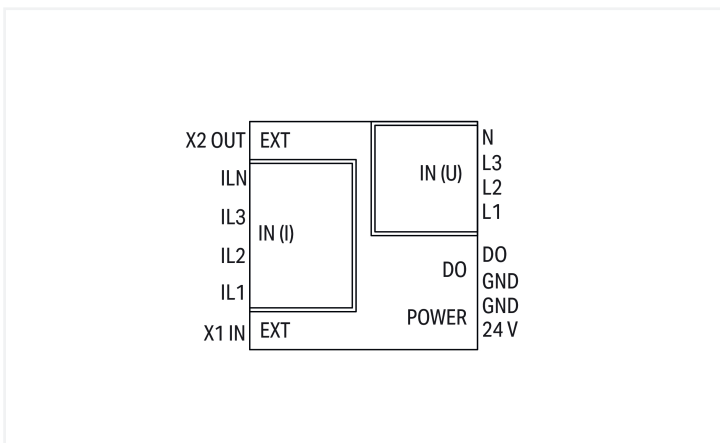
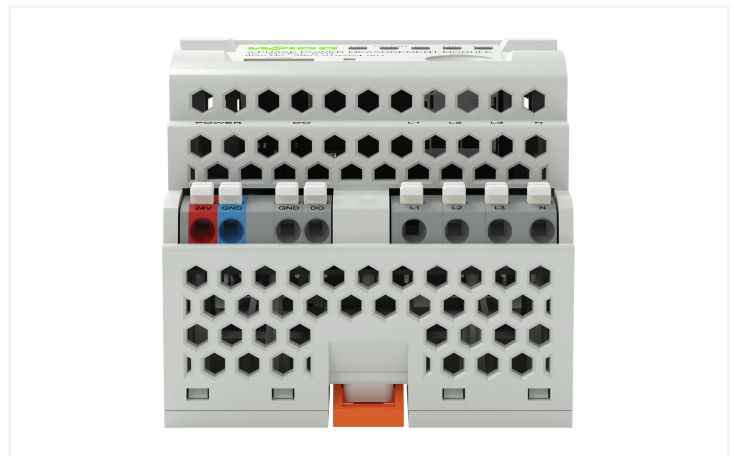


Data Sheet | Item Number: 2857-570/024-001

3-Phase Power Measurement Module; 3x277/480 V/1 A; Modbus RTU; Digital output; Configuration via software; Supply voltage: 24 VDC

<https://www.wago.com/2857-570/024-001>



Short description:

WAGO's 3-Phase Power Measurement Module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level.

Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® interface. In addition, the measured variables can be stored on a microSD card.

Features:

- Current measurement via 1 A current transformer
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® interface
- Configurable digital signal output as pulse output

Notes

Note Additional setting options via the WAGO Interface Configuration Software

Technical data**Configuration**

Configuration options WAGO Interface Configuration Software

Input

| | |
|----------------------------------|---|
| Input signal type | Voltage Current RTD sensors |
| Network configuration | 3-phase power measurement with N-conductor (4-conductor) 3-phase power measurement without N-conductor (3-conductor) |
| Input current (max.) | 1 AAC |
| Response threshold | 10 mA |
| Resolution (current) | 10 mA |
| Measured variable | Voltage Current Electrical output Power factor RTD |
| Input signal (voltage) | 277 VAC (ULN) 480 VAC (ULL) |
| Input signal (current) | 1 AAC (current transformer) |
| Frequency range | 50 ... 60 Hz (Harmonic analysis: 0 ... 3.3 kHz) |
| Input resistance (current input) | 22 mΩ |
| Input resistance (voltage input) | 1.5 MΩ |

Output – MODBUS

| | |
|--------------------------|---------------------------------------|
| Number of devices (max.) | 32 |
| Addressing | Via interface configuration software |
| Connector | 2 x RJ-45 (daisy chain configuration) |

