SATEC

Powerful Solutions

RGM180

REMOTE GRAPHICAL DISPLAY

General

The RGM180 consists of providing User friendly Human interface to monitor and configure SATEC devices.
The xM180 shall consist of two different models:

- Local Graphic DISPLAY **RGM180**, the **RGM180** communicates to a single host processor *expert*meter™ SATEC devices, using RS-485 interface. It is powered directly from the device
- Network Graphic Display **NGM180**, the **NGM180** communicates to multiple host processors *expert*meter™ SATEC devices, using 10/100Base T Ethernet interface or RS-485. It is powered by Power over Ethernet (PoE) and/or external AC/DC adaptor

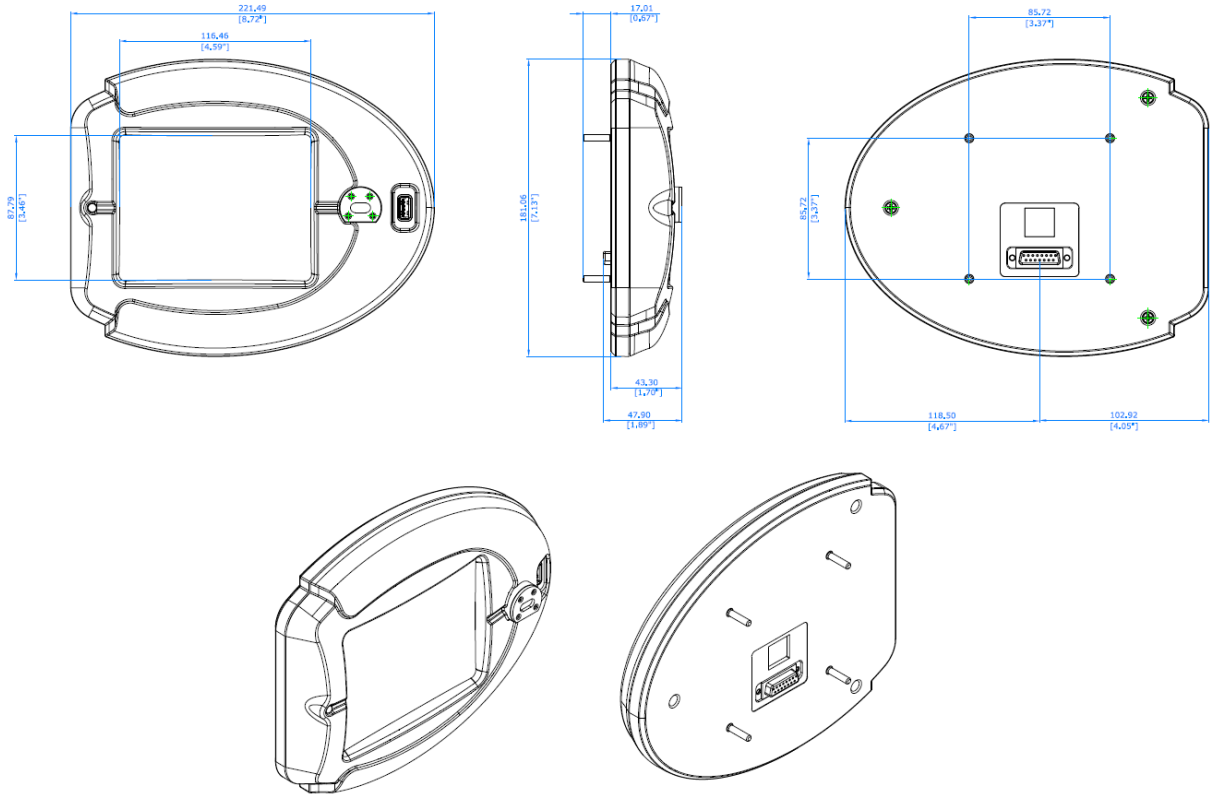
Main Features

- Interactive Display unit controlled by System On Chip ARM based controller
- Local Host Communication – high speed UART interface, up to 480kb/s, for **RGM180** model with RS-485 interface
- Network Host Communication – Ethernet or serial interface, for **NGM180** with 10/100Base T interface or RS-485

RGM180/NGM180 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
- Setting parameter / Display parameter using soft switch based on Touch Panel with at least 500,000 operations
- Programmable DISPLAY setup including Touch Panel calibration
- 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** model
  - IR port for **PM180** only
  - Energy pulsing Led controlled by SATEC device Main CPU, in **RGM180** model only

eXpertmeter™ RGM180 Mechanical size:



Standards specifications

EMC Immunity:

- IEC61000-4-2: Electrostatic discharge, 15KV/8KV (– 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 Immunity 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: Power Frequency Magnetic FieldDamped 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
- Long-term damp heat withstand according to IEC 68-2-3 <95%, +40 °C
- Transport and storage temperature range: –40°C to +85 °C

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**		**NGM180 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**
		USB communication port	Full speed Device
	Basic - Device (default)	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
DISPLAY	**Panel Display**		
	Touch-Panel LCD	size	5.7”
	graphic display, 1 Wh	resolution	320 x 240 dots
	pulse led, IR port and	Type	TFT – color with Touch Panel
	USB Device/Host connector Type A	Outline dimensions	131mm (W) x 102mm (H) x 14.5mm (D)
		Active area	115.2mm (W) x 86.4mm (H)
		Operating temperature	-20°C - +70 °C
		Storage temperature	-30°C - +80 °C

Non-volatile memory	For energy and tariff registers logging, EV-PQ-DATA-WV log	Basic 256MB
Power supply	**Low DC power supply**	
12VDC – Device PS standard	Rated Input	9.5 – 18V DC
	Dielectric withstand insulation	3000 V_{DC} @ 1mn
	Main Output voltage	+12V DC ± 1%
	Output power	2W
24VDC - 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%
	Output power	2W
48VDC – PoE option	Rated Input	37 – 58V DC
	Dielectric withstand insulation	3000 V_{DC} @ 1mn
	Main Output voltage	+12V DC ± 1%
	Output power	2W
All models	Operating Temperature range	-40ºC to + 85ºC
	Detachable Terminals for wires size	3 x 2.5 up to 6 mm^2
	Header pitch	7.5 mm
	PoE connection	RJ45
Temperature limit range	Operational temperature	-30 °C to 70 °C
	LCD Operational temperature	-20 °C to 70 °C
	Storage temperature	-40 °C to 85 °C