

SGM-PR10 / SGM-PE10

Rod type for hydraulic cylinders, aluminium head • External aluminium-profile type, square head



SGM-PR10 series: the compact pressure-resistant outer tube is suitable for being built into hydraulic cylinders and air cylinders. SGM-PE10 series: the aluminum profile housing is convenient for installation on machine surfaces or in external spaces. Analog output 0-10VDC / 4-20mA / 0-20mA; digital output RS485 / SSI / Profinet (on request).

Features

Secure and Reliable

Easy to Diagnose

Non-Contact Measurement

Modular Design

Absolute Position Output

Low-Power Design

High-Resolution 16-Bit D/A Analog Output

Repeatability is better than $\pm 0.001\%$ of the full scale

The nonlinearity is less than $\pm 0.01\%$ of the full scale.

Specifications

Output type	
Analog output	0-10VDC / 4-20mA / 0-20mA
Digital output	RS485 / SSI (Profinet on request)
Performance	
Measuring range	25–8000 mm
Output signal	0-20mA (max/min load 0/500Ω), 4-20mA (max/min load 0/500Ω), 0-10V (min load >5KΩ), RS485 (MODBUS RTU), SSI
Resolution	16-bit DA
Non-linearity	$< \pm 0.01\%FS$ (min $\pm 50\mu m$)
Repeatability	$< \pm 0.001\%$ (min $\pm 5\mu m$)
Update time	<10ms (depending on range); 1ms (1m<range<2m); 2ms (2m<range<3m); 5ms (3m<range<4m)
Operating conditions	
Magnet speed	any
Operating temperature	-40~+85°C
Storage temperature	-55~+85°C
Humidity	90% humidity, no frost forming.
Temperature coefficient	<30ppm/°C

Orderable range as listed; longer ranges and special temperature or pressure versions on request.

Protection class	IP67
Pressure rating	35 MPa (continuous) 70 MPa (peak) (PR10 rod type)
Electrical	
Electrical connection	Direct cable output or connector
Supply voltage	24VDC ($\pm 20\%$)
Current consumption	<60mA (varies with measurement range)
Reverse-polarity protection	Maximum -30VDC
Over-voltage protection	Maximum 36VDC
Insulation strength	500VDC
Mounting	
Mounting orientation	any
Mounting	M18*1.5 or custom-made
Position magnet	Ring magnet or float
Materials	
Sensor head	aluminum alloy
Protective tube	304 stainless steel
Mounting flange	304 stainless steel

Electrical connection

Analog connector pinout (6-pin)

1	Analog output +
2	Analog output -
3	Reserved for debugging
4	Reserved for debugging
5	Input power +
6	Input power - (GND)

SSI connector pinout (7-pin)

1	(-)data
2	(+)data
3	(+) Clock
4	(-) Clock
5	Input power +
6	Input power - (GND)
7	NC suspended

LED status indication

Green on / red off

Normal operation within the effective range

Green off / red on

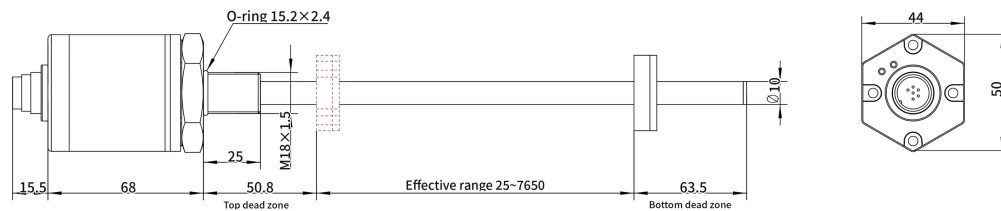
The magnet is out of the effective measurement range or the magnet cannot be detected.

