

ix Industrial™ IP20 Connectors & Cables

ix Industrial™: Next Generation Industrial IoT Connectivity

ix Industrial™ connectors and cables enable IoT connectivity for Ethernet and other Industrial protocols through all levels of an operation from the Enterprise/Cloud to the sensors/actuators at the factory floor. These 10mm pitch connectors featuring 2-point metal latches are just 25% of the size of an RJ45 connector, allowing much greater port density and mating security. They are PoE capable, provide data performance to Cat6A level (10GBASE-T), and feature 360° shielding through the mated pair for superior EMI protection. Cables are available in straight, right angle upward, and downward orientations with many options including Low Smoke Zero Halogen (LSZH) jacket material.

- Increased port density compared to RJ45
- High data rate performance for 10G Ethernet, with PoE capability
- Excellent EMI protection for noisy environments
- Robust 2 point metal latches for secure mating
- Fully intermateable with *ix Industrial™* products from other authorized vendors
- Available PVC or Low Smoke Zero Halogen (LSZH) cables
- Right Angle Cabling Upward and Downward exits

FEATURES

- Complies with IEC61076-3-124
- 75% smaller than RJ45
- 10 position connector with Cat6A 10GBASE-T performance and PoE capability
- 360° shielding through mated pair
- 2-point metal latching
- Low Smoke Zero Halogen (LSZH) cable option
- 5000 mating cycles
- Field terminable IDC Right Angle plugs with solder options
- Right Angle / 90 Degree cable orientation



TARGET MARKETS



BENEFITS

- Fully qualified second source intermateable with other vendors
- 10 mm connector pitch provides greater port density
- Supports Ethernet/IP and common protocols including Profinet, DeviceNet, EtherCAT, Modbus, and others
- Provides excellent EMI immunity for use in electrically noisy environments
- Extremely robust mating to prevent accidental disconnection, and more durable than RJ45 latch
- Free from harmful halogen compounds. Reduce toxic emissions, damage to equipment and risk of downtime
- High durability
- Ease of custom cabling or repair in the field with IDC contacts
- Solder version for high volume assembly
- Improves accessibility allows for more compact routing

TECHNICAL INFORMATION

MATERIAL

- External Shields: Stainless Steel, Nickel plated
- Cable Jacket: PVC / LSZH
- Insulators: Thermoplastic, UL 94 V-0
- Contacts: Copper Alloy plated with Gold over Nickel (mating area)

MECHANICAL PERFORMANCE

- Insertion/Withdrawal Force: 25 N (5.6 lbs-force) max. (IEC 60512-13-2, Test 13b)
- Pull-Out Force: 80 N (18 lbs-force) min. (IEC 60512-15-6, Test 15f)
- Mechanical Shock: 300 m/s², half-sine pulses, 11 ms (IEC 60512-6-3, Test 6c)
- Vibration, Sinusoidal: 10 Hz – 500 Hz, 0.35 mm, 50 m/s² (IEC 60512-6-4, Test 6d)
- Durability: 5000 mating cycles (IEC 60512-9-1, Test 9a)

ELECTRICAL PERFORMANCE

- Current Rating: 1.5 A @ 40 °C (per IEC 60512-5-2, Test 5b)
- Voltage Rating: 50 V AC max., 60 V DC max.
- Initial Contact Resistance: 30 mΩ max. (per IEC 60512-2-1, Test 2a)
- Shielding Resistance: 100 mΩ max. (per IEC 60512-2-1, Test 2a)
- Insulation Resistance: 500 MΩ min. @ 500 V DC (per IEC 60512-3-1, Test 3a)
- Dielectric Withstanding Voltage: 500 V DC (per IEC 60512-4-1, Test 4a, Method A)

PACKAGING

- Carton (Single & Double ended Cables in poly bag)
- Tape & Reel (SMT Receptacles)
- Tray (Plug Connectors)

