SW0028 (LOW)	HMI IP Address(LS BYTE)	Read Only	IP ADDRESS least significant byte
SW0028 (HIGH)	HMI IP Address(2nd BYTE)	Read Only	IP ADDRESS second byte
SW0029 (LOW)	HMI IP Address(3rd BYTE)	Read Only	IP ADDRESS Third byte
SW0029 (HIGH)	HMI IP Address(MS BYTE)	Read Only	IP ADDRESS most significant byte
SW0030 (LOW)	HMI Subnet Mask(LS BYTE)	Read Only	Subnet Mask least significant byte
SW0030 (HIGH)	HMI Subnet Mask(2nd BYTE)	Read Only	Subnet Mask second byte
SW0031 (LOW)	HMI Subnet Mask(3rd BYTE)	Read Only	Subnet Mask Third byte
SW0031 (HIGH)	HMI Subnet Mask(MS BYTE)	Read Only	Subnet Mask most significant byte
SW0032 (LOW)	HMI Default Gateway (LS BYTE)	Read Only	Default Gateway least significant byte
SW0032 (HIGH)	HMI Default Gateway (2nd BYTE)	Read Only	Default Gateway second byte
SW0033 (LOW)	HMI Default Gateway (3rd BYTE)	Read Only	Default Gateway Third byte
SW0033 (HIGH)	HMI Default Gateway (MS BYTE)	Read Only	Default Gateway most significant byte
SW0034	HMI download Port	Read Only	HMI download Port
SW046	Ladder Scan Time	Read only	Value is multiple of 0.1 ms
SW0048	S48 (Ana Type selection)	Read / Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
SW0060	S60(room Temp)	Read / Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
SW0062	S62 (Out Ch Select)	Read / Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
SW0063	S63 (In)Ch Select)	Read / Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
SW64-S65	Node Status Registers for COM1	Read only	Shows the status of the node, whether node is present or not. Total 2 word Register are mapped for 32 nodes.
SW66-S79	Node Status Registers for COM1	Read only	Shows the status of the node, whether node is present or not. Total 14 word Register are mapped for 224 nodes.
SW80-S81	Node Status Registers for COM2	Read only	Shows the status of the node, whether node is present or not. Total 2 word Register are mapped for 32 nodes.
SW82-S95	Node Status Registers for COM2	Read only	Shows the status of the node, whether node is present or not. Total 14 word Register are mapped for 224 nodes.
SW96-S111	Node Status Registers for COM3	Read only	Shows the status of the node, whether node is present or not. Total 16 word Register are mapped for 256 nodes.
SW116	Factory Application 1	Read / Write	Reserved for factory application
SW117	Factory Application 2	Read / Write	Reserved for factory application
SW118	Factory Application 3	Read / Write	Reserved for factory application
SW119	Factory Application 4	Read / Write	Reserved for factory application
SW120	Factory Application 5	Read / Write	Reserved for factory application
SW121	Contrast Set Register (Retentive)	Read / Write	Adjust the contrast of LCD. It is a retentive system register. Value can be between 0 to 100 only.

Register / Coil	Tag Name	Read / Write	Description
SW122	Brightness Set Register (Retentive)	Read / Write	This register is implemented as retentive register in firmware and used for controlling the bright ness of unit.
SW123	Factory Application 6	Read / Write	Reserved for factory application
SW124	Factory Application 7	Read / Write	Reserved for factory application
SW125	Factory Application 8	Read / Write	Reserved for factory application
SW126	Factory Application 9	Read / Write	Reserved for factory application
SW127	Failed Expansion slot reconnect time (Sec)	Read / Write	Shows time in sec recover the communication with failed nodes for Expansion port .the default value is 60Sec

System Bit / Coil

Register / Coil	Tag Name	Read / Write	Description
S0000	Carry bit	Read/Write	Overflow indication in math operations of ladder and also used in rotate with carry instruction.
S0001	High speed timer control bit	Read/write	Enable bit to start high speed timer
S0003	Minute Change status	Read only	1 for every change in minute for one scan cycle
S0004	Hour Change status	Read only	1 for every change in hour for one scan cycle
S0005	Date Change status	Read only	1 for every change in date for one scan cycle
S0006	Month Change status	Read only	1 for every change in month for one scan cycle
S0007	Year Change status	Read only	1 for every change in year for one scan cycle
S0008	Screen saver Control	Read/Write	0: Disable screen saver; 1: Enable screen saver Runtime you can change this bit
S0009	Beeper Control	Read/Write	1: Enable Beeper; 0: Disable Beeper Runtime you can change this bit
S0010	RTC Battery status	Read only	0: Battery voltage is OK (i.e. above 2.2 V) 1: Low battery (I.e. below 2.2 V)
S0012	Refresh historical trend	Read/Write	Refresh historical trend window when set to1
S0014	Acknowledge all alarms	Read only	0: All alarms are acknowledged; 1: All alarms are not acknowledged in the Real and Historical alarms
S0016	Valid key beeper Control	Read/Write	1: Enable valid beeper; 0: Disable valid beeper Run time you can change this bit
S0017	Invalid key beeper Control	Read/Write	1: Enable Invalid beeper; 0: Disable Invalid beeper. Run time you can change this bit
S0019	Invalid RTC date entry	Read only	0=valid date 1= Invalid date
S0020	Popup Screen trigger	Read/Write	This bit triggers the popup screen number stored in S23
S0021	COM1 failed node reconnect control	Read/write	If this bit is set communication with the failed nodes are detected after scan time S0018 for port1. By default : ON
S0022	COM2 failed node reconnect control	Read/write	If this bit is set communication with the failed nodes are detected after scan time S0019 for port2. By default : ON
S0023	COM3 failed node reconnect control	Read/write	If this bit is set communication with the failed nodes are detected after scan time S0022 for port3. By default : ON
S0024	Start/Stop Calibration	Read/Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
S0025	Min/Max Calibration Value	Read/Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
S0026	Save Calibration Data	Read/Write	Used for Calibration Application So hardcoded in Runtime code & Firmware
S0027	Static Data Entry Focus Control	Read/Write	User can enable focus for static data entry using this bit.
S0028	Data log Group1 log Control	Read/Write	User can Start/Stop logging in Bit Task mode for Group1 by using this bit
S0029	Data log Group2 log Control	Read/Write	User can Start/Stop logging in Bit Task mode for Group2 by using this bit
S0030	Data log Group3 log Control	Read/Write	User can Start/Stop logging in Bit Task mode for Group3 by using this bit
S0031	Data log Group4 log Control	Read/Write	User can Start/Stop logging in Bit Task mode for Group4 by using this bit
S0032	Data Entry Lock Control	Read/Write	User can Lock / Unlock the data entry. 1 = Data Entry Lock, 0 = Data Entry unlock.

Register / Coil	Tag Name	Read / Write	Description
S0033	Data Entry Key Selection	Read/Write	User can chose the mode of data entry using this bit. 1= Start data entry only through 'Enter' key. 0= Start data entry through 'Enter' key or Numeric key.
S0034	Ladder Instruction Error Status		Set if Division by zero operation is performed in the ladder instruction and for invalid conditions or operands in case of conversion instructions.
S0035	Real and Historical Alarm Control	Rea/Write	If the selected coil is one the unit will not monitoring(Ignoring) any alarm. After resetting the coil unit will again start to monitor the alarm.
S0036	RUN LED Control	Rea/Write	0: LED functionality works for upload/RUN/ Communication status 1: LED OFF
S0037	USB Host Menu Trigger	Read/Write	System tag to allow USB host operation to user
S0038	Factory application Menu Trigger	Read/Write	System tag to allow to enter in Factory application mode
S0039	Backlight Color Control-Red (Retentive)	Read/Write	To control the RED Color backlight operation (Refer section 12.9)
S0040	Backlight Color Control-Green	Read/Write	To control the GREEN Color backlight operation (Refer section 12.9)
S0041	Backlight Color Control-Blue (Retentive)	Read/Write	To control the BLUE Color backlight operation (Refer section 12.9)
S0042	HMI DHCP Enable/Disable	Read Only	DHCP Enable/Disable

Configuration Registers:

Register / Coil	Tag Name	Read / Write	Description
MW0000	PLC Operation Mode	Read/Write	Bit0-3: 0: Initialization; 1: HALT Mode; 2: RUN Mode; 3: RUN-F Mode; 4: HOLD Mode; 6: ERROR Mode. Invaild value: Previous value will be retained.
MW0003	RUN/STOP Switch Control (Retentive)	Read/Write	1: HALT, 0: RUN. Only LSB is used. MSB bits (1 to 15) will be ignored.
MW0005	Digital Filter constant (0 to 15 ms)	Read/Write	Entered Value is multiple of 10 ms. Enabled when MW10 bit 16 is ON.
MW0010	HSC Configuration register (CH1)	Read/Write	Configure High Speed Counter (CH1)
MW0011	High Speed Counter (HSC) Register (CH1)	Read/Write	Displays Counter Value for High Speed Counter (CH1)
MW0013	HSC Preset Register (CH1)	Read/Write	Sets Preset value High Speed Counter (CH1)
MW0020	HSC Configuration register (CH2)	Read/Write	Configure High Speed Counter (CH2)
MW0021	High Speed Counter (HSC) Register (CH2)	Read/Write	Displays Counter Value for High Speed Counter (CH2)
MW0023	HSC Preset Register (CH2)	Read/Write	Sets Preset value High Speed Counter (CH2)
MW0033	Unit IP Address Lo Word	Read Only	
MW0034	Unit IP Address Hi Word	Read Only	
MW0035	Unit Subnet Mask Address Low Word	Read Only	
MW0036	Unit Subnet Mask Address High Word	Read Only	
MW0037	Unit Default Gateway Low Word	Read Only	
MW0038	Unit Default Gateway High Word	Read Only	
MW0100	HSC Configuration register (CH1)-Slot01	Read/Write	Configure High Speed Counter (CH1) -Slot 01
MW0101	High Speed Counter (HSC) Register (CH1)-Slot01	Read/Write	Displays Counter Value for High Speed Counter (CH1) -Slot 01
MW0103	HSC Preset Register (CH1)-Slot01	Read/Write	Sets Preset value High Speed Counter (CH1) -Slot 01
MW0106	HSC Configuration register (CH2)-Slot01	Read/Write	Configure High Speed Counter (CH2) -Slot 01
MW0107	High Speed Counter (HSC) Register (CH2)-Slot01	Read/Write	Displays Counter Value for High Speed Counter (CH2) -Slot 01
MW0109	HSC Preset Register (CH2)-Slot01	Read/Write	Sets Preset value High Speed Counter (CH2) -Slot 01
MW0200	HSC Configuration register (CH1)-Slot02	Read/Write	Configure High Speed Counter (CH1) -Slot 02
MW0201	High Speed Counter (HSC) Register (CH1)-Slot02	Read/Write	Displays Counter Value for High Speed Counter (CH1) -Slot 02
MW0203	HSC Preset Register (CH1)-Slot02	Read/Write	Sets Preset value High Speed Counter (CH1) -Slot 02
MW0206	HSC Configuration register (CH2)-Slot02	Read/Write	Configure High Speed Counter (CH2) -Slot 02
MW0207	High Speed Counter (HSC) Register (CH2)-Slot02	Read/Write	Displays Counter Value for High Speed Counter (CH2) -Slot 02
MW0209	HSC Preset Register (CH2)-Slot02	Read/Write	Sets Preset value High Speed Counter (CH2) -Slot 02
MW0300	HSC Configuration register (CH1)-Slot03	Read/Write	Configure High Speed Counter (CH1) -Slot 03

Register / Coil	Tag Name	Read / Write	Description
MW0301	High Speed Counter (HSC) Register (CH1)-Slot03	Read/Write	Displays Counter Value for High Speed Counter (CH1) -Slot 03
MW0303	HSC Preset Register (CH1)-Slot03	Read/Write	Sets Preset value High Speed Counter (CH1) -Slot 03
MW0306	HSC Configuration register (CH2)-Slot03	Read/Write	Configure High Speed Counter (CH2) -Slot 03
MW0307	High Speed Counter (HSC) Register (CH2)-Slot03	Read/Write	Displays Counter Value for High Speed Counter (CH2) -Slot 03
MW0309	HSC Preset Register (CH2)-Slot03	Read/Write	Sets Preset value High Speed Counter (CH2) -Slot 03
MW0400	HSC Configuration register (CH1)-Slot04	Read/Write	Configure High Speed Counter (CH1) -Slot 04
MW0401	High Speed Counter (HSC) Register (CH1)-Slot04	Read/Write	Displays Counter Value for High Speed Counter (CH1) -Slot 04
MW0403	HSC Preset Register (CH1)-Slot04	Read/Write	Sets Preset value High Speed Counter (CH1) -Slot 04
MW0406	HSC Configuration register (CH2)-Slot04	Read/Write	Configure High Speed Counter (CH2) -Slot 04
MW0407	High Speed Counter (HSC) Register (CH2)-Slot04	Read/Write	Displays Counter Value for High Speed Counter (CH2) -Slot 04
MW0409	HSC Preset Register (CH2)-Slot04	Read/Write	Sets Preset value High Speed Counter (CH2) -Slot 04
MW0500	HSC Configuration register (CH1)-Slot05	Read/Write	Configure High Speed Counter (CH1) -Slot 05
MW0501	High Speed Counter (HSC) Register (CH1)-Slot05	Read/Write	Displays Counter Value for High Speed Counter (CH1) -Slot 05
MW0503	HSC Preset Register (CH1)-Slot05	Read/Write	Sets Preset value High Speed Counter (CH1) -Slot 05
MW0506	HSC Configuration register (CH2)-Slot05	Read/Write	Configure High Speed Counter (CH2) -Slot 05
MW0507	High Speed Counter (HSC) Register (CH2)-Slot05	Read/Write	Displays Counter Value for High Speed Counter (CH2) -Slot 05
MW0509	HSC Preset Register (CH2)-Slot05	Read/Write	Sets Preset value High Speed Counter (CH2) -Slot 05

Configuration Coils:

Register / Coil	Tag Name	Read / Write	Description
M00016	CPU error	Read Only	ON at error state
M00017	I/O error	Read Only	ON at error state
M00018	Program error	Read Only	ON at error state. This group includes Ladder Scan time.
M00021	Clock/calendar illegal value warning	Read Only	ON when clock/calendar data is illegal
M00022	Retentive data invalid warning	Read Only	ON when retentive data in RAM are invalid
M00027	Watchdog timer error	Read Only	ON at error state
M00029	I/O mismatch error	Read Only	ON at error state
M00031	I/O communication error	Read Only	ON at error state
M00033	Ladder Scan time error	Read Only	ON when the scan time exceeds 200ms (default)
M00240	HSC Enable Bit (CH1)	Read/Write	Start Counting for High Speed Counter (CH1)
M00241	HSC Reset Bit(CH1)	Read/Write	Reset High Speed Counter (CH1)
M00400	HSC Enable Bit (CH2)	Read/Write	Start Counting for High Speed Counter (CH2)
M00401	HSC Reset Bit(CH2)	Read/Write	Reset High Speed Counter (CH2)
M00480	System timer coil for 0.1 sec interval	Read Only	Toggle at 50 % duty cycle
M00481	System timer coil for 0.2 sec interval	Read Only	Toggle at 50 % duty cycle
M00482	System timer coil for 0.4 sec interval	Read Only	Toggle at 50 % duty cycle
M00483	System timer coil for 0.8 sec interval	Read Only	Toggle at 50 % duty cycle
M00484	System timer coil for 1 sec interval	Read Only	Toggle at 50 % duty cycle
M00485	System timer coil for 2 sec interval	Read Only	Toggle at 50 % duty cycle
M00486	System timer coil for 4 sec interval	Read Only	Toggle at 50 % duty cycle
M00487	System timer coil for 8 sec interval	Read Only	Toggle at 50 % duty cycle
M00496	Timer interrupt ladder execution status	Read Only	ON when Timer program is executing
M00497	IO1 interrupt execution status	Read Only	ON when IO1 program is executing
M00498	IO2 interrupt execution status	Read Only	ON when IO2 program is executing
M00512	ALWAYS ON	Read Only	This coil is always ON
M00513	ALWAYS OFF	Read Only	This coil is always OFF
M01080	HSC Enable Bit (CH1)-Slot01	Read/Write	Start Counting for High Speed Counter (CH1) - Slot 01
M01081	HSC Reset Bit(CH1)-Slot01	Read/Write	Reset High Speed Counter (CH1) -Slot 01
M01176	HSC Enable Bit (CH2)-Slot01	Read/Write	Start Counting for High Speed Counter (CH2) - Slot 01
M01177	HSC Reset Bit(CH2)-Slot01	Read/Write	Reset High Speed Counter (CH2) -Slot 01
M02080	HSC Enable Bit (CH1)-Slot02	Read/Write	Start Counting for High Speed Counter (CH1) - Slot 02
M02081	HSC Reset Bit(CH1)-Slot02	Read/Write	Reset High Speed Counter (CH1) -Slot 02
M02176	HSC Enable Bit (CH2)-Slot02	Read/Write	Start Counting for High Speed Counter (CH2) - Slot 02
M02177	HSC Reset Bit(CH2)-Slot02	Read/Write	Reset High Speed Counter (CH2) -Slot 02
M03080	HSC Enable Bit (CH1)-Slot03	Read/Write	Start Counting for High Speed Counter (CH1) - Slot 03
M03081	HSC Reset Bit(CH1)-Slot03	Read/Write	Reset High Speed Counter (CH1) -Slot 03
M03176	HSC Enable Bit (CH2)-Slot03	Read/Write	Start Counting for High Speed Counter (CH2) - Slot 03

Register / Coil	Tag Name	Read / Write	Description
M03177	HSC Reset Bit(CH2)-Slot03	Read/Write	Reset High Speed Counter (CH2) -Slot 03
M04080	HSC Enable Bit (CH1)-Slot04	Read/Write	Start Counting for High Speed Counter (CH1) - Slot 04
M04081	HSC Reset Bit(CH1)-Slot04	Read/Write	Reset High Speed Counter (CH1) -Slot 04
M04176	HSC Enable Bit (CH2)-Slot04	Read/Write	Start Counting for High Speed Counter (CH2) - Slot 04
M04177	HSC Reset Bit(CH2)-Slot04	Read/Write	Reset High Speed Counter (CH2) -Slot 04
M05080	HSC Enable Bit (CH1)-Slot05	Read/Write	Start Counting for High Speed Counter (CH1) - Slot 05
M05081	HSC Reset Bit(CH1)-Slot05	Read/Write	Reset High Speed Counter (CH1) -Slot 05
M05176	HSC Enable Bit (CH2)-Slot05	Read/Write	Start Counting for High Speed Counter (CH2) - Slot 05
M05177	HSC Reset Bit(CH2)-Slot05	Read/Write	Reset High Speed Counter (CH2) -Slot 05

REPRESENTING DATA BY OBJECTS AND WIZARDS

- Alphanumeric Objects
- Graphic Objects
- Wizards
- Import & Export Multilingual Text Objects

4.1 Alphanumeric Objects

Alphanumeric objects are objects with certain properties or attributes. By using various attributes, the designer can emphasize the importance of a particular object. The alphanumeric objects in models with a graphics display have some additional attributes.

Or

The Alphanumeric object types are
1. Text Object 2. Data Entry 3. Display Data 4. Time 5. Date

Select the object and the corresponding properties which can be assigned to object are shown in property window. Some of the common properties from property grid window , which can be set to these alphanumeric objects are Animation and Layout.

Animation :- Select the object and observe the property grid window. The object can be animated in various individual or in combination forms. Types through which an object can be animated are

a) Color Animation: Text/Line Color and background color can be changed. b)
b) Flash Animation: Object Flashes at various speeds(Slow, Medium, and High)
c) Show/Hide Animation: Object is shown / hidden as per the Tag value.

To select any type user needs to change the status in corresponding cell as 'Yes'. By default the text in this cell is 'No' representing the animation is disabled. Following window shows the parameters to be defined for animation

Color Animation :-

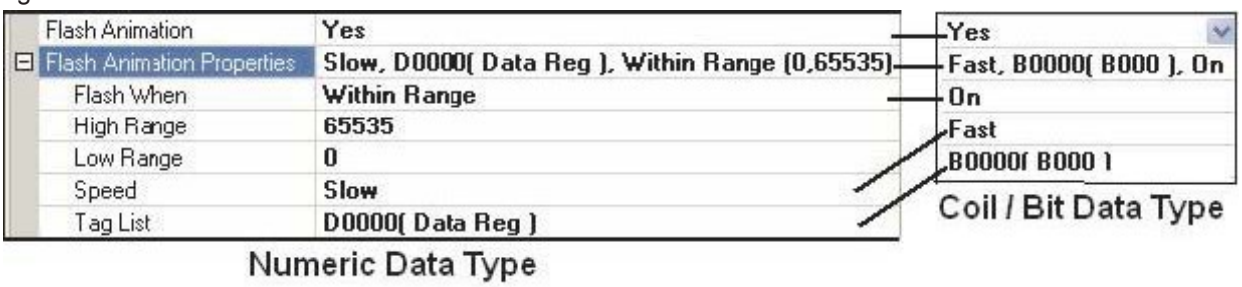
To perform color animation, this cell has to be defined as 'Yes'. Defining Yes, few more cells with Color Animation Properties are enabled. In these cell Data Register Number is to be defined for Fill color and Line color. The value in these data Register will represent to the Color pallet number and accordingly the Background(i.e. Fill) and Text(i.e. Line) color will be defined for the object. e.g.:- Here Fill Color cell is defined with Data Register D00 and Line color cell is defined with Data register D01. In unit Value entered in D00=188 represent the Blue color for Background and value entered in D01 represent Red Color for text.

Note:-

i) Data register range is from D000-D999, hence designer cannot define the Data register above 999.
ii) In unit, depending on the product being used , designer can only enter color pallet number value from 0-15(For Product with Monochrome LCD) or 0-255(For product with Color LCD) only.
iii) This feature can be tested and confirmed through Offline simulation also
iv) for more details of Color pallets please refer Color Dialog Box Section.

Flash Animation :-

To perform Flash Animation , this cell has to be defined as 'Yes'. Defining Yes , few more cells with Flash Animation Properties are enabled. Flash animation is dependent on the internal or PLC tag. This tag can be either coil type or Numeric Type. As per the selection of tag type used for animation , other cell property ranges of Flash animation are defined.



Flash When:- Designer can see following text in this cell
-Within Range/Out of range (If tag Selected is of Numeric type)
-On/Off (If tag selected is of Bit/Coil type)
If the tag is numeric type then designer can define to flash the object within some range of values of the tag or to flash the object out of range of the values of the tag. If the Tag is Coil/Bit type then designer can define to flash the object at the On state of the tag or to flash the object at Off state of the tag.

Speed:- Three various speeds at which the object can be flashed are Slow, Medium and Fast.

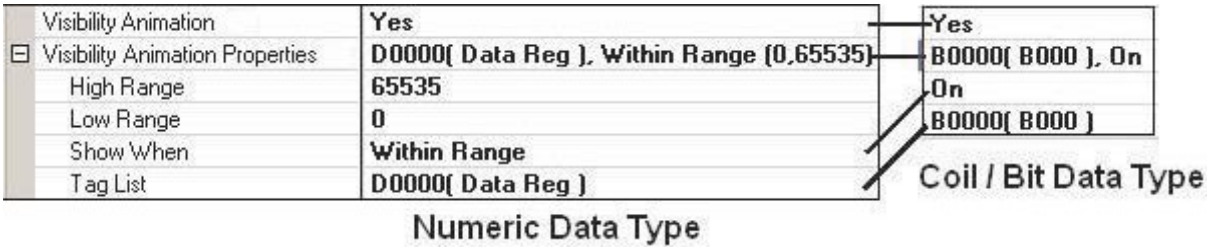
Tag List:- To define the tag either Numeric type or Coil type, on whose condition object embed - ded on screen will be defined for Flash Animation. If the tag is numeric type then 'Flash when cell will be with within range option or Out of range option. Even two more cells with High range and Low range is enabled, in which the low limit and high limit value has to be defined by the designer. According to the value in the tag and flash when option selected by designer , object will flash. If the tag is Coil type then object can be flashed on the On state of the tag or on the Off state of the tag. Fly out to this cell will show the list of already defined tags from tag database.

Note:-

i) Value that can be defined in Low range and high range cell is from 0-65535 only.
ii) This feature can be tested and confirmed through Offline simulation / Run mode also
iii) If Flash animation is selected in Animation section , then Flash Cell from Appearance section is disabled

Show / Hide Animation :-

To show or hide the object embedded on unit screen can be performed with defining this cell as 'Yes'. The important parameters to be set to enable Show/ Hide Animation are 'Show When' (with Low Range value, high range value or On State , Off State) and tag list(with register type tag or Bit type tag).

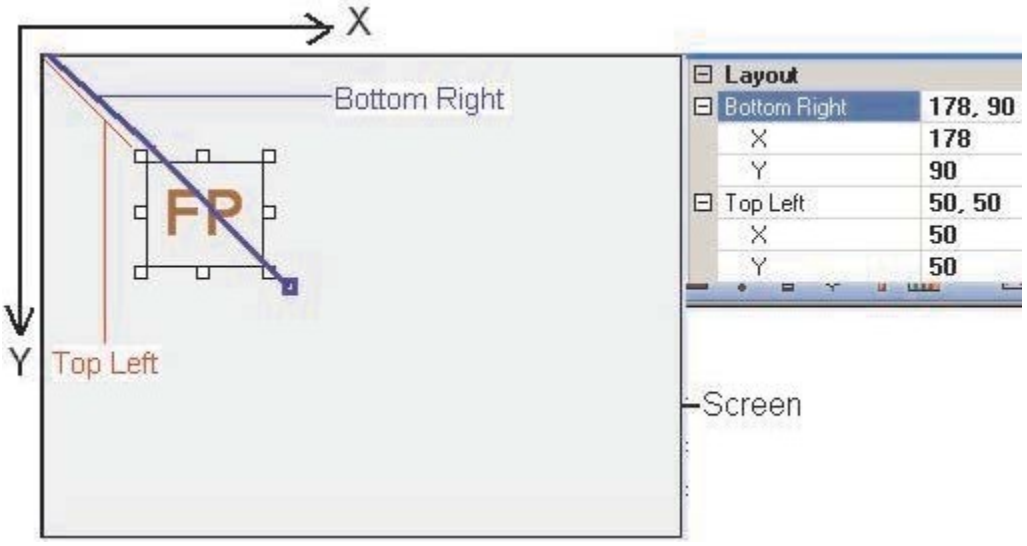


If the tag defined in tag list is numeric type then two more cells will be displayed with high range and low range. The value in this low range or high range cell can be set from 0-65535.
If designer defines 'Within range' option in 'show When' cell then Object embedded on screen will be Shown/ Displayed on screen only when value of the numeric tag selected in tag list is Within low limit and high limit range. If the designer defines 'out of range' option then object embedded on screen will be shown/Displayed on screen only when value of tag is Out of range of the low limit and high limit range.
If designer defines the coil type tag in tag list then, the object will be shown/displayed on screen only when the coil type tag is On or Off state.

Note:-
i) This feature can be tested and confirmed through Offline simulation / Run mode also

Layout:-

To embed the Object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object.

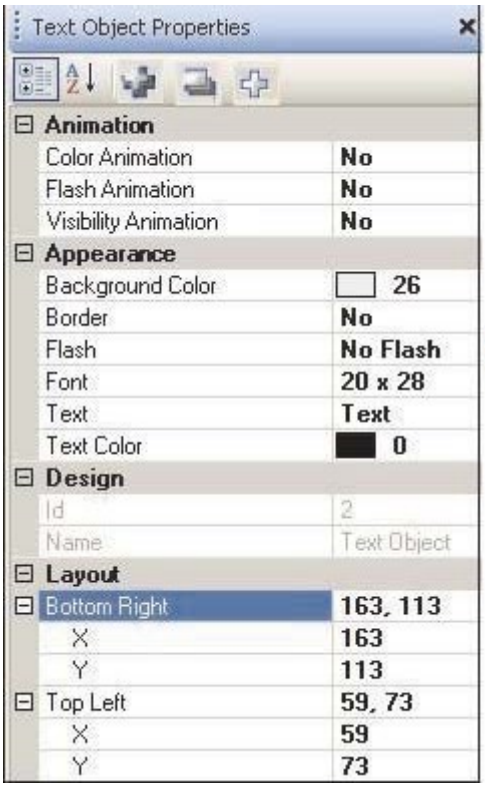


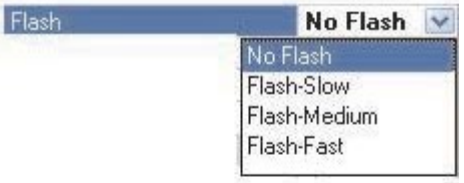
Bottom Right:-
Display the End point pixel position of the object from Top left corner of the screen.
X-> Display the X Coordinate position of End point of object from Top left corner of the screen.
Y-> Display the Y Coordinate position of End point of object from Top left corner of the screen.

Top Left:-
Display the Start point pixel position of the Text object from Top left corner of the screen.
X-> Display the X Coordinate position of Start point of object from Top left corner of the screen.
Y-> Display the Y Coordinate position of start point of object from Top left corner of the screen.

4.1.1 Text Object

To display the message for the operator on unit screen. Designer can define the size, color, flashing properties to this Text object. All such display properties for the text object can be set through the Property grid Window from right side of the software screen. Plain text objects do not depend on the PLC, but can be made dependent on PLC tag by defining animation cells from property grid window.





Animation:-

Text object can be animated in various forms such as Changing the Text Color or background color , Flashing the Text object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the Text object depending on the value of internal or PLC tag.
For more details please refer to the Animation section.

Appearance :-
Background color :- Background color of the text object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color Display then available colors are 256 RGB Colors. By default the background color for any product is white.

Border:- Border for Text object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Flash:- To flash the Text object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'. In this cell Designer needs to define the Flash Speed to be assigned to the Text object embedded on Screen.

Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast. Object with all properties defined (Border background, etc.) gets flashed.

Font:- To display the Text Object on unit screen in various sizes. The text object supports only the software defined sizes. The available sizes in which this Text object can be set are 5x7,10x14, 20x28, and 7x14.

Text:- To write the message which designer needs to display it on unit screen. Designer can write any alphanumeric characters in this cell.

Text Color:- To set the color to the Text object in order to display the Text message on screen in desired color by designer. Text color of the Text object varies from product to product. Range of color depends upon the type of LCD used for selected product. Products with Monochrome LCD can have 16 Grey Scale colors and Color LCD can have 256 colors varying in combination of RGB colors. Default text color for any product is selected as Black.

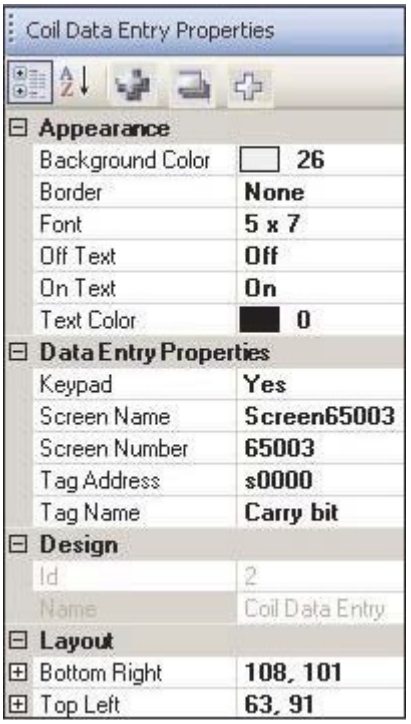
Layout:- To embed the time object on screen at desired location with its coordinates
position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section in start of this document.

4.1.2 Data Entry Object

This object is useful to display and edit the value of internal or PLC tag. The tag data type can be either Bit type or Numeric type. The tag type should be Read/Write. The edit the object on unit screen , designer can define either the use of Popup keypad or Numeric Keypad.

Select the Bit type or Numeric type data object from Fly out.

5.1.2.1 Bit Type Data Entry Object:-
Select Bit/Coil type object from Data Entry object fly out, embed it on screen and edit the desired properties of it from Property grid window.



Appearance:-
Background Color :-
Background color of the data entry object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16
Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the back- ground color for any product is White.
Border:- Border for data entry object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.
Font:- To display the data entry object on unit screen in various sizes. The data entry object supports only the software defined sizes. The available sizes in which this object can be set are 5x7,10x14, 20x28, 7x14.

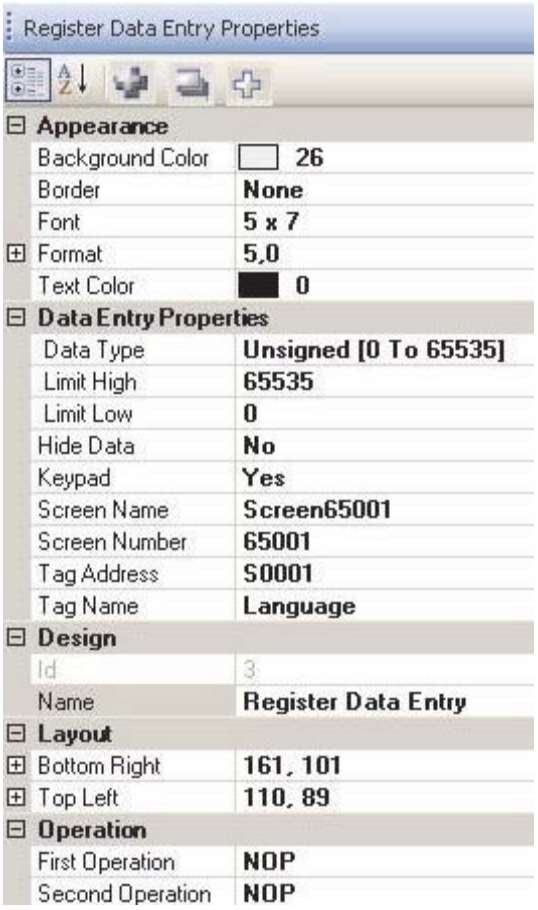
Off text :- To display the Off state condition through Text message for the coil tag defined for Coil type data entry object is to be defined in this cell. Designer can use any alphanumeric characters or special characters to display the off text in unit.
On text :- To display the ON state condition through Text message for the coil tag defined for Coil type data entry object is to be defined in this cell. Designer can use any alphanumeric characters or special characters to display the off text in unit.
Text Color:- To set the color to the data entry object in order to display the value of coil type tag on screen in desired color by designer. Text color of the data entry object varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry object color for any product is selected as Black.

Data Entry Properties:-
Keypad:- To edit the Coil type tag's status on unit screen , user needs to have the keypad on screen. This keypad can be made available in two ways , either with Popup screen with numeric keypad embedded in it or with Numeric keypad embedded on the Screen near the data entry object. This keypad function is optional with
'Yes' or 'No'. If 'Yes' is defined then popup screen with numeric keypad embedded on it will be displayed on screen to enter the data. And if 'No' is defined then user will have to enter data through a static numeric keypad embedded on screen near the data entry object.
Screen Name:- If the popup keypad option is defined in above cell , then only this Screen name cell is displayed. This cell shows the name of the popup screen defined for editing Data entry object. List of popup keypad with name available in the application project can be selected from fly out of this cell. Editing this cell will show the corresponding screen number in following screen number cell.
Screen Number:- If the popup keypad option is defined in above cell , then only this Screen number cell is displayed. This cell shows the number of the popup screen defined for editing Data entry object. List of popup keypad numbers available in the application project can be selected from fly out of this cell. Editing this cell will show the corresponding screen name in above screen name cell.
Tag address:- Type tag on which data entry operation is to be performed is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag in following Tag name cell.
Tag Name:- Name of the bit type tag on which data entry operation is to be performed is to be defined in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Layout:- To embed the data entry object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the data entry object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section in start of this document.

4.1.2.1 Numeric Type Data Entry Object:-

Select numeric type object from Data Entry object fly out, embed it on screen and edit the desired properties of it from Property grid window.



Appearance:-

Background Color :-

Background color of the data entry object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16

Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the back- ground color for any product is White.

Border:- Border for data entry object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Font:- To display the data entry object on unit screen in various sizes. The data entry object supports only the software defined sizes. The available sizes in which this object can be set are 5x7,10x14, 20x28, and 7x14.

Text Color:- To set the color to the data entry object in order to display the value of numerical type tag on screen in desired color by designer. Text color of the data entry object varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry color for any product is selected as Black.

Format :- Digit format to be used for Numerical data entry object Can be defined.

The total digits that can be displayed on unit screen are 1 to 10.

Decimal Point from Right:- To define the decimal point position from right side of the digits. The value for this cell can vary from 0 to 10. The format that can be defined will be from '**.#**' to '**##########.#**'

Number of Digits:- Total number of digits to be used to display the numerical data entry object. Digits to be displayed after decimal point are also included in it. Range of total number of digits to be displayed varies from 0 to10.

Data Entry Properties:-

Data Type:- List of data type and its ranges to be used to display the selected tag in numerical data entry object is displayed in this cell. Various Data type supported are Unsigned, Signed, Hexadecimal, BCD, Binary, ASCII Numeric, and floating point. Data types and its range are displayed as per the bytes defined for the tag in tag data base. If tag is 2 byte, the data type available are in the range 0 to 65535. If tag is 4 byte range 1s 0 to 4294967295. Floating point data is also displayed as a 4 byte tag . The ranges are set automatically depending upon the tag selected.

Limit High:- Maximum limit of selected Tag in Data Entry object is to define in this cell. The best use of this high limit can be made to limit any data entry for the tag to up to certain value. By default this high limit is the highest limit of 2 byte word / 4 byte word. i.e. if 2 byte word then High limit is 65535 and if 4 byte word then high limit is 4294967295.

Limit Low:- Minimum limit of selected tag in Data Entry object can be defined in this cell. The best use of this limit can be made to limit the tag value up to certain value. By default the low limit value is 0.

Hide data:- This cell information is optional. Designer will have to define 'Yes' to hide data on unit screen and defines 'No' to display the data on screen as it is. If Hide data is selected, then Data entry object on unit screen will show '***'. Even editing it will display in *** format ,and will not display the value.

Keypad:- To edit the Numerical type tag's value on unit screen , user needs to have the keypad on screen. This keypad can be made available in two ways , either with Popup screen with numeric keypad embedded in it or with Numeric keypad embedded on the Screen near the data entry object. This keypad function is optional with 'Yes' or 'No'. If 'Yes' is defined then popup keypad with numeric keypad embedded on it will be displayed on screen to enter the data. And if 'No' is defined then designer has to embed a static numeric keypad on screen near the data entry object.

Screen Name:- If the popup keypad option is defined in above cell , then only this Screen name cell is displayed. This cell shows the name of the popup screen defined for editing Data entry object. List of popup keypad with name available in the application project can be selected from fly out of this cell. Editing this cell will show the corresponding screen number in following screen number cell.

Screen Number:- If the popup keypad option is defined in above Keypad cell, then only this Screen number cell is displayed. This cell shows the number of the popup screen defined for editing Data entry object. List of popup keypad numbers available in the application project can be selected from fly out of this cell. Editing this cell will show the corresponding screen name in above screen name cell.

Tag address:- Numerical type tag on which data entry operation is to be performed is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag in following Tag name cell.

Tag Name:- Name of the numerical type tag on which data entry operation is to be per formed is to be defined in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respec tive Tag address in above Tag Address cell.

Layout:- To embed the data entry object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the data entry object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

Operations:- Some of the mathematical operations that can be performed over the tag selected in data entry object are Add, Sub, Multiply, Divide these operations with some operand value can be performed
with simultaneous entry of the value in Tag. Two different operations can be performed on one tag.

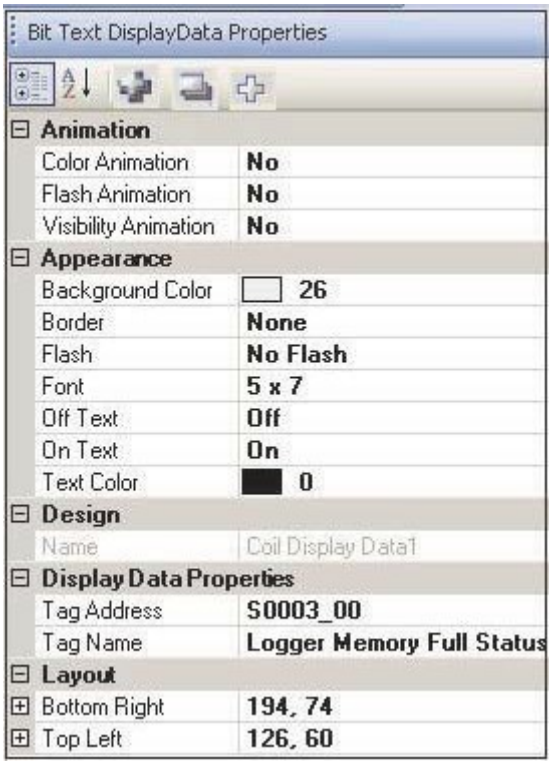
First Operation:- The designer can have a math operations performed on the data. The default selection is NOP or no Operations. Operations which can be performed are Add, Sub, Multiply and Divide. When any of the mathematical operation is selected , First Operand Cell is enabled, where user needs to enter the operand and value.

Second Operation :- The designer can have a second math operations performed on the same numerical Data Entry object Tag. The default selection is NOP or no operation Operations which can be performed are Addition, Subtraction, Multiply and Divide. When any of the mathematical operation is selected, second Operand Cell is enabled, where user needs to enter the operand value.

4.1.3 Display Data Object

Any read only register or coil tag from the unit's internal memory or PLC memory can be embedded on unit screen to display the value. The tag data type can be either Bit type ,Numerical type or with numerical text type. The tag type should be Read/Write. Editing the value of Display data tag is not possible.

Bit Type Display data Object:-
Select Bit/Coil type object from display object fly out, embed it on screen and edit the desired properties of it from Property grid window.



Animation:- Display data object can be animated in various forms such as Changing the text Color or background color, Flashing the display data object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the display data object depending on the value of internal or PLC tag. Refer to the above page for more details of Animation.

Appearance:-

Background Color :- Background color of the display data object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Mono chrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Border:- Border for display data object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Flash:- To flash the coil type display data object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'. In this cell Designer needs to define the Flash Speed to be assigned to the Text object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast. Object with all properties defined (border, background, etc.) gets flashed.

Font:- To display the display data object on unit screen in various sizes. The display data object supports only the software defined sizes. The available sizes in which this object can be set are 5x7,10x14,20x28,and 7x14.

Off text :- To display the Off state condition through Text message for the coil tag defined for Coil type display data object is to be defined in this cell. Designer can use any alphanumeric characters or special characters to display the off text in unit.

On text :- To display the ON state condition through Text message for the coil tag defined for Coil type display data object is to be defined in this cell. Designer can use any alphanumeric characters or special characters to display the off text in unit.

Text Color:- To set the color to the data entry object in order to display the value of coil type tag on screen in desired color by designer. Text color of the data entry object varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry color for any product is selected as Black.

Display Data Properties:-

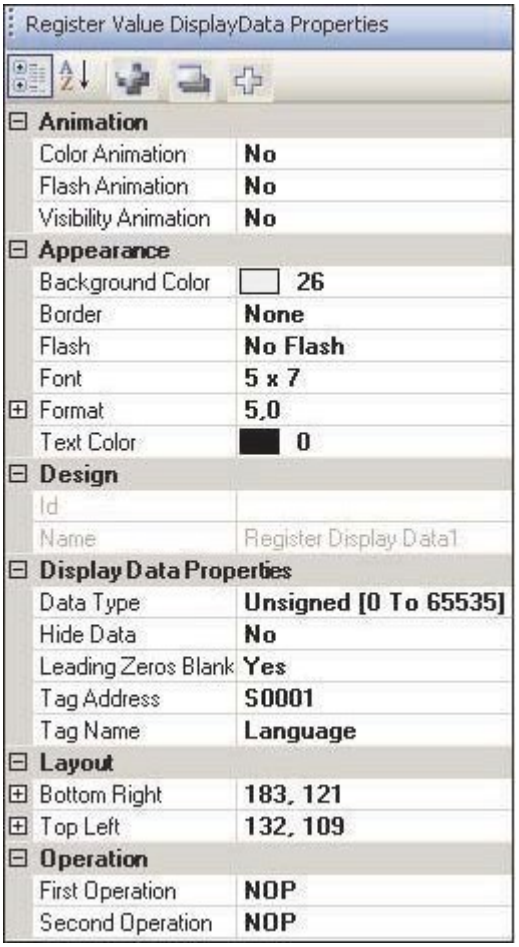
Tag address:- Bit/Coil type tag which is to be defined for Display Data objects are displayed in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag in following Tag name cell.

Tag Name:- Name of the Bit/Coil tag which is to be defined for Display Data objects is displayed in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Layout:- To embed the display data object on screen at desired location with its coordinate's position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section in start of this document.

Numerical Type Display Data Object:-

Select numerical data type from display data object fly out, embed it on screen and edit the desired properties of it from Property grid window.



Animation:- Display data object can be animated in various forms such as Changing the text Color or back-ground color , Flashing the display data object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the display data object depending on the value of internal or PLC tag. Refer to the above page for more details of Animation.

Appearance:-

Background Color :- Background color of the display data object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Mono-chrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Border:- Border for display data object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Flash:- To flash the numerical display data object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'. In this cell Designer needs to define the Flash Speed to be assigned to the numerical display data object embedded on Screen. Flash speed is defined as Flash-Slow, Flash-Medium or Flash-Fast. Object with all properties defined (border, background, etc.)gets flashed.

Font:- To display the display data object on unit screen in various sizes. The numerical display data object supports only the software defined sizes. The available sizes in which this object can be set are 5x7,10x14,20x28,and 7x14.

Format :- Digit format to be used for Numerical display data object can be defined. The total digits that can be displayed on unit screen are 1 to 10.

Decimal Point from Right:- To define the decimal point position from right side of the digits. The value for this cell can vary from 0 to 10. The format that can be defined will be from **'.#'** to **'#########.#'**

Number of Digits:- Total number of digits to be used to display the numerical display data object. Digits to be displayed after decimal point are also included in it. Range of total number of digits to be displayed varies from 0 to10.

