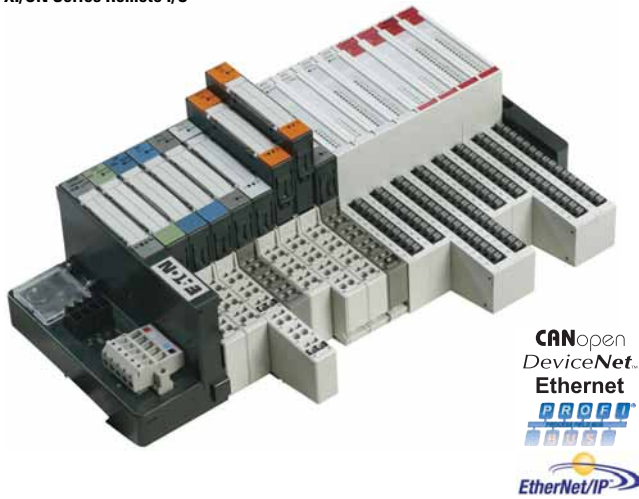


#### XI/ON Series Remote I/O

4



#### Product Overview

Whether for controlling movements, measuring temperature or speed, or logging currents and voltages, the application ranges for remote I/Os are as extensive as the different applications involved. They are used wherever decentralized signal processing is the essential element of the automation concept.

Thanks to the high modularity of the XI/ON system and the wide range of functions, Eaton is able to offer the right I/O solution for every application. XI/ON: A modular concept with simple handling—adaptable to any application, intelligent and ready for future developments.

#### Standards and Certifications

- UL File No. E205091
- UL CCN—NRAQ, NRAQ7
- cULus
- CE
- RoHS



#### Contents

##### Description

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**Product Selection Guide**

**XI/ON Series Remote I/O**



**XI/ON**

As many as needed, as few as possible—this is the principle on which the XI/ON modular I/O system was built. An extensive range of digital and analog I/Os as well as technology modules are available.

- High level of modularity
- Fieldbuses: CANopen, PROFIBUS-DP, DeviceNet and Ethernet
- Bus-independent, pluggable modules
- Low wiring requirement
- Precise diagnostics
- Space and cost saving with XNE modules
- Programmable CANopen gateway
- Standard and XNE modules can be mixed

**XNE Gateways and Integrated Modules**

**Page V7-T4-66**

XI/ON XNE completes the XI/ON I/O system with price and space optimized I/O modules and gateways. The XNE gateways use the EtherNet/IP, Modbus TCP Ethernet, CANopen and PROFIBUS-DP bus systems.

- XNE gateways with integrated bus terminating resistors
- Full compatibility with the standard XI/ON system
- No base module required
- High channel density (up to 16 DI/DO on 12.5 mm width)
- “Push-In” spring-loaded terminals
- Multi-functional slices
- Diagnostics interface

**XN Standard Gateways and Plug-in Modules**

**Page V7-T4-68**

The standard gateways use the Modbus TCP, DeviceNet, Ethernet, CANopen and PROFIBUS-DP bus systems.

- The use of pluggable I/O modules is independent on the fieldbus used
- Wiring is implemented on the base module, fixed wiring
- Fast module exchange under power (hot swapping)
- Generation of diagnostics information to higher-level controller
- Up to 74 slice modules can be connected per gateway
- Mechanical coding of modules
- Diagnostics interface

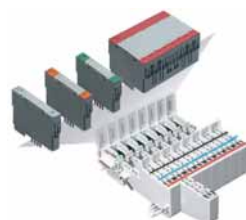


**Programmable CANopen Gateway**

**Page V7-T4-68**

The programmable CANopen gateway brings the power of the PLC directly to the fieldbus terminal. The device is ideal for handling decentralized automation tasks and thus for relieving the load of a higher-level PLC.

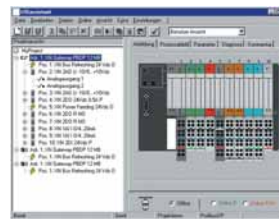
The serial onboard interface is used for local programming access and as an interface for the I/Oassistant configuration and diagnostics tool. Alternatively, this interface can also be used as a free user interface. The gateway is programmed with XSoft-CoDeSys-2.



**Base Modules for Every Requirement**

**Page V7-T4-72**

The base modules are used to connect the field wiring for the standard XI/ON modules. They are available for 2-, 3- and 4-wire connections, as block or slice modules, with either spring-loaded terminals or screw terminals—the right format for every application.



**I/Oassistant—the Universal Configuration and Diagnostics Tool**

The I/Oassistant provides you with a universal tool that offers interactive support with the entire planning and implementation of your XI/ON installation. The I/Oassistant is integrated in XSoft-CoDeSys-2.

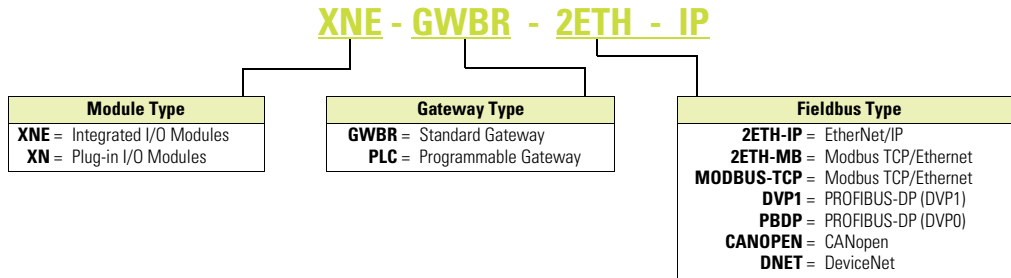
A project is first of all created and structured on the screen. For this you choose gateways, electronic and base modules as well as the appropriate accessories. The individual stations are then configured offline or online. Once everything is set to your satisfaction, you simply put your installation into operation. The I/Oassistant also automatically generates a parts list for your order.

I/Oassistant checks the station, reads the process data, outputs values and visualizes the diagnostics data of the channel. This enables you to commission your station without a higher-level PLC and ensure that a section of the system is functioning correctly.

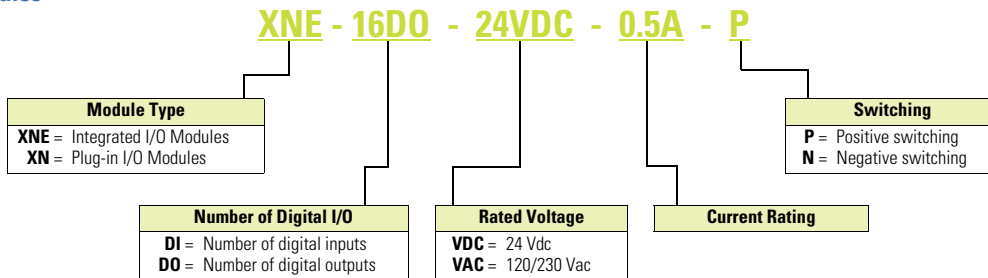
#### Catalog Number Selection

##### Gateway Modules

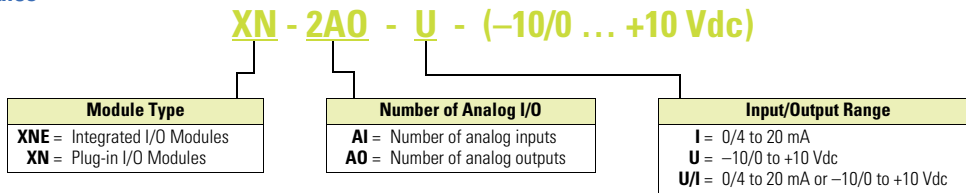
4



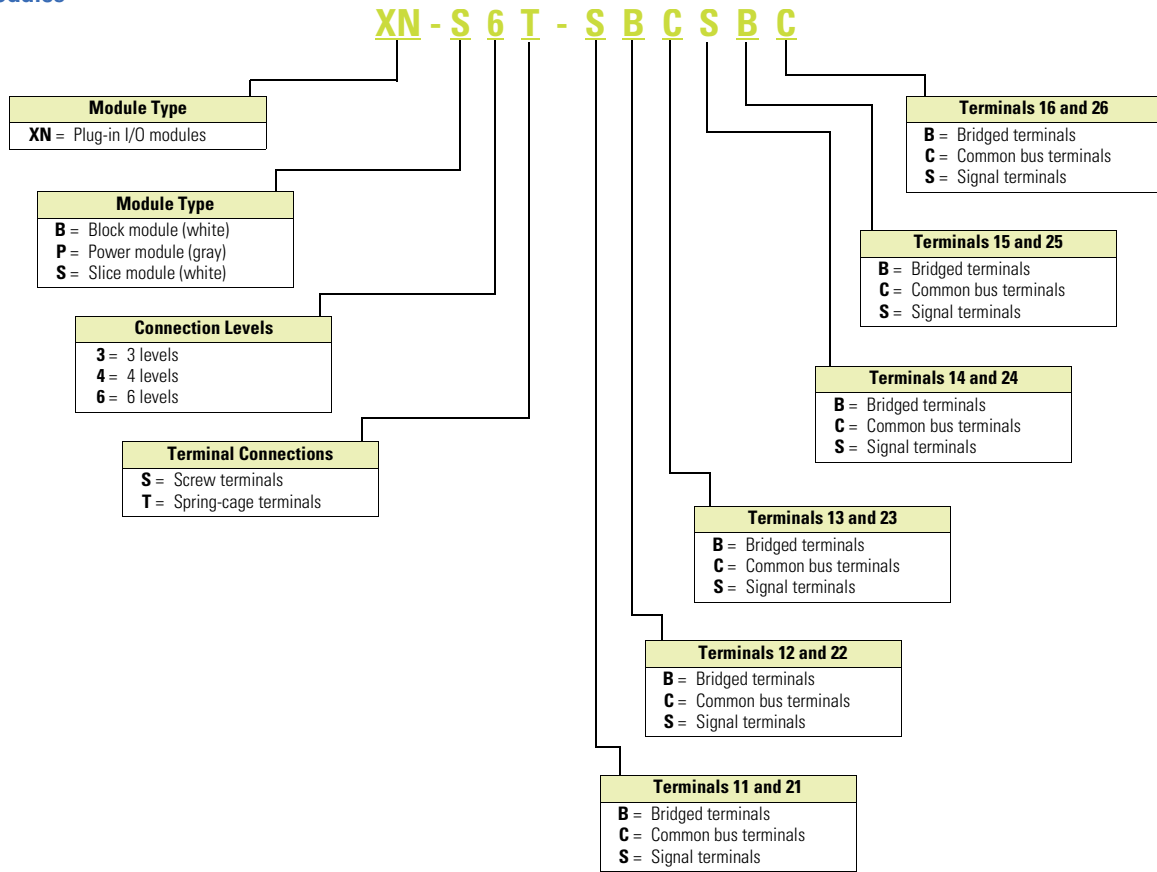
##### Digital I/O Modules



##### Analog I/O Modules



Base Modules



## System Overview

### System Configuration

#### XN Module and Base Compatibility Chart

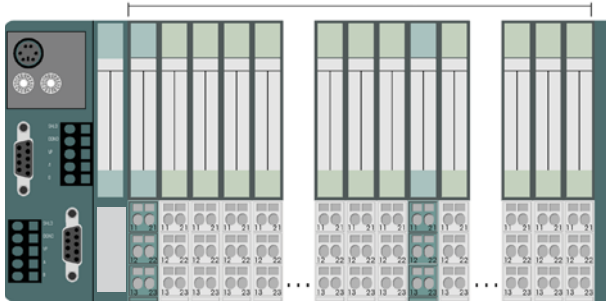
|                               | Base Modules | XN-S3S-SBB<br>XN-S3T-SBB | XN-S3S-SBC<br>XN-S3T-SBC | XN-S4S-SBBC<br>XN-S4T-SBBC | XN-S4S-SBBS<br>XN-S4T-SBBS | XN-S4S-SBCS<br>XN-S4T-SBCS | XN-S4S-SBBS-CJ<br>XN-S4T-SBBS-CJ | XN-S6S-SBBSBB<br>XN-S6T-SBBSBB | XN-S6S-SBCSBC<br>XN-S6T-SBCSBC | XN-B3S-SBB<br>XN-B3T-SBB | XN-B3S-SBC<br>XN-B3T-SBC | XN-B4S-SBBC<br>XN-B4T-SBBC | XN-B6S-SBBSBB<br>XN-B6T-SBBSBB | XN-B6S-SBCSBC<br>XN-B6T-SBCSBC | XN-P3S-SBB<br>XN-P3T-SBB | XN-P3S-SBB-B<br>XN-P3T-SBB-B | XN-P4S-SBBC<br>XN-P4T-SBBC | XN-P4S-SBBC-B<br>XN-P4T-SBBC-B |
|-------------------------------|--------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|----------------------------------|--------------------------------|--------------------------------|--------------------------|--------------------------|----------------------------|--------------------------------|--------------------------------|--------------------------|------------------------------|----------------------------|--------------------------------|
| <b>Electronics Modules</b>    |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| <b>Digital Input Modules</b>  |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-2DI-24VDC-P                |              | ✓                        | —                        | ✓                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DI-24VDC-N                |              | ✓                        | —                        | ✓                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DI-120/230VAC             |              | ✓                        | —                        | ✓                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-4DI-24VDC-P                |              | —                        | —                        | —                          | ✓                          | —                          | —                                | ✓                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-4DI-24VDC-N                |              | —                        | —                        | —                          | ✓                          | —                          | —                                | ✓                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-16DI-24VDC-P               |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | ✓                        | —                        | ✓                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-32DI-24VDC-P               |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | ✓                              | —                              | —                        | —                            | —                          | —                              |
| <b>Digital Output Modules</b> |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-2DO-24VDC-0.5A-P           |              | —                        | ✓                        | —                          | —                          | ✓                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DO-24VDC-0.5A-N           |              | —                        | ✓                        | —                          | —                          | ✓                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DO-24VDC-2A-P             |              | —                        | ✓                        | —                          | —                          | ✓                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DO-120/230VAC-0.5A        |              | —                        | ✓                        | —                          | —                          | ✓                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-4DO-24VDC-0.5A-P           |              | —                        | —                        | —                          | —                          | ✓                          | —                                | —                              | ✓                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-16DO-24VDC-0.5A-P          |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | ✓                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-32DO-24VDC-0.5A-P          |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | ✓                              | —                        | —                            | —                          | —                              |
| <b>Relay Modules</b>          |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-2DO-R-NC                   |              | —                        | —                        | —                          | ✓                          | ✓                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DO-R-NO                   |              | —                        | —                        | —                          | ✓                          | ✓                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2DO-R-CO                   |              | —                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| <b>Analog Input Modules</b>   |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-1AI-I(0/4...20MA)          |              | ✓                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2AI-I(0/4...20MA)          |              | ✓                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-1AI-U(-10/0...+10VDC)      |              | ✓                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2AI-U(-10/0...+10VDC)      |              | ✓                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2AI-PT/NI-2/3              |              | ✓                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2AI-THERMO-PI              |              | —                        | —                        | —                          | —                          | —                          | ✓                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-4AI-U/I                    |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | ✓                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| <b>Analog Output Modules</b>  |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-1AO-I(0/4...20MA)          |              | ✓                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2AO-I(0/4...20MA)          |              | ✓                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-2AO-U(-10/0...+10VDC)      |              | ✓                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| <b>Technology Modules</b>     |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-1CNT-24VDC                 |              | —                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-1RS232                     |              | —                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-1RS485/422                 |              | —                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| XN-1SSI                       |              | —                        | —                        | —                          | ✓                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | —                        | —                            | —                          | —                              |
| <b>Supply Modules</b>         |              |                          |                          |                            |                            |                            |                                  |                                |                                |                          |                          |                            |                                |                                |                          |                              |                            |                                |
| XN-BR-24VDC-D                 |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | ✓ <sup>①</sup>           | ✓ <sup>②</sup>               | ✓ <sup>①</sup>             | ✓ <sup>②</sup>                 |
| XN-PF-24VDC-D                 |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | ✓                        | —                            | ✓                          | —                              |
| XN-PF-120/230VAC-D            |              | —                        | —                        | —                          | —                          | —                          | —                                | —                              | —                              | —                        | —                        | —                          | —                              | —                              | ✓                        | —                            | ✓                          | —                              |

#### Notes

- ① Base module for gateway supply.
- ② Base module for bus refreshing within the station.

Maximum System Configuration

Maximum 74 XI/ON Modules in Slice Design



Plan your XI/ON station with the software “I/Oassistant”.

**Advantage 1:**

Automatically generates a full parts list for your order.

**Advantage 2:**

Generates an error message as soon as the system limits are exceeded.

4

**IMPORTANT:**

When extending your system, make sure that you have a sufficient number of bus refresh or power feed modules.

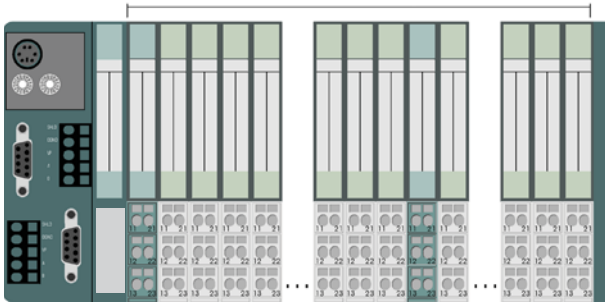
| Style Number:            | 140045          |               | 140044           |                  | 140047           |          | 152279  |          |         |
|--------------------------|-----------------|---------------|------------------|------------------|------------------|----------|---------|----------|---------|
|                          | Catalog Number: | XNE-GWBR-PBDP | XNE-GWBR-CANOPEN | XNE-GWBR-2ETH-IP | XNE-GWBR-2ETH-MB | Channels | Modules | Channels | Modules |
| <b>Modules</b>           |                 |               |                  |                  |                  |          |         |          |         |
| XN-4DI-24VDC-P           | 136             | 34            | 244              | 61               | 288              | 72       | 288     | 72       |         |
| XN-4DI-24VDC-N           | 136             | 34            | 244              | 61               | 288              | 72       | 288     | 72       |         |
| XN-16DI-24VDC-P          | 128             | 8             | 128              | 8                | 128              | 8        | 128     | 8        |         |
| XN-32DI-24VDC-P          | 256             | 8             | 256              | 8                | 256              | 8        | 256     | 8        |         |
| XNE-8DI-24VDC-P          | 384             | 48            | 512              | 64               | 512              | 64       | 512     | 64       |         |
| XNE-16DI-24VDC-P         | 768             | 48            | 512              | 32               | 512              | 32       | 512     | 32       |         |
| XN-4DO-24VDC-0.5A-P      | 132             | 33            | 244              | 61               | 288              | 72       | 288     | 72       |         |
| XN-16DO-24VDC-0.5A-P     | 128             | 8             | 128              | 8                | 128              | 8        | 128     | 8        |         |
| XN-32DO-24VDC-0.5A-P     | 256             | 8             | 256              | 8                | 256              | 8        | 256     | 8        |         |
| XNE-8DO-24VDC-0.5A-P     | 384             | 48            | 488              | 61               | 512              | 64       | 512     | 64       |         |
| XNE-16DO-24VDC-0.5A-P    | 640             | 40            | 512              | 32               | 512              | 32       | 512     | 32       |         |
| XN-2DO-R-__              | 70              | 35            | 122              | 61               | 144              | 72       | 144     | 72       |         |
| XN-2AI-I(0/4...20MA)     | 56              | 28            | 100              | 50               | 126              | 63       | 126     | 63       |         |
| XN-2AI-U(-10/0...+10VDC) | 56              | 28            | 100              | 50               | 126              | 63       | 126     | 63       |         |
| XN-2AI-PT/NI2/3          | 44              | 22            | 98               | 49               | 126              | 63       | 126     | 63       |         |
| XN-2AI-THERMO-PI         | 44              | 22            | 98               | 49               | 126              | 63       | 126     | 63       |         |
| XN-4AI-U/I               | 64 (132)        | 16 (33)       | 108              | 27               | 124              | 31       | 124     | 31       |         |
| XNE-8AI-U/I-4PT/NI       | 72 (120)        | 9 (15)        | 144              | 18               | 128              | 16       | 128     | 16       |         |
| XN-2AO-I(0/4...20MA)     | 50              | 25            | 70               | 35               | 126              | 63       | 126     | 63       |         |
| XN-2AO-U(-10/0...+10VDC) | 46              | 23            | 70               | 35               | 126              | 63       | 126     | 63       |         |
| XNE-4AO-U/I              | 64 (76)         | 16 (19)       | 108              | 27               | 64               | 16       | 64      | 16       |         |
| XN-1CNT-24VDC            | 13              | 13            | 27               | 27               | 31               | 31       | 31      | 31       |         |
| XN-1RS232                | 7               | 7             | 27               | 27               | 31               | 31       | 31      | 31       |         |
| XN-1RS485/422            | 16              | 16            | 27               | 27               | 31               | 31       | 31      | 31       |         |
| XN-1SSI                  | 20              | 20            | 27               | 27               | 31               | 31       | 31      | 31       |         |

**Note**

Numeric values in parentheses. Maximum number when diagnostic alarm disabled.  
The supply module XN-BR-24VDC-D must be mounted immediately next to the gateway XN-GW-\_\_ to provide power for the gateways.

