

JA-150EM-DIN Wireless module for electricity meter pulse output

The JA-150EM-DIN is a component of the JABLOTRON 100 system. It is equipped with a radio transmitter for the wireless transfer of information from an electricity meter to the MyJABLOTRON application. The module is powered straight from mains electricity and it includes galvanically separated circuits protecting the device to 4 kV. The device is designed for connection to a standard electricity meter SO pulse output. It serves only as an orientation gauge but the decisive are values on electric meter. The module can differentiate 2 tariffs and it can be connected to a control line for remote tariffing. An independent input can be used to protect the switchboard box. Connection to the JA-100 system should be done by a trained technician with a valid certificate issued by an authorised distributor.

CAUTION: Avoid damaging the officially sealed part of the electricity meter during connection. If your energy distributor doesn't allow access to the HMS (House Main Switchboard) and the main electricity meter, a supplementary electricity meter can be used as a source of measurement impulses. It has to be placed outside this switchboard.

Terminal descriptions

- L, N** Mains power connection 230V/50Hz
- TA** Line for remote tariffing connection (tariff switching)
- PU** Input for connection to electricity meter pulse output (+SO)
- IN** Universal NC input (activation is sent to the JA-100 control panel)
- COM** Common terminal for IN and PU terminals (electricity meter –SO output)

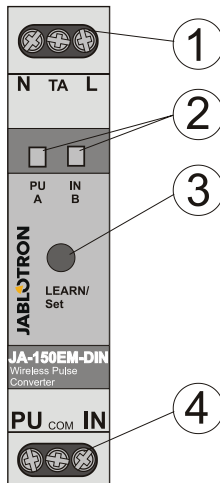


Figure: 1 – Power terminals and tariff input; 2 – Mode and status LED indicators; 3 – LEARN (enroll) / Set button; 4 – Input terminals

Installation



The device can only be connected to mains electricity by a person who has an adequate electrotechnical qualification.

The module is equipped with a special DIN rail holder and thanks to this it can be easily installed inside an electric switchboard.

Before you connect the device to mains electricity check the phase on terminal TA. It has to match the phase on the L terminal. If the phases don't match it is absolutely necessary to supply the TA terminal with the same phase as on the L terminal (the voltage must not be more than 230V between L and TA wires).

It is strictly recommended to protect the device by an appropriate circuit breaker or fuse.

Enrolling to the JA-100 control panel

Enter service mode by F-Link 1.2.0 software or higher and proceed according to the control panel installation manual.

Basic procedure:

- There must be a JA-110R radio module installed in the system.
- Go to the **F-Link** software, select the required position in the **Devices** window and launch enrollment mode by clicking on the **Enroll** option.
- Press the LEARN / Set button for 1 sec, an enrolling signal is sent – the module is thus enrolled to the selected position.

Description of module functioning and its inputs

The module has no tamper contact or backup power supply. When the mains is disconnected the module stops working and it triggers a fault after 1 hour (if supervision enabled) if the mains is not recovered.

PU input: Pulse input. Pulses are counted on this input at High tariff or Low tariff according to the state of the TA input. The input is designed for connection to a floating potential pulse output or open collector output which switches to GND. The input is triggered by connection to the common terminal COM. There is a 10 ms input filter. The input is connected to the measuring device's pulse output. When the output of the measuring device is electronic it is necessary to mind the correct polarity. In the most cases outputs are marked as S0+ and S0-. Then the PU input is connected to the S0+ terminal and the GND input to the S0- terminal.

IN input: Designed for connection to a floating potential output or open collector output which switches to GND. The input is triggered by connecting / disconnecting from the COM terminal (according to the operating mode). There is a 400 ms input filter. Its activation is sent to the control panel. You can set the following reactions: Alarm, Special report or None.

TA input: Designed for the connection of a voltage in the range of 0 to 230 V AC and serves for switching the tariff. When connected to the N terminal it represents the Low tariff.

LEARN / Set button: serves for enrollment signal transmission (when pressed for 1 sec) or for entering operating mode selection or for a device reset.

A / B mode switch: By pressing **Set button** for long (for more than 6 sec) operating mode selection is entered. By pressing the button briefly you can switch between A or B mode – indicated by quick LED flashing (2). The selected mode is confirmed by pressing the button for more than 1 sec and also confirmed by LED.

Reset of Low Tariff and High Tariff counters: a reset is performed by pressing the button for more than 12 sec. The counters indicate 0. The A mode is set after the counters have been reset.

Mode A

Basic operation mode. Default settings.

IN: Universal input (NC), its activation is sent to the JA-100 control panel, standby mode when IN is connected to COM.

TA: Tariff change (switching the counters from Low to High tariff and vice versa), switched by connecting to the N terminal. Its status is transferred and shown on the MyJABLOTRON application as a coloured consumption graph. A tariff change is recorded in the events of the MyJABLOTRON application.

PU: Pulse input for SO electricity meter pulse output.

When the TA terminal is not connected or connected to 230 V then the pulses are taken as a high tariff. In this case the PU LED indicator flashes red with each electricity meter pulse.

When the TA terminal is triggered (connected to N) then the pulses are taken as a low tariff. In this case the PU LED indicator flashes green with each electricity meter pulse.

Mode B

Alternative operation mode which allows changing the TA terminal to inverted logic.

IN: Universal input (NC), it doesn't send the status (activation) of a connected detector to the JA-100 control panel. Activation (grounding) inverts the TA input logic (useful when the tariff switching signal is inverted).

TA: Tariff change (switching the counters from Low to High tariff and vice versa), switched by connecting to the N terminal (IN input disconnected from GND) or by disconnection from the N terminal (IN input grounded). Its status is transferred and shown on the MyJABLOTRON application as a coloured consumption graph. A tariff change is recorded in the events of the MyJABLOTRON application.

PU: Pulse input. The function is the same as in the A mode.

If needed, a tariff change can also be controlled by a low voltage output connected to the IN input (TA input is not used). It can be realized in "B" mode by the IN input terminal. The input logic (Low / High tariff) can be controlled by the permanent connection of the TA terminal to the N terminal.

Technical specifications

Power	230V/50 Hz, protection class II.
Power consumption typical / maximum	approx. 0.5 W / 1.2 W (230 V AC)
Maximum current consumption	10 mA
Communication band	868.1 MHz, Jablotron protocol
Radio communication module:	TRX-30
Antenna:	Internal with a possibility to connect external antenna type AN-868
IN input:	low voltage, galvanically separated from mains, operating voltage 5 V, maximum external overvoltage 30 V DC, maximum connection cable length 3 m.
PU input:	low voltage, galvanically separated from mains, operating voltage 5 V, maximum external overvoltage 30 V DC, maximum connection length 3 m, compatible with an impulse SO output of class B electricity meters according to EN 62053-31
TA input:	remote tariffing input maximum 230 V AC
Dimensions:	68 x 96 x 18 mm, 1 DIN module
Operational environment	general outdoor -20 to +60 °C
IP covering	front panel IP40 according to EN 60529
Can be operated to	ERC REC 70-03
Complies with	ETSI EN 300 220-1, EN 50130-4, EN 55022, EN 60950-1



JABLOTRON ALARMS a.s. hereby declares that the JA-150EM-DIN is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com - Section Downloads.

Note: Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the manufacturer after use.