

Robotics & Industrial Control

1946

 LEMOS


YEARS  ANS
1946-2021

LEMO Manufacturing and R&D Offices





USA



GERMANY



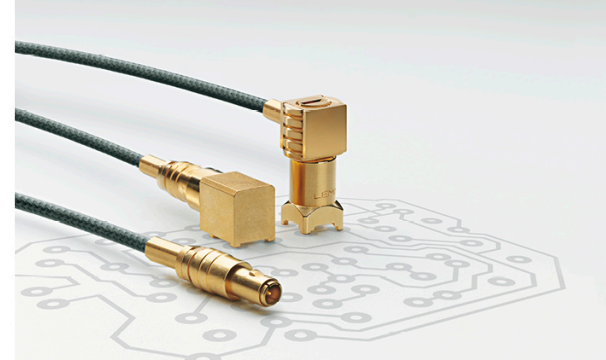
UNITED KINGDOM



Low Voltage



High Voltage



DIN & CECC EU Standard



Harsh Environment



HDTV / SMPTE – Fiber Optic



Media Converters



Underwater



Coaxial / Triaxial



Plastic



Miniature



Custom / Special Order



Cable Assembly

HOW FAR DO LEMO CONNECTORS REACH?





10^{-7} mbar.l/sec
Air Leakage



Harsh Environment
-55°C Outside Temp.



30g Vibration



LEMO Family of Products



Applications

- Quality
- Expertise
- One-stop Shop
- Custom Design Capabilities

Applications where systems are frequently set up and torn down

Where connectors used externally on products

Critical applications where connector has to work every time

Connector Selection Guide



The Connector Selection Guide
features the 36+ Series
Manufactured by LEMO

Most Popular by Market Segment

Most frequently used in darker color

Series Applications	B	S	K	E	2C/2G	L	F	M	H	R	REDEL® P	00	01	0A	Y	05	5G	REDEL® K/S	REDEL® D	3T	4A	4M	3K.93C	REDEL® F	MEERKAT™	SERBAL™	SHACK™	Ethernet	1D	N	03	V	W	U	COELVER® 01	COELVER® DIN
Aviation																																				
Automotive																																				
Audio / Video																																				
HDTV																																				
Communications																																				
Industrial Control																																				
Information Sys.																																				
Machine industry																																				
Medical																																				
Military																																				
Nuclear																																				
Petroleum																																				
Public Sector																																				
Research																																				
Robotics																																				
Test & Measur.																																				

Contacts Available within Series

Series Contact type	B	S	K	E	2C / 2G	L	F	M	H	R	REDEL® P	00	01	0A	Y	05	5G	REDEL® K/S	REDEL® D	3T	4A	4M	3K.93C	REDEL® F	MEERKAT™	SERBAL™	SHACK™	Ethernet	1D	N	03	V	W	U	COELVER® 01	COELVER® DIN
Unipole																																				
Multipole																																				
Coaxial 50 Ω																																				
Coaxial 75 Ω																																				
Multi Coaxial																																				
Mixed Coax + LV																																				
Triaxial 50 Ω																																				
Triaxial 75 Ω																																				
Mixed Triax + LV																																				
Quadrax																																				
High Voltage																																				
Multi High Voltage																																				
Mixed HV + LV																																				
Fibre Optic																																				
Multi Fibre Optic																																				
Mixed FO + LV																																				
Thermocouple																																				
Fluidic																																				
Multi Fluidic																																				
Mixed Fluidic + LV																																				

Robotics & Industrial Controls

LEMO's quality and unique features can improve Automated Systems

- Size & Weight Reduction
- Mating Cycle Life
- Reliability
- Customization



Main Features

- Push-pull for Easy Mating
- High Density Multi-contact
- Hybrid Configurations:
 - LV + Coax
 - LV + HV
 - LV + fluidic/pneumatic
- IP50

Benefits

- Durable Chrome-plated Brass
- High Mating Cycles 5,000+



Main Features

- Push-Pull for Easy Mating
- 2-64 Contacts
- Hybrid Configurations:
LV + Coax, HV, fluidic/pneumatic
- IP66 / IP68 Water Resistance
- Triple-Walled Shielding

Benefits

- Water & Corrosion Resistance
- Durable Chrome-plated Brass
- 1,000+ hours Salt Fog
- High Mating Cycles 5,000+



