

R203 SERIES

Multifunction power meters
with universal input





R203 SERIES

MULTIFUNCTION POWER METERS WITH UNIVERSAL INPUT

R203 three-phase power meter accepts current measurement inputs for CTs with current/voltage output, VTs and Rogowski coils(with voltage output up to 333 mV), with single-phase, three-phase 3/4-wire insertion types and with support for ModBUS RTU, ModBUS TCP-IP, Peer-To-Peer protocols. Like most of the “space-saving” R-series products, R203 has 1 or 2 Ethernet ports that can also be used for daisy chain connections with automatic bypass protection. The analyzer provides an output signal in voltage (0..10Vdc), current (0/4..20mA). R203 also offers measurement and recording of harmonics in voltage/current up to 55th order with THD (total harmonic distortion) calculation. The instrument also operates as a Web Server and datalogger for reading key parameters and downloading from data and events.

HIGHLIGHTS



UNIVERSAL ANALOG INPUTS

R203 is a three-phase network analyzer that can accept universal input signals with scales settable up to 600 Vac (voltage), 5A (CT with current output), 333 mV (CT with voltage output or Rogowski coils).



CURRENT INPUT

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



PRECISION

The instrument ensures an accuracy of 0.2% for TA/voltage current measurements and 0.5% for active/reactive powers and Rogowski currents.



PROGRAMMING

From Web Server (or dedicated software built into the instrument, it is possible to make basic and advanced settings diagnostics; I/O configuration, measurements, communication, ModBUS data and registers.



INTEGRATED MONITORING SYSTEM

Through facilitated integration with the multifunctional IIoT HMI (SSD), R203 enables the analysis of all electrical parameters and their visualization in the intuitive icon and widget interface. With only one SSD installed, it is possible to manage up to 40 analyzers at simultaneously.



MEASURED VALUES

R203 returns single-phase and three-phase values of the main electrical variables: voltage, current, active, reactive, apparent power and energy, frequency, period, power factor, harmonics up to the 55th and THD. The configurable analog output allows the analyzer to also be used as a measurement converter.



ENERGY COUNTING

R203 is equipped with pulse digital output and memory retentive for metering energy active, reactive and apparent. On both digital inputs are a filter and a 32-bit incremental counter with backup to FeRAM 1 time per second.



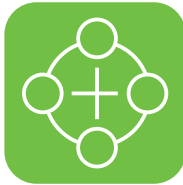
DATALOGGER

R203 operates as a datalogger (up to 30 variables per tag and about 55,296 samples storable in the internal flash) and event datalogger with recording up to 32,768 samples with associated time tag. It is also possible to send log files in csv format to an FTP server.



DAISY CHAIN

Thanks to the Ethernet interface, a chain connection to the next device Ethernet (daisy chain) avoiding expensive industrial switches and simplifying the wiring.



LAN BYPASS

R203 enables the operation of an internal switch even if the device is faulty or unpowered up to 4 days (LAN function with bypass in case of failure)






PEER-TO-PEER





R203 can copy and update in real time an input channel to a remote output channel without the aid of a master controller. It is also possible to copy an input to an output of multiple remote devices.



MODBUS PASS-THROUGH

With the advanced function “ModBUS passthrough” the module can forward to RS485 requests coming from Modbus TCP-IP by behaving, in effect, as a gateway.

