

Φ38 FAMILY

Incremental Encoders

■ Connector (Hirose Electric) 38S/38H

Output type	Parts Number
Open Collector	DF3-6S-2C
Complementary	
Line Driver	DF3-9S-2C

38S Series



38H Series



38M Series



Electrical spec

Output Type	A, B, Z (index signal)	
Resolution	100, 200, 250, 300, 360, 500, 512, 600, 1000, 1024, 2000, 2048, 2500, 3600, 4000, 4096	200, 250, 300, 360, 500, 512, 1000, 1024, 2000, 2048, 2500, 3600, 4000, 4096
Supply voltage	Line driver	DC4.5~13.2V
	Open collector	
	Complementary	DC4.5~30V
Current consumption	30mA, Complementary : 60mA (Max)	
Output current	Line driver	20mA (Max)
	Open collector	40mA (Max)
	Complementary	600mA (Max)
Operating frequency	240kHz (Max)	

Mechanical spec

Shaft diameter	Φ6	Φ6, Φ8	Φ5, Φ6
Sealing	IP 50		—
Starting torque	9.8 × 10 ⁻⁴ N·m or Less		—
Allowable load to the shaft	Thrust : 19.6N / Radial : 29.4N	Thrust : 9.8N / Radial : 29.4N	—
Moment of inertia	8 × 10 ⁻⁷ kg·m ² (Max)		9.3 × 10 ⁻⁷ kg·m ² (Max)
Max Rotating speed	6000r/min. (Max)		10000r/min. (Max)

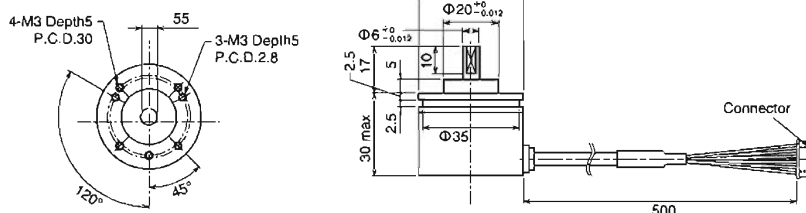
38S Series

■ Type 38S - [] - [] - 6 - 50 - B00 E

Resolution
Cable length 50 : 50cm
Shaft diameter 6 : Φ6

2MD : A, B, Z Line driver
2MC : A, B, Z Open collector
2MT : A, B, Z Complementary

■ Dimensions (mm)



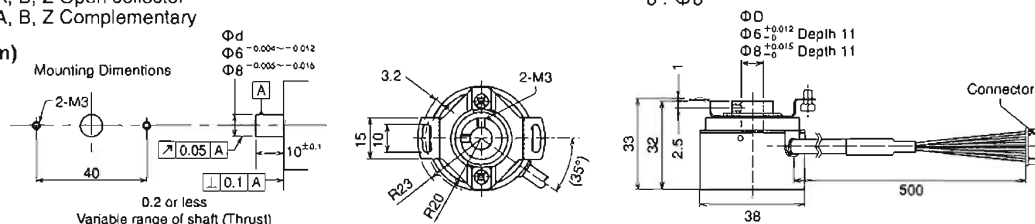
38H Series

■ Type 38H - [] - [] - [] - 50 - B00 E

Resolution
Cable length 50 : 50cm
Inner diameter 6 : Φ6
8 : Φ8

2MD : A, B, Z Line driver
2MC : A, B, Z Open collector
2MT : A, B, Z Complementary

■ Dimensions (mm)



38M Series

■ Type 38M - [] - [] - A [] - 00 E

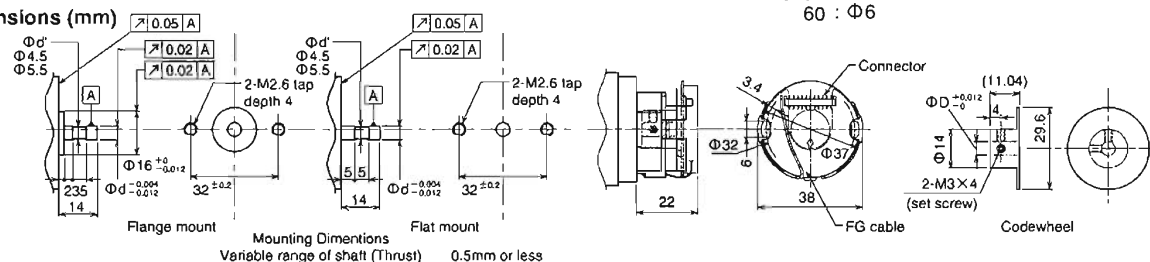
Resolution
Motor Inner diameter 50 : Φ5
60 : Φ6

2MD : A, B, Z Line driver
2MC : A, B, Z Open collector
2MT : A, B, Z Complementary

■ Connector

JST SM10B-GHS-GB-TB

■ Dimensions (mm)



