1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 03ATEX1101X** Issue: **19**

4 Equipment: **'Starline' Range of Connectors and EX-*-18*** 'Starline' Range of Panel Mounted Receptacle Connectors**

5 Applicant: **Amphenol Industrial**

6 Address: 40-60 Delaware Avenue, Sidney,
New York 13838, USA

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012+A11:2013	EN 60079-1:2014	EN 60079-7:2015
EN 60079-28:2015	EN 60079-31:2014	

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2 GD
Ex db IIC T* Gb
Ex db eb IIC T* Gb
Ex op pr IIC T* Gb
Ex op is IIC T4 Gb
Ex db op is IIC T* Gb
Ex db op pr IIC T* Gb
Ex db eb op is IIC T* Gb
Ex db eb op pr IIC T* Gb
Ex tb IIIC T*°C Db
Ta = -*°C to +*°C

* This is a list of marking options that can be applied dependent upon the Connector type, see relevant tables for appropriate temperature classifications, maximum surface temperatures for dust and ambient temperature range.

Project Number 0680

Signed:

Title: Director of Operations

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13 **DESCRIPTION OF EQUIPMENT**

Starline' Range of Connectors

These connectors comprise an aluminium alloy bodied plug and socket to form in-line cable connections. The bodies each contain an insulator and contact pins/tubes at one end and a certified cable gland at the other. The plug and socket, when connected together, form a flamepath and are mechanically interlocked by means of a threaded nut retained by a grub screw. The range comprises five body (shell) sizes, each with a number of pin/tube size combinations. The connector shell size, pin configuration and rating are reflected in the individual type designations. The current ratings, at 1000 V maximum, are detailed in the tables below.

Design Options:

- Alternative body materials - stainless steel or brass.
- Alternative panel mounted socket forming a threaded flamepath with the associated flameproof equipment; the socket is retained by means of four screws and the cable is terminated within the equipment.
- Alternative association with a screw-on blanking cap when in-line connection is not required.
- Alternative filling of the internal free volume with epoxy resin after assembly.
- The replacement of the cable gland by an auxiliary cable clamp assembly, the connector body being completely filled with epoxy resin 50-3150FR/Cat 190 cement.
- Panel mounted receptacles may be marked EEx de IIC T6 indicating they are suitable for fitting to increased safety (EEx e) enclosures when the internal free volume of the receptacle is filled with epoxy resin.

EX-*-18* 'Starline' Range of Panel Mounted Receptacle Connectors**

These connectors form a plain spigoted joint with their associated flameproof apparatus. They provide an electrical supply outlet to the 'Starline' range of plug connectors. The receptacle comprises an aluminium alloy body containing an insulator and contact pins/tubes at one end and an epoxy potted adaptor component at the other. Externally, the circular mounting flange of the receptacle assembly component provides six mounting holes to allow it to be retained to its associated enclosure with appropriate fasteners. Cable or conductors to the receptacle contact pins/tubes are terminated within the device. The plug and socket, when connected together, form a flamepath and are mechanically interlocked by means of a threaded nut retained by a grub screw. The range comprises five body (shell) sizes each with a number of pin/tube size combinations. The connector shell size, pin configuration and rating are reflected in the individual type designations. When used at 1000 V, the Ex-*-18*** connectors attain a maximum surface temperature of 59.2°C and have the same current ratings as the 'Starline' connectors, as detailed in tables below.

Design Options:

- Alternative body material - stainless steel or brass.
- Alternative association with a screw-on blanking cap when in-line connection is not required.

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Electrical Ratings of the 'Starline' and EX-*-18* 'Starline' Connectors**

Shell Size	Max. total current
12	210 A
16	570 A
20	1110 A
24	1740 A
28	1420 A

Pin Size	Max. current
18 AWG	3 A
16 AWG	16 A
12 AWG	30 A
10 AWG	40 A
8 AWG	50 A
4 AWG	90 A
1/0 AWG	155 A
4/0 AWG	225 A
350 MCM	325 A
500 MCM	750 A
646 MCM	940 A
777 MCM	1135 A (Alternatively >1135 A to 1490 A – See Variation 6)

Ingress Protection Ratings of the 'Starline' and EX-*-18* 'Starline' Connectors independently tested according to the requirements of EN 60529:**
The devices are suitable for:

- an ingress protection rating of IP68, tested to 10 m for a duration of 30 minutes.
- an ingress protection rating of IP66.

