S604 Series

MULTIFUNCTION & ROGOWKI POWER METERS

S500 Series

MID SINGLE PHASE AND THREE-PHASE ENERGY COUNTERS

SENECA

www.seneca.it

MULTI-FUNCTION POWER METERS - S604 SERIES

Three phase multifunction power meters with CTs, direct measurement, Rogowski Coils

The S604 series includes innovative three-phase network analyzers for the measurement and storage of electrical parameters. All versions for TA standard 1/5 A, for direct link up to 80 A or for Rogowski coils input, enclose the ideal functions for energy management applications. Depending on the model, the device can communicate through the RS485 serial port with ModBUS RTU / ASCII or through the Ethernet port with ModBUS protocol TCP-IP. Onboard Ethernt models is very useful the Web server interface to remotely manage surveys and export logged data for energy audits. The top features of the advanced versions ENERGY Plus are 8 MB for data logs, the recording of harmonics up to 15^ and the recording of MIN./AVG/MAX values of all the active and reactive powers.

INSERTION MODE
- Vthree phase 4 wires
- From 3x400 V to 3x415 V threephase 3 wires
- From 230 V to 240 V single phase

POWER SUPPLY
- Self-Powered models
- Auxiliary supply models

DIGITAL I/O'S
#1/2 alarm/pulse output
#1 average values calculation (DMD)

DATA STORAGE
- Active/Reactive Power average values recording (S604B – Basic versions) or All Power MIN/AVG/MAX values di tutte le potenze (S604E Energy Plus versions)
- Up to 8 MB memory for data recording

TYPICAL APPLICATION
- Monitoring system and energy control
- Individual machine load monitoring.
- Power peak control
- Switchboards, gensets, motor control centers etc.
- Remote metering and cost allocation

SETTINGS
- ENERGY POWER PACK (software)
- Web Server
- Front Key buttons

OPTIONAL COMMUNICATION
- ModbBUS RTU/ASCCI (RS85 port)
- ModBUS TCP-IP (LAN port)

ENERGY COUNTERS AND MEASUREMENS
- Total counters
- Inductive / capacitive independent counters
- Bidirectional measurement on 4 quadrants for all powers and energies
- Energy efficiency parameters measurement

THD & HARMONICS
- Current / Voltage THD Values
- Current / Voltage THD Values uo tp 15th harmonics

CURRENT INPUT
- Version for 1 or 5A CT, for direct connection up to 6A or 80A
- 3 current measurement scales for Rogowski model

ROGOWSKI COILS - Working principle

An air-cored toroidal winding is placed around the conductor, the magnetic field produced by the current induces in the coil a voltage proportional to the rate of change of current. Integrating this voltage the output become proportional to the current (as for a current transformer).

Flexible coil
From 25 to 300 cm (length)
Very thin cross section down to approx. 8 mm

TECHNOLOGY
- The junction point is insensitive to both the position of the internal conductor and to currents carried by external contuctors
- Coil and cable shielded against electromagnetic noise

ENGINEERING
- Cross section reduced up to approx. 8mm
- High flexibility
- Easy installation
- Low weight

CALIBRATION
- Better than 1% accuracy, even close to the junction point
- Accessible calibration point for easy recalibration, if required

