ABSOLUTE ROTARY ENCODER

"Multi-turn Absolute Encoder, Magnetic Measurement"

MAS

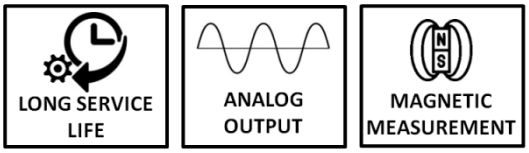
Analog Output

MAS-S 50	MAS-S 58	MAS-B 50	MAS-B 58

GENERAL FEATURES

The MAS series encoders operate absolute. In other words, unlike the incremental systems, they do not lose their positions in power outages and continue to measure from where they left off.
The MAS series multi-turn absolute rotary encoders offer highly flexible solutions in use, with different analog output signals, shaft and flange types.
The MAS multi-turn absolute rotary encoder with integrated reference provides high quality feedback.

- Absolute measurement with magnetic principle
- 50 mm or 58 mm body diameter options
- Shaft or semi hollow shaft options
- 0.02 ° accuracy in multiple turns of the desired number
- 16 bit resolution
- 4-20 mA, 0-5 V, 0.5-4.5 V or 0-10 V analog output options
- High sensitivity
- IP64 protection class



APPLICATION FIELDS

Speed and position accuracy in one application; If it is more important than fault tolerance and system simplicity, absolute encoders should be used. Absolute encoders provide precise operation in applications.

- Identifying multi-axis orientation in CNC machines used in component manufacturing
- Automatically determine the height of the scissor bearings used in hospitals
- Correct placement of multiple stabilizers for large vehicles such as cranes or air lifts
- Automatic doors or slots to move without limiting key
- Continue robotic movement even after a power failure

TECHNICAL SPECIFICATIONS

Electrical Specifications	
Working Principle	Hall Effect
Supply Voltage	15 … 26 VDC
Current Consumption	60 mA
Reverse Polarity Protection	Yes, there is
Measuring Range	2…2^{17} turns
Accuracy	±0,5°
Repeatability	0,1°
Angular Resolution	16 Bit
Response Frequency	500 Hz
***Electrical Interface**	4-20 mA, 0-10 V, 0-5 V, 0.5-4.5 V
***Electrical Connection**	M12 5 pin male socket or 5 x 0,14 mm^2 shielded cable
Output Load	For current output model; min 250 Ω For voltage output model; min 1 KΩ

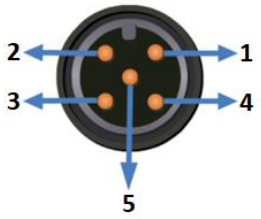
Mechanical Specifications	
Maximum Speed	3000 RPM
***Body Diameter**	50 mm or 58 mm
***Shaft Diameter**	For shaft model; 6 mm, 8 mm, 10 mm For semi hollow shaft model; 6 mm, 8 mm, 10 mm, 12 mm, 14 mm, 15 mm
Weight	≈290 gr
Protection Class	IP64
Operating Temp.	-20°C … +70°C
Relative Humudity	%10 … %90
Material	Shaft: Stainless Steel Body: Aluminium

Note: The specifications indicated by (*) vary according to the model selected. The detailed code table for product selection is shown on page 9.
The product is mechanically non-stop.

ELECTRICAL CONNECTIONS

Signal	Cable	M12 Socket
V+ (15…26 VDC)	Red	Pin 1
Output: 0-10V / 0-5V / 0.5-4.5V / 4-20mA	Yellow	Pin 2
GND (0V)	Black	Pin 3
Direction Change	Green	Pin 4
Reset	Pink	Pin 5

