ROTARY ENCODER(E60H SERIES)

▣Ordering information

E60H	20	–	8192	–	3	–	N	–	24	–	

Series	Shaft diameter	Pulse/1Revolution	Output phase	Output	Power supply	Cable
Diameter ϕ60mm, hollow type	ϕ20mm	5000, 8192	3 : A, B, Z 6 : A, $\overline{A}$, B, $\overline{B}$, Z, $\overline{Z}$	T : Totem pole output N : NPN open collector output V : Voltage output L : Line driver output(※)	5 : 5VDC ±5% 24 : 12-24VDC ±5%	No mark:Normal type (※) C:Cable outgoing connector type

※Standard : E60H20-PULSE-3-N-24

※The power of Line driver is only for 5VDC

※Cable length :250mm

▣Specifications

Item			Diameter ϕ60mm hollow type Incremental Rotary encoder	
Model	Totem Pole output		E60H20 - □-3-T-5-□	E60H20 - □-3-T-24-□
	NPN open collector output		E60H20 - □-3-N-5-□	E60H20 - □-3-N-24-□
	Voltage output		E60H20 - □-3-V-5-□	E60H20 - □-3-V-24-□
	Line Driver output		E60H20 - □-6-L-5-□	———
Appearances			CE (Except for Line driver output) NEW  [ϕ60mm, L36mm]	
Resolution(P/R)			(★Note1) 5000, 8192	
Electrical specification	Output phase		A, B, Z phase (Line driver output A, $\overline{A}$, B, $\overline{B}$, Z, $\overline{Z}$ phase)	
	Phase difference of output		Phase difference between A and B : $\frac{T}{4} \pm \frac{T}{8}$ (T=1cycle of A phase)	
	Control output	Totem pole output	• Low ☞ Load current:Max. 30mA, Residual voltage : Max. 0.4VDC • High ☞ Load current:Max. 10mA, Output voltage(Power supply 5VDC):Min. (Power supply-2.0)VDC, Output voltage(Power supply 12-24VDC):Min. (Power supply-3.0)VDC	
		NPN open collector output	Load current : Max. 30mA, Residual voltage : Max. 0.4VDC	
		Voltage output	Load current : Max. 10mA, Residual voltage : Max. 0.4VDC	
		Line driver output	• Low ☞ Load current : Max. 20mA, Residual : Max. 0.5VDC • High ☞ Load current : Max. -20mA, Output voltage : Min. 2.5VDC	
	Response time (Rise/Fall)	Totem pole output	Max. 1μs	• Measuring condition ☞ Cable length : 2m, I sink = Max. 20mA
		NPN open collector output	Max. 1μs	
		Voltage output	Max. 1μs	
		Line driver output	Max. 0.5μs	
	Max. Response frequency		300kHz	
	Power supply		• 5VDC ±5%(Ripple P-P:Max. 5%) • 12-24VDC ±5%(Ripple P-P:Max. 5%)	
	Current consumption		Max. 80mA(disconnection of the load), Line driver output:Max. 50mA(disconnection of the load)	
	Insulation resistance		Min. 100MΩ(at 500VDC)	
	Dielectric strength		750VAC 50/60Hz for 1 minute(Between all terminals and case)	
	Connection		Cable outgoing type, 200mm cable outgoing connector type	
Mechanical specification	Starting torque		Max. 150gf • cm(0.015N • m)	
	Rotor inertia		Max. 110g · cm^2 (11×10^{-5} kg · m^2)	
	Shaft loading		Radial : 5kgf, Thrust : 2.5kgf	
	Max. allowable revolution		(★Note2) 6000rpm	
Vibration			1.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours	
Shock			Max. 75G	
Ambient temperature			-10 ~ 70℃(at non-freezing status), Storage : -25 ~ 85℃	
Ambient humidity			35~85%RH, Storage : 35~90%RH	
Protection			IP50(IEC standard)	
Cable			ϕ5mm, 5P, Length : 2m, Shield cable(Line driver output : ϕ5mm, 8P)	
Accessory			Spring bracket	
Unit weight			Approx. 300g	

※(★Note1)Not indicated type is available to customize.

