



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 ± 10% (TTL) (on request up to 24 Volts)
MEC. CONSTRUCTION	Based on 2 precision ball bearings for industrial environment

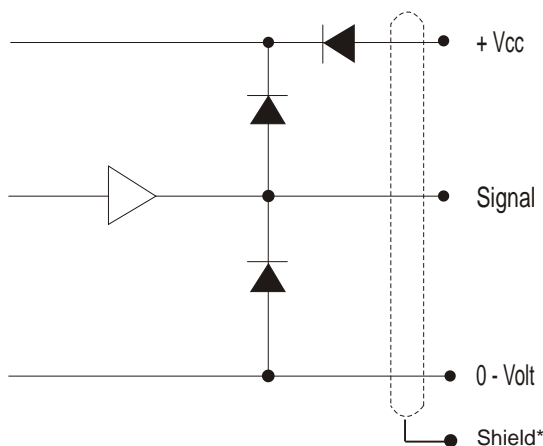
ELECTRICAL SPECIFICATIONS

	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

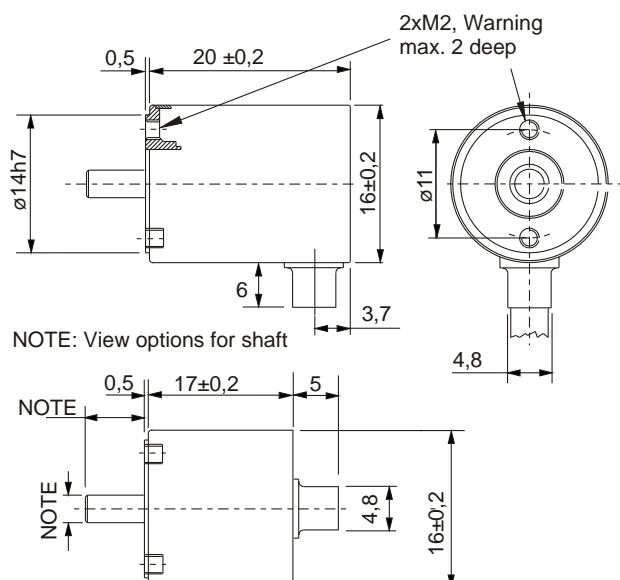
Weight, excl. Cable	About 15 g
Materials: Housing	Brass / Aluminum
Shaft	Brass or Stainless Steel
Bearings	Lifetime lubricated ball-bearings
Shaft dimensions	View shaft options - next page
Shaft loads	Axial max. 10 N Radial max. 10 N
Max. rev.	12.000 rev./min.
IP-rating	IP 64 (with IDC; IP 50)
Start 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



NOTE: View options for shaft

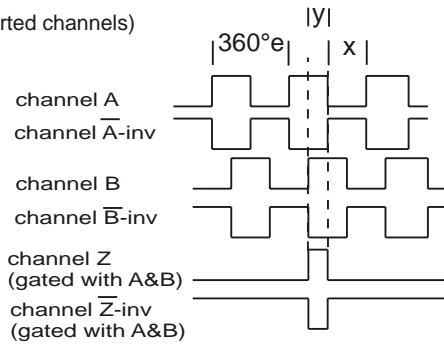
NOTE

NOTE

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

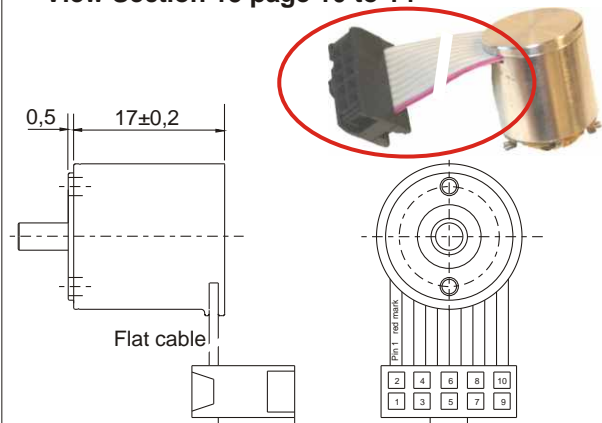
Special: 1520 PPR / 19 Z-pulses

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
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