

Rayfull SY20M

Single Phase Multifunctional Energy Meter with Built-in Relay

The SY20M is a single phase DIN rail energy meter for direct connection up to 80A. It measures voltage, current, four-quadrant power, power factor and bi-directional active and reactive energy, with monthly and daily consumption statistics. A built-in relay allows the supply to be switched remotely over RS485 or from the front panel, and can trip automatically on programmable alarm limits.

- 80A direct input, 1P2W 230V
- Built-in load relay with remote and manual control
- Alarm-triggered disconnect with automatic reconnect timer
- RS485 Modbus RTU / DL/T645-2007
- Bi-directional import/export energy
- 2-module DIN rail housing



Electrical

Rated voltage	230 V AC (input range 85 - 276 V AC), 45 - 65 Hz
Current	0.15 - 80 A direct, rated 5 A; overload 30x I _{max} for 0.01 s
Accuracy	Active energy Class 1 / Class 0.5S (IEC 62053-21/22); reactive Class 2 (IEC 62053-23); V/I Class 0.5; frequency Class 0.2
Measurements	V, A, W, var, VA, PF, Hz; total / import / export kWh and kvarh
Self-consumption	Voltage circuit < 2 W / 10 VA; current circuit < 1 VA
Data update rate	1 s (100 ms optional)

Relay and alarms

Relay control	Remote connect / disconnect over RS485; manual control from the front panel
Alarm objects	Voltage, current, active, reactive and apparent power, frequency (2 channels)
Reconnect	Programmable automatic reconnect time; 0 = manual reconnect only

Communication and outputs

Interface	2-wire RS485, semi-duplex, up to 1000 m, max. 64 devices per bus
Protocol	Modbus RTU (default), DL/T645-2007 (optional)
Settings	Address 1 - 247; 1200 - 38400 bps (default 9600); parity none/even/odd; 1 or 2 stop bits
Pulse output	Open collector optocoupler, 5 - 27 V DC, Class A (IEC 62053-31); 1000/100/10/1 imp/kWh; width 60/100/200 ms
Pulse LED	1000 imp/kWh

Mechanical and environment

Mounting	TH35-7.5 DIN rail, 2 modules
Dimensions	36.0 x 100.0 x 65.3 mm (W x H x D)
Protection	LCD IP51 (indoor), meter body IP30; flammability UL 94 V-0
Terminals	Measurement 14 - 4 AWG, 4 N.m max; comm/pulse 26 - 14 AWG, 0.4 N.m max
Wiring	Terminal 1 N in, 2 N out, 3 L in, 4 L out; A, B, GND and pulse +/- on the comm terminal block
Environment	Operating -25 to +55 C; storage -40 to +80 C; < 90% RH non-condensing; altitude < 2000 m
Safety	CAT III (IEC 61010-1), double insulation, 4 kV AC 1 min, 6 kV 1.2/50 us impulse

Rayfull Electric Technology (Zhejiang) Co., Ltd. Specifications are taken from the manufacturer user manual V1.0 and are subject to change without notice.