SWM 301
Wireless RF Module for water meter

Reed switch for Inclusion/Exclusion

Z-Wave® Commissioning Notes

SWM 301 is a battery-powered RF module using Z-Wave® technology for reporting secondary water metering reading in domestic dwellings. The low-power radio signal transmits the meter readings to a Secures controller or any other 3rd party controller in the system. If there are constant powered nodes within the network, these will act as repeaters to increase network reliability.

The RF module records the meter reading by backlash-free pick-up on the litre wheel of the meter register and transmits the data over the Zwave network either on a time or delta change.

Choose the position where the unit is to be mounted, avoid locations alongside or behind large metal surfaces that could interfere with the low-power radio signals between the unit and the Controller.

The unit contains a lithium battery which provides 10 years battery life based on a 24hr data reporting interval over RF.

For Inclusion following the procedure below.

To Include the SWM 301 onto a network put the Controller in Include mode and hold a magnet on the side of the RF module next to the reed switch for around 3 seconds. The LED will turn on to indicate 2 seconds are over, LED will remain on for next 4 seconds and then after it will flash once to indicate a NIF action is initiated, water meter will then send NIF after. The controller will show when the two units have been successfully linked.

If the controller does not respond within 2 second of NIF being sent, the SWM 301 will enter NWI inclusion automatically whereby it will try to find the controller using repeating devices in the network. In NWI mode SWM 301 will send explorer frame 3 times each 5 seconds apart, after which it will go into deep sleep mode. If the inclusion/exclusion process fails the LED will flash 3 times, indicating failed. Please note NWI reduces the battery life.

To exclude device from a network, put the Controller in Exclusion mode and follow same sequence as used in inclusion for sending NIF. Controller will indicate exclusion completion.

The unit will transmit and report the meter readings for a short while after the battery level is reported 0%, any data reported at this point is not guaranteed.

Z-Wave Device Classes	Implemented Device Class
Generic	Generic Type Meter
Specific	Specific Type Simple Meter
Basic	Routing Slave
Command Classes Supported	Description
Manufacturer Specific(V2)	Secure Controls (UK) Manufacturer ID, RF module serial number
Version	Provides the version number of the software
Meter Command Class	To report the accumulated water meter readings, meter will send the unsolicited report on delta change or defined time interval to associated nodes in group 1.
Battery Level	Supports GET and REPORT, for battery level in the range 0-100%. Low Battery Warning is reported (with parameter = 0xFF) to the nodes in Group 2 if the battery voltage is less than or equal to 3 volts.
Wake Up(V2)	Wake Up Interval Capabilities Get Command used to request the wake up interval capabilities of a device.
Basic	Mapped to the Multilevel Sensor Command Class as follows: o Basic SET: Not Supported o Basic GET: Meter Get o Basic REPORT: Meter Report
Association	Three association groups are supported each group contains max 2 nodes: Group 1 - Nodes to receive unsolicited water meter reading. Group 2 - Nodes to receive unsolicited low battery warnings report. Group 3 - Receive temperature and low temperature alarm.

Configuration

(Any change from default configuration, like increasing reporting interval or enabling temperature monitoring will reduce the battery life, zero configuration means feature is disabled)

Parameter (sequential order)	No	Size Bytes	Units	Resol-ution	Min value	Max Value	Default value
Accumulated register value	1	4	m3/Hr	0.001	0	99999999	0
Reading reporting intervals	2	2	minute	1	1	30 days	24Hr
Delta configuration meter reading	3	2	m3/Hr	0.001	0	10000	0
Water meter serial number	4	4	-	-	-	-	FFFFFFFF
Temperature monitor On OFF	5	1	Boolean	-	0	1	0
Temperature Δ	6	1	ºC	1	0	30	0
Temperature Alarm Threshold	7	1	ºC	1	0	40	0

Multilevel sensor	To report measured temperature based on delta change.
Alarm Sensor	To report low temperature alarm.
CRC-16	To report water meter reading with more integrity

Note: All command classes are version 1 unless otherwise stated.

Technical Information			
Dimensions (WxHxD)	64.5 x 27 x 34.5 mm	Power supply	DC 3.6V (Lithium Battery)
Transmission Frequency	1 time / 24hr	Transmitter frequency	868 MHz
Pollution control degree	3 to EN60950	Design standard	EN 60950
Enclosure protection	IP54	Operating range	0 °C to +40°C
Enclosure material	Flame-retardant thermoplastic		

Please dispose of this unit (and the batteries that it contains) responsibly.

SPEAKS Z-WAVE

CE

Secure Controls (UK) Ltd, Roman Farm Road, Bristol, BS4 1UP, UK

t: + 44 (0) 117 9788700, f: +44 (0) 117 9788701, www.horstmann.co.uk