

# AXL SE DO4/2 2A EF - Digital module



1181790

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Axioline Smart Elements, Digital output module, Digital outputs: 4, 24 V DC, 2 A, 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 emits digital signals.

## Your advantages

- 4 digital outputs
- 24 V DC, 2 A
- Connection of actuators in 2-conductor technology
- Substitute value behavior of the outputs can be parameterized for the Smart Element
- Feed-in of the I/O supply on the Smart Element
- Single-channel diagnostics
- Mapping of the channel status in the input process data
- Device rating plate stored



## Commercial data

|                        |               |
|------------------------|---------------|
| Item number            | 1181790       |
| Packing unit           | 1 pc          |
| Minimum order quantity | 1 pc          |
| Sales key              | DR05          |
| Product key            | DRIB32        |
| GTIN                   | 4063151359430 |

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|                                      |          |
|--------------------------------------|----------|
| Weight per piece (including packing) | 38.1 g   |
| Weight per piece (excluding packing) | 38.2 g   |
| Customs tariff number                | 85389091 |
| Country of origin                    | DE       |

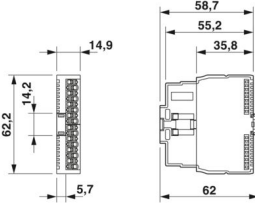
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1181790

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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 | < 500 ms                                       |

### System properties

Programming data (LocalbusSlave)

|                      |        |
|----------------------|--------|
| Process data channel | 8 bit  |
| Input address area   | 1 Byte |
| Output address area  | 1 Byte |

Fieldbus data telegram (PROFIBUS)

|                             |        |
|-----------------------------|--------|
| Required parameter data     | 3 Byte |
| Required configuration data | 7 Byte |

### Output data

Digital:

|                   |                    |
|-------------------|--------------------|
| Output name       | Digital outputs    |
| Connection method | Push-in connection |

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1181790

<https://www.phoenixcontact.com/us/products/1181790>

|   |   |
|---|---|
| Connection technology   | 2-conductor   |
| Number of outputs   | 4   |
| Protective circuit  | Short-circuit and overload protection; electronic                       |
| Output voltage  | 24 V DC   |
| Max. current carrying capacity per output                         | max. 2 A (Observe the derating.)  |
| Maximum output current per module                                 | max. 8 A (provide external fuse protection; observe the derating.)      |
| Nominal output voltage  | 24 V DC   |
| Load min.   | 10 k $\Omega$   |
| Output voltage when switched off                                  | max. 1 V  |
| Output current when switched off                                  | max. 300 $\mu$ A  |
| Nominal load, inductive   | 48 VA (1.2 H, 12 $\Omega$ , at 24 V DC)                                 |
| Nominal load, lamp  | 24 W (at 24 V DC)   |
| Nominal load, ohmic   | 48 W (12 $\Omega$ , in the supply voltage range)                        |
| Switching frequency   | max. 1200 per second (With resistive load, at least 50 mA load current) |
|   | max. 1 per second (with inductive load)                                 |
|   | max. 4 per second (with nominal lamp load)                              |
| Behavior with overload  | Shutdown with automatic restart   |
| Behavior with inductive overload                                  | Output can be destroyed   |
| Signal delay  | max. 100 $\mu$ s (when switched on)                                     |
|   | max. 100 $\mu$ s (when switched off, with at least 50 mA load current)  |
| Overcurrent shut-down   | min. 2.8 A  |
| Output current with ground connection interrupt when switched off | < 1 mA  |

## Product properties

|                   |  |
|-------------------|--|
| Product type      | I/O component                                      |
| Product family    | Axiline 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 | 2.05 W |
|---|--------|

## Potentials: I/O supply (U<sub>O</sub>)

|                      |  |
|----------------------|--|
| Supply voltage       | 24 V DC  |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw         | max. 8 A (provide external protection)                             |
| Current consumption  | min. 12 mA (without actuators)                                     |
| Protective circuit   | Surge protection; electronic (35 V, 0.5 s)                         |
|                      | Reverse polarity protection; parallel diode                        |
| Protection           | max. 8 A (polarity reversal protection up to 5 A)                  |