#### Maximum System Configuration, continued

##### Maximum 74 XI/ON Modules in Slice Design



Plan your XI/ON station with the software “I/Oassistant”.

#### Advantage 1:

Automatically generates a full parts list for your order.

#### Advantage 2:

Generates an error message as soon as the system limits are exceeded.

#### IMPORTANT:

When extending your system, make sure that you have a sufficient number of bus refresh or power feed modules.

| Style Number:   | 140154              | 140055                 | 140156              | 140162                    |
|-----------------|---------------------|------------------------|---------------------|---------------------------|
| Catalog Number: | <b>XN-GWBR-PBDP</b> | <b>XN-GWBR-CANOPEN</b> | <b>XN-GWBR-DNET</b> | <b>XN-GWBR-MODBUS-TCP</b> |
|                 | <b>Channels</b>     | <b>Modules</b>         | <b>Channels</b>     | <b>Modules</b>            |

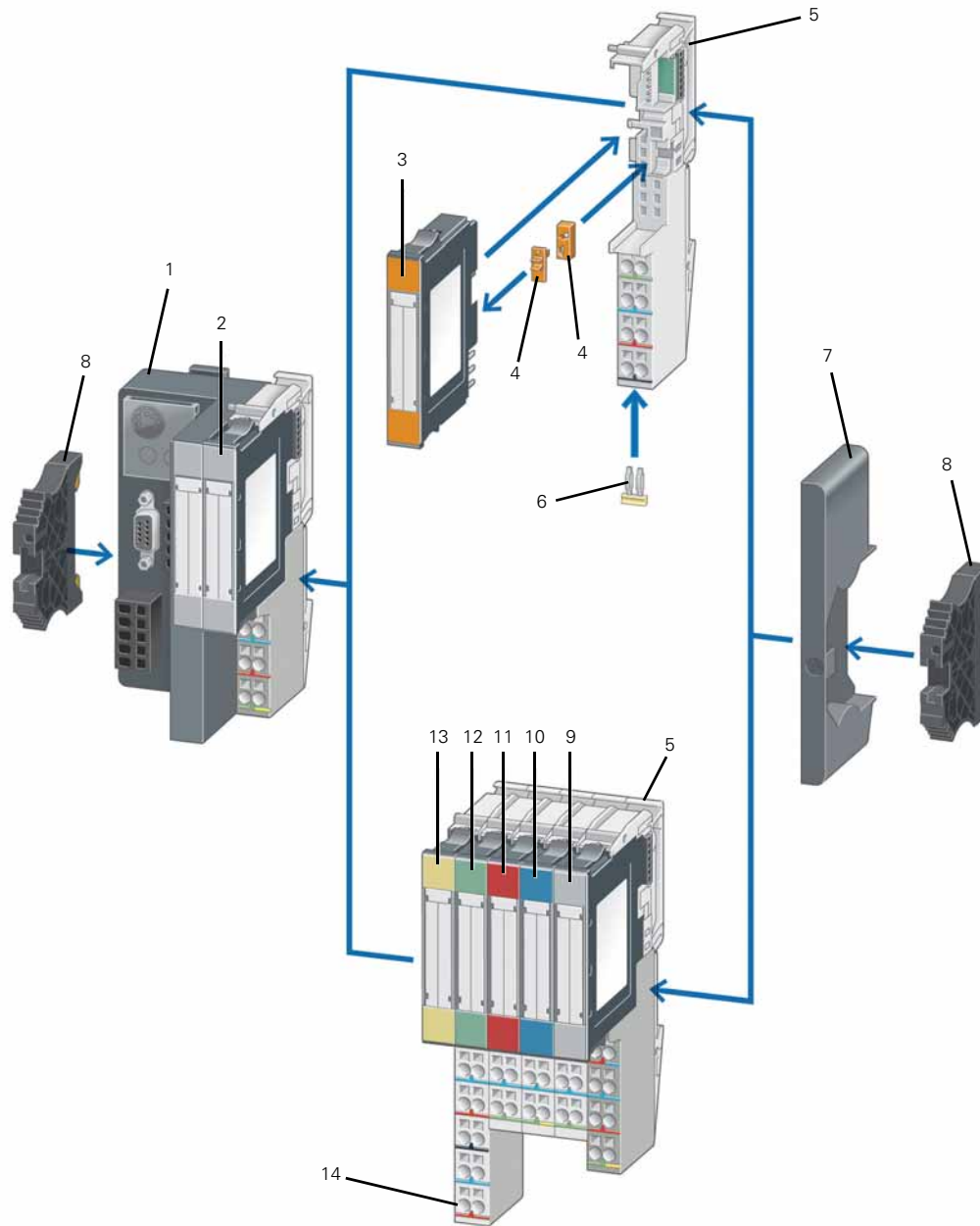
#### Modules

|                          | 140154          | 140055         | 140156          | 140162         |
|--------------------------|-----------------|----------------|-----------------|----------------|
|                          | <b>Channels</b> | <b>Modules</b> | <b>Channels</b> | <b>Modules</b> |
| XN-4DI-24VDC-P           | 288             | 72             | 288             | 72             |
| XN-4DI-24VDC-N           | 288             | 72             | 288             | 72             |
| XN-16DI-24VDC-P          | 128             | 8              | 128             | 8              |
| XN-32DI-24VDC-P          | 256             | 8              | 256             | 8              |
| XNE-8DI-24VDC-P          | 592             | 74             | 512             | 64             |
| XNE-16DI-24VDC-P         | 1184            | 74             | 512             | 32             |
| XN-4DO-24VDC-0.5A-P      | 288             | 72             | 288             | 72             |
| XN-16DO-24VDC-0.5A-P     | 128             | 8              | 128             | 8              |
| XN-32DO-24VDC-0.5A-P     | 256             | 8              | 256             | 8              |
| XNE-8DO-24VDC-0.5A-P     | 592             | 74             | 512             | 64             |
| XNE-16DO-24VDC-0.5A-P    | 1168            | 73             | 512             | 32             |
| XN-2DO-R- <u>  </u>      | 144             | 72             | 144             | 72             |
| XN-2AI-I(0/4...20MA)     | 78              | 39             | 144             | 72             |
| XN-2AI-U(-10/0...+10VDC) | 78              | 39             | 144             | 72             |
| XN-2AI-PT/NI-Z/3         | 46              | 23             | 144             | 72             |
| XN-2AI-THERMO-PI         | 58 (76)         | 29 (38)        | 144             | 72             |
| XN-4AI-U/I               | 112             | 28             | 144             | 36             |
| XNE-8AI-U/I-4PT/NI       | 88              | 11             | 144             | 18             |
| XN-2AO-I(0/4...20MA)     | 38              | 19             | 144             | 72             |
| XN-2AO-U(-10/0...+10VDC) | 38              | 19             | 144             | 72             |
| XNE-4AO-U/I              | 36              | 9              | 144             | 36             |
| XN-1CNT-24VDC            | 7               | 7              | 72              | 72             |
| XN-1RS232                | 22              | 22             | 68              | 68             |
| XN-1RS485/422            | 22              | 22             | 72              | 72             |
| XN-1SSI                  | 22              | 22             | 72              | 72             |

#### Note

Numeric values in parentheses. Maximum number when diagnostic alarm disabled.

System Overview



| Item Number | Description          |
|-------------|----------------------|
| 1           | Gateway              |
| 2           | Digital input module |
| 3           | Relay module         |
| 4           | Coding element       |
| 5           | Base module          |
| 6           | Relay jumper         |
| 7           | End plate            |

| Item Number | Description           |
|-------------|-----------------------|
| 8           | End bracket           |
| 9           | Power supply module   |
| 10          | Analog input module   |
| 11          | Digital output module |
| 12          | Analog output module  |
| 13          | Technology module     |
| 14          | Marker                |






#### Product Selection

##### XNE Series

The following are included as standard with all gateways:  
 2 x End bracket XN-WEW-32/2-SW,  
 1 x End plate XN-ABPL.

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#### XNE Gateway with Integrated Supply

| Description   | Fieldbus Connection              | Terminal Capacity (Fieldbus/Supply Voltage) | Servicing Interface | Transfer Rate   | Style Number | Catalog Number          |
|---|----------------------------------|---|---------------------|---|--------------|-------------------------|
| <b>Ethernet</b>   |                                  |   |                     |   |              |                         |
|  <p>Supports up to 74 disc type modules (XN, XNE)<br/>                     2xRJ45 socket<br/>                     Address set with decimal rotary coding switches,<br/>                     BootP, DHCP or I/Oassistant<br/>                     Address range: 1–254 (dec.)</p> | Ethernet (EtherNet/IP protocol)  | Push-in spring-cage terminals               | Mini USB            | 10/100 MBit/s   | 140047       | <b>XNE-GWBR-2ETH-IP</b> |
|   | Ethernet (Modbus TCP)            | Push-in spring-cage terminals               | Mini USB            | 10/100 MBit/s   | 152279       | <b>XNE-GWBR-2ETH-MB</b> |
| <b>PROFIBUS-DP</b>  |                                  |   |                     |   |              |                         |
|  <p>Supports up to 48 slice type modules (XN, XNE)<br/>                     Address setting through DIP switch<br/>                     Address range: 1–125 (dec.)</p>   | PROFIBUS-DP (DPV0/DPV1 protocol) | Push-in spring-cage terminals               | PS/2 socket         | 9.6 kbit/s to 12 Mbit/s   | 140045       | <b>XNE-GWBR-PBDP</b>    |
| <b>CANopen</b>  |                                  |   |                     |   |              |                         |
|  <p>Supports up to 62 disc type modules (XN, XNE)<br/>                     Address set with DIP switch<br/>                     Address range: 1–63 (dec.)</p>   | CANopen                          | Push-in spring-cage terminals               | PS/2 socket         | 1000 kbit/s<br>800 kbit/s<br>500 kbit/s<br>250 kbit/s<br>125 kbit/s<br>50 kbit/s<br>20 kbit/s | 140044       | <b>XNE-GWBR-CANOPEN</b> |

**XNE Digital Input**

**XNE Digital Input Modules**

Positive switching.



| Channels | Rated Voltage via Power Supply Terminal | Input Delay t <sub>Rise</sub> /t <sub>Fall</sub> | Input Voltage High Signal | Style Number | Catalog Number          |
|----------|---|--|---------------------------|--------------|-------------------------|
| 8        | 24 Vdc                                  | <100/<200 μs                                     | 11 V-U <sub>L</sub>       | 140035       | <b>XNE-8DI-24VDC-P</b>  |
| 16       | 24 Vdc                                  | <150/<300 μs                                     | 11 V-U <sub>L</sub>       | 140040       | <b>XNE-16DI-24VDC-P</b> |

**XNE Digital Output**

**XNE Digital Output Modules**

Resistive inductive and lamp load connectable.



| Channels | Rated Voltage via Power Supply Terminal | Switching Frequency with Resistive Load in Hz | Utilization Factor g in % | Style Number | Catalog Number               |
|----------|---|---|---------------------------|--------------|------------------------------|
| 8        | 24 Vdc                                  | <100  | 100                       | 140036       | <b>XNE-8DO-24VDC-0.5A-P</b>  |
| 16       | 24 Vdc                                  | <100  | 50%, maximum 4A           | 140039       | <b>XNE-16DO-24VDC-0.5A-P</b> |

**XNE Analog Input**

**XNE Analog Input and RTD Module**

Rated voltage via power supply terminal: 24 Vdc.



| Channels                | Measured Variables                                  | Measuring Ranges   | Value Representation  | Limit Frequency in Hz | Style Number | Catalog Number            |
|-------------------------|---|--|---|-----------------------|--------------|---------------------------|
| 8 (U/I)/<br>4 (PT/NI/R) | Voltage, current temperature (PT, NI), resistance R | -10 to 10 Vdc/0 to 10 Vdc<br>PT100, 200, 500, 1000, NI100, 1000 2-, 3-wire | Standard:<br>16-bit/12-bit (flush-left)<br><br>Extended range:<br>16-bit/12-bit (flush-left) PA (NE43),<br>16-bit/12-bit (flush-left) | 1.5                   | 140037       | <b>XNE-8AI-U/I-4PT/NI</b> |

**XNE Analog Output**

**XNE Analog Output Module**

Rated voltage via power supply terminal: 24 Vdc.



| Channels | Measured Variables | Output Variables                                      | Value Representation                    | Style Number | Catalog Number       |
|----------|--------------------|---|---|--------------|----------------------|
| 4        | Voltage, current   | -10 to 10 Vdc/0 to 10 Vdc<br>0 to 20 mA<br>4 to 20 mA | Standard:<br>16-bit/12-bit (flush-left) | 140034       | <b>XNE-4AO-U/I</b> ① |

**XNE Counter**

**XNE Counter Module**

Rated voltage via power supply terminal: 24 Vdc.

Signal evaluation A, B: Pulse and direction, rotary encoder single/double/quadruple.



| Channels | Operating Modes                             | Pulse Duration      | PWM Module | Resolution | Style Number | Catalog Number       |
|----------|---|---------------------|------------|------------|--------------|----------------------|
| 2        | Continuous, once only and periodic counting | 32-bit/maximum 120s | ✓          | 32-bit     | 140038       | <b>XNE-2CNT-2PWM</b> |

**Note**

① cUL pending.

#### XN Series

The following are included as standard with all gateways:  
 2 x End bracket XN-WEW-32/2-SW,  
 1 x End plate XN-ABPL.

#### XN Gateway with Integrated Supply

| Description   | Fieldbus Connection            | Terminal Capacity (Fieldbus/Supply Voltage) | Servicing Interface | Transfer Rate  | Style Number | Catalog Number            |
|---|--------------------------------|---|---------------------|--|--------------|---------------------------|
| <b>XN-GWBR-MODBUS_</b>  |                                |   |                     |  |              |                           |
| <b>Ethernet</b>   |                                |   |                     |  |              |                           |
| Supports up to 74 slice type modules (XN, XNE)<br>1 x RJ45 socket<br>Address set with decimal rotary coding switches,<br>BootP, DHCP or I/Oassistant<br>Address range: 1–254 (dec.) | Ethernet (Modbus TCP protocol) | Screw terminals                             | PS/2 socket         | 10/100 Mbit/s  | 140162       | <b>XN-GWBR-MODBUS-TCP</b> |
| <b>XN-GWBR-D_ / XN-GWBR-C_</b>  |                                |   |                     |  |              |                           |
| <b>DeviceNet</b>  |                                |   |                     |  |              |                           |
| Supports up to 74 disc type modules (XN, XNE)<br>1 x open-style connector<br>Address set with two decimal rotary coding switches<br>Address range: 1–63 (dec.)                      | DeviceNet                      | Screw terminals                             | PS/2 socket         | 500 kbit/s<br>250 kbit/s<br>125 kbit/s   | 140156       | <b>XN-GWBR-DNET</b>       |
| <b>CANopen</b>  |                                |   |                     |  |              |                           |
| Supports up to 74 disc type modules (XN, XNE)<br>1 x open-style connector<br>Address set with two decimal rotary coding switches<br>Address range: 1–99 (dec.)                      | CANopen                        | Screw terminals                             | PS/2 socket         | 1000 kbit/s<br>800 kbit/s<br>500 kbit/s<br>250 kbit/s<br>125 kbit/s<br>50 kbit/s<br>20 kbit/s<br>10 kbit/s | 140155       | <b>XN-GWBR-CANOPEN</b>    |
| <b>XN-GWBR-DVP1</b>   |                                |   |                     |  |              |                           |
| <b>PROFIBUS-DP</b>  |                                |   |                     |  |              |                           |
| Supports up to 74 disc type modules (XN, XNE)<br>1 x D-sub 9-pin socket<br>Address set with decimal rotary coding switches<br>Address range: 1–99 (dec.)                            | PROFIBUS-DP (DVP1 protocol)    | Screw terminals                             | PS/2 socket         | 9.6 kbit/s to 12 Mbit/s  | 148561       | <b>XN-GWBR-DVP1</b>       |
| Supports up to 74 disc type modules (XN, XNE)<br>1 x D-sub 9-pin socket<br>Address set with decimal rotary coding switches<br>Address range: 1–99 (dec.)                            | PROFIBUS-DP (DVP0 protocol)    | Screw terminals                             | PS/2 socket         | 9.6 kbit/s to 12 Mbit/s  | 140154       | <b>XN-GWBR-PBDP</b>       |

#### XN-PLC-CANOPEN

#### XN Programmable Gateway with Integrated Supply

| Description   | Fieldbus Connection | Terminal Capacity (Fieldbus/Supply Voltage) | Servicing Interface | Transfer Rate             | Style Number | Catalog Number        |
|---|---------------------|---|---------------------|---------------------------|--------------|-----------------------|
| <b>CANopen</b>  |                     |   |                     |                           |              |                       |
| Supports up to 74 disc type modules (XN, XNE to limited extent)<br>1 x open-style connector<br>Operating mode and address setting with two hexadecimal rotary coding switches<br>Address range: 1–99 (dec.) | CANopen             | Screw terminals                             | PS/2 socket         | Adjustable up to 1 Mbit/s | 140157       | <b>XN-PLC-CANOPEN</b> |

**Slice Module**



**XN Power Supply Modules**

Number of diagnostic bits: 4.  
Ripple <5% (to EN 61131-2).

| Operating and Field Voltage | System Power Supply | Rated Current Consumption from Modbus | Maximum System Supply Current | For Use With ...   | Style Number | Catalog Number            |
|-----------------------------|---------------------|---------------------------------------|-------------------------------|--|--------------|---------------------------|
| 24 Vdc                      | 24 Vdc              | —                                     | 1.5A                          | XN-P3T-SBB<br>XN-P3S-SBB<br>XN-P4T-SBBC<br>XN-P4S-SBBC<br>XN-P3T-SBB-B<br>XN-P3S-SBB-B<br>XN-P4T-SBBC-B<br>XN-P4S-SBBC-B | 140071       | <b>XN-BR-24VDC-D</b>      |
| 24 Vdc                      | —                   | ≤28 mA                                | —                             | XN-P3T-SBB<br>XN-P3S-SBB<br>XN-P4T-SBBC<br>XN-P4S-SBBC   | 140070       | <b>XN-PF-24VDC-D</b>      |
| 120/230 Vac                 | —                   | ≤25 mA                                | —                             | XN-P3T-SBB<br>XN-P3S-SBB<br>XN-P4T-SBBC<br>XN-P4S-SBBC   | 140072       | <b>XN-PF-120/230VAC-D</b> |

**XN Digital Input Modules**

Base module required.

**Slice Module**



| Channels | Rated Voltage via Power Supply Terminal | Input Delay tRise/tFall | Input Voltage High Signal | For Use With ...                              | Style Number | Catalog Number           |
|----------|---|-------------------------|---------------------------|---|--------------|--------------------------|
| 2        | 24 Vdc                                  | <200/<200 μs            | 11–30 Vdc                 | XN-S3T-SBB                                    | 140056       | <b>XN-2DI-24VDC-P</b>    |
|          |   |                         | 0–5 Vdc                   | XN-S3S-SBB<br>XN-S4T-SBBC                     | 140057       | <b>XN-2DI-24VDC-N</b>    |
| 2        | 120/230 Vac                             | <20,000/<20,000 μs      | 79–265 Vac                | XN-S4S-SBBC                                   | 140058       | <b>XN-2DI-120/230VAC</b> |
| 4        | 24 Vdc                                  | <200/<200 μs            | 15–30 Vdc                 | XN-S4T-SBBS                                   | 140052       | <b>XN-4DI-24VDC-P</b>    |
|          |   |                         | 0–5 Vdc                   | XN-S4S-SBBS<br>XN-S6T-SBBSBB<br>XN-S6S-SBBSBB | 140059       | <b>XN-4DI-24VDC-N</b>    |
| 16       | 24 Vdc                                  | <200/<200 μs            | 15–30 Vdc                 | XN-B3T-SBB                                    | 140142       | <b>XN-16DI-24VDC-P</b>   |
|          |   |                         |                           | XN-B3S-SBB<br>XN-B4T-SBBC<br>XN-B4S-SBBC      |              |                          |
| 32       | 24 Vdc                                  | <200/<200 μs            | 15–30 Vdc                 | XN-B6T-SBBSBB<br>XN-B6S-SBBSBB                | 140147       | <b>XN-32DI-24VDC-P</b>   |

**Block Module**



#### XN Digital Output Modules

Base module required.

Resistive inductive and lamp load connectable.

