

# Battery less Multi-turn Absolute Encoder



## Hollow shaft type    **Model : 38HA-MS**

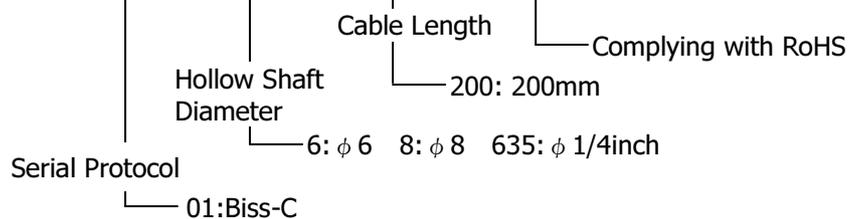
### ■ Features

- 39-bits resolution: 16-bits energy-harvesting multi-turn and 23-bits optical single-turn.
- With CRC and alarm status bits.
- Built in with BiSS-C mode communication protocol.
- Overall encoder outer diameter Ø38 mm, and maximum height of 40 mm.
- Supporting 8-mm diameter of the blind hollow shaft.



### ■ Model

## **38HA-MS01-□□□-200-00E**

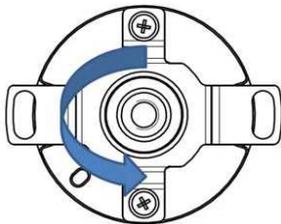


### ■ Specification

#### 1. Basic specification

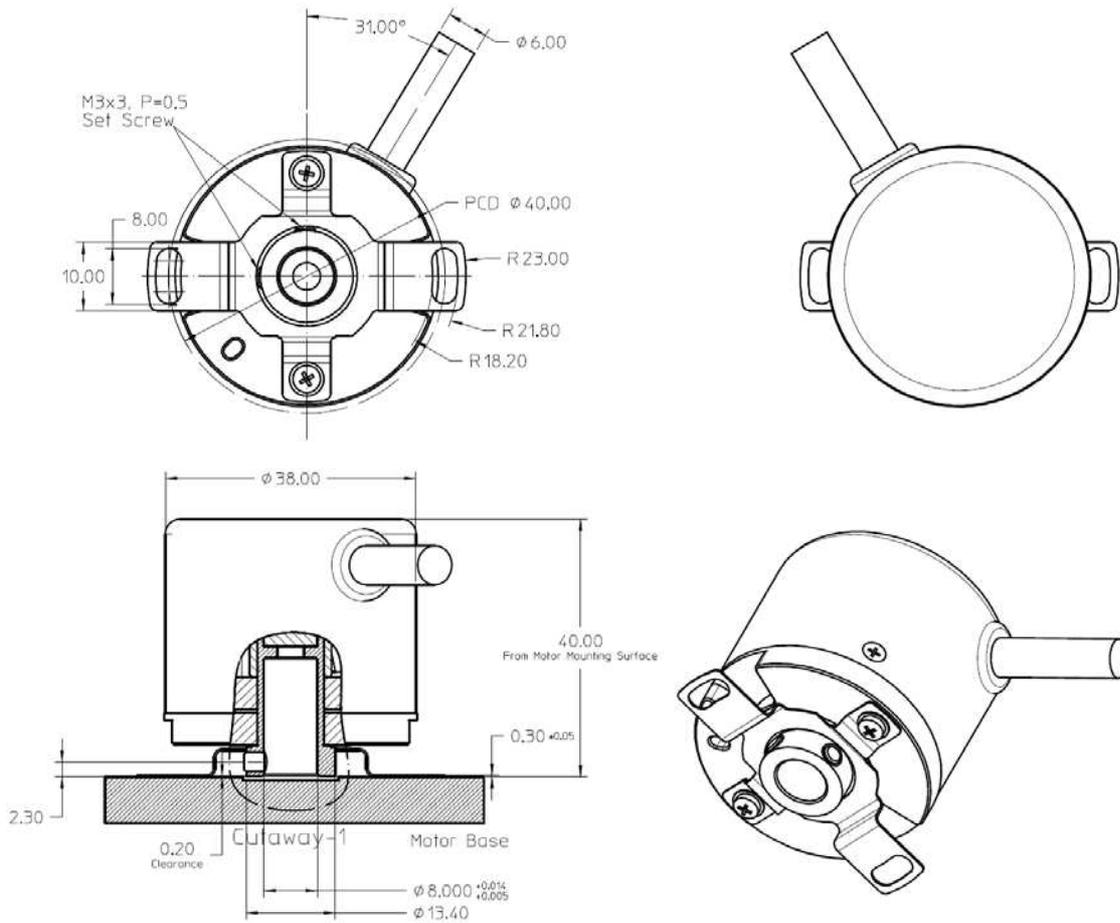
General		
Outside diameter	38mm	At housing
Height	40mm	
Bearing	With Bearing	
Shaft	Hollow shaft	
Shaft Diameter	1/4 inch, φ6, φ8	
Measuring Methods	Optical transparent / Absolute	
Electrical		
Single-turn Resolution	8,388,607 Count (23bit)	
Multi-turn Resolution	65,535 Count (16bit)	
Fault Status	8 bits	
CRC	8 bits	
DC Supply Voltage	5.0V ±10%	
Main Supply Current	Typical ≤ 120mA	Without load
Electrically Permissible Speed	≤6,000min <sup>-1</sup>	
Output Communication	BiSS-C	*Please contact us for various interfaces.
Output Code	Binary	
Mechanical		
Mechanical Permissible Speed	≤6,000min <sup>-1</sup>	

Environmental		
Operating Temperature Range	-20°C~105 °C	
Storage Temperature Range	-20°C ~105°C	
Vibration	G level: 10G; 10~2000Hz	Per IEC 60068-2-6
Shock	6ms; Half Sine; 200G	Per IEC 60068-2-27
Protection	IP50	
Others		
System Accuracy	±80 arc-sec	With electrical correction in room temperature
Counting Direction	Increase with counter-clockwise shaft rotation	View from coupling side
Position Calculation Time	Min: $2/ fMA + 3.35 \mu s$ Max: $2.5/ fMA + 3.75 \mu s$	fMA Min 0.08 MHz Max 10 MHz
Initialization Time	500 ms	
Output Connection	Refer to cable color information	Approximate 200mm (AWG28)
Relative Air Humidity (Non-Condensing)	RH 90 %	At 40 °C
Shaft Radial Play	±0.05 mm	
Shaft Axial Play	±0.1 mm	



View from coupling side, shaft rotate CCW direction when the count increasing.

## ■ Outward



### NOTE

1. Dimensions are in millimeters.
2. Third angle projection.
3. Unless otherwise specified, all tolerances are within  $\pm 0.5$  mm.
4. Recommended to have a recess on motor mounting surface to prevent encoder shaft interfere with motor base.

## ■ Cable Color Information

No.	Color	Description
1	RED	VCC, Positive Supply
2	BLACK	GND, Ground
3	BROWN	MA+
4	WHITE	MA-
5	ORANGE	SLO+
6	BLUE	SLO-

## ■ Applications

- Robot and robotic engineering
- Factory automation
- Angular and linear positioning system
- CNC machine tool

### NOTE

Avago encoders are not recommended for use in safety-critical applications; for example, ABS braking systems, power steering, life support systems, and critical care medical equipment. Please contact a sales representative if more clarification is needed.