DSEGenset®

DSEP961 / DSEP962

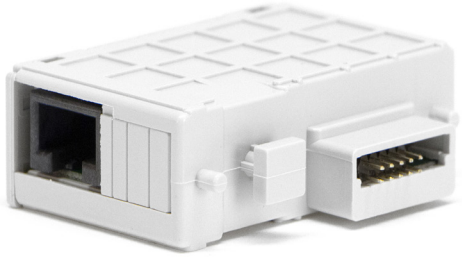
pVIEW MULTI-FUNCTION POWER METER

P961-01 80 V AC to 265 V AC/110 V DC to 300 V DC AUXILIARY SUPPLY
P962-01 11 V DC to 60 V DC AUXILIARY SUPPLY

Optional Module

DSEP915

P915-01 - Ethernet Plug-In Adapter



The DSE**P961** & DSE**P962** are intelligent network monitoring meters that provide complete measurement and monitoring functions for power systems. The DSE**P915** is an optional plug-in Ethernet adapter.

KEY FEATURES

- Active energy class 0.5
- Multi metering (frequency, current, voltage, power factor, active power, reactive power, apparent power)
- Full energy monitoring
- Measured voltage 80 V to 500 V 50 Hz / 60 Hz (Phase to Phase)
- Built-in MODBUS RS485 communications (Modbus TCP with optional DSEP915)
- Harmonic analysis (THDV/THDI)
- Pulse output
- CT terminals allow series connections of devices
- Configurable external CT and VT ratio

RELATED MATERIALS

TITLE	PART NO.
P961/P962 Installation Instructions	053-243
P961/P962/P915 Operators Manual	057-307
P961/P962/P915 MODBUS Protocol	057-308

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Technical Data

DSEP961/P962

INPUTS	**Connection**	
	Single-phase	Yes
	Three-phase, balanced load	Yes
	Three-phase, unbalanced load	Yes
	Rated Value	
	Voltage	80 V to 500 V
	Current	1 A or 5 A
	Frequency	45 Hz to 65 Hz (50 Hz nominal) 360 Hz to 440 Hz (400 Hz nominal)
	Input Current	
	Series connection possible	Yes
	Isolated	No
	Programmable Ratio	
	VT Ratio	1 to 10
	CT Ratio	1 to 9,999
	Max VT Ratio x CT Ratio	99,990
DISPLAY	**Active Energy**	
	Accuracy EN/IEC 61557-12	Class 0.5
	Partial	Yes
	Positive total	Yes
	Negative total	Yes
	Reactive Energy	
	Accuracy EN/IEC61557-12	Class 1
	Partial (resettable)	Yes
	Positive total	Yes
	Negative total	Yes
	Voltage	
	Phase to phase	Yes
	Phase to neutral	Yes
	Minimum Hold	Yes
	Maximum Hold	Yes
	Current	
	Maximum Hold	Yes
	Power Factor	
	Power factor per phase	Yes
	Average power factor	Yes
	Power	
	Active, reactive, apparent per phase	Yes
	Active, reactive, apparent totals	Yes
	Active, reactive, apparent maximum hold	Yes
	Phase active and reactive	Yes
	Harmonic Distortion	
	THDV / THDI	Yes
	Analysis	Yes

Technical Data

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DISPLAY	Frequency	Yes
	Run hours metering	Yes
	Instrument resolution	Automatic
	Refresh Rate	1.1 s
	Adjustable contrast	Yes
	Adjustable backlight	Yes
OUTPUT	**Output**	
	Pulses	Yes (active or reactive)
	Volt-free	Yes
COMMUNICATION	**Communication**	
	RS485 MODBUS RTU	Yes
	Ethernet MODBUS TCP	DSEP915
	WebSCADA	DSEP915 (DSEP915 is configurable to provide either MODBUS TCP or WebSCADA).
ACCURACY	**Accuracy Conformity (EN/IEC 61557-12)**	
	Active Energy	Class 0.5
	Reactive Energy	Class 1
	Voltage	Class 0.5
	Current	Class 0.5
	Active Power	Class 0.5
	Reactive Power	Class 1
	Apparent Power	Class 1
	Frequency	± 0.1 Hz
	THDV / THDI	Class 1

Technical Data

DSE**P961/P962**

Display	
Display type	Backlit LCD
Contrast	4 selectable values
Backlit	0% / 30% / 70% / 100%
Decimal places	Up to 3
Energy count	8 digit counter
Engineering units	Automatic display according to set VT & CT ratios
Resolution	Automatic
Decimal point	Automatic
Refresh rate	1.1 s

The display is divided into four menus. The table below shows the menu structure for the power meters.
Repeated button presses step through the available displays in that section.

