

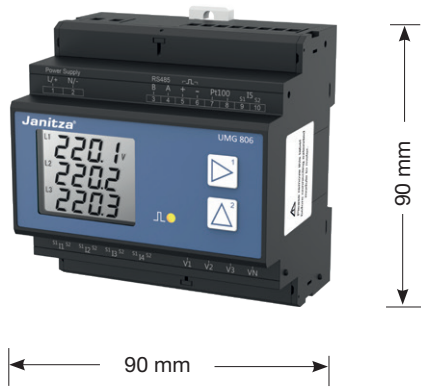


Power Analyser  
**UMG 806**  
and modules

Data sheet

## DEVICE VIEWS

### Front view



## MODULES



**Module 806-EC1:**

- Ethernet communications module



**Module 806-EI1:**

- Analog input module



**Module 806-ED1:**

- Digital input module

# TECHNICAL DATA DEVICE

<b>General information</b>	
Net weight	300 g (0.66 lb)
Device dimensions (approx.)	90 mm × 90 mm × 63.5 mm (3.54 in × 3.54 in × 2.5 in)
Battery	CR2032
Service life of the backlight	45000 h (50% of the starting brightness)
Installation position	discretionary
Impact resistance	IK04 according to IEC 62262

<b>Transport and storage</b>	
The following information applies to devices which are transported or stored in the original packaging.	
Free fall (approx.)	1 m (3.28 ft.)
Temperature (approx.)	-30° C .. +80° C (-22° F .. +176° F)
Relative humidity	5 to 95% at 25 °C (77 °F) without condensation

<b>Ambient conditions during operation</b>	
The device <ul style="list-style-type: none"> <li>• must be used in a weather-protected, stationary application.</li> <li>• fulfills the operating conditions according to DIN IEC 60721-3-3.</li> <li>• possesses protection class II according to IEC 60536 (VDE 0106, Part 1), a ground wire connection is not required!</li> </ul>	
Operating temperature range (approx.)	- 25° C .. + 70° C (-13° F .. +158° F)
Relative humidity	5 to 95% at 25 °C (77 °F) without condensation
Operating altitude	< 2500 m (1.55 mi above sea level)
Degree of pollution	2
Ventilation	forced ventilation is not required
Protection against ingress of solid foreign bodies and water	IP20 i.a.w. EN60529

<b>Supply voltage</b>	
Nominal range	AC/DC: 80 V - 270 V
Operating range	± 10% of the nominal range
Power consumption	max.7 VA
Recommended overcurrent protection device for the line protection	0.5 A (char. B), IEC-/UL approval

<b>Voltage measurement</b>	
3-phase 4-conductor systems with nominal voltages up to	230 VLN / 400 VLL (+/-10%) acc. IEC
3-phase 3-conductor systems, unearthed, with nominal voltages up to	400 VL-L (+/-10%) acc. IEC
Overvoltage category	300 V CAT III acc. IEC
Rated surge voltage	4 kV
Fuse for the voltage measurement	1 - 10 A tripping characteristic B (with IEC/UL approval)
Metering range L-N	0 .. 230 Vrms (max. overvoltage 277 Vrms)
Metering range L-L	0 .. 400 Vrms (max. overvoltage 480 Vrms)
Resolution	0.1 V
Crest factor	2 (based on the metering range 400 V L-N)
Impedance	≥1,7 MΩ/Phase
Power consumption	Approx. 0.1 VA / phase
Sampling frequency	8 kHz / phase
Frequency of the basic oscillation - resolution	45 Hz .. 65 Hz 0.01 Hz
Harmonics	1 .. 31.

<b>Current measurement (./1A) (./5A)</b>	
Rated current	5 A
Channels	4
Metering range	0.005 .. 6 Arms
Crest factor	2
Overload for 1 sec.	100 A (sinusoidal)
Resolution	1 mA
Overvoltage category	300V CAT II
Rated surge voltage	4 kV
Power consumption	approx. 0.2 VA
Sampling frequency	8 kHz
Harmonics	1 .. 31.

<b>Current measurement (0 .. 40 mA, AC)</b>	
Channel (I5)	1

<b>Digital Output</b>	
Energy pulse output	
Switching voltage	max. 35 V DC
Switching current	max. 10 mA <sub>eff</sub> DC
Response time	Approx. 500 ms
Pulse width	80 ms ±20%
Pulse output (energy pulse)	max. 10 Hz

<b>Temperature measurement</b>	
Update time	1 s
Total burden (sensor + cable)	max. 0.35 k $\Omega$
Suitable sensor types	PT 100

<b>Line length (digital output; temp. measurement)</b>	
Up to 30 m (32.81 yd.)	Unshielded
Greater than 30 m (32.81 yd.)	Shielded

<b>RS485 interface</b>	
x-wire connection	
Protocol	Modbus-RTU
Transmission rate	up to 38.4 kbps

<b>Terminal connection capacity (supply voltage)</b>	
Connectable conductors. Only one conductor can be connected per terminal.	
Single core, multi-core, fine-stranded	0.14 - 2.5 mm <sup>2</sup> , AWG 26-14
Cable end sleeve (not insulated)	0.25 - 2.5 mm <sup>2</sup> , AWG 23-14
Cable end sleeve (insulated)	0.25 - 1.5 mm <sup>2</sup> , AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.4 - 5.3 lbf in)
Stripping length	7 mm (0.2756 in)

