



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx UL 20.0044X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 6	Issue 5 (2024-04-30)
Date of Issue:	2024-10-25		Issue 4 (2023-04-28)
			Issue 3 (2022-01-31)
			Issue 2 (2021-04-30)
			Issue 1 (2020-09-29)
			Issue 0 (2020-07-16)
Applicant:	PHOENIX CONTACT GmbH & Co. KG Flachsmarktstr. 8 32825 Blomberg Germany		
Equipment:	I/O Modules with Intrinsically Safe Connections, AXL F EX IS DI16 NAM XC 1F, AXL F EX IS AI8 HART XC 1F, AXL F EX IS AO4 HART XC 1F, AXL F EX IS DO4 SD 24-48 XC 1F, AXL F EX IS DO4 SD 21-60 XC 1F, AXL F EX IS AI8 P HART XC 1F, AXL F EX IS RTD8 XC 1F, AXL P EX IS DI16 NAM 1F, AXL P EX IS AI8 HART 1F, AXL P EX IS AO4 HART 1F, AXL P EX IS DO4 SD 24-48 1F, AXL P EX IS DO4 SD 21-60 1F, AXL P EX IS AI8 P HART 1F, AXL P EX IS RTD8 1F		
Optional accessory:			
Type of Protection:	Intrinsic Safety "ia", Increased Safety "ec"		
Marking:	Ex ec [ia IIB Ga] IIC T4 Gc (for models AXL F EX IS DO4 SD 21-60 XC 1F and AXL P EX IS DO4 SD 21-60 1F only) Ex ec [ia Ga] IIC T4 Gc (for all remaining models) [Ex ia Da] IIIC (for all models) -25°C ≤ Ta ≤ +60°C (AXL F... models, see Specific Conditions of Use) -40°C ≤ Ta ≤ +70°C (AXL P... models, see Specific Conditions of Use)		

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

Signature:
(for printed version)

Date:
(for printed version)

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UL Solutions (US)
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America





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Manufacturer: **PHOENIX CONTACT GmbH & Co. KG**
Flachsmarktstr. 8
32825 Blomberg
Germany

Manufacturing locations: **PHOENIX CONTACT Development and Manufacturing Inc.**
586 Fulling Mill Road
Middletown, PA 17057
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

US/UL/ExTR20.0047/00
US/UL/ExTR20.0047/03
US/UL/ExTR20.0047/06

US/UL/ExTR20.0047/01
US/UL/ExTR20.0047/04

US/UL/ExTR20.0047/02
US/UL/ExTR20.0047/05

Quality Assessment Reports:

NL/DEK/QAR11.0009/09

NL/DEK/QAR11.0012/06



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

These devices are open type programmable logic controllers, consisting of I/O modules and intended for Industrial Control applications requiring intrinsically safe circuits. They are intended to be mounted within a suitable enclosure.

The AXL F EX IS DI16 NAM XC 1F and AXL P EX IS DI16 NAM 1F modules each allow connection of up to sixteen intrinsically safe, galvanically isolated NAMUR digital input signals from separately certified intrinsically safe devices such as proximity switches and closed contact switches. The AXL F EX IS DI16 NAM XC 1F and AXL P EX IS DI16 NAM 1F modules each provide the sole source of power via intrinsically safe output entity parameters on each channel of their I/O terminals for any separately certified intrinsically safe devices that are connected.

The AXL F EX IS AI8 HART XC 1F and AXL P EX IS AI8 HART 1F modules each allow connection of up to eight HART-enabled, intrinsically safe, galvanically isolated analog input signals from separately certified intrinsically safe devices such as sensors. The AXL F EX IS AI8 HART XC 1F and AXL P EX IS AI8 HART 1F modules each provide the sole source of power with intrinsically safe output entity parameters on each channel of their I/O terminals for any separately certified intrinsically safe devices that are connected.

The AXL F EX IS AO4 HART XC 1F and AXL P EX IS AO4 HART 1F modules each allow connection of up to four HART-enabled, intrinsically safe, galvanically isolated analog output signals to separately certified intrinsically safe devices such as sensors. The AXL F EX IS AO4 HART XC 1F and AXL P EX IS AO4 HART 1F modules each provide the sole source of power with intrinsically safe output entity parameters on each channel of their I/O terminals for any separately certified intrinsically safe devices that are connected.

