USER MANUAL

HTP1010 KNX-IO

KNX Multi Function Touch Panels with Intercom

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1. About HTP1010-KNX-IO Functions

HTP1010-KNX-IO series devices are compact, extremely flexible and multi-functional touch panel solutions providing complete array of high-value solutions for building automation. While HTP1010-KNX-IO allows users to connect to KNX Twisted Pair medium, there are two other available devices (HTP1010-KNX-IO) which also provide ethernet connection and many features using IP connection including IP calls and messaging, interactive services etc. HTP1010-KNX-IO also provides more additional input output functions and takes a place in the smart building automation systems like switching electrical appliances.

1.1 Device Overview

HTP1010-KNX-IO devices offer touch panel solutions for the entire control and intercom functionality for building automation systems. Device has many solutions which can increase the comfort like Intercom (VoIP telephony), Home Automation Control, Messaging and Concierge services. HTP1010-KNX-IO devices also allow you to monitor your home while you are away and control your building automation devices using your mobile devices. Three different options are available for HTP1010-KNX-IO devices. These are HTP1010-KNX-IO (KNX Controller With Ethernet Connection, Intercom and additional IO features for building automation)

Below is a list of functions HTP1010-KNX-IO devices support:

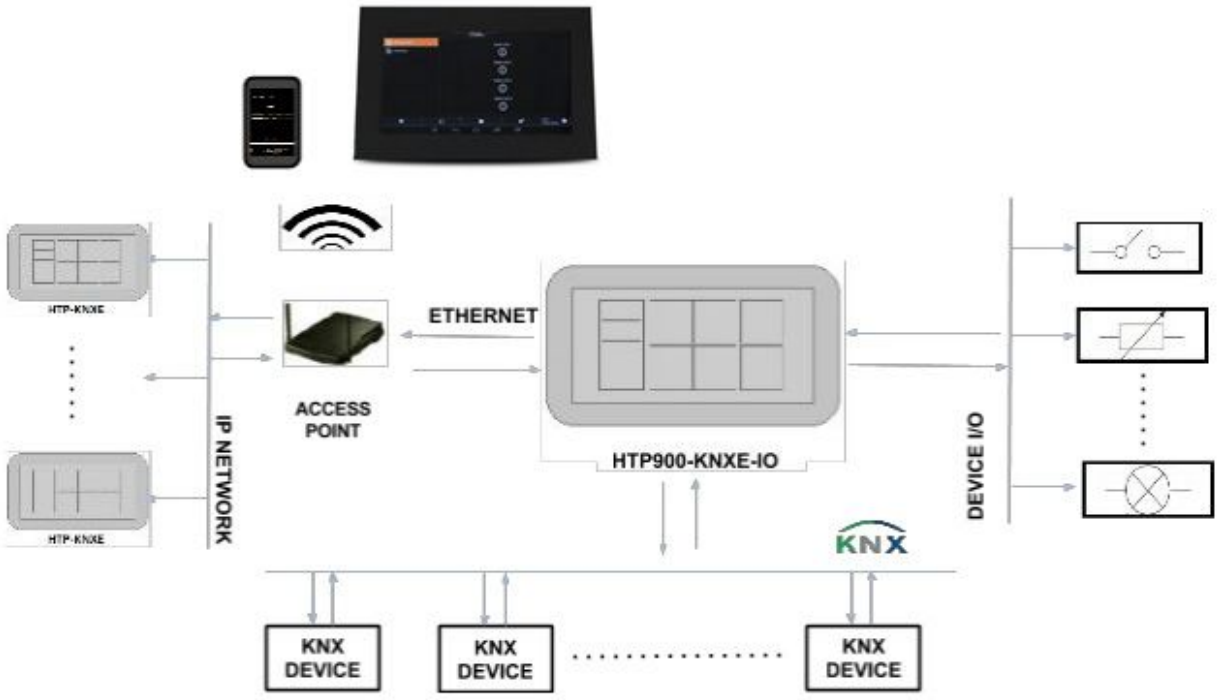
- Touch Panel User Interface
- Full KNX Support
- VoIP Communication and Intercom System (HTP1010-KNX-IO)
- Ethernet 10/100(Modbus TCP, BACnet IP, Socket) (HTP1010-KNX-IO)
- Remote control and monitoring of the building using mobile devices (HTP1010-KNX-IO)

1.2 Technical Specifications

Power supply	802.3af (PoE) 48 V / 380 mA DC
Outputs (HTP1010-KNX-IO)	2 Relay Outputs: 10A-125VAC / 5 A-250VAC / 5A 30VDC
Inputs (HTP1010-KNX-IO)	4 Inputs Digital/Analog Configurable Digital Inputs Range: 0-5 VDC Max. Analog Inputs Range: 0-10 V (Hardware Dependent)
Temperature range	-0...+50 ºC
Case material	Aluminium and Glass
Dimensions (W x H x D)	Touch Panel (Floating): 283 x 185 x 30 mm Back Box (In-wall): 278 x 163 x 40 mm
Height	Touch Panel (Floating):1500 gr. Back Box (In-wall): 550 gr

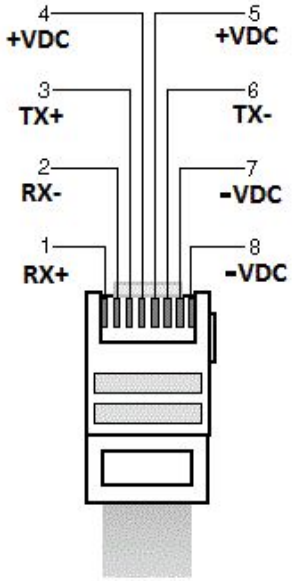
1.3 Wiring Diagrams

HTP1010-KNX-IO devices can be assembled in different configurations with different equipments. Below is a typical diagram for a HTP1010-KNX-IO based system.



