

HOCHIKI RSM-POM-AS WIRELESS BATTERY POWERED OUTPUT MODULE

GENERAL DESCRIPTION

The wireless battery powered output module is a device which allows the activation, switching over and/or deactivation of circuits connected to its outputs.

The activation / switching over command is sent by the control panel to the module via the wire to wireless translator module and other possible wireless expander modules.

The device has the following features:

- a 12 V_{dc} / 24 V_{dc} output
- a SPDT (Single Pole Double Throw) relay operated output.

Communication between the battery powered output module and the translator or the expander is wireless, via the "Sagittarius" protocol.

TECHNICAL SPECIFICATIONS

Operating frequency	916 MHz
Max radiated power	5 dBm (3 mW)
Radio signal's modulation type	FSK
Operating frequency channels	6
Communication range with the translator or the expander *	100 m (in open space)
EOL resistor value for FLT feature	5.6 kOhm (10% tolerance)
Max tolerated humidity (no condensing)	95% RH
IP rating	65
Cable entry knockout holes specifications	6 x M16/20
Applicable wire gauge range	from 0.5 mm ² to 2.5 mm ²
Required programming software	"Wirelex-Fire" revision 5.1.3 and successive

Table 1

RELAY SPECIFICATIONS

Maximum switched voltage	30 V _{dc}
Maximum switched current	2 A
Maximum switched power	60 W

Table 3

TEMPERATURE RANGES

Only relay output	-30 °C - +55 °C
12/24 output at 12 V _{dc} (max current load)	-10 °C - +55 °C
12/24 output at 24 V _{dc} (max current load)	0 - +55 °C

Table 5

BATTERY SPECIFICATIONS

Main battery type	CR123A (3 V & 1.2 Ah)
Secondary battery type	CR123A (3 V & 1.2 Ah)
Main battery lifespan **	5 years ***
Secondary battery lifespan **	2 months ***

* Ideal operating range: may vary consistently according to environmental conditions.

** When a low battery condition is indicated, both, main and secondary, batteries must be changed altogether.

*** These lifespan values refer to the device being programmed with a control signals transmission period of 12 seconds.

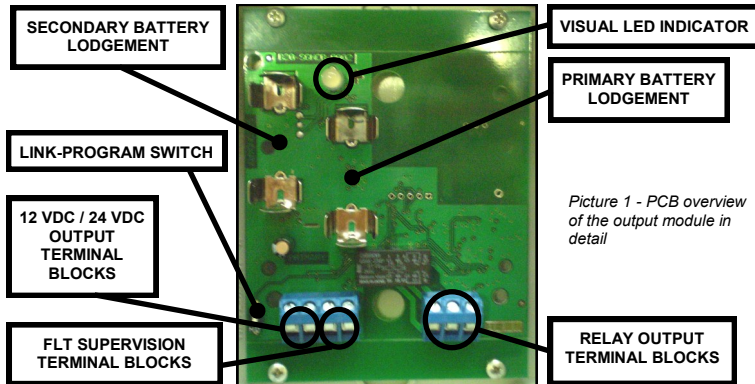
If the 12 VDC / 24 VDC output is activated for 30 seconds a week for test, the primary battery's lifespan reduces to 3 years.

Table 2

OUTPUT SPECIFICATIONS

12/24 V _{dc} output's max current supply at 12 V (+/-10%)	40 mA
12/24 V _{dc} output's max current supply at 24 V (+/-10%)	20 mA

Table 4



Picture 1 - PCB overview of the output module in detail

VISUAL LED INDICATOR

The wireless battery powered output module is equipped with a bi-colour LED (red / green) that provides visual indication for functional conditions and battery levels as indicated in table 6. For its location refer to picture 3.

Module's status	Green LED	Red LED
Power up	1 second green, then 0.5 second red for 4 times	
Programming and linking to the system	Blinking until linking and programming is completed	
Normal condition	-	-
Main battery fault	-	0.5 second on and 10 seconds off
Secondary battery fault	0.5 second on and 10 seconds off	-
Both batteries fault	-	0.5 second on and 10 seconds off
Lost link with wire to wireless translator / wireless expander	0.5 second green and red (amber) and 1 second off	

Table 6

DEVICE'S POWER SUPPLY AND LINKING

The linking operation permits the configuration of the battery powered output module on the wireless system.

The linking operation described below does not change if made directly from the wire to wireless translator module's interface or from the Wirelex PC configuration program.

- 1) Move the "link-program" switch to position ON.
- 2) Insert the secondary battery into its housing.
- 3) Insert the primary battery into its housing; the visual LED indicator switches on accordingly (see "Power up" in table 6).

Ensure that both battery's polarity are correct!!!

- 4) When the translator module (by itself or piloted by the Wirelex) is searching for a new device for linking, move the "link-program" switch to position 1 in order to initiate communication with the translator module; the visual LED indicator switches on accordingly (see "Programming and linking to the system" in table 6).