Text Color:- To set the color to the display data object in order to display the value of coil type tag on screen in desired color by designer. Text color of the data entry object varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry object color for any product is selected as Black.

Display Data Properties:-

Data Type:- List of data type and its ranges to be used to display the selected tag in numerical display data object is displayed in this cell. Various Data types supported are; Unsigned, Signed, Hexadecimal, BCD, Binary, ASCII Numeric, floating point. Data types and ranges are displayed as per the bytes defined for the tag in tag data base. If tag is 2 byte, the data type available within the range 0 to 65535. If tag is 4 byte, then Float data type is also displayed which requires to be 4 byte and with the be 0 to 4294967295. The ranges are set automatically depending upon the tag selected.

Hide data:- This cell information is optional. Designer defines 'Yes' to hide data on unit screen and defines 'No' to display the data on screen as it is. If Hide data is selected , then display data object on unit screen will show '***'.

Leading Zero Blank::- This is an optional cell , to be decided by designer whether to display the Zero or Blank space in front of the Tag value. If the display data object is selected with **"#####"** format , and the value displayed on unit screen is with 3 digits(say 123) , then with leading zero blank option enabled "Yes" then Value displayed on screen will be **"__123"** and if disabled by saying "NO" then the same data will be displayed as **"00123"**. By default Leading zero blank cell will display "Yes", i.e. unit will always display blank space in front of the display data object tag value.

Tag address:- Numerical type tags which are to be defined for Display Data objects are displayed in this cell. Fly out from this cell will display the list of defined internal and PLC tags from tag data base. Selecting particular tag will display the respective tag in following Tag name cell.

Tag Name:- Name of the numerical type tag which is to be defined for Display Data objects is displayed in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Layout:- To embed the display data object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout creation in start of this document.

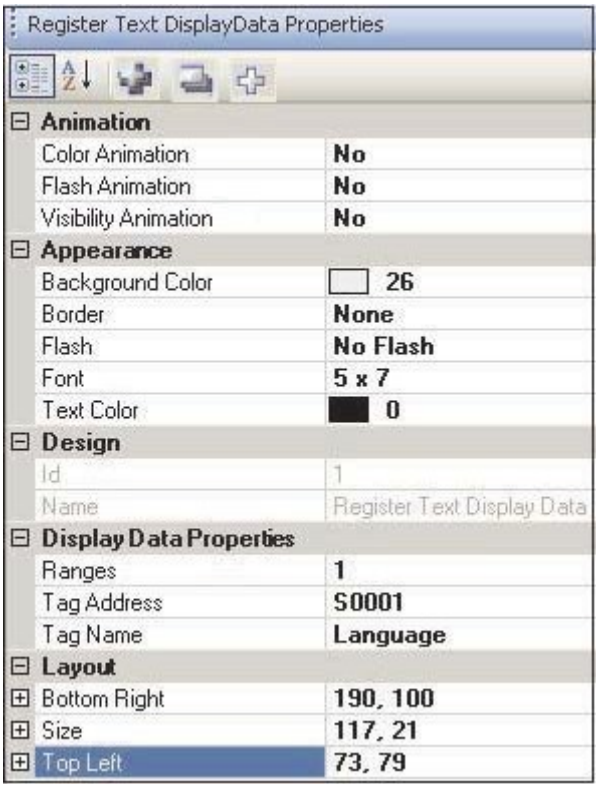
Operations:- Some of the mathematical operations that can be performed over the tag selected in display data object are Add, Sub, Multiply & Divide. These operations with some operand value can be performed with simultaneous entry of the value in Tag. Two different operations can be performed on one tag.

First Operation:- The designer can have a math operations performed on the data. The default selection is NOP or no Operations. Operations which can be performed are Add, Sub, Multiply and Divide. When any of the mathematical operation is selected; First Operand Cell is enabled, where user needs to enter the operand and value.

Second Operation :- The designer can have a second math operations performed on the same numerical Data Entry object Tag. The default selection is NOP or no operation. Operations which can be performed are Addition, Subtraction, Multiply and Divide. When any of the mathematical operation is selected, second Operand Cell is enabled, where user needs to enter the operand value.

Message data Display Object:-

Select Message Data from Display Data object fly out. Place Display data object on screen and edit the desired properties of Register text display data object from Property grid window.



Animation:- Message display data object can be animated in various forms such as Changing the text Color or background color , Flashing the display data object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the display data object depending on the value of internal or PLC tag. Refer to the above page for more details of Animation.

Appearance:-

Background Color :- Background color of the message display data object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Border:- Border for message display data object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Flash:- To flash the message display data object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'. In this cell Designer needs to define the Flash Speed to be assigned to the numerical display data object embedded on Screen. Flash speeds are defined as Flash-Slow, Flash-Medium or Flash-Fast. Object with all properties defined (border, background, etc.) gets flashed.

Font:- To display the message display data object on unit screen in various sizes. The message display data object supports only the software defined sizes. The available sizes in which this object can be set are 5x7, 10x14, 20x28, 7x14.

Text Color:- To set the color to the message data display object in order to display the message for corresponding type tag on screen in desired color by designer. Text color of the message data display object varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry color for any product is selected as Black.

Name:- Display the name of the selected Display data object as “Register Text Display Data”

Layout:- To embed the display data object on screen at desired location with its coordinate’s position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section in start of this document.

Note:- Here one more option with Size is also enabled. Here the designer can define the desired size and accordingly the Coordinates will be changed.

Ranges:- Designer needs to define the tag from either Tag Address or Tag Name cell. From this cell designer has to define the ranges of the value for which message has to be displayed. Accordingly for each range of values message will have to be defined in the popup window of ranges, egg: Total Value ranges for say data register tag D00 are defined as 3

Ranges	Text Message
1) 0-4	**=Low**,
2) 5-7	**=Medium**,
3) 8-10	**=High**

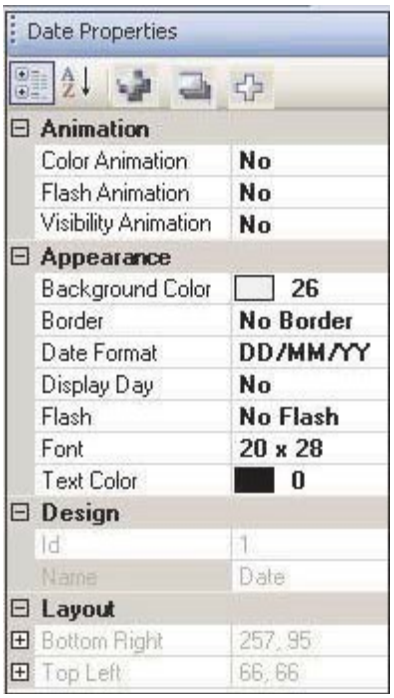
Hence if value of D00 varies within this range, then Message data display object embedded on unit screen will display corresponding Message.

Tag address(Yet not Implemented):- Message data type tag which is to be defined for Message Data display objects are displayed in this cell. Fly out from this cell will display the list of defined internal and PLC tags from tag data base. Designer will have to select the tag on whose values ranges Text message is to be displayed. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical type tag which is to be defined for Message Display Data objects are displayed in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Designer will have to select the tag on whose values ranges Text message is to be displayed. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

4.1.4 Date Object

To Display the Date from RTC on unit screen . Embed the Date object on Unit Screen.
On right side of the software screen , display parameters of the object can be defined from Property grid window. On the software screen designer will observe the current dynamic time of PC. After downloading the application project in unit, if the unit does not have RTC then Date object on screen will show "??" marks.



Animation:- Date object can be animated in various forms such as Changing the text Color or background color, Flashing the display data object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the display data object depending on the value of internal or PLC tag. Refer to the above page for more details of Animation.

Appearance:-

Background Color :- Background color of the Date object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Border:- Border for date object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Date Format:- The desired date format can be set through this cell. By default the date format is DD/MM/YY. User can change the format to MM/DD/YY from fly out to this cell.

Display Day:- To display the day of the week in combination with the date . This Day of week is displayed in front of the Date. By default Day of week is disabled(No) , to set user needs to select Yes from the fly out. The day of week is displayed with only first 3 characters of the day.

Flash:- To flash the date object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO' .In this cell Designer needs to define the Flash Speed to be assigned to the numerical display data object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast. Object with all properties defined (border, background, etc.) gets flashed.

Font:- To display the date object on unit screen in various sizes. The message display data object supports only the software defined sizes. The available sizes in which this object can be set are 5x7,10x14,20x28,7x14.

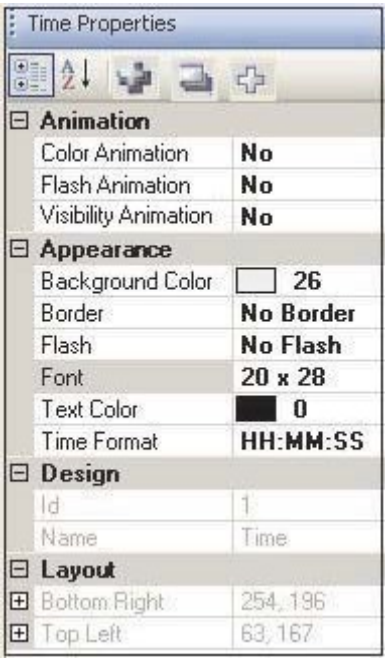
Text Color:- To set the text color to the date object. Colors for these objects varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry color for any product is selected as Black.

Name:- Display the name of the selected Date object as “Date”

Layout:- To embed the date object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section in start of this document.

4.1.5 Time Object

To Display the Time from RTC on unit screen . Embed the Time object on Unit Screen.
On right side of the software screen , display parameters of the object can be defined from Property grid window. On software screen designer will observe the current dynamic time of PC. After downloading the application project in unit, if the unit does not have RTC then Time object on screen will show "??" marks.



Animation:- Time object can be animated in various forms such as Changing the text Color or background color, Flashing the display data object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the display data object depending on the value of internal or PLC tag. Refer to the above page for more details of Animation.

Appearance:-

Background Color :- Background color of the Time object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Border:- Border for Time object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Flash:- To flash the Time object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'.
In this cell Designer needs to define the Flash Speed to be assigned to the numerical display data object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast. Object with all properties defined (border, background, etc.) gets flashed.

Font:- To display the Time object on unit screen in various sizes. The time object supports only the software defined sizes. The available sizes in which this object can be set are 5x7, 10x14, 20x28, 7x14.

Text Color:- To set the text color to the Time object. Colors for these objects varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default data entry color for any product is selected as Black.

Time Format::- The desired time format can be set through this cell. By default the Time format is HH:MM:SS. User can change the format to HH:MM from fly out to this cell.

Name:- Display the name of the selected time object as "Time"

Layout:- To embed the time object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section in start of this document.

4.2 Graphical Objects

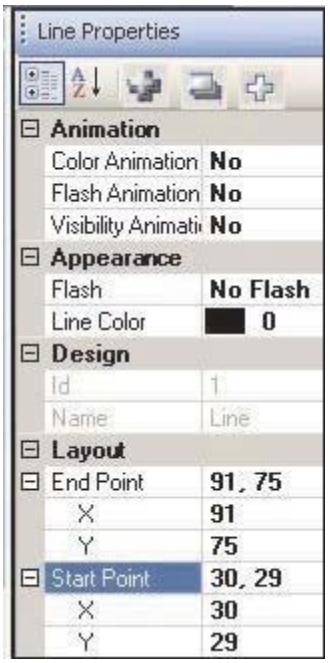
Graphics objects can be used to make the screen more user friendly by drawing pictures.
These objects can be used for representing some pictures, tags, logos, etc. on user screen to enhance the GUI of application project.

Graphical
Objects

Following are the graphical objects:
1. Line
2. Rectangle
3. Ellipse
4. Rounded Rectangle
5. Picture

4.2.1 Line

To draw the line of desired length on unit screen at any location and in any direction. This line can be drawn with the help of Mouse pointer. In software screen , display parameters required to draw line can be set in Property window .



Animation:- Line object can be animated in various forms such as Changing the line Color, Flashing the line object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the line object depending on the value of internal or PLC tag. Refer to the Animation section for more details.

Appearance:-

Flash:- To flash the Line object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'.
In this cell designer needs to define the Flash Speed to be assigned to the Line object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast.

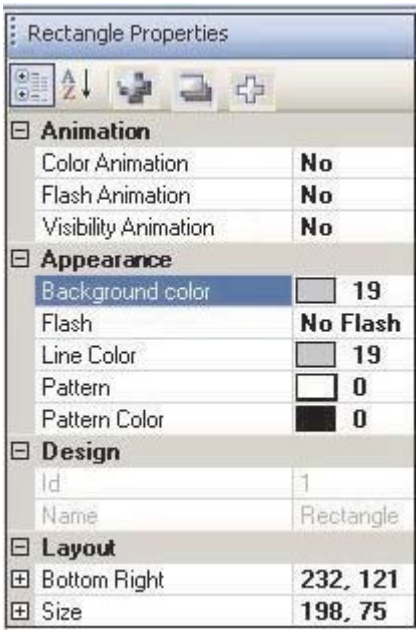
Line Color:- To set the color to the Line object. Colors for these objects varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default color for the Line object is Black.

Name:- Display the name of the selected object as "Line".

Layout:- To embed the line object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object.

4.2.2 Rectangle

To embed the rectangle of desired size on unit screen at any location and in any direction. Rectangle object can be drawn with the help of Mouse pointer. In software screen , display parameters required to draw rectangle can be set in Property window.



Animation:- Rectangle object can be animated in various forms such as Changing the border line and back-ground Color of rectangle object, Flashing the object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the Rectangle object depending on the value of internal or PLC tag. Refer to the Animation section for more details.

Appearance:-

Background Color :- Background color of the Rectangle object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256
RGB Colors. By default the background color for rectangle object is Grey(19).

Flash:- To flash the rectangle object on unit screen can be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'.
In this cell Designer needs to define the Flash Speed to be assigned to the Line object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast.

Line Color:- To set the color to the border Line of rectangle object. Colors for these objects varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default color of line of rectangle object for any product is selected as Grey(19).

Pattern:- Different fill pattern of the rectangle object can be set through this cell. The available patterns from fly out are selected from this cell. Some of the available patterns are as shown in figure. By default the fill pattern defined is white

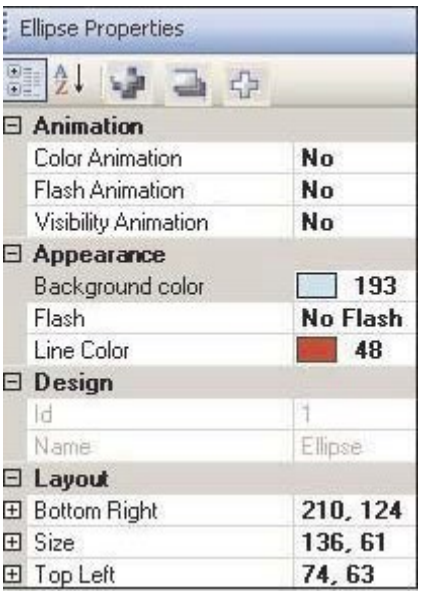
Pattern color:- To set the color to the patterns selected in above cell for Rectangle object. Colors for these objects varies from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default color of line of rectangle object for any product is selected as Black(0).

Name:- Display the name of the selected object as "Rectangle".

Layout:- To embed the rectangle object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

4.2.3 Ellipse

To draw the ellipse of desired size on unit screen at any location and in horizontal or vertical direction. This ellipse can be drawn with the help of Mouse pointer. In software screen, display parameters required to draw ellipse can be set in Property window



Animation:- Ellipse object can be animated in various forms such as Changing the line and background Color of ellipse ,Flashing the ellipse object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the ellipse object depending on the value of internal or PLC tag. Refer to the Animation section for more details.

Appearance:-

Background Color :- Background color of the Ellipse object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Flash:- To flash the ellipse object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'.
In this cell Designer needs to define the Flash Speed to be assigned to the Line object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast.

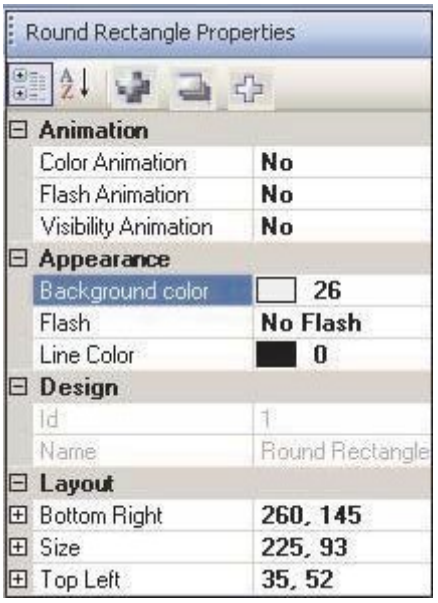
Line Color:- To set the line color to the Ellipse object. Colors for these objects vary from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default line object color for any product is selected as Black.

Name:- Display the name of the selected object as "Ellipse".

Layout:- To embed the line object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object.

4.2.4 Rounded Rectangle

To draw the ellipse of desired size on unit screen at any location and in horizontal or vertical direction . This ellipse can be drawn with the help of Mouse pointer. In software screen, display parameters required to draw ellipse can be set in Property window.



Animation:- Rounded rectangle object can be animated in various forms such as Changing the line and back- ground Color of rounded rectangle ,Flashing the rounded rectangle object at various speed depending on the tag value either internal tag or PLC tag, Show/hide the rounded rectangular object depending on the value of internal or PLC tag. Refer to the Animation section for more details.

Appearance:-

Background Color :- Background color of the Rounded rectangle object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is White.

Flash:- To flash the Rounded rectangle object on unit screen can also be set through this cell. This cell is enabled only if Flash Animation cell from Animation Section is Disabled or selected as 'NO'. In this cell Designer needs to define the Flash Speed to be assigned to the Line object embedded on Screen. Flash speed are defined as Flash-Slow, Flash-Medium or Flash-Fast.

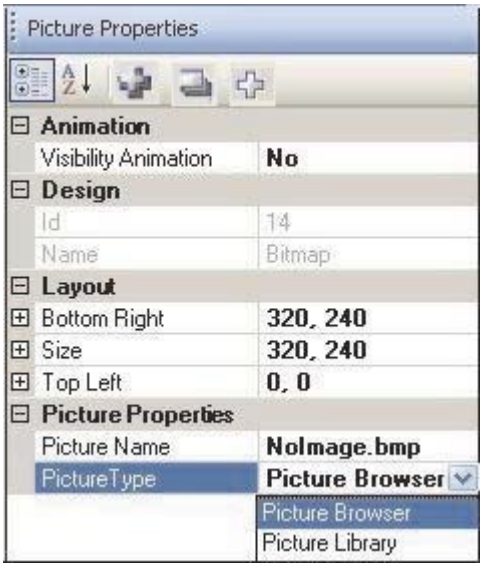
Line Color:- To set the line color to the Rounded rectangle object. Colors for these objects vary from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default line object color for any product is selected as Black.

Name:- Display the name of the selected object as "Rounded Rectangle".

Layout:- To embed the line object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object

4.2.5 Pictures

A bitmap can be drawn on the unit screen display. The bitmap cannot be larger than the display size of the unit's graphics display. The maximum size bitmap depends on the product.
To embed the real picture photographs of Logo, icons, picture of process plant etc. The bitmap object that can be embedded in picture object are "*.bmp", "*.jpg".



Animation:- For picture object embedded on unit screen can be animated only for Hide/Show animation i.e. this picture object can be hidden or shown at the value range of assigned tag. This tag can be either internal or PLC tag. Please refer the Show/Hide animation from Animation section.

Name:- Display the name of the selected object as “Bitmap”.

Layout:- To embed the Picture object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. Maximum size of the picture should not exceed the graphic display size of the unit screen.

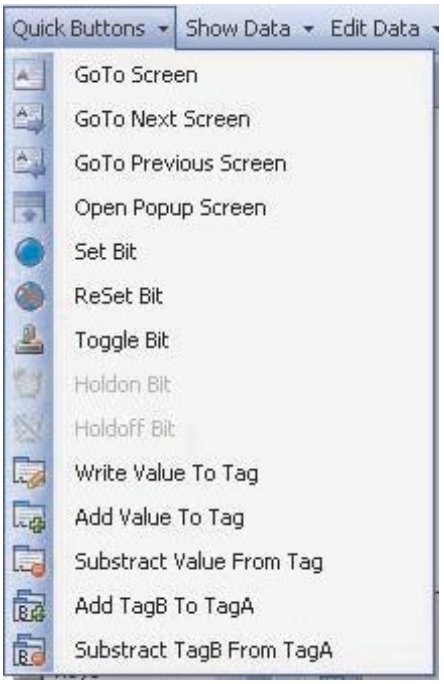
Picture Properties:-

Picture name:- To select the name of the picture or bitmap to be embedded on screen from either picture library or from picture folder. In this cell block with shortcut to browser window is available to select the picture needed to be embedded on unit screen. Browser window will either ask for the path from local disk or will display the picture library available with the OIL-DS Software, this depends upon the option selected in Picture Type Cell fly out.

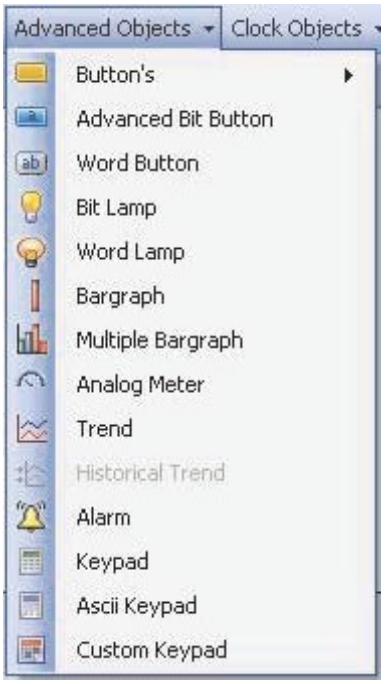
Picture Type:- In this cell , designer has two option to select the picture. Either from local disk or from picture library already available with the OIL-DS software. Selecting Picture browser will pop up the browser window from picture name cell with path for local disk and selecting Picture library will display the available pictures from OIL-DS software picture library

4.3 Wizards

Following are the graphical wizards used for an application project:



and



1. Button object :
   a) Button
   b) Advanced Bit Button
   c) Word Button
   d) Go to Screen , Go to Next Screen , Go to Previous Screen
   e) Open Popup screen button
   f) Set bit Button, Reset Bit button, Toggle bit button
   h) Write value to Tag Button, Add Value to Tag Button, Subtract value from Tag button, Add Tag B to A button, Subtract Tag B from Tag A button,
   i) Recipe
2. Lamp Object:
   a) Bit Lamp
   b) Word Lamp
3. Analog Meter
4. Bargraph
5. Multiple Bargraph
6. Real Trend Display
7. Keypad
   a) Keypad
   b) ASCII Keypad
   c) Custom Keypad

4.3.1 Button Objects

These are the objects to which some task can be assigned. Some button objects have predefined task. These task can be assigned to any of the tag from tag list. With combination of these tasks through these button objects , designer can perform logical operations to perform the process action. Each button objects when embedded on screen have some properties which can be changed from property grid window. Following are some common button objects properties which are optional and can be set by designer for any type of button objects.

Common Button Objects Properties:-

Visibility Animation:- User can show or hide the object using this property. For the detailed operation, please refer section 11.8.

Appearance :-

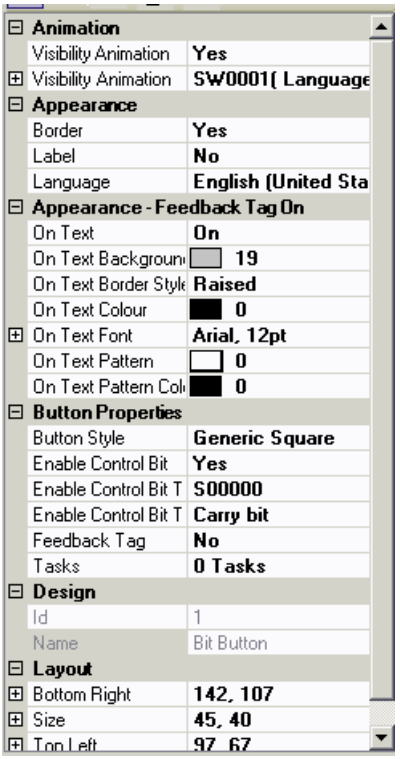
Language:- Language to be set for the text of the button object. Fly out will show the list of multiple languages defined in language settings for the application project.

Appearance-Feedback Tag On:-

Border Style:-To set the Border to the button object to have a better look of the button object . Various border style that can be set through the Fly out of this cell are as Follows.

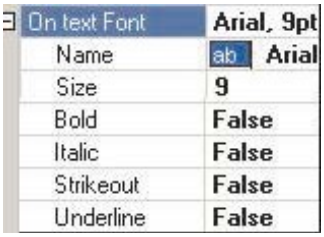
a. Raised
b. Etched
c. Bump
d. Sunken
e. Frame
fanon g.
Flat

Observe the object on screen and corresponding Border style is set through property grid window



On text Background color:- To Set the background color for the button object. Designer can define the any available color as per the product display type selected. By default the background color of button object is Grey.

On Text Font:- Properties related to font of text is listed. This On text font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from following cell.



Name:- To define the font name to be assigned for Text of the Button object. fly out to this cell will list-out the available font type in your system OS. Default is 'Arial'.

Size:- To define the font size to be assigned to the text of the button object. Here the designer needs to enter the number to define the desired font size. Default font size in this cell is '9'.

Bold:- To define the Font of the text in button object in normal form or in Bold Form. This cell is optional, by default this cell has 'False' information, i.e. font selected is with 'Normal' type. If this cell information is defined to be 'True, then font form selected will be '**Bold**'.

Italic:- To define the font of text in button object in normal or in Italic form. By default this cell has 'False' information i.e. text in this object is in 'Normal' form, if this cell information is changed to 'True' then Text in object is in *'Italic'* form

Strikeout:- The text in the button object can be struck out. By default this cell has information as 'False' i.e. the text is in 'Normal' form. If the cell information is changed to 'True' the text displayed is with ~~'Strikeout'~~ form.

Underline:- The text in the button object can be underlined. By default this cell has information as 'False' i.e. the text is in 'Normal' form without underline. If the cell information is changed to 'True' the text displayed is with "Underlined" form.

On Text Pattern:- The various patterns to the buttons that can be assigned are shown in pattern dialog box. By default the button pattern is White.

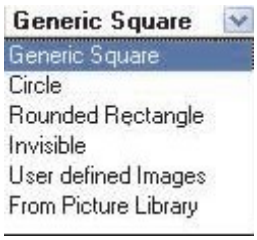
On Text Pattern color:- On text pattern color can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is Black.

On text Color:- On text color on the button object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is Black.

Text:- Text on the button object can be changed. Any alphanumeric characters can be written on the button object.

Button Properties:-

Button Style:- Button object can be displayed in various different shapes and style. Shape and styles which can be assigned to button objects can be circle, Generic square, Rounded rectangle. Button objects property can be assigned to any of the user defined image or to any picture from picture library or even kept as invisible button i.e. the defined touch screen area of unit is kept as blank / invisible , but that area acts as button to perform the defined task. By default the button style is with 'Generic Square'.



Enable Control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback tag:- The button can be assigned with the state tag of particular bit tag. So that button can perform two operations , one with as per the task assigned to button and other with state of Bit tag can be displayed. Enabling this Feedback tag cell by entering "Yes", two more cells related to Feedback tag are also enabled. FB Tag address and FB Tag Name. These two cells are with respect to the tag of which status is to be displayed in Button Object. Making changes in FB Tag address will display the corresponding name of tag in FB Tag Name cell and vice versa.

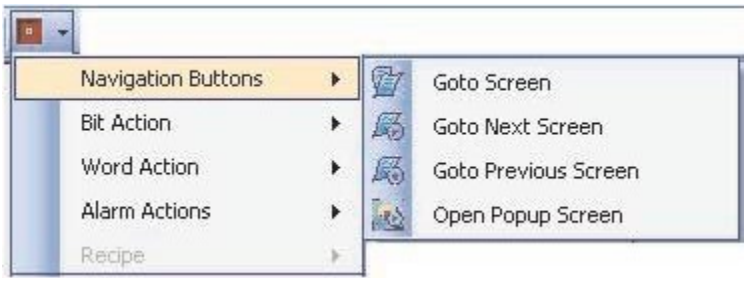
Name:- Display the name of the selected Button object.

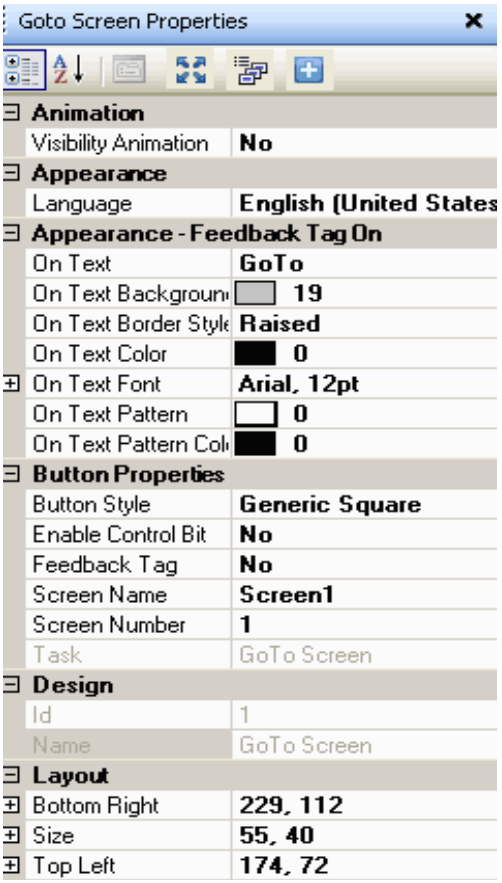
Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section

Navigation Buttons:

Buttons are used to navigate from one base screen to another base screen or to open the popup screen. These are the predefined tasks with direct button access.





Appearance:-

Visibility Animation: User can show or hide the screen objects using this property. For detail operation refer section 11.8.

Language: To set the desired language from the list of languages defined in Language settings of application project.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section of 5.3.1

Enable Control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS10/20/40 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section of 5.3.1.

Screen Name:- The name of the available base screen in application project are listed from fly out. Changing the screen name among the list will change the corresponding Screen number in following Screen Number cell. Defining the screen name in this cell will force the button to switch to the particular base screen .

Screen Number:- The number of the available base screen in application project are listed from fly out. Changing the screen number among the list will change the corresponding Screen name in above Screen name cell. Defining the screen number in this cell will force the button to switch to the particular base screen.

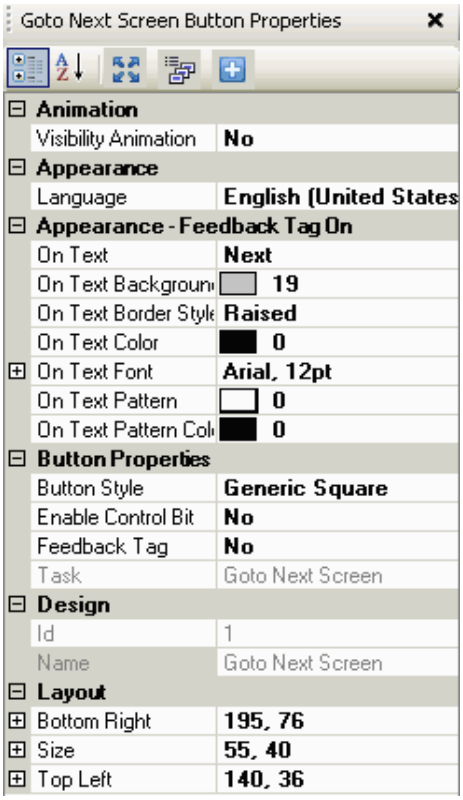
Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is “Go To Screen”.

Name:- Display the name of the selected Button object as “Go to”.

Layout:- To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

a) Go To Next Screen:-

This button object is used to switch to the next screen which is being already defined in project application. Properties which can be set in for this button object can be defined from the property grid window. With this button task user can switch to the next Base screen only. This object feature can be tested and confirmed through Offline simulation / Run mode also



Visibility Animation:- User can show or hide the screen objects using this property. For detail operation, refer section 11.8

Appearance:-

Language: To set the desired language to the text of button object from the list of languages defined in Lan guage settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section of 5.3.1.

Enable Control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section of 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Go To Next Screen".

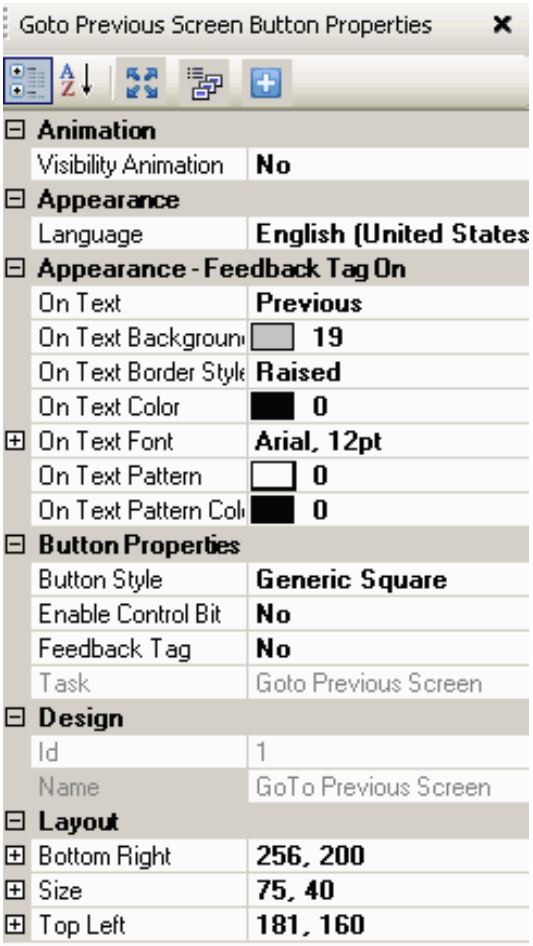
Name:- Display the name of the selected Button object as "NEXT".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

b) Go To Previous Screen:-

This button object is used to switch to the Previous screen which is being already defined in project application. Properties which can be set in for this button object can be defined from the property grid window. With this button task user can switch to the Previous Base screen only. This object feature can be tested and confirmed through Offline simulation / Run mode also.



Visibility Animation: User can show or hide the screen objects using this property. Refer section 11.8 for detail operation.

Appearance:

Language:- To set the desired language to the text of button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section of 5.3.1.

Enable Control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section of 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Go To Previous Screen".

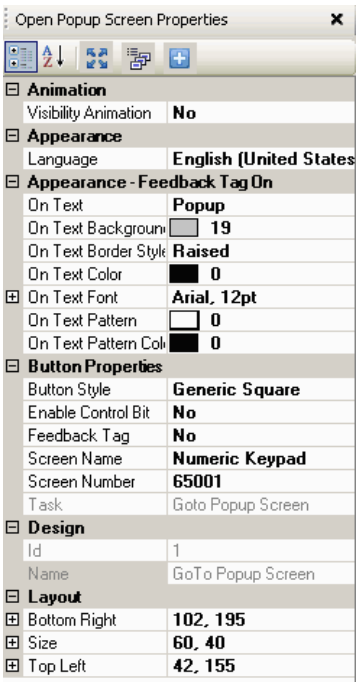
Name:- Display the name of the selected Button object as "Prev".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

c) Open Popup screen:-

This button object is used to switch to the popup screen which is being already defined in project application. Properties which can be set in for this button object can be defined from the property grid window. With this button task user can switch to the next Base screen only. This object feature can be tested and confirmed through Offline simulation / Run mode also.



Visibility Animation:- User can show or hide the screen objects using this property. Please refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language , to the text of button object from, the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section of 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section of 5.3.1.

Screen Name:- The name of the available popup screen in application project are listed from fly out. Changing the screen name among the list will change the corresponding Screen number in following Screen Number cell. Defining the screen name in this cell will force the button to switch to the particular popup screen.

Screen Number:- The number of the available popup screen in application project are listed from fly out of this cell. Changing the screen number among the list , will change the corresponding Screen name in above Screen name cell. Defining the screen number in this cell will force the button to switch to the particular popup screen.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is ”Go To Popup Screen”.

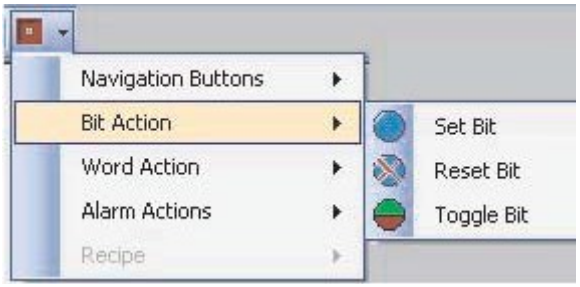
Name:- Display the name of the selected Button object as ”Popup”.

Layout:

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

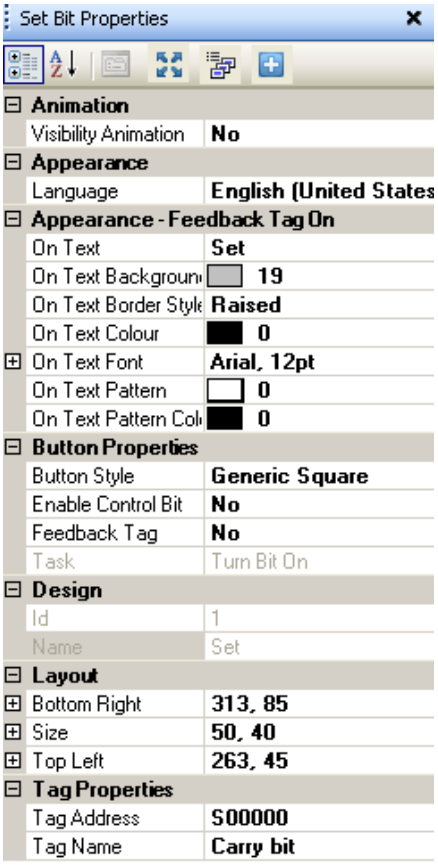
Bit Action:-

Change the status of Coil/Bit type tag: Through these bit action buttons user can take the actions on Bit type tags. These are the predefined tasks with direct button access. Designer can set, Reset or Toggle the bit / Coil tag.



a) Set Bit:-

This button object is used to Set the Bit type tag. Properties which can be set in for this button object can be defined from the property grid window.



Visibility Animation:- User can show or hide the data entry object using this property. Please refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language to the text of button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section of 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section of 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Turn Bit On".

Name:- Display the name of the selected Button object as "Set".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

Tag Properties:-

Tag address:- Type tag which has to be Set or to be Turned On can be defined in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the bit type tag which is to be set or to be turned on is to be in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

b) Reset Bit:-

This button object is used to Reset or to Turn Off the Bit type tag. Properties which can be set in for this button object can be defined from the property grid window.

Visibility Animation: User can show or hide the data entry object using this property. Please refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language to the text of button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is ”Turn Bit Off”.

Name:- Display the name of the selected Button object as ”Reset”.

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

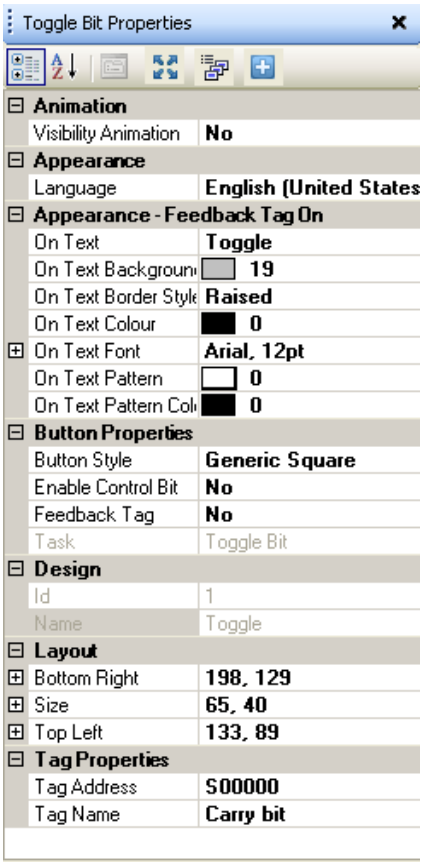
Tag Properties:-

Tag address:- Type tag which has to be reset or to be Turned Off can be defined in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the bit type tag which is to be reset or to be turned off is to be defined in this cell. Fly out from this cell will display the list of Bit type Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

c) Toggle Bit:-

This button object is used to toggle the Bit type tag. Properties which can be set in for this button object can be defined from the property grid window.



Visibility Animation:- User can show or hide the data entry object using this property. Refer section 11.8 for detailed information.

Appearance:-

Language:- To set the desired language to the text of button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address:- Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is ”Toggle Bit”.

Name:- Display the name of the selected Button object as ”Toggle”.

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

Tag Properties:-

Tag address:- Type tag which has to be toggled is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

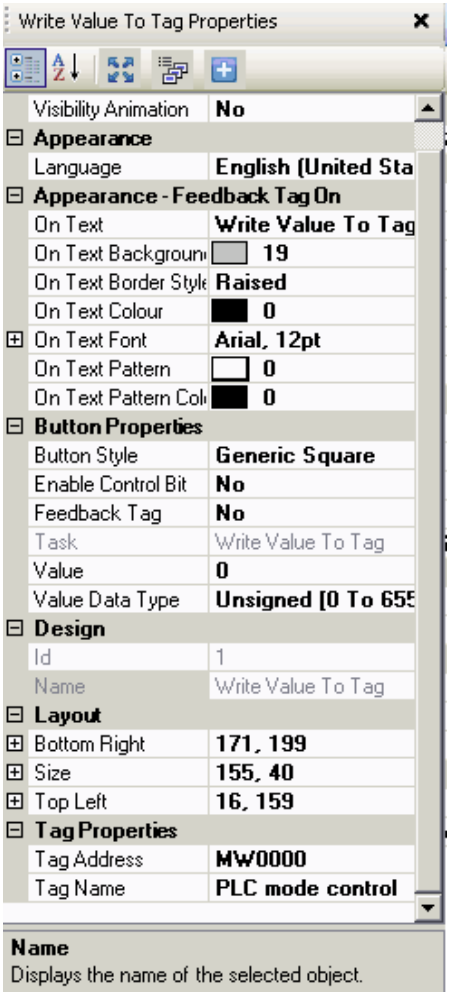
Tag Name:- Name of the bit type tag which is to be toggled is to be defined in this cell. Fly out from this cell will display the list of Bit type Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Word Action:-

To perform some constant value mathematical operations. Through these word action buttons user can write constant , add constant ,subtract constant , Add or subtract to/from one tag to an another tag. These are the predefined tasks with which direct action on numerical tags can be performed.

a) Write Value To Tag

To write a constant value to a numerical type of 2 Byte word or 4 byte word. This word action button objects has predefined task to write some constant value in Numerical data type tag.



Visibility Animation: User can show or hide the screen objects using this property. Please refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Write Value to Tag".

Value:- In this cell the constant value is to be defined , which is expected to be written in the tag through "write value to tag" word action button. The value range varies with the selection of Tag type (2 byte/4 byte) in tag address cell. If Tag is 2 byte word then maximum constant value can be written in value cell is 0-65535, and if tag is 4 byte word then maximum constant value that can be written in Value cell is 4294967295.By default the value in this cell is 0.

Value -Datatype: Data type of the value to be entered through the word action button is to be defined. Fly out to this cell will list out the various available data types with its value ranges as per the tag type selected in Tag Address. List of data types are Unsigned, Signed ,Hexadecimal, BCD, Binary with 2 byte word range and if tag in which value is to be written is 4 byte then list of data types are Unsigned, Signed, Hexadecimal, BCD, Binary, Float with 4 byte word range. By default the data type is unsigned.

Name:- Display the name of the selected Button object to "Write Value to Tag".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

Tag Properties:-

Tag address:- Type tag in which constant value is to be written is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical type tag in which constant value is to be written is to be defined in this cell. Fly out from this cell will display the list of numerical type Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

b) Add Value To Tag

To add some constant value in a numerical type of 2 Byte word or 4 byte word. This word action button objects has predefined task to add some constant value in Numerical data type tag.

Visibility Animation:- User can show or hide the screen objects using this property. Refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is ”Add Constant Value To Tag”.

Value:- In this cell the constant value is to be defined, which is expected to be added in the tag through “Add constant value to tag” word action button. The value range varies with the selection of Tag type (2 byte/ 4 byte) in tag address cell. If Tag is 2 byte word then maximum constant value can be written in value cell is 0-65535, and if tag is 4 byte word then maximum constant value that can be written in Value cell is 4294967295.By default the value in this cell is 0.

Value -Datatype:- Data type of the value to be added through the word action button is to be defined. Fly out to this cell will list out the various available data types with its value ranges as per the tag type selected in Tag Address.List of data types are Unsigned, Signed, Hexadecimal, BCD, and Binary with 2 byte word range and if tag in which value is to be written is 4 byte then list of data types are Unsigned, Signed, Hexadecimal, BCD, Binary, Float with 4 byte word range. By default the data type is unsigned.

