



Type SCH86FEX

- EX d- Certified Hollow Shaft encoder - $\varnothing$ 86 mm
- Hollow bore - $\varnothing$ 5/8 inch to $\varnothing$ 1"
- IP 65 (IP 66 & 67 option)
- "Seawater-proof" 22 micron Anodization
- Material options (AISI 316)
- Ex Certificates

Electrical Specifications

Code:	Incremental
Resolution:	1 to 4096 ppr (pulses per revolution)
Supply Voltage:	4.5 Vdc min. to 30 Vdc max. ** (45 mA max. - no load)
Output Voltage:	Low: 500 mV max. at 10 mA High: (Vin - 0.6) at -10 mA (Vin - 1.3) at -25 mA
Output Current:	30 mA max. load per output channel **
Frequency Response:	300 kHz max. ** Output MW 70 kHz max.
Output Format:	Two channel (A, B) quadrature with Index (Z) and optional complementary (A-, B-, Z-) outputs
Phase Sense:	A leads B clockwise (CW) from the mounting end of the encoder
Index:	Gated with Channels A and B high Output MW gated with Channel A
Accuracy:	+/- 0.8 arc-min.
Outputs:	ASIC Push-pull and Differential OL7272 Push-pull and Differential Line Driver 26C31 Differential Line Driver 5V output (with 5V input) iC-DX Differential Line Driver
Electrical Protection:	Output short circuit protected Reverse polarity protected (ASIC and MP (OL7272) outputs only) Miswiring protected (MW outputs only)
Noise Immunity:	Tested to EN61000-6-2 : 2005 (industrial environments) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments)

**= It is recommended user not to combine max. value for all 3 parameters

Mechanical Specifications

Material:	Housing: Aluminum or AISI316 Cap: Aluminum or AISI316 Hollow Shaft: AISI 316
Weight:	Aluminum: Approx. 1250 gr (44.1 oz) Aisi 316: Approx. 3750 gr. Cable: 50 gr / meter (1.76 oz / meter)
Bearing Life:	> 1.9×10^{10} revolutions at rated load
Shaft Speed:	3,000 rpm continuous (max.)
Starting Torque:	< 0.05 Nm (7.08 oz-in) at 25° C IP 65 < 0.1 Nm (14.16 oz-in) at 25° C IP 67
Mass Moment of Inertia:	550 - 600 g cm ² (7.8×10^{-3} - 8.5×10^{-3} x oz in sec ²)
Shaft Loads:	Axial 50 N (11.25 lbs) max. Radial 100 N (22.50 lbs) max.

Environmental Specifications

Operating Temp.:	-40° to +70° C
Storage Temp.:	-40° to +85° C
Shock:	100 G @ 11 ms
Vibration:	10-2000 Hz @10 G
Bump:	10 G @ 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
Enclosure Rating:	IP 65 / Nema 4 (approx.) IP 66 / Nema 6 (approx.) option IP 67 / Nema 6 (approx.) option

Connection Options

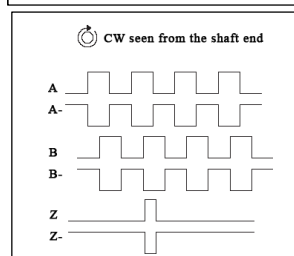
Cable:	8 leads (0.14 mm ² , 26 AWG) twisted pairs; shielded; halogen free
Connectors:	9-position terminal block (inside cap) M20 cable gland entry M25 cable gland entry

Certifications

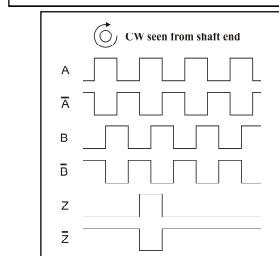
ATEX:	Certificate No.: ITS 09 ATEX 168416X II 2 G Ex d IIC T5 Gb and II 2 D Ex tD IIIC T100°C Tamb -40°C to +70°C
IECEX:	Certificate No.: ITS13.0025X Ex d IIC T5 Gb and Ex tb IIIC T100°C Db Tamb -40°C to +70°C
North America:	Certificate No: LR1192-4R2 Class I, Division 2, Groups ABCD T5 Class II, Division 2, Groups FG Ex d IIC T5 Gb Class I, Zone 1, AEx d IIC T5 Gb Tamb= -40 °C to +70 °C V= 4.5 – 30 Vdc; Imax= 100 mA
EAC Ex:	Certificate No. RU No. 0249626 НАННО «ЦСВЭ» No.TC RU C-DK.ГБ05.В.00974 1Ex d IIC T5 Gb X Ex tb IIIC T100°C Db X -40°C<T.amb<+70°C
ISO 9001 : 2008	Certificate Registration No.: 44 100 111616 Report No: 3508 5281

