

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>



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 5A 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.)	5 AAC
Response threshold	5 mA
Resolution (current)	0.15 mA
Measured variable	Voltage Current Electrical output Power factor RTD
Input signal (voltage)	AC 277 V (U_{LN}); AC 480 V (U_{LL})
Input signal (current)	AC 5 A (current transformer)
Frequency range	50 ... 60 Hz (Harmonics analysis: 0 ... 3.3 kHz)
Input resistance (current input)	5 m Ω
Input resistance (voltage input)	1.5 M Ω

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

Communication	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)
Limit frequency	15.9 kHz

Measurement error

Transmission error (max.)	$\leq 0.5\%$ for current and voltage (of the full scale value)
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Power supply

Power supply type	24 VDC
Nominal supply voltage U_S	DC 24 V (SELV)
Supply voltage range	$\pm 30\%$
Current consumption at nominal supply voltage	$\leq 50\text{ mA}$ (+ I_{D0})

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)	AC 3.51 kV; 50 Hz; 1 min

Connection data

Connector	2 x RJ-45 (daisy chain configuration)
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Connection 1

Connection type 1	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 2	Current/power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO connector 2	WAGO 805 Series
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inches
Solid conductor 2	0.2 ... 1.5 mm ² / 24 ... 16 AWG
Fine-stranded conductor 2	0.2 ... 1.5 mm ² / 24 ... 16 AWG

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	118.2 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

eCl@ss 10.0	27-21-01-24
eCl@ss 9.0	27-21-01-24
ETIM 8.0	EC002476
ETIM 7.0	EC002476
PU (SPU)	1 pcs
Packaging type	Box
Country of origin	DE
Customs tariff number	85437090300

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 7439-92-1
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide Perfluorobutane sulfonic acid (PFBS) and its salts
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 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

Environmental Product Compliance

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