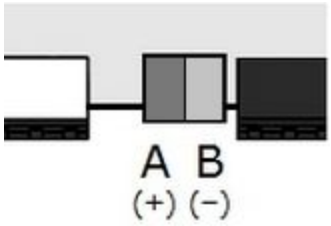
1.3.1 Power Supply and Ethernet Connection

HTP1010-KNX-IO devices can be supplied by PoE technology (802.3af (PoE) 48 V / 380 mA DC). Thus only ethernet cable is enough for both power supply and Internet communication of device. HTP1010-KNX-IO needs internet connection to be able to perform its communication tasks. Below is a figure representing the power and ethernet connection.



1.3.2 KNX Twisted Pair Connection

In order to use KNX functions HTP1010-KNX-IO , device must be connected to KNX Twisted Pair medium. Standard KNX Twisted Pair connector is used for this purpose.



WARNING:

Assembly, installation, and commissioning of system must only be carried out by a qualified electrician!

WARNING:

Do not cut wires when HTP1010-KNX-IO is powered. It can destroy communication circuits of device!

1.4 Main Screen and System Bar

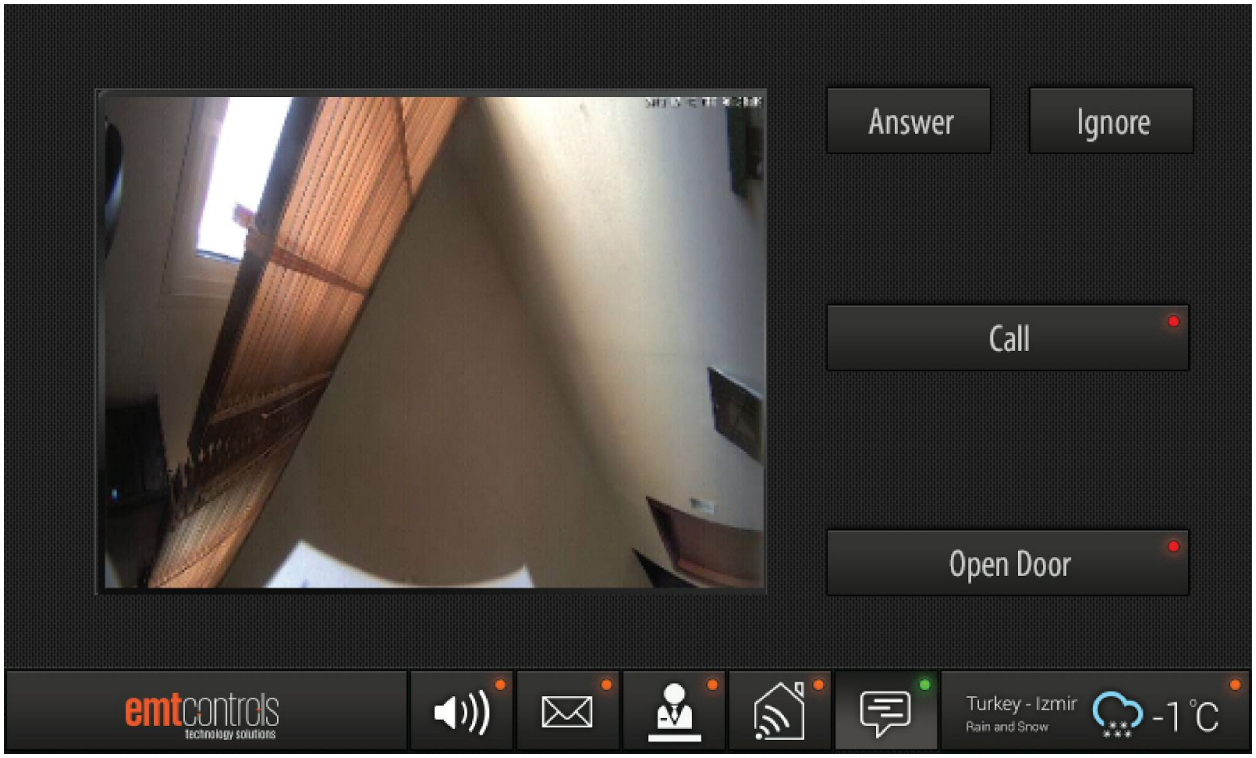
Main Screen of HTP1010-KNX-IO devices is a user friendly graphical user interface which displays widgets like weather, date and time. With its technological and easy to use interface it requires no extra effort for making VoIP calls or controlling your home automation appliances.

The system bar behind the screen is the quick menu for navigating among different functions of the HTP1010-KNX-IO devices.