The AXL F EX IS DO4 SD 24-48 XC 1F, AXL F EX IS DO4 SD 21-60 XC 1F, AXL P EX IS DO4 SD 24-48 1F, and AXL P EX IS DO4 SD 21-60 1F modules each allow connection of up to four intrinsically safe, galvanically isolated digital output signals to separately certified intrinsically safe devices such as solenoid valves, lights, or indicators. The AXL F EX IS DO4 SD 24-48 XC 1F, AXL F EX IS DO4 SD 21-60 XC 1F, AXL P EX IS DO4 SD 24-48 1F, and AXL P EX IS DO4 SD 21-60 1F modules each provide the sole source of power via intrinsically safe output entity parameters on each channel of their I/O terminals for any separately certified intrinsically safe devices that are connected.

The AXL F EX IS AI8 P HART XC 1F and AXL P EX IS AI8 P HART 1F modules each allow up to eight intrinsically safe input connections at their intrinsically safe terminals. They provide galvanically isolated intrinsically safe connections to separately certified intrinsically safe devices. The signals are powered only by the separately certified intrinsically safe field devices with defined intrinsically safe output entity parameters that must comply with the input entity parameters on each of the I/O terminal pairs of models AXL F EX IS AI8 P HART XC 1F and AXL P EX IS AI8 P HART 1F.

The AXL F EX IS RTD8 XC 1F and AXL P EX IS RTD8 1F modules each allow connection of up to eight 2-wire, 3-wire, 4-wire Resistance Temperature Detectors (RTD), intrinsically safe, analog input signals to the Axioline F and Axioline P local buses, respectively.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Please see Annex for Specific Conditions of Use



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Added new models AXL P EX IS DI16 NAM 1F and AXL P EX IS AI8 HART 1F.

Issue 2: Added new models AXL F EX IS AO4 HART XC 1F, AXL P EX IS AO4 HART 1F, AXL F EX IS DO4 SD 24-48 XC 1F, AXL F EX IS DO4 SD 21-60 XC 1F, AXL P EX IS DO4 SD 24-48 1F, and AXL P EX IS DO4 SD 21-60 1F.

Issue 3: Added new models AXL F EX IS AI8 P HART XC 1F and AXL P EX IS AI8 P HART. Minor revisions to other models.

Issue 4: Update to installation instructions and marking labels and addition of alternate components.

Issue 5: Addition of new models AXL F EX IS RTD8 XC 1F and AXL P EX IS RTD8 1F, editorial revisions to marking and installation instruction drawings, and update of some technical documents.

Issue 6: Drawing updates, changes to allow more flexibility, including addition of alternative components.

Annex:

[Annex to IECEx UL 20.0044X Issue 6.pdf](#)



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PARAMETERS RELATING TO THE SAFETY

AXL F EX IS DI16 NAM XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 130 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 10.6 V

I_o : 11 mA

P_o : 30 mW

C_o : 2.30 μ F (IIC) / 16.0 μ F (IIB, IIIC) / 71.8 μ F (IIA)

L_o : 100 mH (IIC) / 100 mH (IIB, IIIC) / 100 mH (IIA)

AXL F EX IS AI8 HART XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 240 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 24.8 V

I_o : 85.8 mA

P_o : 532 mW

C_o : 0.113 μ F (IIC) / 0.86 μ F (IIB, IIIC) / 3.05 μ F (IIA)

L_o : 2.95 mH (IIC) / 18.95 mH (IIB, IIIC) / 30.95 mH (IIA)

AXL F EX IS AO4 HART XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 150 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 24.8 V

I_o : 86.7 mA

P_o : 538 mW

C_o : 0.112 μ F (IIC) / 0.859 μ F (IIB, IIIC) / 3.049 μ F (IIA)

L_o : 4.1 mH (IIC) / 18.29 mH (IIB, IIIC) / 37.21 mH (IIA)

AXL F EX IS DO4 SD 24-48 XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 420 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 27.3 V