Output – Digital

| | |
|------------------------------|---|
| Configurable functions (DO) | Threshold Value Switch Pulse output (S0 interface) |
| Switching voltage (DO) max. | Supply voltage applied |
| Continuous current (DO) max. | 100 mA (no internal restriction) |

Communication

| | |
|--------------------------|--------------------------------------|
| Communications | Modbus RTU |
| Interface | RS-485 (2-wire) via RJ-45 |
| Number of devices (max.) | 32 |
| Addressing | Via interface configuration software |

Signal Processing

| | |
|---------------------------------|--|
| Measurement method | True RMS measurement (measured value acquisition with 8 kHz) |
| Measured variables (calculated) | Line-to-line voltage Outputs Energy sources Power factors Mains frequency Harmonics analysis (up to 41st harmonic) Total Harmonic Distortion (THD) |
| Signal form | Any periodic signals (considering the threshold frequencies) |
| Type of memory card | WAGO 758-879/000-3102 (microSD; 2 GB) |

Signal Processing

| | |
|-----------------|----------|
| Limit frequency | 15.9 kHz |
|-----------------|----------|

Measurement Error

| | |
|---------------------------|---|
| Transmission error (max.) | ≤ 0.5 % for current and voltage (of the full scale value) |
|---------------------------|---|

Power Supply

| | |
|---|-----------------------|
| Power supply type | 24 VDC |
| Nominal supply voltage U_S | 24 VDC (SELV) |
| Supply voltage range | ±30 % |
| Current consumption at nominal supply voltage | ≤ 50 mA (+ I_{00}) |

Safety and protection

| | |
|------------------------------------|---|
| Rated Voltage | 600 V |
| Overtoltage category | III |
| Pollution degree | 2 |
| Safe isolation | Input/supply and communication per EN 61010-1 |
| Requirement (N input) | Neutral conductors that are part of the mains circuit are considered dangerous voltage. |
| IL_x input requirement | Coils/converters with basic insulation |
| Protection type | IP20 |
| Test voltage (input/output/supply) | 3.51 kVAC; 50 Hz; 1 min |

Connection Data

| | |
|-----------|---------------------------------------|
| Connector | 2 x RJ-45 (daisy chain configuration) |
|-----------|---------------------------------------|

Connection 1

| | |
|-------------------------|--|
| Connection type | Voltage |
| Connection technology | Push-in CAGE CLAMP® |
| WAGO connector | WAGO 804 Series |
| Strip length | 10 ... 11 mm / 0.39 ... 0.43 inches |
| Solid conductor | 0.25 ... 2.5 mm ² / 24 ... 14 AWG |
| Fine-stranded conductor | 0.25 ... 2.5 mm ² / 24 ... 14 AWG |

Connection 2

| | |
|-------------------------|---|
| Connection type | Current/power supply/DO |
| Connection technology | Push-in CAGE CLAMP® |
| WAGO connector | WAGO 805 Series |
| Strip length | 9 ... 10 mm / 0.35 ... 0.39 inches |
| Solid conductor | 0.2 ... 1.5 mm ² / 24 ... 16 AWG |
| Fine-stranded conductor | 0.2 ... 1.5 mm ² / 24 ... 16 AWG |

Connection 3

| | |
|-----------------|-----------------------|
| Connection type | Modbus® communication |
|-----------------|-----------------------|

Physical data

| | |
|-----------------------------------|----------------------|
| Width | 72 mm / 2.835 inches |
| Height | 90 mm / 3.54 inches |
| Depth from upper-edge of DIN-rail | 55 mm / 2.165 inches |

Mechanical data

| | |
|----------------|--------------------------|
| Mounting type | DIN-35 rail |
| Housing design | DIN-rail-mount enclosure |

