# IB IL PWM/2-PAC - Function module

2861632

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CRA-READY



Inline function terminal for pulse width and frequency modulation or activation of impulse-driven motor control parts with pulse/direction interface, two outputs for 5 V or 24 V

## Product description

The terminal is designed for use within an Inline station. Two channels that operate independently of one another offer the option of pulse width modulation (PWM) for the output signals. The terminal block supports the following operating modes: PWM (pulse width modulation), frequency generator, single shot (single pulse generator), and pulse direction signal.

## Your advantages

- 2 independent channels
- Output of 5 V or 24 V signals
- Maximum frequency of 50 kHz
- Pulse direction signal output without integrated ramp function for controlling step motor power supply units
- Single pulse output (pulse length of 10 µs to 25.5 s can be set)
- Pulse width modulation (period length can be set in increments from 100 µs to 10 s, duty factor in 0.39% increments)
- Frequency output (frequency can be set between 0 Hz and 50 kHz)

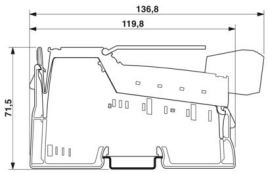
ELEKTROGERÄTE RÜCKNAHME

## Commercial data

| | |
|---|---|
| Item number | 2861632 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR01 |
| Product key | DRI164 |
| GTIN | 4017918948313 |
| Weight per piece (including packing) | 164 g |
| Weight per piece (excluding packing) | 163 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

## Technical data

### Dimensions

| | |
|---|---|
| Dimensional drawing |  |
| Width | 24.4 mm |
| Height | 136.8 mm |
| Depth | 71.5 mm |

### Notes

| | |
|---|---|
| Note on application | Only for industrial use |
| Note on application | As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA. |

### Mounting

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

### Material specifications

| | |
|---|---|
| Color (Housing) | green (RAL 6021) |

### Interfaces

Inline local bus

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

### System properties

Programming data

| | |
|---|---|
| Length code (hex) | 02 |
| ID code (dec.) | 191 |
| Length code (dec) | 02 |
| Process data channel | 32 bit |
| Input address area | 4 Byte |
| Output address area | 4 Byte |
| Parameter channel (PCP) | 0 Byte |
| Register length (bus) | 4 Byte |

Fieldbus data telegram (PROFIBUS)

| | |
|---|---|
| Required parameter data | 1 Byte |
| Required configuration data | 5 Byte |

## Output data

Digital:

| | |
|---|---|
| Output name | Digital output: 24 V DC |
| Connection technology | 2-conductor (shielded) |
| Number of outputs | 2 |
| Protective circuit | Short-circuit protection, overload protection of the outputs; integrated damping diode for each channel |
| Output voltage | 24 V |
| Limitation of the voltage induced on circuit interruption | approx. -25 V |
| Maximum output current per module / terminal block | 1 A |
| Nominal output voltage | 24 V DC |
| Nominal load, inductive | 12 VA (1.2 H, 24 Ω) |
| Nominal load, lamp | 12 W |
| Nominal load, ohmic | 12 W |
| Signal delay when switching off an inductive nominal load | typ. 150 ms (1.2 H, 24 Ω) |
| Signal delay when switching off a lamp nominal load | typ. 100 µs |
| Signal delay when switching off an ohmic nominal load | typ. 80 µs |
| Signal delay when switching on an inductive nominal load | typ. 50 ms (1.2 H, 24 Ω) |
| Signal delay when switching on a lamp nominal load | typ. 30 ms |
| Signal delay when switching on an ohmic nominal load | typ. 80 µs |
| Maximum operating frequency with inductive nominal load | 0.3 Hz (1.2 H, 24 Ω) |
| Maximum operating frequency with lamp nominal load | 500 Hz |
| Maximum operating frequency with ohmic nominal load | 500 Hz |
| Reaction time with short-circuit | ca. 400 ms |
| Behavior with overload | Auto restart |
| Behavior at voltage switch-off | The output follows the power supply without delay |
| Output data validity | typ. 1 ms (after switching the 24 V voltage supply (power up)) |
| One-time unsolicited energy | max. 200 mJ |
| Reverse voltage resistance to short pulses | Reverse voltage proof |
| Resistance to permanent reverse voltage | to 2 A (Reverse voltage protection within the scope of the permissible supply voltage) |
| Resistance to permanently applied surge voltage | no |
| Overcurrent shut-down | as of 0.7 A |

Digital:

| | |
|---|---|
| Output name | Digital output: 5 V DC |
| Connection technology | 2-conductor (shielded) |
| Number of outputs | 2 |
| Protective circuit | Short-circuit protection, overload protection of the outputs; integrated damping diode for each channel |

| | |
|---|---|
| Nominal output voltage | 5 V DC |
| Signal delay when switching off an ohmic nominal load | typ. 2 µs |
| Signal delay when switching on an ohmic nominal load | typ. 2 µs |
| Maximum operating frequency with ohmic nominal load | 50 kHz |

