

# EU-TYPE EXAMINATION CERTIFICATE

## Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

- EU-Type Examination Certificate Number:** ETL22ATEX00116X
- Product:** Amphe-EX Range of Connectors and Associated Blanking Caps - Hermetic
- Manufacturer:** AMPHENOL EEC, INC.
- Address:** 1701 Birchwood Ave Des Plaines, Illinois 60018; USA
- This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- Intertek Testing Services NA Ltd., Notified Body number 2903 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II of the Directive.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-28:2015, EN 60079-31:2014, EN IEC 60079-7:2015/A1:2018 except in respect of those requirements referred to within item 14 of the Schedule.
- If the sign "X" is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
- This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- The marking of the product shall include the following:

II 2 G Ex \* IIC T\* Gb



II 2 D Ex tb IIIC T\* Db

\*°C ≤ Ta ≤ ?\*°C

\*refer to equipment description

**Certification Officer:**  **Date:** 11 February 2022  
Todd L. Relyea

## SCHEDULE:

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### 11. Description of Equipment or Protective System

Hermetic Panel Mount Receptacle EXM-S02-H, EXM-S02 H4, “Amphe-EX” EX range panel mounted Receptacle. The Amphe-EX Connectors comprise a metallic bodied receptacle shell that form in-line cable connections, alternatively, the plugs and receptacles can be used as an individual cable termination that is sealed with the attached, dedicated blanking cap. Two types of blanking caps are available, these can be either flameproof types for use with connectors fitted with energised contact sleeves or types for environmental use with connectors having non-energised contact pins. When connected together and mechanically interlocked by means of a threaded nut retained by a grub screw, the plug and receptacle shell form a spigotted flamepath. Each plug and receptacle shell is supplied with a suitably certified, ATEX cable gland that fits onto the main body of the device, internally, the main bodies each contain an insulator insert that houses solder type contact pins or sleeves.

#### Design Options

- Alternative keying options.
- Alternative pin or sleeve contacts in either the plug or receptacle bodies.

The range of Amphe-EX Connectors comprises seven body (form) sizes each with a number of pin/socket size combinations between 2 and 79 contacts. The connector shell size, pin configuration and rating are reflected in the individual type designations.

#### Ratings

Shell Size	Maximum Total Current (A)
9	48
11	64
13	90
15	125
17	154
19	191
21	217
Contact Size	Maximum Current Rating (A)
22D AWG	5
20 AWG	7.5
16 AWG	13
12 AWG	23
12 Co-ax	

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8 Co-ax	1 (for inner and intermediate contacts) 12 (for outer contact)
8 Twin-ax	
<b>Maximum Voltage</b>	<b>Contact Patterns</b>
500 Vrms	9-5, 17-22, 21-75
550 VDC / 400 VAC	9-35, 9-94, 11-35, 13-35, 15-35, 15-AC, 17-2, 17-31, 17-35, 19-35, 21-35. 21-75
550 VDC / 400VAC	
500 Vrms (8 Co-ax contacts)	17-2, 19-31
500 Vrms (Twin-ax contacts)	
850 VDC / 600 VAC	9-98, 11-2, 11-5, 11-98, 11-99, 13-4, 13-8, 13-13, 13-71, 13-98, 15-2, 15-15, 15-18, 15-19, 15-97, 17-6, 17-26, 17-99, 19-32, 19-68, 21-11, 21-39, 21-41
1250 VDC / 900 VAC	15-5, 17-8, 19-11, 21-16

### Applicable Markings

**Panel Mounted Receptacle Connectors** - Shell configuration 02-H or 02-H4

Ex db IIC T6 Gb (-40°C ≤ Ta ≤ +40°C)

Ex db IIC T4 Gb (-40°C ≤ Ta ≤ +85°C)

Ex op pr IIC T6 Gb (-40°C ≤ Ta ≤ +40°C)\*

Ex op pr IIC T5 Gb (-40°C ≤ Ta ≤ +55°C)\*

Ex op is IIC T6 Gb (-40°C ≤ Ta ≤ +40°C)\*

Ex op is IIC T4 Gb (-40°C ≤ Ta ≤ +55°C)\*

Ex tb IIIC Db T80°C IP6X (-40°C ≤ Ta ≤ +40°C)

Ex tb IIIC Db T130°C IP6X (-40°C ≤ Ta ≤ +85°C)

\* 'op pr' and 'op is' only apply to the Fibre Optic Models that use standard inserts that permit the use of Fibre Optic contacts.

