

# AXL P EX IS AO4 HART 1F - Analog module



1087082

<https://www.phoenixcontact.com/us/products/1087082>

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Axioline P, Analog output module, Analog outputs: 4 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 100 Mbps, HART functionality, Intrinsically safe, degree of protection: IP20, including bus base module and connectors

## Product description

The module is an Axioline P I/O module for use in the Axioline P modular I/O system. The module is a modular I/O device that can be affixed to the Axioline P local bus, to communicate I/O data up to the Axioline P bus coupler, which forms the head of the station. As an intrinsic safety I/O module, this device allows direct connection from intrinsically safe field I/Os to the terminals of the module. The module is fully hot-swappable and can be removed while under power. The module allows the connection of up to four HART devices. The analog output I/O module with HART capabilities manages analog output and HART data to and from the field I/O terminals and makes this information available to the bus coupler through the Axioline P local bus.

## Your advantages

- 4 analog output-powered control signals for HART
- Current range: 4 mA ... 20 mA and 0 mA ... 20 mA
- Cyclic access to PV, SV, TV, QV, and Loop Current
- Temperature range: -40 °C ... +70 °C
- Hot-swappable
- Intrinsically safe analog inputs with connection to Zone 1, Zone 0 or Division 1

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1087082       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | DR06          |
| Product key                          | DRIP42        |
| GTIN                                 | 4055626882550 |
| Weight per piece (including packing) | 382.1 g       |
| Weight per piece (excluding packing) | 236.1 g       |
| Customs tariff number                | 85176200      |
| Country of origin                    | US            |

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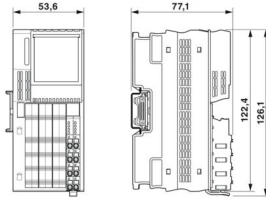


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## Technical data

### Dimensions

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 53.6 mm                                                                            |
| Height              | 126.1 mm                                                                           |
| Depth               | 77.14 mm                                                                           |
| Note on dimensions  | The depth applies when a TH 35-7.5 DIN rail is used (in accordance with EN 60715). |

### Notes

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Utilization restriction |                                                                           |
| EMC note                | EMC: class A product, see manufacturer's declaration in the download area |
| Utilization restriction |                                                                           |
| CCCex note              | Use in potentially explosive areas is not permitted in China.             |

### Material specifications

|       |                         |
|-------|-------------------------|
| Color | traffic grey A RAL 7042 |
|-------|-------------------------|

### Interfaces

|                      |                                |
|----------------------|--------------------------------|
| Axioline P local bus |                                |
| Connection method    | Connection for bus base module |
| Transmission speed   | 100 Mbps                       |

### Output data

|                                          |                                  |
|------------------------------------------|----------------------------------|
| Analog:                                  |                                  |
| Output name                              | Analog outputs                   |
| Connection method                        | Push-in connection               |
| Connection technology                    | 2-conductor                      |
| Note regarding the connection technology | shielded, twisted pair           |
| Number of outputs                        | 4 (HART)                         |
| Current output signal                    | 0 mA ... 20 mA<br>4 mA ... 20 mA |

### Product properties

|              |               |
|--------------|---------------|
| Product type | I/O component |
|--------------|---------------|

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|                    |                                          |
|--------------------|------------------------------------------|
| Product family     | Axioline P                               |
| Type               | block modular                            |
| Mounting position  | any (no temperature derating)            |
| Scope of delivery  | including bus base module and connectors |
| Special properties | HART functionality                       |
|                    | Intrinsically safe                       |

## Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Pollution degree     | 2  |

## Electrical properties

### Potentials: Supply voltage ( $U_L$ )

|                      |                                   |
|----------------------|-----------------------------------|
| Supply voltage       | 24 V DC (via bus base module)     |
| Supply voltage range | 19.2 V DC ... 30 V DC             |
| Current draw         | max. 160 mA (via bus base module) |

### Potentials: Axioline P local bus supply ( $U_{BUS}$ )

|                |                              |
|----------------|------------------------------|
| Supply voltage | 5 V DC (via bus base module) |
| Current draw   | max. 135 mA                  |

### Electrical isolation/isolation of the voltage ranges

|                                                                             |                          |
|-----------------------------------------------------------------------------|--------------------------|
| Test voltage: 5 V supply of the local bus ( $U_{BUS}$ ) / functional ground | 500 V AC, 62 Hz, 1 min.  |
| Test voltage: 24 V supply (I/O) / functional ground                         | 500 V AC, 62 Hz, 1 min.  |
| Test voltage: Field to functional earth                                     | 500 V AC, 62 Hz, 1 min.  |
| Test voltage: Field to 5 V and 24 V supplies                                | 1500 V AC, 62 Hz, 1 min. |

## Connection data

### Connection technology

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

### Conductor connection

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Push-in connection                          |
| Conductor cross section rigid    | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 24 ... 16                                   |
| Stripping length                 | 8 mm                                        |

