Desigo™ PX

Automation stations, compact model

PXC12-E.D  PXC22-E.D  PXC36-E.D

- Freely programmable compact automation stations for HVAC and building services.
- Native BACnet automation stations with communication via
  - BACnet over Ethernet / IP
  - BACnet over LONTALK
- BTL label (BACnet communication passed the BTL test)
- PPC processor for high performance and reliable operation
- Comprehensive management and system functions (alarm management, time scheduling, trends, remote management, access protection etc.)
- 12, 22, or 36 physical inputs / outputs per automation station
- For stand-alone applications or for use within a device or system network
- Supports the following methods of operation:
  - QAX... room units
  - Local or network-compatible operator units
  - system or web operation via system network

Validity
This data sheet is valid for devices / firmware Desigo V5 and higher.
For older devices / firmware see data sheet CM1N9215en_09

Building Technologies

CM1N9215en_11
30 May 2012
Functions

These freely programmable automation stations provide the infrastructure for the provision and processing of system-specific and application-specific functions. Apart from the freely programmable control functions these units comprise integrated convenient management functions such as:

- Alarm management with alarm routing throughout the whole network. Three level alarm management (simple, basic and enhanced) with safety control transmission and automatic transmission monitoring
- Time schedulers
- Trend functions
- Access protection for the whole network with individually defined user profiles and categories

I/O points

Each automation station has dedicated digital inputs and outputs along with a number of universal I/O points that are individually configurable as:

- Digital input:
  - Pulse counter (25Hz)
  - Analog input: sensor, DC 0..10V
  - Analog output: DC 0..10V
- In addition a limited number of the universal I/O can be configured as digital outputs for switching DC 24 V external relays.

Programming language

The automation stations are freely programmable with the D-MAP programming language (follows closely CEN Standard 1131). All function blocks available in libraries are graphically linked with the plant operating programs.

Communication

Communication is via Ethernet with the international standard BACnet protocol. Both peer-to-peer communications with other automation stations and connections to the PXM20 operator units are supported.

Operation

There are various options for operation of the PXC….D automation stations:

- **QAX... room unit** connected to the PPS2 interface. A **maximum** of five room units QAX... (not QAX5...) can be connected. Details on the PPS2 communication are described in the Desigo Technical principles manual (chapter "I/O blocks", section "PPS2 addressing").
- **Local PXM10 operator unit (*)**, connected via PXA-C1 cable
- **The PXM20 operator unit (*)** connected via PXA-C1 cable, can be used either locally or decentralized for all plant connected together in one BACnet / LONTALK network

Note *) In the case of a PXC....D automation station, one PXM10 and one PXM20 operator unit may be connected, but not twice the same type.

- **The PXM20-E operator unit** can be used either locally or decentralized for all plant connected together in one BACnet / IP network (connect via a hub / switch)
### Types

<table>
<thead>
<tr>
<th>Automation stations</th>
<th>PXC12.D 1)</th>
<th>PXC22.D 1)</th>
<th>PXC36.D 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PXC12-E.D 2)</td>
<td>PXC22-E.D 2)</td>
<td>PXC36-E.D 2)</td>
</tr>
<tr>
<td><strong>Total number of inputs / outputs</strong></td>
<td>12</td>
<td>22</td>
<td>36</td>
</tr>
<tr>
<td><strong>Number of digital inputs (DI)</strong></td>
<td>2</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td><strong>Number of universal inputs / outputs (UIO)</strong></td>
<td>8</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td><strong>whereof UIO supporting Q250 (DC 0/24 V</strong></td>
<td>(4)</td>
<td>(4)</td>
<td>(6)</td>
</tr>
<tr>
<td><strong>Number of relay outputs (DO)</strong></td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

1) Communications BACnet / LONtalk
2) Communications BACnet / IP

### Accessories

<table>
<thead>
<tr>
<th>Types</th>
<th>Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXA-C1</td>
<td>Connecting cable between PXM10 or PXM20 operator unit and automation station</td>
</tr>
<tr>
<td>PXA-C2</td>
<td>Adapter for firmware download</td>
</tr>
<tr>
<td>PXA-C3</td>
<td>Adapter cable USB to RS232 for modems (from V2.37)</td>
</tr>
</tbody>
</table>

