



ENGLISH

Datasheet

1 Phase Multi-function Power Meter 100A

DIN Rail Power Meter.





UK

The 871-8291 is a new generation modern design power monitor that will measure and display electrical power quality parameters. It has been engineered to cover most applications (Single Phase networks / Built in Pulsed and RS485 Modbus / Import and Export kWh), replacing the need for several different models of this power meter.

The 871-8295 is produced to the highest quality and utilizes the latest microprocessors and technology. It has a backlit display and 14 different measuring parameters. With built in pulsed outputs and RS485 Modbus RTU it is fully compatible for integration with BMS and remote monitoring systems.

Parameters

- Voltage
- Frequency
- Current
- Power Factor
- kW
- kVA
- kVAr
- Power Max Demand
- Total kWh
- Import kWh
- Export kWh
- Total kVArh
- Import kVArh
- Export kVArh

Specifications

Measured Parameters

The unit can monitor and display the following parameters of a single phase two wire (1p2w) system.

Voltage and Current

- Phase to neutral voltage 176 to 276Vac.

Power factor and Frequency and Max. Demand

- Frequency in Hz
- Instantaneous power:
- Power 0 to 3600 W
- Reactive power 0 to 3600 MVAR
- Volt-amps 0 to 3600 MVA
- Maximum demanded power since last Demand reset Power factor

Interfaces for External Monitoring

Three interfaces are provided:

- RS485 communication channel that can be programmed for Modbus RTU protocol
- Relay output indicating real-time measured energy. (configurable)
- Pulse output 1000imp/kWh (not configurable)

The Modbus configuration (baud rate etc.) and the pulse relay output assignments (kW/kVArh, import/export etc.) are configured through the set-up screens.

Pulse Output

Opto-coupler with potential free SPST-NO Contact (Contact range 5-27VDC / Max current input: I_{min} 2mA and I_{max} 27mA DC).

The pulse output can be set to generate pulses to represent kWh or kVArh.

Rate can be set to generate 1 pulse per:

0.01 = 10Wh/VArh

0.1 = 100 Wh/VArh

1 = 1 kWh/kVArh

10 = 10 kWh/kVArh

100 = 100 kWh/kVArh

Pulse width 200/100/60ms.



RS485 Output for ModbusRTU

For Modbus RTU, the following RS485 communication parameters can be configured from the set-up menu:

Baud rate 1200, 2400, 4800, 9600.

Parity none (default) / odd / even

Stop bits 1 or 2

RS485 network address 3-digit number, 1 to 247

Modbus™ Word order Hi/Lo byte order is set automatically to normal or reverse. It cannot be configured from the set-up menu.

Energy Measurements

Imported/Exported active energy	0 to 99999.99 kWh
Imported/Exported reactive energy	0 to 99999.99 kVArh
Total active energy	0 to 99999.99 kWh
Total reactive energy	0 to 99999.99 kVArh

Auxiliary Supply

This unit does not require a separate auxiliary supply to the unit, it takes power from the phase to generate the display.

Measured Inputs

Voltage inputs through 3-way fixed connector with 19mm² maximum terminal wire.

Nominal Voltage Input	(Ph+N) 176 to 276V
Max Continuous Voltage	120% of nominal
Nominal Input Current	5(100)A
Max Continuous Current	120% of nominal
Nominal Input Current Burden	0.5VA
Frequency	50Hz

Accuracy

Voltage	0.5% of range maximum
Current	0.5% of nominal
Frequency	0.2% of mid-frequency
Power factor	1% of unity (0.01)
Active power (W)	±1% of range maximum
Reactive power (VAR)	±1% of range maximum
Apparent power (VA)	±1% of range maximum
Active energy (Wh)	Class 1 IEC 62053-21
Reactive energy (VARh)	±1% of range maximum
Response time to step input	1s, typical, to >99% of final reading, at 50 Hz.

Reference Conditions of Influence Quantities

Influence Quantities are variables that affect measurement errors to a minor degree. Accuracy is verified under nominal value (within the specified tolerance) of these conditions.

Ambient temperature	23°C ±1°C
Input waveform	50Hz ±2%
Input waveform	Sinusoidal (distortion factor < 0.005)
Auxiliary supply voltage	Nominal ±1%
Auxiliary supply frequency	Nominal ±1%
Auxiliary supply waveform (if AC)	Sinusoidal (distortion factor < 0.05)
Magnetic field of external origin	Terrestrial flux

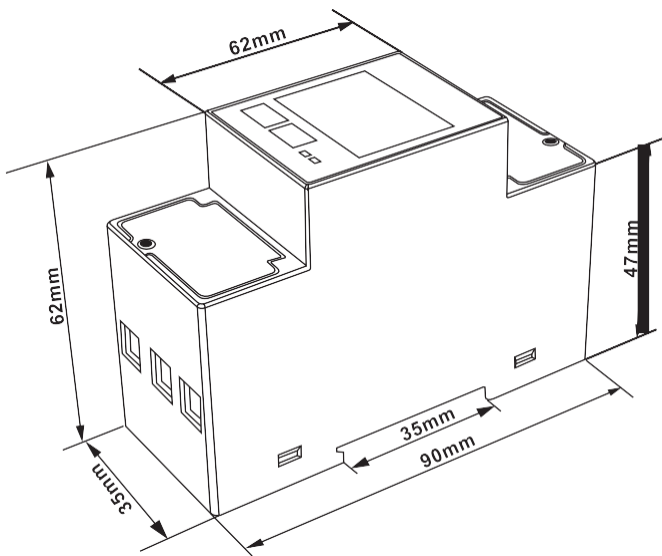
Environment

Operating temperature	-25°C to +55°C*
Storage temperature	-40°C to +70°C*
Relative humidity	0 to 95%, non-condensing
Altitude	Up to 3000m
Warm up time	1 minute
Vibration	10Hz to 50Hz, IEC 60068-2-6, 2g
Shock	30g in 3 planes

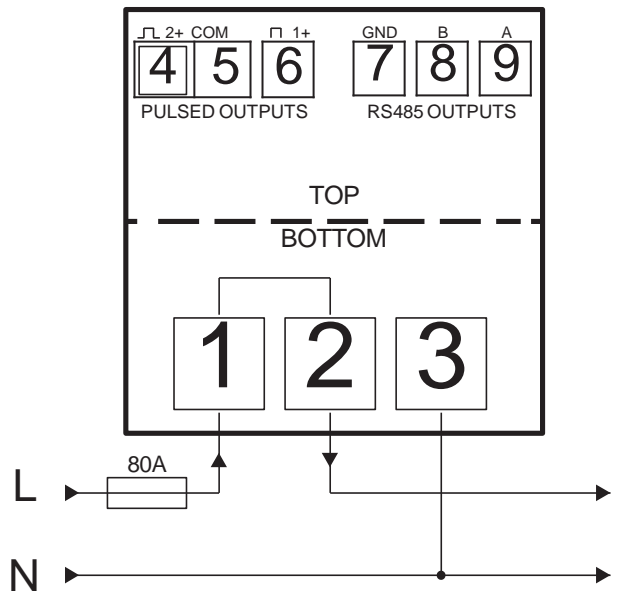
*Maximum operating and storage temperatures are in the context of typical daily and seasonal variation.

Mechanics

DIN rail dimensions	36mm x 90mm (WxH) per DIN 43880
Mounting	DIN rail (DIN 43880)
Sealing	IP51 indoor
Material	Self-extinguishing UL 94V-0



Installation



Specifications are subject to change without notice.

Notes: