

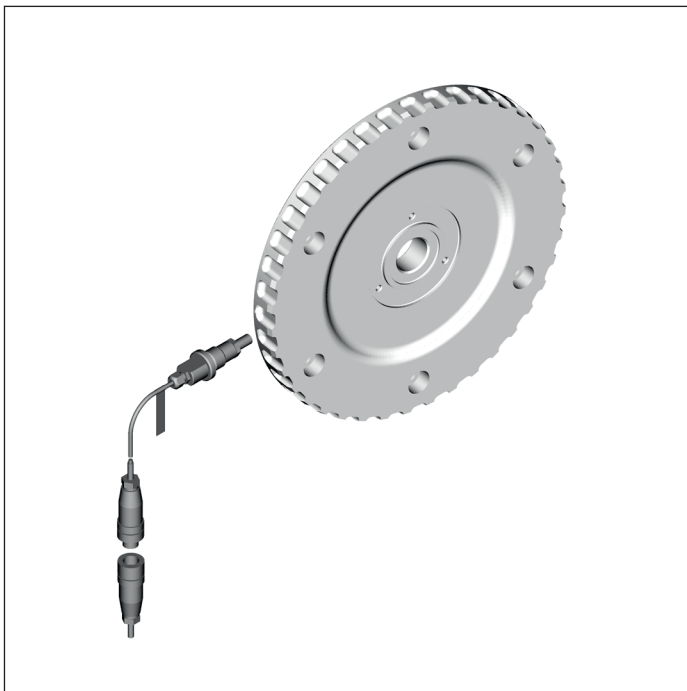
Speed sensor, inductive

Häggglunds SPDE

RE 15351

Edition: 05.2018

Replace: 06.2016



► Valid for: Häggglunds motors CB, CBP, CBM

Features

- Non-contact, wear free system
- Robust design
- ATEX/IECEX -version available
- Through hole version available

Contents

1	Preface	2
2	Ordering code	3
3	Functional description	4
4	Technical data	7
5	Dimensions / Interface.....	8
6	Installation	10




1 Preface

Warning signs

In this manual you will find the following signs which indicate a potential hazard, which can or will cause personal injury or substantial property damage. Depending on the probability of the hazard, and how serious the injury or property damage could be, there are three levels of classification.

Warning sign (warning triangle):	Draws attention to the hazard
Signal word:	Identifies the degree of hazard
Type of risk:	Specifies the type or source of the hazard
Consequences:	Describes the consequences of non-compliance
Precautions:	Specifies how the hazard can be prevented

The signal words have the following meaning:

Warning sign, signal word	Meaning
 DANGER	Indicates a dangerous situation which will cause death or severe personal injuries if not avoided.
 WARNING	Indicates a dangerous situation which may cause death or severe personal injuries if not avoided.
 CAUTION	Indicates a dangerous situation which may cause minor or medium personal injuries if not avoided.
NOTICE	Material damage: the product or its environment could be damaged.

2 Ordering code

In order to identify Hägglands equipment exactly, the following ordering code is used. These ordering codes should be stated in full in all correspondence e.g. when ordering spare parts.

Example: SPDE:

SPD	E	2	02	2	00
01	02	03	04	05	06*

01	Speed sensor	
		SPD
02	Type / Version	
		E
03	Type of sensor	
	Standard	1
	Explosion proof	2
04	Mounting set or motor type	
	CA	–
	CA through hole	–
	CB	–
	CB trough hole	04
	CBP 240 to CBP 840	05
	CBP 240 to CBP 840 through hole	06
	CBM	–
	CBM through hole	08
05	Modification*)	
		0-9
06*	Design	
	Standard	00
	Special index*)	01-99

*) To be filled in by Bosch Rexroth AB Mellansel.

– Not available

3 Functional description

The inductive rotation speed sensor gives a single incremental output with 40 or 60 pulses per rotation depending on motor size. The output is triggered by tooth's on the bearing holder at the end of the rotating motor shaft. The signal can be used for speed indication but can in most cases not be used for speed feedback. The sensor cannot indicate direction of rotation. The standard type sensor has an active output (PNP) for direct driving of a load or a digital input. The Ex type sensor has a Namur output and must be connected via an energy limitation amplifier outside ex zone.

