Allen-Bradley

Pico™ Controller

(Catalog Numbers 1760-L12AWA, -L12AWA-NC, -L12AWA-ND, -L12BWB, -L12BWB-NC, and -L18AWA)

Getting Results

Rockwell Automation

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell International Corporation does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Rockwell Automation publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Rockwell Automation office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

Throughout this manual we use notes to make you aware of safety considerations:

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss

Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

IMPORTANT Identifies information that is critical for successful application and understanding of the product.

Chapter 3

Pico Interface Socket

Appendix A

Specifications

Index

Read this preface to familiarize yourself with the rest of the manual. It provides information concerning:

- who should use this manual
- the purpose of this manual
- related documentation
- conventions used in this manual
- Rockwell Automation support

Who Should Use this Manual

Use this manual if you are responsible for designing, installing, programming, or troubleshooting control systems that use Pico controllers.

You should have a basic understanding of electrical circuitry and familiarity with relay logic. If you do not, obtain the proper training before using this product.

Purpose of this Manual

This manual provides a basic overview of Pico and an introduction to Pico programming. For more a more detailed description of how to install and use your Pico Controller, refer to publication 1760-UM001A-EN-P, *Pico Controller User Manual*.

Related Documentation

The following documents contain additional information concerning Rockwell Automation products. To obtain a copy, contact your local Rockwell Automation office or distributor.

For	Read this Document	Document Number
A more detailed description of how to install and use your Pico controller.	Pico Controller User Manual	1760-UM001A-EN-P
In-depth information on grounding and wiring Allen-Bradley programmable controllers	Allen-Bradley Programmable Controller Grounding and Wiring Guidelines	1770-4.1
A description of important differences between solid-state programmable controller products and hard-wired electromechanical devices	Application Considerations for Solid-State Controls	SGI-1.1
An article on wire sizes and types for grounding electrical equipment	National Electrical Code - Published by the National Fire Protection Association of Boston, MA.	
A complete listing of current documentation, including ordering instructions. Also indicates whether the documents are available on CD-ROM or in multi-languages.	Allen-Bradley Publication Index	SD499
A glossary of industrial automation terms and abbreviations	Allen-Bradley Industrial Automation Glossary	AG-7.1

Common Techniques Used in this Manual

The following conventions are used throughout this manual:

- Bulleted lists such as this one provide information, not procedural steps.
- Numbered lists provide sequential steps or hierarchical information.
- *Italic* type is used for emphasis.

Rockwell Automation Support

Rockwell Automation offers support services worldwide, with over 75 Sales/ Support Offices, 512 authorized Distributors and 260 authorized Systems Integrators located throughout the United States alone, plus Rockwell Automation representatives in every major country in the world.

Local Product Support

Contact your local Rockwell Automation representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Technical Product Assistance

If you need to contact Rockwell Automation for technical assistance, please review the *Troubleshooting* chapter in the *Pico Controller User Manual* first. Then call your local Rockwell Automation representative.

You can also contact Rockwell Automation Technical Support at:
- http://www.ab.com.support
- racleasktheexpert@ra.rockwell.com
- 440-646-6800 - Technical Support Line

Your Questions or Comments on this Manual

If you find a problem with this manual, or you have any suggestions for how this manual could be made more useful to you, please contact us at the address below:

Rockwell Automation
Control and Information Group
Technical Communication, Dept. A602V
P.O. Box 2086
Milwaukee, WI 53201-2086

or visit our internet page at:
http://www.ab.com/pico or http://www.rockwellautomation.com

Pico Controller

Safety Information

ATTENTION Electrical Shock Hazard

The electrical installation and commissioning work must only be carried out by suitably qualified personnel.

Do not work on the device when the power is turned on.

Observe the relevant safety regulations:

- Turn off the power
- Make sure that the device cannot be powered on again inadvertently
- Check to make sure that no dangerous voltages are present before working on the device

Simply Pico

Clever Switching and Controlling

Pico is a compact, user-friendly and low-cost controller for simple control applications. Applications range from building and domestic automation to machine and plant control. Pico has built-in user-friendly operating elements and an LCD display.

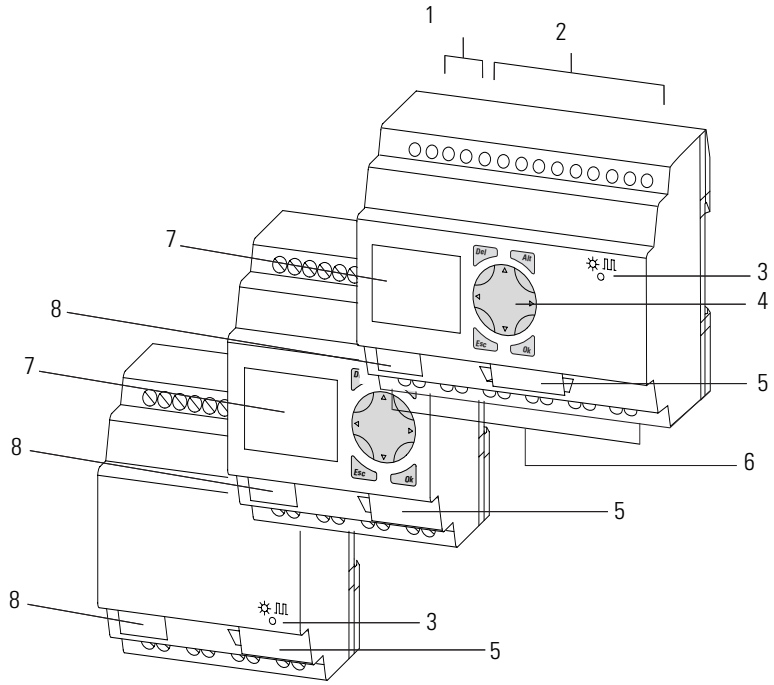
Connect Pico and draw a circuit diagram on the display by pressing the buttons on the device. Pico works with make contacts, break contacts, and relays.

Enter a circuit diagram in Pico just like it is sketched on paper. Pico has basic and advanced functions for relays, time switches and contactors, among other functions. Make changes to the circuit by pressing the buttons on the device. Time consuming rewiring is not necessary.

Applications Everywhere

- Building and domestic automation, controllers for lighting, doors, window shutters
- Control ventilators, rotating doors, greenhouses, exterior lighting, window controllers, shop display lighting
- Create controllers for temperature, ventilation and brightness levels
- Control machines and plant, presses, conveyor belts, oscillating conveyors, sorters, pumps

Overview of Pico

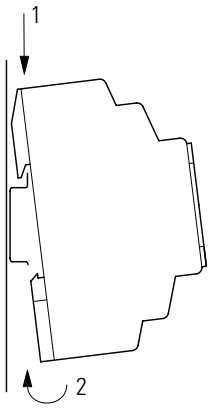


Item	Description
1	Incoming Power
2	Inputs
3	Power/Run LED
4	Keypad
5	Socket for memory module or PC interface cable
6	Outputs
7	LCD display
8	Write-On Surface

Mounting Pico

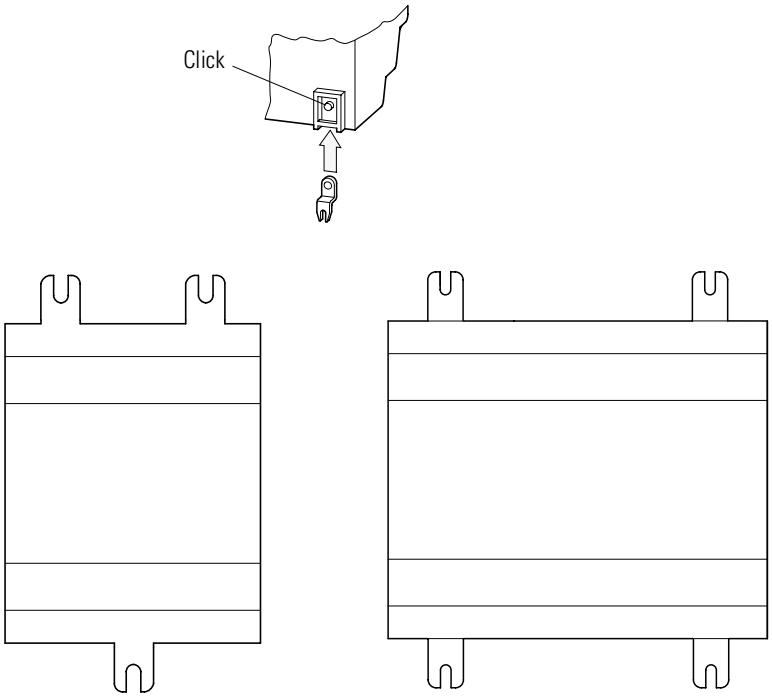
Mounting on DIN Rail

1. Hook Pico to the top edge of the DIN rail and rotate into place while pressing down slightly as shown by the arrow.
2. Pico will clip into place and is secured by the built-in spring mechanism.



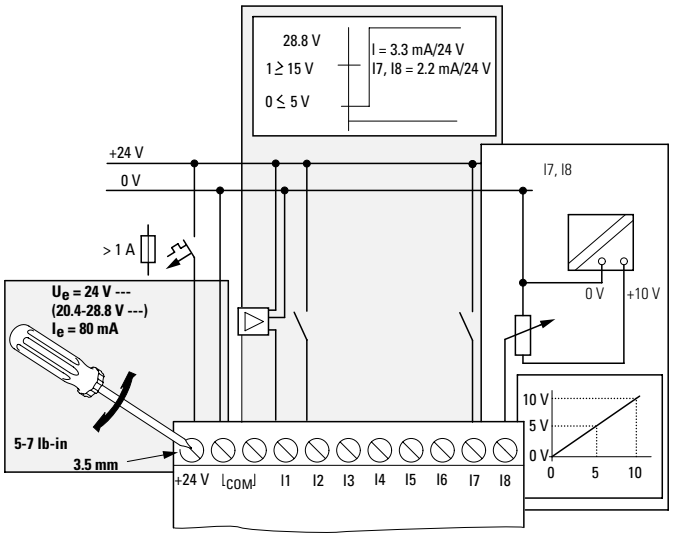
Mounting on a Mounting Plate

Pico can be screwed to a mounting plate with the three or four feet which are included.

