

Current Sensor with Bus Connection in DIN-Rail Mountable Enclosure

Measuring range 0 ... 80 A





Short description:

Intelligent current sensor for monitoring solar plants or inverters for DC measurements within a large current measuring range.

Description	Item No.	Pack. Unit
Current sensor with bus connection	789-620	1
Accessories	Item No.	Pack. Unit
Accessories for data and auxiliary pa	wer supply	
RJ-45 interface module	289-965	1
RJ-45 interface module with shield		
(screen) clamping saddle	289-966	1
Approvals		
Conformity marking	CE	
Standards/Specifications	DIN EN 50178; EN 61	000-6-2 ;
	EN 61000-6-4	
General Specifications		
Dimensions (mm) W x H x L	35 x 55 x 90	
	Height from upper-edge	of DIN 35 rail
Ambient operating temperature	-20°C +70°C	
Storage temperature	-40 °C +85 °C	

0 80 A DC
12 - 34V
≤ 8 mA at 24 V
≤ 0.5 % of upper range value
(at room temperature)
0.01 % /K
< 30 ms
possible
150 Ω (can be activated via DIP switch 1)
Green: power
Red: measured current < -3 A or > 83 A
15 mm
IP20
RS-485
Half duplex 8-bit data, 1 stop bit
MODBUS over serial line
RJ-45
1 32
≤ 1200m
19,200 baud
Even

WAGO Kontakttechnik GmbH & Co. KG Subject to design changes

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RJ-45-Connector Pin Assignment:

Pin	Function
1	1.1
2	
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	
8	GIND

RS-485

half duplex

Uart:

Communication settings requiredfor transducer:

Baud rate: 19200 bd Data bits: 8 Parity: even Stop bits: 1

Communication Description:

MODBUS Function	Read Holding Registers (0x03)	Data Type Measurement
Device Type	0x0000	Char
Firmware	0x0001	Char
Error Code	0x0002	Integer
Measurement	0x0004	Integer
Exception Code	0x0006	Integer

Error Numbers:

id	Description
01	Illegal Function
03	Illegal Data
101	Overflow (Current > +83 A)
102	Underflow (Current < -3 A)

DIP Switch Adjustability

• = ON

Adress	DIP Switch				Terminating resistor	DIP Switch 1	
	2	3	4	5	6	-	
1						150 Ohm	•
2					•		
3				•			
4				•	•		
5			•				
6			•		•		
7			•	•			
8			•	•	•		
9		•					
10		•			•	_	
11		•		•			
12		•		•	•		
13		•	•				
14		•	•		•	-	
15		•	•	•		-	
16		•	•	•	•	-	
17	•					-	
18	•				•	-	
19	•			•		-	
20	•			•	•	-	
21	•		•			-	
22	•		•		•	-	
23	•		•	•		-	
24	•		•	•	•	-	
25	•	•				-	
26	•	•			•	4	
27	•	•		•		4	
28	•	•		•	•	4	
29	•	•	•			4	
30	•	•	•		•	NOTICE	
31	•	•	•	•		Only set the MODBUS address in the	
32	•	•	•	•	•	OFF state.	

789-620



Current Sensor with Bus Connection in DIN-Rail Mountable Enclosure

Measuring range: 0 – 140 A





Short description:

Intelligent current sensor for monitoring solar plants or inverters for DC measurements within a large current measuring range.