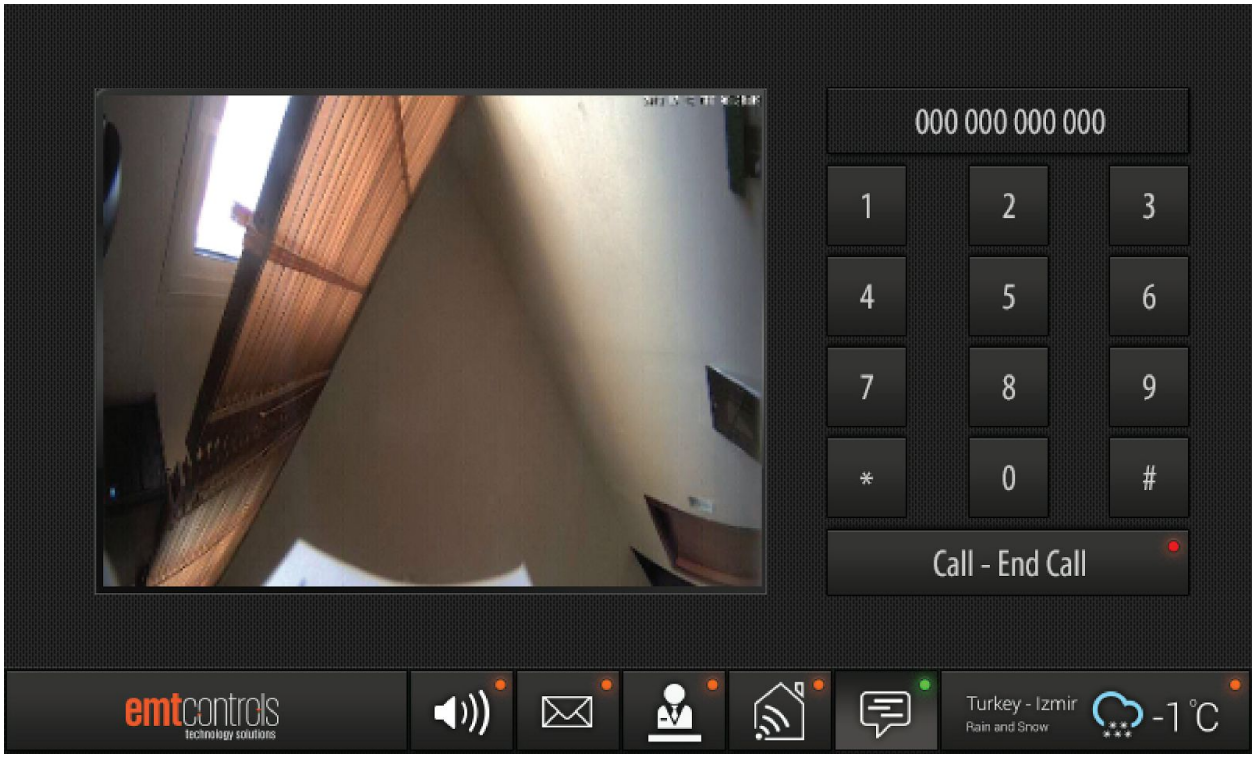
1.5 Intercom Function (HTP1010-KNX-IO)

HTP1010-KNX-IOE can be integrated to the intercom system of a building. Intercom service is provided via VoIP telephony and device can be configured and registered to a SIP server over IP network. Intercom function of device allows users to answer calls from the building entrance or make calls to other devices (apartments,buildings..) connected to the SIP server.

Intercom function does not only provide audio but also provides video communication between two devices. Using the integrated camera of HTP1010-KNX-IO, you can see the person who is at the gate even when you are not home by any device with internet connection. Below is the main screen of intercom function.



By tapping the Call button, a keypad pops up and user can dial the number of destination.

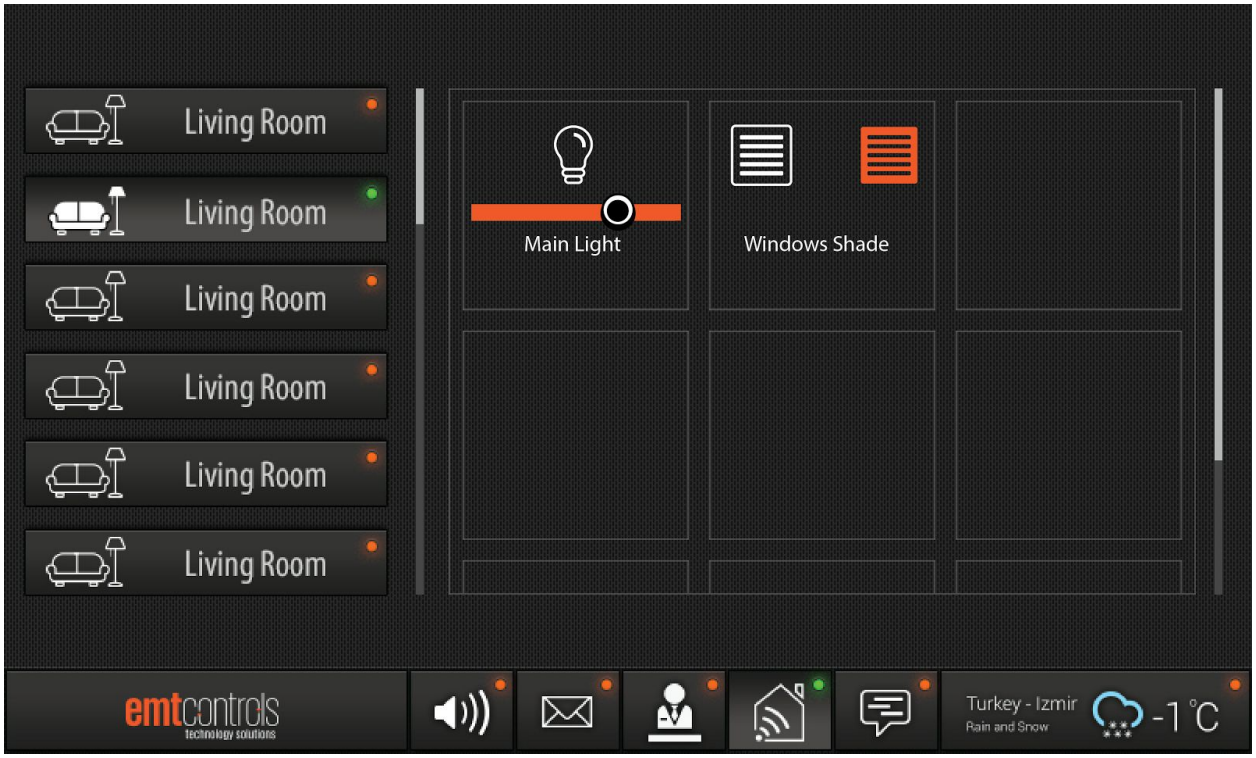

000 000 000 000
1
2
3
4
5
6
7
8
9
*
0
#
Call - End Call
emtcontrols
technology solutions
Turkey - Izmir
Rain and Snow
-1 °C