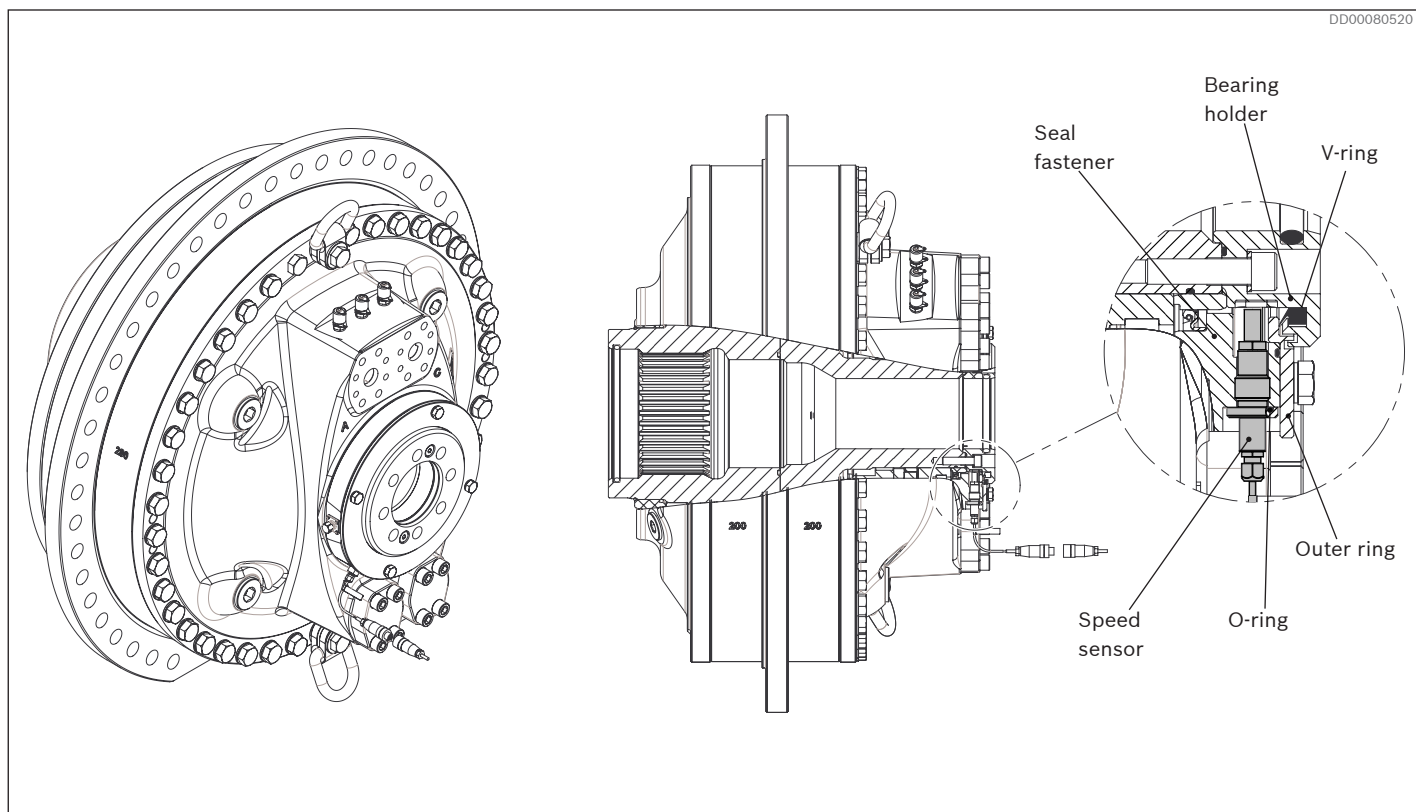


Fig. 1: CB motor with SPDE

DD00080521

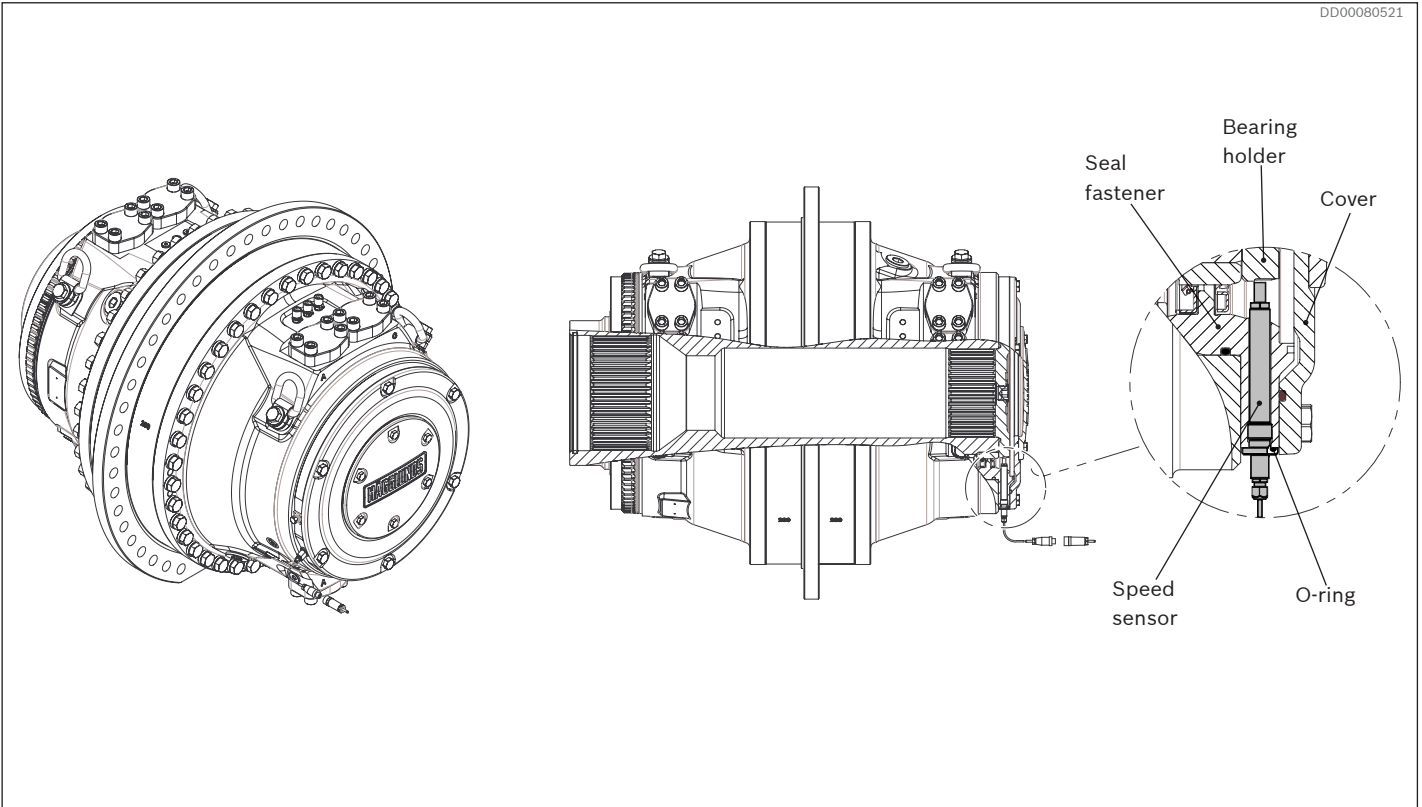


