

Desigo™

## System controller

PXC5.E003



### Feature overview

- System controller to integrate BACnet MS/TP and Modbus devices
- Communication BACnet/IP
- 2-port Ethernet switch for low-cost cabling
- Integration of Modbus data points via RTU and/or TCP
- Integration of BACnet MS/TP devices
- WLAN interface for engineering and commissioning
- Operating voltage AC 24 V
- Mounted on standard rails or on the wall
- Plug-in screw terminal blocks

## Functions

Freely programmable system controller.

- System functions (alarming, scheduling, trending, access protection with individually definable user profiles and categories)
- System controller for system networks with PXC5, PXC4 and DXR controllers over BACnet/IP or BACnet MS/TP
- Integrates third-party devices and systems
- Generic object viewer for data points of several assigned devices via embedded web interface
- Generic object viewer for local data points and assigned devices via embedded web interface
- Engineering and commissioning with the ABT Site Tool using graphical function charts
- BACnet communication on IP or MS/TP, in compliance with the BACnet standard including B-BC profile (Rev. 1.15)
- Wireless connection for engineering and commissioning
- Cloud connectivity for remote access
- Integration of Modbus data points via RTU and/or TCP

## Type summary

Type	Order number	Description
PXC5.E003	S55375-C103	System controller to integrate <ul style="list-style-type: none"> <li>• up to 500 Modbus data points (via RTU and/or TCP)</li> <li>• up to 30 devices in a field level network BACnet/MSTP</li> </ul>

## Equipment combinations

### Desigo Control Point

Description	Type	Data sheet
BACnet touch panels with integrated Web server 7.0 " 10.1 " 15.6 "	PXM30.E PXM40.E PXM50.E	A6V11664137
Touch panels clients with data storage in Web-server PXG3.Wx00-1 7.0 " 10.1 " 15.6 "	PXM30-1 PXM40-1 PXM50-1	A6V11664139
BACnet/IP Web server with standard functionality BACnet/IP Web server with extended functionality	PXG3.W100-1 PXG3.W200-1	A6V10808336


## Technical and mechanical design

The compact build allows for mounting the devices on a standard rail or a wall.

		<p>4 Service button (network login and WLAN on/off)</p> <p>5 2-port Ethernet switch with 2 LEDs per port for display purposes</p> <p>6 Plug-in terminal block with screw terminals KNX, PL-link, for future use</p> <p>7 Plug-in terminal block with screw terminals Power supply</p> <p>8 Plug-in terminal blocks with screw terminals Digital input, for future use</p> <p>9 Plug-in terminal block with screw terminals M-bus, for future use</p> <p>10 Plug-in terminal block with screw terminals COM1 / COM2 (MS/TP or Modbus)</p> <p>11 DIP switches for bus termination and polarization COM1 / COM2</p> <p>12 Slider for mounting on standard mounting rails</p> <p>13 Eyelets for cable ties</p>	
1	Plastic housing	14	Holes for wall mounting
2	Front cover	15	Date / Series and Serial number
3	LEDs for communication and state	16	QR code for default WLAN access Description see Technical data

## LED displays

Activity	LED	Color	Activity	Function
<p>87654321</p> <p>9270005</p> <p>■ RUN ■ COM1 TX            ■ COM1 RX ■ COM2 TX            ■ BAT ■ COM2 RX            ■ SVC            ■ WLAN</p>	Ethernet 1/2	Green	Continuously ON Continuously OFF Flashing	Link active No connection Network traffic
		Yellow	Continuously ON Continuously OFF	Link 100 Mbps Link 10 Mbps
	RUN	Green	Continuously ON Continuously OFF Flashing	Device operational Device not operational Start-up or program halted
			Red	Continuously OFF Continuously ON Rapid flashing
	Cloud icon	Blue	Continuously ON Continuously OFF	Connection to the cloud OK No connection to the cloud
	BAT	Red	Continuously OFF Continuously ON	Optional battery OK Optional battery empty - replace
	COM...	Yellow	Flashing Continuously OFF	Communication No communication to subsystem
	KNX (for future use)	Yellow		
	SVC	Red	Continuously OFF Flashing	OK Device is not configured
			Flashing per wink command	Identification of the device after receipt of wink command