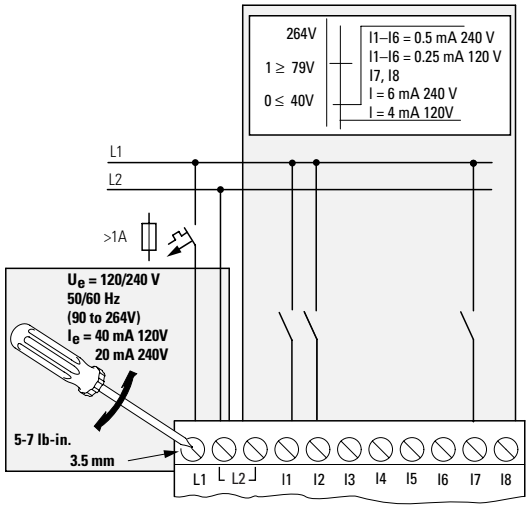


Connecting Pico

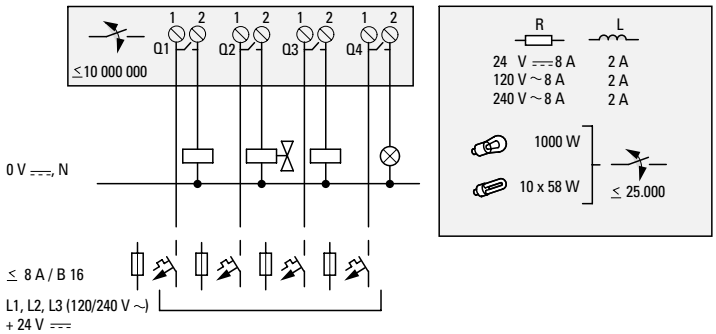
Pico Inputs 1760-L12BWB and 1760-L12BWB-NC



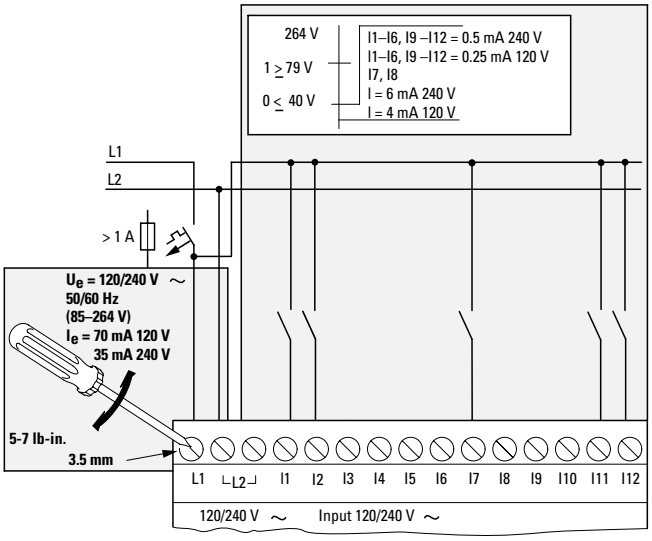
Pico Inputs 1760-L12AWA-NC, 1760-L12AWA, and 1760-L12AWA-ND



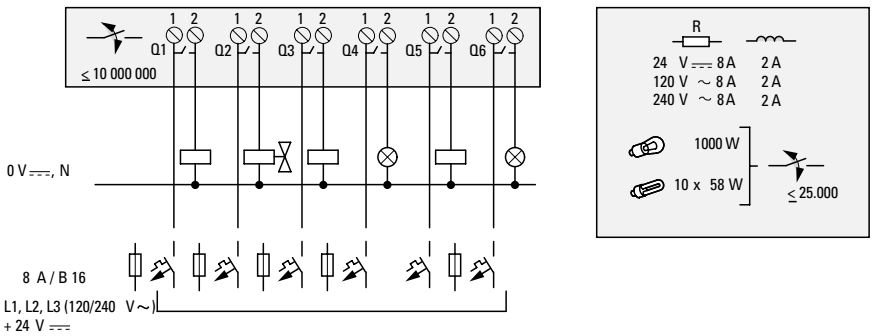
Pico Outputs 1760-L12AWA-xx and 1760-L12BWB-xx



Pico Inputs 1760-L18AWA

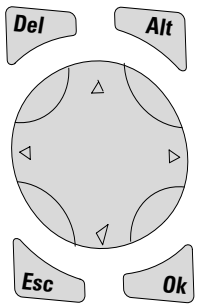


Pico Outputs 1760-L18AWA



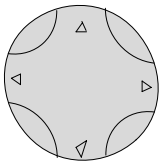
Pico Operating Principle

Pico Operating Buttons

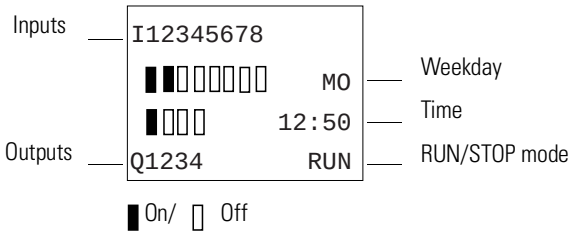


Button	Function
Del	Delete object in the circuit diagram
Alt	Special functions in the circuit diagram
Cursor Buttons	Move cursor
	Select menu item
	Choose contact numbers, values, times, etc.
Ok	Next menu level, store your entry
Esc	Previous menu level, cancel your entry

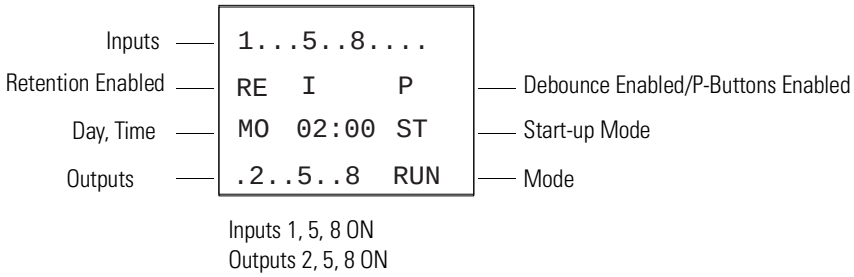
Move Through Menus to Choose Values

Press	To
Del and Alt	Show system menu (press both keys at the same time).
Ok	• Go to next menu level. • Select menu item. • Store your entry.
Esc	Cancel your entry since the last *Ok*.
	• Change menu item. • Change value. • Change position.

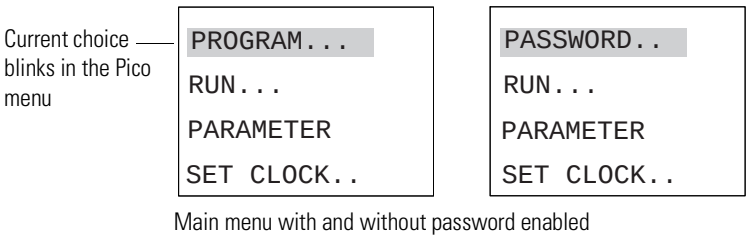
12-Point Status Display



18-Point Status Display



Menu Display



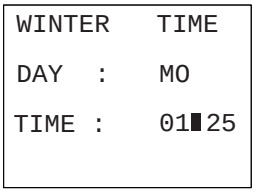
Main menu with and without password enabled

Cursor Display

There are two different cursor types:

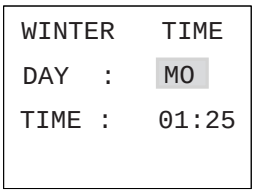
Full block navigation is shown as a flashing block:

- Move cursor with the left/right arrows
- When in circuit diagram, also use up/down arrows



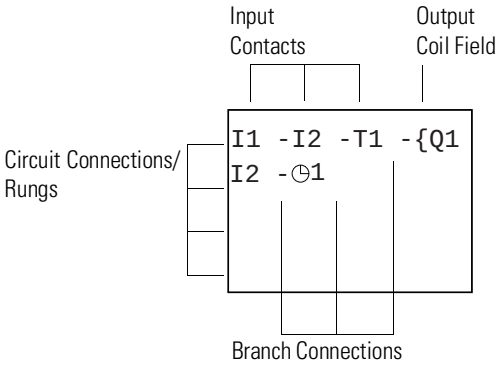
Parameter change cursor flashes the selected parameter:

- Change position with left/right arrows
- Change values with up/down arrows



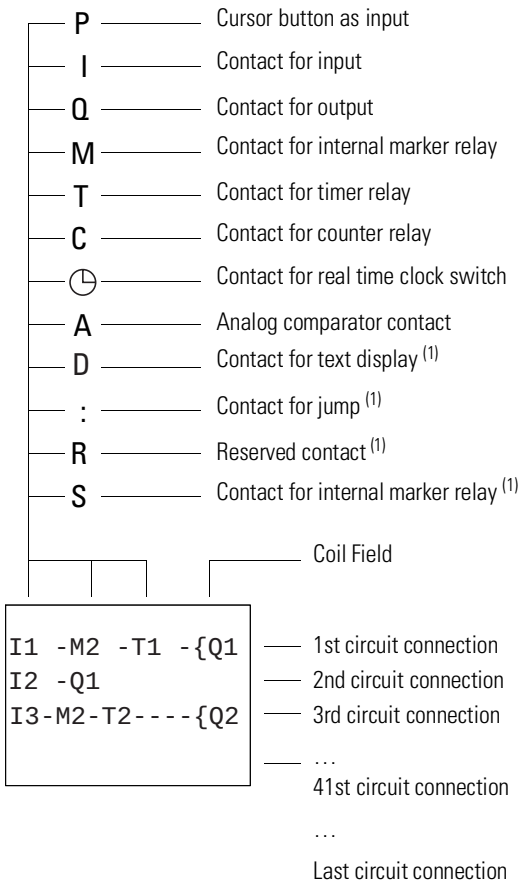
Flashing values/menus are highlighted in grey in this manual.

Circuit Diagram Menu



Each rung can hold four instructions, three input instructions (contacts) and one output instruction (coil or relay). Rungs are connected together through branches at the three positions between instructions. All programming of Pico can be done using the display and keypad.

