100% Made & Designed in Italy

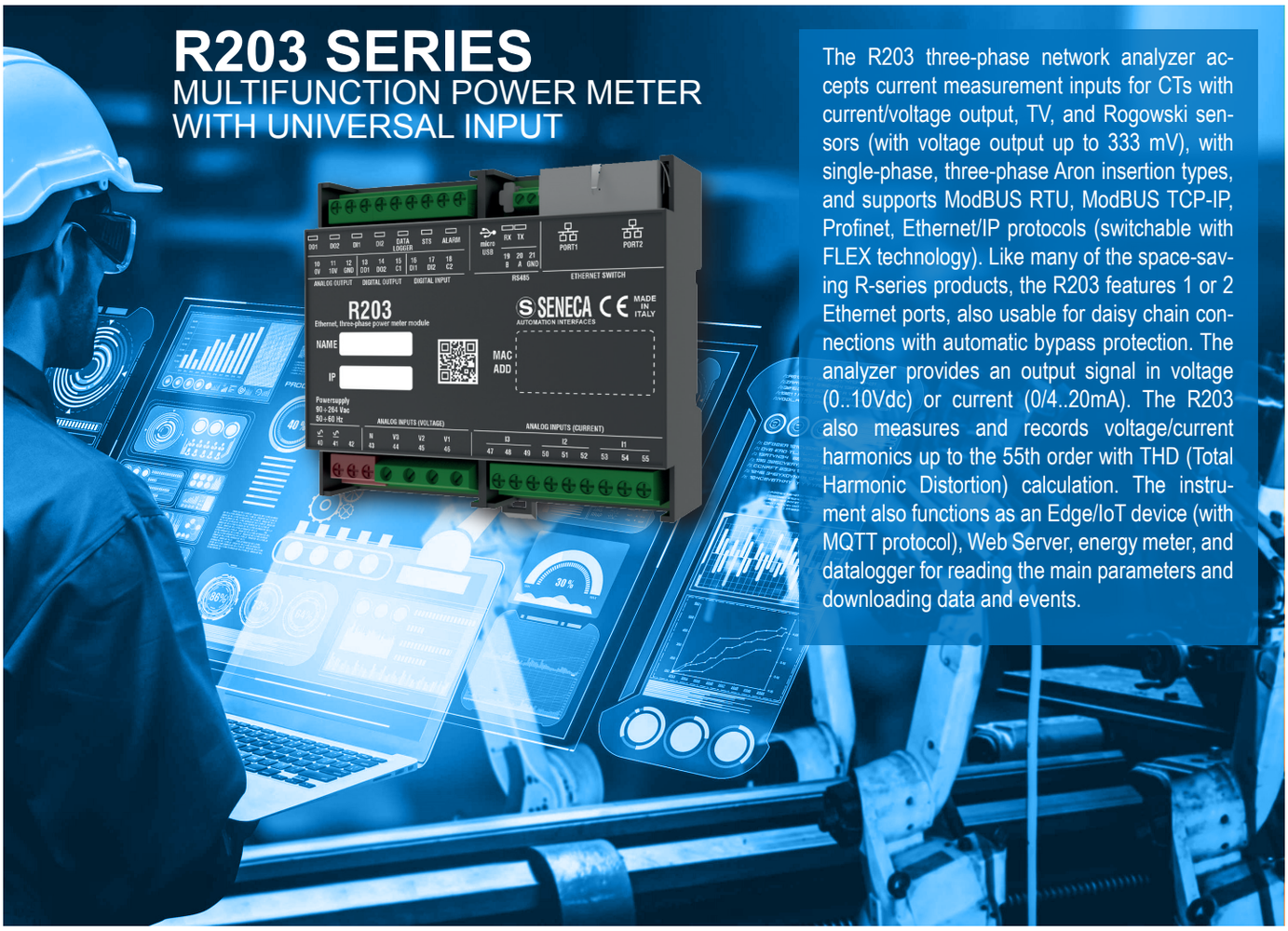
MULTIFUNCTION POWER METER WITH UNIVERSAL INPUT

R203 Series

SENECA

www.seneca.it

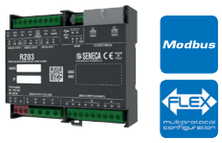
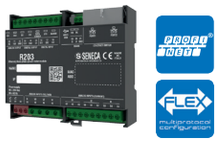
MULTIFUNCTION POWER METER WITH UNIVERSAL INPUT – R203 SERIES



The R203 three-phase network analyzer accepts current measurement inputs for CTs with current/voltage output, TV, and Rogowski sensors (with voltage output up to 333 mV), with single-phase, three-phase Aron insertion types, and supports ModBUS RTU, ModBUS TCP-IP, Profinet, Ethernet/IP protocols (switchable with FLEX technology). Like many of the space-saving R-series products, the R203 features 1 or 2 Ethernet ports, also usable for daisy chain connections with automatic bypass protection. The analyzer provides an output signal in voltage (0..10Vdc) or current (0/4..20mA). The R203 also measures and records voltage/current harmonics up to the 55th order with THD (Total Harmonic Distortion) calculation. The instrument also functions as an Edge/IoT device (with MQTT protocol), Web Server, energy meter, and datalogger for reading the main parameters and downloading data and events.

