

# VERSATILITY IS REALITY



SYSTEM CONTROLS



# ANTENNA PAYLOAD PEDESTAL

**Antenna Pan and Tilt Systems:** We specialize in providing Pan and Tilt Systems for Antenna and Radar payloads, tailored for Defense and Aerospace applications. These high-precision systems are designed to enable precise positioning and movement of antennas and radar equipment, enhancing tracking, communication, and surveillance capabilities. Built to withstand the rigorous demands of Military and Aerospace environments, our Pan and Tilt Systems ensure reliable, smooth operation, supporting mission-critical operations with exceptional accuracy and durability.

## BATTLEFIELD SURVEILLANCE RADAR

No. of Axis	2
Range	Azimuth ( $\pm 180^\circ$ )
Elevation	-15° to +15°
Angular Accuracy	$\pm 0.5^\circ$
Payload	20 kg max
Pedestal Weight	7 kg max
Power Supply	24 VDC
Operating Temperature	-30° C to +55° C



## SINGLE AXIS PEDESTALS

No. of Axis	1
Range	Azimuth 0° - 360°
Angular Accuracy	$\pm 0.1^\circ$
Payload	120 kg max
Pedestal Weight	30 kg max
Power Supply	24 VDC
Operating Temperature	-30° C to +55° C



## ANTENNA POSITIONER UNIT

No. of Axes	2
Range	Azimuth : 0° - 360°
Elevation	-15° to +15°
Angular Accuracy	$\pm 0.5^\circ$
Payload	25 kg max
Pedestal Weight	10 kg max
Power Supply	24 VDC
Operating Temperature	-30° C to +55° C



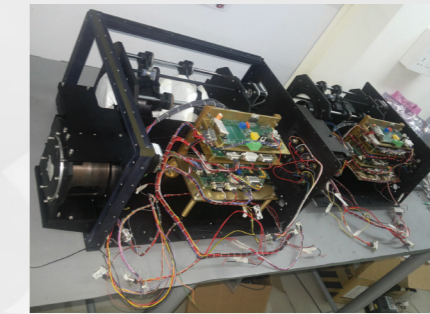
## IFF - RADAR

No. of Axis	1
Range	Azimuth 0° - 360°
Angular Accuracy	$\pm 0.1^\circ$
Payload	150 kg max
Pedestal Weight	100 kg max
Power Supply	230 VAC
Operating Temperature	-30° C to +55° C



# ELECTRO OPTICS PAYLOAD PEDESTAL

**Electro Optics Pan and Tilt Systems** - we provide advanced Pan and Tilt Systems for Electro-Optic Payloads, designed specifically for Defense and Aerospace applications. These precision-engineered systems enable the accurate and reliable positioning of sensors, cameras, and other electro-optical equipment, enhancing situational awareness and operational effectiveness. Built for demanding environments, our Pan and Tilt Systems ensure smooth, controlled movement and optimal performance, supporting critical missions in surveillance, reconnaissance, and targeting.



## PAN & TILT UNIT - SM - 5KG

PAYLOAD	5.3 KG MAX
MOUNT	SIDE
TRAVEL RANGE	AZIMUTH : 0° TO 358°
ELEVATION	+15° TO -40°
ACCURACY	0.05°
SPEED	0 TO 5 RPM
TEMPERATURE	-30° C TO +55° C
POWER SUPPLY	24V DC
DIMENSIONS	304 MM X 215 MM X 185 MM
WEIGHT	5.1 KG



## PAN & TILT UNIT - TM - 5KG

PAYLOAD	5.3 KG MAX
MOUNT	TOP
TRAVEL RANGE	AZIMUTH : 0° TO 358°
ELEVATION	+15° TO -40°
ACCURACY	0.05°
SPEED	0 TO 5 RPM
TEMPERATURE	-30° TO +55° C
POWER SUPPLY	24V DC
DIMENSIONS	304 MM X 215 MM X 185 MM
WEIGHT	5.1 KG



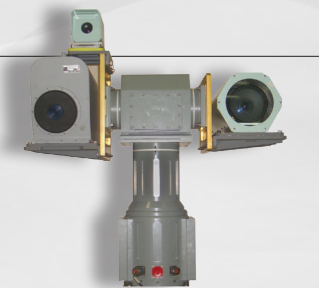
## PAN & TILT UNIT - TM - 25KG

PAYLOAD	25 KG MAX
MOUNT	TOP
TRAVEL RANGE	AZIMUTH : 0° TO 358°
ELEVATION	+15° TO -40°
ACCURACY	0.05°
SPEED	0 TO 2 RPM
TEMPERATURE	-30° TO +55° C
POWER SUPPLY	24V DC



