

AXL F UTH8 XC 1F - Temperature module

2702464

<https://www.phoenixcontact.com/us/products/2702464>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



The figure shows the standard item

Axioline F, Temperature recording module, Analog inputs: 8 (8 inputs for thermocouples or linear voltage, plus 1 input -5 V to +5 V), connection technology: 2-conductor (shielded, twisted pair), transmission speed in the local bus: 100 Mbps, Extreme conditions version, degree of protection: IP20, including bus base module and Axioline F connectors

Product description

The module is designed for use within an Axioline F station. It is used to acquire signals from standard thermocouples in industrial applications. The module supports various types of thermocouple conforming to DIN EN 60584-1 and DIN 46710 as well as linear voltages from -100 mV to +100 mV. It also offers a voltage input from -5 V to +5 V. Heating currents can be monitored here, for example, using a measuring transducer. The four Pt 100 inputs (CJ1 ... CJ4) can each be used as a sensor input or as an external cold junction.

Your advantages

- 8 analog input channels for the connection of thermocouples or linear voltages from -100 mV to +100 mV
- 1 analog input channel for the connection of voltages from -5 V to +5 V
- Connection of sensors in 2-conductor technology
- Internal detection and compensation of cold junction temperature (can be parameterized)
- External connection of Pt 100 cold junction sensors possible
- Easy to use due to internal linearization of the sensor characteristic curves
- Low tolerances (typically $\pm 0.01\%$ for sensor type K)
- High temperature stability (typically 5 ppm/K)
- High resistance to electromagnetic interference (Class A)
- "Channel Scout" function
- Device rating plate stored
- Installation monitoring with indication via diagnostic LED for each channel
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see "Tested successfully: use under extreme ambient conditions" in the data sheet)
- Partially coated PCBs

Commercial data

| | |
|------------------------|---------------|
| Item number | 2702464 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR02 |
| Product key | DRI243 |
| GTIN | 4055626459264 |

AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

| | |
|--------------------------------------|----------|
| Weight per piece (including packing) | 293.8 g |
| Weight per piece (excluding packing) | 144 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

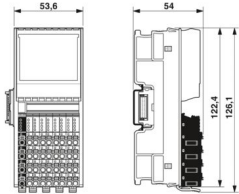
AXL F UTH8 XC 1F - Temperature module

2702464

<https://www.phoenixcontact.com/us/products/2702464>

Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 53.6 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Note on dimensions | The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715). |

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Material specifications

| | |
|-----------------|-----------------|
| Color (Housing) | gray (RAL 7042) |
|-----------------|-----------------|

Interfaces

Axioline F local bus

| | |
|----------------------|-----------------|
| Number of interfaces | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

System properties

Programming data (LocalbusSlave)

| | |
|---------------------|---------|
| Input address area | 18 Byte |
| Output address area | 18 Byte |

Fieldbus data telegram (PROFIBUS)

| | |
|-----------------------------|---------|
| Required parameter data | 20 Byte |
| Required configuration data | 7 Byte |

Input data

Analog:

| | |
|--------------------------|--|
| Input name | Analog inputs |
| Description of the input | Inputs for thermocouples or linear voltage |

AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

| | |
|-------------------------------------|---|
| Number of inputs | 8 + 1 (8 inputs for thermocouples or linear voltage, plus 1 input - 5 V to +5 V) |
| Connection method | Push-in connection |
| Connection technology | 2-conductor (shielded, twisted pair) |
| A/D converter resolution | 24 bit |
| Sensor types (RTD) that can be used | Pt 100 (4 external cold junctions, can also be used as a sensor input) |
| Sensor types that can be used (TC) | U, T, L, J, E, K, N, S, R, B, C, W, HK |
| Tolerance, relative | typ. 0.01 % (Thermocouple type K, NiCr-Ni) see tables for tolerance values |
| Tolerance, absolute | typ. ± 0.19 K (Thermocouple type K, plus tolerance of cold junction) see tables for tolerance values |
| Measuring principle | Sigma/Delta process |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Input filter time | 40 ms 60 ms 100 ms 120 ms (adjustable) |
| Protective circuit | Short-circuit protection, overload protection of the inputs Transient protection of inputs |

Product properties

| | |
|--------------------|---|
| Product type | I/O component |
| Product family | Axioline F |
| Type | block modular |
| Mounting position | any (no temperature derating; Parameterize the mounting position using the object 0080 _{hex} ParaTable!) |
| Scope of supply | including bus base module and Axioline F connectors |
| Special properties | Extreme conditions version |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

| | |
|---|-------|
| Maximum power dissipation for nominal condition | 2.6 W |
|---|-------|