PART NUMBERS

Find part number details using the search box on www.amphenol-cs.com

Description	Part Numbers
Cable, Type-X, Plating Y, Length-Z, Jacket & Wire Size-W	ND9-XCBY-ZZW
Cable, Type-X, Plating Y, Length-Z, Jacket & Wire Size-W, Right Angle Up bend-F	ND9-XCJY-ZZWF
Pigtail Cable, Type-X, Plating Y, Length-Z, Jacket & Wire Size-W	ND9-XCAY-ZZW
Receptacle, Type-X, Plating Y, 0D- Rear Locating Peg, Right Angle Flag, SMT	ND9-XS1Y-0D
Receptacle, Type-X, Plating Y, 0C - Rear Locating Peg & 2.5 mm Shield Tail, Right Angle Flag, SMT	ND9-XS1Y-0C
Receptacle, Type-X, Plating Y, 02-2.5 mm Shield Tail, Vertical, SMT	ND9-XS2Y-02

X = Key (A, B or C). W = Cable Jacket (8-wire, 10-wire, PVC or LSZH), F=Right Angle Cable End Plug Upward Bend to Pigtail
Y = Contact Plating: 1=Gold Flash; 2=8 μin Gold; 3=30 μin Gold; 4=50 μin Gold; 7=30 μin PdNi+Gold Flash
0D = With Rear Locating Peg. 0C = With Rear Locating Peg & 2.5 mm Shield Tail. 02 = With 2.5 mm Shield Tail

SPECIFICATION

- IEC-61076-3-124
- Amphenol Specification: S6168C

ENVIRONMENTAL

- Thermal Shock: 10 cycles between -55 °C and +85 °C (IEC 60512-11-4, test 11d)
- Humidity: Low temperature +25 °C, high temperature +65 °C, cold sub-cycle -10 °C, 93% humidity (IEC-60068-2-38, Text Z/AD)
- Operating Temperature Range: -55 °C to +105 °C

APPROVALS AND CERTIFICATIONS

- RoHS
- ULE64911 Vol. 1

TARGET MARKETS/APPLICATIONS



Switches
Traffic Control
Monitoring Systems



Industrial Internet of Things (IIoT)
Factory/Process Automation – Machine to Machine
Sensors
Actuators
Nodes
Robotics
Building Automation
Test Equipment



Healthcare
Medical Equipment

PART NUMBER SELECTOR

Find part number details using the search box on www.amphenol-cs.com

N	D	9	-	B	C	B	X	-	XX	B
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Series IX Industrial™
I/O Applications

Type B Key

Cable

Plug on both ends

Plating for IX Mating Area	
1	Gold Flash
2	0.20 µm (8 µin) Gold
4	1.27 µm (50 µin) Gold
7	0.76 µm(30 µin) Palladium Nickel With Gold Flash

10 Wire Cable

Cable Length (Dimension 'A')	
20 to 99	Length in CM
A0 to A9	1 Meter + 0 to 9 decimeters
B0 to B9	2 Meters + 0 to 9 decimeters
C0 to C9	3 Meters + 0 to 9 decimeters
D0 to D9	4 Meters + 0 to 9 decimeters
E0 to E9	5 Meters + 0 to 9 decimeters
F0 to F9	6Meters + 0 to 9 decimeters
G0 to G9	7 Meters + 0 to 9 decimeters
H0 to H9	8 Meters + 0 to 9 decimeters
J0 to J9	9 Meters + 0 to 9 decimeters
K0 to K9	10 Meters + 0 to 9 meters
L0 to L9	20 Meters + 0 to 9 meters
M0 to M9	30 Meters + 0 to 9 decameters

Find part number details using the search box on www.amphenol-cs.com

N	D	9	-	A	C	J	X	-	XX	A	F
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Series IX Industrial™
Ethernet

Type A Key

Cable

Right Angle IX Plug

Plating for IX Mating Area	
1	Gold Flash
2	0.20 µm (8 µin) Gold
4	1.27 µm (50 µin) Gold
7	0.76 µm(30 µin) Palladium Nickel With Gold Flash

