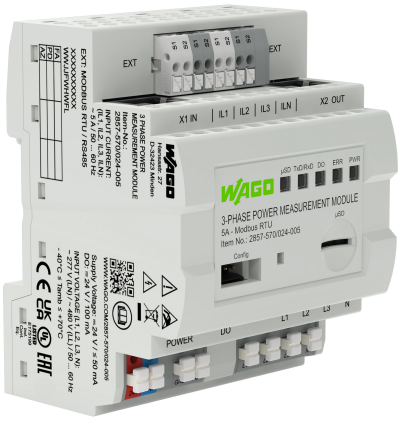
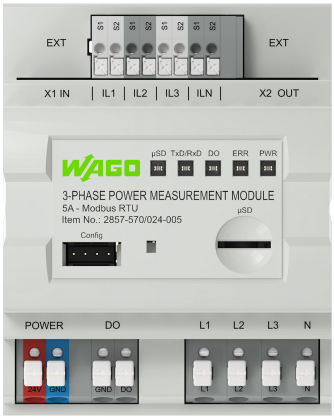
# Data Sheet | Item Number: 2857-570/024-005

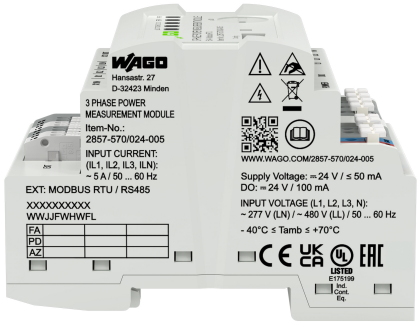
3-Phase Power Measurement Module; 3x277/480 V/5 A; Modbus RTU; Digital output; Configuration via software; Supply voltage: 24 VDC

https://www.wago.com/2857-570/024-005

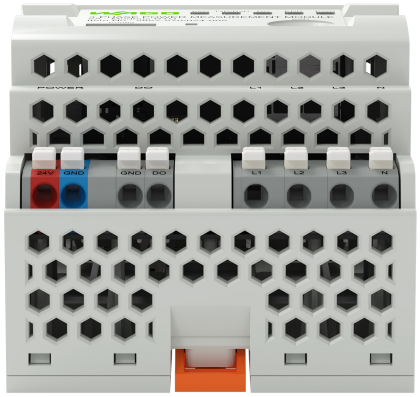


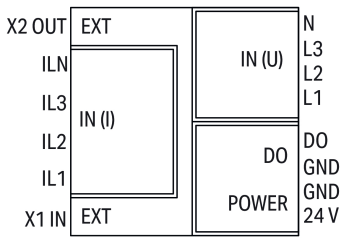










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**Short description:**
WAGO's 3-Phase Power Measurement Module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level.
Measured variables such as active/apparent/reactive power, energy 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 5 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<br>Current |
| Network configuration | 3-phase power measurement with N-conductor (4-conductor)<br>3-phase power measurement without N-conductor (3-conductor) |
| Input current (max.) | 5 AAC |
| Response threshold | 5 mA |
| Resolution (current) | 0.15 mA |
| Measured variable | Voltage<br>Current<br>Electrical output<br>Power factor<br>RTD |
| Input signal (voltage) | 277 VAC (ULN)<br>480 VAC (ULL) |
| Input signal (current) | 5 AAC (current transformer) |
| Frequency range | 50 … 60 Hz (Harmonic analysis: 0 … 3.3 kHz) |
| Input resistance (current input) | 5 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<br>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<br>Outputs<br>Energy sources<br>Power factors<br>Mains frequency<br>Harmonics analysis (up to 41st harmonic)<br>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) |
| Limit frequency | 15.9 kHz |


Continued on next page

## 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 (+ $I_{DO}$) |

## Safety and protection

| | |
|---|---|
| Rated Voltage | 600 V |
| Overvoltage 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 mm² / 24 … 14 AWG |
| Fine-stranded conductor | 0.25 … 2.5 mm² / 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 mm² / 24 … 16 AWG |
| Fine-stranded conductor | 0.2 … 1.5 mm² / 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 |


