






Magnetostrictive Displacement Sensor

E Series Product manual

Honorary Qualification















HP Displacement Sensor



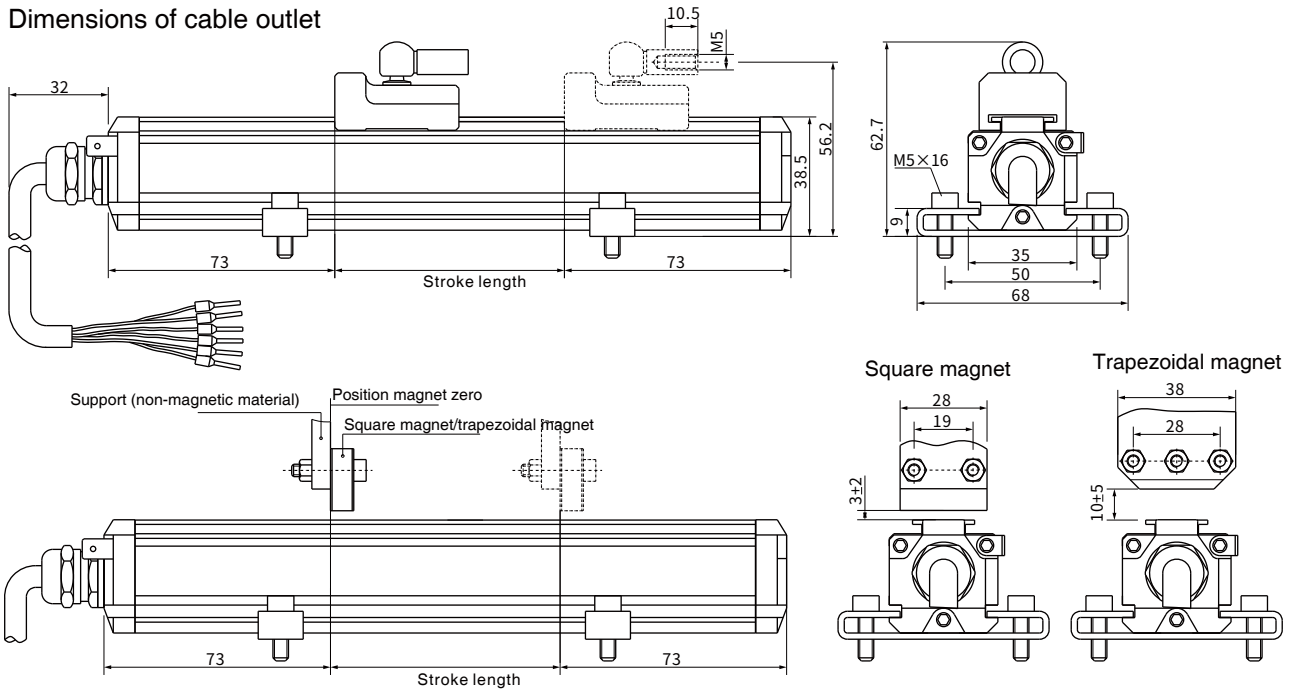
Technical characteristics

- Compact structure, convenient disassembly and assembly
- Linear measuring, absolute position output
- Rugged and fully enclosed design
- Digital technology, stable and reliable

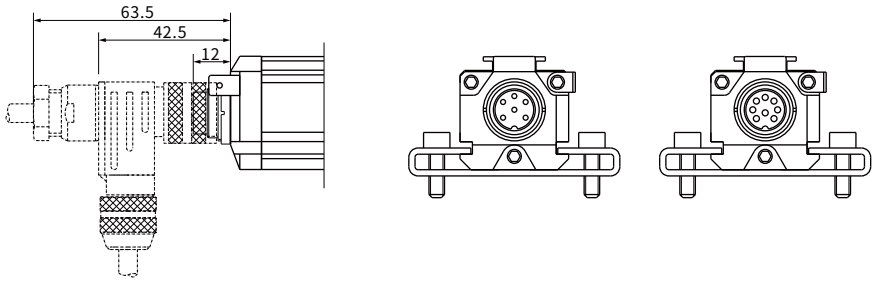
HP-Analog Output

Structural shape

- Dimensions of cable outlet



- Outline dimensions of connector outlet



Wiring and pin definition

PH60 

PB80 

- 6-pin male connector arrangement (Sensor Oriented)

