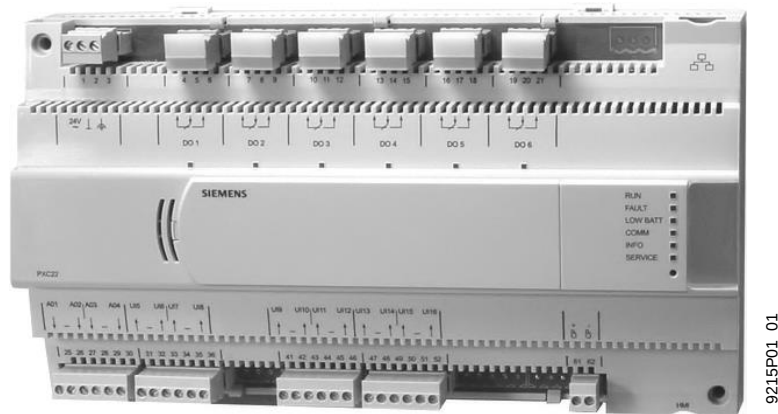




Desigo™ PX

## Automation stations, compact model

## PXC....D

|                  |                  |                    |                    |
|------------------|------------------|--------------------|--------------------|
| <b>PXC12.D</b>   | <b>PXC22.D</b>   | <b>PXC22.1.D</b>   | <b>PXC36.1.D</b>   |
| <b>PXC12-E.D</b> | <b>PXC22-E.D</b> | <b>PXC22.1-E.D</b> | <b>PXC36.1-E.D</b> |

- Freely programmable compact automation stations for HVAC and building services.
- Communications
  - BACnet/IP
  - BACnet/LonTalk
- BTL label (BACnet communication passed the BTL test)
- 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
- PXC22.1... and PXC36.1...: Extendable with TX-I/O and / or TX Open
- For stand-alone applications or for use within a device or system network
- System or web operation via system network

### Validity

*This data sheet is valid for firmware Desigo V6. 1. and higher.  
For older devices / firmware see data sheet CM1N9215en\_16.*

## Functions

Compact, freely programmable automation stations for HVAC and building control systems.

- Management functions (alarm management with alarm routing, schedulers, trend functions, remote management, access protection with individually defined user profiles and categories).
- For stand-alone applications or for use within a device or system network.
- BTL-tested BACnet communications on LonTalk, PTP or IP, compliant with BACnet standard (Rev. 1.12 -for Desigo V6.0 and later) including B-BC profile.
- AMEV profiles AS-A and AS-B to recommendation "BACnet 2011 - Version 1.2 (for Desigo V6.0 and later)"
- Freely programmable, using the D-MAP programming language (close resemblance to CEN standard 11312). All function blocks, available in libraries, can be graphically connected.
- Engineering and commissioning using the Desigo Xworks Plus tool.
- Scalable range of touch panels, Web solutions and operator units
- Direct connection of field devices; the devices provide power supply for inputs and outputs as well as for active sensors.
- Low voltage protection and start-up management to protect the devices against fluctuating voltage.

## Types

| Automation stations                                                                     | PXC12-E.D <sup>1)</sup><br>PXC12.D <sup>2)</sup> | PXC22-E.D <sup>1)</sup><br>PXC22.D <sup>2)</sup> | PXC22.1-E.D <sup>1)</sup><br>PXC22.1.D <sup>2)</sup> | PXC36.1-E.D <sup>1)</sup><br>PXC36.1.D <sup>2)</sup> |
|-----------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
| Total number of inputs / outputs (Onboard)                                              | 12                                               | 22                                               | 22                                                   | 36                                                   |
| Number of digital inputs (DI)                                                           | 2                                                | -                                                | -                                                    | 4                                                    |
| Number of universal inputs / outputs (UIO)<br>whereof UIO supporting Q250<br>(DC 0/24 V | 8<br>(4)                                         | 16<br>(4)                                        | 16<br>(4)                                            | 24<br>(6)                                            |
| Number of relay outputs (DO)                                                            | 2                                                | 6                                                | 6                                                    | 8                                                    |
| Number TX-I/O data points <sup>3)</sup>                                                 |                                                  |                                                  | 16                                                   | 28                                                   |
| Number of physical data points <sup>3)</sup><br>(Onboard + TX-I/O)                      | -                                                | -                                                | 38                                                   | 64                                                   |
| Number of TX Open modules                                                               | -                                                | -                                                | 5                                                    | 5                                                    |
| Number of data points <sup>3)</sup><br>(Onboard + TX-I/O + TX Open)                     | -                                                | -                                                | 400                                                  | 400                                                  |

<sup>1)</sup> Communications BACnet / IP

<sup>2)</sup> Communications BACnet / LonTalk

<sup>3)</sup> Communications island bus

## Input and output configuration

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UIO | Universal input and output, suited for the following signal types: <ul style="list-style-type: none"> <li>• Passive sensor LG-Ni 1000, Ni 1000, Pt 1000, T1</li> <li>• Active sensor DC 0...10 V</li> <li>• Volt-free binary contact for signaling function</li> <li>• Counter up to 20 Hz (C)</li> <li>• Analog output DC 0...10 V</li> <li>• Part of the UIOs can be configured for binary switching with a load of 24 V / 20mA. PXC12/22..D: 4 UIOs; PXC36: 6 UIOs</li> </ul> |
| DI  | Binary input for signaling function 7 mA, DC 20...25 V                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DO  | Relay output AC 230 V / 2 A for binary switching, switchover contact                                                                                                                                                                                                                                                                                                                                                                                                             |

## Device combinations with automation stations

| TX-I/O devices <sup>1)</sup>                   |                                        | Type                   | Data sheet |
|------------------------------------------------|----------------------------------------|------------------------|------------|
| Digital input module                           | 8 or 16 I/O points                     | TXM1.8D, TXM1.16D      | CM2N8172   |
| Universal module                               | without / with local operation and LCD | TXM1.8U, TXM1.8U-ML    | CM2N8173   |
| Super universal mod.                           | without / with local operation and LCD | TXM1.8X, TXM1.8X-ML    | CM2N8174   |
| Relay module                                   | without / with local operation         | TXM1.6R, TXM1.6R-M     | CM2N8175   |
| Resistance measuring module (for Pt100 4-wire) |                                        | TXM1.8P                | CM2N8176   |
| Relay module bistable                          |                                        | TXM1.6RL               | CM2N8177   |
| Triac module                                   |                                        | TXM1.8T                | CM2N8179   |
| Power supply module 1.2 A, Fused 10A           |                                        | TXS1.12F10             | CM2N8183   |
| Bus interface module, Fused 10A                |                                        | TXS1.EF10              | CM2N8183   |
| Island bus expansion module                    |                                        | TXA1.IBE               | CM2N8184   |
| TX Open module                                 | up to 40 / 160 data points             | TXI2-S.OPEN, TXI2.OPEN | CM1N8185   |

<sup>1)</sup> The TXM1... and TX Open require a TXS1.12F10 power supply module

## Desigo Control point

|                                                                                   | Type        | Data sheet  |
|-----------------------------------------------------------------------------------|-------------|-------------|
| BACnet touch panels with integrated data management and web server functionality: |             |             |
| 7.0 "                                                                             | PXM30.E     | A6V10933111 |
| 10.1 "                                                                            | PXM40.E     | A6V10933114 |
| 15.6 "                                                                            | PXM50.E     | A6V10933114 |
| BACnet/IP web server with standard functionality                                  | PXG3.W100-1 | A6V10808336 |
| BACnet/IP web server with enhanced functionality                                  | PXG3.W200-1 |             |
| Client touch panels with data management in the PXG3.Wx00-1 web server            |             |             |
| 7.0 "                                                                             | PXM30-1     | A6V10933111 |
| 10.1 "                                                                            | PXM40-1     | A6V10933114 |
| 15.6 "                                                                            | PXM50-1     | A6V10933114 |

## Operator units for automation stations

|                                                                 | Type                                                                            | Data sheet                                               |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------|
| Local operating unit                                            | PXM10                                                                           | CM1N9230                                                 |
| Network operator unit in a BACnet/IP network <sup>1)</sup>      | PXM20-E                                                                         | CM1N9234                                                 |
| Network operator unit in a BACnet/LonTalk network <sup>1)</sup> | PXM20                                                                           | CA1N9231                                                 |
| Cable (3 m) between PXM10 or PXM20 and PXC....D                 | PXA-C1                                                                          | --                                                       |
| Room operator units <sup>2)</sup>                               | QAX30.1, QAX31.1<br>QAX32.1<br>QAX33.1<br>QAX34.3 <sup>3)</sup><br>QAX84.1/PPS2 | CA2N1741<br>CA2N1641<br>CA2N1642<br>CM2N1640<br>CA2N1649 |
| PXC22.1-E.D, PXC36.1-E.D: Generic web operation                 | integrated                                                                      |                                                          |