### Model Code Designations

**Connectors: EXM-(a)b -(c-d)(e)(f)(g)(h)**

Connector series type designation	EXM
Shell material (a)	A-Aluminium, B-Brass, S-Stainless steel
Shell configuration (b)	02-H, 2-hole panel mount receptacle Hermetic 02-H4, 4-hole panel mount receptacle Hermetic
Shell size (c)	Either: 9, 11, 13, 15, 17, 19 or 21
Insert arrangement (d)	e.g. 35
Contacts type (e)	P – Pin contacts, S – Sleeve contacts
Cable diameter range designation (f)	e.g. A

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Keying position (g)	e.g. 01
Fibre Optic designator (h)	FO (this suffix gets added to the end of a part number when Fibre Optic contacts are supplied in standard catalogue inserts)

### Blanking caps: EXM -ab -c

Blanking cap type designation	EXM
Cap Style (a)	A-Aluminium, B-Brass, S-Stainless steel
Assy type (b)	RC - receptacle assy
Shell size (c)	Either: 9, 11, 13, 15, 17, 19 or 21

### Panel Mount connectors: EXM -(a)b - (c-d)(e)(f)(g)(h)

Connector series type designation	EXM
Shell material (a)	A-Aluminium, B-Brass, S-Stainless steel
Shell configuration (b)	02-H, 2-hole panel mount receptacle Hermetic 02-H4, 4-hole panel mount receptacle Hermetic
Shell size (c)	Either: 9, 11, 13, 15, 17, 19 or 21
Insert arrangement (d)	e.g. 35
Contact type (e)	P – Pin contacts, S – Sleeve contacts
Bulk head adaptor thread type (f)	e.g. M (Metric) or N (NPT)
Keying position (g)	e.g. 01
Fibre Optic designator (h)	FO (this suffix gets added to the end of a part number when Fibre Optic contacts are supplied in standard catalogue inserts)

**12. Report Number**

Intertek Report: 104718991CRT-002 Dated: 02 February 2022

**13. Special Conditions of Certification**

(a). Special Conditions of Use

- The Panel mounted variants may be installed in suitable certified and dimensioned flameproof equipment, providing that the certification of this flameproof equipment will allow such installation.
- The plug connectors that mate with the Amphe-EX Hermetic Receptacles are covered under Sira certificates, IECEx SIR 08.0029X and Sira 07ATEX1229X.
- Both the Plugs and receptacles shall only be used with blanking caps or mating Connector halves certified under certificate number IECEx SIR 08.0029X.
- When a Connector half fitted with contact pins is not connected to an associated Plug or Receptacle, it shall not be energised, as per IEC 60079-0, clause 20.2.
- When a Connector half fitted with contact sleeves is not connected to an associated Plug or Receptacle, it shall not be re-energised unless it is fitted with an explosion-proof-blanking cap.
- This connector does not incorporate an internal or external earth facility; it is therefore the responsibility of the user/installer to provide adequate earth continuity using the guidance given in the manufacturer's installation instructions.
- The user installed conductors fitted to the panel mount receptacles shall be suitable for a continuous operating temperature of at least 84°C when rated for a maximum ambient of 40°C, at least 99°C when rated for a maximum ambient of 55°C and at least 130°C when rated for maximum ambient of 85°C.
- The user installed conductors fitted to the panel mount receptacles are to be insulated at the point between the connections to the receptacle contacts and the associated terminals within associated enclosures to which they are fitted.
- The interface between the panel mount receptacles and associated increased safety enclosure to which they may be fitted cannot be defined. Therefore it is the user's responsibility to ensure that the appropriate ingress protection level of the associated enclosure is maintained at this point.
- When equipment is used as Ex op is IIC, the fibre optic source supplying this equipment shall be suitably certified as compliant with IEC 60079-28:2006 and provide an inherently safe optical source (op is), EPL Gb, subsequently the following parameters apply:

Application, Temperature Class, Max. Surface Temperature & Ta Max.	
T6	T4
Fibre optic source limited to a maximum signal power of 15 mW and a maximum irradiance of 5 mW/sq mm (surface area not exceeding 400 sq mm).	Fibre optic source limited to a maximum signal power of 35 mW and a maximum irradiance of 5 mW/sq mm (surface area not exceeding 400 mm).

(b). Conditions of Manufacture - Routine Tests

- The plugs and in-line receptacles shall be supplied with suitably ATEX certified cable glands that are rated at IP6X minimum and are acceptable for a temperature range at their point of mounting between -40°C to +84°C or -40°C to +99°C or -40°C to + 130°C depending on the application.

#### 14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104718991CRT-002 Dated: 02 February 2022.

#### 15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
SOFTWARE, LABEL, FORMAT AMPHE-EX HERMETIC SERIES ATEX / IECEX	10-756112	A	22-Dec-2021
ASSEMBLY, AMPHE-EX HERMETIC SERIES INTERTEK SUBMISSION DRAWING	10-756074	A	21-Dec-2021
Amphe-EX Assembly Instructions	L-2124	M	05-Jan-2022

#### 16. Details of Certificate changes Issue 1

None – initial issue.