## PAN & TILT UNIT - SM - 75KG

PAYLOAD	75 KG MAX
MOUNT	SIDE
TRAVEL RANGE	AZIMUTH : 0° TO 358°
ELEVATION	+15° TO -40°
ACCURACY	0.05°
SPEED	0 TO 5 RPM
TEMPERATURE	-30° C TO +55° C
POWER SUPPLY	24V DC



## PAN & TILT UNIT - TM - 100KG

PAYLOAD	100 KG MAX
MOUNT	TOP
TRAVEL RANGE	AZIMUTH : 0° TO 358°
ELEVATION	+15° TO -40°
ACCURACY	0.05°
SPEED	0 TO 5 RPM
TEMPERATURE	-30° C TO +55° C
POWER SUPPLY	24V DC



# ELECTRO MECHANICAL STAGES & TRIPODS

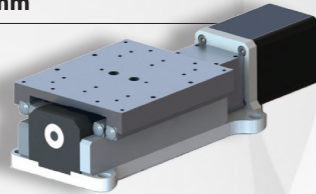
## Electromechanical Stages and Tripods

**Tripods:** System Controls specialize in offering electromechanical stages, tripod and quadripods mounts designed for Defence and Aerospace applications. These high-precision solutions are built to support a variety of critical tasks, from positioning sensitive equipment to stabilizing payloads in demanding environments. With a focus on durability, accuracy, and reliability, our products are engineered to meet the stringent requirements of Military and Aerospace operations, ensuring optimal performance in the field and in the air.



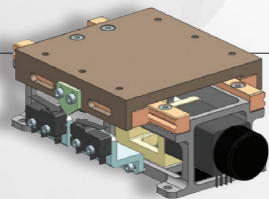
### LINEAR TRANSLATION STAGE-50 mm

Travel Range	50 mm
Degree of Freedom	1 Stage
Weight	1.5 Kg
Repeatability	10 µm
Maximum Speed	15 mm/sec
Load Capacity	Upto 10 Kg
Operating Temperature	0° to +50° C



### LINEAR TRANSLATION STAGE-25 mm

Travel Range	25 mm
Degree of Freedom	1
Drive Mechanism	Precision Ball Screw
Repeatability	5 µm
Maximum Speed	10 mm/sec
Load Capacity	Upto 5 Kg
Operating Temperature	0° to +50° C



### TRIPODS

Load Carrying Capacity	50 kg 60 kg 100 kg
Weight of Tripod	5 kg (Max) 5 kg (Max) 10 kg (Max)
Extended Length	958 mm 958 mm 958 mm
Retracted Length	635 mm 635 mm 635 mm



### QUADRIPOD

Payload	50 kgs
Folded Length	1242 mm
Extended Length	1042 mm
Operational Temperature	-40° C to +55° C
Weight	15 kg



# LINEAR ACTUATORS

**Linear Actuators:** System Controls specializes in providing high-quality linear actuators, designed to deliver precise and reliable motion for a wide range of applications. These actuators are ideal for automating mechanical processes, offering smooth and efficient linear movement in industries such as robotics, manufacturing, automotive, and more. With a focus on durability and performance, our products enable enhanced automation and operational efficiency for various systems and machinery.

### ELECTROMECHANICAL LINEAR ACTUATOR-50mm STROKE

Stroke Length	50 mm
Thrust	800 N
Free Play	0.5 mm
Speed	5 mm per sec
Operating Temperature	-20° to +55° C
Dimension	164 x 90 x 60 mm
Operating Voltage	24 VDC
Weight	1.1 kg



### ELECTROMECHANICAL LEVEL JACK (LEVELLING)-900mm STROKE

Stroke	900 ±10mm
Closed Lengths	1550 ±25mm
Power Source	415V, 3 phase 50cycles AC supply
Speed of operation	450-550mm per minute
Leveling type	AUTO and manual
Leveling accuracy	± 0.1degree
Maximum Inclination	4° Load
Carrying capacity of each Jack	1000 kg
Power	2.2 kW
Operating Temperature	-20° C to +55° C



### ELECTROMECHANICAL LINEAR ACTUATOR -500mm STROKE

Stroke Length	500 mm
Thrust	2000 N
Free Play	0.5 mm
Speed	50 mm per sec
Operating Temperature	-20° to +55° C
Dimension	670 x 55 x 40 mm
Operating Voltage	24 VDC
Weight	1.6 Kg



# ROTARY JOINTS & SLIPRINGS

**Rotary Joints and Slipring:** System Controls specializes in providing rotary joints and slip rings for Defence and Aerospace applications. These critical components enable the seamless transfer of power, data, and signals across rotating systems, such as radar, antennas, and other aerospace equipment. Designed for high performance and reliability, your rotary joints and slip rings are engineered to withstand extreme conditions, ensuring smooth, continuous operation in demanding Military and Aerospace environments. These solutions help enhance the functionality and durability of complex systems used in mission-critical operations.

