



Solar Monitor

SM3-MU Standard Specification

Max. number of devices¹	
SM3-MU Basic and SM3-MU Start	1 device ¹
SM3-MU 60	6 devices ¹
SM3-MU 300	30 devices ¹
SM3-MU 1000	100 devices ¹
Supported devices¹	Ethernet or serial bus connected
Communication	Ethernet (TCP) up to 3 serial ports
Inverter protocols	AEG, Carlo Gavazzi, Danfoss, Delta, Diehl, Fronius, Goodwe, Huawei, Kaco, Kostal, Mastervolt, Mavi Solar, Morningstar, Omnik, Omron, Pairan, Power-One (ABB / Fimer), Power-Trap, Refusol, Riello UPS, Santerno, Satcon, Schneider-Electric, Siemens, Siliken, SMA, SolarEdge, Solarmax, Solax, Solutronic, Steca, Studer, Sungrow, Sunville, Sunways, Vacon, Victron, Voltronic, Xantrex
Meter protocols	ABB (REX521), BMR (PLA33), Carlo Gavazzi (VMU-E/X), Finder, Fronius (Smart Meter), Inepro 380, KMB (SMC-144, PA-144, SMC133), Phoenix Contact (MA200/250), QEED (QI, QE), Schneider-Electric (SEPAM, PM9), Solar Controls (WattRouter), Yorix (GreenBonO), ZPA (IEC 62056-21)
Combined Heat and Power Units	Viessman
Sensors	Dallas 1-wire bus
Interface	Screw terminals for 0.5 mm ² – 1.5 mm ² cores
Max. count	10 sensors
Max. distance	100 m Recommended max. cable length for daisy-chained sensors with minimal trunk segments.

¹ A device represents an inverter, stringbox, MPP tracker, battery monitor, meter or any other device which can be detected on any serial bus or via ethernet communication.

Analog Input	0 – 10 V
Input Impedance	1.1 MΩ
Minimum voltage measured	0.035 V
Ethernet interface (LAN)	
Interface	RJ45 (100BASE-T) -100Mbit/s, compatible with networks 10/100/1000 Mbit/s, auto MDIX, surge and ESD suppression 30A / 600W with Bourns CDNBS08-SLVU2.8-4
Protocols	HTTP, SOAP, DNS, UDP Setup, Telnet, ARP, ICMP, SMTP, SNMP, Modbus
RS485 / RS422 / RS232	
Interfaces	2x RS485 or 1x RS422 ² <i><u>piggy-back hardware options</u></i> ³ 2x RS485 or 1x RS422 opto-isolated ² 1x RS485 + 1x RS232 1x RS485 + 1x RS232 opto-isolated <i><u>SM3-BE extension module</u></i> 1x RS232 + 1x RS485 surge protected ⁴
Speed	300 .. 115.200 bps (software configurable) ^{2, 5}
Termination	Yes, both for half and full duplex
	Configurable with jumpers.
Inputs	opto-electronically isolated
3x digital inputs (DI)	software configurable between dry contact or S0 pulse meter inputs (e.g. from electrometer)
Max. distance	30 m (depends on cable)
Outputs	
1x relay	32 V, 3 A, protected with power fuse
Electrical parameters	
Power supply	9-35 V DC, typ. 0.6 W @ 24V
DI1, DI2, DI3	8-80 V

2 Can be configured by software (web UI, XML).

3 Piggy-back functionality replaces the “2x RS485 or 1x RS422” interface.

4 SM3-BE is mutually exclusive to the SM3-GPRS usage. 2x SM3-BE modules can be also used to extend the HBUS connection between SM3 modules.

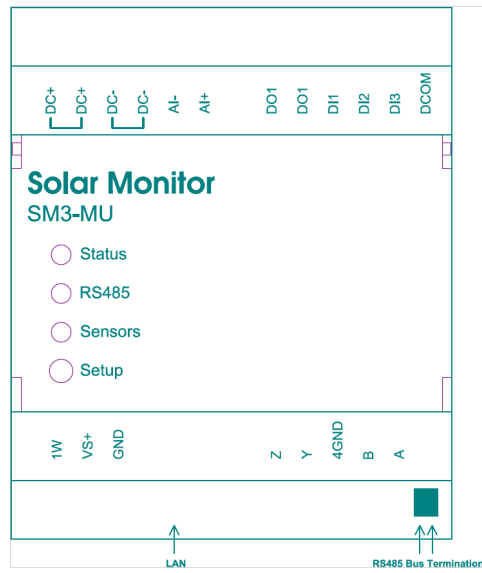
5 Communication speeds are available according to selected device communication protocols.

1-Wire	Interface provides 5 V power supply, max. 350 mA, protected with 500 mA power fuse.
RS485	Protected against transient voltages above 6.8V and against high currents with 10Ω resistors. Additional surge protection can be achieved with SM3-BE (bus extension) module with gas discharge tubes: Minimum DC Sparkover (100 V/s) 185 V Service life: 150 operations 8/20 μs 250 A, 1.2/50, 500 V (IEC61643-21) 20 operations 2/10 μs, 5 kV, 500 A 2 operations 8/20 μs, 1 kA
Mechanical parameters	
Dimensions	71.6 x 89.7 x 62.2 mm
Mounting	DIN rail
Screw terminals	0.5 mm ² - 15 mm ² cable cores
Protection rating	IP20
Operating temperature	0 .. +70 °C
LED diodes	Status, RS485, Sensors
Extension options	
Interface	HBUS (DIN rail, bottom pluggable, no external wires needed)
Extension modules	SM3-PC, SM3-4ADIO, SM3-DI, SM2-GPRS, SM2-UMTS, SM2-IoT, SM3-BE

Enhancement Summary

Feature	Description / Comparison to SM2-MU
CPU	32 bit ARM x 32 bit Coldfire 2
RAM Bus	16 bit x 8 bit
Flash Size	1 MB x 512 kB
SD Card	4 signals x 1 data signal, protection with TVS
LAN Protection	surge and ESD suppression 30A / 600W with Bourns CDNBS08-SLVU2.8-4
Analog Input	0 – 10V @ 1.1 MΩ
Power Supply	Double CMOS switching, 0.6 W x 0.9 W consumption
Firmware	Lua script enhancements – e.g. more PID regulators, email for Lua stop event, supervisory control blocks in Modbus Sunspec – 64700, 64701, 2x LAN device drivers + device addressing change

Cover Layout



Mechanical Dimensions

