# Абсолютные энкодеры ENA58S/ENA39S

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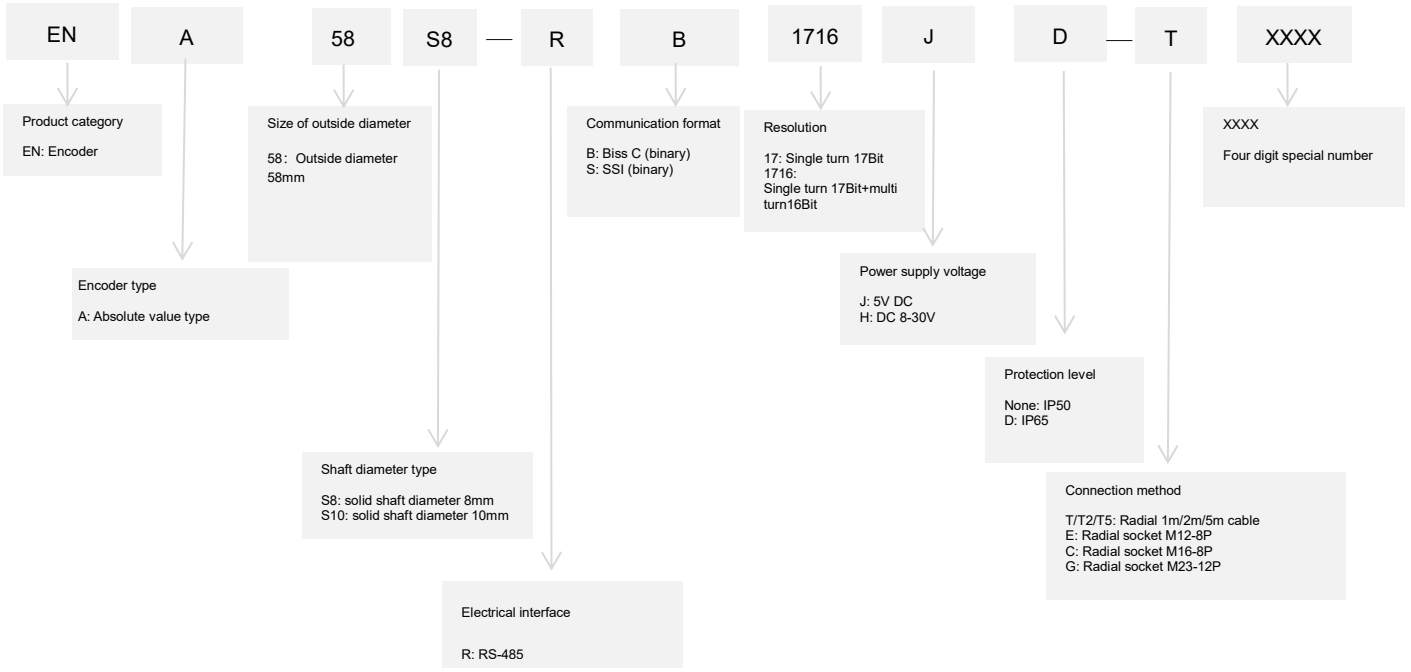
# Absolute encoder **ENA58S** Series

## Features

- ◆ Encoder external diameter Φ58mm, thickness 36-40mm, diameter of shaft of Φ8mm, Φ10mm available;
- ◆ Adopt non-contact photoelectric reflection principle M-code principle;
- ◆ Interface: BiSS_C or SSI;
- ◆ Accuracy: ±80";
- ◆ Support multi-turn data recording without power failure.