##### Slice Module



| Channels | Rated Voltage via Power Supply Terminal | Switching Frequency with Resistive Load in Hz | Utilization Factor g in %           | For Use With ...   | Style Number | Catalog Number                |
|----------|---|---|-------------------------------------|--|--------------|-------------------------------|
| 2        | 24 Vdc                                  | <5000 ( $R_{LO} < 1 \text{ kohm}$ )           | 100                                 | XN-S3T-SBC   | 140053       | <b>XN-2DO-24VDC-0.5A-P</b>    |
|          |   | <100 ( $R_{LO} < 1 \text{ kohm}$ )            |                                     | XN-S3S-SBC   | 140060       | <b>XN-2DO-24VDC-0.5A-N</b>    |
|          |   | <5000 ( $R_{LO} < 1 \text{ kohm}$ )           |                                     | XN-S4T-SBCS<br>XN-S4S-SBCS                                   | 140055       | <b>XN-2DO-24VDC-2A-P</b>      |
| 2        | 120–230 Vac (45–65 Hz)                  | —   | 100 (observe derating requirements) |  | 140150       | <b>XN-2DO-120/230VAC-0.5A</b> |
| 4        | 24 Vdc                                  | <1000 ( $R_{LO} < 1 \text{ kohm}$ )           | 100                                 | XN-S4T-SBCS<br>XN-S4S-SBCS<br>XN-S6T-SBCSBC<br>XN-S6S-SBCSBC | 140148       | <b>XN-4DO-24VDC-0.5A-P</b>    |
| 16       | 24 Vdc                                  | <100 ( $R_{LO} < 1 \text{ kohm}$ )            | 100                                 | XN-B3T-SBC<br>XN-B3S-SBC                                     | 140141       | <b>XN-16DO-24VDC-0.5A-P</b>   |
|          |   |   |                                     |  |              |                               |

##### Block Module



##### Slice Module

#### XN Relay Modules

Base module required.

Rated voltage via power supply terminal: 24 Vdc.

Resistive inductive and lamp load connectable.



| Channels | Contact Type        | Rated Load Voltage | Maximum Continuous Current per Channel/ 230 Vac Resistive Load | For Use With ...                          | Style Number | Catalog Number     |
|----------|---------------------|--------------------|--|---|--------------|--------------------|
| 2        | Changeover Contacts | 230 Vac, 30 Vdc    | 5A   | XN-S4T-SBBS<br>XN-S4S-SBBS                | 140054       | <b>XN-2DO-R-CO</b> |
| 2        | NC                  | 230 Vac, 30 Vdc    | 5A   | XN-S4T-SBBS                               | 140061       | <b>XN-2DO-R-NC</b> |
|          | NO                  |                    |  | XN-S4S-SBBS<br>XN-S4T-SBCS<br>XN-S4S-SBCS | 140062       | <b>XN-2DO-R-NO</b> |

##### Slice Module

#### XN Analog Input Modules

Base module required.

Rated voltage via power supply terminal: 24 Vdc.



| Channels | Measured Variables | Measuring Range             | Value Representation                      | Limit Frequency in Hz | For Use With ...               | Style Number | Catalog Number                  |
|----------|--------------------|-----------------------------|---|-----------------------|--------------------------------|--------------|---------------------------------|
| 1        | Current            | 0–20 mA,<br>4–20 mA         | Standard<br>16-bit/12-bit<br>(flush left) | —                     | XN-S3T-SBB                     | 140063       | <b>XN-1AI-I(0/4...20MA)</b>     |
| 2        |                    |                             |   |                       | XN-S3S-SBB                     | 140144       | <b>XN-2AI-I(0/4...20MA)</b>     |
| 1        | Voltage            | –10...10 Vdc,<br>0...10 Vdc |   | 200                   | XN-S4S-SBBS                    | 140064       | <b>XN-1AI-U(-10/0...+10VDC)</b> |
| 2        |                    |                             |   |                       |                                | 140145       | <b>XN-2AI-U(-10/0...+10VDC)</b> |
| 4        | Voltage/Current    | –10...10 Vdc,<br>0...10 Vdc |   | 20                    | XN-S6T-SBCSBC<br>XN-S6S-SBCSBC | 140158       | <b>XN-4AI-U/I</b>               |

Slice Module



**XN Temperature Modules**

Base module required.

Rated voltage via power supply terminal: 24 Vdc.

| Channels | Connectable Sensors                       | Measuring Range (°C)                       | Value Representation                      | For Use With ...                                       | Style Number | Catalog Number                       |
|----------|---|--|---|--|--------------|--------------------------------------|
| 2        | PT100, 200, 500, 1000                     | Platinum sensors:<br>-200...850/-200...150 | Standard<br>16-bit/12-bit<br>(flush left) | XN-S3T-SBB<br>XN-S3S-SBB<br>XN-S4T-SBBS<br>XN-S4S-SBBS | 140067       | <b>XN-2AI-PT/NI-2/3</b>              |
|          | Ni100, Ni1000                             | Nickel sensors:<br>-60...250/-60...150     |   |  |              |                                      |
| 2        | Type B, E, J, K, N, R, S, T Thermocouples | See user manual                            | Standard<br>16-bit/12-bit<br>(flush left) | XN-S4T-SBBS-CJ<br>XN-S4S-SBBS-CJ                       | 140068       | <b>XN-2AI-THERMO-PI</b> <sup>Ⓢ</sup> |

Slice Module



**XN Analog Output Modules**

Base module required.

Rated voltage via power supply terminal: 24 Vdc.

| Channels | Measured Variables | Output Variables        | Value Representation                      | For Use With ...         | Style Number | Catalog Number                  |
|----------|--------------------|-------------------------|---|--------------------------|--------------|---------------------------------|
| 1        | Current            | 0-20 mA/4-20 mA         | Standard<br>16-bit/12-bit<br>(flush left) | XN-S3T-SBB<br>XN-S3S-SBB | 140065       | <b>XN-1AO-I(0/4...20MA)</b>     |
| 2        |                    |                         |   |                          | 140146       | <b>XN-2AO-I(0/4...20MA)</b>     |
| 2        | Voltage            | -10...10 Vdc/0...10 Vdc |   |                          | 140066       | <b>XN-2AO-U(-10/0...+10VDC)</b> |

Slice Module



**XN Counter Modules**

Base module required.

Rated voltage via power supply terminal: 24 Vdc.

Signal evaluation A, B: Pulse and direction, rotary encoder single/double/quadruple.

| Channels | Operating Modes                             | Pulse Duration      | Resolution | For Use With ...           | Style Number | Catalog Number       |
|----------|---|---------------------|------------|----------------------------|--------------|----------------------|
| 1        | Continuous, once only and periodic counting | 8-bit<br>max. 0.51s | 32-bit     | XN-S4T-SBBS<br>XN-S4S-SBBS | 140069       | <b>XN-1CNT-24VDC</b> |

Slice Module



**XN Serial Interfaces**

Base module required.

Rated voltage via power supply terminal: 24 Vdc.

| Type          | Transfer Channels  | Bit Transfer Rate                   | Cable Length | For Use With ...           | Style Number | Catalog Number       |
|---------------|--------------------|-------------------------------------|--------------|----------------------------|--------------|----------------------|
| RS-232        | RxD, TxD, RTS, CTS | Max. 115,200 bits/s<br>(adjustable) | Max. 15m     | XN-S4T-SBBS<br>XN-S4S-SBBS | 140151       | <b>XN-1RS232</b>     |
| RS-485/RS-422 | RxD, TxD           |                                     | Max. 30m     |                            | 140152       | <b>XN-1RS485/422</b> |
| SS1           | CL, D              | Max. 1 MHz (adjustable)             | Max. 30m     |                            | 140153       | <b>XN-1SSI</b>       |

**Note**

Ⓢ cUL pending.

#### Base Modules

#### Spring-Cage Terminals

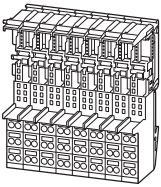
4

##### Slice Module



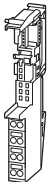
| Description  | For Use With ...  | Style Number | Catalog Number      |
|--|---|--------------|---------------------|
| <b>Three Connection Levels</b>   |   |              |                     |
| Base module for field power supply<br>Base module for the gateway supply<br>(with XN-BR-24VDC-D) | XN-BR-24VDC-D<br>XN-PF-24VDC-D<br>XN-PF-120/230VAC-D  | 140074       | <b>XN-P3T-SBB</b>   |
| Base module for bus refresh within the station   | XN-BR-24VDC-D   | 140073       | <b>XN-P3T-SBB-B</b> |
| —  | XN-2DI-_<br>XN-1AI-_<br>XN-2AI-I(0/4...20MA)<br>XN-2AI-U(-10/0...+10VDC)<br>XN-2AI-PT/NI-2/3<br>XN-1AO-I(0/4...20MA)<br>XN-2AO-_<br>— | 140077       | <b>XN-S3T-SBB</b>   |
| Connection to C rail   | XN-2DO-24VDC-_<br>XN-2DO-120/230VAC-0.5A  | 140079       | <b>XN-S3T-SBC</b>   |
| —  | XN-16DI-24VDC-P   | 140133       | <b>XN-B3T-SBB</b>   |
| Connection to C rail   | XN-16DO-24VDC-0.5-P   | 140134       | <b>XN-B3T-SBC</b>   |

##### Block Module



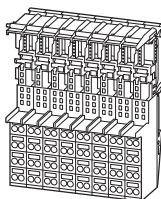
#### Four Connection Levels

##### Slice Module



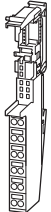
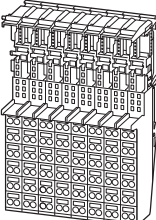
|  |  |        |                       |
|--|--|--------|-----------------------|
| Base module for field power supply<br>Base module for the gateway supply<br>(with XN-BR-24VDC-D)<br>Connection to C rail | XN-BR-24VDC-D<br>XN-PF-24VDC-D<br>XN-PF-120/230VAC-D   | 140076 | <b>XN-P4T-SBBC</b>    |
| Base module for bus refresh within the station<br>Connection to C rail   | XN-BR-24VDC-D  | 140075 | <b>XN-P4T-SBBC-B</b>  |
| Connection to C rail   | XN-2DI-24VDC-P<br>XN-2DI-24VDC-N<br>XN-2DI-120/230VAC  | 140078 | <b>XN-S4T-SBBC</b>    |
| Connection to C rail   | XN-2DO-24VDC-_<br>XN-2DO-120/230VAC-0.5A<br>XN-4DO-24VDC-0.5A-P<br>XN-2DO-R-NO<br>XN-2DO-R-NC  | 140080 | <b>XN-S4T-SBCS</b>    |
| —  | XN-4DI-_<br>XN-2DO-R-_<br>XN-1AI-_<br>XN-2AI-I(0/4...20MA)<br>XN-2AI-U(-10/0...+10VDC)<br>XN-2AI-PT/NI-2/3<br>XN-1CNT-24VDC<br>XN-1RS-_<br>— | 140081 | <b>XN-S4T-SBBS</b>    |
| Base module with temperature sensors for<br>cold-junction compensation   | XN-2AI-THERMO-PI   | 140084 | <b>XN-S4T-SBBS-CJ</b> |

##### Block Module

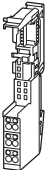
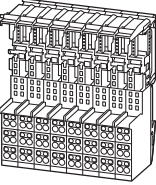


|                      |                 |        |                    |
|----------------------|-----------------|--------|--------------------|
| Connection to C rail | XN-16DI-24VDC-P | 140135 | <b>XN-B4T-SBBC</b> |
|----------------------|-----------------|--------|--------------------|

Spring-Cage Terminals, continued

|  | Description          | For Use With ...                  | Style Number | Catalog Number       |
|--|----------------------|-----------------------------------|--------------|----------------------|
| <b>Six Connection Levels</b>   |                      |                                   |              |                      |
| <b>Slice Module</b><br> | —                    | XN-4DI-24VDC-P<br>XN-4DI-24VDC-N  | 140082       | <b>XN-S6T-SBBSBB</b> |
|  | Connection to C rail | XN-4DO-24VDC-0.5A-P<br>XN-4AI-U/I | 140083       | <b>XN-S6T-SBCSBC</b> |
| <b>Block Module</b><br> | —                    | XN-32DI-24VDC-P                   | 140136       | <b>XN-B6T-SBBSBB</b> |
|  | Connection to C rail | XN-32DO-24VDC-0.5A-P              | 140159       | <b>XN-B6T-SBCSBC</b> |

Screw Terminals

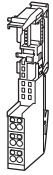
|  | Description  | For Use With ...  | Style Number | Catalog Number    |
|--|--|---|--------------|-------------------|
| <b>Three Connection Levels</b>   |  |   |              |                   |
| <b>Slice Module</b><br> | Base module for field power supply<br>Base module for the gateway supply<br>(with XN-BR-24VDC-D) | XN-BR-24VDC-D<br>XN-PF-24VDC-D<br>XN-PF-120/230VAC-D  | 140085       | <b>XN-P3S-SBB</b> |
|  | —  | XN-2DI-24VDC-P<br>XN-2DI-24VDC-N<br>XN-2DI-120/230VAC<br>XN-1AI-_<br>XN-2AI-I(0/4...20MA)<br>XN-2AI-U(-10/0...+10VDC)<br>XN-2AI-PT/NI-2/3<br>XN-1AO-I(0/4...20MA)<br>XN-2AO-_<br>XN-2DO-24VDC-_<br>XN-2DO-120/230VAC-0.5A | 140088       | <b>XN-S3S-SBB</b> |
|  | Connection to C rail   | XN-2DO-24VDC-_<br>XN-2DO-120/230VAC-0.5A  | 140090       | <b>XN-S3S-SBC</b> |
| <b>Block Module</b><br> | —  | XN-16DI-24VDC-P   | 140137       | <b>XN-B3S-SBB</b> |
|  | Connection to C rail   | XN-16DO-24VDC-0.5A-P  | 140138       | <b>XN-B3S-SBC</b> |



#### Screw Terminals, continued

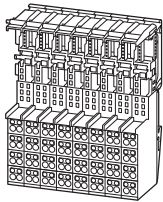
4

##### Slice Module



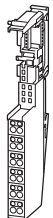
| Description  | For Use With ...  | Style Number | Catalog Number       |
|--|---|--------------|----------------------|
| <b>Four Connection Levels</b>  |   |              |                      |
| Base module for field power supply<br>Base module for the gateway supply<br>(with XN-BR-24VDC-D)<br>Connection to C rail | XN-BR-24VDC-D<br>XN-PF-24VDC-D<br>XN-PF-120/230VAC-D  | 140087       | <b>XN-P4S-SBBC</b>   |
| Base module for bus refresh within the station<br>Connection to C rail   | XN-BR-24VDC-D   | 140086       | <b>XN-P4S-SBBC-B</b> |
| Connection to C rail   | XN-2DI-24VDC-P<br>XN-2DI-24VDC-N<br>XN-2DI-120/230VAC   | 140089       | <b>XN-S4S-SBBC</b>   |
| Connection to C rail   | XN-2DO-24VDC_<br>XN-2DO-120/230VAC-0.5A<br>XN-4DO-24VDC-0.5A-P<br>XN-2DO-R-NO<br>XN-2DO-R-NC  | 140091       | <b>XN-S4S-SBCS</b>   |
| —  | XN-4DI_<br>XN-2DO-R_<br>XN-1AI_<br>XN-2AI-(0/4...20MA)<br>XN-2AI-U(-10/0...+10VDC)<br>XN-2AI-PT/Ni-2/3<br>XN-1CNT-24VDC<br>XN-1RS_<br>XN-1SSI | 140092       | <b>XN-S4S-SBBS</b>   |

##### Block Module



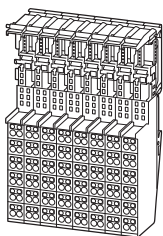
|   |                  |        |                       |
|---|------------------|--------|-----------------------|
| Base module with temperature sensors for cold-junction compensation | XN-2AI-THERMO-PI | 140095 | <b>XN-S4S-SBBS-CJ</b> |
| Connection to C rail  | XN-16DI-24VDC-P  | 140139 | <b>XN-B4S-SBBC</b>    |

##### Slice Module



| <b>Six Connection Levels</b> |                                   |        |                      |
|------------------------------|-----------------------------------|--------|----------------------|
| —                            | XN-4DI-24VDC-P<br>XN-4DI-24VDC-N  | 140093 | <b>XN-S6S-SBBSBB</b> |
| Connection to C rail         | XN-4DO-24VDC-0.5A-P<br>XN-4AI-U/I | 140094 | <b>XN-S6S-SBCSBC</b> |

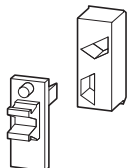
##### Block Module



|                      |                      |        |                      |
|----------------------|----------------------|--------|----------------------|
| —                    | XN-32DI-24VDC-P      | 140140 | <b>XN-B6S-SBBSBB</b> |
| Connection to C rail | XN-32DO-24VDC-0.5A-P | 140160 | <b>XN-B6S-SBCSBC</b> |

Accessories

Coding Elements



Coding Elements

| Description  | For Use With ...   | Style Number | Catalog Number  |
|--|--|--------------|-----------------|
| Included as standard with every electronics module. Prevents incorrect connection of the electronics modules | XN-...DI-24VDC_  | 140114       | <b>XN-KO/2</b>  |
|  | XN-2DI-120/230VAC  | 140117       | <b>XN-KO/5</b>  |
|  | XN-xDO-24VDC_  | 140118       | <b>XN-KO/6</b>  |
|  | XN-2DO-R-NO  | 140119       | <b>XN-KO/8</b>  |
|  | XN-2DO-R-NC  | 140120       | <b>XN-KO/9</b>  |
|  | XN-2DO-R-CO  | 140121       | <b>XN-KO/10</b> |
|  | XN-1AI-I(0/4...20MA)<br>XN-2AI-I(0/4...20MA)   | 140122       | <b>XN-KO/11</b> |
|  | XN-1AI-U(-10/0...+10VDC)<br>XN-2AI-U(-10/0...+10VDC)<br>XN-2AI-PT/Ni-2/3<br>XN-2AI-THERMO-PI<br>XN-4AI-U/I | 140123       | <b>XN-KO/12</b> |
|  | XN-1AO-I(0/4...20MA)<br>XN-2AO-I(0/4...20MA)   | 140124       | <b>XN-KO/13</b> |
|  | XN-2AO-U(-10/0...+10VDC)   | 140125       | <b>XN-KO/14</b> |
|  | XN-1CNT-24VDC<br>XN-1RS232<br>XN-1RS485/422<br>XN-1SSI   | 140126       | <b>XN-KO/15</b> |
|  | XN-BR-24VDC-D<br>XN-PF-24VDC-D   | 140127       | <b>XN-KO/16</b> |
|  | XN-PF-120/230VAC-D   | 140128       | <b>XN-KO/17</b> |

Relay Jumper



Relay Jumpers

| Description | Style Number | Catalog Number |
|-------------|--------------|----------------|
| 1-grid      | 140097       | <b>XN-QV/1</b> |
| 2-grid      | 140098       | <b>XN-QV/2</b> |
| 3-grid      | 140099       | <b>XN-QV/3</b> |
| 4-grid      | 140100       | <b>XN-QV/4</b> |
| 5-grid      | 140101       | <b>XN-QV/5</b> |
| 6-grid      | 140102       | <b>XN-QV/6</b> |
| 7-grid      | 140103       | <b>XN-QV/7</b> |
| 8-grid      | 140104       | <b>XN-QV/8</b> |

Servicing Cable

| Description   | Style Number | Catalog Number      |
|---|--------------|---------------------|
| Establishes the connection between I/O assistant and the service interface at the gateway | 140096       | <b>XN-PS2-CABLE</b> |

End Bracket



End Bracket

| Description   | Style Number | Catalog Number        |
|---|--------------|-----------------------|
| For fixing the XI/ON station on the top-hat rail. Two end brackets are supplied as standard with the gateways | 140130       | <b>XN-WEW-35/2-SW</b> |

End Cover



End Cover

| Description  | Style Number | Catalog Number |
|--|--------------|----------------|
| For covering an XI/ON station. An end cover is supplied with the gateway as standard | 140129       | <b>XN-ABPL</b> |

Connection Level Labels



Connection Level Labels

| Description  | Style Number | Catalog Number           |
|--------------|--------------|--------------------------|
| Blue         | 140105       | <b>XN-ANBZ-BL</b>        |
| Red          | 140106       | <b>XN-ANBZ-RT</b>        |
| Green        | 140107       | <b>XN-ANBZ-GN</b>        |
| Black        | 140108       | <b>XN-ANBZ-SW</b>        |
| Brown        | 140109       | <b>XN-ANBZ-BR</b>        |
| Red/blue     | 140110       | <b>XN-ANBZ-RT/BL-BED</b> |
| Yellow/green | 140111       | <b>XN-ANBZ-GN/GE-BED</b> |
| White        | 140112       | <b>XN-ANBZ-W</b>         |

Labels

| Description                         | Style Number | Catalog Number          |
|-------------------------------------|--------------|-------------------------|
| A5 sheet, perforated, 1 x 57 labels | 140131       | <b>XN-LABEL/SCHIEBE</b> |
| A5 sheet, perforated, 1 x 6 labels  | 140132       | <b>XN-LABEL/BLOCK</b>   |