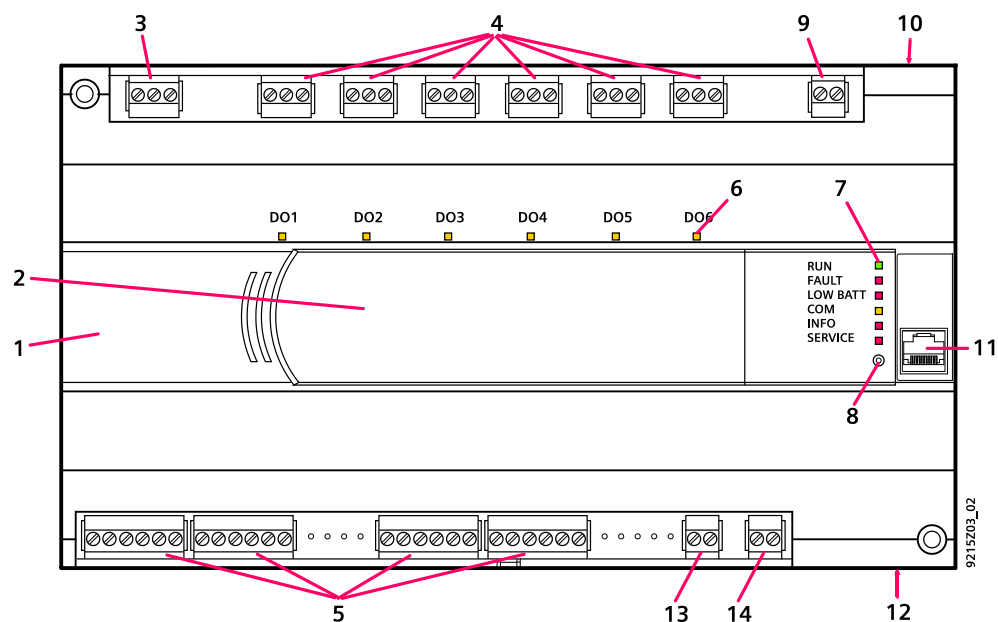
<sup>1)</sup> In the case of a PXC....D automation station, one PXM10 and one PXM20 operator unit may be connected, but not twice the same type.

<sup>2)</sup> Up to 5 QAX3... room units can be connected to all compact automation stations.

<sup>3)</sup> The QAX34. room unit only supports address 1.

## Accessories

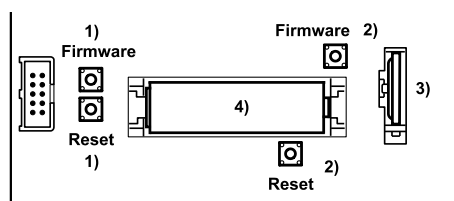
|                               |        |
|-------------------------------|--------|
| Adapter for firmware download | PXA-C2 |
|-------------------------------|--------|



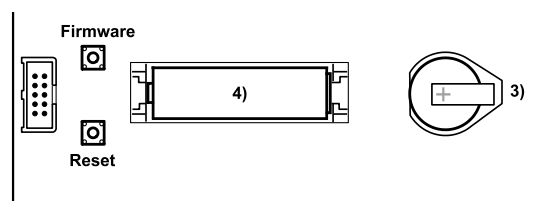
|    |                                                                |
|----|----------------------------------------------------------------|
| 1  | Plastic housing                                                |
| 2  | Front cover                                                    |
| 3  | Plug-in screw terminal block (operating voltage)               |
| 4  | Plug-in screw terminal block (relays)                          |
| 5  | Plug-in screw terminal block (inputs, outputs)                 |
| 6  | LED indicators for relay outputs                               |
| 7  | LED indicators for device and system status                    |
| 8  | Service pin (Network identification)                           |
| 9  | Plug-in screw terminal block (LONWORKS bus, PXC...D only)      |
| 10 | Network interface RJ45 (BACnet / IP, PXC...-E.D only)          |
| 11 | RJ45 Interface for operator unit and tool (RJ45, PXC...D only) |
| 12 | RJ45 interface for operator unit                               |
| 13 | Plug-in screw terminal block (room units)                      |
| 14 | Island bus plug (PXCxx.1 types only)                           |

### Positions of keys and batteries

PXC12... , PXC22-E.D, PXC22.D



PXC22.1-E.D, PXC22.1.D, PXC36....



1) Firmware and Reset pins for PXC12-E.D and PXC22-E.D

2) Firmware and Reset pins for PXC12.D and PXC22.D

Pressing the **reset pin** forces a restart.

If the **Firmware pin** is pressed during a restart (reset) the current D-MAP program is deleted from the FLASH.

3) Battery for real time clock (Lithim Typ CR2032): Backup during power breakdown

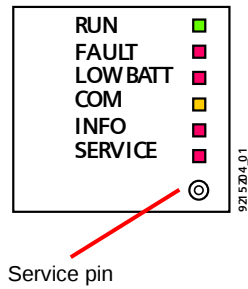
4) Battery for trend data and present parameters (Lithium Typ FR6/AA):

Backup during power breakdown

## LED indicators

Each **relay output** has a yellow status LED

The **other LEDs** have the follow meanings:



| LED                    | Color  | Activity                                                                                               | Function                                                                                                                                                                                                 |
|------------------------|--------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RUN                    | Green  | Continuously off<br>Continuously on                                                                    | No supply<br>Supply OK                                                                                                                                                                                   |
| FAULT                  | Red    | Continuously off<br>Continuously on<br>Quick flashes                                                   | OK<br>Fault<br>Missing / Corrupt Firmware                                                                                                                                                                |
| LOW BATT               | Red    | Continuously off<br>Continuously on                                                                    | Battery ok<br>Battery low - replace <sup>1)</sup>                                                                                                                                                        |
| COMM                   | Yellow | Continuously off<br>Continuously on<br>Flashing                                                        | No Link to switch<br>Link to switch<br>Communication                                                                                                                                                     |
| INFO                   | Red    |                                                                                                        | Freely programmable                                                                                                                                                                                      |
| SERVICE (Ethernet)     | Red    | Continuously off<br>Continuously on<br>Flashing<br>Flashing acc. to wink command pattern <sup>2)</sup> | OK<br>No Link to switch or DHCP server<br>No IP Address configured<br>Physical identification of automation station after receiving wink command                                                         |
| SERVICE (LONWORKS bus) | Red    | Continuously off<br>Continuously on<br>Flashing<br>Flashing acc. to wink command pattern <sup>2)</sup> | LONWORKS node is configured<br>LONWORKS chip defective or service key was pressed again<br>LONWORKS node is not configured<br>Physical identification of automation station after receiving wink command |

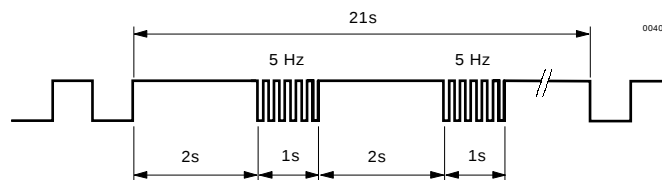
## Battery change

<sup>1)</sup> If one of the batteries has low charge the "LOW BATT" LED lights up and the automation station sends a system event.

Remaining battery life after a "Low batt" event:

- Battery for real time clock (Type CR2032): several days.
- Battery for trend data and present parameters (Type AA Lithium): approx. 15 hrs. Alkaline: several days.
- As long as there is an external power supply, the battery may be removed for unlimited time.
- To prevent hardware damage by electrostatic discharge (ESD), a wrist strap with earth cable must be used during the battery change.
- Note the special disposal notes on Li batteries.

<sup>2)</sup> Wink command rhythm pattern:



Caution!