## FLUID ROTARY UNION

Maximum Pressure	5 Bar
Maximum Temperature of Liquid	+ 55°
Maximum Transfer Liquid Flow	10 LPM
No. of Channels	Dual channel
Media	Ethylene glycol/water mixture
Connections	Straight
Connection Sizes	1/4" BSP
Ambient Temperature	-40° C to +60° C
Housing Material	Stainless Steel
Weight	3.8 kg



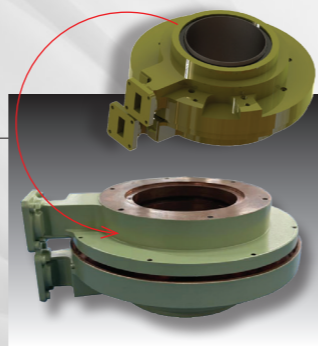
## WAVE GUIDE TWIST

FREQUENCY	8600 TO 9500 MHZ
VSWR	1.15 Max
INSERTION LOSS	0.2 dB Max
PRESSURE	1.7 BAR (170 KPa)
AIR LOSS	1 wt/h
ANGLE OF TWIST	± 80°



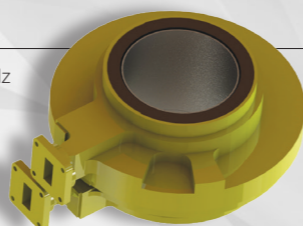
## WAVE GUIDE ROTARY JOINT (MID BAND)

FREQUENCY	8900 TO 9200 MHZ
PRESSURE	270 KP A (2.7 BAR)
AIR LOSS	< 10 L/H
SPEED	60 RPM
ANGLE OF ROTATION	N X 360°



## WAVE GUIDE ROTARY JOINT (LOW BAND)

FREQUENCY	8900 TO 9200 MHz
VSWR	1.25 Max
INSERTION LOSS	<= 0.5 dB
PRESSURE	270 KPa (2.7 BAR)
AIR LOSS	< 10 L/H
SPEED	60 RPM
RUNNING TORQUE	0.25 Nm
ANGLE OF ROTATION	N X 360°



# ELECTRONIC SLIPRINGS

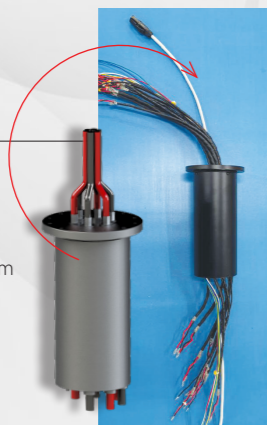
## 18 CHANNEL SLIPRING

No. of Channels	18
Voltage	48V DC
Operational Speed	0-100 RPM max and 50 RPM continuous
Current Rating of Communication Channel	0.5 A
Current Rating of Power Channels	10 A
Temperature range	-20 Deg C to +60 Deg C
Diameter	Dia 106mm x 180mm



## 30 CHANNEL SLIPRING

No of channels	30
Current	4 TO 16 Amps
Operating speed	120 RPM
Weight	5.4 kg with cables
Dimension	Dia 120mm X L 198mm



## DFLL SLIPRING

No of channels	3
Current	15A per channel
Operational speed	5 RPM
Dimension	L-111.6mm X Dia 34 mm



# LANDING AND RECONNAISSANCE LIGHTS

**Landing Lights:** System Controls specializes in providing high-performance landing and reconnaissance lights for helicopters and other airborne applications. These advanced lighting solutions are designed to enhance visibility and safety during night-time operations, enabling pilots to navigate and land in challenging environments. With a focus on reliability and durability, our lights are engineered to meet the demanding needs of aviation, ensuring optimal performance in a variety of conditions.