Description	Item No.	Pack. Unit
Current sensor with bus connection	789-621	1
Accessories	Item No.	Pack. Unit
Accessories for data and auxiliary po	wer supply	
RJ-45 interface module	289-965	1
RJ-45 interface module with shield		
(screen) clamping saddle	289-966	1
Approvals		
Approvals Conformity marking	CE	
Approvals Conformity marking Standards/Specifications	C€ DIN EN 50178; EN 610	000-6-2 ;
Approvals Conformity marking Standards/Specifications	C€ DIN EN 50178; EN 610 EN 61000-6-4	000-6-2 ;
Approvals Conformity marking Standards/Specifications	C€ DIN EN 50178; EN 610 EN 61000-6-4	000-6-2 ;
Approvals Conformity marking Standards/Specifications General Specifications	C € DIN EN 50178; EN 610 EN 61000-6-4	000-6-2 ;
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L	C€ DIN EN 50178; EN 610 EN 61000-6-4 35 × 55 × 90	000-6-2 ;
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L	C€ DIN EN 50178; EN 610 EN 61000-6-4 35 x 55 x 90 Height from upper-edge	000-6-2 ; of DIN 35 rail
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L Ambient operating temperature	C€ DIN EN 50178; EN 610 EN 61000-6-4 35 x 55 x 90 Height from upper-edge -20°C +70°C	000-6-2 ; of DIN 35 rail
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L Ambient operating temperature Storage temperature	C€ DIN EN 50178; EN 610 EN 61000-6-4 35 x 55 x 90 Height from upper-edge to -20°C +70°C -40°C +85°C	000-6-2 ; of DIN 35 rail
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L Ambient operating temperature Storage temperature	C€ DIN EN 50178; EN 610 EN 61000-6-4 35 x 55 x 90 Height from upper-edge a -20°C +70°C -40 °C +85 °C	000-6-2 ; of DIN 35 rail
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L Ambient operating temperature Storage temperature	С є DIN EN 50178; EN 610 EN 61000-6-4 35 x 55 x 90 Height from upper-edge -20°С +70°С -40°С +85°С	000-6-2 ; of DIN 35 rail
Approvals Conformity marking Standards/Specifications General Specifications Dimensions (mm) W x H x L Ambient operating temperature Storage temperature	С є DIN EN 50178; EN 610 EN 61000-6-4 35 x 55 x 90 Height from upper-edge -20°С +70°С -40°С +85°С	000-6-2 ; of DIN 35 rail

Technical Data	
Electrical data:	
Measuring range	0 - 140A DC
Voltage supply	12 - 34V
Max. current consumption	≤ 8 mA at 24 V
Transmission error	0 - 80A: ≤ 0.5% of upper range value (at
	room temperature);
	80 - 140A: ≤ 1% of upper range value (at
	room temperature)
Temperature coefficient	≤ 0.05% /K
	(at ambient operating temperature:
	-20°C +60°C);
	≤ 0.1% /K
	(at ambient operating temperature:
	+60°C +70°C)
Time frame for polling by master	< 30 ms
Hot plugging	possible
Terminating resistor	150Ω (can be activated via DIP switch 1)
Status indication	Green: power;
	Red: measured current < -3A
	or > 143A
Mechanical data:	
Power cable feed-through	15 mm
Degree of protection	IP20
Communication:	
Interface	RS-485
Transmission channels	Half duplex, 8-bit data, 1 stop bit
Protocols	MODBUS RTU Slave over serial line
Connector	RJ-45
Addressing	1 32
Max. length of bus line	≤ 1200m
Baud rate	19200 baud
Parity	Even

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28.06.2012

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RJ-45-Connector Pin Assignment:

Pin	Function
1	1.16
2	OB
3	n.c.
4	A (Data+)
5	B (Data-)
6	n.c.
7	
8	

RS-485 half duplex

Uart:

Communication settings requiredfor transducer:

Baud rate: 19200 bd Data bits: 8 Parity: even Stop bits: 1

Communication Description:

MODBUS Function	Read Holding Registers (0x03)
Address of Measured Value	0x0004
Data Type Measurement	Integer

DIP Switch Adjustability

• = ON

Adress	DIP Switch					Terminating resistor	DIP Switch 1
	2	3	4	5	6		
1						150 Ohm	•
2					•		
3				•			
4				•	•		
5			•				
6			•		•		
7			•	•			
8			•	•	•		
9		•					
10		٠			•		
11		•		•			
12		•		•	•		
13		٠	•				
14		٠	•		•		
15		٠	٠	•			
16		•	•	•	•		
17	•						
18	•				•		
19	•			•			
20	•			•	•		
21	•		•				
22	•		•		•		
23	•		•	•			
24	•		•	•	•		
25	•	٠					
26	•	٠			•		
27	•	٠		•			
28	•	•		•	•		
29	•	٠	•				
30	•	•	•		•		
31	•	•	•	•		NOTICE: Only set the MODBUS address in the	
32	•	•	•	•	•	OFF state.	