## Technical data

|                                         |                                                                                                                                                                    |               |                                                                                              |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------|
| General device data                     | Operating voltage                                                                                                                                                  |               | AC 24 V $\pm$ 20% (SELV / PELV) or<br>AC 24 V class 2 (US)                                   |
|                                         | Operating frequency                                                                                                                                                |               | 50/60 Hz                                                                                     |
|                                         | Power Consumption<br>(depending on field devices)                                                                                                                  |               | PXC12....D max.24 VA<br>PXC22....D max.26 VA<br>PXC36....D max.35 VA                         |
|                                         | Internal fuse                                                                                                                                                      |               | 5 A                                                                                          |
| Operating data                          | Processor                                                                                                                                                          | PXC12/22....D | Motorola Power PC MPC852T                                                                    |
|                                         |                                                                                                                                                                    | PXC36....D    | Motorola Power PC MPC885                                                                     |
|                                         | Memory                                                                                                                                                             | PXC12/22....D | 16MB SDRAM / 8MB FLASH<br>(24MB total)                                                       |
|                                         |                                                                                                                                                                    | PXC36....D    | 64MB SDRAM / 16MB FLASH<br>(80MB total)                                                      |
|                                         | Accuracy class                                                                                                                                                     |               | 0.5                                                                                          |
| Data backup in case of<br>power failure | Scan cycle                                                                                                                                                         |               | Max. 1 s                                                                                     |
|                                         | <b>Battery Backup of Realtime Clock</b><br>Lithium type CR2032 (field replaceable)                                                                                 |               | <b>Battery operation</b> (cumulative): 10 years<br><b>Without load:</b> 10 years             |
|                                         | <b>Battery Backup of SDRAM 1x AA:</b><br>(field replaceable)                                                                                                       |               | <b>Battery operation</b> (cumulative): min. 2 weeks<br><b>Without load:</b> Lithium 10 years |
|                                         | <ul style="list-style-type: none"> <li><b>Lithium</b> Type FR6/AA:<br/>PXCxx.1;<br/>PXC12/22....D series K and later;<br/>PXC36....D series D and later</li> </ul> |               |                                                                                              |
|                                         | <ul style="list-style-type: none"> <li><b>Alkaline:</b> PXC12/22....D up to series H;<br/>PXC36....D up to series C</li> </ul>                                     |               | <b>Without load:</b> Alkaline 4 years                                                        |
| Interface, room units                   | Interface type                                                                                                                                                     |               | PPS2                                                                                         |
|                                         | Supply class                                                                                                                                                       |               | 4                                                                                            |
|                                         | PPS2 baud rate                                                                                                                                                     |               | 4.8 kBit/s                                                                                   |
| Interface, island bus                   | Pluggable screw terminal (CS, CD)                                                                                                                                  |               | Short circuit proof                                                                          |
|                                         | <i>Additionally, <math>\perp</math> (Terminal 82) must be connected to conductor <math>\perp</math> (system neutral of the island bus system).</i>                 |               |                                                                                              |
| Interfaces, communication               | <b>PXC....D</b>                                                                                                                                                    |               | <b>PXC...-E.D</b>                                                                            |
|                                         | Building Level Network                                                                                                                                             |               | 10 Base-T / 100 Base-TX<br>IEEE802.3, Auto-sensing (RJ45)                                    |
|                                         | Local Communication<br>(HMI, Tool) (RJ45)                                                                                                                          |               | --                                                                                           |
|                                         | Local Communication<br>(HMI) (RJ45)                                                                                                                                |               | • PXM10 (RS-232)                                                                             |
|                                         | One PXM10 operator unit and one PXM20 per automation station may be connected. But not twice the same type.                                                        |               | One PXM10 on RJ45                                                                            |
| Binary inputs DI...                     | Contact voltage                                                                                                                                                    |               | DC 20 ... 25 V                                                                               |
|                                         | Contact current                                                                                                                                                    |               | 10 mA                                                                                        |
|                                         | Contact transfer resistance                                                                                                                                        |               | Max. 200 $\Omega$ (closed)                                                                   |
|                                         | Contact isolation resistance                                                                                                                                       |               | Min. 50 k $\Omega$ (open)                                                                    |

|                                                                                                            |                                                                                                                                      |                                                   |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Universal inputs UI...                                                                                     | Configurable by software                                                                                                             |                                                   |
|                                                                                                            | A/D Resolution (analog in)                                                                                                           | 16 bits                                           |
|                                                                                                            | Measured value inputs                                                                                                                |                                                   |
|                                                                                                            | Range                                                                                                                                | 0 ... 11.0 V                                      |
|                                                                                                            | Input resistance                                                                                                                     | 100 k $\Omega$ against $\perp$                    |
|                                                                                                            | 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                                    |
| Analog outputs AO...                                                                                       | Contact current                                                                                                                      | 7 mA                                              |
|                                                                                                            | Contact transfer resistance                                                                                                          | Max. 200 $\Omega$ (closed)                        |
|                                                                                                            | Contact isolation resistance                                                                                                         | Min. 50 k $\Omega$ (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                                             |
|                                                                                                            |                                                                                                                                      | (0...255 → max. cycle time 10 s at 25 Hz)         |
|                                                                                                            | <i>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.</i> |                                                   |
|                                                                                                            | Configurable by software                                                                                                             |                                                   |
|                                                                                                            | D/A Resolution (analog out)                                                                                                          | 10 bits                                           |
|                                                                                                            | Proportional outputs                                                                                                                 |                                                   |
|                                                                                                            | Output voltage range                                                                                                                 | 0 ... 11.0 V                                      |
| Binary outputs BO                                                                                          | Output current                                                                                                                       | Max. 4 mA source, max. 1.5 mA sink                |
|                                                                                                            | for off-board relays                                                                                                                 | only available on UIO 1...4 or 1...6 respectively |
|                                                                                                            | Output voltage range                                                                                                                 | 0 / DC 24 V                                       |
|  Relay outputs DO... *) | Output current                                                                                                                       | 20 mA                                             |
|                                                                                                            | Load                                                                                                                                 | $\geq 1000 \Omega$                                |
|                                                                                                            | Contact data for AC                                                                                                                  |                                                   |
|                                                                                                            | Relay type                                                                                                                           | single pole, change-over contact                  |
|                                                                                                            | Voltage range                                                                                                                        | min. AC 12V max. AC 250V                          |
|                                                                                                            | Current, resistive load                                                                                                              | max. 4A                                           |
|                                                                                                            | Current, inductive load (cos phi $\geq 0.6$ )                                                                                        | max. 2A                                           |
|                                                                                                            | Switching current                                                                                                                    | min. 1mA at AC 250V                               |
|                                                                                                            |                                                                                                                                      | min. 10mA at AC 12V                               |
|                                                                                                            | Current on make                                                                                                                      | max. 20A during max. 10ms                         |
|                                                                                                            |                                                                                                                                      | max. 10A during max. 1s                           |
|                                                                                                            | Contact data for DC                                                                                                                  |                                                   |
|                                                                                                            | Voltage range                                                                                                                        | min. DC 12V, max. DC 30V                          |
|                                                                                                            | Current, resistive load                                                                                                              | max. 3 A at DC 30 V                               |
|                                                                                                            |                                                                                                                                      | min. 10mA at DC 12 V                              |
| Service life of contact for AC 250 V                                                                       | Current on make                                                                                                                      | max. 3 A                                          |
|                                                                                                            | With 0.1 A resistive                                                                                                                 | 8 million switching operations                    |
|                                                                                                            | With 0.5 A resistive                                                                                                                 | 2 million switching operations                    |
|                                                                                                            | With 4.0 A resistive (N/O)                                                                                                           | 0.2 million switching operations                  |
|                                                                                                            | Reduction factor with inductive load (cos phi $\geq 0.6$ )                                                                           | 0.6 (max. 2 A inductive)                          |
|                                                                                                            | External supply line protection                                                                                                      | Slow-blow fuse max. 6 A                           |
|                                                                                                            |                                                                                                                                      | or                                                |
|                                                                                                            |                                                                                                                                      | Circuit breaker max. 10 A                         |
|                                                                                                            |                                                                                                                                      | Characteristic B, C, D according to               |
|                                                                                                            |                                                                                                                                      | EN 60898                                          |

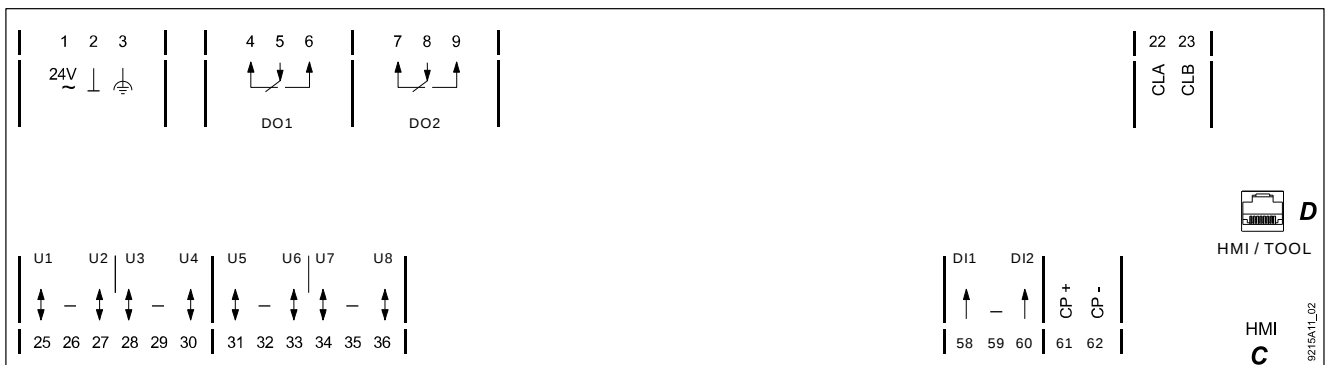
\*) The relay outputs are safely isolated from each other, from earth/cover and the remaining electronics (AC 24 V) in accordance with SELV and PELV specifications. The relay outputs can be used in mixing applications with AC 250 V and SELV / PELV circuits.