Main Features

- Ratchet Coupling
- Triple Start Threads
- Compact & Lightweight Aluminum
- High Density: 2-114 contacts
- IP68 Water Resistance
- Anthracite Nickel-plated

Benefits

- Compact & High Density
- High Shock/Vibration Resistance
- Deep Water Resistant (2m to 15hr)
- Fuel & Oil Resistant



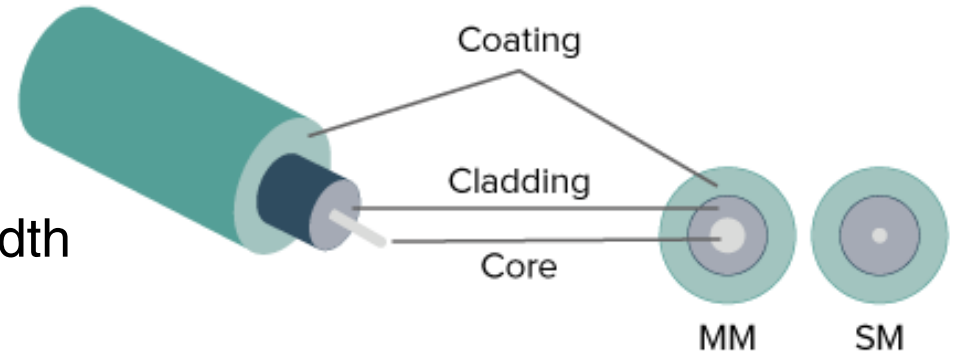
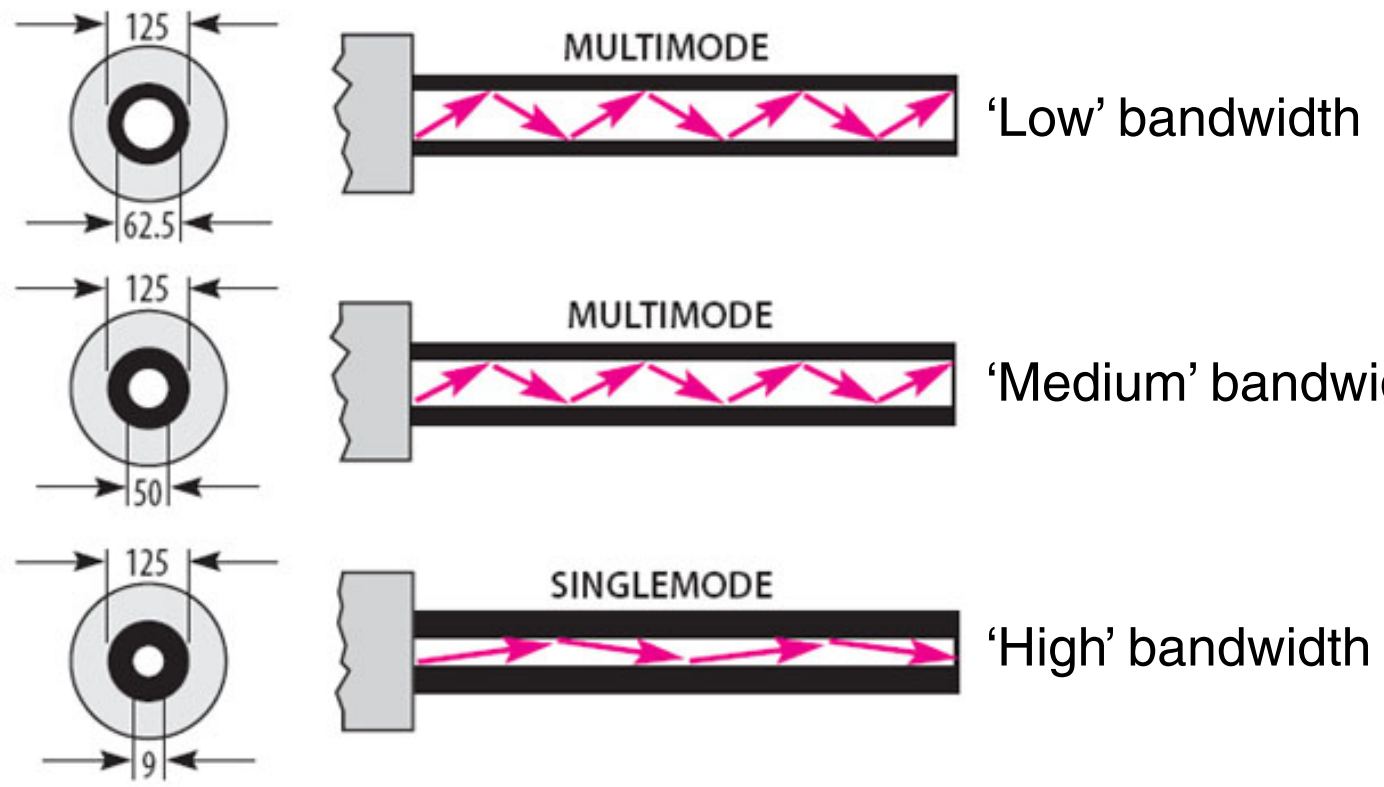
Main Features