Name:- Display the name of the selected Button object as" Add Value to Tag".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

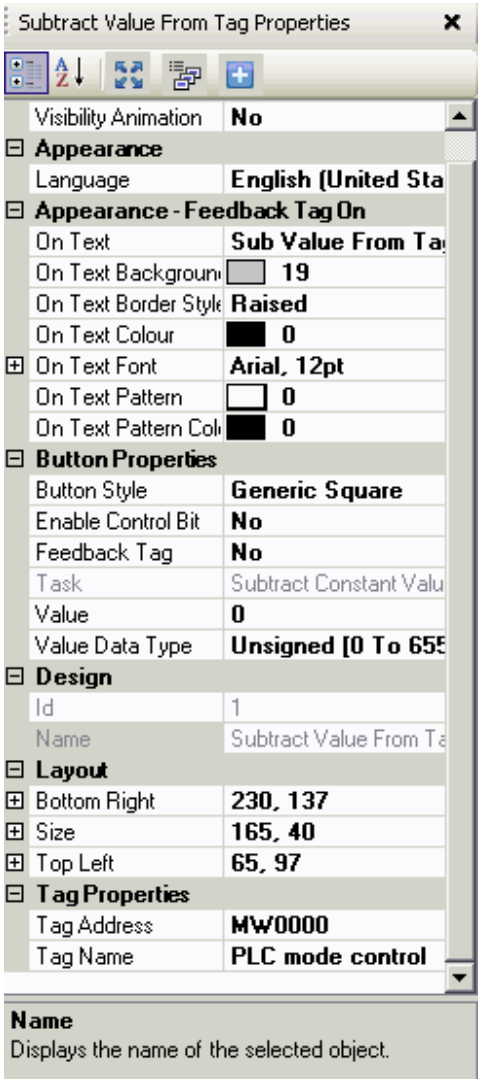
Tag Properties:-

Tag address:- Type tag in which constant value is to be added is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical type tag in which constant value is to be added is to be defined in this cell. Fly out from this cell will display the list of numerical type Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

c) Subtract Value From Tag

To subtract some constant value from the numerical type of 2 Byte word or 4 byte word. This word action button objects has predefined task to subtract some constant value from Numerical data type tag.



Visibility Animation:- User can show or hide the screen objects using this property. Refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS10/20/40 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Subtract Constant Value From Tag".

Value:- In this cell the constant value is to be defined , which is expected to be Subtracted from the tag through "Subtract constant value from tag" word action button. The value range varies with the selection of Tag type (2 byte/4 byte) in tag address cell. If Tag is 2 byte word then maximum constant value can be written in value cell is 0-65535, and if tag is 4 byte word then maximum constant value that can be written in Value cell is 4294967295.By default the value in this cell is 0.

Value -Datatype: Data type of the value to be subtracted through the word action button is to be defined. Fly out to this cell will list out the various available data types with its value ranges as per the tag type selected in Tag Address. List of data types are unsigned, Signed ,Hexadecimal, BCD, Binary with 2 byte word range and if tag in which value is to be written is 4 byte then list of data types are unsigned, Signed, Hexadecimal, BCD, Binary, Float with 4 byte word range. By default the data type is unsigned.

Name:- Display the name of the selected Button object as "Subtract Value From Tag".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

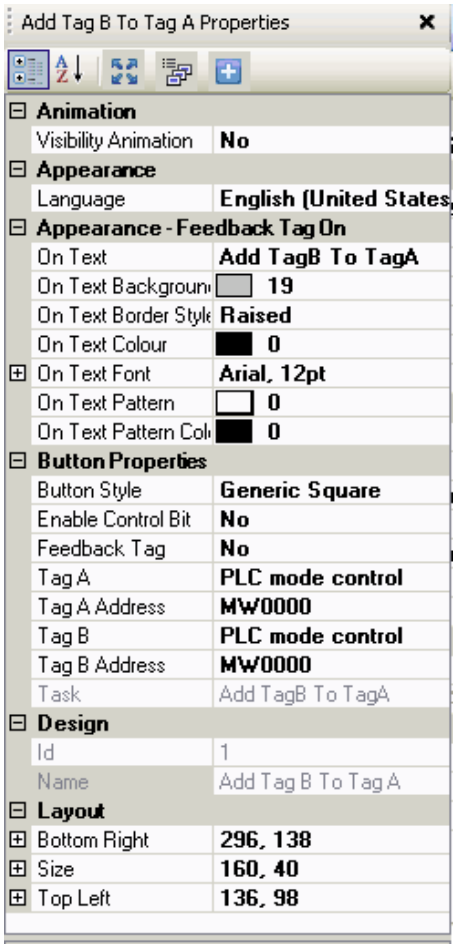
Tag Properties:-

Tag address:- Type tag from which constant value is to be subtracted is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical type tag from which constant value is to be subtracted is to be defined in this cell. Fly out from this cell will display the list of numerical type Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell

d) Add Tag B To Tag A

To add a value from a tag to another tag: This word action button objects has predefined task to add value directly from one tag to an another tag.



Visibility Animation: User can show or hide the screen objects using this property. For detailed operation refer section 11.8

Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS10/20/40 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is ”Add Tag B to Tag A”.

Tag A:- Name of the tag in which value from another tag is to be added is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag names from the list will display the corresponding Tag Address in following "Tag A Address"Cell.

Tag Address:- Tag address in which value from another tag is to be added is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag from the list will display the corresponding Tag Address in above "Tag A" Cell.

Tag B:- Name of the tag whose value is to be added in Tag A Value is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag name from the list will display the corresponding Tag Address in following "Tag B Address" Cell.

Tag B address:- Tag address whose value is to be added in Tag A address is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag from the list will display the corresponding Tag Address in above "Tag B" Cell.

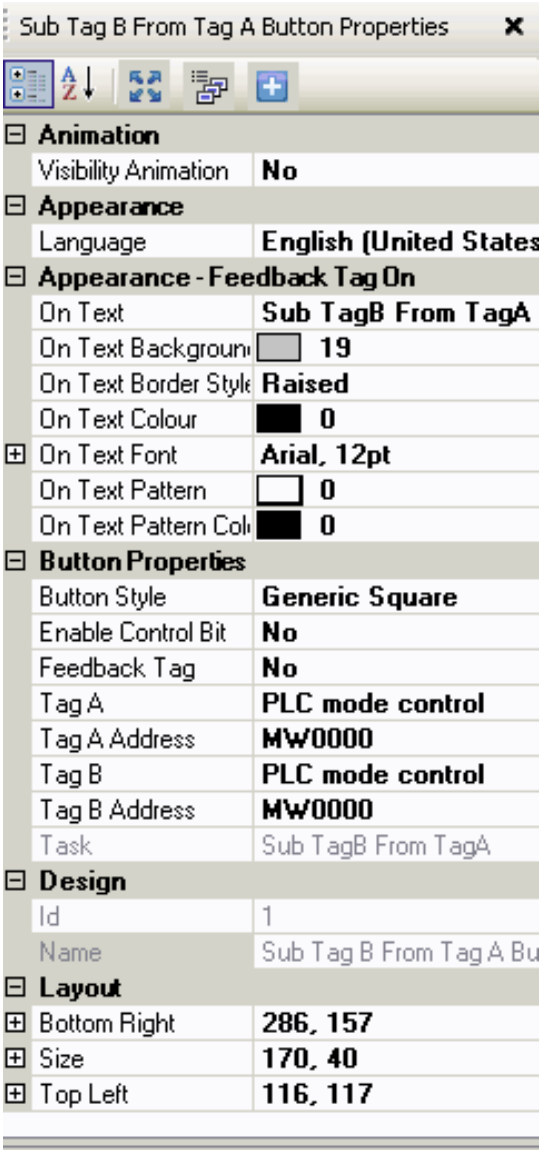
Name:- Display the name of the selected Button object as "Add Tag B to Tag A".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

e) Subtract Tag B From Tag A

To subtract a value of some tag from the value of another tag. This word action button objects has pre-defined task to subtract a value of one tag from value of another Tag.



Visibility Animation:- User can show or hide the screen objects using this property. Refer section 11.8 for detailed operation.

Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Sub Tag B From Tag A".

Tag A:- Name of the tag from which value of another tag is to be subtracted is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag name from the list will display the corresponding Tag Address in following "Tag A Address Cell.

Tag Address:- Tag address from which value from another tag is to be subtracted is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag from the list will display the corresponding Tag Address in above "Tag A" Cell.

Tag B:- Name of the tag whose value is to be subtracted from value of Tag A is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag name from the list will display the corresponding Tag Address in following "Tag B Address" Cell.

Tag Address:- Tag address whose value is to be subtracted from value of Tag A address is to be defined in this cell. The Fly out will list out the available numerical tags. Selecting any of the numerical tag from the list will display the corresponding Tag Address in above "Tag B" Cell.

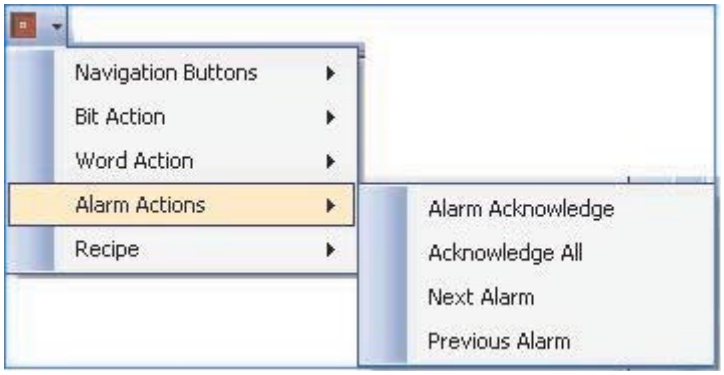
Name:- Display the name of the selected Button object as Subtract Tag B from Tag A".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

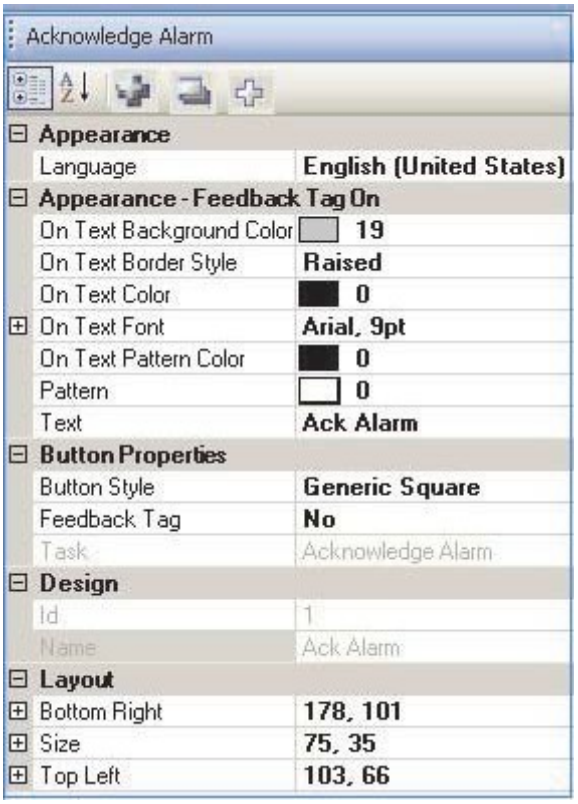
Alarm Actions:-

To perform some operation related to Real Alarms embedded on screen. These are the predefined tasks with which direct action on alarm object embedded on screen can be performed. Hence with this Alarm Actions button objects direct access to Acknowledge Single or all Alarms , to switch to Next or Previous Alarm number within same Alarm display object can be performed.



a) Alarm Acknowledge:-

To acknowledge the top alarm displayed in Display Alarm object. Only Real alarms can be acknowledged through button action. At one press only one alarm is acknowledged. .If alarm is acknowledged then ACK Status flag from Alarm display Window is changed to 'Yes' or 'Y'. If specific alarm bit is turned off and then if alarm is acknowledged then only the alarm information disappears from window else only ACK status is displayed with y or N.



Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is “Acknowledge Alarm”.

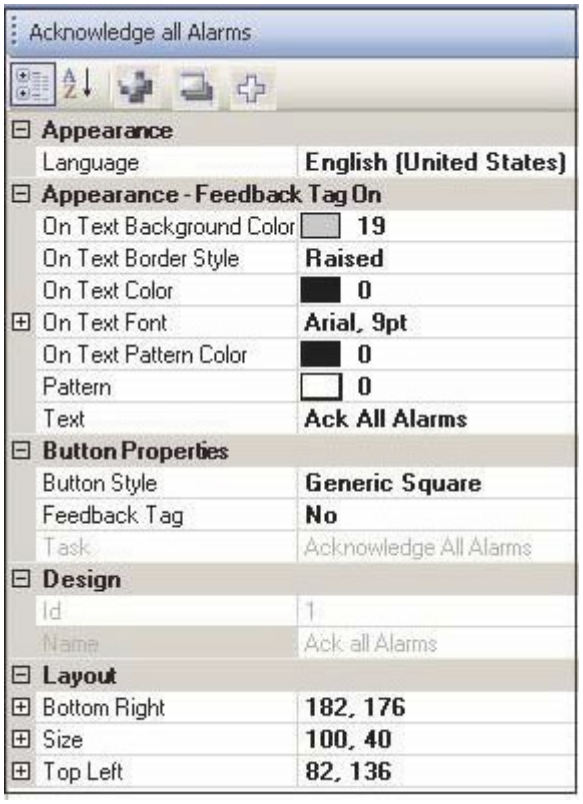
Name:- Display the name of the selected Button object as ”Ack Alarm”.

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

b) Acknowledge All:-

To acknowledge all alarms at a time from display Alarm object. Only Real alarms can be acknowledged through this button action. At one press all alarms are acknowledged. If all alarms are acknowledged then, only the alarms whose respective bits are in Off state gets disappeared from the Alarm display window, remaining all alarms shows the On time and off time and Ack Status of respective alarm bits as ‘Yes’ or ‘Y’.



Appearance:-

Language:- To set the desired language to the text of word action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Acknowledge All Alarms".

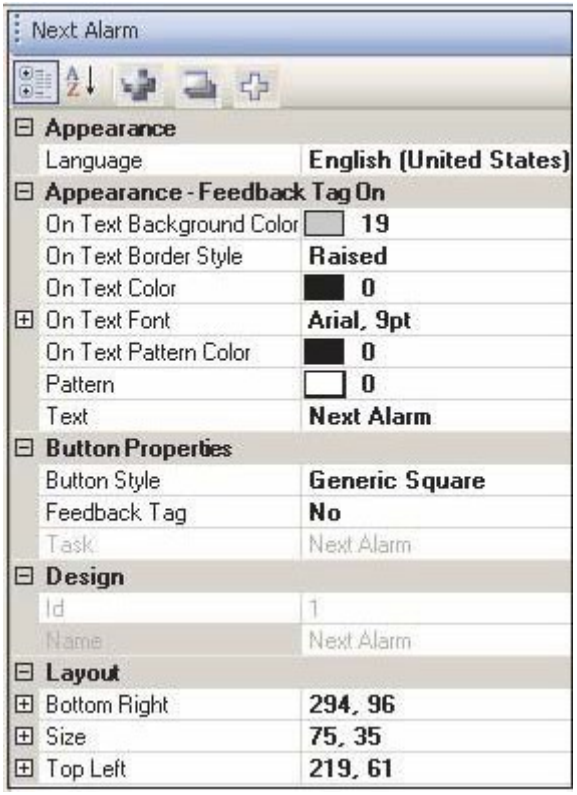
Name:- Display the name of the selected Button object as "Ack all Alarm".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

c) Next Alarm :-

To switch to the next alarm from list of the alarms displayed in Alarm Display Window. This is a predefined action button with task for switching to next alarm , on one press of this button alarm highlighter is switched to next Alarm number.



Appearance:-

Language:- To set the desired language to the text of action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is "Next Alarm".

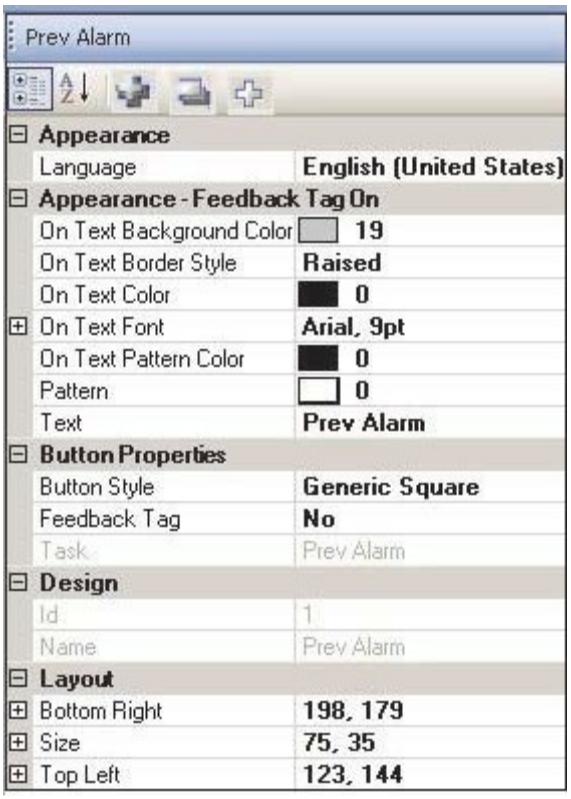
Name:- Display the name of the selected Button object as "Next Alarm".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

d) Previous Alarm :-

To switch to the previous alarm from list of the alarms displayed in Alarm Display Window. This is a predefined action button with task for switching to previous alarm , on one press of this button alarm highlighter is switched to previous Alarm number.



Appearance:-

Language:- To set the desired language to the text of action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task:- This section is greyed out. This cell will display the object name selected. For the selected object the text displayed in this cell is ”Prev Alarm”.

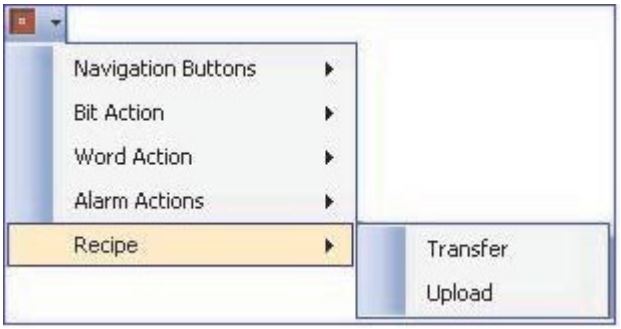
Name:- Display the name of the selected Button object as ”Prev Alarm”.

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

Recipe Actions:-

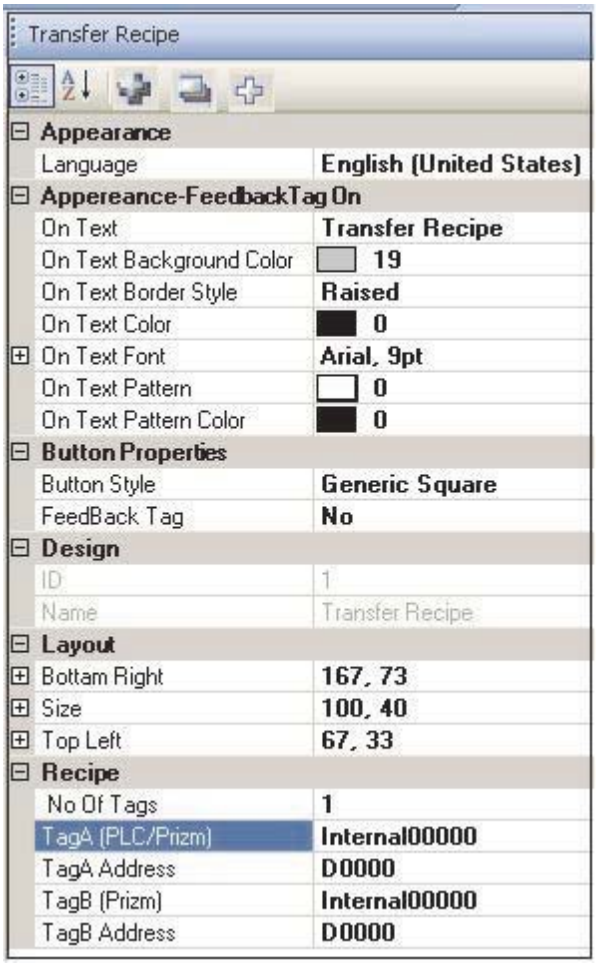
To perform some operation of block copy from list of PLC tags to list of internal Tags or List of internal tags to list of Internal/PLC tags. Here copy block command is performed from Tag B to Tag A. Accordingly the selection of Transfer Recipe or Upload Recipe command is to be selected. Maximum number of Blocks that can copied through this button action is 999.



By default these action buttons are disabled. These Recipe action buttons are enabled only when any of the internal or PLC tag is defined in Tag Data base.

a) Transfer (Recipe)

This is the recipe command to transfer the blocks of tags from internal tags to Internal/PLC tags. This action is irreversible , that is through transfer recipe user cannot copy PLC tags to Internal or another PLC tags.



Appearance:-

Language:- To set the desired language to the text of action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Name:- Display the name of the selected Button object as ”Transfer Recipe”.

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

Recipe:-

To transfer number of blocks of Internal tags to internal or PLC Tags. Here the copy is from Tag B to Tag A. Where Tag B Cell Fly out list out with only internal Tags and Tag A Cell fly out will list out internal as well as PLC Tags.

No Of Tags:- The number with expected number of blocks to be copied from internal to internal/PLC tags is to be defined in this cell. The maximum number that can be entered here is 999. By Default this cell has value “1”.

Tag A(PLC/HMI):- Name of the internal or PLC Address is to be selected to which the value from Tag B is to be copied. The fly out to this cell will list out all the internal or PLC Tags name. Changing the tag name will display the corresponding Tag Address in following Tag A Address cell.

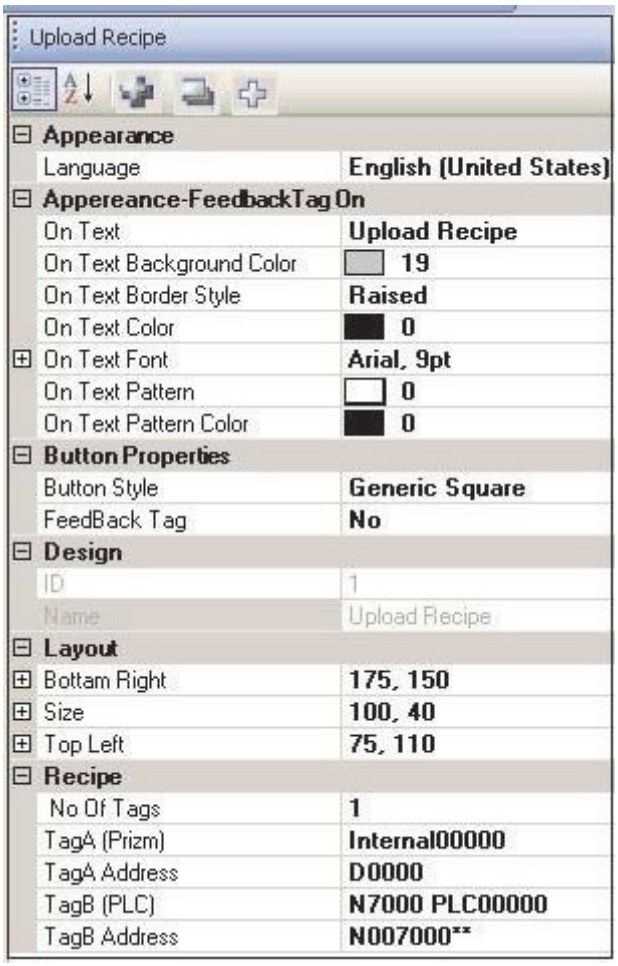
Tag A Address:-Tag address of internal or PLC is to be selected to which the value from Tag B is to be copied. The fly out to this cell will list out all the internal or PLC Tags. Changing the tag address from this cell will display the corresponding Tag Address name in above Tag A cell.

Tag B(HMI):- Name of the internal Address is to be selected whose value is to be copied in Tag A. The fly out to this cell will list out all the Tag names of internal register only. Changing the tag name will display the corresponding Tag address in following Tag B Address cell.

Tag B Address:-Tag address of internal register is to be selected whose value is to be copied to Tag A. The fly out to this cell will list out all the internal tags only. Changing the tag address from this cell will display the corresponding Tag Address name in above Tag B cell.

b) Upload (Recipe)

This is the recipe command to upload the blocks of PLC tags to Internal tags. This action is irreversible, that is through upload recipe command user cannot copy internal tags to PLC tags or even PLC tags to another PLC tags.



Appearance:-

Language:- To set the desired language to the text of action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Name:- Display the name of the selected Button object as "Upload Recipe".

Layout:-

To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

Recipe :-To transfer number of blocks of PLC Tags to internal Tags. Here the copy is from Tag B to Tag A. Where Tag B Cell Fly out list out with only PLC Tags and Tag A Cell fly out will list out internal tags .

No Of Tags:- The number with expected blocks to be copied from PLC tags to internal tags is to be defined in this cell. The maximum number that can be entered here is 999. By Default this cell has value “1”.

Tag A(HMI):- Name of the internal address is to be selected to which the value from Tag B is to be copied. The fly out to this cell will list out all the internal Tags name. Changing the tag name will display the corresponding Tag Address in following Tag A Address cell.

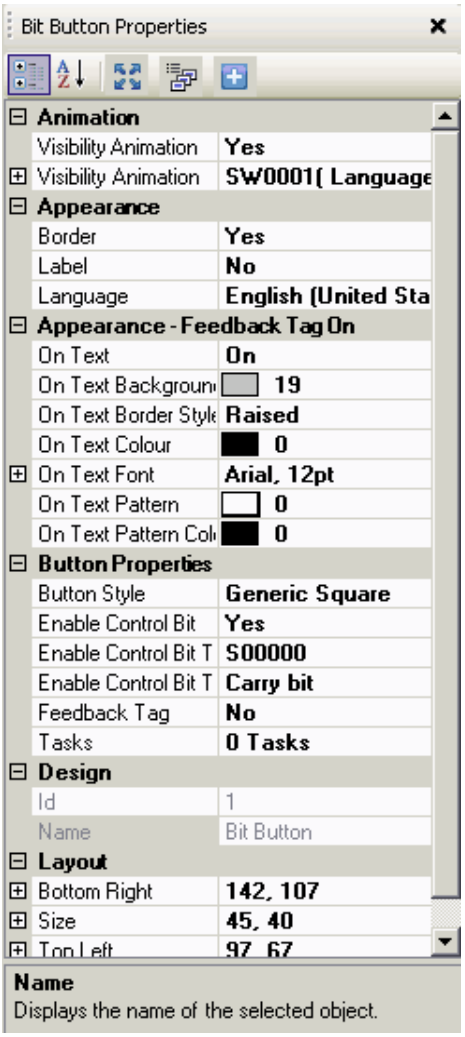
Tag A Address :-Tag address of internal register is to be selected to which the value from Tag B is to be copied. The fly out to this cell will list out all the internal Tags. Changing the tag address from this cell will display the corresponding Tag Address name in above Tag A cell.

Tag B(PLC):- Name of the PLC address is to be selected whose value is to be copied in Tag A. The fly out to this cell will list out all the Tag names of PLC registers only. Changing the tag name will display the corresponding Tag address in following Tag B Address cell.

Tag B Address:-Tag address of internal register is to be selected whose value is to be copied to Tag A. The fly out to this cell will list out all the internal tags only. Changing the tag address from this cell will display the corresponding Tag Address name in above Tag B cell.

4.3.2 Advanced Bit Button

Advanced Bit button wizard is same as that of various buttons as we seen in previous section of Buttons. Only difference is this Advanced Bit Button wizard has list of various predefined task that can performed through it. This wizard has three more options for performing task action on pressing it on unit screen, as Press task , Pressed task or Released task. Multiple task can be used in combination through single Advanced bit button object.



Visibility Animation:- User can show or hide the data entry object using this property. Refer section 11.8 for detailed operation

Appearance:-

Language:- To set the desired language to the text of action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Appearance -Feedback tag On:-

This is the common button object properties as defined in earlier section of 5.3.1.

Button properties:-

Button Style:- To define the style of buttons to be embedded on unit screen. This is the common button object properties, for more details refer section 5.3.1.

Enable control Bit:- User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS4020/30 models.

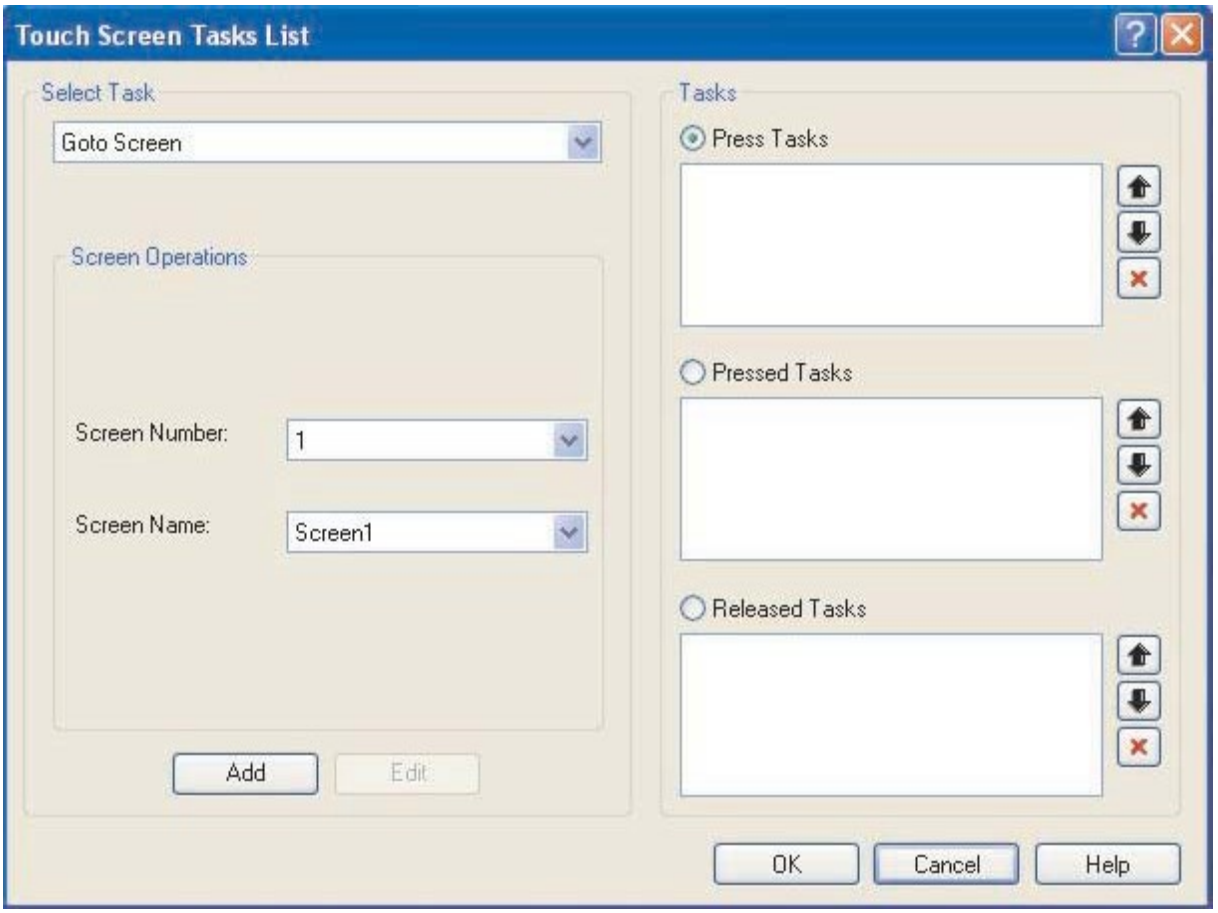
Feedback Tag:- To define the feedback tag to the button object, so that on this button object itself the status of the feedback tag defined can be seen. This is the common button object properties, for more details refer section 5.3.1.

Task List:- Various touch screen tasks can be performed through this advanced bit button wizard. This cell will display the total number of tasks that are being defined in the popup window of "Touch Screen Task List". This task list cell has a button to popup the details of "Touch Screen Task List". Designer can configure the desired actions to be performed on the touch/press of the bit button. As shown in the following image, following are the properties section that has to be configured for any bit button action

1) Select Task :- To select the desired task by the Designer. Various tasks that can be performed. Further we will see in more details.

2) Tag Operation:- The operations to be performed on the tag or task

3) Tasks:- Designer needs to define at which instant on press of the button wizard the desired task action is to be performed. 3 tasks at which these can be performed are Press Task, Pressed Task and Released task.

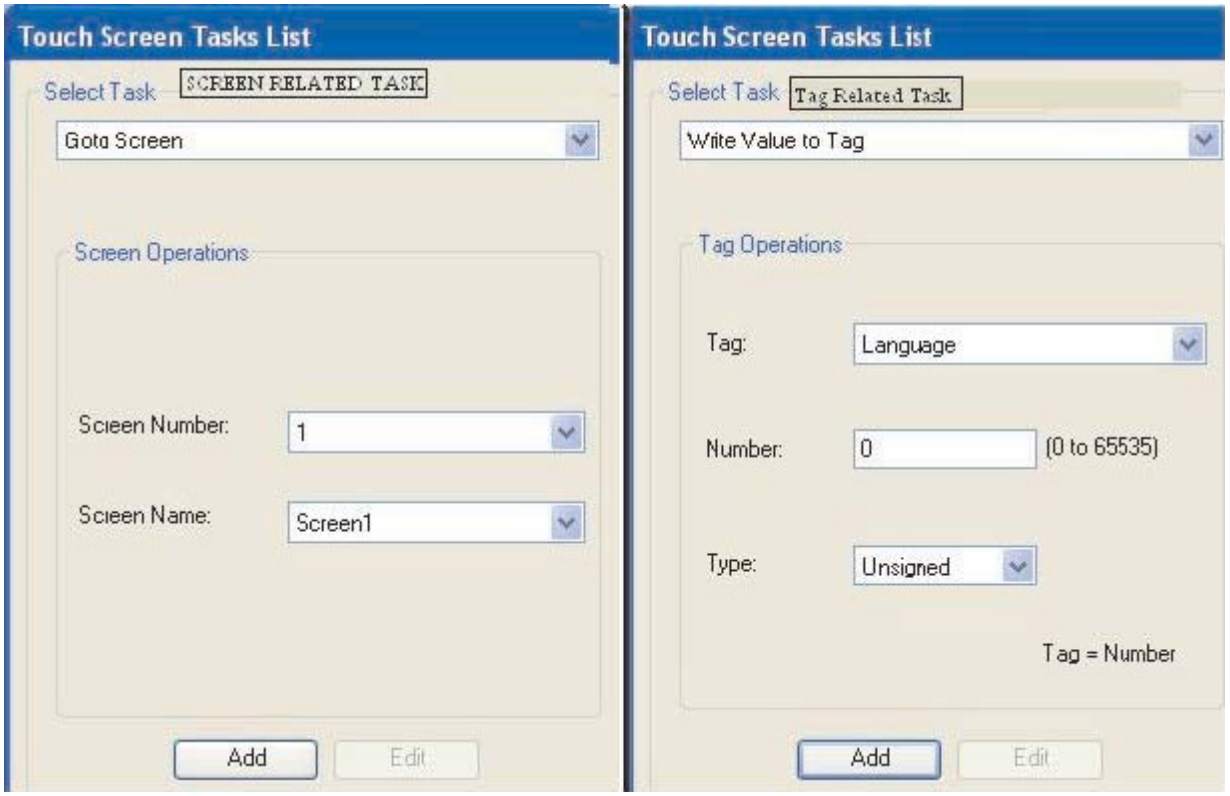


Select Task :- The Various tasks that designer can define for the bit button actions are as follows:

a) Got Screen:- To Switch to desired screen defined in tag Operation .
b) Previous Screen:-To Switch to Previous Screen defined in Tag Operation
c) Next Screen:-To Switch to Next Screen defined in Tag Operation.
d) Write value to Tag:- Write constant value to Defined tag in Tag Operation .
e) Add a constant value to a Tag:- Add constant value to Defined tag in Tag Operation .
f) Subtract a constant value from a Tag:- Subtract a constant value from a defined tag. g) Add Tag B to Tag A:- Add value of Tag B to value of Tag A defined in Tag operation.
h) Subtract Tag B from Tag A:- Subtract a Value of Tag B from a value of Tag A. i) Turn Bit On :- To turn on the coil type tag defined in Tag Operation.
j) Turn Bit Off:- To turn Off the coil type tag defined in Tag Operation
k) Toggle Bit :- To toggle the status of Coil type tag defined in Tag Operation .
l) Copy Tag B to Tag A:-Copy Value of Tag B to Tag .
m) Swap Tag A and Tag B:-Swap (interchange) the Value of Tag A with Value of tag B.
n) Print Data :- To print the data displayed on unit screen.
o) Set RTC:- To set the RTC of the unit through Increment or decrement task
p) Copy Tag to STR:- Copy value of tag to Screen Trigger Register(STR) tag to switch to the desired screen.
q) Copy HMI Block to HMI / PLC Block:- To Copy block of tags from Internal Register of HMI to Internal or PLC registers
r) Copy HMI / PLC Block to HMI Block:-To Copy block of tags from Internal or PLC Register to Internal registers of HMI.
s) Got o Popup Screen:-To Switch to desired Popup Screen through Tag Operation.
t) Key Specific Tasks:- To perform some of the Key specific Tasks.

Tag Operations:-

Tag operations vary with the Selected Tasks from “Select Task” list. If the task selected is related to screen switch then tag operation window will have cell to fill information regarding the Screens. If task selected is regarding the tag operation then tag operation cell will display the cell with Tag Information &Tag type etc.



Tasks:- The Selected tasks for an advanced bit object can be performed at various instants of pressing the Button actions. Following are the instants at which we can perform the actions are:

1) Press Task:- List of operations defined under this section will get performed once at every press.
2) Pressed Task:- List of operations defined under this section will get performed until the key/button is kept pressed.
3) Released Task:- List of operations defined under this section will get performed at the instant of releasing the Press/Pressed key.

By Default the Radio button is marked for Press Task. As we shift the Redo Button from Press task to any of the other task, then only the supported tasks are enabled in Select Task list for respective Tasks(Press / Pressed / Released Tasks).
Even all key specific tasks cannot be used in each and every Tasks Section. These task which can be performed in specific tasks Section are only enabled rest all the tasks are disabled.

Sequence for performing the action with the List of tasks selected in any of the task can be edited through use of Up or Down arrow button supported near the Task Screen.

Layout:-
To embed the button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

4.3.3 Word Button

To display Multiple States and perform respective multiple tasks action on different value ranges of a single numerical tag is possible through Word Button object wizard.

As per the value ranges of a numerical tag, display state can be varied for each display state, separate/ combination of Task can also be performed through one object i.e. Word Button.

Required properties for setting Word button can be done through, property grid window from right side column of the Software

Appearance:-

Border:- Border for Word button object can be set through this cell. By default the object has No Border. To set border select the desired border from Fly out. The border can be Single line border or double line border.

Label:- Label to define the text message for Word button object. This label can be defined at the top or bottom side of the Word button object. This is an optional when selected 'Yes' , the following cell with functionalities gets enabled :

Label Position:- To label the object either on Top side or Bottom side of the Object.BY Default the position of the label is at Top.

Label Text :- Designer can define his/her own text to define the label for an object. Designer can use alpha numeric characters for the same. By Default the Text is Label.

Label Text Color :- Text of the Label can be changed to different colors. To Set the text color for the label of word button object. Designer can define the any available color as per the product display type reduced. By default the Text color of Label of button object is Black.

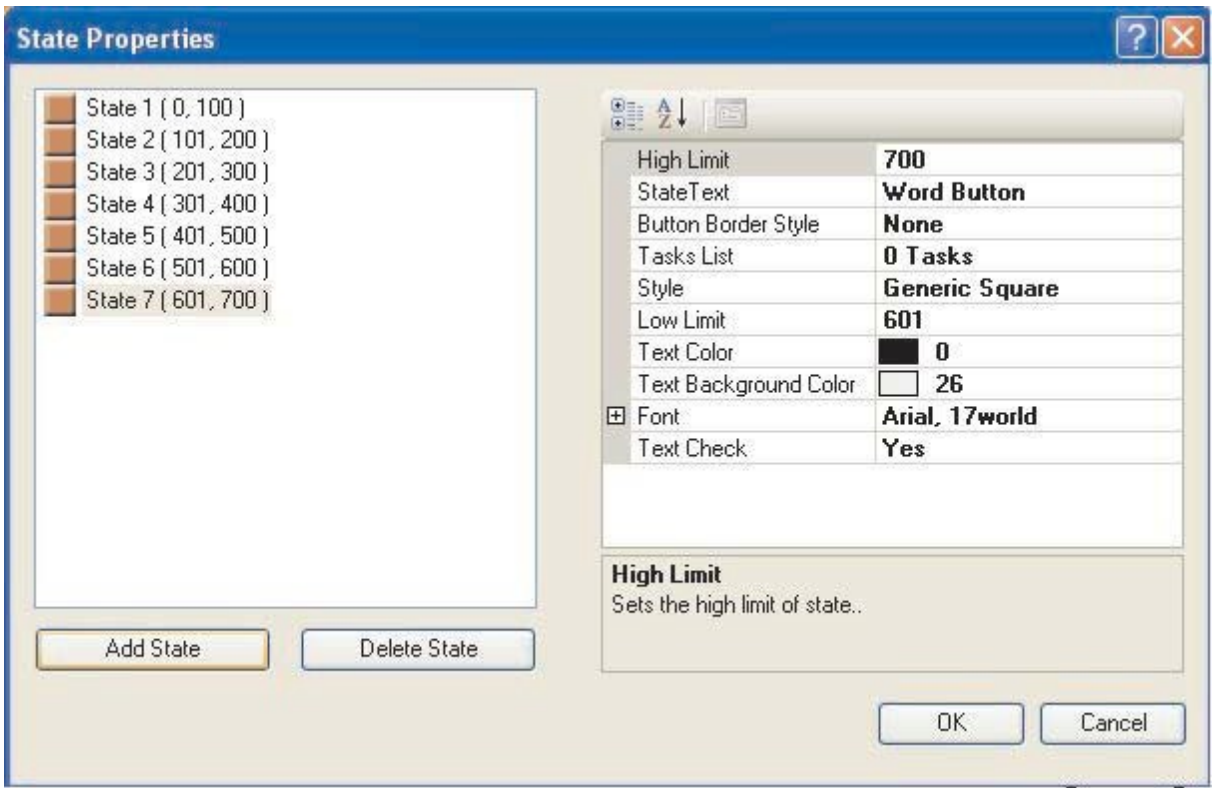
Label Text Font :- Properties related to font of text to be entered in Label for word button object is listed. This Label Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from the cells. Here designer can edit Font ,Font Script, Style, Size, Effects from this cell information.

Label Background Color :- background color of the Label Text of Word button can be changed to different colors. To Set the background color for label of word button object. Designer can define the any available color as per the product display type selected. By default the background color of button object is White.

Language:- To set the desired language to the text of action button object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Layout:-
To embed the word button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

State Properties:-
Description of States defined in word button are described in these cells.



Current State:- To Display the format defined in state properties window for each state. With selecting the particular State number respective display format will be displayed in the screen.

Number of State:- This cell display the total number of states defined in state Properties.

State Properties:- To define the properties of individual states, the button in this cell provided to popup the state properties window , with further details of State. Text written in this cell is [Collection] with button to collect the properties for setting the States to Word Button object.
Following are the details of this property window:

State Text:- To determine the name to State of the object button. The Text for this cell can be any alphanumeric or special characters. By default the text is Word Button.
Button Border Style:- To set the Border to the button object to have a better look to the button object . various border style that can be set through Fly out of this cell are as Follows.
a. Raised
b. Etched
c. Bump
d. Sunken
e. Frame
fanon g.
Flat
Observe the object on screen and corresponding Border style is set through property grid window. By default the border style defined is "Raised" , designer can change it to any desired color from available color pallets for the selected product display.

Task List :- To perform the Touch key operated task when respective Button state is displayed on unit screen. List of tasks that can be performed through an Touch key button is displayed in Touch Screen Task List Button. This will be same as that we do in Advanced Bit Button object. This cell will display the number of task defined for the respective state button.

High Limit:- The high limit value to be defined for the tag used for multiple state word button object for respective state. When the value for the same tag is within this High limit and more than the low limit defined in following cell , then only the respective State of the button is displayed on unit screen.

Style:- To display the various states of the word button objects in different shapes and style. This cell has some of the predefined shapes which can be defined for particular states of word button object. Designer can define user defined images or bitmaps to display the state of the word button object.

Low Limit:- The low limit value to be defined for the tag used for multiple state word button object for respective state. When the value for the same tag is same or above this and up to the high limit defined, then only the respective State of the button is displayed on unit screen.

Text Color:- Text of the state of button object can be changed to different colors. To Set the text color for the state of word button object, designer can define the any available color as per the product display type selected. By default the Text color of Label of button object is Black.

Text Background Color:- Background color for the state Text of Word button object can be changed to different colors. To Set the background color for the word button object, designer can define the any available color as per the product display type selected. By default the background color of button object is White.

Font:- Properties related to font of text to be entered in state properties in word button object is listed. This Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from the cells. Here designer can edit Font, Font Script, Style, Size, Effects from this cell information.

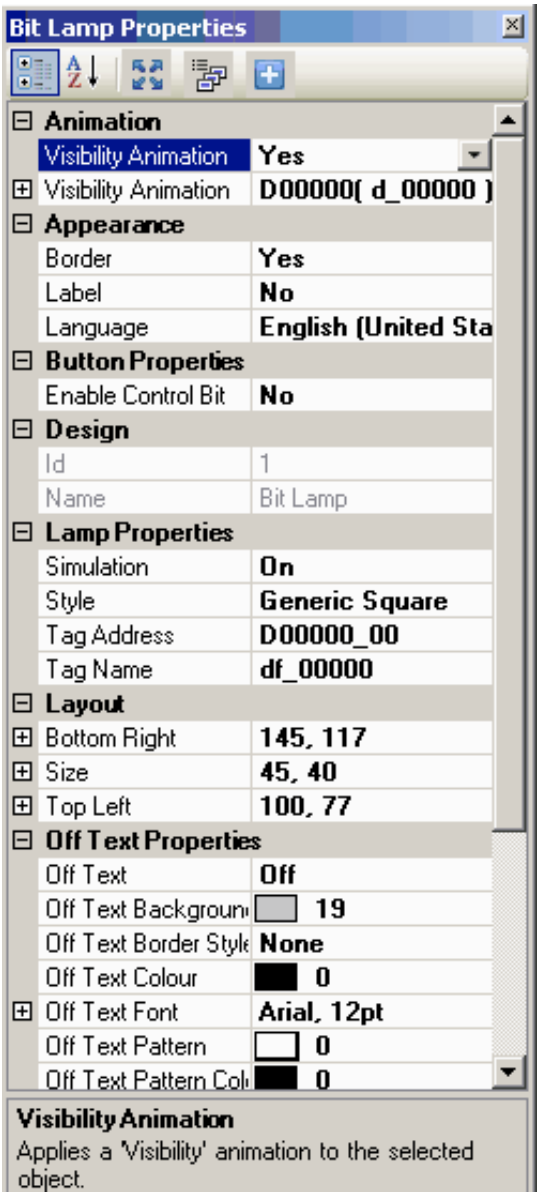
Text Check :- If any of the particular state of word button object is to be displayed without Text , it can be defined through this cell by defining this cell as 'No'. Defining 'No' will disable the State Text Cell, Text Color cell and Font cell.