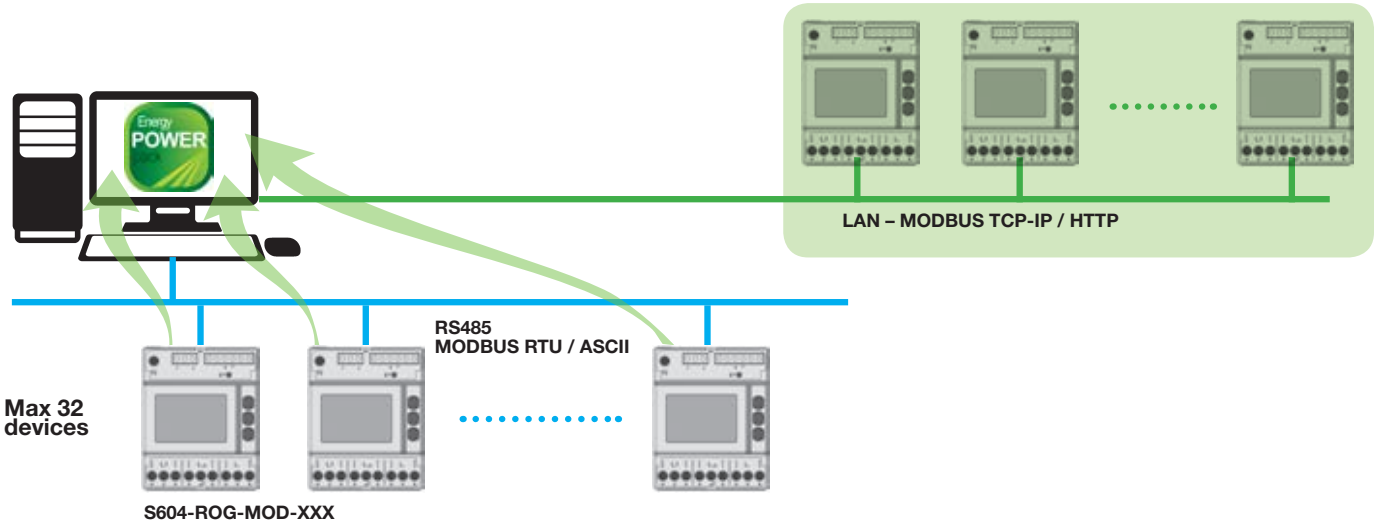
OPTIMAL LOCK
- Secure lock even in presence of vibration and/or pull-ups
- Stable lock ensuring repeatability in measurement

