

# "RADIOBARRIER" WIRELESS INTRUSION DETECTION SYSTEM

## RS-L/433-EX MICROWAVE SENSOR

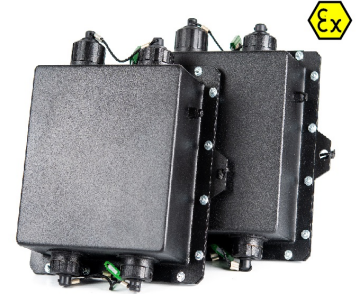
The RS-L/433-Ex is a microwave sensor housed in an explosion-proof casing with the explosion protection marking "0Ex ic IIB T4 X". It can be used in potentially explosive zones.

Installed underground, the RS-L/433-Ex protects chain-link or welded wire fence enclosures where the electromagnetic field reflects off the metal fence and fills the entire enclosure volume.

The RS-L/433-Ex consists of two units: the PRM Receiver Unit and the PRD Transmitter Unit.

The RS-L/433-Ex can operate in the following modes:

- As a microwave sensor. The RS-L/433-Ex detects trespassers in the detection zone by processing the variations in the volumetric electromagnetic field created between the sensing antennas connected to the PRM Receiver Unit and the PRD Transmitter Unit of the RS-L/433-Ex. The sensor generates an alarm and sends it to a handheld receiver or to the operator's console via the radio network.
- As a break-wire sensor<sup>1</sup>. The RS-L/433-Ex sends an alarm message to a receiver when the microwire of the KM Cartridge with Twin-cord Microwire is broken and/or when the contacts of the SMK Magnetic Switch Sensor are disconnected.
- As an autonomous repeater that is always on. The RS-L/433-Ex transmits alarm and service data of system devices in the radio network.



### Additional functions

- The device settings and modes can be changed onsite through a handheld receiver, or remotely, through an operator's console.
- Depending on the size and shape of the detection zone, the RS-L/433-Ex has the following antenna configurations:
  - Single antenna configuration: two AShS-433 antennas for the PRM and one AShS-433 for the PRD. This is used to create a detection zone of 12 x 6 x 1.6 m (length x width x height).
  - Dual antenna configuration: two AShS-433 antennas for the PRM and two AShS-433 for the PRD. This is used to create detection zones of various shapes.

### Compatible batteries<sup>2</sup>

Both the PRM and PRD units are powered by:

- 10.8 V non-rechargeable external batteries (VIP-1013-Ex, VIP-1026-Ex).
- 10.8 V non-rechargeable external batteries (VIP-1013 with the PP-2 Cable Adapter, VIP-1113 with the PP-2 Cable Adapter, VIP-1026, VIP-1126).

OPERATION WITH VIP BATTERIES*				
	VIP-1013/VIP-1113	VIP-1013-Ex	VIP-1026/VIP-1126	VIP-1026-Ex
RS-L/433-Ex	18 months	14 months	3 years	2.4 years

\*Environmental conditions: T: 20°C, RH: 80%, P: 763 mm Hg, no moisture in the soil.

Recommended radio network parameters: Eco mode, 2-second radio network configuration, and two neighboring sensors.

<sup>1</sup>The RS-L/433-Ex operates in break-wire mode only with additional equipment: the KJU External Device Cable, the KM Cartridge with Twin-cord Microwire, and/or the SMK Magnetic Switch Sensor. Shall be ordered by the customer separately.

<sup>2</sup>Additional equipment. Shall be ordered by the customer separately.

### Compatible antennas<sup>3</sup>

- AShS-433 433 MHz Sensing Whip Antenna

ANTENNAS' COMMUNICATION RANGE (433 MHZ)**										
Max, m	AV-6	ASh	AShS	AShV	AK	KBV	AGP	Y5	AMSh	ABK
AShS	6500	1700	1500	3000	375	4500	150	6000	3750	4250

**\*\*Environmental conditions:** T: 20°C, RH: 80%, cloudless atmosphere, LoS: 8 km, elevation changes within the detection line: less than 2 m.

**Installation requirements:** No power lines within 5000 m, no sources of radiation at the antennas' frequencies within 5000 m, no solar flares, no industrial contamination of the air, no ionized particles in the air, installation at the recommended antenna installation height.

**Note:** The type of battery for the RS-L/433-Ex may vary and is subject to operating conditions and technical requirements of the customer.

### Optional accessories<sup>4</sup>

- ATT Attenuator for RS-L/433-Ex is used to reduce electromagnetic signal.
- UKAE-433/5 Shielded Antenna Extension Cable is used to extend the cable of the AShS-433 Sensing Antenna.

PERFORMANCE***	
Detection zone: <ul style="list-style-type: none"> <li>• max. length</li> <li>• min. length</li> <li>• height (with the max. length of detection zone)</li> <li>• width (with the max. length of detection zone)</li> </ul>	12 m 3 m min. 1.6 m min. 6 m
Radio channel frequency	433.2–434.6 MHz
Radio channel type	two-way digital radio channel
The sensor switches back from alarm to standby	in 10 sec
Number of frequency sub-channels	8
Detection probability	0.98
Sealing	IP68
Operating temperature range	-40°C to +50°C
Weight: <ul style="list-style-type: none"> <li>• PRD Transmitter Unit</li> <li>• PRM Receiver Unit</li> </ul>	3.65 kg 3.65 kg
Dimensions (length × width × height): <ul style="list-style-type: none"> <li>• PRD Transmitter Unit</li> <li>• PRM Receiver Unit</li> </ul>	260 × 250 × 80 mm 260 × 250 × 80 mm

**\*\*\*Environmental conditions:** 20°C, LoS: 8 km, P: 760 mm Hg.

**Recommended radio network parameters:** Eco mode, 2-second radio network configuration, and two neighboring sensors.

<sup>3,4</sup>Additional equipment. Shall be ordered by the customer separately.

<b>ENVIRONMENTAL REQUIREMENT</b>	<b>MIL-STD REFERENCE</b>
Storage High Temperature	MIL-STD 810H, 501.7 I (+60°C)
Storage Low Temperature	MIL-STD 810H, 502.7 I (-50°C)
Storage Low Pressure	MIL-STD 810H, 500.6 I
Natural Humidity (Cycle B3)	MIL-STD 810H, 507.6 Ia
Induced Humidity (Cycle B3)	MIL-STD 810H, 507.6 Ib
Operation High Temperature	MIL-STD 810H, 501.7 II (+50°C)
Operation Low Temperature	MIL-STD 810H, 502.7 II (-40°C)
Operation Low Pressure	MIL-STD 810H, 500.6 II
Immersion	MIL-STD 810H, 512.7 I
Functional Shock	MIL-STD 810H, 516.8 I
Transportation Shock	MIL-STD 810H, 516.8 II

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