Potentials: Axioline F local bus supply (U_{BUS})

| | |
|----------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw | max. 180 mA typ. 115 mA |

Potentials: Supply for analog modules (U_A)

| | |
|----------------------|--|
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 70 mA |

AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

| | |
|--------------------|--|
| | typ. 45.3 mA |
| Protective circuit | Surge protection; electronic (35 V, 0.5 s) |
| | Reverse polarity protection; Polarity protection diode |
| | Transient protection; Suppressor diode |

Electrical isolation/isolation of the voltage ranges

| | |
|--|------------------------|
| Test voltage: 5 V supply of the local bus (U_{BUS}) / 24 V supply (I/Os) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 5 V supply of the local bus (U_{BUS}) / functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply (I/O) / functional ground | 500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-------------------------------|---|
| Connection name | Axioline F connector |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "Axioline F: system and installation" user manual. |

Axioline F connector

| | |
|-----------------------------------|---|
| Connection method | Push-in connection |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "Axioline F: system and installation" user manual. |
| Conductor cross-section, rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C (Standard, applications with UL approval, use in zone 2 potentially explosive area) |
| | -40 °C ... 70 °C (Extended, see section "Tested successfully: use under extreme ambient conditions" in the data sheet.) |
| Degree of protection | IP20 |
| Air pressure (operation) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |

Mechanical test

| | |
|--|-----|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 30g |
| Continuous shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 10g |

