

Type SCA-BM



- Shaft Encoder - Ø 24 mm
- Shaft: Ø 3,175 mm x Ø 6 mm
- Resolution up to 7500 ppr
- Standard IP 64 (IP 50 option)
- Thermal shutdown at 155 C

Electrical Specifications

Code:	Incremental
Resolution:	1 to 7500 ppr (pulses per revolution)
Supply Voltage:	4,5 Vdc min. to 30 Vdc max. (35 mA max. - no load) **
Output Voltage:	Low: 500 mV max. at 10 mA High: (V _{in} - 0,6) at -10 mA (V _{in} - 1,3) at -25 mA
Output Current:	25 mA max. load per output channel **
Frequency Response:	200 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
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)
Electrical Protection:	Reverse polarity and output short circuit protected
Noise Immunity:	Tested to EN61000-6-2 : 2005 (industrial environments) Electromagnetic compatibility (EMC) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC)

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

Mechanical Specifications

Material:	Housing: Brass Cap: Electroplated Steel Aluminum (flat cable option) Shaft: Stainless Steel
Weight:	Encoder: ~ 40 gr (1,41 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	> 1,9 x 10 ¹⁰ revolutions at rated load
Shaft Speed:	12.000 rpm (max.)
Starting Torque:	< 0,005 Nm (0,708 oz-in) at 25° C
Mass Moment of Inertia:	0,8 gcm ² (1,13 x 10 ⁻⁵ oz-in-sec ²)
Shaft Loads:	Axial: 10 N (2,25 lbs) max. Radial: 20 N (4.50 lbs) max.

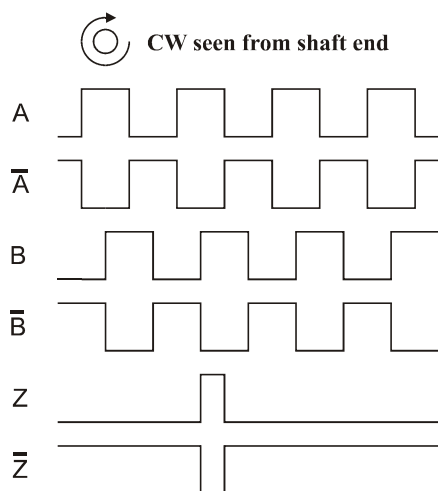
Environmental Specifications

Operating Temp.:	-40° to +85° 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 50 / Nema 5 (approx.) IP 64 / Nema 4 (approx.) – flat cable

Connection Options

Cable:	8 leads (0,05 mm ² , 30 AWG) - Differential 5 leads (0,14 mm ² , 26 AWG) - Standard twisted pairs; shielded
Flat Cable:	10 lead flat cable with IDC connector

Output waveform



Channel tolerance $180\text{ e}^\circ \pm 36\text{ e}^\circ$
 Phase difference tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$
 Z channel tolerance $90\text{ e}^\circ \pm 18\text{ e}^\circ$

Disk Resolutions (pulses per revolution)

