

**Part no.** XNE-8AI-U/I-4PT/NI  
**Catalog No.** 140037

**EL-Nummer** 4520016  
**(Norway)**

## Delivery program

|                   |  |   |
|-------------------|--|---|
| Function          |  | XI/ON I/O modules   |
| Function          |  | XNE Slice module  |
| Short Description |  | 8 Analog input U/I or 4 Analog inputs PT/NI<br>-10/0 to +10 V DC<br>0/4 to 20 mA<br>Acquisition of normalized signals for temperature measurement<br>Connection of sensor types Pt100, Pt200, Pt500, Pt1000 and Ni100, Ni1000, Ni1000TK5000 in 2- or 3-wire circuit |

## Technical data

### General

|   |  |     |  |
|---|--|-----|--|
| Standards                                       |  |     | EN 61000-6-2<br>EN 61000-6-4<br>EN 61131-2   |
| Potential isolation                             |  |     | Yes, through optocoupler   |
| Ambient temperature                             |  |     |  |
| Ambient temperature, operation                  |  | °C  | 0 - +55  |
| Storage, transport                              | g                                      | °C  | -25 - +85  |
| Relative humidity                               |  |     |  |
| Relative humidity                               |  |     | 5 - 95 % (indoor), Level RH-2, no condensation (for storage at 45°C)   |
| Ambient conditions, mechanical                  |  |     |  |
| Degree of Protection                            |  |     | IP20   |
| Harmful gases                                   |  | ppm | SO <sub>2</sub> : 10 (rel. humidity < 75%, no condensation)<br>H <sub>2</sub> S: 1.0 (rel. humidity < 75 %, no condensation) |
| Vibration resistance, operating conditions      |  |     | according to IEC/EN 60068-2-6  |
| Mechanical shock resistance                     |  | g   | according to IEC 60068-2-27  |
| Continuous shock resistance (IEC/EN 60068-2-29) |  |     | According to IEC 60068-2-29  |
| Drop and topple                                 |  |     | According to IEC 60068-2-31, free fall according to IEC 60068-2-32   |
| Electromagnetic compatibility (EMC)             |  |     |  |
| ESD   | Air/contact discharge                  | kV  | EN 61000-4-2   |
| Electromagnetic fields                          | (0.08...1) / (1,4...2) / (2...2,7) GHz | V/m | EN 61100-4-2   |
| Burst   |  |     | EN 61100-4-4   |
| Surge   |  |     | EN 61100-4-5   |
| Radiated RFI                                    |  | V   | EN 61100-4-6   |
| Emitted interference (radiated, high frequency) | (30...230 MHz) / (230...1000 MHz)      | dB  | EN 55016-2-3   |
| Voltage fluctuations/voltage dips               |  |     | EN 61131-2   |
| Type test                                       |  |     | to EN 61131-2  |
| Approvals                                       |  |     | CE, cULus<br>EAC   |
| Other technical data (sheet catalogue)          |  |     | Technical Data   |

### Terminations

|                                    |    |   |   |
|------------------------------------|----|---|---|
| Rated data                         |    |   | according to VDE 0611 Part 1/8.92 /<br>IEC/EN 60947-7-1 |
| Connection design in TOP direction |    |   | Push-In spring-cage terminals                           |
| Stripping length                   | mm | 8 |   |
| Clamping range                     |    |   | max. 0.14 - 1.5 mm <sup>2</sup>                         |
| Connectable conductors             |    |   |   |

|  |                 |             |
|--|-----------------|-------------|
| "e" solid H07V-U   | mm <sup>2</sup> | 0.25 - 1.5  |
| "f" flexible H 07V-K   | mm <sup>2</sup> | 0.25 - 1.5  |
| "f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) | mm <sup>2</sup> | 0.25 - 1.5  |
| "f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)    | mm <sup>2</sup> | 0.25 - 0.75 |
| Connectable conductors   |                 |             |
| "e" solid H07V-U   | mm <sup>2</sup> | 0.25 - 1.5  |
| "f" flexible H 07V-K   | mm <sup>2</sup> | 0.25 - 1.5  |
| "f" with ferrules without plastic collar according to DIN 46228-1 (ferrules crimped gas-tight) | mm <sup>2</sup> | 0.25 - 1.5  |
| "f" with ferrules with plastic collar according to DIN 46228-1 (ferrules crimped gas-tight)    | mm <sup>2</sup> | 0.25 - 0.75 |
| Gauge pin IEC/EN 60947-1   |                 | A1          |

