



CHARACTERISTICS

ENCODER TYPE	Mini Shaft encoder
SMD - TECHNOLOGY	Strong compact electronics
IP-RATING	Std. IP 50 (Option 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 MECH. CONSTRUCTION	Based on 2 precision ball bearings for industrial environments

ELECTRICAL SPECIFICATIONS

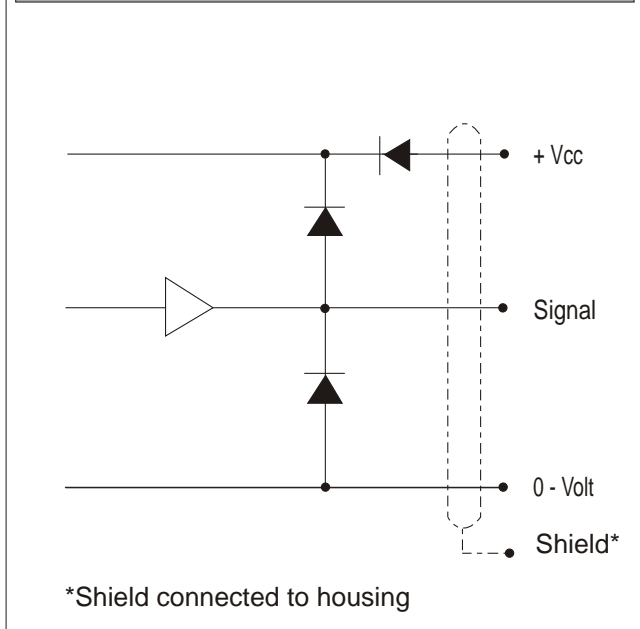
	At +25°C
Output waveform	Incremental (A, B)
Output	Totempole
Supply-voltage (Vin)	Min 4,5V to Max. 30V * Reverse polarity protection
Current (no load)	35mA
Max. load pr. output	20mA (Short circuit protected) *
V out low	Max. 500 mV @ I = 10mA
Operating temp.	-10°C to +70°C
Storage temp.	-10°C to +70°C
Max. pulse frequency	200 kHz *
V out high	Min. (Vin -0,6) @ I = -10mA Min. (Vin -1,3) @ I = -25mA
Cable data	4(0,14 mm ²) or 8-leads(0,05mm ²)shielded
Output signals	Standard, Differential (RS-422A compatible)
Certified acc. to	EN 50081-1 and EN 50082-2

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

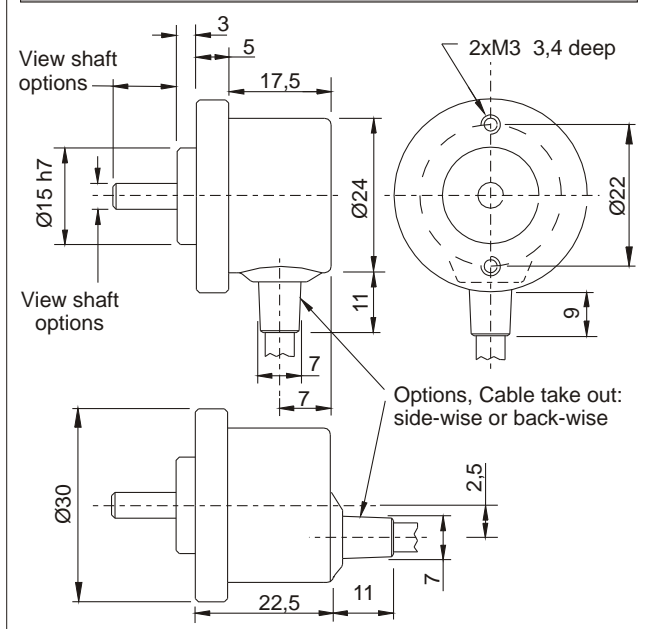
MECHANICAL SPECIFICATIONS

Weight	About 40 g (+cable = 0,040 Kg/meter)
Materials: Housing	Aluminum
Shaft	100 Cr 6
Bearings	Lifetime lubricated ball bearings
Shaft dimensions	View Ordering Code, next page
Shaft loads	Axial max. 10 N Radial max. 15 N
Max. rev.	9.000 rev./min.
IP-rating	Standard IP 50 (Option IP 65)
Start torque	<0,005 Nm at 25°C
Massmoment of inertia	0,8 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



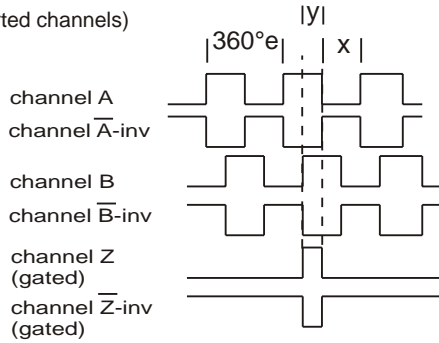
MECHANICAL DIMENSIONS



OUTPUT WAVEFORM

 Rotation: Clockwise (cw) from shaftside

(inv = inverted channels)



$X = 180^\circ \pm 36^\circ$ and $Y = 90^\circ \pm 18^\circ$
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

CONNECTIONS

Color code	Standard	Color code	Differential
Green	Ch A	Pink	Ch A
White	Ch B	Grey	Ch A inv
Red	Vcc	Green	Ch B
Black	0-Volt	Yellow	Ch B inv
		White	Ch Z
	On request with: Standard with Z channel	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

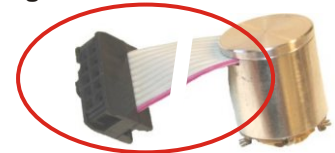
	Options	Ordering codes
Pulses pr.rev.:	No. of pulses	XXXX
Output signal:	Normal (TP-Standard) 3 channel = A, B, Z	N
	TP-Differential, 6 channel A, B, Z and A-inv, B-inv, Z-inv D	
Shaft dimensions:	$\varnothing 4 \times 10$ mm $\varnothing 5 \times 10$ mm $\varnothing 6 \times 10$ mm 1/4" ($\varnothing 6,35$) x 10 mm	4x10 5x10 6x10 6,35x10
IP-rating:	IP 50 Standard IP 65 (Option)	50 65
Round Cable Length of cable:	Standard 1 meter No. of meters	01 XX
Round Cable Cable take out:	Side Back	S B
Cable and connector options:	View section 15 page 10 to 14	
Anti rotation spring coupling or Flange / Plate:	View Section 6 page 1 to 5	

Flat Ribbon Cable and/or Connector

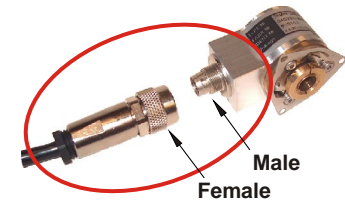
View Section 15 page 10 to 14

Options

Flat Cable (only IP 50)
Ribbon + IDC or AMP



Connector on Encoder:
(only IP64)



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

2RE



Pulses



Output
signal



Shaft



Shaft
length



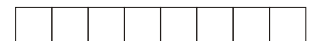
IP-
rating



Length of
round cable



Cable
take out



Anti Rotation Spring Coupling
Or Flange / Plate Order Number