

# IB IL AO 4/U/0-10-ECO - Analog module



2702498

<https://www.phoenixcontact.com/us/products/2702498>

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Inline, Analog output terminal, Analog outputs: 4, 0 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps, degree of protection: IP20, including Inline connector

## Product description

The terminal is designed for use within an Inline station. It is used to output analog voltage signals. The output values are depicted in standardized representation format. Inline ECO terminals are approved for the temperature range from 0°C to +55°C. The electronics base and Inline connector are supplied as standard.

## Your advantages

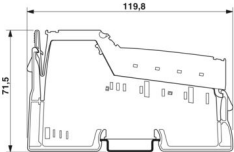
- 4 analog output channels
- Connection of actuators in 2-conductor technology
- Voltage range: 0 V ... 10 V
- Data format: standardized representation
- Resolution: 12 bits
- Diagnostic indicator

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2702498             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | DR01                |
| Product key                          | DRI142              |
| Catalog page                         | Page 118 (C-6-2019) |
| GTIN                                 | 4055626204475       |
| Weight per piece (including packing) | 83.5 g              |
| Weight per piece (excluding packing) | 62.5 g              |
| Customs tariff number                | 85389099            |
| Country of origin                    | DE                  |

## Technical data

### Dimensions

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Width               | 12.2 mm                                                                            |
| Height              | 119.8 mm                                                                           |
| Depth               | 71.5 mm                                                                            |

### Notes

#### Note on application

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

### Interfaces

#### Inline local bus

|                      |                    |
|----------------------|--------------------|
| Number of interfaces | 2                  |
| Connection method    | Inline data jumper |
| Transmission speed   | 500 kbps           |

### System properties

#### Module

|                             |        |
|-----------------------------|--------|
| ID code (dec.)              | 125    |
| ID code (hex)               | 7D     |
| Length code (hex)           | 04     |
| Length code (dec)           | 04     |
| Process data channel        | 64 bit |
| Input address area          | 0 Byte |
| Output address area         | 8 Byte |
| Register length             | 64 bit |
| Required parameter data     | 1 Byte |
| Required configuration data | 4 Byte |

### Output data

#### Analog:

|                                          |                        |
|------------------------------------------|------------------------|
| Output name                              | Analog outputs         |
| Connection technology                    | 2-conductor            |
| Note regarding the connection technology | shielded, twisted pair |

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|                                 |                                                                                             |
|---------------------------------|---------------------------------------------------------------------------------------------|
| Number of outputs               | 4                                                                                           |
| D/A converter resolution        | 12 bit                                                                                      |
| Protective circuit              | Short-circuit and overload protection; Electronic<br>Transient protection; Suppressor diode |
| Data formats                    | Standardized representation                                                                 |
| Representation of output values | 16 bits                                                                                     |
| Process data update             | < 10 ms                                                                                     |
| Voltage output signal           | 0 V ... 10 V                                                                                |
| Load/output load voltage output | > 2 kΩ                                                                                      |

## Product properties

|                      |                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Product type         | I/O component                                                                                                                            |
| Product family       | Inline                                                                                                                                   |
| Type                 | modular                                                                                                                                  |
| Scope of delivery    | including Inline connector                                                                                                               |
| Diagnostics messages | Failure of the internal I/O supply I/O error message sent to the bus coupler<br>Checksum error I/O error message sent to the bus coupler |

## Data management status

|                  |    |
|------------------|----|
| Article revision | 04 |
|------------------|----|

## Electrical properties

### Potentials

|                   |                          |
|-------------------|--------------------------|
| Power consumption | typ. 1.3 W<br>max. 1.4 W |
|-------------------|--------------------------|

### Potentials: Communications power ( $U_L$ )

|                |                               |
|----------------|-------------------------------|
| Supply voltage | 7.5 V DC (via voltage jumper) |
| Current draw   | max. 70 mA<br>typ. 60 mA      |

### Potentials: Supply of analog modules ( $U_{ANA}$ )

|                      |                                                                    |
|----------------------|--------------------------------------------------------------------|
| Supply voltage       | 24 V DC (via voltage jumper)                                       |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw         | max. 45 mA<br>typ. 35 mA                                           |

