JIO and JFERT
Wireless I/O Module

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

- **Outputs**
  8 continuous DC open collector outputs for driving appropriate relays and/or Jabeco Relay PCB.
- **Bi-directional Communication**
  Radio command acknowledgement and data interrogation replied back.
- **Status Monitoring**
  Upon interrogation the unit reports vital data such as battery voltage levels, device ID, transmit and receive signal levels.
- **JIO Setup Control**
  All setup parameters can be read remotely and certain key setup parameters can be programmed remotely.
- **Input Capability**
  8 Digital inputs and 8 analogue inputs can monitor sensors and functions 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**
  RS485 capability allows JIOs to be chained to extend I/O counts and capabilities. The RS485 can also be developed to communicate with third party equipment, typical protocols being SDI-12 and Modbus.
- **Sensor Interfacing**
  Temperature, humidity, pressure, flow, wind speed, soil moisture etc.
- **Ease of installation**
  JIO's and JFERT's are DIN-rail mountable and can be installed in any type of DB or Control Panel.
- **Display**
  There are 16 LEDS on the front panel of the JIO or JFERT, which indicate the digital input and output statuses.

PRODUCT INFORMATION

The Jabeco Input-Output module (JIO) is generally installed in pump stations, and allows inputs and outputs to be connected to various control system functions. Inputs are configured to monitor digital On/Off or Counter functions. A separate set of analogue inputs perform continuous monitoring. Status and I/O information is transmitted and confirmed back to central control upon interrogation. The JIO typically receives all irrigation control system status inputs and actuates valves, switches and pumps. The JIO performs similar functions as the FM. The primary difference is that whereas the FM is dedicated battery driven, the JIO is powered by available utility supply.

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The JFERT is a firmware derivative of the JIO to control fertigation processes. The JFERT autonomously controls fertigation dosing once the parameters for correct volumetric mixing of fertigation is set through Jabeco's EcoWeb control software.

SPECIFICATIONS

POWER
- **Primary:** 6V – 24V at 500mA max.

COMMUNICATION
- **Frequency:** 433MHz or 868MHz, on factory order.
- **RF Power:** 10mW max.
- **RF Connector:** F-Type 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.
- **Multiple JIO** RS485 link-up, 10 units max

INPUTS
- **Digital:**
  - 8 Digital Inputs: Ohmic source (e.g. dry contact).
  - Impedance >100kΩ, active low, 5VDC referenced.
  - Counter pulse width >100ms @ 10% duty.
- **Analogue:**
  - 8 analogue Inputs: 0-5VDC, scalable downward.
- Impedance >6kΩ.
- 5Vdc source available at 120mA max.

OUTPUTS
- 8 Digital outputs, continuous DC, resistive.
- **Output characteristics:** Open Collector to ground.
- 30VDC max, up to 100mA.
- Inductive load requires fly-back diode.

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

PHYSICAL
- **Weight:** approx. 0.5kg.
- **Dimensions:** 100mm x 75mm x 60mm.

ENVIRONMENTAL
- **Operating ambient:** -20°C to 50°C.
- Designed for typical pump house conditions.

ORDER INFORMATION

Part No	Description	Packing list
JB-JA-00-00	JIO - no radio	None
JB-JA-00-01	JFERT - no radio	
JB-JA-00-40	JIO – 443MHz Radio	
JB-JA-00-80	JIO – 868MHz Radio	

APPLICATION NOTES

Water level measurement with switches