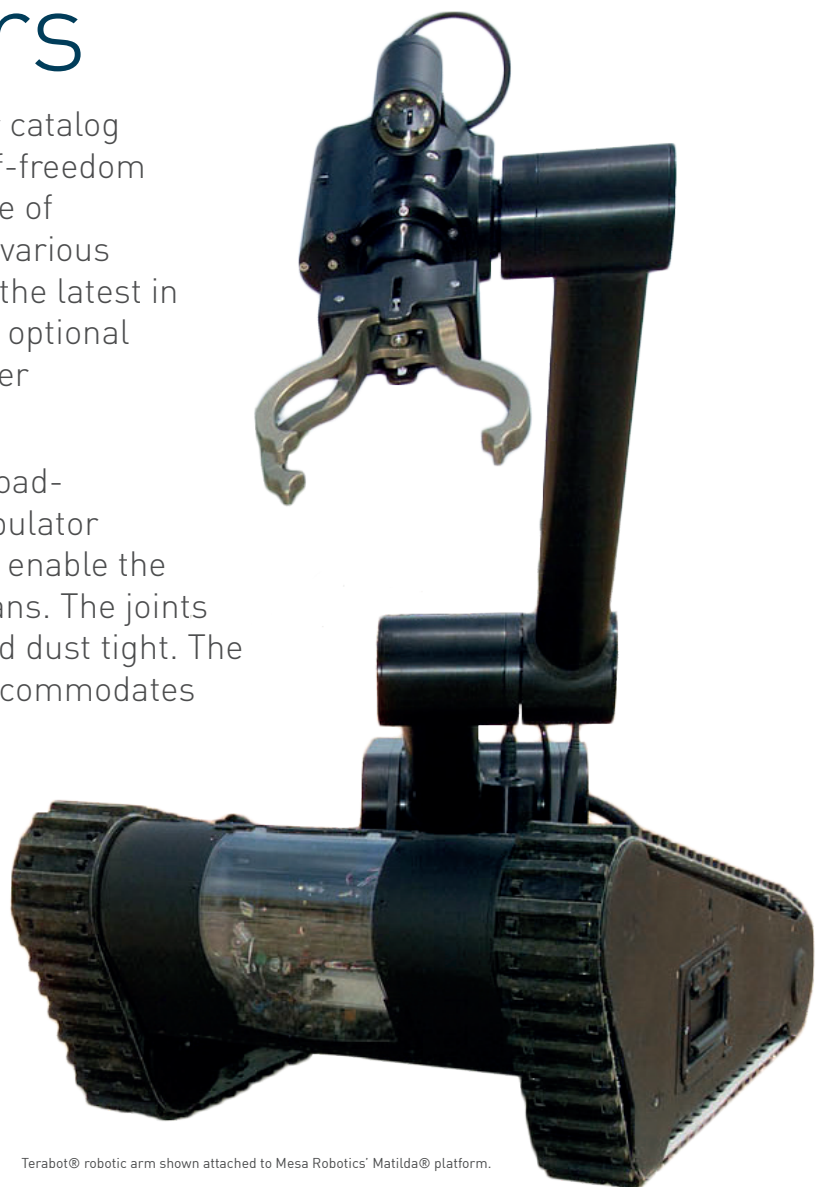


Terabot® Manipulators

The Oceaneering Terabot® manipulator catalog consists of a range of a multi degree-of-freedom (DOF), all-electric manipulators capable of completing a wide variety of tasks with various payload capabilities. The Terabot®-S is the latest in the manipulator series and features an optional spatially correspondent (SC) master user interface for highly intuitive control.

The Terabot®-S joints have integrated load-limiting clutches that protect the manipulator and its surroundings from damage and enable the arm to be operated safely around humans. The joints are fully sealed, making them water and dust tight. The quick-release manual-tool interface accommodates end effectors to suit project needs. The user can also integrate their own tooling on a quick-release interface plate that provides power and data connections. Cartesian control options are available to provide true end-point control and automated routines for repetitive tasks.



Terabot® robotic arm shown attached to Mesa Robotics' Matilda® platform.