Pin	Cable color 1*	Cable color 2*	Function definition
1	Blue	Grey	Magnet ring position signal+
2	Green	Pink	Magnet ring position signal-
3	Yellow	Yellow	Reservation
4	White	Green	Reservation
5	Red	Brown	+24Vdc power supply (-20%~+20%)
6	Black	White	GND (power supply circuit)

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

* Cable color 2/3: Cable PUR sheath, orange,-20~90°C

- 8-pin male connector arrangement (Sensor Oriented)

Pin	Cable color 3*	Function definition
1	Yellow	Current output
2	Grey	current/voltage circuit
3	Pink	Reservation
4	-	Reservation
5	Green	Voltage output
6	Blue	GND (power supply circuit)
7	Brown	+24Vdc power supply (-20%~+20%)
8	White	Reservation

HP Analog Output-Product Parameters

• Input

Measuring data	Position magnet ring
Stroke length	50~2500 mm (customized according to customer's needs)

• Output

Current	4 ~ 20mA or 20~4mA(min/max load 0/500Ω)
Voltage	0 ~ 10Vdc or 0~5Vdc (minimum load resistance ≥10KΩ)
Resolution	16-bit D/A or 0.0015% of full scale (minimum 5μm)
Nonlinearity	< 0.02% of full scale
Repetition accuracy	< ± 0.005% of full scale
Update time	1ms(range≤1m)、2ms(1m<range≤2m)、3ms(2m<range≤3m)
Hysteresis	<10μm

• Operating conditions

Magnet velocity	Arbitrary
Protection class	IP65
Operating temperature	-40°C ~ +85°C
Humidity/dew point	Humidity 90%, no condensation
Temperature coefficient	<30ppm/°C
Shock index	GB/T2423.5 50g(6ms)
Vibration index	GB/T2423.10 20g/10~2000Hz
EMC test	GB/T17626.2 Anti-interference Degree of Electrostatic Discharge, Grade 3, Class A GB/T17626.3 Radiation Anti-interference Degree of Radio Frequency Electromagnetic Field, Grade 3, Class A GB/T17626.4 Anti-interference Degree of Electrical Fast Transient Train, Grade 3, Class A GB/T17626.6 RF Field Induced Conducted Disturbance Immunity, Grade 2, Class A GB/T17626.8 Power Frequency Magnetic Field Immunity, Grade 3, Class A CE certification

• Electrical Connections

Input voltage	+24Vdc±20%
Power consumption	<80mA
Polarity protection	Maximum-30Vdc
Overvoltage protection	Maximum 36Vdc
Insulation resistance	＞10MΩ
Insulation strength	500V

• Construction and Materials

Measuring rod	Aluminum profile
Installation	Movable mounting clamp
Position magnet	Slider magnet, trapezoidal magnet
Outgoing mode	Cable outlet or connector

HP Analog Output-Selection Guide

H	P	–	M					–	C		–					–			1		–		
01	02		03	04	05	06	07		08	09		10	11	12	13		14	15	16	17		18	19

01 - 02	Sensor shell form
H P	Overall profile structure series
03 - 07	**Range (0050~2500mm, others can be**
	0050~0500mm step length 25mm
	0500~1000mm step length 50mm
	1000~2500mm step length 100mm
08 - 09	**Magnet form**
C 2	Slider magnet (211513)
C 3	Square magnet (211508)
C 4	Trapezoidal magnet (211514)
10 - 13	**Connection form**
10 - 11	Cable outlet mode
D H	PUR sheath, orange,-20~90°C, end scattered, Cable color 1
D U	PVC sheath, orange,-20~105°C, end scattered, Cable color 2
D B	PVC sheath, orange,-20~105°C, end scattered, Cable color 3
12 - 13	Cable length, 01~99 units: m (cable outlet mode)
10 - 13	Connector form
P H 6 0	M16 6-pin socket, plug cable needs to be selected separately
P B 8 0	M16 8-pin socket, plug cable needs to be selected separately