	R203	R203-ROG-025	R203-ROG-040
			
	Three-phase power meter with inputs for TA, TV, Rogowski, Ethernet connection, THD measurement	Three-phase power meter kit, Ethernet, universal input and rogowski coil (x3) L25 D12, 100mV/1KA-50Hz	Three-phase power meter kit, Ethernet, universal input and rogowski coil (x3) L40 D12, 100mV/1KA-50Hz
GENERAL DATA			
Power supply	90-264 Vac (50-60 Hz)	90-264 Vac (50-60 Hz)	90-264 Vac (50-60 Hz)
Max power consumption	2,8 W, 5,4 VA	2,8 W, 5,4 VA	2,8 W, 5,4 VA
Isolation	4 kVac (to/from power circuits) 1.500 Vac (other circuits)	4 kVac (to/from power circuits) 1,500 Vac (other circuits)	4 kVac (to/from power circuits) 1,500 Vac (other circuits)
LED Status indicators	Power supply, DI/DO, RS485 communication, data logger, status, wiring error, Ethernet port	Power supply, DI/DO, RS485 communication, data logger, status, wiring error, Ethernet port	Power supply, DI/DO, RS485 communication, data logger, status, wiring error, Ethernet port
Installation category	600 V CAT III	600 V CAT III	600 V CAT III
Type of insertion/connection mode	Single-phase, 3-phase 3-wire, 3-phase 4-wire, CT, CT with mV output, Rogowski transducers	Single-phase, 3-phase 3-wire, 3-phase 4-wire, CT, CT with mV output, Rogowski transducers	Single-phase, 3-phase 3-wire, 3-phase 4-wire, CT, CT with mV output, Rogowski transducers
Protection degree	IP20	IP20	IP20
Accuracy	0.2% (CT Current/Voltage); 0.5% (Active/Reactive Power, Rogowski Current)	0.2% (CT Current/Voltage); 0.5% (Active/Reactive Power, Rogowski Current)	0.2% (CT Current/Voltage); 0.5% (Active/Reactive Power, Rogowski Current)
Mounting	IEC EN60715 35mm DIN rail, wall or panel mounted via screws	IEC EN60715 35mm DIN rail, wall or panel mounted via screws	IEC EN60715 35mm DIN rail, wall or panel mounted via screws
Connections	Screw terminals	Screw terminals	Screw terminals
Operating temperature	-25...+55 °C	-25...+55 °C	-25...+55 °C
Storage temperature	-30...+ 85°C	-30...+ 85°C	-30...+ 85°C
Humidity	30% ÷ 90% non condensing	30% ÷ 90% non condensing	30% ÷ 90% non condensing
Dimensions	90 x 107 x 32 mm	90 x 107 x 32 mm	90 x 107 x 32 mm
Weight	170 g	170 g	170 g
Case	PC/ABS self-extinguishing UL94-V0, color black	PC/ABS self-extinguishing UL94-V0, color black	PC/ABS self-extinguishing UL94-V0, color black
Provided sensors	-	Rogowski coil (x3) L25 D12, 100mV/1KA-50Hz	Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz
Certification	CE	CE	CE
MEASUREMENT AND CALCULATION TIMES			
Sampling time	8,000 sps (for voltage/current channels)	8,000 sps (for voltage/current channels)	8,000 sps (for voltage/current channels)
RMS value settling time	580..700 ms	580..700 ms	580..700 ms
Harmonic update time	30s	30s	30s
PROGRAMMING			
Web Server	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, USB connection, special functions (ModBUS Pass Through), firmware upgrade	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, USB connection, special functions (ModBUS Pass Through), firmware upgrade	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, USB connection, special functions (ModBUS Pass Through), firmware upgrade
DATALOGGER			
Data logger	Max. 30 variables per tag and about 55,296 samples storable in the internal flash; sample time between 1s and 24h	Max. 30 variables per tag and about 55,296 samples storable in the internal flash; sample time between 1s and 24h	Max. 30 variables per tag and about 55,296 samples storable in the internal flash; sample time between 1s and 24h