ROGOWSKI MULTI-FUNCTION POWER METERS

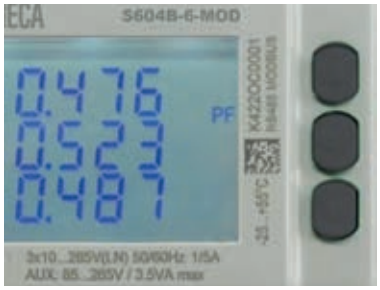
	S604B	S604E	S604B-ROG	S604E-ROG
	Three-phase Power Meter BASIC version	**Three-phase Power Meter ENERGY Plus version**	**Threee-phase power meter kit including nr.1 S604B + nr. 3 Rogowski coils**	**Threee-phase power meter kit including nr. 1 S604E + nr. 3 Rogowski coils**
GENERAL DATA				
Power supply	180..285 Vac line-neutral, Cat III (self powered models) 85..265 Vac, Aux, Cat II (auxiliary powered models)	85..265 Vac, Aux, Cat II (auxiliary powered models)	180..285 Vac line-neutral, Cat III (self powered models) 85..265 Vac, Aux, Cat II (auxiliary powered models)	85..265 Vac, Aux, Cat II (auxiliary powered models)
Max consumption	3,5 VA - 1 W each phase (self-powered models) 1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)	1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)	1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)	1,6 VA - 1 W (auxilary powered, RS485 models) 4,5 VA - 1,6 W (auxiliary powered, Ethernet models)
Display	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols	LCD, backlighted, 43x29 mm, 3 rows, 4 digit+symbols
Keyboard	3 front button, 1 protected button	3 front button, 1 protected button	3 front button, 1 protected button	3 front button, 1 protected button
Operating temperature	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C
Sinusoidal vibration amplitude	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm	50 Hz ± 0.075 mm
Memory (instrument with communicatio port)	1 MB	8 MB	1 MB	8 MB
Recordings	AGV values for active and reactive powers	Min/ Avg/Max values for all powers, selectable	AGV values for active and reactive powers	Min/ Avg/Max values for all powers, selectable
THD & Harmonics	Voltage and current THD values	Voltage and current THD values Voltage and current up to 15th	Voltage and current THD values	Voltage and current THD values Voltage and current up to 15th
Apparent Energy Counters	Total counters or separated inductive/ capacitive counters	Total counters or separated inductive/ capacitive counters	Total counters or separated inductive/ capacitive counters	Total counters or separated inductive/ capacitive counters
Wiring modes	Three-phase, 4 wires, 3 currents Three-phase, 4 wires, 2 currents (aux models)	Three-phase, 4 wires, 3 currents Three-phase, 4 wires, 2 currents (aux models)	Three-phase, 4 wires, 3 currents Three-phase, 4 wires, 2 currents (aux models)	Three-phase, 4 wires, 3 currents Three-phase, 4 wires, 2 currents (aux models)
Front protection degree	IP51	IP51	IP51	IP51
Terminals protection degree	IP20	IP20	IP20	IP20
Dimension (lxhxw)	72x90x65 mm	72x90x65 mm	72x90x65 mm	72x90x65 mm
Weight	436 g	436 g	436 g	436 g
ACCURACY				
Voltage	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)	±0,2% reading 10% FS...FS (FS=full scale value)
Current	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS	±0,4% reading in 5% FS...FS
Power	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)	±0,5% reading ±0,1% FS (PF=1)
Frequency	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz	±0,1% reading ±1 digit in 45...65 Hz
Active Energy	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21	Class 1 according to IEC/EN 62053-21
Reactive Energy	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23	Class 2 according to IEC/EN 62053-23
COMMUNICATION				
Serial Port	RS485 optoisolated, 300..57.600 bps (optional)	RS485 optoisolated, 300..57.600 bps	RS485 optoisolated, 300..57.600 bps (optional)	RS485 optoisolated, 300..57.600 bps
Ethernet Port	10/100 Mbps, RJ45 connector (optional)	10/100 Mbps, RJ45 connector	10/100 Mbps, RJ45 connector (optional)	10/100 Mbps, RJ45 connector
Supported protocols	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)	-	ModBUS RTU/ASCII (RS485); http, Ntp, Dhcp, ModBUS TCP-IP (Ethernet)	-
I/O				
Voltage Input	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)	3x180/310..3x285/495 Vacm Cat III, 300 V (self powered models) 3x10/17…3x285/495 Vac, Cat III 300 V (auxiliary powered models)
Current Input	6A (1/5A CT models); 80 A (80 A models)	6A (1/5A CT models); 80 A (80 A models)	3 selectable scales: 500 / 4.000 / 20.000 A by Rogowski Coils	3 selectable scales: 500 / 4.000 / 20.000 A by Rogowski Coils
Digital Input	N1 optoisolated active channel (NO COM), DMD synchronization range 80..276 Vac/dc	-	N1 optoisolated active channel (NO COM), DMD synchronization range 80..276 Vac/dc	10/100 Mbps, RJ45 connector
Digital Output	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31	Nr 1 (RS485 models) / 2 (NO COM models) optoisolated passive channel, IEC/EN 62053-31
PROGRAMMING				
Configuration systems	Front key buttons Energy Power Pack software (ModBUS/ Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/ Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/ Ethernet models) Webserver (Ethernet models)	Front key buttons Energy Power Pack software (ModBUS/ Ethernet models) Webserver (Ethernet models)
STANDARD				
Certifications	CE	CE	CE	CE
Directives	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE	2006/95/CE, 2004/108/CE
Norms	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2	EN 61010-1, EN 61010-2-030, EN 61326-1, EN 55011, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN61000-6-2

PROGRAMMING SYSTEM

ETHERNET / MODBUS COMMUNICATION / PROGRAMMING



FRONT KEY BUTTONS



Readings, settings and recording are available through tramite front key buttons with 7 display page groups management.

Configuration tool for Energy power meters SERVER S604B and S604E. ENERGY POWER PACK assures reading and visualization of all measurements, it also provides a overall setup of parameters, downloading and converting recording and it manages remote connections

By Web Server it's possible visualizing all device values and associate a recording exportabla into a csv file