I_o : 99 mA

P_o : 676 mW

C_o : 0.088 μ F (IIC) / 0.683 μ F (IIB, IIIC) / 2.28 μ F (IIA)

L_o : 1.189 mH (IIC) / 12.9 mH (IIB, IIIC) / 27.41 mH (IIA)



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AXL F EX IS DO4 SD 21-60 XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 420 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 24.8 V

I_o : 180 mA

P_o : 1116 mW

C_o : 0.86 μ F (IIB, IIIC) / 3.05 μ F (IIA)

L_o : 2.779 mH (IIB, IIIC) / 7.168 mH (IIA)

AXL F EX IS AI8 P HART XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 27 mA; $U_m = 250$ V

Intrinsically Safe Input Entity Parameters:

U_i : 30.0 V

I_i : 115 mA

P_i : 863 mW

C_i : 0 μ F

L_i : 0 mH

AXL F EX IS RTD8 XC 1F:

Supply rating: 24 VDC (19.2-30 VDC), 40 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 10.6 V

I_o : 16.8 mA

P_o : 45 mW

C_o : 2.32 μ F (IIC) / 16.2 μ F (IIB, IIIC) / 72 μ F (IIA)

L_o : 100 mH (IIC) / 100 mH (IIB, IIIC) / 100 mH (IIA)

AXL P EX IS DI16 NAM 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 130 mA; $U_m = 250$ V

Minor supply rating via bus base module: 5 VDC, 135 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 10.6 V

I_o : 11 mA

P_o : 30 mW

C_o : 2.30 μ F (IIC) / 16.0 μ F (IIB, IIIC) / 71.8 μ F (IIA)

L_o : 100 mH (IIC) / 100 mH (IIB, IIIC) / 100 mH (IIA)



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AXL P EX IS AI8 HART 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 260 mA; Um = 250 V

Minor supply rating via bus base module: 5 VDC, 135 mA; Um = 250 V

Intrinsically Safe Output Entity Parameters:

Uo: 24.8 V

Io: 85.8 mA

Po: 532 mW

Co: 0.113 uF (IIC) / 0.86 uF (IIB, IIIC) / 3.05 uF (IIA)

Lo: 2.95 mH (IIC) / 18.95 mH (IIB, IIIC) / 30.95 mH (IIA)

AXL P EX IS AO4 HART 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 160 mA; Um = 250 V

Minor supply rating via bus base module: 5 VDC, 135 mA; Um = 250 V

Intrinsically Safe Output Entity Parameters:

Uo: 24.8 V

Io: 86.7 mA

Po: 538 mW

Co: 0.112 uF (IIC) / 0.859 uF (IIB, IIIC) / 3.049 uF (IIA)

Lo: 4.1 mH (IIC) / 18.29 mH (IIB, IIIC) / 37.21 mH (IIA)

AXL P EX IS DO4 SD 24-48 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 455 mA; Um = 250 V

Minor supply rating via bus base module: 5 VDC, 135 mA; Um = 250 V

Intrinsically Safe Output Entity Parameters:

Uo: 27.3 V

Io: 99 mA

Po: 676 mW

Co: 0.088 uF (IIC) / 0.683 uF (IIB, IIIC) / 2.28 uF (IIA)

Lo: 1.189 mH (IIC) / 12.9 mH (IIB, IIIC) / 27.41 mH (IIA)

AXL P EX IS DO4 SD 21-60 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 455 mA; Um = 250 V

Minor supply rating via bus base module: 5 VDC, 135 mA; Um = 250 V

Intrinsically Safe Output Entity Parameters:

Uo: 24.8 V

Io: 180 mA

Po: 1116 mW

Co: 0.86 uF (IIB, IIIC) / 3.05 uF (IIA)

Lo: 2.779 mH (IIB, IIIC) / 7.168 mH (IIA)



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AXL P EX IS AI8 P HART 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 27 mA; $U_m = 250$ V

Minor supply rating via bus base module: 5 VDC, 135 mA; $U_m = 250$ V

Intrinsically Safe Input Entity Parameters:

U_i : 30.0 V

I_i : 115 mA

P_i : 863 mW

C_i : 0 μ F

L_i : 0 mH

AXL P EX IS RTD8 1F:

Major supply rating via bus base module: 24 VDC (19.2-30 VDC), 40 mA; $U_m = 250$ V

Minor supply rating via bus base module: 5 VDC, 135 mA; $U_m = 250$ V

Intrinsically Safe Output Entity Parameters:

U_o : 10.6 V

I_o : 16.8 mA

P_o : 45 mW

C_o : 2.32 μ F (IIC) / 16.2 μ F (IIB, IIIC) / 72 μ F (IIA)

L_o : 100 mH (IIC) / 100 mH (IIB, IIIC) / 100 mH (IIA)

MARKING

Marking has to be readable and indelible; it has to include the following indications:

For models AXL F EX IS DO4 SD 21-60 XC 1F and AXL P EX IS DO4 SD 21-60 1F only the following content will be stated as a minimum:

IECEx

ATEX

Ex ec [ia IIB Ga] IIC T4 Gc

[Ex ia Da] IIIC

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II 3(1) G Ex ec [ia IIB Ga] IIC T4 Gc

II (1) D [Ex ia Da] IIIC

DEMKO 20 ATEX 2370X

For all remaining models, the following content will be stated as a minimum:

IECEx

ATEX

Ex ec [ia Ga] IIC T4 Gc

[Ex ia Da] IIIC

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II 3(1) G Ex ec [ia Ga] IIC T4 Gc

II (1) D [Ex ia Da] IIIC

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For all models, the following content will be stated as a minimum:

Manufacturers name and address: Phoenix Contact GmbH & Co. KG
Flachsmarktstraße 8
32825 Blomberg, Germany

Note - "Phoenix Contact GmbH & Co. KG" may be replaced with Trademark.

Manufacturing Date: WWYY or traceable S/N

Serial Number: A traceable S/N or barcode

Warnings: Symbol  to direct user to specific Installation Instruction, see below Tables for specifics.

For all AXL F EX IS... models:

Ambient Temperature Range: $-25^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

For all AXL P EX IS... models:

Ambient Temperature Range: $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

For Models AXL F EX IS DI16 NAM XC 1F, AXL F EX IS AI8 HART XC 1F, AXL F EX IS AO4 HART XC 1F, AXL F EX IS DO4 SD 24-48 XC 1F, AXL F EX IS RTD8 XC 1F, and AXL F EX IS AI8 P HART XC 1F the following content will additionally be stated as a minimum (extracted from Drawing No. 97567687):

Model designation: Axioline F, see Tables 1 and 2 below for specific models.

Electrical Ratings: See Tables 1 and 2 below for details.

AXL F EX IS RTD8 XC 1F	4177	24 VDC 40 mA MAX	5 VDC 1 mA MAX	250	10.6	16.8	45
AXL F EX IS AO4 HART XC 1F	4102	24 VDC 150 mA MAX	22 VDC 20 mA MAX	250	24.8	86.7	538
AXL F EX IS DO4 SD 24-48 XC 1F	4104	24 VDC 420 mA MAX	24 VDC 48 mA MAX	250	27.3	99	676
AXL F EX IS DI16 NAM XC 1F	4042	24 VDC 130 mA MAX	8 VDC 8 mA MAX	250	10.6	11	30
AXL F EX IS AI8 HART XC 1F	4041	24 VDC 240 mA MAX	22 VDC 20 mA MAX	250	24.8	85.8	532
Description	Install Doc.	Input	Output	Um (VDC)	Uo (VDC)	Io (mA)	Po (mW)

Table 1

AXL F EX IS AI8 P HART XC 1F	4141	24 VDC 27 mA MAX	24 VDC 20 mA MAX	250	30	115	863
Description	Install Doc.	Input	Inputs	Um (VDC)	Ui (VDC)	Ii (mA)	Pi (mW)