Continued on next page

## Material data

| | |
|---|---|
| Fire load | 1.348 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 | 90303900000 |

## 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<br>1317-36-8<br>2451-62-9<br>7439-92-1<br>75980-60-8 |
| REACH Candidate List Substance | 1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)<br>Diboron trioxide<br>Lead<br>Lead monoxide<br>Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)- |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 6(c)<br>7(a)<br>7(c)-I<br>7(c)-II |
| SCIP notification number (Austria) | 3c5b708a-4d0c-4c4f-915b-7f883a601861 |
| SCIP notification number (Belgium) | 4d261afe-4ebc-4c43-b333-d85400410058 |
| SCIP notification number (Bulgaria) | 8fbd3c1b-4dfd-4dc1-88db-675ccbee6ecc |
| SCIP notification number (Czech Republic) | 44399f69-4a7f-43d4-a7cb-d98caf15c370 |
| SCIP notification number (Denmark) | 5f82d7c4-159f-4e53-baa9-5fb8e060ca75 |
| SCIP notification number (Finland) | b5f30487-a528-4c3b-a705-3c841d7f4480 |
| SCIP notification number (France) | 159c395a-37a7-416b-a514-f8e33ccfe7c7 |
| SCIP notification number (Germany) | 3896b16f-bdb0-4345-9d36-6d9e196fc444 |
| SCIP notification number (Hungary) | da8b306f-e027-4f74-a3fd-9bf1b290f7a5 |
| SCIP notification number (Netherlands) | 9a34b2cc-6202-46ea-b92e-57b0a688a915 |
| SCIP notification number (Poland) | 188bfc07-cfb1-4f44-b082-fedc2a7684d6 |


Continued on next page

## Environmental Product Compliance

| | |
|---|---|
| SCIP notification number (Romania) | 2db68257-7b65-4563-8897-274a6dd802ad |
| SCIP notification number (Sweden) | c8995f6e-e27f-4ba0-a327-70e4f9d7f7f9 |

## Approvals / Certificates

### General approvals

| Approval | Standard | Certificate Name |
|---|---|---|
| EAC<br>GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03083 |
| EAC<br>GZO Almaty Standart | TP TC 004/2011 | EAC CoC 03084 |
| UL<br>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<br>WAGO GmbH & Co. KG | - | - |
| EU-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |
| UK-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |

## Downloads

### Environmental Product Compliance

**Compliance Search**

Environmental Product Compliance
2857-570/024-005

### Documentation

**Manual**

| | | |
|---|---|---|
| WAGO Current and Voltage Signal Conditioners and Power Measurement Modules | | |
| Product Manual 3-Phase Power Measurement Module | 2.0.0<br>11.08.2023 | pdf<br>10700.02 KB |
| Product Manual 3-Phase Power Measurement Module | V 1.0.0<br>15.01.2026 | pdf<br>16063.79 KB |

**Instruction Leaflet**

| | | |
|---|---|---|
| 3-Phase Power measurement module | V 1.3.0<br>11.09.2023 | pdf<br>1293.96 KB |

**Bid Text**

| | | |
|---|---|---|
| 2857-570/024-005 | 15.07.2019 | xml<br>8.62 KB |
| 2857-570/024-005 | 15.07.2019 | docx<br>19.89 KB |


Continued on next page

## CAD/CAE-Data

| CAD data | CAE data |
|---|---|
| 2D/3D Models 2857-570/024-005 | EPLAN Data Portal 2857-570/024-005 |
| | ZUKEN Portal 2857-570/024-005 |

## Runtime Software

**Firmware**

| | | | |
|---|---|---|---|
| 2857-0570/024-005, 3-Phasen-Leistungsmes-sumformer | V 03 14.06.2022 | zip 503.49 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

### 1.1.2 Communication

#### 1.1.2.1 Communication cable



Item No.: 750-923
Configuration cable; USB connector; Length: 2.5 m

 Continued on next page

## 1.1.3 Current transformer

### 1.1.3.1 Plug-in current transformer



Item No.: 855-305/300-501
Plug-in current transformer; Primary rated current 300 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-405/750-501
Plug-in current transformer; Primary rated current 750 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-305/100-201
Plug-in current transformer; Primary rated current: 100 A; Secondary rated current: 5 A; Rated power: 2.5 VA; Accuracy class: 1