Fig. 2: CBP motor with SPDE

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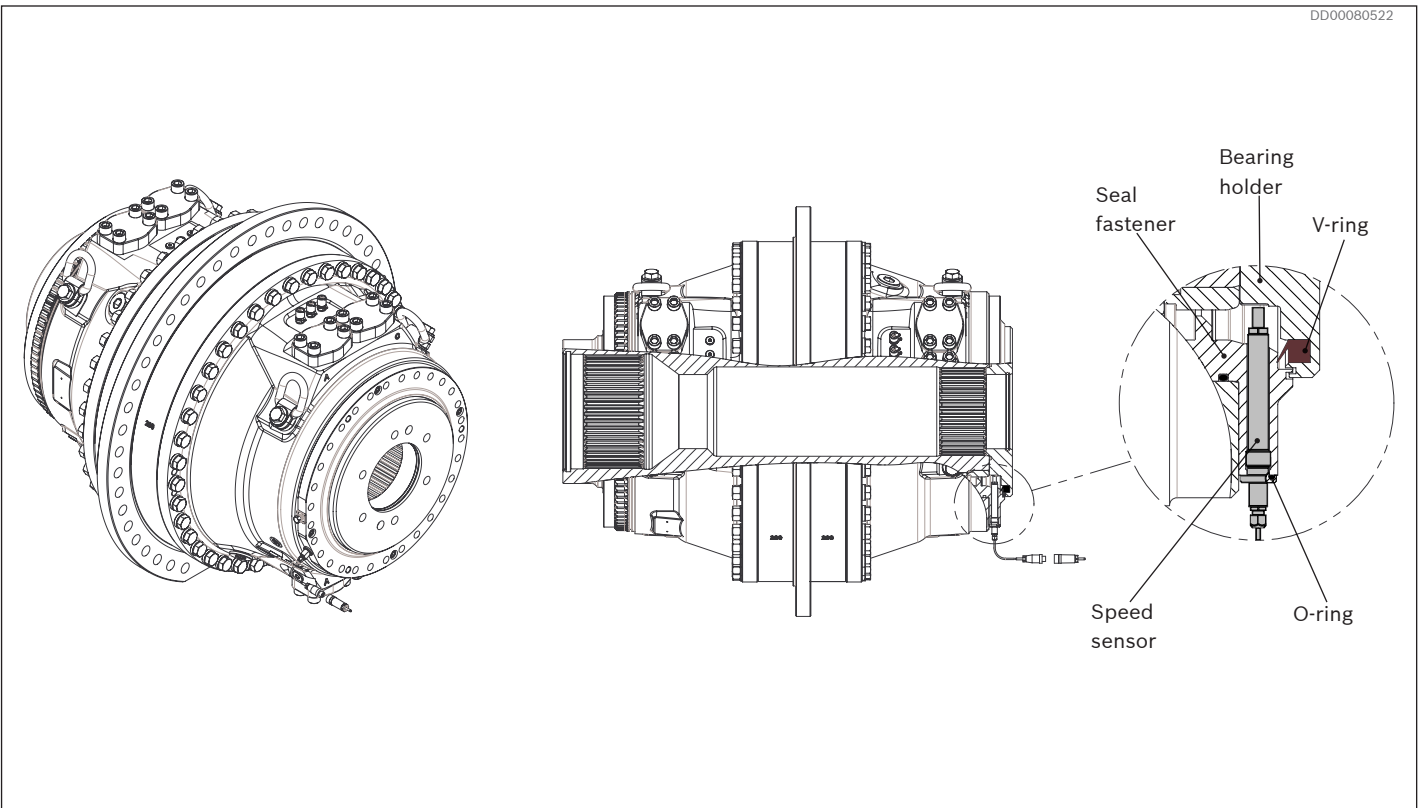