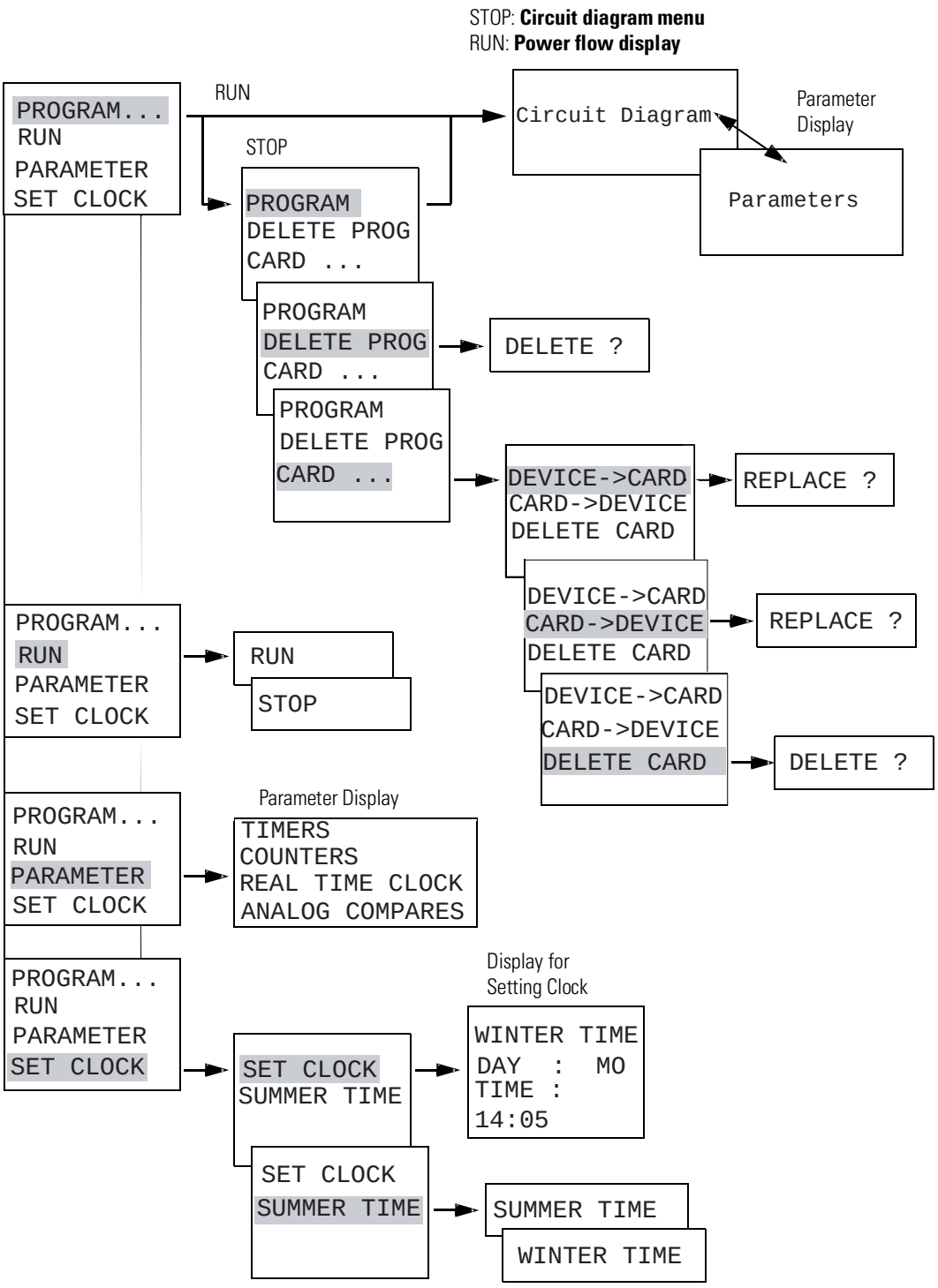
Circuit Diagram Symbols



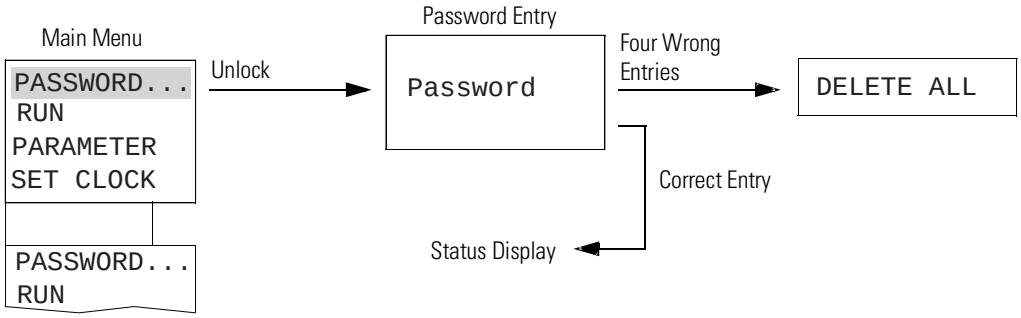
(1) For 1760-L18AWA only.

Menu Structure

Main Menu Without Optional Password Protection

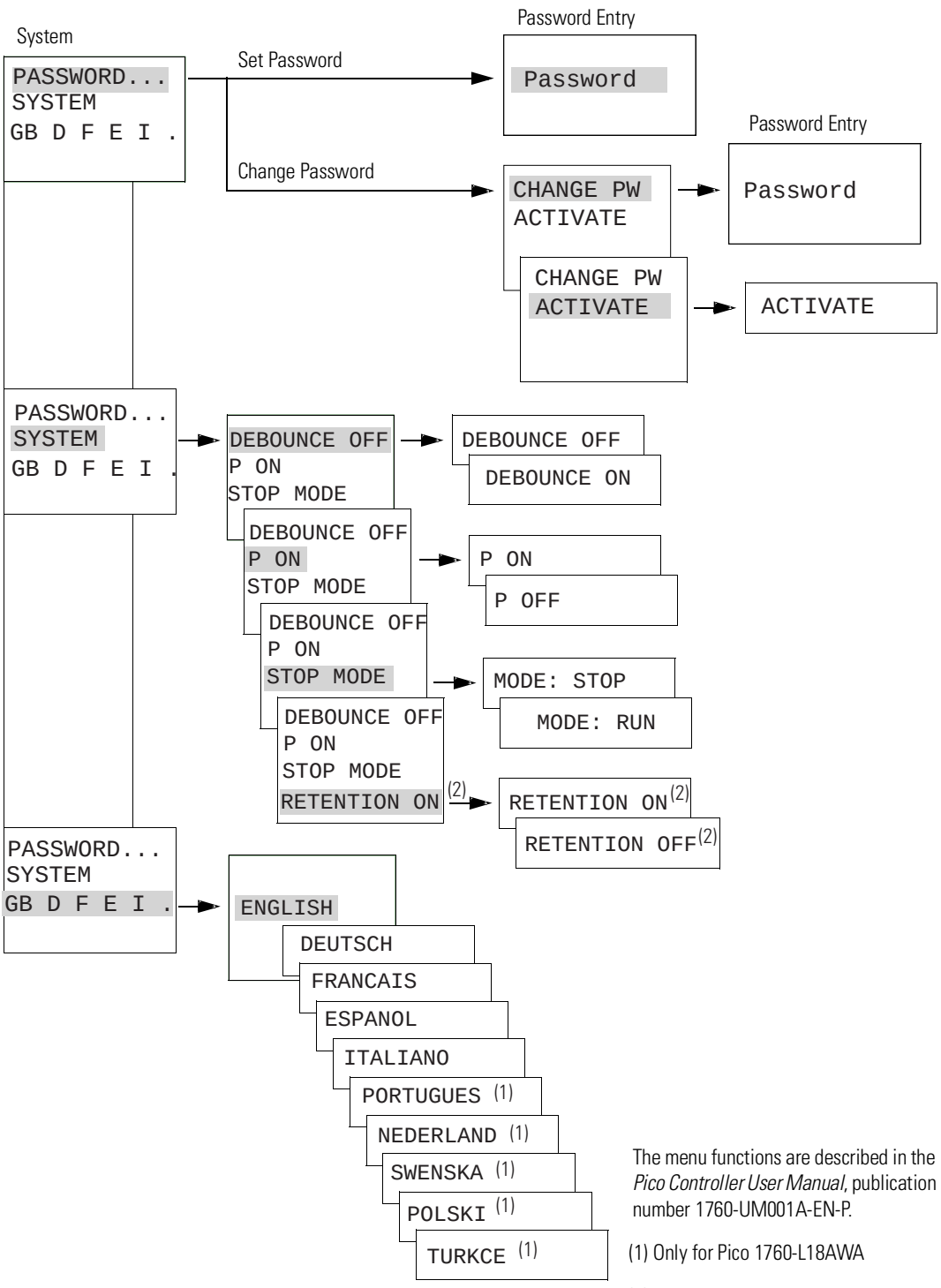


Main Menu with Password Protection



NOTE If you do not know the password, you can delete the old password, but the circuit diagram and data will also be deleted. To delete the password, press *Ok* to *DELETE ALL* after entering four incorrect passwords. (Pressing *Esc* retains the circuit diagram and data. You can then make another four attempts to enter the password.)

System Menu



The menu functions are described in the *Pico Controller User Manual*, publication number 1760-UM001A-EN-P.

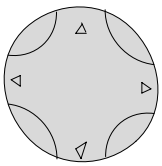
(1) Only for Pico 1760-L18AWA

(2) Not for Pico 1760-L12AWA-xx

Drawing a Circuit with Pico

Operation of Pico

Buttons for Drawing Circuit Diagrams

Button	Function
Del	Delete branch, contact, relay, or empty rung in the circuit diagram
Alt	• Toggle between break and make contact • Connect contacts and relays • Add circuit connections
	Up/down arrows: • Change value • Move cursor up and down Left/right arrows: • Move cursor to left and right • Change between parameters
Esc	• Go to previous menu level • Undo settings from previous Ok • Exit current display
Ok	• Go to next menu level • Change, add contact/relay • Save setting

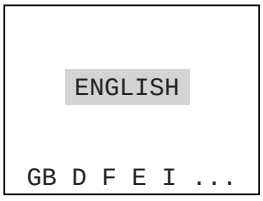
Setting the Menu Language

Powering Up Pico for the First Time

NOTE A brief current surge is produced when powering on the unit for the first time. Do not switch the unit using reed contacts, since these may burn or melt.

Choose language with the up/down cursor keys.

