



## Industrial MAX<sup>®</sup>

Siemon is well-known for its industry leading high performance connectivity. The same high performance copper and fiber products are available with our patented Industrial MAX housings. Industrial MAX outlets and modular patch cords provide an IP66/IP67-rated seal, protecting plug and outlet contacts from dust, moisture, vibration, and common cleaning chemicals. The Industrial MAX solution is ideal for protecting valuable connections in laboratory environments, hospitals, food processing plants and other harsh environments.

## Industrial MAX Copper Connectivity



Siemon's patented Pyramid Wire Entry System on S310 blocks separates paired conductors when lacing cables to simplify and reduce installation time.

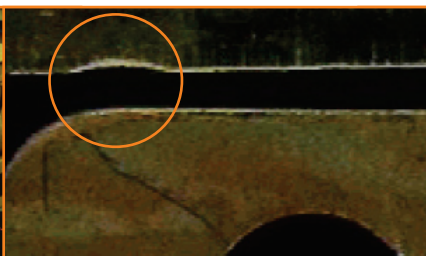
- 1 Standardized Interface** — The Industrial MAX Connector has been recognised by the Open DeviceNet Vendor Association (ODVA), TIA-1005-2009 and IEC 61076-3-106
- 2 Easy Termination** — The UTP Industrial MAX outlet utilises a standard 110 tool for quick and easy punch-down termination
- 3 Universal Wiring** — Each outlet is compatible with both T568A and T568B wiring options
- 4 Ensures Proper Seal** — Bayonet-style mating ensures proper plug depth into the outlet and an IP66/IP67 rated seal

### Meets Harsh Demands of the Environment



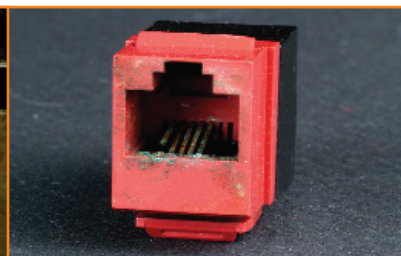
Specially designed Industrial MAX 5e and 6 connectors can withstand humidity, dust and vibration.

### Vibration Causes Pitting in Typical Outlets



Seen under a microscope after exposure to extreme vibration, contact between a typical modular plug and outlet can pit the contact pins, causing intermittent transmission problems.

### Humidity Affects Typical Outlets



Humidity corrodes contact pins inside typical outlets. Repeated exposure can eventually destroy the contact pins, rendering the outlet unusable. The Industrial MAX outlet's special housing prevents this corrosion.





## INDUSTRIAL MAX® 6/6A OUTLETS

The Industrial MAX outlet features a MAX module housed in a protective shell. The outlet's outer housing is made of durable, chemical-resistant, industrial-grade thermoplastic and features Siemon's patented bayonet-style mating design. Category 6 or 6A performance is guaranteed in harsh environments.

The industrial connector's bayonet-style mating prevents over-tightening which could damage contact pins inside the outlet or under-tightening which prevents a proper seal.



Part #	Description
X6	Category 6 UTP, industrial outlet, T568A/B
X6S	Category 6A compatible, shielded industrial outlet, T568A/B

## INDUSTRIAL MAX 5e OUTLETS

The Industrial MAX outlet features a category 5e MAX module housed in a protective shell. The outlet's outer housing is made of durable, chemical-resistant, industrial-grade thermoplastic and features Siemon's patented bayonet-style mating design. Guaranteed category 5e performance to 160 MHz even in the most punishing environments.

Part #	Description
X5	Category 5e UTP, industrial outlet, T568A/B
X5S	Category 5e shielded, industrial outlet, T568A/B
X5-X5S	Category 5e shielded, industrial bulkhead coupler (Industrial outlet to industrial outlet)



## INDUSTRIAL MAX 5e PLUGS

The Industrial MAX Plug features a category 5e modular plug contained in Siemon's industrial-grade housing with patented bayonet-style mating design. The plug can be terminated in the field, allowing custom lengths to be assembled quickly on site in the event a cable is cut or damaged. It terminates twisted-pair cable with 22 – 26 AWG (0.64 – 0.40mm) solid or 7-strand conductors with an insulated conductor diameter of 0.86 – 0.99mm.