1.6 KNX Controller and Mobile Device Connection

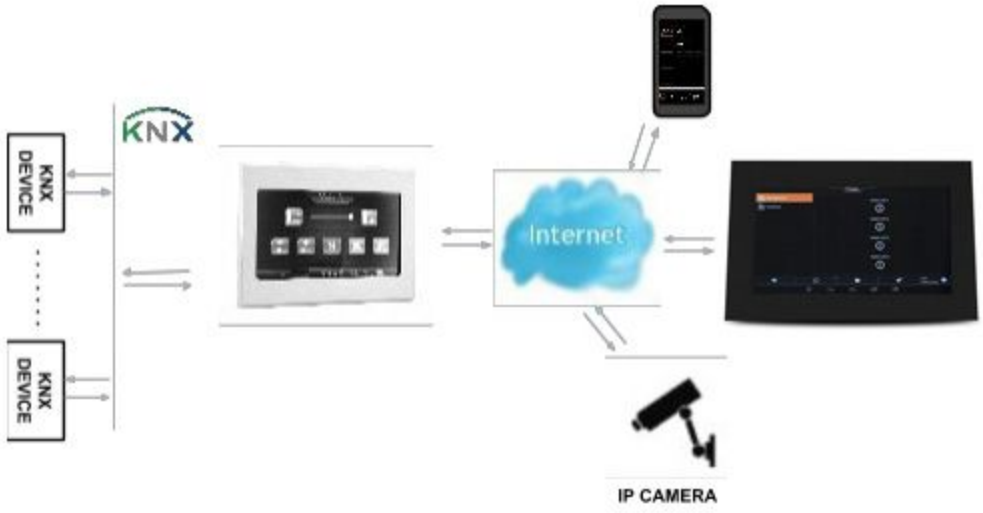
HTP1010-KNX-IO devices are mainly used for controlling every device a home automation system may contain without any restriction like manufacturer or device type. With the practical methods which EMT Builder software provides, any building automation system can be modelled and imported as a project to HTP1010-KNX-IO devices. When prepared as a project, your building automation system can be controlled via touch panel over the KNX twisted pair bus. HTP1010-KNX-IO devices does not require any external devices or gateways to connect with KNX Twisted Pair medium. Standard KNX TP connectors are included on the device.

With the graphical user interface of KNX Controller function, user can easily switch lights, adjusts shutter position etc..

Below is a screenshot of KNX Controller function:



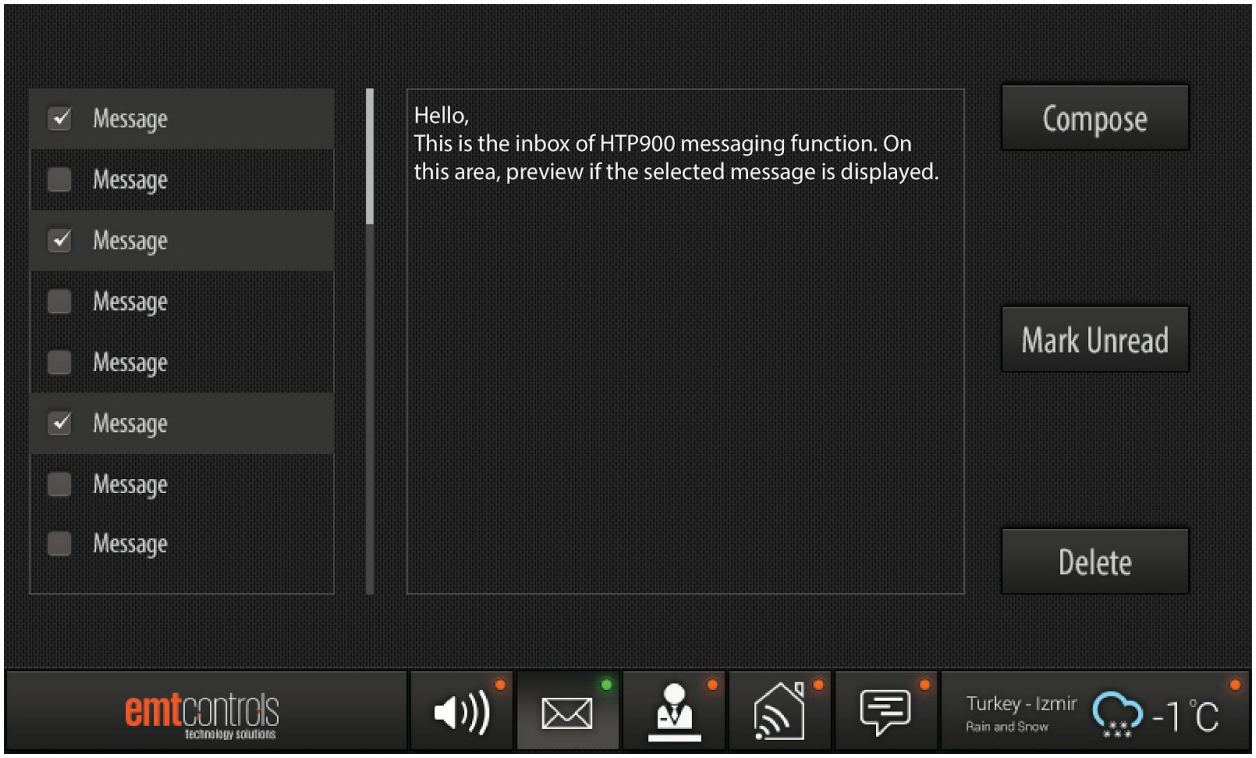
By using one of the ethernet enabled device (HTP1010-KNX-IO) KNX Controller function can also be accessed using any mobile device connected to internet. By this feature you can easily monitor your home and control your electrical appliances even when you are not home.