### Electrical isolation/isolation of the voltage ranges

|                                                           |                         |
|-----------------------------------------------------------|-------------------------|
| Test voltage: Bus logic (local bus, communications power) | 500 V AC, 50 Hz, 1 min. |
| Test voltage: Analog I/O                                  | 500 V AC, 50 Hz, 1 min. |
| Test voltage: Functional ground                           | 500 V AC, 50 Hz, 1 min. |

## Connection data

### Connection technology

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|                 |                  |
|-----------------|------------------|
| Connection name | Inline connector |
|-----------------|------------------|

## Conductor connection

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Connection method                | Spring-cage connection                       |
| Conductor cross section rigid    | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 28 ... 16                                    |
| Stripping length                 | 8 mm                                         |

## Inline connector

|                                   |                                              |
|-----------------------------------|----------------------------------------------|
| Connection method                 | Spring-cage connection                       |
| Conductor cross section, rigid    | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section, flexible | 0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG       | 28 ... 16                                    |
| Stripping length                  | 8 mm                                         |

## Environmental and real-life conditions

### Ambient conditions

|                                          |                                                         |
|------------------------------------------|---------------------------------------------------------|
| Ambient temperature (operation)          | 0 °C ... 55 °C (see "Derating" table 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)  | -25 °C ... 85 °C                                        |
| Permissible humidity (operation)         | 10 % ... 95 % (according to DIN EN 61131-2)             |
| Permissible humidity (storage/transport) | 10 % ... 95 % (according to DIN EN 61131-2)             |

## Standards and regulations

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

## Mounting

|               |                   |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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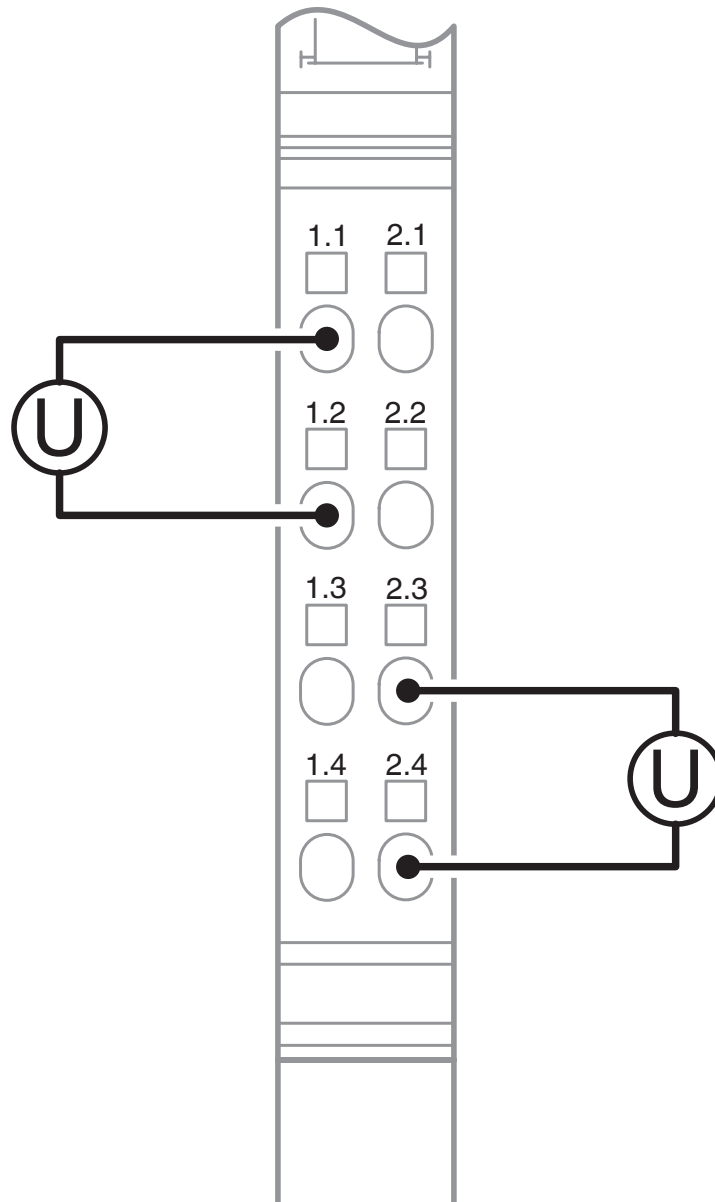
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## Drawings