ORDER CODE

Code	Description
S604B-6	Three phase power meter, BASIC version, for CT/5A, self powered
S604B-6-MOD	Three phase power meter, BASIC version, for CT/5A, RS485 Modbus,1MB mem. log.
S604B-6-ETH	Three phase power meter, BASIC version, for CT/5A, Ethernet, 1MB mem. log.
S604B-80	Three phase power meter, BASIC version, 80A, self-powered
S604B-80-MOD	Three phase power meter, BASIC version, 80A-RS485 Modbus,1MB mem. log.
S604B-80-ETH	Three phase power meter, BASIC version, 80A- Ethernet,1MB mem. log.
S604B-ROG-000-30	Threee-phase power meter kit including nr.1 S604B self powered + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604B-ROG-000-45	Threee-phase power meter kit including nr.1 S604B self powered + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604B-ROG-000-70	Threee-phase power meter kit including nr.1 S604B self powered + nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm
S604B-ROG-MOD-30	Threee-phase power meter kit including nr.1 S604B RS485 Modbus,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604B-ROG-MOD-45	Threee-phase power meter kit including nr.1 S604B RS485 Modbus,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604B-ROG-MOD-70	Threee-phase power meter kit including nr.1 S604B RS485 Modbus,1MB mem. Log+ nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm
S604B-ROG-ETH-30	Threee-phase power meter kit including nr.1 S604B Ethernet,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604B-ROG-ETH-45	Threee-phase power meter kit including nr.1 S604B Ethernet,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604B-ROG-ETH-70	Threee-phase power meter kit including nr.1 S604B Ethernet,1MB mem. Log+ nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm
S604E-6-MOD	Three-phase Power Meter ENERGY Plus version, CT1/5A-RS485 Modbus,8MB log. harmonics
S604E-6-ETH	Three-phase Power Meter ENERGY Plus version, CT1/5A- Ethernet,8MB log. harmonics
S604E-80-MOD	Three-phase Power Meter ENERGY Plus version, 80A-RS485 Modbus,8MB log. harmonics
S604E-80-ETH	Three-phase Power Meter ENERGY Plus version, 80A- Ethernet,8MB log. harmonics
S604E-ROG-MOD-30	Threee-phase power meter kit including nr.1 S604E RS485 Modbus,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604E-ROG-MOD-45	Threee-phase power meter kit including nr.1 S604B RS485 Modbus,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604E-ROG-MOD-70	Threee-phase power meter kit including nr.1 S604E RS485 Modbus,1MB mem. Log+ nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm

Code	Description
S604E-ROG-ETH-30	Threee-phase power meter kit including nr.1 S604E Ethernet,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 30cm Øint. 9,5 cm
S604E-ROG-ETH-45	Threee-phase power meter kit including nr.1 S604E Ethernet,1MB mem. Log + nr. 3 Rogowski coils RC150 L= 45cm Øint. 14 cm
S604E-ROG-ETH-70	Threee-phase power meter kit including nr.1 S604B Ethernet,1MB mem. Log+ nr. 3 Rogowski coils RC150 L= 70cm Øint. 22 cm

ROGOWSKI COILS	
RC150-025-100-3M	Rogowski Coil L=25cm Øint.8cm,100mV/1KA-50Hz,cable L=3mt.
RC150-035-100-3M	Rogowski Coil L=35cm Øint.11cm,100mV/1KA-50Hz,cable L=3mt.
RC150-040-100-3M	Rogowski Coil L=40cm Øint.12cm,100mV/1KA-50Hz,cable L=3mt.
RC150-060-100-3M	Rogowski Coil L=60cm Øint.19cm,100mV/1KA-50Hz,cable L=3mt.
RC150-090-100-3M	Rogowski Coil L=90cm Øint.28cm,100mV/1KA-50Hz,cable L=3mt.
RC150-120-100-3M	Rogowski Coil L=120cm Øint.38cm,100mV/1KA-50Hz,cable L=3mt.
RC150-180-100-3M	Rogowski Coil L=180cm Øint.57cm,100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT30	Rogowski Coil Kit Spare Parts RC150 L= 30cm Ø int. 9,5 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT45	Rogowski Coil Kit Spare Parts RC150 L= 45cm Ø int. 14 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-RIC-KIT70	Rogowski Coil Kit Spare Parts RC150 L= 70cm Ø int. 22 cm, 100mV/1KA-50Hz,cable L=3mt.
RC150-CAVEX-ROG1	Cable extension beyond 3 mt. for Rogwski Coil connection L.1
RC150-CAVEX-ROG2	Cable extension beyond 3 mt. for Rogwski Coil connection L.2
RC150-CAVEX-ROG3	Cable extension beyond 3 mt. for Rogwski Coil connection L.3
RC190-030-333-3M	Rogowski Coil L=30cm Øint.9,5cm,333mV/1KA-50H,cable L=3mt.
RC190-035-333-3M	Rogowski Coil L=35cm Øint.11cm,333mV/1KA-50H,cable L=3mt.
RC190-060-333-3M	Rogowski Coil L=60cm Øint.19cm,333mV/1KA-50H,cable L=3mt.
RC190-090-333-3M	Rogowski Coil L=90cm Øint.28cm,333mV/1KA-50H,cable L=3mt.
RC190-120-333-3M	Rogowski Coil L=120cm Øint.38cm,333mV/1KA-50H,cable L=3mt.
RC190-180-333-3M	Rogowski Coil L=180cm Øint.57cm,333mV/1KA-50H,cable L=3mt.
RC190-180-333-3M	Rogowski Coil L=180cm Øint.57cm,333mV/1KA-50H,cable L=3mt.

