

# "RADIOBARRIER" WIRELESS INTRUSION DETECTION SYSTEM

## RS-L MICROWAVE SENSOR

The RS-L is a microwave sensor that detects intruders based on variations within the volumetric electromagnetic field formed between its constituent parts: the **PRM Receiver** and **PRD Transmitter Units**. Then RS-L sends an alarm to a receiver or an operator's console via a radio network.

The RS-L can operate in the following modes:

- As a microwave sensor that is always on. The RS-L creates a volumetric electromagnetic field. When an intruder appears within the detection zone, the RS-L registers and processes variations within the electromagnetic field, and then generates and sends an alarm message.
- As a break-wire sensor<sup>1</sup>. The RS-L sends an alarm message when the microwire of the **KM Cartridge with Twin-cord Microwire** connected to the PRM is broken and/or when the contacts of the **SMK Magnetic Switch Sensor** connected to the PRM are disconnected.
- As an autonomous repeater that is always on. The RS-L transmits alarm and service data of system devices in the radio network.



### Additional functions

- The RS-L performs self-tests and exchanges of service messages automatically and on operator's request.
- The device settings and modes can be changed onsite through a handheld receiver or remotely, through an operator's console.

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

Both the PRM and PRD units are powered by:

- 10.8 V non-rechargeable external batteries (VIP-1013, VIP-1113, VIP-1026 with PP-1 Cable Adapter, or VIP-1126 with PP-1 Cable Adapter).
- 15 V rechargeable battery (VIP-1513) with the PP-1 Cable Adapter.
- 12 V battery container (VKP-121).

OPERATION WITH VIP BATTERIES*				
RS-L/100; RS-L/200	VIP-1013/VIP-1113	VIP-1026/VIP-1126	VIP-1513	VKP-121 (Energizer Ultimate Lithium batteries, 3 V, 1.5 Ah)
	2 years	4 years	2.5 years	2 months

\**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.*

### Compatible antennas<sup>2</sup>

- The PRM is equipped with the AK-433 Short Whip Antenna.

<sup>1</sup>The RS-L operates in break-wire mode only with additional equipment: the **KVU 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.

**ANTENNAS' COMMUNICATION RANGE (433 MHZ)\*\***

Max, m	AV-6	ASh	AShS	AShV	AK	KBV	AGP	Y5	AMSh	ABK
AK	2000	500	375	700	400	800	50	1100	600	700

**\*\*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 types of antenna and battery for the **RS-L** may vary and are subject to operating conditions and technical requirements of the customer.

**Fixing methods and accessories<sup>3</sup>**

Depending on the location and type of installation, the **RS-L** is mounted by using the following accessories:

- For temporary use on flat surfaces: the **ShTT Tripod** (2 pcs).
- For use on upright objects (trees and poles): the **ShTS G-type Mounting Clamp** (2 pcs).
- For permanent use in complex terrain: the **STV Screw Ground Anchor** (2 pcs).
- For permanent use on a fence: the **KNS Wall Bracket** (2 pcs).

**PERFORMANCE\*\*\***

Detection zone: <ul style="list-style-type: none"> <li>• min. length</li> <li>• max. length</li> <li>• height</li> <li>• width</li> </ul>	10 m 100 m (RS-L/100); 200 m (RS-L/200) min. 1.6 m up to 3 m (RS-L/100); up to 4 m (RS-L/200)
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 seconds
Number of frequency sub-channels	5
Detection probability	0.98
Sealing	IP55
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>	0.7 kg 0.8 kg
Dimensions (length × width × height): <ul style="list-style-type: none"> <li>• PRD Transmitter Unit</li> <li>• PRM Receiver Unit</li> </ul>	185 × 140 × 50 mm 200 × 140 × 50 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</sup>Additional equipment. Shall be ordered by the customer separately.

ENVIRONMENTAL REQUIREMENT	MIL-STD REFERENCE
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
Rain	MIL-STD 810H, 506.6 I (5 mm/min)
Functional Shock	MIL-STD 810H, 516.8 I
Transportation Shock	MIL-STD 810H, 516.8 II