### Technology

#### Universal inputs / outputs

The universal inputs / outputs (UIO) accept the following signal types:

**Input**
- Passive sensors: LG-Ni 1000, Ni 1000, Pt 1000, T1  
  (Signal types R1K, Ni1K, P1K, T1)
- Active sensors: DC 0...10 V (U10)
- Binary inputs: Volt-free (D20, D20S)
- Counters: Volt-free up to 25 Hz (C)

**Output:** On the one hand, Universal inputs / outputs (UIO) can control modulating actuators and, on the other hand, can be programmed via the program structure for binary switching functions.
- Analogue: DC 0...10 V (Y10)
- Binary: 0 or DC24 V, max. 22 mA (Q250, only UIO 1...4 or 1...6 respectively)

#### Digital inputs

The digital inputs (DI) accept volt-free contacts:

#### Relay outputs

The relay outputs (DO) are designed for max. AC 250 V, 2 A.

#### Power Supply

The power supply provides regulated power to the inputs / outputs and active sensors. It is internal to the automation station housing, simplifying installation and troubleshooting.

The power supply works with the processor to ensure smooth power up and power down sequences for the equipment controlled by the I/O points, even through brownout conditions.

Brownout protection and power recovery circuitry protect the automation station from power fluctuations.
The compact construction enables the automation stations to be used in highly confined spaces and makes them especially suitable for compact control panels or technical equipment with integrated control panels.

Terminal blocks

The terminal blocks are removable for easy termination of field wiring.
Each relay output has a yellow status LED. The other LEDs have the following meanings:

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Activity</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN</td>
<td>Green</td>
<td>Continuously off</td>
<td>No supply</td>
</tr>
<tr>
<td>FAULT</td>
<td>Red</td>
<td>Continuously on</td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quick flashes</td>
<td>Fault</td>
</tr>
<tr>
<td>LOW BATT</td>
<td>Red</td>
<td>Continuously off</td>
<td>Battery ok</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Continuously on</td>
<td>Battery low - replace</td>
</tr>
<tr>
<td>COMM</td>
<td>Yellow</td>
<td>Continuously off</td>
<td>No Link to Hub</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flashing</td>
<td>Link to Hub</td>
</tr>
<tr>
<td>INFO</td>
<td>Red</td>
<td>Continuously on</td>
<td>Communication</td>
</tr>
<tr>
<td>SERVICE (Ethernet)</td>
<td>Red</td>
<td>Continuously off</td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flashing</td>
<td>No Link to Hub</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flashing acc. to wink command pattern *)</td>
<td>No IP Address configured</td>
</tr>
<tr>
<td>SERVICE (LONWORKS bus)</td>
<td>Red</td>
<td>Continuously off</td>
<td>LONWORKS node is configured</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flashing</td>
<td>LONWORKS chip defective or service key was pressed again</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flashing acc. to wink command pattern *)</td>
<td>LONWORKS node is not configured</td>
</tr>
</tbody>
</table>

*) Wink command rhythm pattern:

Identification of the automation station in the IP network or LONWORKS network: see "Commissioning".

Disposal

The device is classified as waste electronic equipment in terms of the European Directive 2002/96/EC (WEEE) and should not be disposed of as unsorted municipal waste. The relevant national legal rules are to be adhered to. Regarding disposal, use the systems setup for collecting electronic waste. Observe all local and applicable laws.

Mounting instructions

The automation stations can be snap-mounted on DIN rails or directly screwed to a mounting plate or a building wall.

The connections for field devices and power supply are via plug-in screw terminals. The other interfaces are quick connecting jacks.
Commissioning

In order to prevent equipment damage and/or personal injuries always follow local safety regulations and the required safety standards.

Loading plant operating program

Download the plant operating program to the automation station with the PX Design tool in the Desigo TOOLSET, locally via the RJ45 interface of the AS or via the Network (BACnet/IP or BACnet/LonTalk).