|                                        |                                                                                                                                         |                   |                                                                                                                         |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| Plug-in screw terminal                 | Power supply and signals                                                                                                                |                   | Stranded of solid conductors,<br>0.25 ... 2.5 mm <sup>2</sup> or 2 x 1.5 mm <sup>2</sup>                                |
| Single cable lengths and cable types   | Universal inputs UI...                                                                                                                  |                   | Max. 100m where A = 1 mm <sup>2</sup>                                                                                   |
|                                        | Binary inputs DI...                                                                                                                     |                   | Max. 100 m with diameters ≥ 0.6 mm                                                                                      |
|                                        | Universal outputs AO...                                                                                                                 |                   | Max. 100m where A ≥ 1.5 mm <sup>2</sup>                                                                                 |
|                                        | Relay outputs DO...                                                                                                                     |                   | Depends on load and local regulations                                                                                   |
|                                        | Interface, room unit                                                                                                                    |                   | Max. 125 m where A = 1.0 mm <sup>2</sup>                                                                                |
|                                        | Cable type                                                                                                                              |                   | 2-core, twisted pair, unscreened                                                                                        |
|                                        | Capacitance per unit length                                                                                                             |                   | Max. 56 nF/km                                                                                                           |
|                                        | Connecting cable Ethernet and PXM20-E                                                                                                   |                   | Max. 100 m                                                                                                              |
|                                        | Cable type                                                                                                                              |                   | Standard at least CAT5                                                                                                  |
|                                        |                                                                                                                                         |                   | UTP (Unshielded Twisted Pair)<br>or STP (Shielded Twisted Pair)                                                         |
|                                        | Connecting cable LONWORKS bus                                                                                                           |                   | See installation manual CA110396                                                                                        |
|                                        | Cable type                                                                                                                              |                   | CAT5                                                                                                                    |
|                                        | Connecting cable PXM10                                                                                                                  |                   | Max. 3 m                                                                                                                |
|                                        |                                                                                                                                         |                   |                                                                                                                         |
|                                        |                                                                                                                                         |                   |                                                                                                                         |
| Protection data                        | Housing protection standard                                                                                                             |                   | IP 20 to EN 60529                                                                                                       |
|                                        | Protection class                                                                                                                        |                   | II to EN 60730-1                                                                                                        |
| Ambient conditions                     | Operation                                                                                                                               |                   | To IEC 60721-3-3                                                                                                        |
|                                        | Climatic conditions                                                                                                                     |                   | Class 3K5                                                                                                               |
|                                        | Temperature                                                                                                                             |                   | 0 ... 50 °C                                                                                                             |
|                                        | Humidity                                                                                                                                |                   | 5 ... 95 % rh (no condensation)                                                                                         |
|                                        | Mechanical conditions                                                                                                                   |                   | Class 3M2                                                                                                               |
|                                        | Transport                                                                                                                               |                   | To IEC 60721-3-2                                                                                                        |
|                                        | Climatic conditions                                                                                                                     |                   | Class 2K3                                                                                                               |
|                                        | Temperature                                                                                                                             |                   | -25 ... +70 °C                                                                                                          |
|                                        | Humidity                                                                                                                                |                   | 5 ... 95 % rh (no condensation)                                                                                         |
|                                        | Mechanical conditions                                                                                                                   |                   | Class 2M2                                                                                                               |
| Standards and directives and approvals | Product standard                                                                                                                        | EN 60730-1        | Automatic electrical controls for household and similar use                                                             |
|                                        | Product family standard                                                                                                                 | EN 50491-x        | General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) |
|                                        | Electromagnetic compatibility (Applications)                                                                                            |                   | For use in residential, commerce, light-industrial and industrial environments                                          |
|                                        | EU conformity (CE)                                                                                                                      |                   | CM1T9215xx *)                                                                                                           |
|                                        | UL certification (US)                                                                                                                   |                   | UL916 <a href="http://ul.com/database">http://ul.com/database</a>                                                       |
|                                        | RCM-conformity (EMC)                                                                                                                    |                   | CM1T9222en_C1 *)                                                                                                        |
|                                        | EAC conformity                                                                                                                          |                   | Eurasia conformity                                                                                                      |
|                                        | AMEV: Supports profiles AS-A and AS-B as of AMEV guideline "BACnet in public buildings"                                                 |                   | BACnet 2011 en, V1.1                                                                                                    |
|                                        | FCC                                                                                                                                     |                   | CFR 47 Part 15 Class B                                                                                                  |
|                                        |                                                                                                                                         |                   |                                                                                                                         |
| Environmental compatibility            | Product environmental declaration (contains data on RoHS compliance, materials composition, packaging, environmental benefit, disposal) |                   | CM1E9215 *)                                                                                                             |
| Dimensions                             | See "Dimensions"                                                                                                                        |                   |                                                                                                                         |
| Weight                                 | Type                                                                                                                                    | without packaging | with packaging                                                                                                          |
|                                        | PXC12....D                                                                                                                              | 750               | 830                                                                                                                     |
|                                        | PXC22.... D                                                                                                                             | 754               | 834                                                                                                                     |
|                                        | PXC22.1.... D                                                                                                                           | 1019              | 1095                                                                                                                    |
|                                        | PXC36.... D                                                                                                                             | 1080              | 1160                                                                                                                    |
|                                        | PXC36.1.... D                                                                                                                           | 1090              | 1166                                                                                                                    |
|                                        |                                                                                                                                         |                   |                                                                                                                         |

\*) The documents can be downloaded from <http://siemens.com/bt/download>.

## Connection terminals

### PXC12.D

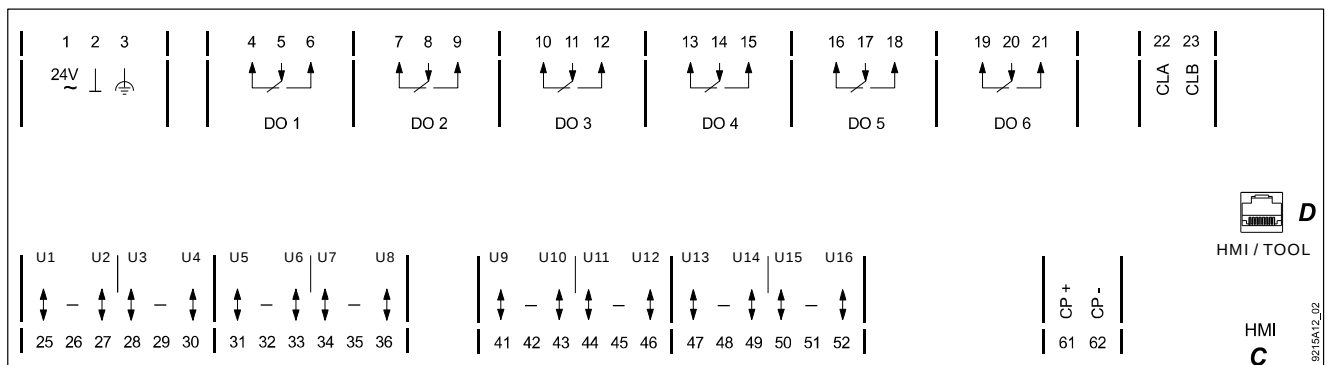


|                  |            |                                          |                   |
|------------------|------------|------------------------------------------|-------------------|
| <b>1, 2</b>      | 24 V ~, ⊥  | Operating voltage AC 24 V                |                   |
| <b>3</b>         |            | Functional earth                         | <b>CFC IOAddr</b> |
| <b>4 ... 9</b>   | DO1, DO2   | 2 Digital outputs (Relays)               | DO1: C=5.1        |
| <b>22, 23</b>    | CLA, CLB   | LonWorks-Bus                             |                   |
| <b>25 ... 30</b> | U1...U4    | 4 Universal inputs / outputs with Q250   | xx1: C=4.1 *)     |
| <b>31 ... 36</b> | U5...U8    | 4 Universal inputs / outputs             | xx5: C=1.1 *)     |
| <b>58 ... 60</b> | DI1, DI2   | 2 Digital inputs                         | DI1: C=3.1        |
| <b>61, 62</b>    | CP+, CP–   | PPS2 bus (for up to 5 QAX... room units) |                   |
| <b>C</b>         | HMI        | RJ45 socket for PXM10, PXM20             |                   |
| <b>D</b>         | HMI / Tool | RJ45 socket for PXM10, PXM20 and tool    |                   |