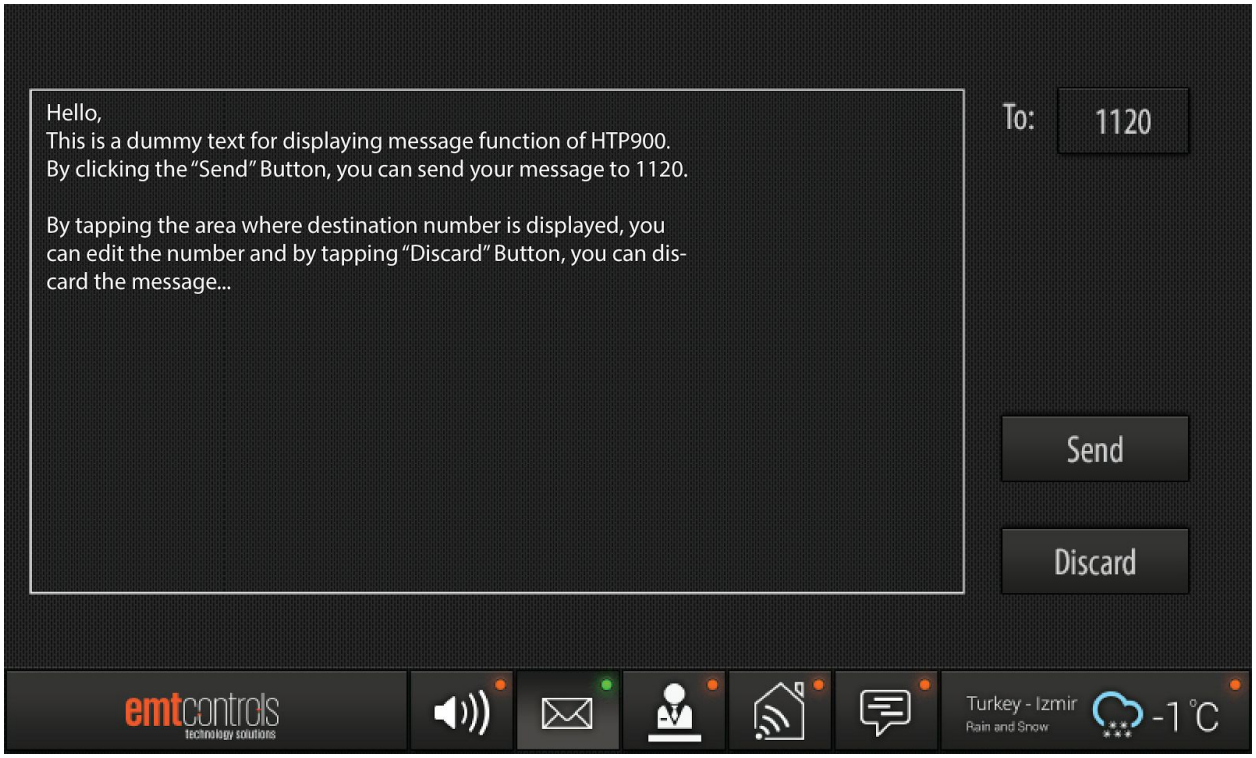
1.7 Mailbox Function (HTP1010-KNX-IO)

Using the Mailbox function of HTP1010-KNX-IO, different devices connected to server can send messages to each other. This function can be used by residents to communicate easily and also allows notifications and announcements to be delivered to a device or group of devices.

Each device can both send and receive messages, device has a user friendly typing interface for composing messages.



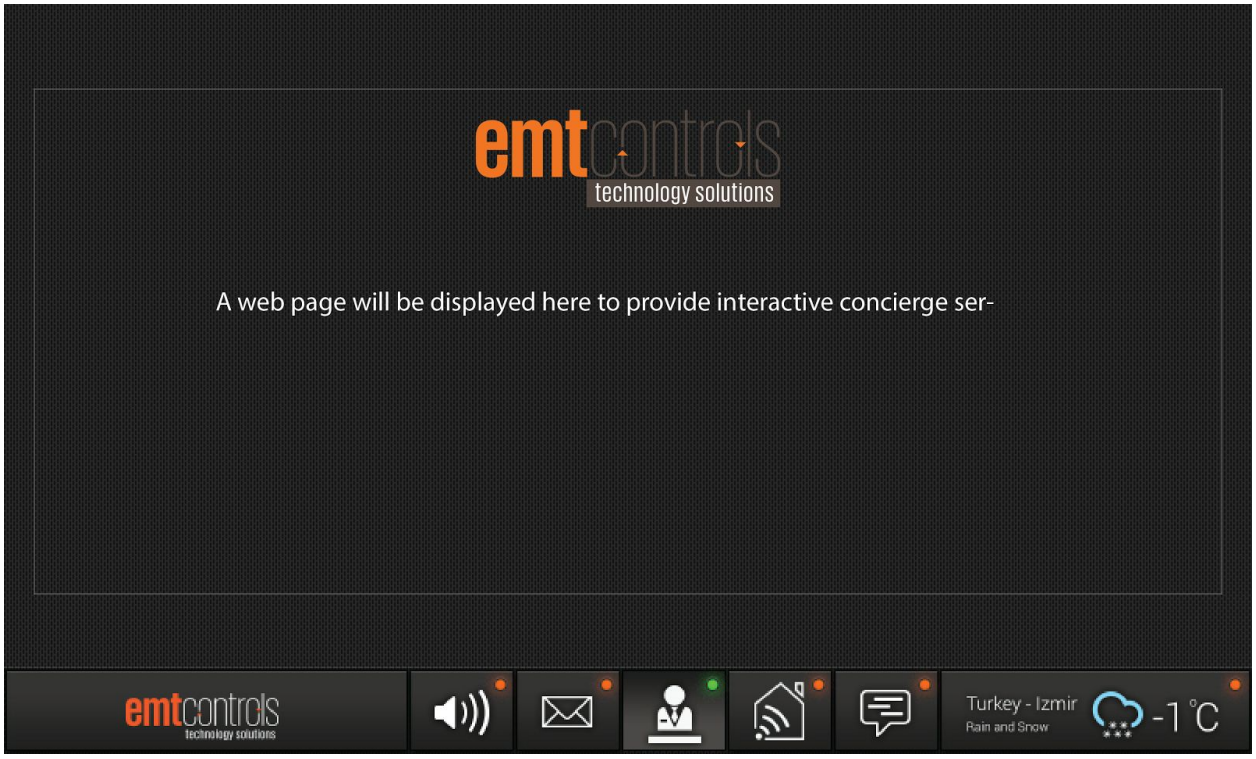
By clicking compose button user will see the screen below:


Hello,
This is a dummy text for displaying message function of HTP900.
By clicking the "Send" Button, you can send your message to 1120.
By tapping the area where destination number is displayed, you can edit the number and by tapping "Discard" Button, you can discard the message...
To:
1120
Send
Discard
emtcontrols
technology solutions
Turkey - Izmir
Rain and Snow
-1 °C

1.8 Concierge Services (HTP1010-KNX-IO)

HTP1010-KNX-IO provides concierge services to user via HTTP connection. By connecting to a web server device receives the concierge services from server and display additional options on concierge menu like finding a florist or calling a taxi etc.

