TYPE SCDC SOLENOID COIL (FLAMEPROOF)
INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

1.0 SCOPE

This manual details the installation, operation and maintenance instructions for type SCDC solenoid coil (flameproof). This product is ATEX and IECEx certified to meet the requirements for hazardous location equipment.

Carefully read and follow all instructions in this manual to ensure proper installation and safe operation of the heater.

2.0 SPECIAL NOTICES

The following special notices highlight important information in the installation and maintenance instructions. Each serves a special purpose and is displayed in the format as below:

DANGER	This symbol indicates a potentially hazardous situation, which, if not avoided, may be a shock hazard.
WARNING	This symbol indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
CAUTION	This symbol indicates a potentially hazardous situation, which, if not avoided, can result in personal injury or damage to the equipment.
NOTICE	This symbol indicates a normal notice from the manufacturer.

3.0 GENERAL INFORMATION

3.1 INTRODUCTION

Type SCDC solenoid coil is designed according to IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-31 standards. The product is certified for installation in Zone 1 and Zone 2 for gas environment, Zone 21 and Zone 22 for dust environment.

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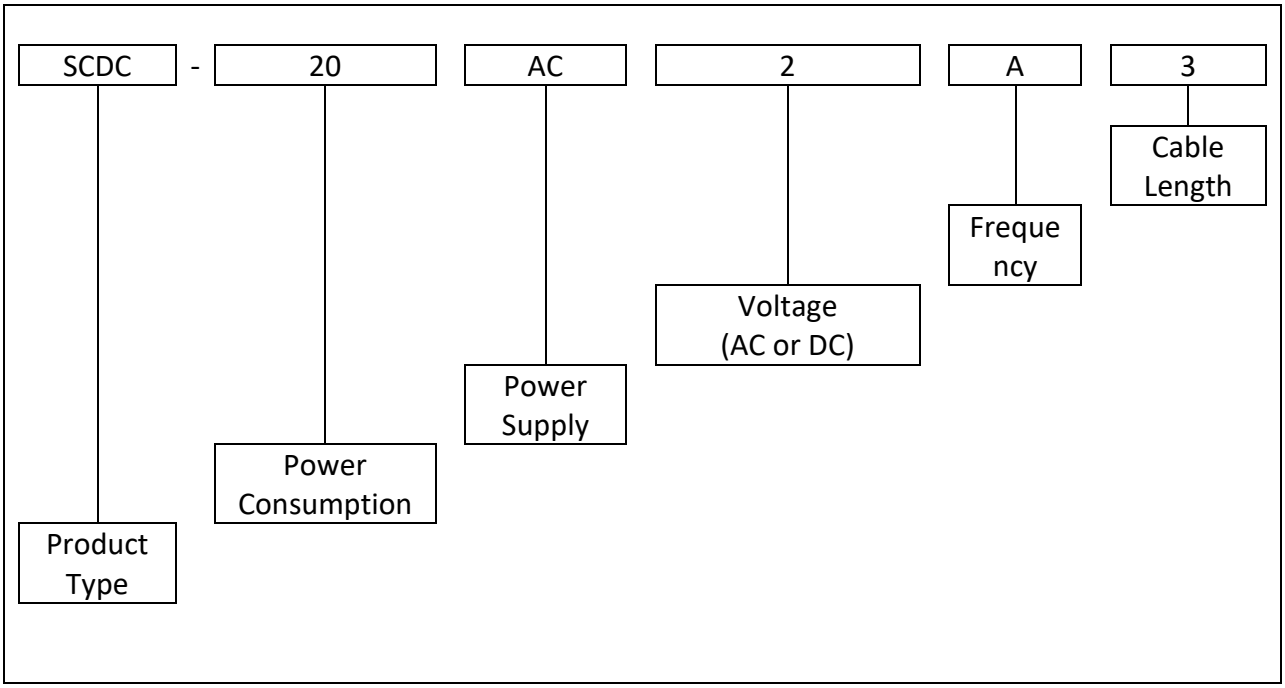
Type SCDC solenoid coil is designed to corporate with solenoid valve. It is typically used as the coil of solenoid valve for the capacity control or start unloading for refrigeration compressors. The solenoid coil can be easily installed to or removed from the solenoid value body by screwing the fixing nut.

