Panasonic®

WRKT92105NC   KNX IP INTERFACE IP100
WRKT92115NC   KNX IP INTERFACE I/O IP164

WRKT92105NC
WRKT92115NC

CE

⚠ Installation should only be carried out by a technical personnel having certificate of competency

Panasonic®

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General Information

KNX IP Interface is used for 2 way communication between KNX TP and Ethernet/IP. Thanks for this technology home automation system can control via PC, mobile device or through the internet. KNX IP Interface establishes access to all bus devices featuring commissioning, addressing, setting parameters, visualization and diagnostic operations.
KNX IP Interface can work as a programming tool with ETS or any ETS compatible commissioning software.
KNX IP Interface can establish up to 4 IP tunneling connection at same time. Device IP settings, physical address, tunneling physical addresses and input/output object's group addresses (only KNX I/O) can adjust through the web interface. Also device firmware can update through the web interface.

Main Features

• KNX IP Tunneling
• KNX TP
• 4 IP tunneling connection with individual address
• IP filtering for tunneling connections
• Parameter setting via web interface
• Firmware update via web interface
• DIN rail
• ETS5 compatible
• Input and Output objects (only for IP164)
• Power supply via KNX bus(Works without external power supply)
• APDU length 15 byte
• KNXnet/IP, DHCP, AutoIP, HTTP, UDP/IP, TCP/IP, ARP, ICMP and IGMP protocol support

Product Components
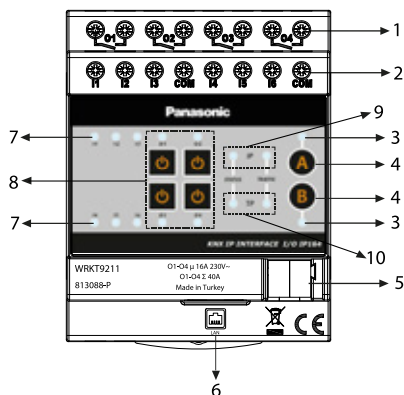
1- Output Ports (Only for IP164)
2- Input Ports (Only for IP164)
3- Function LEDs
4- Function Buttons
5- KNX
6- Ethernet
7- Input LEDs (Only for IP164)
8- Output Buttons and LEDs (Only for IP164)
9- IP Status and Traffic LEDs
10- TP Status and Traffic LEDs

Technical Information

Power	
Operating voltage	DC 21-32 V (from KNX bus)
Environmental conditions	
Ambient temperature	-5 C …+45 C
Storage temperature	-10 C … +55 C
Ambient humidity	5…93% (non-condensing)
Housing	
Dimensions (HxWxD)	90 mm x 71,8 mm x 65,8 mm
Mounting (IEC60715)	35 mm top-hat rail (TH35)
Mounting width	DIN rail 72mm (4 modules)
KNX bus connection	KNX connector (243-211 Wago)
IP connector	Ethernet (RJ45, female)
Input / Output (only IP164)	
Outputs	4 Latch Relay Outputs (16A-230VAC Resistive) (1200W-230VAC Tungsten)
Inputs	6 Dry Contact Digital Inputs
Electrical safety	
Protection type (IEC60529)	IP 20
Pollution degree (IEC60664)	2
Protection class (IEC61140)	II
Overvoltage category (IEC60664)	III
Standards	
EMC	EN 50428
LVD	EN 60669-2-5, EN 60669-1, EN 60669-2-1
KNX	EN 50090

Installation and Maintenance

• After connection to the KNX bus system, the device works with its default settings
• Warning: Do not connect to 230 V. The device is supplied by the KNX bus and does not require any additional external power supply

• The device may only be installed and put into operation by a qualified electrician or authorized person
• Installation on a 35 mm DIN rail (TH35)
• Connect the KNX bus line as for common KNX bus connections with a KNX bus cable, to be stripped and plugged into a KNX TP connector
• Installation only in dry locations
• The housing must not be opened
• Protect the device from moisture, dirt and damage
• The device needs no maintenance
• If necessary, the device can be cleaned with a dry cloth.
• For cables connected to dry contact inputs, a ferrite core providing a minimum of 495ohm at 100 Mhz should be used. Ferite core should be close to input contacts.