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

U1...U4: xx = Y10S, U5...U8: xx = R1K

### PXC22.D



|                  |             |                                          |                   |
|------------------|-------------|------------------------------------------|-------------------|
| <b>1, 2</b>      | 24 V ~, ⊥   | Operating voltage AC 24 V                |                   |
| <b>3</b>         |             | Functional earth                         | <b>CFC IOAddr</b> |
| <b>4 ... 21</b>  | DO1 ... DO6 | 6 Digital outputs (Relays)               | DO1: C=5.1        |
| <b>22, 23</b>    | CLA, CLB    | LonWorks-Bus                             |                   |
| <b>25 ... 30</b> | U1 ... U4   | 4 Universal inputs / outputs with Q250   | xx1: C=4.1 *)     |
| <b>31 ... 52</b> | U5 ... U16  | 12 Universal inputs / outputs            | xx5: C=1.1 *)     |
| <b>61, 62</b>    | CP+, CP–    | PPS2 bus (for up to 5 QAX... room units) |                   |
| <b>C</b>         | HMI         | RJ45 socket for PXM10, PXM20             |                   |
| <b>D</b>         | HMI / Tool  | RJ45 socket for PXM10, PXM20 and tool    |                   |

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

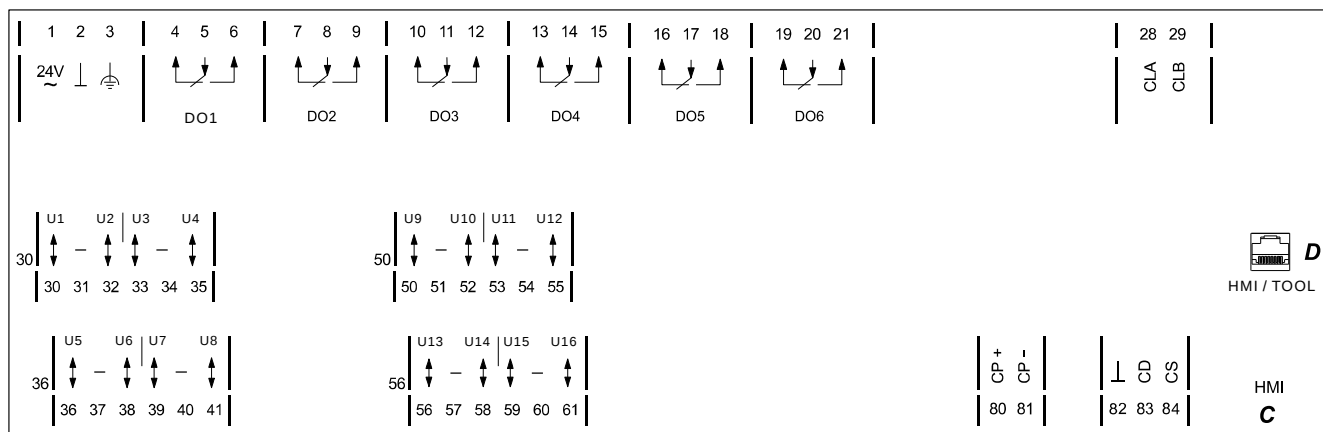
U1...U4: xx = Y10S, U5...U16: xx = R1K



#### Caution!

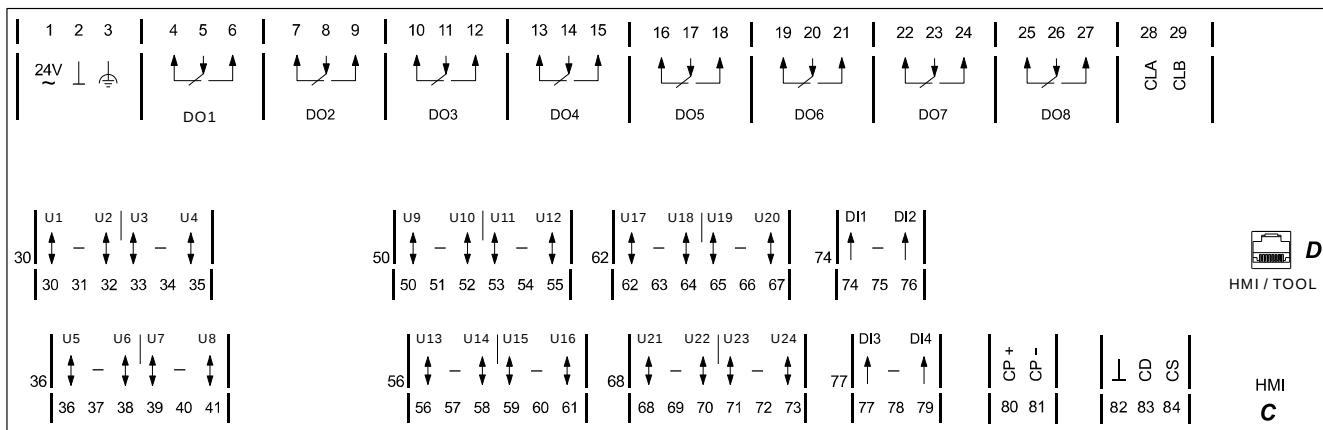
- Observe the technical data for the relay outputs.
- Local installation regulations must be observed.

## PXC22.1.D



|                  |             |                                                                                                                                |                   |
|------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>1, 2</b>      | 24 V ~, ⊥   | Operating voltage AC 24 V                                                                                                      |                   |
| <b>3</b>         |             | Functional earth                                                                                                               | <b>CFC IOAddr</b> |
| <b>4 ... 21</b>  | DO1 ... DO6 | 6 Digital outputs (Relays)                                                                                                     | DO1: C=5.1        |
| <b>28, 29</b>    | CLA, CLB    | LONWORKS bus                                                                                                                   |                   |
| <b>30 ... 38</b> | U1 ... U6   | 6 Universal inputs / outputs with Q250                                                                                         | xx1: C=4.1 *)     |
| <b>39 ... 61</b> | U7 ... U16  | 10 Universal inputs / outputs                                                                                                  | xx7: C=1.1 *)     |
| <b>80, 81</b>    | CP+, CP-    | PPS2 bus (for up to 5 QAX... room units)                                                                                       |                   |
| <b>82 ... 84</b> | ⊥, CD, CS   | Island bus: <i>Additionally, the system neutral conductor ⊥ of the island bus system must be connected to ⊥ (Terminal 82).</i> |                   |
| <b>C</b>         | HMI         | RJ45 socket for PXM10, PXM20                                                                                                   |                   |
| <b>D</b>         | HMI / Tool  | RJ45 socket for PXM10, PXM20 and tool                                                                                          |                   |

## PXC36.1.D



|                  |             |                                                                                                                                |                   |
|------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>1, 2</b>      | 24 V ~, ⊥   | Operating voltage AC 24 V                                                                                                      |                   |
| <b>3</b>         |             | Functional earth                                                                                                               | <b>CFC IOAddr</b> |
| <b>4 ... 27</b>  | DO1 ... DO8 | 8 Digital outputs (Relays)                                                                                                     | DO1: C=5.1        |
| <b>28, 29</b>    | CLA, CLB    | LONWORKS bus                                                                                                                   |                   |
| <b>30 ... 38</b> | U1 ... U6   | 6 Universal inputs / outputs with Q250                                                                                         | xx1: C=4.1 *)     |
| <b>39 ... 73</b> | U7 ... U24  | 18 Universal inputs / outputs                                                                                                  | xx7: C=1.1 *)     |
| <b>74 ... 79</b> | DI1 ... DI4 | 4 digital inputs                                                                                                               | DI1: C=3.1        |
| <b>80, 81</b>    | CP+, CP-    | PPS2 bus (for up to 5 QAX... room units)                                                                                       |                   |
| <b>82 ... 84</b> | ⊥, CD, CS   | Island bus: <i>Additionally, the system neutral conductor ⊥ of the island bus system must be connected to ⊥ (Terminal 82).</i> |                   |
| <b>C</b>         | HMI         | RJ45 socket for PXM10, PXM20                                                                                                   |                   |
| <b>D</b>         | HMI / Tool  | RJ45 socket for PXM10, PXM20 and tool                                                                                          |                   |

