NEW

HEAVY DUTY

M12 Ultra-reliable High-temperature

M Series Connector

most comprehensive product range

Compliant with IEC 61076-2-101 and SAE J2839 standards

M5
Screw thread

M8
Screw thread, Snap-in

Guided M8
Screw thread, Snap-in

M10.5
Screw thread, Snap-in

M12
Screw thread, Push Pull

M20 Heavy Duty
Screw thread

M23
Screw thread

Unrivaled InterConnects for Harsh Environments

About ALTW

3
Production Sites
(Taiwan, China, Mexico)

30+
Market Applications

90,000+
Products

Since 1993, Amphenol LTW Technology "ALTW" lives and breathes to create, innovate, design and produce "***unrivaled interconnects for harsh environments***". With over 300 worldwide patents, not only does ALTW offer the broadest and widest range of rugged interconnects in the industry but also customization with the mission of "Customer Satisfaction First". Undoubtedly, ALTW is the leader in rugged interconnects, highly recognized for its uncompromising quality, short lead time, fast and tailored service and its very competitive pricing.

Regardless of the challenging environments that your products will be subject to; there is a very good chance that you will find what you are looking for with ALTW.

M Series Sensor Connector

M series is designed typically for industrial process measurement and control according to IEC standard, offering secure and reliable data as well as superior power transmission performance. Besides the industrial applications, M series is also an ideal solution for a compact design where the environmental protection and stable connection are required.

Amphenol LTW provides a comprehensive product range of M series, including M5 / M8 / Guided M8 / M10.5 / M12 / 7/8" / M20 and M23. We also have push pull version, MPronto-12, the MPronto-12 M12 push pull connectors with the unique push-pull fast-locking system guarantee secure, tool-free plugging, even in confined spaces and with a high cabling density. The Mpronto-12 M12 push pull connectors are the World's First truly backward compatible to all female M12*1.0 sockets made by different manufacturers.
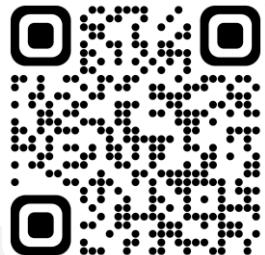
▮ Product Range Overview

SUB SERIES	M5	Guided M8 / LED	M8 / LED	M10.5	M12 A / LED	M12 B / LED	M12 D / LED	M12 I
Mating Style	Screw Thread	Snap-in, Screw Thread	Snap-in, Screw Thread	Screw Thread	Push Pull, Screw Thread	Push Pull, Screw Thread	Push Pull, Screw Thread	Screw Thread
Plastic Version	-	✓	✓	-	✓	✓	✓	✓
Metal Version	✓	✓	✓	✓	✓	✓	✓	✓
No. of Contacts	3 ~ 6*	2 ~ 6	3 ~ 13*	2 ~ 5	3 ~ 28*	2 ~ 8	3 ~ 5	5
Plating of Contacts	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating
Transmission Rate	-	-	-	-	Cat. 5e (8 Pin To RJ45)	-	Cat. 5e (4 Pin To RJ45)	-
Operating Voltage (AC/DC)	60V	30V ~ 60V	30V ~ 60V	30V	30V ~ 250V	60V	250V	60V
Nominal Current	1A	1.5A ~ 4A 3A+1.5A	1.5A ~ 4A	2A	1.5A ~ 4A	4A	3A, 4A	4A
Operating Temperature	Receptacle: -40°C ~ 105°C Receptacle With Cable: -20°C ~ 85°C Overmolded With Cable: -40°C ~ 85°C Field Serviceable/Installable: -40°C ~ 125°C							
Fasten Style of Nut	Front	Front, Rear	Front, Rear	Rear	Front, Rear	Front, Rear	Front, Rear	Front, Rear
Receptacle	✓	✓	✓	✓	✓	✓	✓	✓
Receptacle with Cable	✓	✓	✓	✓	✓	✓	✓	✓
Field Serviceable/Installable	-	✓	✓	✓	✓	✓	✓	✓
Overmolded with Cable	✓	✓	✓	✓	✓	✓	✓	✓
Accessories	-	✓	✓	✓	✓	✓	✓	✓
Mating Cycles (Pin Contact)	1,000 Cycles (IEC 100 Cycles)							
IP Rating	IP67	Up to IP68	Up to IP68	IP67	Up to IP68	Up to IP68	Up to IP68	Up to IP68
Salt Spray (Connector, Mated)	48h	48h	48h	48h	48h	48h	48h	48h
UV Resistant	✓	✓	✓	✓	✓	✓	✓	✓
Flammability Rating	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0
Vibration Resistant	Frequency range 10 ~ 500Hz / Amplitude 0.35mm							
EMI Option	-	✓	✓	-	✓	✓	✓	-
ROSH Compliant	✓	✓	✓	✓	✓	✓	✓	✓
REACH Compliant	✓	✓	✓	✓	✓	✓	✓	✓
Certifications	-	UL1977 UL2238	-	UL1977	UL1977, UL2238, UL1863	UL1977 UL2238	UL1977, UL2238, UL1863	-
Standard / Compliance	IEC 61076-2-105	-	IEC 61076-2-104	-	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	-