Variation 1 - This variation introduced the following change:

i. The inclusion of the EX-*-18*** 'Starline' Range of Panel Mounted Receptacle Connectors, the product description and the conditions were rationalised as a result of this change.

Variation 2 - This variation introduced the following changes:

i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments 1 and 2), EN 50018:2000, EN 50019:2000 and EN 50281-1-1:1998, were replaced by those currently listed, the markings in section 12 were updated accordingly and the conditions were modified to recognise the requirements of the latest standards.
ii. The introduction of a new cement material, Hysol ES1002, replacing the previously approved cement, Hysol ES4412; the description was amended to reflect this change.

Variation 3 - This variation introduced the following change:

i. The Ex-133, Ex-153 and Ex-173 products in the range were allowed to be used in a +55°C ambient with a T5 temperature classification; the marking was amended to reflect this.

Variation 4 - This variation introduced the following changes:

i. The introduction of a new panel mount model, Type Ex 17-1, which is identical in construction to existing models, the only difference being single pin 'Radsock technology' is used and the potting adapter length is increased by 20mm.
ii. Minor drawing modifications, which include mating thread and panel gasket details for reference purposes.

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Variation 5 - This variation introduced the following change:

i. The Product Description is amended to add the following statement:
The 'Starline' Range of Connectors and EX-*-18*** 'Starline' Range of Panel Mounted Receptacle Connectors, are fitted with O-rings for the prevention of water and dust ingress and have been independently tested according to the requirements of EN/IEC 60529 to meet IP X6.

Variation 6 - This variation introduced the following change:

i. The existing epoxy cement, Hysol Type ES1002, was replaced by Resin 50-3150FR/Cat 190, this allows the products to be used in an ambient temperature range of -40°C to +55°C (or +40°C when marked T6), the description was amended to reflect this change.
ii. The 777 MCM pin size was allowed to have a maximum current of between >1135 A to 1490 A, for this application, the temperature classification is T4 and the maximum surface temperature for dust is T130°C.
iii. The table of Electrical Ratings in the description was amended to recognise corrections and the new rating for the 777 MCM pin size.
iv. The appropriate markings for the glands were clarified in the following tables (note these tables also include revised values the maximum temperatures to be considered at the entry):

Connector style	Gas marking (See Note B)	Dust marking	Ambient temp. (°C)	Amperage restriction	Max. temp. at the point of entry (°C)	Min. cable/cond. rating (°C)
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Ex d IIC T6 Gb	Ex tb IIIC T80°C Db	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb	Ex tb IIIC T95°C Db	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb	Ex tb IIIC T130°C Db	-40 to +55	>1135-1490 A	135	135
13-3, 15-3, 17-3	Ex d IIC T6 Gb	Ex tb IIIC T80°C Db	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb	Ex tb IIIC T95°C Db	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb	Ex tb IIIC T130°C Db	-40 to +55	>1135-1490 A	135	135
17-1, 18-1	Ex de IIC T6 Gb	Ex tb IIIC T80°C Db	-40 to +40	See note A	70	90
	Ex de IIC T5 Gb	Ex tb IIIC T95°C Db	-40 to +55	See note A	70	90
	Ex de IIC T4 Gb	Ex tb IIIC T130°C Db	-40 to +55	>1135-1490 A	135	135

Note A: Amperage always limited by shell size and never greater than 1135 A in any case.

Connector style	Description
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Mech. clamp w/ cement or basketweave cable grips w/ cement
13-3, 15-3, 17-3	Ex gland no cement
17-1	Panel mt. sq. flange w/ potting adapter and cement
18-1	Circular flange w/ potting adapter and cement

v. The Special Condition for Safe Use dealing with maximum temperatures at the entry point was revised.

Variation 7 - This variation introduced the following change:

i. The option to use of Henkel Loctite® 242 was recognised, this may be used at the threaded joint between the following: plug shell and cable adapter; receptacle shell and cable adapter; cable adapter and certified gland.

