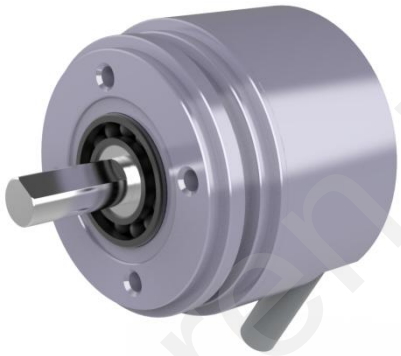
Absolute encoder **ENA39S** Series



Features

- External diameter φ39mm, thickness 31.5mm, shaft diameter φ6mm, φ8mm;
- Compact and sturdy structure;
- Adopt non-contact photoelectric reflection principle;
- Interface: BiSS_C or SSI;
- Accuracy: ±80";
- Support multi-turn data recording without power failure.

Naming rules

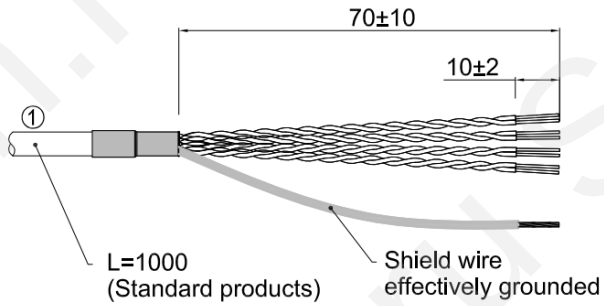
EN	A	39	S8	—	R	B	1716	J	D	—	T	XXXX
Product category EN: Encoder	Encoder type A: Absolute value type	Size of outside diameter 39: Outside diameter 39mm	Shaft diameter type S6: solid shaft diameter 6mm S8: solid shaft diameter 8mm		Electrical interface R: RS-485	Communication format B: Biss C (binary) S: SSI (binary)	Resolution: 1024 2048 2500 65536	Power supply voltage J: 5V DC H: DC 8-30V	Protection level D: IP65		Connection method T: Radial 1m cable T2: Radial 2m cable T5: Radial 5m cable	XXXX Four digit special number

Specification parameters

Name	Parameter
Scanning principle	Photoelectric
Accuracy	±80”
Response speed	Normal action: 6000r/min
RMS position signal noise	±2 @18 Bits/r
Communication	BiSS_C (Binary)
	SSI (Binary)
Communication clock frequency	≤10 MHz (BiSS) or ≤5 MHz (SSI)
Resolution	Single turn 17 bits, multi turn 16 bits
Starting time	Typical value: 13 ms
Absolute position sampling period	≤75 ns
Allowable speed	≤32200 r/min
Electrical connection	Cable connection
Cable	Differential twisted-paired cable
Cable length	1m (Optional 1m, 2m and 5m)
Internal single-turn position update rate	15000kHz
Internal multi-turn position update rate	11.5kHz
Temperature alarm limit value	-40℃~95℃
Mechanical connection	Axial flange type or slotted fixing
Diameter of shaft	φ6mm, φ8mm (D type, solid shaft)
Shaft material	Stainless steel
Starting torque	Less than 9.8×10^{-3}N·m
Inertia moment	Less than 6.5×10^{-6} kg-m²
Shaft load	Radial 30N; Axial 20N
Allowed speed	≤6000 rpm
Shell material	Aluminium alloy
Weight	About 130g
Environmental temperature	Operating: -40～95℃
	Storage: -40～+95℃
Environmental humidity	Operating and storage: 35～85%RH (Non-condensing)
Vibration	Amplitude 1.52mm, 5~55HZ, 2h for X, Y, Z direction individually
Shock	980m/s² 11ms three times for X, Y, Z direction individually
Protection	IP50; IP65
Supply voltage	5V DC; 8-30V DC

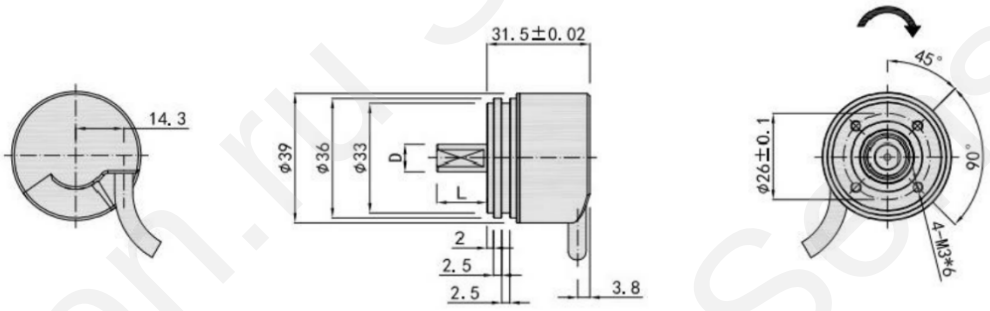
Interface definition

Functional definition of wire colors BISS_C / SSI



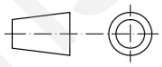
Wire color	Signal				Function	Twisted-paired cable
	BISS_C ST	BISS C MT	SSI ST	SSI MT		
Red	Up	Up	Up	Up	Power positive	
Black	Un	Un	Un	Un	Power negative	
White	SL-	SL-	DATA-	DATA-	Data signal	
White/ Black	SL+	SL+	DATA+	DATA+	Data signal	
Green	MA-	MA-	CLOCK-	CLOCK-	Clock signal	
Green/ Black	MA+	MA+	CLOCK+	CLOCK+	Clock signal	
Yellow	N.C.	Vbat	N.C.	Vbat	Backup power supply	
Yellow/ Black	N.C.	0V	N.C.	0V	0V	

Dimensional drawing

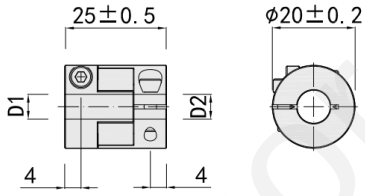
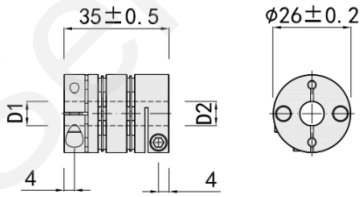


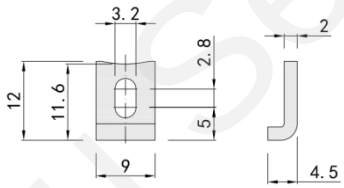
D (Shaft diameter)	$\Phi 8_{h7}$ $(^{0}_{-0.015})$	$\varphi 10_{h7}$ $(^{0}_{-0.018})$
L	15	20

Unit：mm



= Direction of shaft rotation for signal output

Coupler	Dimensions	D1	D2	Model
Cross type: M series 	 Main body material: aluminum alloy	Φ6mm	Φ8mm	LB-M0608
		Φ8mm	Φ8mm	LB-M0808
		Φ8mm	Φ10mm	LB-M0810
Diaphragm type: W series 	 Main body material: aluminum alloy	Φ6mm	Φ8mm	LB-W0608
		Φ8mm	Φ8mm	LB-W0808
		Φ8mm	Φ10mm	LB-W0810

Mounting cardboard	Dimensions	Model
 3 pcs as a set	 Material: stainless steel	LB-K3946