AXL F UTH8 XC 1F - Temperature module

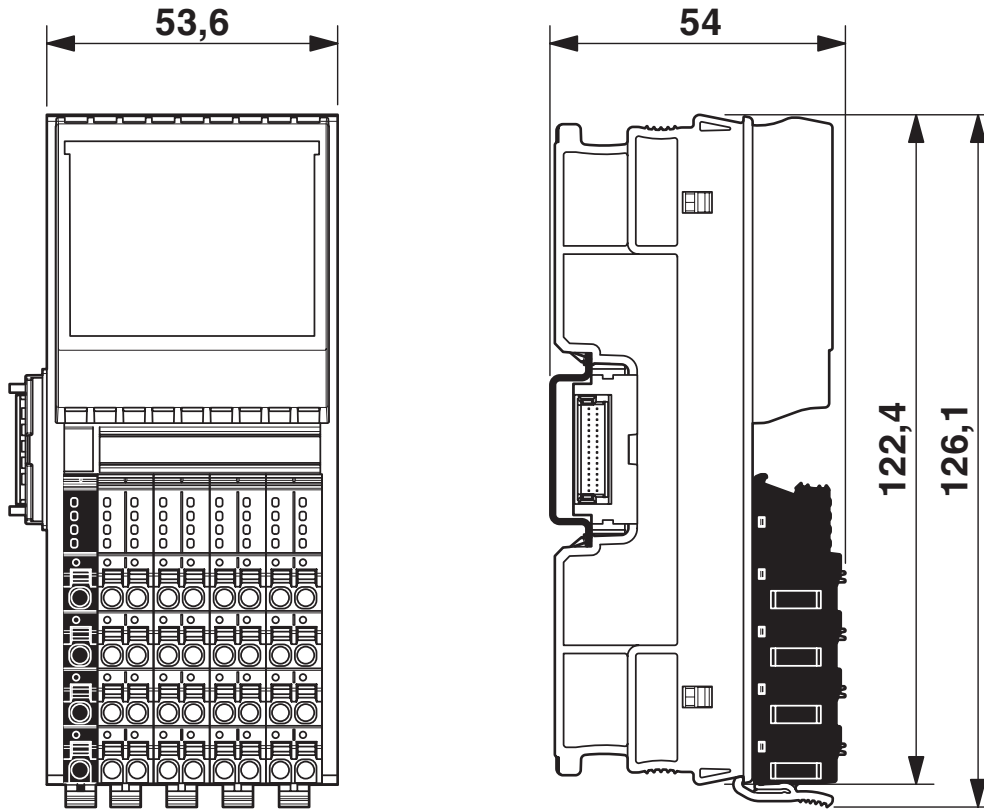


2702464

<https://www.phoenixcontact.com/us/products/2702464>

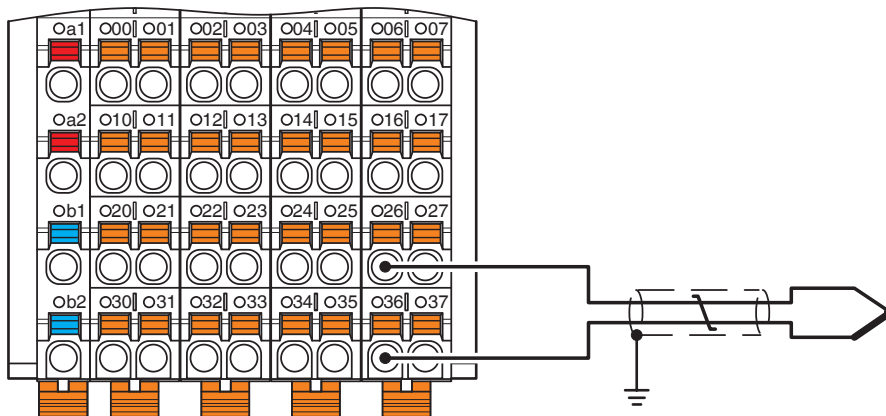
Drawings

Dimensional drawing



Dimensions (in mm)

Connection diagram



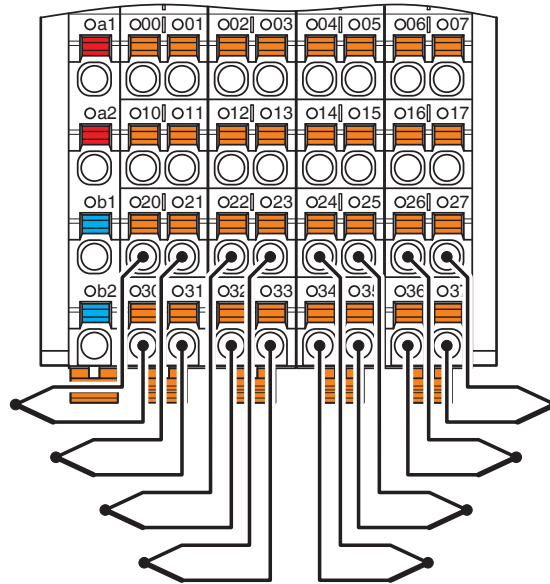
Connection example

AXL F UTH8 XC 1F - Temperature module

2702464

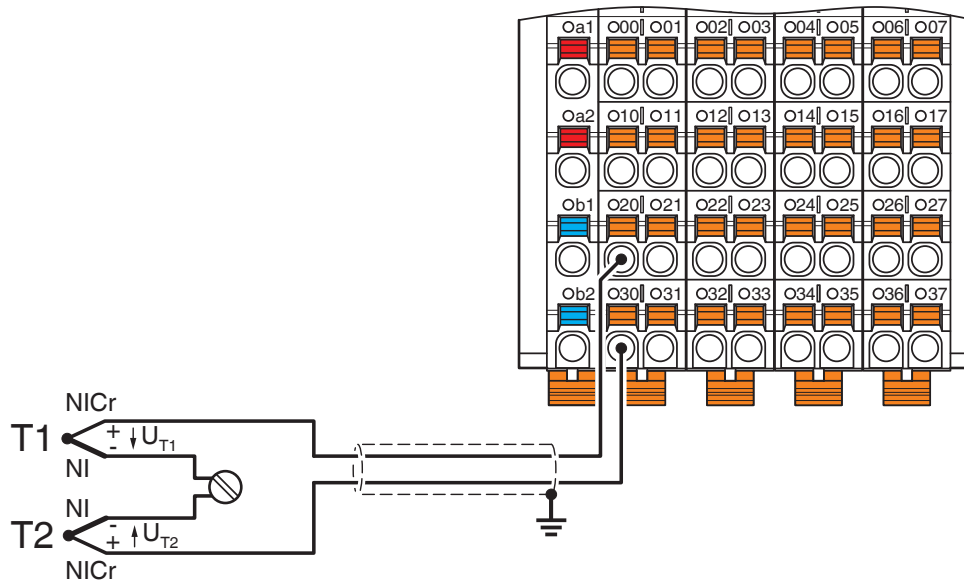
<https://www.phoenixcontact.com/us/products/2702464>