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Variation 8 - This variation introduced the following change:

i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the documents previously listed in section 9, EN 60079-0:2009, and IEC 60079-31:2008 Ed 1, were replaced by those currently listed.

Variation 9 - This variation introduced the following change:

i. The introduction of new model types, the Fibre Optic variants; these have been assessed and are appropriately marked in accordance with EN 60079-28. As a result of this change, new Special Conditions for Safe Use have been applied. The full range of currently available Styles is detailed in the Tables below, which replaces that in Variation 6, together with their marking, ratings etc. that are applicable:

Connector Style	Previous Marking	Fibre Optic Marking	Ambient Temp (°C)	Amperage Restriction	Max. Temp at entry point (°C)	Min. Cable Rating (°C)
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135
13-3, 15-3, 17-3	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135
17-1, 18-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135

Note A: Amperage always limited by shell size and never greater than 1135 A in any case.

Connector style	Description
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Mech. clamp w/ cement or basketweave cable grips w/ cement
13-3, 15-3, 17-3	Ex gland no cement
17-1	Panel mt. sq. flange w/ potting adapter and cement
18-1	Circular flange w/ potting adapter and cement

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Variation 10 - This variation introduced the following changes:

i. To permit within the 18-1 style connectors the use of alternative Hysol Type ES1002 potting compound, restricting the ambient temperature range to -20°C to +40°C when this material is used. The full range of currently available Styles is detailed in the Tables below, which replaces that in Variation 9, together with their marking, ratings etc. that are applicable:

Connector Style	Standard Marking	Fibre Optic Marking	Ambient Temp (°C)	Amperage Restriction	Max. Temp at entry point (°C)	Min. Cable Rating (°C)
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135
13-3, 15-3, 17-3	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135
17-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135
18-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	----	-20 to +40	See note A	70	90
	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135-1490 A	135	135

Note A: Amperage always limited by shell size and never greater than 1135 A in any case.

Connector style	Description
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Mech. clamp w/ cement or basket weave cable grips w/ cement
13-3, 15-3, 17-3	Ex gland no cement
17-1	Panel mt. sq. flange w/ potting adapter and cement
18-1	Circular flange w/ potting adapter and cement

ii. Clarification of the Special Conditions for Safe Use relating to the thermal limits of the connectors.

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Variation 11 - This variation introduced the following changes:

i. The following connector styles were allowed to be fitted with Fluorosilicone o-rings and Silicone gaskets. In this form they are marked for a low ambient temperature of -60°C and are known as "AR" - Arctic Range Product, the part number configuration being unchanged. The table below was added and accompanies that already in the certificate for the existing -40°C low ambient option; in addition, a Special Condition for Safe Use was replaced by a modified Condition of Manufacture:

Connector Style	Standard Marking	Fibre Optic Marking	Ambient Temp. (°C)	Amperage Restriction	Max. Temp. at entry point (°C)	Min. Cable Rating (°C)
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135-1490 A	135	135
13-3, 15-3, 17-3	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135-1490 A	135	135
17-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135-1490 A	135	135
18-1	----	----	----	----	----	----
	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135-1490 A	135	135

Note A: Amperage always limited by shell size and never greater than 1135 A in any case.

ii. It was confirmed that the O-ring and gasket used in the -40°C version are made from Buna (nitrile) rubber and not EPDM rubber, drawing 10-83857 Rev G was therefore retrospectively modified.

iii. The product label was modified to add information which is out of the scope of this certificate.

iv. The amperage restrictions applied in Variations 9 and 10 were corrected.

Variation 12 - This variation introduced the following changes:

i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012, EN 60079-1:2007, EN 60079-7:2007, EN 60079-28:2007 and IEC 60079-31-2013 Ed.2 were replaced by EN 60079-0:2012+A11:2013, EN 60079-1:2014, EN 60079-7:2015, EN 60079-28:2015 and EN 60079-31:2014, the markings were updated accordingly to recognise the new standards.

ii. Permit modifications to the manufacturer's drawings raised in revision since the last variation

iii. Inclusion of new O-ring and gasket drawings as scheduled drawings.