- Push-Pull for Easy Mating
- Miniature Sizes: 0T-3T
- 2-32 Contacts
- IP68 Water Resistance
- Standard Chrome-plated Shell
- Black Chrome-plated Option (seen here)
- Black Plastic Shell Option

Benefits

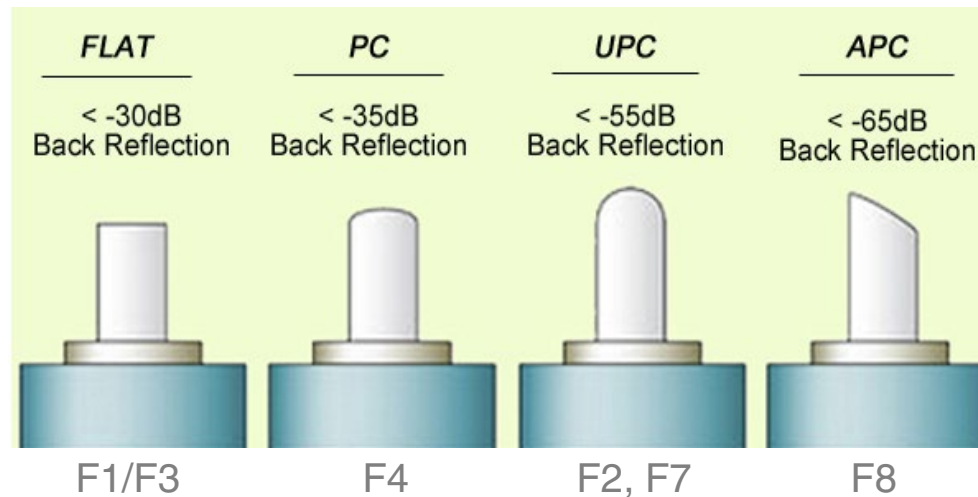
- Break-away / Quick-release
- 1,000+ hours Salt Fog
- High Mating Cycles 3,000+
- Tight Finger Space Operation
- Unique Pin Configurations & Hybrids
- Plug Mates with B Series Receptacles





Main Features

- 2.0mm Fiber Contact allows for smaller housings. (Standard is 2.5mm)
- Ruggedized watertight single fiber connector (see right)
- Hybrid Configurations:
FO + LV, HV, Pneumatic/Fluidic



Main Features

- CAT 6A (4 twisted pair)
- SPE (Single Pair Ethernet)
- Ruggedized Options
 - M = Ratchet Coupling
 - T = Push-Pull Coupling
- USB Form Factor



Robotics & Industrial Control Applications

- Legged Robots
- Animatronics (Actuators + Servos)
- High-Speed Cameras
- Machine Control Systems
- Inspection Sensors
- Test & Measurement



