

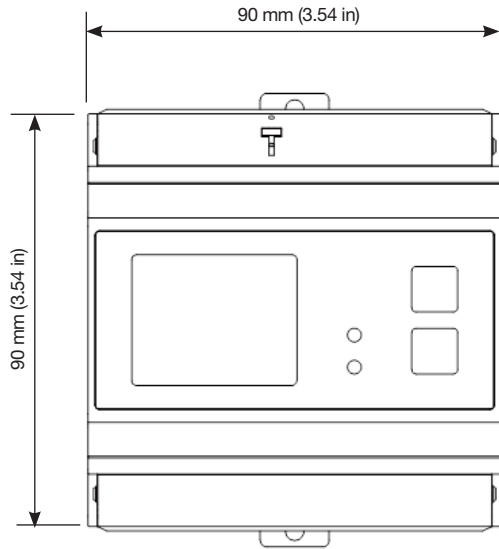


## Multifunctional Energy Analyzer UMG 806-LP

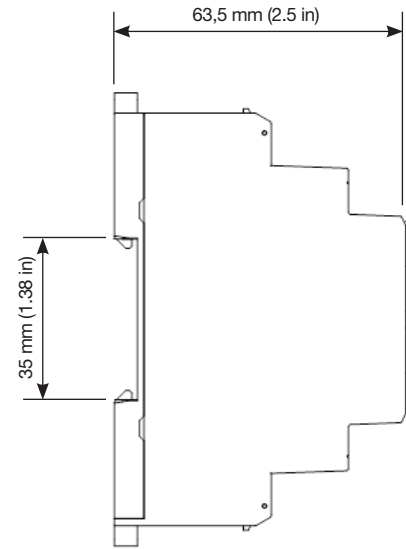
Data sheet

# DEVICE VIEWS

Front view



View from the left



# TECHNICAL DATA

<b>General</b>	
Net weight	approx. 300 g (0.66 lb)
Device dimensions	Approx. B = 90 mm (3.54 in), H = 90 mm (3.54 in), D = 63.5 mm (2.5 in)
Horizontal pitch	5 HP
Battery	Type Li-Mn CR1632, 3 V
Backlight service life	45000 h (50% of the initial brightness)
Mounting orientation	As desired
Impact resistance	IK04 according to IEC 62262

<b>Transport and storage</b>	
The following specifications apply for devices transported and stored in the original packaging.	
Free fall	1 m (39.37 in)
Temperature	-30° C (-22 °F) to +80° C (176 °F)
Relative humidity	5 to 95 % RH at 77 °F (25 °C), non-condensing

<b>Environmental conditions during operation</b>	
The device: For weather-protected and stationary use. Fulfills operating conditions according to DIN IEC 60721-3-3. Has protection class II according to IEC 60536 (VDE 0106, part 1), a ground wire connection is not required!	
Rated temperature range	-25 °C (-13 °F) to +70 °C (158 °F)
Relative humidity	5 to 95 % at 77 °F (25 °C), non-condensing
Operating elevation	< 2000 m (6560 ft) above sea level
Pollution degree	2
Ventilation	No forced ventilation required.
Protection against foreign matter and water	IP20 according to EN60529

<b>Supply voltage</b>	
Nominal range	AC: 100 V - 300 V 50/60 Hz / DC: 100 V - 300 V OVC III
Power consumption	max. 7 VA / 3 W
Recommended overcurrent protective device for line protection	5 A, (type B), IEC/UL approval

<b>Voltage measurement</b>	
3-phase 4-conductor systems with rated voltages up to	277 V <sub>LN</sub> / 480 V <sub>LL</sub> (+/-10%) acc. to IEC 277 V <sub>LN</sub> / 480 V <sub>LL</sub> (+/-10%) acc. to UL
3-phase 3-conductor systems (grounded) with rated voltages up to	480 V <sub>LL</sub> (+/-10%) acc. to IEC 480 V <sub>LL</sub> (+/-10%) acc. to UL
Overvoltage category	300 V CAT III acc. to IEC 300 V CAT III acc. to UL
Rated surge voltage	4 kV
Protection of the voltage measurement	1 - 10 A tripping characteristic B (with IEC/UL approval)
Measuring range L-N	0 <sup>1)</sup> .. 230 V <sub>rms</sub> (max. overvoltage 277 V <sub>rms</sub> )
Measuring range L-L	0 <sup>1)</sup> .. 400 V <sub>rms</sub> (max. overvoltage 480 V <sub>rms</sub> )
Resolution	0.1 V
Crest factor	2 (referred to measuring range 230 V L-N)
Impedance	>1.7 MΩ/Phase
Power consumption	approx. 0.1 VA / phase
Sampling frequency	8 kHz / phase
Frequency of fundamental oscillation - Resolution	45 Hz .. 65 Hz 0.01 Hz
Harmonics	1 .. 31.

1) ... The device only measures if at least one voltage measurement input has an L-N voltage of > 10 V<sub>rms</sub> or an L-L voltage of > 17 V<sub>rms</sub> present.