## Technical Data and Specifications

### XI/ON General

| Description                                | Unit    | Specification   |
|--|---------|---|
| Standards                                  |         | EN 61000-6-2, EN 61000-6-4, EN 61131-2  |
| Supported fieldbus systems                 |         | PROFIBUS-DP, CANopen, DeviceNet, Modbus TCP, EtherNet/IP (depending on gateway) |
| Potential isolation                        |         | Yes, through optocoupler  |
| Ambient temperature                        | °F (°C) | 32° to 131° (0° to 55°)   |
| Ambient temperature, storage               | °F (°C) | −13° to 185° (−25° to 85°)  |
| Relative humidity                          | %       | 5–95 (indoor), Level RH-2, non-condensing (for storage at 45°C)                 |
| Harmful gases                              |         |   |
| SO <sub>2</sub>                            | ppm     | 10 (relative humidity <75%, non-condensing)                                     |
| H <sub>2</sub> S                           | ppm     | 1.0 (relative humidity <75%, non-condensing)                                    |
| Vibration resistance, operating conditions |         | According to IEC 60068-2-6  |
| Mechanical shock resistance                |         | According to IEC 60068-2-27   |
| Repetitive shock resistance                |         | According to IEC 60068-2-29   |
| Drop and free fall                         |         | According to IEC 60068-2-31, free fall to IEC 60068-2-32                        |
| Protection type                            |         | IP20  |
| Electromagnetic compatibility (EMC)        |         |   |
| ESD  |         | EN 61000-4-2  |
| Electromagnetic fields                     |         | EN 61000-4-3  |
| Burst                                      |         | EN 61000-4-4  |
| Surge                                      |         | EN 61000-4-5  |
| HF, asymmetric                             |         | EN 61000-4-6  |
| Radiated interference (RFI)                |         | EN 55016-2-3  |
| Voltage fluctuations                       |         | EN 61131-2  |
| Type test                                  |         | To EN 61131-2   |
| Approvals                                  |         | CE, cUL   |

### Terminals

| Description   | Unit            | XN Gateways and XN Basic Modules             | XNE Gateways and Integrated XNE Modules      |
|---|-----------------|--|--|
| Dimensional data  |                 | To VDE 0611 Part 1/8.92/<br>IEC/EN 60947-7-1 | To VDE 0611 Part 1/8.92/<br>IEC/EN 60947-7-1 |
| Connection from above   |                 | Spring-loaded/screw terminals                | Push-in spring-cage terminals                |
| Cable stripped length   | mm              | 8  | 8  |
| Max. terminal capacity  | mm <sup>2</sup> | 0.5–2.5                                      | 0.14–1.5                                     |
| Connectable conductors  |                 |  |  |
| “e” solid H07V-U  | mm <sup>2</sup> | 0.5–2.5                                      | 0.25–1.5                                     |
| “f” flexible H 07V-K  | mm <sup>2</sup> | 0.5–1.5                                      | 0.25–1.5                                     |
| “f” with ferrule without plastic collar to DIN 46228-1 (ferrules gas-tight) | mm <sup>2</sup> | 0.5–1.5                                      | 0.25–1.5                                     |
| “f” with ferrule with plastic collar to DIN 46228-1 (ferrules gas-tight)    | mm <sup>2</sup> | 0.5–1.5                                      | 0.25–0.75                                    |
| Gauge pin IEC/EN 60947-1  |                 | A1   | A1   |

**XNE Gateways**

| Description                                   | Unit   | XNE-GWBR-PBDP  | XNE-GWBR-CANOPEN   | XNE-GWBR-2ETH-IP   |
|---|--------|--|--|--|
| Fieldbus                                      |        | PROFIBUS-DP  | CANopen  | Ethernet   |
| Protocol                                      |        | PROFIBUS-DPVO and PROFIBUS-DPV1                                    | CANopen  | EtherNet/IP  |
| Maximum number of stations                    |        | 48 modules (XN, XNE) of slice design or max. length of station: 1m | 62 modules (XN, XNE) of slice design or max. length of station: 1m | 74 modules (XN, XNE) of slice design or max. length of station: 1m |
| System supply (U <sub>SYS</sub> )             | Vdc    | 24/5   | 24/5   | 24/5   |
| Permissible range, 5 Vdc (U <sub>SYS</sub> )  | Vdc    | 4.7–5.3  | 4.7–5.3  | 4.7–5.3  |
| Permissible range, 24 Vdc (U <sub>SYS</sub> ) | Vdc    | 18–30  | 18–30  | 18–30  |
| Field voltage (U <sub>I</sub> )               | Vdc    | 24   | 24   | 24   |
| Permissible range (U <sub>I</sub> )           | Vdc    | 18–30  | 18–30  | 18–30  |
| Ripple  | %      | <5 (to EN 61131-2)   | <5 (to EN 61131-2)   | <5 (to EN 61131-2)   |
| Servicing interface                           |        | PS/2 socket  | PS/2 socket  | Mini USB   |
| Fieldbus terminals                            |        | Push-in spring-cage terminals                                      | Push-in spring-cage terminals                                      | 2x RJ45 socket   |
| Transfer rate                                 | kBit/s | 9.6–12,000   | 20, 50, 125, 250, 500, 800, 1000                                   | 10,000, 100,000  |
| Data transfer rate setting                    |        | Automatic  | Through DIP switch or automatically                                | Automatic  |
| Address assignment                            |        | Through DIP switch   | Through DIP switch   | Through DIP switch, BootP, DHCP or PGM                             |
| Fieldbus termination                          |        | Through DIP switch   | Through DIP switch   | —  |
| Number of parameter bytes                     |        | 2  | —  | —  |
| Number of diagnosis bytes                     |        | 2  | —  | —  |
| Address range                                 |        | 1–125 decimal  | 1–63 decimal   | 1–254 decimal  |

**XN Gateways with Built-In Supply Module**

| Description                                     | Unit   | XN-GWBR-PBDP   | XN-GWBR-CANOPEN  | XN-GWBR-DNET  | XN-GWBR-MODBUS-TCP   | XN-PLC-CANOPEN  |
|---|--------|--|--|---|--|---|
| Fieldbus  |        | PROFIBUS-DP  | CANopen  | DeviceNet   | Ethernet   | CANopen   |
| Protocol  |        | PROFIBUS-DPVO  | CANopen  | DeviceNet   | Modbus-TCP   | CANopen   |
| Maximum number of stations                      |        | 74 modules (XN, XNE) of slice design or max. length of station: 1m | 74 modules (XN, XNE) of slice design or max. length of station: 1m | 74 modules (XN) of slice design or max. length of station: 1m | 74 modules (XN, XNE) of slice design or max. length of station: 1m | 74 modules (XN, XNE with limitations) of slice design or max. length of station: 1m |
| System supply (U <sub>SYS</sub> )               | Vdc    | 24/5   | 24/5   | 24/5  | 24/5   | 24/5  |
| Permissible range, 5 Vdc (U <sub>SYS</sub> )    | Vdc    | 4.7–5.3  | 4.7–5.3  | 4.7–5.3   | 4.7–5.3  | 4.7–5.3   |
| Permissible range, 24 Vdc (U <sub>SYS</sub> )   | Vdc    | 18–30  | 18–30  | 18–30   | 18–30  | 18–30   |
| Field voltage (U <sub>I</sub> )                 |        | 24   | 24   | 24  | 24   | 24  |
| Permissible range (U <sub>I</sub> )             | Vdc    | 18–30  | 18–30  | 18–30   | 18–30  | 18–30   |
| Ripple  | %      | <5 (to EN 61131-2)   | <5 (to EN 61131-2)   | <5 (to EN 61131-2)  | <5 (to EN 61131-2)   | <5 (to EN 61131-2)  |
| Servicing interface                             |        | PS/2 socket  | PS/2 socket  | PS/2 socket   | PS/2 socket  | PS/2 socket   |
| Fieldbus terminals                              |        | 1 x D-sub 9-pin socket   | Open style connector   | Open style connector  | RJ45 bus   | Open style connector  |
| Transfer rate                                   | kBit/s | 9.6–12,000   | 10, 20, 50, 125, 250, 500, 800, 1000                               | 125, 250, 500   | 10,000, 100,000  | 10, 20, 50, 125, 250, 500, 800, 1000  |
| Data transfer rate setting                      |        | —  | Through DIP switch   | Through DIP switch  | Automatic  | Software  |
| Address assignment                              |        | 2 decimal rotary coding switches                                   | 2 decimal rotary coding switches                                   | 2 decimal rotary coding switches                              | Decimal rotary coding switch, BootP, DHCP or I/Oassistant          | Software  |
| Fieldbus termination                            |        | External   | External   | External  | —  | External  |
| Number of parameter bytes                       |        | 5  | —  | —   | —  | —   |
| Number of diagnosis bytes                       |        | 3  | —  | —   | —  | —   |
| Address range                                   |        | 1–99 decimal   | 1–99 decimal   | 1–63 decimal  | 1–254 decimal  | 1–127 decimal   |
| Program data                                    | kByte  | —  | —  | —   | —  | 128   |
| Program code                                    | kByte  | —  | —  | —   | —  | 128   |
| Cycle time for 1k of instructions (bits, bytes) | ms     | —  | —  | —   | —  | 0.5   |
| Real-time clock                                 |        | —  | —  | —   | —  | Yes   |

## Supply Modules

| Description  | Unit | XN-BR-24VDC-D                 | XN-PF-24VDC-D          | XN-PF-120/230VAC-D  |
|--|------|-------------------------------|------------------------|---|
| Operating voltage  |      | 24 Vdc                        | 24 Vdc                 | 120/230 Vac   |
| System supply ( $U_{SYS}$ )                              | Vdc  | 24                            | —                      | —   |
| Permissible range, 24 Vdc ( $U_{SYS}$ )                  | Vdc  | 18–30 <sup>①</sup>            | —                      | —   |
| Permissible range, 5 Vdc ( $U_{MB}$ [built into system]) | Vdc  | 4.7–5.3                       | —                      | —   |
| Field voltage ( $U_L$ )                                  |      | 24 Vdc                        | 24 Vdc                 | 120/230 Vac   |
| Permissible range ( $U_L$ )                              |      | 18–30 Vdc                     | 18–30 Vdc <sup>②</sup> | 102–132 Vac (120 Vac)<br>195.5–253 Vac (230 Vac) <sup>③</sup> |
| Rated current drawn from module bus ( $I_{MB}$ )         | mA   | —                             | ≤28                    | ≤25   |
| Insulation test ( $U_i$ )                                | Vac  | 500                           | 500                    | 1500  |
| Ripple   | %    | <5 (to EN 61131-2)            | <5 (to EN 61131-2)     | <5 (to EN 61131-2)  |
| Maximum operating current ( $I_L$ )                      | A    | 10                            | 10                     | 10  |
| Maximum system supply current ( $I_{MB}$ )               | A    | 1.5                           | —                      | —   |
| Number of diagnostic bits                                |      | 4                             | 4                      | 4   |
| Base module without gateway power supply                 |      |                               |                        |   |
| Without C connection                                     |      | XN-P3...-SBB/XN-P3...-SBB-B   | XN-P3...-SBB           | XN-P3...-SBB  |
| With C connection  |      | XN-P4...-SBBC/XN-P4...-SBBC-B | XN-P4...-SBBC          | XN-P4...-SBBC   |

## Digital Input Modules

| Description  | Unit   | XN-2DI-24VDC-P  | XN-2DI-24VDC-N    | XN-2DI-120/230VAC                | XN-4DI-24VDC-P                   | XN-4DI-24VDC-N    |
|--|--------|---|-------------------|----------------------------------|----------------------------------|-------------------|
| Channels   | Number | 2   | 2                 | 2                                | 4                                | 4                 |
| Rated voltage at supply terminal ( $U_L$ )                       |        | 24 Vdc  | 24 Vdc            | 120/230 Vac                      | 24 Vdc                           | 24 Vdc            |
| Rated current drawn from supply terminal ( $I_L$ ) <sup>④⑤</sup> | mA     | ≤20   | ≤20               | ≤20                              | ≤40                              | ≤40               |
| Rated current drawn from module bus ( $I_{MB}$ ) <sup>⑤</sup>    | mA     | ≤28   | ≤28               | ≤28                              | ≤29                              | ≤28               |
| Insulation test ( $U_i$ )  | Vac    | 500   | 500               | 1500                             | 500                              | 500               |
| Heat dissipation   | W      | 0.7   | 0.7               | 1                                | 1                                | 1                 |
| Input voltage  |        |   |                   |                                  |                                  |                   |
| Input voltage, rated value                                       |        | 24 Vdc  | 24 Vdc            | 120/230 Vac                      | 24 Vdc                           | 24 Vdc            |
| Low level  |        | –30V to 5V  | 30V ( $U_L$ –11V) | 0–20 Vac                         | –30V to 5V                       | 30V ( $U_L$ –11V) |
| High level   |        | 11–30V  | 0–5V              | 79 Vac–265 Vac <sup>⑥</sup>      | 15 V–30V                         | 0–5V              |
| Frequency range  | Hz     | —   | —                 | 48–63                            | —                                | —                 |
| Input current  |        |   |                   |                                  |                                  |                   |
| Low level/active level   |        | 0 mA–1.5 mA   | 0 mA–1.7 mA       | 0 mA–1 mA                        | 0 mA–1.5 mA                      | 0 mA–1.2 mA       |
| High level/active level  |        | 2 mA–10 mA  | 1.8 mA–10 mA      | 3 mA–10 mA                       | 2 mA–10 mA                       | 1.3 mA–6 mA       |
| Input delay  |        |   |                   |                                  |                                  |                   |
| $t_{\text{rising edge}}$   | μs     | <200  | <200              | <20,000                          | <200                             | <200              |
| $t_{\text{falling edge}}$  | μs     | <200  | <200              | <20,000                          | <200                             | <200              |
| Basic modules  |        |   |                   |                                  |                                  |                   |
| Without C connection   |        | XN-S3...-SBB 2-conductor proximity switches (Bero <sup>®</sup> ) can be connected, with a permissible quiescent current of up to 1.5 mA | XN-S3...-SBB      | XN-S4...-SBBS<br>XN-S6...-SBBSBB | XN-S4...-SBBS<br>XN-S6...-SBBSBB |                   |
| With C connection  |        | XN-S4...-SBBC   | XN-S4...-SBBC     | XN-S4...-SBBC                    | —                                | —                 |

## Notes

- ① Permissible range for system supply: for  $U_{SYS} = 24$  Vdc: 18 to 30 Vdc (to EN 61131-2).  
 ② Permissible range for field voltage  $U_L$ : to EN 61131-2 (18 to 30 Vdc).  
 ③ Permissible range for rated voltage and field voltage  $U_L$ : to EN 61131-2.  
 ④ The supply terminal ( $U_L$ ) provides power for the module electronics and for the sensors at the inputs. The total current required for each module consists of the sum of all partial currents.  
 ⑤ Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal ( $U_L$ ).  
 ⑥ Maximum permissible capacity: 141 nF at 79 Vac/50 Hz; 23 nF at 265 Vac/50 Hz.

## Digital Input Modules, continued

| Description  | Unit   | XN-16DI-24VDC-P | XN-32DI-24VDC-P | XNE-8DI-24VDC-P  | XNE-16DI-24VDC-P |
|--|--------|-----------------|-----------------|------------------|------------------|
| Channels   | Number | 16              | 32              | 8                | 16               |
| Rated voltage at supply terminal ( $U_L$ )                       | Vdc    | 24              | 24              | 24               | 24               |
| Rated current drawn from supply terminal ( $I_L$ ) <sup>①②</sup> | mA     | ≤40             | ≤30             | ≤1.5             | ≤3               |
| Rated current drawn from module bus ( $I_{MB}$ ) <sup>②</sup>    | mA     | ≤45             | ≤30             | ≤15              | ≤15              |
| Insulation test ( $U_i$ )  | Vac    | 500             | 500             | 500              | 500              |
| Heat dissipation   | W      | 2.5             | 4.2             | <1.5             | <2.5             |
| Input voltage  |        |                 |                 |                  |                  |
| Input voltage, rated value                                       | Vdc    | 24              | 24              | 24               | 24               |
| Low level  |        | -30V to 5V      | -30V to 5V      | - $U_L$ to 5V    | - $U_L$ to 5V    |
| High level   |        | 15V-30V         | 15V-30V         | 11V- $U_L$       | 11V- $U_L$       |
| Frequency range  | Hz     | —               | —               | —                | —                |
| Input current  |        |                 |                 |                  |                  |
| Low level/active level   |        | 0 mA-1.5 mA     | 0 mA-1.5 mA     | -1 mA-1.5 mA     | -1 mA-1.5 mA     |
| High level/active level  |        | 2 mA-10 mA      | 2 mA-10 mA      | 2 mA-5 mA        | 2 mA-5 mA        |
| Input delay  |        |                 |                 |                  |                  |
| $t_{\text{rising edge}}$   | μs     | <200            | <200            | <100             | <150             |
| $t_{\text{falling edge}}$  | μs     | <200            | <200            | <200             | <300             |
| Basic modules  |        |                 |                 |                  |                  |
| Without C connection   |        | XN-B3...-SBB    | XN-B6...-SBBSBB | Already built in | Already built in |
| With C connection  |        | XN-B4...-SBBC   | —               | —                | —                |

**Notes**

- ① The supply terminal ( $U_L$ ) provides power for the module electronics and for the sensors at the inputs. The total current required for each module consists of the sum of all partial currents.
- ② Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal ( $U_L$ ).

## Digital Output Modules

| Description   | Unit   | XN-2DO-24VDC-0.5A-P           | XN-2DO-24VDC-0.5A-N           | XN-2DO-120/230VAC-0.5A  | XN-2DO-24VDC-2A-P             | XN-4DO-24VDC-0.5A-P              |
|---|--------|-------------------------------|-------------------------------|---|-------------------------------|----------------------------------|
| Channels  | Number | 2                             | 2                             | 2   | 2                             | 4                                |
| Rated voltage at supply terminal ( $U_L$ )  |        | 24 Vdc                        | 24 Vdc                        | 120/230 Vac (45–65 Hz)  | 24 Vdc                        | 24 Vdc                           |
| Rated current drawn from supply terminal (for 0 mA load current) ( $I_L$ ) <sup>①</sup> | mA     | ≤20                           | ≤20                           | ≤20   | ≤50                           | ≤25                              |
| Rated current drawn from module bus ( $I_{MB}$ ) <sup>②</sup>                           | mA     | ≤32                           | ≤32                           | ≤35   | ≤33                           | ≤30                              |
| Insulation test ( $U_i$ )   | Vac    | 500                           | 500                           | 1500  | 500                           | 500                              |
| Heat dissipation  | W      | Normally 1                    | Normally 1                    | Normally 1  | Normally 1                    | Normally 1                       |
| Output voltage  |        |                               |                               |   |                               |                                  |
| High level  |        | > $U_L$ -1 Vdc                | <GND <sub>L</sub> +1 Vdc      | > $U_L$ -2 Vac,<br>(zero-point switching triac)                         | > $U_L$ -1 Vdc                | > $U_L$ -1 Vdc                   |
| Output current  |        |                               |                               |   |                               |                                  |
| High level (rated)  | A      | 0.5                           | 0.5                           | 0.5 <sup>③</sup>  | 2                             | 0.5                              |
| High level (permissible range)  | A      | <0.6                          | <0.6                          | 0.02–0.5  | <2.4                          | <0.6                             |
| Low level   | mA     | —                             | —                             | <1.5  | —                             | —                                |
| Back-up fuse  |        | —                             | —                             | 500 mA FF   | —                             | —                                |
| Surge current ( $I_S$ )   | A      | —                             | —                             | 8 (1 period at 60 Hz)   | —                             | —                                |
| Number of parallel-switchable outputs (maximum)   |        | —                             | —                             | —   | —                             | 4                                |
| Total module current  | A      | 1                             | 1                             | 1   | 4                             | 2                                |
| Delay for signal changeover, resistive load   |        |                               |                               |   |                               |                                  |
| From Low to High level  | μs     | <100                          | <100                          | <T/2 +1 ms  | <100                          | <250                             |
| From High to Low level  | μs     | <100                          | <100                          | <T/2 +1 ms  | <100                          | <250                             |
| Load resistance range   |        | >48 ohm                       | >48 ohm                       | At 120 Vac:<br>240 ohm to 6 kohm<br>At 230 Vac:<br>460 ohm to 11.5 kohm | <12 ohm                       | >48 ohm                          |
| Utilization factor (%)  | g      | 100                           | 100                           | 100 (observe derating)  | 100                           | 100                              |
| The following can be connected:   |        |                               |                               | Resistive loads/Inductive loads/Lamp loads                              |                               |                                  |
| Resistive load  | ohm    | >48                           | >48                           | —   | >12                           | >48                              |
| Inductive load  | H      | <1.2                          | <1.2                          | —   | <1.2                          | <1.2                             |
| Lamp load ( $R_{LL}$ )  | W      | <3                            | <12                           | —   | <6                            | <6                               |
| Switching frequency   |        |                               |                               |   |                               |                                  |
| For resistive load (f)  | Hz     | <5000 ( $R_{LO}$ <1 kohm)     | <100 ( $R_{LO}$ <1 kohm)      | —   | <5000 ( $R_{LO}$ <1 kohm)     | <1000 ( $R_{LO}$ <1 kohm)        |
| For inductive load  | Hz     | <2                            | <2                            | —   | <2                            | <2                               |
| For lamps   | Hz     | <10                           | <10                           | —   | <10                           | <10                              |
| Number of diagnostic bits   |        | 2                             | 2                             | —   | 2                             | 1                                |
| Diagnostics   |        | Yes                           | Yes                           | No  | Yes                           | Yes                              |
| Outputs to EN 61131-1   |        | Protected                     | Protected                     | —   | Protected                     | Short-circuit proof              |
| Retriggering after elimination of short circuit ( $I_i$ )                               |        | Self-acting                   | Self-acting                   | —   | Self-acting                   | Self-acting                      |
| Basic modules   |        |                               |                               |   |                               |                                  |
| With C connection   |        | XN-S3...-SBC<br>XN-S4...-SBCS | XN-S3...-SBC<br>XN-S4...-SBCS | XN-S3...-SBC<br>XN-S4...-SBCS   | XN-S3...-SBC<br>XN-S4...-SBCS | XN-S4...-SBCS<br>XN-S4...-SBCSBC |

## Notes

- ① The supply terminal ( $U_L$ ) provides power for the module electronics and for the consumers at the outputs. The total current required for each module consists of the sum of all partial currents.
- ② Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal ( $U_L$ ).
- ③ To increase the maximum output current to up to 1A, two outputs can be connected in parallel.