Setting parameters and configurations

Use the PX Design tool in Xworks Plus for setting the control parameters and the configuration data.

Data visible in the network can also be changed with a PXM20 / PXM20-E operator unit (BACnet / LonTalk or BACnet / IP).

Certain data can also be changed with a PXM10 operator unit.

Wiring test

It is possible to test field devices and the wiring as soon as the power supply is connected, without first downloading the plant operating program.

- BACnet / LonTalk for PXC…D: with PXM20 operator unit.
- BACnet / IP for PXC..-E.D: with PXM20-E operator unit.

Prerequisite: PX and PXM20-E are on Default-IP and alone in the IP segment.

- Signal type when no application loaded:
  UIO 1...4 / 1...6 = Y10S, other UIO = R1K

Network connection

The network addresses are configured with Xworks Plus. In order to provide a unique identification in the network (BACnet/IP or BACnet/LonTalk), press the service pin with a thin, long instrument or send a wink command to the relevant automation station (service LED flashes).

Force Firmware Download

- Variant via V24:
  If the Force Firmware Download key is pressed during a restart (reset) the current D-MAP program is deleted from the FLASH.
  The automation station waits a short while for the signal to activate the FWLoader and then starts the automation station.

- Variant via IP: (for PXC..-E.D. faster than via V24)
  Press the Force Firmware Download key for 5 seconds (without hitting the reset button).

Prerequisite: the automation station has conducted a node setup and no application is loaded, or it has been removed previously by "clear/ reset" in the CFC (communication settings remain – which would not be the case when restart erasing by pressing the reset key).

For details see the Firmware Download Tool User's guide, CM110626.

Reset

Pressing the reset key forces a restart.
Positions of pins and batteries

**PXC12-E.D und PXC22-E.D**

![Diagram](9215201)

**PXC12-D; PXC22-D**

![Diagram](9215212)

**PXC36-D**

![Diagram](9215205)
Battery life

The database information stored in the SDRAM memory is battery-backed (Alkaline AA Type). This eliminates the need for time-consuming program and database re-entry in the event of an extended power failure (up to 1 month). After the "Battery low" event there are several days of remaining life span under load. Alkaline batteries have a typical life span of 4 years without load.

The real time clock is backed by a lithium battery which has a life span of 10 years.

When one of the batteries needs to be replaced, the automation station illuminates a "battery low" status LED and automatically sends a system event. The automation station can also send an alarm message to selected terminals.

Battery change

To change the batteries, remove the front cover. As long as there is an external power supply, the battery may be removed for unlimited time.

**Caution!**

To prevent hardware damage by electrostatic discharge (ESD), a wrist strap with earth cable must be used during the battery change.

Firmware upgrades

The firmware, including the operating system, is stored in non-volatile flash ROM memory. Flash ROM is easily upgradeable at the job site. This provides for ease of upgrade, as new firmware updates are made available.

Technical data

<table>
<thead>
<tr>
<th>General device data</th>
<th>Operating voltage</th>
<th>SELV / PELV AC 24 V ± 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>AC 24 V</td>
<td></td>
</tr>
<tr>
<td>Operating frequency</td>
<td>50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>PXC12....D max.24 VA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PXC22....D max.26 VA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PXC36....D max.35 VA</td>
<td></td>
</tr>
<tr>
<td>Internal fuse</td>
<td>5 A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating data</th>
<th>Processor</th>
<th>Motorola Power PC MPC852T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>PXC12/22....D</td>
<td>Motorola Power PC MPC885</td>
</tr>
<tr>
<td></td>
<td>PXC36....D</td>
<td></td>
</tr>
</tbody>
</table>

| Memory              | 16MB SDRAM / 8MB FLASH |
|                     | (24MB total)         |
|                     | 64MB SDRAM / 16MB FLASH |
|                     | (80MB total)         |

| Accuracy class      | 0.5                |
| Scan cycle          | Max. 1 s           |
| Data backup in case of power failure | Battery Backup of SDRAM 1 month typical |
|                     | 1 x AA Alkaline (field replaceable) (4 years without load) |
|                     | Battery Backup of Realtime Clock 10 years |
| Interface, room units | Interface type PPS2 |
| Supply class        | 4                  |
| PPS2 baud rate      | 4.8 kBit/s         |
### Interfaces, communication

