

NETWORK ANALYZERS

CHOOSE THE RIGHT NETWORK ANALYZER FOR ENERGY MANAGEMENT

ADVANCED NETWORK ANALYZER, Reporter and Data Logger

MULTISER-04-PC-TFT

- Easy installation menu
- Wide screen TFT (320 x 240 pixel 3,2")
- Many leading screen displays
- Microprocessor is based on operating system
- Improved dynamic software
- Ability to enter current and voltage transformer rates
- True RMS
- Voltage, current and harmonic protection
- Multiple alarms
- Memory (upto Micro SD 32GB)
- Password protection
- Waveforms (for current and voltage)
- Graphical reports (Powers, Voltages, Currents)
- Reports according to date
- 3P&4W, 3P&3W, ARON Connection

Measurements

- Voltages (V1N, V2N, V3N ve V12, V23, V13)
- Currents (I1, I2, I3, ΣI)
- Power Factor (PF1, PF2, PF3)
- $\cos\Phi$ (Cos Φ 1, Cos Φ 2, Cos Φ 3, $\Sigma\cos\Phi$)
- Frequency (Hz)
- Active Power (P1, P2, P3, ΣP)
- Inductive Reactive Power [$\Sigma Q(ind), Q1(ind), Q2(ind), Q3(ind)$]
- Capacitive Reactive Power [$\Sigma Q(kap), Q1(kap), Q2(kap), Q3(kap)$]
- Apparent Power ($\Sigma S, S1, S2, S3$)
- Active Energy (ΣWh)
- Inductive Reactive Energy
- Capacitive Reactive Energy
- Neutral Current
- Total harmonic distortion for current and voltage (THD-V ve THD-I)
- Peak and Demands
- Display as list or chart of 3rd — 63rd harmonics for current and voltages
- % Current Unbalance
- % Voltage Unbalance

Inputs & Outputs

- Relay Output (2pcs)
- Pulse Output (2pcs)
- Digital Input (2pcs)
- RS-485 MODBUS-RTU



FOR ECONOMIC SOLUTIONS

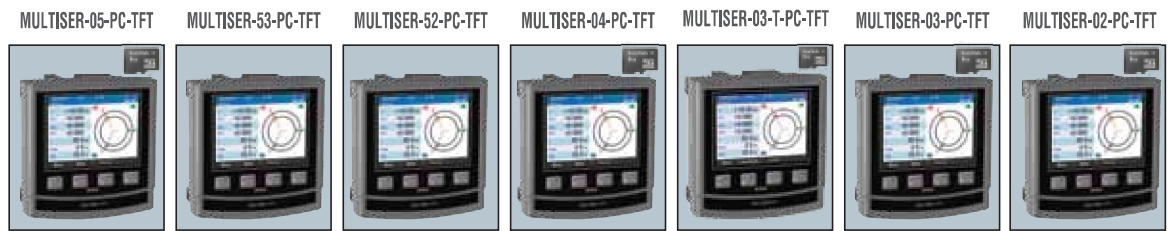
MULTISER-TFT

- Easy-to-use use menu
- Wide screen TFT (320 x 240 pixel 3,2")
- Many leading screen displays
- Microprocessor based operating system
- Improved dynamic software
- Ability to enter current and voltage transformer rates
- True RMS
- Password protection
- Waveforms (for current and voltage)
- 3P&4W, 3P&3W, ARON Connection

Measurements

- Voltages (V1N, V2N, V3N ve V12, V23, V13)
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- Power Factor (PF1, PF2, PF3)
- $\cos\Phi$ (Cos Φ 1, Cos Φ 2, Cos Φ 3, $\Sigma\cos\Phi$)
- Frequency (Hz)
- Active Power (P1, P2, P3, ΣP)
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- Apparent Power ($\Sigma S, S1, S2, S3$)
- Active Energy (ΣWh)
- Inductive Reactive Energy
- Capacitive Reactive Energy
- Neutral Current
- Total harmonic distortion for current and voltage (THD-V ve THD-I)
- Peak and Demands
- % Current Unbalance
- % Voltage Unbalance