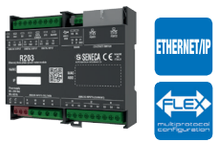
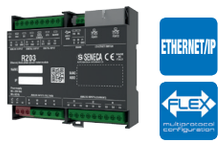
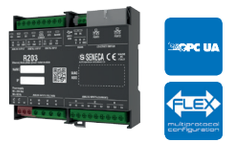
HIGHLIGHTS

- Universal Analog Input (voltage, CT, TV, Rogowski)
- Integrated monitoring system for up to 40 devices
- Measured Values and Analog Output
- Configuration via Web Server or EDS
- THD measurement up to the 55th harmonic
- High Accuracy (0.2 / 0.5)
- Multi-protocol configuration and support
- Active/reactive/ apparent energy meter
- Datalogger with up to 30 variables per tag / 55k samples
- Event Recorder (32k samples)
- Daisy Chain
- LAN BY-PASS (internal switch)
- Peer-To-Peer
- ModBUS Pass-Through (gateway)
- SSL/TLS/X.509 digital certificates, data transmission
- Edge/IoT Device

	R203-2-L	R203-2-H	R203-2-L-P	R203-2-H-P
				
	Three-phase network analyzer with 2xETH, 10-30 Vdc, ModBUS RTU/ TCP-IP	**Three-phase network analyzer with 2xETH, 90-264 Vac, ModBUS RTU/ TCP-IP**	**Three-phase network analyzer with 2xETH, 10-30 Vdc, Profinet IO**	**Three-phase network analyzer with 2xETH, 90-264 Vac, Profinet IO**
GENERAL DATA				
Power Supply	10-30 Vdc	90-264 Vac (50-60 Hz)	10-30 Vdc	90-264 Vac (50-60 Hz)
Max Consumption	2.5 W			
Max isolation	3,500 Vac			
Status Indicators	Input/Output status I/O address status Wiring error Ethernet Data Transit/Connection			
	RX/TX RS485 Datalogger		Profinet communication active -	
Installation category	300 V CAT III	600 V CAT III	300 V CAT III	600 V CAT III
Type of insertion / Connection mode	Single-phase, three-phase 3-wire, three-phase 4-wire, Aron			
Front protection level	IP20			
Precision class	0.5			
Flash Memory (data)	8 MB		-	
Mounting	DIN 35mm IEC EN60715 rail mounting, wall or panel mounting with screws			
Connections	Screw terminals			
Operating Temperature	-25..+65°C			
Storage temperature	-30..+ 85°C			
Humidity	30% ÷ 90% non-condensing			
Dimensions	90 x 107 x 32 mm			
Weight	170 g			
Enclosure	Self-extinguishing PC/ABS UL94-V0 material, black color			
Certifications	CE, UKCA			
MEASUREMENT AND CALCULATION TIMES				
Sampling time	8,000 sps (for voltage/current channels)			
Bus scan time	10 ms		>2 ms	
RMS values settling time	580..700 ms			
Harmonic update times	30 s			
PROGRAMMING				
EASY SETUP 2	Communication parameters, I/O, datalogging		-	
WEB SERVER	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, special functions (ModBUS Pass Through), firmware update		Connection diagnostics, firmware update	
GSD/GSDML/EDS	-		Configuration, project and I/O management	
SPECIAL FEATURES				
Datalogger data	Max 30 variables per tag and approx. 65504 samples storable in internal flash; sampling time between 1s and 24h		-	
Event Datalogger	Recording up to 4096 samples with respective time tag, threshold, time window, date/time		-	
ENERGY METER	Active/reactive energy metering on digital output # 2 incremental 32-bit counters on digital inputs @5kHz		-	
Integrated monitoring system	Configuration, viewing, and simultaneous monitoring on SSD for up to 40 units connected in daisy-chain mode		-	
COMMUNICATION				
RS485 / ModBUS RTU				
Interfaces	#1 RS485 port		-	
Protocol	ModBUS RTU slave		-	
Distance	Up to 1,200 m		-	
Speed	1,200..115,200 baud		-	
Connections	Max 128 Seneca device nodes		-	
Ethernet / Profinet				
Ports	#2 Ethernet 100BaseT ports			
Speed	100 Mbps			
Protocols	ModBUS TCP-IP (switchable with FLEX technology), Seneca P2P I/O Mirror with broadcast (UDP based)		Profinet IO (switchable with FLEX technology)	
Multi-protocol Configuration (ModBUS, Profinet, Ethernet/IP)	yes			
CONNECTIVITY				
Daisy Chain	x			
LAN Fault By-Pass	x			
Peer-To-Peer	x		-	
ModBUS Pass-Through	x		-	
IT/IIoT Protocols	http(s), Ftp, MQTT(s)		-	
MEASUREMENTS AND I/O				
Number of channels	#1 measurement input, #2 DI (Digital Inputs), #2 DO (Digital Outputs), #1 AO (Analog Output)			
Measurement Input	PHASE VOLTAGE Up to 600 Vac, frequency 45 ÷ 65 Hz / Minimum voltage: 5 V (Full Scale 150 Vac); 20 V (Full Scale 600 Vac) / Voltage Transformer (VT) output up to 600 Vac relative to neutral PHASE CURRENT Current input for CT (Current Transformer): 1 ÷ 5A full scale / Voltage input (mV) for CT with voltage output or Rogowski: up to 250 mV / Network Frequency: 50 ÷ 60Hz Voltmeter: 0.2% / Ammeter: 0.2%, Wattmeter: 0.5%			
Analog output	VOLTAGE OUTPUT 0..10 Vdc, minimum load resistance: 2 kΩ CURRENT OUTPUT (active/passive): 0..20, 4..20 mA, maximum load resistance: 500 Ω Transmission Error: 0.1% of the maximum range Thermal Drift: 100 ppm/K			
Digital Inputs	Digital Inputs: #2, activated by 12 to 24V			
DIGITAL OUTPUTS	Digital Outputs: #2, capacity: Imax = 50 mA, Vmax = 28V			