Material data

| | |
|-----------|----------|
| Fire load | 0.044 MJ |
| Weight | 115.6 g |

Environmental requirements

| | |
|---------------------------------|-----------------------------|
| Ambient temperature (operation) | -40 ... +70 °C |
| Ambient temperature (storage) | -40 ... +85 °C |
| Relative humidity | 5 ... 95 % (non-condensing) |

Standards and Specifications

| | |
|------------------------------|--------------|
| Conformity marking | CE |
| EMC immunity to interference | EN 61000-6-2 |
| EMC emission of interference | EN 61000-6-3 |
| Standards/specifications | EN 61010-1 |

Commercial data

| | |
|-----------------------|-------------|
| PU (SPU) | 1 pcs |
| Packaging type | Box |
| Country of origin | DE |
| Customs tariff number | 85437090300 |

Product Classification

| | |
|-------------|----------------------|
| UNSPSC | 41113630 |
| eCl@ss 10.0 | 27-21-01-24 |
| eCl@ss 9.0 | 27-21-01-24 |
| ETIM 9.0 | EC002476 |
| ETIM 10.0 | EC002476 |
| ECCN | NO US CLASSIFICATION |

Environmental Product Compliance

| | |
|---|---|
| CAS-No. | 1303-86-2 1317-36-8 7439-92-1 75980-60-8 |
| REACH Candidate List Substance | Diboron trioxide Lead Lead monoxide Perfluorobutane sulfonic acid (PFBS) and its salts Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)- |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 6(c) 7(a) 7(c)-I 7(c)-II |
| SCIP notification number (Austria) | 15d13b36-0a46-423a-baf0-25f90221a4d7 |
| SCIP notification number (Belgium) | 37cb977c-7afd-4d6b-99a2-c75722031572 |
| SCIP notification number (Bulgaria) | 6fdb7a61-9a73-491a-87c2-14bd4d2a27da |
| SCIP notification number (Czech Republic) | 1963302d-27cc-497c-9336-916b863aece2 |
| SCIP notification number (Denmark) | 93676f10-06ff-435f-b314-51652050b5db |
| SCIP notification number (Finland) | 3f54975c-8829-4804-b066-2e1212198413 |
| SCIP notification number (France) | f15a2035-ea4d-463b-85d3-5d3caaccf2b5 |

Environmental Product Compliance

| | |
|--|--------------------------------------|
| SCIP notification number (Germany) | 17ebc7e6-c2e2-475f-a072-a19a472fd55e |
| SCIP notification number (Hungary) | d6acea0b-e26a-4b6d-9ab1-d659c89a1b48 |
| SCIP notification number (Italy) | 7b560f3d-0d98-4ba2-9fef-e7f6bfd7f0b9 |
| SCIP notification number (Netherlands) | 0896ef5a-d7a8-40d6-9eeb-5e1c6451f580 |
| SCIP notification number (Poland) | 6fb46ab3-fc35-485c-9f81-160b6e695a33 |
| SCIP notification number (Romania) | 0dab5cdd-294c-4e22-9a5c-203eac2de80f |
| SCIP notification number (Sweden) | e5247453-2fea-4b36-9d6e-3364faaba8c0 |

Approvals / Certificates

General approvals



| Approval | Standard | Certificate Name |
|--|----------------|------------------|
| EAC GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03083 |
| EAC GZO Almaty Standart | TP TC 004/2011 | EAC CoC 03084 |
| UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS) | UL 61010-2-201 | E175199 |

Declarations of conformity and manufacturer's declarations

| Approval | Standard | Certificate Name |
|--|----------|------------------|
| EU-Declaration of Conformity WAGO GmbH & Co. KG | - | - |

Downloads

Environmental Product Compliance

Compliance Search

| | |
|--|-------------------|
| Environmental Product Compliance 2857-570/024-001 | ↓ |
|--|-------------------|

