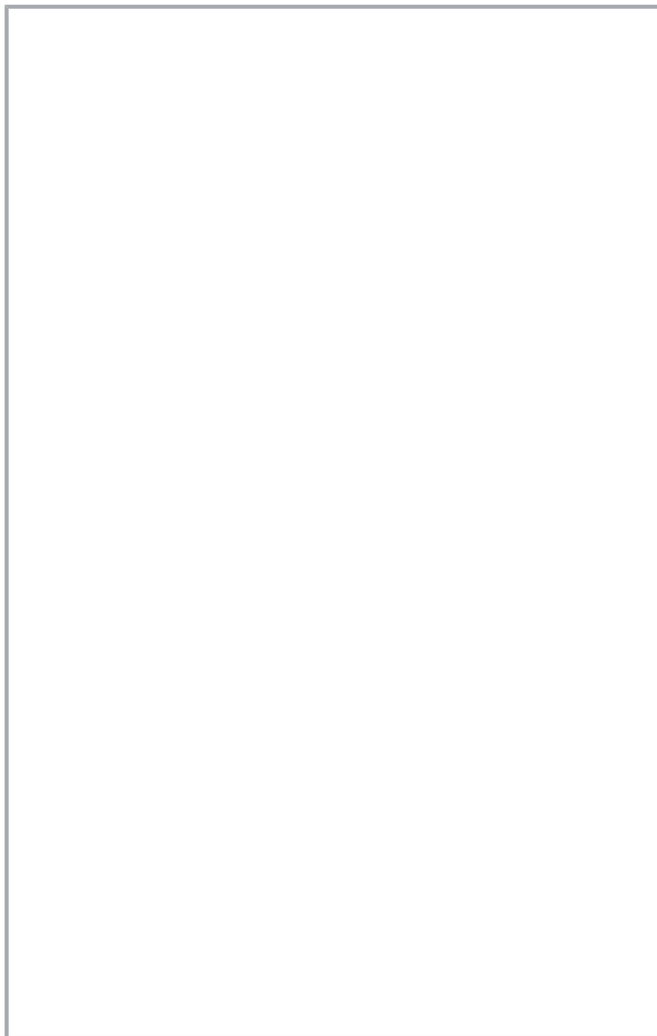
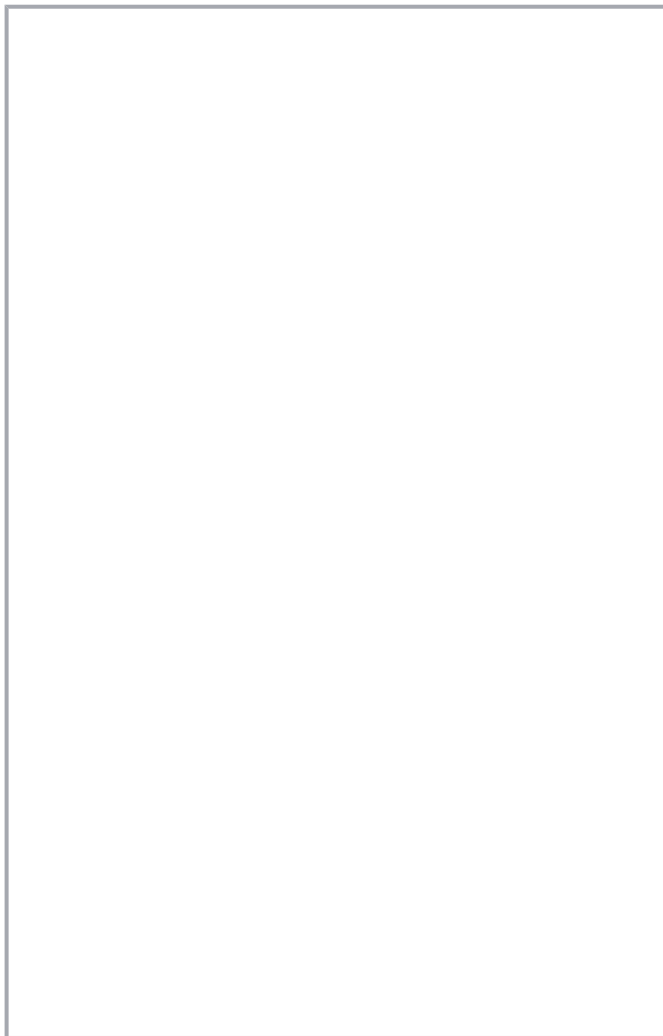


Data sheet | Item number: 789-665

Ground resistance signaling module; Ground fault alarm via digital output;