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

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

Electrical isolation/isolation of the voltage ranges

|   |                        |
|---|------------------------|
| Test voltage: Communications power supply / 24 V supply $U_O$ (I/O) | 500 V AC, 50 Hz, 1 min |
| Test voltage: Communications power supply / 24 V supply $U_P$       | 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 $U_O$ (I/O) / 24 V supply $U_P$           | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply $U_O$ (I/O) / functional ground           | 500 V AC, 50 Hz, 1 min |
| Test voltage: 24 V supply $U_P$ / functional ground                 | 500 V AC, 50 Hz, 1 min |

## Connection data

Connection technology

|                               |  |
|-------------------------------|--|
| Connection name               | I/O  |
| Note on the connection method | Please observe the information provided on conductor cross-sections in the "Axoline 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 "Axoline 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><br>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 |

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1181790

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|  |     |
|--|-----|
| 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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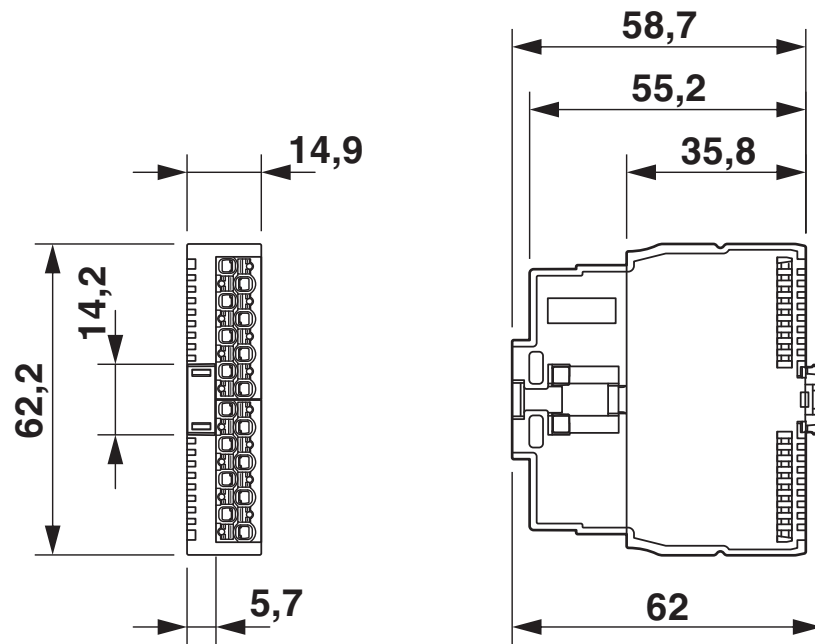
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## Drawings