## Product properties

| | |
|---|---|
| Product type | I/O component |
| Product family | Inline |
| Type | modular |
| Operating mode | PWM, frequency generator, single-shot, pulse/direction signal |
| | Process data operation with 2 words |
| Special properties | The product is being prepared for compliance with the Cyber Resilience Act (CRA) |
| Diagnostics messages | Short circuit or overload of a 24 V output yes |

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 | 1.4 W |

Potentials: Communications power ($U_L$)

| | |
|---|---|
| Supply voltage | 7.5 V DC (via voltage jumper) |
| Current draw | max. 130 mA |

Potentials: Segment circuit supply ($U_S$)

| | |
|---|---|
| Supply voltage | 24 V DC (via voltage jumper) |
| Current draw | max. 1 A |
| | 0 A |

Electrical isolation/isolation of the voltage ranges

| | |
|---|---|
| Test voltage: 7.5 V supply (bus logics)/24 V supply (I/O) | 500 V AC, 50 Hz, 1 min |
| Test voltage: 7.5 V supply (bus logic)/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 | Inline connector |

Inline connector

| | |
|---|---|
| Connection method | Spring-cage connection |
| Conductor cross-section, rigid | 0.08 mm² ... 1.5 mm² |
| Conductor cross-section, flexible | 0.08 mm² ... 1.5 mm² |
| Conductor cross-section AWG | 28 ... 16 |
| Stripping length | 8 mm |

## Environmental and real-life conditions

### Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -25 °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 % (non-condensing) |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |

### Mechanical test

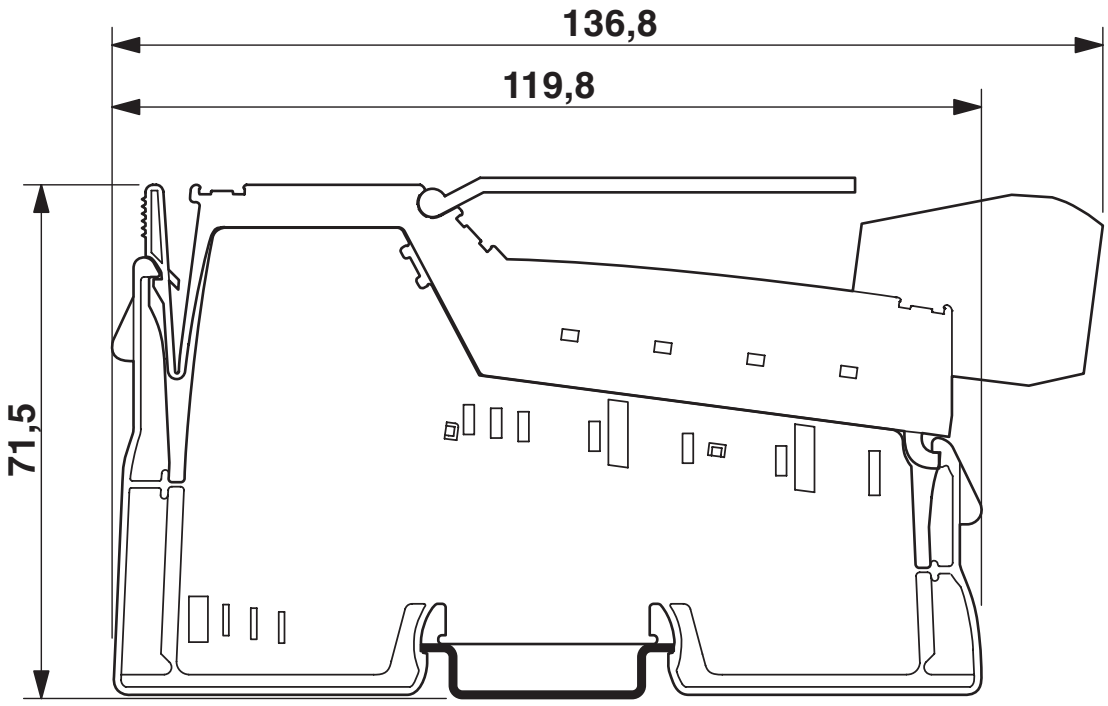
| | |
|---|---|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 25g |