Product Range Overview

SUB SERIES	M12 K / LED	M12 L / LED	M12 M / LED	M12 S / LED	M12 T / LED	M12 X	M12 Y	M20	M23
Mating Style	Screw Thread	Screw Thread	Screw Thread	Push Pull, Screw Thread	Push Pull, Screw Thread	Push Pull, Screw Thread	Screw Thread	Screw Thread	Screw Thread
Plastic Version	✓	✓	✓	✓	✓	✓	✓	-	-
Metal Version	✓	✓	✓	✓	✓	✓	✓	✓	✓
No. of Contacts	3 ~ 5	2 ~ 5	3 ~ 6	3 ~ 4	2 ~ 4	8	8	2 ~ 14	6
Plating of Contacts	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating
Transmission Rate	-	-	-	-	-	Cat.6A	-	-	-
Operating Voltage (AC/DC)	630V	63V	630V	250V ~ 630V	63V	50V AC / 60V DC	60V	60V ~ 300V	600V
Nominal Current	12A, 16A	16A	8A	4A, 12A	12A	0.5A	0.5A, 6A	5A, 10A, 20A	28A
Operating Temperature	Receptacle: -40°C ~ 105°C Receptacle With Cable: -20°C ~ 85°C Overmolded With Cable: -40°C ~ 85°C Field Serviceable/Installable: -40°C ~ 125°C								
Fasten Style of Nut	Front	Front, Rear	Front	Front, Rear	Front, Rear	Front, Rear	Front, Rear	Front, Rear	Front
Receptacle	✓	✓	✓	✓	✓	✓	✓	✓	✓
Receptacle with Cable	✓	✓	✓	✓	✓	✓	✓	-	-
Field Serviceable / Installable	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overmolded with Cable	✓	✓	✓	✓	✓	✓	✓	✓	✓
Accessories	✓	✓	✓	✓	✓	✓	-	-	-
Mating Cycles (Pin Contact)	1,000 Cycles (IEC 100 Cycles)								
IP Rating	Up to IP68	Up to IP68	Up to IP68	Up to IP68	Up to IP68	Up to IP68	Up to IP68	IP68	IP67
Salt Spray (Connector, Mated)	48h	48h	48h	48h	48h	48h	48h	48h	48h
UV Resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flammability Rating	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0	UL94V-0
Vibration Resistant	Frequency range 10 ~ 500Hz / Amplitude 0.35mm								
EMI Option	-	-	✓	-	-	✓	✓	✓	✓
ROSH Compliant	✓	✓	✓	✓	✓	✓	✓	✓	✓
REACH Compliant	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certifications	UL1977 UL2237	UL1977 UL2238	-	UL1977, UL2237, UL2238	UL1977 UL2238	UL1863	UL1863	-	-
Standard / Compliance	IEC 61076-2-111	IEC 61076-2-111	IEC 61076-2-111	IEC 61076-2-111	IEC 61076-2-111	IEC 61076-2-109	IEC 61076-2-109	-	-