## Naming rules



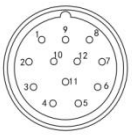
## Specification parameters

| Name | Parameter |
|---|---|
| Scanning principle | Photoelectric |
| Accuracy | ±80” |
| Response speed | Normal action:6000r/min |
| position data jitter | ±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 |
| 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 | Clamping flange or synchro flange |
| Diameter of shaft | φ8mm, φ10mm (D type, solid shaft) |
| Shaft material | Stainless steel |
| Starting torque | At +20℃ IP50<0.05 Nm; IP65<0.1 Nm |
| Inertia moment | Less than $3\times10^{-6}$ kg·m² |
| Shaft load | Radial 60N; Axial 40N |
| Allowed speed | ≤6000 rpm |
| Shell material | Aluminium alloy |
| Weight | About 420g |
| 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 |
| Supply current | 120 mA |

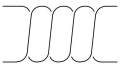
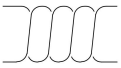
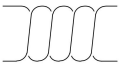
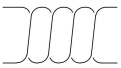
## Interface definition

Socket pin definition
(M12 8-pin)

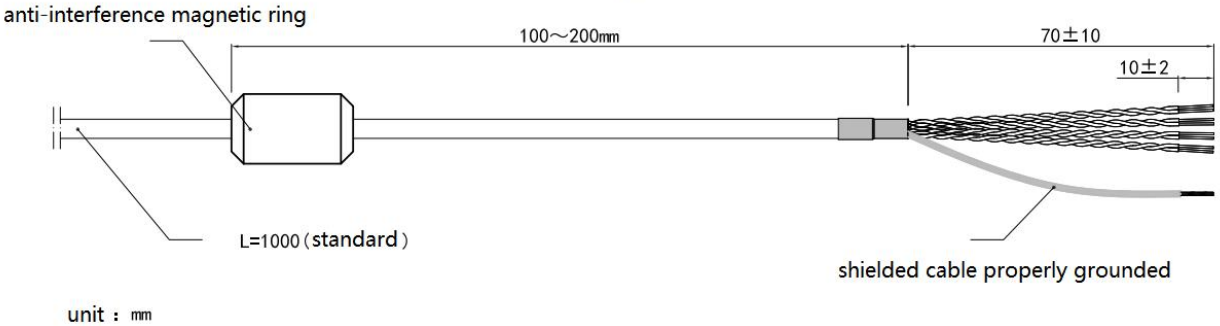
Socket pin definition
(M16 8-pin)



Socket pin definition
(M23 12-pin)

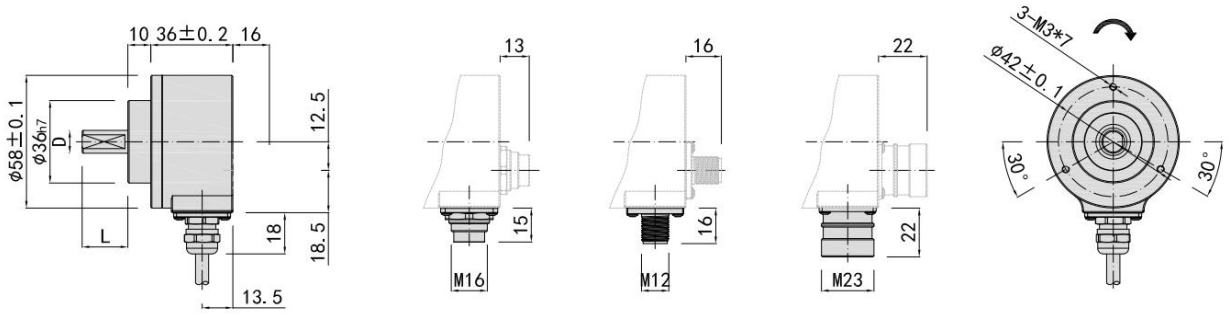
| Wire color | PIN NO. | Signal | | | | Function | Twisted-paired cable |
|---|---|---|---|---|---|---|---|
| | | BISS_C ST | BISS_C MT | SSI ST | SSI MT | | |
| Red | 1 | Up | Up | Up | Up | Power positive |  |
| Black | 2 | Un | Un | Un | Un | Power negative | |
| White | 3 | SL- | SL- | DATA- | DATA- | Data signal |  |
| White/BK | 4 | SL+ | SL+ | DATA+ | DATA+ | Data signal | |
| Green | 5 | MA- | MA- | CLOCK- | CLOCK- | Clock signal |  |
| Green/BK | 6 | MA+ | MA+ | CLOCK+ | CLOCK+ | Clock signal | |
| Yellow | 7 | N.C. | Vbat | N.C. | Vbat | Backup power supply |  |
| Yellow/BK | 8 | N.C. | 0V | N.C. | 0V | 0V | |
| - | 9 | N.C. | N.C. | N.C. | N.C. | Unallocated | - |
| - | 10 | N.C. | N.C. | N.C. | N.C. | Unallocated | - |
| - | 11 | N.C. | N.C. | N.C. | N.C. | Unallocated | - |
| - | 12 | N.C. | N.C. | N.C. | N.C. | Unallocated | - |
| GND | No encoder body connected. | | | | | | |