Connection diagram



Actuator connection

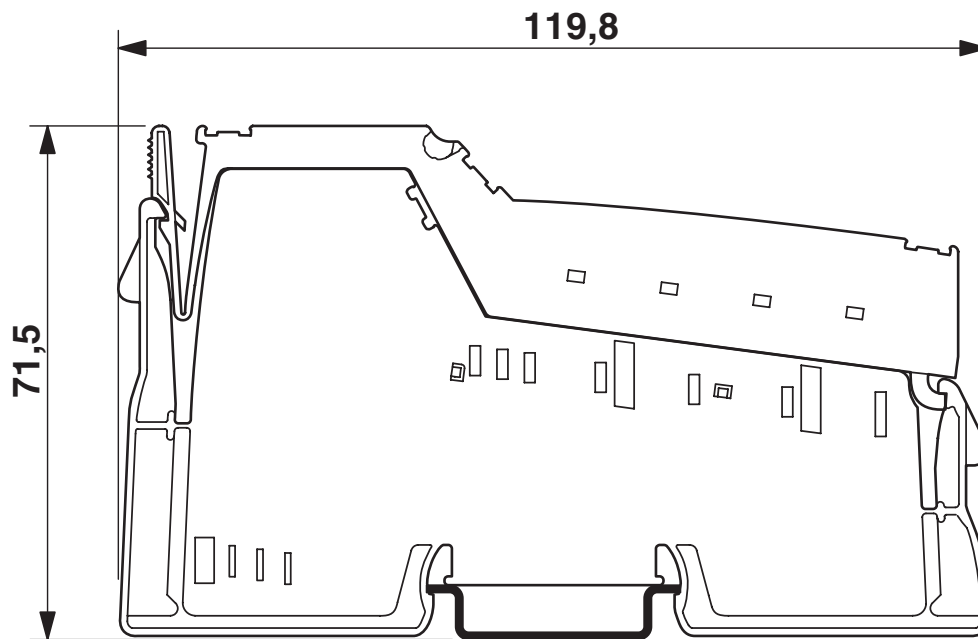
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Dimensional drawing