Event datalogger	Recording up to 32,768 samples with associated time tag, threshold, time window, date/time	Recording up to 32,768 samples with associated time tag, threshold, time window, date/time	Recording up to 32,768 samples with associated time tag, threshold, time window, date/time
COMMUNICATION			
SERIAL			
Interfaces	N°1 porta RS485	N°1 porta RS485	N°1 porta RS485
Protocol	ModBUS RTU Slave	ModBUS RTU Slave	ModBUS RTU Slave
Distance	Fino a 1.200 m	Fino a 1.200 m	Fino a 1.200 m
Speed	1.200..115.200 baud	1.200..115.200 baud	1.200..115.200 baud
Connectivity	Max 128 nodi device Seneca	Max 128 nodi device Seneca	Max 128 nodi device Seneca
ETHERNET			
Ports	Nr. 1 or 2 100 Mbps Ethernet ports	Nr. 1 or 2 100 Mbps Ethernet ports	Nr. 1 or 2 100 Mbps Ethernet ports
Connections	Daisy Chain	Daisy Chain	Daisy Chain
Protocols	ModBUS TCP-IP, Seneca P2P I/O Mirror with broadcast (UDP based)	ModBUS TCP-IP, Seneca P2P I/O Mirror with broadcast (UDP based)	ModBUS TCP-IP, Seneca P2P I/O Mirror with broadcast (UDP based)
USB			
Ports	Nr.1 Micro USB programming port	Nr.1 Micro USB programming port	Nr.1 Micro USB programming port
I/O			
Channels	2 digital inputs/outputs, 1 analog output	2 digital inputs/outputs, 1 analog output	2 digital inputs/outputs, 1 analog output
Measurement Input	VOLTAGE up to 600 Vac, freq. 45 ÷ 65 Hz. CURRENT: TA 1 ÷ 5 A full scale; voltage (mV) for TA with voltage or Rogowski output: up to 333 mV f.s.	VOLTAGE up to 600 Vac, freq. 45 ÷ 65 Hz. CURRENT: TA 1 ÷ 5 A full scale; voltage (mV) for TA with voltage or Rogowski output: up to 333 mV f.s.	VOLTAGE up to 600 Vac, freq. 45 ÷ 65 Hz. CURRENT: TA 1 ÷ 5 A full scale; voltage (mV) for TA with voltage or Rogowski output: up to 333 mV f.s.
Rogowski Analog Input	VOLTAGE: up to 600 Vac, frequency 45..65 Hz ROGOWSKI (supplied by SENECA): 100 1000 A @ 50 Hz (sine); 120 mV to 1000 A @ 60 Hz (sine); Max measurable current: 3 kA @ 50 Hz; 2.5 kA @ 60 Hz	VOLTAGE: up to 600 Vac, frequency 45..65 Hz ROGOWSKI (supplied by SENECA): 100 1000 A @ 50 Hz (sine); 120 mV to 1000 A @ 60 Hz (sine); Max measurable current: 3 kA @ 50 Hz; 2.5 kA @ 60 Hz	VOLTAGE: up to 600 Vac, frequency 45..65 Hz ROGOWSKI (supplied by SENECA): 100 1000 A @ 50 Hz (sine); 120 mV to 1000 A @ 60 Hz (sine); Max measurable current: 3 kA @ 50 Hz; 2.5 kA @ 60 Hz
Analog Output	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT 0..20, 4..20 mA, max load resistance 500Ω Transmission error: 0.1 % of maximum range Thermal drift: 100 ppm/K	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT 0..20, 4..20 mA, max load resistance 500Ω Transmission error: 0.1 % of maximum range Thermal drift: 100 ppm/K	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT 0..20, 4..20 mA, max load resistance 500Ω Transmission error: 0.1 % of maximum range Thermal drift: 100 ppm/K
Digital Inputs	No.2 digital inputs that can be activated with voltage from 12 to 24V	No.2 digital inputs that can be activated with voltage from 12 to 24V	No.2 digital inputs that can be activated with voltage from 12 to 24V
Digital Outputs	No.2 digital outputs, range I _{max} = 50 mA V _{max} = 28V	No.2 digital outputs, range I _{max} = 50 mA V _{max} = 28V	No.2 digital outputs, range I _{max} = 50 mA V _{max} = 28V