<table>
<thead>
<tr>
<th>Building Level Network</th>
<th>PXC…-D</th>
<th>PXC…-E.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONWORKS FTT Transceiver (Screw terminals)</td>
<td>10 Base-T / 100 Base-TX IEEE802.3, Auto-sensing (RJ45)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Communication (HMI, Tool) (RJ45)</th>
<th>PXM10 (RS-232)</th>
<th>PXM20 (BACnet/LonTalk)</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Communication (HMI) (RJ45)</td>
<td>PXM10 (RS-232)</td>
<td>PXM20 (BACnet/LonTalk)</td>
<td>PXM10 (RS-232)</td>
</tr>
</tbody>
</table>

**Building Level Network**
- One PXM10 operator unit and one PXM20 per automation station may be connected. But not twice the same type.

**Local Communication**
- One PXM10 on RJ45

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### Universal inputs UI...

- Configurable by software
- A/D Resolution (analog in) 16 bits
- Measured value inputs
  - Range 0 ... 11.0 V
  - Input resistance 100 kΩ against 

**Sensor inputs**
- Temperature sensors
  - LG-Ni 1000, Ni 1000, Pt 1000, T1
  - Scaling range – 50 ... 150 °C
- Sensor current (continuous current) Approx. 2.1 mA
- Resolution 0.2 K
- Measuring error at 25 °C (Ni 1000, Pt 1000) Max. 0.3 K (without cable and sensor)
- Measuring error at 25 °C (T1) Max. 1.0 K (without cable and sensor)

**Signal inputs**
- Contact voltage DC 20 ... 25 V
- Contact current 7 mA
- Contact transfer resistance Max. 200 Ω (closed)
- Contact isolation resistance Min. 50 kΩ (open)

**Counter inputs**
- Counting frequency (symmetric) Max. 25 Hz
- Min. closing/opening time incl. bouncing 20 ms
- Max. bounce time 10 ms
- Counter memory 8 Bit

**Universal inputs UI...**

- Contact voltage DC 20 ... 25 V
- Contact current 10 mA
- Contact transfer resistance Max. 200 Ω (closed)
- Contact isolation resistance Min. 50 kΩ (open)

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### Analog outputs AO...

- Configurable by software
- D/A Resolution (analog out) 10 bits
- Proportional outputs
  - Output voltage range 0 ... 11.0 V
  - Output current Max. 4 mA source, max. 1.5 mA sink
- Binary outputs (for off-board relays)
  - Output voltage range 0 / DC 24 V
  - Load ≥ 1000 Ω

**Relay outputs DO...**

- Relay type single pole, change-over contact

**Contact details for AC voltage**
- Voltage range Min. AC 10 V, max. AC 250 V
- Current, resistive load Max. AC 5 A
- Current, inductive load 2 A
- Switching current Min. 10 mA, max. 20 A

**Contact details for DC voltage**
- Voltage range Min. DC 5 V, max. DC 250 V
- Switching current Min. 100 mA at DC 5 V
- Switching load Max. 20 W

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**Siemens**

**PXC…-D – Automation stations, compact model**

**Building Technologies**

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30 May 2012
The relay outputs are safely isolated from each other, from earth/cover and the remaining electronics (AC 24 V) in accordance with SELV and PELV specifications. The relay outputs can be used in mixing applications with AC 250 V and SELV / PELV circuits.

