



## Deep Space application Encoder with Sinter Rings



### CHARACTERISTICS

ENCODER TYPE	Shaft encoder
SMD - TECHNOLOGY	Strong compact electronics
HIGH FREQUENCY	200 kHz version
HIGH IP-RATING	Std. IP 65
LOW CURRENT CONSUMPTION	To be connected directly to PLC's and counters
SHORT CIRCUIT PROTECTION	Thermal shutdown at 155°C
WIDE SUPPLY RANGE	Min. 4,5V to max. 30V
STRONG MECH. CONSTRUCTION	Based on 2 high precision Sinter Rings with MoS2 oil for industrial for low temperature and vacuum environments

### ELECTRICAL SPECIFICATIONS

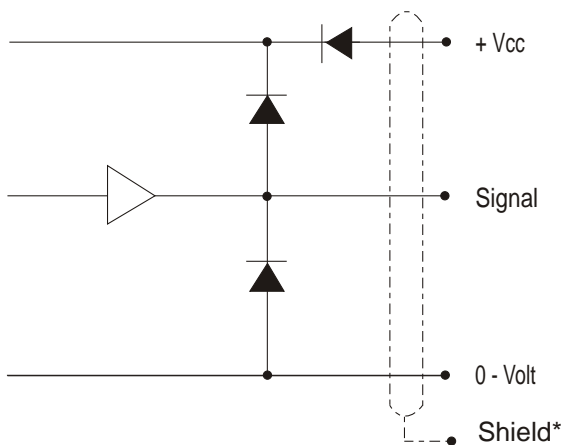
At +25°C	
Output	Totempole
Output waveform	Incremental (A, B)
Zero or index pulse	(Z) one pr./rev.
Supply-voltage (Vin)	Min 4,5V to Max. 30V * Reverse polarity protection
Current (no load)	35mA
Max. load pr. output	20mA*
V out low	Max. 500 mV @ I = 10mA
Operating temp.	-40°C to +85°C
Storage temp.	-40°C to +85°C
Max. pulse frequency	200 kHz*
V out high	Min. (Vin - 0,6) @ I = -10mA Min. (Vin - 1,3) @ I = -25mA
Cable data	5(0,14mm <sup>2</sup> ) or 8-leads(0,05mm <sup>2</sup> ) shielded
Output signals	Standard Inverted Differential
Certified acc. to	EN 50081-1 and EN 50082-2

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

### MECHANICAL SPECIFICATIONS

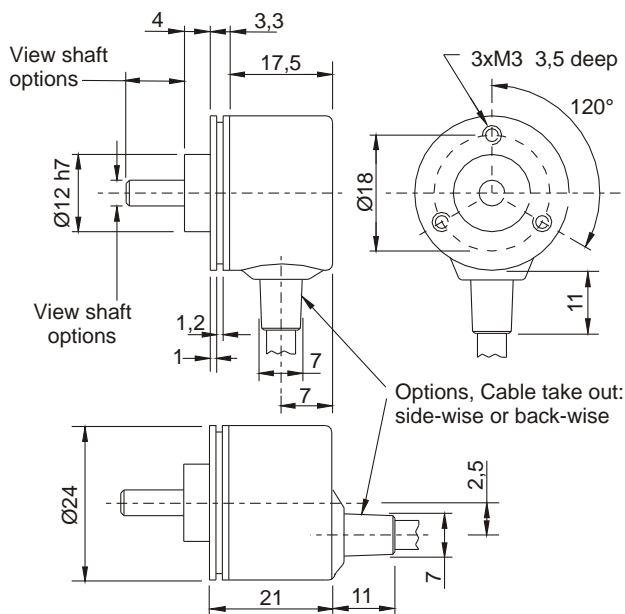
Weight	About 40 g (+cable = 0,040 Kg/meter)
Materials: Housing	Electroplated steel and brass
Shaft	Stainless steel
Bearings	Lifetime lubricated ball bearings
Shaft dimensions	View Ordering Code, next page
Shaft loads	Axial max. 20 N Radial max. 20 N
Max. rev.	9000 rev./min.
IP-rating	Standard IP 65
Start torque	<0,05 Nm at 25°C
Mass moment of inertia	0,8 gcm <sup>2</sup>
Max. shock	100 G/11 ms.
Bump	10 G - 16 ms (1000 X 3 axis)
Vibration	(10 - 2000 Hz)/10 G