ACCESSORIES	
S107USB	RS485/USB serial converter, portable version

The new SENECA energy counters for DIN rail mounting cover the most different application requirements for single-phase and threephase systems. Available with RS485 Modbus, M-BUS or Ethernet + webserver communication interfaces, the energy counters are compliant with MID (2004/22 / EC Directive) in class B with EN 50470 standard. Equipped with Wide backlighted LCD display for easy consultation of the values of energy and power, the counters
also make avalilable the diagnostic function signaling polarity errors in the connection.

HIGHLIGHTS

- On-board communication RS485 Modbus RTU/ASCII
- On-board communication M-Bus
- On-board communication Ethernet (Modbus TCP)
- For 3 or 4 wire networks with balanced or unbalanced load
- Class B according to EN 50470-3, MID certified
- S0 output for energy pulse emission and tariff input
- Wide LCD display with 8 main digits

- M-Bus (Meter-Bus) is a European standard (EN 13757-2 physical and link layer, EN 13757-3 application layer) for the remote reading of gas or electricity meters.
- The M-Bus was developed to fill the need for a system for the networking and remote reading of utility meters,
- The data (e.g. heat consumption) are read out electronically
- At one single cable, which connects to a building controller all consumption meters of a housing unit can be attached
- All meters are individually addressable
- Apart from the availability of the data at the controller also a remote reading is possible

MID

The Measuring Instruments Directive (2004/22/EC) is a directive by the European Union, which seeks to harmonise many aspects of legal metrology across all member states of the EU. Its most prominent tenet is that all kinds of meters which receive a MID approval may be used in all countries across the EU.

APPLICATION FIELDS

Totalization of the electric energy in the industry for each single line or machine

Measurement of energy generated by renewable sources

Accounting and billing of consumptions in camp sites, malls, residential areas, naval ports etc.

