FIELD MODULE
Solar Powered Wireless Remote I/O Module

Jabeco's complete management system to optimise the use of water resources

- **Solar Powered**
- **Latching Outputs**
  Up to four DC pulse outputs for latching appropriate pilot valve solenoids to actuate hydraulic valves.
- **Bi-directional Communication**
  Radio command acknowledgement and data interrogation replied back.
- **Status Monitoring**
  Upon interrogation the FM reports vital data such as battery and solar voltage levels, device ID, transmit and receive signal levels.
- **FM Setup Control**
  All setup parameters can be read remotely and certain key setup parameters can be programmed remotely.
- **Input Capability**
  By adding the appropriate add-on module(s), up to four digital inputs and four analogue inputs can be added to monitor sensors that provide various irrigation network parameters.
- **Configurable Digital / Analogue Inputs**
  - (D) Dry inputs, monitor On/Off condition.
  - (D) Counter inputs, monitor quantity and/or rate.
  - (A) Analogue voltage monitoring.
  - (A) 4-20mA current monitoring.
- **Extended communication**
  All Jabeco radio units possess transparent repeater capabilities. This allows for a broad communications reach.
- **Field Communication**
  By adding the appropriate add-on module, local Modbus and SDI-12 communication with processor based sensors is enabled. Sensor data is assembled locally and transmitted packet-sized to central control.
- **Sensor Interfacing**
  Temperature, humidity, pressure, flow, wind speed, soil moisture etc.

PRODUCT INFORMATION

Jabeco's FMs are designed to provide autonomous and maintenance free operation. The internal battery is backed up with solar power, and can be used to control digital outputs, such as valves, receive analogue and digital inputs from measurement devices in the field, and wirelessly communicate over a range of more than three kilometers. Status and I/O information is transmitted and confirmed back to central control upon interrogation.

FM's can be used to connect a single remote site to a controller, but are typically deployed as an interconnected wireless control network.

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SPECIFICATIONS

POWER
- **Battery:** 6V at 4.5Ah, over 5 days charge life.
- **Solar:** 8.5Vnom, 1.5W.
- **Life expectancy** is >3y battery, >5y solar panel.

COMMUNICATION
- **Frequency:** 433MHz or 868MHz, on factory order.
- **RF Power:** 10mW max.
- **RF Connector:** SMA Jack Female.
- **Antenna:**
  - Dipole, standard ex-factory.
  - Optional: Single element Yagi.
- **Reach:** Dipole: + 3Km with good LOS.
  Yagi: up to 10Km with good LOS.

LOCAL COMMS INTERFACE
- **Hardware:** RS485, RS232, TTL.
- **Protocol:** SDI-12, Modbus.

INPUTS
- **Digital:**
  - High impedance, resistive load.
  - On/Off or Counter, >100ms pulse.
- **Analogue:** 5VDC max, switched at 100ms live period.
- Up to 4 digital and 4 analogue.

OUTPUTS
- **Number:** 2 or 4 outputs, on factory order.
- **Type:** Pulse, for latching load (e.g. solenoid).
- **Magnitude:** <23V @ 30ms max Width.
- **Source:** 2200mF capacitive.

PROGRAMMING
- System firmware via TTL (OEM suite).
- User parameters via TTL or wireless (JCOM radio management software).

PHYSICAL
- **Weight:** approx. 2kg.
- **Dimensions:** 250mm x 200mm x 180mm.

ENVIRONMENTAL
- **Operating Ambient:** -20°C to 50°C.
- IP65.

ORDER INFORMATION

Part No	Description	Packing list
JB-FA-00-42	Field Module – 433MHz 2 output channels	All modules come with an integrated mounting bracket, dipole antenna and solar panel, and a valve connection box with cable. Dipole antenna can be replaced by a separate Yagi antenna.
JB-FA-00-82	Field Module - 868/2ch/Omni	
JB-FA-00-44	Field Module – 433MHz 4 output channels	
JB-FA-00-84	Field Module - 868/4ch/Omni	
Add-on Modules		
JB-GA-06	RS485 Serial Convertor Module	Fitted Internally
JB-GA-02	4 x Analogue Input Module	
JB-GA-01	4 x Digital Input Module	