### Analog input modules

|  |                 |  |   |
|--|-----------------|--|---|
| Measured variables                             |                 | Voltage, current, temperature (PT, NI), resistance R |   |
| Channels                                       | Number          | 8 (U/I), 4 (PT/NI/R)                                 |   |
| Rated voltage through supply terminal          | U <sub>L</sub>  | 24 V DC  |   |
| Rated current consumption from supply terminal | I <sub>L</sub>  | mA   | 35  |
| Rated current consumption from module bus      | I <sub>MB</sub> | mA   | ≤ 30  |
| Heat dissipation                               |                 | W  | < 1.5   |
| Input current                                  |                 | mA   | 0/4 - 20  |
| Maximum input current                          |                 | mA   | 40 (Max. input voltage: < 17 V)   |
| Input voltage                                  |                 |  | -10/0 to +10 V DC   |
| Maximum input voltage                          |                 | V DC   | ± 20  |
| Input impedance                                |                 |  | < 62 Ω/≥ 200 kΩ   |
| Limit frequency (-3 db)                        |                 | Hz   | 1.5   |
| Offset error                                   |                 | %  | 0.1   |
| Basic error limit at 23 °C                     |                 | %  | 0.2   |
| Temperature coefficient                        |                 |  | 200 ppm/°C of full-scale value  |
| Measured value representation                  |                 |  | 16-bit signed integer<br>12-bit full range, flush left<br>Standard/extended range/PA (NE43)                     |
| Connectable sensors                            |                 |  | Platinum sensors: Pt100, Pt500, Pt1000 (as per IEC 751)<br>Nickel sensors: Ni100, Ni1000 (as per DIN 43760)     |
| Temperature range                              | °C, (°F)        |  | Pt: -200 - +850 (-328 - +1562)/-200 - +150 (-328 - +302)<br>Ni: -60 - +250 (-76 - +482)/-60 - +150 (-76 - +302) |
| Diagnostics                                    |                 |  | Yes   |
| Base modules                                   |                 |  |   |
| without C connection                           |                 |  | Already built in  |

### Analog output modules

|  |                 |  |   |
|--|-----------------|--|---|
| Measured variables                             |                 | Voltage, current, temperature (PT, NI), resistance R |   |
| Channels                                       | Number          | 8 (U/I), 4 (PT/NI/R)                                 |   |
| Rated voltage through supply terminal          | U <sub>L</sub>  | 24 V DC  |   |
| Rated current consumption from supply terminal | I <sub>L</sub>  | mA   | 35  |
| Rated current consumption from module bus      | I <sub>MB</sub> | mA   | ≤ 30  |
| Heat dissipation                               |                 | W  | < 1.5   |
| Offset error                                   |                 | %  | 0.1   |
| Basic error limit at 23 °C                     |                 | %  | 0.2   |
| Temperature coefficient                        |                 |  | 200 ppm/°C of full-scale value  |
| Measured value representation                  |                 |  | 16-bit signed integer<br>12-bit full range, flush left<br>Standard/extended range/PA (NE43) |
| Base modules                                   |                 |  |   |
| without C connection                           |                 |  | Already built in  |

### Digital outputs

|   |                |                      |
|---|----------------|----------------------|
| Channels  | Number         | 8 (U/I), 4 (PT/NI/R) |
| Rated voltage through supply terminal                                       | U <sub>L</sub> | 24 V DC              |
| Rated current consumption from the supply terminal (at load current = 0 mA) | I <sub>L</sub> | mA                   |

