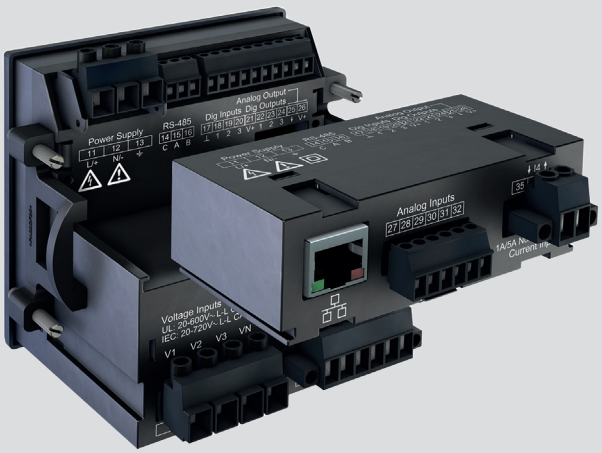
Smart Energy & Power Quality Solutions



The device view may deviate!

Module

96-PA-RCM-EL

Residual current expansion modules
for the
UMG 96-PA and UMG 96-PQ-L device series

Data sheet

Doc. No. 2.061.144.1.b 09/2023

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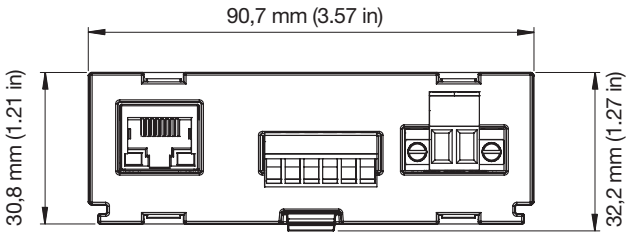
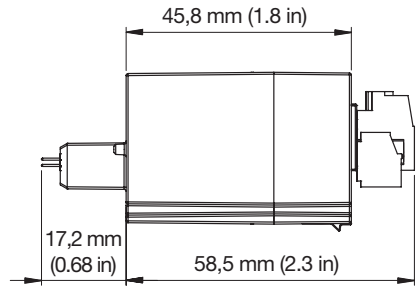
DEVICE VIEWS

The illustrations are for illustrative purposes and are not to scale.

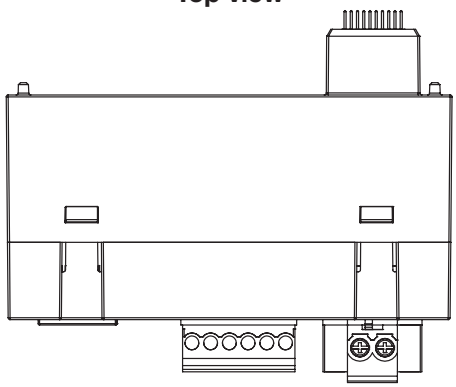
Rear view (with connectors)



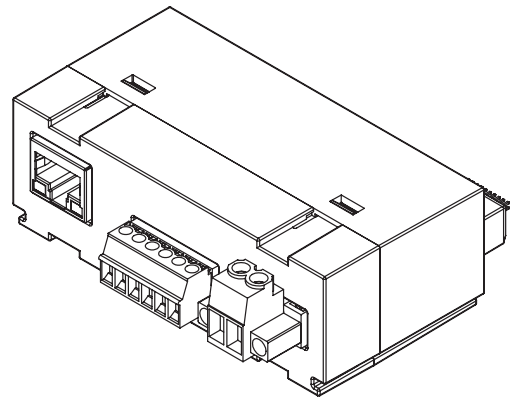
Side view



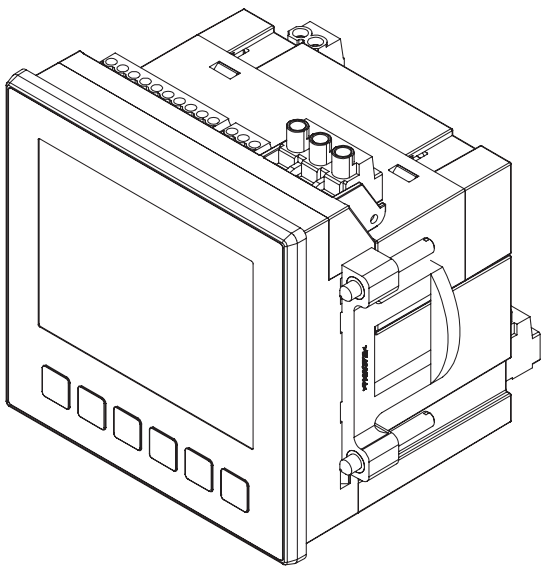
Top view

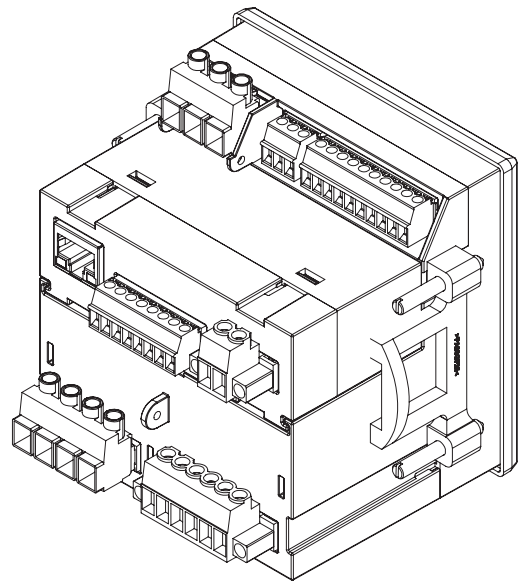


3D view



Views of the UMG 96-PA/96-PQ-L basic device with the module attached





TECHNICAL DATA

General	
Net weight of **module** (with attached plug-in connectors)	78 g (0.17 lbs)
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	K55 -25° C (-13 °F) to +70° C (158 °F)
Relative air humidity (non-condensing)	0 to 90% RH

Environmental conditions during operation, see the usage information for your basic device.