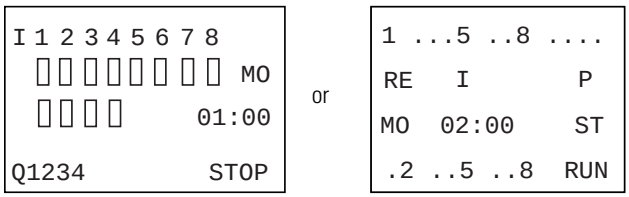
Abbreviation	Language
GB	English
D	German
F	French
E	Spanish
I	Italian



Pico 1760-L18AWA also supports the following languages:

- Portuguese
- Dutch
- Swedish
- Polish
- Turkish

1. Use the arrow keys to select a language.
2. Confirm with *Ok*.
3. Pico then shows the status display.

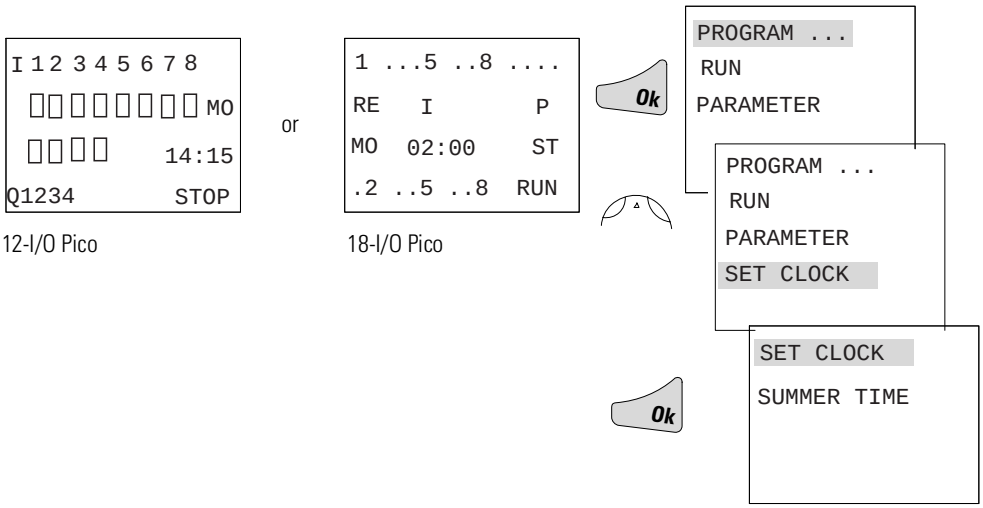


12-I/O Pico 18-I/O Pico

Setting the Time

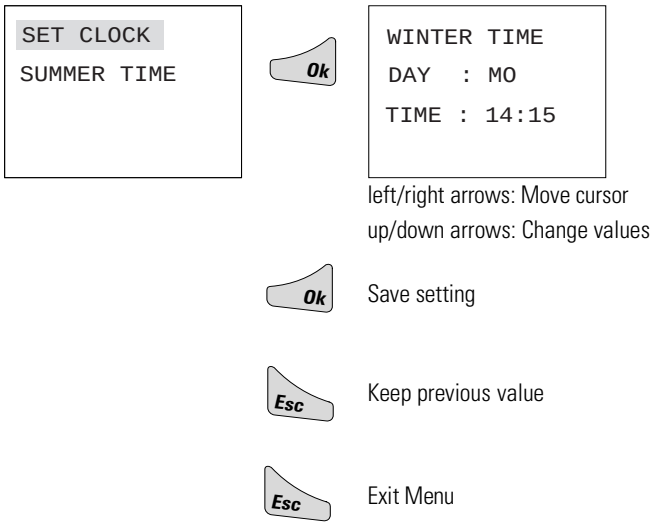
Controllers with the "-NC" designation do not have real time clocks.

Setting the Real Time Clock

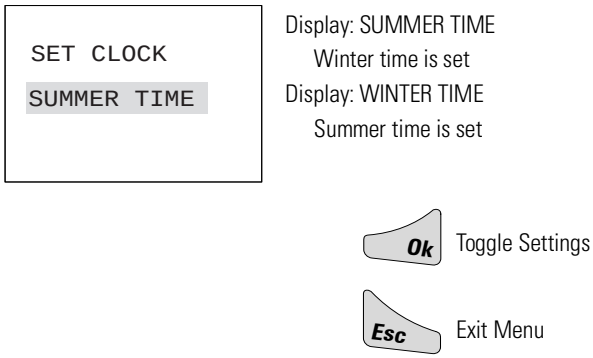


12-I/O Pico 18-I/O Pico

Setting Week Day and Time



Winter/Summer Time (Daylight Savings Time)



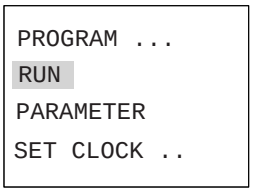
Choose Pico Operating Mode

The two Pico operating modes are RUN and STOP.

- RUN: Pico processes the circuit diagram.
- STOP: Create and modify the circuit diagram.

The alternating RUN/STOP menu shows either RUN or STOP as follows:

- STOP mode active: RUN is shown
- RUN mode active: STOP is shown



Selectable Start-up Behavior

It is possible to select the operating mode to be activated when Pico is powered up. You can choose start-up in “RUN” mode or in “STOP” mode through the System Menu.

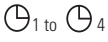
Pico Circuit Diagram Elements

Contacts

Contact Type	Make Contact	Break Contact	1760-L12xx	1760-L18AWA
Inputs	I	$\overline{I}$	I1 to I8	I1 to I12
Soft Inputs - Keypad	P	$\overline{P}$	P1 to P4	P1 to P4
Outputs	Q	$\overline{Q}$	Q1 to Q4	Q1 to Q6
Internal Marker bits	M	$\overline{M}$	M1 to M16	M1 to M16
Counters	C	$\overline{C}$	C1 to C8	C1 to C8
Timers	T	$\overline{T}$	T1 to T8	T1 to T8
Real Time Clock				
Analog Setpoint Compare(1)	A	$\overline{A}$	A1 to A8	–
Text Display	D	$\overline{D}$	–	D1 to D8
Jump to Label	:	–	–	:1 to :8
Internal Marker Bits	S	$\overline{S}$	–	S1 to S8
Reserve	R	$\overline{R}$	–	R1 to R16

(1) This applies only to the 1760-L12BWB and 1760-L12BWB-NC.

Relays

Relay Type	Pico Symbol	1760-L12xx	1760-L18AWA	Coil Function	Parameter
Inputs	I	I1 to I8	I1 to I12	–	–
Soft Inputs - Keypad	P	P1 to P4	P1 to P4	–	–
Outputs	Q	Q1 to Q4	Q1 to Q6	X	–
Internal Marker Bits	M	M1 to M16	M1 to M16	X	–
Counters	C	C1 to C8	C1 to C8	X	X
Timers	T	T1 to T8	T1 to T8	X	X
Real Time Clock				–	X
Analog Setpoint Compare(1)	A	A1 to A8	–	–	X
Text Display	D	–	D1 to D8	X	X
Jump to Label	:	–	:1 to :8	X	–
Internal Marker Bit	S	–	S1 to S8	X	–
Reserve	R	–	R1 to R16	–	–

(1) This applies only to the 1760-L12BWB and 1760-L12BWB-NC.

Retentive Actual Values

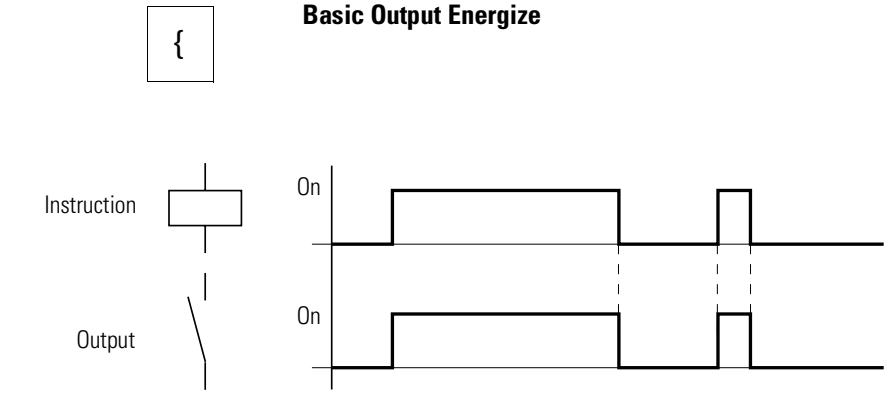
With Pico 1760-L12BWB, 1760-L12BWB-NC, and 1760-L18AWA, it is possible to save the actual values of markers, timers and counters in the event of a power failure. The quantities and values that may be retained are found in the following table.

For further information see the *Pico Controller User Manual*, publication number 1760-UM001A-EN-P.

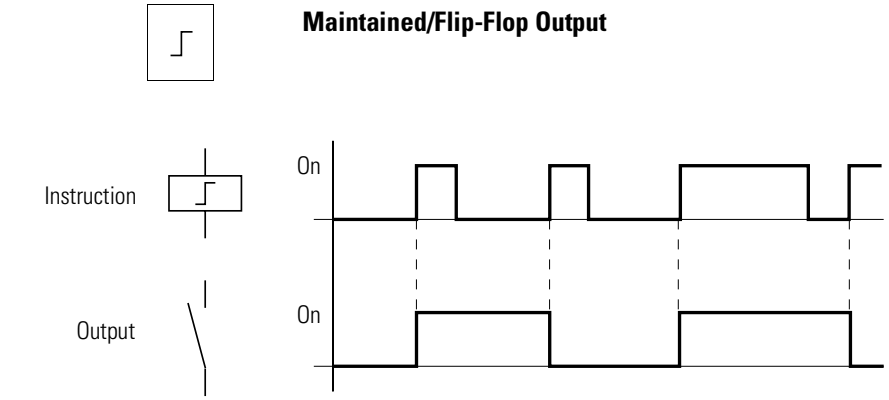
Retentive Relays

Relay Type	Pico Symbol	1760-L12BWB-xx	1760-L18AWA
Internal Marker Bits	M	4 (M13 to M16)	4 (M13 to M16)
Counters	C	1 (C8)	4 (C5, C6, C7, C8)
Timers	T	1 (T8)	2 (T7, T8)
Text Display	D	–	8 (D1 to D8)