Tag Address:- Type tag whose state has to be displayed in defined word button object can be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical tag to be used to display the state of word button object is to be set in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

4.3.4 Bit lamp

This object is used to display the on state and Off state of a coil type tag. This object can be defined in various user defined style. To set the display properties for bit lamp object can be set through property grid window.



Bit Lamp Properties:-

Visibility Animation:- User can show or hide the bit lamp object using this property. Refer section 11.8 for detailed operation.

Appearance:-

Language:- This section has to be defined for the language desired by the designer to display the text of the lamp state in respective language. This cell will display the list of languages defined in project configuration for particular project application. By default the language defined in this cell is English (United States).

Name:- Display the name of the selected Button object as ”Bit Lamp”.

Button Properties:-

Enable control Bit: User can control the task execution of the object at runtime. Once the user enables this feature then execution of the task is depends upon the bit value.

Enable control Bit Tag address: Defined the tag address. This tag should be that one, which on enabling the task execution of the object at runtime can be controlled.

If the bit value tag becomes zero (0), the task will not be executed and if it is one (1), then the task will be executed.

Note: This feature is not supported in OIS PLUS10/20/40 models.

Lamp Properties:-

Simulation:- Through this cell preview of the defined On state and Off state can be seen/reconfirmed. This cell has two options On /Off. Setting it On will always show the defined On State on screen in software(i.e. for preview). Setting it OFF will display the defined off state on screen in software for preview.

Style:- To display the various states of the bit lamp objects in different shapes and style. This cell has some of the predefined shapes which can be defined for particular states of bit lamp object . The designer can define user defined images or bitmaps to display as bit lamp objects.

Tag Address:-Type tag whose state has to be displayed in defined bit lamp object can be defined in this cell. Fly out from this cell will display the list of defined internal and PLC bit type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the bit type tag state is to be displayed in bit lamp object is to be set in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Off Text Properties:-

This property grid is to be used to configure the display properties for Off condition state of the defined tag. Off text Background color:- To Set the background color for the bit lamp object. Designer can define the any

available color as per the product display type selected. By default the background color of button object is Grey.

Off Text Border Style:- To set the Border to the bit lamp object to have a better look to the button object . various border style that can be set through Fly out of this cell are as Follows:

a. Raised b. Etched c. Bump
d. Sunken e. Frame f. None g. Flat

Observe the object on screen and corresponding Border style is set through property grid window. By default the border style defined is "Etched" , designer can change it to any desired color from available color pallets for the selected product display.

Off Text Color:-Off text color on the bit lamp object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is Black.

Off Text Font:- Properties related to font of text is listed. This Off text font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from following cell.

- Name:- To define the font name to be assigned for Text of the Button object. fly out to this cell will list out the available font type in your system OS. Default is 'Arial'.
- Size:- To define the font size to be assigned to the text of the button object. Here the designer needs to enter the number to define the desired font size. Default font size in this cell is '9'.
- Bold:- To define the Font of the text in button object in normal form or in Bold Form. This cell is optional, by default this cell has 'False' information, i.e. font selected is with 'Normal' type. If this cell information is defined to be 'True' then font form selected will be '**Bold**'.
- Italic:- To define the font of text in button object in normal or in Italic form. By default this cell has 'False' information i.e. text in this object is in 'Normal' form, if this cell information is changed to 'True' then Text in object is in *'Italic'* form
- Strikeout:- The text in the button object can be struck out. By default this cell has information as 'False' i.e. the text is in 'Normal' form. If the cell information is changed to 'True' the text displayed is with ~~'Strikeout'~~ form.
- Underline:- The text in the button object can be underlined. By default this cell has information as 'False' i.e. the text is in 'Normal' form. If the cell information is changed to 'True' the text displayed is with "Underline' form.

Off Text Pattern:- The various patterns to the buttons that can be assigned are shown in pattern dialog box. by Default the button pattern is White.

On Text Pattern color:- On text pattern color can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is Black.

Text:- Text on the button object can be changed. Any alphanumeric characters can be written on the button object.

On Text Properties:- This property grid is to be used to configure the display properties for Off condition state of the defined tag.

On text Background color:- To Set the background color for the bit lamp object. Designer can define the any available color as per the product display type selected. By default the background color of button object is Grey.

On Text Border Style:- To set the Border to the bit lamp object to have a better look to the button object . various border style that can be set through Fly out of this cell are as Follows:

a. Raised
b. Etched
c. Bump
d. Sunken
e. Frame fanon
g. Flat

Observe the object on screen and corresponding Border style is set through property grid window. By default the border style defined is "Etched" , designer can change it to any desired color from available color pallets for the selected product display.

On Text Color:-On text color on the bit lamp object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256
RGB Colors. By default the background color for any product is Black.

On Text Font:- Properties related to font of text is listed. This On text font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from following cell.

- Name:- To define the font name to be assigned for Text of the Button object. fly out to this cell will list out the available font type in your system OS. Default is 'Arial'.
- Size:- To define the font size to be assigned to the text of the button object. Here the designer needs to enter the number to define the desired font size. Default font size in this cell is '9'.
- Bold:- To define the Font of the text in button object in normal form or in Bold Form. This cell is optional, by default this cell has 'False' information , i.e. font selected is with 'Normal' type. If this cell information is defined to be 'True 'then font form selected will be '**Bold**'; changed to 'True' the text displayed is with ~~'Strikeout'~~ form.
- Underline:- The text in the button object can be underlined. By default this cell has information as 'False' i.e. the text is in 'Normal' form. If the cell information is changed to 'True' the text displayed is with "Underline' form.
- Italic:- To define the font of text in button object in normal or in Italic form. By default this cell has 'False' information i.e. text in this object is in 'Normal' form, if this cell information is changed to 'True' then Text in object is in *'Italic'* form
- Strikeout:- The text in the button object can be struck out. By default this cell has information as 'False' i.e. the text is in 'Normal' form. If the cell information is changed to 'True' the text displayed is with 'Strikeout' form.

On Text Pattern:- The various patterns to the buttons that can be assigned are shown in pattern dialog box. by Default the button pattern is White.

On Text Pattern color:- On text pattern color can be changed through this cell. The fly out will display color dialog box, with supported colors for the product If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for any product is Black.

Text:- Text on the button object can be changed. Any alphanumeric characters can be written on the button object.

4.3.5 Word Lamp:

To display Multiple States of the different value ranges of a single numerical tag is possible through Word lamp object wizard.
As per the value ranges of a numerical tag , display state can be varied. This wizard is same as that of Word button with difference of only display and not able to perform any task with touch button on this object.
Required properties for setting Word lamp object can be done through, property grid window from right side column of the Software.

Word Lamp Properties:

Appearance:-

Border:- Border for Word lamp object can be set through this cell. By default the object has No Border. To set border select the 'Yes' from Fly out.

Label:- Label to define the text message for Word lamp object. This label can be defined at the top or bottom side of the Word lamp object. This is an optional when selected 'Yes', the following cell with functionalities get enabled:

Label Position:- To label the object either on Top side or Bottom side of the Object.BY Default the position of the label is at Top.

Label Text :- Designer can define his/her own text to define the label for an object. Designer can use alpha numeric characters for the same. By Default the Text is 'Label'.

Label Text Color :- Text of the Label can be changed to different colors. To Set the text color for the label of word lamp object. Designer can define the any available color as per the product display type selected. By default the Text color of Label of button object is Black.

Label Text Font :- Properties related to font of text to be entered in Label for word lamp object is listed. This Label Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from the cells. Here designer can edit Font, Font, Script, Style, Size, Effects from this cell information.

Label Background Color :- Background color of the Label Text of Word lamp can be changed to different colors. To Set the background color for label of word lamp object designer can define the any available color as per the product display type selected. By default the background color of button object is White.

Language:- This cell will display the list of languages defined in project configuration for particular project application. By default the language defined in this cell is English(United States).To set the desired language to the text of word lamp object from the list of languages defined in Language settings of application project.

Name:- Display the name of the selected object as ”Word Lamp”.

Layout:-

To embed the word button object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the button object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details refer Layout section.

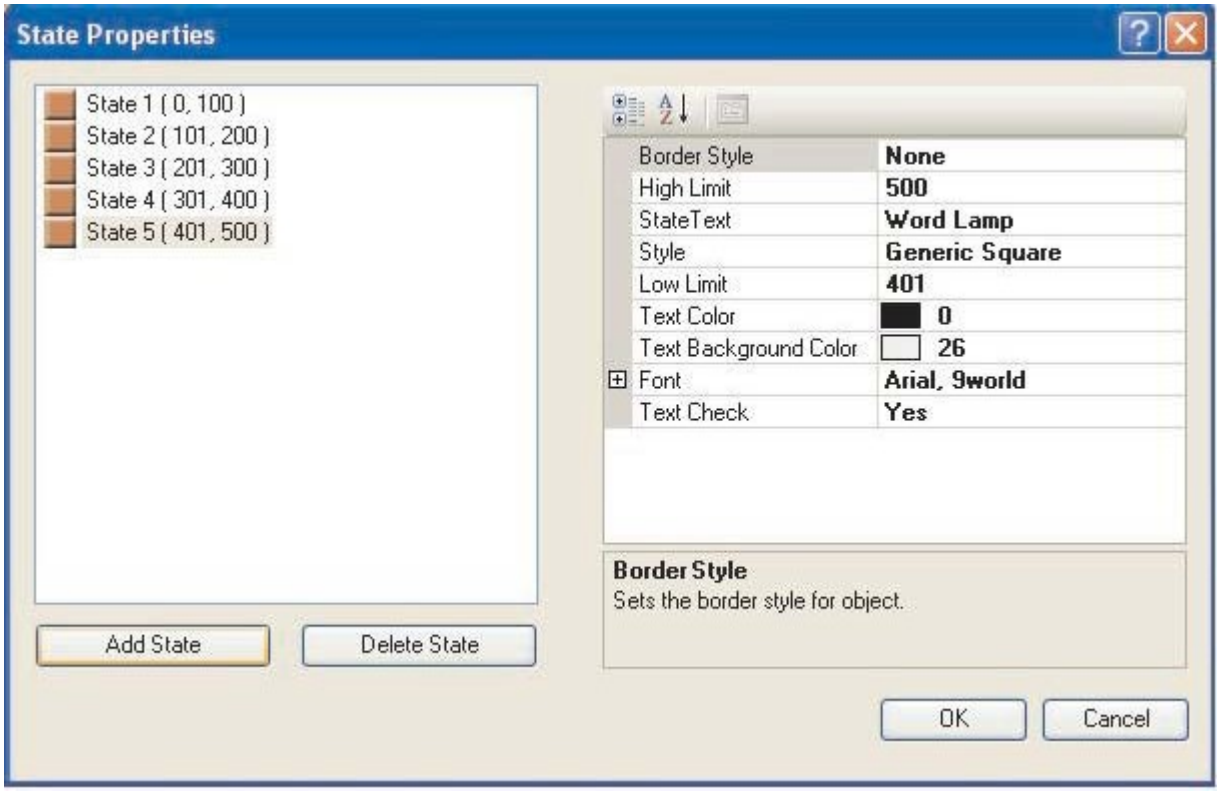
State Properties:-

Description of States defined in word lamp objects are described in these cells.

Current State:- To Display the format defined in state properties window for each state. With selecting the particular State number respective display format will be displayed in the screen.

Number of State:- This cell display the total number of states defined in state Properties.

State Properties:- To define the properties of individual states, the button in this cell provided to popup the state properties window , with further details of State. Text written in this cell is [Collection] with button to collect the properties for setting the States to Word lamp object. Following are the details of this property window:



Border Style:- To set the Border to the word lamp object to have a better look to the lamp object . various border style that can be set through Fly out of this cell are as Follows:

a. Raised
b. Etched
c. Bump
d. Sunken
e. Frame fanon
g. Flat

Observe the object on screen and corresponding Border style is set through property grid window. By default the border style defined is “Raised” , designer can change it to any desired color from available color pallets for the selected product display.

State Text:- To determine the name to State of the object lamp. The Text for this cell can be any alphanumeric or special characters. By default the text is ‘Word Lamp’.

High Limit:- The high limit value to be defined for the tag used for multiple state word lamp object for respective state. When the value for the same tag is within this High limit and more than the low limit defined in following cell, then only the respective State of the word lamp is displayed on unit screen.

Style:- To display the various states of the word lamp objects in different shapes and style. This cell has some of the predefined shapes which can be defined for particular states of word button object . Designer can define user defined images or bitmaps to display the state of the word lamp object.

Low Limit:- The low limit value to be defined for the tag used for multiple state word lamp object for respective state. When the value for the same tag is same or above this and up to the high limit defined, then only the respective State of the lamp is displayed on unit screen.

Text Color:- Text of the state of lamp object can be changed to different colors. To Set the text color for the state of word lamp object, designer can define the any available color as per the product display type selected. By default the Text color of word lamp object is Black.

Text Background Color:- Background color for the state Text of Word lamp object can be changed to different colors. To Set the background color for the word lamp object, designer can define the any available color as per the product display type selected. By default the background color of button object is White.

Font:- Properties related to font of text to be entered in state properties in word lamp object is listed. This Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from the cells. Here designer can edit Font, Font Script, Style, Size, Effects from this cell information.

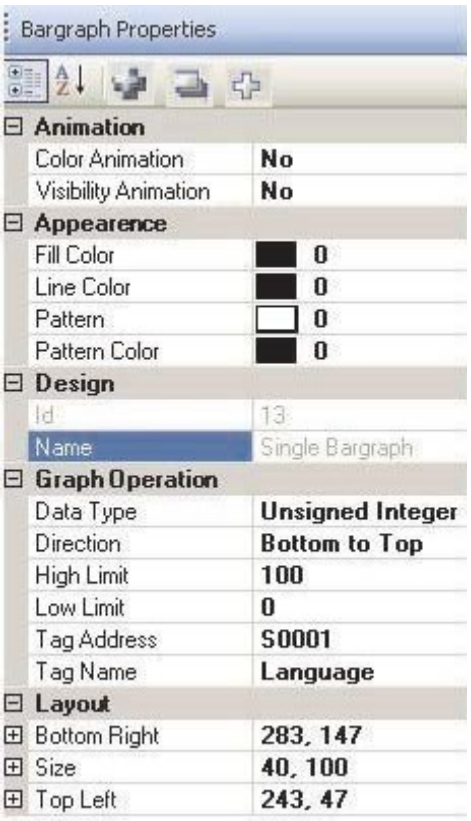
Text Check :- If any of the particular state of word lamp object is to be displayed without Text , it can be defined through this cell by defining this cell as 'No'. Defining 'No' will disable the State Text Cell, Text, Color cell, and Font cell.

Tag Address:- Type tag whose state has to be displayed in defined word lamp object can be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical type tag to be used to display the state of word lamp object is to be set in this cell. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell

4.3.6 Bargraph

To display the graphical representation of value of any numerical tag can be done through Bargraph object. Bargraph object of desired length and width can be drawn with the help of Mouse pointer. In software screen , display parameters required to draw bargraph can be set in Property window .



Animation:- Bargraph object can be animated in various forms such as Changing the line and background Color of bargraph object, Show/hide the bargraph object depending on the value of internal or PLC tag. Refer to the Animation section for more details.

Appearance:-

Fill Color :- Fill color of the bargraph object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for rectangle object is Black(0).

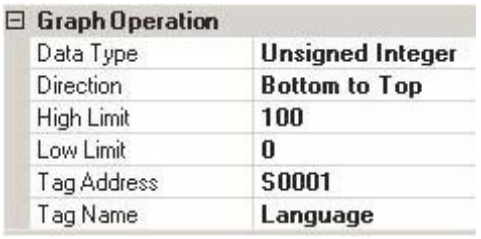
Line Color:- To set the color to the border Line of bargraph object. Colors for these objects vary from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default color of line of bargraph object for any product is defined as Black(0).

Pattern:- Different fill pattern of the bargraph object can be set through this cell. The available patterns from fly out are selected from this cell. Some of the available patterns are as follows. By default the fill pattern defined is white.

Pattern color:- To set the color to the patterns selected in above cell for bargraph object. Colors for these objects vary from product to product. Range of color depends upon the type of display used for selected product. Products with Monochrome display can have 16 Grey Scale colors and Color display can have 256 colors varying in combination of RGB colors. Default color of line of rectangle object for any product is selected as Black(0).

Layout:- To embed the bargraph object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

Graph Operation:-
To set the parameters required for the bargraph object. Different parameters are such as to define direction in which bar is to be moved , Low limit and high limit value up to which bar is to be moved, defining the Tag on whose value the bar is going to be moved.



Graph Operation	
Data Type	**Unsigned Integer**
Direction	**Bottom to Top**
High Limit	**100**
Low Limit	**0**
Tag Address	**S0001**
Tag Name	**Language**

Data type:- The data type which is to be configured for the bargraph object is to defined in this cell. The data types which can be supported to the Bargraph object are Unsigned Integer, Signed integer, Hexadecimal, BCD, Float same are also listed in Fly out to the cell.

Direction: Direction to move the bargraph as per the change in value of assigned tag to bargraph object can be set through this cell. This direction can be either Left to Right , Right to Left, Bottom to Top or Top to Bottom.

High Limit:- High limit value for the defined tag is to be set , that will be the limit for the Bargraph object to move the bar up to it.

Low Limit:- low limit value is to be set to limit the bar moving in lower direction up to it.

Tag Address:-Numerical Type tag whose value is to be represented in bargraph object is to be defined in this cell. .Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Name:- Name of the numerical type tag to be used to display the value of it in graphical form in Bargraph object is to be set here. Fly out from this cell will display the list of Tag names already defined in Tag Data base for Internal or PLC Tags. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

4.3.7 Multiple Bargraph

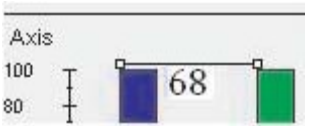
Multiple bargraph object can be used to display the graphical representation of 4 different Tag values. With the help of this object user can compare 4 tag values. Multiple bargraph object of desired length and width can be drawn with the help of Mouse pointer. In software screen, display parameters required to draw bargraph can be set in Property window .

Animation:- Multiple bargraph object can be animated only for Show or Hide. Refer to the Animation section for more details.

Appearance:-

Bargap:- The desired distance between the two bars drawn in Multiple bargraph object is to be set through this cell. The bargap is represented with respect to the number of pixels space between two bars. The total distance between one bar and gap between two consecutive bars is of 68 number of Pixels. Hence maximum allowable bargap number depends upon the assigned barwidth. By default this space is 18.

BarWidth:- The width of the bar is defined through this cell. Width is represented in number of pixels space. The total distance between one bar and gap between two consecutive bars is of 68 number of Pixels.



Hence maximum allowable barwidth depends upon the assigned bargap in above cell. By default barwidth is 15.

Bargraph Background Color :- Background color of the multiple bargraph object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for multi bargraph object is White.

Border:- To set the border to the multi bargraph object is selected through this cell. If designer selects 'No' then Border is not drawn for the multi bargraph object .By default it is selected a Yes to draw the Border to the object.

Label:- This cell is to define if designer needs to specify some heading to the multi bargraph object. Text heading with different color, background , font size can be defined to multi bargraph object at its Top or Bottom position. If selected as 'Yes' further following cells related to label properties are enabled. By default Label for object is not assigned. This cell has 'No' information.

Label Background Color :- Background color of the Label Text for multi bargraph object can be changed to different colors. To Set the background color for label of this object, designer can define the any available color as per the product display type selected. By default the background color of button object is White.

Label Font :- Properties related to font of text to be entered in Label for multi bargraph object is listed. This Label Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from the cells. Here designer can edit Font ,Font, Script, Style, Size, Effects from this cell information.

Label Position:- To label the object either on Top side or Bottom side of the Object. By Default the position of the label is at Top.

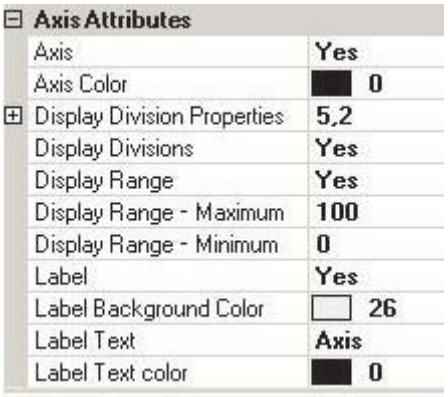
Label Text :- Designer can define his/her own text to define the label for an object. Designer can use alpha numeric characters for the same. By Default the Text is 'Label'.

Label Text Color :- Text of the Label can be changed to different colors. To Set the text color for the label of multi graph object. Designer can define the any available color as per the product display type selected. By default the Text color of Label of button object is Black.

Language:- To set the desired language to the text of multi bargraph object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Style:- The bar graphs can be moved in 4 different styles, from top to bottom, bottom to top, Left to Right, Right to Left.

Axis Attributes:



Axis:- It is needed to display the measuring correspondence for the values of tag represented in graphical format. Used to display the coordinate positional axis in X and Y direction for multi graph objects. This is optional for designer , if designer selects 'Yes' then following properties are enabled and Axis is displayed. By default Axis is Enabled.

Axis Color:- To change the axis color. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the axis color for multi bargraph object is 'Black'. The change in axis color will change the X -Y Axis lines and Y coordinates value ranges color.

Display Division properties:- Division of Y axis can be made with some Major and minor divisions. First digit displays the major divisions defined . Major division is the number of equal parts between Low limit value and High limit Value. Minor divisions are the equal part division between 2 major divisions. By default this division is 5,2. This cell is enabled only if following Display division cell is enabled with 'Yes'.

Display Division:- To display the divisions to vertical Y axis. By default it is enabled with 'yes' hence divisions can be observed in multi bargraph object. If this cell is defined with 'No', then vertical scale will not be displayed.

Display Range:- Optional to decide whether to display the numerical value ranges on Y axis. By default the display range is enabled.

Display Range-Maximum:-Maximum range for Y axis value is to be displayed. Value in this cell represents the maximum value up to which bar is to be moved. By default this value is '100'.

Display Range-Minimum:-Minimum range for Y axis value is to be displayed. Value in this cell represents the minimum value up to which bar is to be moved. By default this value is '0'.

Label:- Label to Y axis is assigned through this cell. If this label cell is disabled with 'No' then following cells with its properties of Text color, Text Font, Background color will be disabled. By default Label is Enabled for Multi bargraph object with all following property cells enabled.

Label Background Color :- Background color of the Label Text for Y axis in multi bargraph object can be changed to different colors. To Set the background color for label for Y axis used in object , designer can define the any available color as per the product display type selected. By default the background color for label for Y axis in multi bargraph object is White.

Label Text:- Text to be assigned to label to represent Y axis. User can write any alphanumeric and special characters to write Label. By Default it is 'Axis'.

Label Text Color :- Text of the Label can be changed to different colors. To Set the text color for the label of multi graph object, designer can define the any available color as per the selected product type display. By default Label Text Color is 'Black'.

Bar Attributes:-

To set the tag to different bar with different colors, different name, different labels, and different Minimum-Maximum value ranges for each bar can be set through this section. User can select maximum of 4 bars.

Appearance	
Border	Yes
Colour Patch Proper	(Collection)
Colour Patches	5
Colour Range	Yes
Label	No
Language	English (United Sta
Simulation Value	35

Number of Bars:- Designer can select the number of desired bars to be compared through one multi bargraph object. By default the name assigned to all bars is Bar1, Bar2, Bar3, Bar4. By default selected number of bars are 4.

Bar Selected:- The desired bar whose attributes needed to be defined can be selected from this cell. Selecting the desired bar , will display the corresponding properties in following cell. By default selected bar is 'Bar1'.

Bar Value:- The bar position at which it is to be displayed by default is to be defined in this cell. By default the value in this cell is '100'.

Data Type:- The data type of tags to be used to display its graphical representation in Multi bargraph object is defined in this cell. This data type selected for one bar is set common for all other defined bars from one multi bargraph object. The fly out to this cell will list out the data type supported by the object. By default the data type is unsigned integer.

Fill Line Color:- Border line of each bar can be changed through this cell. The assigned color in this cell will represent to the respective bar defined in 'Bar Selected' cell. The available colors from software depends upon the product display type selected. By default the assigned color in this cell is 'Black'.

Fill Color:- Fill color for each bar can be assigned through this cell. The assigned color in this cell will represent to the respective bar defined in 'Bar Selected' cell. The available colors from software depends upon the product display type selected. By default the assigned color in this cell changes with the bar selected from 'Bar Selected' cell. Default colors assigned for Bar1 is Blue, For Bar2 is Green , for Bar 3 is Red and for Bar 4 is Yellow.

Label:- Name to the bar can be assigned in this cell. This is the label assigned to bar names to be displayed in X axis. The assigned color in this cell will represent to the respective bar defined in 'Bar Selected' cell. The available colors from software depends upon the product display type selected. By default the assigned color in this cell is 'Black'. The name in this cell will represent to the bar which is selected in 'Bar Selected Cell. Designer can enter any alphanumeric or special characters. By default name to the multiple bars is Bar1 for first bar, Bar2 for second bar , Bar3 to third bar , Bar4 to fourth bar.

Label Background:- Background color for label displayed on X axis of the multiple bargraph object can be set from this cell. The available colors from software depends upon the product display type selected. By default the background color is 'White'.

Label Text:- Designer can rename the name of the bars from the default ones assigned through software. User can use any alphanumeric characters and special character to rename the name of bar. Text changed to rename the bar in this cell will represent to the bar selected in 'Bar Selected' cell. By default this cell has following text as Bar1 ,Bar2 ,Bar3 and Bar4 representing corresponding first ,second ,third and fourth bar from multiple bargraph object.

Label Text Color:- Text color for the text used for individual Bar in X Axis can be defined in this cell. The assigned color in this cell will represent to the respective bar defined in 'Bar Selected' cell. By default the label text color is 'Black'

Maximum Tag Value:- The maximum value up to which respective bar is to be moved can be defined in this cell. By default it is 100.

Maximum Tag Value:- The minimum value up to which respective bar is to be moved can be defined in this cell. By default it is 0.

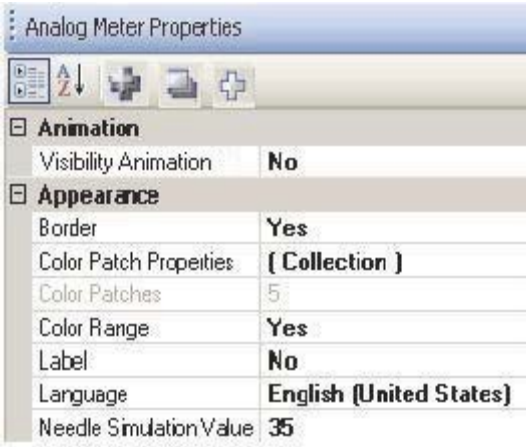
Tag Address:- Numerical Type tag to be assigned to individual bar from multiple bargraph object is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. Selected tag from fly out will represent to the Bar defined in “Bar Selected” Cell. Selecting particular tag will display the respective tag name in following Tag name cell.

Tag Address:- Name of Numerical Type tag to be assigned to individual bar from multiple bargraph object is to be defined in this cell. Fly out from this cell will display the list of names of defined internal and PLC numerical type tags from tag data base. Selected name of tag from fly out will represent to the Bar defined in “Bar Selected” Cell. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Layout:- To embed the multiple bargraph object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout selection

4.3.8 Analog Meter

This wizard provides view for any tag, which is analogous in nature. This wizard can be very useful to represent parameters values like Temperature, Pressure etc., which are stored either in a unit tag or PLC tag. Analog meter object of desired length and width can be drawn with the help of Mouse pointer. In software screen display parameters required to use analog meter object can be set in Property window.

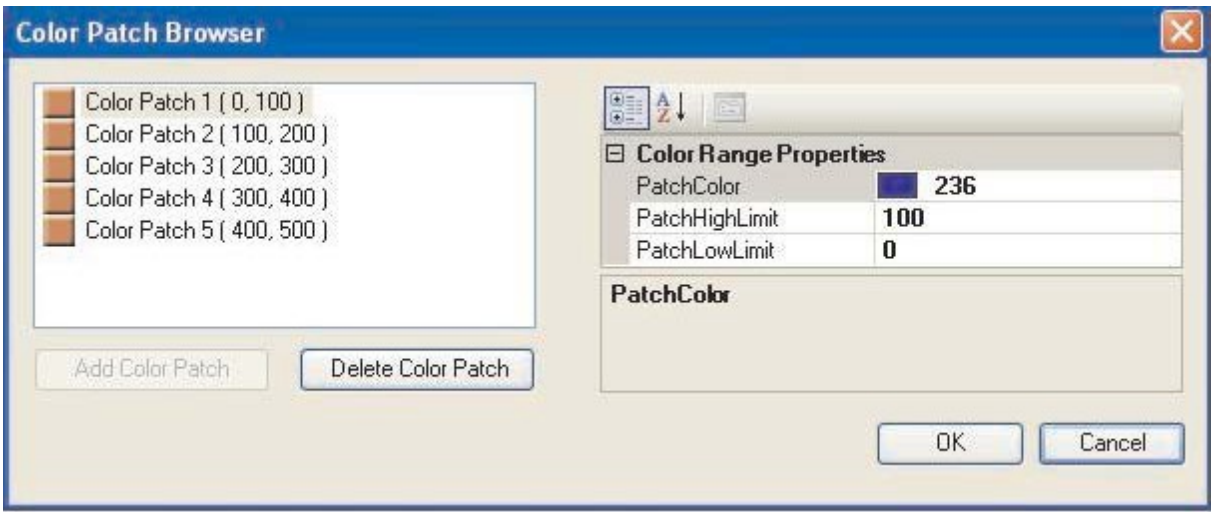


Animation:- Analog meter object can be animated only for Show or Hide. By default it is disabled "NO". Refer to the Animation section for more details.

Appearance:-

Border:- To set the border to the analog meter object is selected through this cell. If designer selects 'No' then Border is not drawn for the analog meter object. By default it is selected as 'Yes' to draw the Border to the object.

Color Patch Properties:- Analog meter dial can be set in color patched to elaborate the view of Tag Value can be set through this cell. By default Text in this cell is [collection] , the button provided in this cell will pop up with color patch browser window. Maximum of 5 color patches can be defined to the analog meter object. By default object shows 5 color patches as shown in figure.



Color Patch Browser: Designer can change and define the number of color patches desired to display, with desired color and value ranges through this popup window. By default the analog meter object is defined in 5 patches. Designer can define it in 1/2/3/4 patches also.

Color Range Properties:- Select the color patch which needed to be assigned with Low and High Limit and separate patch color.

Patch Color:- Individual patch can be assigned with separate color from the fly out to the cell. The color will get assigned to the range with Low and High limit values. By default the patch color varies serially from Patch 1 to 5 in Blue, Yellow, White, Green and Red Color respectively.

Patch High Limit:- The high limit for which the particular selected patch is to be colored is to be defined here. By Default the high limit for patch 1 to 5 is 100, 200, 300, 400 and 500 respectively.

Patch Low Limit:- The low limit for which the particular selected patch is to be colored is to be defined here. By Default the low limit for patch 1 to 5 is 0, 100, 200, 300 and 400 respectively.

Color patches:- This cell is greyed out, but displays the total number of patches being defined for analog meter object.

Color Range:- This cell is optional to display Analog meter object with either Color patch display enabled or disabled. If color range cell is having 'Yes' then color patches will be made available else with 'No' then analog meter object will display white dial. By default color range cell is enabled with 'Yes'.

Label:- This cell is to define if designer needs to specify some heading to the analog meter object. Text heading with different color, background, font size can be defined to the object at its Top or Bottom position. If this cell is selected as 'Yes' further following cells related to label properties are enabled. By default Label for object is not assigned. This cell has 'No' information.

Label Background Color :- Background color of the Label Text for analog meter object can be changed to different colors. To Set the background color for label of this object, designer can define the any available color as per the product display type selected. By default the background color of button object is White.

Label Position:- To label the object either on Top side or Bottom side of the Object. By Default the position of the label is at Top.

Label Text :- Designer can define his/her own text to define the label for an object. Designer can use alpha numeric characters for the same. By Default the Text is 'Label'.

Label Text Color :- Text of the Label can be changed to different colors. To Set the text color for the label of analog meter object , designer can define the any available color as per the product display type selected. By default the Text color of Label of button object is Black.

Label Text Font:-Properties related to font of text to be entered in Label for analog meter object is listed. This Label Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text , which can be edited from the cells. Here designer can edit Font , Font Script, Style, Size, Effects from this cell information.

Language:- To set the desired language to the text of multi bargraph object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Needle Simulation Value:- The simulation value at which needle of analog meter object is to be displayed is to be defined in this cell.

Appearance Meter Background:-

The details of meter background appearance parameters such as meter dial display option, change in Back- ground color, Fill color Meter style and needle color are to be set through this section.

Meter Background:- This cell information is optional. Designer needs to define whether dial for Analog meter object is to be displayed. By default it is enabled. If enabled then only following background and fill color cells are enabled .But if it disabled then Analog meter object will show only border and Needle for meter object.

Meter Background Color:- Background color for the analog meter object can be defined in this cell. This is the color at the background of Dial of Analog meter object. By default this color is 'White'.

Meter Fill Color:- To fill the analog meter object with color is to be done through this cell. This is the color which is filled inside the dial. By default the fill color is white.

Meter Style:- Option in which designer can choose the style in which the Analog meter object is to be displayed. Two styles in which analog meter can be displayed are Custom Meter or D-Meter with difference of angle. Custom meter can be drawn with any angle within 0-360 degree. D style meter is drawn in D Shape facing up with Start angle as 0 and End angle as 180. Dial Scale border is not drawn in D Style analog meter object.

Needle Color:- Color of the needle can be set through this cell. Color of the needle depends upon the product with selected display type. If display type of the product selected is Monochrome then available color varies in 16 grey scale. and if display type of product is color then color of the needle can be varied in 256 color. By default needle color is Black.

Appearance Meter Foreground	
Display Range	Yes
⊞ Divisions	4,2
Maximum Display Range	500
Minimum Display Range	0

Appearance Meter Foreground:-

Foreground appearance of analog meter object such as display range, major and minor divisions, min and max display range are to be set through this section.

Display Range:- This is optional if designer needs to display the scale for displaying ranges , then this cell has to be Enabled. By default it is enabled "Yes". Disabling this cell will also disable the following min max display range scale.

Divisions:- Dial of the analog meter object can be divided in to the scales with Maximum divisions and minor divisions within two Max divisions.

Maximum Display Range:- The maximum range up to which the needle of an analog meter is to be moved is to be defined in this cell. By default this range value is '500'.

Minimum Display Range:-The minimum range up to which the needle of an analog meter is to be moved is to be defined in this cell. By default this range value is '0'.

Layout:- To embed the analog meter object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

Operation	
Angle -End	180
Angle -Start	0
Meter Data Type	Unsigned Integer
Tag Address	S0001
Tag Name	Language
Value -End tag	500

Operation:-

Details of data type tag to be used for moving the value across analog meter object, Tag to be assigned for Analog meter. Its start and end value and angle in which meter is to moved is to be defined in this section.

Angle-End:- End Angle of the analog meter object is to be defined here. By default it is '180'. Designer can move it from 0-360 degree. Only the difference between Start and End angle should be more than 10.

Angle-Start:- Start Angle of the analog meter object is to be defined here. By default it is '0'. Designer can move it from 0-360 degree. Only the difference between Start and End angle should be more than 10.

Meter Data Type:- Data type of the tag which can be used for Analog Meter object are listed in this cell. Designer can select the data type to be used from fly out of this cell. by default data type selected is Unsigned Integer.

Tag Address:- Numerical Type tag to be assigned to analog meter object is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. The value of this tag will be moved in analog meter within the angle and within its defined start and end tag value. Selecting particular tag will display the respective tag name in following Tag name cell.

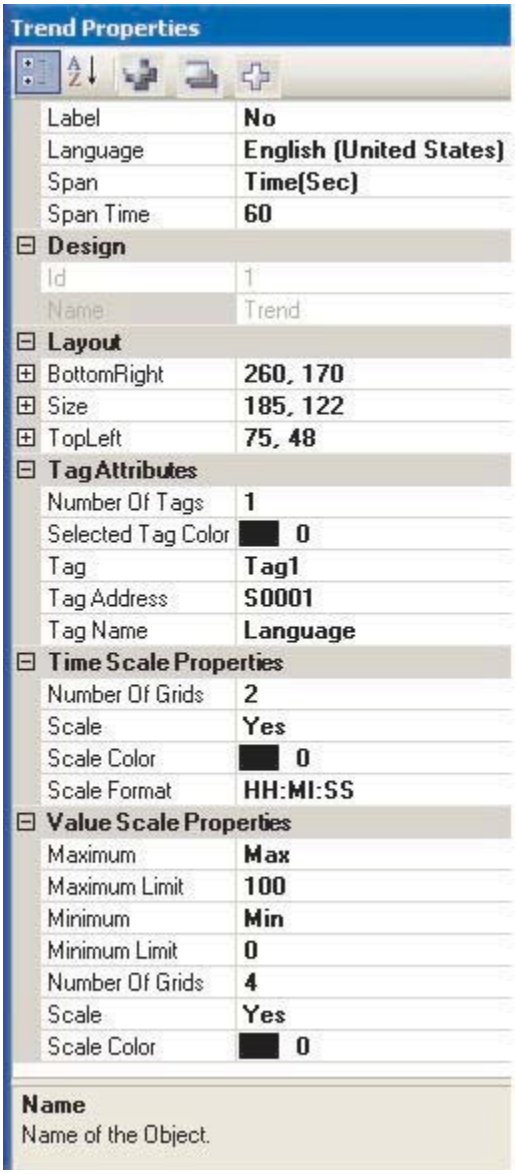
Tag Name:- Name of Numerical Type tag to be assigned to analog meter object is to be defined in this cell. Fly out from this cell will display the list of names of defined internal and PLC numerical type tags from tag data base. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Value-End Tag:- End value to be assigned for Analog meter object to make the analog meter needle displacement limit up to this. By default this value is '500'.

Value-Start Tag:- Start value to be assigned for Analog meter object to make the analog meter needle displacement limit up to this in reverse direction. By default this value is '0'.

4.3.9 Trend

Wizard to be used to display the continuous change of particular tag value with respect to real time. So that variation in tag value can be monitored at every instant. Property grid window on right side of the software screen will display the different sections and cell for defining the appearance parameters.



Appearance:-
This section is needed to set the general appearance of the trend object.

Background Color :- Background color of the trend object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the background color for multibargraph object is White.

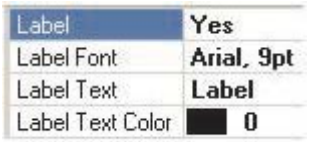
Error Message Font Color:- The trend object offers the unique feature of specifying the parameter values runtime in the unit by passing through a tag. The trend object does the value validation check runtime & if the values are found invalid then the message related to it, is shown in the message window to let the user know about it.

Font:- The error message can be displayed in two font formats ,one with 5X7 or another with 7X14. The font type defined for error message by default is 5X7.

Grid:- To display the internal grid for X and Y axis value representation can be defined through this cell. This is an optional , if grid is desired by designer then 'Yes' has to be typed in this cell or else 'No' will not display the grid. By default it is 'Yes'.

Grid Color:- Grid color of the trend object can be changed through this cell. The fly out will display color dialog box, with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the grid color for trend object is 'Black'.

Label:- This cell is to define if designer needs to specify some heading to the trend object. Text heading with different color, background, font size can be defined to trend object at its Top or Bottom position. If selected as 'Yes' further following cells related to label properties are enabled. By default Label for object is not assigned. This cell has 'No' information. This label can be defined only at the top position of the Real trend object.



Label Font :- Properties related to font of text to be entered in Label for trend object is listed. This Label Text Font cell has a button to enhance with the list of font related system properties or a '+' button which will list out the properties for font of text, which can be edited from the cells. Here designer can edit Font, from this cell information.

Label Text :- Designer can define his/her own text to define the label for an trend object. Designer can use alphanumeric characters for the same. By Default the Text is 'Label'.

Label Text Color :- Text of the Label can be changed to different colors. To Set the text color for the label of trend object , designer can define the any available color as per the product display type selected. By default the Text color of Label of button object is 'Black'.

Language:- To set the desired language to the text of trend object from the list of languages defined in Language settings of application project. This is the common button object properties, for more details refer section of 5.3.1.

Span:- The format to represent the span time can be defined through this cell in two ways one with fixed Time in seconds or with defining tag to enter the desired time span value in it.

Span-Time(Sec):- If Time (in Sec) is selected then user can define the time in span time for only once. This is fixed with one download of application.

Span Time:- This cell indicates the value in seconds representing the interval on the X-axis, which is the real time axis.by default this cell has time value as 60 seconds. This cell is displayed only if Span cell is defined with "Time[Span}" This value can be changed from 0-65535.

Span-Tag):- If Tag is selected in span cell then user will have to define the tag on whose value the Span time on X axis for Real trend object will be defined. With defining tag user can change the span time from unit screen itself through any Data Entry enabled objects.

Span Time Tag Address:- Numerical Type tag is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. The value of this tag will be assigned as time in seconds for representing real time X axis. Selecting particular tag will display the respective tag name in following Tag name cell.

Span Time Tag Name:-Name of Numerical Type tag to be assigned to analog meter object is to be defined in this cell. Fly out from this cell will display the list of names of defined internal and PLC numerical type tags from tag data base. The value of this tag will be assigned as time in seconds for representing real time X axis. Selecting particular tag name will display the respective Tag address in above Tag Address cell.

Layout:- To embed the trend object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

Time Scale Properties:-

Here the parameters related to display the internal appearance with respect to time scale i.e. X Axis is defined. The properties to display the X axis of Trend object in better format are related to number of Grids , Scale , Scale color and scale format.

Time Scale Properties	
Number Of Grids	2
Scale	Yes
Scale Color	0
Scale Format	HH:MI:SS

Number of Grids:- Number of grids that can be drawn in trend object is to be defined in this cell. Maximum 10 such grids can be drawn. By default the number of grids defined are 2.

Scale:- To scale each grade on time span scale i.e. X axis is optional. If enabled "yes" then at bottom of each grid scaling in real time hours and minutes is displayed , corresponding scale color and scale format cell will be displayed in following cell. If scale cell is disabled "No" then X axis of Trend object is displayed Blank.

Scale Color:- Color of the scales defined on X Axis can be defined through this cell. Fly out to this cell will display the Color dialog box with supported colors for the product. If product is with Monochrome display then available colors are 16 Grey scale and if product is with Color display then available colors are 256 RGB Colors. By default the grid color for trend object is 'Black'.

Scale Format:- Scale to be defined in X axis can be displayed in various formats of Hour:Minute:Seconds(HH:MI:SS) or Hour:Minute(HH:MI).

Value Scale Properties:-

Here the parameters related to display the internal appearance with respect to value scale i.e. Y Axis is defined. The properties to display the Y axis of Trend object in better format are related to minimum and maximum limit number of horizontal grids Scaling and its color.

Value Scale Properties	
Maximum	Max
Maximum Limit	100
Minimum	Min
Minimum Limit	0
Number Of Grids	4
Scale	Yes

Maximum:- Maximum Scale for Y axis can defined in fixed format style or through tag whose value can be changed through unit screen. Designer can define either Max or Tag in this cell.

Maximum-Max:- If Max is selected in this cell then , following cell with Maximum limit is enabled. By default this cell has Max selection. This is the maximum fixed limit up to which trend in vertical direction can be moved.

Maximum Limit :-The maximum value that has to be assigned to Y Axis , up to which tag value defined for Trend object can vary. By Default the value in this cell is 100. User can define value as per the tag Data type selected.

Maximum-Tag:- While running the application, if user wish to change the maximum Y limit from unit, designer will have to select the "Tag" option from the fly out of this cell. Selecting Tag in this cell will enable the related following cells "Tag Address" and "Tag Name".

Maximum Time Tag Address:- Numerical Type tag is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. The value of this tag can be changed from the running application to define the maximum Y limit value for vertical axis of Trend object. Selecting particular tag will display the respective tag name in following maximum Tag name cell.

Maximum Tag Name:- Name of Numerical Type tag to be assigned to Y limit of trend object is to be defined in this cell. Fly out from this cell will display the list of names of defined internal and PLC numerical type tags from tag data base. The value of this tag will be assigned as value to limit Y axis so as to display the trend up to this value. Selecting particular tag name will display the respective Tag address in above Maximum Tag Address cell.

Minimum:- Minimum Scale for Y axis can defined in fixed format style or through tag whose value can be changed through unit screen. Designer can define either Min or Tag in this cell.

Minimum-Min:- If Min is selected in this cell then , following cell with minimum limit is enabled. By default this cell has Min selection. This is the Minimum fixed limit up to which trend in vertical downward direction can be moved.

Minimum Limit :-The minimum value that has to be assigned to Y Axis , up to which tag value defined for Trend object can vary. By Default the value in this cell is 0. User can define value as per the tag Data type selected.

Minimum-Tag:- While running the application, if user wish to change the minimum Y limit from unit, designer will have to select the "Tag" option from the fly out of this cell. Selecting Tag in this cell will enable the related following cells "Minimum Tag Address" and "Minimum Tag Name".

