

GYFRS Probe

RS422

Flang-head Robust type



GYFRS probe is the robust type against vibration and shock. Vibration proof : 10G and shock proof : 200G are available. Between probe and controller, RS-422 differential line driver transmission, providing robustness against electrical noise, is used. In combination with a digital output controller, Min.1 μ m resolution is possible. A thin type head enabled to miniaturize equipment, and flange installation improved workability compared with a conventional screw.

Specifications

Accuracy	Non-linearity	$\leq \pm 0.025\%$ FS TYP
	Resolution	(analogue) 16bit (with GYHC) (digital) Min.1 μ m (with GYDC-05)
	Repeatability	$\leq \pm 0.001\%$ FS
	Temp. drift	$\leq \pm 20$ ppmFS/ $^{\circ}$ C
Environment	Max. Pressure	35MPa (probe rod)
	Operating temp.	-20° C $\sim$ $+80^{\circ}$ C
	Storage temp.	-40° C $\sim$ $+80^{\circ}$ C
	Vibration	10G (40Hz 2mmPP)
	Shock	200G (2msec)
	IP grade	IP67(option IP68)

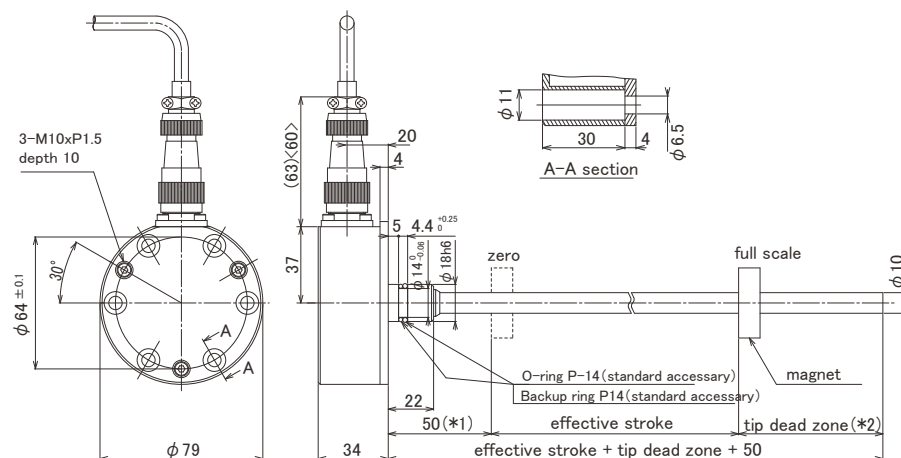
- The above mentioned accuracy applies to sensors with an effective stroke of 300mm or more.
- The specification of stroke less than 300mm is equal that of stroke 300mm.
- resolution depends on associated controller

◆ associated controller

- analogue output : GYHC (page 50-51), GYFC2*3 (page 52-53)
- digital output : GYDC-S1 (page 54-55), GYDC-05 (page 56-57)
- IRDS-GY (page 59) : When using the IRDM, you can connect with CC-Link, CC-Link IE Field, PROFIBUS, EtherNet/IP, and EtherCAT.
- DC-Q (page 58) : MELSEC-Q built-in unit

Dimensions

■ Connector type (Code: CN) <WPCN>



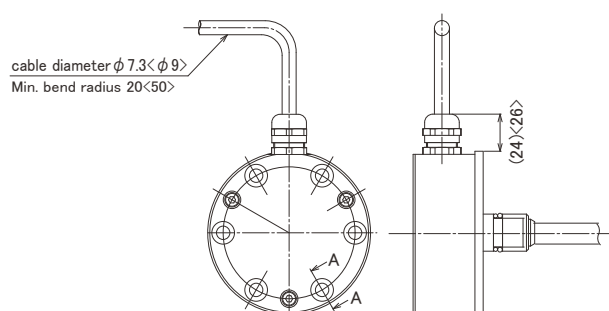
■ Cable

Cable color	Pin number	Function
red	1	Sensor power
yellow	2	N.C.
white	3	0V
green	4	Start(+)
black	5	Stop(+)
blue	6	Start(-)
brown	7	Stop(-)

- shield should be connected to shield terminal of the controller.

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

■ Pigtail type (Code: G※) <WP3G※>



- Material probe head: SS304, probe rod: SS304
 - magnet : Select one from group GG on page 109
 - The tip dead zone length depends on the selected magnet or float type.
 - connector CN type: Sanwa SNW-1607-PCF (Material: zinc alloy fluoroplastic), connector WPCN type: Tajimi TC1108-12A10-7F(8.6) (Material: brass with Ni plating)
 - Applied cable diameter: $\Phi 6.6 \sim \Phi 7.5$, Wire size: 0.5mm²
 - The figure in < > is the figure of IP68 type (WPCN, WP3G※).
 - Applicable O ring type is P-14. Back-up ring is strongly suggested in usage.
 - Water proof option (WP3G※) has a protection tube.
- Please refer the dimensions on P.107.

■ Probe

GYFRS-□□□□-□/□-F-□□-□□-00

①

②

③

④

⑤

⑥

⑦

① Effective stroke

15mm~3500mm

② Head dead zone

S: 50mm (STD)

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

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

③ Tip 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 M3, M11N, BA	F28N
90mm		
100mm	T144, T163	F40S, F42S, F50S, F54S

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

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

④ Mount/Rod diameter

F : flange, rod Φ 10 (STD)

⑤ Associated magnet or float

<magnet>

M2PN : No.2PN (STD)

M3 : No.3

M11N : No.11N

T144 : No.T14-M4

T163 : No.T16-M3

BA : No.2KYN-17-LG

<float>

F40S : Φ 40 SS316 (B)

F42S : Φ 42.5 SS316

F50S : Φ 50 SS316L

F54S : Φ 54 SS304

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.
- When you need a magnet or float, please order separately.

⑥ Cable connection

CN: connector (STD)

Δ G□F: pigtail / cable end : free

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

Δ G□FC: pigtail / cable end : with connector for GYFC2/3

(□: cable length (m), Max.10m) (*)

(Δ : cable type

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

<Water proof option> (recommendation : pigtail (WP3G))

WPCN: submersible connector type

WP3G□F: pigtail / cable end : free

WP3G□A: pigtail / cable end : with connector for relay

WP3G□FC: pigtail / cable end : with connector for GYFC2/3

(□: cable length (m), Max.10m) (*)

• P.107 shows the detailed information

(*) In case of using extension cable
sensor cable (m) + extension cable (m) $\leq$ 200m

• Please consider extension cable on page 111.

• In case that you need loose mating connector, ordering connector (straight only) separately is necessary.

⑦ Output

00: depends on external controller

【Start/Stop-Interface】

◆ In case of using probe only,

probe outputs digital signals (start/stop) using RS422 differential line drivers. In response to user's interrogation (start) pulse, probe provides stop pulse.