Fig. 3: CBP motor trough hole with SPDE

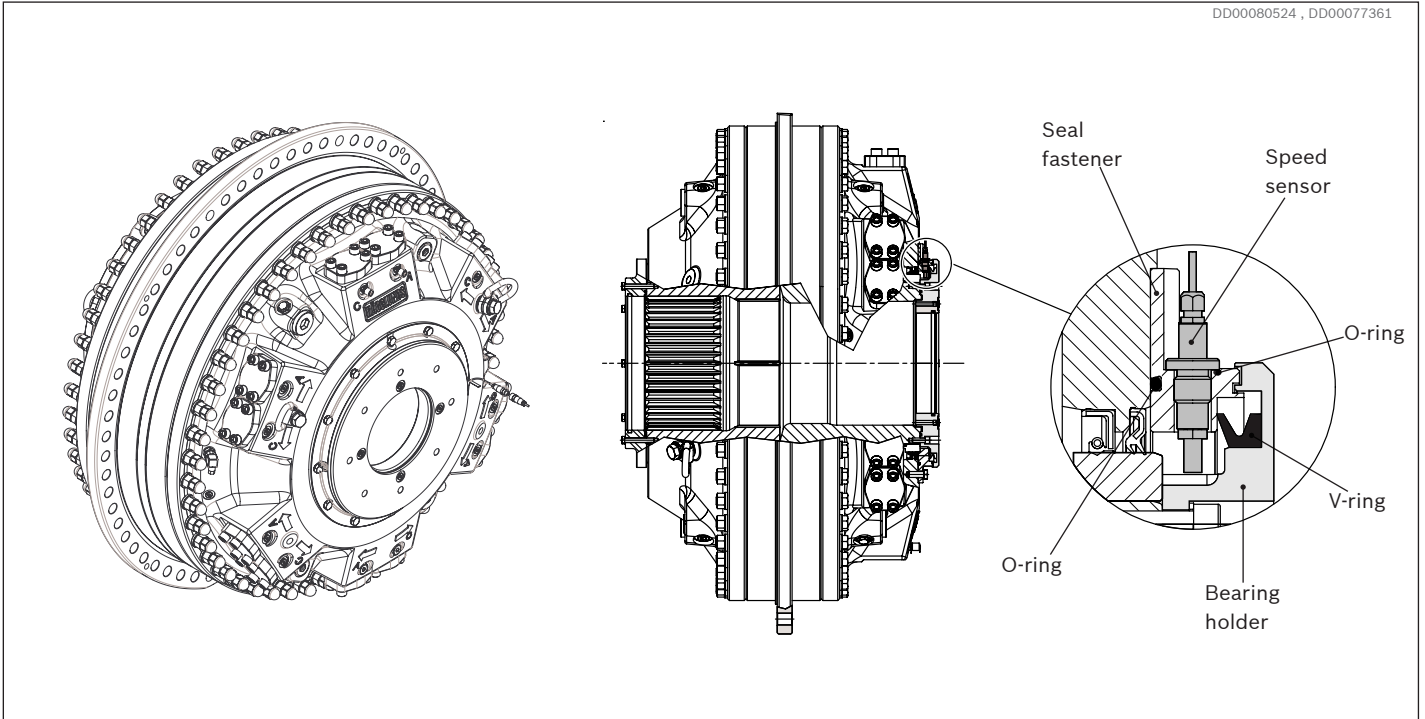


Fig. 6: CBM motor trough hole with SPDE

4 Technical data

Table 1: Specifications

Type	Standard	Ex
Electrical specification		
Supply voltage +Ub	DC 24 V (10-36 V)	DC 15 V (5-15V)
Current Consumption	≤11 mA	
Output current		>2 mA (active surface free) <1,5 mA (active surface covered)
Max load	200 mA	-
Voltage drop	≤ 1.5 V (at 200mA, 20°C)	-
Switching function	DC.NO	NAMUR EN 60947-5-6
Self inductance	2 mH	
Self capacitance	250 nF	
Sensor contact	M12 4-pin Male	M12 4-pin Male
Cable contact, R913019688	M12 4-socket Female Screw terminals, max 0,75mm ² Cable size 4-6 mm	M12 4-socket Female Screw terminals, max 0,75mm ² Cable size 4-6 mm
Pulses per revolution CB, CBP	40 ppr	40 ppr
Pulses per revolution CBM	60 ppr	60 ppr
Mechanical specification		
Operating temp	-25 °C...+70 °C	-20 °C...+80 °C
Protection class	IP 67	IP 67
Material	Stainless steel	Stainless steel
Sensing distance	0-1,2 mm	0-1,5 mm
Cable min bending radius	25 mm	25 mm
Cable length	2 m	2 m
Approvals		ATEX, IECEx II 1G Ex ia IIC T1-T6 Ga