Analog inputs	
Differential or current signals	2x
Temperature measurement	1x

Residual current input	
Nominal current	30 mA_{rms} | 0...20 mA | 4...20 mA
Measuring range	0 .. 30 mA_{rms}
Operating current	50 µA
Resolution	1 µA
Cable break detection (failure monitoring)	Can be activated
Crest factor	1.414 (relative to 30 mA)
Load	4 Ω
Overload for 1 s	1 A
Constant overloaded	200 mA
Measurement of residual currents	According to IEC/TR 60755 (2008-01):  Type A  Type B and B+[1)]

[1)] Residual current transformers type B+ required.

Temperature measurement	
Update time	200 ms
Suitable thermal sensor	PT100, PT1000, KTY83, KTY84
Total burden (thermal sensor and lead)	max. 4 kΩ

Thermal sensor type	Temperature range	Resistance range	Measurement uncertainty
PT100	-99 °C (-146.2 °F) ... +500 °C (932 °F)	60 Ω ... 180 Ω	±1.5% rng
PT1000	-99 °C (-146.2 °F) ... +500 °C (932 °F)	600 Ω ... 1.8 kΩ	±1.5% rng
KTY83	-55 °C (-67 °F) ... +175 °C (347 °F)	500 Ω ... 2.6 kΩ	±1.5% rng
KTY84	-40 °C (-40 °F) ... +300 °C (572 °F)	350 Ω ... 2.6 kΩ	±1.5% rng

Current measurement I4*	
Nominal current	5 A
Measuring range	0.005 .. 6 A_{rms}
Crest factor	2 (relative to 6 A_{rms})
Overvoltage category	300 V CAT II
Power consumption	approx. 0.2 VA (Ri = 5 mΩ)
Sampling frequency	8.33 kHz
Resolution	16 bit
Rated surge voltage	2.5 kV
Overload for 1 s	60 A (sinusoidal)

* Exception: These specifications for I4 current measurement do not apply in combination with the UMG 96-PQ-LP as the basic device. As this device is equipped with four current measurement inputs, the I4 current measurement is carried out on the UMG 96-PQ-L-LP. In this case, the I4 current measurement input of the RCM module cannot be used and the specifications marked here do not apply.

Ethernet interface (only module 96-PA-RCM-EL)		
Connection	RJ45	
Functions	Modbus gateway	
Protocols	ARP, IPv4, ICMP (ping)	
	TCP, UDP	Port: Application specific
	Modbus TCP	Port: 502
	Modbus UDP	Port: 502
	DHCP/BootP	Port: 67/68 (UDP)
	DNS server	Port: 53 (UDP)
	NTP server	Port: 123 (UDP)

Terminal connection capacity – Analog inputs (residual current, current signals, temperature) Connectible conductors. Connect one conductor per terminal position!	
Single core, multi-core, fine-stranded	0.2 - 1.5 mm^2, AWG 28-16
Wire ferrules (non-insulated)	0.2 - 1.5 mm^2, AWG 26-16
Wire ferrules (insulated)	0.2 - 1.5 mm^2, AWG 26-16
Tightening torque	0.2 - 0.25 Nm (1.77 - 2.21 lbf in)
Strip length	7 mm (0.2756 in)

Terminal connection capacity (current measurement I4*) Connectible conductors. Connect one conductor per terminal position!	
Single core, multi-core, fine-stranded	0.2 - 4 mm^2, AWG 28-12
Wire ferrules (non-insulated)	0.2 - 2.5 mm^2, AWG 26-14
Wire ferrules (insulated)	0.2 - 2.5 mm^2, AWG 26-14
Tightening torque	0.4 - 0.5 Nm (3.54 - 4.43 lbf in)
Strip length	7 mm (0.2756 in)

Cable lengths for analog input, residual current input, temperature measurement input, current measurement input I4*	
Up to 30 m (32.81 yd)	Unshielded
Greater than 30 m (32.81 yd)	Shielded

Potential isolation and electrical safety of the temperature measurement input
The temperature measurement input has: · Double insulation relative to the current measurement inputs, voltage measurement inputs and the supply voltage. · No insulation relative to the residual current input (RCM). · A functional isolation relative to the Ethernet interface. The external temperature sensor must have double insulation against system parts with hazardous contact voltage (according to IEC 61010-1:2010).

PERFORMANCE CHARACTERISTICS OF FUNCTIONS

Function	Symbol	Accuracy class	Measuring range	Display range
Neutral conductor current I4, measured*	I_N	1 (IEC61557-12)	0 .. 6 A_{rms}	0 A .. 999 kA
Neutral conductor current I4, calculated*	I_{Nc}	1.0 (IEC61557-12)	0.03 .. 25 A	0.03 A .. 999 kA
Residual currents I5, I6	I_{Diff}	1 (IEC61557-12)	0 .. 30 mA_{rms}	0 A .. 999 kA
Temperature	T	-	See temperature sensor types	0°C ... +100°C (32°F ... 212°F)

* Exception: These specifications for I4 current measurement do not apply in combination with the UMG 96-PQ-LP as the basic device. As this device is equipped with four current measurement inputs, the I4 current measurement is carried out on the UMG 96-PQ-L-LP. In this case, the I4 current measurement input of the RCM module cannot be used and the specifications marked here do not apply.

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Doc. No. 2.061.144.1.b | 09/2023 | Subject to technical alterations.
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