Accounting of the consumptions in buildings with executive office services

Energy monitoring systems

Remote survey of the consumptions and compute of the costs

ENERGY COUNTERS - S500 SERIES

	S501-32	S502-80	S503-6	S503-80	S504-6
	32A single phase 2 wires energy counter	**80A single phase 2 wire energy counter**	**6A three phase 3 wire energy counter**	**80A 3 wires three phase energy counter**	**6A three phase 4 wire energy counter**
GENERAL DATA					
Power Supply	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit
Max consumption	0,8 VA	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase)
Accuracy	Active Energy class B according to EN 50470-3	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23
Tariff input		Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc
Metrological LED	Meter constant 5000 imp/kWh	Meter constant 1000 imp/kWh	Meter constant 10000 imp/kWh Pulse length 10±2ms	Meter constant 1000 imp/kWh Pulse length 10±2ms	Meter constant 10000 imp/kWh Pulse length 10±2ms
Reset Counters		Option	Option	Option	Option
Operating Temperature	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C
Protection Degree	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)
Dimension (lxhxd)	18x90x64 mm	36x90x64 mm	72x90x64 mm	72x90x64 mm	72x90x64 mm
VOLTAGE					
Nominal Values	230 V, 50-60 Hz, 2 wire	230 V 50 Hz 240 V 50 Hz 230 V 50/60 Hz 230..240 V 50/60 Hz	3x400 V 50 Hz 3 wires 3x415 V 50 Hz 3 wires 3x400 V 50/60 Hz 3 wires 3x400..3x415 V 50/60 Hz 3 wires	3x400 V 50 Hz 3 wires 3x415 V 50 Hz 3 wires 3x400 V 50/60 Hz 3 wires 3x400..3x415 V 50/60 Hz 3 wires	3x230/400 V 50 Hz 4 wires 3x240/415 V 50 Hz 4 wires 3x230/400 V 50/50 Hz 4 wires 3x230/400..3x240/415 V 50/60 Hz 4 wires
CURRENT					
Starting current Ist	20 mA	20 mA	2 mA	20 mA	2 mA
Minimum current Imin	250 mA	250 mA	10 mA	250 mA	10 mA
Transitional current Itr	500 mA	500 mA	50 mA	500 mA	50 mA
Reference current Iref (Ib)	5 A	5 A	1 A	5 A	1 A
Maximum current Imax	32 A	80 A	6 A	80 A	6 A
S0 OUTPUTS / ENERGY PULSE EMISSION					
Q.ty / Type	Passive optoisolated	2 passive optoisolated	2 passive optoisolated	2 passive optoisolated	2 passive optoisolated
Max Values	27 Vdc - 27 mA	250 Vac/dc - 100 mA	250 Vac/dc - 100 mA	250 Vac/dc - 100 mA	250 Vac/dc - 100 mA
Pulse lenght	100 ms (@1000 imp/kWh); 500 ms (@100 imp/kWh)	50±2 ms	50±2 ms	50±2 ms	50±2 ms
COMMUNICATION					
Supported protocols	M-BUS	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet, Konnex
Type	Built-in / By optical interface	By optical interface	By optical interface	By optical interface	By optical interface
CONFIGURATION					
Programming System	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK
STANDARD					
Norms	EN 50740-3	EN 50740-3	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23
Certifications	CE, MID (option)	CE, MID (option)	CE	CE	CE

ORDER CODE

Code	Description
S501	
S501-32-0	32A single phase energy 2 wires 1 DIN
S501-32-0-MID	32A single phase energy 2 wires 1 DIN, MID certified
S501-32-MBU	32A single phase energy 2 wires 1 DIN, M-BUS
S501-32-MBU-MID	32A single phase energy 2 wires 1 DIN, MID certified, M-BUS
S502	
S502-80	80A single phase energy counter 2 wires 2 DIN
S502-80-MID	80A single phase energy counter 2 wires 2 DIN MID certified
S502-80-R	80A single phase energy counter 2 wires 2 DIN MID certified, counters reset
S503-6	
S503-6	6A three phase energy counter 3 wires 4 DIN
S503-6-R	6A three phase energy counter 3 wires 4 DIN, counters reset
S503-80	
S503-80	80A three phase energy counter 3 wires 4 DIN
S503-80-R	80A three phase energy counter 3 wires 4 DIN, counters reset

ORDER CODE

Code	Description
S504-6	
S504-6	6A three phase energy counter 4 wires 4 DIN
S504-6-R	6A three phase energy counter 4 wires 4 DIN, counters reset
S504-80	
S504-80	80A three phase energy counter 4 wires 4 DIN
S504-80-R	80A three phase energy counter 4 wires 4 DIN, counters reset
S504C-60	
S504C-6-MOD	6A three phase energy counter 4 wires 4 DIN, RS485 Modbus
S504C-6-MBU	6A three phase energy counter 4 wires 4 DIN, M-BUS
S504C-6-ETH	6A three phase energy counter 4 wires 4 DIN, Ethernet
S504C-6-MOD-MID	6A three phase energy counter 4 wires 4 DIN, RS485 Modbus, MID certified
S504C-6-MBU-MID	6A three phase energy counter 4 wires 4 DIN, M-BUS, MID certified
S504C-6-ETH-MID	6A three phase energy counter 4 wires 4 DIN, Ethernet, MID certified

