

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**

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.

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.

100% Made & Designed in Italy

SENECA
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R203 OPC UA | ENERGY POWER METER WITH OPC UA SERVER

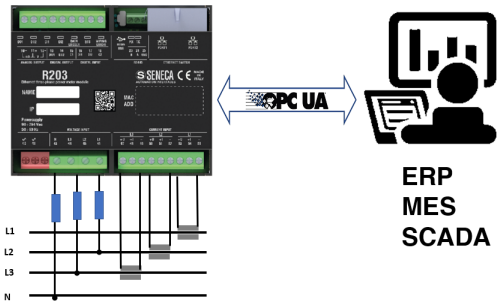
MODELS

	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

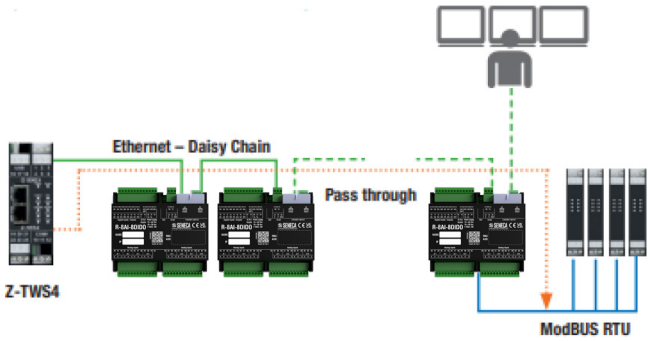
ENERGY MONITORING



SPECIAL FUNCTIONS

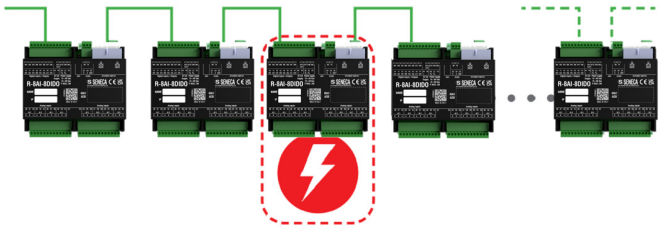
DAISY-CHAIN CONNECTION

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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