Documentation

Manual

| | | | |
|--|-----------------------|--------------------|-------------------|
| WAGO Current and Voltage Signal Conditioners and Power Measurement Modules ↓ | | | |
| Product Manual 3-Phase Power Measurement Module | 2.0.0 11.08.2023 | pdf 10255.03 KB | ↓ |
| Product Manual 3-Phase Power Measurement Module | V 1.0.0 15.01.2026 | pdf 16063.79 KB | ↓ |

Bid Text

| | | | |
|------------------|------------|------------------|-------------------|
| 2857-570/024-001 | 15.07.2019 | xml 8.60 KB | ↓ |
| 2857-570/024-001 | 15.07.2019 | docx 19.63 KB | ↓ |

| Instruction Leaflet | | | |
|----------------------------------|-----------------------|-------------------|-------------------|
| 3-Phase Power measurement module | V 1.3.0 11.09.2023 | pdf 1293.96 KB | ↓ |

CAD/CAE-Data

| CAD data | |
|----------------------------------|-------------------|
| 2D/3D Models 2857-570/024-001 | ↓ |

| CAE data | |
|---------------------------------------|-------------------|
| EPLAN Data Portal 2857-570/024-001 | ↓ |
| ZUKEN Portal 2857-570/024-001 | ↓ |

Runtime Software

| Firmware | | | |
|--|--------------------|------------------|-------------------|
| 2857-0570/024-001, 3-Phasen-Leistungsmes-sumformer | V 03 14.06.2022 | zip 504.24 KB | ↓ |

Libraries

| Library | | | |
|--|---------------------|-------------------|-------------------|
| Library for the Wago 3-Phase Powertransducer module 2857-570 | 1.0.0 28.02.2019 | zip 2117.75 KB | ↓ |

1 Compatible Products

1.1 Optional Accessories

1.1.1 Cables and connectors

1.1.1.1 Communication cable



Item No.: 750-923/000-001
Configuration cable; USB connector;
Length: 5 m

1.1.1.2 Connector plug



Item No.: 750-978/000-011
Connector ETHERNET; RJ-45; Cat. 6A;
straight; Code T568A; AWG 22; Strain relief

1.1.3 Current transformer

1.1.3.1 Plug-in current transformer



Item No.: 855-301/100-201

Plug-in current transformer; Primary rated current: 100 A; Secondary rated current: 1 A; Rated power: 2.5 VA; Accuracy class: 1



Item No.: 855-501/1000-1001

Plug-in current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-801/1000-1001

Plug-in current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-301/150-501

Plug-in current transformer; Primary rated current: 150 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-601/1500-501

Plug-in current transformer; Primary rated current: 1500 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-301/200-501

Plug-in current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-801/2000-1001

Plug-in current transformer; Primary rated current: 2000 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-301/250-501

Plug-in current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-401/250-501

Plug-in current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-1001/2500-1001

Plug-in current transformer; Primary rated current: 2500 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-2701/035-001

Plug-in current transformer; Primary rated current: 35 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1



Item No.: 855-301/400-1001

Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-501/400-1001

Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-401/400-501

Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-301/050-103

Plug-in current transformer; Primary rated current: 50 A; Secondary rated current: 1 A; Rated power: 1.25 VA; Accuracy class: 3



Item No.: 855-301/060-101

Plug-in current transformer; Primary rated current: 60 A; Secondary rated current: 1 A; Rated power: 1.25 VA; Accuracy class: 1



Item No.: 855-301/600-1001

Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-401/600-501

Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-501/600-1001

Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-2701/064-001

Plug-in current transformer; Primary rated current: 64 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1



Item No.: 855-301/075-201

Plug-in current transformer; Primary rated current: 75 A; Secondary rated current: 1 A; Rated power: 2.5 VA; Accuracy class: 1



Item No.: 855-501/800-1001

Plug-in current transformer; Primary rated current: 800 A; Secondary rated current: 1 A; Rated power: 10 VA; Accuracy class: 1

1.1.3.2 Split-core current transformer



Item No.: 855-4001/100-001

Split-core current transformer; Primary rated current: 100 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-3001/100-003