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



**Caution!**

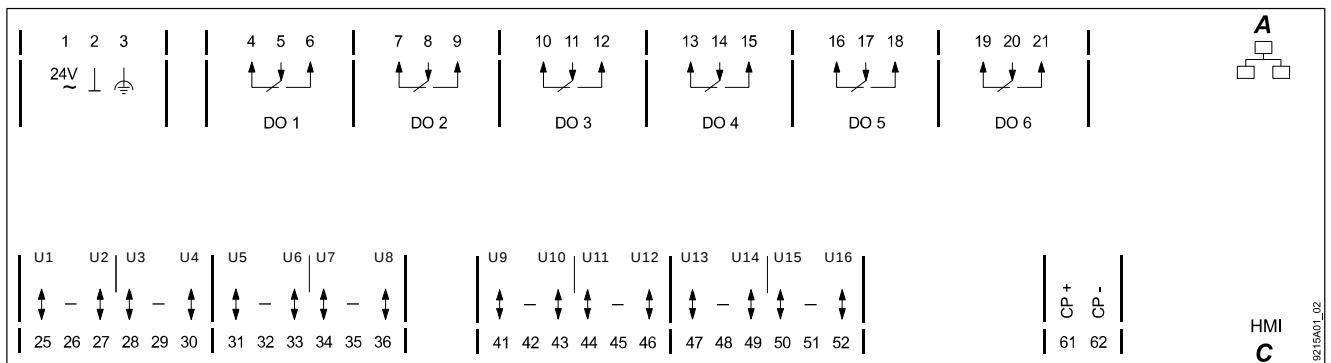
- Observe the technical data for the relay outputs.
- Local installation regulations must be observed.

## PXC12-E.D



|                  |           |                                          |                   |
|------------------|-----------|------------------------------------------|-------------------|
| <b>1, 2</b>      | 24 V ~, ⊥ | Operating voltage AC 24 V                |                   |
| <b>3</b>         |           | Functional earth                         | <b>CFC IOAddr</b> |
| <b>4 ... 9</b>   | DO1, DO2  | 2 Digital outputs (Relays)               | DO1: C=5.1        |
| <b>25 ... 30</b> | U1 ... U4 | 4 Analog inputs / outputs with Q250      | xx1: C=4.1 *)     |
| <b>31 ... 36</b> | U5 ... U8 | 4 Analog inputs / outputs                | xx5: C=1.1 *)     |
| <b>58 ... 60</b> | DI1, DI2  | 2 Digital inputs                         | DI1: C=3.1        |
| <b>61, 62</b>    | CP+, CP–  | PPS2 bus (for up to 5 QAX... room units) |                   |
| <b>A</b>         |           | Ethernet socket                          |                   |
| <b>C</b>         | HMI       | RJ45 socket for PXM10                    |                   |

## PXC22-E.D



|                  |             |                                          |                   |
|------------------|-------------|------------------------------------------|-------------------|
| <b>1, 2</b>      | 24 V ~, ⊥   | Operating voltage AC 24 V                |                   |
| <b>3</b>         |             | Functional earth                         | <b>CFC IOAddr</b> |
| <b>4 ... 21</b>  | DO1 ... DO6 | 6 Digital outputs (Relays)               | DO1: C=5.1        |
| <b>25 ... 30</b> | U1 ... U4   | 4 Universal inputs / outputs with Q250   | xx1: C=4.1 *)     |
| <b>31 ... 52</b> | U5 ... U16  | 12 Universal inputs / outputs            | xx5: C=1.1 *)     |
| <b>61, 62</b>    | CP+, CP–    | PPS2 bus (for up to 5 QAX... room units) |                   |
| <b>A</b>         |             | Ethernet socket                          |                   |
| <b>C</b>         | HMI         | RJ45 socket for PXM10                    |                   |

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

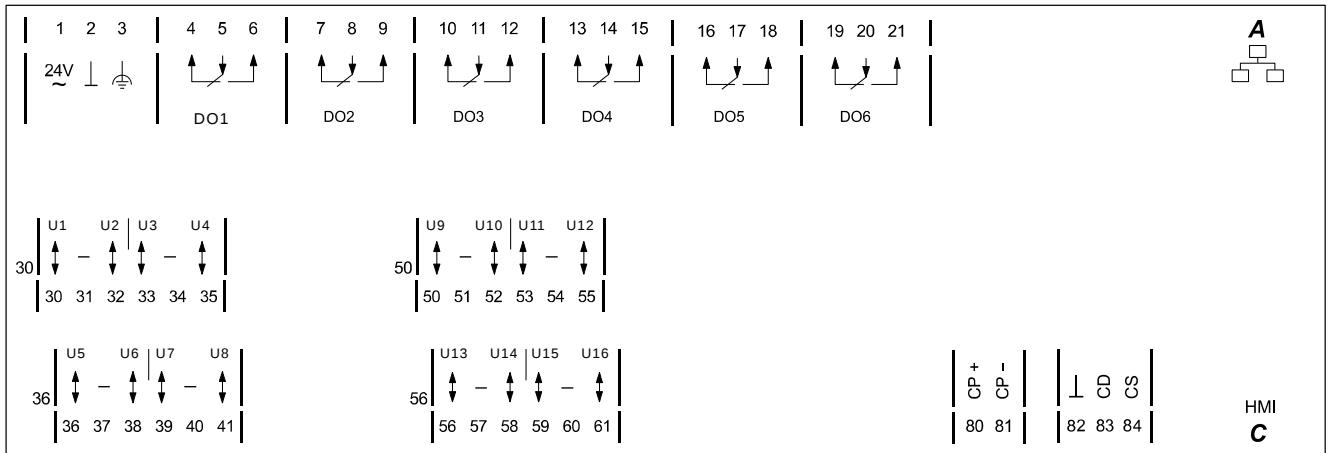
U1...U4: xx = Y10S, U5...U16: xx = R1K



**Caution!**

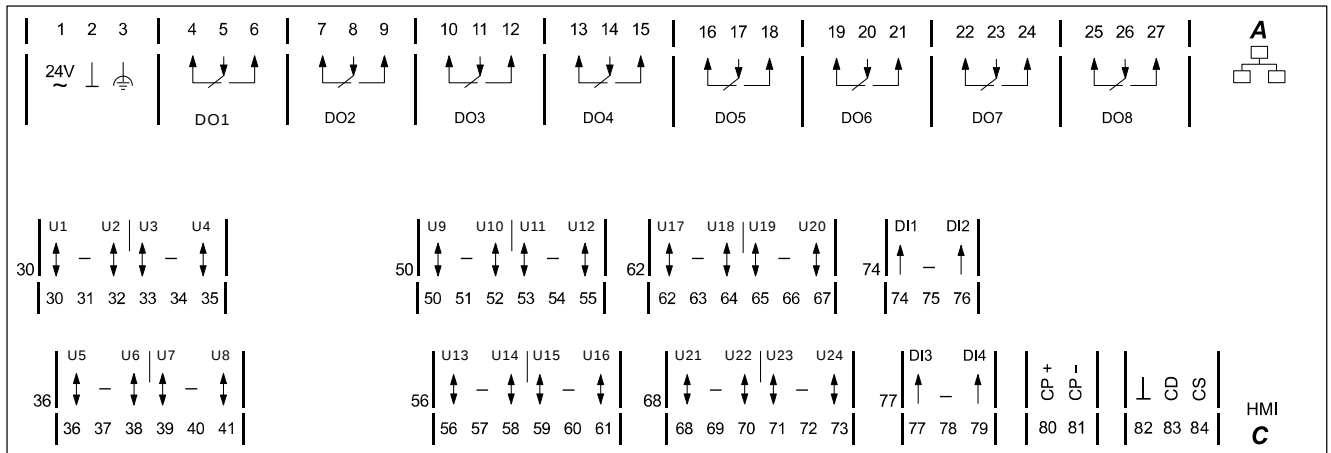
- **Observe the technical data for the relay outputs.**
- **Local installation regulations must be observed.**

## PXC22.1-E.D



|           |             |                                                                                                                                |                   |
|-----------|-------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1, 2      | 24 V ~, ⊥   | Operating voltage AC 24 V                                                                                                      |                   |
| 3         | ⊥           | Functional earth                                                                                                               | <b>CFC IOAddr</b> |
| 4 ... 21  | DO1 ... DO6 | 6 Digital outputs (Relays)                                                                                                     | DO1: C=5.1        |
| 30 ... 38 | U1 ... U6   | 6 Universal inputs / outputs with Q250                                                                                         | xx1: C=4.1 *)     |
| 39 ... 61 | U7 ... U16  | 10 Universal inputs / outputs                                                                                                  | xx7: C=1.1 *)     |
| 80, 81    | CP+, CP–    | PPS2 bus (for up to 5 QAX... room units)                                                                                       |                   |
| 82 ... 84 | ⊥, CD, CS   | Island bus: <i>Additionally, the system neutral conductor ⊥ of the island bus system must be connected to ⊥ (Terminal 82).</i> |                   |
| A         |             | Ethernet socket                                                                                                                |                   |
| C         | HMI         | RJ45 socket for PXM10                                                                                                          |                   |

