

Topydic Series Shaft Incremental EV50P



Description

Topydic series shaft incremental encoder EV50P, with double-bearing and casting housing, has excellent performance to resist mechanical shocks and can be used in various industrial environments; stainless steel through-hole, shaft diameter of up to 15mm; its wide voltage range, reverse connection and short circuit protection can effectively avoid mis-wiring.

Features

- Resolution up to 5000 ppr; pulse frequency up to 300 kHz
- Wide range of shaft diameter, $\Phi 6\sim\Phi 15$ mm
- Hollow shaft installation, robust metal casting housing
- Operating temperature, $-40\sim+85\text{ }^{\circ}\text{C}$; IP67 protection class for outdoors application
- Housing thickness up to 46.3 mm for limited installation space
- Multi signal output interfaces to meet different types of data acquisition of upper computer
- Optional output types-with cable, M12 connector and M23 connector
- Reverse connection and short circuit protection to ensure the safety¹⁾

Mechanical parameters

Shaft diameter	$\Phi 6/\Phi 8/\Phi 10/\Phi 12/\Phi 14/\Phi 15/\Phi 1\frac{1}{4}"/\Phi 3\frac{1}{8}"/\Phi 1\frac{1}{2}"/\Phi 5\frac{1}{8}"$ mm	
Protection class	IP65 (without oil seal)	
	IP67 (with oil seal)	
Speed	12000 rpm (without oil seal)	
	6000 rpm (with oil seal)	
Max. load capacity of the shaft	40 N axial	
	80 N radial	
Shock resistance	50G/11 ms	
Vibration resistance	10G 10~2000 Hz	
Bearing life	10^9 revolution	
Moment of inertia	6×10^{-6} kgm ²	
Starting torque	<0.03 Nm (IP65)	
	<0.08 Nm (IP67)	
Body material	Al-alloy	
Housing material	Al-alloy	
Operating temperature	$-40\sim+85\text{ }^{\circ}\text{C}$	
Storage temperature	$-45\sim+90\text{ }^{\circ}\text{C}$	
Relative humidity/condensation	90%, Condensation not permitted	
Weight	Approx. 400 g	

Regular resolution: 100, 200, 300, 360, 400, 500, 512, 600, 800, 1000, 1024, 1200, 1250, 2000, 2048, 2500, 3600, 4096, 5000

Attention: the products with above resolutions are available from stock, others on request.

Electrical parameters

Output circuit	RS422	Push-pull
Supply voltage	5 ± 0.25 or 10...30 VDC	10...30 VDC
Power consumption(no load)	typ. 40 mA	typ. 50 mA
	max. 90 mA	max. 100 mA
Permissible load(channel)	max. ± 20 mA	max. ± 30 mA
Pulse frequency	max. 300 kHz	max. 300 kHz
Signal level high	min. 2.5 V	min. U_b-1 V
Signal level low	max. 0.5 V	max. 0.5 V
Rise time Tr	max. 200 ns	max. 1 μ s
Fall time Tf	max. 200 ns	max. 1 μ s

1) When the voltage supply within the limited range and only one signal channel is connected improperly at certain moment:
if $U_b=5\text{V}$, it's permitted to connect to signal channels, 0V or U_b ; if $U_b>5\text{V}$, it's permitted to connect to signal channels or 0V.

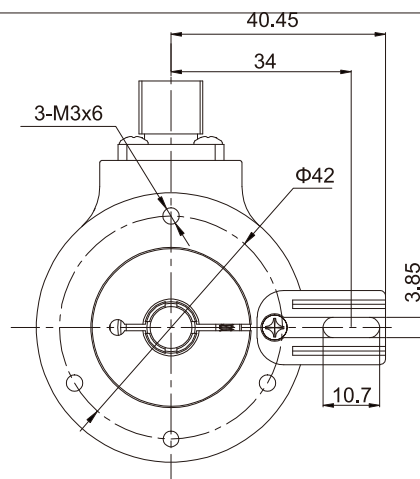
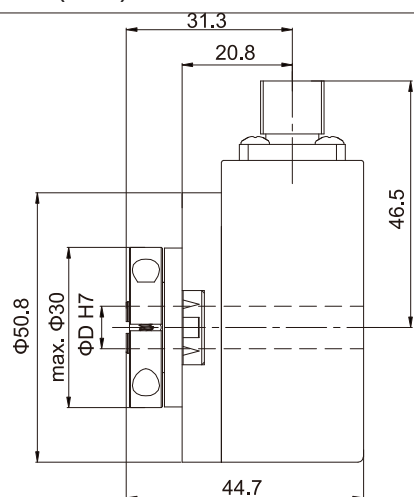
Topydic Series Shaft Incremental EV50P

