

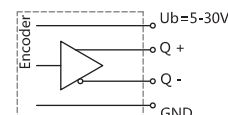
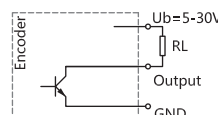
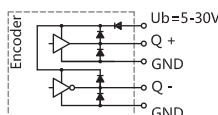
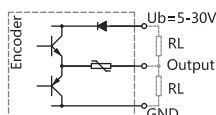
ESK100H Series
Sensing method Optical
Housing size $\Phi 101$ mm
Hollow shaft diameter $\Phi 30$ 、 $\Phi 35$ 、 $\Phi 38$ 、 $\Phi 40$ 、 $\Phi 42$ 、 $\Phi 45$ mm
Max. resolution 3000 PPR
Supply voltage 5VDC, 5-30VDC, 9-26VDC
Protection IP54/IP65

Mechanical characteristics

Note: ^{*}) Isolation inserts for hollow shaft can prevent currents from passing through the encoder bearings.

Shaft diameter	$\Phi 30$ 、 $\Phi 35$ 、 $\Phi 38$ 、 $\Phi 40$ 、 $\Phi 42$ 、 $\Phi 45$ mm [*])
Protection	IP54 /IP65
Speed	max. 3000 min ⁻¹
Shaft loading	max. 100 N Axial ; max. 200 N Radial
Shock resistance	100g, 6ms
Vibration resistance	10g, 10...2000HZ
Bearing life	10 ⁹ turns
Rotor moment of inertia	$< 150 \times 10^{-6}$ kgm ² (The rotor moment of inertia depends on the diameter of the shaft)
Starting torque	< 0.1 Nm
Materials	Hollow shaft : Stainless steel Flange : Aluminum alloy Housing: Aluminum alloy
Working temperature	-40 C...+85 C
Storage temperature	-40 C...+85 C
Weight	approx. 1kg (Cable2m)

Electrical characteristics

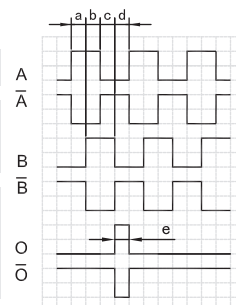


Output circuit	Push-Pull	Push-Pull Differential	Open Collector	RS422 (TTL Compatible)
Pulse rate	max. 3000 P/R	max. 3000 P/R	max. 3000 P/R	max. 3000 P/R
Supply voltage	5-30V	5-30V	5-30V	5-30V
Power consumption(no load)	max. 125 mA	max. 125 mA	max. 80 mA	max. 80 mA
Permissible load/channel	max. ± 80 mA	max. ± 80 mA	max. -50 mA	max. ± 50 mA
Pulse frequency	max. 100 KHz	max. 100 KHz	max. 100 KHz	max. 100 KHz
Signal level high	min. Ub-1.5V	min. Ub-1.5V	/	min. 2.5V
Signal level low	max. 0.8V	max. 0.8V	/	max. 0.4V
Rise time Tr	max. 1 μ s	max. 1 μ s	/	max. 1 μ s
Fall time Tf	max. 1 μ s	max. 1 μ s	/	max. 1 μ s
Short circuit proof outputs	yes	yes	yes	yes

Terminal assignment

Signal	OV	+Ub	A	$\bar{A}$	B	$\bar{B}$	O	$\bar{O}$	
Cable Colour	WH	BN	GN	PK	YE	BU	GY	RD	Shield
Flange connector M18, 9-pin, CCW (9218)	2	7	1	3	4	5	6	8	PH ¹⁾

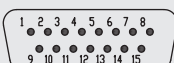
Note: ¹⁾ PH= connected to housing



Shaft turning clockwise,
top-view of clamping ring.
a, b, c, d = $T/4 \pm T/8$
e = $T/4 \pm T/8$

Note: Positional relationship of O channel and A&B channels is not specified.