Part #	Description
XP85	Category 5e UTP, industrial plug, 8-position, 8-contacts
XP85S	Category 5e shielded, industrial plug, 8-position, 8-contacts





## INDUSTRIAL MAX® 6 MODULAR PATCH CORDS

Industrial modular patch cords combine the high performance and quality that Siemon cords are known for with a protective industrial-grade plug housing. These assemblies feature standard black MC® 6 cordage.

Part #	Description
XC6-(XX)	Category 6 UTP, industrial plug-to-industrial plug, CMX
XC6-(XX)-B05	Category 6 UTP, industrial plug-to-modular RJ-45 plug, yellow boot, CMX

Use (XX) to specify length: 03 = 0.9m (3 ft.), 05 = 1.5m (5 ft.),  
07 = 2.1m (7 ft.), 10 = 3.1m (10 ft.), 15 = 4.6m (15 ft.)



## INDUSTRIAL MAX 5e MODULAR PATCH CORDS

Designed to withstand the rigors of a factory floor environment, our industrial category 5e stranded cordage is petroleum and UV resistant, is not effected by common chemicals and water, operates in a wider temperature range and provides a longer flex life. Available in three industrial jacket types to meet various environmental requirements (see table on next page for jacket comparison)

Part #	Description
XC5-(XX)	Category 5e UTP, industrial plug-to-industrial plug, PVC jacket
XC5-(XX)T	Category 5e UTP, industrial plug-to-industrial plug, TPE jacket
XC5-(XX)-B05	Category 5e UTP, industrial plug-to-modular RJ-45 plug, yellow boot, PVC jacket
XC5-(XX)-B05T	Category 5e UTP, industrial plug-to-modular RJ-45 plug, yellow boot, TPE jacket
XC5NS-(XX)-B05T	Category 5e UTP, modular RJ-45 plug -to-modular RJ-45 plug, yellow boot, TPE jacket
XC5S-(XX)	Category 5e Shielded (SF/UTP) industrial plug-to-industrial plug, PVC jacket
XC5S-(XX)T	Category 5e Shielded (SF/UTP) industrial plug-to-industrial plug, TPE jacket
XC5S-(XX)U	Category 5e Shielded (SF/UTP) industrial plug-to-industrial plug, PUR jacket
XC5S-(XX)-B05	Category 5e Shielded (SF/UTP) industrial plug-to-modular RJ-45 plug, yellow boot, PVC jacket
XC5S-(XX)-B05T	Category 5e Shielded (SF/UTP) industrial plug-to-modular RJ-45 plug, yellow boot, TPE jacket
XC5S-(XX)-B05U	Category 5e Shielded (SF/UTP) industrial plug-to-modular RJ-45 plug, yellow boot, PUR jacket
XC5SNS-(XX)-B05T	Category 5e Shielded (SF/UTP) modular RJ-45 plug-to-modular RJ-45 plug, yellow boot, TPE jacket
XC5SNS-(XX)-B05U	Category 5e Shielded (SF/UTP) modular RJ-45 plug-to-modular RJ-45 plug, yellow boot, PUR jacket

PVC = Polyvinyl Chloride, PUR = Polyurethane, TPE =Thermoplastic Elastomer

Use (XX) to specify length: 03 = 0.9m (3 ft.), 05 = 1.5m (5 ft.),  
07 = 2.1m (7 ft.), 10 = 3.1m (10 ft.), 15 = 4.6m (15 ft.), 20 = 6.1m (20 ft.)  
PVC and PUR jacket color is teal. TPE jacket color is black. See next page for additional jacket properties.



## OUTLET TO PLUG ASSEMBLIES

Siemon's outlet to plug assemblies provide an avenue to connect to active components mounted within an enclosure. These protected environments allow the use of standard cordage and are available in both UTP and Shielded construction.

