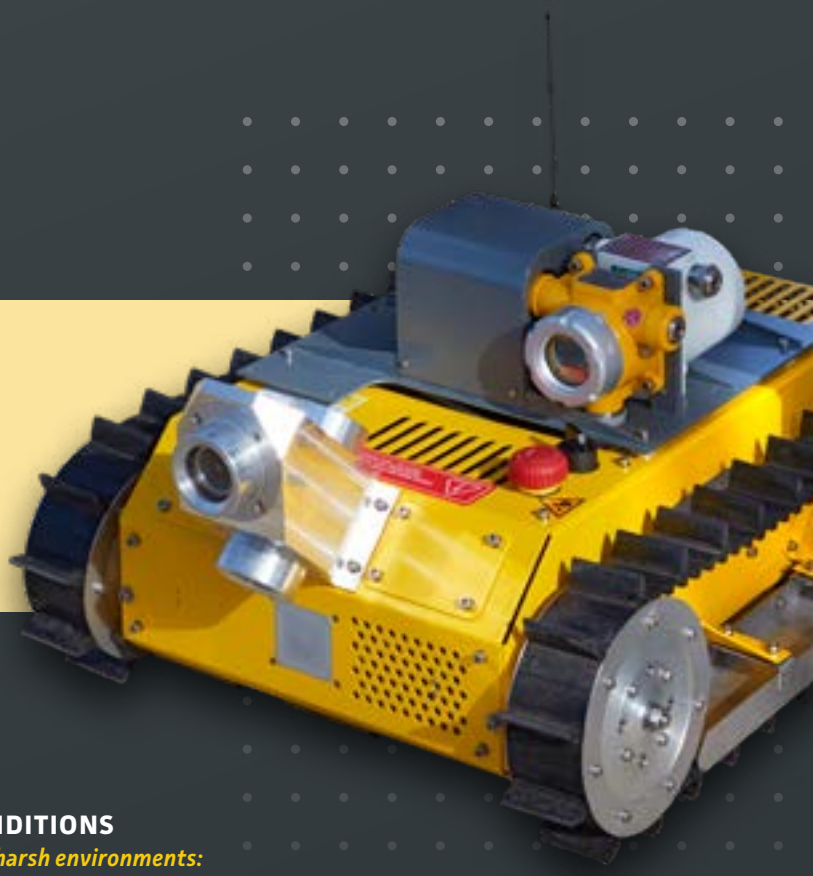
EX ROBOTICS

ExR-1 SPECIFICATIONS



Weight
75-100 kg
Depending on options

Dimensions
950 x 690 x 560mm
(L x W x H)

Operating time
Ops time: 2 hr
Standby time: 8 hr

Speed
2 km/hour

Ambient operating temperature
From -20°C to 50°C
Depending on options

ATEX/IECEx Zone 1 certified
T4 temperature classification.

ENVIRONMENTAL CONDITIONS

ExR-1 robots can be used in harsh environments:

- Marking II 2G Ex db eb ib mb qb IIB T4 Gb
- Ambient operating temperature -20°C-50°C
- Equipment protection level Gb (Zone 1)
- Explosion group IIB (ethylene)
- Temperature class T4 (max surface temp 135°C)
- Ingress protection equivalent to IP57
- Designed for maritime environments
- Operates in rain, light snow & standing water

ELECTRONICS BOX

Ex enclosure containing a customised motherboard that integrates the robot's functions:

- Intel Atom 4 cores, 8 Gb, 1,04 Ghz
- Dedicated MCUs for real-time control
- Battery charger system with battery management system

BATTERY PACK

Ex battery pack

- Ex enclosure containing three 7.2Ah lead crystal batteries for a combined 260Wh
- Operating time under normal operation 2 hours
- Operating time on standby 8 hours
- Battery charging time 4 hours (from 10%-90%)

MOBILITY

Ex drive module containing motors and control electronics

- Centipede tracks
- Motor power 360W BLDC
- Speed 2 km/hour, range 2 km
- Spot steering around robot's central axis
- Drives up and down 30 degree slopes
- Drives up and down 20 cm ledges
- Ground clearance 40 mm
- Can drive over mixed hard surfaces, slabs, pebbles, metal gratings and grass

CAMERA AND LIGHT MODULES

Ex module with:

- Two hi-resolution 18.1 mega pixel camera point and click and high dynamic range imaging
- 1.3 mega pixel down facing camera for pit inspections

Ex module with:

- Three 690 Lm LEDs aligned with camera

The robots of ExRobotics are distinguished by their:

Independence
they are self-charging and require no human intervention when stationed on unmanned facilities.

Reliability
they are designed to operate for months, or even years.

Ruggedness
they can operate in a wide range of climates.

ROBOTICS

INDUCTION CHARGER AND DOCKING STATION

60W patented induction charger with:

- Foreign object detection system
- Inputs 110 to 240 VAC
- Autonomous docking without human intervention

CONTROL & MANAGEMENT SOFTWARE

Comes with the advanced software from Energy Robotics

- Server software available in public or private cloud
- User and access management by customer
- Remote control interface
- Mission report for evaluation of collected data
- Notification system to report anomalies

MICROPHONE

- Standard front facing microphone

COMMUNICATION

- Dual band antennas to connect to 4G / LTE public or private networks
- WiFi antennas to connect to local WiFi access points *Alternative to 4G/LTE*
- VPN connection between robot and cloud software
- API interface with to customer systems

OPTIONS

THERMAL CAMERA MODULE

Integrated unit of high grade aluminum with:

- FLIR Boson longwave infrared (LWIR) thermal camera wavelength 7.5um – 13.5um
- 640 x 512 resolution with 12um pixel pitch

GAS SENSOR MODULES

- Ion Science Falco 1.1 for volatile organic compounds (VOCs)
- Honeywell 3000 Mk II for toxic gases
- Simtronics GD10-P00 for hydrocarbon gases

SOFTWARE

Comes with the advance software from Energy Robotics

- Autonomous docking
- 2D gas maps in mission report
- Autonomous line-following navigation and tag-based inspections

AI DATA PROCESSING

- Digitalisation of analogue gauge readings
- Object recognition
- Dynamic thermo image analysis
- Sound processing to extract historical anomalies

ENERGY ROBOTICS

The ExR-1 is brain-powered by Energy Robotics' OS and cloud-based software solutions. These enable customers to manage robot fleets, remotely control their robots, programme and launch autonomous missions, and analyse the data their robots collect.

Our Robots create a safer working environment for your operators whilst improving your financial performance.

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