GYSE-S Probe

SSI

GPM **Noise Cancel** **CE**

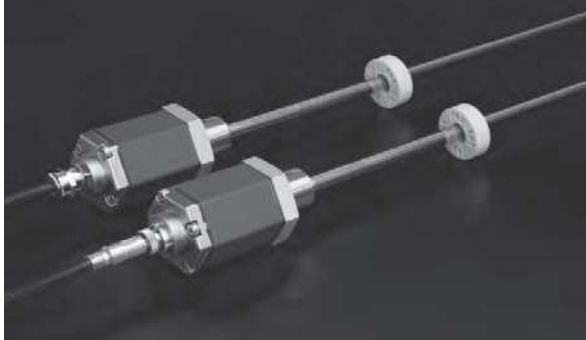## SSI output
（detachable probe element）

GYSE-S probe outputs displacement of the magnet as SSI (Synchronous Serial Interface). SSI is output of a serial communication-type and outputs the position data of of 24 ～27bit（Min. resolution 1 μ m (option 0.1 μ m)). When using SSPC-03 of separate sale, you can convert SSI to parallel data. So you can get the data in the I/O unit. 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～0.1 μ m
	Repeatability	≦±0.001%FS（Min. ±3 μ m）
	Temp. drift	≦±15ppmFS/℃
Output	Position（Std.）	SSI（Synchronized Serial Interface）, 24～27bit, Binary(Std.) or Gray
	Velocity（Option）	not available
	Alarm	Open drain 50V 0.1A（for lost magnet）
Power supply		+24(±2)VDC（70mA）
Sampling freq.（＊）		Std. 1kHz(Total rod length : 1300mm)
Environment	Max. Pressure	35MPa（probe rod）
	Operating temp.	−20℃～+75℃
	Storage temp.	−40℃～+75℃
	Vibration	15G（20～100Hz）
	Shock	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.

（＊）Sampling freq. is available to Max. 3.75kHz by option. It depends on the total rod length (shows in Model ⑬), and the consumption current increases.

Dimensions

■Probe（Materials ; Probe head : Al alloy, Probe rod : SS304）
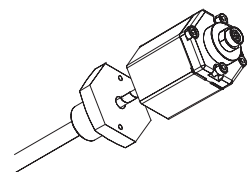
■detachable probe element
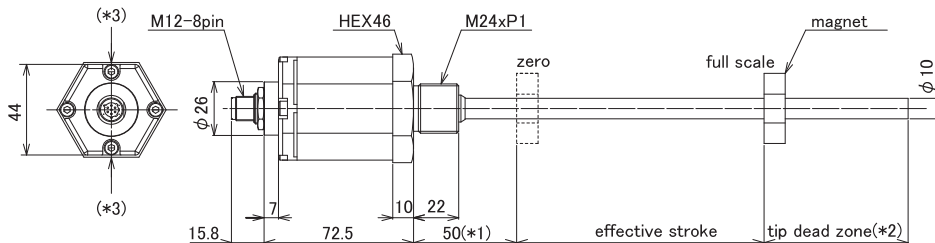
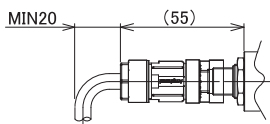*1) In case of stroke 3001mm or more, head dead zone is 100mm. (Model code ② : 100)
*2) In case of stroke 3001mm or more, tip dead zone is standard length + 30mm. (Model code ③ : 100/120/130)
*3) Screws (2 pcs) for detachment.

■Connector type（straight）　　■Connector type（L-shaped）　　■Pigtail type
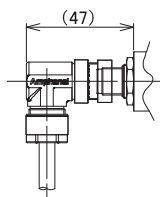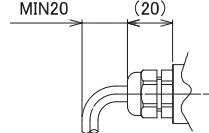
In case of connector type, connector dimensions are different from the existing product. Please refer to page 115 for the existing one (LEMO).

・Connector(M12-8pin)：Amphenol (Materials : glass fiber reinforced plastic)
・Suitable cable diameter：Φ4.0～Φ7.0、Wire size：0.3mm² (AWG22)

■Cable

Wire color	Pin number	Function
red	1	+24VDC
white	2	0V
blue	3	DATA+
green	4	DATA−
brown	5	CLK+
black	6	CLK−
yellow	7	Alarm

・Shield should be connected to FG of user's unit.

■Probe

GYSE-S-□□□□□-□/□-□□-□□-□□-□□-□□-□-□-□

① ② ③ ④ ⑤ ⑥ ⑦⑧ ⑨⑩ ⑪ ⑫ ⑬

①Effective stroke
15〜7500mm

②Head dead zone
50：50mm（Std.）
□：□mm（option）（specified by customers）

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

③Tip dead zone
□：70mm／90mm／100mm（Std.）
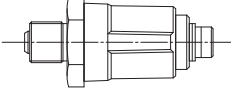
□	tip DZ	magnet	float
70	70mm	M2PN, M0SM, M0LM, M3, M11N, BA	F25N, F28N
90	90mm		F28S, F30S
100	100mm	T144, T163	F40S, F42S, F50S, F54S

□：□mm（option）（specified by customers）
・Possible Min. length depends on the selected magnet or float.