8 Wire Cable

Cable end plug – upward bend one end, pigtail other end

Cable Length (Dimension 'A')	
20 to 99	Length in CM
A0 to A9	1 Meter + 0 to 9 decimeters
B0 to B9	2 Meters + 0 to 9 decimeters
C0 to C9	3 Meters + 0 to 9 decimeters
D0 to D9	4 Meters + 0 to 9 decimeters
E0 to E9	5 Meters + 0 to 9 decimeters
F0 to F9	6Meters + 0 to 9 decimeters
G0 to G9	7 Meters + 0 to 9 decimeters
H0 to H9	8 Meters + 0 to 9 decimeters
J0 to J9	9 Meters + 0 to 9 decimeters
K0 to K9	10 Meters + 0 to 9 meters
L0 to L9	20 Meters + 0 to 9 meters
M0 to M9	30 Meters + 0 to 9 decameters

Cable Length Ordering Code Examples:
75 cm=F5 6.3 m=F3 25 m=L5 80 m=M5

PART NUMBER SELECTOR

Find part number details using the search box on www.amphenol-cs.com

N

D

9

Series IX Industrial™ Ethernet

-

A

C

B

X

Type A Key for Ethernet

Cable

Plug on both ends

Plating for IX Mating Area

1 = Gold Flash

2 = 0.20 μm (8 μin) Gold

3 = 0.76 μm (30 μin) Gold

4 = 1.27 μm (50 μin) Gold

7 = 0.76 μm(30μ in) Palladium Nickel With Gold Flash

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XX

G

8 Wire, Low Smoke, Zero Halogen Cable

Cable Length (Dimension 'A')

20 to 99	Length in CM
A0 to A9	1 Meter + 0 to 9 decimeters
B0 to B9	2 Meters + 0 to 9 decimeters
C0 to C9	3 Meters + 0 to 9 decimeters
D0 to D9	4 Meters + 0 to 9 decimeters
E0 to E9	5 Meters + 0 to 9 decimeters
F0 to F9	6Meters + 0 to 9 decimeters
G0 to G9	7 Meters + 0 to 9 decimeters
H0 to H9	8 Meters + 0 to 9 decimeters
J0 toJ9	9 Meters + 0 to 9 decimeters
K0 to K9	10 Meters + 0 to 9 meters
L0 to L9	20 Meters + 0 to 9 meters
M0 to M9	30 Meters + 0 to 9 decameters

Find part number details using the search box on www.amphenol-cs.com

N

D

9

Series IX Industrial™ Ethernet

-

A

C

B

X

Type A Keyfor Ethernet

Cable

Plug on both ends

Plating for IX Mating Area

1 = Gold Flash

2 = 0.20 μm (8 μin) Gold

4 = 1.27 μm (50 μ in) Gold

7 = 0.76 μm(30μ in) Palladium Nickel With Gold Flash

-

XX

A

8 Wire Cable

Cable Length (Dimension 'A')

10 to 99	Length in CM
A0 to A9	1 Meter + 0 to 9 decimeters
B0 to B9	2 Meters + 0 to 9 decimeters
C0 to C9	3 Meters + 0 to 9 decimeters
D0 to D9	4 Meters + 0 to 9 decimeters
E0 to E9	5 Meters + 0 to 9 decimeters
F0 to F9	6Meters + 0 to 9 decimeters
G0 to G9	7 Meters + 0 to 9 decimeters
H0 to H9	8 Meters + 0 to 9 decimeters
J0 toJ9	9 Meters + 0 to 9 decimeters
K0 to K9	10 Meters + 0 to 9 meters
L0 to L9	20 Meters + 0 to 9 meters
M0 to M9	30 Meters + 0 to 9 decameters

Cable Length Ordering Code Examples:
75 cm=75 6.3 m=F3 25 m=L5 80 m=M5