Concierge function screen looks like this:



2. Configuring Device

2.1 Power Supply And IP Connection (All three devices)

HTP1010-KNX-IO needs to be connected to an IP network for performing its communication functions. Ethernet cable connection (RJ45 standard jack) can be plugged into the connector behind the device before mounting it on to a wall. All HTP1010-KNX-IO devices are supplied from this connector with POE power supply technology (complies with 802.3af standard) including HTP1010-KNX-IO for compliance though it has no ethernet functionality .

2.2 Intercom Configuration (HTP1010-KNX-IO)

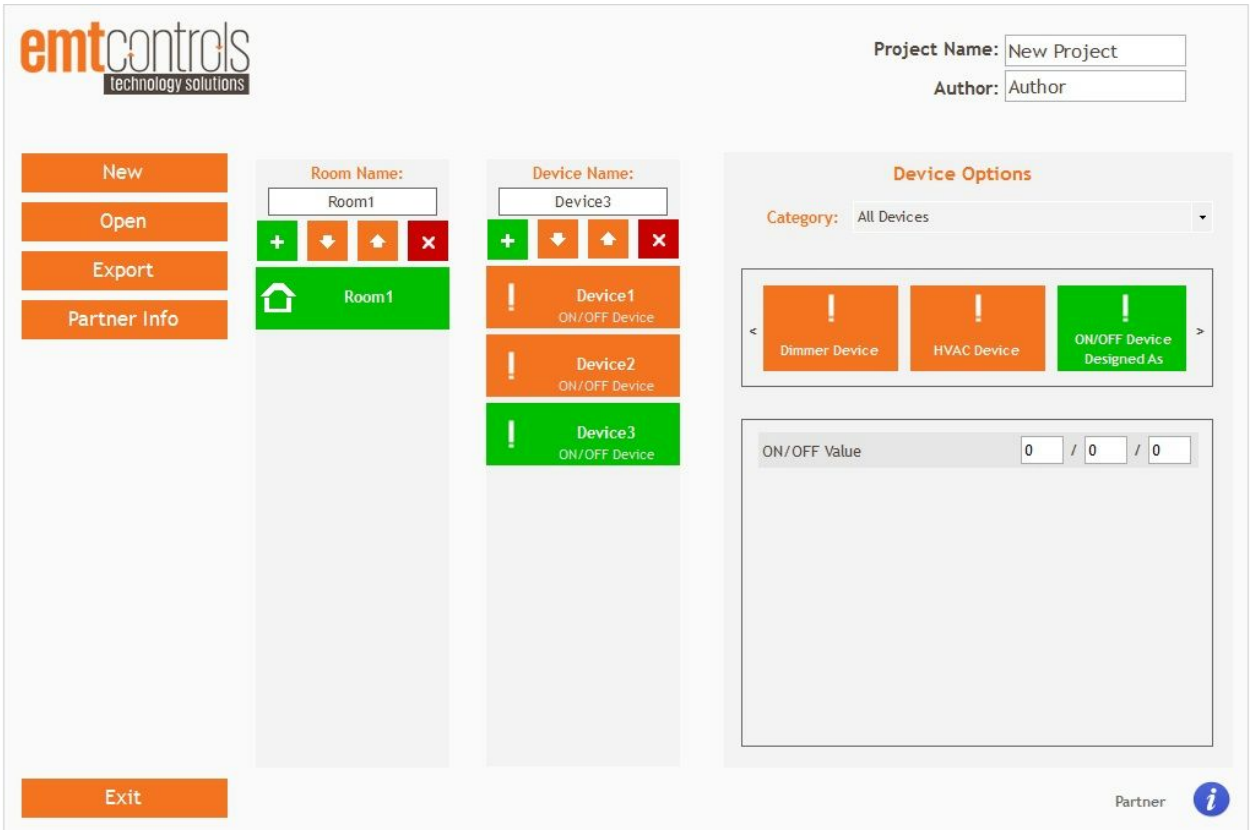
To enable intercom functions, some parameters should be adjusted. These parameters are available on the settings menu of HTP1010-KNX-IO. By assigning a username, password and registering the device to server, devices can be used as a user panel for any intercom application.

2.3 KNX Controller and EMT Builder PC Software (All three devices)

HTP1010-KNX-IO, HTP1010-KNX-IO can be used for controlling any KNX device on a building automation installation. By using the general touch input, easy to use user controls like buttons, sliders and input boxes any KNX input task can be achieved. KNX controller user interface and functionality can be easily changed using the EMT Builder PC software. Using this device any KNX project can be modelled and imported to HTP1010-KNX-IO touch panel devices.

EMT Builder is a PC application for creating KNX projects and interfaces for HTP1010-KNX-IO series devices. Using this software you can Add rooms and devices to your projects, edit room and device configurations like names and group addresses…

Below is a Screenshot of EMT Builder:



The left handed column is for adding/removing rooms and the right handed column is for adding/removing devices into the selected room.
We can add rooms and devices without any limit.
Above the columns there are buttons for adding-removing-moving up and moving down rooms or devices. Also there are text boxes for editing names of these items above the buttons.
Once we select a device in the project, we can change device parameters from the Device options menu.