Part #	Description
X5-MC5-(XX)-B05	Category 5e UTP, industrial outlet-to-modular RJ-45 plug, yellow boot, CMX
X5S-MC5S-(XX)B05L	Category 5e Shielded (F/UTP), industrial outlet-to-modular RJ-45 plug, yellow boot, LSOH

Use (XX) to specify length: 03 = 0.9m (3 ft.), 05 = 1.5m (5 ft.),  
07 = 2.1m (7 ft.), 10 = 3.1m (10 ft.), 15 = 4.6m (15 ft.), 20 = 6.1m (20 ft.)





## PATCH CORD COMPARISON

PERFORMANCE CRITERIA	PVC		TPE		PUR
Cable Type	UTP	SF/UTP	UTP	SF/UTP	SF/UTP
Conductors	24 AWG Bare Cu	24 AWG Bare Cu	24 AWG Tinned Cu	26 AWG Tinned Cu	26 AWG Tinned Cu
Conductor Insulation Material	Polyolefin	Polyolefin	High-Density Polyethylene	Polyolefin	High-Density Polyethylene
Jacket Construction	Double Jacket		Single Jacket		Single Jacket
Shielding (SF/UTP Only)	Aluminum Tape 65% Tinned Cu Braid		Aluminum Tape 85% Tinned Cu Braid		Aluminum Tape 75% Tinned Cu Braid
Overall Cable Diameter	0.256"	0.315"	0.227"	0.237"	0.244"
RoHS Compliant and Lead Free	Yes		Yes		Yes
Dielectric Strength and Electrical Performance	Good		Good		Fair
Low Temperature Flexibility and Brittle Point	Fair		Excellent		Excellent
Tear Resistance	Fair		Excellent		Excellent
Abrasion and Scuff Resistance	Good		Good		Excellent
Flexibility and Flex-Life	Good		Excellent		Excellent
Tensile Strength and Toughness	Good		Good		Excellent
Resistance to Ozone	Excellent		Good		Good
Ultraviolet and Weather Resistance	Fair		Good		Good
Resistance to Acids	Fair		Excellent		Fair
Resistance to Bases	Good		Good		Good
Resistance to Moisture	Good		Excellent		Excellent
Resistance to Petrochemicals	Good		Fair		Fair
Flame and Fire Resistance	Excellent		Good		Fair
Temperature Rating	-20°C (4°F) to 60° (140°F)		-40°C (-40°F) to 75°C (167°F)		-40°C (-40°F) to 75°C (167°F)
Outdoor Use (Not for Direct Burial)	Not Recommended		UL CMX Outdoor		Not Listed
UL/ETL Listing	CMR		CM, CMX Outdoor		CMX
Low Smoke, Zero Halogen	No		No		Yes

## TECHNICAL INFORMATION

Ingress Protection	IP66/67 minimum and NEMA 6	Temperature: -25°C (-13°F) to 85°C (185°F)	Plug/Outlet
Shell Material	PBT - Polybutylene Terephthalate (Valox®), UL94V-0		Plug/Outlet
Collar Nut Material	Acetal, Acetal/Elastomer alloy (Delrin®) — Bulkhead Coupler: Zinc		Plug/Outlet
Gasket Material	Silicone		Plug/Outlet
Contact Material	Copper alloy		Plug/Outlet
Contact Plating	50 microinch minimum hard gold over nickel		Plug/Outlet
Mechanical Durability	750 cycles minimum		Plug/Outlet
Chemical Resistance	Materials have been selected to provide the widest range of protection from most solvents and common industrial chemicals. (Details available upon request)		Plug/Outlet
Bulkhead Thickness	0.762mm to 3.175mm (0.030 in. to 0.125 in.)		Outlet
Electrical Rating — Plug	Voltage: 150 volts AC		Plug
	Current: 175 mA		
Electrical Rating — Outlet	Dielectric Withstanding Voltage: 1000 VAC contact-to-contact; 1500 VAC contact-to-ground		Outlet
	Voltage: 150 volts AC maximum @ 25° C		
Electrical Resistance	Current: 1.5 amp max. @ 25 C		Outlet
	Dielectric Withstanding Voltage: 1000 VAC, RMS 60 Hz, 1 minute   Surge Test: to 1000 volts		
	Insulation: 50 MΩ minimum	Contact: 20 MΩ maximum	Outlet