Digital Output Modules, continued

| Description   | Unit   | XN-16DO-24VDC-0.5A-P           | XN-32DO-24VDC-0.5A-P           | XNE-8DO-24VDC-0.5A-P                       | XNE-16DO-24VDC-0.5A-P        |
|---|--------|--------------------------------|--------------------------------|--|------------------------------|
| Channels  | Number | 16                             | 32                             | 8  | 16                           |
| Rated voltage at supply terminal (U <sub>L</sub> )  | Vdc    | 24                             | 24                             | 24   | 24                           |
| Rated current drawn from supply terminal (for 0 mA load current) (I <sub>L</sub> ) <sup>①</sup> | mA     | ≤30                            | ≤50                            | ≤3 (all outputs OFF)                       | ≤3 (all outputs OFF)         |
| Rated current drawn from module bus (I <sub>MB</sub> ) <sup>②</sup>                             | mA     | ≤120                           | ≤30                            | ≤15  | ≤25                          |
| Insulation test (U <sub>i</sub> )   | Vac    | 500                            | 500                            | 500  | 500                          |
| Heat dissipation  | W      | Normally 4                     | Normally 5                     | Normally 1.5                               | Normally 2.5                 |
| Output voltage  |        |                                |                                |  |                              |
| High level  | Vdc    | >U <sub>L</sub> -1             | >U <sub>L</sub> -1             | >U <sub>L</sub> -1                         | >U <sub>L</sub> -1           |
| Output current  |        |                                |                                |  |                              |
| High level (rated)  | A      | 0.5                            | 0.5                            | 0.5 <sup>③</sup>                           | 0.5 <sup>③</sup>             |
| High level (permissible range)  | A      | <0.6                           | <1.0                           | <1.0                                       | <1.0                         |
| Low level   | mA     | —                              | —                              | —  | —                            |
| Back-up fuse  |        | —                              | —                              | —  | —                            |
| Surge current (I <sub>S</sub> )   | A      | —                              | —                              | —  | —                            |
| Number of parallel-switchable outputs (maximum)   |        | —                              | 2                              | —  | —                            |
| Total module current  | A      | 8                              | 10                             | 4  | 4                            |
| Delay for signal changeover, resistive load   |        |                                |                                |  |                              |
| From Low to High level  | μs     | <100                           | <300                           | <300                                       | <300                         |
| From High to Low level  | μs     | <100                           | <300                           | <300                                       | <300                         |
| Load resistance range   |        | >48 ohm                        | >48 ohm                        | >48 ohm                                    | >48 ohm                      |
| Utilization factor (%)  | g      | 100                            | See total module current       | 100  | 50%, max. 4A                 |
| The following can be connected:   |        |                                |                                | Resistive loads/Inductive loads/Lamp loads |                              |
| Resistive load  | ohm    | >48                            | >48                            | >48  | >48                          |
| Inductive load  | H      | <1.2                           | <1.2                           | As for DC13 to IEC 60947-5-1               | As for DC13 to IEC 60947-5-1 |
| Lamp load (R <sub>LL</sub> )  | W      | <3                             | <6                             | <6   | <6                           |
| Switching frequency   |        |                                |                                |  |                              |
| For resistive load (f)  | Hz     | <100 (R <sub>LO</sub> <1 kohm) | <100 (R <sub>LO</sub> <1 kohm) | <100                                       | <100                         |
| For inductive load  | Hz     | —                              | —                              | As for DC13 to IEC 60947-5-1               | As for DC13 to IEC 60947-5-1 |
| For lamps   | Hz     | —                              | —                              | <10  | <10                          |
| Number of diagnostic bits   |        | 4                              | 8                              | —  | —                            |
| Diagnostics   |        | Yes                            | Yes                            | —  | —                            |
| Outputs to EN 61131-1   |        | Short-circuit proof            | Short-circuit proof            | Short-circuit proof                        | Short-circuit proof          |
| Retriggering after elimination of short circuit (I <sub>s</sub> )                               |        | Self-acting                    | Self-acting                    | Self-acting                                | Self-acting                  |
| Basic modules   |        |                                |                                |  |                              |
| With C connection   |        | XN-B3...-SBC                   | XN-B6...-SBCSBC                | Already built in                           | Already built in             |

Notes

① The supply terminal (U<sub>L</sub>) provides power for the module electronics and for the consumers at the outputs. The total current required for each module consists of the sum of all partial currents.

② Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal (U<sub>L</sub>).

③ To increase the maximum output current to up to 1A, two outputs can be connected in parallel.



## Analog Input Modules

| Description  | Unit   | XN-1AI-I(0/4...20MA)   | XN-2AI-I(0/4...20MA)  | XN-1AI-U(-10/0...+10VDC)                                       | XN-2AI-U(-10/0...+10VDC)  |
|--|--------|--|---|--|---|
| Measured variables   |        | Current  | Current   | Voltage  | Voltage   |
| Channels   | Number | 1  | 2   | 1  | 2   |
| Rated voltage at supply terminal ( $U_L$ )                       | Vdc    | 24   | 24  | 24   | 24  |
| Rated current drawn from supply terminal ( $I_L$ ) <sup>①②</sup> | mA     | ≤50  | ≤12   | ≤50  | ≤12   |
| Rated current drawn from module bus ( $I_{MB}$ ) <sup>②</sup>    | mA     | ≤41  | ≤35   | ≤41  | ≤35   |
| Heat dissipation   | W      | <1   | <1  | <1   | <1  |
| Sensor/transmitter supply  |        | Bridged with $U_L$ and $GND_L$ of incoming unit; not protected | ≤250 mA; bridged with $U_L$ and $GND_L$ of incoming unit; not protected | Bridged with $U_L$ and $GND_L$ of incoming unit; not protected | ≤250 mA; bridged with $U_L$ and $GND_L$ of incoming unit; not protected |
| Voltage measurement  |        |  |   |  |   |
| Measurement ranges   |        | —  | —   | –10 to 10 Vdc/0 to 10 Vdc                                      | –10 to 10 Vdc/0 to 10 Vdc   |
| Value representation   |        | —  | —   | Standard, 16-bit/12-bit left-aligned                           | Standard, 16-bit/12-bit left-aligned                                    |
| The following can be connected:                                  |        | —  | —   | 2-/3-/4-conductor + shield                                     | 2-/3-conductor + shield   |
| Maximum input voltage ( $U_{max}$ )                              | Vdc    | —  | —   | 35   | 35  |
| Input resistance ( $R_L$ )                                       | kohm   | —  | —   | ≥98.5  | ≥98.5   |
| Limiting frequency ( $f_G$ )                                     | Hz     | —  | —   | 200  | 50  |
| Basic error limit at 23°C  | %      | —  | —   | <0.2   | <0.2  |
| Temperature coefficient  |        | —  | —   | ≤300 ppm/°C of full-scale value                                | ≤150 ppm/°C of full-scale value   |
| Current measurement  |        |  |   |  |   |
| Measurement ranges   | mA     | 0–20/4–20  | 0–20/4–20   | —  | —   |
| Value representation   |        | Standard, 16-bit/12-bit (left-aligned)                         | Standard, 16-bit/12-bit (left-aligned)                                  | —  | —   |
| The following can be connected:                                  |        | 2-/3-/4-conductor + shield                                     | 2-/3-conductor + shield   | —  | —   |
| Maximum input current ( $I_{max}$ )                              | mA     | 50   | 50  | —  | —   |
| Input resistance ( $R_L$ )                                       | ohm    | <125 ohm   | <125 ohm  | —  | —   |
| Limiting frequency ( $f_G$ )                                     | Hz     | 200  | 50  | —  | —   |
| Basic error limit at 23°C  | %      | <0.2   | <0.2  | —  | —   |
| Temperature coefficient  |        | ≤300 ppm/°C of full-scale value                                | ≤300 ppm/°C of full-scale value   | —  | —   |
| Temperature measurement  |        |  |   |  |   |
| Connectable sensors  |        | —  | —   | —  | —   |
| Measurement ranges   |        | —  | —   | —  | —   |
| Value representation   |        | —  | —   | —  | —   |
| The following can be connected:                                  |        | —  | —   | —  | —   |
| Measuring current ( $I_{mess}$ )                                 |        | —  | —   | —  | —   |
| Destruction limit ( $U_{max}$ )                                  | Vdc    | —  | —   | —  | —   |
| Basic error limit at 23°C  | %      | —  | —   | —  | —   |
| Temperature coefficient  |        | —  | —   | —  | —   |
| R (resistance measurement)                                       |        |  |   |  |   |
| Measurement ranges   |        | —  | —   | —  | —   |
| Value representation   |        | —  | —   | —  | —   |
| The following can be connected:                                  |        | —  | —   | —  | —   |
| Destruction limit ( $U_{max}$ )                                  | Vdc    | —  | —   | —  | —   |
| Limiting frequency ( $f_G$ )                                     | Hz     | —  | —   | —  | —   |
| Basic error limit at 23°C  | %      | —  | —   | —  | —   |
| Temperature coefficient  |        | —  | —   | —  | —   |
| Basic modules  |        |  |   |  |   |
| Without C connection   |        | XN-S3...-SBB   | XN-S3...-SBB  | XN-S3...-SBB   | XN-S3...-SBB  |
| Without C connection, for sensor supply                          |        | XN-S4...-SBBS  | XN-S4...-SBBS   | XN-S4...-SBBS  | XN-S4...-SBBS   |

## Notes

- ① The supply terminal ( $U_L$ ) provides power for the module electronics and for the analog transmitters at the inputs. The total current required for each module consists of the sum of all partial currents.
- ② Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal ( $U_L$ ).

Analog Input Modules, continued

| Description  | Unit   | XN-4AI-U/I                             | XN-2AI-THERMO-PI   | XN-2AI-PT/NI-2/3   | XNE-8AI-U/I-4PT/NI  |
|--|--------|--|--|--|---|
| Measured variables   |        | Voltage, current                       | Temperature (thermocouples)  | Temperature PT, NI resistance R  | Voltage, current, temperature PT, NI resistance R   |
| Channels   | Number | 4                                      | 2  | 2  | 8 (U/I)/4 (PT/NI/R)   |
| Rated voltage at supply terminal (U <sub>I</sub> )                       | Vdc    | 24                                     | 24   | 24   | 24  |
| Rated current drawn from supply terminal (I <sub>I</sub> ) <sup>①②</sup> | mA     | ≤20                                    | ≤30  | ≤30  | Normally 35   |
| Rated current drawn from module bus (I <sub>MB</sub> ) <sup>②</sup>      | mA     | ≤50                                    | ≤45  | ≤45  | ≤30   |
| Heat dissipation   | W      | <1                                     | <1   | <1   | <1.5  |
| Sensor/transmitter supply  |        | —                                      | —  | —  | —   |
| Voltage measurement  |        |  |  |  |   |
| Measurement ranges   |        | –10 to 10 Vdc/0 to 10 Vdc              | –50 to 50 mV, –100 to 100 mV<br>–500 to 500 mV,<br>–1,000 to 1,000 mV  | —  | –10 to 10 Vdc/0 to 10 Vdc   |
| Value representation   |        | Standard, 16-bit/12-bit (left-aligned) | Standard, 16-bit/12-bit (left-aligned)   | —  | Standard, 16-bit/12-bit (left-aligned)<br>Extended range, 16-bit/12-bit (left-aligned)<br>PA (NE43), 16-bit/12-bit (left-aligned) |
| The following can be connected:  |        | 2-conductor + shield                   | 2-conductor  | —  | 2-conductor   |
| Maximum input voltage (U <sub>max</sub> )                                | Vdc    | 30                                     | 10   | —  | ±20   |
| Input resistance (R <sub>I</sub> )                                       | kohm   | ≥98.5                                  | —  | —  | ≥200  |
| Limiting frequency (f <sub>G</sub> )                                     | Hz     | 20                                     | —  | —  | 1.5   |
| Basic error limit at 23°C  | %      | <0.3                                   | <0.2 (normally)  | —  | <0.2  |
| Temperature coefficient  |        | ≤300 ppm/°C of full-scale value        | ≤300 ppm/°C of full-scale value  | —  | ≤200 ppm/°C of full-scale value   |
| Current measurement  |        |  |  |  |   |
| Measurement ranges   | mA     | 0–20/4–20                              | —  | —  | 0–20/4–20   |
| Value representation   |        | Standard, 16-bit/12-bit (left-aligned) | —  | —  | Standard, 16-bit/12-bit (left-aligned)<br>Extended range, 16-bit/12-bit (left-aligned)<br>PA (NE43), 16-bit/12-bit (left-aligned) |
| The following can be connected:  |        | 2-conductor + shield                   | —  | —  | 2-conductor   |
| Maximum input current (I <sub>max</sub> )                                | mA     | 50                                     | —  | —  | 40 (Max. input voltage: <17V)   |
| Input resistance (R <sub>I</sub> )                                       | ohm    | <62                                    | —  | —  | <52   |
| Limiting frequency (f <sub>G</sub> )                                     | Hz     | 20                                     | —  | —  | 1.5   |
| Basic error limit at 23°C  | %      | <0.3                                   | —  | —  | <0.2  |
| Temperature coefficient  |        | ≤300 ppm/°C of full-scale value        | —  | —  | ≤200 ppm/°C of full-scale value   |
| Temperature measurement  |        |  |  |  |   |
| Connectable sensors  |        | —                                      | Thermocouple type B, E, J, K, N, R, S, T to IEC 584, Class 1, 2, 3   | PT100 RTD, PT200, PT500, PT100 RTDO (EN 60751)<br>NI100, NI1000 (DIN 43760)          | PT100 RTD, PT200, PT500, PT100 RTDO (all: EN 60751)<br>NI100, NI1000 (DIN 43760), NI1000TK5000                                    |
| Measurement ranges   |        | —                                      | Type B: 100 to 1820 °C<br>Type E: –270 to 1000 °C<br>Type J: –210 to 1200 °C<br>Type K: –270 to 1370 °C<br>Type N: –270 to 1300 °C<br>Type R: –50 to 1760 °C<br>Type S: –50 to 1540 °C<br>Type T: –270 to 400 °C | Platinum RTDs: –200 to 850°C/–200 to 150°C<br>Nickel RTDs: –60 to 250°C/–60 to 150°C | Platinum RTDs: –200 to 850°C/–200 to 150°C<br>Nickel RTDs: –60 to 250°C/–60 to 150°C  |

Notes

- ① The supply terminal (U<sub>I</sub>) provides power for the module electronics and for the analog transmitters at the inputs. The total current required for each module consists of the sum of all partial currents.
- ② Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal (U<sub>I</sub>).

## Analog Input Modules, continued

| Description                             | Unit | XN-4AI-U/I      | XN-2AI-THERMO-PI  | XN-2AI-PT/NI-2/3                            | XNE-8AI-U/I-4PT/NI  |
|---|------|-----------------|---|---|---|
| Temperature measurement, continued      |      |                 |   |   |   |
| Value representation                    |      | —               |   | Standard, 16-bit/12-bit left-aligned        |   |
| The following can be connected:         |      | —               | 2-conductor (cold-junction compensation in base module)     | 2-conductor/3-conductor                     | 2-conductor/3-conductor   |
| Measuring current ( $I_{\text{mess}}$ ) |      | —               | —   | <1 mA                                       | <0.5 mA   |
| Destruction limit ( $U_{\text{max}}$ )  | Vdc  | —               | —   | >30   | >30   |
| Basic error limit at 23°C               | %    | —               | <0.2 (type T, -200 to 0°C: 0.6%)                            | <0.2  | PT100 RTD, NI100: 0.35%, PT200, PT500, PT100 RTDO, NI1000, NI1000TK5000: 0.2% |
| Temperature coefficient                 |      | —               | ≤300 ppm/°C of full-scale value                             | ≤300 ppm/°C of full-scale value             | ≤200 ppm/°C of full-scale value   |
| R (resistance measurement)              |      |                 |   |   |   |
| Measurement ranges                      |      | —               | —   | 0–100 ohm, 0–200 ohm, 0–400 ohm, 0–1000 ohm | 0–250 ohm, 0–400 ohm, 0–800 ohm, 0–2000 ohm, 0–4000 ohm                       |
| Value representation                    |      | —               | —   | Standard, 16-bit/12-bit left-aligned        | Standard, 16-bit/12-bit left-aligned  |
| The following can be connected:         |      | —               | —   | 2-conductor/3-conductor                     | 2-conductor/3-conductor   |
| Destruction limit ( $U_{\text{max}}$ )  | Vdc  | —               | —   | >30   | >30   |
| Limiting frequency ( $f_G$ )            | Hz   | —               | —   | —   | 1.5   |
| Basic error limit at 23°C               | %    | —               | —   | <0.2  | <0.2  |
| Temperature coefficient                 |      | —               | —   | ≤300 ppm/°C of full-scale value             | ≤200 ppm/°C of full-scale value   |
| Basic modules                           |      |                 |   |   |   |
| Without C connection                    |      | XN-S6...-SBCSBC | —   | XN-S3...-SBB                                | Already built in  |
| Without C connection, for sensor supply |      | —               | With integrated cold-junction compensation XN-S4...-SBBS-CJ | XN-S4...-SBBS                               | —   |

Analog Output Modules

| Description   | Unit   | XN-1A0-I(0/4...20MA)                   | XN-2A0-I(0/4...20MA)                   | XN-2A0-U(-10/0...+10VDC)               | XNE-4A0-U/I   |
|---|--------|--|--|--|---|
| Measured variables  |        | Current                                | Current                                | Voltage                                | Voltage, current  |
| Channels  | Number | 1                                      | 2                                      | 2                                      | 4   |
| Rated voltage at supply terminal (U <sub>I</sub> )                      | Vdc    | 24                                     | 24                                     | 24                                     | 24  |
| Rated current drawn from supply terminal (I <sub>I</sub> ) <sup>①</sup> | mA     | ≤50                                    | ≤50                                    | ≤50                                    | ≤150  |
| Rated current drawn from module bus (I <sub>MB</sub> ) <sup>①</sup>     | mA     | ≤39                                    | ≤40                                    | ≤43                                    | ≤40   |
| Heat dissipation  | W      | Normally 1                             | Normally 1                             | Normally 1                             | <3  |
| <b>Output Value, Voltage</b>  |        |  |  |  |   |
| Output voltage  | Vdc    | —                                      | —                                      | -10 to 10 Vdc/0 to 10 Vdc              | -10 to 10 Vdc/0 to 10 Vdc   |
| Value representation  |        | —                                      | —                                      | Standard, 16-bit/12-bit (left-aligned) | Standard, 16-bit/12-bit (left-aligned)<br>Extended range, 16-bit/12-bit (left-aligned)<br>PA (NE43), 16-bit/12-bit (left-aligned) |
| The following can be connected:   |        | —                                      | —                                      | 2-conductor + shield                   | 2-conductor   |
| Load resistor   |        |  |  |  |   |
| Resistive load  | ohm    | —                                      | —                                      | >1000                                  | >1000   |
| Capacitive load   | µF     | —                                      | —                                      | <1                                     | <1  |
| Transfer frequency  | Hz     | —                                      | —                                      | <100                                   | <20   |
| Recovery time   |        |  |  |  |   |
| Resistive load  | ms     | —                                      | —                                      | <0.1                                   | <1  |
| Inductive load  | ms     | —                                      | —                                      | <0.5                                   | <2  |
| Capacitive load   | ms     | —                                      | —                                      | <0.5                                   | <2  |
| Short-circuit current   | mA     | —                                      | —                                      | ≤40                                    | ≤40   |
| Basic error limit at 23°C   | %      | —                                      | —                                      | <0.2                                   | <0.2  |
| Temperature coefficient   |        | —                                      | —                                      | ≤300 ppm/°C of full-scale value        | ≤200 ppm/°C of full-scale value   |
| <b>Output Value, Current</b>  |        |  |  |  |   |
| Output current  | mA     | 0-20/4-20                              | 0-20/4-20                              | —                                      | 0-20/4-20   |
| Value representation  |        | Standard, 16-bit/12-bit (left-aligned) | Standard, 16-bit/12-bit (left-aligned) | —                                      | Standard, 16-bit/12-bit (left-aligned)<br>Extended range, 16-bit/12-bit (left-aligned)<br>PA (NE43), 16-bit/12-bit (left-aligned) |
| The following can be connected:   |        | 2-conductor + shield                   | 2-conductor + shield                   | —                                      | 2-conductor   |
| Load resistor   |        |  |  |  |   |
| Resistive load  | ohm    | <550                                   | <450                                   | —                                      | <450  |
| Inductive load  | µH     | <1                                     | <1                                     | —                                      | <1  |
| Transfer frequency  | Hz     | <200                                   | <200                                   | —                                      | <20   |
| Recovery time   |        |  |  |  |   |
| Resistive load  | ms     | <0.1                                   | <2                                     | —                                      | <1  |
| Inductive load  | ms     | <0.5                                   | <2                                     | —                                      | <2  |
| Capacitive load   | ms     | <0.5                                   | —                                      | —                                      | <2  |
| Short-circuit current   | mA     | —                                      | —                                      | —                                      | ≤40   |
| Basic error limit at 23°C   | %      | <0.2                                   | <0.2                                   | —                                      | <0.2  |
| Temperature coefficient   |        | ≤300 ppm/°C of full-scale value        | ≤300 ppm/°C of full-scale value        | —                                      | ≤200 ppm/°C of full-scale value   |
| Basic modules   |        |  |  |  |   |
| Without C connection  |        | XN-S3...-SBB                           | XN-S3...-SBB                           | XN-S3...-SBB                           | Already built in  |

Note

① Part of the XI/ON module's electronics is supplied with module bus voltage (5 Vdc), the other part through the supply terminal (U<sub>I</sub>).