④Thread/Rod diameter
M　：M24xP1.0, rod Φ10（Std.）
N　：M18xP1.5, rod Φ10
U　：3/4-16UNF-3A, rod Φ10
M8　：M24xP1.0, rod Φ8
N8　：M18xP1.5, rod Φ8
U8　：3/4-16UNF-3A, rod Φ8
M14　：M24xP1.0, rod Φ13.8
Z　：Probe inside element only （without outer housing）

⑤Associated magnet or float
＜magnet＞
M2PN　：No.2PN （Std.）
M0SM　：No.ΦSPM
M0LM　：No.ΦLPM
M3　　：No.3
M11N　：No.11N
T144　：No.T14-M4
T163　：No.T16-M3
BA　　：No.2KYN-17-LG

＜float＞
F28S　：Φ28 SS316L
F30S　：Φ30 SS316L
F40S　：Φ40 SS316（B）
F42S　：Φ43 SS316L
F50S　：Φ50 SS316L
F54S　：Φ54 SS304
F25N　：RF-A10 plastic
F28N　：RF-A6 plastic

・Selecting magnet from page 116〜118（GG）.
・Please consult our factory in case of requesting special magnet or float.
・This model code means only specifying associated magnet or float.
・Ordering magnet or float individually.

⑥Cable connection
8P：Connector（M12-8pin）
△G□F：pigtail／cable end：free
△G□A：pigtail／cable end：with connector for relay
　　（□：cable length（m）、Max.10m）（＊）
　　（△：cable type
　　　　S：standard, H：high temp. cable, R：robot cable, UL：cUL cable）
CN：existing connector（Please refer to page 115 of option.）
（＊）In case of cable 10m or more, please use extension cable.
・Please confirm extension cable on page 120〜122.
・Ordering loose mating connector individually.

⑦Resolution
D2：0.1mm　　　　D5：0.005mm　　　　DF：0.5μm
D3：0.05mm　　　D7：0.002mm　　　　DG：0.2μm
D4：0.01mm（Std.）　D8：0.001mm　　　DH：0.1μm

⑧ Linearity option
blank：without option
L ：Linearization option （at room temperature）.

⑨Direction
D：When magnet moves toward tip, output increase
R：When magnet moves toward tip, output decrease

⑩Number of bits
4：24bit （Std.）
5：25bit
6：26bit
7：27bit

⑪Output code
B：Binary（Std.）
G：Gray

⑫Synchronous
5A：asynchronous SSI
5S：synchronous SSI

⑬Option
blank：without option
SRT：SRT option （Recommendation：pigtail type）
・Please confirm the details of SRT option on page 114.

High-frequency sampling：
Only when "5A（asynchronous）" is selected in ⑫.
X2：2kHz sampling （total rod length：Max.700mm）
X3：3kHz sampling （total rod length：Max.500mm）
X4：3.75kHz sampling （total rod length：Max.400mm）

【Simultaneous】
Asynchronous type：Measured at a fixed cycle by an internal timer.
Synchronous type　：Measured at the first falling edge of an external clock.
　　　　　　　　　Although the output data depends on the previous clock,
　　　　　　　　　it is possible to synchronize the measurement timing.

Group 7   GYSE-CN, -G※
Group 8   GYSE-8P, GYKMR-8P
Group 9   GYMRS, GYKMR

・The relay connector on cable (ⓒ and ⓓ) is not connected to probe directly.
The relay connector is only straight type.

Group8		connector type	ⓐ / ⓑ ⓒ
Group7	Group9	pigtail type	ⓒ / ⓓ ⓒ
		pigtail type	ⓔ ⓒ

Probe

・Cable with connectors on both ends
・Cable with a connector on one end
・Cable with free on both ends
・For other requests, please consult our factory.

▨ Model

■Cable

CL-□□-□-□□-□□□
①   ②   ③   ④⑤⑥

①Probe
SE8 : GYSE-8P
SE   : GYSE-CN, G※
KMR8 : GYKMR-8P
KMR : GYKMR

②Cable type
S : Standard cable
H : High temp. cable
R : Robot cable
UL : cUL cable

③Cable length(m)

④Cable end (sensor side)
[For GYSE, GYSE-8P]
F: Free
S: with straight connector
L: with L-shape connector

[For GYKMR-8P]
F: Free
S: with straight connector

⑤Cable end (controller side)
F : free
A : with relay connector

Crimping terminal is also possible.
Please consult our factory.

⑥Connector Code
【 GYSE 】
ⓐ : blank
ⓑ : (LM/NH)
ⓒ : (NH/F)
ⓓ : (NH/NH)
ⓔ : (F/NH)

【 GYKMR 】
ⓒ : (SN/F)
ⓓ : (SN/SN)
ⓔ : (F/SN)

【 GYSE-8P 】
ⓐ : blank
ⓑ : (AP/NH)
ⓒ : (NH/F)

【 GYKMR-8P 】
ⓐ : blank
ⓑ : (AP/SN)
ⓒ : (SN/F)

AP : Amphenol
LM : Lemo
NH : Nanaboshi
SN : Sanwa