## DUAL FILAMENT LANDING LIGHT - HALOGEN BULB

First Mode of Operation	Visible mode
Second Mode of Operation	Covert (IR) mode
Normal Lamp Peak Light Output	3,00,000 cd
Beam Angle	14° Horizontal X 8° Vertical
Extension and Retraction Range	0° to 120°
Time taken for 0° to 120° extension	12 seconds max
Rotation Angle in Azimuth	N * 360°
Time taken for one rotation	15 sec max
Power	300 W



## LANDING LIGHT - LED 3 L CD

First Mode of Operation	Visible mode
Second Mode of Operation	Covert (IR) mode
Normal Lamp Peak Light Output	3,00,000 cd
Beam Angle	14° Horizontal X 8° Vertical
Extension and Retraction range	0° to 120°
Time taken for 0° to 120° extension	12 seconds max
Rotation angle in both the directions	N * 360°
Time taken for one rotation	15 sec max
Power	< 250 W



## LANDING LIGHT - LED 1.5 L CD

First Mode of Operation	Visible mode
Second Mode of Operation	Covert (IR) mode
Normal Lamp Peak Light Output	1,50,000 cd
Beam Angle	14° Horizontal X 8° Vertical
Extension and Retraction Range	0° to 120°
Time taken for 0° to 120° extension	12 seconds max
Rotation angle in both the directions	N * 360°
Time taken for one rotation	15 sec max
Power	< 120 W



# LASER BASED SYSTEM

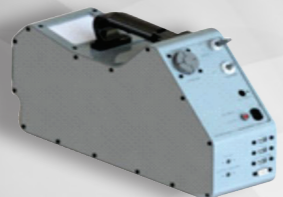
## HAND HELD EXPLOSIVE IDENTIFIER

For identification of different types of explosions from a standard distance based on Raman Spectroscopy

**Optical System :**  
Diode Pumped Solid State Laser CCD-coupled Spectrograph Optical Assembly

**Electronic Sub System**  
processor with RAM and flash memory display battery with adaptor

**Main Housing**  
mounts for optical & electronic components sample chamber base platform

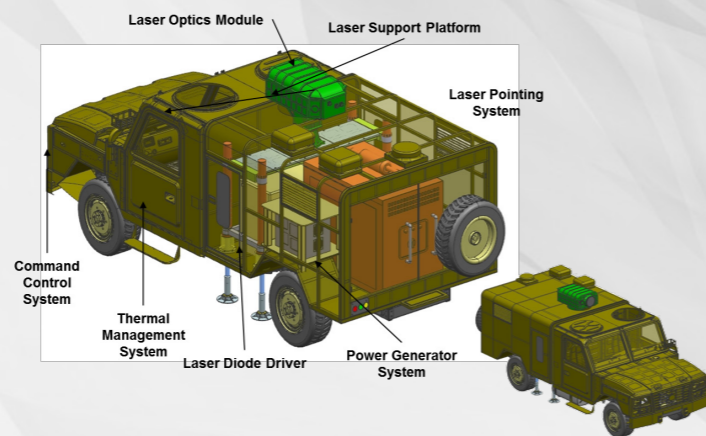


## Differential absorption LIDAR (DIAL ) Systems

LIDAR Precision scanning system is developed to emit pulse tunable 9.2 -10.8 Micro meter TEA CO2 laser beams in a predefined direction to the atmosphere from the top of the vehicle, receive back the scattered radiation and detect the presence of toxic agents in the atmosphere. A steerable scanning mirror is used to direct the laser beams to the atmosphere and a telescope assembly to receive the scattered radiations which in turn focuses this on to a detector. Depending on the parameters of the radiation, the presence of toxic gases is determined

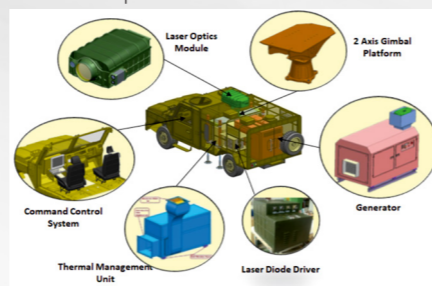


RAMAN SPECTROSCOPY ANALYSER (SORS)		
Parameter	Probe at 532 nm	Probe at 785 nm
	laser wavelength	laser wavelength
Transmitting wavelength	532 nm	785 nm
Receiving wavelength range	530 -635 nm	780 -1050 nm
Optical layout	Co-axial/ bi-axial	
Offset form	Laser beam in ring form and ring should be co-centric with collection spot	
Offset range	Ring radius should be variable from 0.5 mm to 20 mm with step of 0.5 mm at a distance of 25 mm approximately.	
Length of both coupling fibers i.e. at transmitting and receiving ends	≤ 1 m	



## VEHICLE MOUNTED LASER SYSTEM LORDS - 1KW

Laser Ordnance Disposal System (LORDS) is designed for disposal of explosive devices like surface laid unexploded ordnances, mines, directional mines, IEDs from safe stand-off distance of 500 m by focusing 1 kw laser energy of 1070 nm on the munitions casing thereby heating it until the explosive filler ignites and starts to burn. The combustion of explosive charge leads to low-level detonation or deflagration of the explosive device