## PXC36.1-E.D



|           |             |                                                                                                                                |                   |
|-----------|-------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1, 2      | 24 V ~, ⊥   | Operating voltage AC 24 V                                                                                                      |                   |
| 3         | ⊥           | Functional earth                                                                                                               | <b>CFC IOAddr</b> |
| 4 ... 27  | DO1 ... DO8 | 8 Digital outputs (Relays)                                                                                                     | DO1: C=5.1        |
| 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)                                                                                       |                   |
| 82 ... 84 | ⊥, CD, CS   | Island bus: <i>Additionally, the system neutral conductor ⊥ of the island bus system must be connected to ⊥ (Terminal 82).</i> |                   |
| A         |             | Ethernet socket                                                                                                                |                   |
| C         | HMI         | RJ45 socket for PXM10                                                                                                          |                   |

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

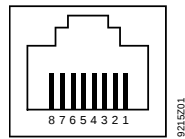


**Caution!**

- Observe the technical data for the relay outputs.
- Local installation regulations must be observed.

### Tool socket "HMI" (Ethernet)

#### Automation stations for BACnet / IP



#### Pin Description

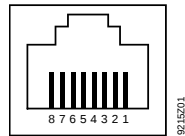
1. Unoccupied
2. Unoccupied
3. G0, GND
4. G/Plus

#### Pin Description

5. Unoccupied
6. Hot-wired to Pin 8
7. COM1/TxD
8. COM1/RxD

### Tool socket "HMI" (LONWORKS)

#### Automation stations for BACnet / LonTalk



#### Pin Description

1. LONWORKS Data A (CLA)
2. LONWORKS Data B (CLB)
3. G0 / GND
4. G / Plus

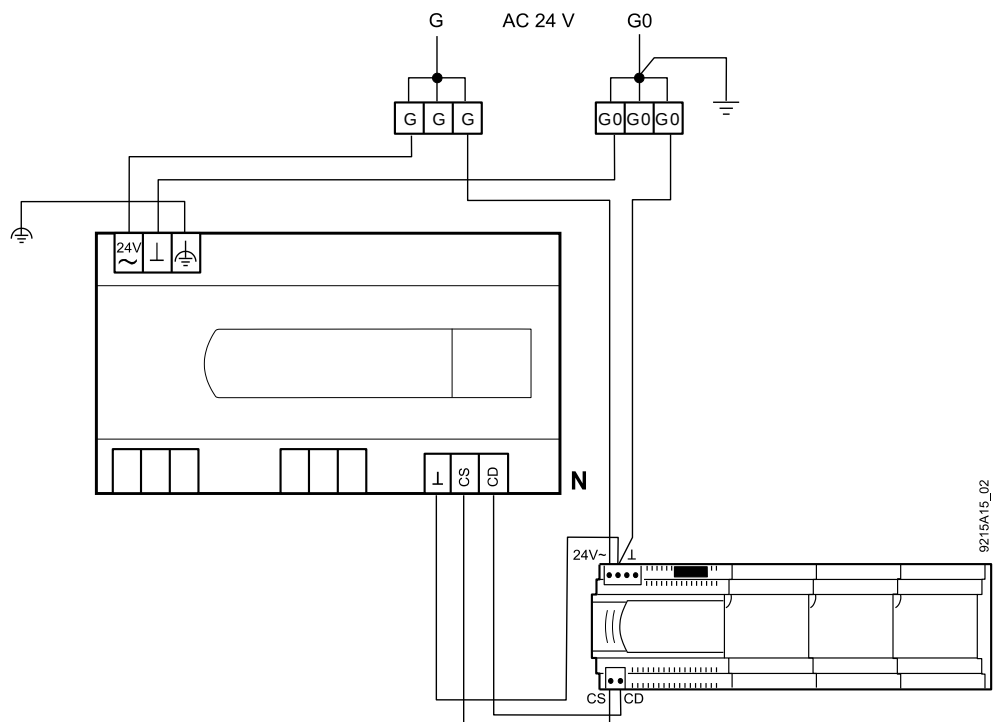
#### Pin Description

5. Unoccupied
6. Hot-wired to Pin 8
7. COM1 / TxD
8. COM1 / RxD

## Connecting island bus modules (For details, see TX-I/O Installation manual, CM110562)

### Island bus supply

- The TX-I/O modules require a TXS1.12F10 power supply module.
- Additionally, the system neutral conductor  $\perp$  of the island bus system must be connected to  $\perp$  (terminal 82).



### Grounding

- See TX-I/O Installation manual, CM110562



### 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:

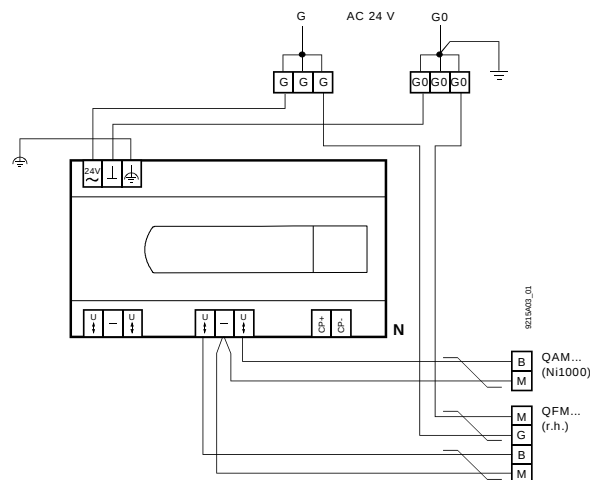
- ① either on the terminals of the field device
- ② or between one of the (–) terminals of the automation station and G0 (in existing plants where there are only 3 conductors installed).

## Field device supply voltage from system transformer

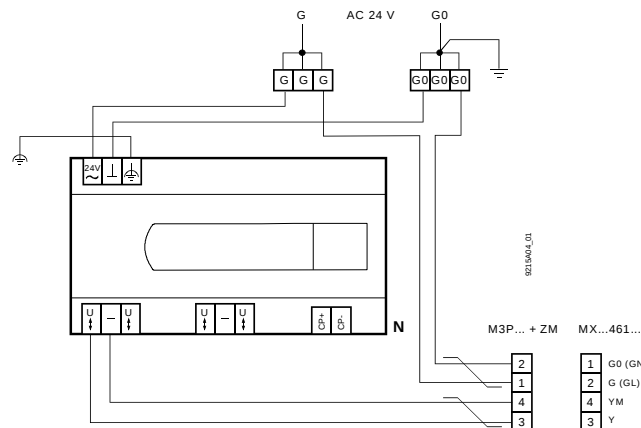
Counter inputs

*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.*

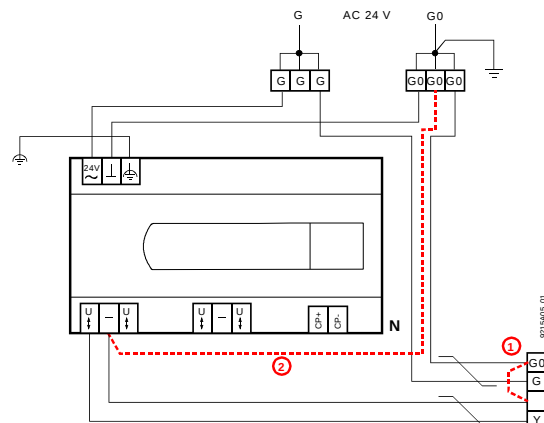
Passive sensors  
(e.g. QAM... , Ni 1000)  
Active sensors  
(e.g. QFM... , humidity)



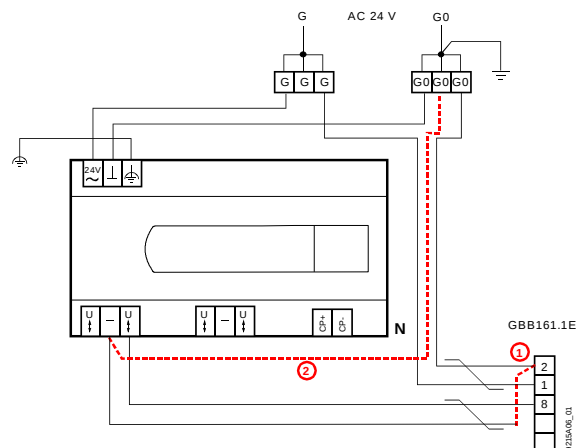
Magnetic valves  
(e.g. M3P... + ZM  
or MX...461...)



