Type SC88Ex
Installation Guide

Installation guide

This Installation Guide is valid only for encoder types SCH88BEX, SCH88FEX and SCA88EX

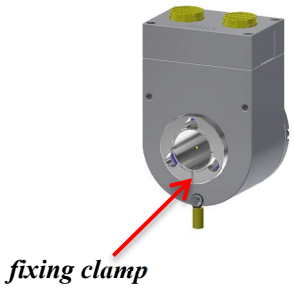
For your safety please read this guide carefully.

Failure to follow the instructions in this guide will render **ALL** certifications **INVALID.**

ESHR 1.1.2: Within the limits of the operating conditions laid down by the manufacturer, it must not be possible for a reaction to take place between the materials used and the constituents of the potentially explosive atmosphere which could impair explosion protection.

1. Installation

Installation of the encoder must be completed by a skilled technician or engineer. Failure to comply with the instructions below will render all certifications **INVALID**. **The encoder may not be modified by the customer**.



1. Insure that power is off.
2. Connect to earth prior to proceeding. Observe precautions for handling **ESD** (**E**lectro**S**tatic **D**ischarge) sensitive devices
3. When installing the Hollow Shaft encoder, check that the encoder fixing clamp is loose. Then slide the encoder hollow bore over the motor shaft (or other device).
4. Align encoder torque arm mounting hole with motor face plate hole. Insert screw into mounting hole and tighten.
5. Tighten fixing clamp M3 screw (maximum 1.5 Nm (1.12 lbft) torque).
6. **Use only shielded cable**. Temperatures at the cable entry can reach 90 °C. Selection of cable must be appropriate for the ambient temperature range in which the product is used.
7. Use **only** suitably certified cable glands (or blind plug, if no cable is attached) minimum rated for these applications or superior (see marking below). Cable entry threads are M20 x 1,5; M25 x 1,5;

½" NPT; ¾" NPT. The encoder housing can be provided with up to two of them on the nondrive end shield.

Each entry shall have no more than one thread adapter when an adaptor is used. A blanking element shall not be used with an adapter.

8. Assemble cable through Ex-Proof Cable Gland be sure approx. 3 inches (76 mm) of wire extend completely through gland.
9. Remove the protective plastic insert(s) from the cable gland outlet(s). This must be done prior to final installation.
10. Remove Cover from encoder.
11. Push wires through Cable Gland and the exterior Cover hole.
12. Screw Cable Gland into the Cover and tighten.
    Estimate required wire length needed for insertion into Terminal Blocks. **NOTE** – *wire lengths will vary depending on which terminal they will be inserted into.*
    - **WARNING: Do not tighten the Ex-proof cable gland while the encoder is attached to the shaft. Excessive torque may result in damage to the encoder ball bearings.**
13. Cut wires to proper lengths and insert into terminals.
14. Attach Cover to encoder and tighten screws; M4 – 3,5 Nm +/- 0,1 Nm torque.
15. Connect encoder Circuit Ground (GND).
16. Connect remaining Output wires to PLC. Then apply power (**insure the Supply Voltage is correct!**).
17. If used, safety screws in the Removable End Cap shall have a minimum yield stress of 600 MPa, class A4-80.
18. Precautions must be taken to avoid dust from forming layers on the encoder.
19. It is strongly recommended that the original packaging be used for any additional shipping or transport.

Caution

- **DO NOT connect encoder when power is on.**
- **DO NOT connect output wires to supply voltage.**
- **WARNING: Do not open when an explosive atmosphere is present!**
- **DO NOT strike encoder with hammer or any other heavy object.**
- **WARNING: Open circuit before removing cover. Keep cover tight while circuits are alive**
- **WARNING: equipment must be used with class 2 circuits."(North America only)**
  AVERTISSEMENT:. Doit être utilisé avec des circuits Class 2 "(Amérique du Nord uniquement)
- **WARNING: This primary backup battery is intended for use in applications subject to replacement only by a trained service technician.**
- **No user replaceable items inside – including internal backup battery!**
  Aucun utilisateur les éléments remplaçables à l'intérieur!
- **If encoder is mounted to electrical machinery with high current or high voltage on the shaft, precautions must be taken for galvanic separation.**