	MULTISER-05-PC-TFT	MULTISER-53-PC-TFT	MULTISER-52-PC-TFT	MULTISER-04-PC-TFT	MULTISER-03-T-PC-TFT	MULTISER-03-PC-TFT	MULTISER-02-PC-TFT
Connection 3P&4W, 3P&3W, ARON	✓	✓	✓	✓	✓	✓	✓
Voltage: V1, V2, V3	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class
Voltage: V12, V23, V31	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class
Current: I1, I2, I3, I neutral	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class
Active Power: P1, P2, P3, ΣP	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
Reactive Power: Q1, Q2, Q3, ΣQi, ΣQc	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
cosφ 1, cosφ 2, cosφ 3, PF1, PF2, PF3, ΣPF	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]
Imp-exp Active Energy kWh	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
Imp-exp Reactive Energy kVARh	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
Demand and Peak	✓	✓	✓	✓	✓	✓	✓
Total Harmonic: THD and THD-V	✓	✓	✓	✓	✓	✓	✓
Voltage Unbalance U%	✓	✓	✓	✓	✓	✓	✓
Current Unbalance I%	✓	✓	✓	✓	✓	✓	✓
Oscilloscope	✓	✓	✓	✓	✓	✓	✓
Harmonics	3 - 63. harmonics	3 - 63. harmonics	3 - 63. harmonics	3 - 63. harmonics	3 - 31. harmonics	3 - 31. harmonics	3 - 31. harmonics
ALARMS Over - Under voltage - Voltage Unbalance Over - Under current - Current Unbalance Phase sequence - Phase failure Over THD-V - Over THD-I	✓	—	✓	✓	✓	✓	✓
Graphic reports	Power, Current, Voltage THD-V, THD-I	—	—	Power, Current, Voltage THD-V, THD-I	Power, Current, Voltage	Power, Current, Voltage	Power, Current, Voltage
ALARM REPORTS according to date	✓	—	—	✓	✓	✓	✓
Second energy meter for Generator	✓	✓	✓	✓	✓	✓	—
Temperature, alarm set range	—	—	—	—	5 - 85 °C	—	—
Relay output: max. 3A/240 Vac	2 pcs N.O.	—	2 pcs N.O.	2 pcs N.O.	2 pcs N.O.	2 pcs N.O.	2 pcs N.O.
Digital input 5-24Vdc max. 30Vdc	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	—
Energy pulse output	—	—	—	2 pcs	2 pcs	2 pcs	—
Programmable Analog output	2 pcs 4-20mA, 0-10V, 0-20mA, 2-10V, 0-5V, 1-5V	2 pcs 4-20mA, 0-10V, 0-20mA, 2-10V, 0-5V, 1-5V	2 pcs 4-20mA, 0-10V, 0-20mA, 2-10V, 0-5V, 1-5V	—	—	—	—
RS485 MODBUS-RTU	✓	✓	✓	✓	✓	✓	✓
Memory	8 GB	—	—	8 GB	8 GB	8 GB	8 GB
Operating time	✓	✓	✓	✓	✓	✓	✓
Password protection	✓	✓	✓	✓	✓	✓	✓
Ambient temperature	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C
Storage temperature	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C
Display	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen
Current transformer	X/ 5 A	X/ 5 A	X/ 5 A	X/ 5 A	X/ 5 A	X/ 5 A	X/ 5 A
Current transformer ratio	1 5000	1 5000	1 5000	1 5000	1 5000	1 5000	1 5000
Voltage transformer ratio	1 4000	1 4000	1 4000	1 4000	1 4000	1 4000	1 4000
Auxiliary supply voltage	85-265 Vac < 4VA	85-265 Vac < 4VA	85-265 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA
Dimensions	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm
Quantity in 1 box	6	6	6	6	6	6	6

OPTIONS	1-100A current transformer ratio
	100A/22,5 mV LPCT model
	Calibration Certificate