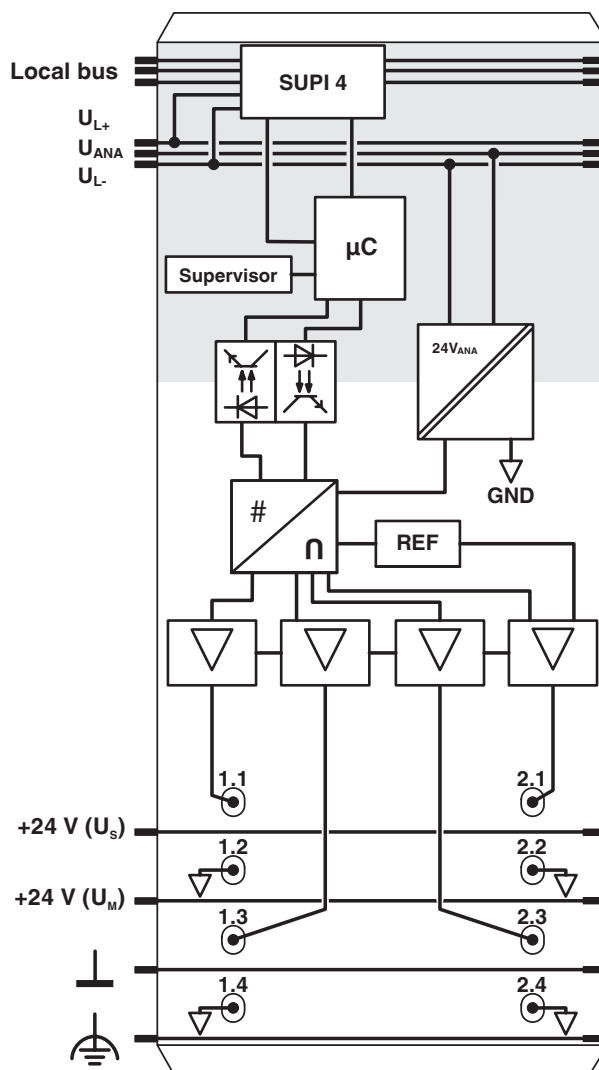
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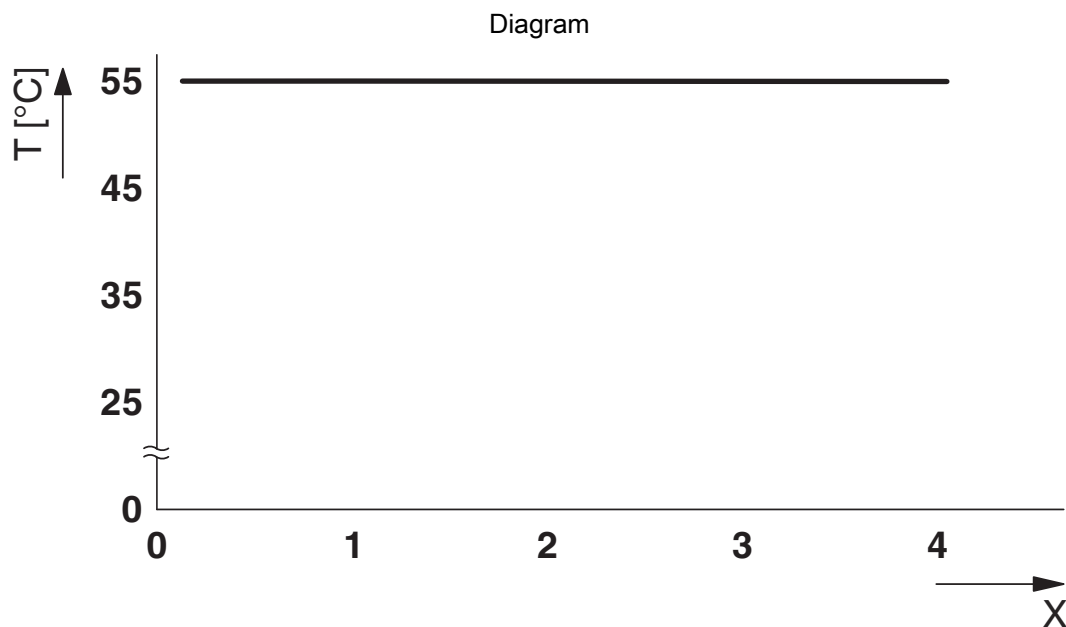
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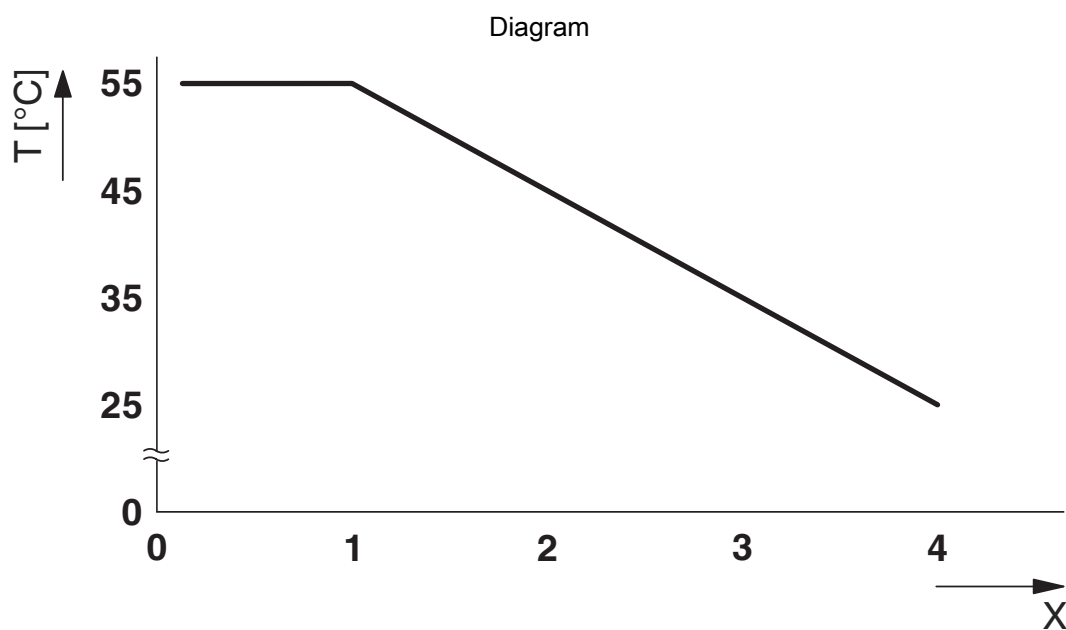
Block diagram



