## **All-in-one Series**

# **GYSE-Q Probe**

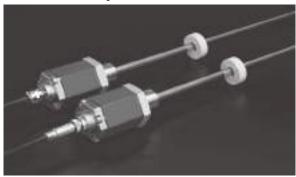
# A/B pulse

GPM

Noise Cancel



# Quasi-incremental output (detachable probe element)



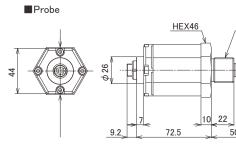
GYSE-Q probe has the incremental output (A/B pulse), the resolution is Min.1  $\mu$  m (Quad divide). The working principle is based on a sampling detection method, in which pulse frequency is fixed to 250kHz or 500kHz (it depends on resolution). GYSE-Q doesn't output the pulse which continued like a linear encoder, so please be careful. The inside probe element can be detached from the outer housing, and with the captive software (GPM), zero and gain adjustment is possible at user side.

## Specifications

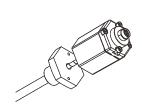
Accuracy	Non-linearity	≦±0.025%FS TYP	
	Resolution	0.1mm~0.001mm specified	
	Repeatability	$\leq \pm 0.001\%$ FS (Min. $\pm 3 \mu$ m)	
	Temp. drift	≦±15ppmFS/°C	
Output	Position	A/B pulse, without Z pulse	
	(STD)	Line driver, pulse freq. 250kHz	
	Velocity	not available	
	(Option)		
	Alarm	Open drain 50V 0.1A (for lost magnet)	
Power supply		+24(±2)VDC (70mA)	
Sampling freq.		STD 1kHz(up to stroke 1000mm)	
	Max. Pressure	35MPa(probe rod)	
l E	Operating temp.	−20°C~+75°C	
Environment	Storage temp.	-40°C∼+75°C	
	Vibration	15G(20~100Hz)	
	Shocks	100G(2msec)	
	IP grade	IP67	

- The above mentioned accuracy applies to sensors with an effective stroke of 300mm or more.
- •The specification of stroke less than 300mm is equal that of stroke 300mm.

#### **Dimensions**



detachable probe element



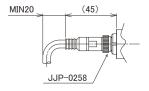
- screws (2pcs)
  for detachment
- \*1) In case of stroke 3001mm or more, head dead zone is 100mm. (Model code ②: 100)

effective stroke

\*2) In case of stroke 3001mm or more, tip dead zone is standard length + 30mm. (Model code ③:100/120/130)

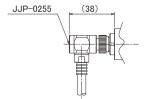
full scale

 $\blacksquare \, \mathsf{Connector} \, \, \mathsf{type} \, (\mathsf{straight}) \, (\mathsf{STD})$ 



■Connector type(L-shaped) (option)

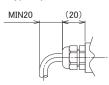
M24xP1



■Pigtail type(option)

magnet

tip dead zone(\*2)



#### ■ Cable

Cable	Pin	Function	
color	number	runction	
red	1	+24VDC	
while	2	0V	
blue	3	A+ pulse	
green	4	A- pulse	
brown	5	B+ pulse	
black	6	B- pulse	
yellow	7	Alarm	

shield should be connected to FG of user's unit.

<sup>•</sup>magnet : Select one from group GG on page 109

<sup>•</sup>The tip dead zone length depends on the selected magnet or float.

connector; straight or L-sharped (housing parts: BS with Ni plating)

Applied cable diameter: Φ6.6 ~ Φ7.5, Wire size: 0.5 mm<sup>2</sup>

### ■ Probe

#### **1** Effective stroke

15~7500mm

#### 2 Head dead zone

S:50mm(STD)

□:□mm(option)(specified by customers)

Possible Min. length depends on the selected magnet or float.

#### 3Tip dead zone

S:70mm/90mm/100mm(STD)

•S (STD length) depends on the selected magnet or float in (5).

tip DZ	magnet	float
70mm	M2PN, M0SM, M0LM,	F25N, F28N
	M3, M11N, BA	
90mm		F28S, F30S
100mm	T144, T163	F40S, F42S, F50S

□: □mm(option)(specified by customers)

•Possible Min. length depends on the selected magnet or float.

#### **4**Thread/Rod diameter

M : M24xP1.0, rod  $\Phi 10(STD)$ 

N : M18xP1.5, rod Φ10

U : 3/4-16UNF-3A, rod  $\Phi 10$ 

M8 : M24xP1.0, rod  $\Phi$ 8 N8 : M18xP1.5, rod  $\Phi$ 8 U8 : 3/4-16UNF-3A, rod  $\Phi$ 8 M14: M24xP1.0, rod  $\Phi$ 13.8

Z : EF (flexible element) only (without outer housing)

#### **⑤** Associated magnet or float

<magnet> <float> M2PN: No.2PN (STD) F28S Ф28 SS316L M0SM : No. ΦSPM F30S Ф30 SS316L M0LM : No.ΦLPM F40S Ф40 SS316(B) : No.3 F42S Φ42.5 SS316 M3 **F50S** Φ50 SS316L M11N : No.11N F54S Ф54 SS304 T144 :No.T14-M4 F25N :RF-A10 plastic T163 : No.T16-M3 No.2KYN-17-LG F28N :RF-A6 plastic

•Please consult if you select a magnet or a float of other than above.

•This Model code means only specifying associated magnet or float.

 $\mbox{\ensuremath{^{\bullet}}}\mbox{\ensuremath{When}}$  you need a magnet or float, please order separately.

#### **6** Cable connection

CN:connector(STD)

 $\triangle G \square F$ : pigtail / cable end : free

△G□A: pigtail / cable end : with connector for relay

 $(\Box : cable length(m), Max.10m)(*)$ 

(∆:cable type

S:standard, H:high temp. cable, R:robot cable)

(\*) In case of using extension cable

sensor cable (m) + extension cable (m)  $\leq$  100m

•Please consider extension cable on page 112.

•In case that you need loose mating connector, ordering connector (straight or L-shaped) separately is necessary.

#### ?Resolution

#### **®Direction**

D: When magnet moves toward tip, output increase

R: When magnet moves toward tip, output decrease

### 9Pulse frequency

1:1MHz

2:500kHz(STD in case of  $\overline{\mathcal{D}}$  resolution:D7, D8) 3:250kHz(STD in case of  $\overline{\mathcal{D}}$  resolution:D2~D5)

4:125kHz 6:31kHz 7:15kHz

•Allowable magnet speed depends on the selected resolution and pulse freq. Allowable speeds for STD setting are as below.

Resolution(mm)	Pulse freq.	Max. magnet speed
0.1	250kHz	(*)15m/sec
0.05	250kHz	(*)15m/sec
0.01	250kHz	8m/sec
0.005	250kHz	4m/sec
0.002	500kHz	3.2m/sec
0.001	500kHz	1.6m/sec

(\*)For the noise cancellation function

#### **10Option**

blank: without option

SRT: SRT option (6) Cable connection: pigtail type only)

•Please confirm the details of option on page 108.

#### [Quadrature output]

- •The train of impulses corresponds to the travel distance at each sampling period (T1).
- •Pulse frequency (1/T2) is constant.