<table>
<thead>
<tr>
<th>Plug-in screw terminal</th>
<th>Power supply and signals</th>
<th>Stranded of solid conductors, 0.25 … 2.5 mm² or 2 x 1.5 mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single cable lengths and cable types</td>
<td>Universal inputs UI…</td>
<td>Max. 100m where A = 1 mm²</td>
</tr>
<tr>
<td></td>
<td>Binary inputs DI…</td>
<td>Max. 100 m with diameters ≥ 0.6 mm</td>
</tr>
<tr>
<td></td>
<td>Universal outputs AO…</td>
<td>Max. 100m where A ≥ 1.5 mm²</td>
</tr>
<tr>
<td></td>
<td>Relay outputs DO…</td>
<td>Depends on load and local regulations</td>
</tr>
<tr>
<td></td>
<td>Interface, room unit</td>
<td>Max. 125 m where A = 1.0 mm²</td>
</tr>
<tr>
<td></td>
<td>Connecting cable per unit length</td>
<td>2-core, twisted pair, unscreened</td>
</tr>
<tr>
<td></td>
<td>Connecting cable Ethernet and PXM20-E</td>
<td>Max. 100 m</td>
</tr>
<tr>
<td></td>
<td>Cable type</td>
<td>Standard at least CAT5</td>
</tr>
<tr>
<td></td>
<td>Capacitance per unit length</td>
<td>UTP (Unshielded Twisted Pair) or STP (Shielded Twisted Pair)</td>
</tr>
<tr>
<td></td>
<td>Connecting cable LonWorks bus</td>
<td>See installation manual CA110396</td>
</tr>
<tr>
<td></td>
<td>Cable type</td>
<td>CAT5</td>
</tr>
<tr>
<td></td>
<td>Connecting cable PXM10</td>
<td>Max. 3 m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing protection standard</th>
<th>Protection standard to EN 60529</th>
<th>IP 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection class</td>
<td>Insulation protection class</td>
<td>II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ambient conditions</th>
<th>Operation</th>
<th>To IEC 60721-3-3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Climatic conditions</td>
<td>Class 3K5</td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>0 … 50 °C</td>
</tr>
<tr>
<td></td>
<td>Humidity</td>
<td>5 … 95 % rh (no condensation)</td>
</tr>
<tr>
<td></td>
<td>Mechanical conditions</td>
<td>Class 3M2</td>
</tr>
<tr>
<td>Transport</td>
<td>Class 2K3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Temperature</td>
<td>-25 … +70 °C</td>
</tr>
<tr>
<td></td>
<td>Humidity</td>
<td>5 … 95 % rh (no condensation)</td>
</tr>
<tr>
<td></td>
<td>Mechanical conditions</td>
<td>Class 2M2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standards and directives and approbations</th>
<th>Product standard</th>
<th>EN 60730-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromagnetic compatibility</td>
<td>EN 60730-1</td>
<td></td>
</tr>
<tr>
<td>Emissions (domestic)</td>
<td>EN 60730-1</td>
<td></td>
</tr>
</tbody>
</table>

Meets requirements for CE marking:
- Electromagnetic compatibility 2004/108/EC
- Low Voltage Directive 2006/95/EC
- UL-Approbation (UL 916) PAZX7
- Federal Communications Commission (US) FCC CFR 47 Part 15 Class B
- C-Tick conformity to (EMC) AS/NZS 61000-6-3

Environmental compatibility
- The product environmental declaration CM1E9215 contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal) 2002/95/EC (RoHS)
- ISO 14001 (Environment)
- ISO 9001 (Quality)
- SN 36350 (Environmentally compatible products)

Dimensions
- See “Dimensions”

<table>
<thead>
<tr>
<th>Weight</th>
<th>Type</th>
<th>without packaging</th>
<th>with packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PXC12…D</td>
<td>750</td>
<td>830</td>
</tr>
<tr>
<td></td>
<td>PXC22…D</td>
<td>754</td>
<td>834</td>
</tr>
<tr>
<td></td>
<td>PXC36…D</td>
<td>1080</td>
<td>1180</td>
</tr>
</tbody>
</table>
## Connection terminals

