



EtherNet/IP™

# R203-E

## 3-PHASE ENERGY POWER METER WITH 2 ETHERNET PORTS AND ETHERNET/IP PROTOCOL

### Highlights

- **Universal input in voltage, current, TA with A/mV output, TV, Rogowski sensors**
- **Full scale input: 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 Daisy Chain connection**
- **Configuration: EDS, Web Server**

The three-phase energy power meter R203-E 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 and Ethernet/IP protocol support. Thanks to the Ethernet interface, a daisy chain connection to the next Ethernet device can be realised, avoiding expensive industrial switches and simplifying wiring. The R203-E returns single-phase and three-phase values of the main electrical quantities: voltage, current, active, reactive, apparent power, frequency, period, power factor and harmonics. The configurable analog output in voltage or current allows the analyser to also be used as a measurement converter. The R203-E also offers measurement and recording of harmonics in voltage/current up to 55th order with THD (total harmonic distortion) calculation.



## 3-PHASE POWER METER - ETHERNET/IP

R203-2-L-E

R203-2-H-E

EtherNet/IP



Three-phase power meter, 2xETH, 10-30 Vdc, Ethernet/IP



Three-phase power meter, 2xETH, 90-264 Vdc, Ethernet/IP

### GENERAL DATA

<b>Power supply</b>	10..30 Vdc	90-264 Vac (50-60Hz)
<b>Max Power consumption</b>	2.5 W max	
<b>Max Isolation</b>	3.500 Vac	
<b>Installation category</b>	300 V CAT III	600 V CAT III
<b>Insertion mode</b>	Single-phase, three-phase 3/4-wire, Aron	
<b>Front protection degree</b>	IP20	
<b>Accuracy class</b>	0.2% Voltage 0.5% Current	
<b>Mounting</b>	IEC EN60715 35mm DIN rail, wall or panel mounted with screws	
<b>Connections</b>	Screw terminals	
<b>Operating temperature</b>	-25...+65°C	
<b>Storage temperature</b>	-30...+85°C	
<b>Humidity</b>	30% ÷ 90% non condensing	
<b>Dimension</b>	90 x 107 x 32 mm	
<b>Weight</b>	170 g	
<b>Housing</b>	PC/ABS self-extinguishing UL94-V0, black color	
<b>Approvals</b>	CE, UKCA	

### MEASUREMENT AND CALCULATION TIMES

<b>Sampling times</b>	8.000 sps (for voltage/current channels)	
<b>Bus scan time</b>	>2 ms	
<b>RMS value settling time</b>	580..700 ms	
<b>Harmonic tuning time</b>	30s	

### PROGRAMMING

<b>Web Server</b>	Connection diagnostics, firmware update
<b>GSD/GSDML/ EDS</b>	Configuration, project design and I/O

### COMMUNICATION

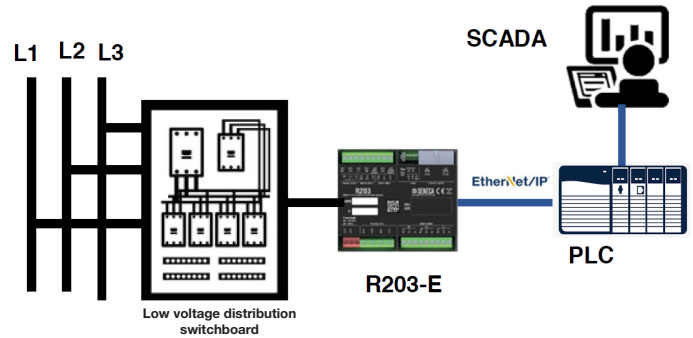
<b>Ethernet comm.</b>	
<b>Ports</b>	2 porte Ethernet 100BaseT
<b>Speed</b>	100 Mbps
<b>Supported Protocol</b>	Ethernet/IP
<b>Connectivity</b>	
<b>Daisy Chain</b>	Yes
<b>LAN Fault By-Pass</b>	Yes

### MEASUREMENT AND I/O CHANNELS

<b>Number of channels</b>	1 ingresso di misura, 2DI, 2DO, 1AO
<b>Measurement Input</b>	<b>PHASE VOLTAGE</b> Up to 600 Vac, frequency 45 ÷ 65Hz Minimum voltage 5 V ( F.S. 150 Vac); 20 V (F.S. 600 Vac) TV with output up to 600 Vac to neutral
	<b>PHASE CURRENT</b> Current input for CT: 1 ÷ 5A full scale Voltage input (mV) for CT with voltage or Rogowski output: up to 250 mV Main frequency: 50 to 60Hz
	Accuracy: voltmeter : 0.2 %; amperometer: 0.2%, wattmeter: 0.5%
<b>Analog Output</b>	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 maximum range Thermal drift: 100 ppm/K
<b>Digital Inputs</b>	2 digital inputs activated with voltage from 12 to 24V

## CONNECTION SCHEMES

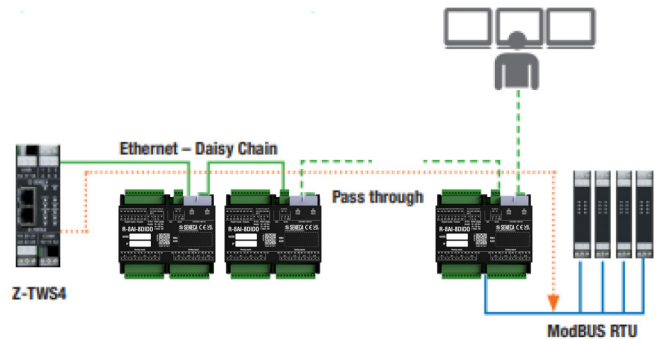
### ENERGY MONITORING



### SPECIAL FUNCTIONS

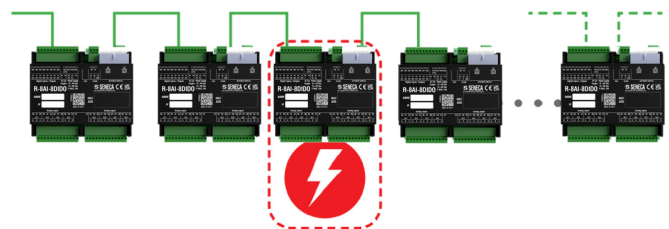
#### DAISY-CHAIN CONNECTION

REDUCED WIRING, MINIMUM INFRASTRUCTURE COSTS AND INSTALLATION FLEXIBILITY



#### FAULT BYPASS

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



### ORDER CODES

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