Activity	LED	Color	Activity	Function
	WLAN	Blue	Steady OFF Steady ON Flashing	WLAN inactive WLAN active and at least one WLAN client connected WLAN active and no WLAN client connected
 SVC	Service button		Short press (< 1 s) Long press (> 3 s)	Identification in the network Enable/disable WLAN WLAN is disabled automatically after 10 min if no client is connected
			As per description	Do the following to reset the device to factory state: <ol style="list-style-type: none"> <li>1. Power off the device.</li> <li>2. Power on the device.</li> <li>3. Wait until all LEDs light up and turn off again, then press the Service button.</li> <li>4. Keep the Service button pressed until all LEDs light up, then release the button. All LEDs go off, the device restarts.</li> <li>5. Wait until the device has fully started – unconfigured (green RUN LED and red SVC LED are flashing)</li> </ol>

## Product documentation

Related documents such as the environmental declarations, CE declarations, etc., can be downloaded from the following Internet address:

<https://siemens.com/bt/download>

## Safety


**⚠ CAUTION**
**National safety regulations**

Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national provisions and comply with the appropriate safety regulations.
- This equipment is intended only for use in a restricted access area (lockable cabinet)
- This equipment is not suitable for use in locations where children are likely to be present.
- Conductors with a cross-section of 0.5 mm<sup>2</sup> (AWG24) or greater shall comply with the requirements of IEC 60332-1-2 and IEC 60332-1-3 or IEC TS 60695-11-21.

**Mounting position and ambient temperature**

The devices can be snapped onto standard rails or screwed onto a flat surface.  
Plug-in screw terminals connect power and interfaces.

Ambient temperature -5...50 °C (23...122 °F)	Ambient temperature -5...45 °C (23...113 °F)
<ul style="list-style-type: none"> <li>• Wall, horizontal               <ul style="list-style-type: none"> <li>– From left to right</li> <li>– From right to left</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Overhead</li> <li>• Wall, vertically               <ul style="list-style-type: none"> <li>– From top to bottom</li> <li>– From bottom to top</li> </ul> </li> <li>• On a horizontal surface</li> </ul>


**⚠ CAUTION**
**Risk of overheating for failure to comply with ambient temperature**

Burning and damage to the device

- Ensure sufficient ventilation to comply with the permissible ambient temperature within the panel or installation box. The temperature must be at least 10 K (18° F) lower outside the installation box.

**Disposal**


The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.
- Dispose of empty batteries in designated collection points.

## Technical data

### Power supply

Operating voltage (24 V~, $\perp$ , $\oplus$ )	AC 24 V -15 / +20 % (SELV / PELV) or AC 24 V Class 2 (US) 48...63 Hz
Functional ground (US) Functional earth $\oplus$	The terminal for the functional ground must be connected on the installation side with the building grounding system (PE).
Screw terminals for wire cross sections up to	Max. 2.5 mm <sup>2</sup> (14 AWG)
Internal fusing	3.15 A irreversible / non-replaceable
External supply line fusing (EU)	Non-renewable fuse max. 10 A slow-blow or circuit breaker max. 13 A Tripping characteristic B, C, D per EN 60898 or Power supply with current limitation of max. 10 A

### Power consumption (for transformer planning)

Base load	12 VA / 0.5 A
With M-Bus, with KNX	19 VA / 0.8 A

### Function data

Hardware information	
Processor	NXP i.MX8 DualX
Storage	1 GByte RAM 8 GByte eMMC

#### Data backup in the event of power failure

Energy reserve (Supercap) to support real-time clock (7 days).  
Energy reserve can be extended to min. 1 month using optional battery CR2032  
(Battery safety requirement and specification for CR2032 according to IEC 60086-4 or UL 1642.  
Battery must be rated for ambient temperature 70 °C (158 °F))  
Data available if stored to flash memory. Occurs every 5 minutes.