Minimum Time Tag Address:-Numerical Type tag is to be defined in this cell. Fly out from this cell will display the list of defined internal and PLC numerical type tags from tag data base. The value of this tag can be changed from the running application to define the minimum Y limit value for vertical axis of Trend object. Selecting particular tag will display the respective tag name in following minimum Tag name cell.

Minimum Tag Name:- Name of Numerical Type tag to be assigned to Y limit of trend object is to be defined in this cell. Fly out from this cell will display the list of names of defined internal and PLC numerical type tags from tag data base. The value of this tag will be assigned as value to limit Y axis so as to display the trend up to this value. Selecting particular tag name will display the respective Tag address in above Minimum Tag Address cell.

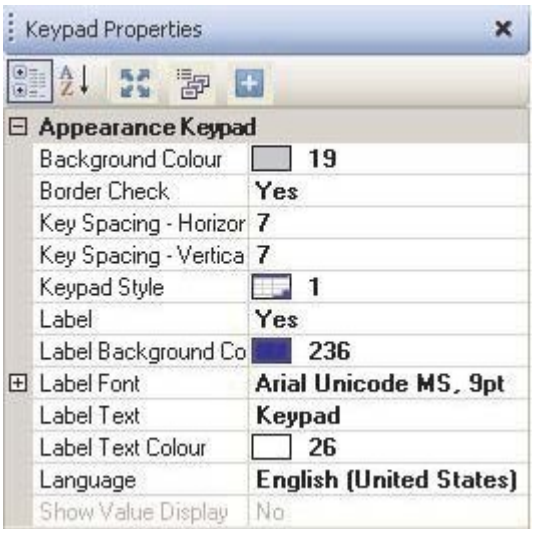
Number of Grids:- Number of Grids desired across X axis to the values of Y axis can be defined in this cell. By default number of grids are "4" , but user can define it up to "10". intermediate limits between Low and High Limits varies proportionately with the number of grids defined.

Scale:- To display the scales in Y axis is optional. By default it is enabled "Yes". If selected as "No", then limit values in Y axis is not displayed.

Scale Color:- Color can be assigned to the limit values to be displayed in Y axis. The color dialog box will pop up from this cell. Available color will depend upon the selected product's display type. If product is with monochrome display then color dialog box will show only 16 monochrome colors and if product is with Color display then color dialog box will display 256 colors in combination of RGB.

4.3.10 Keypad

Static keypad which can be either embedded on screen to enter in to the data entry object without popup keypad or these keypad can be embedded on popup screen to recall it
from particular data entry object. The value of tags with Unsigned / Signed integer, Float, Binary, Hexadecimal data types can be changed through the keypad. From property grid windows, keypad properties such as Keypad base color, Key's color, height and width of keys, keypad in different styles , even Text of the keys can be modified.



Appearance Keypad:-
The appearance of the keypad can be modified thro- ugh this section. Designer can modify the Gap width and height between 2 keys, Background color of the object, Label for particular Keypad Object or style of the keypads can be selected from this section.

Background Color:- Background Color of the keypad object can be modified through this cell. Available colors in this cell will depend upon the selected product's display type. If product is with monochrome display then available colors will be 16 grey Scale colors. and if display type is color then available colors will be 256 colors in combination of base RGB colors. By default background color to the keypad object is "Grey(19)".

Border Check:- Designer can either wish to draw the border to the object. This is an optional, by default border is provided to the keypad object.

Display area Check:- This is Disabled , greyed out with message as "Yes" or "No". If keypad is embedded on base screen then message is "No" and if keypad is embedded on popup screen then message is "Yes" with display area on keypad object is displayed to see the value entered through the particular Keypad Object

Gap Height:- The pixel height gap between the two keys can be defined from this cell. By default the height gap is with 7 number of pixels. Designer can define it in between 6 and 49 number of pixels, provided the keypad object does not go out of the screen.

Gap Width:- The pixel width gap between the two keys can be defined from this cell. By default the width gap is with 7 number of pixels. Designer can define it in between 6 and 49 number of pixels, provided the keypad object does not go out of the screen.

Label:- To represent the keypad object with different name can be availed through this cell. Any alphanumeric characters can be entered in this cell. By default the text in this cell is "Label".

Label Background Color:- Background color of the text entered in above "Label" cell can be modified through this cell. By Default the background color defined in Label cell is "Blue(236)"

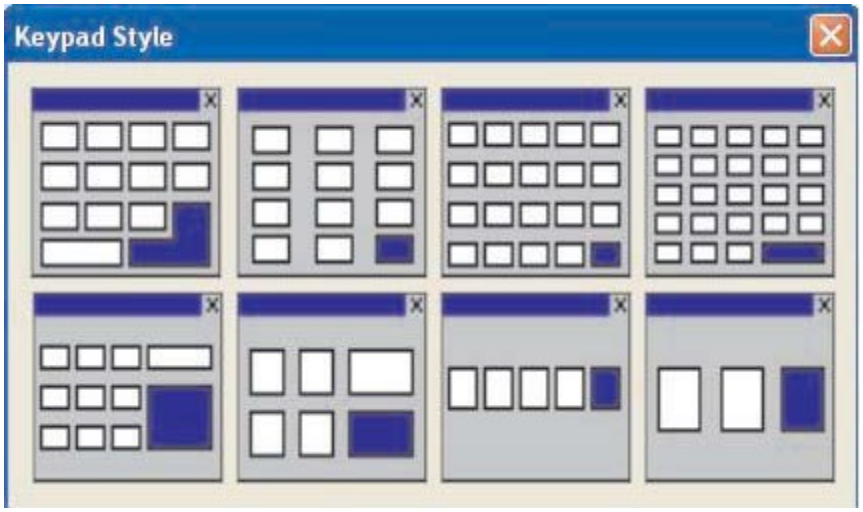
Label Font:- Parameters related to Font of Text entered in Label cell can be modified through this cell. All windows parameters displayed for font of any text can be modified through this cell. Parameters which can be modified to display Text in various format are such as font type name, size, whether bold/ normal, italic, strike out, underline etc. By default the font is with Arial name and point 9 size. All other parameters are normal.

Label Text Color:- Color for the Text entered in Label cell can be defined through this cell. By default the color of the text is "White(26)".

Label Check:- To display the Label for Keypad object is optional , by default this cell is selected with "Yes" with label displayed on Top of keypad. If selected as "No" then above properties related to Keypad label will

Language:- To set the desired language to the label text for Keypad object from the list of languages defined in Language settings of application project is to be done through this cell.

Style:- Various predefined styles of keypads are available from the Fly out to this cell. Following are the predefined keypad.



Designer can even modify any of the selected predefined keypad from the Keys Properties.

Design:-

Name:- Display the name of the selected object as “Numeric Keypad”.

Layout:- To embed the keypad object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

Key Properties:-

This section is enabled and displayed in property grid window of keypad properties , only when any of the key from the keypad object is selected. This section is useful to modify the key name, key task and rest all properties related to color and font display.

Keys Properties	
Back Colour	236
Display Text	Yes
Keypad Key Task	Accept Data Entry
Style Index	3
Text	ENT
Text Colour	26

Back Color:- Back color for the specific selected key can be defined from this cell. By default all keys are with Grey Color (19).

Keypad Key task:- Designer can modify the key task from the available key specific task desired to be assigned to the specific selected key. By default the task assigned to keypad depends upon the style of keypad and the Key selected from the Keypad Object.

Style Index:- Display the style number of the selected key pad from the predefined keypads. Predefined keypads are already displayed in above section.

Text:- Default text defined for the specific key is displayed in this cell. Designer can change the text. Any alphanumeric text can be entered in this cell.

Text Check:- This cell has optional properties. If Selected “No” , then Text from the key is disabled and made blank with disabling Text Color cell also. by Default Text Check cell is Enabled with “Yes”.

Text Color:- Color to the text of the particular specific selected key can be changed. Dialog box with color pallets will be displayed from this cell with available colors as per the selection of the product’s Display type selected. By default Text Color is “Blue(236)”.

4.3.11 ASCII Keypad:

ASCII keypad is used to enter the ASCII data to Tag embedded on screen with ASCII Data Type. It is predefined keypad with specific keys with ASCII Characters. With help of such keypad String of characters sent to / from PLC/other device can be displayed or transmitted. Through the use of properties from property grid window designer can change the aesthetic view of the key pad object with Shape, Size and color of the text embedded on specific keys of the ASCII Keypad object.

ASCII Keypad Properties:-

The appearance of the ASCII keypad can be modified through this section. Designer can modify the Background color of the object, Label for particular Keypad Object or style of the keypads can be selected from this section.

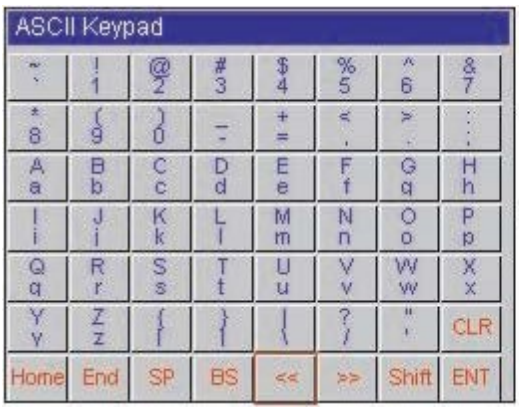
Back Color:- Background Color of the keypad object can be modified through this cell. Available colors in this cell will depend upon the selected product's display type. If product is with monochrome display then available colors will be 16 grey Scale colors. and if display type is color then available colors will be 256 colors in combination of base RGB colors. By default background color to the keypad object is "Grey(19)".

Display area Check:- This cell is Disabled , grayed out with message as "Yes" or "No". If ASCII keypad is embedded on base screen then message is "No" and if ASCII keypad is embedded on popup screen then message is "Yes" with display area on keypad object is displayed to see the value/String entered through the particular ASCII Keypad Object.

Gap Height:- The pixel height gap between the two keys is displayed in this cell. By default the height gap is with 2 number of pixels. This Cell is Grayed out(disabled) hence the Gap Height cannot be changed by designer.

Gap Width:- The pixel width gap between the two keys is displayed in this cell. By default the width gap is with 2 number of pixels. This Cell is Grayed out(disabled) hence the Gap Height cannot be changed by designer.

Keypad Style:- Various predefined styles of ASCII keypads are available from the Fly out to this cell. Following are the two predefined ASCII keypad.



Label Check:- To display the Label for ASCII Keypad object is optional , by default this cell is selected with "Yes" with "ASCII Keypad" text displayed on Top of ASCII keypad. If selected as "No" then following property related to ASCII Keypad label will be disabled.

Label Font Color:- Color for the Text entered in Label Text cell can be defined through this cell. By default the color of the text is "White(26)".

Label Text:-To represent the ASCII keypad object with different name can be availed through this cell. Any alphanumeric characters can be entered in this cell. By default the text in this cell is "ASCII Keypad".

Label Back Color:- Background color of the text entered in above "Label Text " cell can be modified through this cell. By Default the background color defined in Label cell is "Blue(236)"

Language:- To set the desired language to the label text for ASCII Keypad object from the list of languages defined in Language settings of application project is to be done through this cell.

Design:-

Name:- Display the name of the selected object as "**ASCII Keypad**".

Layout:- To embed the keypad object on screen at desired location with its coordinates position from Top left corner of the screen. Moving the text object on screen with mouse cursor will show the corresponding pixel position of the placed object. For more details please refer Layout section.

Key Properties:-

This section is enabled and displayed in property grid window of keypad properties , only when any of the key from the keypad object is selected. Through this section of selected ASCII Keypad Objects only the following parameters of Key Text color and Key Background color can be modified , rest none of the properties related to key can be modified.

Key Background Color:- Background color for the specific selected key can be defined from this cell. By default all keys are with Grey Color (19).

Key Text Color:- Color to the text of the particular specific selected key can be changed. Dialog box with color pallets will be displayed from this cell with available colors as per the selection of the product's Display type selected. By default Text Color is "Blue(236)" or "Red(57)".

4.4 Import & Export Multilingual Text Objects

This exporting & importing object utility is useful for all text objects which contains text in multiple language. (e.g. button wizards, multilingual text etc.). The information will be stored in "*.csv" format. So it will be easy for user to change the text for the properties for different languages. This change in the "*.csv" file can be import in the project.

4.4.1 Export Text Object:

Step-1 After creating OIS PLUS application for language conversion; launch "Export text object" wizard from "Project"
menu as shown below:

In the “Export Object” dialog box:

1. Format

Choose the format of the language conversion.

Note: Format may be kept as “Unicode” by default; provided that, importing text should be in “Unicode” format only.

ASCII format is that language format, which employs a 7-bit coding scheme, supporting 128 (2 7) characters, which is quite satisfactory for both upper case and lower case letters of the English alphabet and similarly simple Roman alphabets, Arabic numerals, punctuation marks, a reasonable complement of special characters, and a modest number of control characters.

The Unicode format developed the original coding scheme to support multiple complex alphabets such as Chinese, Devanagri (Hindi), Japanese, and Korean. In the Japanese language, for example, even the abbreviated Kanji writing system contains well over 2,000 written ideographic characters; the Hirigana and Katakana alphabets add considerably to the complexity. As 7- and 8-bit coding schemes cannot accommodate such complex alphabets, computer manufacturers traditionally have taken proprietary approaches to this problem through the use of two linked 8-bit values. This “UNICODE” format supports 65,536 (2 16) characters, which accommodates the most complex alphabets. Unicode accommodates pre-existing standard coding schemes, using the same byte values for consistency. Unicode encodes all characters in byte sequences varying from one to five bytes.

2. Output Range

Here you can select whole project or selected screens that are requires conversion.

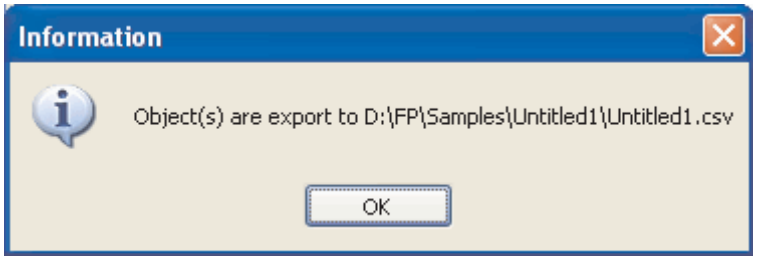
3. Select Screen

Here list of screens are seen.

4. File Name & Browse

Here, you can specify the file name to exported CSV format file. And from “Browse” tab, you can select path for saving on PC.

Step -2. Now press “Export”. It gives information about exporting text object as shown below:



Step -3. After that, you can open this “*.csv” file in “*.xls” sheet; where you can find information about text object/s such as Screen number, Screen Name, Shape Type, Shape object ID and languages used in application as shown below:

#	Import-Export Objects				
#	Project Name	Untitled2			
#	Screen Name	Shape Type	Shape ObjectId	Property	English (United States)
	Screen1	Advance bit button	3673	On Text	On
	Screen1	Advance bit button	3673	Off Text	Off
	Screen1	Advance bit button	3673	Label	Label
	Mode Selection Menu	Advance bit button	3335	On Text	FHWT
	Mode Selection Menu	Advance bit button	3335	Off Text	Off
	Mode Selection Menu	Advance bit button	3335	Label	Label
	Mode Selection Menu	Advance bit button	3336	On Text	Sys Setup
	Mode Selection Menu	Advance bit button	3336	Off Text	Off
	Mode Selection Menu	Advance bit button	3336	Label	Label
	Mode Selection Menu	Advance bit button	3337	On Text	Exit
	Mode Selection Menu	Advance bit button	3337	Off Text	Off
	Mode Selection Menu	Advance bit button	3337	Label	Label
	SystemSetupMenu-1	Advance bit button	3341	On Text	TouchScreen Calibrate
	SystemSetupMenu-1	Advance bit button	3341	Off Text	Off
	SystemSetupMenu-1	Advance bit button	3341	Label	Label
	SystemSetupMenu-1	Advance bit button	3342	On Text	Brightness Control
	SystemSetupMenu-1	Advance bit button	3342	Off Text	Off
	SystemSetupMenu-1	Advance bit button	3342	Label	Label
	SystemSetupMenu-1	Advance bit button	3343	On Text	RTC Settings
	SystemSetupMenu-1	Advance bit button	3343	Off Text	Off
	SystemSetupMenu-1	Advance bit button	3343	Label	Label
	SystemSetupMenu-1	Advance bit button	3344	On Text	Com Port Settings
	SystemSetupMenu-1	Advance bit button	3344	Off Text	Off
	SystemSetupMenu-1	Advance bit button	3344	Label	Label

Here you can change name in other language you want & then save as file in again "*.csv" format.

Please note that, we can use the "*.csv" file prepared in project for the same project only. Because while exporting text object; it gives screen numbers & shape ID etc.

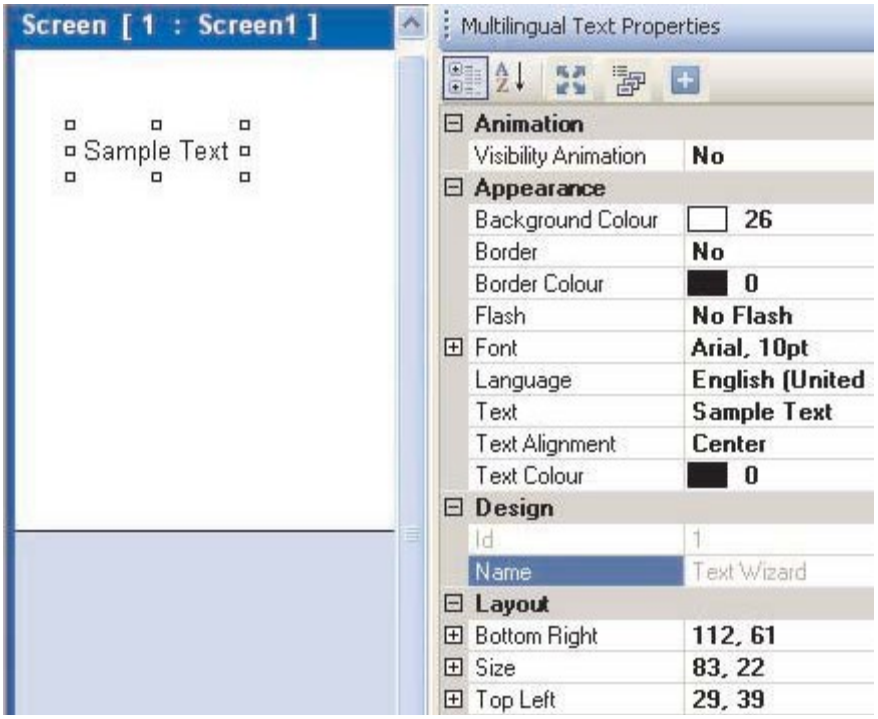
4.4.2 Import Text Object:

Step-1 Once, you change the desire changes in exported "*.csv" file, you can import the same in the project as shown below:

Here again choose a format and select path; where exported csv file is saved. Then press "Import".
If during this exporting & importing text object, any operation is done e.g.; if any language is added or any text button is added or deleted; it gives error in notepad as shown below:

4.5 Multi-language Text Wizard

The Multi-Language Text Wizard allows the designer to configure text objects for use in a multiple language project.



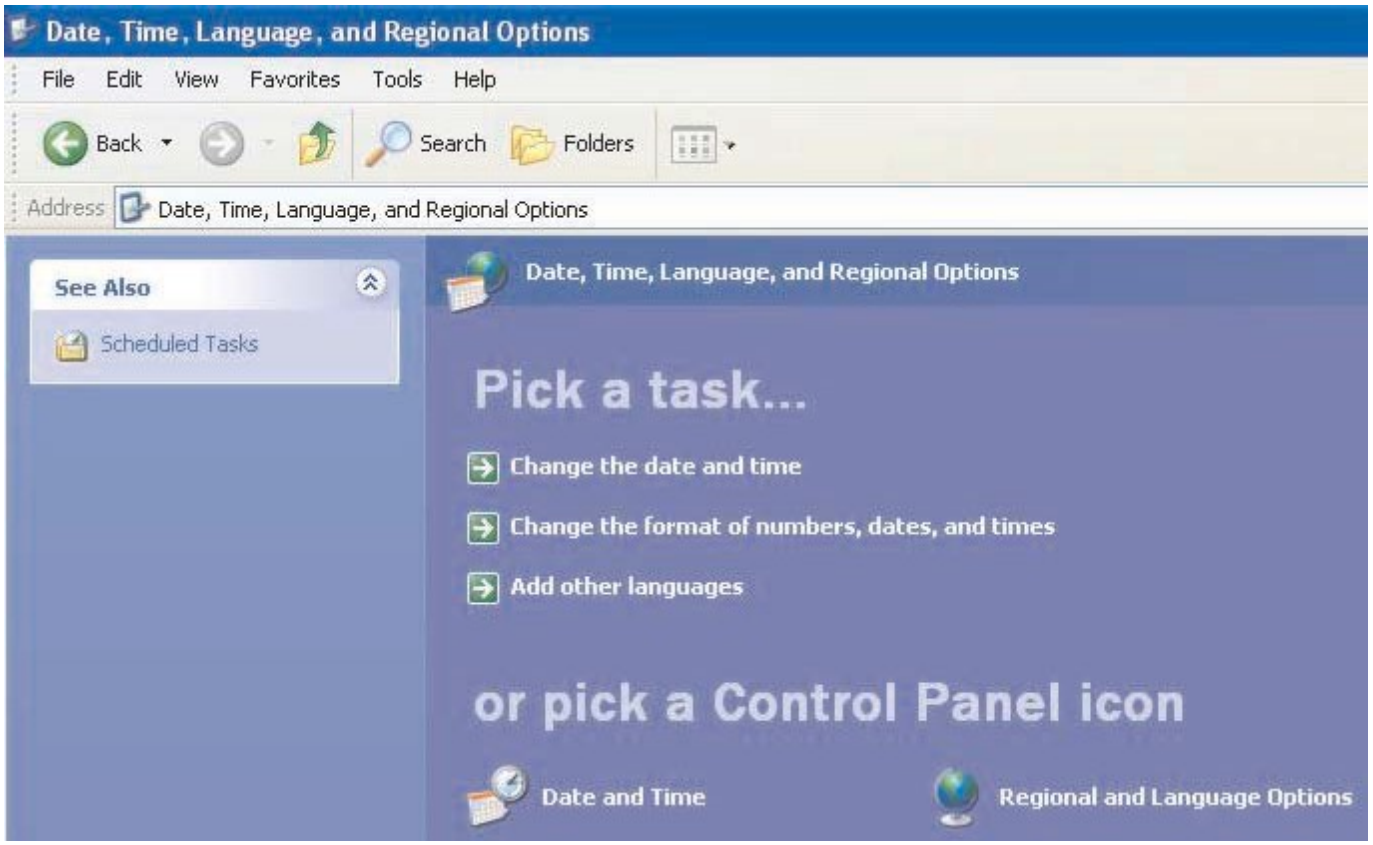
Text properties
Appearance:

1. **Background Color :** Sets the Background text color from the palette.
2. **Border :** If enabled, the text object will have a border.
3. **Border Color :** Sets the color of the border from the palette.
4. **Font :** Selects Windows® Font, Font Style and Font size.
5. **Language :** Displays the list of languages configured in the Unit Settings.
6. **Text :** The object can have a maximum of 150 characters.
7. **Text color :** Sets the text color from the palette.
8. **Text Alignment :** Sets the text alignment.

4.5.1 Configure Language

The OIS PLUS products can be configured for a different languages from configure language wizard. To enable multilanguage support, the user has to add the languages he wants to use in the application here.

The list box on the left side shows which languages are installed on your computer. The list box on the right side lists the languages to be used in the project. The languages must be installed on your computer to appear in the installed languages list. Languages can be installed on a computer by using the Windows task “Add other languages”. This task is located in the Regional and Language Options selection of the Control Panel menu as shown on the following page.



Language installation uses the following screen.

Note: Parameters not supported for the product are grayed out.

4.5.2 Displaying Multiple Languages

System Register S0001 controls the language to be displayed at run time. User can use 'Write value to tag' task for changing value in system register.

Note : If SW0001 has value other than 1 to 9 then English language is displayed.
Example:
If user has configured project for 3 different languages namely English, Korean, Japanese then following tasks can be used to change language at run time.
English - Write value to Tag SW0001 with value 1
Korean - Write value to Tag SW0001 with value 2
Japanese - Write value to Tag SW0001 with value 3
In this way different languages can be displayed in unit at run time.

4.5.3 List of Text Objects which used Multiple Languages

Objects	Property
Multilingual Text	Text
Goto Screen	ON text, OFF text
Goto Next Screen	ON text, OFF text
Goto Prev Screen	ON text, OFF text
Goto Popup Screen	ON text, OFF text
Set	ON text, OFF text
Reset	ON text, OFF text
Toggle	ON text, OFF text
Hold On	ON text, OFF text
Hold Off	ON text, OFF text
Write Value to tag	ON text, OFF text
Sub Value from tag	ON text, OFF text
Add Value to Tag	ON text, OFF text
Add Tag A to Tag B	ON text, OFF text
Sub Tag B from Tag A	ON text, OFF text
Bit Button	ON text, OFF text, Label
Word Button	Text for 1-32 States, Label
Bit Lamp	ON text, OFF text, Label
Word Lamp	Text for 1-32 States, Label,
Multiple Bargraph	Label,Bar label, Axis label
Trend	Label
Historical Trend	Label
Analog Meter	Label
Keypad	Lable, Keys (text)(max keys 24 dependent on keypad style)
ASCII Keypad	Label

TASK MANAGEMENT

- Background Task
- Tasks
  - Power On Tasks
  - Global Tasks
- Screen Tasks
  - Before Showing Tasks
  - While Showing Tasks
  - After Hiding Tasks

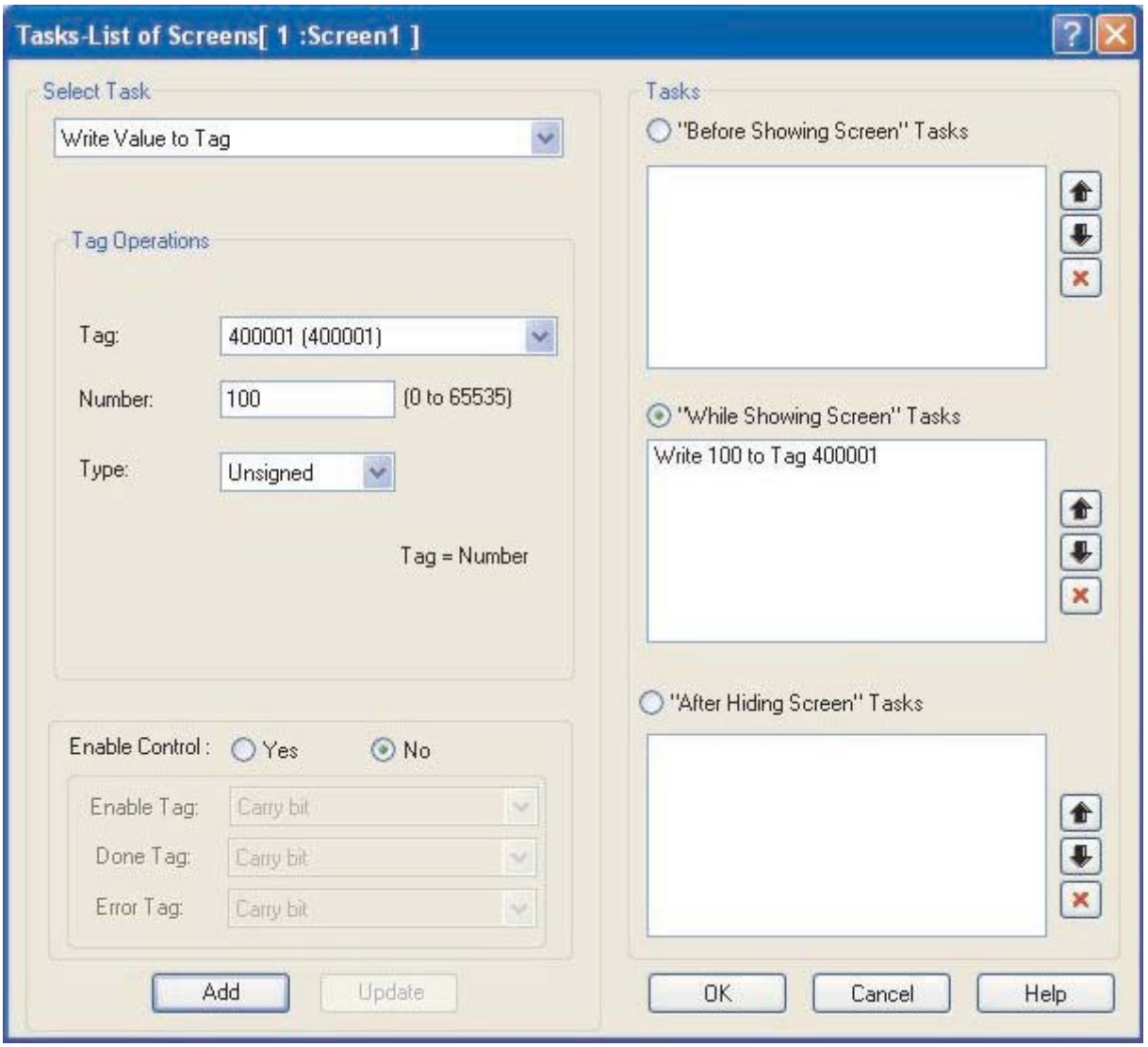
5.1 Background Task

If the following PLC tasks are present in while showing screen task list or in the global task list , these task are executed in the background loop.

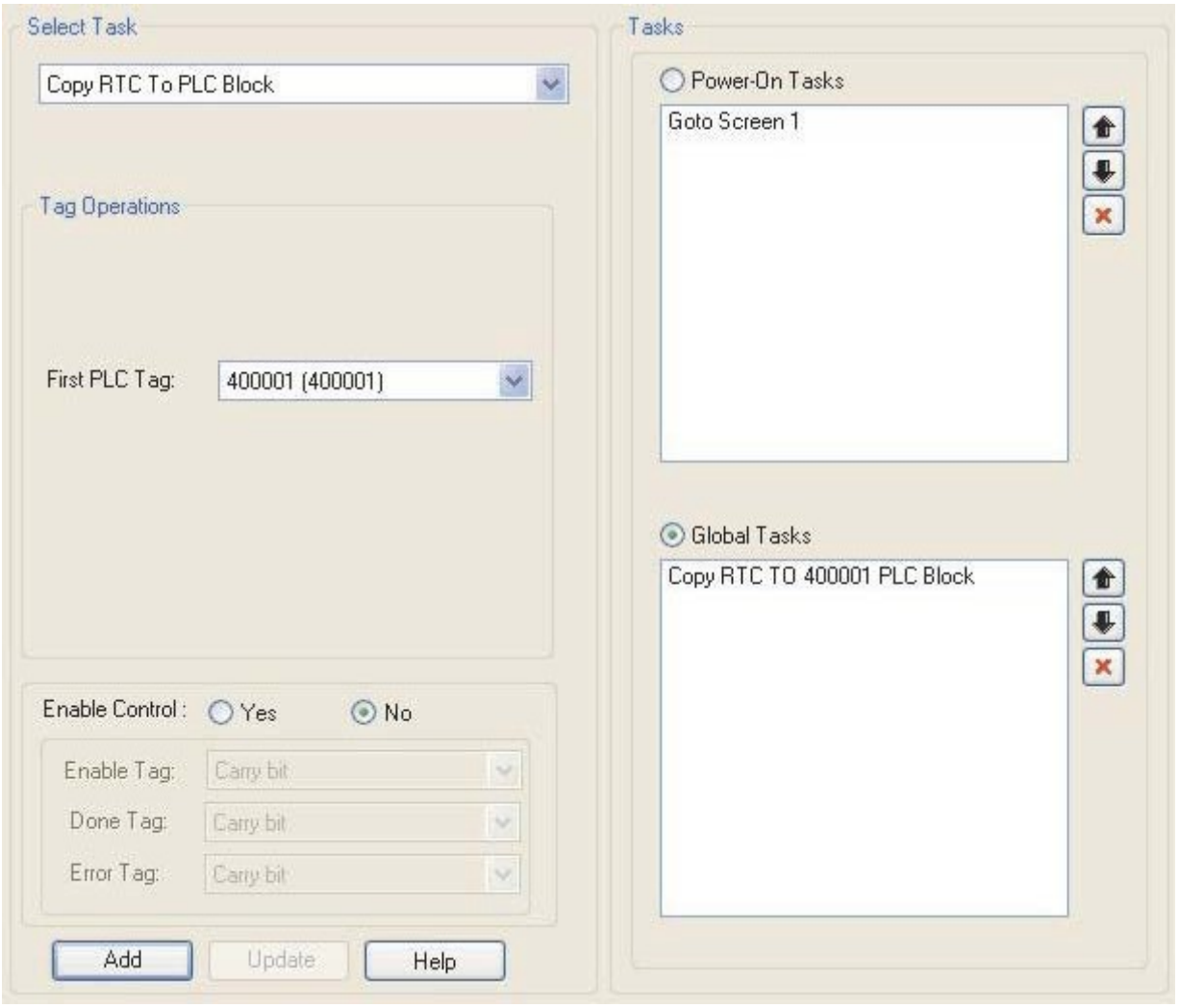
Recipe Tasks:
1. Copy RTC to PLC block
2. Copy HMI block to PLC block
3. Copy PLC block to HMI block

Other Tasks:
1. Write Values to tag (if tag is PLC tag)
2. Copy Tag B to Tag A (if Tag A is PLC tag)
3. Turn Bit ON (if Bit is PLC bit)
4. TURN Bit OFF (if Bit is PLC bit)

Example of “While Showing” task is as follows



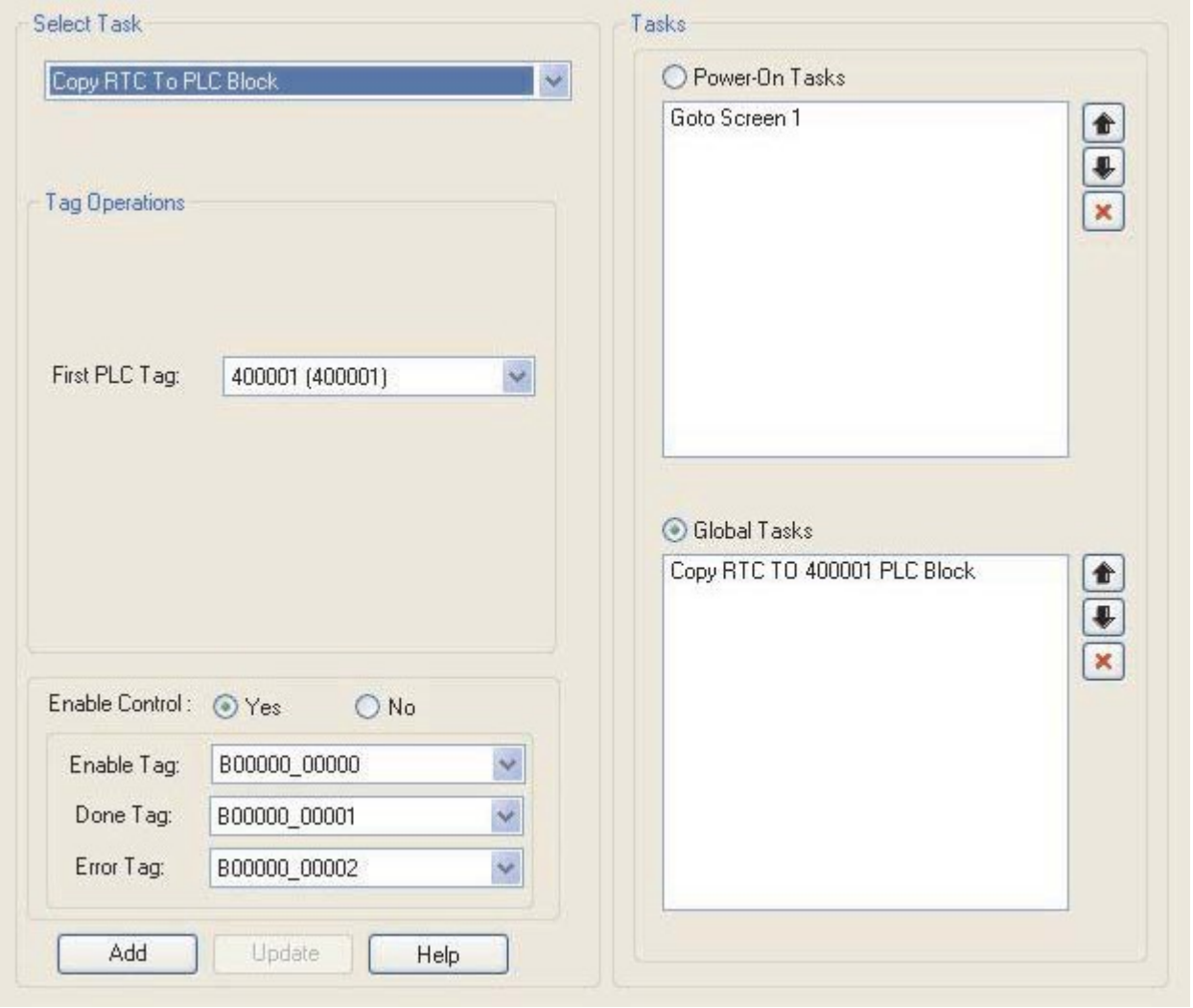
Example of global task is as below:



Number of tasks supported in background loop:

Type	FP4035T Models	FP4057T Models	FP4020 Models	FP4030 Models
Recipe Tasks	100	100	16	16
Other Tasks	512	512	16	16

Enable Control for background tasks: The enable control is activated for the background task by clicking yes for enable control. If enable control is activated , the Enable tag, Done tag and Error tag will be activated as shown below



Enable tag:
The task will be executed only when the value of the enable tag is made ON.

Done Tag:
The value of this tag will be made ON by HMI, when the task is executed by Background loop successfully. This value will be automatically reset by main loop, when the next time the task has to be executed.

Error Tag:
The value of this tag will be made ON by HMI, when the task is not executed successfully in background loop. This value will be automatically reset by main loop, when the next time the task has to be executed. There can be multiple reasons for error tag to set.
Example : if the task used is write value to any PLC tag, error tag can be set in following cases:

If this tag is not present in PLC
If write is not allowed to that PLC tag
PLC returns some exception for write of that PLC tag etc.

The following coils can be used as Enable tag, Done Tag, Error Tag:

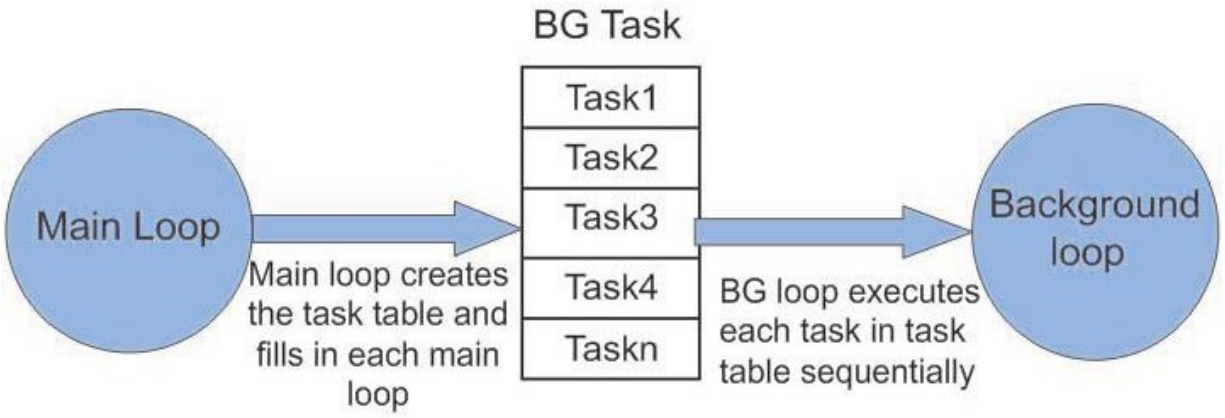
Sr. No.	Coils
1	Data Register coil accesses as bit addressed register
2	Input Coils
3	Internal Coils
4	IO configuration Coils
5	IO configuration register accessed as bit addressed register
6	Output coils
7	System coils
8	System Register bits accesses as bit addressed register
9	Timer coils
10	Counter coils

Please note that if the Retentive register is used in any task mentioned in above list, then that task will not be executed in background. Instead that task will be executed in main loop.

Example : If task Copy Tag B to Tag A is used in global task, Tag B is Retentive register tag and Tag A is PLC tag, then that task will be executed from mail loop.

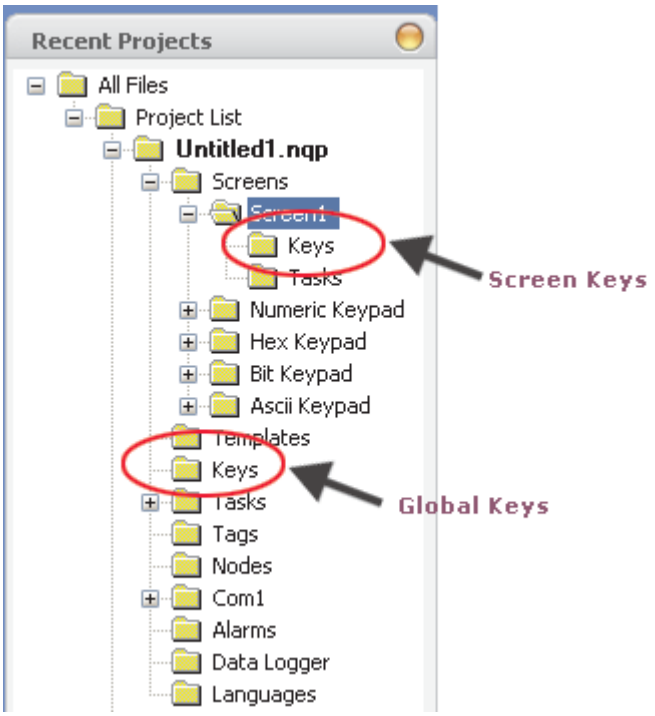
How does Background loop work?

From the above figure it is clear that task table is created by the main loop and the task table is updated in each main loop. The background loop executed each task in the task table sequentially.
The main loop does not wait for the PLC task to be completed.



5.2 Various Tasks

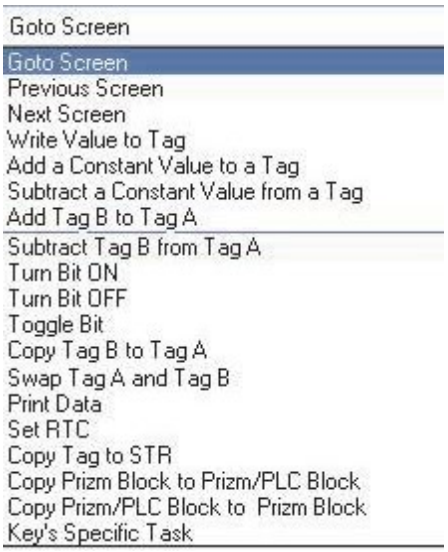
Various list of tasks that can be performed on internal or PLC Tags at various desired instants after power on/off of the unit. The instants of these tasks are Power on of Unit, Global Tasks, with respect to particular screen tasks i.e. Before showing , While showing or After hiding respective screens Task, with respect to the pressing of Key task are at Press Task, Pressed Task and Release task. Key task can be performed through the hardware keys or through the button objects embedded through OIL-DS Software.



Various Tasks through which we can perform list of operations at various Instants are:

1) Power On Task
2) Global Task
3) Screen Task
   - Hardware Keys(Press, Pressed, Released)
   - Screen showing Tasks(Before Showing, While Showing, After Hiding)
4) Global Keys (Press, Pressed, Pressed)

Tasklist which can be performed through all those above tasks are as shown in the Figure.
Some of the task operations are task specific, hence enabled in task list, only when particular task is selected.



Tasks:
As shown in above figure, Tasks folder with option of Power on Task and Global task can be configured from left side window of Recent Project Sections from Software. Through selection of this folder following screen can be observed.

Through Selection of Radio button , designer can select the task in which task operation is to be operated/ performed.

5.2.1 Power On Task

List of task operations that can be performed at the Power on of the unit is to be selected in this section from the selected task. Figure shows the operation tasks that are supported for Power on Task. Defined number of tasks in Power on task will be executed sequentially.

Step-1

Step-4

Step-2

Step-6

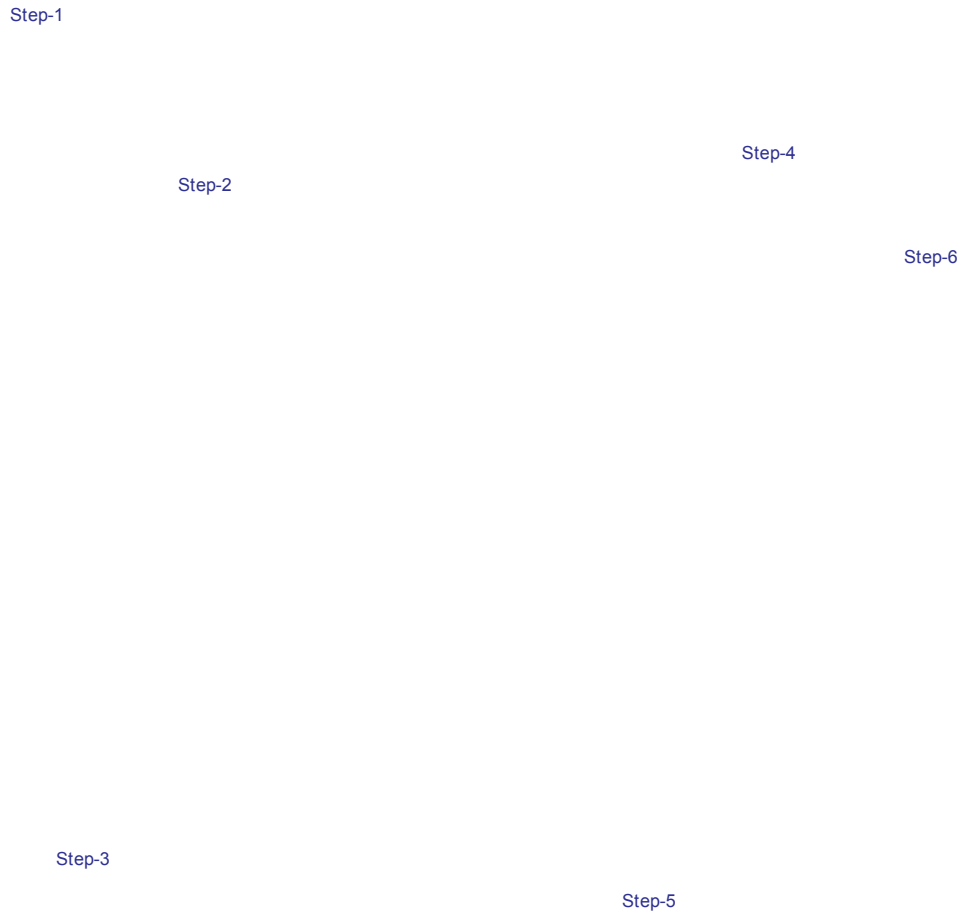
Step-3

Step-5

1) Select the task which is to be assigned at power on of the unit.
2) Fill the corresponding Screen / Tag operation section and
3) Click on the ADD button.
4) The selected task will be displayed in right hand side section of Tasks-> Power On task
5) Press OK.
6) Number of Tasks selected in Power on task, are executed sequentially. So if designer needs to change the sequence of the operation then designer can select the operation whose sequence is to be changed and then press “UP Arrow” or “Down Arrow ”. If designer wish to delete the defined task then designer needs to select the task operation and Press “Cancel/Delete button. Designer needs to press the OK button after final addition/ changes to the task operations are being made.

