

# AXL SE AI4 I 4-20 - Analog module



1088062

<https://www.phoenixcontact.com/us/products/1088062>

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Axioline Smart Elements, Analog input module, Analog inputs: 4, 4 mA ... 20 mA, connection technology: 2-conductor, degree of protection: IP20

## Product description

You can integrate Axioline Smart Elements into systems with the Smart Element interface. This Smart Element detects analog current signals.

## Your advantages

- 4 analog input channels
- Connection of sensors in 2-conductor technology
- Current range: 4 mA ... 20 mA
- Data format: standardized representation
- Resolution: 12 bits
- Wire-break detection
- Device rating plate stored



## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1088062       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DR05          |
| Product key                          | DRIB41        |
| GTIN                                 | 4055626887623 |
| Weight per piece (including packing) | 37 g          |

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<https://www.phoenixcontact.com/us/products/1088062>

|                                      |          |
|--------------------------------------|----------|
| Weight per piece (excluding packing) | 35 g     |
| Customs tariff number                | 85389091 |
| Country of origin                    | DE       |

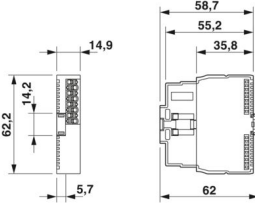
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## Technical data

### Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Width               | 14.9 mm  |
| Height              | 62.2 mm  |
| Depth               | 62 mm  |

### Notes

Note on application

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

### Material specifications

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

### Interfaces

Smart Element interface

|                                   |  |
|-----------------------------------|--|
| Number of interfaces              | 1  |
| Connection method                 | Card edge connector                            |
| Transmission speed                | See system in which you use the Smart Element. |
| Start time until ready to operate | < 1000 ms                                      |

### System properties

Programming data (LocalbusSlave)

|                      |        |
|----------------------|--------|
| Process data channel | 64 bit |
| Input address area   | 8 Byte |
| Output address area  | 0 Byte |

Fieldbus data telegram (PROFIBUS)

|                             |         |
|-----------------------------|---------|
| Required parameter data     | 24 Byte |
| Required configuration data | 6 Byte  |

### Input data

Analog:

|                          |                              |
|--------------------------|------------------------------|
| Input name               | Analog inputs                |
| Description of the input | Single-ended inputs, current |

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|  |                             |
|--|-----------------------------|
| Number of inputs                         | 4                           |
| Connection method                        | Push-in technology          |
| Connection technology                    | 2-conductor                 |
| Note regarding the connection technology | shielded, twisted pair      |
| Current input signal                     | 4 mA ... 20 mA              |
| Input resistance current input           | max. 60 Ω                   |
| A/D converter resolution                 | 12 bit                      |
| Data formats                             | Standardized representation |
| Measured value representation            | 16 bits                     |
| Protective circuit                       | Transient protection        |

## Product properties

|                   |  |
|-------------------|--|
| Product type      | I/O component                                      |
| Product family    | Axioline Smart Elements                            |
| Type              | modular  |
| Mounting position | See the system in which the Smart Element is used. |

## 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 | 0.75 W |
|---|--------|

## Potentials: Communications power supply of the Smart Elements ( $U_{SE}$ )

|                |                            |
|----------------|----------------------------|
| Supply voltage | using card edge connectors |
|----------------|----------------------------|

## Potentials: I/O supply ( $U_P$ )

|                      |  |
|----------------------|--|
| Supply voltage       | 24 V DC (using card edge connectors)   |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple)   |
| Current draw         | max. 20 mA<br>typ. 15 mA   |
| Current consumption  | min. 12 mA (without connected peripherals)   |
| Protective circuit   | Surge protection; See the system in which the Smart Element is used.<br>Reverse polarity protection; Polarity protection diode |
| Protection           | See the system in which the Smart Element is used.   |

## Electrical isolation/isolation of the voltage ranges

|   |                        |
|---|------------------------|
| Test voltage: Communications supply / 24 V supply (I/O) | 500 V AC, 50 Hz, 1 min |
| Test voltage: Communications supply / 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 | I/O |
|-----------------|-----|

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|                               |   |
|-------------------------------|---|
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "AxioLine Smart Elements" user manual. |
|-------------------------------|---|

## I/O

|   |   |
|---|---|
| Connection method   | Push-in connection  |
| Note on the connection method   | Please observe the information provided on conductor cross-sections in the "AxioLine Smart Elements" user manual. |
| Conductor cross-section, rigid  | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section, flexible                                       | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section AWG   | 24 ... 16   |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve    | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section, flexible, with ferrule, without plastic sleeve | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
|   | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross-section, flexible, with ferrule, with plastic sleeve    | 0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Stripping length  | 8 mm  |

## Environmental and real-life conditions

### Ambient conditions

|  |   |
|--|---|
| Ambient temperature (operation)          | -25 °C ... 60 °C                                  |
| 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 |