Variation 13 - This variation introduced the following changes:

i. The addition of twenty five fibre optic and current-carrying variants and a modification to variant ZP-16-4F06.
ii. The marking drawing is clarified by the removal of the temperature classification column.
iii. Addition of combined marking options to the certificate according to the previously controlled marking drawing.

Variation 14 - This variation introduced the following change:

i. The introduction of a two x 373 MCN, Type P cable configurations (two conductors per contact, in an already certified 777MCM insert), between a Panel Mount Receptacle, P/N EX-17-1-C24-386SN and In-Line Plug, P/N EX-13-2-24-C24-386PN, which is fitted with a mechanical clamp (part no. ZP-W-5324-H412). A Condition of Manufacture was added The configuration has been independently tested to IP 66/IP68 (10m for 30 minutes) and is limited to the following certification coding and ambient temperature range:

Certification code:	Ex db IIC T4 Gb Ex db eb IIC T4 Gb Ex tb IIIC T130°C Db
Ambient temperature range:	Ta = -40°C to +55°C
Rating:	1135A (562.5A through each cable)

Variation 15 - This variation introduced the following changes:

i. Update to certified label drawing 10-838356, to include the below changes:
- Addition of build site name and address on label.
- Notified Body Number on CE mark has been replaced with "XXXX".
- Russian Ex logo removed from label.
- CofC number removed from label.
- Update to "Amperage Restriction" information shown on tables 1, 2 and 3.

ii. The full range of currently available Styles is detailed in the Tables below, which replaces that in Variation 14, together with their marking, ratings, etc. that are applicable:

a. Table 1 – Standard Connector Style:

Connector Style	Standard Marking	Fibre Optic Marking	Ambient Temp (°C)	Amperage Restriction	Max. Temp at entry point (°C)	Min. Cable Rating (°C)
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135A	135	135
13-3, 15-3, 17-3	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135A	135	135
17-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135A	135	135

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Connector Style	Standard Marking	Fibre Optic Marking	Ambient Temp (°C)	Amperage Restriction	Max. Temp at entry point (°C)	Min. Cable Rating (°C)
18-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	----	-20 to +40	See note A	70	90
	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-40 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-40 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-40 to +55	1135A	135	135

Note A: Amperage always limited by shell size and never greater than 1135 A in any case.

Connector style	Description
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Mech. clamp w/ cement or basket weave cable grips w/ cement
13-3, 15-3, 17-3	Ex gland no cement
17-1	Panel mt. sq. flange w/ potting adapter and cement
18-1	Circular flange w/ potting adapter and cement

b. Table 2 – 'AR' (Arctic Range) Connector Style:

Connector Style	Standard Marking	Fibre Optic Marking	Ambient Temp. (°C)	Amperage Restriction	Max. Temp. at entry point (°C)	Min. Cable Rating (°C)
13-2, 15-2, 17-2, 13-4, 15-4, 17-4	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135A	135	135
13-3, 15-3, 17-3	Ex d IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex d IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex d IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135A	135	135
17-1	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135A	135	135
18-1	----	----	----	----	----	----
	Ex de IIC T6 Gb Ex tb IIIC T80°C Db	Ex op pr IIC T6 Gb Ex op is IIC T6 Gb	-60 to +40	See note A	70	90
	Ex de IIC T5 Gb Ex tb IIIC T95°C Db	Ex op pr IIC T5 Gb Ex op is IIC T4 Gb	-60 to +55	See note A	70	90
	Ex de IIC T4 Gb Ex tb IIIC T130°C Db	----	-60 to +55	1135A	135	135