3.2 TYPE EXPLANATION



Ordering Reference:

Please refer to the below ordering code table. If you need more information, please contact our sales representative for assistance.

Product Type	Power Consumption (W)	Power Supply (AC/DC)	Voltage for AC (V)	Voltage for DC (V)	Frequency (Hz)	Cable Length (m)
SCDC	10-10W	AC-AC	1-110~115	1-12	A-50Hz	1-1.5m
	15-15W	DC-DC	2-220~240	2-24	B-60Hz	2-2m
	20-20W		3-380~400	3-48	C-50/60Hz	3-3m

E.g.: SCDC-20AC2A3

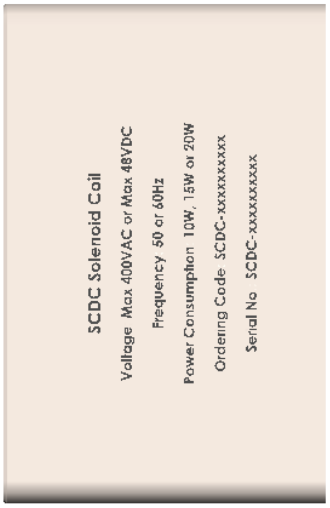
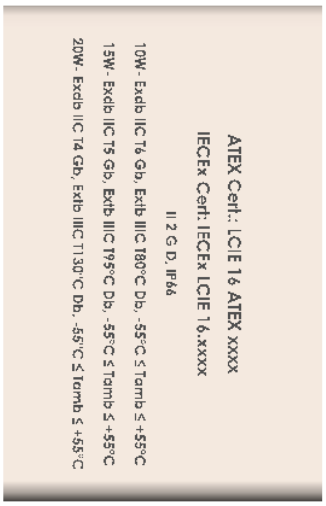
SCDC	20	AC	2	A	3
Type SCDC solenoid coil	Power consumption 20W	AC power supply	220-240V	50Hz	Cable length 3m

3.3 LABELING

The product marking carries the following important information:

Maximum Working Voltage:	Max 400VAC or Max 48VDC
Frequency:	50 or 60Hz
Rated Power Output:	10W, 15W or 20W
Equipment Group:	II
Equipment Category:	2GD
Gas Group:	IIC
Dust Group:	IIIC
Ex Marking:	10W- Exdb IIC T6 Gb ; Extb IIIC T80°C Db; 15W- Exdb IIC T5 Gb ; Extb IIIC T95°C Db; 20W- Exdb IIC T4 Gb ; Extb IIIC T130°C Db
Ingress Protection:	IP66
Ambient Temperature:	-55°C ≤ Tamb ≤ +55°C
ATEX Certificate No.:	LCIE 16 ATEX 3038X
IECEx Certificate No.:	IECEx LCIE 16.0032X
ATEX Mark:	
CE Mark:	CE 2813
Notified Body No.:	2813
Warning:	DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT; HOT SURFACE DO NOT TOUCH WHEN OPERATING
Ordering No.:	E.g. SCDC-xxxxxxxxxx
Serial No.:	E.g. SCDC-xxxxxxxxxx

SCDC Marking:

		
Side A	Side B	Side C

3.4 APPROVAL STANDARDS

Type SCDC solenoid coil is approved and issued IECEx and ATEX certificates complying with the following standards:

IEC60079-0:2011 (EN 60079-0:2012+All: 2013): General requirements

IEC60079-1:2014(EN 60079-1:2014): Equipment protection by flameproof enclosures "d"

IEC60079-31:2013 (EN 60079-31:2014): Equipment dust ignition protection by enclosure "t"

3.5 ZONES, GROUP, CATEGORY AND TEMPERATURE CLASSIFICATION

The explosion-proof classification for SCDC solenoid coil is:

ATEX: Ⓔx II 2GD,

10W- Exdb IIC T6 Gb, -55°C ≤ Tamb ≤ +55°C,
15W- Exdb IIC T5 Gb, -55°C ≤ Tamb ≤ +55°C,
20W- Exdb IIC T4 Gb, -55°C ≤ Tamb ≤ +55°C;

IECEx:

10W- Exdb IIC T6 Gb, -55°C ≤ Tamb ≤ +55°C,
15W- Exdb IIC T5 Gb, -55°C ≤ Tamb ≤ +55°C,
20W- Exdb IIC T4 Gb, -55°C ≤ Tamb ≤ +55°C;

This means the product can be installed in locations with the following conditions:

Area Classification:

Zone 1: Explosive gas air mixture likely to occur in normal operation.

