EH 38 A / B / D

SOLID SHAFT INCREMENTAL ENCODER

MAIN FEATURES

Miniaturised ø 38 mm encoders designed to fit in small devices.
Recommended when minimum size is required, while still offering excellent performance.

- 3 channel encoder (A / B / Z) up to 1024 ppr
- Power supply up to +30 V DC with various electrical interfaces available
- Output frequency up to 105 kHz
- Cable output, connectors available at cable end
- Solid shaft diameter up to 6 mm
- Mounting by clamping or centering square flange

ORDERING CODE

EH	38A	500	S	5/28	P	6	X	3	PR	. XXX

SERIES
incremental encoder series EH

MODEL
clamping flange ø 20 mm 38A
square flange □ 36,5 mm 38B
square flange □ 32 mm 38D

RESOLUTION
ppr from 50 to 1024
refer to the available pulses list

ZERO PULSE
without zero pulse S
with zero pulse Z

POWER SUPPLY
5 V DC 5
5 ... 28 V DC 5/28

ELECTRICAL INTERFACE
NPN open collector C
push-pull P
line driver L
power supply 5/28 V DC - output RS-422 RS

SHAFT DIAMETER
mm 6

ENCLOSURE RATING
IP 54 X

MAX ROTATION SPEED
3000 rpm 3

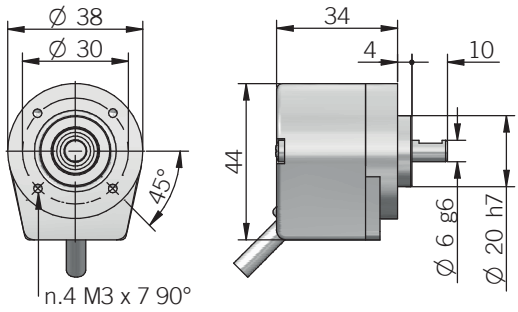
OUTPUT TYPE
radial cable (standard length 0,5 m) PR
preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after OUTPUT TYPE (eg. PR5)

VARIANT
custom version XXX

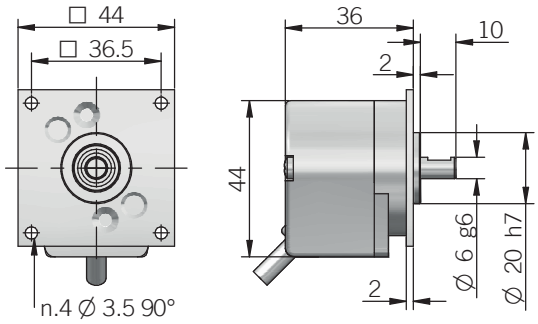
© Copyright 2025 Eltra S.p.a. Unipersonale. All rights reserved. All informations in this catalog are subject to change without notice.
Eltra takes no responsibility for typographic errors. For the terms of sales please check the website. REV. 2502

eltra.it@broadcom.com

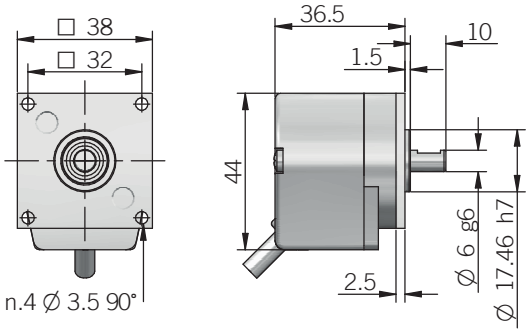
38A



38B



38D



recommended mating shaft tolerance H7
dimensions in mm

CONNECTIONS

Function	Cable C / P	Cable L
+V DC	red	red
0 V	black	black
A+	green	green
A-	/	brown or grey
B+	yellow	yellow
B-	/	orange
Z+	blue	blue
Z-	/	white
⏚	shield	shield

ELECTRICAL SPECIFICATIONS

Resolution	from 50 to 1024 ppr
Power supply[1]	5 = 4,5 ... 5,5 V DC 5/28 = 4,5 ... 30 V DC (reverse polarity protection)
Current consumption without load	100 mA max
Max load current	C / P = 50 mA / channel L = 20 mA / channel
Electrical interface[2]	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272 or similar) line driver RS-422 (AELT-5000 or similar)
Max output frequency	105 kHz
Counting direction	A leads B clockwise (shaft view)
Index signal	90°e (gated A&B)
Mean time to dangerous failure ($MTTF_d$)[3] **according to EN ISO 13849-1**	244 years
Mission time (Tm)[3]	20 years
Diagnostic coverage (DC)[3]	0%
Cable type	shielded - fixed installation conductors section 0,22 mm^2 / AWG 24 bending radius min 60 mm
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	file n. E212495

MECHANICAL SPECIFICATIONS

Shaft diameter	ø 6 mm
Enclosure rating	IP 54 (IEC 60529)
Max rotation speed	3000 rpm
Max shaft load[4]	5 N (1,12 lbs) axial / radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	0,05 x 10^{-6} kgm^2 (1,2 x 10^{-6} $lbft^2$)
Starting torque (at +20°C / +68°F)	< 0,01 Nm (1,42 Ozin)
Bearing stage material	aluminum aluminium / stainless steel (mod. B)
Shaft material	stainless steel
Housing material	PA66 glass fiber reinforced
Bearings	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature[5,6]	-20° ... +70°C (-4° ... +158°F)
Storage temperature[6]	-20° ... +70°C (-4° ... +158°F)
Weight	150 g (5,29 oz)

[1] as measured at the transducer without cable influences
[2] for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section
[3] this product is not a safety component, for further details refer to TECHNICAL BASICS section
[4] maximum load for static usage
[5] measured on the transducer flange
[6] condensation not allowed

RESOLUTIONS

50* - **100** - **200** - 250 - 256 - 360 - 400 - **500** - **512** - **1000** - 1024

*available only without zero pulse
please directly contact our offices for other pulses, preferred resolutions in bold

© Copyright 2025 Eltra S.p.a. Unipersonale. All rights reserved. All informations in this catalog are subject to change without notice.
Eltra takes no responsibility for typographic errors. For the terms of sales please check the website. REV. 2502