

# IB IL AI 4/I/4-20-ECO - Analog module



2702495

<https://www.phoenixcontact.com/pc/products/2702495>

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Inline, Analog input terminal, Analog inputs: 4, 4 mA ... 20 mA, 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. The measured 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 input channels
- Connection of sensors in 2-conductor technology
- Current range: 4 mA ... 20 mA
- Data format: standardized representation
- Resolution: 12 bits
- Diagnostic indicator

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2702495             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Product key                          | DRI141              |
| Catalog page                         | Page 118 (C-6-2019) |
| GTIN                                 | 4055626306759       |
| Weight per piece (including packing) | 84.7 g              |
| Weight per piece (excluding packing) | 69 g                |
| Customs tariff number                | 85389099            |
| Country of origin                    | DE                  |

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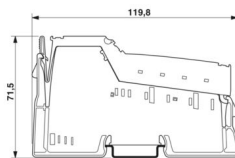
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## Technical data

### Dimensions

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

### Interfaces

#### Inline local bus

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

### System properties

#### Module

|                             |        |
|-----------------------------|--------|
| ID code (dec.)              | 126    |
| ID code (hex)               | 7E     |
| Length code (hex)           | 04     |
| Length code (dec)           | 04     |
| Process data channel        | 64 bit |
| Input address area          | 8 Byte |
| Output address area         | 0 Byte |
| Register length             | 64 bit |
| Required parameter data     | 1 Byte |
| Required configuration data | 4 Byte |

### Input data

#### Analog

|                                          |                              |
|------------------------------------------|------------------------------|
| Input name                               | Analog inputs                |
| Description of the input                 | Single-ended inputs, current |
| Number of inputs                         | 4                            |
| A/D converter resolution                 | 12 bit                       |
| Connection method                        | Inline connector             |
| Connection technology                    | 2-conductor                  |
| Note regarding the connection technology | shielded, twisted pair       |

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|                                |                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------|
| Current input signal           | 4 mA ... 20 mA                                                                              |
| Input resistance current input | 200 $\Omega$                                                                                |
| Data formats                   | Standardized representation                                                                 |
| Measured value representation  | 16 bits                                                                                     |
| Protective circuit             | Overload protection; max. $\pm 10$ V DC, corresponds to max. $\pm 50$ mA through the shunts |
|                                | Transient protection; Suppressor diode                                                      |

## 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 |
|                      | Checksum error I/O error message sent to the bus coupler                     |

## Electrical properties

### Potentials

|                   |            |
|-------------------|------------|
| Power consumption | typ. 0.8 W |
|                   | max. 0.9 W |

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

|                |                               |
|----------------|-------------------------------|
| Supply voltage | 7.5 V DC (via voltage jumper) |
| Current draw   | max. 70 mA                    |
|                | 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. 20 mA                                                         |
|                      | typ. 15 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

|                 |                  |
|-----------------|------------------|
| 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> |

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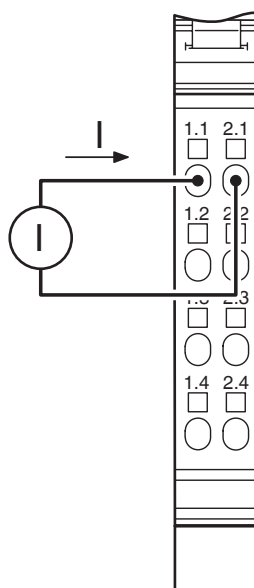


## Drawings

Dimensional drawing



Connection diagram



Connecting the sensors

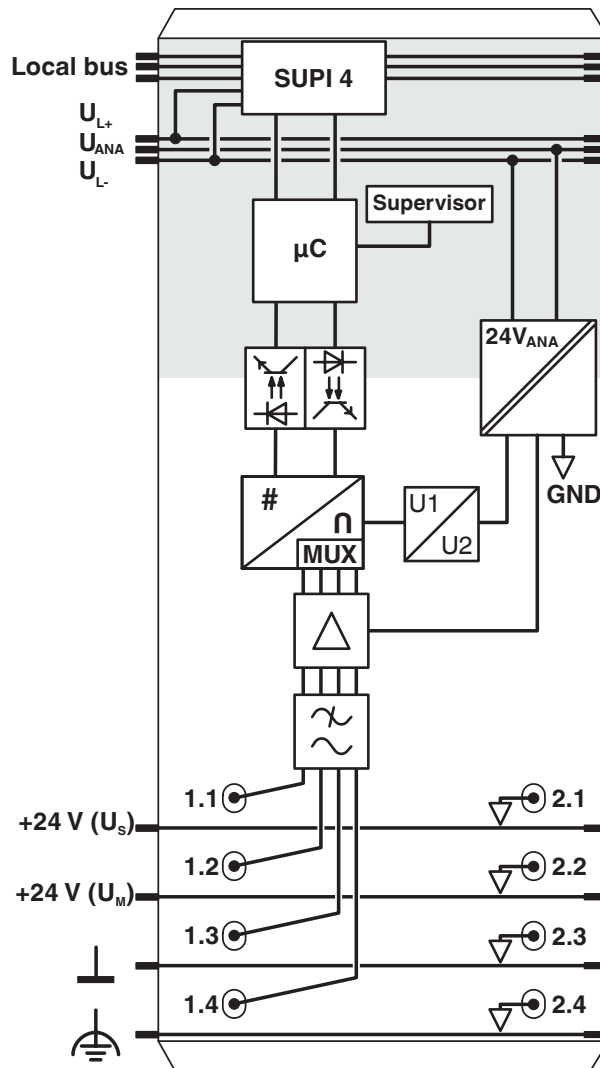
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### Block diagram



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## Approvals

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**UL Listed**  
Approval ID: FILE E 238705



**cUL Listed**  
Approval ID: FILE E 238705

**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 |
|-------------|----------|

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## Environmental product compliance

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

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