Cable End Diagram



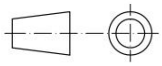

unit ： mm

## Dimensional drawing



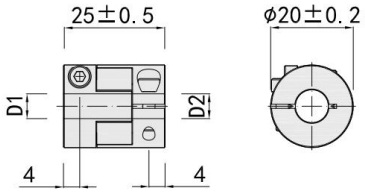
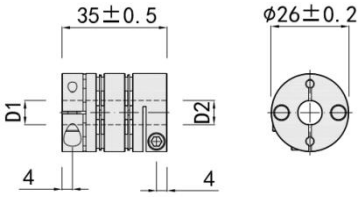

| D (Shaft diameter) | $\Phi 8_{h7}(^{0}_{-0.015})$ | $\varphi 10_{h7}(^{0}_{-0.018})$ |
|---|---|---|
| L | 20 | 20 |

Unit：mm



= Direction of shaft rotation for signal output

## Accessories

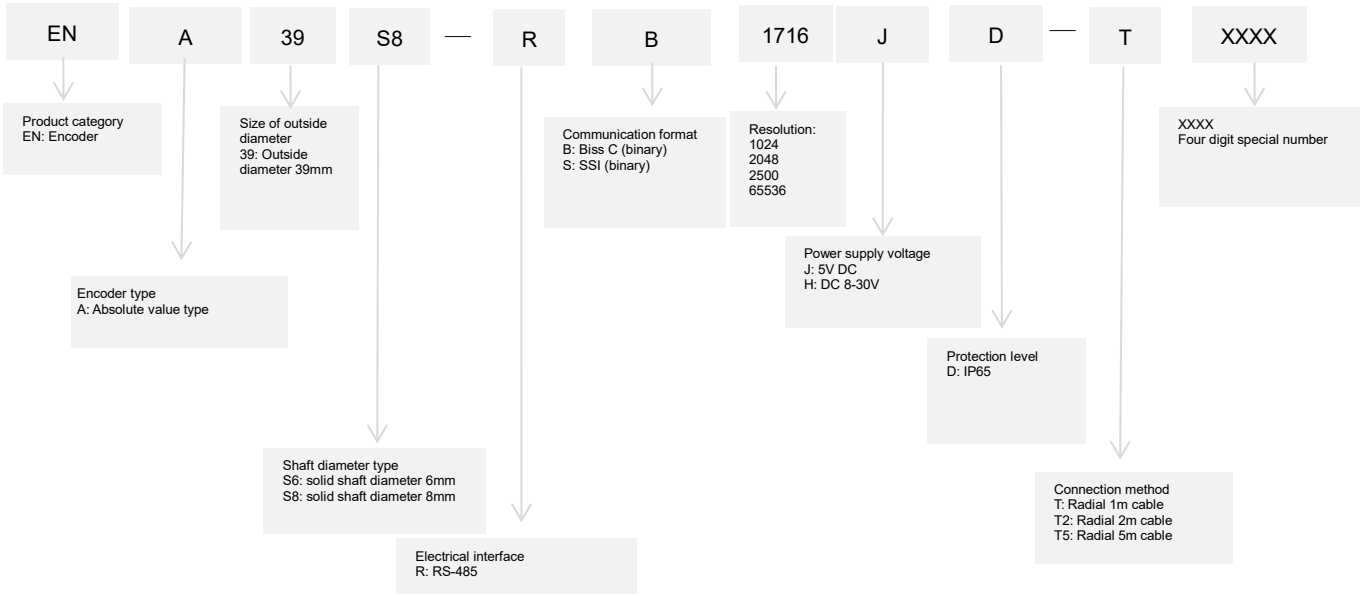
| Coupler | Dimensions | D1 | D2 | Model |
|---|---|---|---|---|
| Cross type: M series  |   Main body material: aluminum alloy | Φ6mm | Φ8mm | LB-M0608 |
| | | Φ8mm | Φ8mm | LB-M0808 |
| | | Φ8mm | Φ10mm | LB-M0810 |
| Diaphragm type: W series  |   Main body material: aluminum alloy | Φ6mm | Φ8mm |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