### Interfaces

Ethernet interface	
Plug	2 x RJ45, shielded
Interface type	10Base-T / 100Base-TX, IEEE 802.3 compatible
Bit rate	10/100 Mbps, autosensing
Protocol	BACnet on UDP/IP and HTTPS on TCP/IP
Cabling (in-house cabling only), cable type	10 Mbps: Min. CAT3, shielded cable is recommended 100 Mbps: Min. CAT5, shielded cable is recommended
Cable length	Max. 100 m (330 ft)

#### Screw terminals, plug-in

Cu-wire or Cu-strand with wire end sleeve	1 x 0.6 mm $\varnothing$ to 2.5 mm <sup>2</sup> (22 to 14 AWG) or 2 x 0.6 mm $\varnothing$ to 1.0 mm <sup>2</sup> (22 to 18 AWG)
Cu-strand without wire end sleeve	1 x 0.6 mm $\varnothing$ to 2.5 mm <sup>2</sup> (22 to 14 AWG) or 2 x 0.6 mm $\varnothing$ to 1.5 mm <sup>2</sup> (22 to 16 AWG)

<b>Screw terminals, plug-in</b>	
Stripping length	6...7.5 mm (0.24...0.29 in)
Screwdriver	Slot screws, screwdriver size 1
Max. tightening torque	0.6 Nm (0.44 lb ft)

The two COM interfaces can be used either for Modbus or for MS/TP, according to configuration.

<b>Modbus RTU interface</b>	
Interface type	EIA-485, electrically isolated
Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 (depending on the configuration)
Internal bus termination	120 Ohm, switchable with DIP switch
Internal bus polarization	270 Ohm pull-up/pull-down resistances, switchable with DIP switch
Cabling (in-house cabling only)	3-wire cable
Cable length	Max. 1000 m (3300 ft)
Protection	Short-circuit proof Protection against faulty wiring with AC 24 V

<b>BACnet MS/TP interface</b>	
Interface type	EIA-485, electrically isolated
Baud rate	9600, 19200, 38400, 57600, 76800, 115200 (depending on the configuration)
Internal bus termination	120 Ohm, switchable with DIP switch
Internal bus polarization	270 Ohm pull-up/pull-down resistances, switchable with DIP switch
Cabling (in-house cabling only)	3-wire cable, shielded
Distance between 2 devices	Max. 500 m (1650 ft)
Length of the MS/TP line	Max. 1000 m (3300 ft)
Protection	Short-circuit proof Protection against faulty wiring with AC 24 V

<b>WLAN interface</b>	
Interface type	Wireless access point
Supported standards	IEEE 802.11b/g/n
Frequency band	2.4...2.462 GHz
WLAN channels	1...11
Maximum radio-frequency power	16.4 dBm
Distance (unobstructed field)	Min. 5 m (16 ft)
Device pairing	Activation / Deactivation with service button Automatic switch off after 10 minutes if no WLAN-client is connected. Optionally, for cyber security reasons, the WLAN can be permanently disabled via configuration.
<p><b>Default SSID and WLAN password:</b> Scan the QR code. It will show something like WIFI:S:PXC5.E003_0000550;T:WPA;P:1400052738;; Then SSID = PXC5.E003_0000550 and password = 1400052738 Determine manually: Use the information from the Date/Series/SN block It will show something like: Date/Series: 20190423A0000550 S/N: 1400052738 SSID = &lt;ASN&gt;_&lt;Running number after the series letter&gt; and password = &lt;S/N&gt;</p>	

Ambient conditions and protection classification	
Classification as per EN 60730	Type 1
Automatic action	Class A
Control function	2
Degree of pollution	III
Overvoltage category	III
Design	Suitable for use in protection class I or II systems
Degree of protection of housing to EN 60529	IP30
Front parts in DIN cut-out	IP20
Terminal part	IP20
Climatic ambient conditions	<ul style="list-style-type: none"> <li>• Storage / Transport (packaged for transport) as per IEC EN 60721-3-2</li> <li>• Operation as per IEC/EN 60721-3-3</li> </ul>
Mechanical ambient conditions	<ul style="list-style-type: none"> <li>• Class 1K22 / 2K21 Temperature -25...70 °C (-13...158 °F) Air humidity 5...95 % (non-condensing)</li> <li>• Class 3K22 Temperature -5...50 °C (23...122 °F) <i>(for details see chapter Mounting)</i> Air humidity 5...95 % (non-condensing)</li> </ul>
<ul style="list-style-type: none"> <li>• Transport per IEC/EN 60721-3-2</li> <li>• Operation as per IEC/EN 60721-3-3</li> </ul>	<ul style="list-style-type: none"> <li>• Class 2M11</li> <li>• Class 3M11</li> </ul>