Dimensional drawing



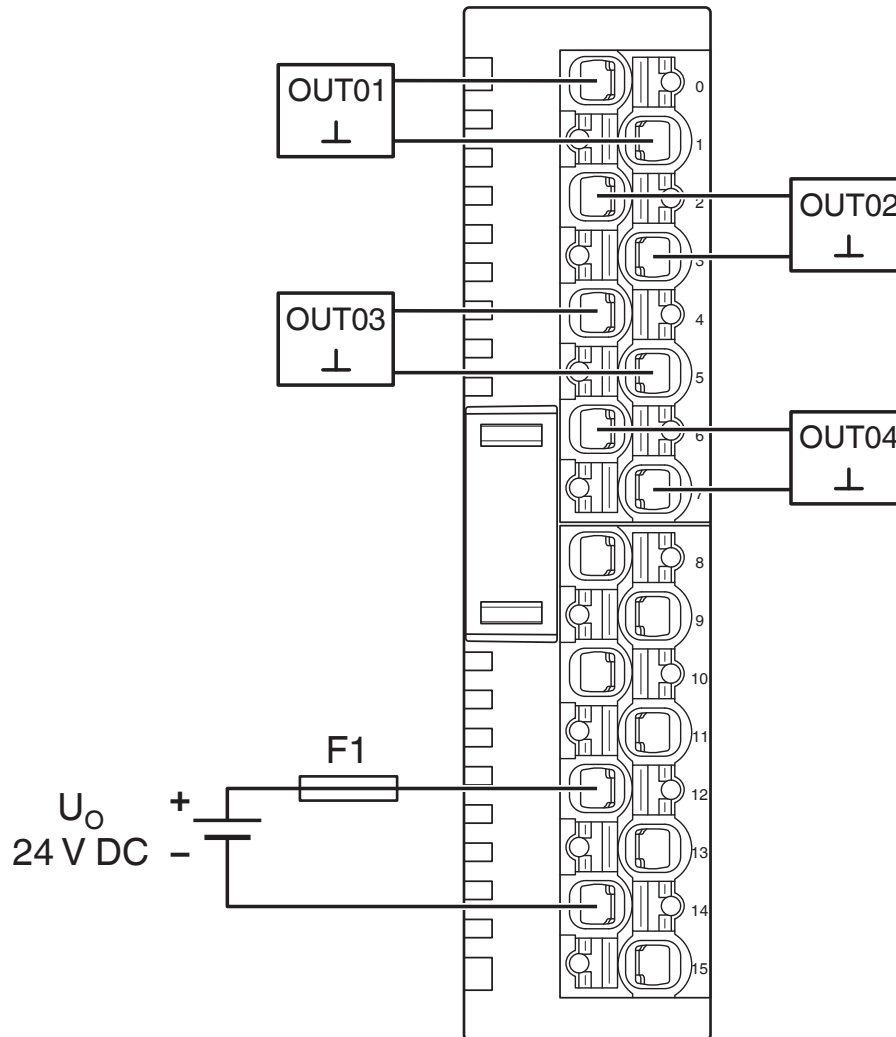
Dimensions (in mm)

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Connection diagram



Connection in 2-conductor technology

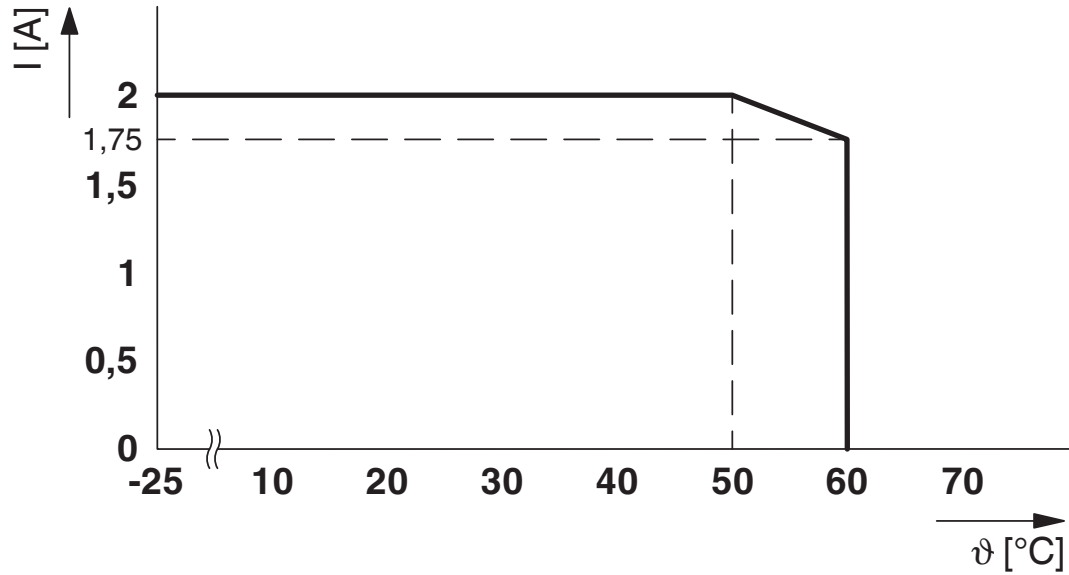
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Diagram

