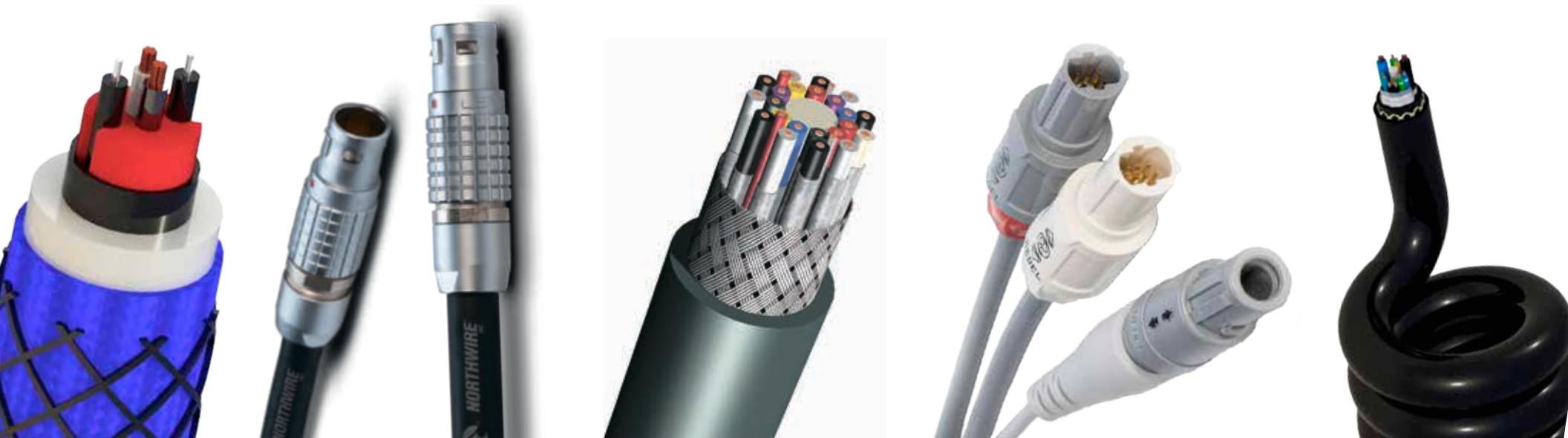




NORTHWIRE[®]_{INC}

A LEMO Group Company

*Your Partner for Custom
Interconnectivity Solutions*



ISO 9001 | AS9100C | ISO 13485 | ISO 17025 Qualified



LEMO

Precision Custom Connection Solutions

- The Original Push-Pull Connector
- Seven Decades of Expertise
- Over 75,000 Connector Combinations
- Reliable High Quality Connectors

Northwire

Custom Technical Cable Solutions

- Wire | Cable | Retractiles
- Assemblies
- Over Four Decades of Innovation
- Over 8,000 Products