Standards, directives and approvals	
Product standards	EN 60730-1, EN 62368-1
Product family standard	EN 50491-x
Electromagnetic compatibility (EMC)	For residential, commercial, and industrial environments
EU conformity (CE)	See CE declaration <sup>1)</sup>
EAC compliance	Eurasian compliance
RCM conformity	See RCM declaration <sup>1)</sup>
UL/cUL approbation (US / Canada)	UL916; <a href="http://ul.com/database">http://ul.com/database</a>
CSA certification	C22.2, <a href="http://csagroup.org/services-industries/product-listing">http://csagroup.org/services-industries/product-listing</a>
FCC	CFR 47 Part 15 Class B
BACnet.	B-BC
Environmental compatibility <sup>1)</sup>	The product environmental declaration <sup>1)</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

<sup>1)</sup> Documents can be downloaded at <http://siemens.com/bt/download>.

### FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.



- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation

**FCC Caution:** Changes or modifications not expressly approved by Siemens Switzerland Ltd. could void the user's authority to operate the equipment. United States representative <https://new.siemens.com/us/en/products/buildingtechnologies/home.html>

### Industry Canada statement

This device complies with ISED's licence-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

### Radio frequency radiation exposure Information for USA and Canada

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment.

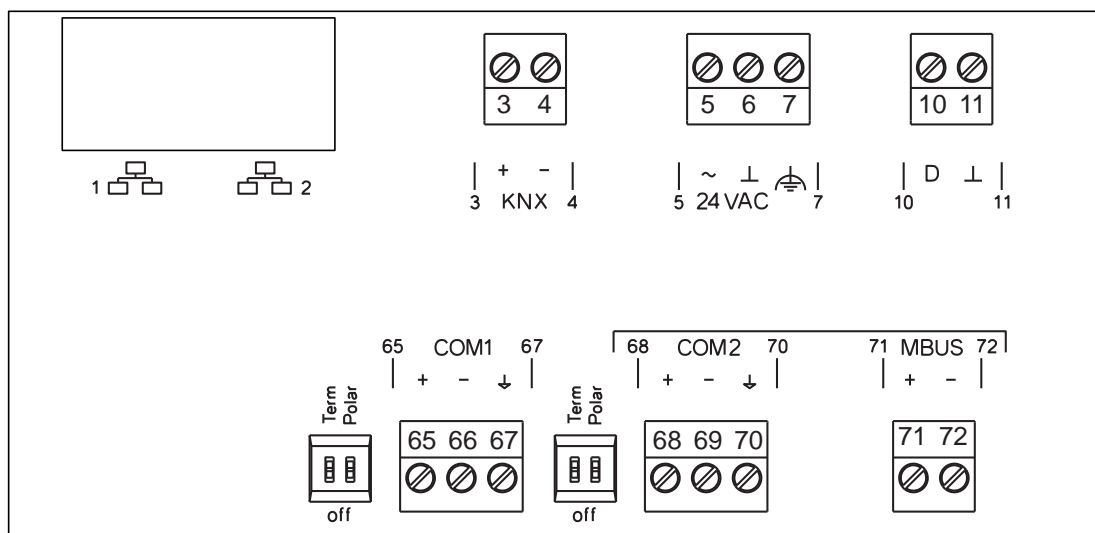
This equipment should be installed and operated with a minimum distance of 20 cm (8 in) between the radiator and your body.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

## Housing

Color top/bottom	RAL 7035 (light grey) / RAL 7016 (anthracite grey)
Dimensions	per DIN 43880, see dimensions
Weight without/with packaging	351 g / 391 g

