

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

www.wago.com/2857-569



Subject to changes. Please also observe the further product documentation!

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Item description

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

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- The digital output can be configured as a frequency generator or pulse output (S0 interface).

Data Notes

Note	<ul style="list-style-type: none"> ■ 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
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Technical data

Configuration

Configuration options	WAGO Interface Configuration Software WAGO Configuration Display
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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.)	$1.2 \times I_N$ (≤ 60 °C); $1 \times I_N$ (60 ... 70 °C)
Input voltage (max.)	$1.2 \times U_N$
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)

Subject to changes. Please also observe the further product documentation!

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)

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

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Step response (max.)	350 ms (for default settings)
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Measurement Error

Transmission error (max.)	≤ 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	±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 digital output (DO) is at the potential of the supply. 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 coordination (UL)

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

Insulation coordination

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!

Subject to changes. Please also observe the further product documentation!



Connection data

Connection technology	Push-in CAGE CLAMP®
WAGO connector	<i>picoMAX</i> ® 5.0
Solid conductor	0.2 ... 2.5 mm ² / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm ² / 24 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inches

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
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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

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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

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 7439-92-1 75980-60-8 79-94-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol 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)	e9a0da3f-7ab8-4615-8bb8-51d84373ba4c
SCIP notification number (Belgium)	cde42bc2-2ed6-4b3f-b95b-c988d14bf8db
SCIP notification number (Bulgaria)	02ec92ad-0329-4305-b22b-9e24a0f958c9
SCIP notification number (Czech Republic)	d096da26-d7f8-4d5e-becc-86e2fb93012f
SCIP notification number (Denmark)	ea1432b2-fa84-46ab-8a5d-075664e979ef
SCIP notification number (Finland)	711a69de-5cbd-429b-a6d3-8ffed1a1b9f3
SCIP notification number (France)	7750255c-4551-444f-b3c6-a4edfe120427
SCIP notification number (Germany)	f2d91d82-2ffe-4f8c-815a-b19f31daaf10
SCIP notification number (Hungary)	118e1f7b-e544-475b-8dbf-0016c1a2f149
SCIP notification number (Italy)	02841e02-dc41-4530-999f-a472b42b8822
SCIP notification number (Netherlands)	b182a8b9-fbbe-43c7-a18e-99b519fe0e2f
SCIP notification number (Poland)	f7f4ead4-ec70-41f8-88ec-eb9d615fea26
SCIP notification number (Romania)	0237191f-9eb4-45db-8b80-7a562cc49da6

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SCIP notification number (Sweden)

7a289ca8-3605-43d8-9581-2947e0665a91

Approvals / Certificates

General approvals

Logo	Approval	Additional Approval Text	Certificate name
	EAC Brjansker Zertifizierungsstelle	TP TC 020/2011	EAC_Certificate_RU_C-DE.AM02.B.00115_19
	EAC Brjansker Zertifizierungsstelle	TP TC 004/2011	EAC RU C-DE.AM02.B.00122/19
	UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 61010-2-201	E175199

Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name
	EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Optional accessories

Marking accessories

Marking strip		
	Item no.: 2009-110 Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white	www.wago.com/2009-110
Marker		
	Item no.: 2009-115 WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	www.wago.com/2009-115
	Item no.: 793-501 WMB marking card; as card; not stretchable; plain; snap-on type; white	www.wago.com/793-501
	Item no.: 793-502 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white	www.wago.com/793-502
	Item no.: 793-503 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white	www.wago.com/793-503
	Item no.: 793-504 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white	www.wago.com/793-504
	Item no.: 793-505 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; white	www.wago.com/793-505

Subject to changes. Please also observe the further product documentation!