## PORTABLE LORDS - 400W

1070 Nanometer wave length  
400W Output power  
15 micro radian pointing accuracy  
laser positioning system  
Remote Operation: 30-500 mtr  
Heavy Duty Tripod



# ROBOTICS

Robotics – System Controls provides advanced robotics solutions, specializing in a range of innovative technologies. These include 4-Axis Collaborative Robots, designed for safe interaction with humans in work environments; 3-Axis Delta Robots, ideal for high-speed pick-and-place tasks; 3-Axis Scara Robots, offering precision and efficiency for assembly and packaging; and multifunctional Unmanned Ground Vehicles (UGVs), which are designed for autonomous navigation and task execution in various industrial and outdoor settings. These solutions help enhance automation, productivity, and safety across multiple industries.

## 4 AXIS COLLABORATIVE ROBOT

Degree Of Freedom	4 Axis, Trapezoidal/S-curve
Modes Of Operation	Position, velocity and 2/3 Axis linear interpolation
Type Of Interpolation	Linear interpolation
Operating Temperature	0° to +55 C
Maximum Reach	550mm
Payload Capacity @ Wrist	3Kg
Repeatability	±0.5mm
Weight	26Kg



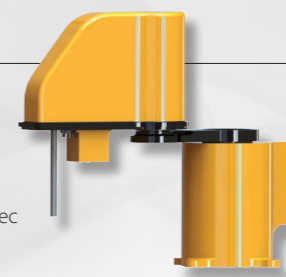
## 3 AXIS DELTA ROBOT

Degree of Freedom	3
Payload	3 kg Maximum
X,Y Axis (Stroke)	500mm
Z Axis (Stroke)	80mm
Repeatability (X,Y & Z Axis)	± 0.5mm
Dimension	L - 90 mm; B - 60 mm; H - 430 mm
Weight	22 kgs
Temperature	0 C to +55 C



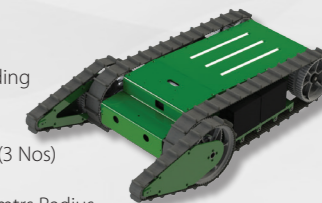
## 3 AXIS SCARA ROBOT

Degree of freedom	3
Payload	1 kg (Maximum)
Reach	480 mm
Speed	Joint 1 - 180°/sec, Joint 2 - 200°/sec Joint 3 - 40 mm/sec
Protection	IP - 54
Weight	25 kg



## MULTIFUNCTIONAL UNMANNED GROUND VEHICLE (MUGV)

Weight	25 kg
Dimensions	1000 x 550 x 250 mm
Payload	70 kg
Horizontal Movement	Continuous
Flipper Movement	Climbing and descending Stairs Maximum of 35° Gradient
Power Source	24 V DC/ 9 Ah Battery (3 Nos)
Operations	Wireless Remote Operation within 100 mtrs Radius



# VERSATILITY IS REALITY

- Headquarters - Hi-Tech Defence and Aerospace Industrial Area, Bengaluru
- More than 1,00,000 sq. ft. built up state of art facility.
- 1,00,000 sq. ft. available for future expansion
- CNC 3 & 4 Axis Machine Shop
- Clean room - ISO Class 8
- Metrology & Electro Optics Characterisation Lab
- Environmental Test Lab

#### Certifications

- An AS9100 D certified Company
- CEMILAC certified Avionics Design House
- Compliance to MIL Standards, JS55555, DO Standards



सत्यमेव जयते  
**DSIR**

## INNOVATION AND ENGINEERING EXCELLENCE

Motion Control Products (Pan and Tilt Systems, High Accuracy Positioning Systems, Stabilized Platforms for EO and other payloads), Actuator based Products, Electro-Optical & Opto-Mechanical Systems, Laser based Systems, Test Benches, Lighting Solutions for Air-borne platforms.



**A. Francis Xavier**  
Founder & Managing Director

**National award for R & D Efforts**  
from Ministry of Science and  
Technology, 2008

**Winner of SIATI (Society of Indian  
Aerospace Technologies and  
Industries) Award 2012**



#### DIPP Eligibility for OFFSETS in :

- Manufacture of Homeland / Battlefield Surveillance & Security System
- High Precision Control Systems
- Avionics and Airborne Systems
- Radar Associated Systems
- Electro Optical Systems
- Stabilized Tracking Systems & Gimbals
- Gun Control Systems

### System Controls Technology Solutions Pvt. Ltd.

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