Voltage Displays **V** 	Current Displays **A** 	Power Displays **P.Q.S** 	Energy Displays **E.PF.F** 
Phase to Neutral	Three Phase	Active	Active Energy
Phase to Phase	Neutral	Reactive	Reactive Energy
Minimum	Average	Apparent	Power Factor
Maximum	Peak Current	Distorting	Frequency
Harmonic Distortion	Average Three-Phase	Average	Run Hours Meter
Harmonic Analysis	Harmonic Distortion	Average Peak	
Peak Factor	Harmonic Analysis		
	Peak Factor		

Technical Data

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Harmonic Analysis	
Display mode	Configurable up to 9th or 25th harmonic
Programmable Parameters	
Programming	Via front keys
Programming access	Access code protected
Programming menu	Split across 3 levels
Level 1	Customised display pages Connection Average power/current delay time Display contrast Display backlight Current rating Start run timer (voltage or power) RS485 communications Pulse output Harmonic analysis
Level 2	External CT & VT ratio
Level 3	Communication protocols
Inputs	
Connection	Single-phase and three-phase network, 3 & 4 wire
Three-phase voltage rating	400 V
Three-phase voltage	50 V to 500 V (ph to ph)
Single-phase voltage rating	230 V
Single-phase voltage	50 V to 290 V (ph to n)
External VT ratio	1 to 10 (max. VT primary 1200 V)
Current rating (In)	1 A or 5 A
Max current	1.2 In
Instantaneous overload	20 In for 0.5 s
CT ratio	1 to 9,999 (max CT primary 50kA / 5A to 10kA / 1A
Frequency rating (fn)	50 Hz or 400 Hz (automatic selection)
Range	45 Hz to 65 Hz (fn 50 Hz) 360 Hz to 440 Hz (fn 400 Hz)
Type of measurement	True RMS value
Harmonic content	Up to 50th harmonic
Start time (energy count)	<5 s
Voltage inputs rated burden	0.1 VA (neutral phase to voltage rating)
Current inputs rated burden	1 VA (each phase to max current 6 A)

