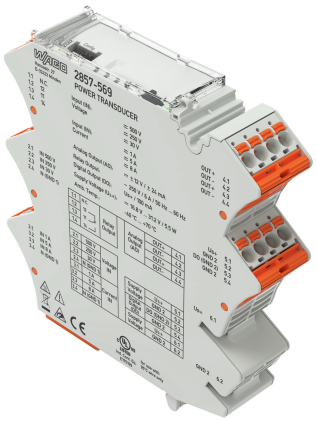
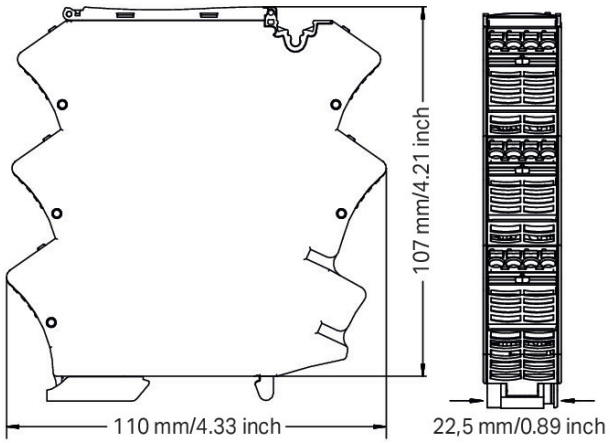
Data Sheet | Item Number: 2857-569

Single-Phase Power Signal Conditioner; Current and voltage input signal; Current and voltage output signal; Digital output; Configuration via software; Supply voltage: 24 VDC

https://www.wago.com/2857-569



1.1	N.C.	Relay Output	Analog Output (AO)	OUT+	4.1
1.2	12			OUT-	4.2
1.3	11			OUT+	4.3
1.4	14			OUT-	4.4
2.1	500 V	Voltage IN	Supply Voltage	U_s+	5.1
2.2	250 V			GND 2	5.2
2.3	30 V		Digital Output (DO)	DO (GND 2)	5.3
2.4	N (GND 1)			GND 2	5.4
3.1	1 A	Current IN	Supply Voltage	U_s+	6.1
3.2	5 A			GND 2	6.2
3.3	8 A				
3.4	N (GND 1)				



Dimensions in mm

Short description:

WAGO's 1-phase power measurement module monitors and reports signal states with up to two switching thresholds. The sensor and status information that is collected is also converted to a standard analog signal. Current, voltage, effective power, apparent power or reactive power can be selected as the measured variable.

Additionally, both frequency and phase angle are displayed.

Features:

- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values).
- Adjustable software filter
- Simulation of input/output response via WAGO Interface Configuration Display
- Analog unipolar/bipolar signals (current/voltage) at output
- Additional digital signal output for configured measurement range limits
- The digital output can be configured as a frequency generator or pulse output (S0 interface).

Notes

Note	• This product is supplied with 24 VDC, which can be commoned using lateral push-in type jumper bars: (6.1) U_S+ (BR) and (6.2) GND 2 (BR). With this variant, it is necessary to ensure that the maximum permissible total current of 6 A is not exceeded. • Additional setting options via WAGO Interface Configuration Software or WAGO Configuration Display

Technical data

Configuration

Configuration options	WAGO Interface Configuration Software WAGO Configuration Display