**Item no.: 793-506**

WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-506
white

Item no.: 793-566

WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-566
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 www.wago.com/793-5501

Item no.: 2009-141

Micro-WSB-Inline; 2000 pieces on roll; plain; snap-on type; white www.wago.com/2009-141

Jumpers

Jumper

Item no.: 281-482

Jumper; 2-way; insulated; gray www.wago.com/281-482

Item no.: 859-402/000-029

Jumper; for jumper slot; 2-way; insulated; yellow www.wago.com/859-402/000-029

Item no.: 859-402/000-006

Jumper; for jumper slot; 2-way; insulated; blue www.wago.com/859-402/000-006

Item no.: 859-402

Jumper; for jumper slot; 2-way; insulated; light gray www.wago.com/859-402

Item no.: 859-402/000-005

Jumper; for jumper slot; 2-way; insulated; red www.wago.com/859-402/000-005

Power supplies

Power supply unit

Item no.: 787-2852

Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current www.wago.com/787-2852

Mounting

Mounting accessories

Item no.: 249-116

Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray www.wago.com/249-116

Item no.: 249-117

Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray www.wago.com/249-117

Item no.: 249-197

Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray www.wago.com/249-197

Testing and measuring

Testing accessories

Item no.: 735-500

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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 www.wago.com/735-500

Voltage tap

Power tap

Item no.: 855-8001 Power tap; with fuse; 2,5 mm ² (12 AWG) - 6 mm ² (10 AWG); Phase	www.wago.com/855-8001
Item no.: 855-8002 Power tap; without fuse; 2,5 mm ² (12 AWG) - 6 mm ² (10 AWG); N-conductor	www.wago.com/855-8002
Item no.: 855-8004 Power tap; without fuse; 10 mm ² (8 AWG) - 16 mm ² (6 AWG); N-conductor	www.wago.com/855-8004
Item no.: 855-8003 Power tap; with fuse; 10 mm ² (8 AWG) - 16 mm ² (6 AWG); Phase	www.wago.com/855-8003
Item no.: 855-8006 Power tap; for busbar; with fuse; Mounting screw M6	www.wago.com/855-8006
Item no.: 855-8008 Power tap; for busbar; with fuse; Mounting screw M8	www.wago.com/855-8008
Item no.: 855-8015 Power tap; for busbar; with fuse; Clamping connection	www.wago.com/855-8015

Terminal blocks

Supply module

Item no.: 857-979 Supply and through module	www.wago.com/857-979
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Relay module

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 mm ² ; gray	www.wago.com/857-304
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Communication

Configuration display

Item no.: 2857-900 Configuration display	www.wago.com/2857-900
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Communication cable

Item no.: 750-923 Configuration cable; USB connector; Length: 2.5 m	www.wago.com/750-923
Item no.: 750-923/000-001 Configuration cable; USB connector; Length: 5 m	www.wago.com/750-923/000-001

Tool

Operating tool

Subject to changes. Please also observe the further product documentation!

Item no.: 210-720

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

www.wago.com/210-720

Downloads

Documentation

Manual

WAGO Current and Voltage Signal Conditioners and Power Measurement Modules HTML	URL	Download
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Instruction Leaflet

Single-Phase Power Signal Conditioner; Current and voltage input signal	V 2.0.0 2020 年9月30 日	pdf 3.1 MB	Download
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Additional Information

Disposal and Recycling Electrical and electronic equipment, Batteries, Packaging	V 1.1.0 2022 年8月18 日	pdf 2.2 MB	Download
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Environmental Product Compliance

Compliance Search

Environmental Product Compliance 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	URL	Download
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Installation Notes

Configuring

Subject to changes. Please also observe the further product documentation!



Configuration via WAGO Interface
Configuration Software



Configuration via WAGO Configuration Display

Conductor termination

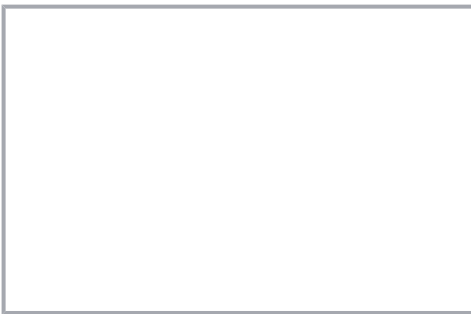


Pluggable connection technology



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

Security



Lock-out seal option

Subject to changes. Please also observe the further product documentation!