IMPORTANT NOTE!

Programming is considered to be completed successfully only if there is an indication of programming success on the translator or on the window of the Wirelex program.

If the linking and programming operation fails, check if mistakes were made with the translator or the Wirelex, remove the batteries, change over alternatively the ON / 1 switch a few times in order to discharge the internal capacitor and then start again from point 1) re-performing the linking procedure.

COMMUNICATION QUALITY ASSESSMENT

It is possible to assess the wireless communication quality between the battery powered output module and the wire to wireless translator module / wireless expander module by using a testing feature built in the device.

After a successful linking operation, by changing the "link-programming" switch on the ON position, the device's LED will start blinking according to table 7.

Always remember to reposition the switch to 1 after the assessment operation: device will NOT work operatively while the switch is set on the ON position.

Communication quality	Assessment	Device's indication
No communication	Fail	Two red blinks
Communication quality: 0 dB - 10 dB (Mark 2)	Poor	One red blink
Communication quality: 10 dB - 20 dB (Mark 3)	Medium-low	One green blink
Communication quality: 20 dB - 30 dB (Mark 4)	Good	Two green blinks
Communication quality: > 30 dB (Mark 5)	Excellent	Two green blinks

Table 7

WARNINGS AND LIMITATIONS

Our devices use high quality electronic components and plastic materials that are highly resistant to environmental deterioration. However, after 10 years of continuous operation, it is advisable to replace the devices in order to minimize the risk of reduced performance caused by external factors. Ensure that this device is only used with compatible control panels.

Detection systems must be checked, serviced and maintained on a regular basis to confirm correct operation. Smoke sensors may respond differently to various kinds of smoke particles, thus application advice should be sought for special risks. Sensors cannot respond correctly if barriers exist between them and the fire location and may be affected by special environmental conditions. Refer to and follow national codes of practice and other internationally recognized fire engineering standards. Appropriate risk assessment should be carried out initially to determine correct design criteria and updated periodically.

WARRANTY

All devices are supplied with the benefit of a limited 3 year warranty relating to faulty materials or manufacturing defects, effective from the production date indicated on each product.

This warranty is invalidated by mechanical or electrical damage caused in the field by incorrect handling or usage.

Product must be returned via your authorized supplier for repair or replacement together with full information on any problem identified. Full details on our warranty and product's returns policy can be obtained upon request.



DEVICE'S PLACEMENT

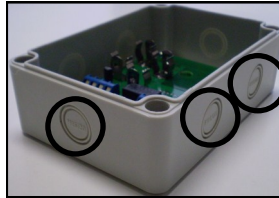
For specific information regarding detector and device's spacing, placement and special applications refer to your specific national standards. In order to avoid a consistent degradation of the distance and quality of the wireless communication between the output module and the translator / expander module, place the output device as far as possible from metal objects (for example metal doors, windows, openings etc.), other electronic devices, computer equipment and cable conductors. For the purpose of maintaining a good communication quality, it is very important to install the output module perfectly vertically straight as illustrated in picture 2. Follow this procedure for placing the battery powered output module:

- 1) Select the position of the battery powered output module before installing and fixing it. Verify, from that possible position, that the communication between the device and the wire to wireless translator module / wireless expander module is correctly established and working (see the COMMUNICATION QUALITY ASSESSMENT paragraph).
- 2) Install and fix the device's box in the selected position using the provided screws and their indicated lodgment holes (picture 2). The output module is designed with 6 cable entry knockout holes, distributed on the lateral sides of the device's box, allowing sealed, gland fitted cables to be connected to the device and, at the same time, to preserve the original IP protection rating (picture 3).
- 3) Fit the cable's gland (or glands) into the "knocked out" device box's cable entry (or entries).
- 4) Feed the cables into the box, giving them sufficient length for a secure connection.
- 5) Extract the supply batteries from their lodgment on the PCB, in order to power the device off.
- 6) Connect the cable's terminals to the device's output terminal blocks as indicated in the following paragraphs.
- 7) Reinsert correctly the batteries into their PCB lodgments, in order to power up again the device.
- 8) Test the module (as described later in this manual), then install and screw securely the cover onto the module's box.