5 Dimensions / Interface

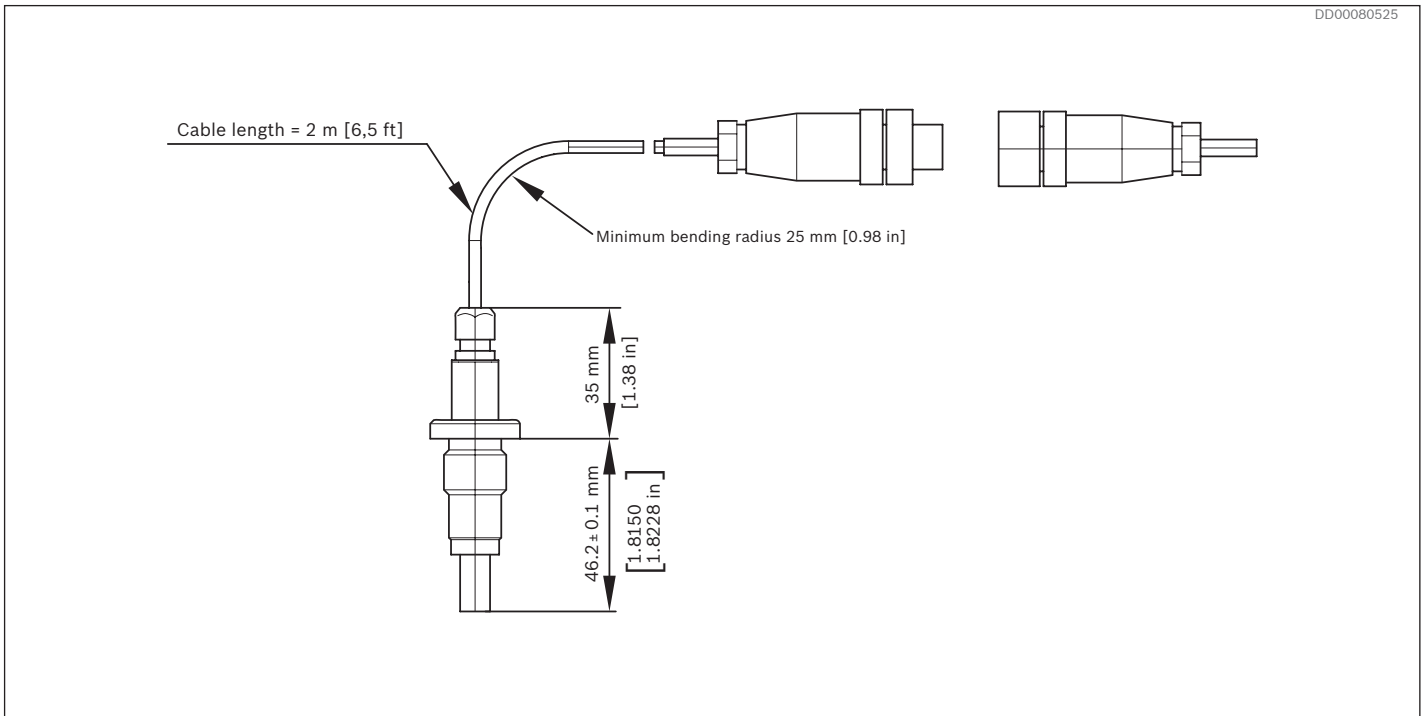


Fig. 7: Version for CB and CBM

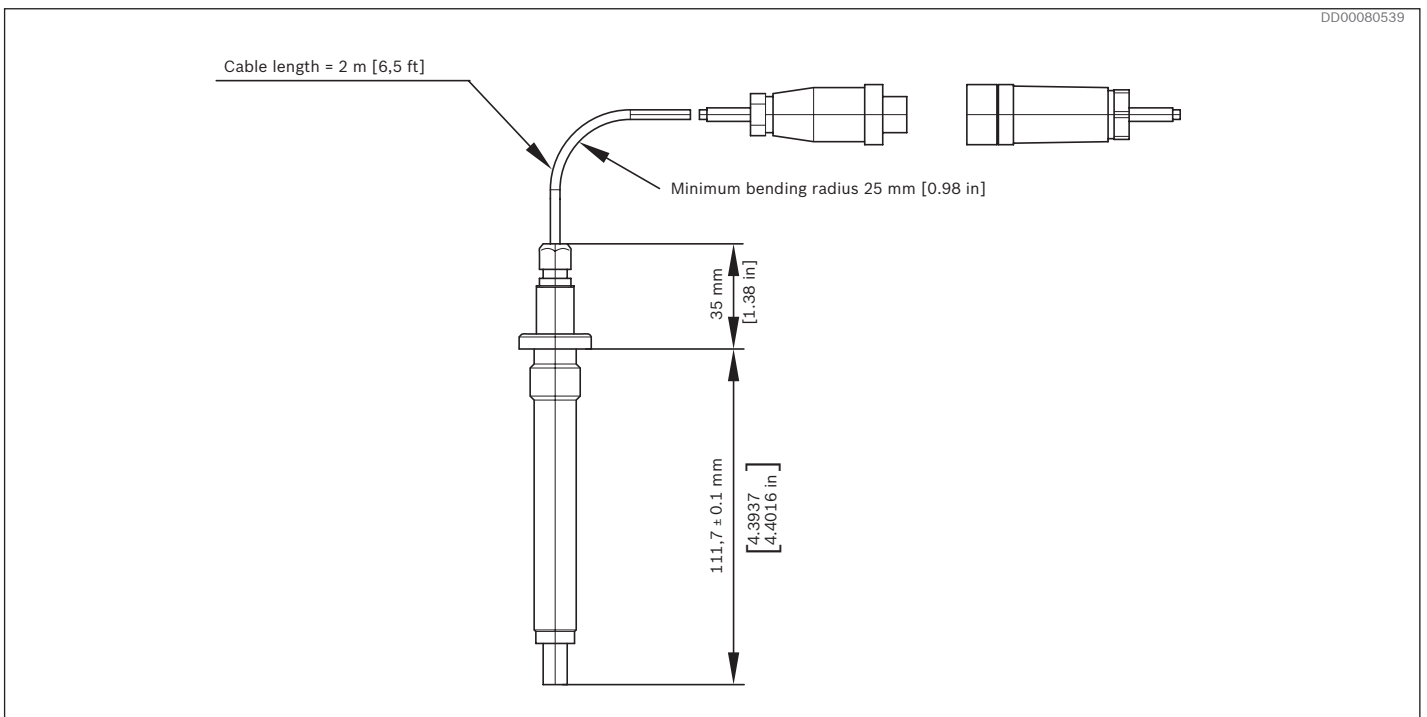


Fig. 8: Version for CBP 280 to CBP 840

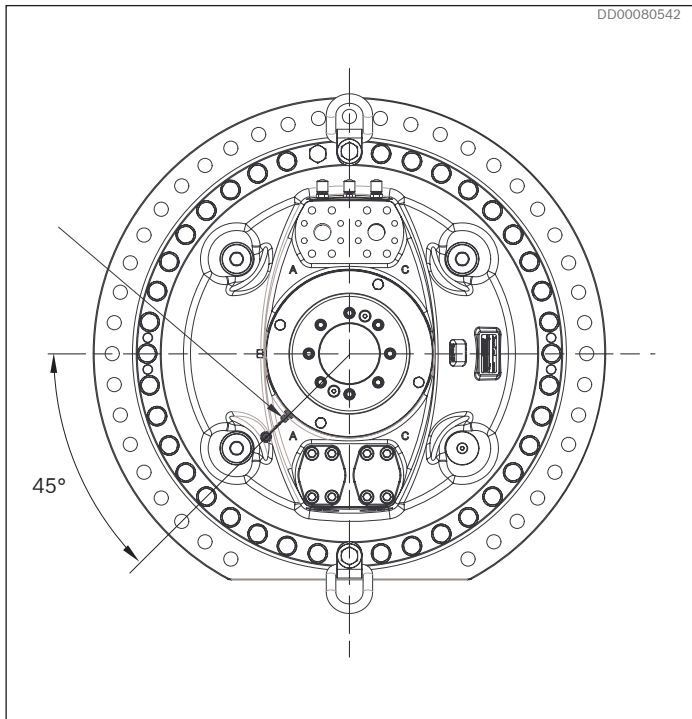


Fig. 9: Position SPDE on CB motor

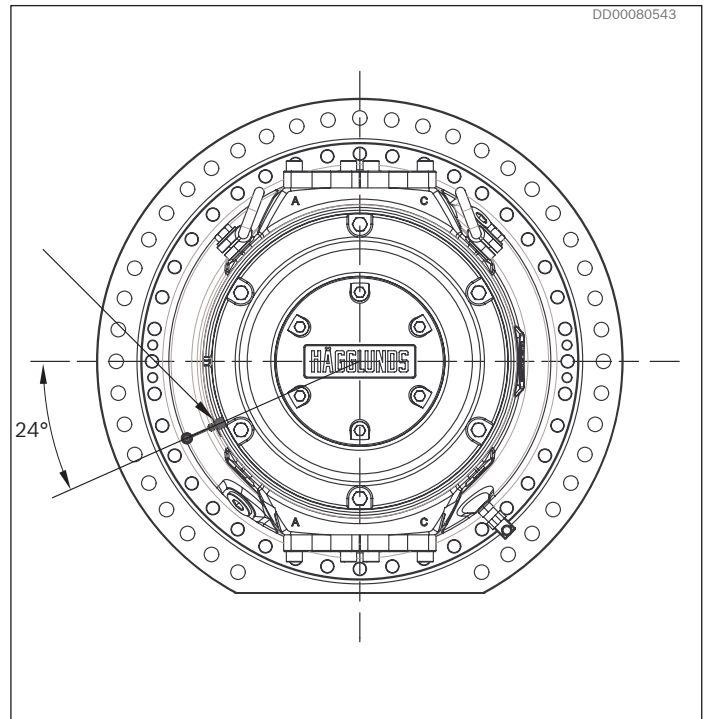