### PXC12.D

<table>
<thead>
<tr>
<th>1, 2</th>
<th>4, 5, 6</th>
<th>7, 8, 9</th>
<th>22, 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V</td>
<td>DI1, DI2</td>
<td>Operating voltage AC 24 V</td>
<td>CFC IOAddr</td>
</tr>
<tr>
<td>CLA, CLB</td>
<td>DO1, DO2</td>
<td>2 Digital outputs (Relays)</td>
<td>DO1: C=5.1</td>
</tr>
<tr>
<td>U1…U4</td>
<td>U5…U8</td>
<td>4 Universal inputs / outputs with Q250</td>
<td>xx1: C=4.1 *)</td>
</tr>
<tr>
<td>U1…U4</td>
<td>U5…U8</td>
<td>4 Universal inputs / outputs</td>
<td>xx5: C=1.1 *)</td>
</tr>
<tr>
<td>CP+, CP–</td>
<td>DI1, DI2</td>
<td>2 Digital inputs</td>
<td>DI1: C=3.1</td>
</tr>
<tr>
<td>CLA, CLB LonWorks-Bus</td>
<td>LonWorks-Bus</td>
<td>PPS2 bus (for up to 5 QAX... room units)</td>
<td></td>
</tr>
<tr>
<td>USB Device interface (not supported)</td>
<td>RJ45 socket for operator unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RJ45 socket for operator unit and tool</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*) Signal type when no application is loaded (wiring test):
U1…U4: xx = Y10S, U5…U8: xx = R1K

**Caution!**

- Observe the technical data for the relay outputs.
- Local installation regulations must be observed.
1, 2 24 V ~, ⊥ Operating voltage AC 24 V
3 ⊲ Functional earth
4 .. 21 DO1 .. DO6 6 Digital outputs (Relays) DO1: C=5.1
22, 23 CLA, CLB LonWorks-Bus
25 .. 30 U1 .. U4 4 Universal inputs / outputs with Q250 xx1: C=4.1 *)
31 .. 52 U5 .. U16 12 Universal inputs / outputs xx5: C=1.1 *)
61, 62 CP+, CP− PPS2 bus (for up to 5 QAX… room units)
B ← USB Device interface (not supported)
C HMI RJ45 socket for operator unit
D HMI / Tool RJ45 socket for operator unit and tool

*) Signal type when no application is loaded (wiring test):
U1…U4: xx = Y10S, U5…U16: xx = R1K

1, 2 24 V ~, ⊥ Operating voltage AC 24 V
3 ⊲ Functional earth
4 .. 27 DO1 .. DO8 6 Digital outputs (Relays) DO1: C=5.1
28, 29 CLA, CLB LonWorks-Bus
30 .. 38 U1 .. U6 6 Universal inputs / outputs with Q250 xx1: C=4.1 *)
39 .. 73 U7 .. U24 18 Universal inputs / outputs xx7: C=1.1 *)
74 .. 79 DI1 .. DI4 4 digital inputs DI1: C=3.1
80, 81 CP+, CP− PPS2 bus (for up to 5 QAX… room units)
B ← USB Device interface (not supported)
C HMI RJ45 socket for operator unit
D HMI / Tool RJ45 socket for operator unit and tool

*) Signal type when no application is loaded (wiring test):
U1…U6: xx = Y10S, U7….U24: xx = R1K

- Observe the technical data for the relay outputs.
- Local installation regulations must be observed.
### PXC12-E.D

**Operating voltage AC 24 V**

<table>
<thead>
<tr>
<th>1, 2</th>
<th>24 V ~,</th>
<th>Functional earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>CFC IOAddr</td>
</tr>
</tbody>
</table>

**Digital outputs (Relays)**

| 4 … 9 | DO1, DO2 | 2 Digital outputs (Relays) | DO1: C=5.1 |

**Analog inputs / outputs**

| 25 … 30 | U1 ... U4 | 4 Analog inputs / outputs with Q250 | xx1: C=4.1 *) |
| 31 … 36 | U5 ... U8 | 4 Analog inputs / outputs | xx5: C=1.1 *) |