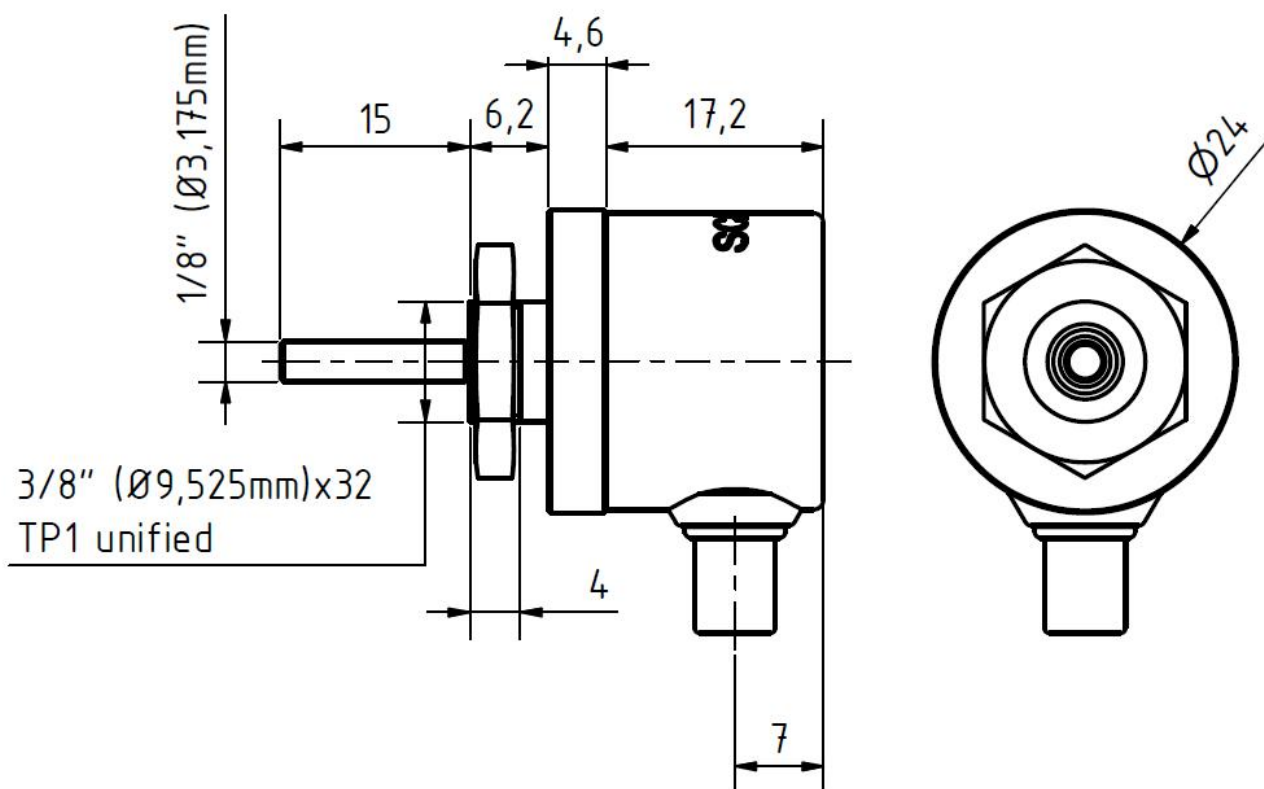
4	30	100	250	600	2048
10	36	125	256	1000	2500
11	50	128	300	1024	3000
12	60	150	360	1250	3600
15	75	180	400	2000	5000
25	90	200	500	2500	7500*

