

# Amphenol Amphe-EX Explosion-proof Series



## EXCLUSIVE WORLDWIDE ASSEMBLER OF AMPHE-EX CIRCULAR CONNECTORS

Amphenol Industrial's explosion-proof connector series Amphe-EX is ATEX and IECEx-approved for Zone 1-rated (Europe) and Class I, Division II (USA) hazardous applications (IECEx 60079). Amphe-EX is the only explosion-proof connector that allows the use of copper, coax and fibre optic contacts in one product. PEI-Genesis is the only approved worldwide assembling distributor.

- Complements Amphenol Star-Line EX connectors
- Meets IECEx 60079

## APPLICATIONS

- Chemical manufacturing
- Petrochemical refineries
- Pharmaceutical manufacturing
- Land and offshore drill rigs
- Flour and sugar refining
- Aircraft fuelling pods

All areas where the risk of an explosion exists.

## FEATURES

### MATERIAL

The shells are machined from high-tensile strength aluminum and plated with a hard anodic coating or stainless steel to withstand the most extreme environments.

### CONTACT TYPES

There are many sizes and types with different contact configurations that can be used on this connector series. Insert patterns ranging from 2 to 79 contacts include RF, fibre optic, and coaxial.

### MATING SYSTEM

The Double-Lead Acme threaded coupling systems ensure a positive mating which allows for self-cleaning mating action and does not clog with ice, mud, snow, or sand. Inserts are compatible with the D38999 series III layouts up to shell size 21.

### KEYING

Additional keying of the shells ensures that mis-mating of similar connectors does not occur in explosive environments.

### PHYSICAL SIZE

Smaller interface than most heavy-duty, hazardous-rated connectors.

### EASE OF ASSEMBLY

Conductors are easily terminated to the contacts with ample space to slip cable housing over conductors to eliminate seating of inserts and cumbersome handling.

### ACCOMODATION OF VARIOUS CABLE TYPES

The cable gland terminations allow for the use of various types of cable in the construction such as unarmored, armored, and sheathed cable. Flexible cables such as SOOW-A,W, G-GC and DLO can also be used.

### APPROVALS

ATEX for Zone 1-IIC, IECEx,AEX and Centelec IP68-rated.

**TECHNICAL SPECIFICATIONS**

**MATERIALS AND FINISHES**

Shell & Plating	Aluminum alloy, alloy (black hardcoat), or stainless steel (1.4404, AISI 316L)
Contacts	Copper alloy
Plating	Gold-plated, 50 microinches per MIL-G-45204 type II, grade C, class I
Insulator	Hard, dielectric wafer which contains tines for high-reliability retention of crimp contacts
Grommet & Seals	Silicone-based elastomer

**ELECTRICAL DATA**

Contact Sizes 22D, 20, 16, 12, and 8

Operating Voltage & Test Voltage

TEST VOLTAGES	SERVICE RATING			
	N	M	I	II
Sea Level	1000	1300	1800	2300
100,000 Feet	200	200	200	200

Current Rating by Contact Size and Wire Accommodation (Test Amps) (Unmated Condition)	WIRE SIZE	22D	20	16	12	10	8
	28	1.5	-	-	-	-	-
26	2.0	-	-	-	-	-	-
24	3.0	3.0	-	-	-	-	-
22	5.0	5.0	-	-	-	-	-
20	-	7.5	7.5	-	-	-	-
18	-	-	10.0	-	-	-	-
16	-	-	13.0	-	-	-	-
14	-	-	-	17.0	-	-	-
12	-	-	-	23.0	-	-	-
8 (power)	-	-	-	-	-	-	46

Contact Resistance of Mated Contacts End-to-End

CONTACT SIZE	MAXIMUM MILLIVOLT DROP
22D	73
20	55
16	49
12	42
8 (power)	26

Insulation Resistance 5,000 megohms minimum

**MECHANICAL**

Operating Temperature -20°C to + 55°C (-4°F to +131°F)

Sealing Against sand, dust per MIL-STD-202 & ice resistance

Wire Sealing Range

CONTACT SIZE	MIN inches	MAX inches	MIN mm	MAX mm
22D	0.030	0.054	0.76	1.37
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61
8 (power)	0.135	0.155	3.43	3.94

TECHNICAL SPECIFICATIONS

Insulation Strip Length

CONTACT SIZE	STRIP LENGTH
22D	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)
8 (power)	.470 (11.94)

All dimensions in inches (millimeters in parenthesis)

Mating Life 500 cycles minimum

Salt Spray 48-hour salt spray

Temperature Durability -20°C + 40°C ambient (-4°F to +104°F)

Contact Type Crimp

Number of Circuits 2 to 79

Contact Insertion Rear-insertion/rear-extraction with simple plastic or high-quality metal hand tools.

CONTACT	AXIAL LOAD NEWTONS ±10%	AXIAL LOAD POUNDS ±10%
22D	44	10
20	67	15
16	111	25
12	111	25
8 (power)	111	25

Polarization Five keyways with optional master keyway rotations (Note insert and main keyways remain fixed)

Approvals



EEx dIIC T6 / Ex tD A21 IP68 (Plug and Receptacles)  
 EEx de IIC T6 / Ex tD A21 IP68 (Panel mount receptacles filled with cement)  
 Sira 07ATEX1229X

RJ45 AMPHE-EX

**BOX MOUNT RECEPTACLES WITH POTTING ADAPTER**

**EXM-A02-19-RJF-00**

RJ45 to PCB

**EXM-A02-19-RJF-01**

RJ45 to RJ45

**IN-LINE RECEPTACLE WITH EEX D GLAND**

**EXM-A01-19-RJF-00A2**

RJ45 to PCB

**EXM-A01-19-RJF-01A2**

RJ45 to RJ45

Cable range – .283 to .460 in (7.2 to 11.7mm)

Other sizes available

← Mates with →

**CABLE PLUG EEX D GLAND**

**EXM-A06-19-RJ2-03A2**

Cable range – .283 to .460 in (7.2 to 11.7mm)