

Tral Patrol 4.0

Security robot



- **Panoramic video surveillance, automatic tracking of moving objects by PTZ camera**
- **Remote video surveillance on a tablet computer, built-in DVR**
- **Change of surveillance positions without operator assistance**
- **Automatic obstacle avoidance and return when batteries are discharged**
- **Duration of autonomous patrolling -12 hours**
- **Cruising range without recharging - 24 km**
- **All-weather, day-and-night operation**
- **Low-noise electric drive**

Mobile video surveillance system

The robot is designed as part of security system of large area facilities. Staying on positions, optimal for video surveillance of protected area, the panoramic video surveillance system detects movement and the PTZ camera is targeted on moving object.

If the system recognizes a human on the PTZ camera image, it transmits alarm signal to a guard station. After analyzing video image, an operator makes a decision: to reset alarm, turn on a siren or a strobe on the robot and send out security personnel to deal with the intrusion.

In case of alarm reset or absence of an intruder in the camera field of vision, the robot automatically moves to the next observation position. When using several robots within protected area, their routes are coordinated.

Remote video surveillance

An operator is able to remotely control the robot through a tablet computer. The Robot Vision software displays image from the Robot camera, current position of the Robot, status of its control system and batteries discharge level. If required, route of the Robot can be remotely changed.

Video and data are transmitted through Wi-Fi. Large area facilities require Wi-Fi - networks to ensure reliable coverage of patrol routes.

During patrolling mission video from all cameras is recorded by the built-in DVR. During recharging video data is copied to a stationary NAS using Ethernet connection.

Autonomous patrolling

The robot on wheeled chassis moves between surveillance positions without operator assistance under control of automatic driving system. Patrol route is memorized during first patrol mission under control of an operator.

Automatic video driving system allows moving along patrol route even under conditions of unstable reception of GPS data, for example, in forest parks or on heavily built area.

When driving without operator assistance the robot is able to bypass obstacles.

As the batteries are drained or overcooled the robot automatically returns to the guard station for recharging..

All-weather round-the-clock operation

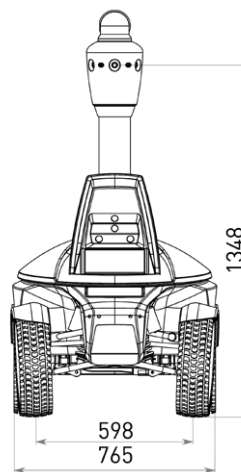
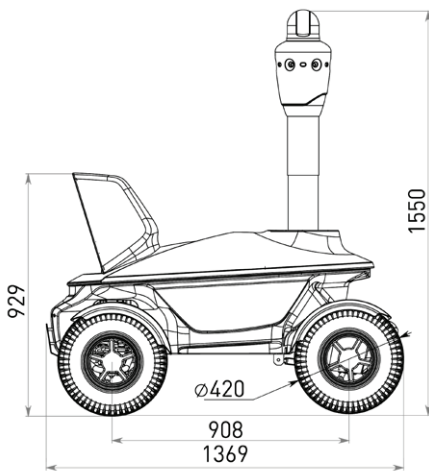
Flotation ability of the robot is sufficient for driving on any type of hard surface, crossing shallow puddles and soft ground patches.

In winter time patrolling routes must be cleared of snow. But the robot can move on the snow layer equal to the mean daily precipitation in Central Russia.

At night patrolling headlights are used (can be switched between downward beams and upper beams). For concealed operation at night IR LED lights can be mounted on the robot (optionally).

For emergency withdrawal from the route or manual control in other situations a manual control console is included in the supplied set.

Tral Patrol 4.0 Security robot



Technical characteristics

Cruising range at +5 °C	25 km
Speed at daylight autonomous driving	4-9 km/h
Speed at night autonomous driving	3-6 km/h
Width of patrolling route path	1.2 m
Turning radius	3.4 m, Max
Max. gradeability	up to 18 °
Vertical wall climb	0,14 m
Fordable depth	up to 0,12 m
Snow cover depth	up to 0,05 m of fresh snow
Dimensions (L x W x H)	1369 x 765 x 1550 mm
Unladen weight (with batteries)	110 kg
Payload capacity	35 kg
Nominal operating temperature range	-20 °C ~ +45 °C
Max. operating temperature range	-35 °C ~ +55 °C

Differential Rear wheel drive

Drive power supply voltage	24 V
Power output	400~600 W
Collector brushes life, no less than	1,500 hours

LiFePo4 Batteries

Capacity	3 x 100 A/h
Cycle life	3000
Cycle life at deep discharge	750
Single battery dimensions	345 x 175 x 240 mm
Weight	3 x 14 kg
On-board power supply for mounted equipment	50 A/h 12 V
Typical charging time	4.5 hours
Quick charging time	2 hours
Charger power	1 kW, 220 V

Data exchange link (Robot - Tablet Computer)

Wi-Fi protocol	IEEE 802.16
Operating frequencies	2.4~2.5 or 5.0 GHz
Emergency transmission link (optional)	GSM/GPRS