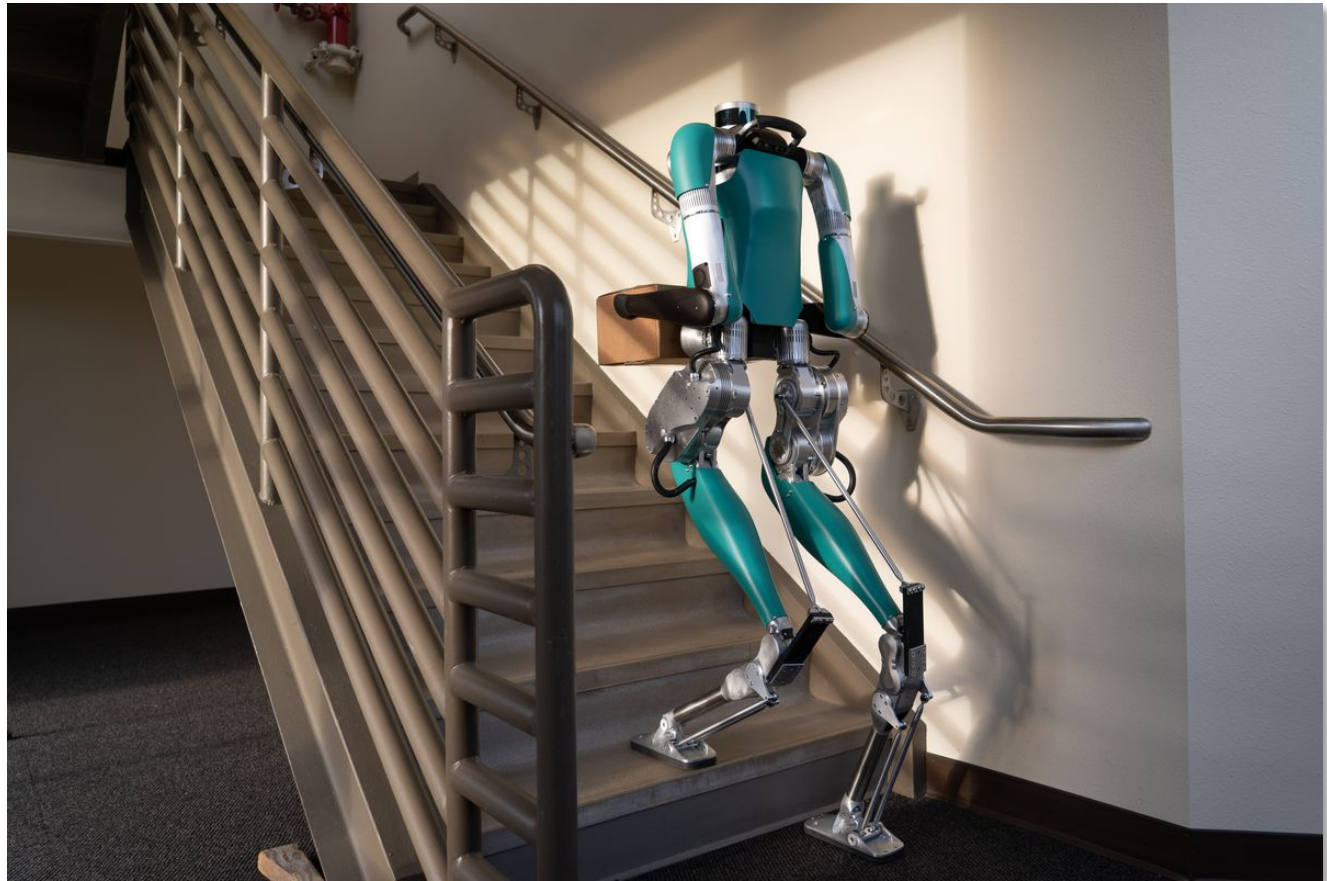
Anybotics, ANYmal C – 4-Legged Robot T Series