Connection diagram



Connection example: absolute temperature measurement

Connection diagram



Differential temperature measurement

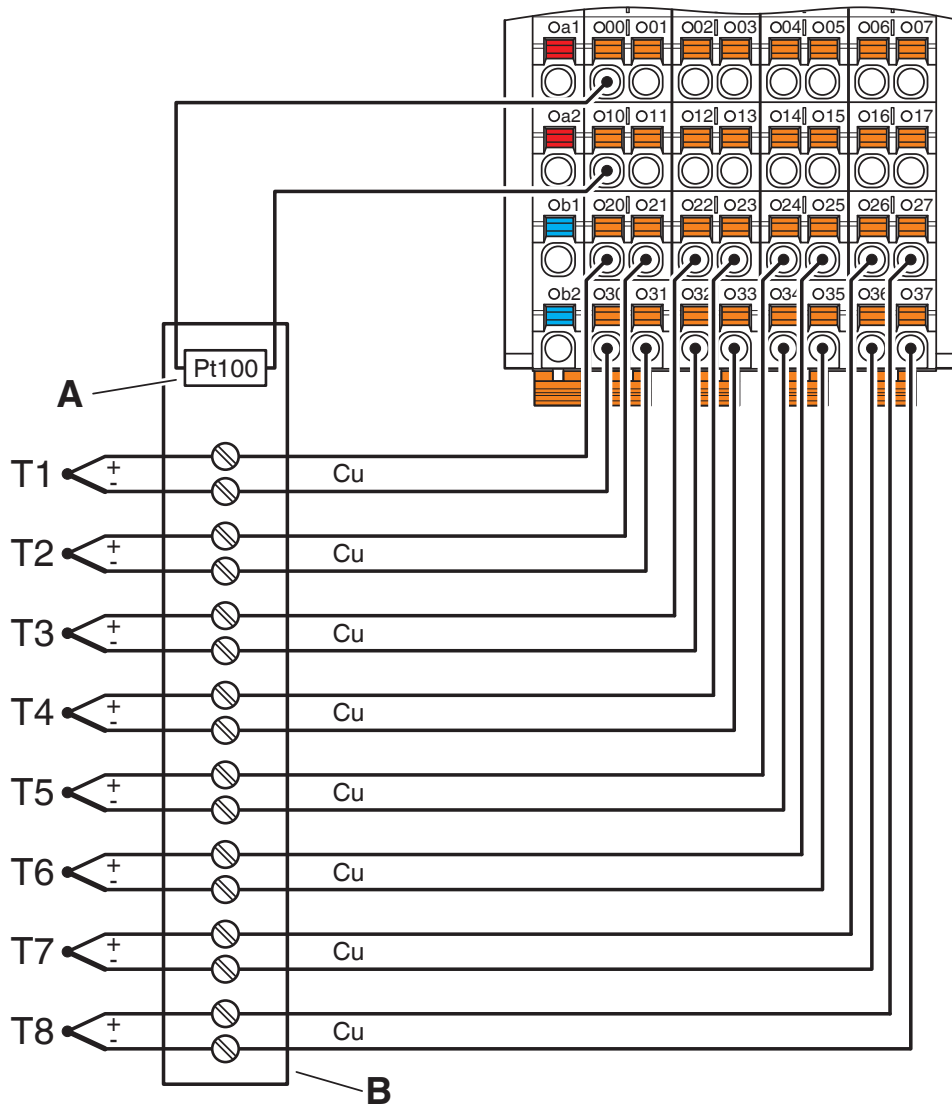
AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

Connection diagram



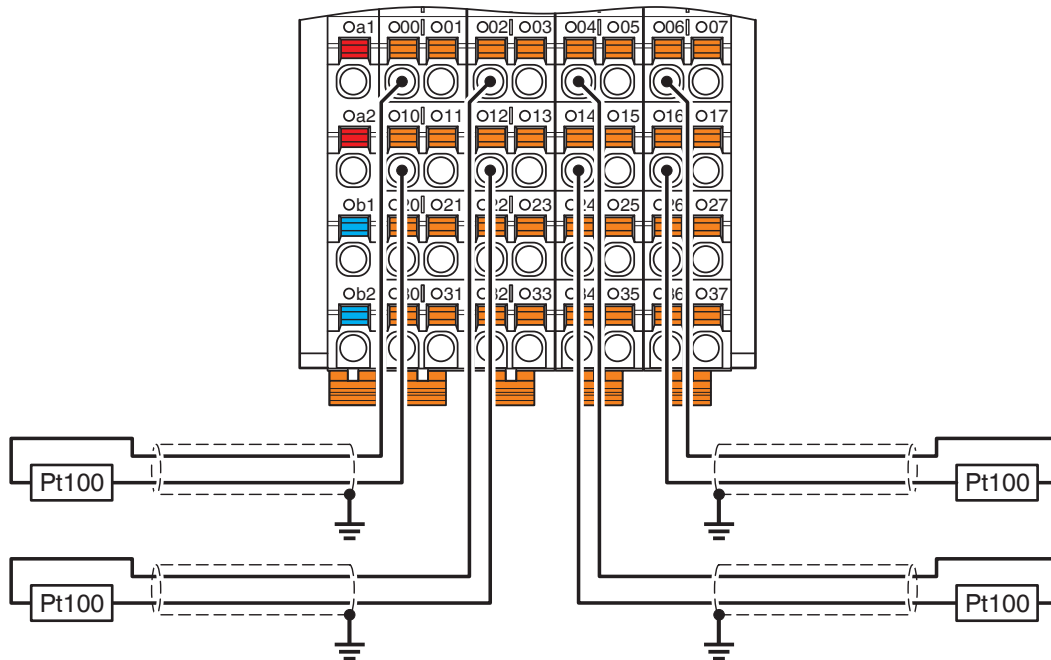
Thermocouple detection with external cold junction compensation at channel 1