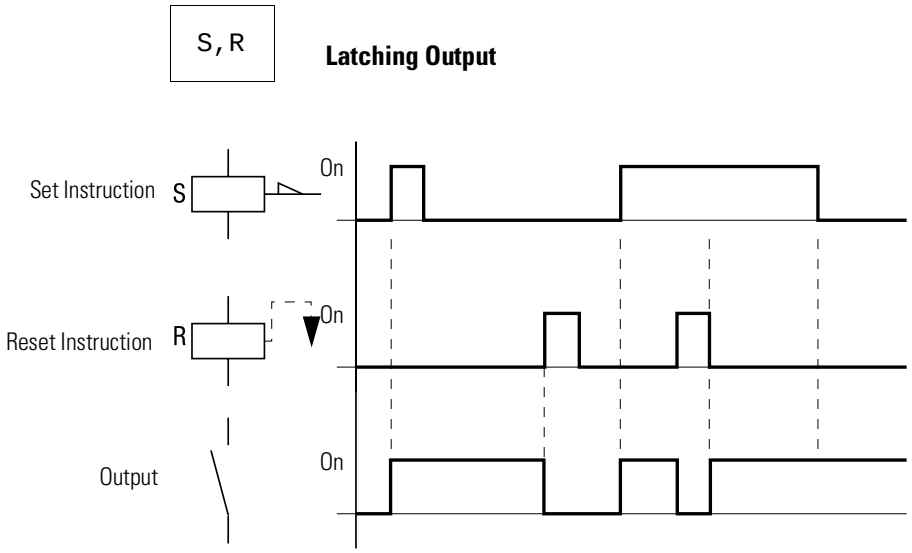
Basic Output Energize



Maintained/Flip-Flop Output

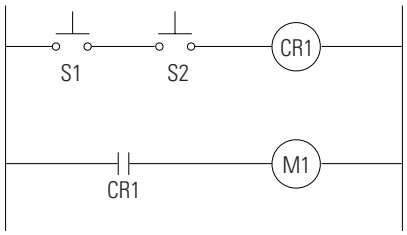


Latching Output



Example: Creating a Circuit Diagram

Interconnecting Contacts and Relays



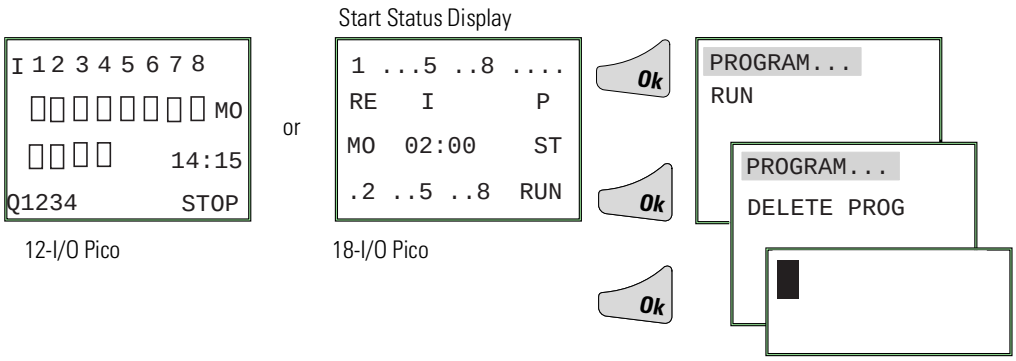
Connecting Pico

1. Connect S1 to Pico input terminal I1
2. Connect S2 to Pico input I2
3. Connect load M1 to Pico output Q1

```
I1-I2----{Q1
```

Pico circuit diagram

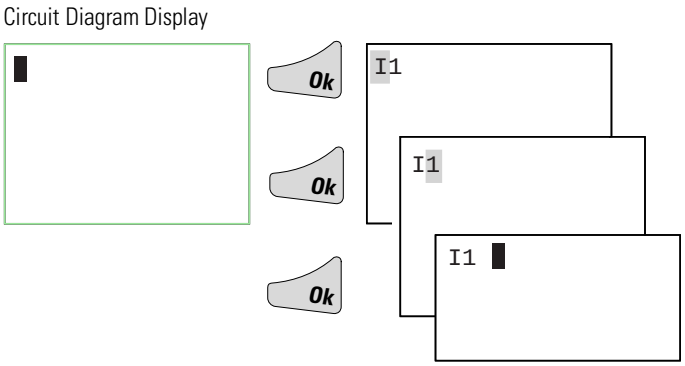
Draw Circuit in Circuit Diagram Menu



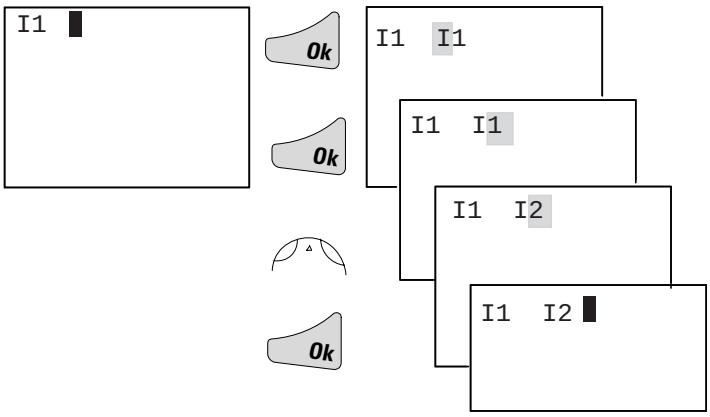
12-I/O Pico

18-I/O Pico

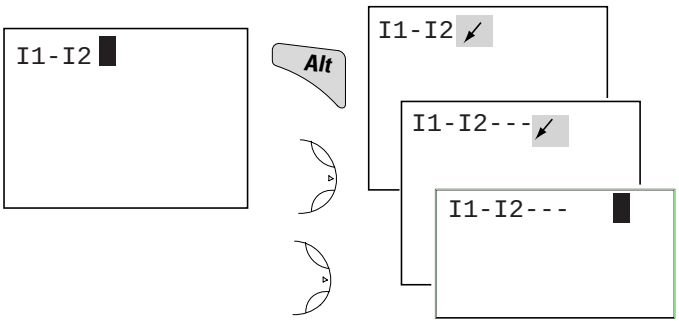
Insert Contact "I1"



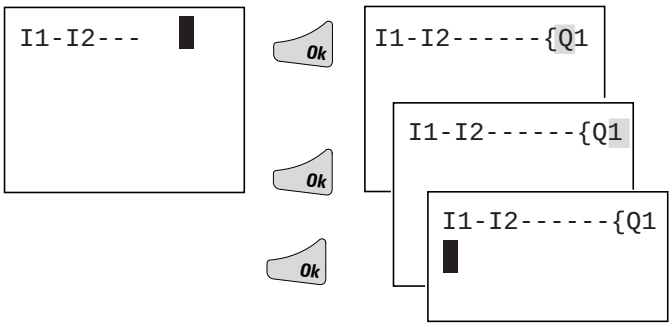
Insert Contact "I2"



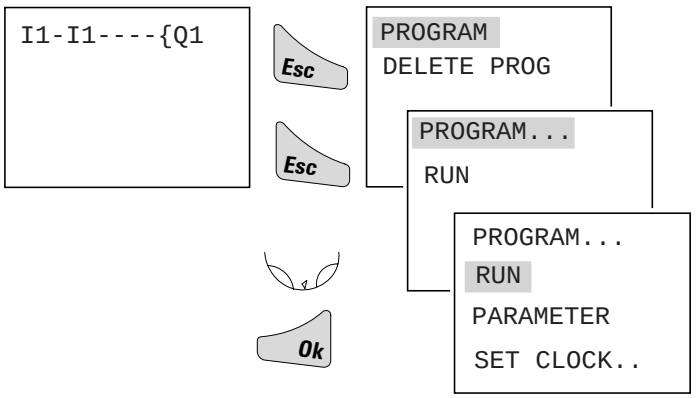
Draw Connection Between Contact and Relay Coil



Choose Relay Coil "Q1"