Ghost Robotics, Ghost Q-UGVs™ – Robotic Dog, Controller
M Series



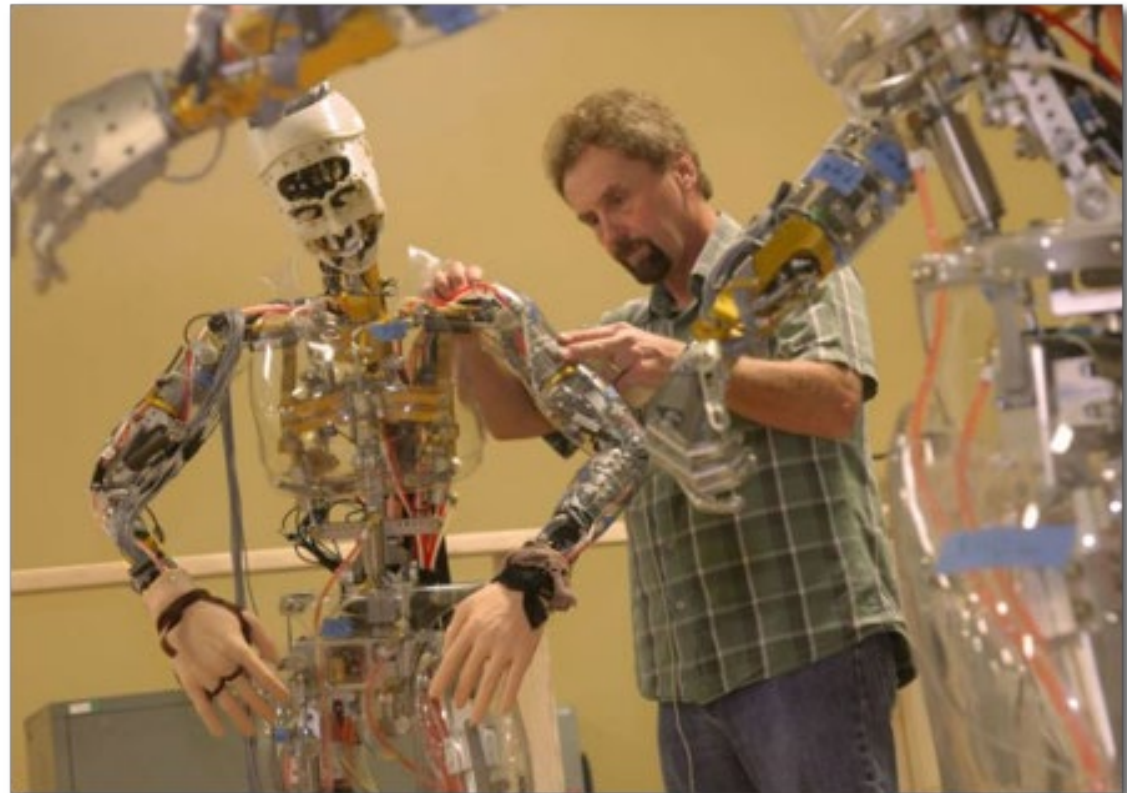
Agility Robotics, Digit – 2-Legged Robot B & K Series



Sarcos – Full Body Powered Exoskeleton B Series



Harmonic Drive, FHA-C Mini Series – Actuator + Integrated Servo Drive B & T Series



Automated High-Speed Cameras

IDT Vision – Digital High-Speed Cameras & Hubs M Series



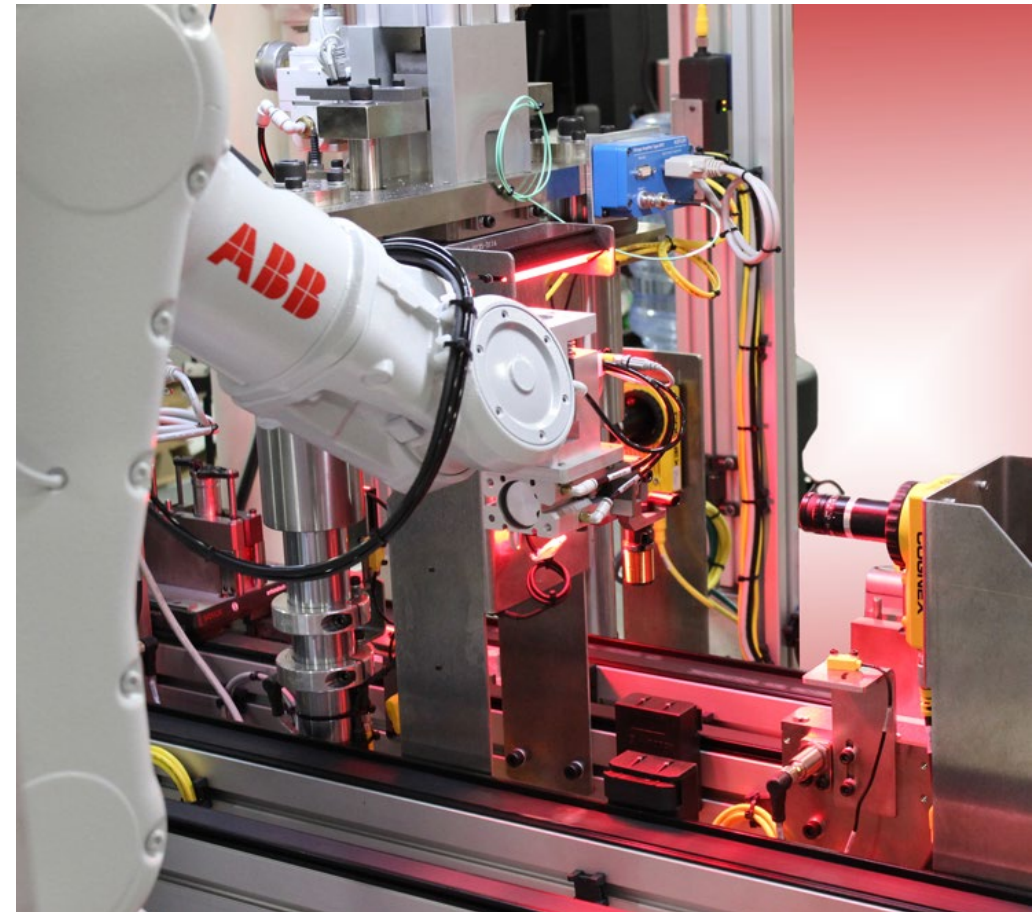
Abundant Robotics, Apple Harvester M Series