789-622



Current Sensor with Bus Connection in DIN-Rail Mountable Enclosure

Measuring range: 0 – 50 A _{eff.}





Short description:

Intelligent DIN 35-rail mount current sensor for monitoring AC currents.

Description	Item No.	Pack. Unit
Current sensor with bus connection	789-622	1
Accessories Description	Item No.	Pack. Unit
Accessories for data and auxiliary po	ower supply	
RJ-45 interface module	289-965	1
RJ-45 interface module with shield		
(screen) clamping saddle	289-966	1
Approvals		
Conformity marking	CE	
Standards/Specifications	DIN EN 50178; EN 61	000-6-2 ;
	EN 61000-6-4	
General Specifications		
Dimensions (mm) W x H x L	35 x 55 x 90	
	Height from upper-edge	of DIN 35 rail
Ambient operating temperature	-20 °C +70 °C	
Storage temperature	-40 °C +85 °C	

Technical Data			
Electrical data:			
Measuring range	0 – 50 A AC _{eff.}		
Voltage supply	12 - 34 V		
Max. current consumption	≤ 8 mA at 24 V		
Transmission error	typ. 1%, max. 3% of upper range value (at		
	room temperature)		
Temperature coefficient	≤ 0.01% /K		
Time frame for polling by master	< 30 ms		
Hot plugging	possible		
Terminating resistor	150 Ω (can be activated via DIP switch 1)		
Status indication	Green: Power		
	Red: Measured current > 55 A _{eff.}		
Mechanical data:			
Power cable feed-through	15 mm		
Degree of protection	IP20		
Communication:			
Interface	RS-485		
Transmission channels	Half duplex, 8-bit data, 1 stop bit		
Protocols	MODBUS RTU slave over serial line		
Connector	RJ-45		
Addressing	1 - 32		
Max. length of bus line	≤ 1200 m		
Baud rate	19200 baud		
Parity	Even		

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RJ-45-Connector Pin Assignment:

Pin	Function				
1	1.11				
2	06				
3	n.c.				
4	A (Data+)				
5	B (Data-)				
6	n.c.				
7					
8	GND				

RS-485 half duplex

Uart:

Communication settings requiredfor transducer:

Baud rate: 19200 bd Data bits: 8 Parity: even Stop bits: 1

Communication Description:

MODBUS Function	Read Holding Registers (0x03)		
Address of Measured Value	0x0004		
Data Type Measurement	Integer		

DIP Switch Adjustability

• = ON

Adress	DIP Switch					Terminating resistor	DIP Switch 1
	2	3	4	5	6	-	
1						150 Ohm	•
2					•		
3				•			
4				•	•		
5			•				
6			•		•		
7			•	•			
8			•	•	•		
9		•					
10		•			•		
11		•		•			
12		•		•	•		
13		•	•				
14		•	•		•		
15		•	•	•			
16		•	•	•	•		
17	•						
18	•				•		
19	•			•			
20	•			•	•		
21	•		•				
22	•		•		•		
23	•		•	•			
24	•		•	•	•		
25	•	•					
26	•	•			•		
27	•	•		•			
28	•	•		•	•		
29	•	•	•				
30	•	•	•		•		
31	•	•	•	•		NOTICE: Only set the MODBUS address in the	
32	•	•	•	•	•	OFF state.	

789-622