

IB IL PM 3P/N/EF-PAC - Function module



2700965

<https://www.phoenixcontact.com/us/products/2700965>

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Inline power measurement terminal for direct measurement of AC currents up to 5 A, including neutral conductor current and phase conductor voltages up to 400 V AC (phase/neutral conductor) or 690 V AC (phase/phase) complete with accessories (connectors and labeling fields)

Product description

The terminal is designed for use within an Inline station. The power measurement terminal is used to analyze AC power grids. You can use it in distribution systems for measuring current, voltage, and power as well as detecting distortion and harmonics. You can run the power measurement terminal in five operating modes. In "Basic measured values" operating mode, the power measurement terminal is used to acquire mains variables in three-phase mains. Mains variables are phase currents, neutral conductor current, phase and phase-to-phase voltages, active power, reactive power, and apparent power as well as the power factors of phases, energy flow directions, and frequency. The measured variables and operands are calculated in accordance with DIN 40110 Parts 1 and 2 (non-sinusoidal variables). In "Scanning measured values" operating mode, the power measurement terminal acquires the instantaneous values (scanning values) of a measuring signal. This measuring mode is used to analyze the waveform of the measuring signal. In "Heating current measured values" operating mode, the power measurement terminal monitors non-equivalence. Phase currents and phase voltages are measured to detect faults at an early stage. In the "1-phase or 3-phase synchronization" operating modes, the power measurement terminal acquires measured values that can be used for controlling the voltage, speed, and phase angle of a generator so that connection to the mains is possible.

Your advantages

- 4 inputs, 0 A AC ... 5 A AC for phase currents and neutral conductor current
- 3 inputs for outer conductor voltages up to 690 V AC, supports direct connection
- Triggers for meas. intervals can be freely defined
- Harmonics analysis
- Determination of maximum values
- Operating hours counter
- Energy meter
- Bimetal filtering
- Short-time control

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2700965 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR01 |
| Product key | DRI165 |
| GTIN | 4046356665919 |
| Weight per piece (including packing) | 231.2 g |
| Weight per piece (excluding packing) | 200 g |

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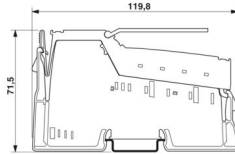
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| | |
|-----------------------|----------|
| Customs tariff number | 85389099 |
| Country of origin | DE |

Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 48.8 mm |
| Height | 119.8 mm |
| Depth | 71.5 mm |
| Note on dimensions | Housing dimensions |

Notes

Note on application

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

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 (LocalbusSlave)

| | |
|-------------------------|---------|
| Length code (hex) | 0C |
| ID code (dec.) | 220 |
| Length code (dec) | 12 |
| Process data channel | 192 bit |
| Input address area | 24 Byte |
| Output address area | 24 Byte |
| Parameter channel (PCP) | 4 Byte |
| Register length (bus) | 28 Byte |

Fieldbus data telegram

| | |
|-----------------------------|---------|
| Required parameter data | 29 Byte |
| Required configuration data | 5 Byte |

Input data

Measurement: voltage

| | |
|--------------------------|--|
| Input name | Voltage measuring input |
| Description of the input | Detection of phase voltages U1 ... U3, for phase-to-phase voltages up to 690 V AC (phase/phase), direct connection supported |
| Number of inputs | 3 |

Measurement: Current

| | |
|--------------------------|--|
| Input name | Current measuring input |
| Description of the input | Detection of I1 ... I3 and IN currents, up to 6 A AC can be connected directly |
| Number of inputs | 4 |

Product properties

| | |
|----------------------|--|
| Product type | I/O component |
| Product family | Inline |
| Type | modular |
| Operating mode | Process data mode with 12 words, PCP with 2 words |
| Diagnostics messages | Two line conductors confused I/O error message |
| | One line conductor not connected or wire break at line conductor I/O error message |
| | Measuring circuit fault I/O error message |
| | Value range for transformer factors exceeded I/O error message |
| | Value range for other settings exceeded I/O error message |

Insulation characteristics

| | |
|----------------------|-------------------------------------|
| Overvoltage category | III (up to 300 V), II (up to 400 V) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

| | |
|---|-------|
| Maximum power dissipation for nominal condition | 2.7 W |
|---|-------|

Potentials: Communications power (U_L)

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

Connection data

Connection technology

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

Inline connector

| | |
|-----------------------------------|---|
| Connection method | Spring-cage connection |
| Conductor cross-section, rigid | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.2 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 24 ... 16 |

