R203 OPC UA

THREE-PHASE ENERGY POWER METER
DUAL ETHERNET WITH PROTOCOL OPC UA SERVER

Highlights

- **Universal input in voltage, current, TA with A/mV output, TV, Rogowski sensors**
- **Measuring input full scale: 600 Vac (voltage), 5A (TA), TA with voltage output, Rogowski (250 mV)**
- **Output: mA/V**
- **Accuracy class: 0.2% for voltage/ current; 0.5% for power**
- **Operating Temperature: -25..+75°C**
- **Ethernet Connection Daisy Chain**
- **Configuration via Web Server**

SENECA proprietary FLEX technology enables the switching of different serial and industrial Ethernet communication protocols such as ModBUS RTU/ASCII/TCP-IP, Profinet, Ethernet/ IP, IEC 61850, in a single device.

OPC UA (Open Platform Communications Unified Architecture) is an open communication protocol for industrial automation, enabling smooth exchange between machines, plants and factory systems.

R203 OPC UA three-phase energy power meter accepts current measurement inputs for CTs with current/voltage output, TVs and Rogowski sensors (with voltage output up to 333 mV), with single-phase, three-phase 3/4-wire, Aron insertion types, and with OPC UA Server protocol support (switchable to ModBUS, Profinet or Ethernet/IP thanks to SENECA FLEX technology).

R203 OPC UA returns single-phase and three-phase values of the main electrical quantities: voltage, current, power and active, reactive, apparent, frequency, period, power factor.

The configurable analog output in voltage or current also allows the analyzer to be used as a measurement converter.

R203 OPC UA also offers measurement and recording of harmonics in voltage/current up to 55th order with THD (total harmonic distortion) calculation.

The dual Ethernet interface enables a daisy-chain connection to the next Ethernet device, reducing installation costs by avoiding the use of industrial switches and simplifying wiring.

100% Made & Designed in Italy

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R203 OPC UA | ENERGY POWER METER WITH OPC UA SERVER

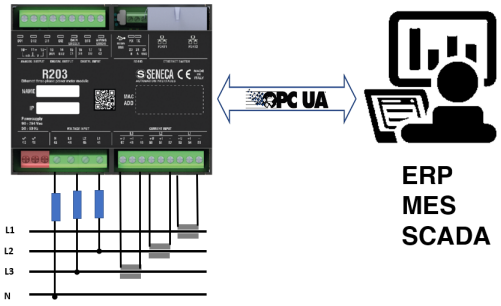
MODELS

	R203-2-L-U	R203-2-H-U
		
	Three-phase energy power meter, 2xETH, 10-30 Vdc, OPC UA server	Three-phase energy power meter, 2xETH, 90-264 Vdc, OPC UA server

GENERAL DATA		
Power supply	10..30 Vdc	90-264 Vac (50-60Hz)
Power consumption	2.5 W max	
Isolation	3.500 Vac	
installation category	300 V CAT III	600 V CAT III
Type of insertion / Connection mode	Single-phase, tree-phase 3-wire, tree-phase 4-wire, Aron	
Protection degree	IP20	
Accuracy class	0.2% Voltage 0.5% Current	
Operating Temperature	-25…+65°C	
Stocking Temperature	-30…+85°C	
Humidity	30% ÷ 90% non condensing	
Dimension (wxhxd)	90 x 107 x 32 mm	
Weight	130 g	
Housing	PC/ABS self-extinguishing UL94-V0 black color	
Certifications	CE, UKCA	
Installation	DIN guide rail (IEC EN 60715) or wall	
MEASUREMENT AND CALCULATION TIMES		
Sampling times	8.000 sps (for voltage/current channels)	
Bus scanning time	10 ms	
Time settling RMS values	580..700 ms	
PROGRAMMING		
Web Server	Connection diagnostics, firmware update	
COMMUNICATION		
Ethernet		
Ports	2 Ethernet 100BaseT ports	
Speed	100 Mbps	
Protocols	OPC UA server	
CONNETTIVITY		
Daisy Chain	Yes	
LAN Fault By-Pass	Yes	
MEASUREMENTS AND I/O CHANNELS		
Channels	1 measuring input, 2DI, 2DO, 1AO	
Measurement Input	PHASE VOLTAGE	
	UP to 600 Vac, freq. 45 ÷ 65Hz	
	Minumim voltage 5 V (F.S. 150 Vac); 20 V (F.S. 600 Vac)	
	TV with output up to 600 Vac with respect to neutral	
	PHASE CURRENT	
	Current input for TA: 1 ÷ 5A f.s.	
	Voltage input (mV) for CT with voltage output or Rogowski: up to 250 mV	
	Network frequency: 50 ÷ 60Hz	
	Accuracy: voltmeter: 0.2 percent; ammeter: 0.2 percent, wattmeter: 0.5 percent	
Analog Output	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT (active/passive): 0..20, 4..20 mA, max. load resistance 500Ω Transmission error: 0.1 % of max. range Thermal drift: 100 ppm/K"	
Digital Input	2 digital inputs that can be activated with voltage from 12 to 24V	
Digital Output	2 digital outputs, range Imax = 50 mA Vmax = 28V	