14 - 17	**Signal output mode**
14 - 15	Communication interface
A 0	Current output, 4 ~ 20mA
A 1	Current output, 20 ~ 4mA
A 2	Current output, 0 ~ 20mA
A 3	Current output, 20 ~ 0mA
V 0	Voltage output, 0 ~ 10V
V 1	Voltage output, 10 ~ 0V
V 4	Voltage output, 0 ~ 5V
V 5	Voltage output, 5 ~ 0V
16	Reserved bit
1	1 position magnet
17	No magnet ring state
A	Keep the original value
B	Maximum value
C	minimum
18 - 19	**Non-usable area at head and end**
B 1	72.5mm+72.5mm
D 2	73mm+73mm

● Selection example

For example: HP-M0300-C2-PH60-A01B-B1

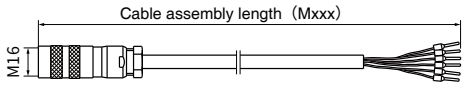
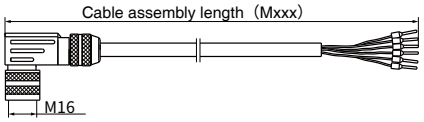
Indicates: HP structure, mounting clamp installation, 300mm Stroke length, C-type magnet, M16 male socket (without plug cable), current output of 0~20mA, output value larger than 20mA without magnet ring, non-usable area at head and end of 72.5 mm+72.5 mm.

● Supply list

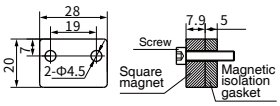
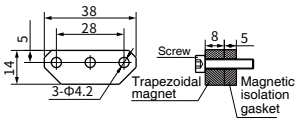
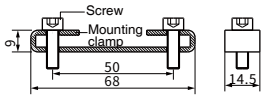
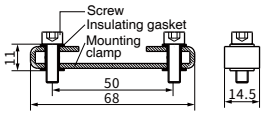
Sensor, certificate, instruction manual, optional parts (optional separately)

HP Analog Output - Common Options

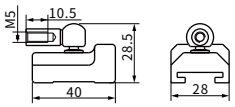
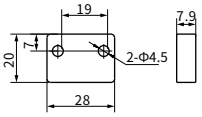
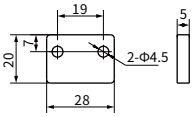
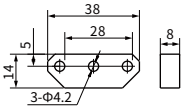
• Plug assembly cable

Accessory name/model	Dimensions	Description
Analog wiring cable assembly Order No.:AST-Mxxx-H01 (U01/U02)		Mxxx denotes cable length in meters; H01-6-pin PUR orange sheath, temperature-resistant-20~90℃ cable assembly; U01-6-pin PVC orange sheath, temperature resistance -20~105℃ cable assembly; U02-8-pin PVC orange sheath, temperature -20~105℃ cable assembly.
Analog wiring right angled cable assembly Order No.:AST-Mxxx-H03 (U03/U04)		Mxxx denotes cable length in meters; H03-6-pin PUR orange sheath, temperature-resistant -20~90℃ cable assembly; U03-6-pin PVC orange sheath, temperature resistance -20~105℃ cable assembly; U04-8-pin PVC orange sheath, temperature -20~105℃ cable assembly.

• Magnet ring

Accessory name/ model	Dimensions	Description
Square magnet kit Order No.:288508		One square magnet 211508, one square magnet gasket 211529 (thickness 5mm), two M4X20 socket screws
Trapezoidal magnet kit Order No.:288514		One trapezoidal magnet 211514, one trapezoidal magnet gasket 211530 (thickness 5mm), three M4X20 socket screws
Mounting clamp kit Order No.:211561		One mounting clamp, two M5X16 socket screws
Mounting clamp kit (With insulation) Order No.:211801		One mounting clamp, two M6X16 socket head cap screws, four insulating washers

Note:For other accessories, please refer to general options

Accessory name/ model	Dimensions
Slider Magnet Kit Order No.:211513	
Square magnet Order No.:211508	
Square magnet gasket Order No.:211529	
Trapezoidal magnet Order No.:211514	
Trapezoidal magnet gasket Order No.:211530	