### OUTPUT CIRCUIT




\*Shield connected to housing

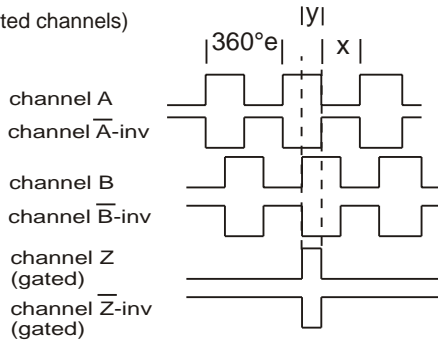
### MECHANICAL DIMENSIONS



## OUTPUT WAVEFORM

 Rotation: Clockwise (cw) from shaftside

(inv = inverted channels)



$X = 180^\circ e \pm 36^\circ e$  and  $Y = 90^\circ e \pm 18^\circ e$   
Z puls: Gated with A and B (standard)

Options: TTL or HTL compatible. Open Collector NPN or PNP  
Gated Z-puls or none-gated Z-puls.  
View more Output options in section 15 - page 1

## CONNECTIONS

Color code	Standard	Color code	Differential
Green	Ch A	Pink	Ch A
Yellow	Ch B	Grey	Ch A inv
Grey	Ch Z	Green	Ch B
Brown	Vcc	Yellow	Ch B inv
White	0-Volt	White	Ch Z
		Brown	Ch Z inv
		Red	Vcc
		Blue	0-Volt

## PULSES/REV.

4	30	100	250	600
10	36	125	256	
11	50	128	300	
12	60	150	360	
15	75	180	400	
25	90	200	500	

## ORDERING CODES

	Options	Ordering codes
Pulses pr.rev.:	No. of pulses	XXXX
Output signal:	Normal (TP-Standard) 3 channel = A, B, Z	N
	TP-Differential, 6 channel A, B, Z and A-inv, B-inv, Z-inv	D
Shaft dimensions:	ø6 x 14mm	06 x 14
IP-rating:	IP 65	65
Round Cable	Standard 1 meter	01
Length of cable:	No. of meters	XX
Round Cable	Side	S
Cable take out:	Back	B

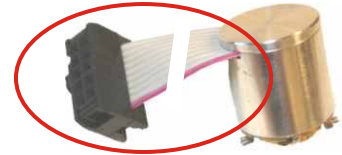
Cable and connector options: View section 20 page 10 to 13

Anti rotation spring coupling or Flange / Plate: View Section 9 page 1 to 6

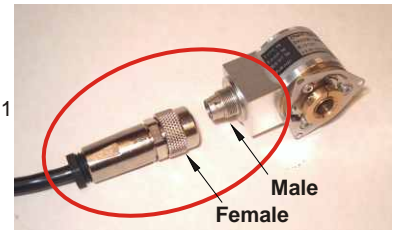
## Flat Ribbon Cable and/or Connector

### Options

Flat Cable (only IP 50)  
Ribbon + IDC or AMP  
View Section 20 page 10



Connector on Encoder:  
(only IP64)  
View Section 20 page 11



## Advanced Output Options:

Options	Ordering codes
Normal Open Collector NPN	NON
Differential Open Collector NPN	DON
Normal Open Collector PNP	NOP
Differential Open collector PNP	DOP

To order replace  with  **O**  
Output signal                      Output signal

**2RM-MoS2**

Pulses

Output signal

Shaft

 X  

Shaft length

 **6**  **5**

IP-rating

Length of round cable

Cable take out

Anti Rotation Spring Coupling Or Flange / Plate Order Number