Zone 2: Explosive gas air mixture not likely to occur, and if it does, it will only exist for a short time.

Zone 21: Explosive mixture is likely to occur in normal operation.

Zone 22: Explosive mixture is not likely to occur in normal operation and if it occurs it will exist only for a short time.

Gas Grouping:
Group IIC (Hydrogen and Acetylene etc.); Group IIB (Ethylene etc.); Group IIA (Propane etc.)

Dust Grouping:
Group IIIC (Metal Dusts); Group IIIB (Carbonaceous and Non-conductive Dusts); Group IIIA (Fibers and Flyings)

Equipment Category:
II 2GD

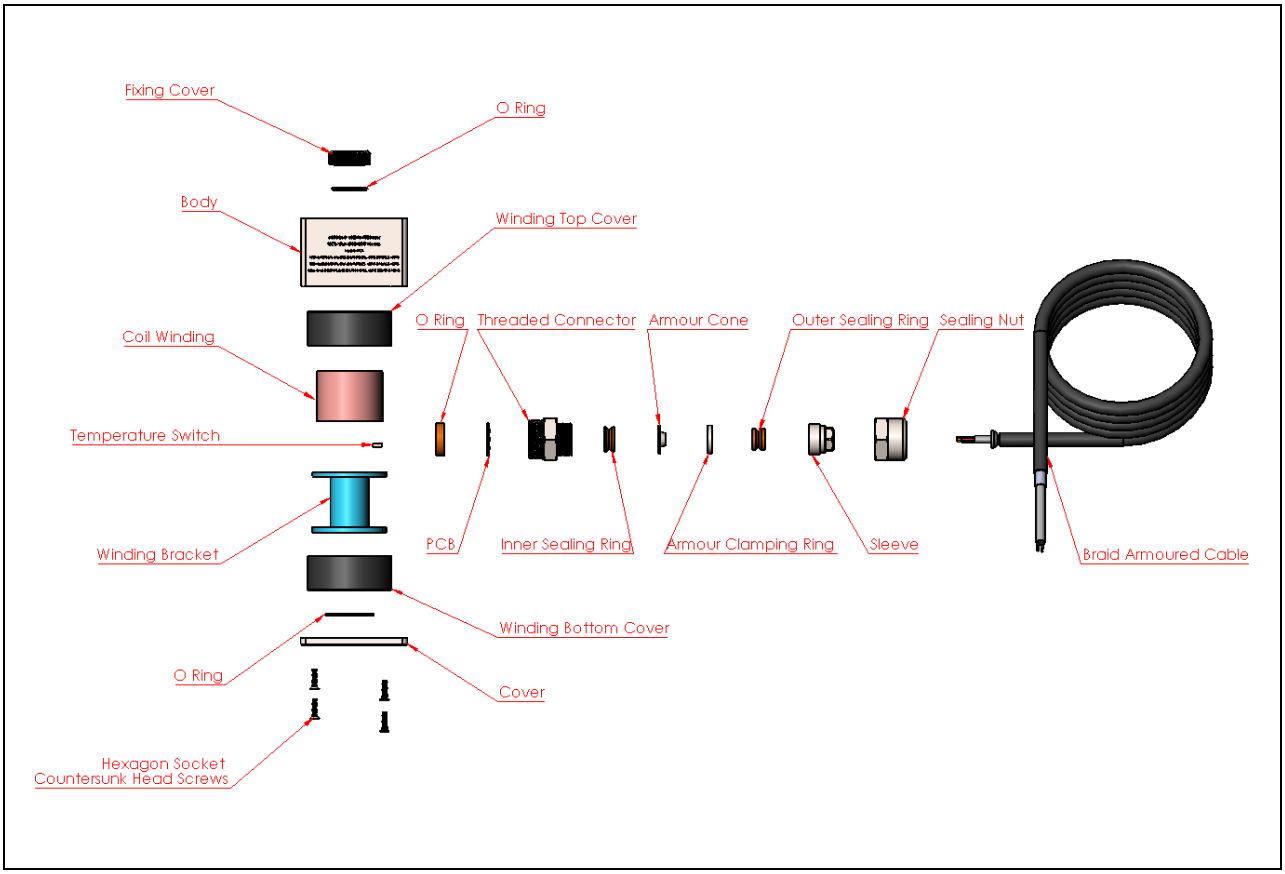
Temperature Class:
T6 (85°C) or T5 (100°C) or T4 (135°C)

