

Module 800-CT12-SVD-US

Current measuring module with voltage detection

Data sheet

Doc. no.: 2.053.249.1.c Status: 06/2025

Janitza®

Current measuring module 800-CT12-SVD-US

Suitable for basic devices UMG 800/801
*UMG 801 in preparation from Firmware 1.7.3

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The German version is the original version of the documentation.

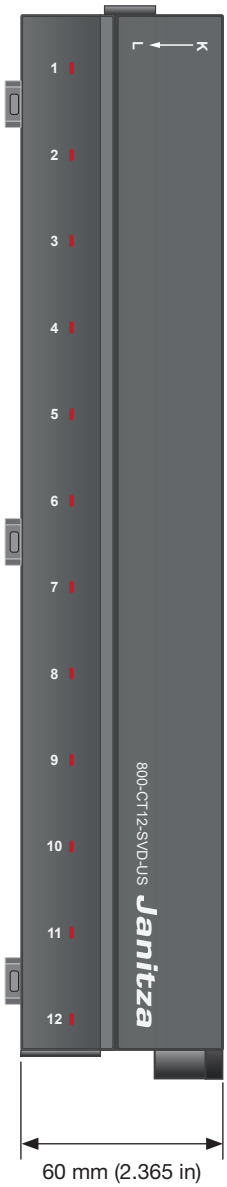
Subject to technical changes

The content of our documentation has been compiled with the utmost care and is based on the latest information available to us. Nevertheless, we would like to point out that the updating of this document cannot always be performed simultaneously with the further technical development of our products. Information and specifications can be changed at any time.
Please consult www.janitza.com for information on the current version.

Device views

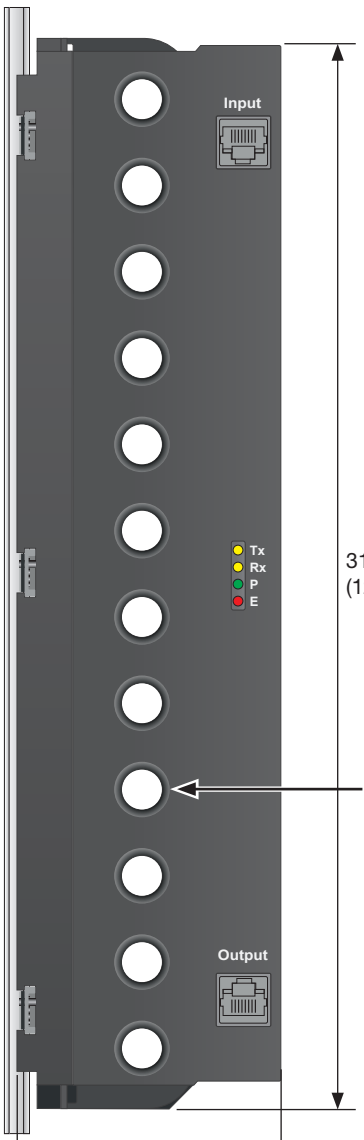
- The figures serve as illustrations and are not true to scale.
- Dimensions in mm (in).

Top view



60 mm (2.365 in)

Side view



316 mm
(12.4 in)

77 mm (3.04 in)

12 measurement channels (cable bushings) with built-in current transformers and voltage detection





Technical data

General	
Net weight approx.	880 g (1.94 lbs)
Dimensions	W = 316 mm (12.45 in), H = 60 mm (2.37 in), D = 77 mm (3.04 in)
Grid dimension of the measurement channels (cable bushings)	25.4 mm / 1.0 in
Mounting orientation	As desired
Fastening/mounting - Suitable DIN rails (35 mm / 1.38 in)	TS 35/7.5 according to EN 60715 TS 35/10 TS 35/15 x 1.5
Protection against foreign matter and water	IP20 according to EN60529
Impact resistance	IK07 according to IEC 62262

Transport and storage The following specifications apply for devices transported and stored in the original packaging.	
Free fall	1 m (39.37 in)
Temperature	-25 °C (-13 °F) to +70 °C (158 °F)
Relative humidity	0 to 95% without condensation

Environmental conditions during operation	
The module · Must only be operated with suitable basic devices (see Sect. on p. 2). · Is for weather-protected and stationary use. · Fulfills the operating conditions according to IEC 61000-4-30, IEC 60721-3-3. · Has protection class II according to IEC 60536 (VDE 0106, part 1), a ground wire connection is not required!	
Working temperature	-10 °C (14 °F) .. +55 °C (131 °F)
Relative humidity	5 to 95% at 25 °C (77 °F), no condensation
Pollution degree	2
Ventilation	No forced ventilation required.