2.4 Mailbox Configuration (HTP1010-KNX-IO)

Mailbox function of HTP1010-KNX-IO is used for sending/receiving SIP messages between devices connected to the server. Mailbox function also requires some parameters for configuration like mailbox information and username password parameters. These parameters are available on settings menu of HTP1010-KNX-IO.

2.5 Concierge Function (HTP1010-KNX-IO)

Concierge function of HTP1010-KNX-IO is a screen which displays and allows user to interact with a web page. This web page can be on any server from the IP network which device is connected. Concierge options are available on setting page of the device.

3.KNX Functions and Device Inputs/Outputs (HTP1010-KNX-IO)

HTP1010-KNX-IO has auxiliary inputs and outputs which can be configured to operate in building control scenarios.

3.1 Inputs of HTP1010-KNX-IO

HTP1010-KNX-IO has 4 inputs which can be used as both analog and digital inputs. These inputs can be linked to work with any KNX devices by linking corresponding communication objects via the ETS software.

Below is the table of functions and related communication objects for each function of inputs.

	ON/OFF Button	Toggle Button	Push Button	Scene	Analog Input
ON/OFF	x				
Output Status		x			
Toggle		x			
Push Button			x		
Scene				x	
Analog Value					x

3.1.1 ON/OFF Button and Push Button Functions

ON/OFF buttons can perform only one operation. According to its ETS configuration, an ON/OFF button can transmit either ON or OFF value to the KNX bus. If any input is configured as a push button, it will have the Push Button object and it will transmit ON when the contact is closed and OFF when the contact is released.

Only ON/OFF object of the corresponding input is related to ON/OFF Button Function.

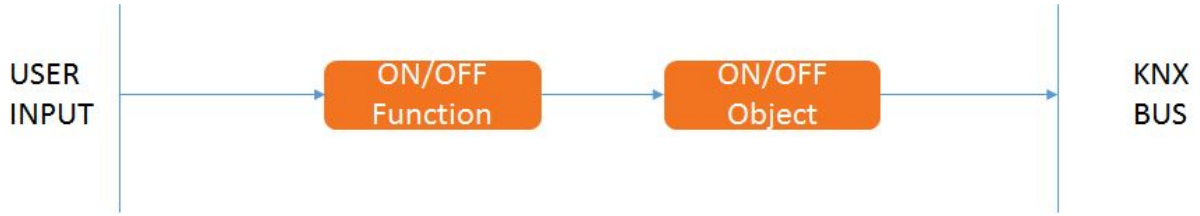


Figure. Block Diagram Representation of ON/OFF Function

3.1.2 Toggle Button Function

If an input is configured as a toggle button then there will be two objects accessible via ETS. These objects are, ON/OFF object and Output Status object. Each time the button is pressed the invert of the previous state of the output is sent to the bus via the ON/OFF object of the touch button. Feedback about current state of the output device is obtained via the Output Status object of the input.

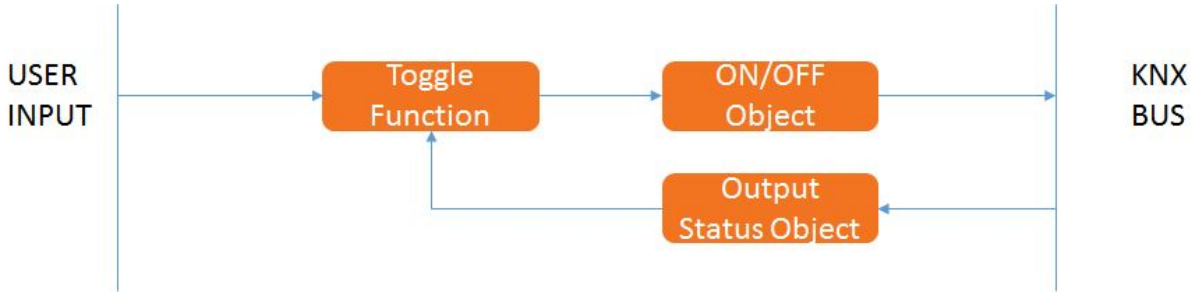


Figure. Block Diagram Representation of Toggle Function

3.1.3 Scene Function

When configured as Scene a digital input transmits a scene value to the KNX bus. Leaving the house scene can be given as an example for the usage of this function.

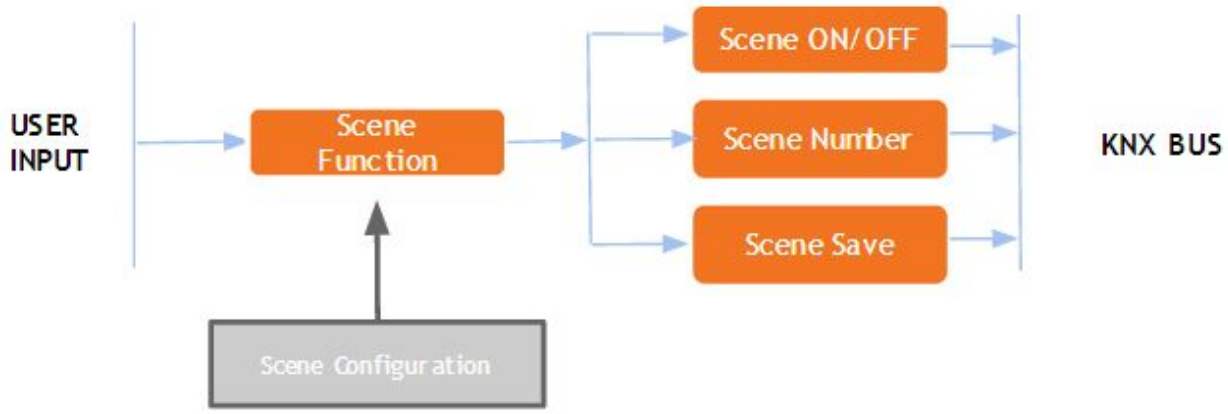


Figure. Block Diagram Representation of Scene Function

3.1.4 Analog Value Function

If an input of HTP1010-KNX-IO is configured as an analog input it will have only one communication object available on ETS which is the Analog Value object. This object is a read only object which continuously updates its value by the periodic measurements performed by HTP1010-KNX-IO.