- **Maintenance is not necessary. Any required maintenance or repair is to be done only by the manufacturer.**
- No modifications may be made to the flamepaths of the enclosure.
- **To minimize the risk from electrostatic discharge - clean only with a damp cloth.**
- **It is a condition of certification that the precautions must be taken to avoid dust from forming layers on the encoder.**
- **Temperatures at the branching point can reach 90°C. Selection of cable must be appropriate for the ambient tempearture range in which the product is used !**
- **Note: This equipment is suitable for use in class I, division 1, groups CD or class II, division 1, groups EFG or non-hazardous locations only!**
- **Use only fasteners with a minimum yield stress of 600 MPa, class A4-80**
  Utilisez uniquement des fixations avec une limite d'élasticité minimale de 600 MPa, class A4-80.
- **Only suitably certified cable glands, fittings, and/or blind plugs may be used.**
  Seulement convenablement certifié presse-étoupes, raccords et / ou bouchons peuvent être utilisés.
- **A seal shall be installed within 50 mm of the enclosure. (North America only).**
  Un scellement doit être installé à moins de 50 mm du boîtier.

2. Electrical ratings

Supply voltage:	9V to 30V
Current consumption:	80 mA @ Vsup=10V(typical)
	40 mA @ Vsup=24V(typical)
Power consumption:	< 1,2 Watts
Rotation:	3000 rpm maximum

3. Marking:
ATEX/IECEx

CE xxxx[1] Ex

Ex db IIC T5 Gb
Ex tb IIIC T100°C Db
Tamb= -40°C to +70°C

II 2G Ex db IIC T5 Gb
II 2D Ex tb IIIC T100°C Db
Tamb= -40°C to +70°C

[1]) It is place for the specific number for the QAN issuer.

North American

File no. LR1192

Class I Div. 1 Groups CD T5
Class I Div. 2 Groups BCD T5
Class II Div. 1 Groups EFG
Class II Div. 2 Groups FG
Ex db IIC T5 Gb
Ex tb IIIC T100°C Db
Tamb=-40°C to +70°C

Class I Zone 1, AEx db IIC T5 Gb
Zone 21, AEx tb IIIC T100°C Db
Tamb=-40°C to +70°C

Additionally the encoders meet IP65/66/67 & 68- 1 meter/1 hour) in accordance with EN 60529.

4. Certification numbers:

IECEx: IECEx QPS 19.0003X

ATEX: CML 19ATEX1099X, QPS24ATEX5009X

Certificate of Compliance (North America & Canada) is under file no. LR1192

See certifications at www.scancon.dk

5. The encoder complies with the following standards:

IEC 60079-0 :2017 Ed.7 EN 60079-0 :2018	Explosive atmospheres - Part 0: Equipment – General requirements
IEC 60079-1 :2014 Ed. 7 EN 60079-1 :2014	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 :2013 Ed. 2 EN 60079-31 :2014	Explosive Atmosphere – Part 31: Equipment dust ignition protection by enclosure “t”
CSA C22.2 No.30-M1986	Explosion-Proof Enclosures for Use in Class I hazardous locations, Industrial Products.
CSA C22.2 No. 25-2017	Enclosures for Use in Class II, Division 1, Groups E, F and G hazardous locations
CSA C22.2 No. 213-2017	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations.
CSA C22.2 No. 60079-0:2019	Explosive atmospheres - Part 0: Equipment - General Requirements

CAN/CSA C22.2 No. 60079-1:2016	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures 'd'
CAN/CSA C22.2 No. 60079-31:2015	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'
UL 1203, Edition 5.0	Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
UL 121201, Edition 9.0	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
UL 60079-0, Edition 6.0	Explosive atmospheres - Part 0: Equipment - General requirements
UL 60079-1, Edition 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
UL 60079-31, Edition 2.0	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'

NOTE: Adding/removing data or changing the layout of this document, which does not conflict with the actual data and QPS, ATEX/IECEx certification, does not need to be notified by Certification Body, as well as the new revision number following the changes.