CONNECTION SCHEMAS

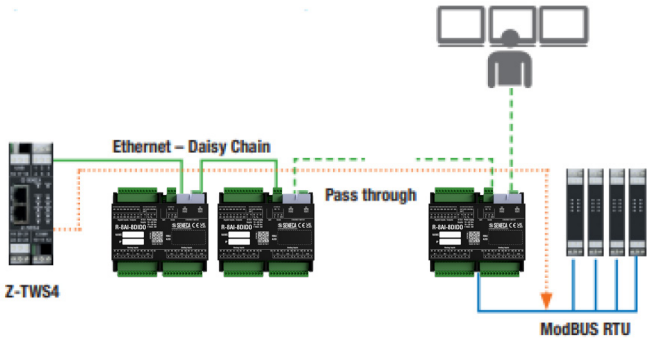
ENERGY MONITORING



SPECIAL FUNCTIONS

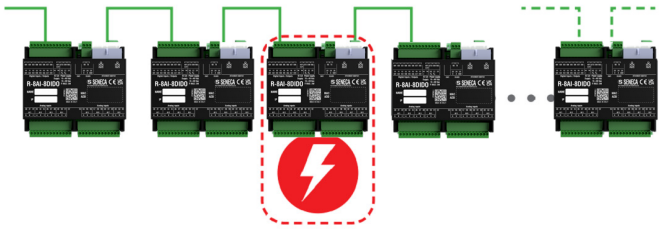
DAISY-CHAIN CONNECTION

REDUCED WIRING, MINIMAL INFRASTRUCTURE COSTS AND INSTALLATION FLEXIBILITY



FAULT BYPASS

MAINTAINING ETHERNET CHAIN CONNECTION EVEN IN THE EVENT OF A MODULE FAILURE



ORDER CODES

Codes	Description
R203-2-L-U	Energy power meter, 2xETH, 24 Vdc, OPC UA server protocol
R203-2-H-U	Energy power meter, 2xETH, 90-264 Vac, OPC UA server protocol
ROGOWSKI COILS	
RC150-025-100-3M	Rogowski coil L=25cm Øint. 8cm 100mV/1kA-50Hz, cable L 3m
RC150-035-100-3M	Rogowski coil L=35cm Øint. 11cm 100mV/1kA-50Hz, cable L 3m
RC150-040-100-3M	Rogowski coil L=40cm Øint. 12cm 100mV/1kA-50Hz, cable L 3m
RC150-060-100-3M	Rogowski coil L=60cm Øint. 19cm 100mV/1kA-50Hz, cable L 3m
RC150-090-100-3M	Rogowski coil L=90cm Øint. 28cm 100mV/1kA-50Hz, cable L 3m
RC150-180-100-3M	Rogowski coil L=180cm Øint. 57cm 100mV/1kA-50Hz, cable L 3m
RC190-030-333-3M	Rogowski coil L=30cm, Øint. 9cm, 333mV/1kA-50Hz, cable L 3m
RC190-035-333-3M	Rogowski coil L=35cm, Øint. 11cm, 333mV/1kA-50Hz, cable L 3m
RC190-060-333-3M	Rogowski coil L=60cm, Øint. 19cm, 333mV/1kA-50Hz, cable L 3m
RC190-090-333-3M	Rogowski coil L=90cm, Øint. 28cm, 333mV/1kA-50Hz, cable L 3m
RC190-160-333-3M	Rogowski coil L=160cm, Øint. 50cm, 333mV/1kA-50Hz, cable L 3m

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