Auxiliary supply voltage 18-70Vdc
Auxiliary supply voltage 85-265Vac

INDUSTRIAL MICRO SD CARD



In models with memory card icon, The memory card is included in the price

MULTISER-21-PC-TFT MULTISER-13-PC-TFT MULTISER-H1-TFT MULTISER-11-PC-TFT MULTISER-01-PC-TFT MULTISER-01-TFT MULTISER-TFT



Measurements	Connection 3P&4W, 3P&3W, ARON	✓	✓	✓	✓	✓	✓	✓
	Voltage: V1, V2, V3	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class
	Voltage: V12, V23, V31	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class
	Current: I1, I2, I3, I neutral	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class
	Active Power: P1, P2, P3, ΣP	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
	Reactive Power: Q1, Q2, Q3, ΣQi, ΣQc	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
	Cosφ1, Cosφ2, Cosφ 3, PF1, PF2, PF3, ΣPF	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]
	Imp-exp Active Energy kWh	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
	Imp-exp Reactive Energy kVARh	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
	Demand ve peak	✓	✓	✓	✓	✓	✓	✓
	Total Harmonic: THD and THD-V	✓	✓	✓	✓	✓	✓	✓
	Voltage Unbalance U%	✓	✓	✓	✓	✓	✓	✓
	Current Unbalance I%	✓	✓	✓	✓	✓	✓	✓
	Oscilloscope	✓	✓	✓	✓	✓	✓	✓
	Harmonics	3 - 31. harmonics	—	3 - 31. harmonics	—	3 - 31. harmonics	3 - 31. harmonics	—
Inputs/Outputs	ALARMS							
	Over - Under voltage - Voltage Unbalance	✓	—	—	—	—	—	—
	Over - Under current - Current Unbalance	—	—	—	—	—	—	—
	Phase sequence - Phase failure	—	—	—	—	—	—	—
	Over THD-V - Over THD-I	—	—	—	—	—	—	—
	Graphic reports	—	Power, Current, Voltage	Power, Current, Voltage THD-V, THD-I (3h, 5h, 7h, 11h)	—	—	—	—
	ALARM REPORTS according to date	—	—	—	—	—	—	—
	Second energy meter for Generator	✓	—	—	—	—	—	—
	Temperature, alarm set range	—	—	—	—	—	—	—
	Relay output: max. 3A/240 Vac	2 pcs N.O.	—	—	—	—	—	—
	Digital input 5-24Vdc max. 30Vdc	2 pcs	—	—	—	—	—	—
	Energy pulse output	2 pcs	—	—	—	—	—	—
	Programmable Analog output	—	—	—	—	—	—	—
	RS485 MODBUS-RTU	✓	✓	—	✓	✓	—	—
	Memory	—	8 GB	8 GB	—	8 GB	—	—
Operating time	✓	✓	✓	✓	✓	✓	✓	
Password protection	✓	✓	✓	✓	✓	✓	✓	
Ambient temperature	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	5°C +50 °C	
Storage temperature	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	
Display	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	3.2" color TFT screen	
Current transformer	X / 5 A	X / 5 A	X / 5 A	X / 5 A	X / 5 A	X / 5 A	X / 5 A	
Current transformer ratio	1 5000	1 5000	1 5000	1 5000	1 5000	1 5000	1 5000	
Voltage transformer ratio	1 4000	1 4000	1 4000	1 4000	1 4000	1 4000	1 4000	
Auxiliary supply voltage	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	
Dimensions	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	
Quantity in 1 box	6	6	6	6	6	6	6	

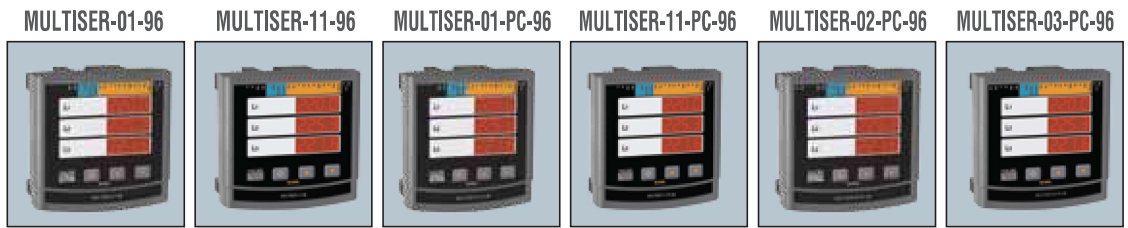
The following parameters can be set as analog output on the device.