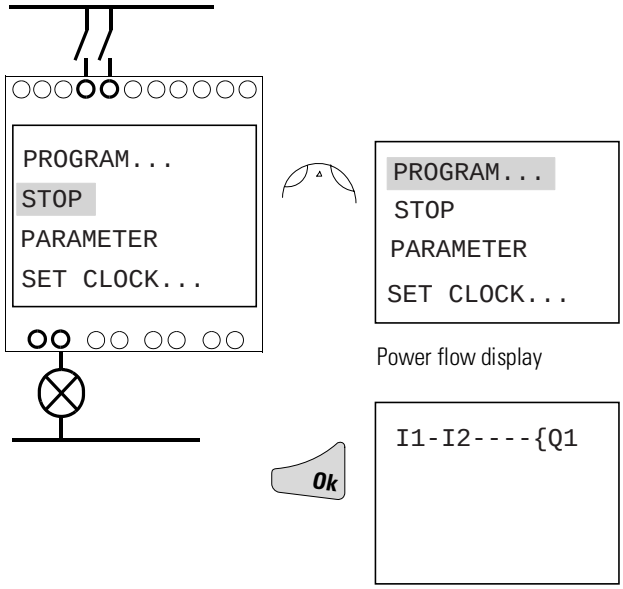


Change Operating Mode



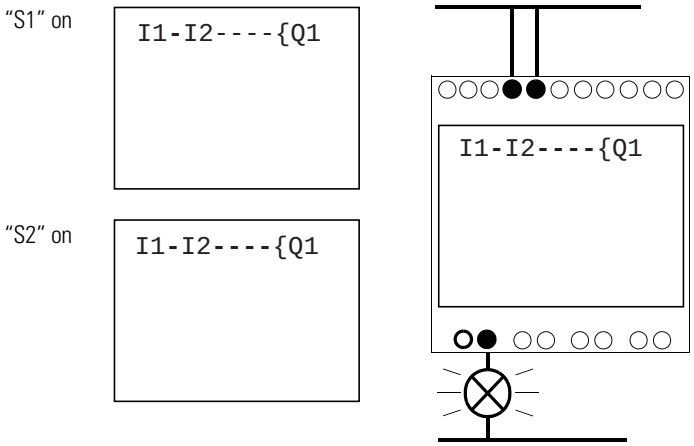
Pico now in RUN mode

Test Circuit Diagram

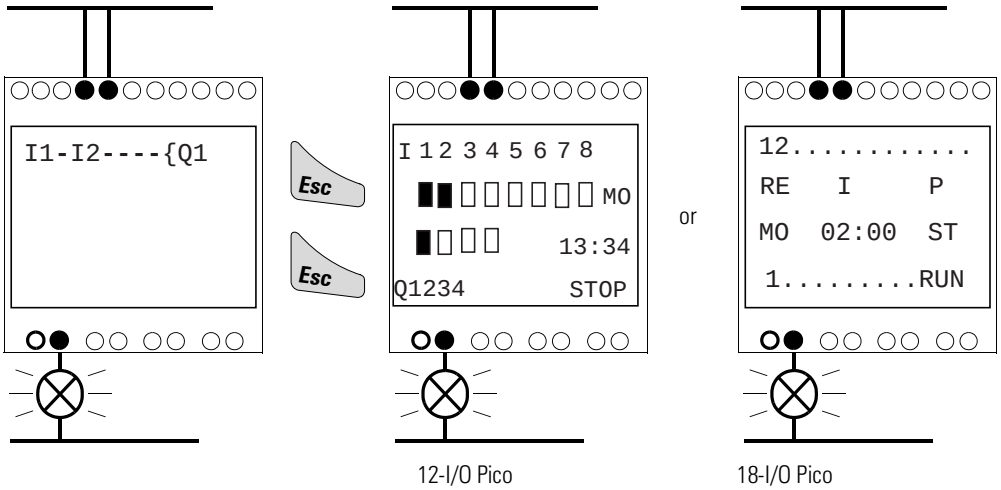


Power flow display

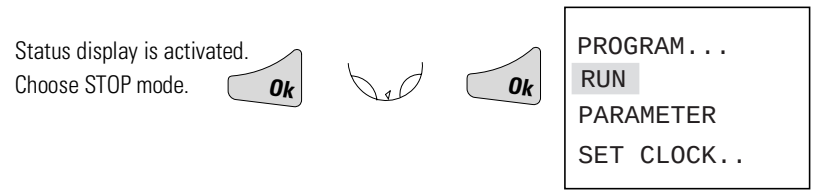
Operate Switch "S1" and "S2"



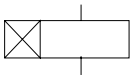
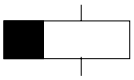
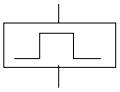
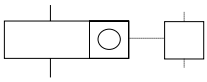
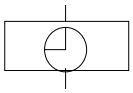
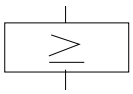
Return to Status Display with ESC



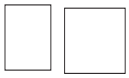
In the next example, a timing relay will be added to the circuit.



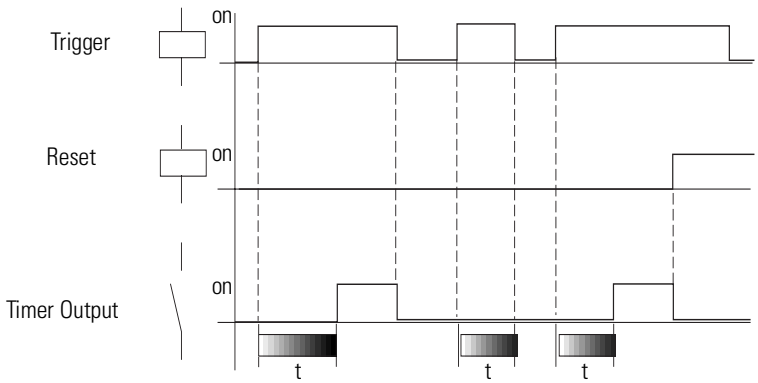
Function Relay Types

Circuit Diagram Symbol	Function Relay Type
	Timing relay with on-delay, with and without random switching
	Timing relay with off-delay, with and without random switching
	Timing relay, single pulse Timing relay, flashing
	Counter relay, up/down counter
	Time switch, weekday/time (only in Pico models with clock)
	Analog comparator relay (only in Pico models with 24V dc)

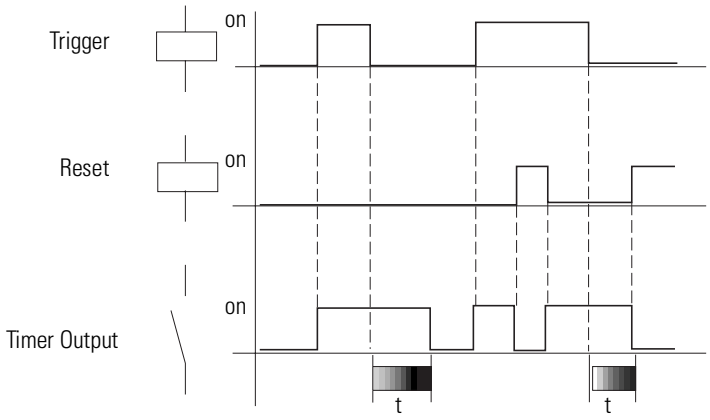
Timing Relay



Timing Relay with on delay, with and without random switching

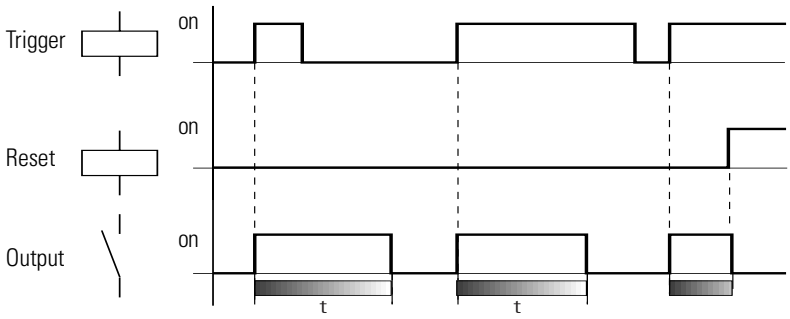


Timing Relay with Off-Delay, with and without Random Switching



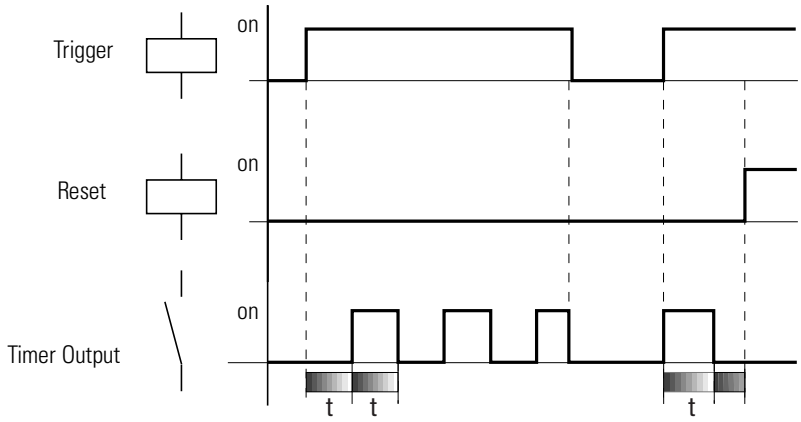
With random switching, the relay contact switches randomly at any time up to the specified time value (shown shaded in figure).

Timing Relay, Single Pulse

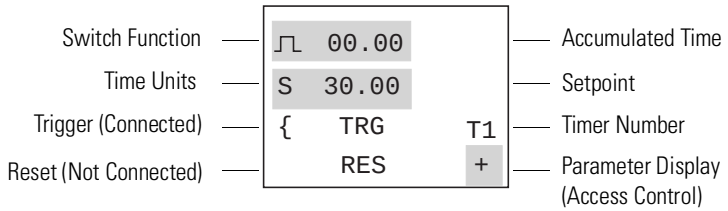


Timing Relay, Flashing

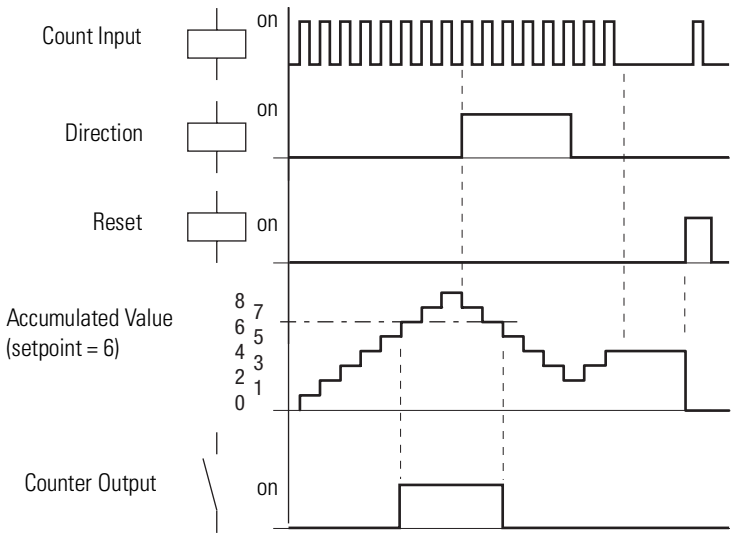
Flash Frequency = 1/2 x setpoint



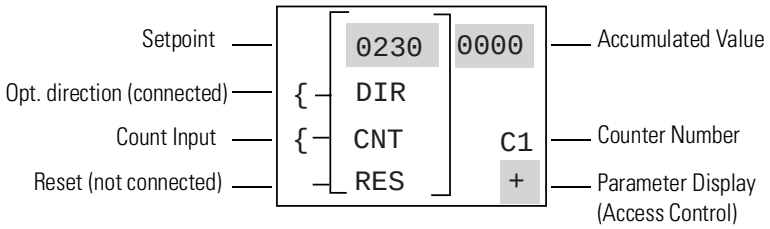
Parameter Display for Timing Relays



Counter Relay

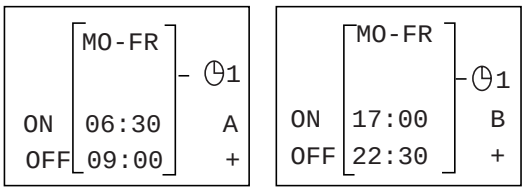


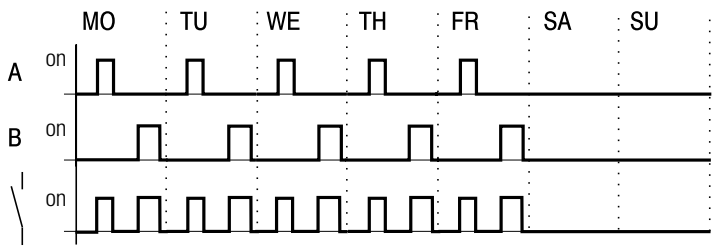
Parameter Display for Counter Relays



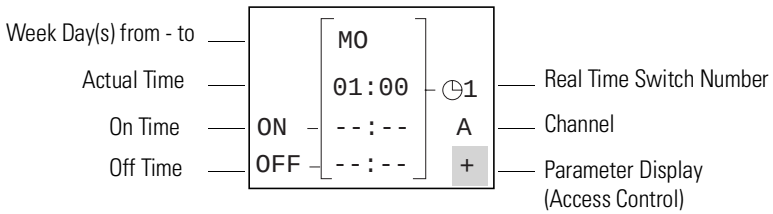
Real Time Switch

Example: Real Time Switch 1 switches on Monday through Friday between 6:30 and 9:00 and again between 17:00 and 22:30 (5:00 pm and 10:30 pm).