Item No.: 855-505/1000-1001
Plug-in current transformer; Primary rated current: 1000 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-305/150-501
Plug-in current transformer; Primary rated current: 150 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-605/1500-501
Plug-in current transformer; Primary rated current: 1500 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-305/200-501
Plug-in current transformer; Primary rated current: 200 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-805/2000-1001
Plug-in current transformer; Primary rated current: 2000 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-305/250-501
Plug-in current transformer; Primary rated current: 250 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-405/250-501
Plug-in current transformer; Primary rated current: 250 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-1005/2500-1001
Plug-in current transformer; Primary rated current: 2500 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-305/400-1001
Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-505/400-1001
Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-405/400-501
Plug-in current transformer; Primary rated current: 400 A; Secondary rated current: 5 A; Rated power: 5 VA; Accuracy class: 1



Item No.: 855-305/050-103
Plug-in current transformer; Primary rated current: 50 A; Secondary rated current: 5 A; Rated power: 1.25 VA; Accuracy class: 3



Item No.: 855-305/060-101
Plug-in current transformer; Primary rated current: 60 A; Secondary rated current: 5 A; Rated power: 1.25 VA; Accuracy class: 1



Item No.: 855-305/600-1001
Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-505/600-1001
Plug-in current transformer; Primary rated current: 600 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1



Item No.: 855-305/075-201
Plug-in current transformer; Primary rated current: 75 A; Secondary rated current: 5 A; Rated power: 2.5 VA; Accuracy class: 1



Item No.: 855-505/800-1001
Plug-in current transformer; Primary rated current: 800 A; Secondary rated current: 5 A; Rated power: 10 VA; Accuracy class: 1

### 1.1.3.2 Split-core current transformer



Item No.: 855-5005/1000-000
Split-core current transformer; Primary rated current: 1000 A; Secondary rated current: 5 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 3 m



Item No.: 855-5105/1000-000
Split-core current transformer; Primary rated current: 1000 A; Secondary rated current: 5 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 3 m



Item No.: 855-4005/150-101
Split-core current transformer; Primary rated current: 150 A; Secondary rated current: 5 A; Rated power: 1 VA; Accuracy class: 1; Cable length: 0.5 m



Item No.: 855-4105/250-101
Split-core current transformer; Primary rated current: 250 A; Secondary rated current: 5 A; Rated power: 1 VA; Accuracy class: 1; Cable length: 0.5 m



Item No.: 855-5005/400-001
Split-core current transformer; Primary rated current: 400 A; Secondary rated current: 5 A; Rated power: 0.5 VA; Accuracy class: 1; Cable length: 3 m



Item No.: 855-4105/400-101
Split-core current transformer; Primary rated current: 400 A; Secondary rated current: 5 A; Rated power: 1 VA; Accuracy class: 1; Cable length: 0.5 m



Item No.: 855-5005/600-000
Split-core current transformer; Primary rated current: 600 A; Secondary rated current: 5 A; Rated power: 0.5 VA; Accuracy class: 0.5; Cable length: 3 m

## 1.1.4 Interface module

### 1.1.4.1 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


Continued on next page

## 1.1.5 Memory card

### 1.1.5.1 Memory card

Item No.: 758-879/000-3116
Memory Card SD Micro; pSLC-NAND; 16 GB; Temperature range: -40 to 85°C

## 1.1.6 Power supply

### 1.1.6.1 Power Supply



Item No.: 787-2850
Power supply; Compact; 1-phase; 24 VDC output voltage; 1.25 A output current

## 1.1.7 Power tap

### 1.1.7.1 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

## 1.1.8 Terminal blocks

### 1.1.8.1 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

## 1.1.9 Tool

### 1.1.9.1 Operating tool



Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured


Continued on next page

## Installation Notes

### Configuring



Configuration via WAGO Interface Configuration Software