5.2.2 Global Task

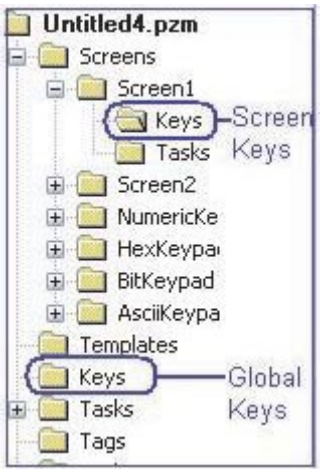
List of task operations that can be performed at the every instance of the unit in power on stage are selected in this section from the selected task. Figure shows the operation tasks that are supported to get executed in global Task. Defined number of tasks in Power on task will be executed sequentially.



1) Select the task which is to be executed globally at running condition of the unit.
2) Fill the corresponding Screen / Tag operation section and
3) Click on the ADD button.
4) The selected task will be displayed in right hand side section of Tasks-> Power On task
5) Press OK.
6) Number of Tasks selected in Power on task, are executed sequentially. So if designer needs to change the sequence of the operation then designer can select the operation whose sequence is to be changed and then press “UP Arrow” or “Down Arrow ”. If designer wish to delete the defined task then designer needs to select the task operation and Press “Cancel/Delete button. Designer needs to press the OK button after final addition/ changes to the task operations are being made.

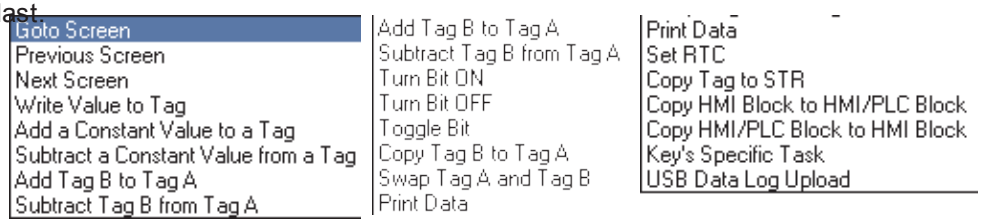
Key Task:
The key specific task can be derived either as Screen Specific key task or as global key task.
Hence the hardware keys can perform two operations one at if defined for specific screen key and other at if being defined as Global Key task. Preference to the task is given for Screen Specific Keys than to the Global Keys.

E.g.:- Application project with 2 Screens defined with Data Reg D000 Embedded on Screen 1 as well as Screen 2.
Screen 1 F1 Key :- Defined as Write Value **45** to Tag D000 Screen 2 F1 Key :- Is undefined.
Global F1 Key :- Defined as Write Value **5555** to Tag D000
Now if , Unit displays Screen 1 and user press F1 then Value displayed will be 45 (giving preference to Screen Specific Key) and if unit displays Screen 2 and user press F1 then value displayed is 5555 (as no screen Specific key task defined, hence perform Global key task).
Two types of Key task are : 1) Screen Key Task 2) Global Key Task.

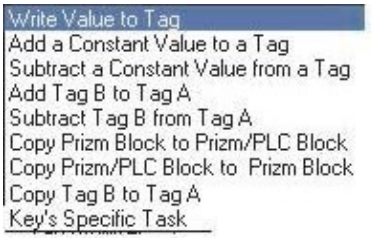


The tasks related to any of the keys (Screen Key or Global keys) can be operated in 3 ways

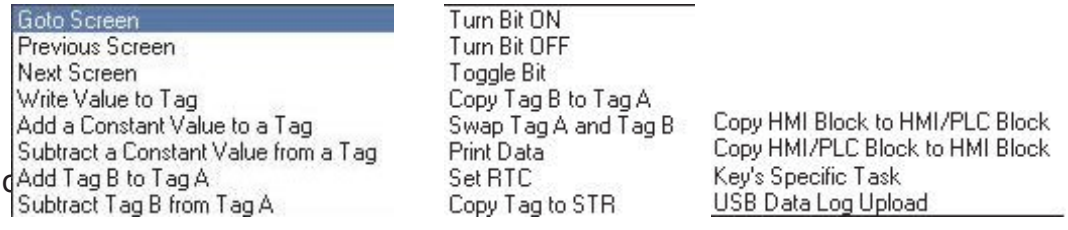
1) Press Task:- Perform defined operation once at the press of key. The list of task which can be operated at one touch of Key are as shown in Fig. Various list of tasks related to screen or Tag can be defined in this "Press Task". All these tasks in one key press will get executed sequentially, i.e. first task will get executed first and last one at last.



2) Pressed Task:-Perform defined operation with key being kept pressed continuously.
Various list of tasks related to Tag or group of tags(i.e. Blocks) can be defined in this "Pressed Task". All these tasks will be repeatedly getting executed sequentially at key being kept pressed, i.e. first task will get executed first and last one at last.

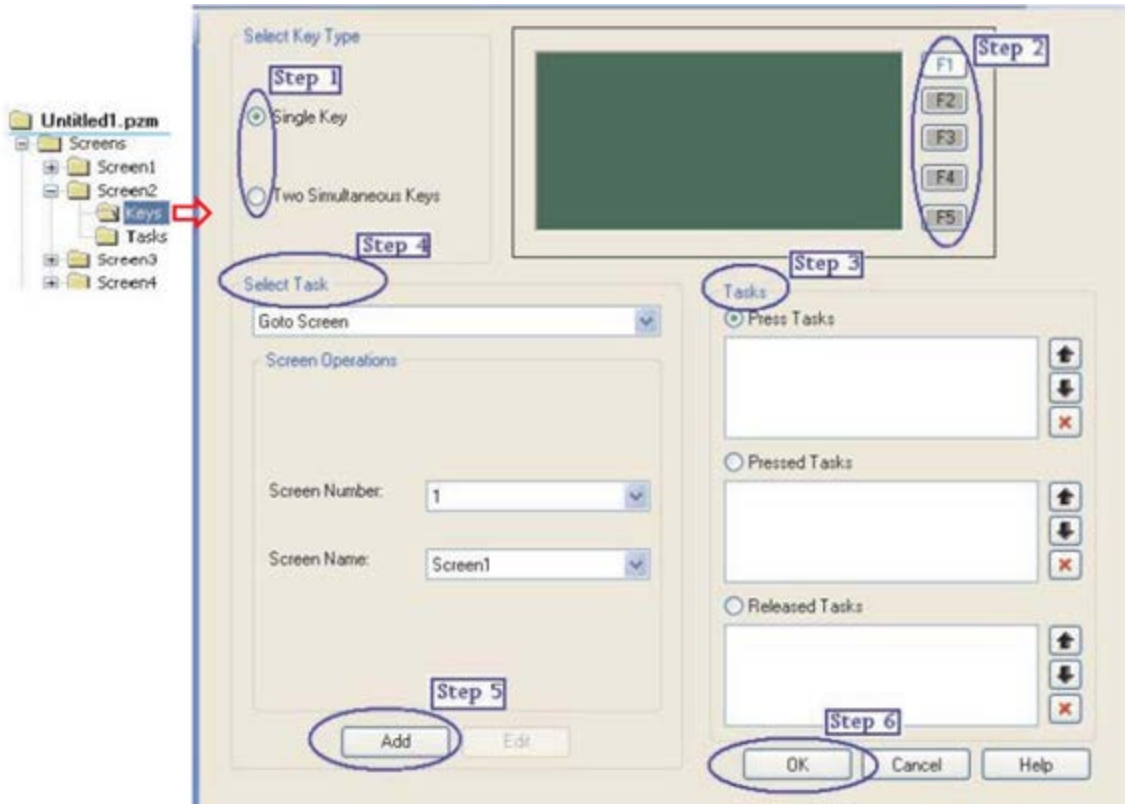


3) Released Task:-Perform defined operation once after the release of key. Various list of tasks related to screen, Tag or group of tags (Blocks) can be defined in this "Released Tasks". All these tasks will get executed sequentially at the instant of release of touched key.



5.2.3 Screen Key Task

The key task is use at the display of specific screen. It can be set through Keys folder shown for each Screen (i.e. Screen 1 Screen 2 or any user defined screen name).



Select Key Type:-

User can perform the key task operation either by selecting the single key press or with Two simultaneous key press.

Single Key:- Any single key can be selected to define the list of operations desired to be performed at different tasks to be executed at its press. The selected key will be highlighted and will display the list of already defined task in specific Task windows but these tasks are specific to particular key defined for particular Screen only. Same key with same/Different task desired to be used at display of different screen , will have to be defined separately.

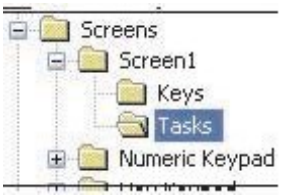
Two Simultaneous Keys:- Any two simultaneous keys can be defined to execute the defined list of operation in task. User will have to press the defined two keys simultaneously. The tasks defined for two simultaneous keys will be displayed only if proper combination of defined keys are selected. One key can be used/shared in multiple combination of any two keys ,i.e.
F1 + F2, F1+F3, F1+F5 ….).

Following steps can be used to define any Key Specific task.

Step 1 :- Select the key type (Single key or Two Simultaneous keys).
Step 2 :- Select the Specific key to which the task operation is to be defined.
Step 3 :- Select the task (Pressed or Released) , where desired task operation is to be defined.
Step 4 :- Select the task operation either tag related or screen related from the list of operations displayed from fly out to this cell.
Step 5 :- Press Add to get the task operation defined in Desired tasks Cell.

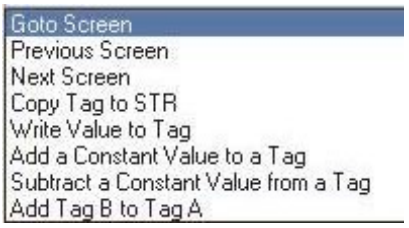
Step 6 :- Press OK to get desired operation task stored permanently in desired Task Cell.
If Ok is not pressed and Designer switch to any other tasks or Screen , then the operation task added by pressing ADD button will not be stored in Tasks Cell.

Tasks:- The other way in which list of tasks that can be executed / operated without any pressing of key are defined as Screen Tasks. The tasks which gets executed at the display of particular screen. Screen Tasks Can be defined through Application Folder->Particular screen (Say Screen1) ->Tasks Folder as shown in figure. The Task operation defined in tasks folder will get executed only on the display of particular screen on unit

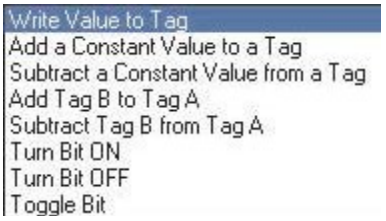


Executing the list of operational task on display of particular screens can be done in three ways:

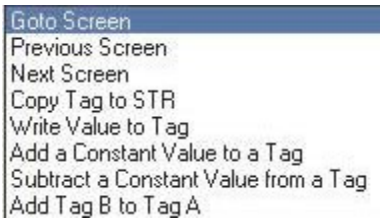
1) Before showing the Screen:
Task operation defined in this cell gets executed just before showing the selected defined key. The list of task operations supported in this cell are as follows



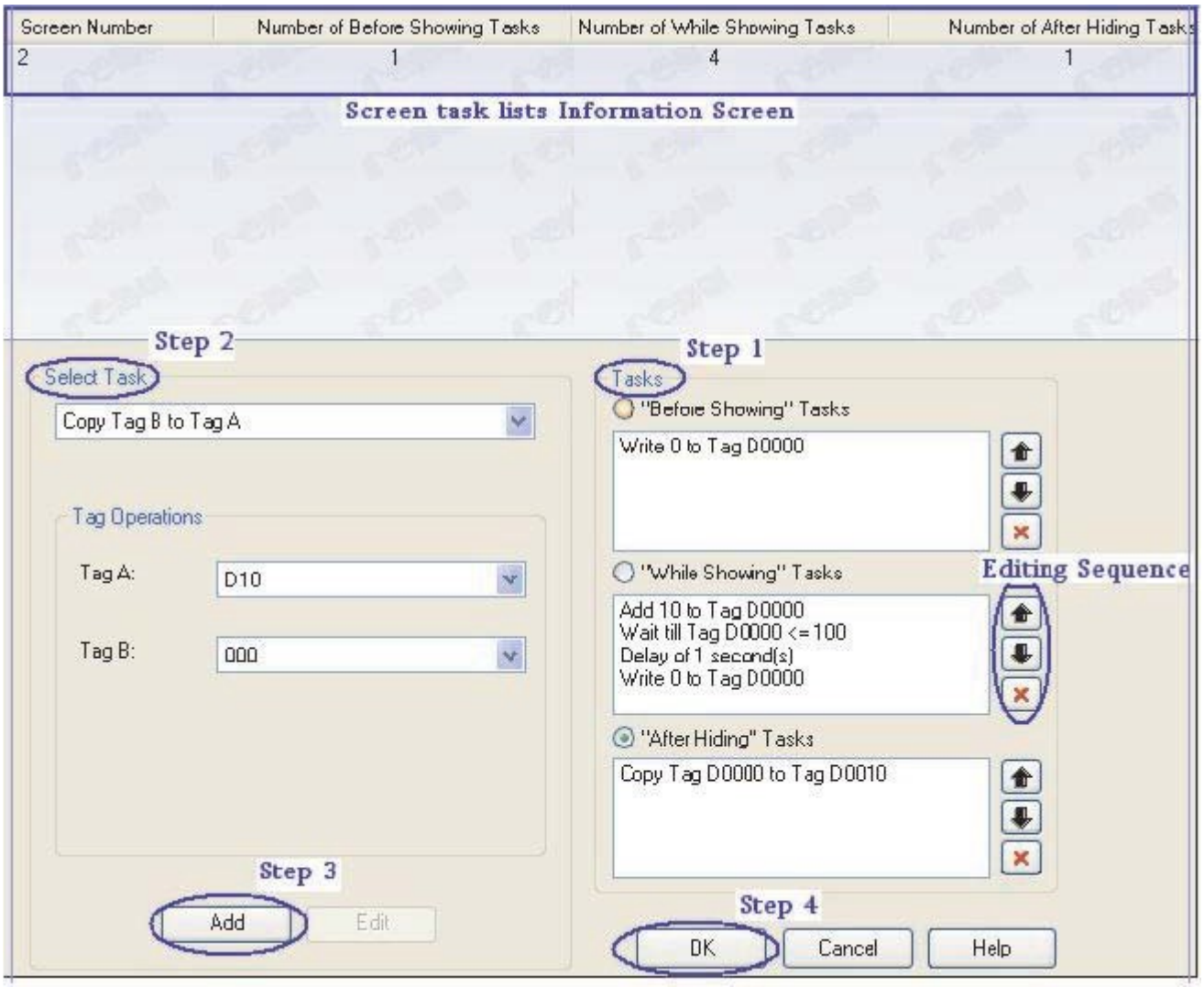
2) While showing the screen:
Task operation defined in this cell gets executed while showing (or on display of screen) the selected defined screen. The list of task operations supported in this cell are as follows



3) After hiding the screen:
Task operation defined in this cell gets executed just after the selected defined screen is closed. The list of task operations supported in this cell are as follows



Selecting the tasks folder will display the following screen



Screen Task List Information Screen:- Will display the overall information related to the screen tasks defined for respective screen. First Column defines the screen number which is being selected. Rest 3 columns defines the number of task operations defined in various screen tasks(either or else Before Showing, While showing and After hiding).

Following steps should be followed by Designer to define the task operations desired to be executed in various task of display of screen

Step 1:- Select the Tasks cell in which list of operations are to be defined.
Step 2:- Select the task operation to be performed. Define the particular Tag or screen information in tag or screen operation cell.
Step 3:- Press add button to get added the task operation in desired Tasks Cell
Step 4:- Press OK , to confirm and store the desired task operations added in tasks cell.

Editing Sequence :- The buttons with Up Key, Down Key or Cancel Key. These Up/Down keys are used to change the sequence of list of operation tasks defined in Tasks Cell. Cancel key is used to delete the operation task defined in Tasks cell.

5.3 Description of Tasks

1) Got Screen:- The task operation is used to switch from one screen to another. Through this task operation user can switch to any screen from any of the existing screens by defining it in Power on Task, Press Task of Key, Released task of Key, Before showing screen Task, After hiding Screen task.

2) Next Screen:- The task operation is used to switch to next screen from the existing displayed screen. This task operation can be used through Power on Task, Press Task of Key, Released task of Key, Before showing screen Task, After hiding Screen task.

3) Previous Screen:- The task operation is used to switch to previous screen from the existing displayed screen. This task operation can be used through Power on Task, Press Task of Key, Released task of Key, Before showing screen Task, After hiding Screen task.

4) Write Value to Tag:- The task operation is used to write an constant value in internal tag or PLC Tag defined in tag data base. This task operation can be executed through all Tasks, Tasks (Power on and Global), Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing, While Showing and After hiding Screen).

5) Add a constant Value to a Tag:- The task operation is used to add a constant value continuously in internal tag or PLC Tag defined in tag data base. This task operation can be executed through all Tasks, Tasks (Power on and Global), Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen). The constant value number range selection limits, depends upon the bytes defined for the selected Tag defined in Tag Data base. If tag is 2 byte then number range will be 0-65535 and if Tag is 4 byte then number range will be 0-4294967295.

6) Subtract a constant Value to a Tag:- The task operation is used to subtract a constant value continuously from internal tag or PLC Tag defined in tag data base. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).The constant value number range selection limits , depends upon the bytes defined for the selected Tag defined in Tag Data base.
If tag is 2 byte then number range will be 0-65535 and if Tag is 4 byte then number range will be 0-4294967295.

7) Add Tag B to Tag A:- The task operation is used to add a value from particular tag to a value of another tag. Value of tag which is to be added is to be defined as Tag B, and the value of tag in which it is to be added is to be defined as Tag A , the result of adding both tag is stored in Tag A. So mathematical operation formed through this task operation is Tag A=Tag A + Tag B. These A or B tag can be either Internal tag or PLC tags defined in Tag Database. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

8) Subtract Tag B from Tag A:- The task operation is used to subtract a value of particular tag from a value of another tag. Value of tag which is to be subtracted is to be defined as Tag B, and the value of tag from which it is to be subtracted is to be defined as Tag A , the result of subtracting values from tag is stored in Tag A. So mathematical operation formed through this task operation is Tag A=Tag A - Tag B. These A or B tag can be either Internal tag or PLC tags defined in Tag Database. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

9) Turn Bit ON:- The task operation is used to Turn On the bit from its previous off state. This task can be executed only on the Bit type/Coil type tag. The tag can be either Internal tag or PLC tag. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

10) Turn Bit OFF:- The task operation is used to Turn Off the bit from its previous on state. This task can be executed only on the Bit type/Coil type tag. The tag can be either Internal tag or PLC tag. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

11) Toggle Bit :- The task operation is used to change the state of bit from its previous state.
This task operation toggles the earlier state. E.g. if Bit/Coil is in Off State then this Task operation will turn it on or vice a versa. This task can be executed only on the Bit type/Coil type tag. The tag can be either internal tag or PLC tag. This task operation can be executed through all Tasks, Tasks(Power on and Global), Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing, While Showing and After hiding Screen).

12) Copy Tag B to Tag A:- The task operation is used to copy a value from particular tag to an another tag. Value of tag which is to be copied is to be defined as Tag B, and the tag in which it is to be copied is to be defined as Tag A , the result of copying is stored in Tag A. These A or B tag can be either Internal tag or PLC tags defined in Tag Database. This task operation can be executed through all Tasks, Tasks (Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing, While Showing and After hiding Screen).

13) Swap Tag A to Tag B:- The task operation is used to interchange the values from two tags. Through this task operation "Swap Tag B to Tag A" , the value from Tag A and Tag B gets interchanged ,i.e. Value in Tag A is displayed in Tag B and Value from Tag B is displayed in Tag A. These A or B tag can be either Internal tag or PLC tags defined in Tag Database. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

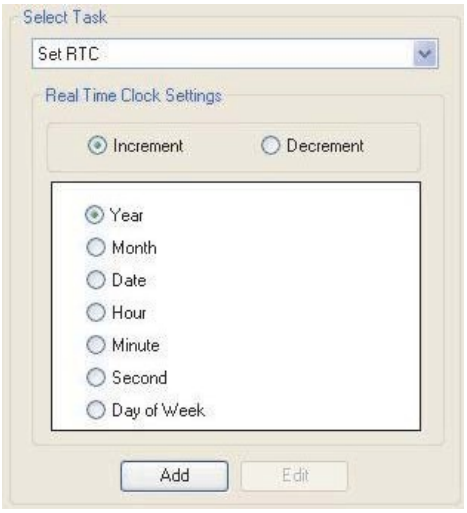
14) Copy FP Block to OIS PLUS/PLC Block:- The task operation is used to copy the values of Consecutive set of unit (Internal) tags to consecutive set of unit (internal)/ PLC Tag. This task operation is useful to copy number
of Blocks at a time instead of copying each tag one by one. Through this task operation either Internal tags can be copied to Internal Tags or in to PLC Tags. The internal tags start address to be mentioned is Tag B and Internal Tag / PLC tags whose start address is Tag A. No of blocks which needs to be get copied at a time is to be defined in "No of Tag Cells". Therefore the Tag A Can be internal or PLC Tag and Tag B can be only Internal Tag. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

15) Copy OIS PLUS/PLC Block to OIS PLUS Block:- The task operation is used to copy the values of consecutive set of unit (Internal)/ PLC tags to consecutive set of unit (Internal) Tag. This task operation is useful to copy number of Blocks at a time instead of copying each tag one by one. Through this task operation either Internal tags can
be copied to Internal Tags or PLC tag can be copied to unit (Internal) Tags. The internal tags start address to be mentioned is Tag A and Internal Tag / PLC tags whose start address is Tag B. No of blocks which needs to be get copied at a time is to be defined in "No of Tag Cells". Therefore the Tag A Can be internal or PLC Tag and Tag B can be only Internal Tag. This task operation can be executed through all Tasks , Tasks(Power on and Global),Key Tasks with local keys or global keys with (Press/Pressed/Released) and through screen tasks (Before Showing ,While Showing and After hiding Screen).

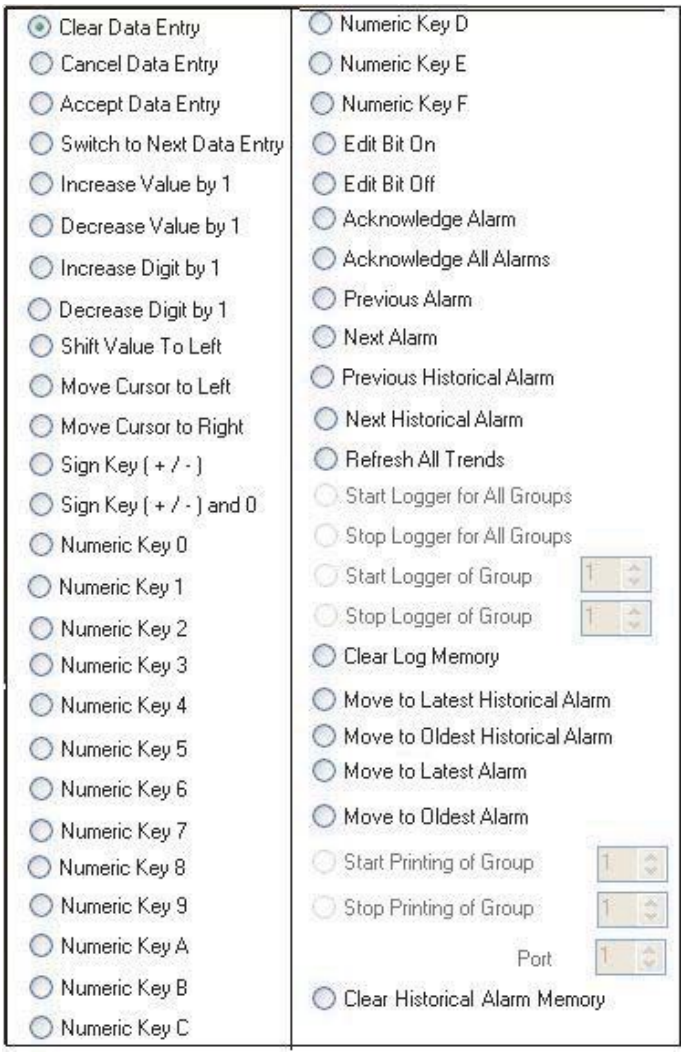
16) Print Data:- This task operation is used to print the alphanumeric data displayed on current unit screen. To execute this task operation user needs to define the port as Serial Printer. This task operation can be executed through Key tasks only. Either through Press Key Task or Released Key Task.

17) SET RTC:- This task operation is used to set the Real Time Clock of the Unit. This task operation can be performed through Key task at Key Press or Key release. Designer will need to define whether to Increment / decrement the Date or time parameters. These parameters gets incremented / decremented by 1. RTC counts

all parameters with reference to Leap year compensation. Designer needs to click Add as Well as OK , so as to define the Key task to particular key.



19) Key Specific Task:- This task operation can be performed through Key Task only. i.e. either at Key press, Key Pressed or Key released. These tasks can be defined to either Global Keys or Function keys. The list of key specific task is as shown in following figure. Key Specific task operations from following list gets enabled or Disabled depending upon the Key task selected.



1. Clear Data Entry: This task clears active data entry value to Zero.
2. Cancel Data Entry: This task disabled data entry.
3. Accept Data Entry: Accepts edited data for current data entry and cursor jumps to next data entry object.
4. Switch to Next Data Entry: Disables previous data entry object and switch to next Data entry object.
5. Increase value by 1: Adds 1 to Tag value in data entry object.
6. Decrease value by 1: Subtracts 1 to Tag value in data entry object.
7. Increase Digit by 1: This task is executed only on a single digit shown by cursor. The digit scrolls between 0 to 9.
8. Decrease Digit by 1: This task is executed only on single digit shown by cursor. The digit scrolls between 0 to 9.
9. Shift Value to Left: This task shifts value to left by adding 0's from right side.
10. Move Cursor to Left: This task moves cursor to left . This task is not scrolling type so cursor moves up to no. of digits in the data entry object.
11. Move Cursor to Right: This task moves cursor to right . This task is not scrolling type so cursor moves up to no of digits in the data entry object.
12. Sign Key(+/-): This task operates only on Signed data. On each event sign toggles between + and -.
13. Sign Key(+/-) and 0: For first iteration this task acts as Sign key. Then for each following iteration, it acts as Numeric Key 0.
14. Numeric Key 0: This task allows user to enter '0' at cursor location , if selected tag is register type. For coil/ bit type, this task acts as 'Edit Bit Off'.
15. Numeric Key 1: This task allows user to enter '1' at cursor location , if selected tag is register type. For coil/ bit type, this task acts as 'Edit Bit On'.
16. Numeric Key 2: This task allows user to enter '2' at cursor location.
17. Numeric Key 3: This task allows user to enter '3' at cursor location.
18. Numeric Key 4: This task allows user to enter '4' at cursor location.
19. Numeric Key 5: This task allows user to enter '5' at cursor location.
20. Numeric Key 6: This task allows user to enter '6' at cursor location.
21. Numeric Key 7: This task allows user to enter '7' at cursor location.
22. Numeric Key 8: This task allows user to enter '8' at cursor location.
23. Numeric Key 9: This task allows user to enter '9' at cursor location.
24. Numeric Key A: This task allows user to enter 'A' at cursor location.
25. Numeric Key B: This task allows user to enter 'B' at cursor location.
26. Numeric Key C: This task allows user to enter 'C' at cursor location.
27. Numeric Key D: This task allows user to enter 'D' at cursor location.
28. Numeric Key E: This task allows user to enter 'E' at cursor location.
29. Numeric Key F: This task allows user to enter 'F' at cursor location.

Note Numeric keys A to F are applicable for HEX data entry only.

30. Edit Bit On: This task operates only on coil/ bit tags. coil/bit is set to 1 from this task.
31. Edit Bit Off: This task operates only on coil/ bit tags. coil/bit is set to 0 from this task.
32. Acknowledge Alarm: This task will acknowledge the first alarm (in top position in the real time alarm window).
33. Acknowledge all Alarm: Unlike the Acknowledge Alarm task this task will acknowledge all active alarms.
34. Previous Alarm: The alarm display position in the real time alarm container is shifted one position up.
35. Next Alarm: The alarm display position in the real time alarm container is shifted one position down.
36. Previous Historical Alarm: The alarm display position in the historical alarm container is shifted one position up.
37. Next Historical Alarm: The alarm display position in the historical alarm container is shifted one position down.
38. Refresh all Trend: It refreshes the historical trend for the new values.
39. Start Logger for all groups: Start the data logger for all the four groups.
40. Stop Logger for all groups: Stop the data logger for all the four groups.
41. Start Logger of groups: Start the data logger for the specific groups (in the range of 1 to 4 groups)
42. Stop Logger of groups: Stop the data logger for the Specific groups (in the range of 1 to 4 groups)

43. Clear Log Memory: Clear data logger memory.

The time required to erase the flash memory:

Flash Size (KB) Approx.	Time to Erase (Seconds)
256	2
512	4
1024	8
2048	16

44. Clear Historical Alarm Memory:
Clear all displayed historical alarm from memory.

44. Move to Latest Historical Alarm:
Alarm display window will show the latest historical Alarm page.

45. Move to Oldest Historical Alarm:
Alarm display window will show the oldest historical Alarm page.

46. Move to Latest Alarm: Alarm display window will show the latest real Alarm page.

47. Move to Oldest Alarm: Alarm display window will show the oldest real Alarm page.

48. Start Printing of Group: To start printing the desired value and information of logged data tag . This section is enabled only if Tag to be printed is defined in Print properties of Data Logger section.

49. Stop Printing of Group: To stop printing the desired value and information of logged data tag. This section is enabled only if Tag to be printed is defined in Print properties of Data Logger section.

50. Clear Historical Alarm Memory:
Clear all displayed historical alarm from memory.

ALARMS

- Defining Alarms
- Using the Alarm Window
- Alarm Definition
- Steps to Create an Alarm
- Alarm Window

6.1 Define Alarms

Alarm will be displayed in the alarm window only if it is defined from the '**Define Alarm**' menu.

There are two categories of alarm

1. **Real time alarms:** Stored & displayed as long as unit power is ON.
2. **Historical alarms:** Stores alarms in memory with battery backup.

> **Note:** Historical alarms are only supported for the units with RTC / Battery backup.

In case of historical alarms the alarms defined with "Historical attribute" are logged till the unit is ON. Then even though you turn the unit OFF & then back ON after few days you can still view the alarms that were present when the unit was ON earlier.

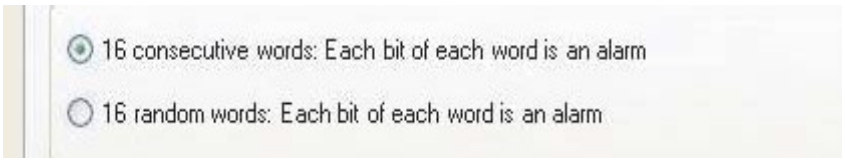
The alarm object displays the alarm text when the alarm occurs. First triggered alarm is on top. Alarm condition for alarm should be cleared. Each alarm has to be acknowledged. 'Acknowledge Alarm' key acknowledges the alarm. The alarm text is cleared when the alarm condition is cleared and the alarm is acknowledged. Alarm text for unacknowledged or uncleared alarms will not be cleared. Any tag can be continuously monitored by defining alarms for each bit of that tag. To display an alarm on the screen as soon as it is triggered, alarm object has to be placed on the screen. An alarm is triggered for each bit in a tag. If the value of the particular tag becomes nonzero, corresponding alarm is displayed in the alarm object.

An alarm is a bit in a particular 2-byte tag. This two-byte tag is defined as a particular group in the alarm definition table. Since a two-byte tag contains 16 bits one such tag can generate 16 alarms. So to define 64 alarms we need to create 4 groups with 4 different two byte tags & define one alarm per bit. In total you can define up to 256 real time alarms and can store 6000 historical alarms.

6.2 Alarm Project Configuration

At project configuration; when you select "Alarm" tab, below shown window is seen:

Step-1: we can define alarms for following 3 different types:



In first 2 options, you can define 16 alarms on each bit of the 2 byte tag. In third option, alarm can be defined on the tag value, it could be either *discrete* tag or *word* tag.

16 consecutive words: Each bit of each word is an alarm: (Default)
For this user must add either system / PLC, 16 consecutive tags (Data registers - 2 byte) to the tag database.

Note: Alarm created under this option are faster than other 2 options. Because in the case of PLC tags, all 16 tags value get access in a single command. But in following options they could become slow because of sending commands in the random way.

At the runtime, when the bit becomes high, particular alarm will get activated.

16 random words: Each bit of each word is an alarm:
There must be 2 byte tag present in the tag database.

256 Discrete Alarms: Each alarm is either a bit alarm (on / off) or a word alarm:
This is alarm can be defined for bit tag or word type tag. This is conditional alarm. Alarm tag can be compared with another tag OR constant value. At runtime when the condition is satisfied then the alarm gets activated.

Step-2: Auto Acknowledge Option
You can select this option when an alarm is activated and the user acknowledges it. This is Bit/Coil tag. Purpose is to handle the alarm in the mutual way. It means system generates alarm and user acknowledge it. In this system user can acknowledge all alarms at once or acknowledge each alarm differently.
Right now alarms can be acknowledged through tag only. User has to write value to the Acknowledge Tag.
The tag list is provided at the Alarm definition level.

Acknowledge All: Define tag which is used for acknowledge to all alarms at once. This is default option.
Selectable: On each created alarm, user can assigned acknowledge tag. This is an optional for each alarm.

Step-3: When Buffer is Full:
This is applicable only for historical alarm memory in the unit. It allows storing 600 alarms in the memory.

FIFO: This option will continue to erase logged historical alarms, when specified memory limit will be filled. It will overwrite the old data. This option doesn't wait for commands from the user nor to define the button "Clear Historical Alarms".

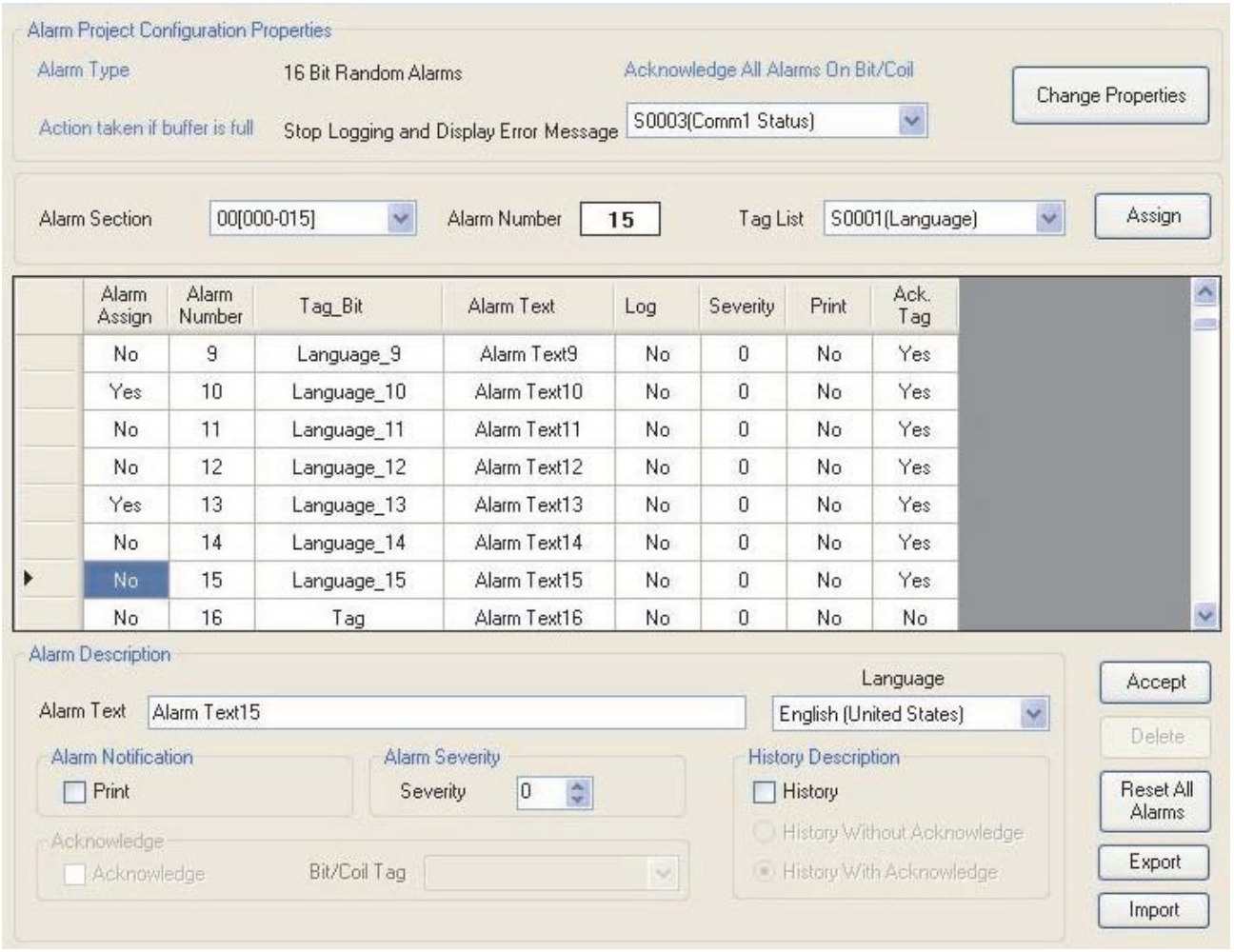
Stop Logging: In this case, if allocated space gets full, then it stops logging the records. For clearing all records from memory, you must define "Clear Historical Alarm" button.

Stop Logging Display Error Message: In this case, if allocated space gets full, then it stops logging the records & displays error the message that you set.

6.3 Alarm Definition

In the project Information window, when you select "Alarm"; below shown window will appear:

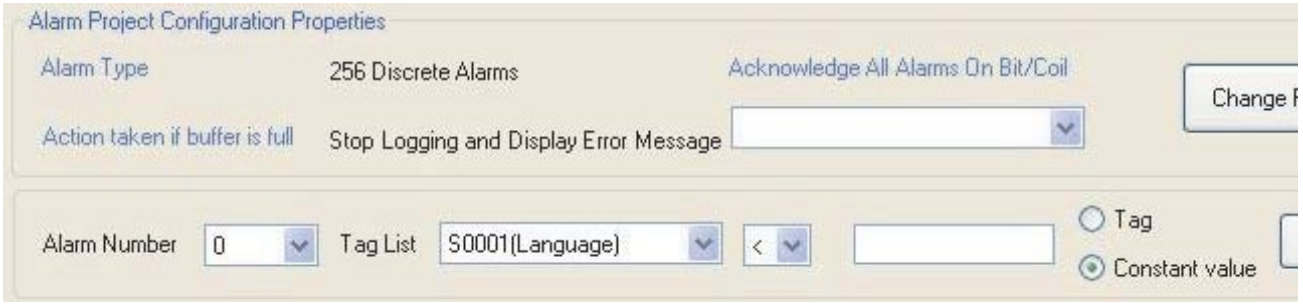
Alarm Type:



Change Properties-
This allows changing the project configuration properties for Alarms. Right now before going to the main dialog, it asks for confirmation whether to delete the current alarms or not. If yes then delete current alarms and allow change the options.
Properties of alarms are as:
16-Consecutive Words Alarms :
Alarm type set to Consecutive alarms. The selected tag shown is the **First word.** Alarm number field shows the selected alarm in the list. **Tag Bit** column shows that the bit of selected tag.

16-Random words Alarms:
Each selected tag act as an Alarm Section / Word. A total of 16 numbers of sections are defined and for each, user can defined 16 alarms on each bit. Used same tag is not allowed for another section/word. According to the selected section, the alarm focus will be set to the particular alarm in the list or vice versa.

Discrete Alarms (Conditional Alarms):
Alarms defined on the basis of conditions. The selected tag can be compare with either constant value or with Tag value. Constant value is limit to 65535. Comparison operators are <, >, <=, >=, == and !=. One more column is added to the data grid list view, i.e. **Alarm Condition.**



Assign:
This button is always used to assign the selected tag to the alarms. In the Consecutive case, the tag list shows the first word of the alarm and after assigning, it starts from first word to the last 16th word.
For example, if user added D0 data register and also Auto add the 16 number of tags; this will create 16 consecutive tags of 2 bytes from D0000 to D0016. This is done to create the 256 (**16 bits of each word X 16 words** i.e. maximum possible number of alarms) alarms and each bit of each word (D0_0 ,D0_1,D0_2,... D0_15,D1_0,...,D1_15,.....D16_15) is defined as an alarm.
For Consecutive alarms, Assign button allows to assign the selected tag as a first word to the 256 alarms.
For 16-Random Words, tags assign to the selected section of 16 bit word. Same Tag cannot be assigned to the other sections.
In the Discrete Alarm, it assigns tag to the particular selected alarm. The same tag can be assigned to more than one alarm.

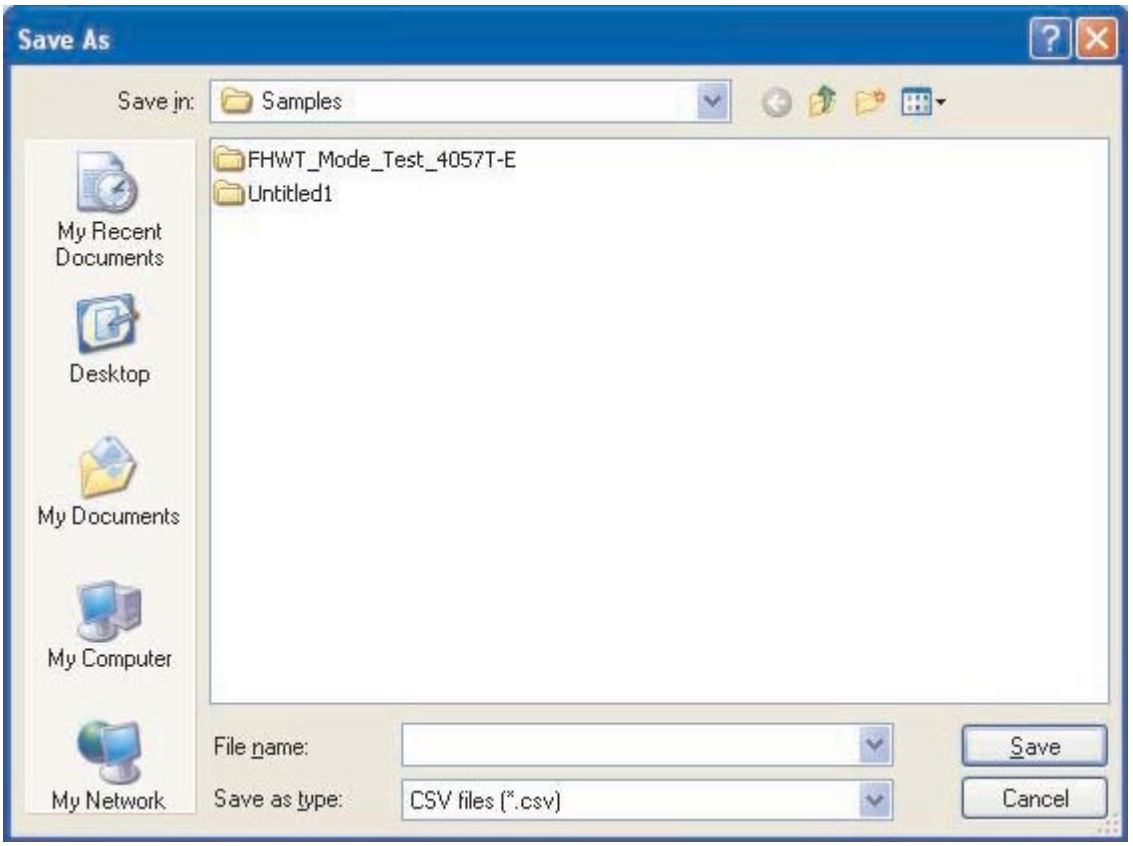
Accept:
This button enables after **assigning the tags** to the alarms (that could be seen in the data-grid view list) and **Alarm Assign column is No.** Before that, user should confirm about the following properties:
Alarm Text, Selected Multi-language, Print, Alarm Severity, History (If selected then Check the Acknowledge box and select the acknowledge tag from list). After Accept , alarm is created and Alarm Assign column shows **Yes**.