Parameter Display for Real Time Switches



Analog Comparator

Available functions:

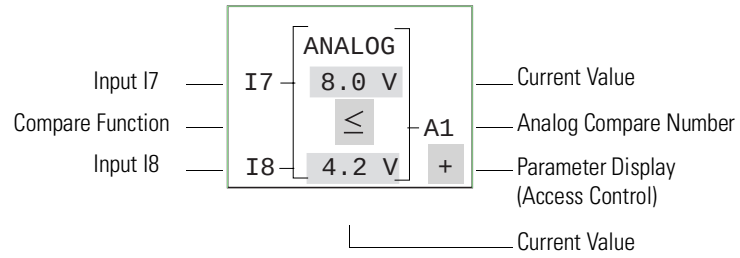
- I7 ≥ I8, I7 ≤ I8
- I7 ≥ Setpoint, I7 ≤ Setpoint
- I8 ≥ Setpoint, I8 ≤ Setpoint

The analog comparator can compare voltages from 0V to 10V (setpoints “0.0” to “10.0”).

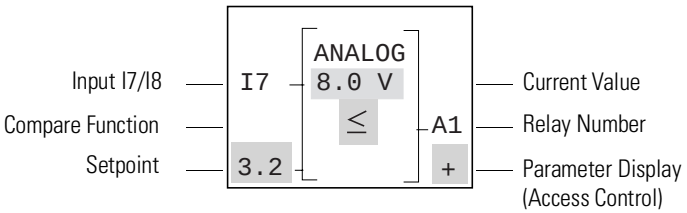
NOTE Analog signals of sensors typically fluctuate by several millivolts. For stable switching the setpoints should differ by at least 0.2V (switching hysteresis). Do not use any relay with output energize or impulse relay coil functions.

Parameter Displays for Analog Comparators

Compare inputs I7 and I8.



Compare input “I7” to a setpoint.



Text Display (1760-L18AWA Only)

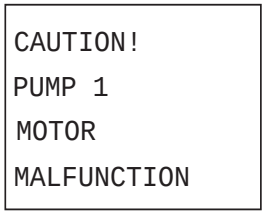
The Text Display is used to display eight freely definable messages on the Pico screen. Each text block displays up to 48 characters from the Pico display character set (ASCII + Pico special characters). If the Text Display is enabled, the text entered via PicoSoft is displayed. If several Text Displays are enabled, the next screen is displayed every 4 seconds. When Text Display D1 is enabled it stays displayed (fault indication).

Press *Ok* to switch to the menus at any time.

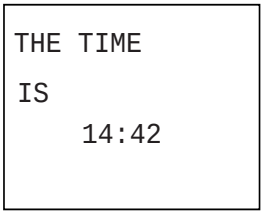
Current values or parameters of function relays can be displayed in lines 2 and 3.

Examples:

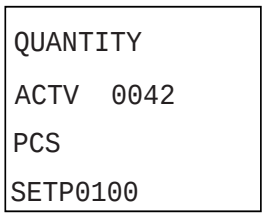
Fault Signals



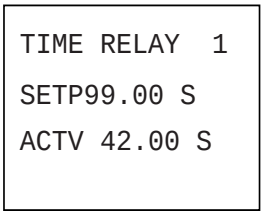
Time with Text Display



Display Counter Value

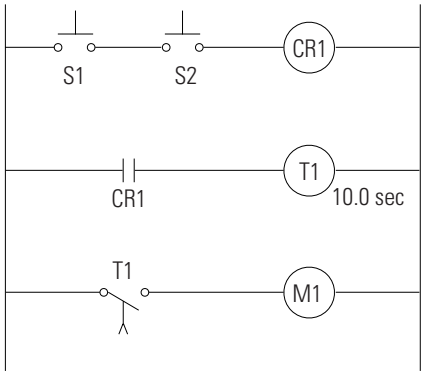


Display Current Value and Parameter of Timing Relay



Example: Using a Function Relay

Conventional Circuit



Pico switches M1 with 10 seconds delay.

```
I1-I2----{M1
M1-------TT1
T1-------{Q1
```

Pico Circuit Diagram

Select an Internal Marker Relay

Start Circuit from first example

```
I1-I2----{Q1
```

Ok

2 X

Ok

Position cursor on "Q"

```
I1-I2----{Q1
```

```
I1-I2----{M1
```

```
I1-I2----{M1
```

Select Marker Contact and Connect to New Output Relay

```
I1-I2----{M1
```

2 X

2 X Ok

Alt

3 X

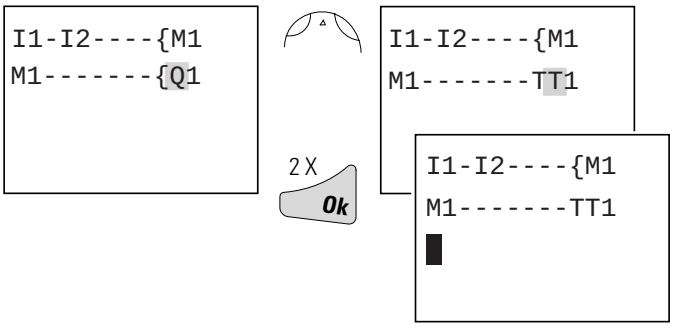
Ok

Ok

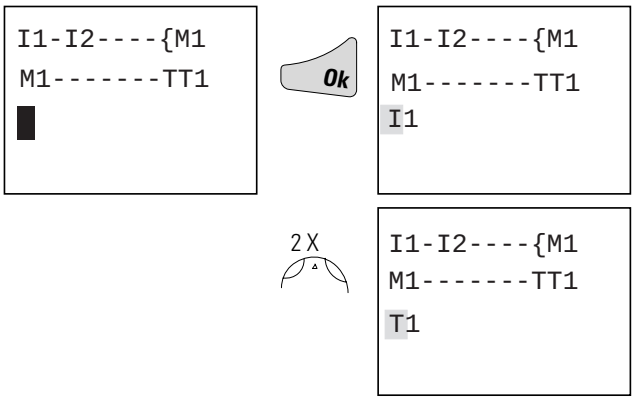
```
I1-I2----{M1
I1
```

```
I1-I2----{M1
M1------ {Q1
```

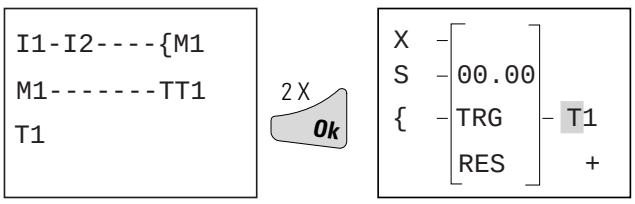
Select Trigger Relay for Time



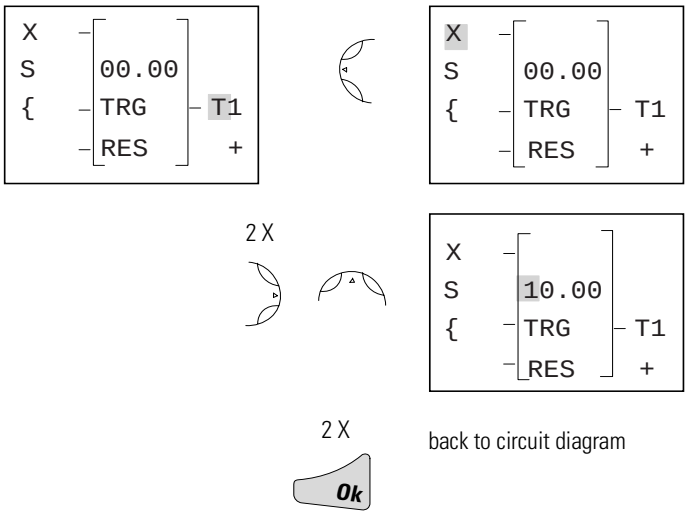
Insert Timing Relay Contact



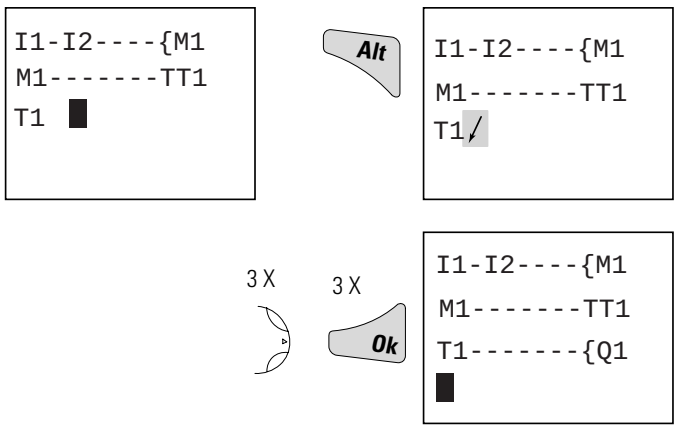
Select Parameter Access



Set "10 Seconds"



Connect Timing Relay Contact to New Output Relay



Change Pico to RUN to test the program.Test the circuit as shown for the first example. To display and access the parameters for the timing relay and change the time value in RUN mode, position the cursor in the circuit diagram on the "T" of "T1" and press *Ok*.