Application Temperature Class:
T6 (80°C) or T5 (95°C) or T4 (130°C)

3.6 PARTS AND ACCESSORIES

SCDC Solenoid Coil:

Item	Part Name	Qty.	Remarks
1	Body	1	
2	Cover	1	
3	Winding Bracket	1	
4	Coil Winding	1	
5	Winding Top Cover	1	
6	Winding Bottom Cover	1	
7	Fixing Cover	1	
8	O Ring	1	
9	O Ring	1	
10	Temperature Switch	1	
11	Threaded Connector	1	
12	Sleeve	1	
13	Sealing Nut	1	
14	O Ring	1	
15	Inner Sealing Ring	1	
16	Outer Sealing Ring	1	
17	Armour Clamping Ring	1	
18	Armour Cone	1	
19	PCB	1	
20	Hexagon Socket Countersunk Head Screw	4	
21	Braid Armoured Cable	1	1.5m, 2m or 3m cable length selectable.



4.0 PRE-INSTALLATION

4.1 Inspect the solenoid coil for possible damage due to shipping and handling. Claims for shipping damages shall be placed with the carrier.

4.2 Check the solenoid coil marking to ensure that the area classification, gas and/or dust grouping and temperature code are suitable for the hazardous area classification.

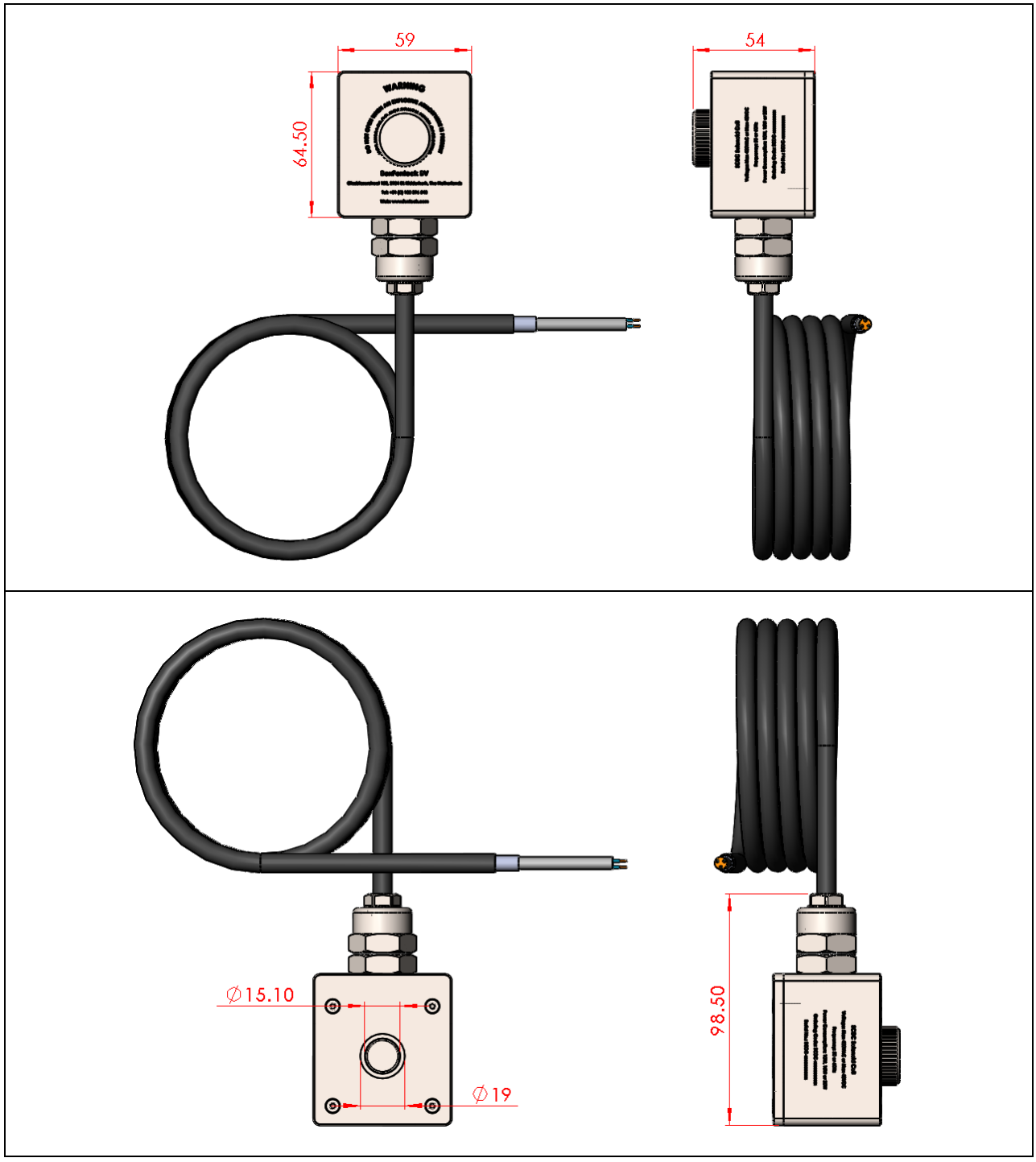
4.3 Verify that voltage, frequency, phase and wattage are as ordered and are the same as the electrical power supply available.