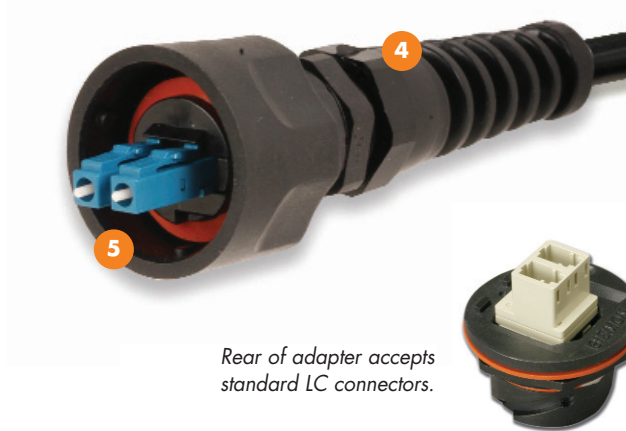
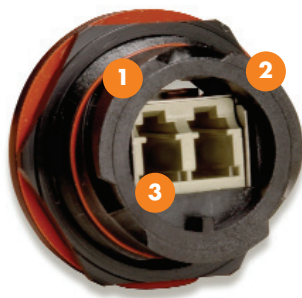




## Industrial LC Fiber Connectivity

Another first from Siemon — the Industrial LC Fiber system. The Siemon Industrial LC Fiber solution provides a robust fiber connection with an IP66/IP67-rated seal and is ideal for protecting valuable connections in laboratory environments, hospitals, food processing plants and other harsh environments.

The Siemon Industrial Fiber solution is ideal for installations requiring extended distances, in close proximity to heavy sources of EMI, or where fiber active equipment is used.



Rear of adapter accepts standard LC connectors.

- 1 Robust Design** — Protects fiber connections in virtually any harsh environment
- 2 High Performance** — Meets TIA-568-C.3 and, ISO/IEC 11801 Ed 2.2 specifications for multimode and singlemode components
- 3 Proper Seal** — Bayonet-style mating ensures proper fiber alignment and an IP66/IP67 rated seal
- 4 Specialized Bend Relief** — Compression fitting provides a superior rear seal and ensures fiber meet minimum bend radius requirements
- 5 Field-Termination** — Plug includes two industrial qualified multimode LC connectors that accepts 2 strand, round, breakout style fiber optic cable

### Precision Performance



R&D labs develop, design and implement rigorous testing programs using sophisticated instrumentation. The Industrial LC provides reliability with leading edge technology for applications where highly accurate performance is critical.

### Robust and Reliable



Industrial Fiber connections help to streamline operations, improve product availability, and reduce costs in manufacturing environments.

### Meets Harsh Demands of the Environment



The Industrial LC connector is ideal in areas where chemicals, corrosive gases and liquids are commonplace.





## INDUSTRIAL LC FIBER PLUG AND OUTLET

Part #	Description
XPLC2-MM	Industrial LC fiber plug, multimode, duplex. Includes two multimode LC connectors
XPLC2-SM	Industrial LC fiber plug, singlemode, duplex. Includes two singlemode LC connectors
XLC-MM	Industrial LC fiber adapter, multimode, duplex
XLC-SM	Industrial LC fiber adapter, singlemode, duplex.
X-CAP	Industrial outlet dust cap with chain
XP-CAP2	Industrial plug dust cap with chain



Note: Industrial LC fiber plug accepts 2 strand, round, breakout style fiber optic cable with O.D. ranges from 5mm – 8mm with two 2.4mm – 3.0mm jacketed subunits.