|  |          |        |   |
|--|----------|--------|---|
| Rated current consumption from module bus      | $I_{MB}$ | mA     | $\leq 30$   |
| Can be connected                               |          |        | Platinum sensors: Pt100, Pt500, Pt1000 (as per IEC 751)<br>Nickel sensors: Ni100, Ni1000 (as per DIN 43760) |
| Diagnostics                                    |          |        | Yes   |
| <b>Digital inputs</b>                          |          |        |   |
| Channels                                       |          | Number | 8 (U/I), 4 (PT/NI/R)  |
| Rated voltage through supply terminal          | $U_L$    |        | 24 V DC   |
| Rated current consumption from supply terminal | $I_L$    | mA     | 35  |
| Rated current consumption from module bus      | $I_{MB}$ | mA     | $\leq 30$   |
| Heat dissipation                               |          | W      | < 1.5   |
| Base modules                                   |          |        |   |
| without C connection                           |          |        | Already built in  |
| <b>Relay modules</b>                           |          |        |   |
| Rated voltage through supply terminal          | $U_L$    |        | 24 V DC   |
| Rated current consumption from supply terminal | $I_L$    | mA     | 35  |
| Rated current consumption from module bus      | $I_{MB}$ | mA     | $\leq 30$   |
| Can be connected                               |          |        | Platinum sensors: Pt100, Pt500, Pt1000 (as per IEC 751)<br>Nickel sensors: Ni100, Ni1000 (as per DIN 43760) |
| Base modules                                   |          |        |   |
| without C connection                           |          |        | Already built in  |
| <b>Power supply module</b>                     |          |        |   |
| Rated voltage through supply terminal          | $U_L$    |        | 24 V DC   |
| Rated current consumption from supply terminal | $I_L$    | mA     | 35  |
| Rated current consumption from module bus      | $I_{MB}$ | mA     | $\leq 30$   |
| <b>Counter module</b>                          |          |        |   |
| Channels                                       |          | Number | 8 (U/I), 4 (PT/NI/R)  |
| Rated voltage through supply terminal          | $U_L$    |        | 24 V DC   |
| Rated current consumption from supply terminal | $I_L$    | mA     | 35  |
| Rated current consumption from module bus      | $I_{MB}$ | mA     | $\leq 30$   |
| Heat dissipation                               |          | W      | < 1.5   |
| <b>Measuring modes</b>                         |          |        |   |
| Temperature coefficient                        |          |        | 200 ppm/ $^{\circ}$ C of full-scale value   |
| <b>Interfaces</b>                              |          |        |   |
| Rated voltage through supply terminal          | $U_L$    |        | 24 V DC   |
| Rated current consumption from supply terminal | $I_L$    | mA     | 35  |
| Rated current consumption from module bus      | $I_{MB}$ | mA     | $\leq 30$   |

## Design verification as per IEC/EN 61439

|  |            |              |  |
|--|------------|--------------|--|
| Technical data for design verification   |            |              |  |
| Rated operational current for specified heat dissipation   | $I_n$      | A            | 0  |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W            | 0  |
| Equipment heat dissipation, current-dependent  | $P_{vid}$  | W            | 0  |
| Static heat dissipation, non-current-dependent   | $P_{vs}$   | W            | 1.5  |
| Heat dissipation capacity  | $P_{diss}$ | W            | 0  |
| Operating ambient temperature min.   |            | $^{\circ}$ C | 0  |
| Operating ambient temperature max.   |            | $^{\circ}$ C | 55   |
| Degree of Protection   |            |              | IP20                                       |
| IEC/EN 61439 design verification   |            |              |  |
| 10.2 Strength of materials and parts   |            |              |  |
| 10.2.2 Corrosion resistance  |            |              | Meets the product standard's requirements. |
| 10.2.3.1 Verification of thermal stability of enclosures   |            |              | Meets the product standard's requirements. |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |            |              | Meets the product standard's requirements. |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |            |              | Meets the product standard's requirements. |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |            |              | Meets the product standard's requirements. |

|  |  |
|--|--|
| 10.2.5 Lifting   | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.6 Mechanical impact                                 | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.7 Inscriptions                                      | Meets the product standard's requirements.   |
| 10.3 Degree of protection of ASSEMBLIES                  | Meets the product standard's requirements.   |
| 10.4 Clearances and creepage distances                   | Meets the product standard's requirements.   |
| 10.5 Protection against electric shock                   | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.6 Incorporation of switching devices and components   | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.7 Internal electrical circuits and connections        | Is the panel builder's responsibility.   |
| 10.8 Connections for external conductors                 | Is the panel builder's responsibility.   |
| 10.9 Insulation properties                               |  |
| 10.9.2 Power-frequency electric strength                 | Is the panel builder's responsibility.   |
| 10.9.3 Impulse withstand voltage                         | Is the panel builder's responsibility.   |
| 10.9.4 Testing of enclosures made of insulating material | Is the panel builder's responsibility.   |
| 10.10 Temperature rise                                   | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                               | Is the panel builder's responsibility.   |
| 10.12 Electromagnetic compatibility                      | Is the panel builder's responsibility.   |
| 10.13 Mechanical function                                | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 8.0

Programmable logic controllers PLC (EG000024) / Fieldbus, decentr. periphery - analogue I/O module (EC001596)