Product Details

LED indicators

NO	LED	COLOUR/SITUATION	EXPLANATION
1	IP STATUS	Blue	IP connection ok
		Off	No IP connection
2	IP TRAFFIC	Blinking green	Incoming IP traffic
		Green	No IP traffic
		Blinking red	IP connection error
3	TP STATUS	Blue	TP connection ok
		Off	No TP connection
4	TP TRAFFIC	Blinking green	Incoming TP traffic
		Off	No TP traffic
		Blinking red	TP connection error
5	B	Blinking blue	Firmware recover or parameter reset mod active
		Off	Firmware recover or parameter reset mod not active
6	A	Blue	Flashes as many as the maximum connection count in a period
		Off	Maximum connection adjustment mode is off
4 and 5	TP TRAFFIC and B	LED's blinks sequentially	System rebooted and bootloader installing new firmware
7	I1 (IP164)	Blue	Signal at input 1
		Off	No signal at input 1
8	I2 (IP164)	Blue	Signal at input 2
		Off	No signal at input 2
9	I3 (IP164)	Blue	Signal at input 3
		Off	No signal at input 3
10	I4 (IP164)	Blue	Signal at input 4
		Off	No signal at input 4
11	I5 (IP164)	Blue	Signal at input 5
		Off	No signal at input 5
12	I6 (IP164)	Blue	Signal at input 6
		Off	No signal at input 6
13	O1 (IP164)	Blue	Output 1 is active
		Off	Output 1 is de-active
14	O2 (IP164)	Blue	Output 2 is active
		Off	Output 2 is de-active
15	O3 (IP164)	Blue	Output 3 is active
		Off	Output 3 is de-active
16	O4 (IP164)	Blue	Output 4 is active
		Off	Output 4 is de-active

Buttons

NO	LED	EXPLANATION
1	B	Firmware recover or parameter reset button
2	A	Decrease / Increase tunneling connection
3	O1 (IP164)	O1 button
4	O2 (IP164)	O2 button
5	O3 (IP164)	O3 button
6	O4 (IP164)	O4 button

KNXnet/IP

KNX IP Interfaces are highly similar to USB interfaces. The only difference is that they use the IP communication medium and the KNXnet/IP communication protocol. However, KNX end devices can be integrated directly via IP.

IP Tunneling

KNX IP Interface offers the possibility for point-to-point connections for the between supervisory system and KNX installation. Device support 4 IP tunneling connection at same time. Maximum connection limit can change over the web interface and IP filter can activated for each tunneling connection.

IP Bootloader

IP bootloader function is used for upgrading device firmware. This is not a parameter update. While firmware update, all flash content erased and rewritten after firmware update if want you can reinstall previous firmware. (System Recovery).
The software update is done via web interface. Firmware update is describe in "Firmware Update" chapter.

Device Functions

KNX IP Interface starts to working with default parameters after powering up. When installing the device KNX system, these parameters should be taken into consideration and if necessary, the device and tunneling addresses should be changed through the web interface.

IP Receive Procedure and IP Settings

KNX IP Interface is designed for use in IEEE802.3 compatible 10/100 BaseT networks. Device receives IP from DHCP server if DHCP setting is on. If the DHCP setting is on but the device cannot find the DHCP server, the device receives IP through the AutoIP procedure. If DHCP is not activated, the device starts with the static IP address entered on the web server. Default IP settings are shown in the following table.

DHCP	Off
Static IP Address	192.168.1.167
Net Mask	255.255.255.0
Gateway Address	192.168.1.1

To change the IP settings of the device;

1- The IP address of the device is written on the address line of any web browser (Google Chrome is prefered) and hit enter button.
2- After entering "admin" in both the "username" and "password" tabs in the window that opens, the IP settings page is entered by pressing the login button.
3- After the IP settings are done, the settings are saved by pressing the "SAVE & REBOOT" button.

Note: To reset the IP settings of the device, "RESTORE DEFAULT" button can be pressed or it can be reset together with all other setting parameters with the help of the "B" button without entering the Web interface (Reset Device Parameters).

Device Connection Settings

KNX IP Interface supports a maximum of 4 connections at the same time. The device and the connections each have an individual address. The number of connections is 1 by default and can be set between 1 and 4. UDP timeout time is 1 by default and can be increased up to 8 seconds in order to avoid timeout problems in slow connections (e.g. connections over the Internet).

The default connection settings of the device are as follows.

Device address	15.15.0
Maximum connection count	1
UDP timeout	1 second

Connection	Connection Address	IP filtering (On/Off)
Tunneling 1	15.15.30	Off
Tunneling 2	15.15.31	Off
Tunneling 3	15.15.32	Off
Tunneling 4	15.15.33	Off

To change device connection settings;

1- Repeat IP settings changing steps 1 and 2. Then click to the "Connection Settings".
2- After the connection settings are made in the window that opens, the setting is saved by pressing the "SAVE" button.

Note: To reset the IP settings of the device, "RESTORE DEFAULT" button can be pressed or it can be reset together with all other setting parameters with the help of the "B" button without entering the Web interface (Reset Device Parameters).

KNX Object Settings (Only IP164)

There are 6 digital dry contact inputs and 4 dry contact relay outputs on IP164. These inputs and outputs are defined as KNX objects. In this way, the inputs and outputs on the device can be associated and controlled with any device on the KNX bus. The default group addresses assigned to these objects can be changed through the web interface.

