Smart Energy & Power Quality Solutions

Modular Power Analyser

UMG 806
and modules

Data sheet

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DEVICE VIEWS

Front view

MODULES

Module 806-EC1:

- Ethernet communications module

- Analog input module

Module 806-ED1:

- Digital input module

TECHNICAL DATA DEVICE

General information	
Net weight	300 g (0.66 lb)
Device dimensions (approx.)	approx. 90 mm × 90 mm × 63.5 mm (3.54 in x 3.54 in x 2.5 in)
Horizontal pitch	5 HP
Battery	Typ Li-Mn CR2032, 3 V
Service life of the backlight	45000 h (50 % of the starting brightness)
Installation position	discretionary
Impact resistance	IK04 according to IEC 62262

Transport and storage The following information applies to devices which are transported or stored in the original packaging.	
Free fall (approx.)	1 m (39.37 in)
Temperature (approx.)	-30 °C .. +80 °C (-22 °F .. +176 °F)
Relative humidity	5 to 95 % at 25 °C (77 °F) without condensation

Ambient conditions during operation	
The device • must be used in a weather-protected, stationary application. • fulfills the operating conditions according to DIN IEC 60721-3-3. • possesses protection class II according to IEC 60536 (VDE 0106, Part 1), a ground wire connection is not required!	
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

Supply voltage	
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	5 A (char. B), IEC-/UL approval

Voltage measurement	
3-phase 4-conductor systems with nominal voltages up to	230 V_{LN} / 400 V_{LL} (+/-10) acc. IEC
3-phase 3-conductor systems, unearthed, with nominal voltages up to	400 V_{L-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 V_{rms} (max. overvoltage 277 V_{rms})
Metering range L-L	0 .. 400 Vrms (max. overvoltage 480 V_{rms})
Resolution	0.1 V
Crest factor	2 (based on the metering range 230 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.

Current measurement (../1A) (../5A)	
Rated current	5 A
Channels	4
Metering range	0.005 .. 6 A_{rms}
Crest factor	2
Overloadfor 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.

Current measurement (0 .. 40 mA, AC)	
Channel (I5)	1

Digital Output Energy pulse output	
Switching voltage	max. 35 V DC
Switching current	max. 10 mA_{eff} DC
Response time	Approx. 500 ms
Pulse width	80 ms ±20%
Pulse output (energy pulse)	max. 10 Hz

Temperature measurement	
Update time	1 s
Total burden (sensor + cable)	max. 0.35 kΩ
Suitable sensor types	PT 100

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

RS485 interface x-wire connection	
Protocol	Modbus-RTU
Transmission rate	up to 115.2 kbps

Terminal connection capacity (supply voltage) Connectable conductors. Only one conductor can be connected per terminal.	
Single core, multi-core, fine-stranded	0.14 - 2.5 mm², AWG 26-14
Cable end sleeve (not insulated)	0.25 - 2.5 mm², AWG 23-14
Cable end sleeve (insulated)	0.25 - 1.5 mm², AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.4 - 5.3 lbf in)
Stripping length	7 mm (0.2756 in)

Terminal connection capacity (current measurement) Connectable conductors. Only one conductor can be connected per terminal.	
Single core, multi-core, fine-stranded	0.2 - 4 mm², AWG 24-12
Cable end sleeve (not insulated)	0.25- 2.5 mm², AWG 23-14
Cable end sleeve (insulated)	0.25 - 1.5 mm², AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.4 - 5.3 lbf in)
Stripping length	7 mm (0.2756 in)

Terminal connection capacity (voltage measurement) Connectable conductors. Only one conductor can be connected per terminal.	
Single core, multi-core, fine-stranded	0.2 - 4 mm², AWG 24-12
Cable end sleeve (insulated/not insulated)	0.25- 2.5 mm², AWG 23-14
Stripping length	7 mm (0.2756 in)

Terminal connection capacity (RS485, digital output, temp. measurement)	
Single core, multi-core, fine-stranded	0.2 - 4 mm², AWG 24-12
Cable end sleeve (not insulated)	0.25- 2.5 mm², AWG 23-14
Cable end sleeve (insulated)	0.25 - 1.5 mm², 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 class	Display range	Standard
Voltage	U	0.2	0-999.9 kV	IEC61557-12
Current	I	0.2	0-99.99 kA	IEC61557-12
Active power	P	0.5	0-9999 MW	IEC61557-12
Reactive power	Q	0.5	0-9999 Mvar	IEC61557-12
Apparent power	S	0.5	0-9999 MVA	IEC61557-12
Power factor	PF	0.5	0-1.000	IEC61557-12
Frequency	F	±0.01 Hz	45.00 Hz-65.00 Hz	IEC61557-12
Active energy	EP	0.5 s	0-99999999 MWh	IEC62053-22
Reactive energy	EQ	2	0-99999999 Mvarh	IEC62053-23
Total harmonic distortion of voltage	THDu	1 (50 Hz) 5 (60 Hz)	0-99.99 %	IEC61557-12
Total harmonic distortion of current	THDi		0-99.99%	IEC61557-12
Voltage harmonic ratio	THDu		0-99.99 %	IEC61557-12
Current harmonic ratio	THDi		0-99.99 %	IEC61557-12
Voltage unbalance	Uunb	0.5	--	IEC61557-12
Current unbalance	Iunb	0.5	--	IEC61557-12
Voltage sequence component	--	0.5	--	IEC61557-12
Phase position of voltage, current	--	±0.1°		IEC61557-12
Current sequence component	--	0.5	--	IEC61557-12
Extreme value	--	0.5	--	IEC61557-12
Demand	--	0.5	--	IEC61557-12
Temperature	T	±2 °C (35.6 °F)	--	--

Note:
The following applies to current transformers with an open model or to Rogowski coils:
Current accuracy 0.5
Performance accuracy 1.0
Active energy class 2

TECHNICAL DATA MODULES

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

Module 806-EI1		
Analog input	Input number	4
	Input type	4 .. 240mA
	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^2 , AWG 28-16
Cable end sleeve (not insulated)	0,2 - 1.5 mm^2 , AWG 26-16
Cable end sleeve (insulated)	0,2 - 1,5 mm^2 , 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. pulse width	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^2 , AWG 28-16
Cable end sleeve (not insulated)	0.2 .. 1,5 mm^2 , AWG 26-16
Cable end sleeve (insulated)	0.2 .. 1,5 mm^2 , AWG 26-16
Tightening torque	0.2 - 0,25 Nm (1.77 - 2.21lbf in)
Stripping length	7 mm (0.2756 in)

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