

Encoder

Topydic Series Shaft Incremental EV50P



Descriptions

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

Features

- Resolution up to 5000ppr; pulse frequency up to 300kHz
- Wide range of shaft diameter, $\Phi 6\sim\Phi 15\text{mm}$
- Hollow shaft installation, robust metal casting housing
- Operating temperature, $-40\sim+85\text{ }^\circ\text{C}$; IP67 protection grade for outdoors application
- Housing thickness up to 46.3mm 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 safety

Mechanical Characteristics

Shaft diameter (mm)	$\Phi 6/\Phi 8/\Phi 10/\Phi 12/\Phi 14/\Phi 15/\Phi 1\frac{1}{4}"/\Phi 3/8"/\Phi 1\frac{1}{2}"/\Phi 5/8"$
Protection grade	IP65 (without oil seal)
	IP67 (with oil seal)
Speed	12000 (without oil seal)
	6000 (with oil seal)
Max. load capacity of the shaft	40N axial
	80N radial
Shock resistance	50G/11ms
Vibration resistance	10G 10~2000HZ
Bearing life	10^9 revolution
Moment of inertia	$6\times 10^{-6}\text{kgm}^2$
Starting torque	$<0.03\text{Nm}$ (IP65)
	$<0.08\text{Nm}$ (IP67)
Body material	Al-alloy
Housing material	Al-alloy
Operating temperature	$-40\sim+85\text{ }^\circ\text{C}$
Storage temperature	$-45\sim+90\text{ }^\circ\text{C}$
Weight	Approx. 400g

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

Note: other resolutions on request

Electrical Characteristics

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

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 UB; if $U_b>5\text{V}$, it's permitted to connect to signal channels or 0V.

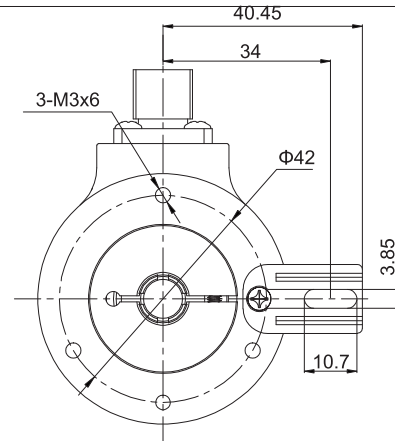
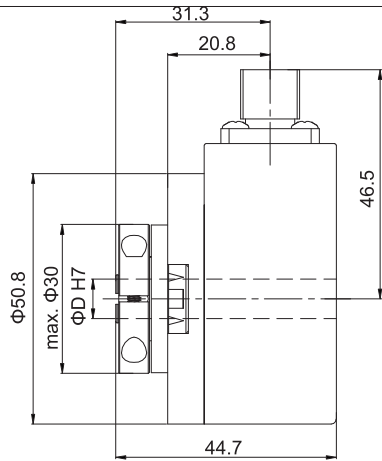
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Terminal Configuration