The technical data and diagrams in this document are indicative and not binding.

MULTIFUNCTION POWER METER WITH UNIVERSAL INPUT – R203 SERIES

	R203-2-L-E	R203-2-H-E	R203-2-L-U	R203-2-H-U
				
	Three-phase Network Analyzer, 2xETH, 10-30 Vdc, OPC UA	**Three-phase Network Analyzer, 2xETH, 90-264 OPC UA**	**Three-phase Network Analyzer, 2xETH, 10-30 Vdc, OPC UA**	**Three-phase Network Analyzer, 2xETH, 90-264 OPC UA**
GENERAL DATA				
Power Supply	10-30 Vdc	90-264 Vac (50-60 Hz)	10-30 Vdc	90-264 Vac (50-60 Hz)
Max Consumption	2.5 W			
Max isolation	3,500 Vac			
Status Indicators	Input/Output Status, I/O address status, wiring error, Ethernet data transit/connection, active Ethernet communication,			
Installation category	300 V CAT III	600 V CAT III	300 V CAT III	600 V CAT III
Type of insertion / Connection mode	Single-phase, three-phase 3-wire, three-phase 4-wire, Aron			
Front protection level	IP20			
Precision class	0.5			
Mounting	DIN 35mm IEC EN60715 rail mounting, wall or panel mounting with screws			
Connections	Screw terminals			
Operating Temperature	-25..+65°C			
Storage temperature	-30..+ 85°C			
Humidity	30% ÷ 90% non-condensing			
Dimensions	90 x 107 x 32 mm			
Weight	170 g			
Enclosure	Self-extinguishing PC/ABS UL94-V0 material, black color			
Certifications	CE, UKCA			
MEASUREMENT AND CALCULATION TIMES				
Sampling time	8,000 sps (for voltage/current channels)			
Bus scan time	>2 ms		>10 ms	
RMS values settling time	580..700 ms			
Harmonic update times	30s			
PROGRAMMING				
WEB SERVER	Connection diagnostics, firmware update		firmware diagnostics, device configuration, firmware update	
GSD/GSDML/EDS	Configuration, project and I/O management		-	-
INTERFACES				
Ports	#2 Ethernet 100BaseT ports			
Speed	100 Mbps			
Protocols	Ethernet/IP		OPC UA Server	
Connectivity	Daisy Chain, LAN Fault By-Pass			
MEASUREMENTS AND I/O				
Number of channels	#1 measurement input, #2 DI (Digital Inputs), #2 DO (Digital Outputs), #1 AO (Analog Output)			
Voltage Measurement Input	Up to 600 Vac, frequency: 45 ÷ 65 Hz			
	Minimum voltage 5 V (Full Scale 150 Vac); 20 V (Full Scale 600 Vac)			
	Voltage Transformer (VT) output up to 600 Vac relative to neutral			
Current Measurement Input	Current input for CT (Current Transformer): 1 ÷ 5A full scale			
	Voltage input (mV) for CT with voltage output or Rogowski: up to 250 mV			
	Network Frequency: 50 ÷ 60Hz			
	Accuracy: Volt Meter: 0.2%; Ampere Meter: 0.2%, Wattmeter: 0.5%			
Analog output	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT (active/passive): 0..20, 4..20 mA, maximum load resistance: 500 Ω Transmission Error: 0.1% of the maximum range Thermal drift: 100 ppm/K			
Digital Inputs	Digital Inputs: #2, activated by 12 to 24V			
DIGITAL OUTPUTS	Digital Outputs: #2, capacity: Imax = 50 mA, Vmax = 28V			