## Standards and regulations

|                  |                                       |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

## Mounting

|                   |  |
|-------------------|--|
| Mounting type     | Plug-in mounting (Smart Element slot)              |
| Mounting position | See the system in which the Smart Element is used. |

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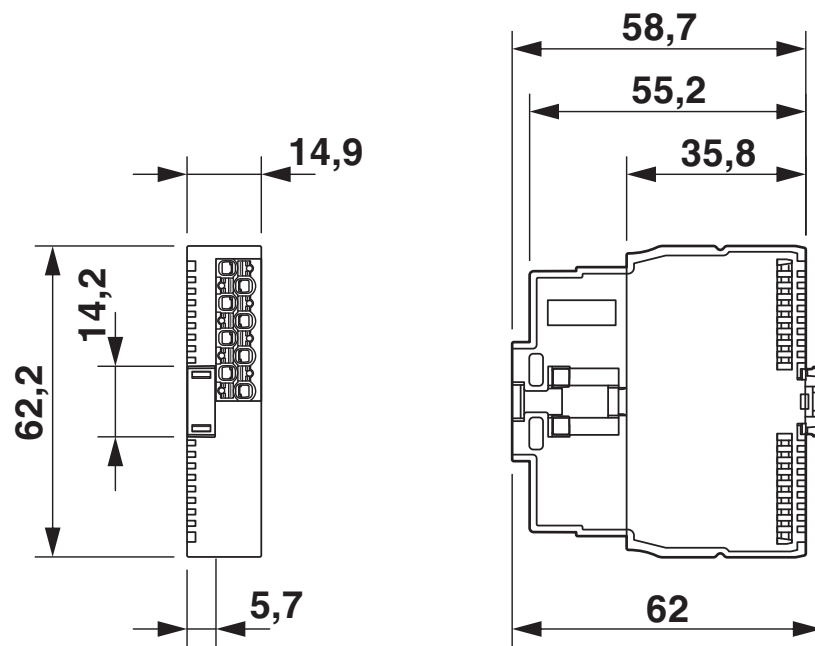
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## Drawings