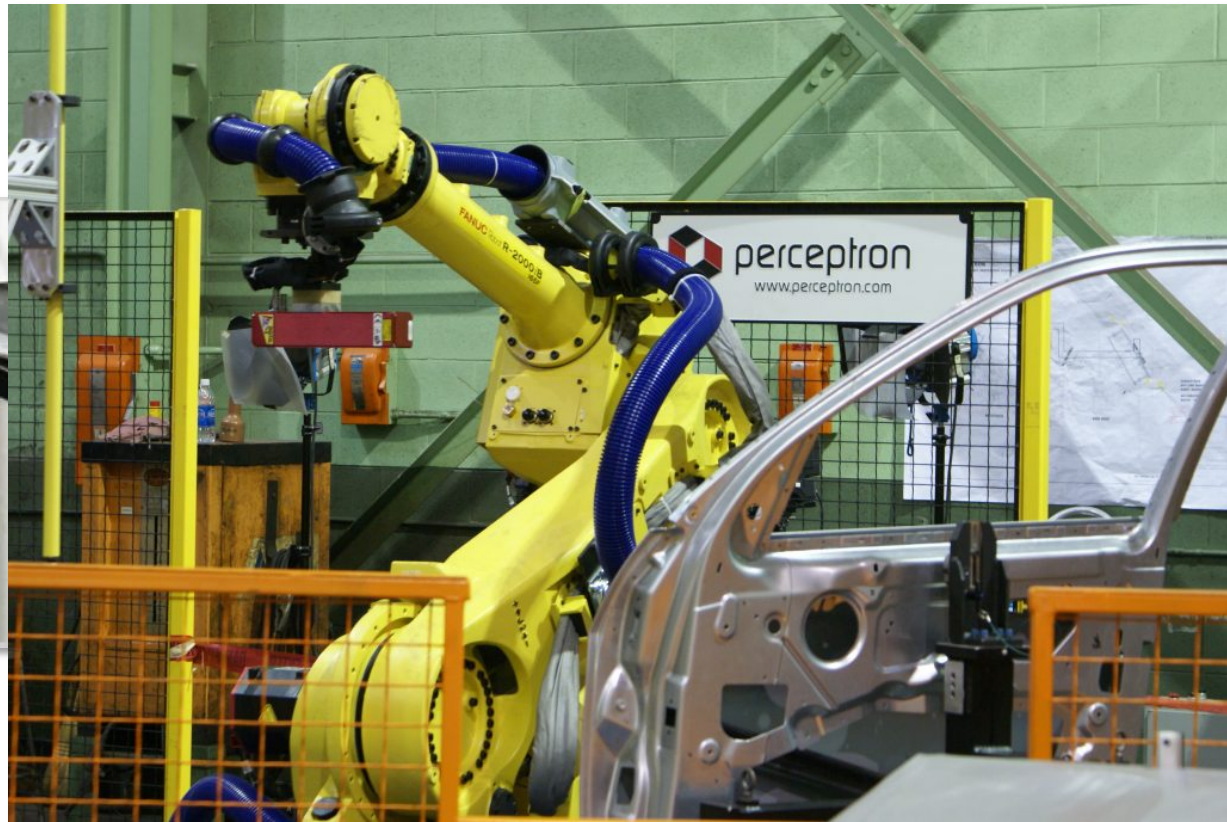
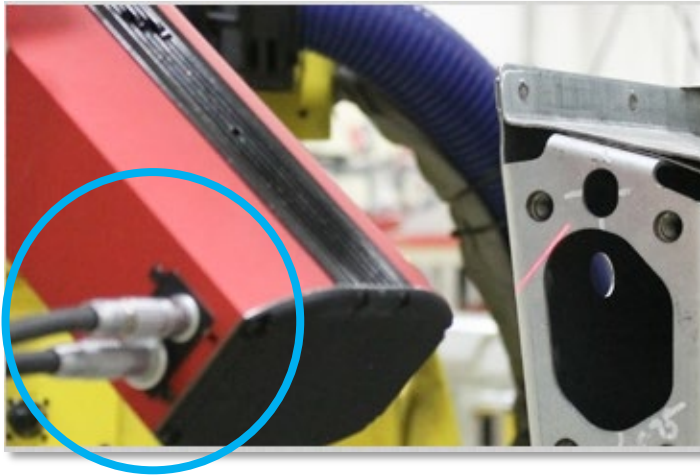
Amazon Robotics – Robotic Tech Vest (Warehouse Technicians) SP Series, Custom in-Line