The technical data and diagrams in this document are indicative and not binding.

FLEXIBLE AND RECONFIGURABLE DEVICES WITH FLEX TECHNOLOGY

SENECA's proprietary FLEX technology allows connecting a single device capable of supporting various protocols in serial and Ethernet industrial communication networks. Starting from the same network analyzer, for example, it is possible to change the type of protocol conversion in a few steps, addressing rapid production layout changes or efficiently transferring data to and from PLCs and other Master/Slave or Client/Server devices. This flexible approach saves time, financial resources, and the hassle of managing multiple devices with different purchasing codes, regardless of the application type.

STRENGTHS

- A single multiprotocol solution on one device
- Maximum connectivity in a single hardware
- The functionality of multiple gateways at the price of one
- Simplification of purchasing codes
- Reduction in storage and handling costs
- Immediate selection of multiple protocol combinations based on the freely downloadable Seneca Discovery Device tool from the Seneca website
- No programming software or change of tag and I/O registers needed
- Supported and interchangeable protocols: ModBUS RTU, ModBUS TCP-IP, ModBUS ASCII, Profinet, Ethernet/IP, upcoming implementations (OPC UA, IEC 61850)
- Models integrating FLEX technology: R-KEY-LT, R-KEY-LT-E, R-KEY-LT-P, Z-KEY-0, Z-KEY-2ETH, Z-KEY-2ETH-E, Z-KEY-2ETH-P, Z-KEY-P, Z-KEY-E, R203-2-L, R203-2-H, R203-2-L-P, R203-2-H-P, R203-2-L-U, R203-2-H-U

PROTOCOL RECONFIGURATION PROCEDURE WITH FLEX TECHNOLOGY

- Connect the PC to the FLEX device via Ethernet
- Launch the SENECA DISCOVERY DEVICE software, available on the SENECA website; scan the ModBUS / Ethernet network
- Select the new combination of protocols to apply to the device
- With the module turned off, set the DIP Switch to "Factory Reset"
- Turn on the module and set the DIP Switch to "Read configuration from Flash"

1 Connect the PC via Ethernet to the SENECA module

2 Launch the SENECA DISCOVERY DEVICE software and scan the ModBUS / Ethernet network

3 Change the protocol from ModBUS to Profinet or Ethernet/IP

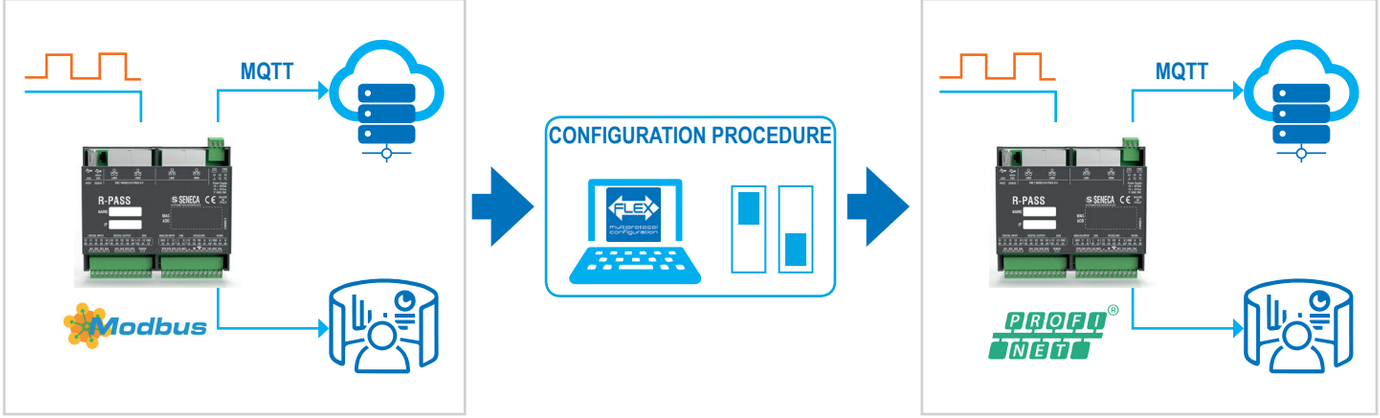
4 When the module is off, position the DIP Switches to "ON" (factory reset).