⚠ CAUTION	***REVIEW THIS MANUAL CONTAINED WITHIN PRIOR TO INSTALLATION, WIRING OR OPERATION OF THE COILS.***

5.0 INSTALLATION

The solenoid coil must be installed by qualified personnel in strict compliance with the electrical code and hazardous locations standards.

5.1 DIMENSION



5.2 INSTALLATION

⚠ WARNING	***HAZARDOUS VOLTAGE MAY CAUSE DEATH, SERIOUS PERSONAL INJURY, OR PROPERTY DAMAGE.***
⚠ WARNING	***TO AVOID ELECTRICAL SHOCK, TRUN OFF ELECTRICAL POWER TO SOLENOID COIL BEFORE PERFORMING INSTALLATION MAINTENANCE.***
NOTICE	***CARRY OUT INSTALLATION ACCORDING TO RELATED IEC/EN STANDARDS.***

6.0 WIRING

⚠ WARNING	***WHENEVER HAZARDOUS MATERIALS ARE PRESENT, ENSURE THAT THE SOLENOID COIL COVER AND GLAND SEALING NUT ARE SECURED (BUT NOT OVER-TIGHTENED) BEFORE ENERGIZING IT.***

7.0 OPERATION

⚠ WARNING	***DO NOT OPERATE SOLENOID COIL AT VOLTAGE HIGHER THAN THE RATING SPECIFIED ON THE NAME PLATE. FAILURE TO DO THIS WILL CAUSE ELEVATED TEMPERATURES.***
⚠ WARNING	***AFTER ALL CONNECTIONS HAVE BEEN MADE AND BEFORE STARING UP SOLENOID COIL, ENSURE THAT ALL PARTS HAVE BEEN INSTALLED.***

7.1 Check that all connections are tight.

7.2 Energize the solenoid coil and verify the correct voltage; the voltage can be verified by measuring resistance of the coil at room temperature.

7.3 Without overheating or failures, solenoid coil can be continuously energized. This is normal if the coil has been energized for a long time and then the surface becomes hot.

⚠ WARNING	***HOT SURFACE. DO NOT TOUCH WHEN OPERATING.***

8.0 MAINTENANCE

WARNING	***DISCONNECT ALL POWER SUPPLY TO THE EQUIPMENT PRIOR TO SERVICING THE JUNCTION/TERMINAL BOX.***

8.1 The maintenance must be implemented by qualified personnel in strict compliance with the electrical code and hazardous locations standards.

8.2 Periodically inspect the solenoid coil installation to ensure that all connections, fitting and covers etc. are tight and free of corrosion.