Fig. 10: Position SPDE on CBP motor

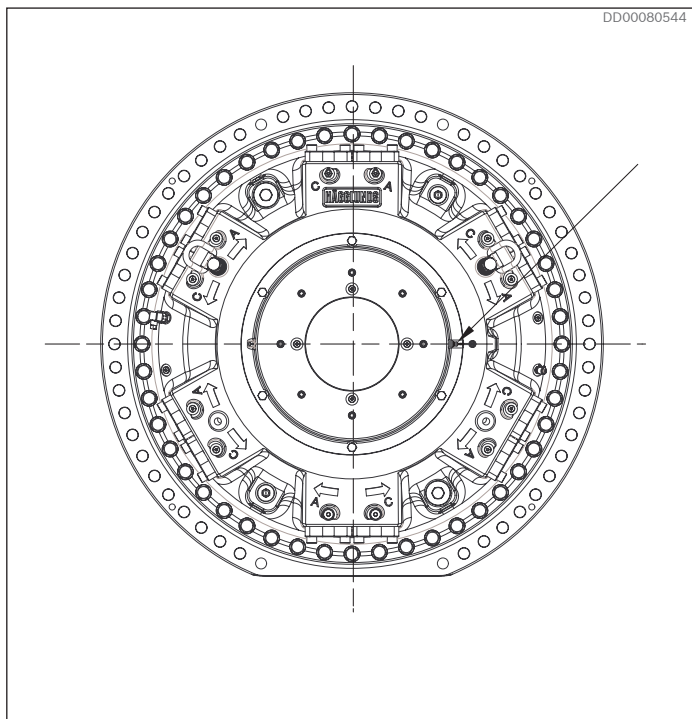


Fig. 11: Position SPDE on CBM motor

6 Installation

6.1 Mechanical installation

Remove the plug G $\frac{3}{8}$ on the motor, using an Allen key and replace it with the sensor.

Tighten to 35 Nm, key width = 12,5 mm [$\frac{1}{2}$ "]