Terminal Configuration

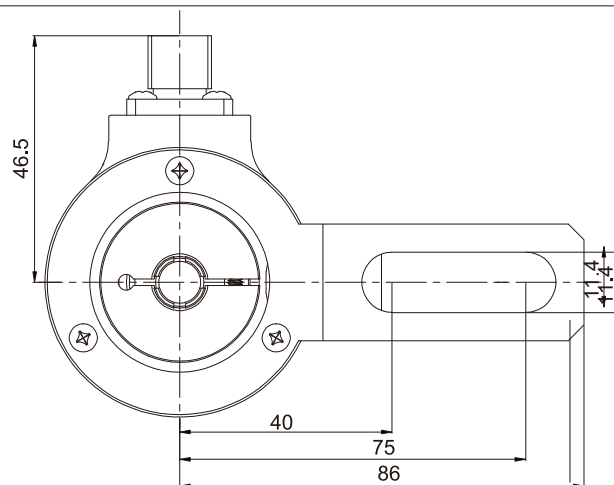
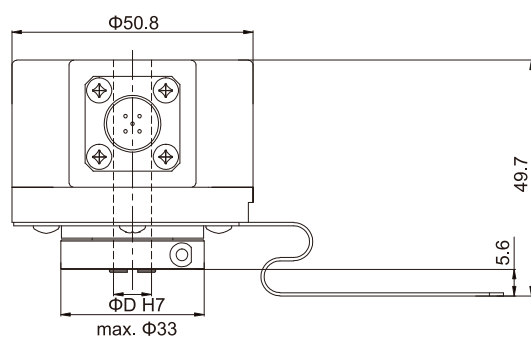
Signal	0V	+U _b	A	\bar{A}	B	\bar{B}	Z	\bar{Z}	Shield
Color	WH	BN	GN	YE	GY	PK	BU	RD	$\frac{1}{2}$
Pin(12-pin)	10	12	5	6	8	1	3	4	PH
Pin(5-pin)	1	2	3	-	4	-	5	-	PH
Pin(8-pin)	1	2	3	4	5	6	7	8	PH

Dimensions(mm)

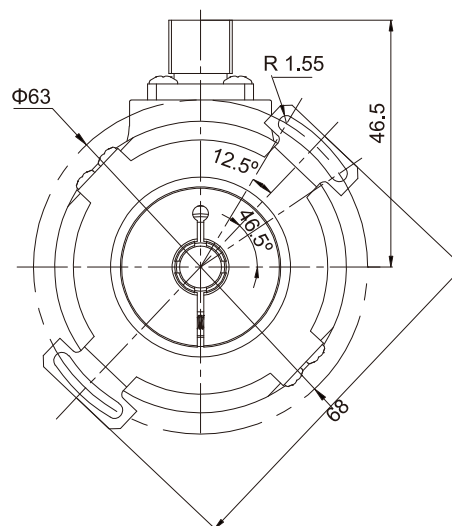
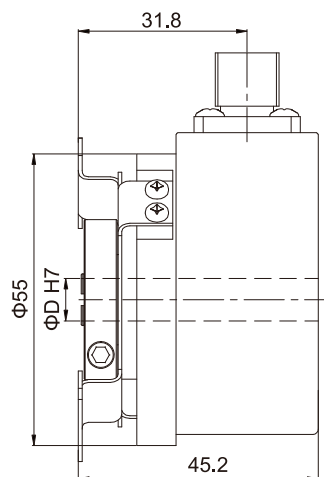
EV50K



EV50H



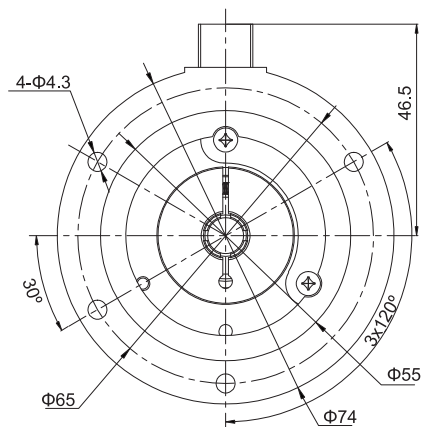
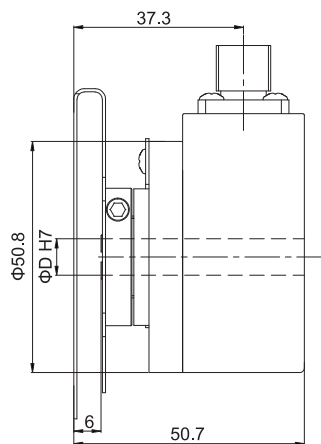
EV50W