The default object settings of the device are as follows.

Input	Input Type (Normal/Invert)	Input Debounce(ms)	Group Address
I1	Disable	50	15 / 7 /48
I2	Disable	50	15 / 7 /49
I3	Disable	50	15 / 7 /50
I4	Disable	50	15 / 7 /51
I5	Disable	50	15 / 7 /52
I6	Disable	50	15 / 7 /53

Output	Output Type (Normal/Invert)	Startup State	Group Address	Feedback (On/Off)	Feedback Group Address
O1	Disable	Open Contact	15 / 7 /40	On	15 / 7 /41
O2	Disable	Open Contact	15 / 7 /42	On	15 / 7 /43
O3	Disable	Open Contact	15 / 7 /44	On	15 / 7 /45
O4	Disable	Open Contact	15 / 7 /46	On	15 / 7 /47

To change KNX object settings;

1- Repeat IP settings changing steps 1 and 2. Then click to the "Object Settings".
2- After the input output settings are made in the window that opens, the setting is saved by pressing the "SAVE" button.

Note: To reset the IP settings of the device, "RESTORE DEFAULT" button can be pressed or it can be reset together with all other setting parameters with the help of the "B" button without entering the Web interface (Reset Device Parameters).

Reset Device Parameters

In order to connect to the KNX IP Interface device over Ethernet, the IP address block (eg 192.168.2.X) of the device must match the IP address block (192.168.2.Y) of the PC or mobile device. In cases where IP address cannot be determined, device IP address and all other parameters can be reset to factory settings by performing parameter reset.
Resetting device parameters;
1- Press and hold the "B" button. As soon as the button is pressed, the "B" LED starts to flash.
2- "B" button is kept pressed for about 10 seconds until the "B" LED lights up steadily.
3- As soon as the "B" LED is steady, resetting is done. When the button is released, the "B" LED also goes out.

Firmware Update

The firmware of the KNX IP Interface device can be updated through a web browser without any extra device required.
To update the firmware;
1- Repeat IP settings changing steps 1 and 2. Then click to the "FW Update".
2- Click on the "Select File" button in the window that opens, and the firmware file with the ".bin" extension provided by Panasonic Life Solutions is selected from the location where it is saved.
3- By clicking the "Upload" button. The software installation process starts. When the software installation process is completed, "FIRMWARE UPLOAD SUCCEED, REBOOT REQUIRED FOR INSTALLING NEW FIRMWARE!!!" warning appears on the screen.
4- The device is restarted by pressing the "REBOOT" button.
5- When the device is restarted, software restore point is created and software installation is completed. Meanwhile, "B" and "TP TRAFFIC" LEDs periodically flashes.

Changing Maximum Allowed Connection Settings

Maximum allowed connection also can change without entering web interface.
To change maximum allowed connection with button;
1- Press and hold the "A" button about 5 seconds until the "A" LED starts to flash. Device will be entered maximum allowed connection adjustment mode. In this mode LED blink will simulate the connection count. The LED blinks as many as the number of connections in a period. For eg. maximum connection count is 2 so LED blinks as below sequence.

LONG OFF ➔ ON ➔ OFF ➔ ON ➔ LONG OFF ➔

2- Every pressing and releasing "A" button will change the connection count(1 ➔ 2 ➔ 3 ➔ 4 ➔ 1). Maximum connection count is "4".
3- You can save setting and exit adjustment mode by pressing and holding "A" button about 5 seconds. If you not pressed "A" button, adjustment will ended automatically after 30 seconds.
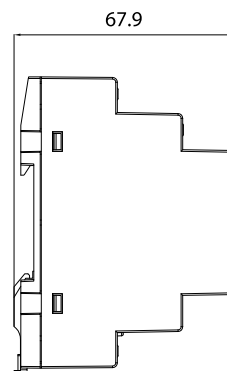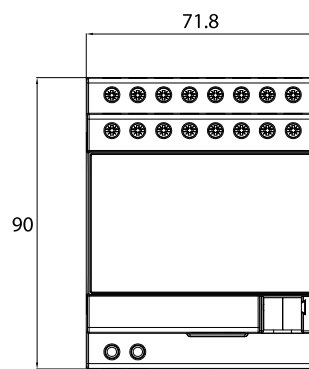
System Recovery

If there is an unexpected situation in the new software after the software update, the system automatically restores the previous software. The restore process can also be done manually if desired.
To restore the system manually;
1- The device is de-energized.
2- Press and hold the "B" button on the device.
3- The device is energized. After about 10 seconds, the "B" LED starts flashing.
4- While the LED is flashing, "B" button is released and pressed again and the system restore process begins.
5- While the system is being restored, "B" LED continues to flash. When the restore is complete, "B" LED turns off and the device starts working.

Dimensions

71.8

90

67.9