

Special function module - AXL F PM EF 1F - 2702671

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Axioline F, power measurement module, input voltage: up to 400 V AC (phase/neutral) or 690 V AC (phase/phase), input current: up to 5 A AC, transmission speed in local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connectors

Product Description

The module is designed for use within an Axioline F station.

The power measurement module is used for direct measurement of AC currents up to 5 A, including neutral conductor current and phase conductor voltages up to 400 V AC (phase to neutral conductor) or outer conductor voltages up to 690 V AC (phase to phase).

The module is used to perform analysis of AC networks. You can use it in distribution systems for measuring current, voltage, and power, as well as detecting distortion and harmonics.

You can use the power measurement module in two operating modes.

In "R.m.s. Values" mode, the module acquires mains variables in three-phase mains. Mains variables are phase currents, neutral conductor current, phase and outer conductor voltages, real power, reactive power, and apparent power as well as the power factors of phases, energy flow directions, and frequency.

In "Instantaneous Values" mode, the module acquires the instantaneous (scanning) values of a measuring signal. This measuring mode is used to analyze the waveform of the measuring signal.

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
- ✓ Harmonics analysis
- ✓ Determination of maximum values
- ✓ Power meter
- ✓ Process data update < 500 µs



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 055626 364940 |
| GTIN | 4055626364940 |
| Weight per Piece (excluding packing) | 300.000 g |
| Custom tariff number | 85437090 |

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| | |
|-------------------|---------|
| Country of origin | Germany |
|-------------------|---------|

Technical data

Note

| | |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

Dimensions

| | |
|--------------------|---|
| Width | 53.6 mm |
| Height | 126.1 mm |
| Depth | 65.5 mm |
| Note on dimensions | The depth is valid when a TH 35-7,5 DIN rail is used (according to EN 60715). |

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing) |
| Air pressure (operation) | 70 kPa ... 106 kPa (Up to 3000 m above sea level, from HW 01) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Degree of protection | IP20 (in accordance with IEC 60529 / EN 60529) |

General

| | |
|-------------------------------|-------------------------------------|
| Mounting type | DIN rail |
| Color | traffic grey A RAL 7042 |
| Net weight | 222 g |
| Note on weight specifications | with connectors and bus base module |
| Operating mode | Process data mode with 32 words |
| Degree of pollution | 2 |
| Mounting position | any (no temperature derating) |

Interfaces

| | |
|--------------------|----------------------|
| Designation | Axioline F local bus |
| Number | 2 |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |

Axioline potentials

| | |
|---------------------|---|
| Designation | Axioline F local bus supply (U_{Bus}) |
| Supply voltage | 5 V DC (via bus base module) |
| Current consumption | typ. 73 mA |
| | max. 80 mA |

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Technical data

Axioline potentials

| | |
|-------------------|-------------|
| Power consumption | typ. 365 mW |
| | max. 400 mW |

Standards and Regulations

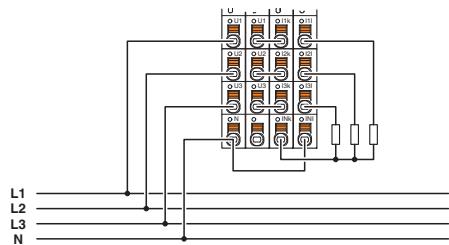
| | |
|------------------------------------|--|
| Immunity to ESD | Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion A, 6 kV contact discharge, 8 kV air discharge |
| Immunity to EF | Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m |
| Immunity to burst | Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 4 kV / Criterion A, 2 kV |
| Immunity to surge | Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion A; DC supply lines: ± 0.5 kV/ ± 1 kV (symmetrical/asymmetrical) Criterion A, measurement input: ± 2 kV/ ± 4 kV (symmetrical/asymmetrical) |
| Immunity to conducted interference | Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V |
| Interference emission | Noise emission test according to EN 61000-6-3 Class B |
| Mechanical tests | Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g |
| | Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30g |
| | Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10g |
| Protection class | II |

Environmental Product Compliance

| | |
|------------|---|
| REACH SVHC | Dechlorane Plus |
| China RoHS | Environmentally Friendly Use Period = 50 years |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

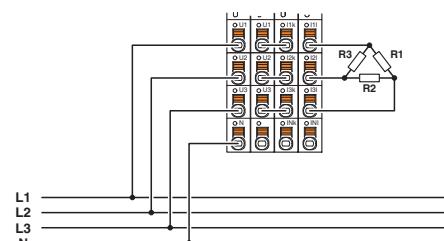
Drawings

Connection diagram



Connection of a 3-phase load for power measurement in star connection with neutral conductor current

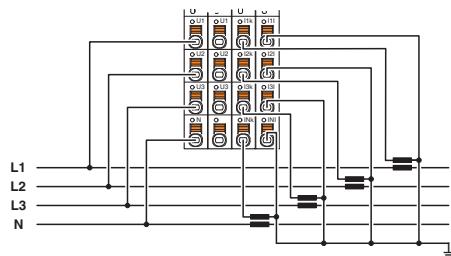
Connection diagram



Connection of a 3-phase load for power measurement in delta circuit

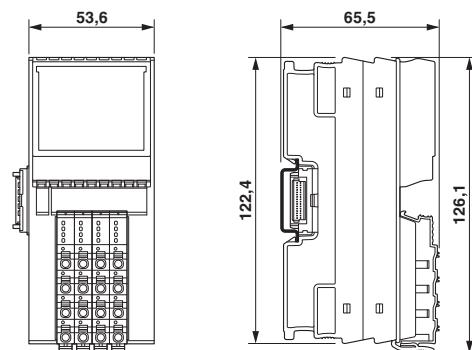
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Connection diagram

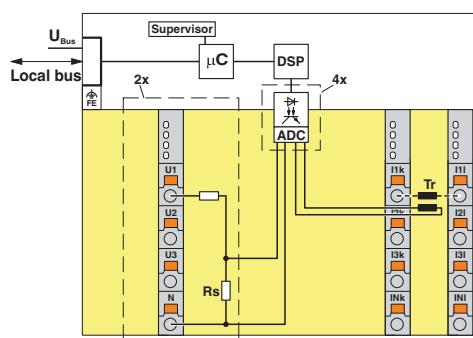


Connection of a 4-conductor network with current transformers

Dimensional drawing



Block diagram



Internal wiring of the terminal points

Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27242605 |
| eCl@ss 11.0 | 27242605 |
| eCl@ss 6.0 | 27242600 |
| eCl@ss 7.0 | 27242605 |
| eCl@ss 9.0 | 27242605 |

ETIM

| | |
|----------|----------|
| ETIM 6.0 | EC001601 |
| ETIM 7.0 | EC001601 |

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Approvals

Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 357804

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 357804

cULus Listed



Accessories

Accessories

Device marking

Insert label - EMT (35X46)R - 0801604



Insert label, for the Axioline F series from Phoenix Contact, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped into marker carrier, lettering field size: 35 x 46 mm, Number of individual labels: 500

DIN rail connector

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Accessories

Bus connector - AXL F BS F - 2688129



Axioline F bus base module for housing type F

Terminal marking

Zack marker strip - ZB 20,3 AXL UNPRINTED - 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

Zack Marker strip, flat - ZBF 7,5:UNBEDRUCKT - 0809942



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 7.5 mm, lettering field size: 5.15 x 7.4 mm, Number of individual labels: 10