- V1, V2, V3 (V).....Phase-Neutral Voltages
- V12, V23, V31 (V).....Phase-Phase Voltages
- VLN (average) (V).....Average Phase-Neutral Voltages
- VLL (average) (V).....Average Phase-Phase Voltages
- F (Hz).....Frequency Total + Q (KVAR)
- I1, I2, I3 (A).....Phase current Total -Q (VAR)
- THD V1, I2, I3 %.....Total Voltage Harmonics Total S (kVA)
- THD I1, I2, I3 %.....Total Current Harmonics
- + - P1, I2, I3 (kW).....Active Powers (imp-exp)
- + - Q1, I2, I3 (KVAR).....Reactive Powers
- S1, I2, I3 (kVA).....Apparent Powers
- Total P (kW).....Total Active Power
- Total Positive Reactive Power
- Total Negative Reactive Power
- Total Apparent Reactive Power

RS485

- V1, V2, V3
- V12, V23, V31
- I1, I2, I3, In0ir, Hz
- P1, P2, P3, Q1, Q2, Q3, S1, S2, S3
- Cosφ1, Cosφ2, Cosφ3
- PF1, PF2, PF3, ΣPF
- ΣP, ΣQi, ΣQc, ΣQ, ΣS

- imp-exp ΣkWh
- imp-exp ΣkVARh(ind)
- imp-exp ΣkVARh(kap)
- ΣkVAh
- THD-I ve THD-V
- single current harmonics
- single voltage harmonics



	MULTISER-01-96	MULTISER-11-96	MULTISER-01-PC-96	MULTISER-11-PC-96	MULTISER-02-PC-96	MULTISER-03-PC-96
Connection 3P&4W, 3P&3W, ARON	√	√	√	√	√	√
Voltage: V1,V2,V3	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class
Voltage: V12,V23,V31	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class
Current: I1, I2, I3, I neutral	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class
Active Power: P1,P2,P3,ΣP	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
Reactive Power: Q1,Q2,Q3,ΣQi,ΣQc	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
Cosφ1,Cosφ2,Cosφ3,PF1,PF2,PF3,ΣPF	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]	[± 0.000] - [± 1.000]
Imp-exp Active Energy kWh	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
Imp-exp Reactive Energy kVARh	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
Demand and peak	√	√	√	√	√	√
Total Harmonic: THD and THD-V	√	√	√	√	√	√
ALARMS Over – Under voltage – Voltage Unbalance Over – Under current – Current Unbalance Phase sequence – Phase failure Over THD-V – Over THD-I	–	–	–	–	√	√
Relay output: max. 3A/240 Vac	–	–	–	–	2 pcs NO	2 pcs NO
Digital input 5-24Vdc max. 30Vdc	–	2 pcs	–	2 pcs	–	2 pcs
Energy pulse output	–	2 pcs	–	2 pcs	–	2 pcs
RS485 MODBUS-RTU	–	–	√	√	√	√
Password protection	√	√	√	√	√	√
Password protection	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C
Storage temperature	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C
Display	LED Display	LED Display	LED Display	LED Display	LED Display	LED Display
Current transformer	X/5	X/5	X/5	X/5	X/5	X/5
Current transformer ratio	1 5000	1 5000	1 5000	1 5000	1 5000	1 5000
Voltage transformer ratio	1 4000	1 4000	1 4000	1 4000	1 4000	1 4000
Auxiliary supply voltage	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA
Dimensions	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm	96x96x56 mm
Quantity in 1 box	12	12	12	12	12	12

OPTIONS

- 1-100A current transformer ratio
- 100A/22,5 mV LPCT model
- Calibration Certificate
- Auxiliary supply voltage 18-70 Vdc
- Auxiliary supply voltage 85-265 Vac