5 Turn on the module and set the DIP Switch to "OFF", read configuration from Flash

6 Now the module operates with another combination of protocols

For more information: www.seneca.it/flex

EXAMPLE OF CONVERSION FROM MODBUS ANALYZER TO PROFINET ANALYZER.

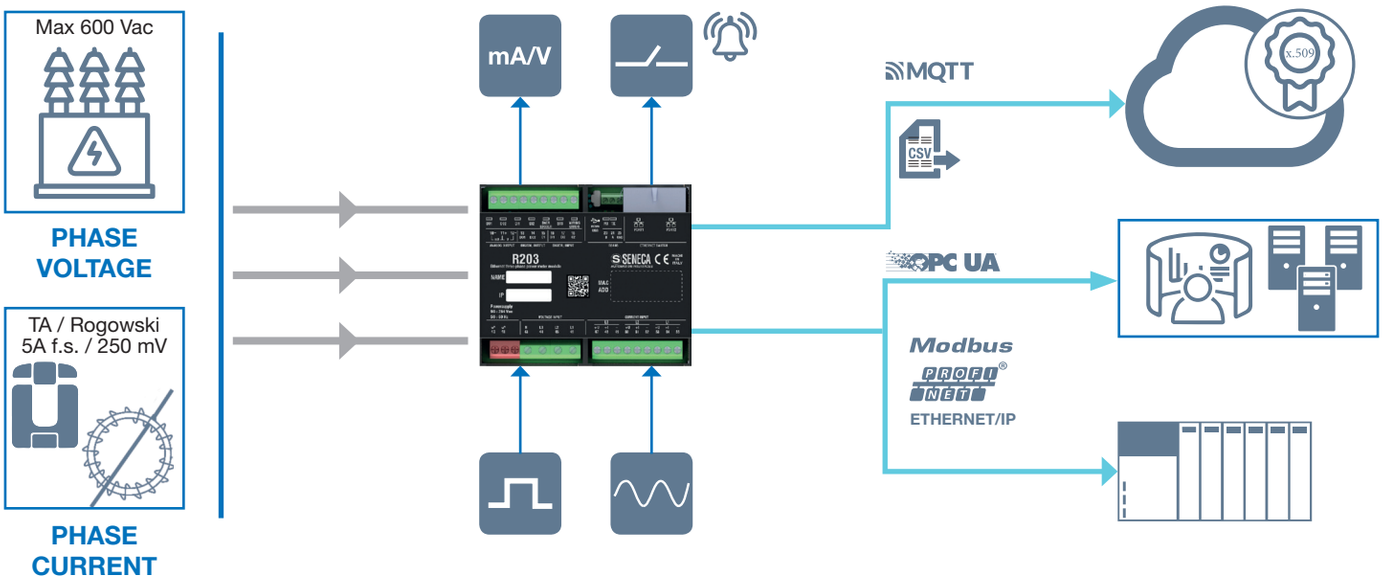


MULTIFUNCTION POWER METER WITH UNIVERSAL INPUT – R203 SERIES

MAIN MEASUREMENTS

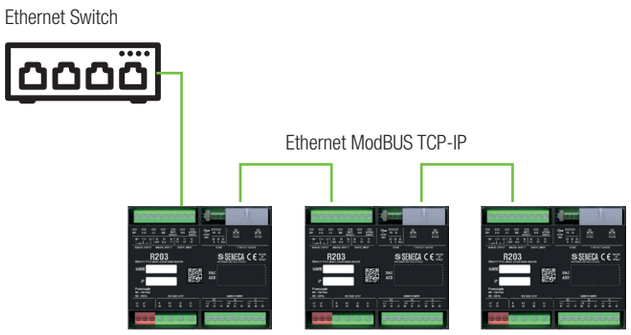
INSTANTANEOUS VALUES	
Voltage	VL1-L2, VL2-L3, VL3-L1, VL1-N, VL2-N, VL3-N
Current (+/-)	IL1, IL2, IL3, IN
Active Power (+/-)	P1, P2, P3, Ptot
Reactive Power (+/-)	Q1, Q2, Q3 and Qtot
Apparent Power (+/-)	S1, S2, S3 and Stot
Power Factor (inductive and capacitive)	PF1, PF2, PF3 and PFtot
Frequency	F1, F2, F3
Period	PER1, PER2, PER3
Voltage-Current Phase Angle [°]	Delta VIL1, VIL2, VIL3
Line Voltage Phase Angle [°]	Delta VL1-L2, VL2-L3, VL3-L1
Total Harmonic Distortion of Voltage (THD)	THD % VL1-N, VL2-N, VL3-N
Total Harmonic Distortion of Current (THD)	THD % IL1, IL2, IL3
AVERAGE VALUES IN DEMAND TIME	
Average Voltage	VL1-N, VL2-N, VL3-N, VL1-N MIN, VL1-N MAX, VL2-N MIN, VL2-N MAX, VL3-N MIN, VL3-N MAX
Average Current (+/-)	IL1, IL2, IL3, IL1 MIN, IL1 MAX, IL2 MIN, IL2 MAX, IL3 MIN, IL3 MAX
Average Active Power (+/-)	P1, P2, P3, P1 MIN, P1 MAX, P2 MIN, P2 MAX, P3 MIN, P3 MAX, Ptot
Average Reactive Power (+/-)	Q1, Q2, Q3, Q1 MIN, Q1 MAX, Q2 MIN, Q2 MAX, Q3 MIN, Q3 MAX, Qtot
Average Apparent Power (+/-)	S1, S2, S3, S1 MIN, S1 MAX, S2 MIN, S2 MAX, S3 MIN, S3 MAX, Stot
Average Power Factor (inductive and capacitive)	PF1, PF2, PF3, PF1 MIN, PF1 MAX, PF2 MIN, PF2 MAX, PF3 MIN, PF3 MAX, PFtot
MAXIMUM / MINIMUM / ABSOLUTE VALUES	
Voltage	VL1-N MIN, VL1-N MAX, VL2-N MIN, VL2-N MAX, VL3-N MIN, VL3-N MAX
Current (+/-)	IL1 MIN, IL1 MAX, IL2 MIN, IL2 MAX, IL3 MIN, IL3 MAX
Active Power (+/-)	P1 MIN, P1 MAX, P2 MIN, P2 MAX, P3 MIN, P3 MAX, Ptot