Sub-D male
connector,
15-pin (9115)



5 7 4 3 2 1 9 10 PH¹⁾

Note: ¹⁾ PH= connected to housing

Ordering information

ESK100 XX H 45 E 1024 F 5-30 R 2 / XXXX

① Extended No.
XX

② Shaft type
H: Hollow shaft
HK: Hollow shaft with keyway

③ Channels
30 : 30mm
35 : 35mm
38 : 38mm
40 : 40mm
42 : 42mm
45 : 45mm

④ Channels
B : A B
C : A B O
D : A $\bar{A}$ B $\bar{B}$
E : A $\bar{A}$ B $\bar{B}$ O $\bar{O}$
F : A B $\bar{O}$

⑤ Pulse rate
600,1024,
1200,1500,
3000

⑥ Output circuit
F: Push-Pull
A: Push-Pull Differential
C: Open Collector
B: RS422 (TTL Compatible)

⑦ Supply voltage
5 : 5VDC
5-30 : 5...30VDC
9-26 : 9...26VDC

⑧ Exit position
R: Radial

⑨ Connection type
Figure : Cable length(m)
9115: Sub-D male connector, 15-pin
9218: M18 connector, 9-pin, CCW

⑩ Special code
XXXX

Note: Printed in bold=standard items

Notes : 1, Pulse rates available at a short notice (600,1024,1200,1500,3000) , other pulse rates on request.

2, Please chose the ordering information : Extended No., Shaft type, Shaft diameter, Channels, Pulse rate, Output circuit, Supply voltage, Exit position, Connection type and Special code.

Ordering example : 1, ESK100H45B1024F5-30R2, Special requirements please indicate to the back.

Explanation : ESK100H Series, Shaft diameter 45mm, Output channels A B, 1024PPR, Push-Pull, DC 5-30V, Radial Output 2m.

2, ESK100H45E3000A5-30R9115, Special requirements please indicate to the back.

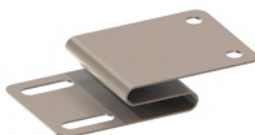
Explanation : ESK100H Series, Shaft diameter 45mm, Output channels A A B B O O, 3000PPR, Push-Pull Differential, DC 5-30V, Radial Output, Sub-D male connector, 15-pin.

Accessories (sold separately) Note: Further fixing components can be found in the accessories selection table.