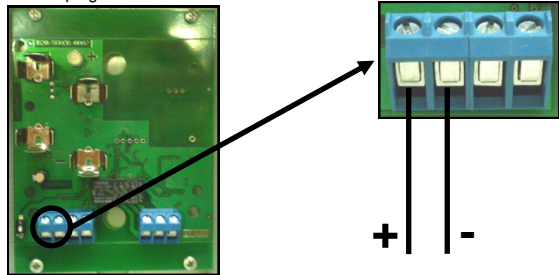
Picture 2 - Wall fixing screw entry points

Picture 3 - Cable entry knockout holes



THE 12 VDC / 24 VDC OUTPUT

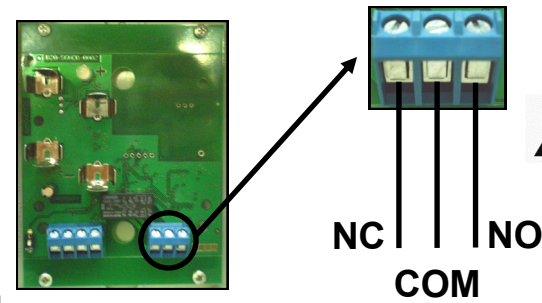
The battery powered output module is equipped with a 12 V_{dc} / 24 V_{dc} output; its terminals, on the PCB, are illustrated in picture 4. The output voltage and its characteristics must be selected and programmed through the wire to wireless translator module with the sole aid of the Wirelex program.



Picture 4 - The 12 VDC / 24 VDC output

THE RELAY OUTPUT

The battery powered output module is equipped with a SPDT (Single Pole Double Throw) relay operated output; its terminals are illustrated in picture 5; "NO" is the normally open terminal, "NC" is the normally closed terminal and "COM" is the common terminal. Consult table 3 for the relay specifications. The output characteristics must be selected and programmed through the wire to wireless translator module with the sole aid of the Wirelex program.



WARNING
Disconnect battery power before wiring this device

CAUTION
Electrostatic sensitive device. Observe precautions when handling and making connections

Picture 5 - The relay output

FAULT (FLT) FEATURE

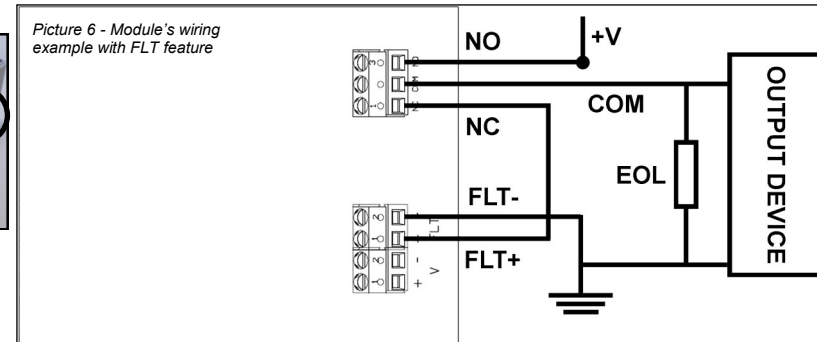
This module permits to check whether there are interruptions or short circuits between the output device and the output module itself; for using this feature, wiring described in picture 6 can be applied; FLT (fault) contacts and an end of line (EOL) supervising resistor are used to supervise the output line.

EOL resistor must be of the value specified in the TECHNICAL SPECIFICATIONS table and we suggest to wire it as near as possible to the output module.

If a short or open circuit is detected on the output line, a fault message is sent to the control panel.

FLT feature must be enabled through Wirelex software during programming.

Bear in mind that in picture 6 wiring example a fault message will be sent to the control panel when the activated module's relay switches from the NC to the NO contact.



Picture 6 - Module's wiring example with FLT feature

BATTERY FAULTS

If a battery fault condition is detected on the battery powered output module, a fault message is sent to the control panel via the wire to wireless translator module / wireless expander module. This kind of fault condition is locally signaled by the module's visual LED indicator (see table 6).

TESTING

In order to test the functionality of the installed battery powered output module, the following test must be performed: activate an alarm condition on the control panel (by a call-point or sensor in the installed system): the control panel will transmit an activation / switching over message to the device via the wire to wireless translator module / the wireless expander module and activate / switch over the module's outputs; this applies to the 12 VDC / 24 VDC and the relay outputs.

After each test the device must be reset by the specific command on the control panel or on the translator module (see the RESET paragraph).

If the test fails check whether the batteries are charged, if mistakes were done previously or even if the system is activated. If the battery powered output module functionality is hopeless, send back the device to your distributor for repair or substitution.

All devices must be tested after installation and, successively, on a periodic basis.

RESET

To reset the battery powered output module from an activated / switched over or a fault condition, it is necessary to solve the cause of the abnormal condition and send the reset command from the control panel or from the wire to wireless translator module; the module's outputs and/or fault conditions will deactivate.

MAINTENANCE

- 1) Before starting any maintenance work (e.g. batteries substitution), isolate and disable the system, in order to avoid accidental and unwanted fault detection conditions.
- 2) Remove the front cover from the device's box.
- 3) Perform the planned necessary maintenance operations.
- 4) After the device has been serviced, reinstall correctly the front cover onto its box, re-apply power to the system and check correct operation as described under the TESTING paragraph.