### Axioline P connector

|                                |                                                                                                                               |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Connection method              | Push-in connection                                                                                                            |
| Note on the connection method  | Please observe the information provided on conductor cross sections in the "Axioline P: system and installation" user manual. |
| Conductor cross section, rigid | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>                                                                                   |

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|                                   |                     |
|-----------------------------------|---------------------|
| Conductor cross section, flexible | 0.2 mm² ... 1.5 mm² |
| Conductor cross section AWG       | 24 ... 16           |
| Stripping length                  | 8 mm                |

## Environmental and real-life conditions

### Ambient conditions

|                                          |                                                   |
|------------------------------------------|---------------------------------------------------|
| Degree of protection                     | IP20                                              |
| Ambient temperature (operation)          | -40 °C ... 70 °C (Standard)                       |
| Degree of protection                     | IP20                                              |
| Air pressure (operation)                 | 70 kPa ... 106 kPa (up to 2000 m above sea level) |
| Air pressure (storage/transport)         | 70 kPa ... 106 kPa (up to 2000 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)                     |

## Standards and regulations

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

## Approvals

### ATEX

|                |                                                               |
|----------------|---------------------------------------------------------------|
| Identification | II 3(1) G Ex ec [ia Ga] IIC T4 Gc<br>II (1) D [Ex ia Da] IIIC |
| Certificate    | DEMKO 20 ATEX 2370X                                           |

### IECEX

|                |                                            |
|----------------|--------------------------------------------|
| Identification | Ex ec [ia Ga] IIC T4 Gc<br>[Ex ia Da] IIIC |
| Certificate    | IECEX UL 20.0044X                          |

### UKCA Ex (UKEX)

|                |                                                               |
|----------------|---------------------------------------------------------------|
| Identification | II 3(1) G Ex ec [ia Ga] IIC T4 Gc<br>II (1) D [Ex ia Da] IIIC |
| Certificate    | UL22UKEX2508X                                                 |

### UL, USA/Canada

|                |         |
|----------------|---------|
| Identification | cULus   |
| Certificate    | E238705 |

### UL Ex, USA / Canada

|                |                                                                                                                                                                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identification | Class I, Division 2, Groups A, B, C, D, T4<br>Intrinsically safe outputs for: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III; [Ex ia] Haz loc<br>Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc<br>[AEx ia Da] IIIC<br>Ex ec [ia Ga] IIC T4 Gc<br>[Ex ia Da] IIIC |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|             |         |
|-------------|---------|
| Certificate | E196811 |
|-------------|---------|

## CCC / China-Ex

|                |                                            |
|----------------|--------------------------------------------|
| Identification | Ex ec [ia Ga] IIC T4 Gc<br>[Ex ia Da] IIIC |
|----------------|--------------------------------------------|

## Ex data

|                  |                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL, USA / Canada | Ind. Cont. Eq. (E238705) also Listed<br>Ind. Cont. Eq. for haz. loc. E196811<br>Install in: Class I, Div. 2, Groups A, B, C, D T4<br>Intrinsically safe outputs for: Class I, Groups A, B, C, D; Class II, Groups E, F, G; Class III; [Ex ia] Haz loc<br>Class I, Zone 2, AEx ec [ia Ga] IIC T4 Gc<br>[AEx ia Da] IIIC<br>Ex ec [ia Ga] IIC T4 Gc<br>[Ex ia Da] IIIC |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Mounting

|                   |                               |
|-------------------|-------------------------------|
| Mounting type     | DIN rail mounting             |
| Mounting position | any (no temperature derating) |

## Ex data

### Safety data

|                                                                                              |                          |
|----------------------------------------------------------------------------------------------|--------------------------|
| Max. output voltage $U_o$                                                                    | 24.8 V                   |
| Max. output current $I_o$                                                                    | 86.7 mA                  |
| Max. output power $P_o$                                                                      | 538 mW                   |
| Safety-related maximum voltage $U_m$                                                         | 250 V                    |
| A, B / IIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$                | 4.1 mH / 0.112 $\mu$ F   |
| C/IIB, IIIC: Max. external inductivity $L_o$ / Max. external capacitance $C_o$               | 18.29 mH / 0.859 $\mu$ F |
| D/IIA, E, F, G, Class III: Max. external inductivity $L_o$ / Max. external capacitance $C_o$ | 37.21 mH / 3.049 $\mu$ F |