## Connection terminals



Terminal	Symbol	Description
1, 2		2 x RJ45 interface for Ethernet with switch
3, 4	KNX	KNX PL-Link (for future use)
5, 6	~, ⊥	Operating voltage AC 24 V
7		Functional ground (must be connected on the installation side with the building)

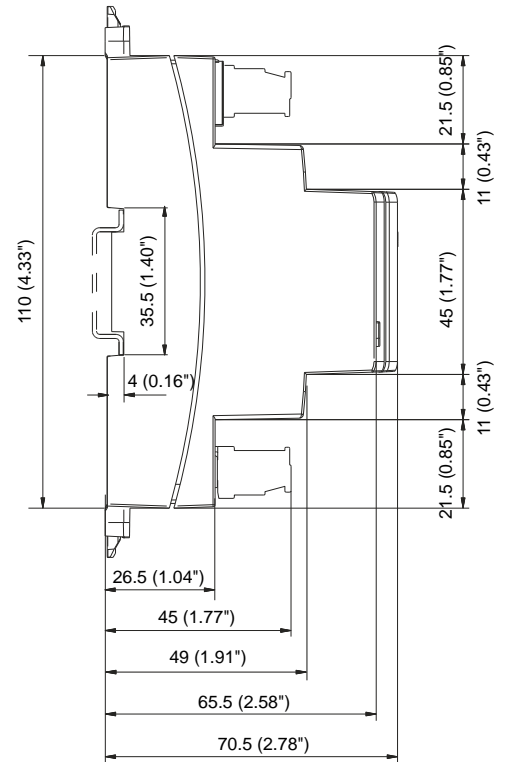
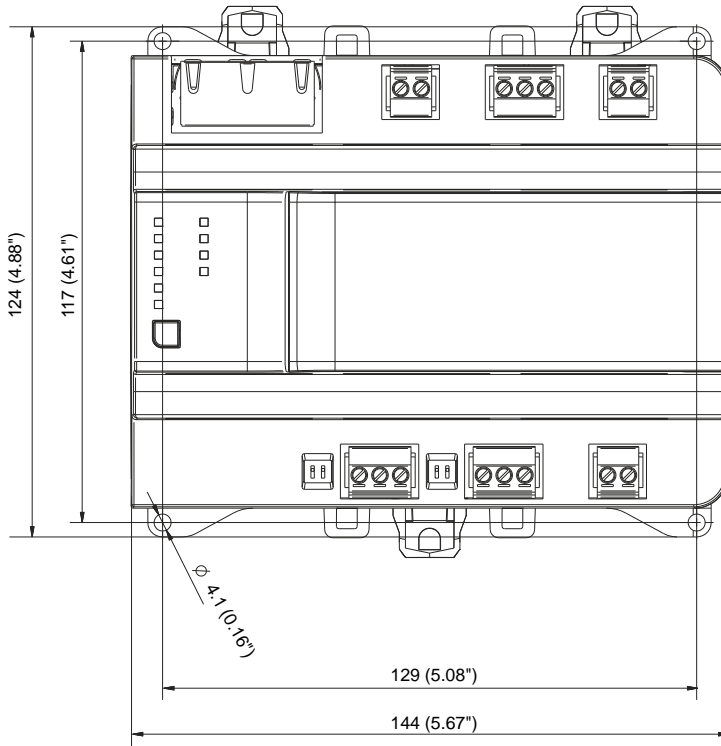
		grounding system (PE).
10, 11	D, $\perp$	Digital input (for future use)
Term	On, off	Switch for bus termination
Polar	On, off	Switch for polarization
65, 66, 67	COM1	Interface EIA-485 (Modbus MS/TP)
68, 69, 70	COM2	
71, 72	MBUS	M-bus interface (for future use)

## Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

## Dimensions

All dimensions in mm and inches



Issued by  
Siemens Switzerland Ltd  
Smart Infrastructure  
Global Headquarters  
Theilerstrasse 1a  
CH-6300 Zug  
Tel. +41 58 724 2424  
[www.siemens.com/buildingtechnologies](http://www.siemens.com/buildingtechnologies)

© Siemens Switzerland Ltd, 2020  
Technical specifications and availability subject to change without notice.