

# Magnetostrictive Displacement Sensors Operating Manual

R Series  
R(H/P/F) Structure  
Analog/SSI interface

 **400-809-1101**  
Customer Service Hotline



## ■ Use Regulations

Magnetostrictive displacement sensor is used to detect the displacement of motion mechanism. According to the selection regulations, the magnets matched with magnetostrictive displacement detection electronic components are selected for detection applications in different occasions. During use, ensure that the cable, connector, magnet and sensor body are the original parts of the manufacturer.

Please do not open the shell of the sensor without authorization, so as not to affect the normal warranty period of the product.

## ■ Safety matters

Please read the manual carefully before powering up the sensor. First, confirm the outlet mode and pin signal of the sensor, and make correct electrical connection to prevent power-on from damaging the sensor or causing misoperation of the equipment. During the construction and use of the sensor, the current of high-power equipment such as welding machine should be avoided from entering the working circuit of the sensor.

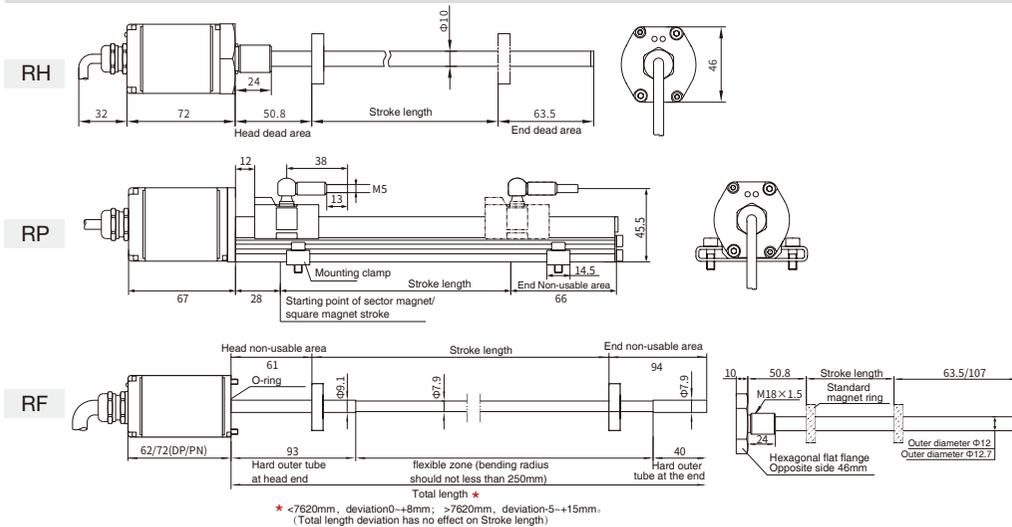
If you find that the sensor data is abnormal or the appearance has obvious changes, please stop using it immediately, and contact the manufacturer to confirm the current state of the sensor before continuing to use it.

## ■ Status indication/fault analysis

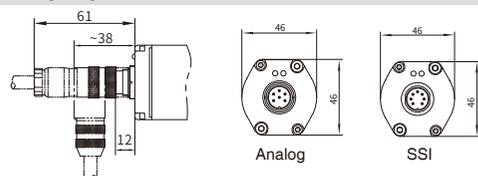
Analog indicator			SSI indicator		
Green light	Red light	Function	Green light	Red light	Function
ON	OFF	Normal work	ON	OFF	Normal work
ON	Flash	Magnet leaves Stroke length range	ON	ON	The magnet leaves the Stroke length range or the magnet cannot be detected
ON	ON	Magnet not detected	Flash	ON	Programming state
Flash	ON	Programming state			

## ■ Installation Dimensions

### Outgoing mode: Cable outlet



### Outgoing mode: Connector



## ■ Electric interface

### Analog



• 6-pin male connector arrangement (facing the sensor head)			
Pin	Cable color 1*	Cable color 2*	Pin/wire function definition
1	Blue	Grey	No. 1 magnet ring position signal(+)
2	Green	Pink	No. 1 magnet ring position signal(-)
3	yellow	yellow	Reservation
4	white	Green	Reservation
5	Red	Brown	+24Vdc±20% power supply
6	Black	white	0 V d c (power supply circuit)

### Analog



• Pin arrangement of eight-pin male connector (Facing the sensor head)		
Pin	Cable color 3*	Pin/wire function definition
1	yellow	Current output
2	Grey	0Vdc (current/voltage loop)
3	Pink	Reservation
4	-	Reservation
5	Green	0...10V
6	Blue	0Vdc (power supply circuit)
7	Brown	+24Vdc±20% power supply
8	white	Reservation

### SSI



• 7-pin male connector arrangement (facing the sensor head)			
Pin	Cable color 1*	Cable color 2*	Pin/wire function definition
1	White	Grey	Data (-)
2	Yellow	Pink	Data (+)
3	Blue	Yellow	Clock (+)
4	Green	Green	Clock (-)
5	Red	Brown	+24Vdc power supply (-20%~+20%)
6	Black	White	0 V d c (power supply circuit)
7	-	-	Do not connect

### SSI



• 8-pin male connector arrangement (facing the sensor head)		
Pin	Cable color 3*	Pin/wire function definition
1	yellow	Clock (+)
2	Grey	Data (+)
3	Pink	Clock (-)
4	-	Reservation
5	Green	Data (-)
6	Blue	0Vdc (power supply circuit)
7	Brown	+ 2 4 V d c power supply (- 2 0 % ~ + 2 0 %)
8	white	Reservation

Note: \* Cable color 1: cable PUR sheath, orange, -20~90 C

\* Cable color 2/3: cable PVC sheath orange, -20~105 C

## ■ Application environment

Magnetostrictive displacement sensor is a kind of magnetic measurement sensor. Make sure there is no strong magnetic field around the sensor, which may interfere with the data.

The displacement output signal cable of magnetostrictive displacement sensor should be away from the power cable or large current or strong pulse interference source.

Confirm the environmental parameters including temperature, vibration, etc., and ensure that the working conditions are within the nominal working parameters of the sensor.

## ■ Installation

The installation of magnetostrictive displacement sensor mainly includes sensor body, magnet and cable fixing.

The installing forms of the sensor body are: thread installing, clamp installing and matching fixing installing. Before installation, make sure that the packaging is in good condition, and the sensor body has no obvious bending and bumping. The sensor body should be assembled according to the specific installation form.

When installing magnets, please use matching magnetic insulation gaskets to ensure normal magnetic field circuit.

When installing plugs or cables, please connect them accurately according to the electrical interfaces in the instructions.

## ■ After-sales support

If the sensor malfunctions, please contact the after-sales department of the company in time. Do not attempt to repair it yourself.