Input

Input signal type	Voltage Current
Input signal (voltage)	AC/DC 500 V (IN 2.1; per EN 61010-1); AC/DC 300 V (IN 2.1; per UL 61010-1); AC/DC 250 V (IN 2.2) ; 30 V AC/DC (IN 2.3)
Input signal (current)	AC/DC 1 A (IN 3.1); AC/DC 5 A (IN 3.2) ; 8 A AC/DC (IN 3.3)
Frequency range	15 … 400 Hz
Input current (max.)	1.2 × I_N (≤ 60 °C); 1 × I_N (60 … 70 °C)
Input voltage (max.)	1.2 × U_N
Response threshold (voltage)	500 mVAC / 600 mVDC (IN 2.1) 50 mVAC / 500 mVDC (IN 2.2) 20 mVAC / 100 mVDC (IN 2.3)
Response threshold (current)	1.5 mAAC / 7.5 mADC (IN 3.1) 3 mAAC / 10 mADC (IN 3.2) 7.5 mAAC / 12 mADC (IN 3.3)
Resolution (voltage)	50 mV (IN 2.1) 30 mV (IN 2.2) 5 mV (IN 2.3)
Resolution (current)	1 mA (for all measurement ranges)

Output (analog)

Output signal type	Current Voltage
Output signal (voltage)	± 12 V (SELV)
Output signal (current)	±24 mA (SELV)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

Output (digital)

Switching voltage (DO) max.	Supply voltage (applied): −0.3 V
Continuous current (DO) max.	100 mA (no internal restriction)
Number of switching thresholds (DO)	2 (max.)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Configurable functions (DO)	Disabled U_S/GND switching Threshold value switch Frequency generator Pulse output (S0 interface)
Setting range (frequency generator)	0.3 … 100 Hz
Setting range (pulse output)	1000 … 1 pulses/kW(h)

Output (relay)

Number of changeover/switchover contacts	1
Switching voltage (max.)	AC 250 V
Dielectric strength (open contact) (AC, 1 min)	1 kVrms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)

Signaling and communication

Configuration options	WAGO Interface Configuration Software WAGO Configuration Display
Input signal (voltage)	AC/DC 500 V (IN 2.1; per EN 61010-1); AC/DC 300 V (IN 2.1; per UL 61010-1); AC/DC 250 V (IN 2.2) ; 30 V AC/DC (IN 2.3)

Signal processing

Measurement method	True RMS measurement (TRMS)
Measured variables (calculated)	Active power Apparent power Reactive power Mains frequency Phase angle
Limit frequency	2 kHz
Software filter (adjustable)	Filter level: 1 … 30
Step response (max.)	350 ms (for default settings)

Measurement error

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

Supply

Power supply type	24 VDC
Nominal supply voltage U_S	DC 24 V (SELV)
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 70 mA (+ I_{DO})

Safety and protection

Rated voltage	600 V; 300 V (UL)
Measurement category per EN/UL 61010-2-030	CAT III (input)
Note on insulation parameters	The service interface is located on the analog output potential.
Protection type	IP20

Test voltage

Test voltage (input IN 2.1/relay output; per EN 61010-1)	5.4 kVAC ; 50 Hz; 5 s 3.6 kVAC; 50 Hz; 1 min
Test voltage (input IN 2.1/relay output; per UL 61010-1)	3.51 kVAC; 60 Hz; 1 min
Test voltage (input/supply and analog output/relay output)	3.51 kVAC; 50 … 60 Hz; 1 min
Test voltage (supply/analog output)	3.6 kVAC; 50 … 60 Hz; 1 min

Insulation parameters(UL)

Overvoltage category	III
Pollution degree	2
Insulation type (input/supply and analog output/relay output)	Reinforced insulation (safe isolation)

Insulation parameters

Overvoltage category	III
Pollution degree	2
Insulation type (input IN 2.1/relay output)	Reinforced insulation (safe isolation)
Insulation type (input/supply and analog output/relay output)	Double insulation (impedance and basic insulation) Requirement: The N (GND 1) input is dangerous when active!