Split-core current transformer; Primary rated current: 100 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 3; Cable length: 3 m



Item No.: 855-5001/1000-000

Split-core current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m



Item No.: 855-5101/1000-000

Split-core current transformer; Primary rated current: 1000 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m



Item No.: 855-4001/150-001

Split-core current transformer; Primary rated current: 150 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-4001/200-001

Split-core current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 0.5; Cable length: 3 m



Item No.: 855-3001/200-001

Split-core current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-4101/200-001

Split-core current transformer; Primary rated current: 200 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-3001/250-001

Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-4101/250-001

Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-5001/250-001

Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 1; Cable length: 5 m



Item No.: 855-4101/400-001

Split-core current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 1; Cable length: 3 m

1.1.3.2 Split-core current transformer



Item No.: 855-5001/400-000

Split-core current transformer; Primary rated current: 400 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m



Item No.: 855-3001/060-003

Split-core current transformer; Primary rated current: 60 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 3; Cable length: 3 m



Item No.: 855-5001/600-000

Split-core current transformer; Primary rated current: 600 A; Secondary rated current: 1 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 5 m

1.1.4 Installation

1.1.4.1 Current transformer terminal block



Item No.: 2007-8874

Compact terminal block; for current and voltage transformers; 6,00 mm²; multicoloured



Item No.: 2007-8877

Compact terminal block; for current transformer circuit; 6,00 mm²; multicoloured

1.1.5 Interface module

1.1.5.1 Interface module



Item No.: 289-175/790-108

Interface module; RJ-45; PCB terminal blocks, double-row; Cat. 5; in mounting carrier; with shield connection; with shield clamping saddle



Item No.: 289-176

Interface module; RJ-45; with power jumper contacts; RJ-45; Cat. 5; in mounting carrier

1.1.6 Memory card

1.1.6.1 Memory card



Item No.: 758-879/000-3102

Memory Card SD Micro; 2 GByte

1.1.7 Potential distribution

1.1.7.1 Current and voltage tap



Item No.: 855-1851/350-000

Current and voltage tap up to 185 mm²; Primary rated current: 350 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 0.5; fused



Item No.: 855-501/150-000

Current and voltage tap up to 50 mm²; Primary rated current: 150 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 0.5; fused



Item No.: 855-951/250-000

Current and voltage tap up to 95 mm²; Primary rated current: 250 A; Secondary rated current: 1 A; Rated power: 0.2 VA; Accuracy class: 0.5; fused

1.1.8 Power supply

1.1.8.1 Power Supply



Item No.: 787-2850

Power supply; Compact; 1-phase; 24 VDC output voltage; 1.25 A output current

1.1.9 Power tap

1.1.9.1 Power tap



Item No.: 855-8015

Power tap; for busbar; with fuse; Clamping connection



Item No.: 855-8006

Power tap; for busbar; with fuse; Mounting screw M6



Item No.: 855-8008

Power tap; for busbar; with fuse; Mounting screw M8



Item No.: 855-8003

Power tap; with fuse; 10 mm² (8 AWG) - 16 mm² (6 AWG); Phase



Item No.: 855-8001

Power tap; with fuse; 2,5 mm² (12 AWG) - 6 mm² (10 AWG); Phase



Item No.: 855-8004

Power tap; without fuse; 10 mm² (8 AWG) - 16 mm² (6 AWG); N-conductor



Item No.: 855-8002

Power tap; without fuse; 2,5 mm² (12 AWG) - 6 mm² (10 AWG); N-conductor

1.1.10 Tool

1.1.10.1 Operating tool

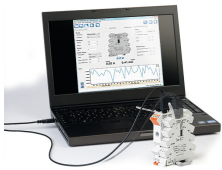


Item No.: 210-720

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

Installation Notes

Configuring



Configuration via WAGO Interface Configuration Software