Served Markets & Applications

Market	Application	
LED Lighting	• Architectural Lighting • Residential, Medical, and Commercial Lighting • Street, Parking, Park, and Tunnel Lighting • Entertainment and Signage Lighting	• Horticulture, Grow, & Warehouse Lighting • Mass Transportation and Vehicles • Marine Vessel and Submersible Lighting • Appliances and Equipment Lighting
Marine	• Navigation System: Radar, GPS, Sonar, Fish-finder, Auto-pilot, Sailing Instruments, Chartplotter • Communication: Antenna, radio, AIS, SCS • Instrumentation & Monitoring: MFD, CCTV, Sensors	• Power Distribution: Appliances, Charging, HVAC • Entertainment: Video, Audio, Decorative • Motors: Outboard, Inboard, Pump, Actuator, Trolling • Subsea: Exploration, Buoys, Underwater Vehicle
Broadband Wireless Access	• Access Point: LTE, 5G • Cellular and Mobile Station • Wireless Router and Mobile Backhaul	• Power Supply and distribution system • Other Communication Equipment
Industrial Automation	• Data Communication: Router, Switches • Motors: Servo, Step, Encoder, Actuator • Power Supply and Distribution • Robotic Arms, Packaging, and Conveyor system	• Controller: Machine Vision, AVI, Sensors • Autonomous Robots, Forklifts, Power Tools • Industrial PC, Counters, and Display
Renewable Energy	• Photo Voltaic (PV), Concentrated Solar Power (CSP) • Power Distribution and Control: Inverter, MLPE, ICS • Device Communication and Tracker	• Wind Turbine and Tidal Power Generation • Energy Storage and Portable Energy
Heavy Equipment	• Navigation System: GPS, Lidar, Radar, Ultrasonic • Instrumentation, Control, and Diagnostic Systems • Monitoring: Display, Camera, Imaging	• Safety System: Sensor, ADAS, Telematics & Tracking • Communication and Electronic Toll systems • Power Distribution: Charging, Lighting, Equipment
Autometer	• Metering: Water, Electric, & Gas Meter • Power and Control: Drone, Security Alarm	• Monitoring: Sewage, Telemetry, and Vehicle tracking
Test Equipment	• Measuring Device: Air, Humidity, Light, sound, Water, Image, Weight, Height • Detectors: Gas, Fire, Leak, Motion, Heat	• Monitoring: Seismic (earthquake), Climatic • Weighing: Weigh, in-motion • Geodetic System: Surveying, Laser marking, Borrescope
Hybrid Electric Vehicles	• Motor Module: Scooter, Hoover board, Wheelchair • Safety System: Speed, Brake, Throttle, Gear • Power System: Controller	• Sensors: Speedometer, Fuel, Cleaning • Device Communication: CAN, In-vehicle Info • Lighting: Interior and Exterior LED
Railway Mass Transit	• Navigation: GPS, Radar, Lidar, Ultrasonic • HVAC • Infotainment: Display, sound, Broadcasting, monitor	• Sensors: Speedometer, Fuel, Cleaning • Communication: Main Controller, In-vehicle Info • Lighting: Interior and Exterior
Mobile Devices	• Drone Remote Controller • Measurement: Altimeter, Gesture, Piezoelectric	• Handheld: Barcode, Scanner, Portable lamp, GPS
Transportation	• Monitoring: Display ,C CTV, Lidar, Surveillance Cam • Communication: Wifi, router, Fleet Management • Navigation: GPS, Radar	• Power: Charger, Outlet, Inlet • Peripherals: Speaker, Electronic seats, Winches
Medical Equipment	• Patient Care: Electric Beds, Wheelchair Lift & stair, Rehabilitation System, Mobile Carts • Visualization: Display and monitors	• Diagnostic: MRI, CT Scan, Ultrasound, X-ray • Monitoring: ECG, Holter, Blood Pressure, Sugar
Automotive Diagnostics	• Auto-crash detection & notification system • Vehicle Tracking and Roadside Assistance System	• Remote Diagnostics
UAV	• Drone: Commercial, Consumer, & Military	
Lifts & Materials Handling	• Forklift, Industrial Lift, Material Handling	
Remote Video Response Center	• Monitoring: Display ,CCTV, Dome, IP Camera • Detection: Auto-License Plate Recognition, Alarm • Identification: Face detection, encoders	• Remote Control Devices and Sensors • Peripherals: Junction boxes and cabling system • Lighting: Interior and Exterior
Autonomous	• Navigation & Sensor: GPS, Lidar, Radar, Ultrasonic, IMU • Imaging: Cameras, Monitors, Infotainment Display	• Controller: Inertial Measurement Unit & Navigation System, Central Computer
Communication	• Transmitter and Receiver Equipment • Data: Router and Switches	• Base Station and Access Point • High Bandwidth: Multiplexer & demultiplexer
Rugged IT	• Telemetry • Military Notebook & Tablet and VR & AR	• Night Vision Googles and Camera • Communication Equipment

NEW RELEASE

Heavy Duty M12 "HDM12"

Rugged HDM12 for ultra-reliable, high-temperature applications

- ☐ Temperature range: -40°C ~ +125°C
- ☐ Waterproof rating: IP68
- ☐ Durability: 1000 cycles
- ☐ Salt Spry: 204h
- ☐ Vibration resistance: 20G as per SAE J2839
- ☐ Vibration and mechanical shock: SAE J2839
- ☐ UL1977
- ☐ IEC 61076-2-101

Amphenol LTW presents the robust M12 high-temperature connector, the HDM12. Engineered for commercial applications with elevated vibration and challenging environmental conditions, the HDM12 excels in heavy-duty and harsh surroundings.