Output waveform

Output: N,D,M,MP,MS and L



Output: MW



Channel tolerance 180 e° +/- 36 e°
Phase difference tolerance 90 e° +/- 18 e°
Z channel tolerance 90 e° +/- 18 e°

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Phase difference tolerance 90 e° +/- 18 e°
Z channel tolerance 180 e° +/- 18 e°

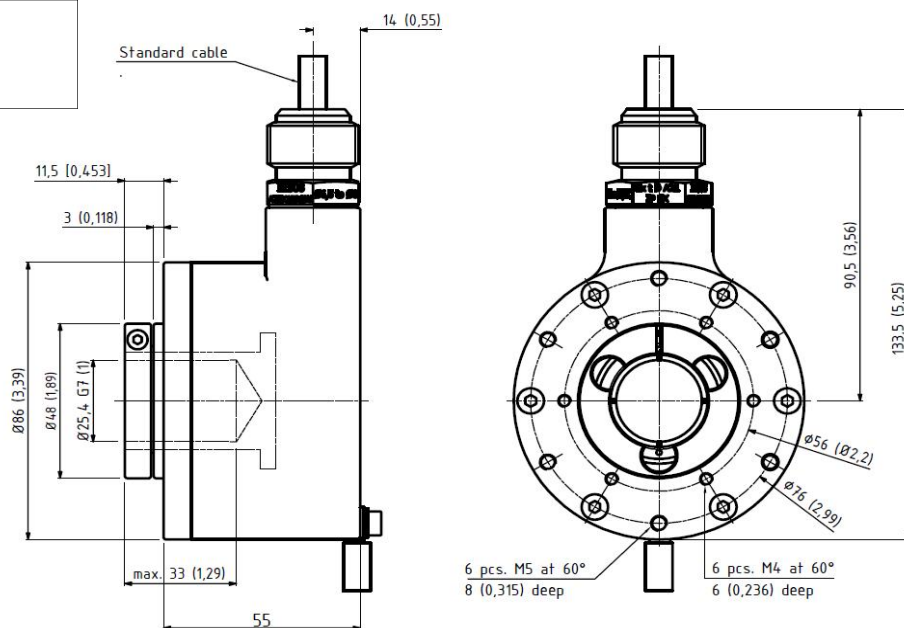
Disk Resolutions (pulses per revolution)