Internal wiring of the terminal points



Derating with active convection



Derating without active convection

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702498>



**UL Listed**  
Approval ID: E238705



**cUL Listed**  
Approval ID: E238705

**cULus Listed**

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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 |
|-------------|----------|

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                                    | e4266376-fae2-4063-842d-aaa07682610f                                                                                                                                                                                              |

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## Accessories

### SK 8 - Shield connection clamp

3025163

<https://www.phoenixcontact.com/us/products/3025163>



Shield connection clamp, for shield on busbars, contact resistance  $< 1 \text{ m}\Omega$

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### SK 14 - Shield connection clamp

3025176

<https://www.phoenixcontact.com/us/products/3025176>



Shield connection clamp, for shield on busbars, contact resistance  $< 1 \text{ m}\Omega$

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## SK 20 - Shield connection clamp

3025189

<https://www.phoenixcontact.com/us/products/3025189>



Shield connection clamp, for shield on busbars, contact resistance  $< 1 \text{ m}\Omega$

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## SK 35 - Shield connection clamp

3026463

<https://www.phoenixcontact.com/us/products/3026463>



Shield connection clamp, for shield on busbars, contact resistance  $< 1 \text{ m}\Omega$

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## AB-SK - Support bracket

3025341

<https://www.phoenixcontact.com/us/products/3025341>

Support bracket for busbars



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## AB-SK 65 - Support bracket

3026489

<https://www.phoenixcontact.com/us/products/3026489>

Support bracket, Bracket for busbars, set every 20 cm, width: 6.2 mm, height: 95.5 mm, number of positions: 1, color: gray, mounting type: DIN rail mounting



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## AB-SK/E - Support bracket

3026476

<https://www.phoenixcontact.com/us/products/3026476>

Support bracket, Bracket for busbars, set every 20 cm, depth: 20 mm, width: 56 mm, height: 10 mm, diameter: 4.5 mm, number of positions: 2, color: silver, mounting type: Direct mounting



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## NLS-CU 3/10 SN 1000MM - Neutral busbar

0402174

<https://www.phoenixcontact.com/us/products/0402174>

Neutral busbar, DIN VDE 0611-4: 1991-02, color: silver



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## AK 4 - Connection terminal block

0404017

<https://www.phoenixcontact.com/us/products/0404017>



Connection terminal block, connection method: Screw connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.5 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting: Neutral busbar, color: silver

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## AKG 4 GNYE - Connection terminal block

0421029

<https://www.phoenixcontact.com/us/products/0421029>



Connection terminal block, nom. voltage: 300 V, nominal current: 41 A, connection method: Screw connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.5 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting: Neutral busbar, color: green-yellow

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## AKG 4 BK - Connection terminal block

0421032

<https://www.phoenixcontact.com/us/products/0421032>



Connection terminal block, nom. voltage: 300 V, nominal current: 41 A, connection method: Screw connection, Rated cross section: 4 mm<sup>2</sup>, cross section: 0.5 mm<sup>2</sup> - 6 mm<sup>2</sup>, mounting: Neutral busbar, color: black

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## IB IL SCN-8 - Inline connector

2726337

<https://www.phoenixcontact.com/us/products/2726337>

Connector, for digital 1, 2 or 8-channel Inline terminals



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## IB IL FIELD 2 - Marking field

2727501

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Marking field, width: 12.2 mm



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## ESL 62X10 - Insert strip

0809492

<https://www.phoenixcontact.com/us/products/0809492>

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems, CMS-P1-PLOTTER, mounting type: insert, lettering field size: 62 x 10 mm, Number of individual labels: 72



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