## Relay Modules

| Description  | Unit              | XN-2DO-R-NC        | XN-2DO-R-NO                                | XN-2DO-R-CO            |
|--|-------------------|--------------------|--|------------------------|
| Contact type                                       |                   | 2 NC               | 2 N/O                                      | 2 change-over contacts |
| Rated voltage at supply terminal ( $U_L$ )         | Vdc               | 24                 | 24   | 24                     |
| Rated current drawn from supply terminal ( $I_L$ ) | mA                | ≤20                | ≤20  | ≤20                    |
| Rated current drawn from module bus ( $I_{MB}$ )   | mA                | ≤28                | ≤28  | ≤28                    |
| Insulation test ( $U_i$ )                          | Vac               | 1500, 500          | 1500, 500                                  | 1500, 500              |
| Heat dissipation                                   | W                 | Normally 1         | Normally 1                                 | Normally 1             |
| The following can be connected:                    |                   |                    | Resistive loads/Inductive loads/Lamp loads |                        |
| Nominal load voltage                               |                   | 230 Vac, 30 Vdc    | 230 Vac, 30 Vdc                            | 230 Vac, 30 Vdc        |
| Output current for channel/230 Vac                 |                   |                    |  |                        |
| Maximum continuous current                         | A                 | 2                  | 2  | 2                      |
| Maximum continuous current, resistive load         |                   | 5A, load-dependent | 5A, load-dependent                         | 5A, load-dependent     |
| Minimum load current                               | mA                | 100 at 12 Vdc      | 100 at 12 Vdc                              | 100 at 12 Vdc          |
| Output current for DC voltage (resistive)          |                   |                    | Load limit curve, see <b>Page V7-T4-99</b> |                        |
| Utilization factor (g)                             | %                 | 100                | 100  | 100                    |
| Lifespan at 230 Vac                                |                   |                    |  |                        |
| At 5A (Operations)                                 | x 10 <sup>6</sup> | >0.1               | >0.1                                       | >0.1                   |
| At 0.5A (Operations)                               | x 10 <sup>6</sup> | >1                 | >1   | >1                     |
| Basic modules                                      |                   |                    |  |                        |
| Without C connection                               |                   | XN-S4...-SBBS      | XN-S4...-SBBS                              | XN-S4...-SBBS          |
| With C connection                                  |                   | XN-S4...-SBCS      | XN-S4...-SBCS                              | —                      |

## Technology Modules

| Description  | Unit    | XN-1CNT-24VDC  | XNE-2CNT-2PWM  |
|--|---------|--|--|
| Rated voltage at supply terminal ( $U_L$ )         | Vdc     | 24   | 24   |
| Rated current drawn from supply terminal ( $I_L$ ) | mA      | $\leq 50$ <sup>①</sup>   | $\leq 20$  |
| Rated current drawn from module bus ( $I_{MB}$ )   | mA      | $\leq 40$  | $\leq 50$  |
| Heat dissipation                                   | W       | <1.3   | <3   |
| Power supply of encoders                           |         | Output voltage $U_L$ (-0.8V)<br>Output current $\leq 0.5A$ , short-circuit proof | Output voltage $U_L$ , $GND_L$<br>Output current 0.5A, not protected     |
| <b>Digital Inputs</b>                              |         |  |  |
| Input voltage                                      |         |  |  |
| Input voltage, rated value                         | Vdc     | 24   | 24   |
| Low level  | Vdc     | -30 to 5   | -30 to 5   |
| High level   | Vdc     | 11 to 30   | 11 to 30   |
| Input current                                      |         |  |  |
| Low level  | mA      | -8 to 1.5  | -1 to 1.5  |
| High level   | mA      | 2 to 10  | 2 to 10  |
| Minimum pulse width                                | $\mu s$ | Filter on: >25 (20 kHz)<br>Filter off: <2.5 (200 kHz)                            | Filter on: >25 (20 kHz)<br>Filter off: <2.5 (200 kHz)                    |
| <b>Counter Modules</b>                             |         |  |  |
| Channels   | Number  | 1  | 2  |
| Resolution   | bit     | 32   | 32   |
| <b>Measurement Ranges</b>                          |         |  |  |
| Frequency  |         | 0.1 Hz–200 kHz   | 0.01 Hz–200 kHz (scaleable)  |
| Rotational speed                                   |         | 1–25,000 rpm   | Scaleable  |
| Period duration                                    |         | 5 ms to 120s   | 5 ms to 120s (scaleable)   |
| <b>Counter Modes</b>                               |         |  |  |
| Signal evaluation A, B                             |         | Pulse and direction, rotary encoder: single/double/quadruple                     | Pulse and direction, rotary encoder: single/double/quadruple             |
| Operating mode                                     |         | Endless count, count once, count periodically                                    | Endless count, count once, count periodically                            |
| Hysteresis   | bit     | 8  | 32   |
| Pulse duration                                     |         | 8-bit/max. 0.51s   | 32-bit/max. 120s   |
| Synchronization                                    |         | Once/periodic  | Once/periodic  |
| Counter limits                                     |         | Upper count limit: 0–7FFF FFFF<br>Lower count limit: 8000 0000–FFFF FFFF         | Upper count limit: 0–7FFF FFFF<br>Lower count limit: 8000 0000–FFFF FFFF |
| <b>Measurement Modes</b>                           |         |  |  |
| Signal evaluation A, B                             |         | Pulse and direction, single rotary encoder                                       | Pulse and direction, single rotary encoder                               |
| <b>Digital Outputs</b>                             |         |  |  |
| Output voltage                                     |         |  |  |
| Output voltage, nominal value                      | Vdc     | 24   | 24   |
| Low level  | Vdc     | $\leq 3$   | $\leq 3$   |
| High level   |         | $\geq U_L$ (-1V)   | $\geq U_L$ (-1V)   |
| Output current                                     |         |  |  |
| High level (permissible range)                     |         | 5 mA to 2A   | 5 mA to 0.6A   |
| High level (nominal)                               |         | $\leq 0.5A$ (55°C)   | 0.5A (55°C)  |
| Switching frequency                                |         |  |  |
| For resistive load                                 | Hz      | 100  | 20,000/100   |
| For inductive load                                 | Hz      | 2  | —  |
| For lamps  | Hz      | $\leq 10$  | —  |
| Lamp load ( $R_{LL}$ )                             | W       | $\leq 10$  | —  |
| Output delay                                       | $\mu s$ | 100 (resistive load)   | 25 (resistive load)  |
| Short-circuit rating                               |         | Yes  | Yes  |

**Note**

<sup>①</sup> The figures for rated operational current from the supply terminal apply for load current = 0 mA.

## Technology Modules, continued

| Description                                   | Unit   | XN-1CNT-24VDC | XNE-2CNT-2PWM         |
|---|--------|---------------|-----------------------|
| <b>PWM Module</b>                             |        |               |                       |
| Channels                                      | Number | —             | 2                     |
| PWM   |        | —             | 0.01Hz–20 kHz         |
| Period duration/duty cycle                    |        | —             | 32-bit at 41.6 ns/bit |
| Pulse duration                                |        | —             | 32-bit at 41.6 ns/bit |
| Pause time                                    |        | —             | 32-bit at 41.6 ns/bit |
| Output, number of pulses                      |        | —             | 32-bit counter        |
| Pulse output modes                            |        | —             | Once, endless         |
| <b>General Data</b>                           |        |               |                       |
| Diagnostics                                   |        | 1 bit         | 4 Byte                |
| Parameters                                    |        | 15 bit        | 16 Byte               |
| <b>Basic Modules</b>                          |        |               |                       |
| No C-connection for sensor/transmitter supply |        | XN-S4...-SBBS | Already built in      |

## Interfaces

| Description   | Unit      | XN-1RS232  | XN-1RS485/422  | XN-1SSI   |
|---|-----------|--|--|---|
| Type  |           | RS232  | RS485/RS422  | SSI   |
| Rated voltage at supply terminal ( $U_L$ )          | Vdc       | 24   | 24   | 24  |
| Rated current drawn from supply terminal ( $I_L$ )  | mA        | 0  | ≤25  | ≤25 <sup>①</sup>  |
| Rated current drawn from module bus ( $I_{MB}$ )    | mA        | ≤140   | ≤60  | ≤50   |
| Heat dissipation                                    | W         | Normally 1   | Normally 1   | Normally 1  |
| Transfer channels                                   |           | RxD, TxD, RTS, CTS   | RxD, TxD   | CL, D   |
| Data buffer   |           |  |  |   |
| Receive   | Byte      | 128  | 128  | —   |
| Send  | Byte      | 64   | 64   | —   |
| Connection type                                     |           |  |  |   |
| RS 232  |           | Full-duplex  | —  | —   |
| RS 485  |           | —  | 2-wire, half-duplex  | —   |
| RS 422  |           | —  | 2-conductor, half-duplex or<br>4-conductor, full-duplex  | 4-conductor, full-duplex<br>(clock output/signal input)       |
| Bit transfer rate                                   |           | Max. 115200 bits/s (parameterizable),<br>Standard: 9600 bits/s, 7 data bits,<br>odd parity and 2 stop bits | Max. 115200 bits/s (parameterizable),<br>Standard: 9600 bits/s, 7 data bits,<br>odd parity and 2 stop bits | Max. 1 MHz (parameterizable),<br>default settings: 500 kBit/s |
| Insulation test ( $U_i$ )                           |           |  |  |   |
| Between interface and module bus/<br>system voltage | $V_{eff}$ | 500  | 500  | 500   |
| Between interface and field voltage                 | $V_{eff}$ | 500  | 500  | 500   |
| Common-mode range                                   | Vdc       | –7 to 12   | —  | —   |
| Cable impedance                                     | ohm       | —  | 120  | 120   |
| Bus termination                                     | ohm       | —  | 120 (external)   | Internal  |
| Cable length  | m         | Max. 15  | Max. 30  | Max. 30   |
| Number of diagnosis bytes                           |           | 1  | 1  | 1   |
| Number of parameter bytes                           |           | 4  | 4  | 4   |
| Basic modules                                       |           |  |  |   |
| No C-connection for sensor/transmitter supply       |           | XN-S4...-SBBS  | XN-S4...-SBBS  | XN-S4...-SBBS   |

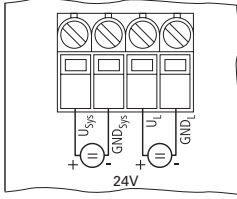
**Note**

<sup>①</sup> The figures for rated operational current from the supply terminal apply when there is no sensor/transmitter current.

**Connection Diagrams**

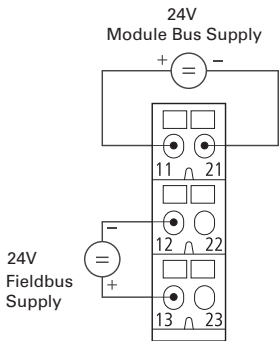
**Gateway XN...GWBR\_**

24V Supply from Gateway ( $U_L$ ) and System Bus ( $U_{sys}$ )

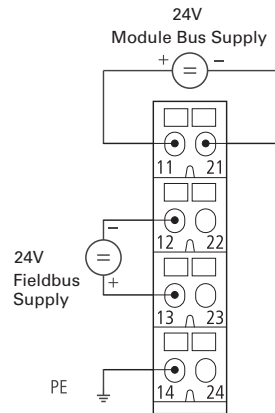


**Bus Refreshing Modules**

**XN-P3x-SBB with Gateway Power Supply**  
**XN-P3...-SBB-B without Gateway Power Supply**

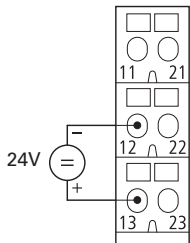


**XN-P4...-SBBC with Gateway Power Supply**  
**XN-P4...-SBBC-B without Gateway Power Supply**

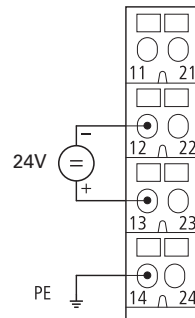


**Power Feeding Modules**

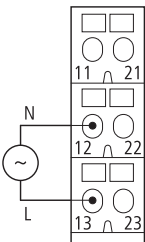
**XN-P3...-SBB for XN-PF-24VDC-D**



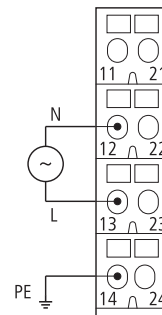
**XN-P4...-SBBC for XN-PF-24VDC-D**



**XN-P3...-SBB for XN-PF-120/230VAC-D**



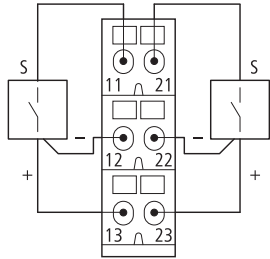
**XN-P4...-SBB for XN-PF-120/230VAC-D**



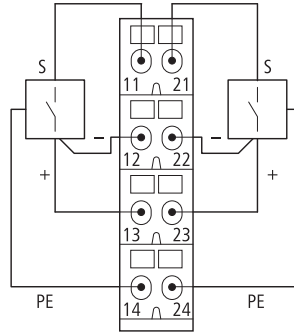


#### Digital Input Modules

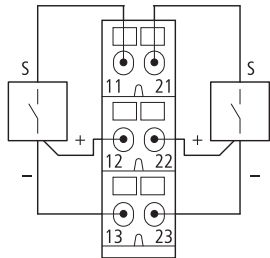
**XN-S3...-SBB for XN-2DI-24VDC-P**



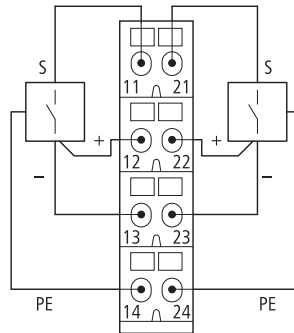
**XN-S4...-SBBC for XN-2DI-24VDC-P**



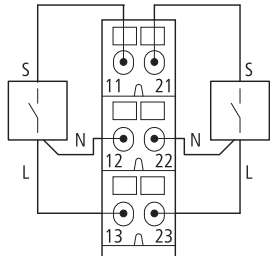
**XN-S3...-SBB for XN-2DI-24VDC-N**



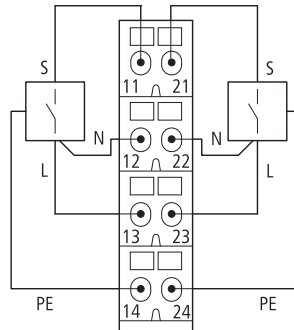
**XN-S4...-SBBC for XN-2DI-24VDC-N**



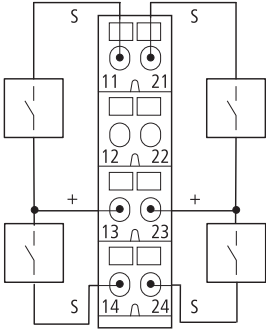
**XN-S3...-SBB for XN-2DI-120/230VAC**



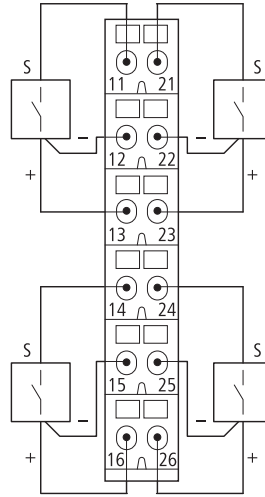
**XN-S4...-SBBC for XN-2DI-120/230VAC**



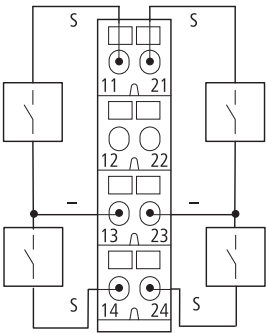
**XN-S4...-SBBS for XN-4DI-24VDC-P**



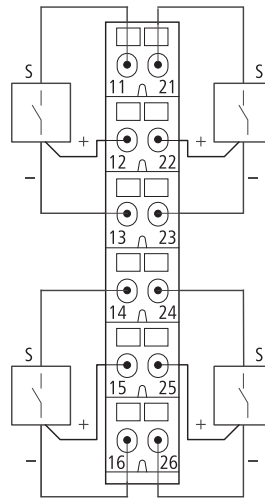
**XN-S6...-SBBSBB for XN-4DI-24VDC-P**



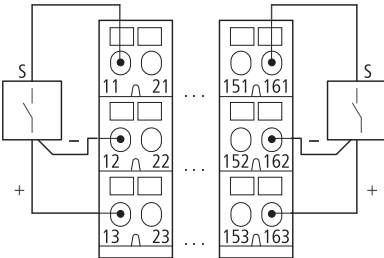
**XN-S4...-SBBS for XN-4DI-24VDC-N**



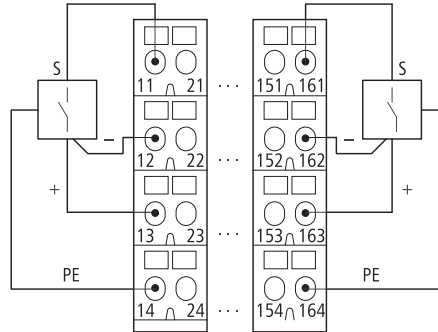
**XN-S6...-SBBSBB for XN-4DI-24VDC-N**



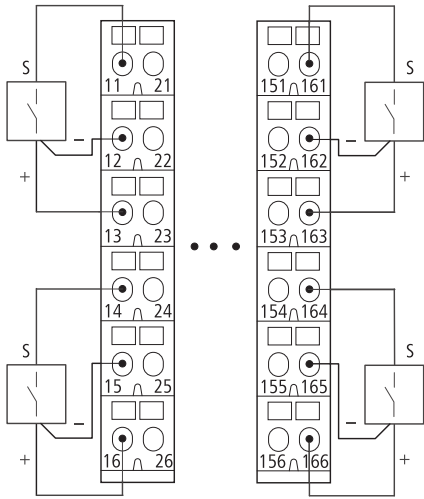
**XN-B3...-SBB for XN-16DI-24VDC-P**



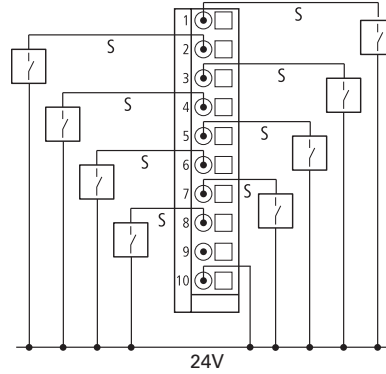
**XN-B4...-SBBC for XN-16DI-24VDC-P**



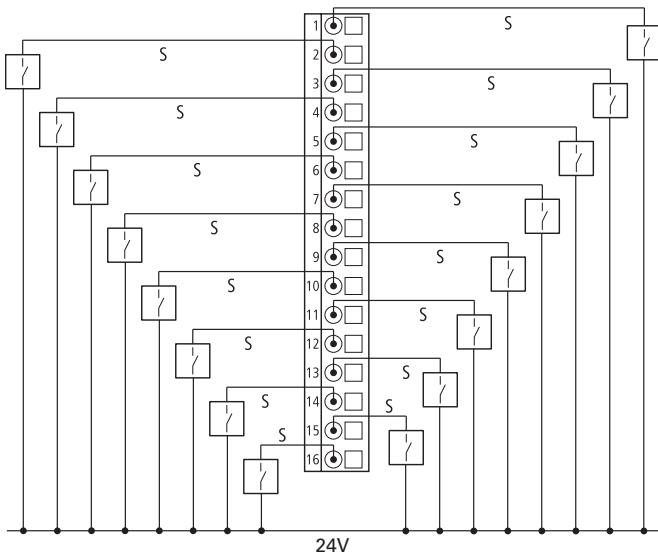
**XN-B6...-SBBSBB for XN-32DI-24VDC-P**



**XNE-8DI-24VDC-P**

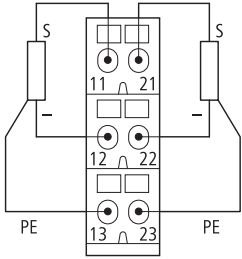


**XNE-16DI-24VDC-P**

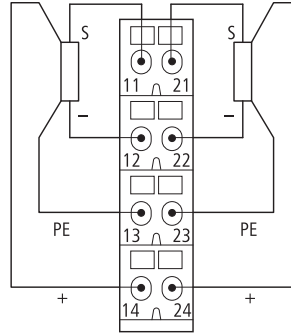


**Digital Output Modules**

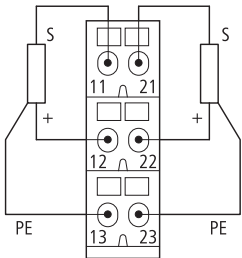
**XN-S3...-SBC for XN-2DO-24VDC-0.5A-P and XN-2DO-24VDC-2A-P**