8.3 The solenoid coil should be checked regularly for surface, check the cleanliness, moisture, discharging and corrosion.

8.4 Periodically inspect the damage and proper operation of the solenoid coil.

8.5 Field repairs of flameproof joints should not be undertaken by the end user. In the event that flameproof joint must be repaired, contact the manufacturer. Repairs of flameproof joints must be made in compliance with the structural specifications in manufacturer's drawings. Repairs must NOT be made on the basis of values specified in tables 1 and 2 of IEC/EN 60079-1.

8.6 The flameproof solenoid coil is not field-serviceable. If your product requires servicing, please consult the manufacturer.

8.7 The maintenance working area must be ensured with safety isolation.

9.0 MAIN EXPLOSION-PROOF CHARACTERISTICS OF THE SOLENOID COIL

9.1 FLAMEPROOF STRUCTURE

Type SCDC solenoid coil comprises a body and a cover. The cover is fixed to the body by hexagon socket countersunk head screws. The coil winding is on a bracket and protected by two covers. The whole coil winding assembly is located in the enclosure of the body. There is a through hole in the body where the solenoid coil can be fixed to solenoid valve by screwing the fixing nut. The solenoid coil is manufactured with a braid armoured cable permanently connected to it. A cable gland is integral with the body. The material for both the enclosure of the body and the integral cable gland is stainless steel. Both the enclosure of the body and the integral cable gland are flameproof.

9.2 EX OR EX RELATED PARTS

The body, winding top cover, winding bottom cover, winding bracket, threaded connector and sleeve etc. are explosion-proof or explosion-proof related parts. The O-ring, gasket and compression seal are ingress protection related parts.

9.3 FLAMEPROOF JOINTS

The length, gap, surface roughness of the flameproof joints and the electrical clearance, creepage distance between the bare wires, the conductors and the enclosure must be guaranteed.

Field repairs of flameproof joints should not be undertaken by the end user. In the event that flameproof joint must be repaired, contact the manufacturer. Repairs of flameproof joints must be made in compliance with the structural specifications in manufacturer's drawings. Repairs must NOT be made on the basis of values specified in tables 1 and 2 of IEC 60079-1.

9.4 CABLE ENTRY

There is one cable entry located in the bottom of the solenoid coil body. It is a cylindrical threaded hole. The thread type and size is M25 x 1.0.

⚠ WARNING	***THE SOLENOID COIL IS MANUFACTURED WITH A BRAID ARMOURED CABLE PERMANENTLY CONNECTED TO IT. THE CABLE GLAND IS INTEGRAL WITH THE SOLENOID COIL ENCLOSURE. ALL THREADS ARE FASTENED AND LOCKED BY HIGH TEMPERATURE ANAEROBIC ADHESIVES IN ADVANCE. DO NOT DISASSEMBLE OR DISMANTLE THE CABLE GLAND IN ANY CIRCUMSTANCES FOR POTENTIAL DAMAGE TO THE INTERNAL ELECTRICAL PARTS OR THE CONSTRUCTION OF THE SOLENOID COIL.***

9.5 SPECIAL CONDITIONS FOR SAFE USE

⚠ CAUTION	***OPERAING AMBIENT TEMPERATURE: -55°C ~ +55°C***

EU DECLARATION OF CONFORMITY

We, BoxFonteck BV, the manufacturer, hereby declare under our sole responsibility that,

the products listed below comply with the essential health and safety requirements of Directive 2014/34/EU.

Products:	Type SCDC Solenoid Coil
ATEX Certificate No.:	LCIE 16 ATEX 3038X
Notification Body:	CSA Group Netherlands BV
CE Conformity:	CE 2813
Ex Marking:	Ex II 2 G D Ex db IIC T6…T4 Gb Ex tb IIIC T…°C Db IP66 -55°C ≤ Tamb ≤ +55°C
Harmonized Standards:	EN 60079-0:2012+A11:2013 EN 60079-1:2014 EN 60079-31:2014

Gap analysis has been conducted by us. No substantial technical changes in relation to the products design have been found. The products comply with the newest standards.

Authorized Signature

Authorized Person:
R. Wang

Place and Date:
Ridderkerk, The Netherlands
01. 2026

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