Reactive Power (+/-)	Q1 MIN, Q1 MAX, Q2 MIN, Q2 MAX, Q3 MIN, Q3 MAX, Qtot
Apparent Power (+/-)	S1 MIN, S1 MAX, S2 MIN, S2 MAX, S3 MIN, S3 MAX, Stot
Power Factor (inductive and capacitive)	PF1 MIN, PF1 MAX, PF2 MIN, PF2 MAX, PF3 MIN, PF3 MAX, PFtot
Counters	
Active Energy [Wh]	ACTIVE ENERGY IMPORTED L1 (+) Q1/Q4
	ACTIVE ENERGY IMPORTED L2 (+) Q1/Q4
	ACTIVE ENERGY IMPORTED L3 (+) Q1/Q4
	ACTIVE ENERGY EXPORTED L1 (-) Q2/Q3
	ACTIVE ENERGY EXPORTED L2 (-) Q2/Q3
	ACTIVE ENERGY EXPORTED L3 (-) Q2/Q3
	ACTIVE ENERGY IMPORTED TOTAL (+) Q1/Q4
	ACTIVE ENERGY EXPORTED TOTAL (-) Q2/Q3
	ACTIVE ENERGY BALANCE TOTAL (+/-)
REACTIVE ENERGY [VARH]	REACTIVE ENERGY IMPORTED L1 (+) Q1/Q2
	REACTIVE ENERGY IMPORTED L2 (+) Q1/Q2
	REACTIVE ENERGY IMPORTED L3 (+) Q1/Q2
	REACTIVE ENERGY EXPORTED L1 (-) Q3/Q4
	REACTIVE ENERGY EXPORTED L2 (-) Q3/Q4
	REACTIVE ENERGY EXPORTED L3 (-) Q3/Q4
	REACTIVE ENERGY IMPORTED L1 (+) Q1
	REACTIVE ENERGY IMPORTED L2 (+) Q1
	REACTIVE ENERGY IMPORTED L3 (+) Q1
	REACTIVE ENERGY IMPORTED L1 (-) Q2
	REACTIVE ENERGY IMPORTED L2 (-) Q2
	REACTIVE ENERGY IMPORTED L3 (-) Q2
	REACTIVE ENERGY IMPORTED L1 (+) Q3
	REACTIVE ENERGY IMPORTED L2 (+) Q3
	REACTIVE ENERGY IMPORTED L3 (+) Q3
	REACTIVE ENERGY IMPORTED L1 (-) Q4
	REACTIVE ENERGY IMPORTED L2 (-) Q4
	REACTIVE ENERGY IMPORTED L3 (-) Q4
	REACTIVE ENERGY IMPORTED TOTAL (+) Q1/Q2
	REACTIVE ENERGY EXPORTED TOTAL (-) Q3/Q4
	REACTIVE ENERGY BALANCE TOTAL (+/-)
APPARENT ENERGY [VAH]	APPARENT ENERGY BALANCE TOTAL (+/-)
HARMONIC ANALYSIS	
Voltage Harmonics from the fundamental to the 55th [V]	VL1-N, VL2-N, VL3-N
Current Harmonics from the fundamental to the 55th [A]	IL1, IL2, IL3
Voltage Harmonics from the 2nd to the 55th [% relative to the fundamental]	VL1-N, VL2-N, VL3-N
Current Harmonics from the 2nd to the 55th [% relative to the fundamental]	IL1, IL2, IL3