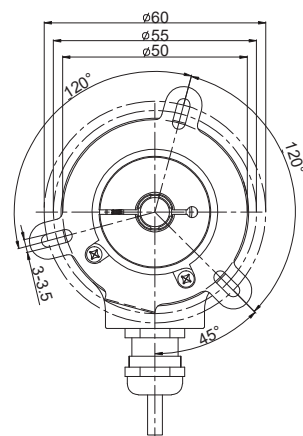
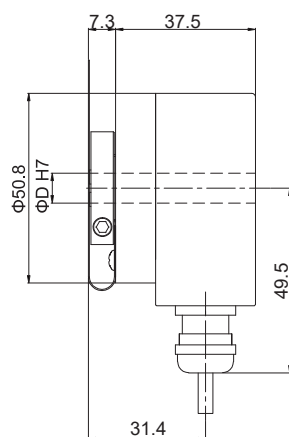
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Dimensions

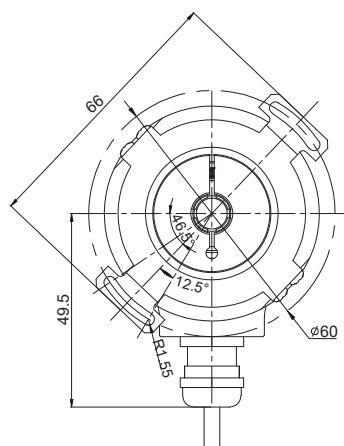
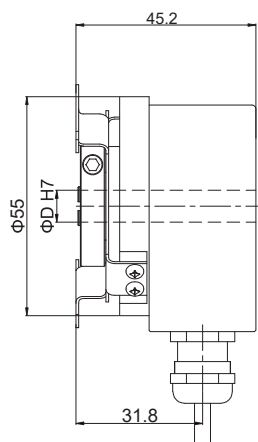
EV50V



EV50S



EV50N



Topydic Series Shaft Incremental EV50P

Order Code:

EV 50 W 10 — L5 P R — 1024 XX . XXXX

Shaft diameter

6= Φ 6 mm
7= Φ 1/4"
8= Φ 8 mm
9= Φ 3/8"
10= Φ 10 mm
12= Φ 12 mm
13= Φ 1/2"
14= Φ 14 mm
15= Φ 15 mm
16= Φ 5/8"
(8R,9R,10R,12R=IP67)

Flange type

K= long torque support slot
H= long fastening arm
W=double-wing fixing plate
V=Flexible fastening connector
S=Three-claw spring
N=Flexible fastening connector

Housing diameter

50= housing diameter

Series

EV=Topydic incremental

XXXX=Special code

Customized cable length
CN00XX=cable length
e.g. CN0010=1 m
CN0020=2 m

Optional functions

TP=tangential output cable length
1.5m (only applicable to L5,L6)
M5=M12, 5-pin plug without connector
M8=M12, 8-pin plug without connector
T=M23, 12-pin plug without connector
(for other cable length, it's on requested)

Outlets direction

R=radial

Standard cable length

P=1.5 m

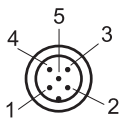
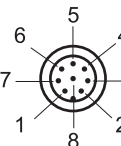
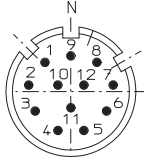
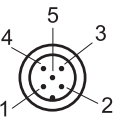
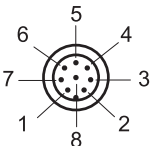
Resolution

Pulse/r: 1-5000

Output & Supply voltage¹⁾

L5=RS422 (with reverse signal) 5Vdc
L6=RS422 (with reverse signal) 10~30Vdc
H6=Push-pull HTL (with reverse signal) 10~30Vdc
P6=Push-pull HTL (without reverse signal) 10~30Vdc

Top view of pin plug:

Connector type	5-pin M12 connector	8-pin M12 connector	12-pin M23 connector	5-pin M12 connector	8-pin M12 connector
Pin plug					
Matched connector	M125PSF-0020-W 5-core pre-molded connector with 2 m PUR cable	M128PSF-0020-W 8-core pre-molded connector with 2 m PUR cable	TMSP1612F Field attachable connector	TMSP125PF Field attachable connector	TMSP128PF Field attachable connector