# 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

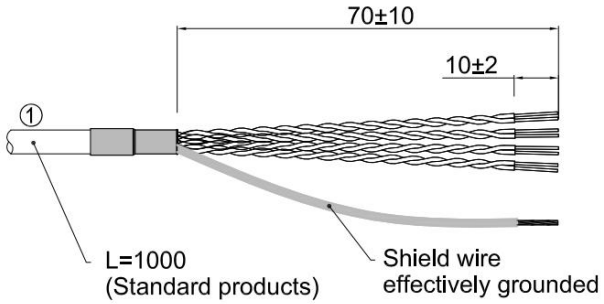


## Specification parameters

| 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 $9.8\times10^{-3}$N·m |
| Inertia moment | Less than $6.5\times10^{-6}$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 |

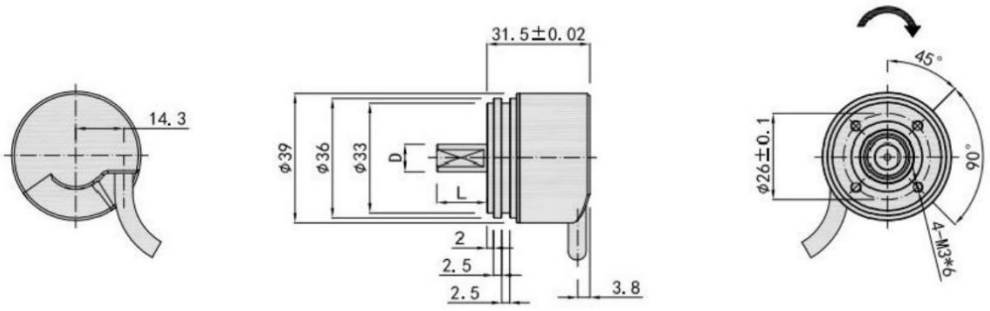
## Interface definition

Functional definition of wire colors BISS_C / SSI



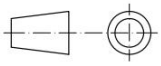

| Wire color | Signal | | | | Function | Twisted-paired cable |
|---|---|---|---|---|---|---|
| | BISS_C ST | BISS C MT | SSI ST | SSI MT | | |
| Red | Up | Up | Up | Up | Power positive | |
| Black | Un | Un | Un | Un | Power negative | |
| White | SL- | SL- | DATA- | DATA- | Data signal | |
| White/ 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

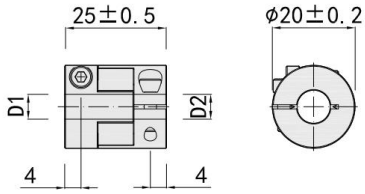
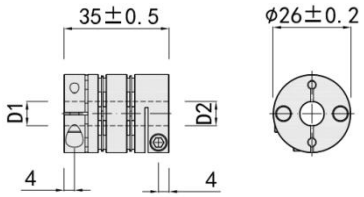


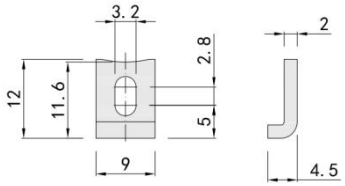

| D (Shaft diameter) | $\Phi 8_{h7}\ (^{0}_{-0.015})$ | $\varphi 10_{h7}\ (^{0}_{-0.018})$ |
|---|---|---|
| L | 15 | 20 |

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 |

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