CONNECTION DIAGRAM

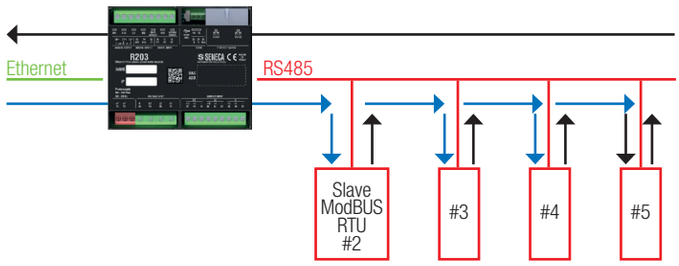


NETWORKING

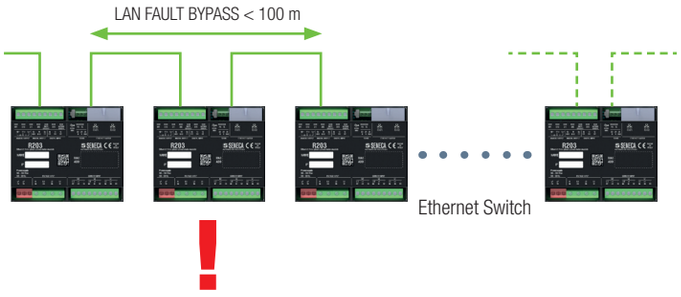
DAISY CHAIN



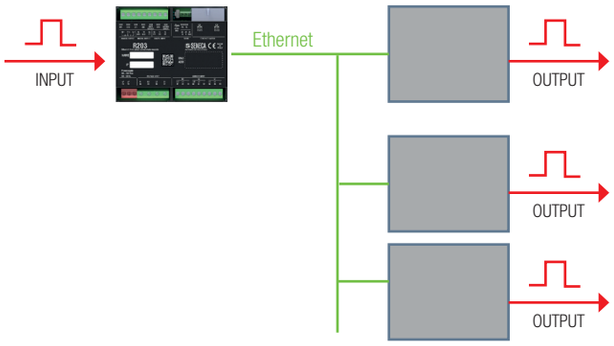
ModBUS Pass-Through



Fault By-Pass



Copia I/O Peer-To-Peer



MULTIFUNCTION POWER METER WITH UNIVERSAL INPUT – R203 SERIES

RANGE

Modbus

R203-2-L
Three-phase Power Meter, 2xETH, 10-30 Vdc, ModBUS RTU/TCP-IP

R203-2-H
Three-phase Power Meter, 2xETH, 90-264 Vac, ModBUS RTU/TCP-IP

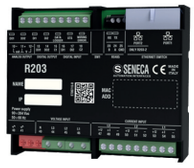
PROFINET

R203-2-L-P
Three-phase Power Meter, 2xETH, 10-30 Vdc, Profinet

R203-2-H-P
Three-phase Power Meter, 2xETH, 90-264 Vac, Profinet

EtherNet/IP

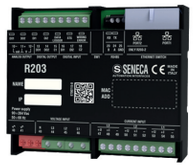
R203-2-L-E
Three-phase Power Meter, 2xETH, 10-30 Vac, Ethernet/IP



R203-2-H-E
Three-phase Power Meter, 2xETH, 90-264 Vac, Ethernet/IP

OPC UA

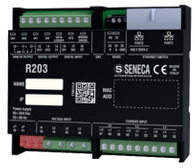
R203-2-L-U
Three-phase Power Meter, 2xETH, 10-30 Vdc, OPC UA