Field Proven Solutions for a Wide Range of Industries and Applications



**Industrial
Instrumentation
& Automation**



**Aerospace
& Defense**



**Electronics
& Machinery**



**Test &
Measurement**



**Medical
& Life Sciences**



**Communications
& Audiovisual**



**Information &
Networking Systems**



**Public Sector
& Automotive**



**Marine &
Underwater Use**



**Decorative &
Architectural Lighting**

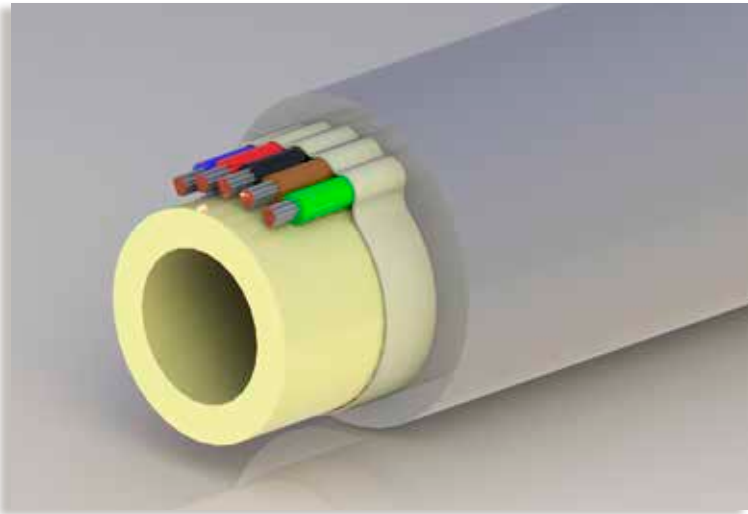
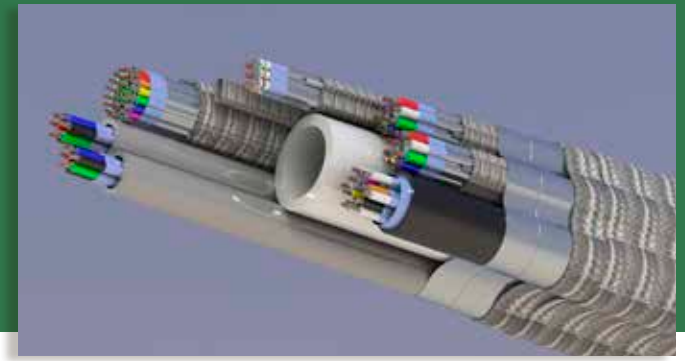


Green Energy

And much more...

Customized Solutions

Northwire, a LEMO Group Company, is your partner for custom interconnectivity solutions. Our Application Engineers and Design Specialists will help you navigate complex requirements to design a solution specific to your unique end application.



Capabilities and Services

- Research and Development
- Project and Program Management
- Procurement and Supply Chain Optimization
- Prototyping and 3D Printing
- Co-Extrusion
- High Mix, Low Volume to Low Mix, High Volume

Injection Molding Capabilities and Equipment

- Low Pressure Injection Molding
- 10 Ton Horizontal and Vertical Injection Molding

Custom Technical Products

- Wire | Cable
- Hybrid Composite
- Retractiles
- Connectors
- Assemblies
- Harnesses

CAD Capabilities

- SolidWorks
- Parametric Modeling | Simulation
- Design Validation
- Mold Flow
- Finite Element Analysis

Methodologies and Standards

- Design for Six Sigma® | Six Sigma®
- Lean | Project Management
- American Society for Quality
- Society of Manufacturing Engineers



Custom Options

Low Voltage to Mid Voltage Range
• 0V – 2000V

Conductors
• 2 – 36 AWG
• Plating | Tin | Silver
• Carbon Fiber

Fiber Optics
• Single-Mode Fiber
• Multi-Mode Fiber

Stranding Options
• Bunched | Concentric | Unilay | Rope Lay

Tubing
• Nylon | PE | PVC | PUR

Fillers
• PP | TPES | Nylon | Cotton | Paper

Shielding- EMI/RFI Protection
• Braid | Basket Weave | Spiral | Serve
• Copper | Stainless Steel

Solutions with Increased Strength
• Aramid | Carbon
• Flame Resistant Meta-Aramid Fiber
• Galvanized Carbon Steel
• Glass Reinforced Plastic

Tape and Paper Separation Options
• FEP | Foam PP | Paper | TPES | PTFE
Spun Nylon | Aluminum Foil | Aluminized Polyester

Protectant and Water Blocking
• Conductors | Fillers | Tapes
• Insulation Displacement
• Conformal Coatings
• Potting