AXL F UTH8 XC 1F - Temperature module

2702464

<https://www.phoenixcontact.com/us/products/2702464>

Connection diagram



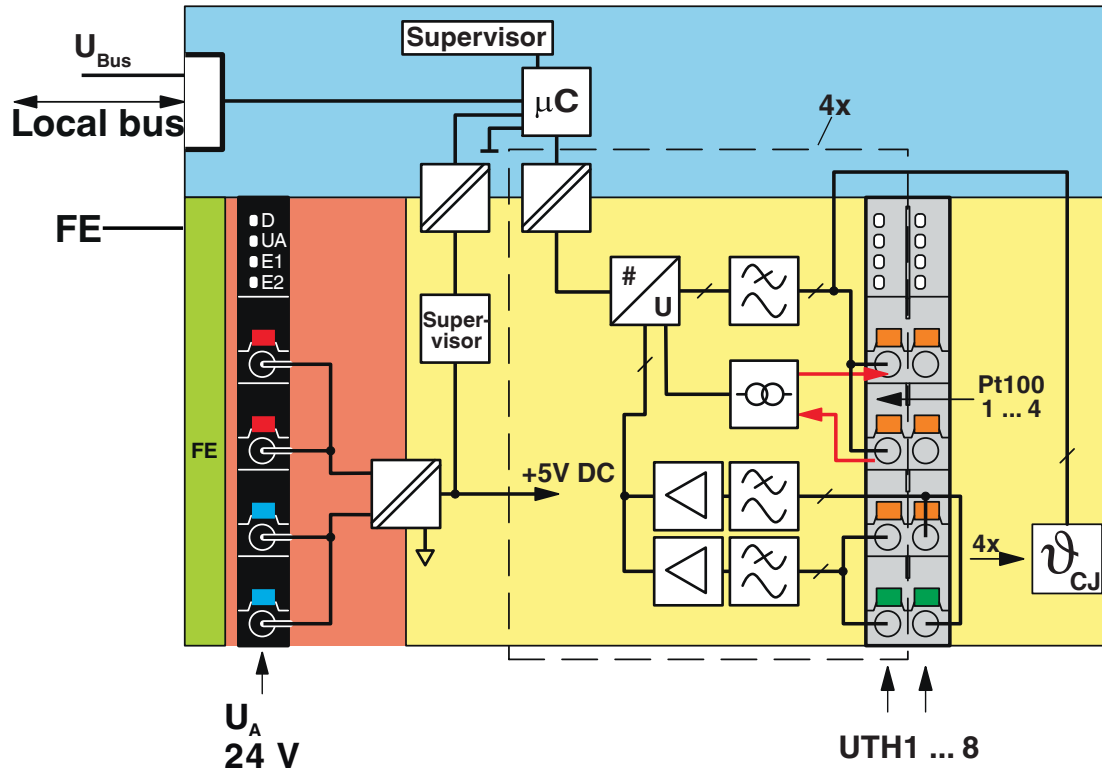
Pt 100 detection

AXL F UTH8 XC 1F - Temperature module

2702464

<https://www.phoenixcontact.com/us/products/2702464>

Block diagram



Internal wiring of the terminal points

AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702464>



IECEx

Approval ID: IECEx ULD 20.0026X



ATEX

Approval ID: UL 20 ATEX 2441X



cULus Listed

Approval ID: E366272



CCC

Approval ID: 2021122309114456_CN

AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242601 |
| ECLASS-15.0 | 27242601 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001596 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

AXL F UTH8 XC 1F - Temperature module



2702464

<https://www.phoenixcontact.com/us/products/2702464>

Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 2fb73bed-1e62-43e7-9af0-1ad1e4fb14f6 |

Phoenix Contact 2026 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com