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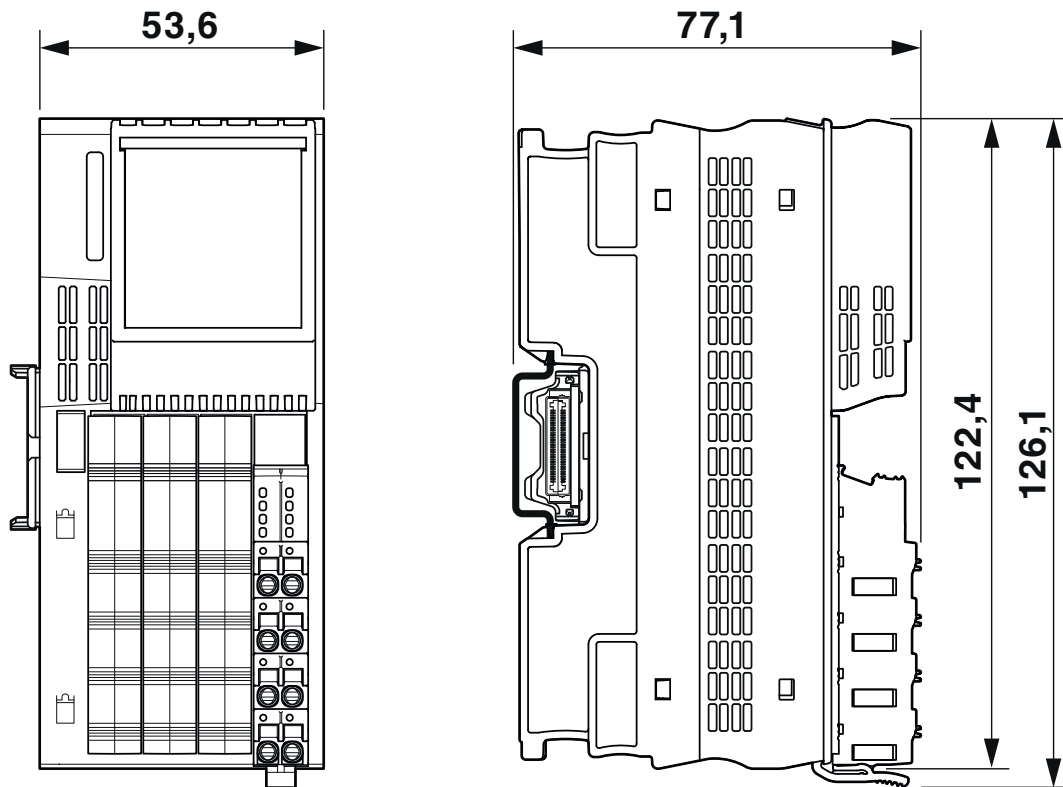


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## Drawings

Dimensional drawing



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1087082>

|                                                                                     |                                                 |
|-------------------------------------------------------------------------------------|-------------------------------------------------|
|    | <b>UL Listed</b><br>Approval ID: File E238705   |
|    | <b>cUL Listed</b><br>Approval ID: E238705       |
|    | <b>IECEX</b><br>Approval ID: IECEX UL 20.0044X  |
|    | <b>cUL Listed</b><br>Approval ID: FILE E196811  |
|  | <b>UL Listed</b><br>Approval ID: FILE E196811   |
|  | <b>ATEX</b><br>Approval ID: DEMKO 20 ATEX 2370X |
|  | <b>CCC</b><br>Approval ID: 2021122316114727     |
|  | <b>UKCA-EX</b><br>Approval ID: UL22UKEX2508X    |
|                                                                                     | <b>cULus Listed</b>                             |
|                                                                                     | <b>cULus Listed</b>                             |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27242601 |
| ECLASS-12.0 | 27242601 |
| ECLASS-13.0 | 27242601 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | 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                                                                                                                                                                                                                      |
| China RoHS                              |                                                                                                                                                                                                                                   |
| Environment friendly use period (EFUP)  | EFUP-25                                                                                                                                                                                                                           |
|                                         | 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                                    | dddde763-22c7-4eed-9754-87faeab1e0e0                                                                                                                                                                                              |

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## Accessories

### AXL P BS F2 - Bus connector

1052428

<https://www.phoenixcontact.com/us/products/1052428>

Axioline P bus base module for housing type F2



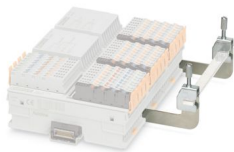
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### AXL SHIELD SET - Shield connection

2700518

<https://www.phoenixcontact.com/us/products/2700518>

Axioline shield connection set (contains 2 shield bus holders and 2 SK 5 shield connection clamps)



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## AXL F/P IO EX PP - Separating plate

1100201

<https://www.phoenixcontact.com/us/products/1100201>

Axioline F/P partition plate for intrinsically safe modules



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## AXL P TERM PAIR - Terminal block

2316402

<https://www.phoenixcontact.com/us/products/2316402>

Axioline P terminator pair



## AXL P EX IS AO4 HART 1F - Analog module

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## ZB 20,3 AXL UNPRINTED - Zack marker strip

0829579

<https://www.phoenixcontact.com/us/products/0829579>



Zack marker strip for Axioline F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER

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## AXL P TERM PAIR - Terminal block

2316402

<https://www.phoenixcontact.com/us/products/2316402>



Axioline P terminator pair

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## AXL P BS F2 - Bus connector

1052428

<https://www.phoenixcontact.com/us/products/1052428>

Axioline P bus base module for housing type F2



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