Technical Data

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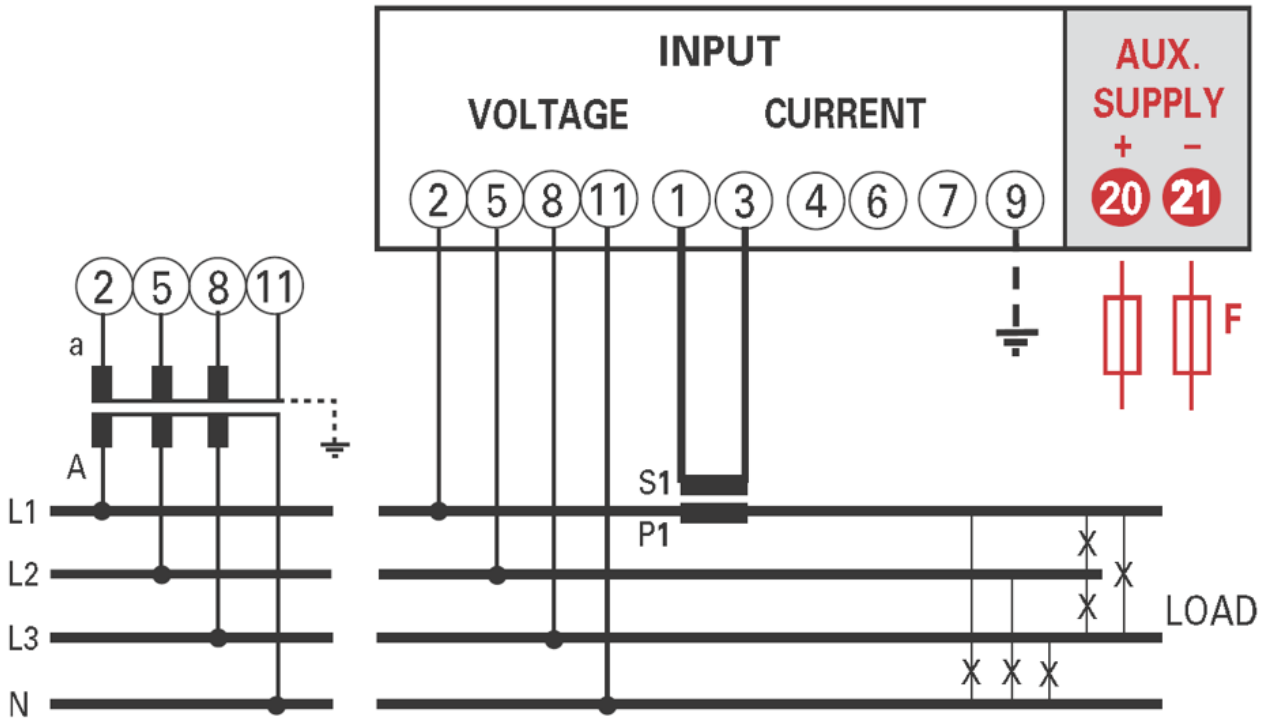
Current/Power	
Quantity	Active, reactive, apparent power, current
Calculation	Average on selected time interval
Average period	5 min / 8 min / 10 min / 15 min / 20 min / 30 min / 60 min
Hours Run Meter	
Count start	Power or voltage selectable
Voltage	Phase voltage >10 V
Power	3-phase active power rating
Programmable value	0 % to 50 % power
Outputs	
Energy pulses	Pulse output according to SO EN / IEC 62053-31
	Opto-relay with potential free SPST-NO contact
Contact range	27 V DC / AC (50 mA)
Assignable energy	Active or reactive energy
Pulse weight	10 Wh (varh) / 100 Wh (varh) / 1 kWh (kvarh) / 1 MWh (Mvarh) / 10 MWh (Mvarh)
Pulse length	50 ms / 100 ms / 200 ms / 300 ms / 400 ms / 500 ms
RS485 Communication	
Isolation	Yes, from input and auxiliary supply
Standard	RS485 - 3 Wire
Transmission	Asynchronous serial
Protocol	MODBUS RTU / MODBUS TCP
Number of addresses	1 - 255
Number of bits	8
Stop bit	1
Parity bit	None / even / odd
Query response time	<100 ms
Time out	3 ms to 100 ms
Transmission speed	4,800 bit/s / 9,600 bit/s / 19,200 bit/s / 38,400 bit/s
Modbus word message format	Big endian, little endian, swap

Technical Data

DSEP961/P962

Auxiliary Supply	
Note: DSEP961 only: 50 Hz and 60 Hz nominal supply is automatically detected and selects the low frequency measurement range 45 Hz to 65 Hz.	
Applicable terminals	20 & 21
Aux supply rating (DSEP961)	80 V AC to 265 V AC 110 V DC to 300 V DC
Aux supply rating (DSEP962)	11 V DC to 60 V DC
Working frequency	45 Hz to 65 Hz (50 Hz nominal) 360 Hz to 440 Hz (400 Hz nominal)
Burden	2.5 VA at 230 V AC supply without DSEP915 3.5 W at 110 V DC supply without DSEP915
Protection	Protected against incorrect polarity
Environmental Testing Standards	
Insulation	
Insulation category	III
Pollution degree	2
Insulation voltage rating	300 V (phase to neutral)
Electromagnetic Compatibility	
Emissions	EN 61326-1 Class B
Immunity	EN 61326-1
Environmental Conditions	
Operating temperature	-5° C to +55° C / 23° F to 131° F
Storage and transport temperature	-25° C to +70° C / -13° F to 158° F
Max power dissipation	<5 W
Housing	
Housing	Flush mounting (panel cutout 92 mm x 92 mm)
Front frame	96 mm x 96 mm
Depth (without DSEP915)	62 mm
Depth (with DSEP915)	81 mm
Connections	Screw terminals
Housing material	Self-extinguishing polycarbonate
Protection	IP54 front/IP20 terminals
Weight	285 g / 10 oz

Typical Wiring Diagram



Additional wiring diagrams shown in the operators manual.