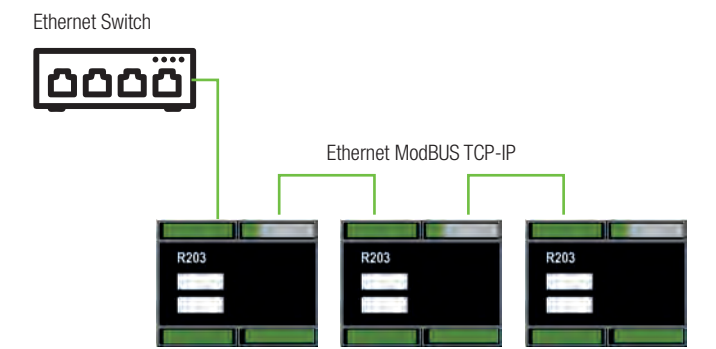
	R203-ROG-060	R203-ROG-090	R203-TA50
	 <p>Three-phase power meter kit, Ethernet, universal input and rogowski coil (x3) L60 D12, 100mV/1KA-50Hz</p>	 <p>Three-phase power meter kit, Ethernet, universal input and rogowski coil (x3) L90 D12, 100mV/1KA-50Hz</p>	  <p>Power meter kit, Ethernet, universal input, 3xTA 50/5A, cl.0.5/1, D23mm</p>
GENERAL DATA			
Power supply	90-264 Vac (50-60 Hz)	90-264 Vac (50-60 Hz)	90-264 Vac (50-60 Hz)
Max power consumption	2,8 W, 5,4 VA	2,8 W, 5,4 VA	2,8 W, 5,4 VA
Isolation	4 kVac (to/from power circuits) 1,500 Vac (other circuits)	4 kVac (to/from power circuits) 1,500 Vac (other circuits)	4 kVac (to/from power circuits) 1,500 Vac (other circuits)
LED Status indicators	Power supply, DI/DO, RS485 communication, data logger, status, wiring error, Ethernet port	Power supply, DI/DO, RS485 communication, data logger, status, wiring error, Ethernet port	Power supply, DI/DO, RS485 communication, data logger, status, wiring error, Ethernet port
Installation category	600 V CAT III	600 V CAT III	600 V CAT III
Type of insertion/connection mode	Single-phase, 3-phase 3-wire, 3-phase 4-wire, CT, CT with mV output, Rogowski transducers	Single-phase, 3-phase 3-wire, 3-phase 4-wire, CT, CT with mV output, Rogowski transducers	Single-phase, 3-phase 3-wire, 3-phase 4-wire, CT, CT with mV output, Rogowski transducers
Protection degree	IP20	IP20	IP20
Accuracy	0.2% (CT Current/Voltage); 0.5% (Active/Reactive Power, Rogowski Current)	0.2% (CT Current/Voltage); 0.5% (Active/Reactive Power, Rogowski Current)	0.2% (CT Current/Voltage); 0.5% (Active/Reactive Power, Rogowski Current)
Mounting	IEC EN60715 35mm DIN rail, wall or panel mounted via screws	IEC EN60715 35mm DIN rail, wall or panel mounted via screws	IEC EN60715 35mm DIN rail, wall or panel mounted via screws
Connections	Screw terminals	Screw terminals	Screw terminals
Operating temperature	-25...+55 °C	-25...+55 °C	-25...+55 °C
Storage temperature	-30...+ 85°C	-30...+ 85°C	-30...+ 85°C
Humidity	30% ÷ 90% non condensing	30% ÷ 90% non condensing	30% ÷ 90% non condensing
Dimensions	90 x 107 x 32 mm	90 x 107 x 32 mm	90 x 107 x 32 mm
Weight	170 g	170 g	170 g
Case	PC/ABS self-extinguishing UL94-V0, color black	PC/ABS self-extinguishing UL94-V0, color black	PC/ABS self-extinguishing UL94-V0, color black
Provided sensors	Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz	Rogowski coil (x3) L90 D12, 100mV/1KA-50Hz	3xCT 50/5A, cl.0.5/1, D23mm
Certification	CE	CE	CE
MEASUREMENT AND CALCULATION TIMES			
Sampling time	8,000 sps (for voltage/current channels)	8,000 sps (for voltage/current channels)	8,000 sps (for voltage/current channels)
RMS value settling time	580..700 ms	580..700 ms	580..700 ms
Harmonic update time	30s	30s	30s
PROGRAMMING			
Web Server	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, USB connection, special functions (ModBUS Pass Through), firmware upgrade	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, USB connection, special functions (ModBUS Pass Through), firmware upgrade	Connection diagnostics, device configuration, alarm and I/O configuration, datalogger, USB connection, special functions (ModBUS Pass Through), firmware upgrade
DATALOGGER			