Supply voltage: 24 VDC; Module width: 18 mm

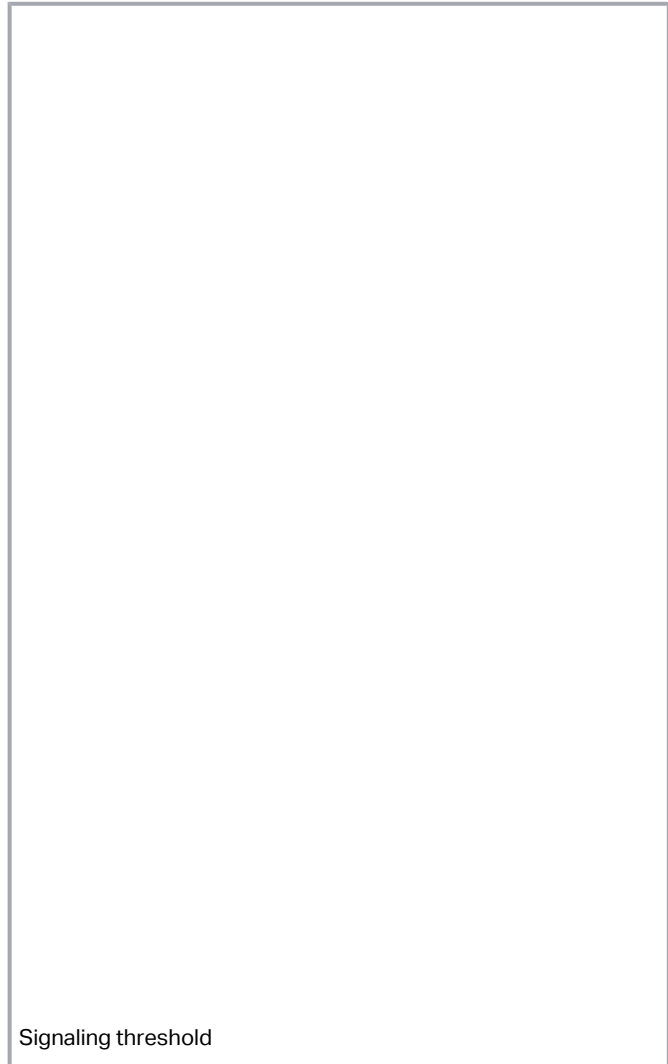
www.wago.com/789-665



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

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Item description

Short description:

WAGO's module signals a value falling below a non-adjustable, asymmetric isolation resistance between +24 V or 0 V of the supply voltage and ground with a potential-free (Iso OK) contact and status LED. The Iso OK contact can be evaluated via a PLC. This status is maintained until the next measurement interval.

Operation with Grounded Control Circuit (Functional Potential Equalization)

- The module establishes an internal connection between the 0 V (X2.2) and ground (X2.1) connections via a semiconductor switch.
- At 10 s intervals, this connection between 0 V and ground is interrupted for 0.5 s, and the isolation resistance between +24 V (X1.3) or 0 V (X2.2) of the supply voltage and earth (X2.1) is determined.
- The grounding connection on the module does not meet the requirements of a protective earth terminal (PE). It serves as a functional ground. The measurement method does not involve the module establishing any permanent connection between 0 V and ground.

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Operation with Ungrounded Control Circuit

- In this operating mode, the semiconductor switch to establish a connection between 0 V (X2.2) and ground (X2.1) is deactivated. At 1 s intervals, the isolation resistance offset is determined for 0.5 s.
- The module does not meet the requirements of an isolation monitoring device per EN 61557-8.

"Iso OK" Contact

- The potential-free contact serves the purpose of supporting evaluation (e.g., via a PLC) of looming isolation faults.
- This contact must not be used to switch safety-related products that could cause the circuit to switch off.

Data

Power supply

Nominal supply voltage U_S	DC 24 V (SELV)
Supply voltage range (DC)	DC 18 ... 31.2 V
Current consumption at nominal supply voltage	≤ 40 mA
Power loss P_I	≤ 1.7 W
Current at ground fault (24 VDC) max.	56 mA

Signaling

Operation status indicator	1 x LED "Status OK" (green)
Signaling	1 x LED "Iso Alarm" (red) 1 x LED "Iso Alarm" 24 V – Ground (yellow) 1 x LED "Iso Alarm" 0 V – Ground (yellow) 1 x Signal output "Iso OK"

Iso OK contact

Switching voltage (max.)	48 VDC (SELV)
Continuous current (max.)	500 mA (for general use)
Number of Iso OK contacts connected in series (max.)	25 (Limit value type: 1); 32 (Limit value type: 2 and 3) (per IEC 61131)
Function	1 make contact (NO); closed with applied power supply and insulation resistance > limit value

Circuit protection

Backup fusing (required)	The fuse must be placed in the output circuit of the power supply. The fuse must be adapted to the power supply used and must trip safely in case of a short circuit. The module is designed for use with
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a 10 A (max.) fuse or with a 10 ADC (max.) circuit breaker
(characteristic B or C).