$\Phi 18 / \Phi 38$ Other Spec

$\Phi 18$ Cable assign

Open collector

Pin No.	Color	Connection
1	Brown	Vcc
2	Red	0V
3	Orange	Sig A
4	Yellow	Sig B
5	Green	Sig Z

Line driver

Pin No.	Color	Connection
1	Brown	Vcc
2	Red	0V
3	Orange	Sig A
4	Yellow	Sig $\bar{A}$
5	Green	Sig B
6	Blue	Sig $\bar{B}$
7	Purple	Sig Z
8	Gray	Sig $\bar{Z}$
9	Black	—

$38S / 38H$ Cable assign

Open collector / Complementary

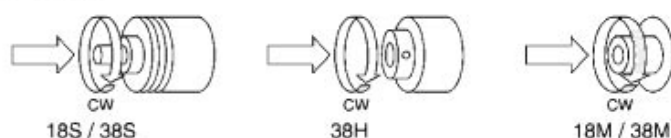
Pin No.	Color	Connection
1	Red	Vcc
2	Black	0V
3	Blue	Sig A
4	White	Sig B
5	Yellow	Sig Z
6	Black	Shield

Line driver

Pin No.	Color	Connection
1	Red	Vcc
2	Black	0V
3	Green	Sig A
4	Blue	Sig $\bar{A}$
5	White	Sig B
6	Gray	Sig $\bar{B}$
7	Yellow	Sig Z
8	Orange	Sig $\bar{Z}$
9	Black	Shield

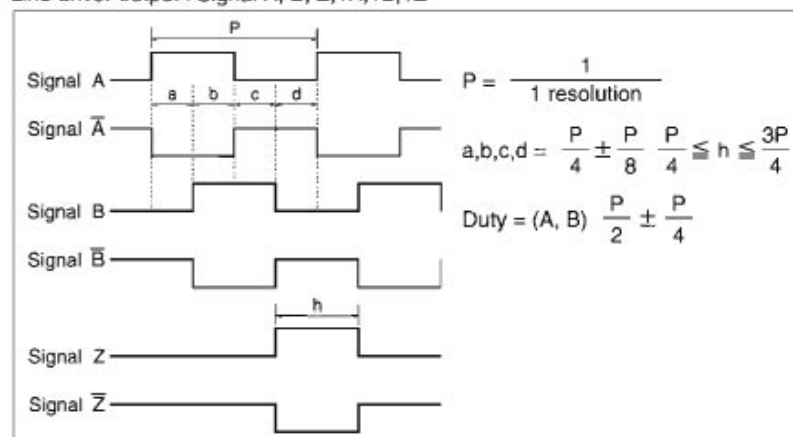
Output style

Rotation direction



Open collector output / Complementary output : Signal A, B, Z

Line driver output : Signal A, B, Z, /A, /B, /Z



$38M$ Connector assign

Open collector / Complementary

Pin No.	Connection
1	Vcc
2	0V
3	Sig A
4	—
5	Sig B
6	—
7	Sig Z
8	—
9	—
10	Shield
11	—

Line driver

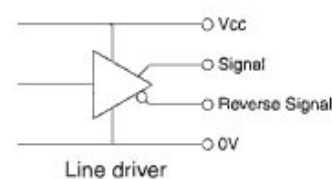
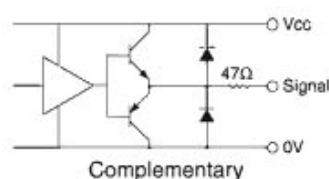
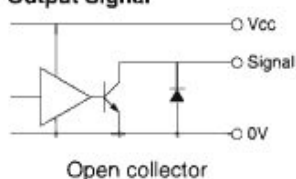
Pin No.	Connection
1	Vcc
2	0V
3	Sig A
4	Sig $\bar{A}$
5	Sig B
6	Sig $\bar{B}$
7	Sig Z
8	Sig $\bar{Z}$
9	—
10	Shield
10	—

Environmental spec

Operating temperature	$-10^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Humidity	RH 85% Max*
Vibration	10~55Hz/1.5mm X, Y, Z direction each 2h
Shock	490m/s ² , 11ms X, Y, Z direction each for 3 times

*No Condensation

Circuit of Output Signal



This content on this sheet is subject to change without advance notice due to the technical development and progress etc.
When using this product, please refer to the latest specifications.

PS11004

We are here for you. Addresses and Contacts.

Headquarter Switzerland:

Angst+Pfister Sensors and Power AG
Thurgauerstrasse 66
CH-8050 Zurich
Phone +41 44 877 35 00
sensorsandpower@angst-pfister.com

Office Germany:

Angst+Pfister Sensors and Power Deutschland GmbH
Edisonstraße 16
D-85716 Unterschleißheim
Phone +49 89 374 288 87 00
sensorsandpower.de@angst-pfister.com

Office North America:

Angst+Pfister North America Inc.
10391 Brecksville Rd.
US-Brecksville, OH 44141
Phone +1 440 375-5212
info.apus@angst-pfister.com

Scan here and get an overview of personal contacts!



<https://sensorsandpower.angst-pfister.com/en/>