Motorized valves

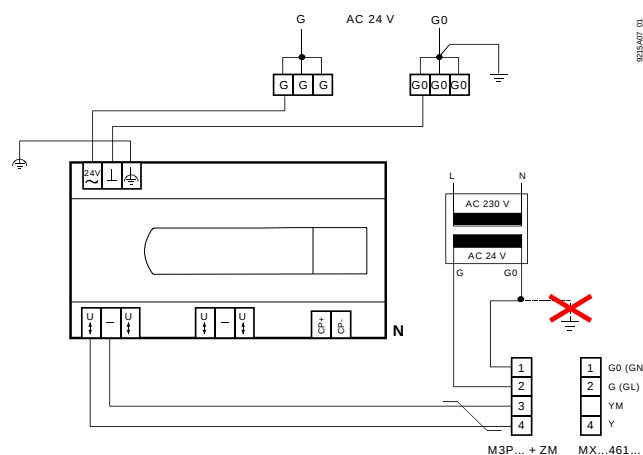


Damper actuators  
(e.g. GBB161.1E)



## Field device supply from separate transformer

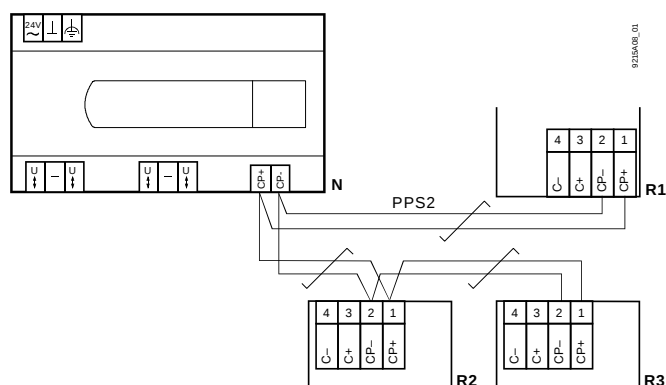
Magnetic valves  
(e.g. M3P... + ZM  
or MX...461...)



**Note!**  
Do NOT earth  
the local  
transformer

## 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"

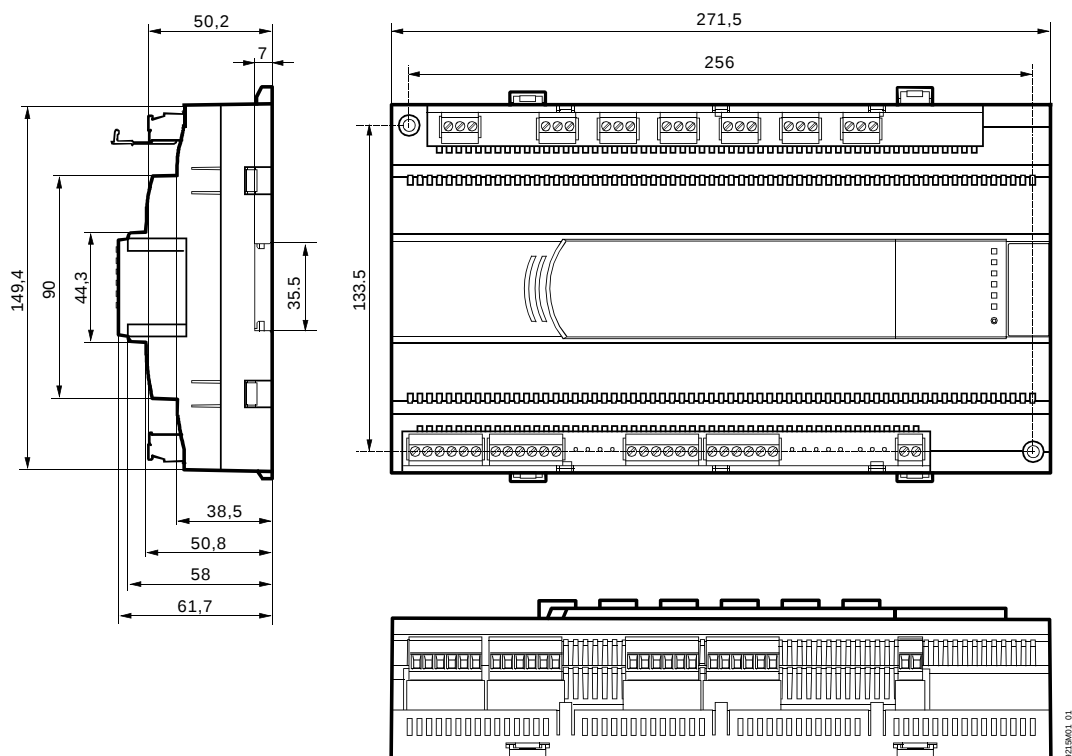


- Notes
- The room units are connected in parallel (max. five devices).
  - To distinguish between them, they must be addressed by use of jumpers (address plug on the printed circuit board). The factory-setting is Address 1.

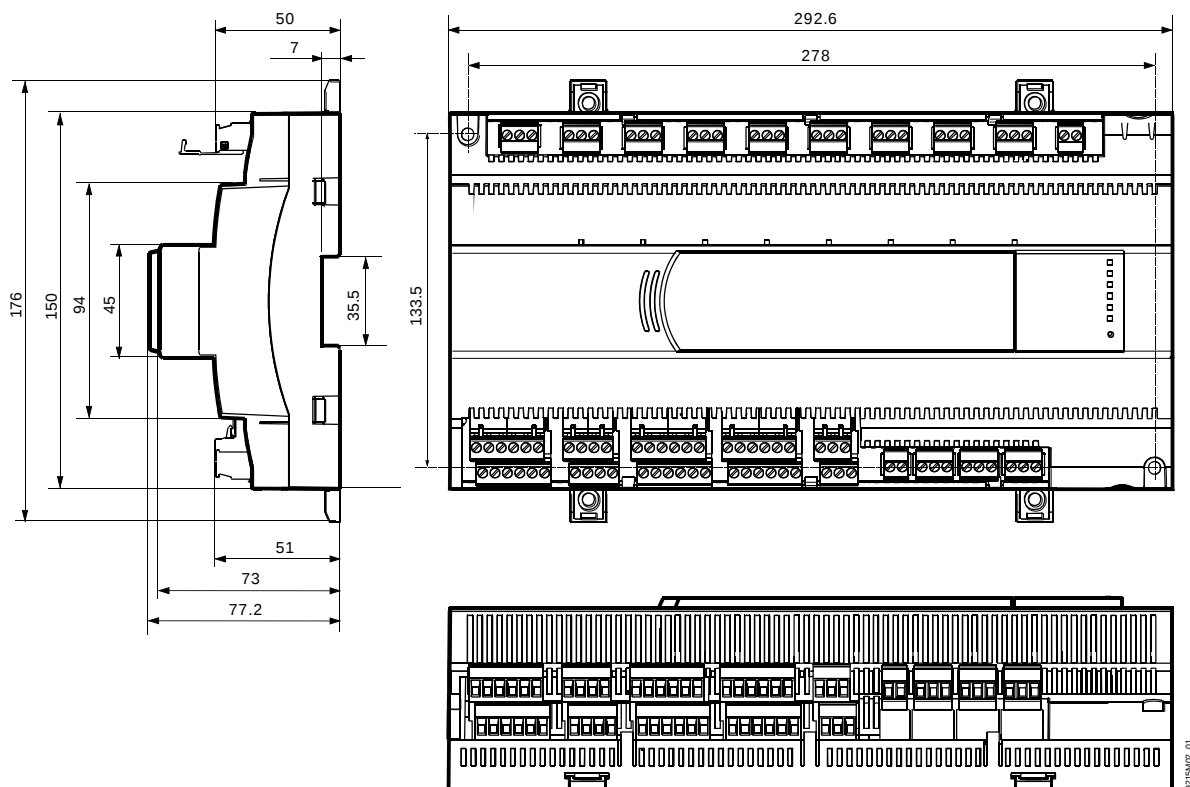
## Dimensions

(All dimensions in mm)

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



### PXC22.1....D and PXC36.1....D



## Disposal

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The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive 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.

**Lithium batteries:** May catch fire, explode or leak. Do not short circuit, charge, disassemble, dispose of in fire, heat above 100 °C, or expose to water.

Disposal: Seal battery terminals with tape.

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