<b>Terminal connection capacity (current measurement)</b>	
Connectable conductors. Only one conductor can be connected per terminal.	
Single core, multi-core, fine-stranded	0.2 - 4 mm <sup>2</sup> , AWG 24-12
Cable end sleeve (not insulated)	0.25- 2.5 mm <sup>2</sup> , AWG 23-14
Cable end sleeve (insulated)	0.25 - 1.5 mm <sup>2</sup> , AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.4 - 5.3 lbf in)
Stripping length	7 mm (0.2756 in)

<b>Terminal connection capacity (voltage measurement)</b>	
Connectable conductors. Only one conductor can be connected per terminal.	
Single core, multi-core, fine-stranded	0.2 - 4 mm <sup>2</sup> , AWG 24-12
Cable end sleeve (insulated/not insulated)	0.25- 2.5 mm <sup>2</sup> , AWG 23-14
Stripping length	7 mm (0.2756 in)

<b>Terminal connection capacity (RS485, digital output, temp. measurement)</b>	
Single core, multi-core, fine-stranded	0.2 - 4 mm <sup>2</sup> , AWG 24-12
Cable end sleeve (not insulated)	0.25- 2.5 mm <sup>2</sup> , AWG 23-14
Cable end sleeve (insulated)	0.25 - 1.5 mm <sup>2</sup> , AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.4 - 5.3 lbf in)
Stripping length	7 mm (0.2756 in)

## FUNCTION PERFORMANCE CHARACTERISTICS

Function	Sign	Accuracy	Display range
Voltage	U	0.2	0-999.9 kV
Current	I	0.2	0-99.99 kA
Active power	P	0.5	0-9999 MW
Reactive power	Q	0.5	0-9999 Mvar
Apparent power	S	0.5	0-9999 MVA
Power factor	PF	0.5	0-1.000
Frequency	F	±0.01 Hz	45.00 Hz-65.00 Hz
Active energy	EP	0.5 s	0-99999999 MWh
Reactive energy	EQ	2	0-99999999 Mvarh
Total harmonic distortion of voltage	THDu	Class S	0-99.99 %
Total harmonic distortion of current	THDi	Class S	0-99.9 9%
Voltage harmonic ratio	THDu	Class S	0-99.99 %
Current harmonic ratio	THDi	Class S	0-99.99 %
Voltage unbalance	Uunb	0.5	--
Current unbalance	Iunb	0.5	--
Voltage sequence component	--	0.5	--
Phase position of voltage, current	--	±0.1°	
Current sequence component	--	0.5	--
Extreme value	--	0.5	--
Demand	--	0.5	--
Temperature	T	±2°C (35,6°F)	--

**Note:**

When transformer is open type transformer or rogowski, current accuracy 0.5, power accuracy 1 class, active energy 2 class

# TECHNICAL DATA MODULES



Module 806-EC1 Ethernet interface	
Connection	RJ45 (10M)
Frame format	IEE 802.3
MAC	IEEE certification
IP	Static set
Protocol	Modbus/TCP, SNMP V2c
Isolation	1.5 kV AC



Module 806-EI1		
Analog input	Input number	4
	Input type	0 .. 24 mA
	Accuracy	0.5 %
Relay output	Output number	2
	Contact rate	AC 250 V/5 A or DC 30 V/5 A
	Isolation	2.5 kV AC

Terminal connection capacity (inputs and outputs)	
Single core, multi-core, fine-stranded	0,2 .. 1.5 mm <sup>2</sup> , AWG 28-16
Cable end sleeve (not insulated)	0,2 .. 1.5 mm <sup>2</sup> , AWG 26-16
Cable end sleeve (insulated)	0,2 - 1,5 mm <sup>2</sup> , AWG 26-16
Tightening torque	0.2 - 0.25 Nm (1.77 - 2.21 lbf in)
Stripping length	7 mm (0.2756 in)



Module 806-ED1		
Digital input	Number	4
	Input type	Dry contact
	Scan time	30 ms
	Isolation	2 kV AC
	Min. pulse width	5 ms
	Max. frequency	30 ms
	Max. value of calculation	99999999
Relay output	Number	2
	Contact rate	AC 250 V/5 A or DC 30 V/5 A
	Isolation	2.5 kV AC

Terminal connection capacity (inputs and outputs)	
Single core, multi-core, fine-stranded	0,2 .. 1,5 mm <sup>2</sup> , AWG 28-16
Cable end sleeve (not insulated)	0,2 .. 1,5 mm <sup>2</sup> , AWG 26-16
Cable end sleeve (insulated)	0,2 .. 1,5 mm <sup>2</sup> , AWG 26-16
Tightening torque	0.2 - 0,25 Nm (1,77 - 2,21lbf in)
Stripping length	7 mm (0.2756 in)

# optec

energie ist messbar

Optec AG | Guyer-Zeller-Strasse 14 | CH-8620 Wetzikon ZH

Telefon: +41 44 933 07 70 | Telefax: +41 44 933 07 77  
E-Mail: [info@optec.ch](mailto:info@optec.ch) | Internet: [www.optec.ch](http://www.optec.ch)

Janitza electronics GmbH  
Vor dem Polstück 6  
35633 Lahnau, Germany  
Support Tel. +49 6441 9642-22  
e-mail: [info@janitza.com](mailto:info@janitza.com)  
[www.janitza.com](http://www.janitza.com)

Subject to technical alterations

**Janitza®**