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| | |
|------------------|------|
| 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) | 80 kPa ... 106 kPa (up to 2000 m above sea level) |
| Air pressure (storage/transport) | 80 kPa ... 106 kPa (up to 2000 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) |

Standards and regulations

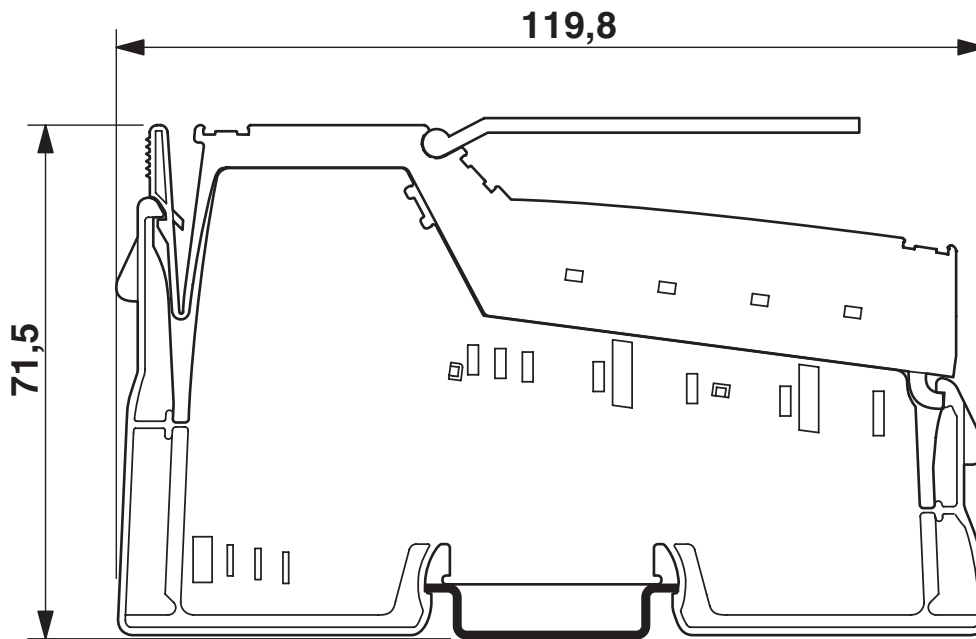
| | |
|------------------|--------------------------------------|
| Protection class | II (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|--------------------------------------|

Mounting

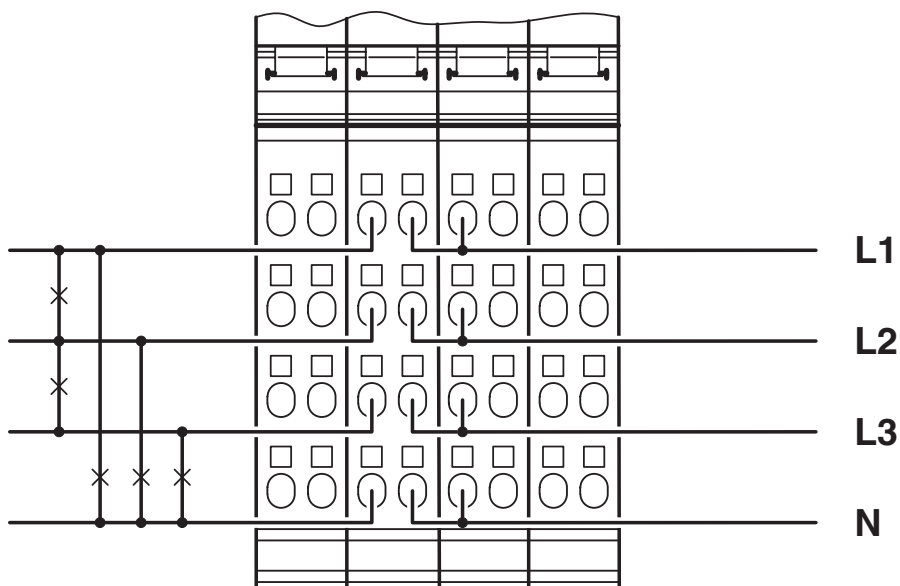
| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

Drawings

Dimensional drawing



Connection diagram



Direct connection

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Classifications

ECLASS

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

ETIM

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

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-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 24c5394e-f8a5-43dc-94a1-04c11d49f9fa |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 21.73 kg CO2e |
|---------|---------------|

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