## FIELD-INSTALLABLE LC FIBER CONNECTOR

Siemon multimode LC buffered connectors have been qualified for use in Siemon's industrial fiber system. Use these connectors to terminate 62.5/125 or 50/125 micron multimode or singlemode fiber and plug into the rear of the Industrial LC outlet.

Part #	Description
FC1-LC-MM-B80	LC simplex connector, multimode, buffered fiber beige boot
FC2-LC-MM-J80	LC duplex connector, multimode, jacketed fiber beige boot
FC1-LC-SM-B02	LC simplex connector, singlemode, buffered fiber, white boot
FC2-LC-SM-J02	LC duplex connector, singlemode, jacketed fiber, white boot



## INDUSTRIAL LC FIBER KIT

Use the Industrial LC Kit with Siemon's LightSpeed Termination Kit for Industrial LC connector terminations. The kit contains a dual LC polishing puck, which decreases polish time by 50%.

Part #	Description
FTERM-XLC	Industrial LC fiber termination kit used in conjunction with FTERM-L2 includes dual polishing puck
FT-LC2PUCK	Dual LC polishing puck
FT-MSLC2HEAD	Dual LC microscope adapter



## TECHNICAL INFORMATION

<b>Enclosure Protection</b>	IP66/IP67	<b>Temperature:</b> -40°C (-40°F) to 85°C (185°F) Service Environment Testing: IEC 61753-1 Ed. 2.0	Plug/Outlet
<b>Shell Material</b>	PBT - Polybutylene Terephthalate (Valox®), UL94V-0		Plug/Outlet
<b>Collar Nut Material</b>	Acetal, Acetal/Elastomer alloy (Delrin®)		Plug/Outlet
<b>Gasket Material</b>	Silicone		Plug/Outlet
<b>Ferrule Material</b>	Ceramic		Plug
<b>Adapter Sleeve Material</b>	Phosphor Bronze		Outlet
<b>Mechanical Durability</b>	500 mating cycles minimum		Plug/Outlet
<b>Chemical Resistance</b>	Materials selected to provide the widest range of protection from most solvents and common industrial chemicals. (Details available upon request)		Plug/Outlet
<b>Bulkhead Thickness</b>	0.762mm to 3.175mm (0.030 in. to 0.125 in.)		Outlet
<b>Strain Relief</b>	250 Newtons (56 lbs) typical		Plug
<b>Optical Performance</b>	TIA-568-C.3, ISO/IEC 11801 ED 2.2, Telcordia GR-326-CORE		Plug/Outlet





## INDUSTRIAL MAX DUST CAPS

The Industrial MAX dust caps are the ideal way to protect your investment in your industrial cabling system. Outlet dust caps can be used to protect unused outlets or to seal an outlet during wash down periods when the outlet and plug may be disconnected. Plug dust caps protect Industrial MAX patch cords from exposure to elements or accidental damage when not mated to an outlet. Dust caps are constructed of industrial-grade thermoplastic for superior protection and durability. Additionally, outlet and plug dust caps feature a retention tether, which prevents them from being misplaced when not in use.

XP-CAP2 .....  
Industrial plug dust cap  
with retention tether



X-CAP .....  
Industrial outlet dust cap  
with retention tether



## INDUSTRIAL MAX® SURFACE MOUNT BOXES

The Siemon Industrial MAX Surface Mount Box (IBOX) mounts either Siemon copper or fiber industrial outlets. Boxes provide an IP66/IP67 (NEMA 4X) seal and can be mounted on virtually any flat surface. Available in 1, 2, 3, and 4-port versions. Compression fittings provided for cable entry.

