UtilityPal

PRODUCT DATASHEET
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SINGLE PHASE · 80A DIRECT CONNECTED

RX-11

Single Phase Multifunction Energy Meter

Bi-directional DIN rail energy meter with RS485 Modbus, a built-in relay and a configurable pulse output.

80A direct | Class 0.5 | RS485 Modbus RTU | Built-in relay | Pulse output | 2-module DIN



Overview

The UtilityPal RX-11 is a single phase multifunction energy meter that measures and analyses the electrical parameters that matter: voltage, current, four-quadrant power and power factor, together with bi-directional active and reactive energy and monthly and daily consumption statistics. An RS485 port with Modbus RTU or DL/T645 allows remote reading at up to 38400 bps, and the built-in relay lets the supply be switched on or off remotely.

80 A	Class 0.5	RS485	36 mm
Direct connection, no CT	Active energy accuracy	Modbus RTU / DL/T645	2 modules on DIN rail

Key Features

- Direct input to 80A. 0.15 to 80A measurement range, rated 5A, with no current transformer needed.
- Full parameter set. V, A, W, var, VA, kWh, kvarh, power factor, phase angle and frequency.
- Bi-directional energy. Import and export active and reactive energy across four quadrants.
- Built-in relay. Switch the supply on or off remotely or manually from the meter.
- Alarms. Monitoring alarms on electrical parameters.
- Statistics. Monthly and daily energy consumption held in the meter.
- RS485 communication. Modbus RTU or DL/T645-2007, up to 64 meters on one bus over 1000 m.
- Pulse output. Optocoupler output with configurable constant, width and energy type.
- Backlit LCD. Large screen with 1 second refresh and manual or automatic scrolling.
- Touch buttons. Simple two-button operation with password-protected settings.

Typical applications: Sub-metering in homes, apartments, estates and shopping centres, tenant billing, solar and backup monitoring, and energy management systems that read meters over RS485 Modbus.

ACCURACY	
Active energy	Class 0.5 (IEC 62053-21)
Reactive energy	Class 2 (IEC 62053-23)
Voltage / current	Class 0.5 (IEC 61557-12)
Power factor	Class 1 (IEC 61557-12)
Frequency	Class 0.2 (IEC 61557-12)
Data update	1 s (100 ms optional)

VOLTAGE & CURRENT INPUT	
Rated voltage	230 V AC, single phase 2 wire
Voltage range	85 to 276 V AC
Frequency	45 to 65 Hz
Current	0.15 to 80 A direct, rated 5 A
Current overload	30 x max. current for 0.01 s
Self-consumption	Voltage < 2 W / 10 VA, current < 1 VA

PULSE OUTPUT	
Type	Open collector optocoupler, 5 to 27 V DC
Pulse constant	1000 (default), 100, 10 or 1 imp/kWh (kvarh)
Pulse width	60, 100 (default) or 200 ms
Energy type	Import, export, total active or total reactive
Pulse LED	1000 imp/kWh

COMMUNICATION	
Interface	2-wire RS485, half duplex
Protocol	Modbus RTU (default) or DL/T645-2007
Baud rate	1200 to 38400 bps (9600 default)
Parity / stop bit	None, even or odd / 1 or 2
Response time	< 100 ms
Bus length	Up to 1000 m
Bus load	Up to 64 meters

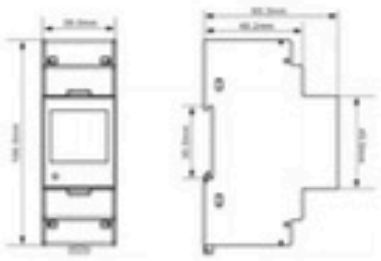
MECHANICAL & ENVIRONMENT	
Mounting	TH35-7.5 DIN rail
Protection	IP51 display (indoor), IP30 whole meter
Housing	UL 94 V-0 flame retardant
Operating temp.	-25 to +55 °C
Storage temp.	-40 to +80 °C
Humidity	< 90 %, non-condensing
Altitude	< 2000 m
Pollution degree	2

SAFETY & EMC	
Category	CAT III, double insulation (IEC 61010-1)
AC withstand	4 kV AC for 1 minute
Impulse withstand	6 kV, 1.2/50 µs waveform
EMC immunity	IEC 61000-4-2/3/4/5/6/8/11 (IEC 61326-1)
Emissions	EN 55011 Class B, IEC 61000-3-2

TERMINALS	
Measurement	14 to 4 AWG, 4 N·m max.
Comms & pulse	26 to 14 AWG, 0.4 N·m max.

Dimensions and wiring

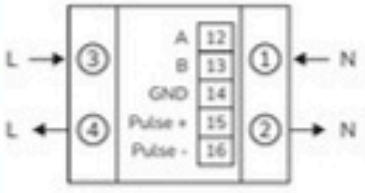
DIMENSIONS (MM)



WIRING



TERMINAL CONNECTIONS



L in on 3, out on 4. N in on 1, out on 2.

Specifications are subject to change without notice. Install by qualified personnel only. Full installation and operating details are in the RX-11 user manual.