Applications

- » Military operations / Explosive Ordnance Disposal (EOD)
- » First responders and tactical law enforcement
- » Biotech / Biochem response and cleanup
- » Mining
- » Education and Research

Benefits

- » Flexible system performs complex tasks
- » Intuitive control greatly minimizes time dedicated to training
- » Quick-release interface allows easy installation of user's tools and sensors
- » Joint clutches provide constant protection against overloads
- » Suitable for operation in harsh environmental conditions
- » System may be washed / decontaminated
- » User I/O pass thru minimizes external cables
- » Lightweight system can be fitted to many vehicles as OEM or retrofit
- » Open command/data interface allows connection to any user system
- » Low power consumption extends vehicle battery life
- » High payload-to-weight ratio
- » Integrated joint overload clutches and absolute joint encoding
- » High-efficiency digital controller



	TERABOT®- S	TERABOT®	TERABOT® XL
Payload (full extension)	9.9 lb, 19.8 lb option** 4.5 kg, 9 kg option**	22.3 lb / 11 kg	11 lb / 5 kg
Reach	41.3 in / 105 cm	42.1 in / 107 cm	72 in / 183 cm
Weight	22 lb / 10 kg	41.9 lb / 19 kg	110 lb / 50 kg
Tooling / Gripper	Manual quick release	2 finger	Auto tool changer
Power (standby / maximum)	<5w / 280w	<6w / 225w	<6w / 800w
Joint resolution	~0.1°	~0.05°	~0.01°
Joint rate (maximum)	35°/ sec	30°/ sec	40°/sec
Joint type	Low backlash, clutch protected	Zero backlash	Zero backlash, clutch protected

**with lift assist cylinder

Manipulator

Manipulator	
Configuration	5 DOF with gripper
Housing material	Aluminum
Environmental protection	Static and dynamic seals
Joint encoding	Absolute
Tool interface	Quick- release or manual
User I/O	Internal pass thru
Camera	Color with auto IR lighting

Manipulator System Controller

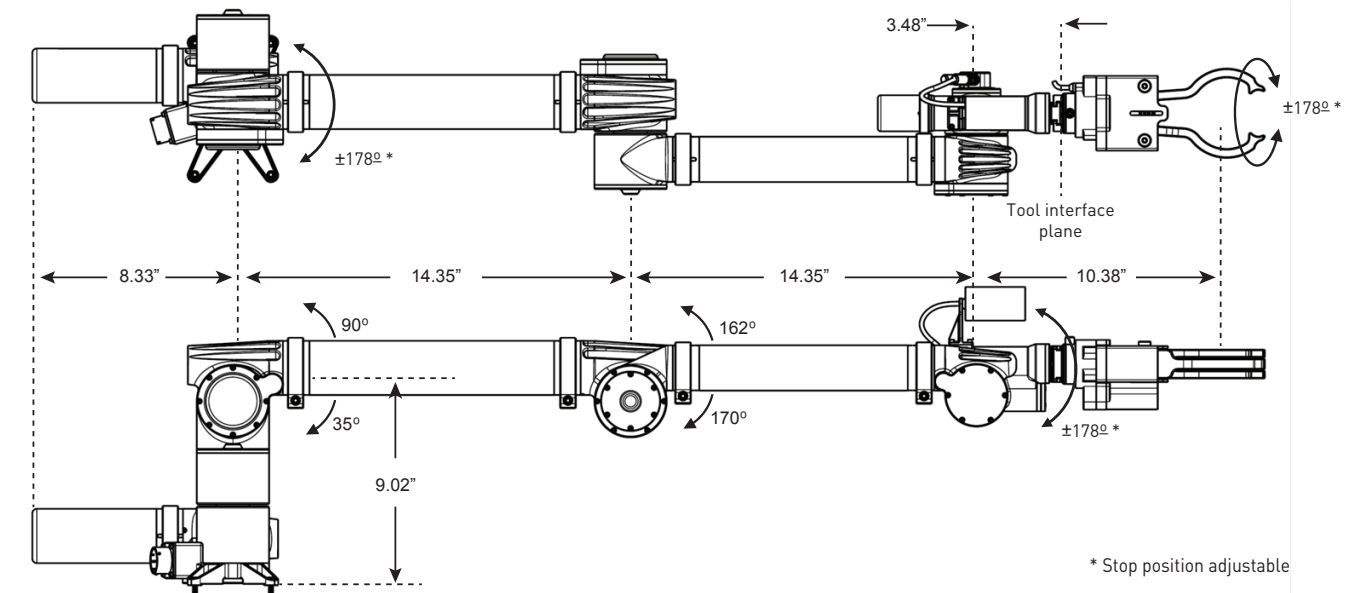
Housing	Aluminum, sealed
Power source	28 VDC Nominal, 24-30 VDC operating range, 15A max
Data interface	RS-232, 19.2 kbaud
Command / query	Joint space, status

