RGM180

REMOTE GRAPHICAL DISPLAY

The RGM180 provides a user-friendly human interface to monitor and configure SATEC devices.

The RGM180 is a 5.7" large color graphic touch screen that takes power quality and energy monitoring to a new level. The RGM180 can display comprehensive information in easy to read screens that allow monitoring complex information at a glance. The touch screen makes the operation and configuration so simple that it completely eliminates the need for employee training.

Main Features

- Interactive Display unit controlled by System On Chip ARM based controller
- Local Host Communication – high speed UART interface, up to 480kb/s, for **RGM180-G1** model with RS-485 interface
- Network Host Communication – Ethernet or serial interface, for **RGM180-G3** with 10/100 Base-T interface or RS-485

System specifications

- 200Mips SOC ARM9 based controller
- Up to 64MB RAM
- Up to 256MB NAND Flash
- 5.7 inch, color graphical display with touch panel, TFT technology
- Wide range operating temperature: −20°C to +70°C / −4°F to +158°F

- Programmable display setup including touch panel calibration
- Setting parameter / Display parameter using soft switch based on Touch Panel with at least 500,000 operations
- Programmable system setup, including multi-language support
- Plug-and-Play Device display detecting SATEC device type for Device Monitoring and Configuration
- Programmable screen saver
- Provides additional features while attached to SATEC devices:

  - Full Speed USB port, enabling SATEC device with USB port, in RGM180-G1 model
  - IR port for PM180 only
  - Energy pulsing Led controlled by SATEC device Main CPU, in RGM180-G3 model only

Models

RGM180-G1

The RGM180-G1 controls and monitors information from a single SATEC eXpertMeter™.

The RGM180-G1 can be connected directly without an additional power source to PM17x or ezPAC SA3x0. The PM17x is attached directly to the RGM180 (which replaces the LED display—as shown in the image on the left). The ezPAC is connected via cable, up to 10m long. Up to 1000m (slow baud rate) cable can be used with remote power supply for both ezPAC and PM17x direct connection. The RGM180-G1 adds to existing

SATEC meter devices full speed USB 2.0 capabilities.

RGM180-G3

The RGM180-G3 controls and monitors information from several SATEC eXpertMeters™ over RS-485 or 10/100 Base-T Ethernet, using MODBUS Master protocol.

The RGM180-G3 model has two power sources—Power over Ethernet (PoE) or external AC/DC-DC/DC power supply which can be connected in parallel.

Standards Specifications

EMC Immunity

- IEC61000-4-2
  Electrostatic discharge, 15KV/− air/contact
- IEC61000-4-3
  Electromagnetic RF Fields, 10V/m and 30V/m @ 80Mhz − 1000MHz
- IEC61000-4-4
  Fast Transients burst, 4KV on current and voltage circuits and 2 KV for auxiliary circuits
- IEC61000-4-5
  Surge 4KV on current and voltage circuits and 1 KV for auxiliary circuits
- IEC61000-4-6
  Conducted Radio-frequency, 10V @ 0.15Mhz − 80MHz
- IEC61000-4-8
  Power Frequency Magnetic Field
- IEC61000-4-12:
  Damped oscillatory waves, CMM 2.5KV and DFM 1KV @ 100KHz and 1MHz

Emission (radiated/conducted)

- EN55022: 1994 Class A (CISPR 22)
- FCC p.15 Class A

Atmospheric Environment

- Operational ambient temperature range: −30°C to +70°C / −22°F to +158°F
- Long-term damp heat withstand according to IEC 68-2-3 <95%, +40° C / +104°F
- Transport and storage temperature range: −40°C to +85°C / −40°F to +185°F

Vibration

- IEC 60068-2-6

Shock

- IEC 60068-2-27

Enclosure protection

- IEC 60529: IP54 (NEMA type 13)

Technical Specifications

COMMUNICATION PORTS

COM1	
IR Communication Port - PM180 Device Only	
OPTIONAL	
Optical Communication port	
Max. Baud rate	19.200 kb/s
Protocols	Modbus or DNP3.0
Isolation	2500 V_{AC} @ 1 mn

