



CHARACTERISTICS

ENCODER TYPE	Heavy duty shaft encoder
SMD - TECHNOLOGY	Strong compact electronics
OPTION	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 shut down at 155°C
WIDE SUPPLY RANGE	Min. 4,5V to max. 30V
STRONG MEC. CONSTRUCTION	Based on 2 precision ball bearings, for harsh industrial environments

ELECTRICAL SPECIFICATIONS

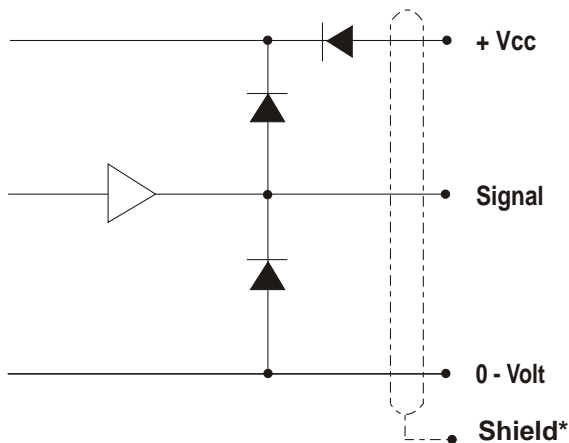
	At +25°C
Output waveform	Incremental (A, B)
Zero or index pulse	(Z) one pr./rev.
Output	Totempole
Supply-voltage (Vin)	Min 4,5V to Max. 30V * Reverse polarity protection
Current (no load)	35mA
Max. load pr. output	20mA (Short circuit protected) *
V _{Out low}	Max. 500 mV @ I = 10 mA
Operating temp.	-40°C to +85°C
Storage temp.	-40°C to +85°C
Max. pulse frequency	200kHz *
V _{out high}	Min. (Vin -0,6) @ I = -10mA Min. (Vin -1,3) @ I = -25mA
Cable data	5 (0,14 mm ²) or 8-leads(0,05mm ²)
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

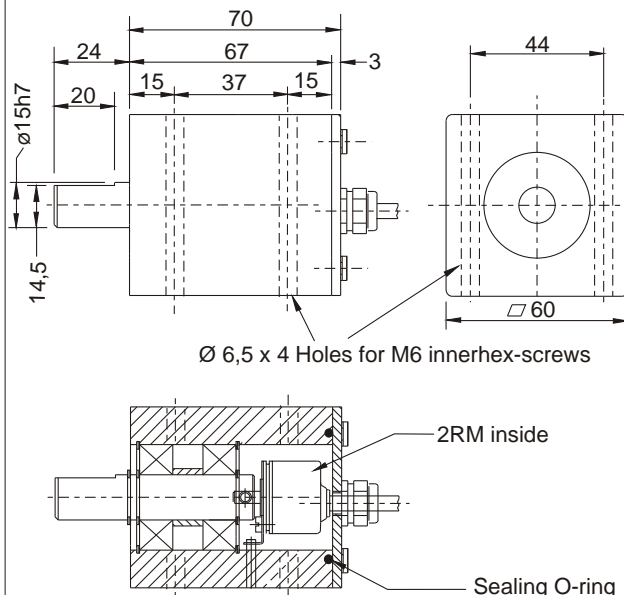
Weight	About 715 g
Materials: Housing	Anodized aluminum
Shaft	Stainless steel
Bearings	Lifetime lubricated ball bearings
Shaft dimensions	ø15 mm
Shaft loads	Axial max. 250 N Radial max. 250 N
Max. rev.	3.000 rev./min.
IP-rating	Standard IP 65
Start torque	<0,1 Nm at 25°C
Mass moment of inertia	40 gcm ²
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

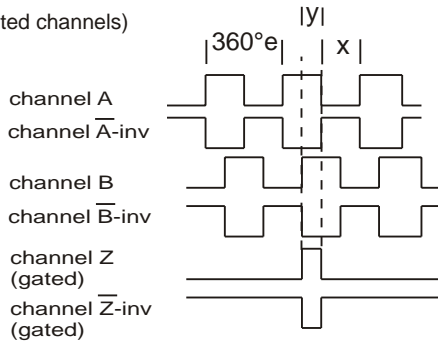
MECHANICAL DIMENSIONS



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	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

ORDERING CODES

Options	Ordering codes
Pulses pr.rev.: No. of pulses	XXXXX
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: $\varnothing 15$ mm	15
IP-rating: IP 65	65
Length of cable: Standard 1 meter No. of meters	01 XX
Cable take out: Back	B

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

2RMHD

1 5

6 5

B

Pulses

Output signal

Shaft

IP- rating

Length of cable

Cable take out