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	S504-80	S504C-6	S504C-80	S534-6	S534-80
	80A 4 wires three phase energy counter	**6A thee phase 4 wire energy counter with built-in communication**	**80A thrre phase 4 wire energy counter with built-in communication**	**6A three phase 3/4 wire energy counter**	**80A three phase 3/4 wire energy counter**
GENERAL DATA					
Power Supply	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit	From voltage circuit
Max consumption	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase) - M-BUS version 3,5 VA - 1 W (for each phase) -Modbus/Ethernet version)	7,5 VA - 0,5 W (for each phase) - M-BUS version 3,5 VA - 1 W (for each phase) -Modbus/Ethernet version)	7,5 VA - 0,5 W (for each phase)	7,5 VA - 0,5 W (for each phase)
Accuracy	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23	Active Energy class B according to EN 50470-3 Reactive Energy class 2 according to IEC/EN 62053-23
Tariff input	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc	Active optoisolated Voltage range for tariff 2: 80..276 Vac/dc
Metrological LED	Meter constant 1000 imp/kWh Pulse length 10±2ms	Meter constant 10000 imp/kWh Pulse length 10±2ms	Meter constant 1000 imp/kWh Pulse length 10±2ms	Meter constant 10000 imp/kWh Pulse length 10±2ms	Meter constant 1000 imp/kWh Pulse length 10±2ms
Reset Counters				Option	Option
Operating Temperature	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C	-25..+55°C
Protection Degree	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)	IP51 (front), IP20 (terminals)
Dimension (lxhxd)	72x90x64 mm	72x90x64 mm	72x90x64 mm	72x90x64 mm	72x90x64 mm
VOLTAGE					
Nominal Values	3x230/400 V 50 Hz 4 wires 3x240/415 V 50 Hz 4 wires 3x230/400 V 50/60 Hz 4 wires 3x230/400..3x240/415 V 50/60 Hz 4 wires	3x230/400..3x240/415 V 50/60 Hz	3x230/400..3x240/415 V 50/60 Hz	3x230/400 V 50 Hz 3x240/415 V 50 Hz 3x230/400 V 50/60 Hz 3x230/400..3x240/415 V 50/60 Hz	3x230/400 V 50 Hz 3x240/415 V 50 Hz 3x230/400 V 50/60 Hz 3x230/400..3x240/415 V 50/60 Hz
CURRENT					
Starting current Ist	20 mA	2 mA	20 mA	2 mA	20 mA
Minimum current Imin	250 mA	10 mA	250 mA	10 mA	250 mA
Transitional current Itr	500 mA	50 mA	500 mA	50 mA	500 mA
Reference current Iref (Ib)	5 A	1 A	5 A	1 A	5 A
Maximum current Imax	80 A	6 A	80 A	6 A	80 A
S0 OUTPUTS / ENERGY PULSE EMISSION					
Q.ty / Type	2 passive optoisolated	Passive optoisolated	Passive optoisolated	2 passive optoisolated	2 passive optoisolated
Max Values	250 Vac/dc - 100 mA	27 Vdc - 27 mA	27 Vdc - 27 mA	250 Vac/dc - 100 mA	250 Vac/dc - 100 mA
Pulse lenght	50±2 ms	50±2 ms	50±2 ms	50±2 ms	50±2 ms
COMMUNICATION					
Protocols supported	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet	ModBUS, M-BUS, Ethernet	ModBUS, M-BUS, Ethernet, Konnex	ModBUS, M-BUS, Ethernet, Konnex
Type	By optical interface	RS485 port, Modbus RTU/ASCII, 30..57600 bps EN 1434-3 wired port, M-BUS, 300..38400 bps 10/100BaseT, http, Ntp, Dhcp, Modbu TCP, 10/100 Mbps, data recording, web server Built-in	RS485 port, Modbus RTU/ASCII, 30..57600 bps EN 1434-3 wired port, M-BUS, 300..38400 bps 10/100BaseT, http, Ntp, Dhcp, Modbu TCP, 10/100 Mbps, data recording, web server Built-in	By optical interface	By optical interface
CONFIGURATION					
Programming System	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK Web Server	Front key buttons E-MODBUS-PACK, E-MBUS-PACK Web Server	Front key buttons E-MODBUS-PACK, E-MBUS-PACK	Front key buttons E-MODBUS-PACK, E-MBUS-PACK
STANDARD					
Norms	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23	EN 50470-3, EN 62053-23	EN 50470-1, EN 50470-3, EN 62053-23	EN 50470-1, EN 50470-3, EN 62053-23
Certifications	CE	CE, MID (option)	CE, MID (option)	CE, MID (option)	CE, MID (option)