## Standards and regulations

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

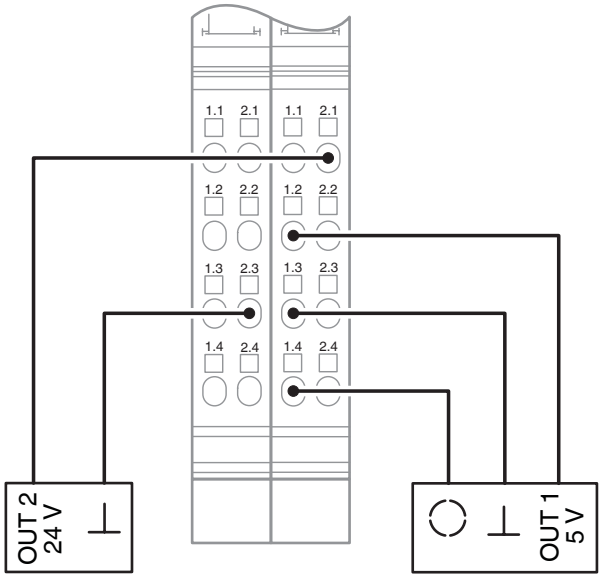
## Drawings

Dimensional drawing



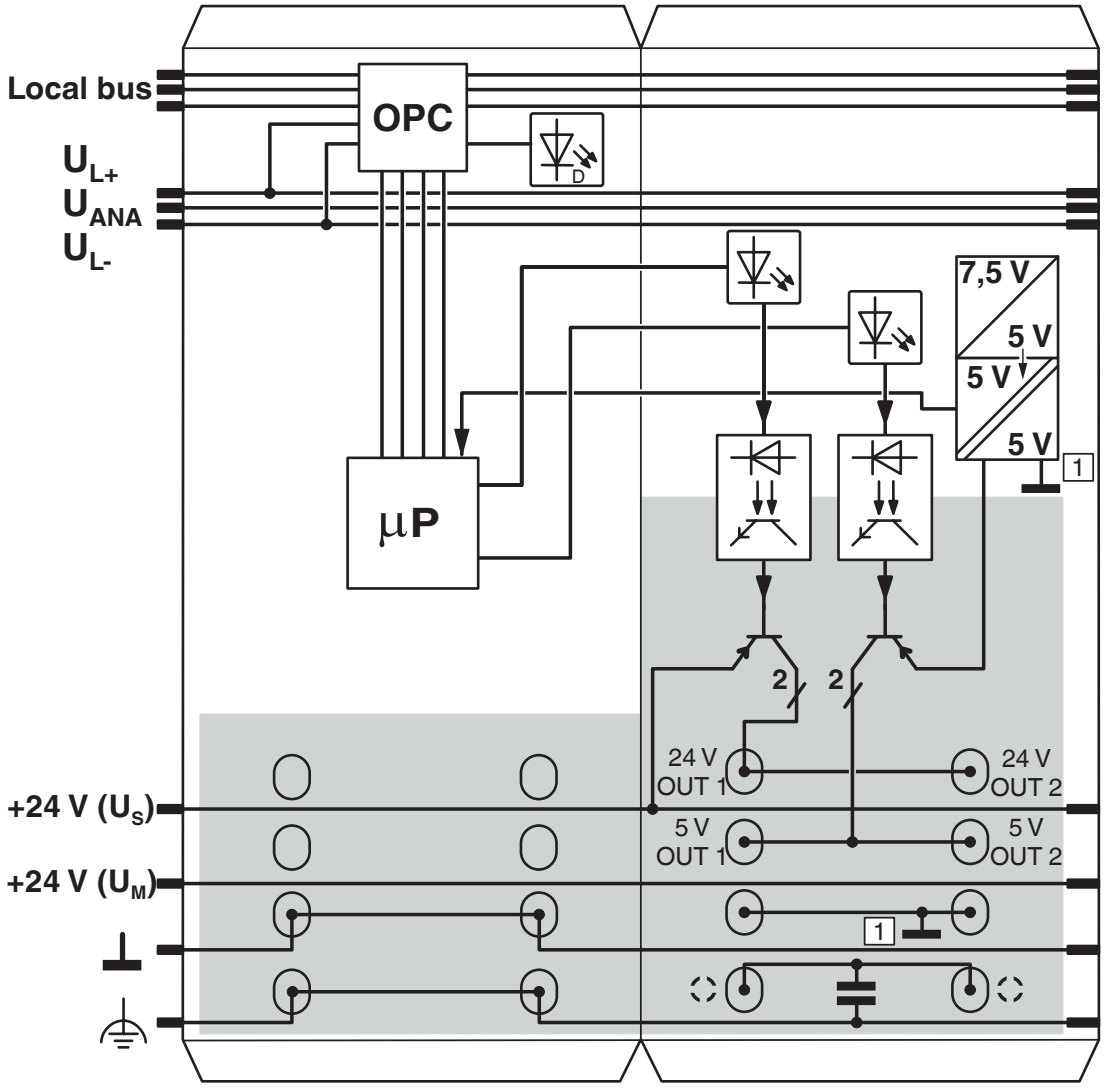

Dimensions (in mm)

Connection diagram




Connection example

Block diagram




Internal wiring of the terminal points

## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2861632

**LR**
Approval ID: LR23398855TA

**BV**
Approval ID: 20989_C1 BV

**BSH**
Approval ID: 658a

**RINA**
Approval ID: ELE121121XG

**ABS**
Approval ID: 22-2226444-PDA

**DNV**
Approval ID: TAA00002CU

**cULus Listed**
Approval ID: E140324

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27242605 |
| ECLASS-15.0 | 27242605 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC001601 |

### UNSPSC

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

## 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 | e51d1a97-1d8c-4946-ade4-de7a5f52abac |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 6.595 kg CO2e |


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