COM2	
Serial Communication port - Device COM port	
BASIC	
RS-485 or RS-232 Max. Baud rate	115.2 to 480 kb/s
Isolation	4000 V_{AC} @ 1 mn
RS-485 Maximum length cable	1000m
Protocols	Modbus RTU
Connection	DB-15

ETHERNET	
Multiple device Communication port - RGM180-G3 only	
10/100BASE-T BASIC	
Built-in network communication port with PoE	
Wired LAN communication port with auto-negotiation	IEEE 802.3
Ethernet port Baud rate	10/100 Mb/s
Protocols	Modbus/TCP
ETH port Isolation	3 KVAC @ 1mn
ETH connector	Standard RJ-45

USB	
Built-in USB Communication port - Display Panel	
Basic - Device (default)	
USB communication port	Full speed Device
USB port Baud rate	12 Mb/s

Protocols	Modbus RTU/ASCII and DNP3.0
USB device port Isolation	2.5 KVAC @ 1mn
USB connector DISPLAY Panel	USB type A, vertical mount, straight

PANEL DISPLAY

Touch-Panel LCD graphic display, 1 Wh pulse led, IR port and USB Device/Host connector Type A

Size	5.7" / 14.5mm
Resolution	320 x 240 dots
Type	TFT – color with Touch Panel
Outline dimensions (WxHxD)	0.5 x 4 x 0.6" 13 x 102 x 14.5mm
Active area (WxH)	4.5 x 3.4" 115.2 x 86.4mm
Operating temperature	-20°C to +70°C -4°F to +158°F
Storage temperature	-30°C to +80°C -22°F to +176°F

NON-VOLATILE MEMORY	
For energy and tariff registers logging, EV-PQ-DATA-WV log	Basic 256MB

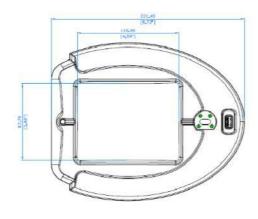## POWER SUPPLY
Low DC Power Supply

12V DC – DEVICE PS STANDARD	
Rated Input	10.8 – 13.2V DC
Dielectric withstand insulation	4000 V_{DC} @ 1mn
Power consumption	2W

24V DC – DEVICE PS OPTION (PM180 AUX. PS)	
Rated Input	9.5 – 24V DC

Dielectric withstand insulation	3000 V_{DC} @ 1mn
Main Output voltage	+12V DC ± 1%
Power consumption	2W
48V DC – PoE OPTION	
Rated Input	37 – 58V DC
Dielectric withstand insulation	1500 V_{DC} @ 1mn
Power consumption	2W
ALL MODELS	
Operating Temperature range	-40°C to + 85°C -40°F to +185°F

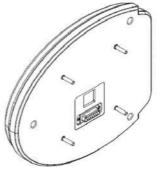|	
Detachable Terminals for wires size	3 x 2.5 up to 6 mm^2 0.1 x 0.1 up to $0.2"^2$
Header pitch	7.5mm / 0.3"
PoE connection	RJ45
TEMPERATURE LIMIT RANGE	
Operational temperature	-30°C to +70°C -22°F to +158°F
LCD Operational temperature	-20°C to +70°C -4°F to +158°F
Storage temperature	-30°C to +80°C -22°F to +176°F

Mechanical size

Order String

RGM180 – GRAPHIC TOUCH SCREEN DISPLAY	
Display	
Direct connection to PM17x - 15 pin D-Type connector	G1
Remote connection - 15 pin D-Type and RJ-45	G3
Cable	
No cable (direct connection to PM17x or PM180, or RJ45 connection)	C00
10m/33 ft cable for PM130, EM133 or EM920. Requires Power Supply	C01
10m/33 ft cable for PM17x or PM180. Requires Power Supply	C02
3m/10 ft cable for PM17x or PM180	C03
10m/33 ft cable for EM720. Requires Power Supply	C04
10m/33 ft cable for ezPAC	C05
Power Supply	
None	-
85-265V AC and 88-290V DC (Standard)	ACDC
12VDC (9.6-19V DC)	1DC
24VDC (19-37V DC)	2DC
48VDC (37-72V DC)	3DC

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