Data logger	Max. 30 variables per tag and about 55,296 samples storable in the internal flash; sample time between 1s and 24h	Max. 30 variables per tag and about 55,296 samples storable in the internal flash; sample time between 1s and 24h	Max. 30 variables per tag and about 55,296 samples storable in the internal flash; sample time between 1s and 24h
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COMMUNICATION			
SERIAL			
Interfaces	N°1 porta RS485	N°1 porta RS485	N°1 porta RS485
Protocol	ModBUS RTU Slave	ModBUS RTU Slave	ModBUS RTU Slave
Distance	Fino a 1.200 m	Fino a 1.200 m	Fino a 1.200 m
Speed	1.200..115.200 baud	1.200..115.200 baud	1.200..115.200 baud
Connectivity	Max 128 nodi device Seneca	Max 128 nodi device Seneca	Max 128 nodi device Seneca
ETHERNET			
Ports	Nr. 1 or 2 100 Mbps Ethernet ports	Nr. 1 or 2 100 Mbps Ethernet ports	Nr. 1 or 2 100 Mbps Ethernet ports
Connections	Daisy Chain	Daisy Chain	Daisy Chain
Protocols	ModBUS TCP-IP, Seneca P2P I/O Mirror with broadcast (UDP based)	ModBUS TCP-IP, Seneca P2P I/O Mirror with broadcast (UDP based)	ModBUS TCP-IP, Seneca P2P I/O Mirror with broadcast (UDP based)
USB			
Ports	Nr.1 Micro USB programming port	Nr.1 Micro USB programming port	Nr.1 Micro USB programming port
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Channels	2 digital inputs/outputs, 1 analog output	2 digital inputs/outputs, 1 analog output	2 digital inputs/outputs, 1 analog output
Measurement Input	VOLTAGE up to 600 Vac, freq. 45 ÷ 65 Hz. CURRENT: TA 1 ÷ 5 A full scale; voltage (mV) for TA with voltage or Rogowski output: up to 333 mV f.s.	VOLTAGE up to 600 Vac, freq. 45 ÷ 65 Hz. CURRENT: TA 1 ÷ 5 A full scale; voltage (mV) for TA with voltage or Rogowski output: up to 333 mV f.s.	VOLTAGE up to 600 Vac, freq. 45 ÷ 65 Hz. CURRENT: TA 1 ÷ 5 A full scale; voltage (mV) for TA with voltage or Rogowski output: up to 333 mV f.s.
Rogowski Analog Input	VOLTAGE: up to 600 Vac, frequency 45..65 Hz ROGOWSKI (supplied by SENECA): 100 1000 A @ 50 Hz (sine); 120 mV to 1000 A @ 60 Hz (sine); Max measurable current: 3 kA @ 50 Hz; 2.5 kA @ 60 Hz	VOLTAGE: up to 600 Vac, frequency 45..65 Hz ROGOWSKI (supplied by SENECA): 100 1000 A @ 50 Hz (sine); 120 mV to 1000 A @ 60 Hz (sine); Max measurable current: 3 kA @ 50 Hz; 2.5 kA @ 60 Hz	VOLTAGE: up to 600 Vac, frequency 45..65 Hz ROGOWSKI (supplied by SENECA): 100 1000 A @ 50 Hz (sine); 120 mV to 1000 A @ 60 Hz (sine); Max measurable current: 3 kA @ 50 Hz; 2.5 kA @ 60 Hz
Analog Output	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT 0..20, 4..20 mA, max load resistance 500Ω Transmission error: 0.1 % of maximum range Thermal drift: 100 ppm/K	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT 0..20, 4..20 mA, max load resistance 500Ω Transmission error: 0.1 % of maximum range Thermal drift: 100 ppm/K	VOLTAGE 0..10 Vdc, min load resistance 2kΩ CURRENT 0..20, 4..20 mA, max load resistance 500Ω Transmission error: 0.1 % of maximum range Thermal drift: 100 ppm/K
Digital Inputs	No.2 digital inputs that can be activated with voltage from 12 to 24V	No.2 digital inputs that can be activated with voltage from 12 to 24V	No.2 digital inputs that can be activated with voltage from 12 to 24V
Digital Outputs	No.2 digital outputs, range I _{max} = 50 mA V _{max} = 28V	No.2 digital outputs, range I _{max} = 50 mA V _{max} = 28V	No.2 digital outputs, range I _{max} = 50 mA V _{max} = 28V