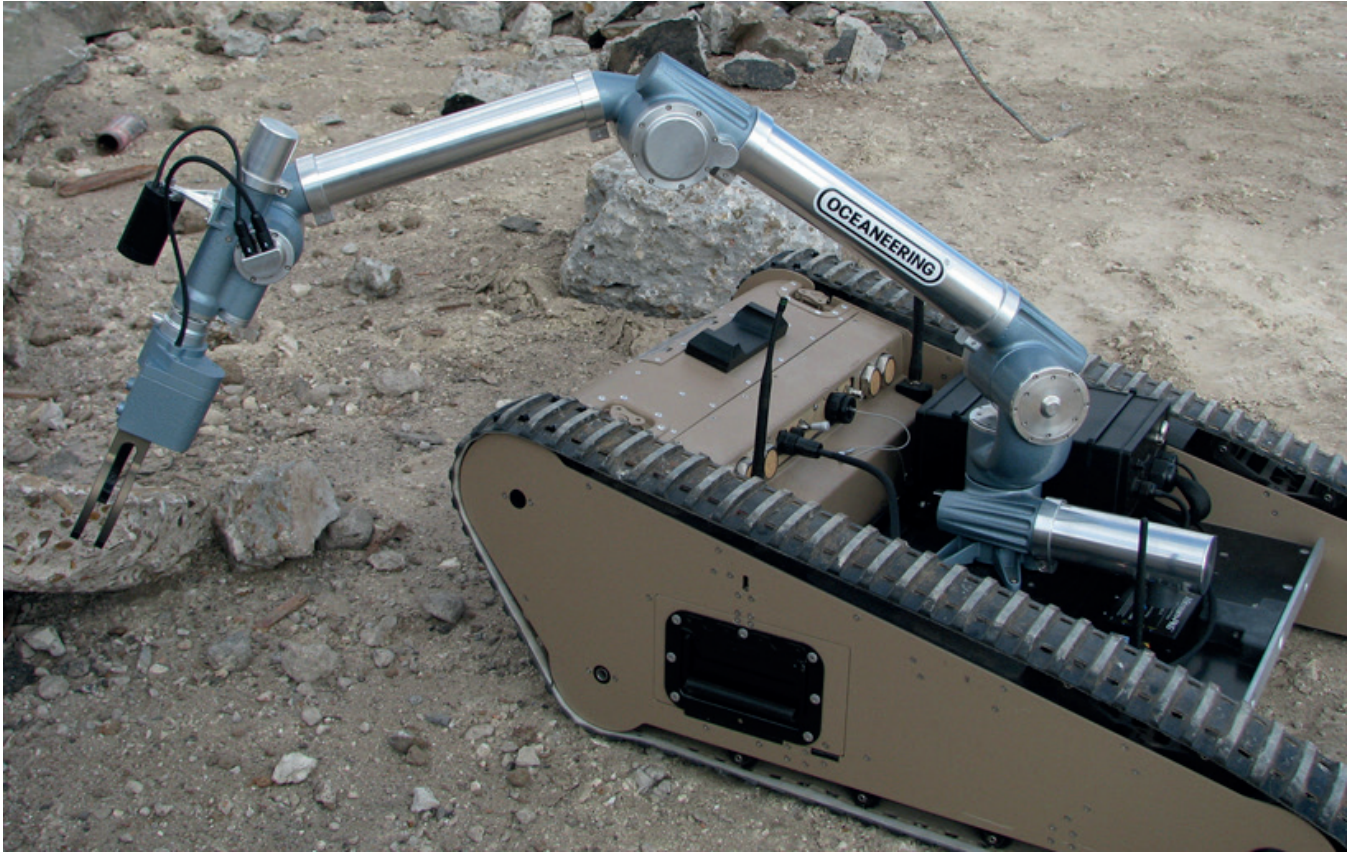
Accessories

Gripper	
Housing	Aluminum, sealed
Grip force	15 lb / 7 kg at center of grip (with 3 sec closing rate)
Fingers	Replaceable
Opening	100 mm (maximum)
Interface	Quick-release

Spatially Correspondent (SC) Master Controller

Configuration	5 DOF and gripper control
Length	~11.8 in / ~300 mm, fully extended
Power source	9-18 VDC, 0.5A max
Data interface	RS-232, 19.2 kbaud
User interface	4 x 40 LCD screens, switches





Terabot® robotic arm shown attached to Mesa Robotics' Matilda® platform.

Additional Options

- » 2-jaw gripper with interchangeable fingers
- » Cartesian space control with onboard kinematics
- » Alternate link lengths for custom configurations
- » Custom tooling including grippers, cutters, digging implements, and sensors
- » Quick release interface adapters to attach user-supplied tooling and sensors
- » Automated tool changeout and quick-release manipulator mount
- » Color zoom camera with remote zoom, focus, and iris
- » Lift assist cylinder kit: increases payload to 19.8 lb / 9 kg
- » Graphical user interface software for control from a notebook PC with scripting, Cartesian control and display, and integrated video
- » Alternate communications using RS 422/485 or Ethernet, WiFi

■ For more information visit oceanearing.com/space-systems

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