Table 2

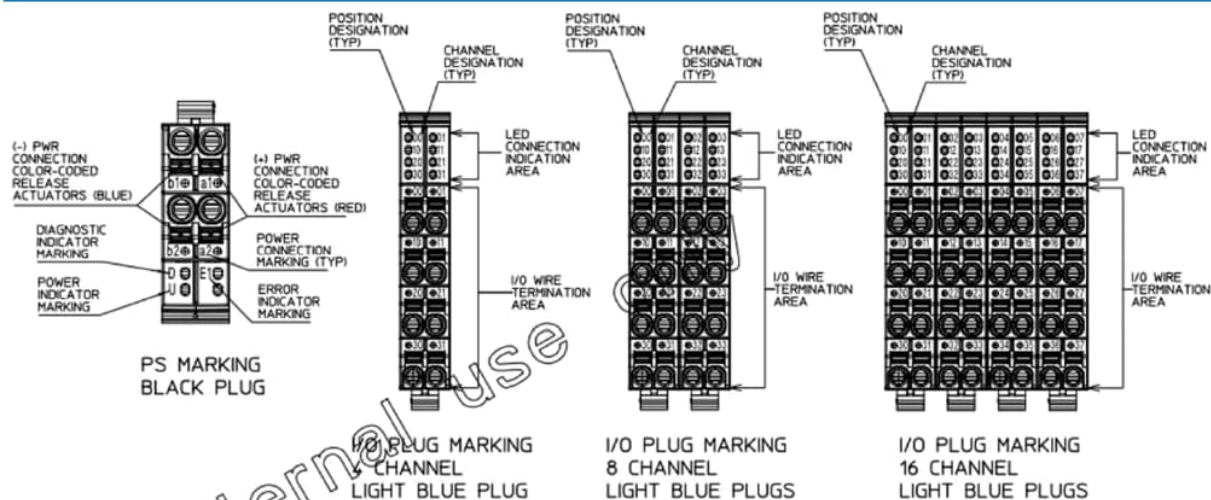


Diagram of I.S. I/O and PS Plugs

For Model AXL F EX IS DO4 SD 21-60 XC 1F the following content will additionally be stated as a minimum (extracted from Drawing No. 097593115):

Model designation: AXL F EX IS DO4 SD 21-60 XC 1F

Electrical Ratings: See Table 1 below for details.

AXL F EX IS DO4 SD 21-60 XC 1F	4105	24 VDC 420 mA MAX	21 VDC 60 mA MAX	250	24.8	180	1116
Description	Install Doc.	Input	Output	Um (VDC)	Uo (VDC)	Io (mA)	Po (mW)

Table 1

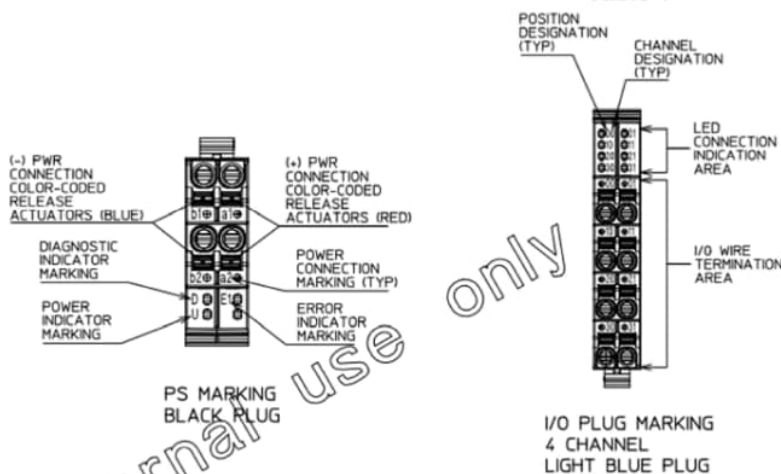


Diagram of I.S. I/O and PS Plugs

For Models AXL P EX IS DI16 NAM 1F, AXL P EX IS AI8 HART 1F, AXL P EX IS AO4 HART 1F, AXL P EX IS DO4 SD 24-48 1F, AXL P EX IS RTD8 1F, and AXL P EX IS AI8 P HART 1F the following content will additionally be stated as a minimum (extracted from Drawing No. 97567680):



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Model designation: Axioline P, see Tables 1 and 2 below for specific models.

Electrical Ratings: See Tables 1 and 2 below for details.