MEASUREMENT PARAMETERS

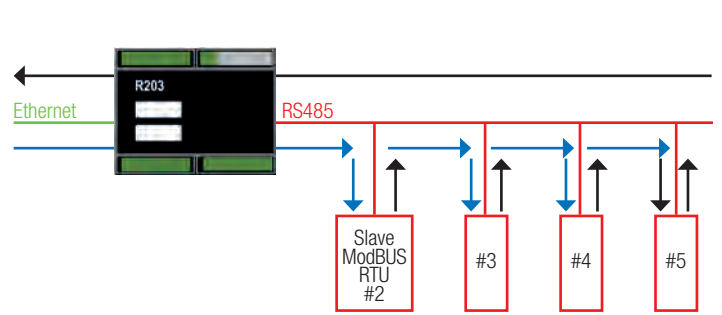
INSTANT VALUES	
Voltage	VL1-L2, VL2-L3, VL3-L1, VL1-N, VL2-N, VL3-N
Current (+/-)	IL1, IL2, IL3, IN
Active Power (+/-)	P1, P2, P3, Ptot
Reactive Power (+/-)	Q1, Q2, Q3 e Qtot
Apparent Power (+/-)	S1, S2, S3 e Stot
Power Factor (inductive and capacitive)	PF1, PF2, PF3 e Pftot
Frequency	F1, F2, F3
Period	PER1, PER2, PER3
Voltage-Current Phase Shift [°]	Delta VIL1, VIL2, VIL3
Line Voltage Phase Shift [°]	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 MINIMO, PF1 MASSIMO, PF2 MINIMO, PF2 MASSIMO, PF3 MINIMO, PF3 MASSIMO, Pftot
ABSOLUTE / MAXIMUM / MINIMUM 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 MINIMO, PF3 MAX, Pftot
COUNTERS	
ACTIVE ENERGY [Wh]	IMPORTED ACTIVE ENERGY L1 (+) Q1/Q4
	IMPORTED ACTIVE ENERGY L2 (+) Q1/Q4
	IMPORTED ACTIVE ENERGY L3 (+) Q1/Q4
	EXPORTED ACTIVE ENERGY L1 (-) Q2/Q3
	EXPORTED ACTIVE ENERGY L2 (-) Q2/Q3
	EXPORTED ACTIVE ENERGY L3 (-) Q2/Q3
	IMPORTED ACTIVE ENERGY TOT (+) Q1/Q4
	EXPORTED ACTIVE ENERGY TOT (-) Q2/Q3
	TOTAL ACTIVE ENERGY BALANCE (+-)
	IMPORTED IDLE ENERGY L1 (+) Q1/Q2
REACTIVE ENERGY [VARh]	IMPORTED REACTIVE ENERGY L2 (+) Q1/Q2
	IMPORTED REACTIVE ENERGY L3 (+) Q1/Q2
	EXPORTED REACTIVE ENERGY L1 (-) Q3/Q4
	EXPORTED REACTIVE ENERGY L2 (-) Q3/Q4
	EXPORTED REACTIVE ENERGY L3 (-) Q3/Q4
	IMPORTED REACTIVE ENERGY L1 (+) Q1
	IMPORTED REACTIVE ENERGY L2 (+) Q1
	IMPORTED REACTIVE ENERGY L3 (+) Q1
	IMPORTED REACTIVE ENERGY L1 (-) Q2
	IMPORTED REACTIVE ENERGY L2 (-) Q2
	IMPORTED REACTIVE ENERGY L3 (-) Q2
	IMPORTED REACTIVE ENERGY L1 (+) Q3
	IMPORTED REACTIVE ENERGY L2 (+) Q3
	IMPORTED REACTIVE ENERGY L3 (+) Q3
	IMPORTED REACTIVE ENERGY L1 (-) Q4
	IMPORTED REACTIVE ENERGY L2 (-) Q4
	IMPORTED REACTIVE ENERGY L3 (-) Q4
	IMPORTED REACTIVE ENERGY TOT (+) Q1/Q2
	EXPORTED REACTIVE ENERGY TOT (-) Q3/Q4
	TOTAL REACTIVE ENERGY BALANCE (+-)
APPARENT ENERGY [VAh]	TOTAL APPARENT ENERGY BALANCE (+-)
HARMONIC ANALYSIS	
Voltage harmonics from fundamental to 55th [V].	VL1-N, VL2-N, VL3-N
Current harmonics from fundamental to 55th [A].	IL1, IL2, IL3
Voltage harmonics from 2nd to 55th [% with respect to fundamental]	VL1-N, VL2-N, VL3-N
Current harmonics from 2nd to 55th [% with respect to fundamental]	IL1, IL2, IL3