Dimensional drawing



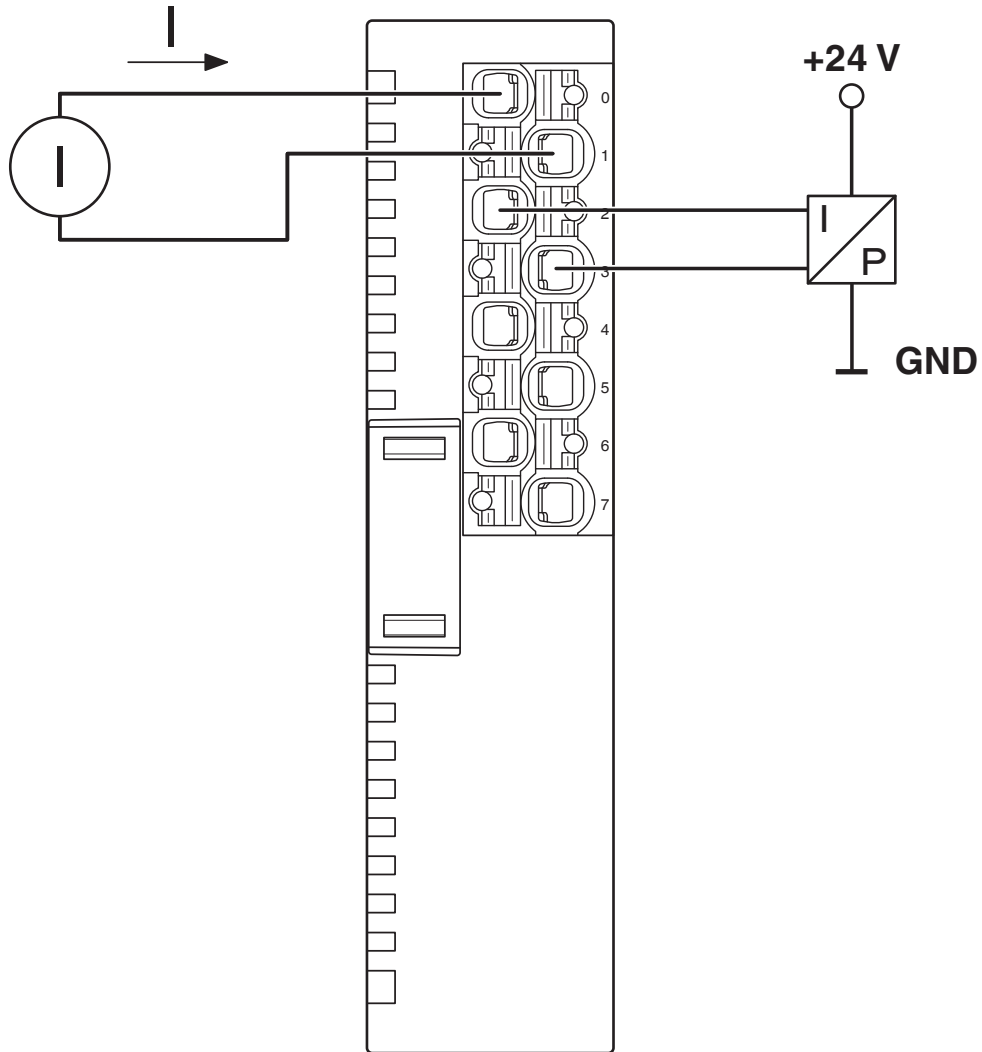
## Dimensions

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Connection diagram



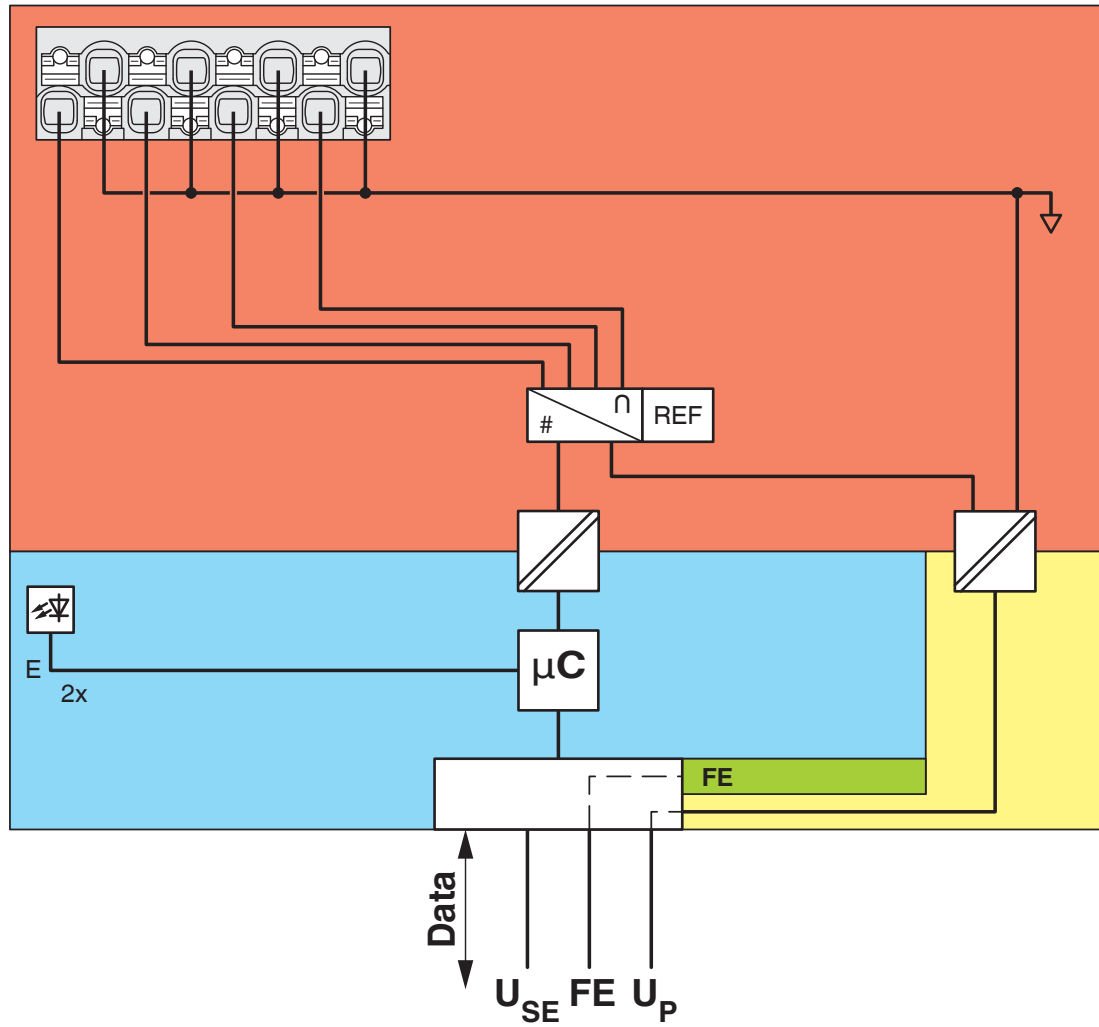
Connection example

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Block diagram



Internal wiring of the terminal points

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1088062>

**DNV**

Approval ID: TAA00003B0



**LR**

Approval ID: LR23402057TA



**RINA**

Approval ID: ELE263623XG

**ABS**

Approval ID: 24-2510075-PDA



**cULus Listed**

Approval ID: E238705

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## Classifications

### ECLASS

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

### ETIM

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

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

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

### 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                                | a05f4d76-89dc-40c5-8c0a-082642ddfb71 |

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 2.086 kg CO2e |
|---------|---------------|

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