Extrusion and Molding Materials

- ECTFE (Ethylene Chlorotrifluoroethylene)
- ETFE (Ethylene Tetrafluoroethylene)
- FEP (Fluorinated Ethylene Propylene)
- PFA (Perfluoroalkoxy)
- PVDF (Polyvinylidene Fluoride)
- PE (Polyethylene) Solid or Foam
- XLPE (Cross-Link PE) Solid or Foam
- HDPE (High Density PE)
- LDPE (Low Density PE)
- LLDPE (Linear Low Density PE)
- MDPE (Medium Density PE)
- TPES (Polyester)
- PP (Polypropylene)
- FRPP (Flame Resistant PP)
- PUR (Polyurethane)
- TPE (Thermoplastic Elastomer)
- TPR (Thermoplastic Rubber)
- PVC (Polyvinyl Chloride)
 - Flexible | Semi-Conductive | Semi-Rigid
- PA (Polyamide Low Pressure)
- Nylon



Aesthetics or Personalization

- Proprietary Designs | Private Labels
- Custom Colors | Color Coding | Custom Cut
- Strip Bar Coding | RFID Tags | Mil Spec | Packaging

Connector Types

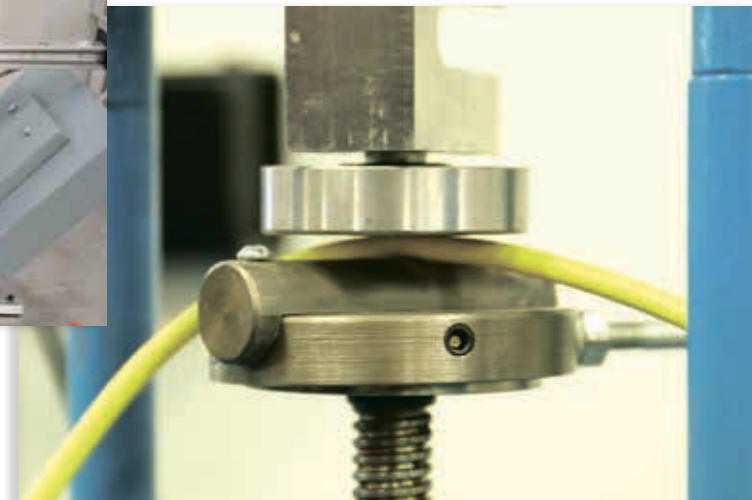
- Push Pull
- Circular
- D-Sub and Backshells
- DIN 41612
- PCB Terminal Blocks
- Rectangular
- RF Coaxial

Connector Offerings

- LEMO
- Amphenol
- Binder
- Deutsch
- Hirose
- Intercontec
- ITT/Cannon
- Molex
- TE Connectivity (AMP)
- 3M

Terminations and Protection

- Soldering
- Hand and Pneumatic Crimping
- Insulation Displacement
- Conformal Coating
- Potting
- Epoxy



Flex Testing



RETRACTABLE



TORSIONAL



ROLLING



BENDING



VARIABLE



C-TRACK

Test Capabilities



EXTREME
TEMPS



EXTREME
HEAT



EXTREME
COLD



IMPACT
RESISTANT



CRUSH
RESISTANT



FLAME
RESISTANT



EXPOSED
RUN



DIRECT
BURIAL



OIL
RESISTANT



CHEMICAL
RESISTANT



CUT
RESISTANT

Compliance

- RoHS2, REACH and Conflict Minerals Compliant Materials
- Food Grade | FDA Approved Materials
- USP Class VI Approved
- IPC-A-610 | IPC/WHMA-A-620
- CAGE Code 7V821 | ITAR and EAR Registered

Quality Management Systems

- ISO 9001 | AS9100C | ISO 13485
ISO 17025 Qualified
- Independent 3rd Party Test Protocols | UL® | ANSI®
CSA® | cUL® | CE® | NFPA® | ABS® | IEEE® | MSHA®

Test and Validation

Physical

- Durometer
- Tensile and Elongation
- Abrasion Resistance

Electrical

- Insulation Resistance | DC Resistance
Dielectric Withstand
- Velocity of Propagation
- Impedance | Capacitance | Inductance
- Attenuation
- Skew