CONNECTION EXAMPLES

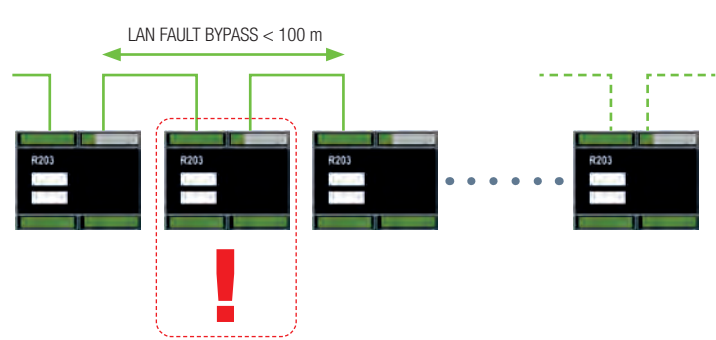
DAISY CHAIN CONNECTION



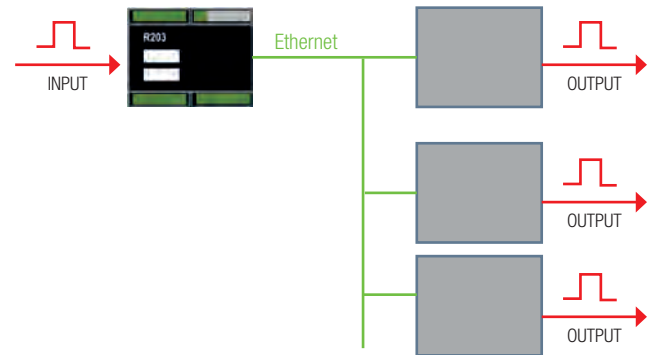
MODBUS PASS THROUGH



FAULT BYPASS CONNECTION



I/O COPY WITH PEER-TO-PEER FUNCTION



ORDER CODE

Code	Description
R203-1	Three-phase power meter single Ethernet and universal input
R203-1-ROG-025	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L25 D12, 100mV/1KA-50Hz, 3mt
R203-1-ROG025-10	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L25 D12, 100mV/1KA-50Hz, 10mt
R203-1-ROG-025-5	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L25 D12, 100mV/1KA-50Hz, 5mt
R203-1-ROG-040	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz, 3mt
R203-1-ROG040-10	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz, 10mt
R203-1-ROG-040-5	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz, 5mt
R203-1-ROG-060	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz, 3mt
R203-1-ROG060-10	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz, 10mt
R203-1-ROG-060-5	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz, 5mt
R203-1-ROG-090	Three-phase power meter kit, single Ethernet, universal input and Rogowski coil triplet L90 D12, 100mV/1KA-50Hz, 3mt
R203-1-TA50	Power meter kit, 1xETH, univ. input, 3xTA 50/5A, cl.0.5/1, D23mm
R203-2	Three-phase dual Ethernet power meter and universal input
R203-2-ROG-025	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil triplet L25 D12, 100mV/1KA-50Hz, 3mt
R203-2-ROG025-10	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L25 D12, 100mV/1KA-50Hz, 10mt
R203-2-ROG-025-5	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L25 D12, 100mV/1KA-50Hz, 5mt
R203-2-ROG-040	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz, 3mt
R203-2-ROG040-10	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz, 10mt
R203-2-ROG-040-5	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L40 D12, 100mV/1KA-50Hz, 5mt
R203-2-ROG-060	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz, 3mt
R203-2-ROG060-10	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz, 10mt
R203-2-ROG-060-5	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L60 D12, 100mV/1KA-50Hz, 5mt
R203-2-ROG-090	Three-phase power meter kit, dual Ethernet, universal input and Rogowski coil (x3) L90 D12, 100mV/1KA-50Hz, 3mt
R203-2-TA50	Power meter kit, 2xETH, univ. input, 3xTA 50/5A, cl.0.5/1, D23mm



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