

"RADIOBARRIER" WIRELESS INTRUSION DETECTION SYSTEM

RS-U MULTI-SENSOR

The RS-U is a multifunctional seismic sensor. It detects and classifies intruders based on the seismic signature they produce within a circular detection zone, and sends an alarm to the operator's console or a receiver.

The RS-U can operate in the following modes:

- As a seismic sensor. The **RS-U** classifies the type of intrusion, personnel or vehicle, and sends an alarm message. This is the default setting.
- As a break-wire sensor¹. The **RS-U** sends an alarm message 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 (always on). The **RS-U** transmits alarm and service data of system devices in the radio network to increase the network communication range and the reliability of data exchange in it.



Additional functions

- In the network controller configuration, the RS-U organizes the system devices and keeps them operational in a radio network.
- The **RS-U** performs self-tests and exchanges of service messages automatically and on operator's demand.
- The **RS-U** settings and modes can be changed onsite through a handheld receiver and remotely, through an operator's console.

Compatible batteries²

- 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**, or **VIP-1126**).
- 15 V rechargeable external battery (**VIP-1513**).
- 12 V battery container (**VKP-121**) with the **PP-2** Cable Adapter.

OPERATION WITH VIP BATTERIES*				
RS-U	VIP-1013/VIP-1113	VIP-1026/VIP-1126	VIP-1513	VKP-121 (Energizer Ultimate Lithium batteries, 3 V, 1.5 Ah)
	30 months	5 years	3.5 years	3 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 antennas²

- **ASh-433** 433 MHz Whip Antenna
- **AShV-433** 433 MHz Long Whip Antenna
- **KBV-433** 433 MHz Cable Antenna
- **AGP-433** 433 MHz Flexible Antenna
- **AMSh-433** 433 MHz Magnetic Base Whip Antenna
- **PA-433/an1** 433 MHz Underground Antenna
- **Y5** 433 MHz Directional Antenna
- **AV-6** 433 MHz Stationary Directional Antenna

¹The **RS-U** 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.

²Additional 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	PA/an1	ABK
AV-6	21000	8000	6500	9000	2000	11500	1000	15000	10000	-	10750
ASh	8000	2000	1700	4000	500	6000	200	7000	5000	50	5500
AShV	9000	4000	3000	5000	700	6800	200	8000	6000	50	6500
KBV	11500	6000	4500	6800	800	9000	300	9000	7500	-	8000
AGP	1000	200	150	200	50	300	100	500	200	-	250
Y5	15000	7000	6000	8000	1100	9000	500	15000	7500	-	8250
AMSh	10000	5000	3750	6000	600	7500	200	7500	6000	-	6550
PA/an1	-	50	-	50	-	-	-	-	-	-	-

****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-U** may vary and are subject to operating conditions and technical requirements of the customer.

PERFORMANCE***

Seismic detection range:	170 m 300 m
<ul style="list-style-type: none"> personnel vehicle 	
Radio channel frequency	433.2–434.6 MHz
Radio channel type	two-way digital radio channel
Detection probability	0.95
Sealing	IP68
Operating temperature range	-40°C to +50°C
Weight	0.65 kg
Dimensions (length × width × height)	140 × 80 × 70 mm

*****Environmental conditions:** Soil characteristics as in Lat, Long: 53.394505, 77.729883, May to September, 12% to 14% soil moisture.

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

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
Immersion	MIL-STD 810H, 512.7 I
Functional Shock	MIL-STD 810H, 516.8 I
Transportation Shock	MIL-STD 810H, 516.8 II