AXL P EX IS RTD8 1F	4179	24 VDC 40 mA MAX	5 VDC 1 mA MAX	250	10.6	16.8	45
AXL P EX IS AO4 HART 1F	4103	24 VDC 160 mA MAX	22 VDC 20 mA MAX	250	24.8	86.7	538
AXL P EX IS DO4 SD 24-48 1F	4106	24 VDC 455 mA MAX	24 VDC 48 mA MAX	250	27.3	99	676
AXL P EX IS DI16 NAM 1F	4081	24 VDC 130 mA MAX	8 VDC 8 mA MAX	250	10.6	11	30
AXL P EX IS AI8 HART 1F	4080	24 VDC 260 mA MAX	22 VDC 20 mA MAX	250	24.8	85.8	532
AXL P EX IS AI8 P HART 1F	4142	24 VDC 27 mA MAX	24 VDC 20 mA MAX	250	30	115	863
Description	Install Doc.	Input	Output	Um (VDC)	Uo (VDC)	Io (mA)	Po (mW)

Table 1

AXL P EX IS AI8 P HART 1F	4142	24 VDC 27 mA MAX	24 VDC 20 mA MAX	250	30	115	863
Description	Install Doc.	Input	Inputs	Um (VDC)	Ui (VDC)	Ii (mA)	Pi (mW)

Table 2

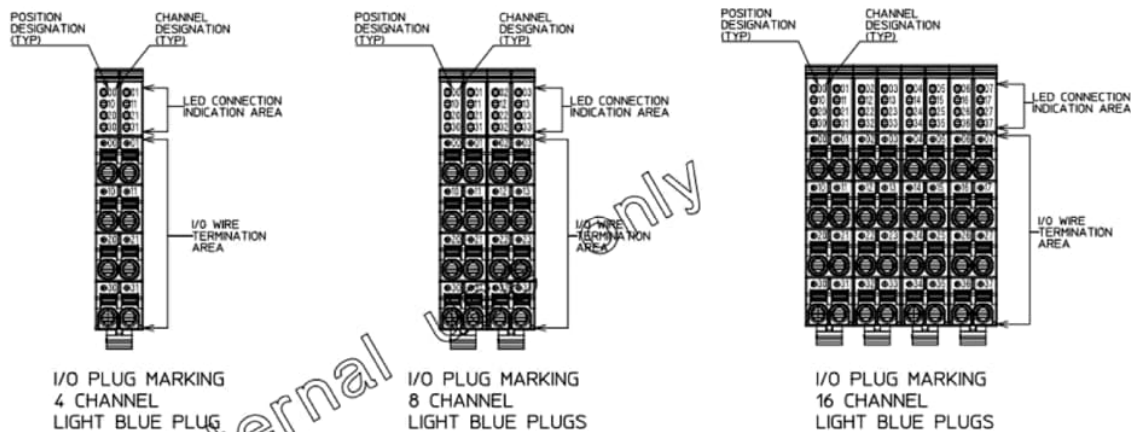


Diagram of I.S. I/O Plugs

For Model AXL P EX IS DO4 SD 21-60 1F the following content will additionally be stated as a minimum (extracted from Drawing No. 97593116):

Model designation: AXL P EX IS DO4 SD 21-60 1F

Electrical Ratings: See Table 1 below for details.



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AXL P EX IS DO4 SD 21-60 1F	4107	24 VDC 455 mA MAX	21 VDC 60 mA MAX	250	24.8	180	1116
Description	Install Doc.	Input	Output	Um (VDC)	Uo (VDC)	Io (mA)	Po (mW)