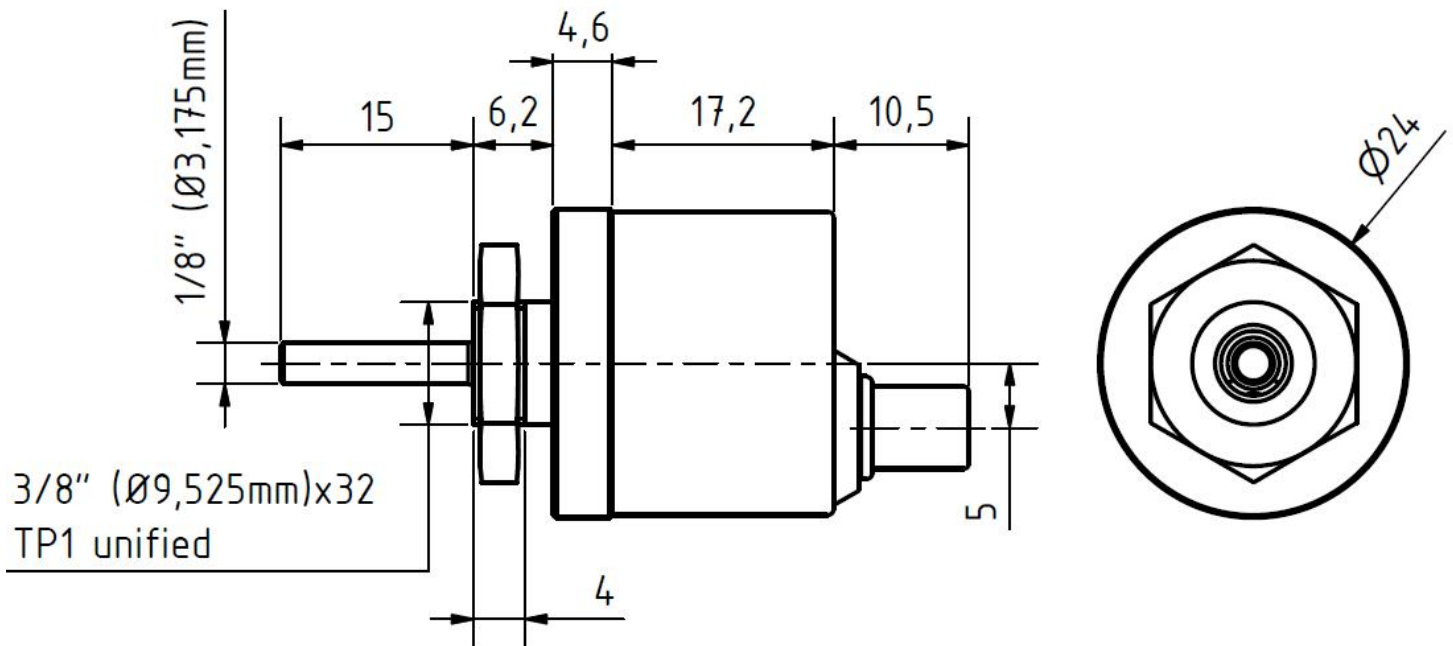
Other options on request

Pulses per revolution,
 min. 1 – max. 7.500

* Operating temperature: -20°C to 50°C

Mechanical Dimensions





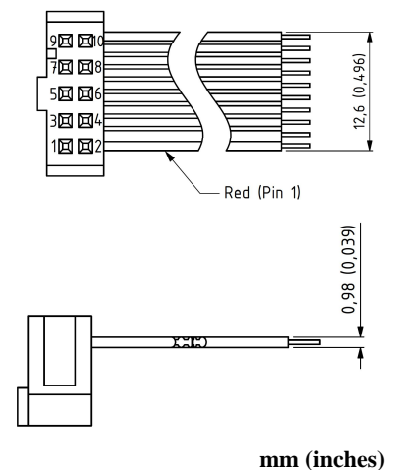
Output Terminations

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

GND = Circuit Ground

Position	Flat Cable w/ IDC Connector	
	Channel	Differential Output *
1	NC	
2	Vsup	
3	GND	
4	NC	
5	A -	
6	A	
7	B -	
8	B	
9	Z -	
10	Z	

* Hewlett Packard (HP) compatible



- IP 50 rating
- CE mark not available
- 0,5 m, 1 m, or 2 m cable length only

Ordering Code

Example: SCABM – 1024 – D – 06 – 15 – 64 – 01 – B

Type

SCA-BM - [] - [] - [] - 15 - [] - [] - []

Pulses per Revolution
See table

Output

Shaft Dia.

Shaft Length

IP Rating

Cable Length

Cable Takeout

Standard	N
Standard – Open Collector NPN	NON
Standard – Open Collector PNP	NOP
Differential	D
26C31 Line Driver 5V / 5V only	L
OL 7272 Line Driver	M
Standard - with built-in TSM **	T

IP 50	50
IP 64	64

Standard Cable	
Standard is 1 meter	01
Specify length	XX
Flat Cable w/ IDC	
0,5 meter	0,5
1,0 meter	01
2,0 meters	02

Side (radial)	S
Back (axial)	B
Flat cable w/ IDC connector	IDC*

*= Only IP50

3.175 mm (1/8)	1/8 - 15
6.0 mm	06 - 15

Other options on request:
Please contact Scancon A/S

** Designed specifically for Wind Power applications.
See SCA24 COC under *Industries – Wind Power – SCA24* for additional conformity standards testing.

TSM = Transient Suppression Module

Available only as Standard output

See Accessories for drawings