Safety and protection

Pollution degree	2
Overvoltage category	II
Protection type	IP20
Test voltage (supply/Iso OK contact)	1.5 kVAC; 50 ... 60 Hz; 1 min
MTBF	> 600,000 h (per MIL-HDBK-217F2)

Mode: Ungrounded circuit

Response value for alarm at nominal voltage	4 k Ω (at $U_S = 24$ V; for other U_S values, see diagram for signaling threshold)
Response time	1 s
Hysteresis (typ.)	1 k Ω

Mode: Grounded circuit

Response value for alarm at nominal voltage	4 k Ω (at $U_S = 24$ V; for other U_S values, see diagram for signaling threshold)
Response time	10 s
Hysteresis (typ.)	1 k Ω

Connection data

Connection type 1	X1.x
Connection technology	Push-in CAGE CLAMP [®]
WAGO connector	<i>picoMAX</i> [®] eCOM
Solid conductor	0.25 ... 1.5 mm ² / 24 ... 14 AWG
Fine-stranded conductor	0.25 ... 1.5 mm ² / 24 ... 14 AWG
Fine-stranded conductor; with insulated ferrule	0.25 ... 0.75 mm ²
Fine-stranded conductor; with uninsulated ferrule	0.25 ... 1.5 mm ²
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
Connection type 2	X2.x
Connection technology 2	Push-in CAGE CLAMP [®]
WAGO connector 2	<i>picoMAX</i> [®] eCOM
Solid conductor 2	0.2 ... 2.5 mm ² / 24 ... 12 AWG

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Fine-stranded conductor 2	0.2 ... 2.5 mm ² / 24 ... 14 AWG
Fine-stranded conductor; with insulated ferrule 2	0.25 ... 1.5 mm ²
Fine-stranded conductor; with uninsulated ferrule 2	0.25 ... 2.5 mm ²
Strip length 2	9 ... 10 mm / 0.35 ... 0.39 inches

Physical data

Width	18 mm / 0.71 inches
Height	90 mm / 3.54 inches
Depth from upper-edge of DIN-rail	51 mm / 2.01 inches

Mechanical Data

Mounting type	DIN-35 rail
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Material Data

Weight	47 g
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Environmental requirements

Ambient temperature (operation)	-40 ... +70 °C
Ambient temperature (storage)	-40 ... +85 °C
Temperature range of connection cable	≥ (T _{ambient} + 10 K)
Relative humidity	5 ... 95 % (non-condensing)
Operating altitude (max.)	3000 m

Standards and specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3; EN 61000-6-4
Standards/specifications	UL 61010-2-201

Commercial data

ETIM 8.0	EC003596
ETIM 7.0	EC003596
Recupel Type	
PU (SPU)	1 pcs
Country of origin	CN

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GTIN	4066966120820
Customs tariff number	85365005000

Environmental Product Compliance

RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II

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
	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	-	-

Approvals for hazardous areas

Logo	Approval	Additional Approval Text	Certificate name
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	UL 121201	E198726

Optional accessories

Tool

Operating tool	Item no.: 210-719 Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft	www.wago.com/210-719
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Marking accessories

Marking strip	Item no.: 2009-110	www.wago.com/2009-110
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Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

Marker carrier

Item no.: 2009-198
Adaptor; gray

www.wago.com/2009-198

Downloads Documentation

Bid Text

789-665 X81 - Datei	xml 10.4 kB	Download
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789-665 docx - Datei	docx 29.4 kB	Download
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Instruction Leaflet

Erdwiderstand-Signalisierungsmodul Überspannungsschutz und Sonderelektronik	V 1.0.0 2020 年11月17日	pdf 2.7 MB	Download
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CAD/CAE-Data

CAD data

2D/3D Models 789-665	URL	Download
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CAE data

ZUKEN Portal 789-665	URL	Download
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EPLAN Data Portal 789-665	URL	Download
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Environmental Product Compliance

Compliance Search

Environmental Product Compliance 789-665 Ground resistance signaling module; Ground fault alarm via digital output; Supply voltage: 24 VDC; Module width: 18 mm	URL	Download
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Installation Notes

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