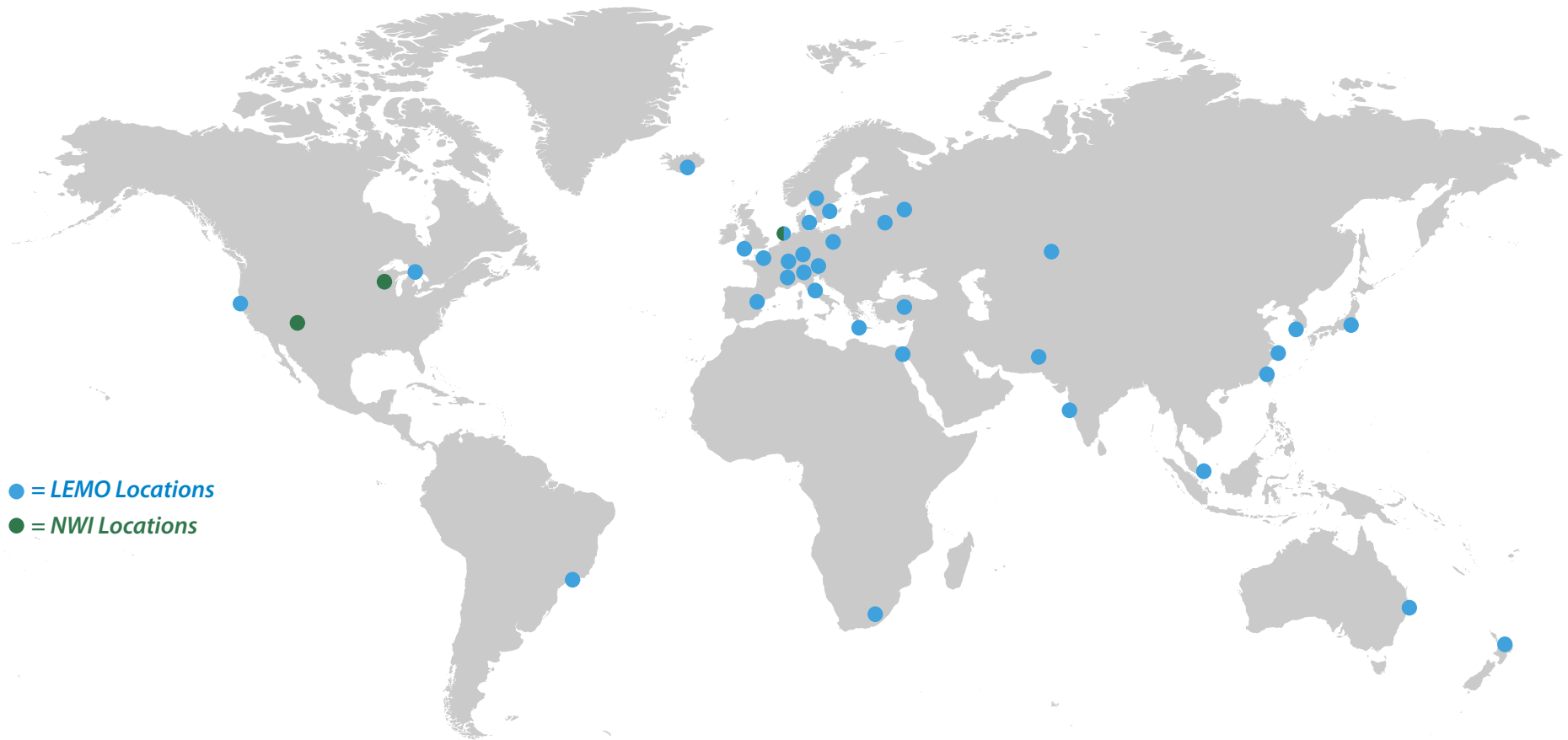
Assembly Verification

- Programmable Wire Map
- Pinout Tester
- Interferometer



Global Presence

Northwire and LEMO deliver seamless integrated interconnectivity solutions to customers worldwide.



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