Calvary Robotics, Next Gen Automation – Automation Equipment B Series



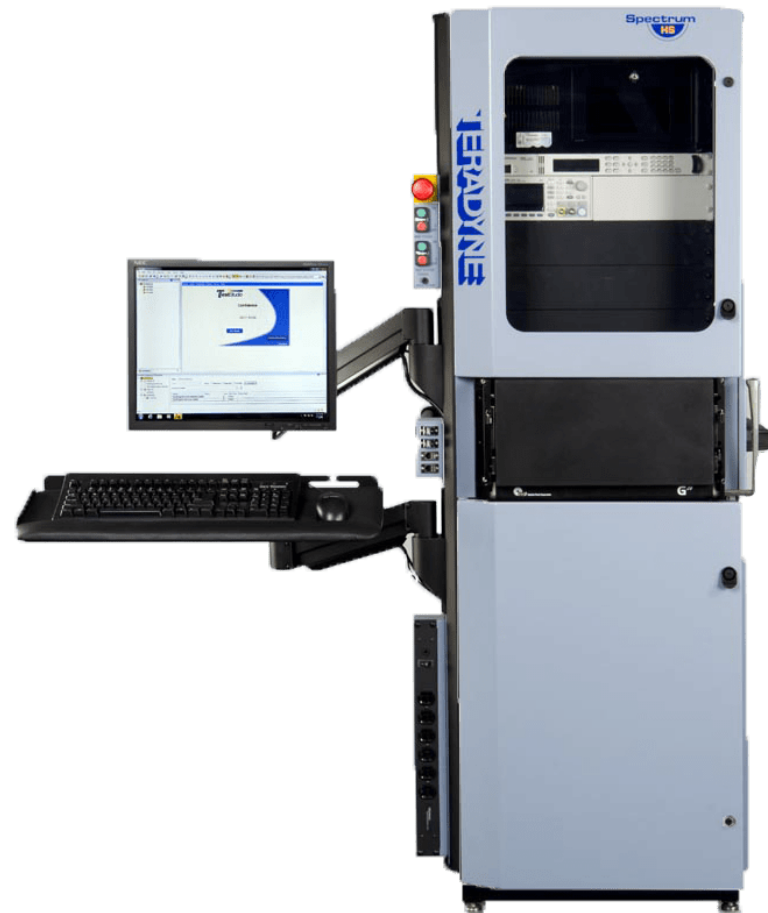
Perceptron, In-Line Automated Robot Guidance B Series



Schunk Sonosystems – Ultrasonic Welders S Series, High Voltage 5kv



Teradyne, Spectrum HS – System Tester, Controller B Series



Quality

Expertise

One-stop Shop

Custom Design Capabilities

SERIES - B, K, M & T Series

FEATURES

- Long Lasting Connectors / High-Reliability
- Harsh Environment / Sealed IP68
- Push Pull or Ratchet Coupling
- Cable Assemblies & Harnesses



Robotics & Industrial Control Scenarios

Application: Animatronics

Contact type	Low Voltage Power
Contact number	9 LV
Environment	Robotic Costume
IP Rating	IP68
How durable?	Durable, Lightweight, Sweat Resistant
Plastic or metal housing?	Metal
Is cost a factor?	No

LEMO Series you would recommend and why?