Seal off the sensor with an o-ring .

O-ring size 13,95 x 2,62 , NBR 70 (Included in delivery).

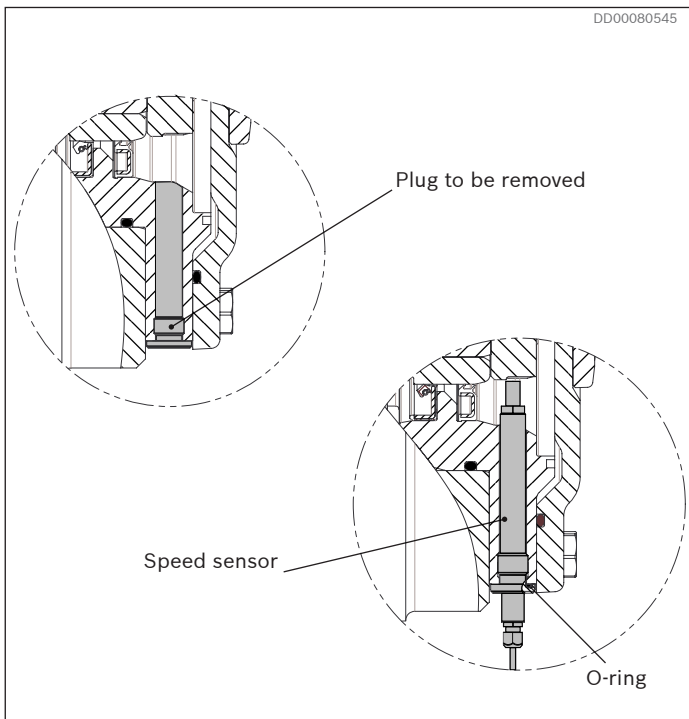


Fig. 12: Mounting SPDE

6.2 Electrical installation

Table 2: Cable connection

Cable connections	Standard sensor	Ex sensor
1	Supply +Ub	+ signal
2	Output	NC
3	0 VDC	- signal
4	NC	NC