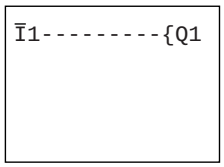
Basic Circuits

Significance of Logic Values

Value	Function
"0"	Make contact open, break contact closed, relay coil not energized
"1"	Make contact closed, break contact open, relay coil energized

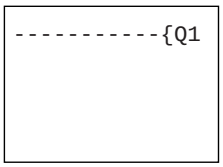
Negation (NOR)

I1	Q1
1	0
0	1



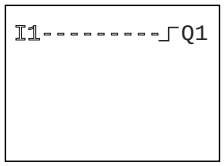
Permanent Contact (Unconditional Rung)

---	Q1
1	1



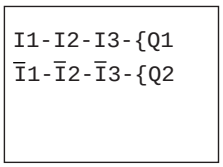
Flip-Flop Output

I1	State Q1	Q1
0	0	0
0 to 1	0	1
0	1	1
0 to 1	1	0



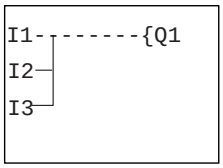
Series Connection (AND)

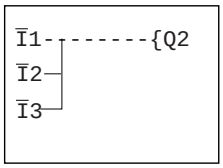
I1	I2	I3	Q1	Q2
0	0	0	0	1
1	0	0	0	0
0	1	0	0	0
1	1	0	0	0
0	0	1	0	0
1	0	1	0	0
0	1	1	0	0
1	1	1	1	0



Parallel Connection (OR)

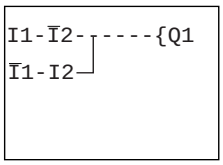
I1	I2	I3	Q1	Q2
0	0	0	0	1
1	0	0	1	1
0	1	0	1	1
1	1	0	1	1
0	0	1	1	1
1	0	1	1	1
0	1	1	1	1
1	1	1	1	0





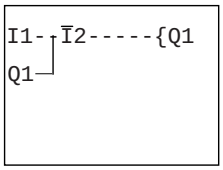
Exclusive OR Circuit (XOR)

I1	I2	Q1
0	0	0
1	0	1
0	1	1
1	1	0

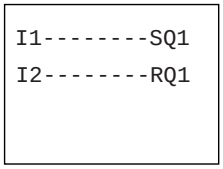


Motor Start/Stop Circuit

I1	I2	Contact Q1	Coil Q1
0	0	0	0
1	0	1	1
0	0	1	1
0	1	0	0
1	1	0	0



Alternatively:



Pico Interface Socket

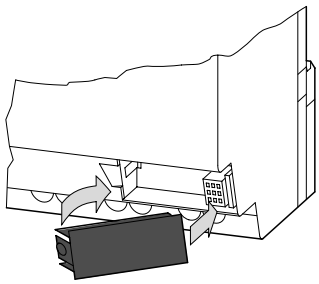
The Pico interface socket, which is beneath a protective cap, accepts the optional Pico memory module, or connects Pico to a PC using the optional PC interface cable and the PicoSoft software. This allows you to copy the circuit diagrams to and from the PC and/or memory module.

Memory Module

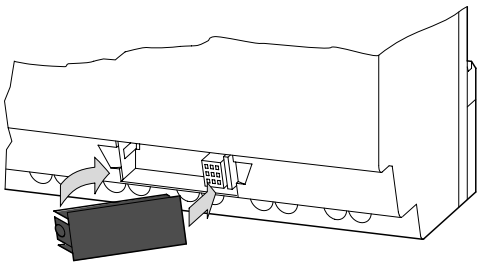
Memory modules are available as an optional accessory. Each memory module can store a single Pico circuit diagram. Information stored on the memory module is non-volatile (the information is not lost when the power is turned off). The memory module can be used to make a backup copy of a program and/or to transfer it to another Pico controller.

Each memory module stores:

- the circuit diagram
- all parameter settings of the circuit diagram
- system settings



1760-MM1 for all 1760-L12xxx controllers



1760-MM2 for the 1760-L18AWA controller

ATTENTION ELECTRICAL SHOCK HAZARD

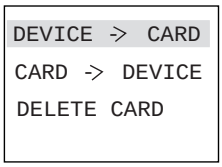
The memory module and PC-cable socket are at the potential of L2. There is a danger of electric shock if L2 is not grounded. Do not make contact with electrical components under the socket cover.

Loading or Storing the Circuit Diagram

You can only transfer the program from Pico to the memory module or vice versa in the STOP mode.

DEVICE ->CARD: Transfer circuit diagram and parameter settings from Pico to the memory module.

CARD->DEVICE: Transfer circuit diagram and parameter settings from the memory module to Pico.



DELETE CARD: Delete the contents of the memory module.

Available Memory Modules

Use the 1760-MM1 memory module for the 12-I/O Pico controllers and use the 1760-MM2 memory module for the 1760-L18AWA Pico controller. The 1760-L18AWA controller is able to read from the 1760-MM1 memory module, but cannot write to it. The 1760-MM2 memory module will not physically fit on a 12-I/O Pico controller.

PicoSoft

PicoSoft is an optional PC program that creates, stores, and manages Pico circuit diagrams. It transfers the circuit diagrams from the PC to Pico or vice versa using a special PC interface cable.

ATTENTION

The PC interface cable is catalog number 1760-CBL-PM02 and is available as an accessory item. Only use the Pico interface cable. Do not attempt to make your own cable as this can cause damage to the unit or present a shock hazard.

The PicoSoft software also includes extensive on-line Help.

To use the on-line Help, start PicoSoft and choose *Contents* in the *Help* menu. Context sensitive help is also available. Choose a menu item with the mouse and press F1 while keeping the mouse button pressed.

Specifications

Physical Specifications

Specification	1760-L12xxx	1760-L18AWA
Weight	200g (7 oz)	300g (10.6 oz)
Ambient temperature, (operation)	0°C to + 55°C (+32°F to 131°F)	
Storage Temperature	-40°C to +70°C (-40°F to +158°F)	
Operating Humidity	5 to 95%, non-condensing	
Emitted interference, interference immunity	EN 55011, EN 55022, Class B	
Standards and regulations	EN 50178	
Approvals	UL, CSA, CE	

Electrical Specifications

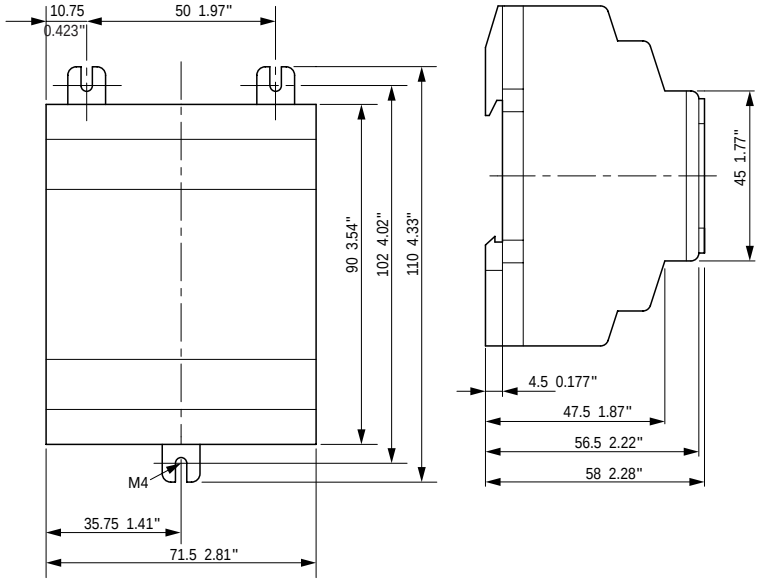
Specification	1760-					
	L12BWB-NC	L12BWB	-L12AWA-NC	-L12AWA	-L12AWA-ND	-L18AWA
Power Supply	24V dc		120/240V ac, 50/60 Hz ±5%			
Digital Inputs	8 (24V dc) (2 can also be used as 0 to 10V analog inputs)		8 (120/240V ac)			12 (120/240V ac)
Relay Outputs	4	4	4	4	4	6
LCD Display	X	X	X	X	-	X
Keypad	X	X	X	X	-	X
Real Time Clock	-	X	-	X	X	X
Text Display Feature	-	-	-	-	-	X
Retentive Actual Values	X	X	-	-	-	X

Accessories

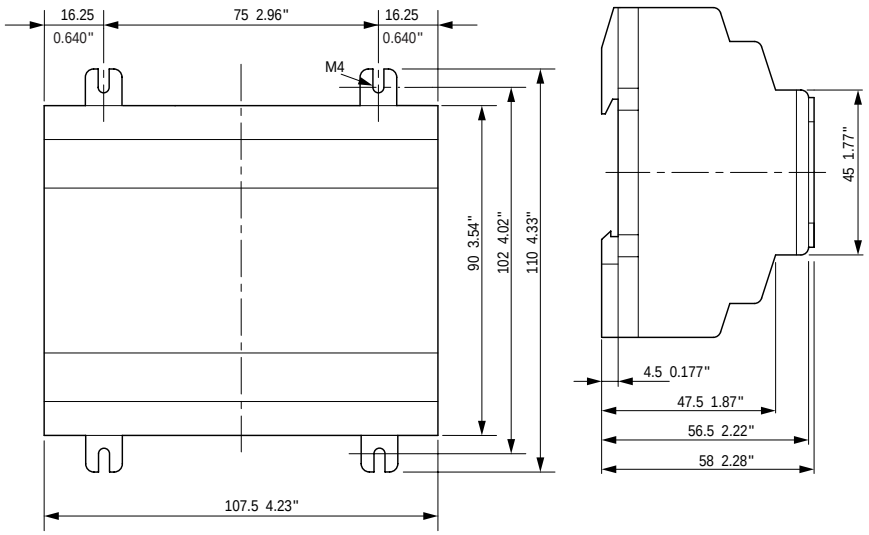
Accessory	1760-					
	L12BWB-NC	L12BWB	-L12AWA-NC	-L12AWA	-L12AWA-ND	-L18AWA
Software	PicoSoft (catalog number 1760-PicoSoft), for Windows 95/98, Windows NT					
PC - Pico interface cable	Pico 1760-CBL-PM02					
Memory Card	Pico 1760-MM1					Pico 1760-MM2
Input/Output Simulator	Pico 1760-SIM		-	-	-	-
Documentation	Getting Results Manual (publication number 1760-GR001A-EN-P) User Manual (publication number 1760-UM001A-EN-P)					

Dimensions

Pico 1760-L12BWB-NC, -L12BWB, -L12AWA-NC, -L12AWA, L12AWA-ND



Pico 1760-L18AWA



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