ORDER CODE

Code	Description
S504C-80	
S504C-80-MOD	80A three phase energy counter 4 wires 4 DIN, RS485 Modbus
S504C-80-MBU	80A three phase energy counter 4 wires 4 DIN, M-BUS
S504C-80-ETH	80A three phase energy counter 4 wires 4 DIN, Ethernet
S504C-80-MOD-MID	80A three phase energy counter 4 wires 4 DIN, RS485 Modbus, MID certified
S504C-80-MBU-MID	80A three phase energy counter 4 wires 4 DIN, M-BUS, MID certified
S504C-80-ETH-MID	80A three phase energy counter 4 wires 4 DIN, Ethernet, MID certified

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ORDER CODE

Code	Description
S534-6	
S534-6	6A three phase energy counter 3/4 wires 4 DIN
S534-6-MID	6A three phase energy counter 3/4 wires 4 DIN, MID certified
S534-6-R	6A three phase energy counter 3/4 wires 4 DIN, counters reset
S534-80	
S534-80	80A three phase energy counter 3/4 wires 4 DIN
S534-80-MID	80A three phase energy counter 3/4 wires 4 DIN, MID certified
S534-80-R	80A three phase energy counter 3/4 wires 4 DIN, counters reset

S500 SERIES - ACCESSORIES

COMMUNICATION MODULES WITH OPTICAL INTERFACE

S500-MOD	S500-KNX	S500-MBU	S500-ETH
RS485 MODBUS OPTICAL INTERFACE MODULE	KONNEX OPTICAL INTERFACE MODULE	M-BUS OPTICAL INTERFACE MODULE	MODBUS TCP-IP / WEBSERVER OPTICAL INTERFACE MODULE
ORDER CODE			
S500-MOD	S500-KNX	S500-MBU	S500-ETH

BUS ADAPTERS AND CABLES

S107USB	S107MBU	CE-RJ45-RJ45-C • CE-RJ45-RJ45-R
RS485/USB SERIAL CONVERTER, PORTABLE **For RS485 ModBUS RTU versions**	USB - M-BUS CONVERTER, PORTABLE VERSION **For M-BUS versions**	ETHERNET CABLES **For S504C (Ethernet version) and S500- ETH models**
Power supply: Powered by USB port **Max consumption**: 60 mA **Operating systems**: Windows 98, 2000, XP, Windows 7; Linux 2.24.0 or more recent **Compatibility**: USB 1.1 and 2.0 **Dimension**: 40x48x20,17 mm **Accessories**: Connection cable (USB side) and CD driver	**Power supply**: Powered by USB port **Max consumption**: 60 mA **Operating systems**: Windows XP, Windows 7 **Compatibility**: USB 1.1 and 2.0 **Dimension** (WxHxD): 54x30x110 mm **Accessories**: Connection cable (USB side) and CD driver for Windows	
ORDER CODE		
S107USB	S107MBU	CE-RJ45-RJ45-C: Crossover Ethernet cable (RJ45-RJ45) CE-RJ45-RJ45-R: Straight-thru Ethernet cable (RJ45-RJ45)

S500 SERIES - PROGRAMMING

FRONT KEY BUTTONS

By f ront key buttons on all models can be programmed these functions:

- **Page scroll Temporary visualization of secondary values**
- **Access / exit Programming pages**
- **Start / stop / reset partial hour counter**
- **Setting parameters**
- **Display test**

WEBSERVER

All counters S500 Series energy counters - Ethernet or external COM version - have access to a **WEB SERVER** accessible through protected connection. WEB SERVER prov ides real-time values and recorded data in .csv exportable files.

ENERGY MODBUS PACK

Modbus models can be configured through sof tware package **ENERGY MODBUS PACK** downloadable by www.seneca.it.

- **Serial port setting**
- **Search / addition counters**
- **Network parameters configuration for each counter**

ENERGY M-BUS PACK

Communication models with M-BUS interface can be configured by the software package **ENERGY M-BUS PACK** downloadable by www.seneca.it.

- **Serial port setting**
- **Search / addition counters network**
- **Parameters configuration network for each meter**

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SENECA
Via Austria, 26 • 35127 Padova - (I)
Tel. +39 049 87.05.359 • Fax +39 049 87.06.287
www.seneca.it • info@seneca.it

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