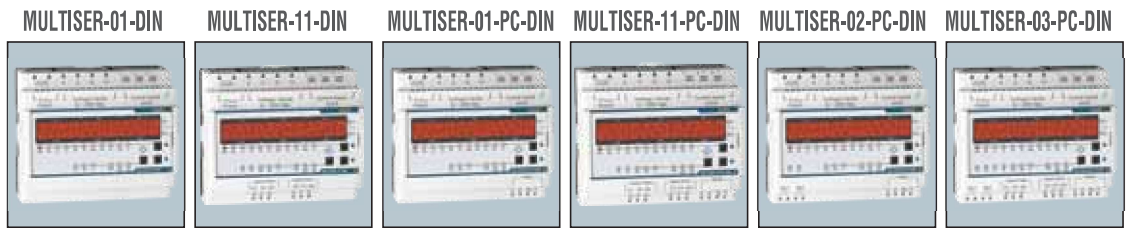
MULTISER-01-PC-96



MULTISER-02-PC-96



MULTISER-03-PC-96



	MULTISER-01-DIN	MULTISER-11-DIN	MULTISER-01-PC-DIN	MULTISER-11-PC-DIN	MULTISER-02-PC-DIN	MULTISER-03-PC-DIN
Connection 3P&4W, 3P&3W, ARON	√	√	√	√	√	√
Voltage: V1,V2,V3	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class	1-300 Vac; 0.5 class
Voltage: V12,V23,V31	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class	2-600 Vac; 0.5 class
Current: I1, I2, I3, I neutral	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class	10mA - 6A; 0.5 class
Active Power: P1,P2,P3,ΣP	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
Reactive Power: Q1,Q2,Q3,ΣQi,ΣQc	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
Cosφ1,Cosφ2,Cosφ3,PF1,PF2,PF3,ΣPF	[± 0.000] – [± 1.000]	[± 0.000] – [± 1.000]	[± 0.000] – [± 1.000]	[± 0.000] – [± 1.000]	[± 0.000] – [± 1.000]	[± 0.000] – [± 1.000]
Imp-exp Active Energy kWh	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class	√ 1 class
Imp-exp Reactive Energy kVARh	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class	√ 2 class
Demand and peak	√	√	√	√	√	√
Total Harmonic: THD and THD-V	√	√	√	√	√	√
ALARMS Over – Under voltage – Voltage Unbalance Over – Under current – Current Unbalance Phase sequence – Phase failure Over THD-V – Over THD-I	–	–	–	–	√	√
Relay output: max. 3A/240 Vac	–	–	–	–	2 pcs NO	2 pcs NO
Digital input 5-24Vdc max. 30Vdc	–	2 pcs	–	2 pcs	–	2 pcs
Energy pulse output	–	2 pcs	–	2 pcs	–	2 pcs
RS485 MODBUS-RTU	–	–	√	√	√	√
Password protection	√	√	√	√	√	√
Ambient temperature °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C	-5°C +50 °C
Storage temperature °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C	-20°C +70 °C
Display	LED Display	LED Display	LED Display	LED Display	LED Display	LED Display
Current transformer	X / 5	X / 5	X / 5	X / 5	X / 5	X / 5
Current transformer ratio	1 5000	1 5000	1 5000	1 5000	1 5000	1 5000
Voltage transformer ratio	1 4000	1 4000	1 4000	1 4000	1 4000	1 4000
Auxiliary supply voltage U _n	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA	230 Vac < 4VA
Dimensions	105x90x59 mm	105x90x59 mm	105x90x59 mm	105x90x59 mm	105x90x59 mm	105x90x59 mm
Quantity in 1 box	12	12	12	12	12	12

Measurements

Inputs/Outputs

- VL1, VL2, VL3
- VL12, VL23, VL13
- IL1, IL2, IL3, I_{Neutral}, Hz
- P1, P2, P3, Q1, Q2, Q3, S1, S2, S3
- Cosφ1, Cosφ2, Cosφ3
- PF1, PF2, PF3, ΣPF
- ΣP, ΣQi, ΣQc, ΣQ, ΣS
- imp-exp ΣkWh
- imp-exp ΣkVARh(ind)
- imp-exp ΣkVARh(kap)
- ΣkVAh
- THD-I ve THD-V



MULTISER-03-PC-DIN



MULTISER-02-PC-DIN



MULTISER-01-PC-DIN