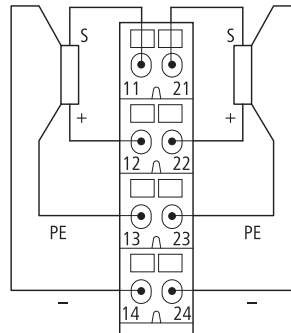
**XN-S4...-SBCS for XN-2DO-24VDC-0.5A-P and XN-2DO-24VDC-2A-P**



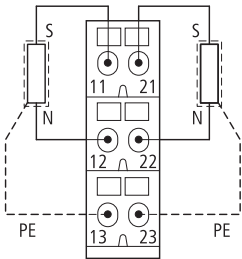
**XN-S3...-SBC for XN-2DO-24VDC-0.5A-N**



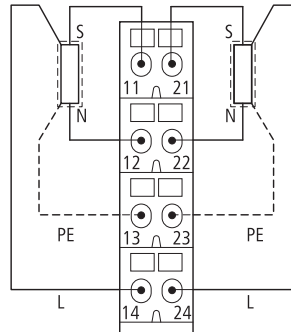
**XN-S4...-SBCS for XN-2DO-24VDC-0.5A-N**



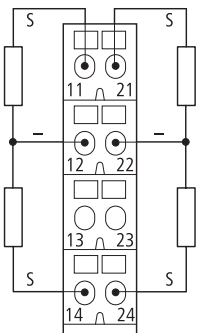
**XN-S3...-SBC for XN-2DO-120/230VAC-0.5A**



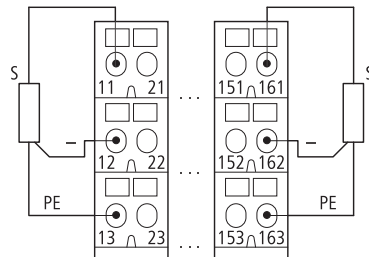
**XN-S4...-SBCS for XN-2DO-120/230VAC-0.5A**



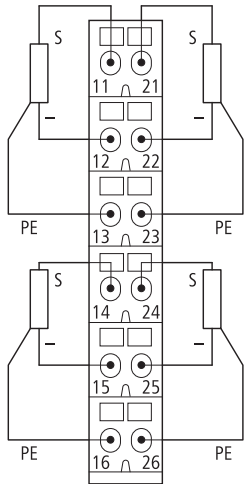
**XN-S4...-SBCS for XN-4DO-24VDC-0.5A-P**



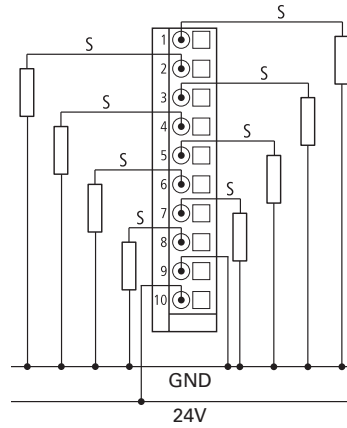
**XN-B3...-SBC for XN-16DO-24VDC-0.5A-P**



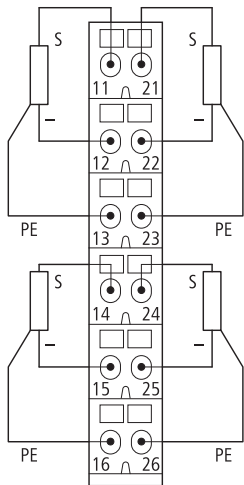
**XN-S6...-SBCSBC for XN-4DO-24VDC-0.5A-P**



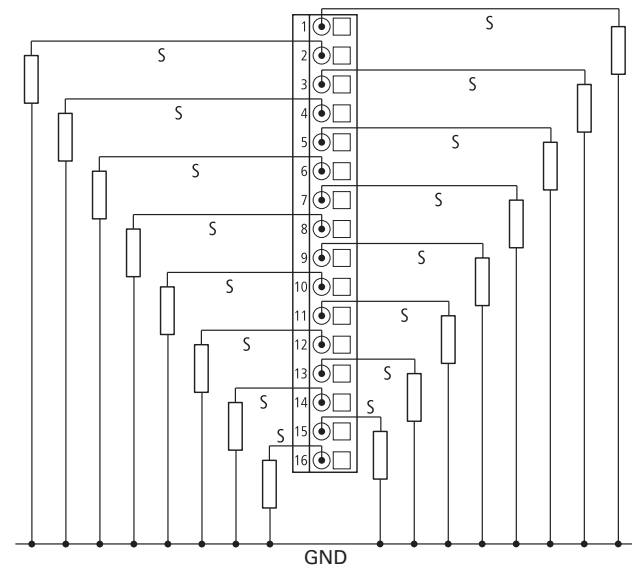
**XNE-8DO-24VDC-0.5A-P**



**XN-B6...-SBCSBC for XN-32DO-24VDC-0.5A-P**

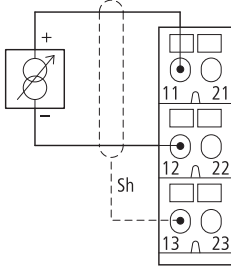


**XNE-16DO-24VDC-0.5A-P**

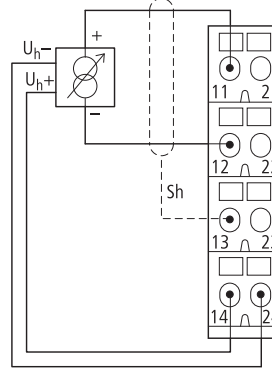


**Analog Input Modules**

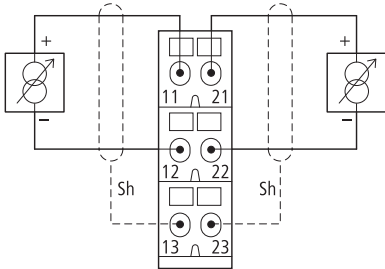
**XN-S3...-SBB for XN-1AI-I(0/4...20MA)  
 XN-S3...-SBB for XN-1AI-U(-10/0...+10VDC)  
 Analog Sensor/Transmitter, without Transmitter Supply**



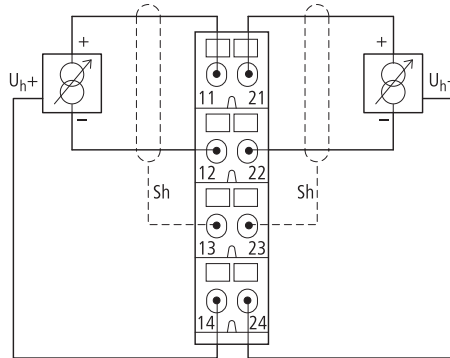
**XN-S4...-SBBS for XN-1AI-I(0/4...20MA)  
 XN-S4...-SBBS for XN-1AI-U(-10/0...+10VDC)  
 Analog Transmitter with Non-Isolated Transmitter Supply**



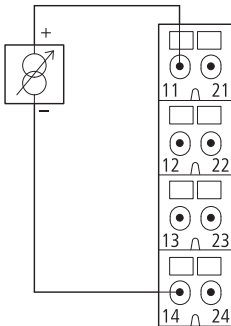
**XN-S3...-SBB for XN-2AI-I(0/4...20MA),  
 XN-2AI-U(-10/0...+10VDC)  
 Analog Sensor/Transmitter, without Transmitter Supply**



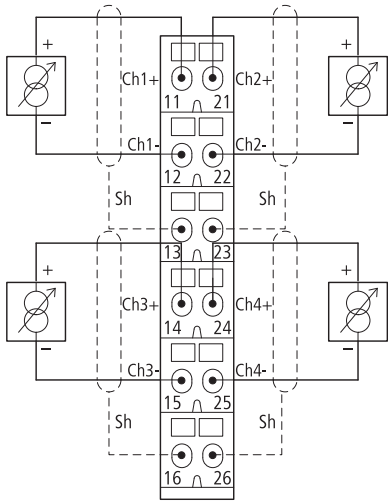
**XN-S4...-SBBS for XN-2AI-I(0/4...20MA),  
 XN-2AI-U(-10/0...+10VDC)  
 Analog Transmitter with Non-Isolated Transmitter Supply**



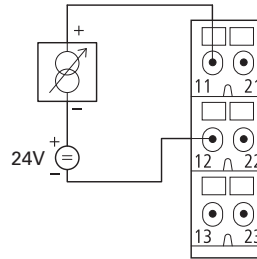
**XN-S4...-SBBS for XN-2AI-I(0/4...20MA)  
 Two-Conductor Connection without  
 External Transmitter Supply**



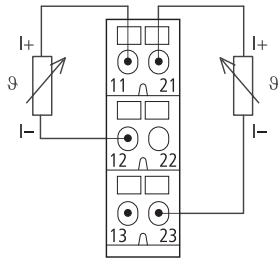
**XN-S6...-SBCSBC for XN-4AI-U/I**  
**Analog Sensor/Transmitter,**  
**without Transmitter Supply**



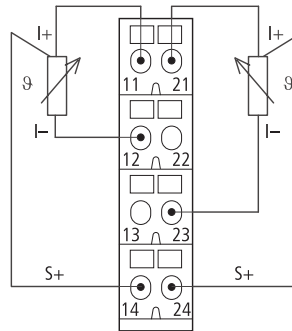
**XN-S3...-SSB for XN-AI-U/I**  
**Two-Conductor Connection without**  
**External Transmitter Supply**



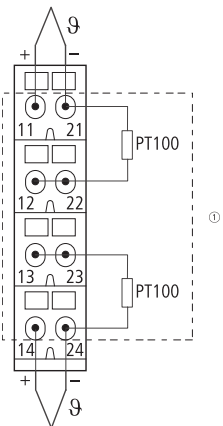
**XN-S3...-SBB for XN-2AI-PT/NI-2/3**  
**Two-Conductor Connection**



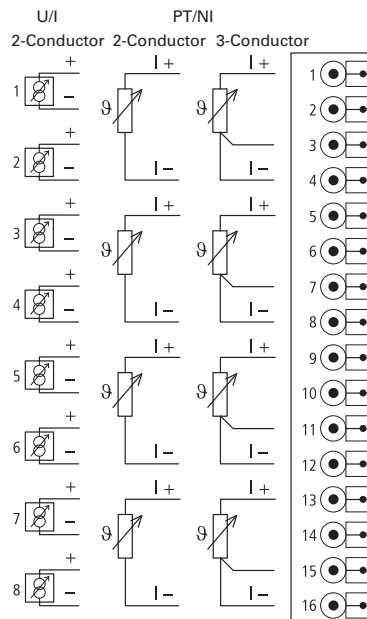
**XN-S4...-SBBS for XN-2AI-PT/NI-2/3**  
**Three-Conductor Connection**



**XN-S4...-SBBS-CJ for XN-2AI-THERMO-PI**



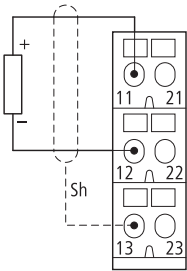
**XNE-8AI-U/I-4PT/NI**



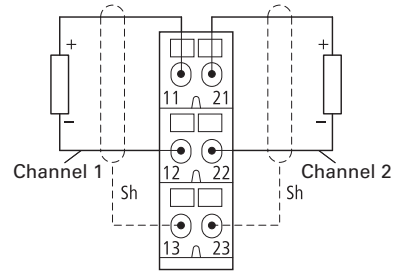
**Note**  
 ① Cold-junction compensation in base module.

**Analog Output Modules**

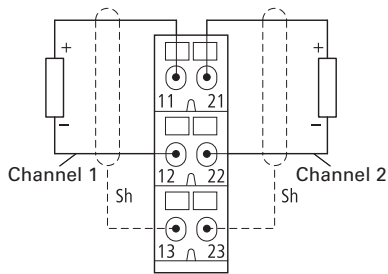
**XN-S3...-SBB for XN-1AO-I(0/4...20MA)**



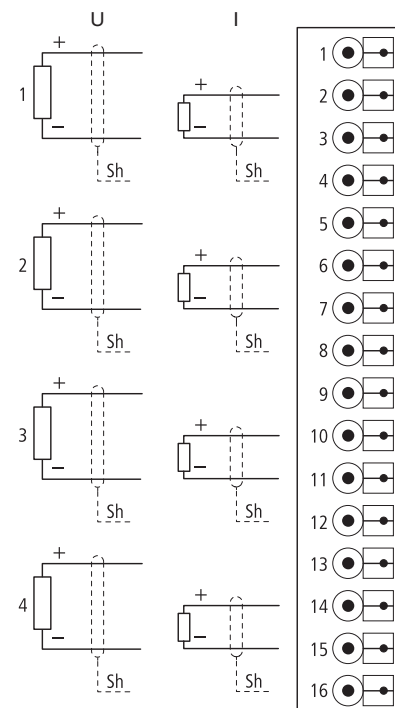
**XN-S3...-SBB for XN-2AO-I(0/4...20MA)**



**XN-S3...-SBB for XN-2AO-U(-10/0...+10VDC)**



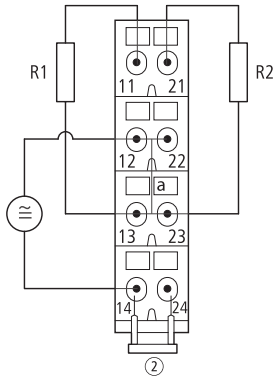
**XNE-4AO-U/I**



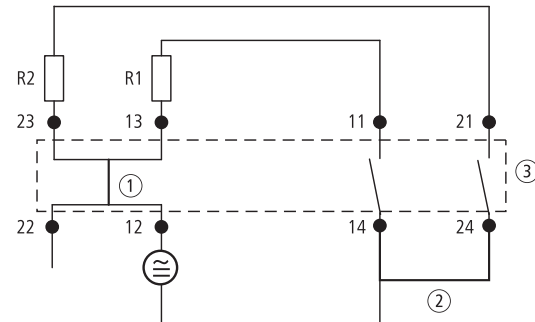


#### Relay Modules

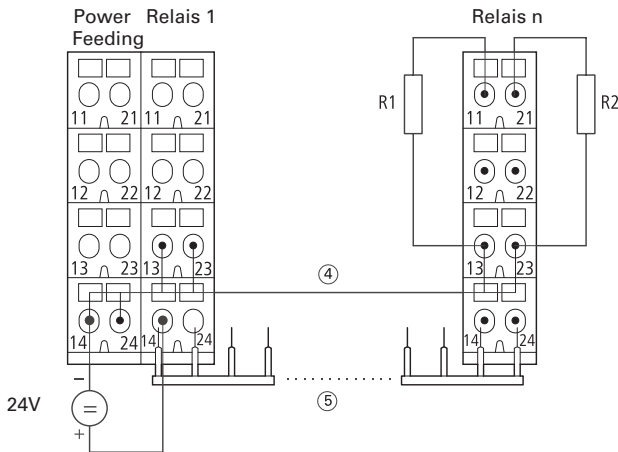
##### XN-S4x...SBBS with Externally Applied Supply and Common Potential Link for XN-2DO-R-NC



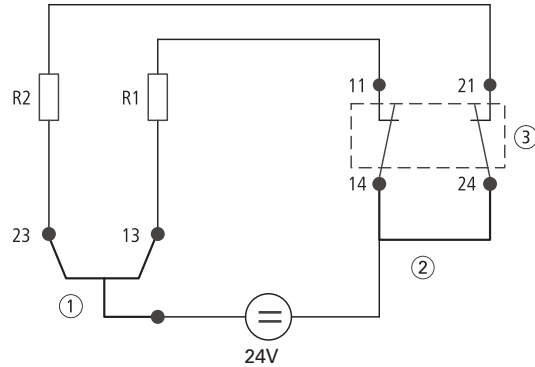
##### Module Circuit XN-S4x...SBBS for XN-2DO-R-NC



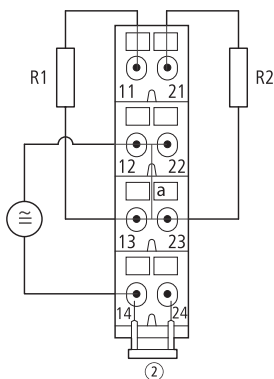
##### XN-S4x...SBBS Supply via C-Rail and Common Potential Link for XN-2DO-R-NC



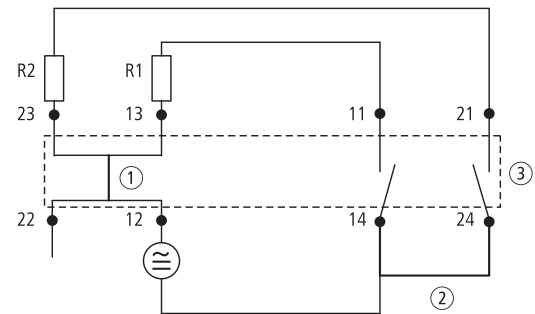
##### Module Circuit XN-S4x...SBBS for XN-2DO-R-NC



##### XN-S4x...SBBS with Externally Applied Supply and Common Potential Link for XN-2DO-R-NO



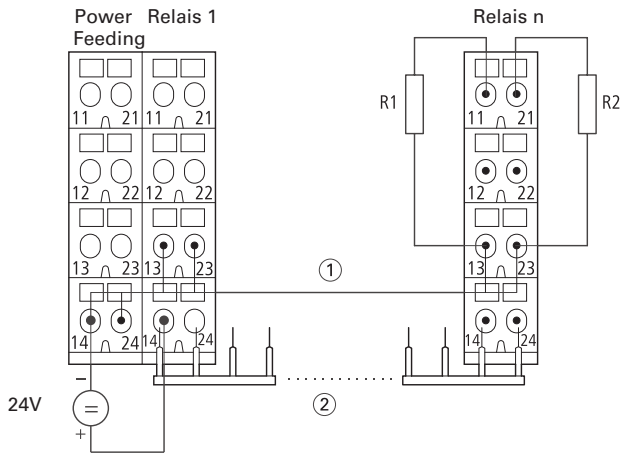
##### Module Circuit XN-S4x...SBBS for XN-2DO-R-NO



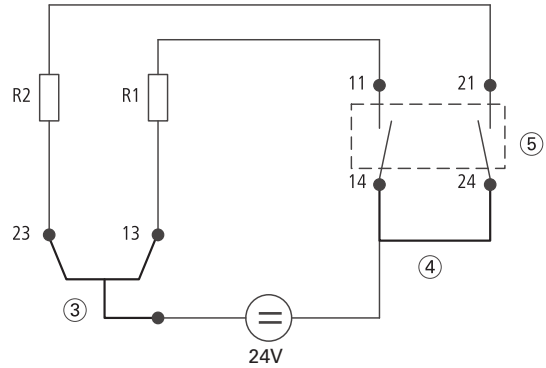
#### Notes

- ① Linked in the electronics.
- ② Cross-link via QVR in the base module.
- ③ Electronics module.
- ④ Supply via C-rail.
- ⑤ Maximum eight relay modules.