Note A: Amperage always limited by shell size and never greater than 1135 A in any case.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report number	Comment
0	7 August 2003	R53M9062A	The release of the prime certificate.
1	4 May 2005	R51A12850A	Re-issued to permit the introduction of changes described in report number R51A12850A.
2	23 January 2009	R51A18355A	This Issue covers the following changes: • All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 and 1 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format. The introduction of Variation 1.
3	14 June 2010	R21763A/00	The introduction of Variation 2.
4	13 August 2010	R22640A/00	The introduction of Variation 3.
5	15 December 2011	N.A.	Change ii in Variation 2 was clarified.
6	03 October 2012	R27884A/00	The introduction of Variation 4.
7	13 March 2013	R23314A/00	The introduction of Variation 5.
8	19 June 2013	R27929A/00	The introduction of Variation 6.
9	11 March 2014	R32823A/00	The introduction of Variation 7.
10	20 March 2014	R33181A/00	The introduction of Variation 8.
11	29 October 2014	R27929A/01	Issued to allow Report R27929A/01 to replace R27929A/00
12	18 March 2015	R70015125A	The introduction of Variation 9.
13	24 April 2015	R70021554A	The introduction of Variation 10.
14	08 Oct 2015	R70026802A	The introduction of Variation 11.
15	21 November 2016	R70048255A	This Issue covers the following changes: • EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. *(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)* • The introduction of Variation 12.
16	23 June 2017	R70124013A	The introduction of Variation 13.
17	22 November 2017	R70027381A	The introduction of Variation 14.
18	13 September 2019	R80013687A	The introduction of Variation 15
19	15th October 2019	0680	• Transfer of certificate **Sira 03ATEX1101X** from Sira Certification Service to CSA Group Netherlands B.V..

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 The panel mounted variants may be installed in suitably certified and dimensioned flameproof equipment providing that the certification of this flameproof equipment will allow such installation.

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15.2 The Ex-18 range of panel-mounted variants may be installed in a suitably certified and dimensioned flameproof equipment providing that the certification of this flameproof equipment will allow such installation. They have the following dimensioned spigot joints and are suitable for Group IIA, IIB or IIC, dependent upon the associated apparatus entry dimensions.

Shell Size	Spigot diameter (mm)	Spigot length (mm)
12	39.90/39.85	46 (+/-1)
16	49.90/49.85	46 (+/-1)
20	62.90/62.85	46 (+/-1)
24	74.90/74.85	46 (+/-1)
28	89.90/89.85	46 (+/-1)

15.3 The panel mounted variants may be fitted in an reased safety enclosure when the free internal space is filled with epoxy resin and providing the certification of the enclosure will allow such installation. An electric strength test in accordance with EN 60079-7 Clause 7.1 will be performed on each unit after installation of the epoxy resin.

15.4 The Ex-18 range connector does not orporate an external earth facility. It is the responsibility of the user or installer to ensure adequate earth continuity by means of guidance given within the manufacturer's installation instructions.

15.5 When connectors to this certificate marked as Ex 'op is' are used, the source of the fibre optic radiation shall be suitably certified as compliant with EN 60079-28 and shall provide an optical source in compliance with the following parameters:

T6 & T80°C (Tamb +40°C)	T4 & T130°C (Tamb +55°C)
Fibre optic source limited to a maximum signal power of 15 mW and a maximum irradiance of 5 mW/mm^2 (surface area not exceeding 400 mm^2).	Fibre optic source limited to a maximum signal power of 35 mW and a maximum irradiance of 5 mW/mm^2 (surface area not exceeding 400 mm^2).

15.6 When connectors to this certificate marked as Ex 'op pr' are used, the connectors are only to be attached to an Ex d IIC Gb certified enclosure, suitable for the assigned ambient temperatures.

15.7 In the case where Ex 'op pr' EPL 'Gb' certified connectors are attached to certified Ex 'd' enclosures, the Ex 'op is' power limitations for optical sources do not apply.

15.8 In the case where two Ex 'op pr' EPL 'Gb' certified connectors are connected together as an inline mated pair, the Ex 'op is' power limitations for optical sources do not apply.