<b>Current measurement</b>	
Nominal input signal	.. / 333 mV
Channels	4
Measuring range	0,3 .. 400 mV <sub>rms</sub>
Crest factor	< 2,4
Overload for 1 s	1 V
Resolution	0,00333 mV
Power consumption	< 0,1 VA
Sampling frequency	8 kHz
Harmonics	1 .. 31.

<b>RCM Strommessung (I5)</b>	
Nominal current	40 mA
Measuring range	0 .. 500 mA <sub>rms</sub>
Operating current	0.01 mA
Resolution	0.01 mA
Crest factor	1.141 (relative to 500 mA)
Load	0.75 Ω
Overload for 1 s	5 A
Permanent overload	1 A
Overload for 20 ms	10 A
Measurement of residual currents	Typ A

**Digital outputs**

## Energy pulse output

Switching voltage	max. 35 V DC
Switching current	max. 10 mA <sub>rms</sub> DC
Response time	approx. 500 ms
Pulse width	80 ms ±20%
Digital output (energy pulses)	max. 10 Hz

**Temperature measurement**

Update time	1 s
Total load (sensor and cable)	max. 0.35 k $\Omega$
Suitable sensor types	PT100

**Cable length (digital output, temperature measurement)**

Up to 30 m (32.81 yd)	Unshielded
Greater than 30 m (32.81 yd)	Shielded

**RS-485 interface**

## 2-wire connection

Protocol	Modbus RTU
Transmission rate	up to 115.2 kbps

<b>Connecting capacity of the terminals (supply voltage)</b>	
Connectible conductors. Only connect one conductor per terminal point!	
Single core, multi-core, fine-stranded	0.14 - 2.5 mm <sup>2</sup> , AWG 26-14
Wire ferrules (non-insulated)	0.25 - 2.5 mm <sup>2</sup> , AWG 23-14
Wire ferrules (insulated)	0.25 - 1.5 mm <sup>2</sup> , AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.43 - 5.31 lbf in)
Strip length	7 mm (0.2756 in)

<b>Connecting capacity of the terminals (current measurement)</b>	
Connectible conductors. Only connect one conductor per terminal point!	
Single core, multi-core, fine-stranded	0.2 - 4 mm <sup>2</sup> , AWG 24-12
Wire ferrules (non-insulated)	0.25 - 2.5 mm <sup>2</sup> , AWG 23-14
Wire ferrules (insulated)	0.25 - 1.5 mm <sup>2</sup> , AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.43 - 5.31 lbf in)
Strip length	7 mm (0.2756 in)

<b>Connecting capacity of the terminals (voltage measurement)</b>	
Connectible conductors. Only connect one conductor per terminal point!	
Single core, multi-core, fine-stranded	0.2 - 4 mm <sup>2</sup> , AWG 24-12
Wire ferrules (insulated/non-insulated)	0.25 - 2.5 mm <sup>2</sup> , AWG 23-14
Strip length	7 mm (0.2756 in)

<b>Connection capacity of the terminals (RS-485, digital output, temperature measurement)</b>	
Single core, multi-core, fine-stranded	0.2 - 4 mm <sup>2</sup> , AWG 24-12
Wire ferrules (non-insulated)	0.25 - 2.5 mm <sup>2</sup> , AWG 23-14
Wire ferrules (insulated)	0.25 - 1.5 mm <sup>2</sup> , AWG 23-16
Tightening torque	0.5 - 0.6 Nm (4.43 - 5.31 lbf in)
Strip length	7 mm (0.2756 in)

# FUNCTION PERFORMANCE CHARACTERISTICS

Function	Symbol	Accuracy class	Display range	Norm
Voltage	U	0.2	0-999.9 kV	IEC61557-12
Current	I	0.5	0-99.99 kA	IEC61557-12
Active power	P	1	0-9999 MW	IEC61557-12
Reactive power	Q	1	0-9999 Mvar	IEC61557-12
Apparent power	S	1	0-9999 MVA	IEC61557-12
Power factor	PF	1	0-1.000	IEC61557-12
Frequency	F	±0.01 Hz	45.00 Hz-65.00 Hz	IEC61557-12
Active energy	EP	1	0-99999999 MWh	IEC62053-22
Reactive energy	EQ	2	0-99999999 Mvarh	IEC62053-23
Harmonic ratio of voltage	THDu	Class S	0-99.99 %	IEC61557-12
Harmonic ratio of current	THDi		0-99.99%	IEC61557-12
Sub-harmonic voltage component	THDu		0-99.99 %	IEC61557-12
Sub-harmonic current component	THDi		0-99.99 %	IEC61557-12
Voltage unbalance	Uunb	0.5	--	IEC61557-12
Current unbalance	Iunb	1	--	IEC61557-12
Phase sequence of the mains voltage	--	0.5	--	IEC61557-12
Phase position of the mains voltage / mains current	--	±0.1°		IEC61557-12
Phase sequence of the mains current	--	1	--	IEC61557-12
Extreme value	--	1	--	IEC61557-12
Consumption	--	1	--	IEC61557-12
Temperature	T	±2° C	--	--

**Note:**

For open type current transformers or Rogowski coils, the following applies:

- Current accuracy 0.5
- Power accuracy 1.0
- Active energy class 2

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