Update:
The accept button changes to update button when if already alarm is created. This updates all properties to the selected alarms.

Delete:
This button deletes the selected alarm and reset all the column values in the list view. Before performing this operation, it asks confirmation from the user.

Reset All Alarms:
This will be delete all alarms and reset it to the default values. Before that it asks confirmation.

Export:
This becomes enabled after creating the alarm database. This exports the alarm database into the CSV format. CSV file includes Alarm Project configuration properties, list of alarms. This displays **Save File** dialog as:



Import:
This allows importing the CSV file alarm database.
Before that, please ensure for the following:

a) Project configuration properties must be same.
b) Tag should exist in the tag database.
c) No negative values allowed.
d) Alarm number is not allowed to change.
e) Language should be installed.
f) **Open File** dialog to select the CSV file.
g) Import all alarms and properties and update accordingly in the existing the database.

Multi-language Support:
Alarms supports to the multi-language text. Only that language should be added to the language list. Language list shows the added language and user is able to define alarm text for that language. After writing alarm text for particular alarm, the language Column is added in the data-grid view list. User can write **Alarm Text** up to 40 characters.

Severity:
This can be defined for each alarm to show the alarms in the different alarm window/object. (Alarm window/ object will display only those alarms having equal or greater severity). Range is 0 to 9 and default it is set to 0. (Priority decreases with ascending numbers)

Print:
This provides alarm notification for printing of real time alarms at runtime. After checked, it shows Yes in Print column.

History:
History enables to storing alarms in the defined memory.

History without Acknowledge: - Tag can add in historical container when event occur on that alarm. It moves the position of the alarm in the historical container when more than one event occurs. In this type adding all events on same alarms in historical container without using acknowledge.

History with Acknowledge: - Tag can add in historical container when an event occurs on that alarm. It over write the same alarm position in the container when more than one event occur. In this way use acknowledges all events for the same alarm in historical container.

6.4 Steps to Create an Alarm

1. Go to Project configuration dialog.
2. Select Alarm Type
   16 Consecutive word alarms
   16 Random words alarms
   Discrete alarms (Conditional alarms)
3. Acknowledge: Acknowledge All Selectable
4. If Buffer is full: Erase previous and start from beginning Stop Logging.

6.4.1 16 Consecutive Words Selected

1. Add at least 16 consecutive 2-byte tags to the tag database.
2. If required add multi languages at language tab.
3. Also define Bit/Coil tag for Acknowledge tag.
4. In alarm definition (Alarm list view), select first acknowledge tag.
5. Select First word tag from tag list, which is used for alarms.
6. Press Assign button. The selected tag and its bits get assigned to the 256 alarms.
7. Press Accept button to create the alarms, the Alarm Assign column shows “Yes”.
8. Change the properties and also write alarm text in different languages (if defined).
9. Press Update button to update the properties for selected alarms.
10. If Delete button is pressed then it delete the selected alarm.
11. If Reset All Alarms button is pressed then it deletes all the alarms.
12. Export button export the alarm database to the CSV file.
13. Import CSV to the existing database. Before doing this, first verify that Alarm type and tag in CSV file should be same as in the existing project, otherwise it will shows warning message.

6.4.2 16 Random Words Selected

1. At least one 2-byte tag should be present in the tag database.
2. If required add multi languages at language tab.
3. Also define Bit/Coil tag for Acknowledge tag.
4. In alarm definition (Alarm list view), select first acknowledge tag.
5. Select First word tag from tag list, which is used for alarms.
6. Press Assign button. The selected tag and its bits get assigned to the selected Alarm section / Alarm word. For one section 16 alarms are defined. Each bit in the tag get assigned to the alarms and hence group of 16 bits form one Alarm section or Alarm word. 256 Alarms divided into the 16 Alarm sections.
7. Press Accept button to create the alarms, the Alarm Assign column shows “Yes”.
8. Change the properties and also write alarm text in different languages (if defined).
9. Press Update button to update the properties for selected alarms.
10. If Delete button is pressed then it delete the selected alarm.
11. If Reset All Alarms button is pressed then it deletes all the alarms.
12. Export button export the alarm database to the CSV file

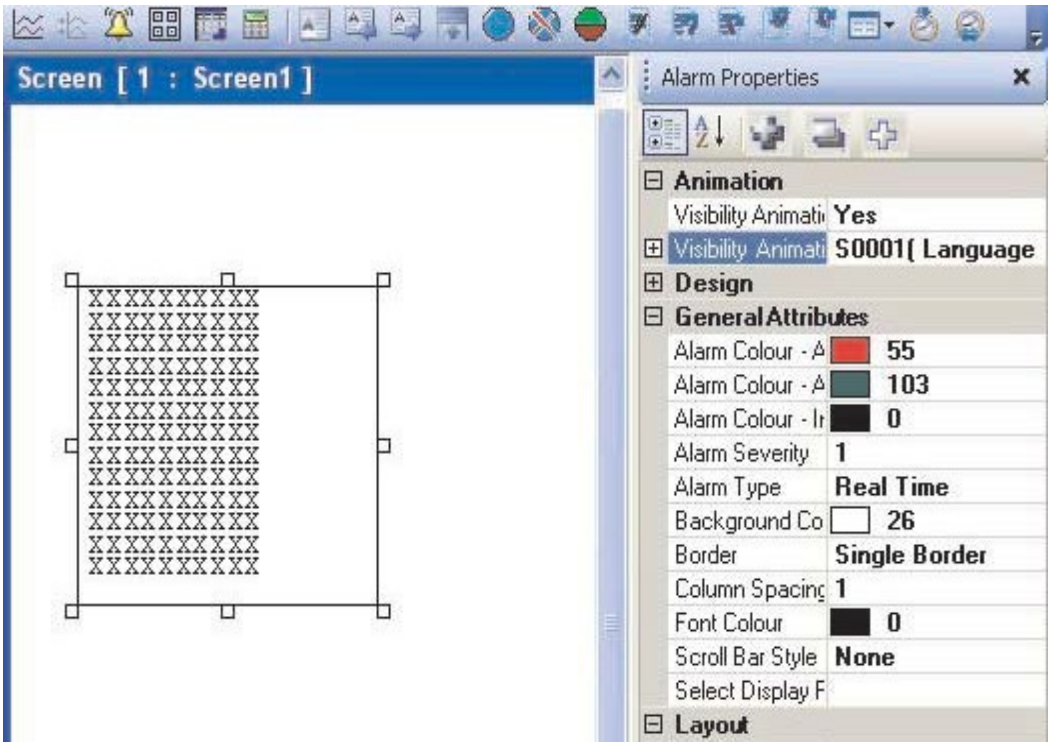
6.4.3 Discrete / Conditional Alarm Selected

1. Discrete / word tag must be present in the tag database.
2. If required add multi languages at language tab.
3. Also define Bit/Coil tag for Acknowledge tag.
4. In alarm definition (Alarm list view), select first acknowledge tag.
5. Select First word tag from tag list, which is used for alarms.
6. Select tag from tag list, comparison operator and compare with either select tag or constant value.

7. Constant value should not exceed more than 65535.
8. Press Assign button. The selected tag, comparison operator and compare with parameter form one condition string and also shown in the column “Alarm Condition”.
9. Press Accept button to create the alarms, the Alarm Assign column shows “Yes”.
10. Change the properties and also write alarm text in different languages (if defined).
11. Press Update button to update the properties for selected alarms.
12. If Delete button is pressed then it delete the selected alarm.
13. If Reset All Alarms button is pressed then it deletes all the alarms.
14. Export button export the alarm database to the CSV file.

6.5 Alarm Window

In the creating “Screen” application, you can create alarm using  button.



General Attributes:

Active and Acknowledge Alarm Color:

You can define alarm color if it is active & acknowledged.

Active and Unacknowledged Alarm Color:

You can define alarm color if it is active & unacknowledged.

Note: These two attributes are applicable to “Real time” alarm type only.

Alarm Order: you can define preferences to alarm

Alarm Severity: you can define severity to specific alarm from 0 to 9

Alarm Type: you can specify type of alarm here.

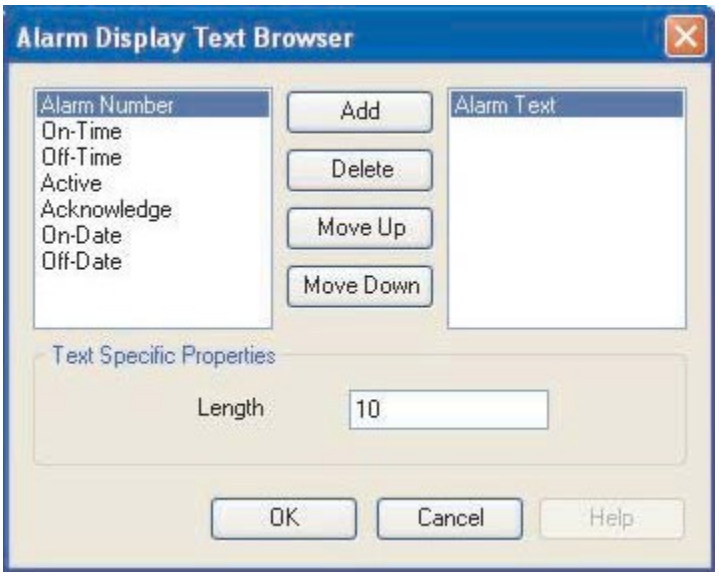
Background: You can define background color for the alarm on screen.

Border: You can select the border as:

Font Color: You can define the color of the font.
Inactive and Unacknowledged Alarm Color:
You can define the alarm color if it is Inactive & Unacknowledged.

Note: This attribute is not applicable to “Historical Alarm”.

Inter Column Distance:
You can define distance between two columns.
Scroll Bar Style: You can set scroll bar appearance to alarm window.
Select Display Field:



This list contains the available columns that can be viewed in an alarm display Text Browser:
1. Alarm Text – Text defined for the alarm.
2. Alarm Number – Number defined for the alarm.
3. ON time – The time at which the alarm made transition from OFF to ON state.
4. Off time - The time at which the alarm made transition from ON to OFF state.
5. Active – The present status of the alarm [Active/inactive].
6. Acknowledge - The status of the acknowledge attribute for the alarm.
7. ON date – The date at which the alarm made transition from OFF to ON state.
8. Off date – The date at which the alarm made transition from ON to OFF state.

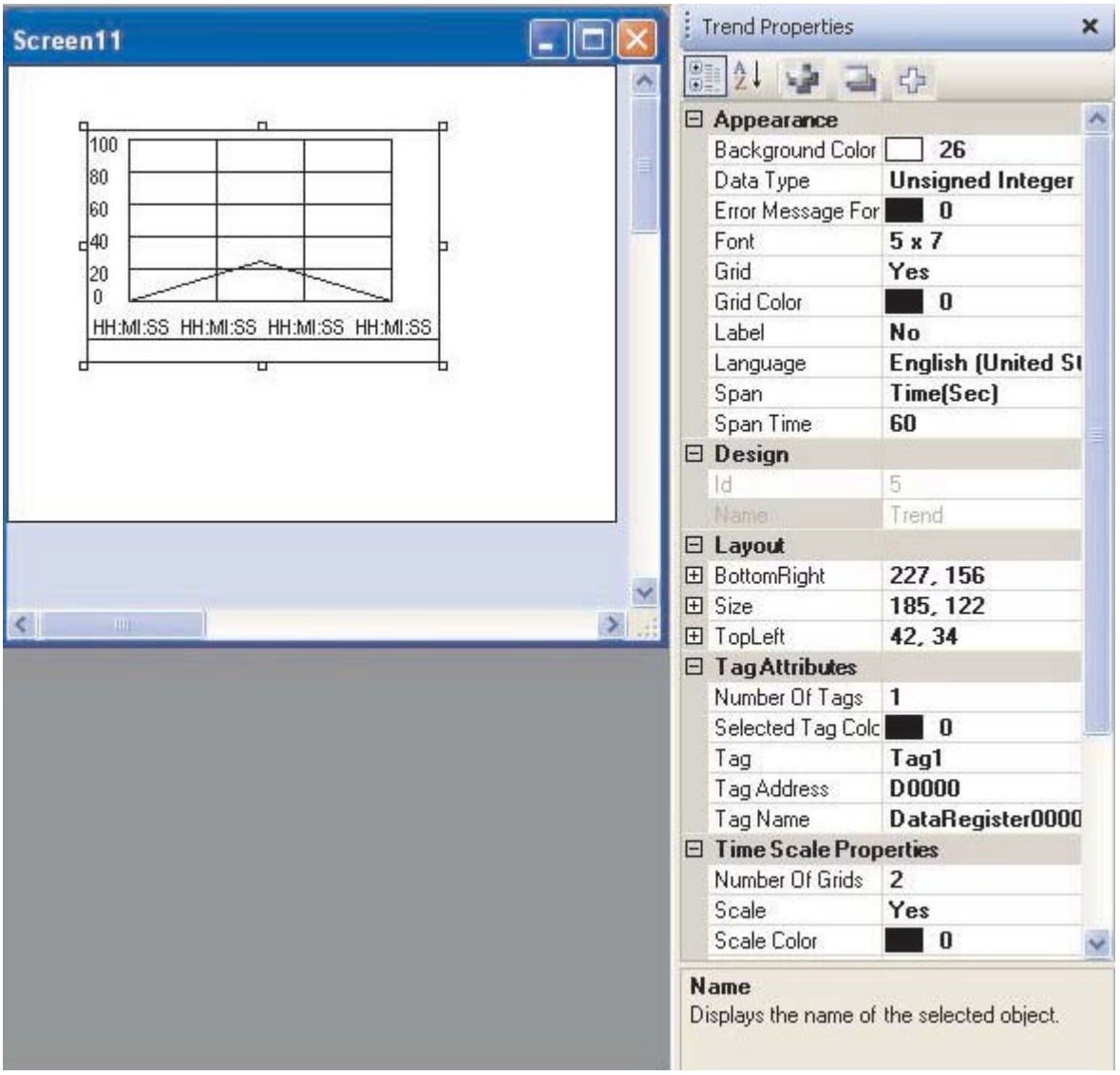
Note: The active and acknowledge attributes are not applicable for historical alarms.

TRENDING

- Real Time Trend
- Historical Trend
- Data Logging

7.1 Real Time Trend

This object is very useful for having a graphical representation of a tag against the real time. The real time is the time of the RTC of the unit. The tag value is plotted in Y-axis & the X-axis represents the time stamps.



Trend Appearance

1. Background Color – User can define background color from color docker window.
2. Data Type – User can have tags of following data types representing values of meter object -
   1. Unsigned integer
   2. Signed integer
   3. Hexadecimal
   4. BCD
   5. Float
3. Error Message Font Color - Color of the error message to be displayed.

Error Message-
The trend object offers the unique feature of specifying the parameter values runtime in the unit by passing through a tag. The trend object does the value validation check runtime & if the values are found invalid then the message related to it, is shown in the message window to let the user know about it.

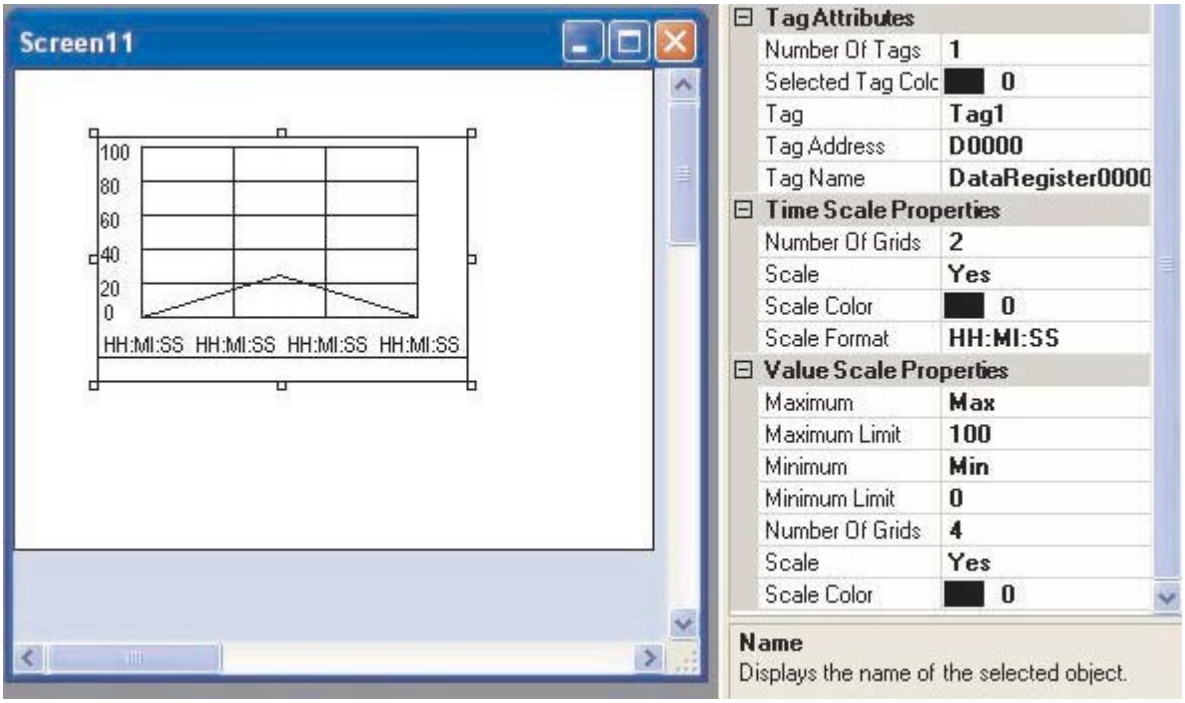
Trend Appearance

4. Font – You can use font size of the text indicating trend parameters.
5. Grid – You can enable / disable grid
6. Grid Color – You can choose color of the grids [if enabled] on the trend object
7. Label – Parameters related to the trend label can be configured here if the Label selection is enabled. (Check box 'Label' is selected).

1. Text - Label text.
2. Font -User can select windows® Font , Font Style and Font size.
3. Language - Display the list of languages depending upon number of languages configured in the Unit Settings.
4. Color - Color of the text.

8. Span Time – This indicated the value in seconds representing the interval on the X-axis, which is the real time axis.
9. Span time Tag – If this option is enabled then user can specify a tag [2 byte], which will correspond to value in seconds representing the interval on the X-axis. User can vary the value of this tag at run time from the display. The trend will be readjusted accordingly.

Tag Attributes



1. No. of Tags – User can assign up to 4 tags. You can define the number of tags to be plotted.
2. Selected Tag Color – The color by which the trend for the tag is represented on the trend object.
3. Tag – Selects the tag to be configured. The 'Tag Attributes' properties should be independently configured for each tag.

Tag Attributes

4. Tag Address – Here tag addresses are displayed which are defined for plotting. The choose address can be
5. Tag Name – This will automatically appears according to tag address.

Time Scale Properties

1. Number of Grids – If the user enables grid option then he can select the number of grids on the Y-axis, which is the time scale. User can assign up to 10 grids on Y-axis
2. Scale – If the scale selection is enabled then the real time stamps are shown on the trend object along the time scale axis.

Scale Format - The time on the X-axis can be viewed in two different formats via HH:MM:SS or HH:MM**.**

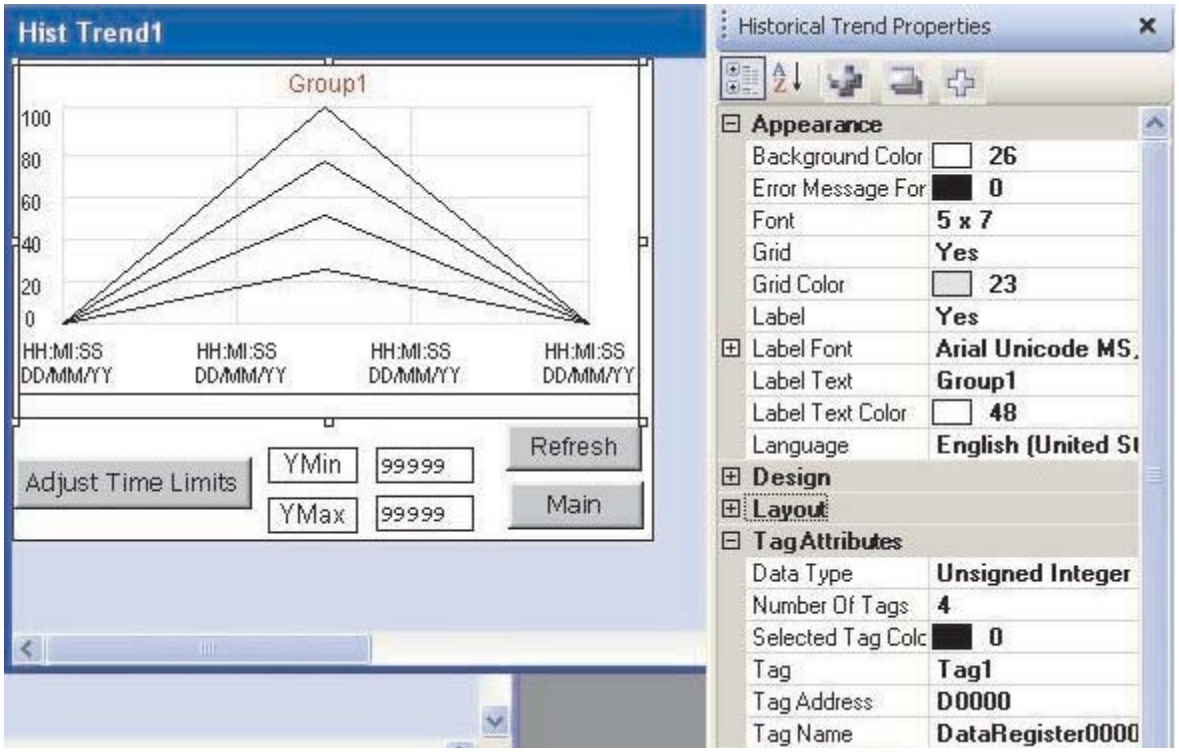
Scale Color - The color of the time stamp values represented on time scale.

Value Scale Properties

1. Maximum – This indicates the higher limit on the Y-axis represented by the top most point on the Y-axis. The range is from 0 to 65535 for a 2 byte integer.
2. Maximum Limit – If the user wants a tag to specify the higher limit at run time through a two byte tag then he can pass the predefined tag to the object.
3. Minimum – This indicates the lower limit on the Y-axis represented by the down most point on the Y-axis. The range is from 0 to 65535 for a 2 byte integer.
4. Minimum Limit – If the user wants a tag to specify the lower limit at run time through a two byte tag then he can pass the predefined tag to the object.
5. No of Grids - If the user enables grid option then he can select the number of grids on the Y-axis, which is the value scale. He can assign up to 10 grids on Y-axis

7.2 Historical Trend

Historical Trending can be enabled only when data logging is enabled.



Trend Appearance

1. Background Color – User can define background color from color docker window.
2. Error Message Font Color - Color of the error message to be displayed.

Error Message-
The trend object offers the unique feature of specifying the parameter values runtime in the unit by passing through a tag. The trend object does the value validation check runtime & if the values are found invalid then the message related to it, is shown in the message window to let the user know about it.

4. Font – You can use font size of the text indicating trend parameters.
5. Grid – You can enable / disable grid
6. Grid Color – You can choose color of the grids [if enabled] on the trend object
7. Label – Parameters related to the trend label can be configured here if the Label selection is enabled. (Check box 'Label' is selected).
   1. Text - Label text.
   2. Font -User can select windows® Font , Font Style and Font size.
   3. Language - Display the list of languages depending upon number of languages configured in the Unit Settings.
   4. Color - Color of the text.

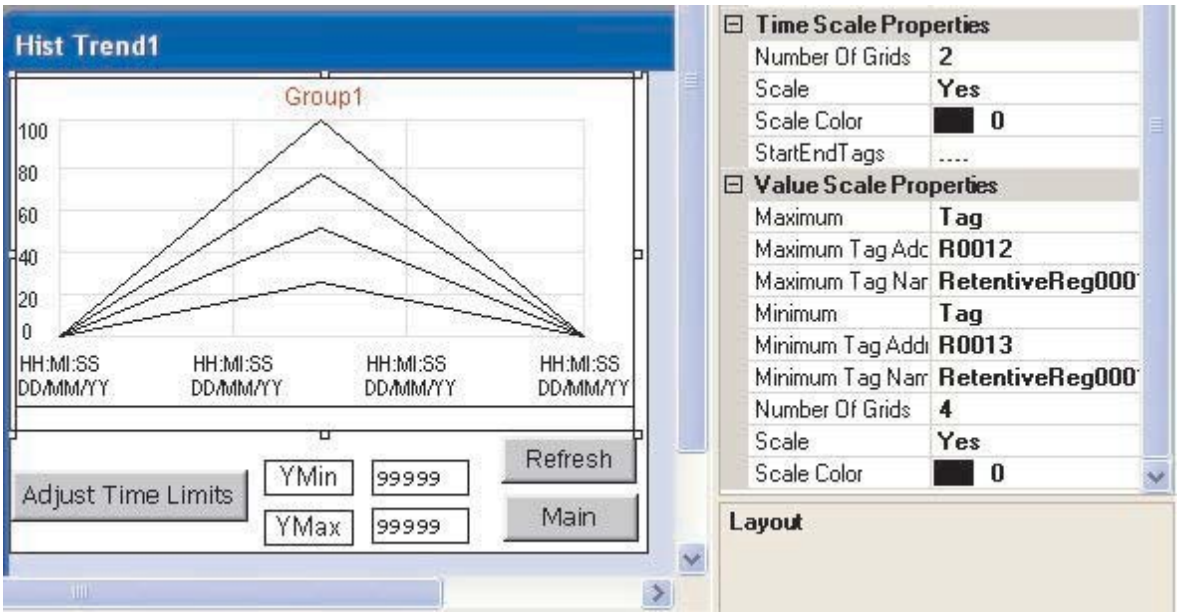
Tag Attributes

1. Data Type – User can have tags of following data types representing values of trend object -
   1. Unsigned integer
   2. Signed integer
   3. Hexadecimal
   4. BCD
   5. Float

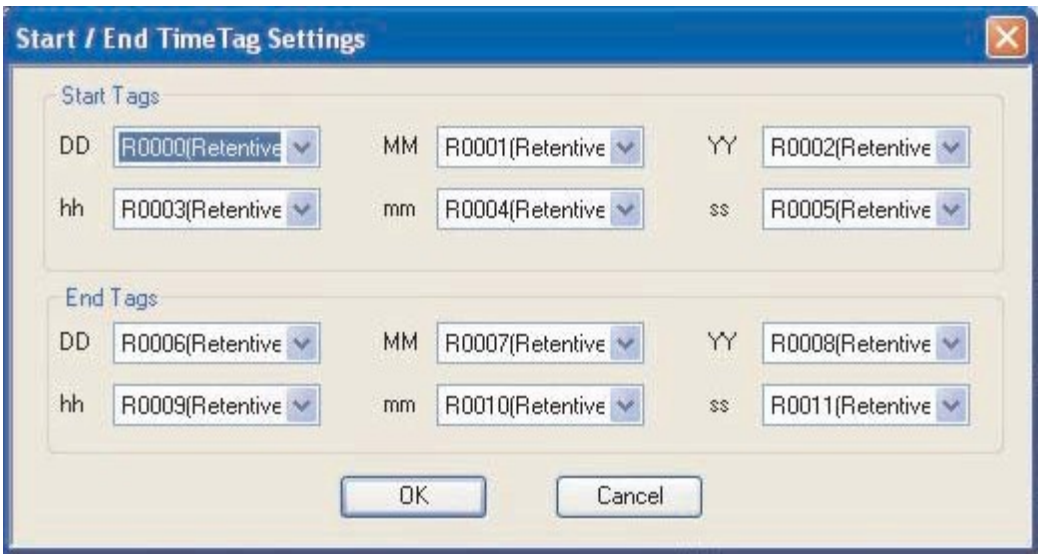
Tag Attributes

2. Number of Tags - This selection box allows user to select the number of tags to be plotted using selected trend object from the logged tags. Maximum value can be four for single trend object.
3. Selected Tag Color - The color by which the trend for the tag is represented on the trend object.
4. Tag - Selects the tag to be configured. The 'Tag Attributes' properties should be independently configured for each tag.
5. Tag Address – User can specify tag address here.
6. Tag Name – This will automatically appears according to tag address.

Time Scale Properties



1. Number Of Grids - If the user enables grid option then he can select the number of grids on the X-axis, which is the time scale. He can assign up to 10 grids on X-axis.
2. Scale - If the scale selection is enabled then the real time stamps are shown on the trend object along the time scale axis.
Scale Color - The color of the time stamp values represented on time scale.
3. Start End Tags - Start / End Time Tags



Time Scale Properties

Start / End Time Tags:
This dialog box allows user to set the start time of the tag with respect to Day, Month, and Year along with Hours, Minutes and Seconds and the End time of the tag with respect to the Day, Month, and Year along with the Hours, Minutes and Seconds.

Value Scale Properties

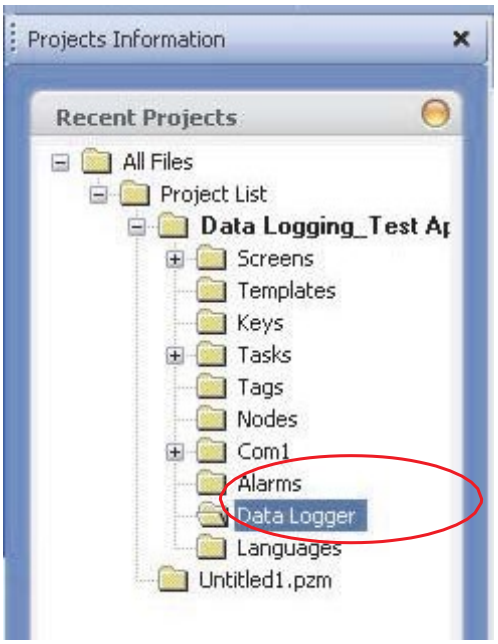
1. Maximum - This indicates the higher limit on the Y-axis represented by the top most point on the Y-axis. The range is from 0 to 65535.
2. Maximum tag address- If the user wants a tag to specify the higher limit at run time through a two byte tag then he can pass the predefined tag to the object.
3. Maximum tag Name - This will be changing with respect to tag address defined as maximum.
4. Minimum - This indicates the lower limit on the Y-axis represented by the down most point on the Y-axis. The range is from 0 to 65535.
5. Minimum tag address- If the user wants a tag to specify the lower limit at run time through a two byte tag then he can pass the predefined tag to the object.
6. Minimum tag Name - This will be changing with respect to tag address defined as minimum.
7. Number Of Grids - If the user enables grid option then he can select the number of grids on the Y-axis, which is the value scale. He can assign up to 10 grids on Y-axis.
8. Scale - If the scale selection is enabled then the value scale stamps are shown on the trend object along the time scale axis.
9. Scale Color - The color of the “value scale” stamp values represented on scale.

7.3 Data Logger

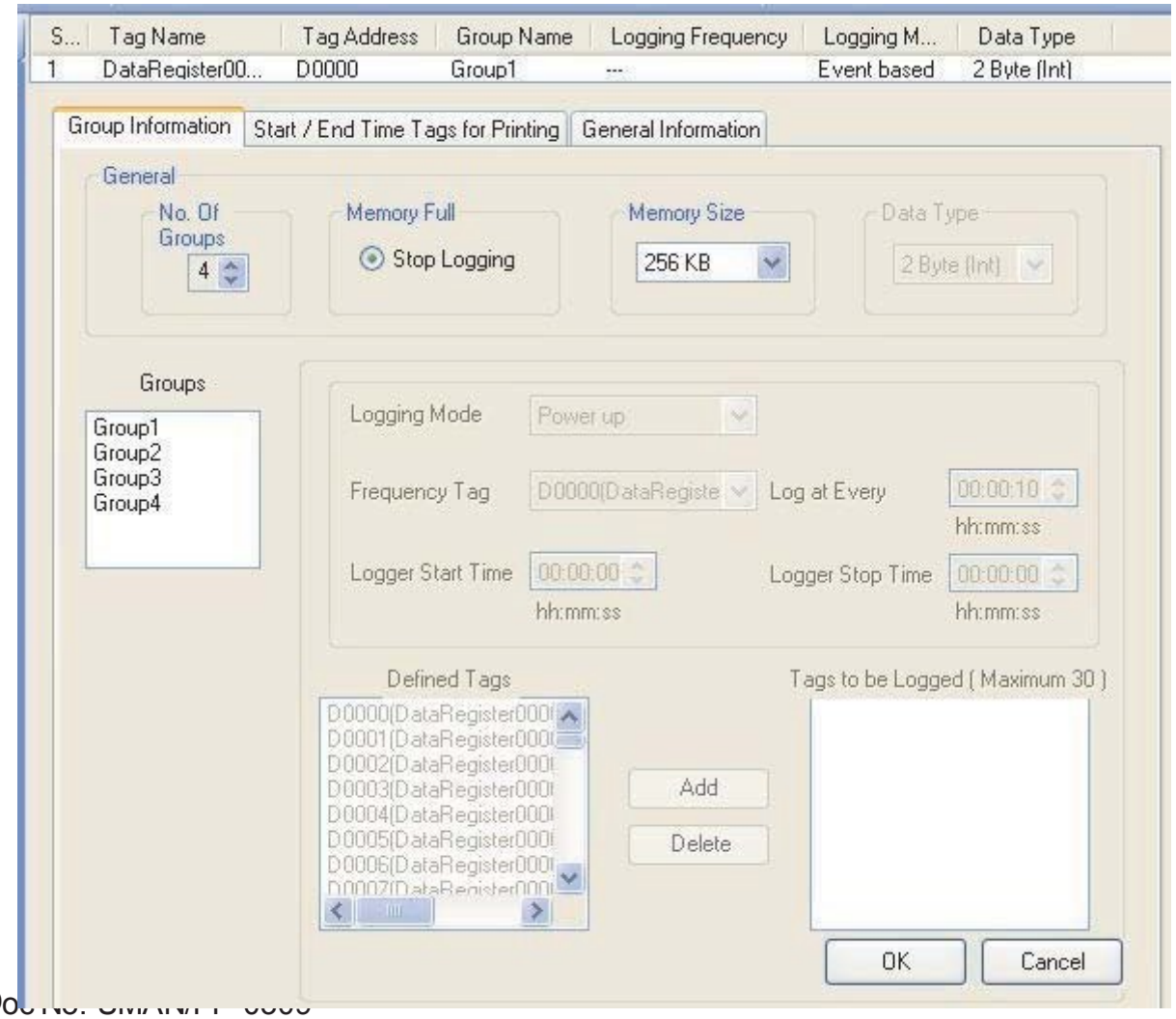
The Data Logger can be used to record the values of tags over time. The data can be viewed using the Historical Trend Object. It can also be uploaded to a computer for analysis.

The Data Logger can be opened from either by choosing **Define | Data Logger** menu option or from the Project Tool Bar as shown below:

OR



The data logger window is shown below:



General Settings for All Groups:

Number of Logger groups: In this feature we can define maximum four groups for the data logging, which are having different logging mode. **Data Type of Log Data:**
User can log only following type of data
(i) 2 Byte Integer
(ii) 4 Byte Integer
(iii) 4 Byte Float

After Memory is full; action to be taken as:
Stop Logging:
The logger will stop logging new data when the specified memory limit given for it will be completely filled.

Logger memory size:
For OIS PLUS models:
(i) 256 Kb
(ii) 512 Kb
(iii) 1024 Kb
(iv) 2048 Kb

Note 1: - All the settings chosen -Memory size, Data Type of logger tags, and Action after memory full - will be common for all groups
Note 2: - Any type of change in settings will require previous logged data in unit to be erased.

A group specific setting is given below:

Logging Mode:

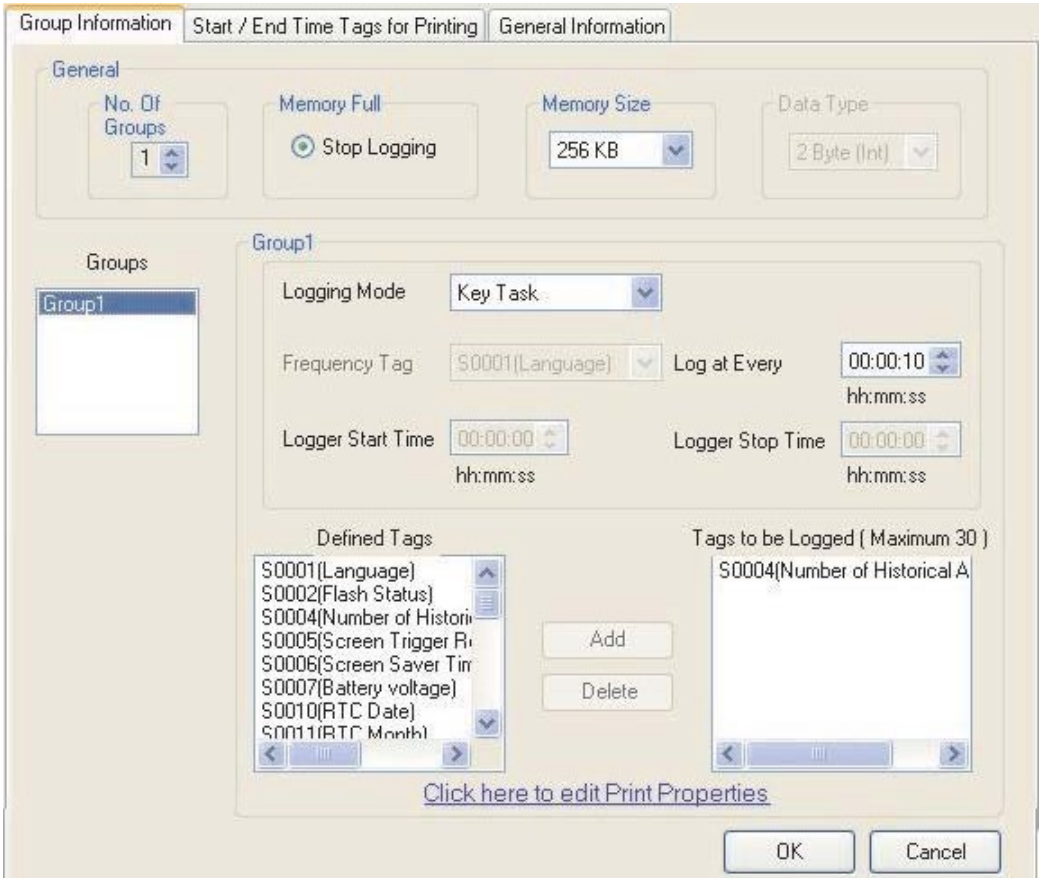
There are different five modes. User can choose one of the groups dragged as:

(i) **Power Up**: The power on will start the logging for the defined tags for the group

(ii) **Start/Stop Time** :

The logging will start and stop depending on the values of "Start Time" and "Stop Time" provided by the user at configuration time. The values are provided in HH:MM:SS format.

(iii) **Key Task**: In this mode, data logging can be started and stopped using a bit button having the proper Key's Specific Tasks

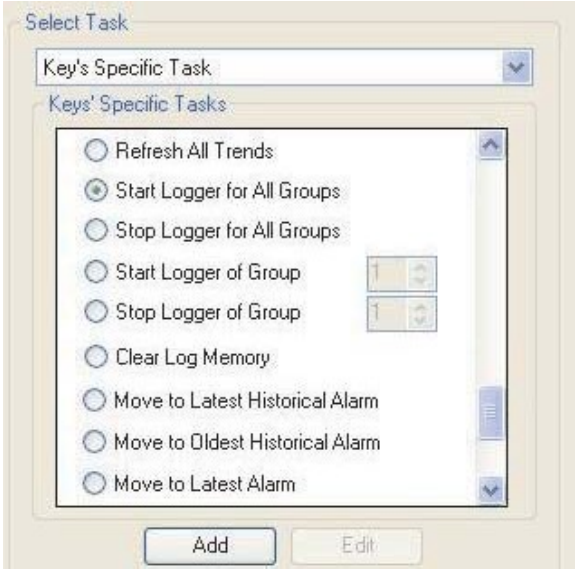


The time interval for data is set in the 'Log at Every' window. This window is applicable for all the modes. The default time is 10 seconds.

Logger's Start time and Logger's Stop time windows are available only for the Start/ Stop time mode.

For each group, define the tags that should be logged.

For Key Task mode logging, bit buttons should be created to handle various logging needs. The Key Specific Tasks should be assigned to the button's task list.



(iv) **Bit Task**: A bit status will make the logging On and Off. The bits s27, s28, s29, s30 are assigned to group 1 to 4. The specific bit should be made on for the particular group.

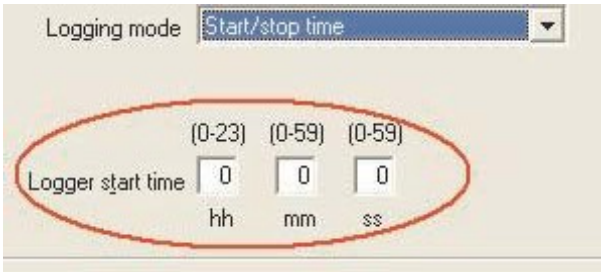
(v) **Event based**:

1. Logging Bit: User can select the bit whose event should be considered for logging the specified tags. The logging bit is only Internal bits of OIS PLUS unit memory. The bits which are defined in the application are shown in the drop-down box.
2. Logging Event: There will be three options for logging event based on which logging will be done.
   a. Positive Edge: Whenever the Log Bit Transition will be from Low to High the data will be logged.
   b. Negative Edge: Whenever the Log Bit Transition will be from High to Low the data will be logged.
   c. Both Edges: If Log Bit will transit from Low to High or High to Low the data will be logged.

"Log at every" parameter:

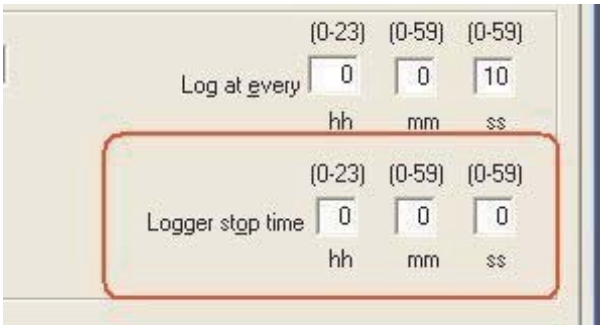
This is used to decide the time between to logs. This is applicable to only first four modes. In Event based mode logging depends on event occurred so this time is not taken into consideration. Minimum time between two logs can be 1-second.

"Logger start time: Set parameter



This is used only for "Start/Stop time mode". The start time of the logging is to be provided here. The time is in HH:MM:SS format.

"Logger stop time" parameter:



This is used only for "Start/Stop time mode". The stop time of the logging is to be provided here. The time is in HH:MM:SS format.

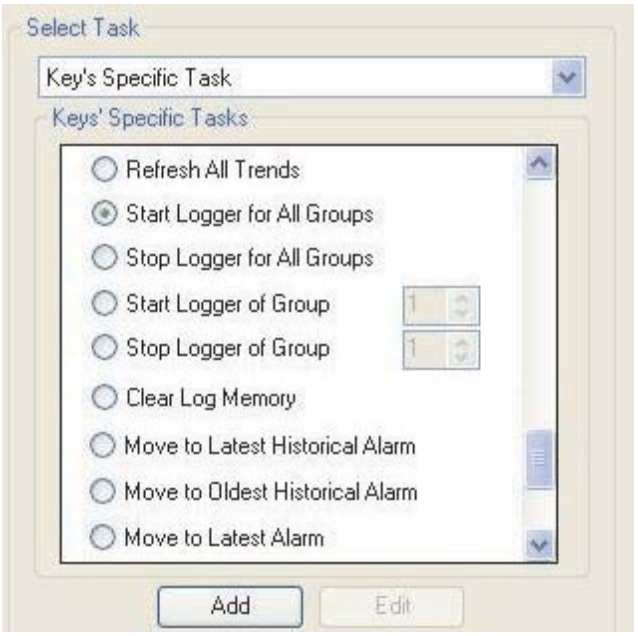
"Defined Tags" parameter:

The tags defined in the present application will be shown in this window. User can highlight the particular tag with a mouse click and by using "Add" button he can add the tags to the " Tags to be Logged (Maximum 30) " window.

"Tags to be logged" window:

By using "Add" and "Delete" button we can add or remove the tags respectively to be logged for particular group. Only the tags that are shown in this window will be logged for the specific group. Maximum 30 tags can be logged for a group.

To clear the logged data, and to assign keys for start and stop in Key specific task; user can use the Key's specific tasks window as shown below:



The following tags can be used to see the status of the logger memory:
1. S2 – Flash memory Status register.
2. S003_00 – Flash memory full status bit. On when flash will become full.
3. S003_01 – Flash memory clear status bit. On when flash will become clear.