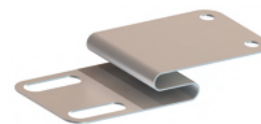
Tether square
Model (common) : 8116-A



Tether square
Model (common) : 8117



Tether square
Model (common) : 8117-A



Tether square
Model (common) : 8120

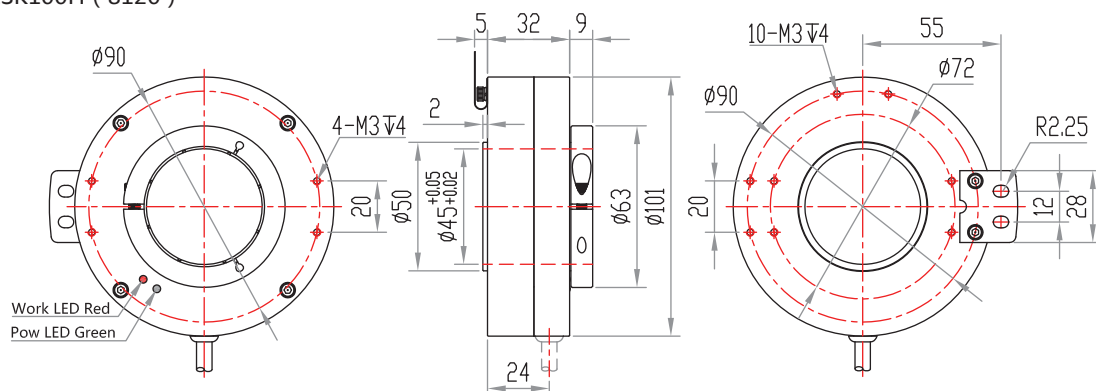


Isolation insert for hollow shaft
Model (depending on series) : 866X

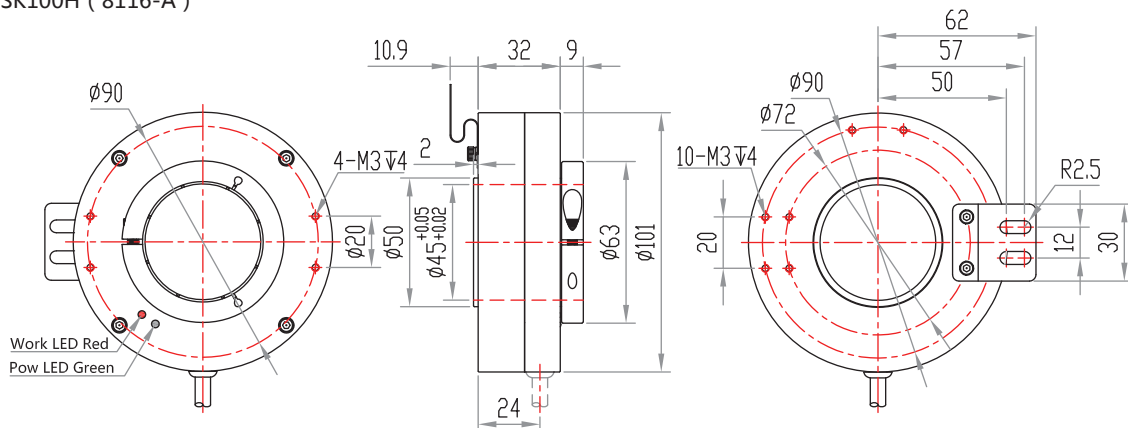


Dimensions

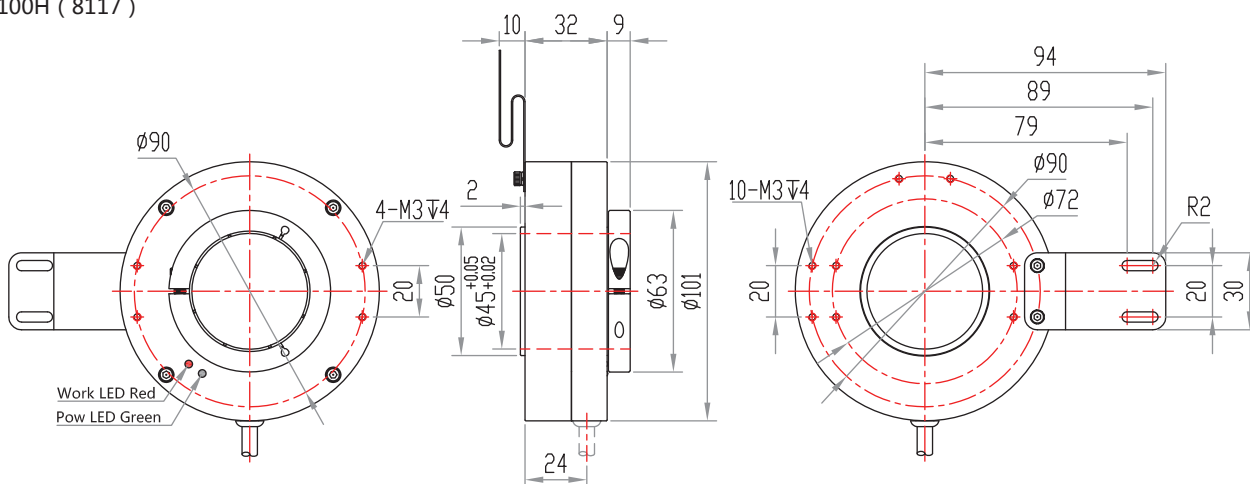
ESK100H (8120)



ESK100H (8116-A)