Connection data

Connection technology	Push-in CAGE CLAMP®
WAGO connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inches

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Physical data

Width	22.5 mm / 0.886 inches
Height	110 mm / 4.331 inches
Depth from upper-edge of DIN-rail	107 mm / 4.213 inches

Mechanical data

Mounting type	DIN-35 rail

Material data

Fire load	2.168 MJ
Weight	149 g

Environmental requirements

Ambient temperature (operation)	-40 … +70 °C
Ambient temperature (storage)	-40 … +85 °C
Temperature range of connection cable	≥ ($T_{ambient}$ + 25 K)
Temperature range of connection cable (UL)	95 °C
Relative humidity	5 … 85 % (non-condensing)
Operating altitude (max.)	2000 m

Standards and specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3
EMC emission of interference	EN 61000-6-3; EN 61326-2-3
Standards/specifications	EN 61010-1 UL 61010-1 UL 61010-2-201

Commercial data

ETIM 8.0	EC002476
ETIM 7.0	EC002476
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4055143907323
Customs tariff number	85437090300

Approvals / Certificates

General approvals

Approval	Standard	Certificate Name
EAC Brjansker Zertifizierungs-stelle	TP TC 020/2011	EAC_Certificate_RU_C-DE.AM02.B.00115_19
EAC Brjansker Zertifizierungs-stelle	TP TC 004/2011	EAC RU C-DE.AM02.B.00122/19
UL Underwriters Laboratories Inc. (ORDINARY LOCATI-ONS)	UL 61010-2-201	E175199

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Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 2857-569

Documentation

Instruction Leaflet			
Single-Phase Power Signal Conditioner; Current and voltage input signal	V 2.0.0 30.09.2020	pdf 3007.72 KB	

1 Compatible Products

1.1 Optional Accessories

1.1.1 Communication

1.1.1.1 Communication cable

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

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

1.1.1.2 Configuration display

Item No.: 2857-900
Configuration display

1.1.2 Installation

1.1.2.1 Mounting accessories

Item No.: 249-117
Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

Item No.: 249-197
Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

Item No.: 249-116
Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

1.1.3 Jumper

1.1.3.1 Jumper

Item No.: 281-482
Jumper; 2-way; insulated; gray

Item No.: 859-402/000-006
Jumper; for jumper slot; 2-way; insulated; blue

Item No.: 859-402
Jumper; for jumper slot; 2-way; insulated; light gray

Item No.: 859-402/000-005
Jumper; for jumper slot; 2-way; insulated; red

Item No.: 859-402/000-029
Jumper; for jumper slot; 2-way; insulated; yellow

1.1.4 Marking

1.1.4.1 Marker

Item No.: 2009-141
Micro-WSB-Inline; 2000 pieces on roll; plain; snap-on type; white

Item No.: 793-5501
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; white

Item No.: 793-502
WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-566
WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-503
WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-504
WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-505
WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-506
WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-501
WMB marking card; as card; not stretchable; plain; snap-on type; white

Item No.: 2009-115
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

1.1.4.2 Marking strip

Item No.: 2009-110
Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

1.1.5 Power supply

1.1.5.1 Power supply unit

Item No.: 787-2852
Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current

1.1.6 Power tap

1.1.6.1 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

1.1.7 Relay module

1.1.7.1 Relay module

Item No.: 857-304
Relay module; Nominal input voltage: 24 VDC; 1 changeover contact; Limiting continuous current: 6 A; Yellow status indicator; Module width: 6 mm; 2,50 mm²; gray

1.1.8 Terminal blocks

1.1.8.1 Supply module

Item No.: 857-979
Supply and through module

1.1.8.2 Through terminal block

Item No.: 857-979
Supply and through module

1.1.9 Test and measurement

1.1.9.1 Testing accessories

Item No.: 735-500
WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 6 mm uninsulated; Test lead for soldering up to 0,5mm²

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

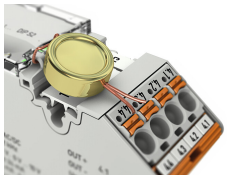
Configuration via WAGO Configuration Display

Conductor termination

Pluggable connection technology

Commoning, not discrete wiring – Same outline allows use of a single in-line, push-in jumper.

Security



Lock-out seal option