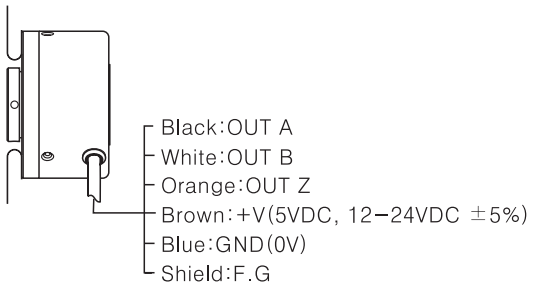
※(★Note2)Max. allowable revolution ≧ Max. response revolution 【Max. response revolution(rpm) = $\frac{\text{Max. response frequency}}{\text{Resolution}} \times 60$ sec】

ROTARY ENCODER(E60H SERIES)

▣Connections

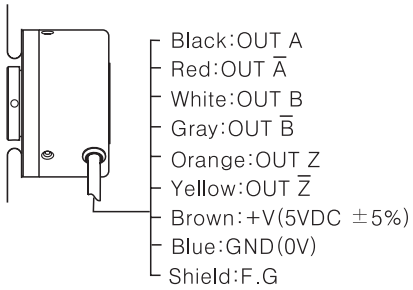
◎Normal type

●Totem pole output / NPN open collector output / Voltage output



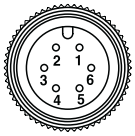
※Unused wires must be insulated.
※The metal case and shield cable of encoder should be grounded(F.G).

●Line driver output



◎Cable outgoing connector type

●Totem pole output
NPN open collector output
Voltage output



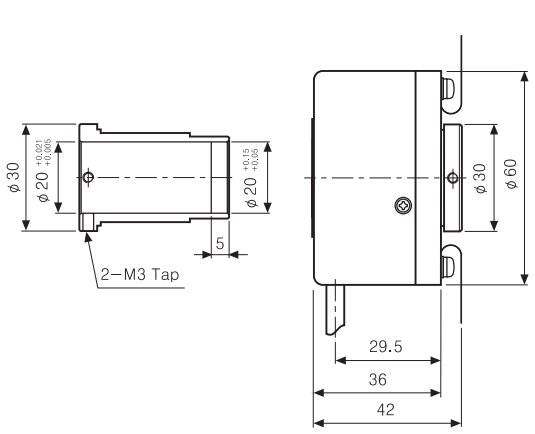
●Line driver output

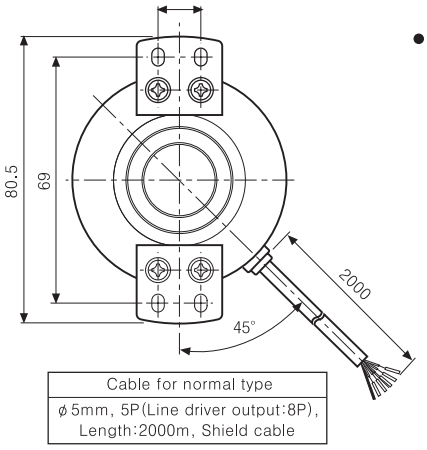
Totem pole output NPN open collector output Voltage output			Line driver output		
Pin No.	Cable color	Function	Pin No.	Cable color	Function
①	Black	OUT A	①	Black	OUT A
②	White	OUT B	②	Red	OUT $\overline{A}$
③	Orange	OUT Z	③	Brown	+V
④	Brown	+V	④	Blue	GND
⑤	Blue	GND	⑤	White	OUT B
⑥	Shield	F.G	⑥	Gray	OUT $\overline{B}$
			⑦	Orange	OUT Z
			⑧	Yellow	OUT $\overline{Z}$
			⑨	Shield	F.G

※F.G(Field Ground):It should be grounded seperately.

▣Dimensions

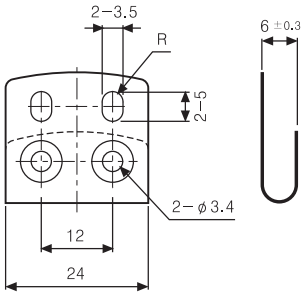
◎Normal type





Cable for normal type
φ5mm, 5P(Line driver output:8P), Length:2000m, Shield cable

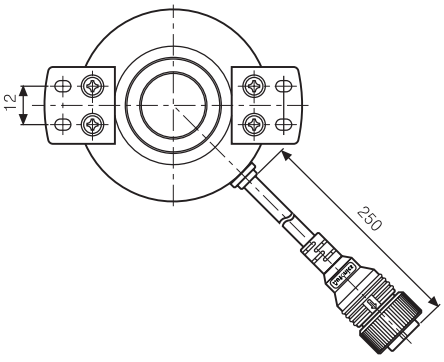
●Bracket

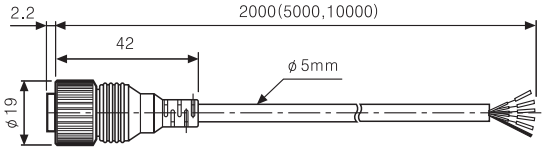


Unit:mm

◎Cable outgoing connector type

●Connector cable(Accessory)





Connector cable model	
Line driver output	**CID9S-2(Standard), CID9S-5, CID9S-10**
Etc.	**CID6S-2(Standard),CID6S-5, CID6S-10**