R203-2-H-U
Three-phase Power Meter, 2xETH, 90-264 Vac, OPC UA

IEC 61850

R203-2-L-I
Three-phase Power Meter, 2xETH, 10-30 Vdc, IEC 61850



R203-2-H-I
Three-phase Power Meter, 2xETH, 90-264 Vac, IEC 61850

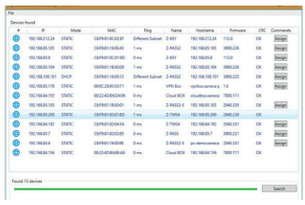
ACCESSORIES AND CONFIGURATION

CE-RJ45-RJ45-R
Straight Ethernet cable RJ45-RJ45

RC150
Rogowski coil 100 mV/kA @ 50Hz, Ø bobina 80..580 mm

RC190
Rogowski coil 333 mV/kA @ 50Hz, Ø bobina 100..580 mm

SDD
SENECA Discovery Device



ORDER CODES

Code	Description
POWER METERS	
R203-2-L	3-phase power meter, 2xETH, 24 Vdc, ModBUS RTU/TCP-IP
R203-2-H	3-phase power meter, 2xETH, 90-264 Vac, ModBUS RTU/TCP-IP
R203-2-L-P	3-phase power meter, 2xETH, 24 Vdc, Profinet IO
R203-2-H-P	3-phase power meter, 2xETH, 90-264 Vac, Profinet IO
R203-2-L-E	3-phase power meter, 2xETH, 24 Vdc, Ethernet/IP
R203-2-H-E	3-phase power meter, 2xETH, 90-264 Vac, Ethernet/IP
R203-2-L-U	3-phase power meter, 2xETH, 24 Vdc, OPC UA
R203-2-H-U	3-phase power meter, 2xETH, 90-264 Vac, OPC UA
ROGOWSKI COILS	
RC150-025-100-10	Rogowski coil L=25cm D.int.8cm 100mV/1KA-50Hz cable=10mt
RC150-025-100-3M	Rogowski coil L=25cm D.int.8cm 100mV/1KA-50Hz cable=3mt
RC150-025-100-5M	Rogowski coil L=25cm D.int.8cm 100mV/1KA-50Hz cable=5mt
RC150-035-100-3M	Rogowski coil L=35cm D.int.11cm 100mV/1KA-50Hz cable=3mt
RC150-035-100-5M	Rogowski coil L=35cm D.int.11cm 100mV/1KA-50Hz cable=5mt
RC150-035-100-10	Rogowski coil L=35cm D.int.11cm 100mV/1KA-50Hz cable=10mt
RC150-040-100-10	Rogowski coil L=40cm D.int.12cm 100mV/1KA-50Hz cable=10mt
RC150-040-100-3M	Rogowski coil L=40cm D.int.12cm 100mV/1KA-50Hz cable=3mt

Code	Description
RC150-040-100-5M	Rogowski coil L=40cm D.int.12cm 100mV/1KA-50Hz cable=5mt
RC150-060-100-10	Rogowski coil L=60cm D.int.19cm 100mV/1KA-50Hz cable=10mt
RC150-060-100-3M	Rogowski coil L=60cm D.int.19cm 100mV/1KA-50Hz cable=3mt
RC150-060-100-5M	Rogowski coil L=60cm D.int.19cm 100mV/1KA-50Hz cable=5mt
RC150-090-100-10	Rogowski coil L=90cm D.int.28cm 100mV/1KA-50Hz cavo=10mt
RC150-090-100-3M	Rogowski coil L=90cm D.int.28cm 100mV/1KA-50Hz cable=3mt
RC150-090-100-5M	Rogowski coil L=90cm D.int.28cm 100mV/1KA-50Hz cable=5mt
RC150-120-100-3M	Rogowski coil L=12cm D.int.38cm 100mV/1KA-50Hz cable=3mt
RC150-120-100-5M	Rogowski coil L=12cm D.int.38cm 100mV/1KA-50Hz cable=5mt
RC150-130-100-5M	Rogowski coil L=13cm D.int.38cm 100mV/1KA-50Hz cable=5m
RC150-180-100-3M	Rogowski coil L=180cm D.int.57cm 100mV/1KA-50Hz cable=3m
RC150-280-100-5M	Rogowski coil L=280cm D.int.89cm 100mV/1KA-50Hz cable=5m
RC150-300-100-5M	Rogowski coil L=300cm D.int.96cm 100mV/1KA-50Hz cable=5m
RC190-030-333-3M	Rogowski coil L=30cm, D.int. 9cm, 333mV/1KA-50Hz, cable=3mt
RC190-030-333-5M	Rogowski coil L=30cm, D.int. 9cm, 333mV/1KA-50Hz, cable=5mt
RC190-035-333-3M	Rogowski coil L=35cm, D.int. 9cm, 333mV/1KA-50Hz, cable=3mt
RC190-060-333-3M	Rogowski coil L=60cm, Øint. 9cm, 333mV/1KA-50Hz, cable=3mt
RC190-090-333-3M	Rogowski coil L=90cm, Øint. 9cm, 333mV/1KA-50Hz, cable=3mt
RC190-160-333-3M	Rogowski coil L=160cm, Øint. 9cm, 333mV/1KA-50Hz, cable=3mt

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