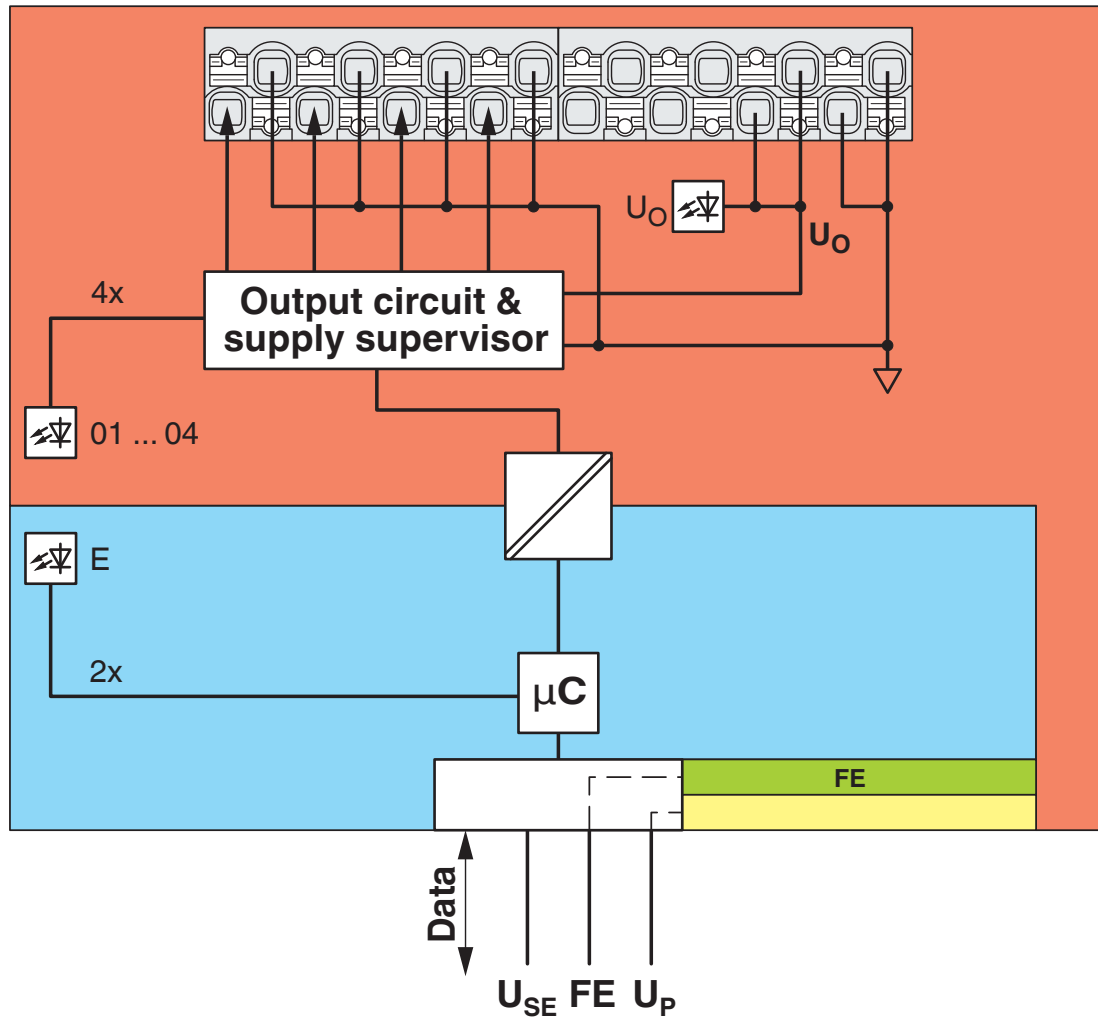


Derating at 100 % simultaneity

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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/1181790>



**cULus Listed**

Approval ID: E238705

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27242604 |
| ECLASS-15.0 | 27242604 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001599 |
|-----------|----------|

### 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 |

### 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                                | 4108ee54-b82c-43ac-8372-2a6c8e6c42ee |

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 4.062 kg CO2e |
|---------|---------------|

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