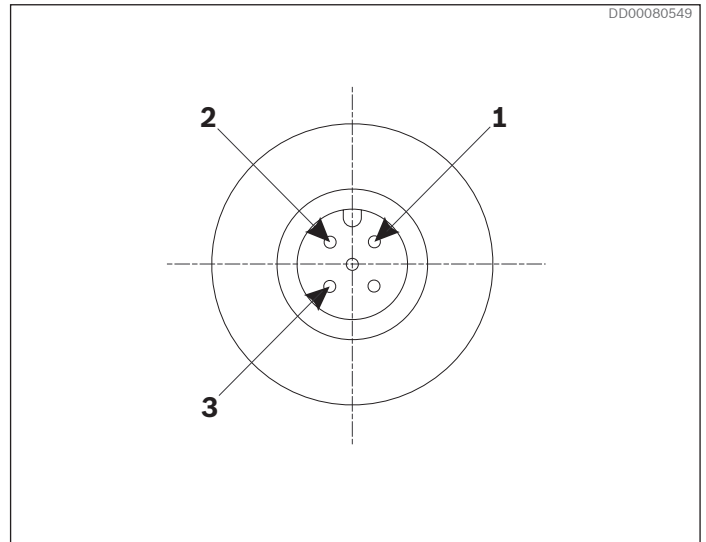


Fig. 13: Sensor connection (pin side)

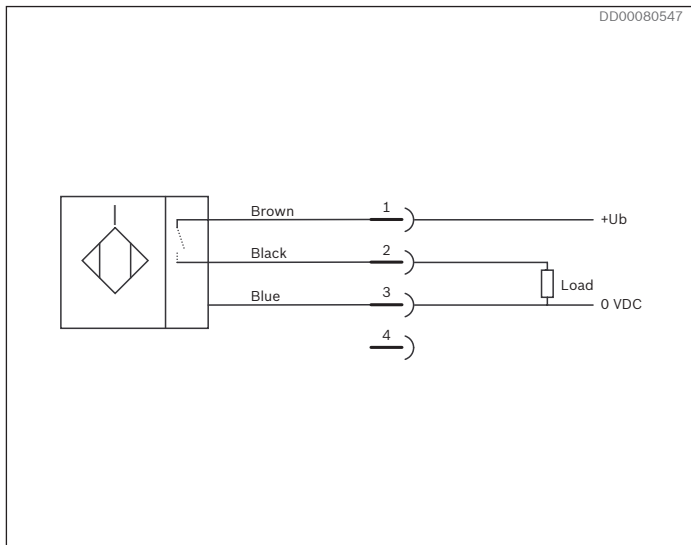


Fig. 14: Connection standard sensor

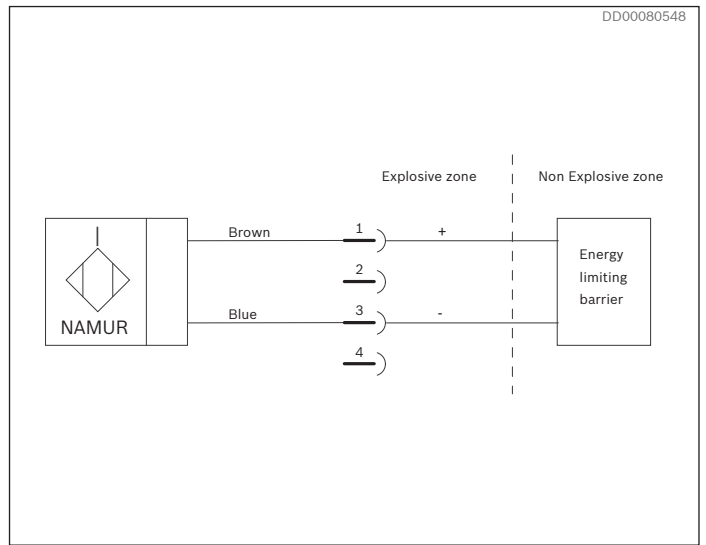


Fig. 15: Connection Ex sensor

The Ex sensor must be connected via an intrinsically safe pulse isolator placed outside explosive zone.

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