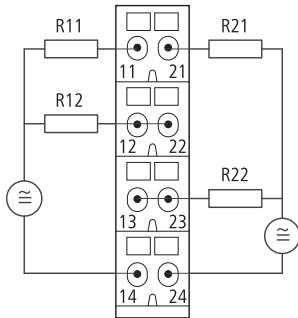
**XN-S4x...-SBCS Supply via C-rail and Common Potential Link for XN-2DO-R-NO**



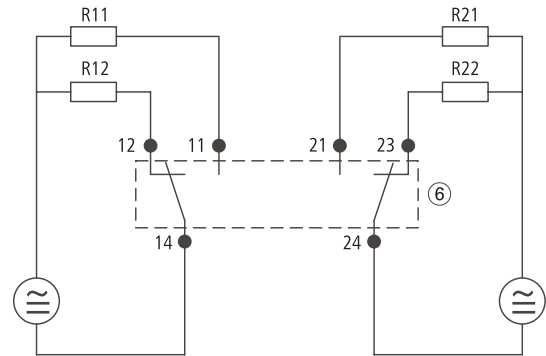
**Module Circuit XN-S4x...SBCS for XN-2DO-R-NO**



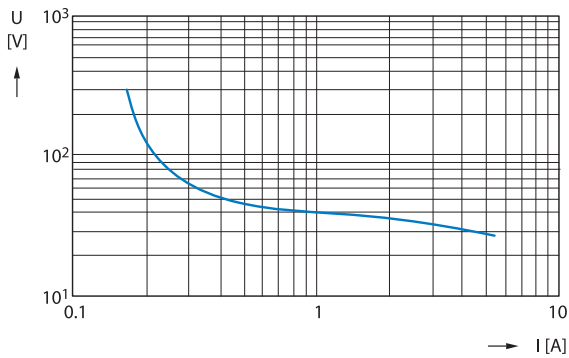
**XN-S4x...-SBBS for XN-2DO-R-CO**



**Module Circuit XN-S4x...-SBBS for XN-2DO-R-CO**



**Load Limit Curve**

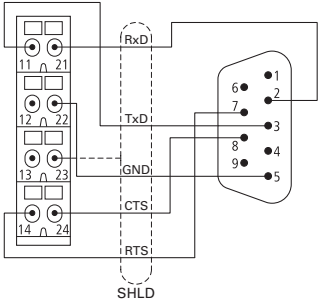


**Notes**

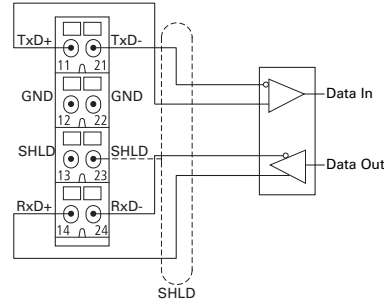
- ① Supply via C-rail.
- ② Maximum eight relay modules.
- ③ Top-hat rail.
- ④ Cross-link via QVR in the base module.
- ⑤ Electronics module.
- ⑥ Electronics module—  
Definition: At 1000 operations, no arc with a duration >10 ms must occur.

#### Serial Interfaces

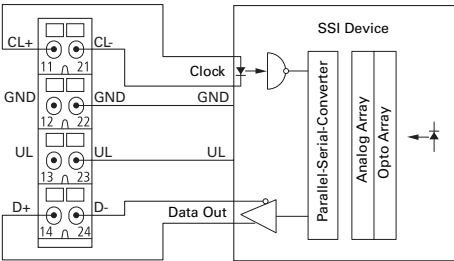
**XN-S4x...-SBBS for XN-1RS232 and D-Sub Plug**



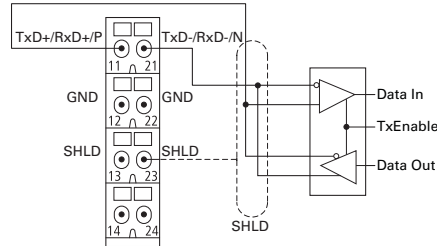
**XN-S4x...-SBBS for XN-1RS485/422 in RS422 Mode**



**XN-S4x...-SBBS for XN-1SSI on an SSI Rotary Encoder**

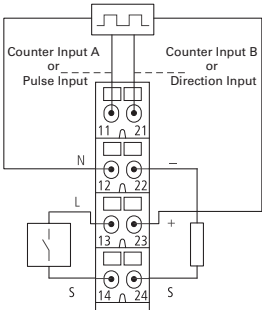


**XN-S4...-SBBS for XN-1RS485/422 in RS485 Mode**

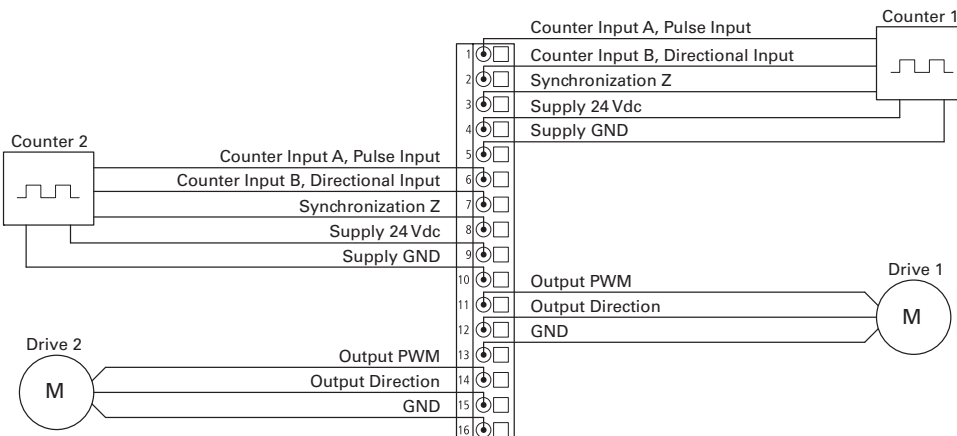


#### Technology Modules/Counter

**XN-S4...-SBBS for XN-1CNT-24VDC**



**XNE-2CNT-2PWM**



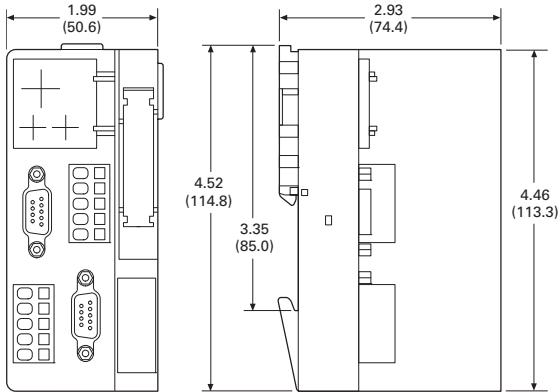
**Dimensions**

Approximate Dimensions in Inches (mm)

**XN Gateways**

**XN-GWBR-PBDP**  
**XN-GWBR-CANOPEN**  
**XN-GWBR-DNET**

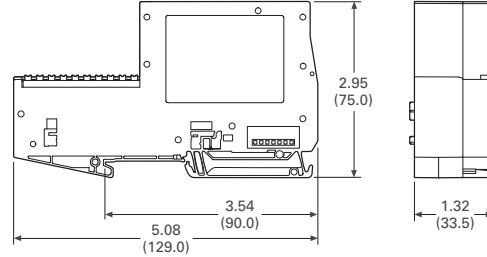
**XN-GWBR-MODBUS-TCP**  
**XN-PLC-CANOPEN**



**Note:** The plugs/connectors used depends on the version.

**XNE Gateways**

**XNE-GWBR-PBDP**  
**XNE-GWBR-CANOPEN**  
**XNE-GWBR-2ETH-IP**

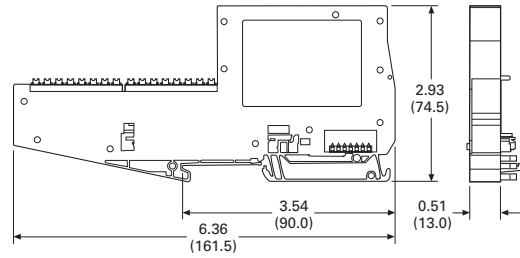
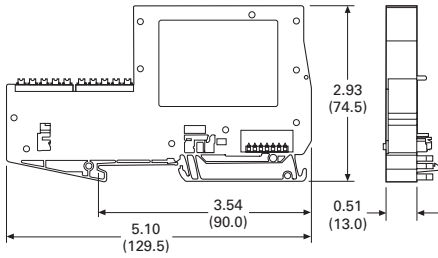


**XNE Electronics Modules**

**XNE-8DO-24VDC-0.5A-P**  
**XNE-8DI-24VDC-P**

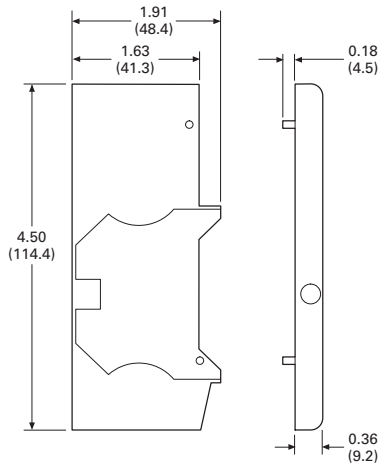
**XNE-16DI-24VDC-P**  
**XNE-16DO-24VDC-0.5A-P**  
**XNE-8AI-U/I/4PT/NI**

**XNE-4AO-U/I**  
**XNE-2CNT-2PWM**



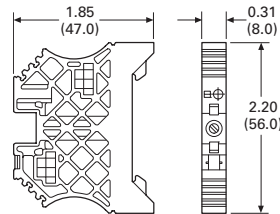
**End Cover**

**XN-ABPL**



**End Bracket**

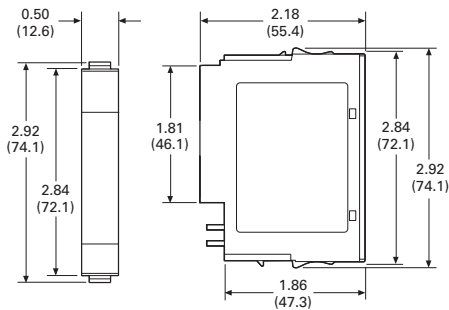
**XN-WEW-35/2-SW**



Approximate Dimensions in Inches (mm)

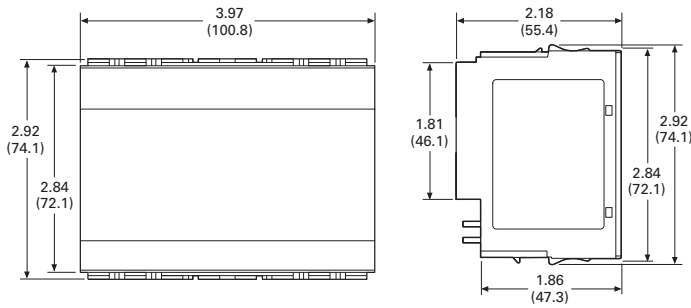
#### XN Electronics Modules in Slice Design

|                           |                               |                                 |                      |
|---------------------------|-------------------------------|---------------------------------|----------------------|
| <b>XN-BR-24VDC-D</b>      | <b>XN-2DI-24VDC-P</b>         | <b>XN-1AI-I(0/4...20MA)</b>     | <b>XN-1CNT-24VDC</b> |
| <b>XN-PF-24VDC-D</b>      | <b>XN-2DI-24VDC-N</b>         | <b>XN-2AI-I(0/4...20MA)</b>     | <b>XN-1RS232</b>     |
| <b>XN-PF-120/230VAC-D</b> | <b>XN-2DI-120/230VAC</b>      | <b>XN-1AI-U(-10/0...+10VDC)</b> | <b>XN-1RS485/422</b> |
|                           | <b>XN-4DI-24VDC-P</b>         | <b>XN-2AI-U(-10/0...+10VDC)</b> | <b>XN-1SSI</b>       |
|                           | <b>XN-4DI-24VDC-N</b>         | <b>XN-2AI-PT/NI-2/3</b>         |                      |
|                           | <b>XN-2DO-24VDC-2A-P</b>      | <b>XN-2AI-THERMO-PI</b>         |                      |
|                           | <b>XN-2DO-24VDC-0.5A-P</b>    | <b>XN-4AI-U/I</b>               |                      |
|                           | <b>XN-2DO-24VDC-0.5A-N</b>    | <b>XN-1AO-I(0/4...20MA)</b>     |                      |
|                           | <b>XN-2DO-120/230VAC-0.5A</b> | <b>XN-2AO-I(0/4...20MA)</b>     |                      |
|                           | <b>XN-4DO-24VDC-0.5A-P</b>    | <b>XN-2AO-U(-10/0...+10VDC)</b> |                      |
|                           | <b>XN-2DO-R-CO</b>            |                                 |                      |
|                           | <b>XN-2DO-R-NC</b>            |                                 |                      |
|                           | <b>XN-2DO-R-NO</b>            |                                 |                      |



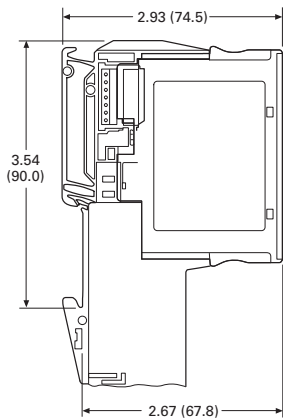
#### XN Electronics Modules in Block Design

|                        |                             |
|------------------------|-----------------------------|
| <b>XN-16DI-24VDC-P</b> | <b>XN-16DO-24VDC-0.5A-P</b> |
| <b>XN-32DI-24VDC-P</b> | <b>XN-32DO-24VDC-0.5A-P</b> |



#### XN Electronics Modules Completed with Base Module

All Types



Approximate Dimensions in Inches (mm)

**Base Modules in Slice Design**

**Spring-Cage Terminals**

**3 Connection Levels**

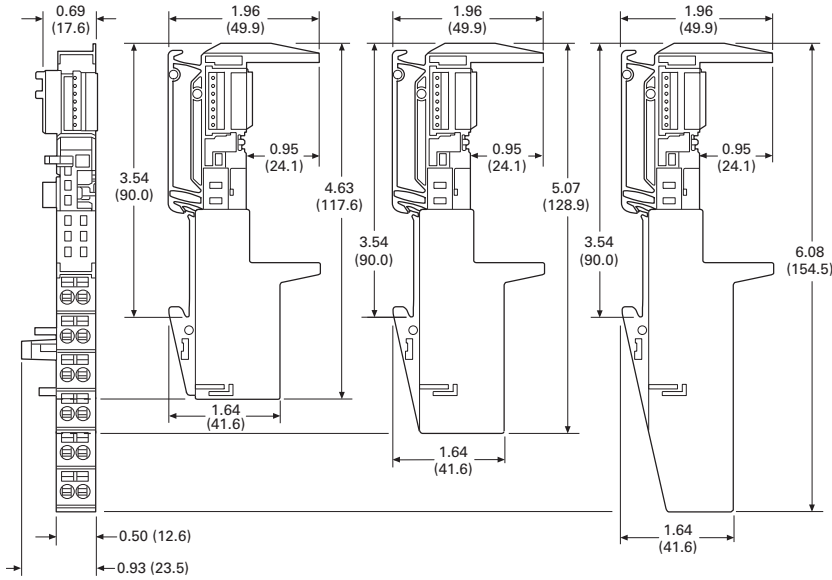
- XN-S3T-SBB
- XN-S3T-SBC
- XN-P3T-SBB
- XN-P3T-SBB-B

**4 Connection Levels**

- XN-S4T-SBBC
- XN-S4T-SBBS
- XN-S4T-SBBS-CJ
- XN-S4T-SBCS
- XN-P4T-SBBC
- XN-P4T-SBBC-B

**6 Connection Levels**

- XN-S6T-SBBSBB
- XN-S6T-SBCSBC



**Screw Terminals**

**3 Connection Levels**

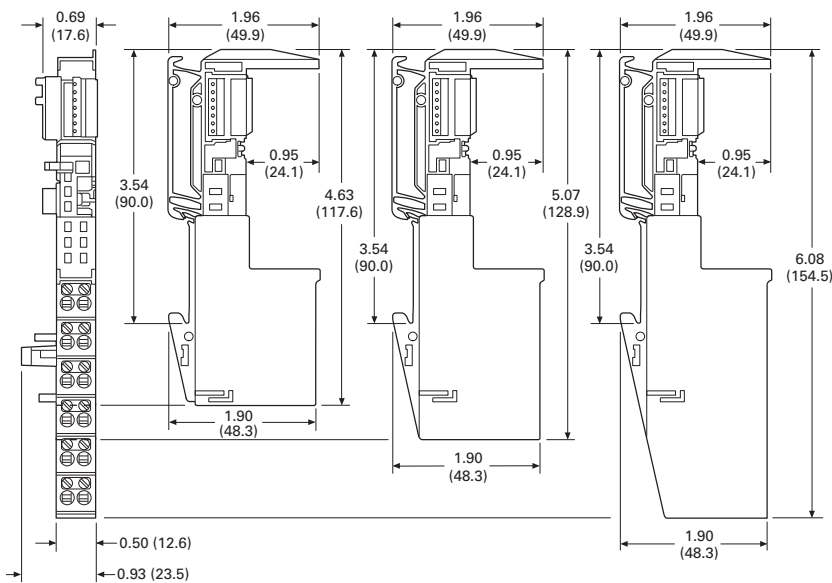
- XN-S3S-SBB
- XN-S3S-SBC
- XN-P3S-SBB
- XN-P3S-SBB-B

**4 Connection Levels**

- XN-S4S-SBBC
- XN-S4S-SBBS
- XN-S4S-SBBS-CJ
- XN-S4S-SBCS
- XN-P4S-SBBC
- XN-P4S-SBBC-B

**6 Connection Levels**

- XN-S6S-SBBSBB
- XN-S6S-SBCSBC



Approximate Dimensions in Inches (mm)

#### Base Modules in Block Design

##### Spring-Cage Terminals

**3 Connection Levels**

**XN-B3T-SBB**

**XN-B3T-SBC**

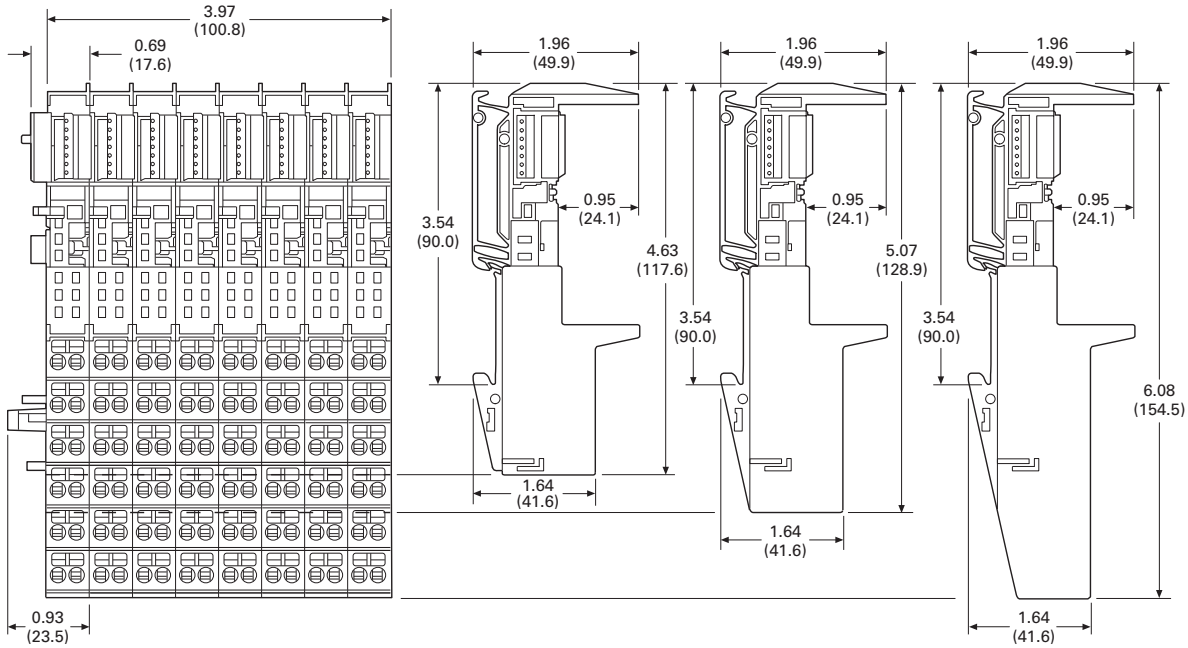
**4 Connection Levels**

**XN-B4T-SBBC**

**6 Connection Levels**

**XN-B6T-SBBSBB**

**XN-B6T-SBCSBC**



##### Screw Terminals

**3 Connection Levels**

**XN-B3S-SBB**

**XN-B3S-SBC**

**4 Connection Levels**

**XN-B4S-SBBC**

**6 Connection Levels**

**XN-B6S-SBBSBB**

**XN-B6S-SBCSBC**