Application: Animatronics

Contact type	Low Voltage Power
Contact number	9 LV
Environment	Robotic Costume
IP Rating	IP68
How durable?	Quick Connect/Disconnect, Small form factor, Sweat Resistant
Plastic or metal housing?	Metal
Is cost a factor?	No

T Series

IP68, Push-pull



Application: Nuclear Molten Salt Power Generator

Contact type	Low Voltage Power
Contact number	10 LV
Environment	High Radiation
IP Rating	IP66
How durable?	Remote handling & latching, 30-year operational life
Plastic or metal housing?	Metal – Stainless Steel
Is cost a factor?	No

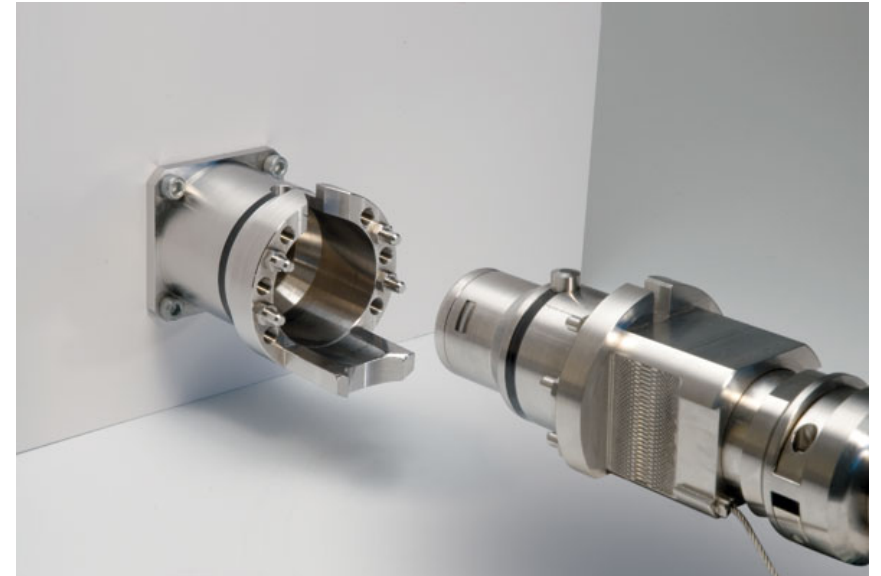
LEMO Series you would recommend and why?

Application: Nuclear Molten Salt Power Generator

Contact type	Low Voltage Power
Contact number	10 LV
Environment	High Radiation
IP Rating	IP66
How durable?	Remote handling & latching, 30-year operational life
Plastic or metal housing?	Metal – Stainless Steel
Is cost a factor?	No

N Series

Remote handling & latching.
Stainless Steel shell.



Application: GPS Antenna - Underwater Buoy

Contact type	Miniature Coax
Contact number	1 Coax
Environment	Submerged underwater
IP Rating	IP68
How durable?	Submersible up to 60 bar (200 ft) Screw coupling
Plastic or metal housing?	Metal
Is cost a factor?	No

LEMO Series you would recommend and why?

Application: GPS Antenna - Underwater Buoy

Contact type	Miniature Coax
Contact number	1 Coax
Environment	Submerged underwater
IP Rating	IP68
How durable?	Submersible to 60 bar (2,000 ft) Screw coupling
Plastic or metal housing?	Metal
Is cost a factor?	No

03 Series

Miniature underwater screw coupling.



Application: Industrial Welding Robot - Auto Assembly Line

Contact type	Low Voltage Signal
Contact number	8 LV
Environment	Factory Floor
IP Rating	IP68
How durable?	Push-pull & high vibration, High shielding for noise >80 dB
Plastic or metal housing?	Metal
Is cost a factor?	No

LEMO Series you would recommend and why?

Application: Industrial Welding Robot - Auto Assembly Line

Contact type	Low Voltage Signal
Contact number	8 LV
Environment	Factory Floor
IP Rating	IP68
How durable?	Push-pull & high vibration, High shielding for noise >80 dB
Plastic or metal housing?	Metal
Is cost a factor?	No

K or E Series

K has better availability



Application: Fly-by Wire Harness for Fulfillment Center Technician

Contact type	Low Voltage Signal
Contact number	13 LV
Environment	Warehouse
IP Rating	IP50
How durable?	Lightweight
Plastic or metal housing?	Plastic OK
Is cost a factor?	No

LEMO Series you would recommend and why?

Application: Fly-by Wire Harness for Fulfillment Center Technician

Contact type	Low Voltage Signal
Contact number	13 LV
Environment	Warehouse
IP Rating	IP50
How durable?	Lightweight
Plastic or metal housing?	Plastic OK
Is cost a factor?	No

REDEL P or SP Series

Wire gauge is the differentiator





Thank You