

IBIS

EOD/IEDD and Combat Robot

IBIS is a robot for EOD/IEDD and combat applications. The robot is equipped with a six wheel mobile platform. Each wheel has independent drive. The front wheels are mounted on a common axle, which can rotate within a limited range around the longwise axis of the robot. The remaining wheels are linked in pairs, on each side of the robot. The pairs of side wheels can rotate within a limited range around the common crosswise axis of the robot. Such suspension architecture ensures the contact of all wheels with the ground in most situations and consequently, easy movement on uneven surfaces, good stability during movement and ideal distribution of torque to each wheel.

Special solutions used for driving the manipulator ensure fluent movement of each segment within the entire speed range.

The manipulator can be controlled in two modes:

- Independent control of each segment
- Direct control of the gripper (the speed of movement of the manipulator's remaining segments is controlled automatically)

The manipulator is protected from damage by 3 independent systems:

- Mechanic clutches
- Electronic protection
- Dynamic analysis of allowed movement range

The robot is equipped with 4 cameras:

1. Mobile front camera: colour/infrared; powerful LED lamps
2. Mobile rear camera: colour/infrared; powerful LED lamps
3. Manipulation camera: colour; LED lamp
4. Main camera: colour/infrared or thermo vision; powerful LED lamps; vertical and horizontal rotation

The robot can be controlled either over a radio connection or via a fibre optic cable, from a suitcase control panel or with a very light-weight remote controller. In addition to the conventional view from one of the cameras (Standard mode), the operator can display views from many cameras on the control panel (QUAD or PIP modes). The LCD monitor displays also data from robot's sensors, in digital and graphic format. A negotiation system is integrated with the operator's control panel.

The robot is compatible with different additional equipment: pyrotechnical launchers, M16 machine gun, 40 mm grenade launcher, antitank missile launcher, chemical and radioactive contamination sensors, bus bar for remote detonation of explosives, bed bar wire cutters, drills, recording devices and many others.



Weight	290 kg
Width	780-850 mm(depending on tyres used)
Length	1300 mm
Height	950 mm with folded arms
Maximum speed	8,5 km/h
Number of freedom degrees	7
Manipulator base rotation range	400°
Lower arm rotation range	220°
Upper arm rotation range	220°
Telescopic arm	0.5 m
Wrist rotation	220°
Gripper jaws rotation range	infinite
Gripper jaws opening range	0-350 mm
Manipulator maximum lift	30 kg
Manipulator maximum reach	3150 mm
Operator's control panel weight	22 kg
Control system	radio/fibre optic cable
Maximum battery operation time	8 h