

Field Monitoring Controller

FMC – Feature Data Sheet

General Overview

Feature	Description
Model	Field Monitoring Controller (FMC)
Power Supply	12V 9Ah SLA battery with onboard 3-stage solar charger
Solar Input	12V panel up to 40W, reverse polarity protected
Wi-Fi Hotspot	Unit Configuration

Inputs & Outputs

Type	Quantity	Specifications
Analog Inputs	3	0–5V DC or 4–20mA (configurable with jumper)
Contact Closures	4	With LED indicators, mapped to: Flow meter, Rain gauge, Float sensors
Relay Outputs	2	4A @ 240V AC or 4A @ 30V DC, latched
SDI-12 Input	1	Supports EnviroPro EPGL100-08
I2C Port	1	Supports Expansion modules e.g. LoRa & RS485 Modbus
Auxiliary Output	1	12V, 500mA max, 2.2A thermal fuse
Power Inputs	2	SLA battery and solar panel, both reverse-polarity protected

Supported Communication

Type	Details
4G (Cellular)	CAT-M1 / NB-IoT modem
MQTT Support	Full MQTT messaging to Mac Systems Portal
SMS Support	Command/control via SMS e.g., relay switching, battery status, restart

Indicators

LED Indicator	Description
Status	Blinks on activity Wi-Fi, update, sleep, input triggers
4G Modem	Power and Network status indicators

Configuration Options

Area	Details
Wi-Fi Setup	WPA-secured hotspot, auto-enabled or button toggled
Analog Input Modes	0–5V, 4–20mA Pressure Sensor, Ultrasonic (inverted)
Scaling	Custom upper/lower voltage-to-value mapping per input
Relay Control	Manual, sensor-triggered, or SMS-based
Flow Meter	K-factor configurable (pulses per litre)
Modbus	Supported via expansion module (I2C)
Firmware Update	Via onboard web interface

Protection

Area	Details
Thermal Fuses	Battery (5A), Aux (1.1A), SDI-12 (0.5A), Analog 5V (0.5A)
Reverse Polarity	Battery and solar inputs protected
Low Voltage Cutoff	Aux output disabled below 11.8V