**Digital inputs**

| 58 … 60 | DI1, DI2 | 2 Digital inputs | DI1: C=3.1 |

**Connections**

- **A** Ethernet socket
- **B** USB Device interface (not supported)
- **C** HMI RJ45 socket for operator unit

*) Signal type when no application is loaded (wiring test): U1...U4: xx = Y10S, U5...U8: xx = R1K

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### PXC22-E.D

**Operating voltage AC 24 V**

<table>
<thead>
<tr>
<th>1, 2</th>
<th>24 V ~,</th>
<th>Functional earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td>CFC IOAddr</td>
</tr>
</tbody>
</table>

**Digital outputs (Relays)**

| 4 … 21 | DO1 ... DO6 | 6 Digital outputs (Relays) | DO1: C=5.1 |

**Universal inputs / outputs**

| 25 … 30 | U1 ... U4 | 4 Universal inputs / outputs with Q250 | xx1: C=4.1 *) |
| 31 … 52 | U5 ... U16 | 12 Universal inputs / outputs | xx5: C=1.1 *) |

**Connections**

- **A** Ethernet socket
- **B** USB Device interface (not supported)
- **C** HMI RJ45 socket for operator unit

*) Signal type when no application is loaded (wiring test): U1...U4: xx = Y10S, U5...U8: xx = R1K

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**Caution!**

- Observe the technical data for the relay outputs.
- Local installation regulations must be observed.
Operating voltage AC 24 V

4 ... 27 8 Digital outputs (Relays)  DO1: C=5.1

30 ... 38 6 Universal inputs / outputs with Q250  xx1: C=4.1 *)

39 ... 73 18 Universal inputs / outputs  xx7: C=1.1 *)

74 ... 79 4 Digitale Eingänge  DI1: C=3.1

80, 81 PPS2 bus (for up to 5 QAX... room units)

A Ethernet socket

B USB Device interface (not supported)

C HMI RJ45 socket for operator unit

*) Signal type when no application is loaded (wiring test):

U1...U6: xx = Y10S, U7...U24: xx = R1K

Observe the technical data for the relay outputs.

Local installation regulations must be observed.

Tool socket "HMI" (Ethernet)

Automation stations for BACnet / IP

1. Unoccupied  5. Unoccupied
2. Unoccupied  6. Hot-wired to Pin 8
3. GO, GND  7. COM1/TxD
4. G/Plus  8. COM1/RxD

Tool socket "HMI" (LONWORKS)

Automation stations for BACnet / LonTalk

1. LONWORKS Data A (CLA)  5. Unoccupied
2. LONWORKS Data B (CLB)  6. Hot-wired to Pin 8
3. GO / GND  7. COM1 / TxD
4. G / Plus  8. COM1 / RxD
Connecting the field devices

**Note!**

In the automation stations described in this data sheet, system neutral (G0) and measuring ground (–) are NOT CONNECTED.

For active 4-wire field devices, this connection is made in the device.

For active 3-wire field devices, you have to make an additional connection:
- ① either on the terminals of the field device
- ② or between one of the (–) terminals of the automation station and G0
  (in existing plants where there are only 3 conductors installed).

Field device supply voltage from system transformer

Counter inputs

*Counter inputs faster than 1 Hz must be shielded if they are routed in the same trunking as analog inputs for more than 10 m.*

Passive sensors (e.g. QAM... , Ni 1000)
Active sensors (e.g. QFM... , humidity)

Magnetic valves (e.g. M3P... + ZM or MX...461...)

Motorized valves
Damper actuators
(e.g. GBB161.1E)

Field device supply from separate transformer

Magnetic valves
(e.g. M3P... + ZM or MX...461...)

Connecting the room units

N   Automation station
R... Max. 5 room units (parallel)
PPS2 • Twisted pair bus cable
       • Reversible polarity
       • Cable length, see "Technical data"

Notes  • The room units are connected in parallel (max. five devices).
       • To distinguish between them, they must be addressed by use of jumpers (address plug on the printed circuit board). The factory-setting is Address 1.
Dimensions

All dimensions in mm

PXC12....D and PXC22....D

PXC36....D

All dimensions in mm