

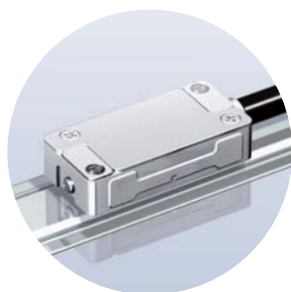
Magnescale

SPEED X PRECISION

Maximum response speed 3m/s
Maximum resolution 50nm and
 $\pm 5\mu\text{m}$ accuracy



Incremental type SmartSCALE



Separate type
simple architecture
IP65 protection against
dust and water



Space-saving small head
W33xD16xH8[mm](Actual size)



Easy to check signal
with LED display

Magnescale Co., Ltd.

Specifications

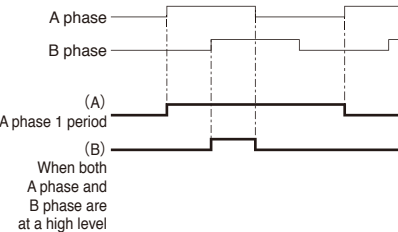
Model name	SQ10 scale unit	PQ10 head unit	MQ10 interpolator unit
		PQ11 head unit with interpolator	
Effective length	100~1,000 mm		
Accuracy (at 20°C)	±5μm		
Resolution	0.05/0.1/0.5/1μm/0.048828μm (Only Yaskawa Electric Serial interface)		
Maximum response speed	Serial interface	3m/s	
	A/B phase output	Minimum phase difference(ns)	
		[m/min]	50 100 150 200 250 300 400 500 650 1,000 1,250 2,500 3,000
Resolution(μm)	0.05 36 18 12 9 7 6 4.5 3.6 2.7 1.6 1.3 0.6 0.4		
	0.1 72 36 24 18 14 12 9 7 6 3.6 2.8 1.4 0.9		
	0.5 180 180 150 114 90 72 54 42 3 19 15 7 6		
	1.0 180 180 180 180 180 156 120 96 72 48 36 18 12		
Operating temperature	0 to 50°C		
Vibration resistance	196m/s ² (50Hz - 2000Hz)(Head only)		
Impact resistance	980m/s ² (11ms)(Head and Scale)		
Protective design grade	IP67	IP65/IP60	IP60
Power supply voltage range	-	DC5V±5%	
Maximum consumption current	-	250mA	
Mass	(Effective length: mm×0.22)+8g	8g (excludes cable)	120g (excludes cable)
Output signal	Various serial interface or A/B phase output		

LED display



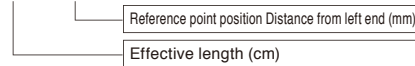
Items	color	Lighting conditions
ORIGIN	Orange	When passing reference point
ALARM	Red	When an alarm occurs
HIGH	Yellow	Excessive level
FINE	Green	Appropriate level
LOW	Orange	Shortage level

A/B phase output Reference point output format



Model name :

SQ10-A xxx □□□□ A(scale unit)



PQ10-xx ☆ A (head unit)

A: IP60, B: IP65	
Type	Cable length
07	700mm
17	1,700mm
27	2,700mm
32	3,200mm
37	3,700mm

MQ10-△ □ A ◆ ○ (interpolator unit)

Type	Reference point output format
A	A phase 1 period
B	When both A phase and B phase are at a high level
Minimum phase difference See Table 1	
Resolution A:0.05, B:0.1, C:0.5, D:1μm L:0.048828μm (Only Yaskawa Electric)	
Communication protocol See Table 2	

PQ11-xx △ □ ☆ ◆ ○ (head unit with interpolator)

Reference point output format(Only A/B phase)	
Minimum phase difference See Table 1	
A: IP60, B: IP65	
Resolution A:0.05, B:0.1, C:0.5, D:1μm L:0.048828μm (Only Yaskawa Electric)	
Communication protocol See Table 2	
Type	Cable length
10	1,000mm
20	2,000mm
30	3,000mm
40	4,000mm

Table 1: Minimum phase difference (ns)

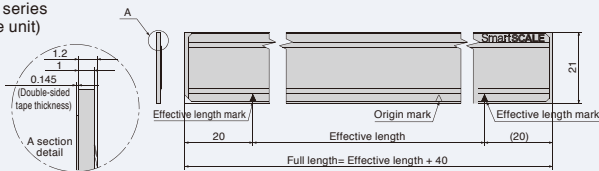
Model name	Phase difference
A	50
B	100
C	150
D	200
E	250
F	300
G	400
H	500
J	650
K	1000
L	1250
M	2500
N	3000

Table 2 : Communication protocol

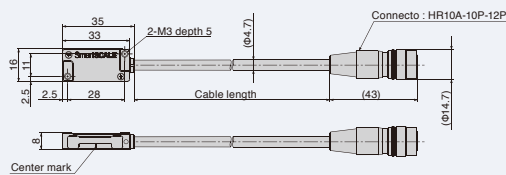
Model name	Communication protocol
B	Mitsubishi Electric/ 2-wire
D	Mitsubishi Electric/ 4-wire
F	Yaskawa Electric/ Without hall sensor
G	Yaskawa Electric/ With hall sensor
H	Panasonic
P	A/B phase output
M	Magnescale protocol

Dimensions

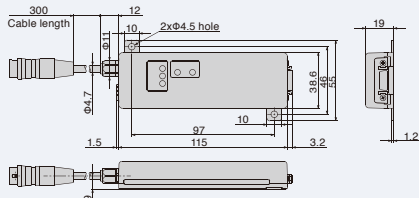
SQ10 series (Scale unit)



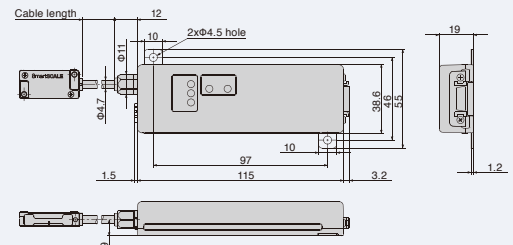
PQ10 series (Head unit)



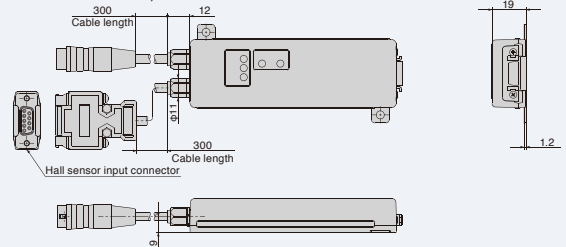
MQ10 series (Interpolator unit)



PQ11 series (Head unit with interpolator)



MQ10-GLA (Yaskawa Electric/With hall sensor)



△ To use this product safely, please read the instruction manual carefully and thoroughly prior to usage. •Magnescale reserves the right to change products and specifications without prior notice.

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