Electric engineering, automation, process control engineering / Control / Field bus, decentralized peripheral / Field bus, decentralized peripheral - analogue I/O module (ecl@ss10.0.1-27-24-26-01 [BAA061014])

|   |     |             |
|---|-----|-------------|
| Supply voltage AC 50 Hz                     | V   | 0 - 0       |
| Supply voltage AC 60 Hz                     | V   | 0 - 0       |
| Supply voltage DC                           | V   | 20.4 - 28.8 |
| Voltage type of supply voltage              |     | DC          |
| Input, current                              |     | Yes         |
| Input, voltage                              |     | Yes         |
| Input, resistor                             |     | Yes         |
| Input, resistance thermometer               |     | Yes         |
| Input, thermocouple                         |     | No          |
| Input signal, configurable                  |     | Yes         |
| Resolution of the analogue inputs           | Bit | 16          |
| Output, current                             |     | No          |
| Output, voltage                             |     | No          |
| Output signal configurable                  |     | No          |
| Resolution of the analogue outputs          | Bit | 0           |
| Number of analogue inputs                   |     | 8           |
| Number of analogue outputs                  |     | 0           |
| Analogue inputs configurable                |     | Yes         |
| Analogue outputs configurable               |     | Yes         |
| Number of HW-interfaces industrial Ethernet |     | 0           |
| Number of interfaces PROFINET               |     | 0           |
| Number of HW-interfaces RS-232              |     | 0           |
| Number of HW-interfaces RS-422              |     | 0           |
| Number of HW-interfaces RS-485              |     | 0           |
| Number of HW-interfaces serial TTY          |     | 0           |
| Number of HW-interfaces parallel            |     | 0           |
| Number of HW-interfaces Wireless            |     | 0           |
| Number of HW-interfaces USB                 |     | 0           |
| Number of HW-interfaces other               |     | 1           |
| Supporting protocol for TCP/IP              |     | No          |
| Supporting protocol for PROFIBUS            |     | No          |
| Supporting protocol for CAN                 |     | No          |

|  |    |                    |
|--|----|--------------------|
| Supporting protocol for INTERBUS                       |    | No                 |
| Supporting protocol for ASI                            |    | No                 |
| Supporting protocol for KNX                            |    | No                 |
| Supporting protocol for Modbus                         |    | No                 |
| Supporting protocol for Data-Highway                   |    | No                 |
| Supporting protocol for DeviceNet                      |    | No                 |
| Supporting protocol for SUCONET                        |    | No                 |
| Supporting protocol for LON                            |    | No                 |
| Supporting protocol for PROFINET IO                    |    | No                 |
| Supporting protocol for PROFINET CBA                   |    | No                 |
| Supporting protocol for SERCOS                         |    | No                 |
| Supporting protocol for Foundation Fieldbus            |    | No                 |
| Supporting protocol for EtherNet/IP                    |    | No                 |
| Supporting protocol for AS-Interface Safety at Work    |    | No                 |
| Supporting protocol for DeviceNet Safety               |    | No                 |
| Supporting protocol for INTERBUS-Safety                |    | No                 |
| Supporting protocol for PROFIsafe                      |    | No                 |
| Supporting protocol for SafetyBUS p                    |    | No                 |
| Supporting protocol for other bus systems              |    | Yes                |
| Radio standard Bluetooth                               |    | No                 |
| Radio standard Wi-Fi 802.11                            |    | No                 |
| Radio standard GPRS                                    |    | No                 |
| Radio standard GSM                                     |    | No                 |
| Radio standard UMTS                                    |    | No                 |
| IO link master   |    | No                 |
| System accessory                                       |    | Yes                |
| Degree of protection (IP)                              |    | IP20               |
| Degree of protection (NEMA)                            |    | 1                  |
| Type of electric connection                            |    | Plug-in connection |
| Fieldbus connection over separate bus coupler possible |    | Yes                |
| Rail mounting possible                                 |    | Yes                |
| Wall mounting/direct mounting                          |    | No                 |
| Front built-in possible                                |    | No                 |
| Rack-assembly possible                                 |    | No                 |
| Suitable for safety functions                          |    | No                 |
| SIL according to IEC 61508                             |    | None               |
| Performance level according to EN ISO 13849-1          |    | None               |
| Appendant operation agent (Ex ia)                      |    | No                 |
| Appendant operation agent (Ex ib)                      |    | No                 |
| Explosion safety category for gas                      |    | None               |
| Explosion safety category for dust                     |    | None               |
| Width  | mm | 13                 |
| Height   | mm | 74.5               |
| Depth  | mm | 161.5              |