



### Hollow through Shaft



### CHARACTERISTICS

ENCODER TYPE	Hollow through shaft encoder
SMD - TECHNOLOGY	Strong compact electronics
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

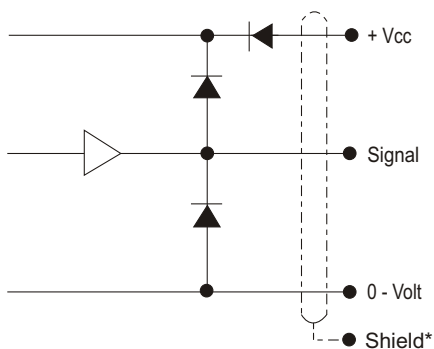
### ELECTRICAL SPECIFICATIONS

At +25°C	
Output waveform	Incremental (A, B, Z and inverted)
Zero or index pulse	(Z) one pr. Rev.
Output	Totempole (TP)
Supply-voltage (Vin)	Min 4,5V to Max. 30V * Reverse polarity protection
Current (no load)	Max. 45 mA
Max. load pr. output	30 mA - (Short circuit protected) *
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	300 kHz *
V out high	Min. (Vin -0,6) @ I = -10mA Min. (Vin -1,3) @ I = -25mA
Cable data	8 leads (0,14 mm <sup>2</sup> ) pairtwisted/shielded
Output signals	Standard, Inverted, Differential (RS-422A compatible @ 5 V)
Certified acc. to	EN 50081-1 and EN 50082-2
* = It is not recommended to combine max. value for all 3 parameters	

### MECHANICAL SPECIFICATIONS

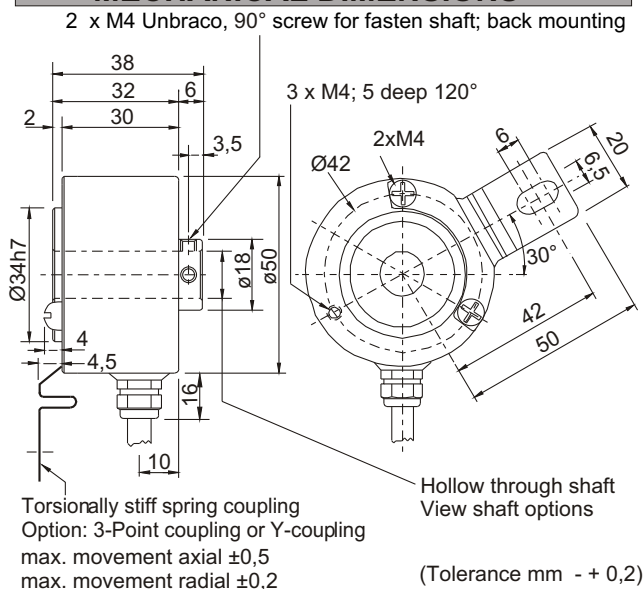
Weight	About 150 g
Materials : Housing	Aluminum
Shaft	Brass
Bearings	Lifetime lubricated ball bearings
H.-Shaft dimensions	View shaft options - next page
H.-Shaft loads	Axial max. 50 N Radial max. 50 N
Max. rev.	3.000 rev./min.
IP-rating	Standard IP 65
Start torque	<0,02 Nm at 25°C
Mass moment of inertia	6 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

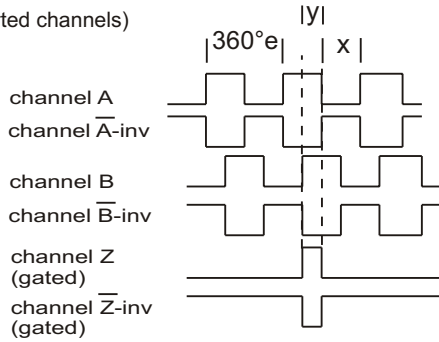
### MECHANICAL DIMENSIONS



## 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 16 - page 1 to 2

## ORDERING CODES

	Options	Ordering codes
Pulses pr. rev.:	No. of pulses	XXXXX
Output signal:	Normal, TP-Standard, A, B, Z (3 channel)	N
	TP-Differential: A, B, Z and A-inv, B-inv, Z-inv (6 channel)	D
	Line driver OL 7272 for extra long cable, up to 100 meters (Differential)	M
	Line driver chip 26C31 (V out low < 0,4 V) (RS-422A compatible @ 5V) Only 5 Volt (Differential)	L
Shaft dimensions Through Shaft Tolerance G7	ø10 mm	10
	ø12 mm	12
	1/2" (ø12,7mm)	1/2
	ø14 mm	14
	ø15 mm	15
IP-rating:	IP 65	65
Length of cable:	Standard 1 meter	01
	No. of meters	XX
Cable take out: (or connector)	Side (Radial)	S
Anti rotation Spring coupling:	View Section 15 page 1 to 8	
Connector:	Coninvers Connector View Section 15 page 6 to 8	
More accessories Anti rotation spring and adaptors: View section 12 page 1 to 8		

## CONNECTIONS

Color code Standard

Pink	Ch. A
Grey*	Ch. A Gnd
Green	Ch. B
Yellow*	Ch. B Gnd
White	Ch. Z
Brown*	Ch. Z Gnd
Red	Vcc
Blue*	Gnd

\*Blue, grey, yellow and brown are internal connected

Color code Differential

Pink	Ch. A
Grey	Ch. A inv.
Green	Ch. B
Yellow	Ch. B inv.
White	Ch. Z
Brown	Ch. Z inv.
Red	Vcc
Blue	Gnd

## PULSES/REV.

1	32	125	600	2048
2	36	150	635	2500
5	40	180	720 *	3000
6	50	200	800	3600
8	60	250	1000	4000
10	64	300	1024	4096
15	75	360	1131	5000
16	80	400	1250	9000
20	90	455	1500	
25	100	500	2000	
30				

\* = Delivery without 0-puls only

## 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    
Output signal Output signal

2RHI  Pulses  Output signal  H.-Shaft  IP-rating **65**  Length of cable  Cable take out **S**  Anti Rotation Spring Coupling  Accessories Order Number