15.9 Connectors certified as Ex 'tb' EPL 'Db' must in all cases comply with the power limitations for Ex 'op is' optical sources.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

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Certificate Annexe

Certificate Number: **Sira 03ATEX1101X**

Equipment: **'Starline' Range of Connectors and EX-*-18*** 'Starline' Range of Panel Mounted Receptacle Connectors**

Applicant: **Amphenol Industrial**

Issue 0

Drawing No.	Sheet	Rev.	Date	Description
300022	1 of 1	B	25 Jul 03	Ex Starline product label
300027	1 of 1	B	25 Jul 03	Ex Starline product label for protective covers
300029	1 of 1	A03	31 Jul 03	Software, label format ATEX
300000-SIRA-0	1 to 5	A02	28 Apr 98	Drawing for Ex Starline
C=300000=SIRA=01	1 to 3	B01	08 Feb 99	Drawing for Ex Starline

Issue 1

Drawing No.	Sheet	Rev.	Date	Description
300011	1 of 1	A02	18 Jul 97	O-ring
300029	1 of 1	C	23 Mar 05	Software, label format ATEX

Issue 2

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
10-838431	1 to 2	A	20 Jan 09	Circular Flange Recept Assy with Spigot Joint

Issue 3

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
10-838356	1 of 1	A	27 May 10	Software Label Format ATEX/IECEx Starline Series
10-838357	1 to 9	A	27 May 10	Assembly, Staline-Ex Series Submission Drawing

Issue 4

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
10-838356	1 of 1	B	12 Aug 2010	Software Label Format ATEX/IECEx Starline Series

Issue 5 (No new drawings were introduced.)

Issue 6

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
10-838357	1 to 10	B2	25 Sept 12	Assembly, Starline-Ex Series Submission Drawing

Issue 7

Drawing	Sheets	Rev.	Date (Sira stamp)	Description
10-838356	1 of 1	F	06 Mar 13	Software Label Format ATEX/IECEx Starline Series

Issue 8

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10-838356	1 of 1	G	31 May 13	Software Label Format ATEX/IECEx Starline Series
10-838357	1 to 11	E	31 May 13	Assembly, Starline-Ex Series Submission Drawing

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Certificate Annexe

Certificate Number: **Sira 03ATEX1101X**

Equipment: **'Starline' Range of Connectors and EX-*-18*** 'Starline' Range of Panel Mounted Receptacle Connectors**

Applicant: **Amphenol Industrial**

Issue 9

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10-838357	1 to 11	F	24 Feb 14	Assembly, Starline-Ex Series Submission Drawing

Issues 10 and 11 No new drawings were introduced.

Issue 12

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10-838356	1 to 2	J	10 Feb 15	Nameplate
10-838357	1 to 12	G	10 Feb 15	General Assembly

Issue 13

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10-838356	1 to 2	J	31 Mar 15	Nameplate

Issue 14

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10-83856	1 to 3	K	21 Sep 15	Software, Label Format ATEX/IECEX Starline IECEX Series
10-83857	1 to 12	H	02 Oct 15	Assembly, Starline Ex Series Submission Drawing SIRA – FM - TUV

Issue 15

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
10-838356	1 to 4	P	23 Sep 16	Label, Starline-EX Series
10-838357	1 to 12	J	23 Sep 16	Assembly, Starline-EX Series
300011-XXAR	1 to 1	B	20 Oct 26	O-ring (Arctic Range)
300028-XX	1 of 1	A	30 Sep 16	Receptacle Panel Mount Gasket
300028-XXAR	1 of 1	A	30 Sep 16	Receptacle Panel Mount Gasket (Arctic Range)

Issue 16

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10-838356	1 to 4	R	25 May 17	Label, Starline-EX Series
10-838357	1 to 12	K	25 May 17	Assembly, Starline-EX Series

Issue 17

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
AOGT-2T01	1 to 3	P12	14 Nov 17	Two conductor per contact, connector/receptacle configuration
ZP-W-5324-H412	1 to 1	D	05 Oct 17	Cable Clamp S/A 24 Size
L-2120-3	1 to 19	J	15 Nov 17	Amphenol Star-line Ex Assembly Instructions

Issue 18

Drawing	Sheets	Rev.	Date (Sira stamp)	Title

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Netherlands

Certificate Annexe

Certificate Number: **Sira 03ATEX1101X**

Equipment: **'Starline' Range of Connectors and EX-*-18*** 'Starline' Range of Panel Mounted Receptacle Connectors**

Applicant: **Amphenol Industrial**

10-838356	1 of 4	S	28 Aug 19	Label, Starline-EX Series

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