Table 1

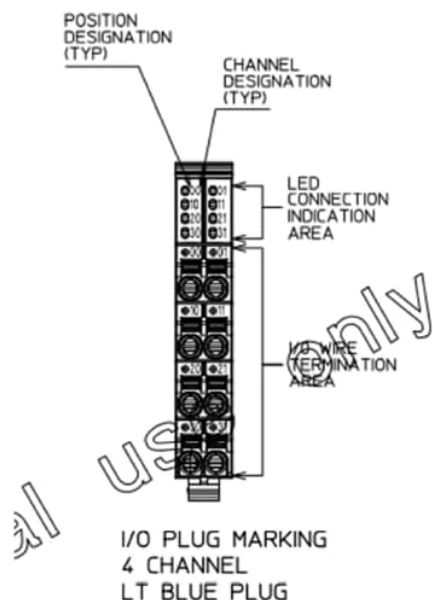


Diagram of I.S. I/O Plugs

SPECIFIC CONDITIONS OF USE

- The equipment must be installed in a suitably certified tool-secured enclosure providing a minimum ingress protection of IP54 in accordance with IEC 60079-0.
- The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.
- The equipment must be supplied by a circuit of Overvoltage category II, as defined in IEC 60664-1.



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(For Model AXL F EX IS DO4 SD 24-48 XC 1F only):

When installed on a vertical DIN rail, the maximum ambient operating temperature is reduced in relation to the load:

Maximum load current	Maximum ambient temperature
48 mA	45°C
40 mA	50°C
32 mA	55°C
24 mA	60°C

The derating curve is linear. Specific temperature ratings can be interpolated between specified temperatures. Do not allow the product to operate above the designated temperature range. When installed on a horizontal DIN rail, the maximum load current is limited to 48 mA for the entire ambient temperature range marked on the AXL...EX IS... station.

(For Model AXL F EX IS DO4 SD 21-60 XC 1F only):

When installed on a vertical din rail, the maximum ambient operating temperature is reduced in relation to the load:

Maximum load current	Maximum ambient temperature
60 mA	45°C
50 mA	52.5°C
40 mA	60°C

The derating curve is linear. Specific temperature ratings can be interpolated between specified temperatures. Do not allow the product to operate above the designated temperature range. When installed on a horizontal DIN rail, the maximum load current is limited to 60 mA for the entire ambient temperature range marked on the AXL...EX IS... station.

(For Model AXL P EX IS DO4 SD 24-48 1F only):

When installed on a vertical DIN rail, the maximum ambient operating temperature is reduced in relation to the load:

NOTE: The maximum ambient temperature when installed on a vertical DIN rail is 60°C.

Maximum load current	Maximum ambient temperature
48 mA	45°C
40 mA	50°C
32 mA	55°C
24 mA	60°C

When installed on a horizontal DIN rail, the maximum ambient operating temperature is reduced in relation to the load:

Maximum load current	Maximum ambient temperature
48 mA	60°C
36 mA	65°C
24 mA	70°C

The derating curve is linear. Specific temperature ratings can be interpolated between specified temperatures. Do not allow the product to operate above the designated temperature range.



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(For Model AXL P EX IS DO4 SD 21-60 1F only):

When installed on a vertical DIN rail, the maximum ambient operating temperature is reduced in relation to the load:

NOTE: The maximum ambient temperature when installed on a vertical DIN rail is 60°C.

Maximum load current	Maximum ambient temperature
60 mA	45°C
50 mA	52.5°C
40 mA	60°C

When installed on a horizontal DIN rail, the maximum ambient operating temperature is reduced in relation to the load:

Maximum load current	Maximum ambient temperature
60 mA	60°C
50 mA	65°C
40 mA	70°C

The derating curve is linear. Specific temperature ratings can be interpolated between specified temperatures. Do not allow the product to operate above the designated temperature range.

ROUTINE EXAMINATIONS AND TESTS

Each piece of equipment defined above has to have successfully passed-before delivery:

- For all models, routine dielectric strength tests according to IEC 60079-11 Clause 11.2 are required for infallible transformers T2 as referenced on Power (PS) PCBA and T2000 as referenced on I/O PCBA as follows:

Test Potential Applied Between	Test Potential, V @ Frequency Hz, for Min. Hold Time, s	Alternative Test Potential, V @ Frequency Hz, for Min. Hold Time, s
Input Windings (tied together) and Output Windings (tied together)	1500 V @ 60 Hz for 60 s	1800 V @ 60 Hz for 1 s
All Windings (tied together) and Core	500 V @ 60 Hz for 60 s	600 V @ 60 Hz for 1 s

The current flowing during the test shall not exceed 5 mA r.m.s. at any time.