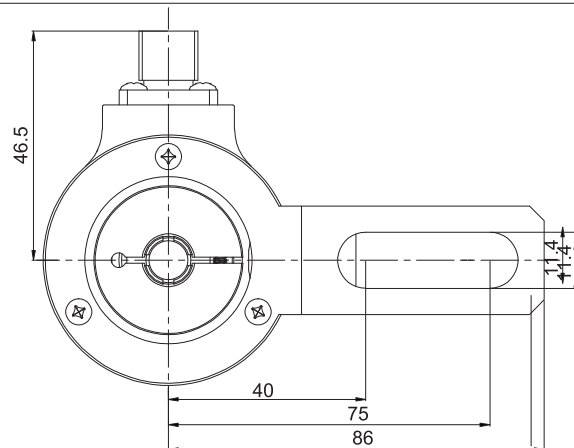
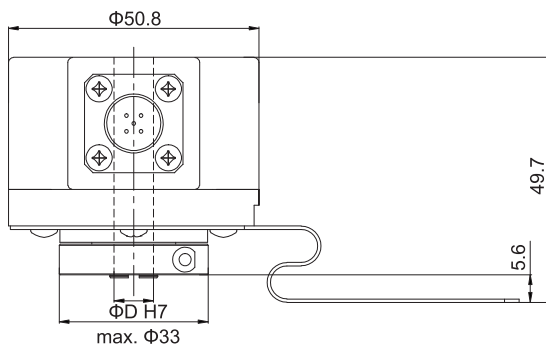
Signal	0V	+U _b	A	\bar{A}	B	\bar{B}	Z	\bar{Z}	0V Sen	+U _b Sen	Shield
Color	WH	BN	GN	YE	GY	PK	BU	RD	GY/PK	RD/BU	⊥
Pin(12-pin)	10	12	5	6	8	1	3	4	11	2	PH
Pin(5-pin)	1	2	3	-	4	-	5	-			PH
Pin(8-pin)	1	2	3	4	5	6	7	8			PH

Dimensions

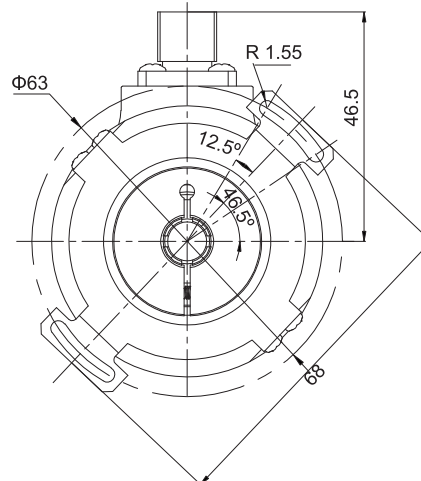
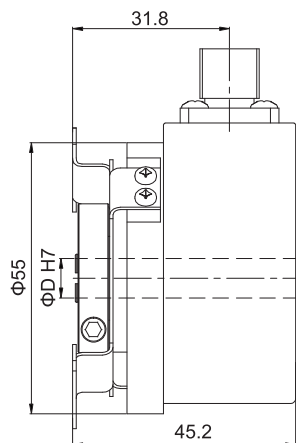
EV50K



EV50H



EV50W



Encoder

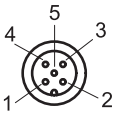
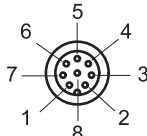
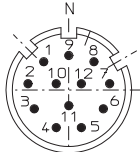
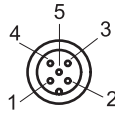
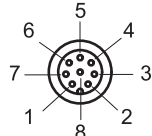
Topydic Series Shaft Incremental EV50P

Order Code:

EV 50 W 10 - L5 P R - 1024 XX . XXXX

<p>Series EV=Topydic incremental</p> <p>Housing diameter 50=housing diameter</p> <p>Flange type K= long torque support slot H= long fastening arm W=double-wing fixing plate</p>	<p>Shaft diameter 6= Φ6mm 7= Φ1/4" 8= Φ8mm 9= Φ3/8" 10= Φ10mm 12= Φ12mm 13= Φ1/2" 14= Φ14mm 15= Φ15mm 16= Φ5/8" (8R,9R,10R,12R=IP67)</p>	<p>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</p>	<p>Outlets direction R=radial</p> <p>Standard cable length P=1.5m</p>	<p>Resolution Pulse/r: 1-5000</p> <p>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)</p>	<p>XXXX= Special code Customized cable length CN00XX=cable length e.g. CN0010=1m CN0020=2m</p>
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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 2m PUR cable	M128PSF-0020-W 8-core pre-molded connector with 2m PUR cable	TMSP1612F Field attachable connector	TMSP125PF Field attachable connector	TMSP128PF Field attachable connector