This measurements can be used as input for control scenarios as they are available as generic inputs. An example for usage of this configuration would be to turn on a light when the illumination level on a zone decreases.

Below is a figure for illustrating the Analog Input function.

Figure5. Block Diagram Representation of Analog Value Function

3.1 Outputs of HTP1010-KNX-IO

HTP1010-KNX-IO has two integrated digital outputs (Relays) which can be configured to switch electrical appliances according to the messages received from the KNX bus. These digital outputs can be used in different control scenarios of a building automation system by linking their corresponding communication objects on ETS commissioning.

Below is a list of available group objects for relays:

- ON/OFF object
- Timer Object
- Scene Object
- Status Object

By configuring the digital outputs via ETS and linking above objects with appropriate input devices, these relays can be programmed to achieve many different switching tasks and scenarios.

Digital outputs can be used as generic digital switches by three configuration. If timer and scene functions are disabled, they will simply operate as a switch and close contacts when they receive messages from the bus.

If the timer of a digital output is enabled, it can be used as a time delay switch. When ON/OFF object is set, the timer will automatically disable it after a certain time delay. Alternatively if the scene object of a digital output is enabled, its contacts should be configured to be ON or OFF for a scene. Scene object has an 8 bit data field which can receive scene values.

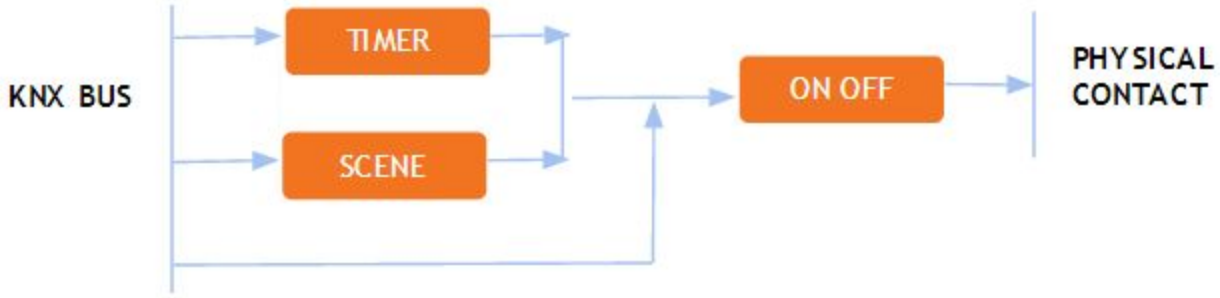


Figure5. Block Diagram Representation of Digital Output Functions

4. Warranty Information

4.1 Details of Warranty

4.1.1 Warranty Period

The warranty period for a product that was purchased (hereafter called “delivered product”) is 2 years from the time of delivery to the location specified by the customer.

4.1.2 Warranty Scope

EMT Controls shall replace or repair a defective product free of change if a defect attributable to EMT Controls occurs during the warranty period above. This warranty does not cover defects caused by the delivered product reaching the end of its service life and replacement of parts that require replacement or that have a limited service life.

This warranty does not cover failures that result from any of the following causes:

1. Improper handling, abuse, or use in unsuitable conditions or in environments not described in product catalogs or manuals, or in any separately agreed-upon specifications.

2. Causes not attributable to the delivered product itself.

3. Modifications or repairs not performed by EMT Controls.

4. Abuse of the delivered product in a manner in which it was not originally intended.

5. Events for which EMT Controls is not responsible, such as natural or human-made disasters.

4.2 Limitations of Liability

1. EMT Controls shall in no event be responsible for any damage or loss of opportunity to the customer that arises due to failure of the delivered product.

2. EMT Controls shall not be responsible for any programs (including parameter settings) or the results of program execution of the programs provided by the user or by a third party for use with programmable EMT products.

3. The information described in product catalogs or manuals is provided for the purpose of the customer purchasing the appropriate product for the intended application. The use therefore does not guarantee that there are no infringements of intellectual property rights or other proprietary rights of EMT or third parties, nor does it construe a license.

4. EMT Controls shall not be responsible for any damage arising from infringements of intellectual property rights or other proprietary rights of third parties as a result of using the information described in catalogs or manuals.

4.3 Suitability for Use

1. It is the customer's responsibility to confirm conformity with any standards, codes, or regulations that apply if the EMT product is used in combination with any other products.

2. The customer must confirm that the EMT product is suitable for the systems, machines, and equipment used by the customer.

3. Consult with EMT to determine whether use in the following applications is acceptable. If use in the application is acceptable, use the product with extra allowance in ratings and specifications, and provide safety measures to minimize hazards in the event of failure.
• Outdoor use, use involving potential chemical contamination or electrical interference or use in conditions or environments not described in product catalogs or manuals.
• Nuclear energy control systems, combustion systems, railroad systems, aviation systems, vehicle systems, medical equipment, amusement machines, and installations subject to separate industry or government regulations.
• Systems, machines, and equipment that may present a risk to life or property.
• Systems that require a high degree of reliability, such as systems that supply gas, water, or electricity, or systems that operate continuously 24 hours a day.
• Other systems that require a similar high degree of safety.

4. Never use the product for an application involving serious risk to life or property without first ensuring that the system is designed to secure the required level of safety with risk warnings and redundancy, and that the EMT product is properly rated and installed.

5. The circuit examples and other application examples described in product catalogs and manuals are for reference. Check the functionality and safety of the actual devices and equipment to be used before using the product.

6. Read and understand all use prohibitions and precautions, and operate the EMT product correctly to prevent accidental harm to third parties.

4.4 Specifications Change

The names, specifications, appearance, and accessories of products in product catalogs and manuals may be changed at any time based on improvements and other reasons. The next editions of the revised catalogs or manuals will be published with updated code numbers. Consult with your EMT representative to confirm the actual specifications before purchasing a product.

END OF DOCUMENT