Current measurement	
Nominal current	100 A (120 A continuous overload)
Channels	12 (3x4): · 3 systems - L1, L2, L3, N or 12 individual channels [1)] · Virtual meter for configuration as needed, e.g. L1, L2, L3
Measuring range	1 ... 120 A (eff)
Crest factor	1.5 (relative to nominal current)
Overload for 1 s	500 A (sinusoidal)
Resolution	0.1 A
Sampling frequency	6.8 kHz
Overvoltage category	300 V CAT III
Rated surge voltage	4 kV
Harmonics	1 .. 15 (odd only)

1) Physical measurement groups are only possible with a UMG 801 as the basic device. The UMG 800 always uses Virtual Meter with predefined or freely definable measurement groups.

Voltage detection	
3-phase-4-conductor systems with rated voltages up to	277 V_{LN} / 480 V_{LL} (±10%) according to IEC/UL
Overvoltage category (up to 2000 m)	300 V CAT III according to IEC/UL
Rated surge voltage	4 kV
Measuring range L-PE	0 .. 300 Vrms
Sampling frequency	6.8 kHz

Cable bushing					
Line type		Single-core, insulated cable (basic insulation according to UL/CSA 61010)			
Outer diameter		Up to 11 mm			
Wire size		**Load capacity in A** at a permissible continuous temperature of 75°C (167°F) on the conductor depending on the **Ambient temperature**			
AWG	mm^2	≤ 30°C / 86°F	≤ 35°C / 95°F	≤ 45°C / 113°F	≤ 55°C / 131°F
14	2.07	30	28	25	20
12	3.29	35	33	29	23
10	5.26	50	47	41	34
8	8.38	70	66	57	47
6	13.32	95	89	78	64
4	21.09	100	100	100	84
2	33.63				100

Interface and energy supply	
RJ45 interface (In/Out)	JanBus (proprietary) via RJ45 patch cable.
JanBus (proprietary) - Max. bus lengths/cable lengths of the RJ45 cables (use shielded RJ45 cables as of 30 m)	Cat 7/7a = 100 m (109.36 yd) (AWG 22: Ø = 0.64 mm, cross-sectional area = 0.33 mm^2)
	Cat 6/6a = 75 m (82.02 yd) (AWG 23: Ø = 0.57 mm, cross-sectional area = 0.26 mm^2)
	Cat 5/5e = 60 m (65.62 yd) (AWG 24: Ø = 0.51 mm, cross-sectional area = 0.21 mm^2)
Supply voltage	24 V via JanBus interface
Power consumption	max. 1 W

Module LEDs	
Tx (send data)	Blinks "orange" during operation and indicate cyclic data exchange.
Rx (receive data)	
P (power – power supply)	Lights "green" if the supply of power via the JanBus interface is correct.
E (error – initialization and malfunction)	Lights "red" when initializing/starting the device and blinks in the event of a fault.

Performance characteristics of functions

All performance characteristics only apply in combination with UMG 801 or UMG 800 as basic device.

Voltage detection

Function	Symbol	Accuracy class	Measuring range
Voltage	U_{L-PE}	20% [1]	0 .. 300 V_{rms}

1) Calibration of the measurement channels required, see section „9.9 Voltage calibration (calibration of the measurement channels)“.

Current measurement, module 800-CT12-SVD-US in combination with basic device

Function	Symbol	Accuracy class – 100 A nominal current
Total active power	P	0.5 (IEC61557-12)
Total reactive power	QA, Qv	1 (IEC61557-12)
Total apparent power	SA, Sv	0.5 (IEC61557-12)
Total active energy	Ea	0.5 (IEC61557-12) 0.5S (IEC62053-22)
Total reactive energy	ErA, ErV	1 (IEC61557-12)
Total apparent energy	EapA, EapV	0.5 (IEC61557-12)
Phase current	I	0.5 (IEC61557-12)
Power factor	PFA, PFV	1 (IEC61557-12)
Current harmonics	Ih	Cl. 1 (IEC61000-4-7)
THD of the current	THDI	1.0 (IEC61557-12)

INFORMATION

Detailed information on the functions and data of the basic device can be found in the usage information included with the basic device or available for download at www.janitza.com!

Janitza electronics GmbH
Vor dem Polstück 6 | 35633 Lahnau
Germany

Tel. +49 6441 9642-0
info@janitza.com | www.janitza.com

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