Compliant with IEC 61076-2-101 and SAE J2839 standards, the HDM12 connectors emerge as the ideal solution for ultra-rugged applications prevalent in markets such as Heavy Equipment, Heavy-Duty Automotive, Railway Mass Transit, Factory Automation, and more. Elevate your connectivity reliability in extreme conditions with the durability and performance offered by our HDM12 connectors.

Field Installable 5 Pin			
Gender	**Part Number**	**Termination Style**	**Backshell**
Female	HDM12A-05BFFB-SL7001	Screw-in	Straight
Male	HDM12A-05BMMB-SL7001		

Receptacle 5 Pin			
Gender	**Part Number**	**Thread**	**Assembly Style**
Female	HDM12A-05PFFP-SF8001	PG9	PCB 180°
	HDM12A-05PFFP-SF8002	M16	
Male	HDM12A-05PMMP-SF8001	PG9	
	HDM12A-05PMMP-SF8002	M16	

MPRONTO-12
M12 PUSH PULL CONNECTORS

Right Angle

Robust Design
In Any Bending Direction

Straight

Spring Lock Designed For Backward Compatible With M12 * 1.0 Thread According To IEC Standard

World's First truly backward compatible to all female M12*1.0 sockets made by different manufacturers.

FEATURES

- ☐ Unique technology patent
- ☐ One simple Push-to-Plug and Pull-to-Unplug
- ☐ Saves over 80% installation time vs. standard M12 screw thread mating
- ☐ Parts and components available for sale

SPECIFICATIONS

- ☐ Supports A, B, D, S, T, X coding
- ☐ Contacts: up to 17 pins
- ☐ Salt Spray: 48h
- ☐ Durability: 500 cycles
- ☐ Meets IP67, IP68 and IP69K ingress protection
- ☐ Mate with all M12*1.0 per IEC standard (in compliant to IEC 61076-2-101)

MPronto-12

Accessory

(click the image to find more product information)

Waterproof Cap
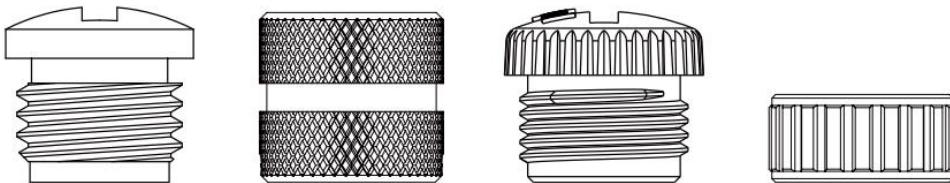
✓ Cap only
✓ With rubber lead
✓ With chain
✓ With fish line

I Adaptor
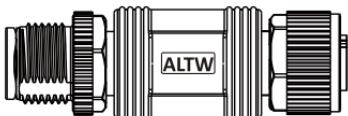
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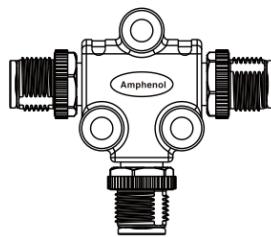
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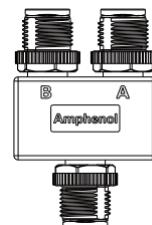
M12 to RJ Adaptor
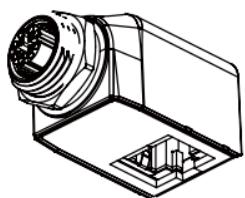
T Cable
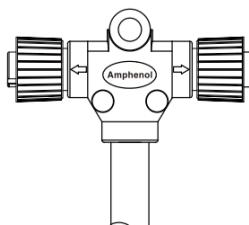
Y Cable
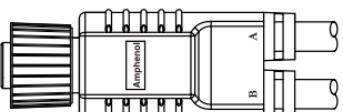
Insert / Nut / Retail Package
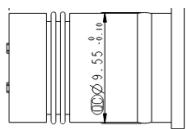
Insert

Retail Package

Nut

Distribution Box

M23
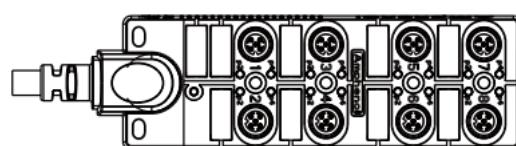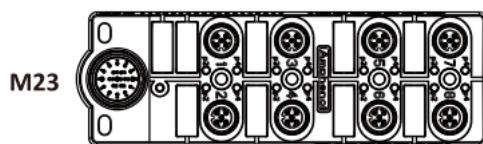
Amphenol LTW

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