



Ø16 - up to 5000 PPR - up to 20000 Counts



CHARACTERISTICS

ENCODER TYPE	Micro shaft encoder
SMD - TECHNOLOGY	Strong compact electronics
IP-RATING	Std. IP 64 (with IDC; IP 50)
LOW CURRENT CONSUMPTION	To be connected directly to PLC'S and counters
SHORT CIRCUIT PROTECTION	Thermal shut down at 155°C
SUPPLY RANGE	5 volts to 12 Volts $\pm 10\%$ (TTL) (on request up to 24 Volts)
MEC. CONSTRUCTION	Based on 2 precision ball bearings for industrial environment

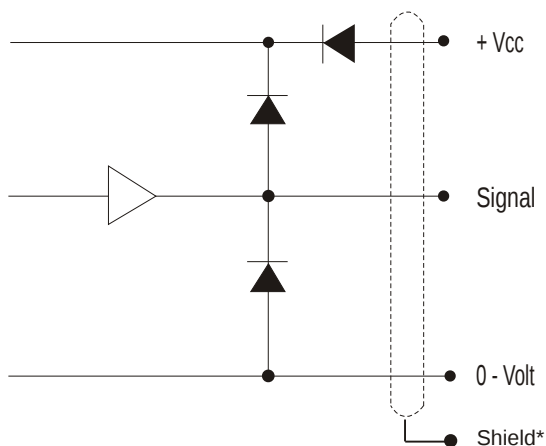
ELECTRICAL SPECIFICATIONS

	At +25°C
Output	Totempole
Output waveform	Incremental (A, B)
Zero or index pulse	(Z) one pr./rev.
Supply-voltage	5 to 12 V (on request up to 24 Volts)
Current (no load)	35mA
Max. load pr. output	20mA (Short circuit protected)
V out low	Max. 500 mV @ I = 10 mA
Operating temp.	-20°C to +70° C
Storage temp.	-20° 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	8-leads (0,05 mm ²) shielded or 10-leads flat band cable (0,14mm ²)
Output signals	Differential (RS-422A compatible)
Certified acc. to	EN 50081-1 and EN 50082-2

MECHANICAL SPECIFICATIONS

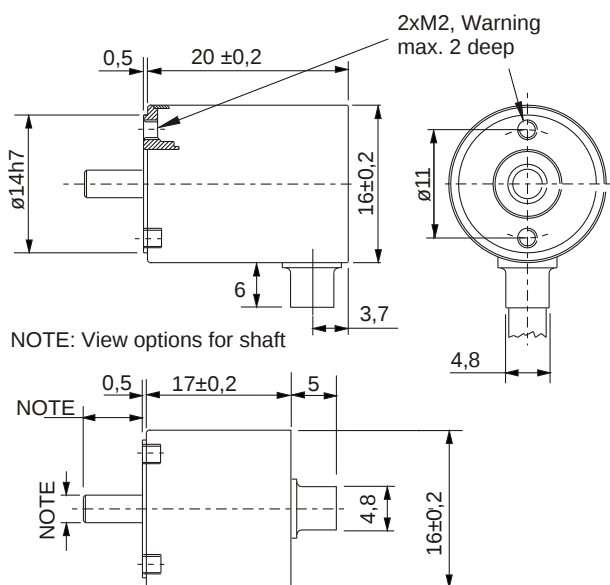
Weight, excl. Cable	About 15 g
Materials: Housing	Brass / Aluminum
Shaft	Brass or Stainless Steel
Bearings	Lifetime lubricated ball-bearings
Shaft dimensions	View shaft options - next page
Shaft loads	Axial max. 10 N Radial max. 10 N
Max. rev.	12.000 rev./min.
IP-rating	IP 64 (with IDC; IP 50)
Start torque	<0,005 Nm at 25°C
Mass moment of inertia	0,2 gcm ²
Max. shock	100 G/11 ms.
Bump	10 G - 16 ms (1000 x 3axis)
Vibration	(10 - 2000 Hz)/10 G

OUTPUT CIRCUIT



* Shield connected to housing

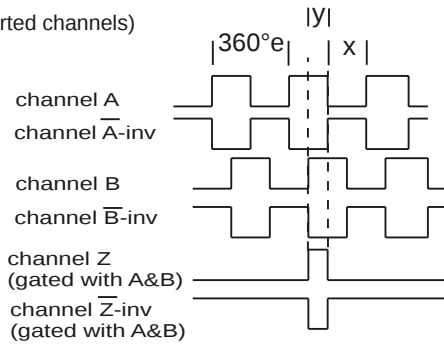
MECHANICAL DIMENSIONS



OUTPUT WAVEFORM

Rotation: Clockwise (cw) from shaftside

(inv = inverted channels)



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

Options: 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

8 leads cable

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	0-Volt

PULSES/REV.

100 160 300 500 2000 3600
125 256 360 1024 2500 5000

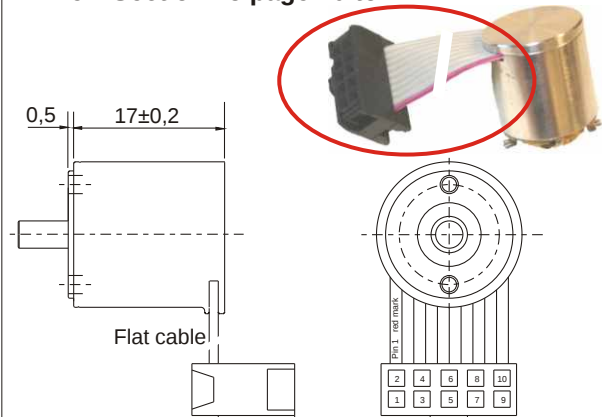
Special: 1520 PPR / 19 Z-pulses

ORDERING CODES

Options	Order code
Pulses pr.rev.: No. of pulses	XXXX
Output signal: TP-Differential, 6 channel A, B, Z and A-inv, B-inv, Z-inv	D
Shaft dimensions:	
$\varnothing 1,5\text{mm} \times 6\text{ mm}$	1,5 x 6,0
$\varnothing 2\text{mm} \times 6\text{ mm}$	02 x 6,0
$\varnothing 3\text{mm} \times 6\text{ mm}$	03 x 6,0
$\varnothing 3\text{mm} \times 9\text{ mm}$	03 x 9,0
$\varnothing 3\text{mm} \times 19\text{ mm}$	03 x 19
$\varnothing 4\text{mm} \times 6\text{ mm}$	04 x 6,0
$\varnothing 4\text{mm} \times 18\text{ mm}$	04 x 18
IP-rating: IP 64	64
Round Cable Standard 1 meter	01
Length of cable: No. of meters	XX
Round Cable Side take out:	S
Back	B
Anti rotation spring coupling Or Flange / Plate:	View Section 4 page 1 to 5
Flat Ribbon Cable + IDC:	View Section 15 page 10 to 14

Flat Ribbon Cable and/or Connector

View Section 15 page 10 to 14



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

2MCA

Pulses

☒ D

Output signal

Shaft

☒ X

Shaft length

 6 4

IP-rating

Length of round cable

Cable take out

Anti Rotation Spring Coupling Or Flange / Plate Order Number