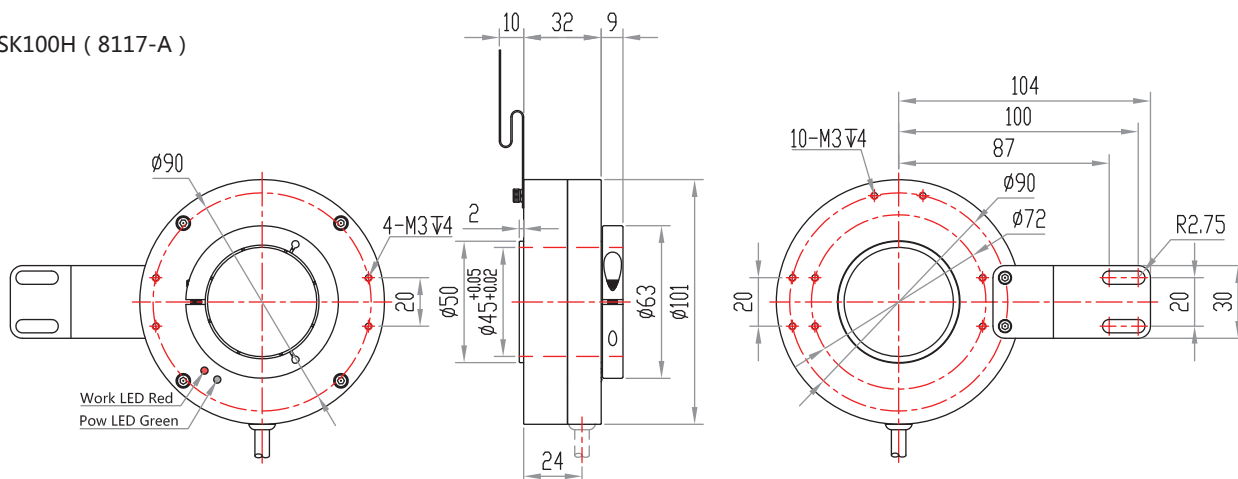


ESK100H (8117)

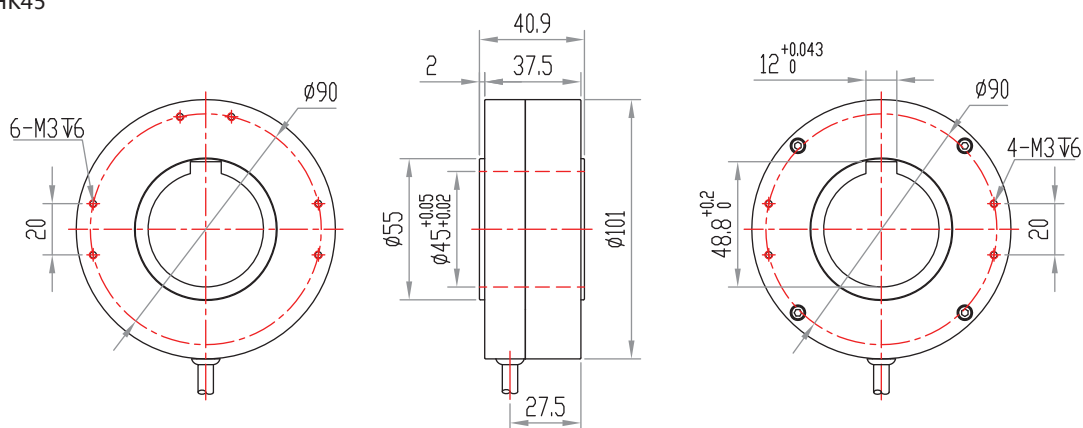


Dimensions

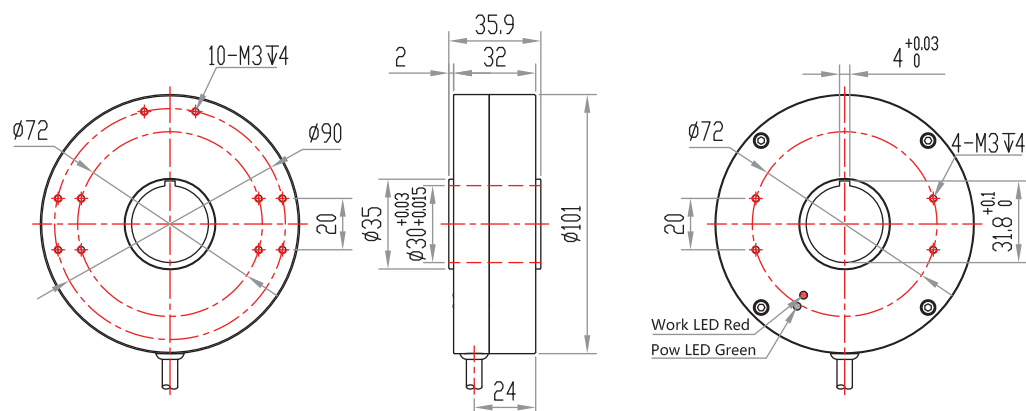
ESK100H (8117-A)



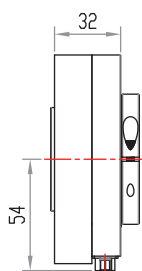
ESK100HK45



ESK100HK30



ESK100H(9115)



ESK100H(9218)