7.4 Data Logger Printing

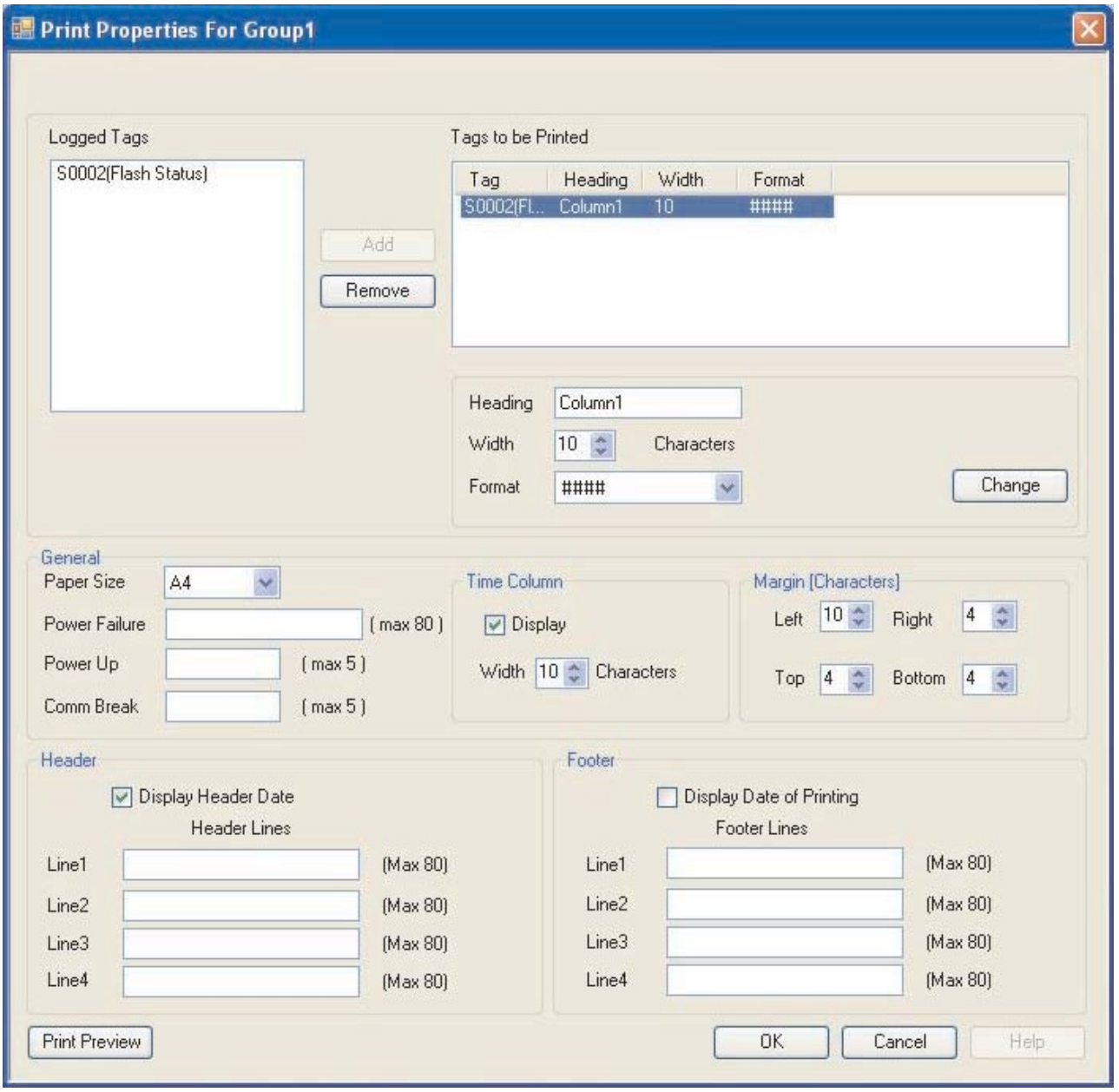
User can use this feature only if data logging is added in application.

To use this feature please go through following steps :
Example is given for single group. Log data printing for multiple groups is also possible.

Step 1: In Group Information
Select "Group1":
Select logging mode.
Make a list of tags to be logged. Here all tags should be of same size. Now user can go for " Print Properties".

Note: This logging mode "Logging with run time Frequency" is only supported for "Group1" .

After click on "Print properties" below shown window will appear:



1. Logged tags: User can select any tag with any order from the Logged tag list for printing.

2. Tags to be printed: User can set the table properties by Column heading, column width and printing format of tag.

3. General:
   Paper size is fixed to A4.
   If unit is switched off for some duration, for that many intervals power failure message will print.
   Power up characters will print with the first logged data after the unit gets power.
   Communication break characters will print only with PLC tags. If there is no communication between PLC and unit then previously logged value is repeated for next time intervals with communication break character.

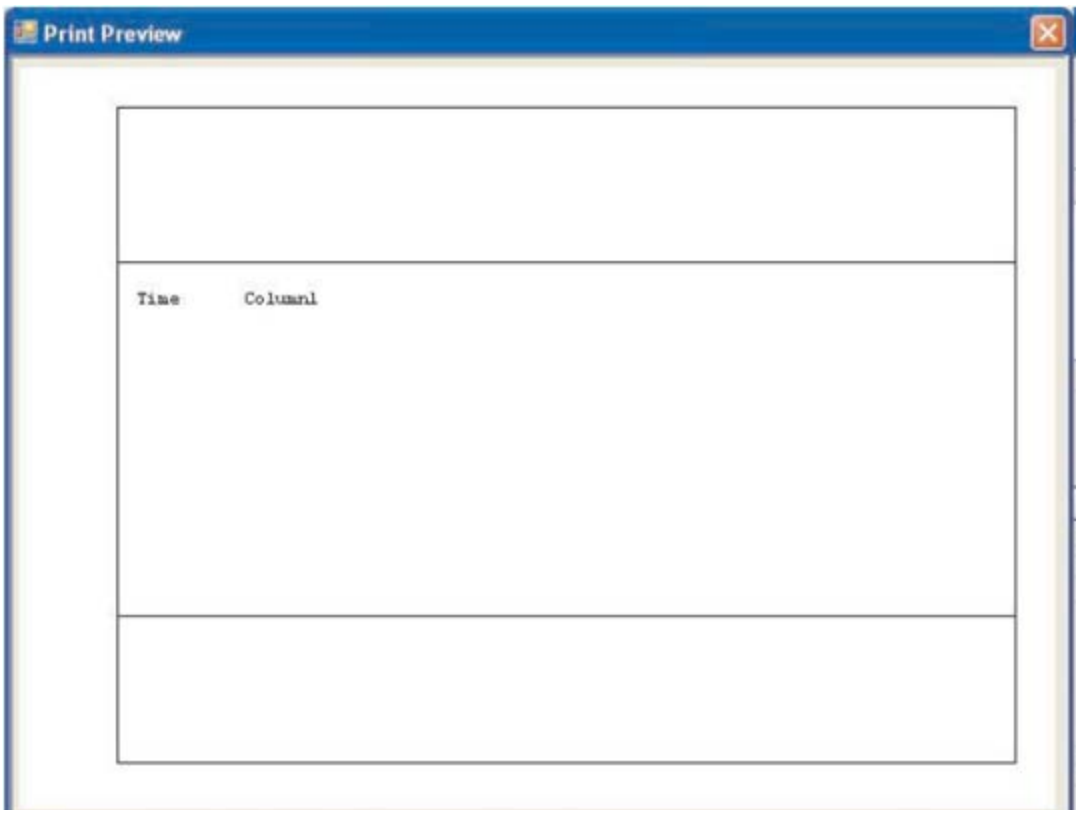
4. Time column: If user wants to add time column in table , he can add it by selecting the check box. Enter sufficient column width to display Hr:Mn:Sec.(00:00:00)

5.Margin (characters): This is related to paper margin for four sides in printer character size.

6. Header: User can give maximum 4 line header for each page. He can add Date of log data in header.

7. Footer. User can give maximum41ine footer for each page. He can add Date and time of printing in footer.

8. Print Preview: User can see the print preview as shown below.

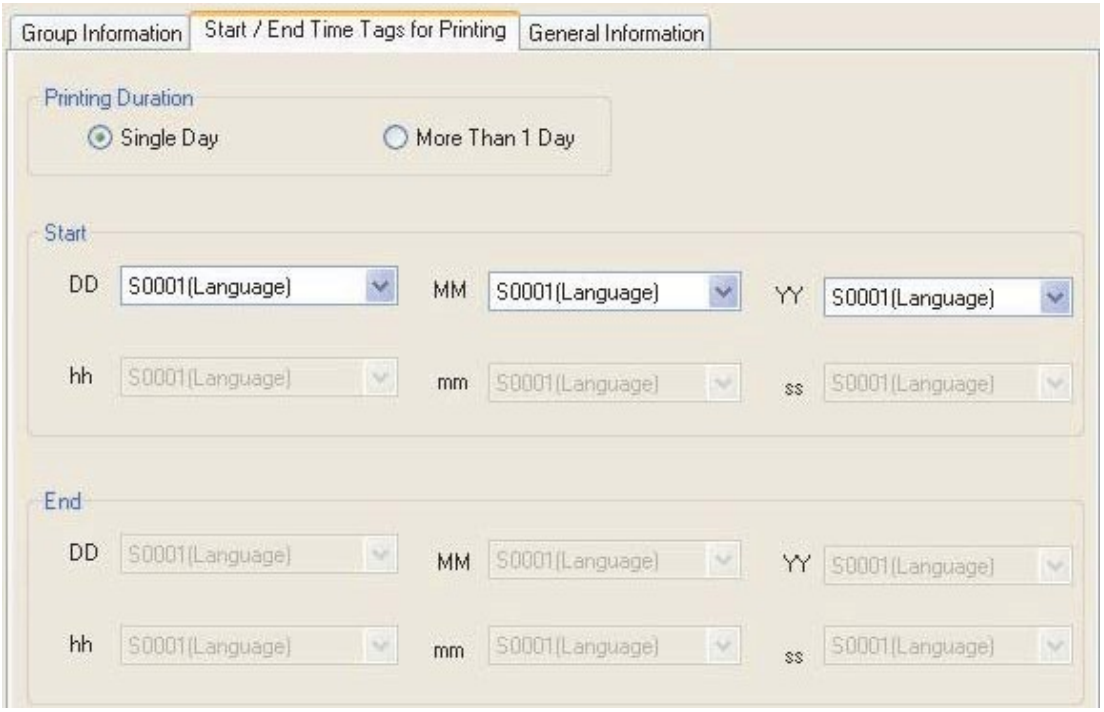


Step 2: In Group Information

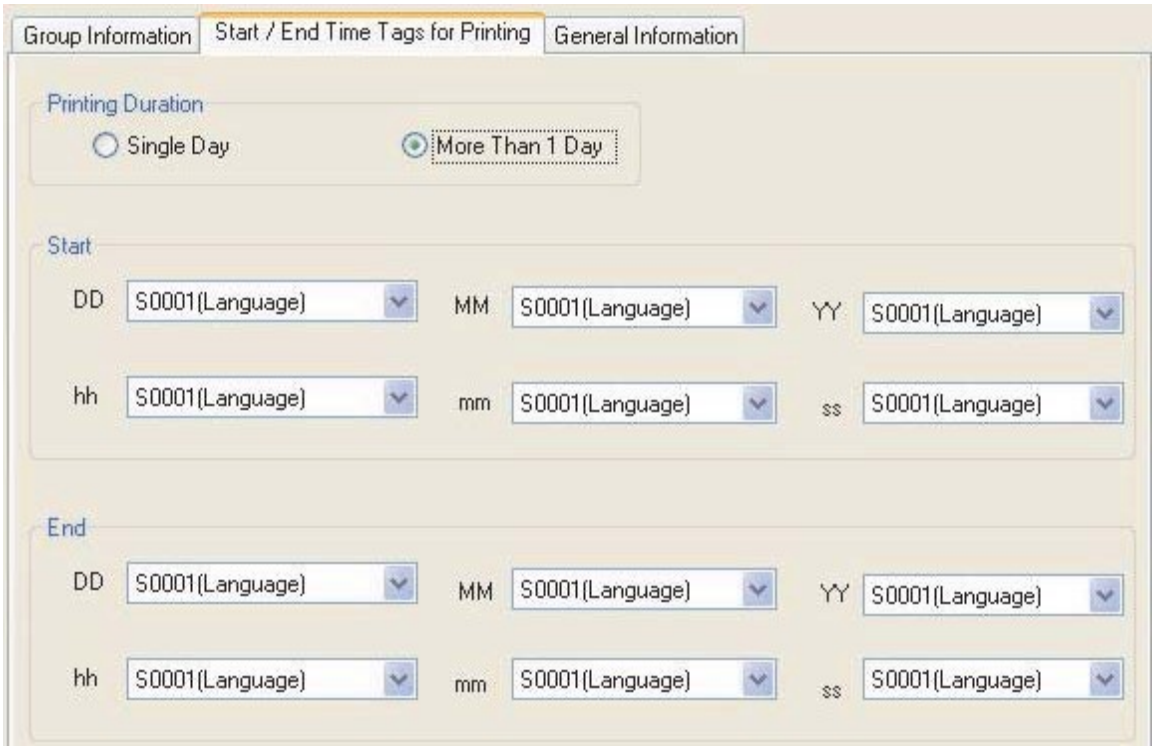
For other three groups:
Select group. Select Logging mode. Add defined tags to be logged and go to print properties.
Select logged tags to be printed. Select Data type.

Note: For 2 byte integer & 4 byte integer, user can select any type of data except “Float”.
For “Float” type integer, user can select only “Float” type data.

Step 3: In “Start / End Time Tags for Printing” tag
Select Printing duration.
If user selects “ Single day “ option, then user can get printout for selected day only.
User can enter date (DD) , month(MM) and year(YY) in selected tags at run time. Here default time is from 00:00:00 to 23:59:59.



If user selects " More than 1 day " option, then user has to enter start date / time and End date / time in appropriate tags as given below.



To print Log data user has to add button task as shown below:

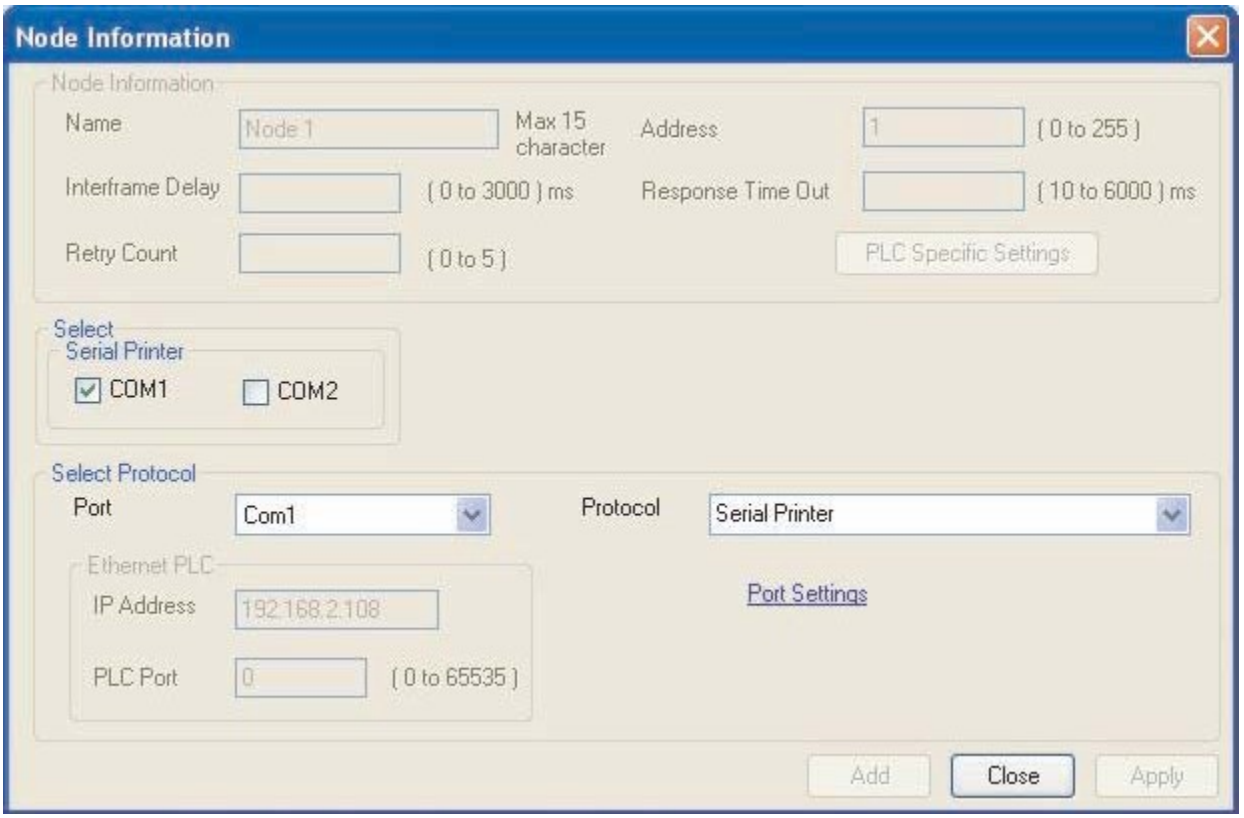
User can take group wise printing by giving the group number and the print port . But while processing this, please ensure that selected port should be defined as a serial printing port.
User can stop printing at any instance of printing by giving stop printing of group task to button.

PRINTING

- Printing from OIS PLUS
- Printing Port Setup
- Printing from OIL-DS Configuration Software

8.1 Printing from an OIS PLUS

Configure printing port by selecting Baud rate, Parity and Number of Bits from Node Information window.



1. Presentation of screen on printer page decided by No of Columns, Terminating Char and Max chars per screen.
2. Number Of Columns: By default this field is set to 80. But user can set any value up to column width of printer. Maximum limit is 255.
3. Terminating Characters: By default this char is NONE, Options are given below –
   NONE : No characters.
   CR : Carriage returns.
   LF : Line Feed.
   CR + LF: Carriage return + Line Feed

   OIS PLUS unit will send selected terminating character after completion of number of characters decided in No of column field.

4. Max Characters per screen: By default this field shows max for 5x7 font characters present on one screen. User can select how many characters he wants to print from screen. Please note that user can't select starting location for printing, it is always considered as a top left of the screen.

Examples:
Considering Printer column width is 80.

1. **No Of Columns** - 80
   Terminating Char - NONE
   Result - After printing 80 chars, carriage of printer comes to next New line automatically.
2. **No Of Columns** - 50
   Terminating Char - NONE
   Result - As there is no terminating char , printer will print continuous 80 char from screen and then carriage of printer comes to next new line automatically.
3. **No Of Columns** - 50
   Terminating Char - CR
   Result - After printing 50 chars carriage will return to starting location of same line.

4. **No Of Columns** - 50
   Terminating Char - LF
   Result - After printing 50 chars, printer will insert 1 blank line of column width. And from same location next 50 chars will print.

5. **No Of Columns** - 50
   Terminating Char – CR + LF
   Result - After printing 50 chars , printer will insert 1 blank line of column width and carriage will return to home position.

Note: Printer can print 5x7 font in same proportion. But if user selects larger font size, then number of spaces will be inserted in two characters as per font size.

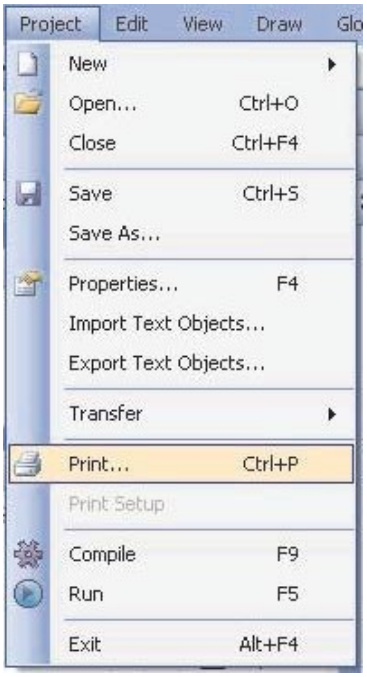
8.2 Printer Port Setup

A printer port can be set through Node Information.
Select Serial Printer in the Node Information and when you click on Com Settings, following window appears.

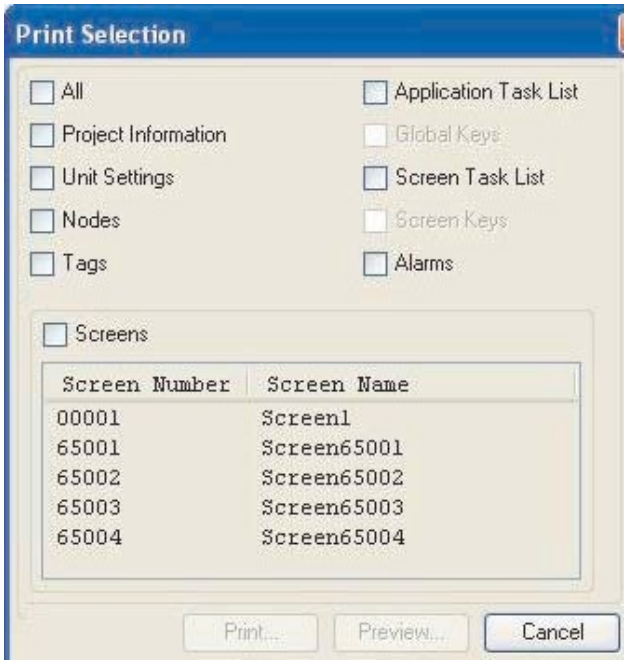
The parameters for setting up the printer are:
1. **Baud Rate**: Supported Baud Rates are 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K & 187.5K.
2. **Parity**: Parity can be None, Even or Odd.
3. **Number of bits**: Number of bits can be 7 or 8.
4. **Terminating Character**: Terminating character can be None, CR (Carriage Return), LF (Line Feed) or CR+LF.
5. **Printer columns**: Number of columns can be minimum 1 to maximum 255.

8.3 Printing from OIL-DS Configuration Software

Select the **Project | Print** menu option to print the OIS PLUS application.



Select the items that user wants to print.

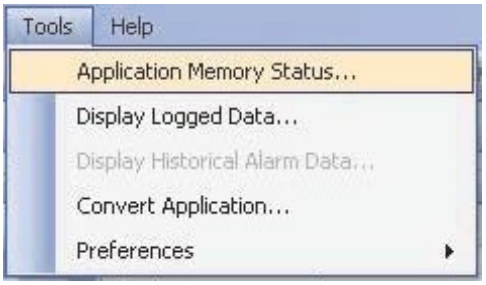


MISCELLANEOUS

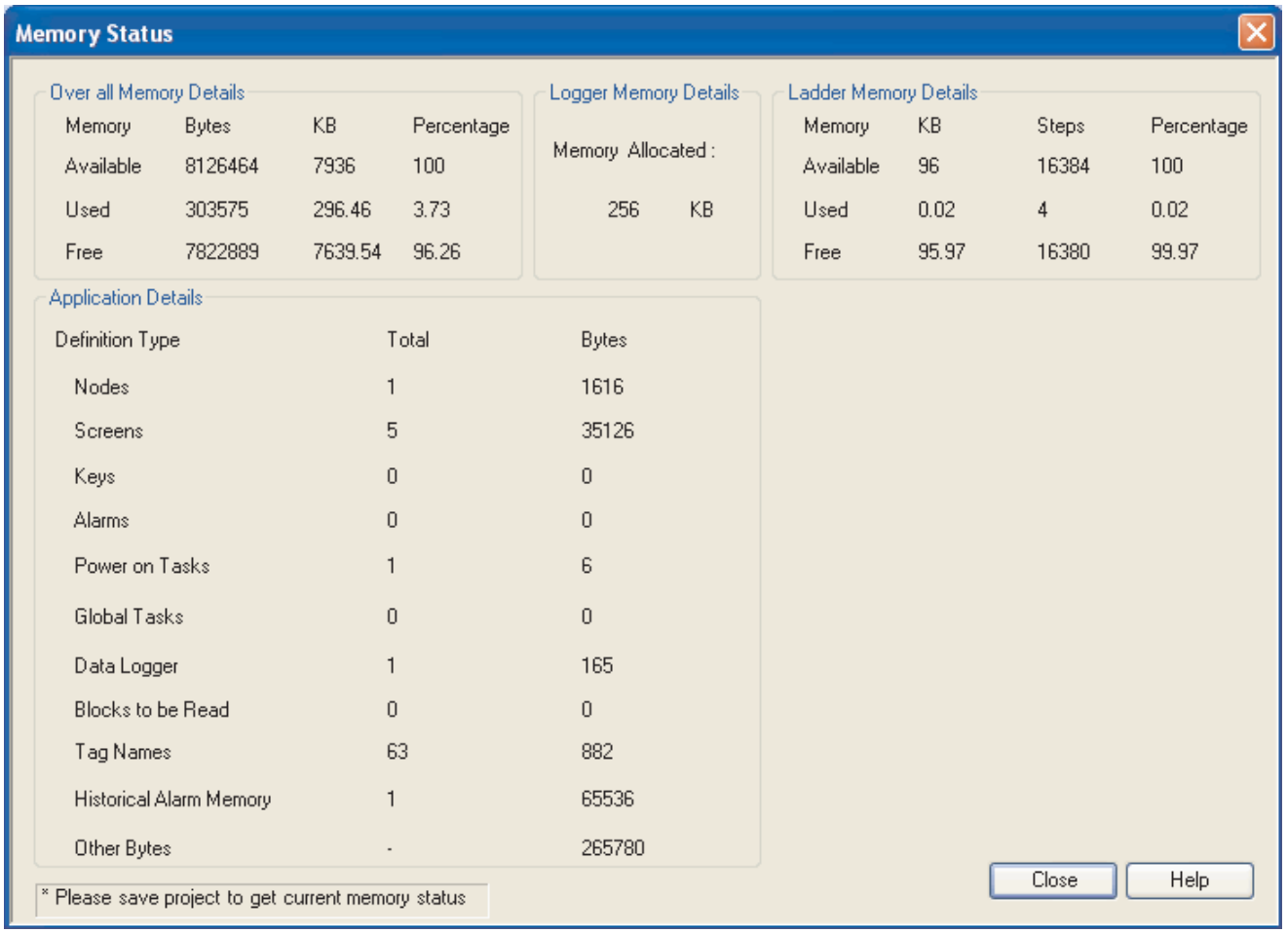
- Application Memory Status
- Real Time Clock Calendar
- Templates
- USB Driver Installation
- Visibility Animation
- Selecting Tricolor Backlight

9.1 Application Memory Status

User can see the memory status of his application from Memory Configuration Wizard. It gives information about the available memory of the application, the used memory in the application and the free memory in terms of Bytes, KB and percentage.



Memory Configuration Wizard can be opened from **Tools | Application Memory Status...** menu.
After Selecting "Application Memory Status..." following window will be displayed:



The above window displays the information about overall Flash memory, Logger memory details and application details.

Over all Memory Details: Shows total available memory, used memory and free memory in Bytes, MB and in percentage.
Logger Memory Details: Shows total logger memory allocated by designer for Data Logging.

Application Details: Shows details about the overall application The detail information of Application with Definition Type(of objects/Tasks), Total number of (Objects/Tasks) and Bytes (memory information utilized by object/Task).The detail information displayed are as follows

a) Nodes:- Displays information of total number of nodes configured in "Nodes" section , with its memory information in Bytes. Operator Panel OIS PLUS is also one node.

b) Screens:- Total number of Screens defined in application project, with its memory information in Bytes. Popup Keypad are also included this.

c) Keys:- Total number of Global Keys used to execute some task, with its memory information in Bytes. Two Simultaneous Keys used is also considered as single key.

d) Alarms:- Total number of alarms defined in Alarm Section of application project, with its memory information in Bytes.

e) Power on Task:- Total number of Tasks assigned in Power on Task Section in particular application project, with its memory information in Bytes.

f) Global Tasks:- Total number of Tasks assigned in Global Task Section in particular application project, with its memory information in Bytes.

g) Data Logger:- Information of memory in bytes used for selection of information used in Data Logger Section.

h) Blocks to be Read:- Total number of blocks used in application, with its memory information in Bytes

i) Tag Names:- Memory information in Bytes required for name of the tags assigned in Tag Data base.

j) Historical Alarm Memory:- Maximum memory in bytes allocated for historical alarm.

k) Other Bytes:- Information of memory in application other than above features.

9.2 Real Time Clock (RTC)

The entire OIS PLUS series has built in Real Time Clock (RTC). This clock has battery backup.
In the absence of power, the battery will retain the clock settings.
The time and date information is available through Default System Tags defined in Tag Database.

Tag No	Tag Name	Port	Tag Address	Byte(s)	Node Name	Tag Type
32	Unit default gateway hi word	-	MW0038	2	Operator Panel	Default Tag
33	Carry bit	-	S00000	bit	Operator Panel	Default Tag
34	Invalid RTC date entry	-	S00019	bit	Operator Panel	Default Tag
35	COM1: failed node reconnect control	-	S00021	bit	Operator Panel	Default Tag
36	COM2: failed node reconnect control	-	S00022	bit	Operator Panel	Default Tag
37	COM3: failed node reconnect control	-	S00023	bit	Operator Panel	Default Tag
38	Ladder instruction error status	-	S00034	bit	Operator Panel	Default Tag
39	COM 3 status	-	SW0003_13	2	Operator Panel	Default Tag
40	COM 1 status	-	SW0003_14	bit	Operator Panel	Default Tag
41	COM 2 status	-	SW0003_15	bit	Operator Panel	Default Tag
42	RTC day of month	-	SW0010	2	Operator Panel	Default Tag
43	RTC month	-	SW0011	2	Operator Panel	Default Tag
44	RTC year	-	SW0012	2	Operator Panel	Default Tag
45	RTC hour	-	SW0013	2	Operator Panel	Default Tag
46	RTC min	-	SW0014	2	Operator Panel	Default Tag
47	RTC sec	-	SW0015	2	Operator Panel	Default Tag
48	RTC day of week	-	SW0016	2	Operator Panel	Default Tag
49	Scan time register	-	SW0017	2	Operator Panel	Default Tag
50	COM1: failed node reconnect time (sec)	-	SW0018	2	Operator Panel	Default Tag

The tags assigned for RTC are as follows:

Sr. No.	Bytes	Tag Name	Permission
1.	2	RTC-Date	Read Only
2.	2	RTC-Month	Read Only
3.	2	RTC-Year	Read Only
4.	2	RTC-Hour	Read Only
5.	2	RTC-Min	Read Only
6.	2	RTC-Sec	Read Only
7.	2	RTC-Day of Week	Read Only

An application can make use of these Default System Tags for displaying and for decision making.
These default system registers are Read only (as shown in table), so you cannot write anything to these registers.

RTC Task present in Tasklist
Set RTC :- User can edit RTC (Real Time Clock) registers of the OIS PLUS unit. This task increments selected RTC register at a time for one instance. User can edit Year / Month / Date / Hour / Minutes / Seconds / Day of the week. User must place a Time /Date object on the screen for editing the RTC. This task is supported in key tasks only. This task is available in Task lists with Key Task(either Function Key or Global Key) only. These tasks either can be assigned to Hardware key or Bit Button key. RTC counts all parameters with leap year compensation so no miss of any Date / time with change in leap Year.

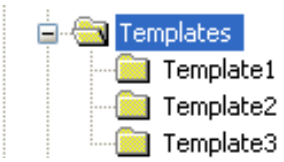
Copy RTC to PLC:- This task is supported only in Global task-list. This task copies sequentially 7 RTC parameters from selected tag after every specified RTC Download Time. If this time is specified as 0 seconds then it means this task will be executed as per
Global task-list execution time. Click 'OK' to add task in task list.

7 RTC parameters are copied in the PLC Tags starting from the First PLC Tag (IR00000 as shown above) following sequence:
1st Tag - Hours
2nd Tag - Minutes
3rd Tag - Seconds
4th Tag - Date
5th Tag - Month
6th Tag - Year
7th Tag - Day of week

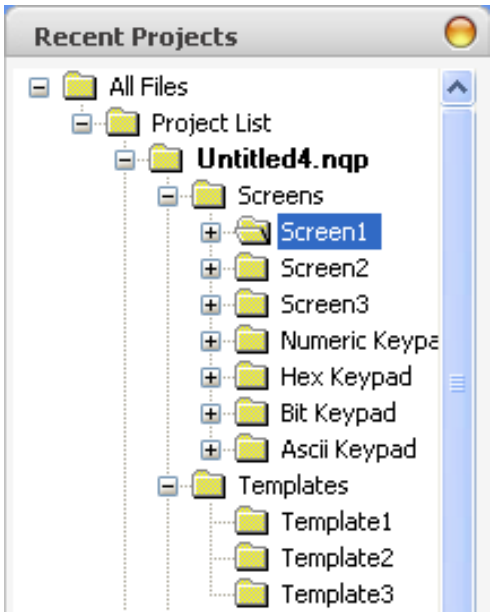
9.3 Templates

Template screen is the screen which has to be associated to base screen to share the information on it with one/various base screens. Any screen can be associated with another screen. This association of the objects of one screen to one/multiple base screens can be done with "Template" Screen.
To make use of these Template screen , Open project , go to Project information window. and follow the following Steps
Step 1:- Select the Template folder, Right Click on this Templates Folder and click to create new Template Screen.

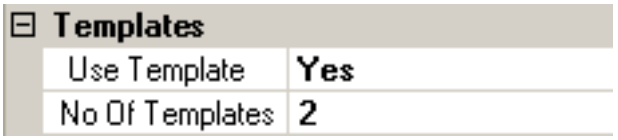
Designer can create maximum up to 10 Template Screens.
Opening this Template folder will show the list of Template screens being defined . These template Screens can also be Renamed with Desired Alphanumeric characters by Designer.



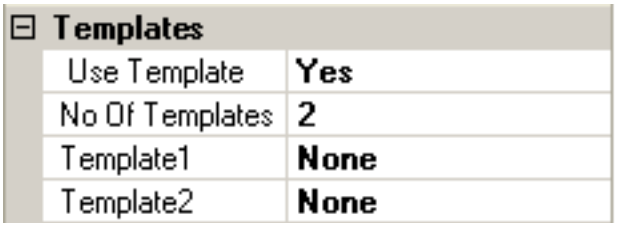
Selecting respective Screen will display the screen with information / Objects that are/or can be embedded on particular screen.
Step 2:- After defining the desired template screens , switch to the base screen to which these template screens are to be associated.
Step 3:- Open the Base screen and observe the last section of templates in Property grid Window



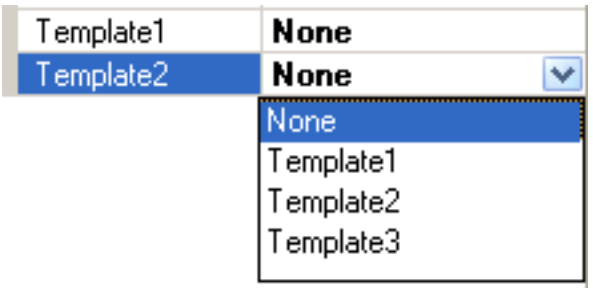
Step 4:-This templates section has one cell of Use template:
Use template:-This cell is to define whether the selected base screen is to be associated with the content of Template screen. By default it is "No". Selecting "Yes" from Fly out will display more information to be defined for Template screen



Step 5:- Selecting "Use Template" screen as "Yes" , "No of Templates" Cell is enabled. In this cell designer can define about the number of template screens to be associated to the particular selected Base screen. User can enter only the number up to the total number of defined template screen or 10. Maximum 10 template screens can be defined and hence can be associated through this "No of Templates".



Step 6:- Selecting the number of template screens to be associated to particular base screen , will enable the cells for individual Template. Where user will have to select the Template screen from fly out of respective template cell.



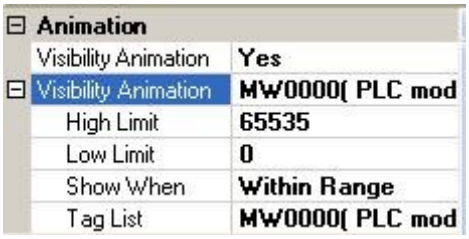
So when any of the template screens is being assigned to particular base screen, then at the display of this particular base screen on unit, content/information embedded on template screen will be displayed on base screen with same position as on that of template Screen .

So with the use of template screen, any recurring information to be shared on each base screen can be displayed with help of template screen.

9.4 Visibility Animation

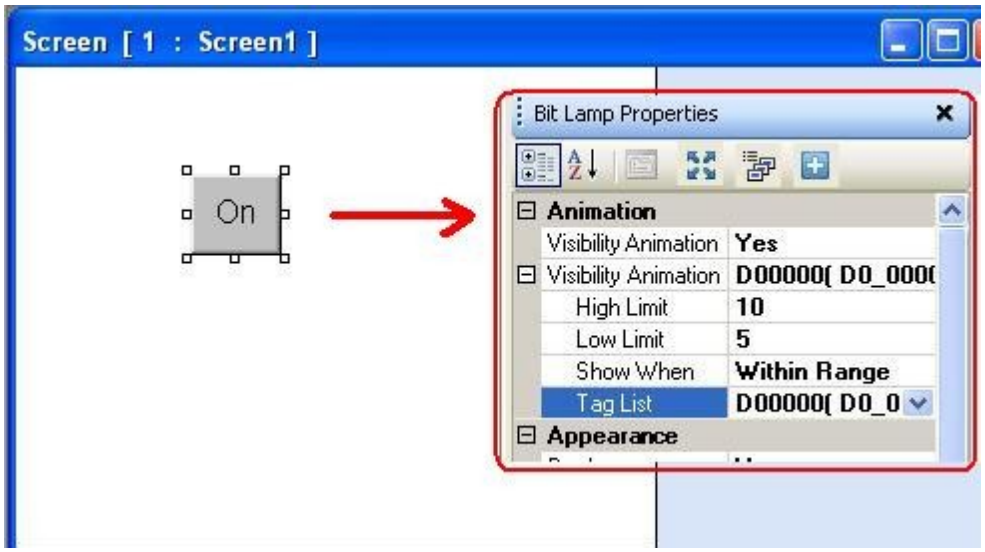
Visibility animation for data and button object :

User can animate data entry register and data entry coil using this feature in terms of show or hide. Below given example will elaborate the working of this feature in detail.
If user selects "Visibility Animation" as "Yes", then below said parameters will display:



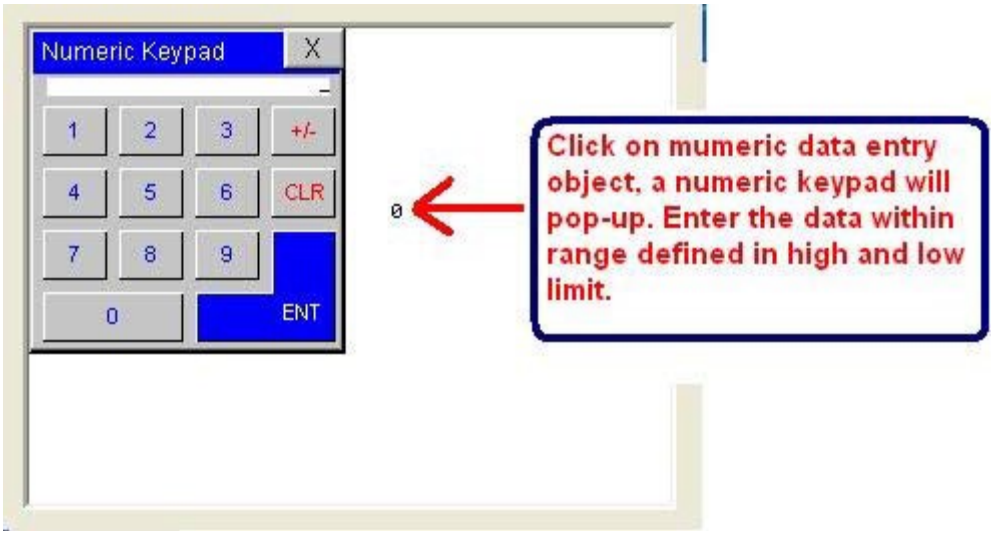
(i) Select "Yes" if wants to show or hide the data.
(ii) Define "High Limit" or "Low Limit".
(iii) Define "Show When": Within range or Out of Range.
(iv) Define tag register.

Example is given below:
1. A bit lamp object is taken on the screen and select visibility animation as "Yes". Defined the parameters as shown below:



2. Now taken a numeric data entry object to control the bit lamp object. Defined the tag register for this numeric data entry object same as that of bit lamp as shown below:

3. Compiled and run the application. A numeric data entry object will display on the screen. When user will click on this a keypad will pop-up. If the data enters is within range 5 - 10, then a bit lamp object will be seen. (Here for better explanation, offline simulation screens are shown).



4. If user selects “Show When” tab as out of range and the numeric data entered is not within range 5 - 10, the application will show a bit lamp object. If user selects the data within range (i.e. say 6), the application will not show the object.

Thus user can set the limit extremes as 0 to 65535. Beyond this, application will not support. Also please note that, at the values defined as limits, the animation will not be seen.

9.5 Color Combination for Tricolor Backlight

User can change the backlight color of models FP4020 and FP4030, by setting system registers: S39, S40 and S41.

The color combination is given below:

Sr. No.	RED S39	GREEN S40	BLUE S41	Backlight Color
1	0	0	0	Backlight OFF
2	1	0	0	RED
3	0	1	o	GREEN
4	0	0	1	BLUE
5	1	1	0	YELLOW
6	0	1	1	CYAN
7	1	0	1	MAGENTA
8	1	1	1	WHITE

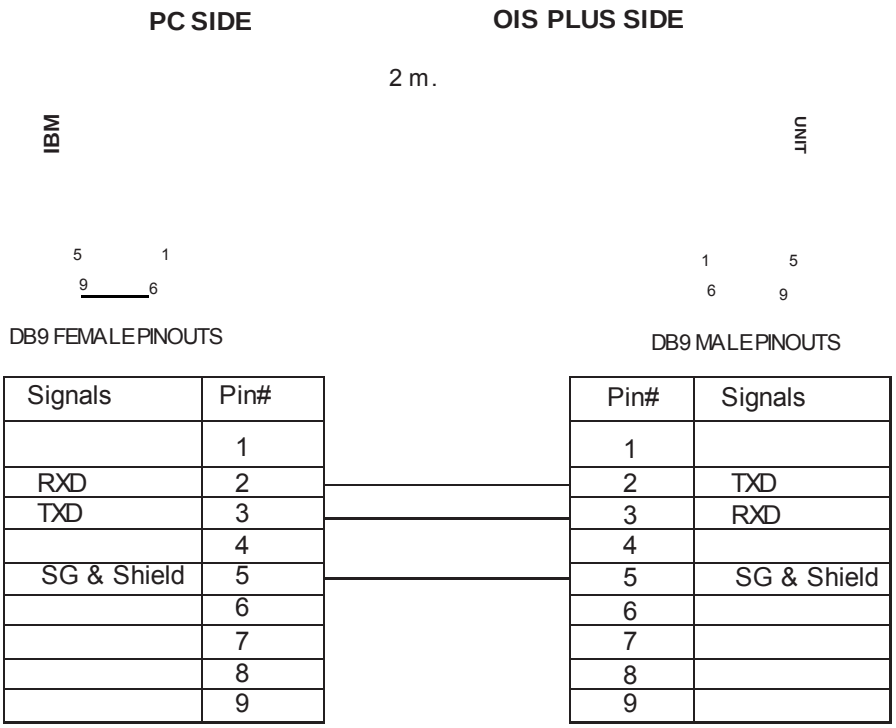
APPENDIX

- IBM Cable
- Special “Y” Cable
- Memory Erase

10.1 Programming Cable for OIS PLUS

This cable is used for connecting between the serial port on a computer and the serial port on the OIS PLUS

Part Number: IBM-0909-1-00



Signals	Pin#
	1
RXD	2
TXD	3
	4
SG & Shield	5
	6
	7
	8
	9

Pin#	Signals
1	
2	TXD
3	RXD
4	
5	SG & Shield
6	
7	
8	
9	

Note: It is also possible to program the OIS PLUS with a standard USB printer cable. This cable is connected to the computers USB port and the OIS PLUS USB port.

10.2 Special "Y" Cable for OIS PLUS

OIS PLUS displays with only one serial port can use the special "Y" cable to split the port into an RS232 port and an RS485 port. These ports can be used simultaneously.

Part Number: EC-Y-FP

RS485 SIDE

OIS PLUS SIDE Cable Length 9"

RS232 SIDE

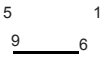
Cable Length 6"

DB9 MALE PINOUTS

Pin#	Signals
1	TX+
2	TXD
3	RXD
4	RX+
5	SG & Shield
6	NC
7	NC
8	TX-
9	RX-

DB9 FEMALE PINOUTS
RS232 End

Pin#
1
2
3
4
5
6
7
8
9



DB9 FEMALE PINOUTS
RS485 End

Pin#
1
2
3
4
5
6
7
8
9

Connect shield only to the body of all DB9 connectors

Note:
On DB9 Male connectors, use hex screws to fix further cables. On DB9 Female connector, use hex nut (female counter part)

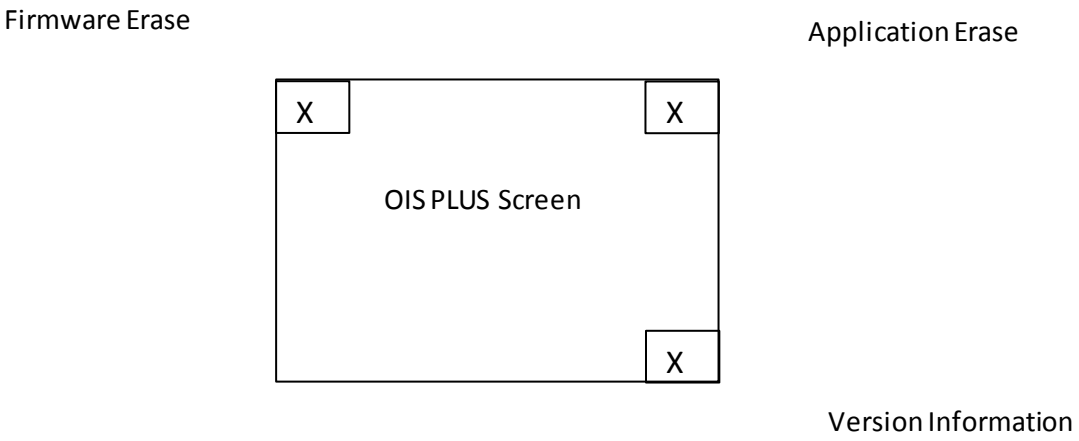
: Cable Length 6" (Inches)
: Cable Length 9" (Inches)

OIS PLUS*: Supports OIS PLUS models with two communication levels on one port.

10.3 Memory Erase

A special power-up sequence allows different portions of the OIS PLUS memory to be erased.

Touchscreens: At power-up press down at the corner of the screen to erase/view the following:



Follow the on screen information to complete the task.

Keypads: At power-up do the following:

Firmware Erase: Press F1 then ENT.

Application Erase: Press F2 then ENT.