25	32	40	100
400	800	1024	2000
2048	2500	3072	3600
4096			

Other options on request
Pulses per revolution,
min. 1 – max. 10.000

Mechanical Dimensions

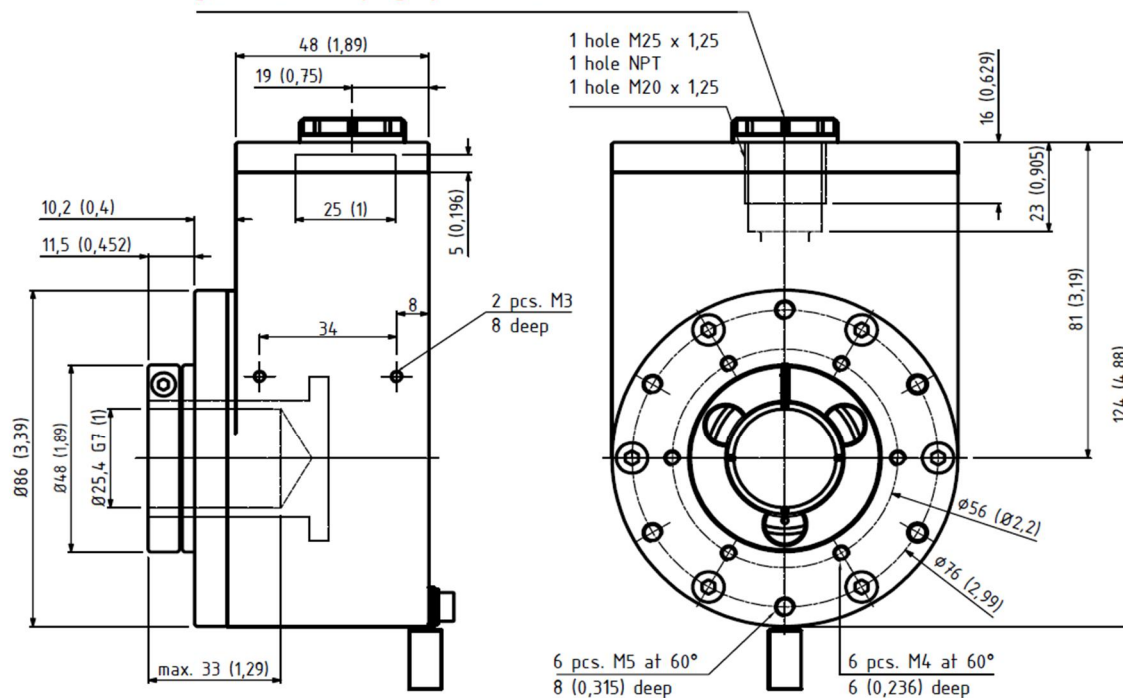
**Certified for ATEX
and IECEx only**



Standard Cap Type SF08

mm (inches)

1 pc. plastic Screw Plug for environmental protection only! Must be replaced by Ex d certified cable glands and/or plugs prior to use.



Standard End Cap

Type EC08, EC09, EC10 & EC11

mm (inches)

Output Terminations

Standard Cap Type SF08

Channel	Standard Cable	
	Standard Output	Differential Output
	Wire Color	Wire Color
A	Pink	Pink
A -	Gray*	Gray
B	Green	Green
B -	Yellow*	Yellow
Z	White	White
Z -	Brown*	Brown
Vsup	Red	Red
GND	Blue	Blue

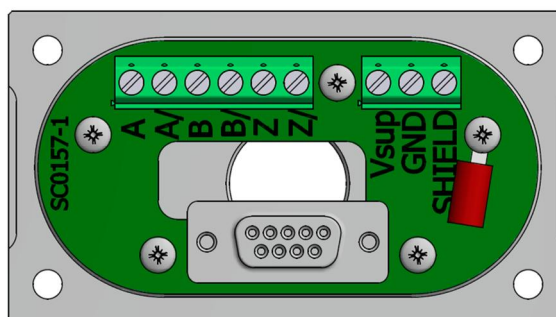
GND = Circuit Ground

* Gray, Yellow, and Brown are internally connected as Ground

Standard End Cap Type EC08, EC09, EC10& EC11

Position	Terminal Block	
	Standard Output	Differential Output
	Channel	Channel
1	Vsup	Vsup
2	GND	GND
3	Ch. A	Ch. A
4	*	Ch. A -
5	Ch. B	Ch. B
6	*	Ch. B -
7	Ch. Z	Ch. Z
8	*	Ch. Z -
9	Shield	Shield

Terminal block MKDSN 1,5/9 – 5,08



* Do not attach any wires to terminal block

GND = Circuit Ground Shield = Case Ground

Ordering Code

Example: SCH86FEX – 1024 – AL – M – 01 – 00 – 67 – 00 – EC11 – A

SCH86FEX		-	-	-	-	-	00	-	-	-	-	-	A	
Pulses per Revolution		Composition	Output	Hollow Shaft Dia.	Hollow Shaft Length	IP Rating	Cable Length	Cable Takeout	Flange					
See table														
Aluminum	AL													
Stainless Steel	SA	AISI 316												
Standard	N													
Differential	D													
Differential 9V to 30V														
Miswiring protected and with build in TSM	MW													
OL7272 4.5V to 30V	M*													
OL7272 9V to 30V	MP													
OL7272 9V to 30V	MS													
With build in TSM														
26C31 5V in / 5V out	L*													
* Not reverse polarity protected														
						IP 65	65							
						IP 66	66							
						IP 67	67							
Standard is 1 meter								01						
Specify length								XX						
No Cable (End Cap)								00						
										Side (Radial)	SH08			
										End Cap M25 1 hole	EC08			
										End Cap M20 1 hole	EC09			
										End Cap NPT 1/2 1 hole	EC10			
										End Cap NPT 3/4 1 hole	EC11			
See Accessories for Cable Gland options														
5/8" (15,875 mm)					01	-	00							
16 mm					02	-	00							
20 mm					03	-	00							
25 mm					04	-	00							
1" (25,4 mm)					05	-	00							

Other options on request:
Please contact Scancon A/S