**Technical Tip!**  
Contact Technical Support for punch tool to create industrial knockouts for custom mounting.



X-IBOX-01 .....  
Industrial surface mount box,  
1-port, supplied with 1 cable entry  
compression fitting



X-IBOX-02 .....  
Industrial surface mount box,  
2-port, supplied with 2 cable  
entry compression fittings



X-IBOX-03 .....  
Industrial surface mount box,  
3-port, supplied with 3 cable  
entry compression fittings



X-IBOX-04 .....  
Industrial surface mount box,  
4-port, supplied with 4 cable entry  
compression fittings

*Note: Compression fittings accommodate cable diameters from 4.1-7.9mm (0.16-0.31 in.)*

## INDUSTRIAL MAX STAINLESS STEEL FACEPLATES

Mount Siemon's Industrial MAX outlets into these stainless steel faceplates for a protective seal from moisture and debris. The faceplates are available in 1-, 2-, 3- and 4-port options with a rear sealing gasket and carry an IP44 rating.



XFP-S-01-SS .....  
Single gang faceplate,  
1-port, stainless steel



XFP-S-02-SS .....  
Single gang faceplate,  
2-port, stainless steel



XFP-D-03-SS .....  
Double gang faceplate,  
3-port, stainless steel



XFP-D-04-SS .....  
Double gang faceplate,  
4-port, stainless steel

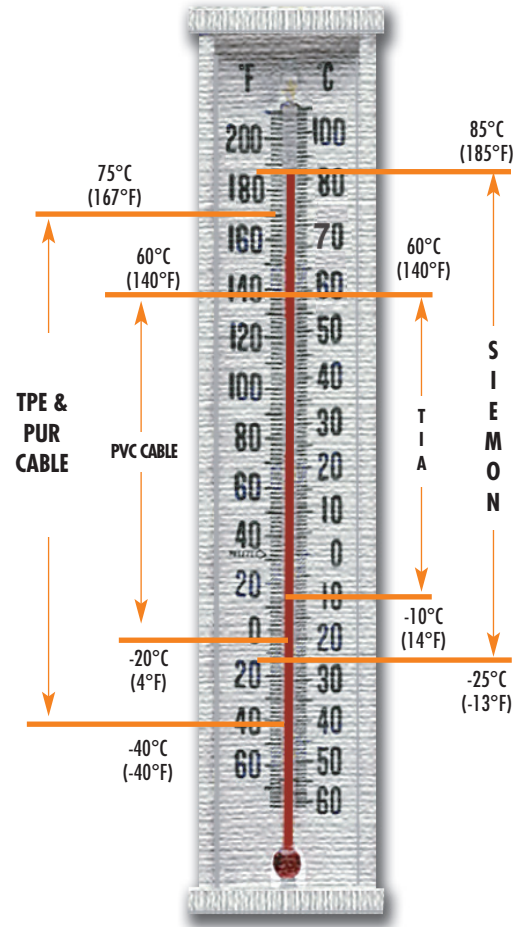
*Faceplates include mounting screws with sealed screw head.*





INDEX FIGURE	IP CODE				INDEX FIGURE
	DEGREE OF PROTECTION		DEGREE OF PROTECTION		
0	No Protection	No protection against accidental contact, no protection against foreign bodies	No Protection against water	No Protection	0
1	Protection against large foreign bodies	Protection against contact with a large area by hand and against large solid bodies Ø > 50mm	Protection against vertical water drips	Drip-Proof	1
2	Protection against medium sized foreign bodies	Protection against contact with fingers, protection against small foreign solid bodies with Ø > 12mm	Protection against water drips (up to a 15° angle)	Drip-Proof	2
3	Protection against small solid foreign bodies	Protection against tools, wires, or similar objects with 2.5 mm protection against small foreign bodies with Ø > 2.5 mm	Protection against water drips (up to a 60° angle)	Spray-Proof	3
4	Protection against grain-shaped foreign bodies	Protection against foreign bodies with Ø > 1mm	Protection against splashed water from all directions	Spray-Proof	4
5	Protection against deposits of dust	Full protection against contact. Protection against interior equipment damage due to dust deposits	Protection against splashed water (out of a nozzle) from all directions	Hose-Proof	5
6	Protection against ingress of dust	Total protection against contact and protection against penetration of dust.	Protection against temporary flooding	Protected against flooding	6
			Protected against temporary immersion	Protected against immersion	7
			Protected against water pressure	Water-tight	8

**Temperature Range Industrial MAX vs TIA**



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