Green off / red flashing

Enter debugging

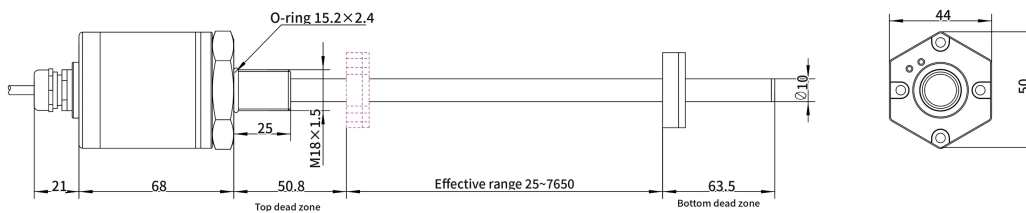
Dimensions (mm)

D60 connector



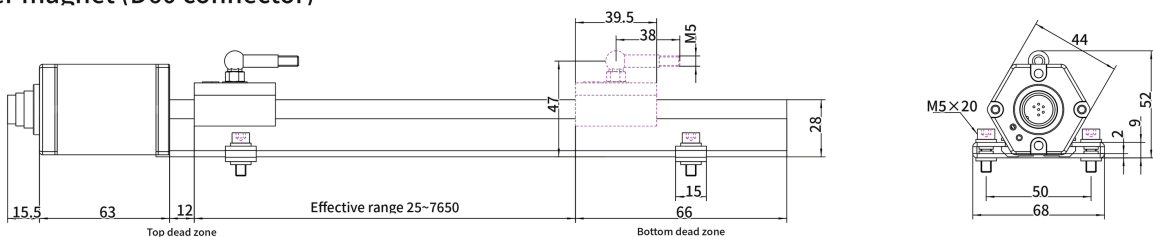
PR10 analog, D60 connector, dimensions

Direct cable (standard 2 m)



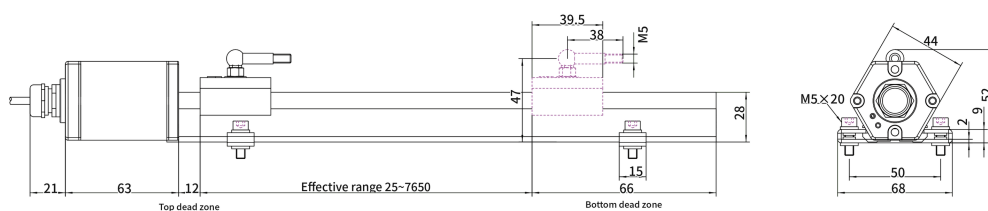
PR10 analog, direct cable

Slider magnet (D60 connector)



PE10 analog, slider magnet

Slider magnet (direct cable, standard 2 m)



PE10 analog, slider magnet (direct cable)

Range figures in drawings are illustrative; the orderable range is given in the specifications.

Ordering code

SGM-<series>-<mounting>-<range>-<output>-<connection>[-options]

Series			
PR10	Rod type for hydraulic cylinders	I2R	0–20 mA reversed (20–0 mA), zero at head
PE10	External profile type	V1F	0–10 V, zero at rod end
		V1R	0–10 V reversed (10–0 V), zero at head
Mounting		V2F	0–5 V, zero at rod end
18	M18×1.5 (PR10)	V2R	0–5 V reversed (5–0 V), zero at head
20	M20×1.5 (PR10)	R4	RS485 (Modbus RTU)
XX	Custom thread (PR10)	SS	SSI; append bits+code+resolution μm+direction, e.g. SS25G005F
MS	Slider magnet (PE10)	Connection	
MT	Trapezoid magnet (PE10)	K16	M16 connector (analog / RS485 6-pin, SSI 7-pin)
MF	Floating magnet (PE10)	C02 ... C99	Direct cable, number = length in m (C02 = 2 m)
Range		...X	Suffix X: customer-specified cable
00025–08000	5 digits in mm, 5 mm steps (25–8000 mm)	Options	
Output		(none)	Series standard dead zones
I1F	4–20 mA, zero at rod end	Z1	Short dead zones 30 + 60 mm
I1R	4–20 mA reversed (20–4 mA), zero at head	Z9	Customer-specified dead zones
I2F	0–20 mA, zero at rod end		

Outputs or options listed in the specifications but not in the ordering code are available on request.

Ordering examples

SGM-PR10-18-00600-I1F-K16	Rod type, M18×1.5, 600 mm, 4–20 mA, M16 connector
SGM-PE10-MS-01200-SS25G005F-K16	Profile type, slider magnet, 1200 mm, SSI 25-bit Gray 5 μm

Specifications are subject to change; final values are confirmed with the order.