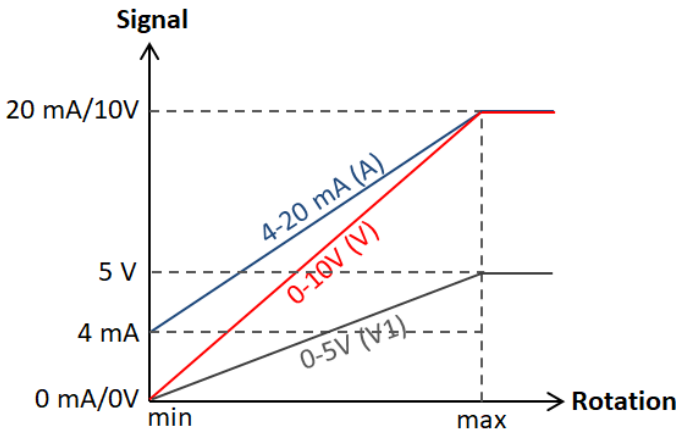
M12 5 PIN MALE SOCKET



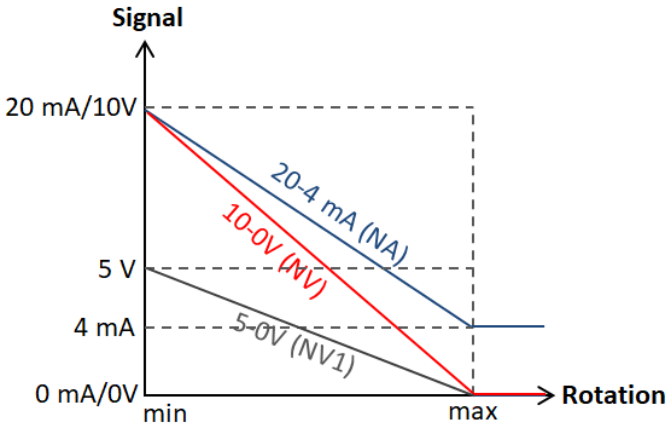
RESET: With the reset function you can set the desired location to 0. The reset terminal and GND are short-circuited for about 5 seconds and then disconnected. The sensor then accepts the current position as zero.
DIRECTION CHANGE: You can change the angle increase direction with the direction change function. The direction changing terminal and GND are short-circuited for about 5 seconds and then disconnected.Thus, the sensor reverses the angle direction (CW is CCW and CCW is CW).

OUTPUT SIGNAL GRAPHICS

Output Signal (V, V1, A, V3)



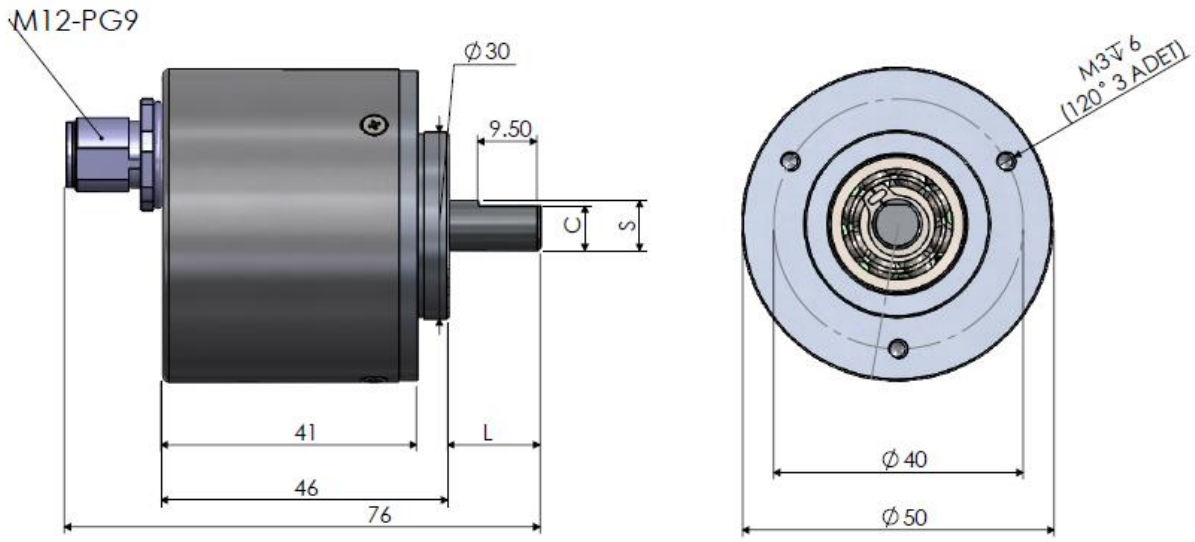
Reverse of Output Signal (NV, NV1, NA, NV3)



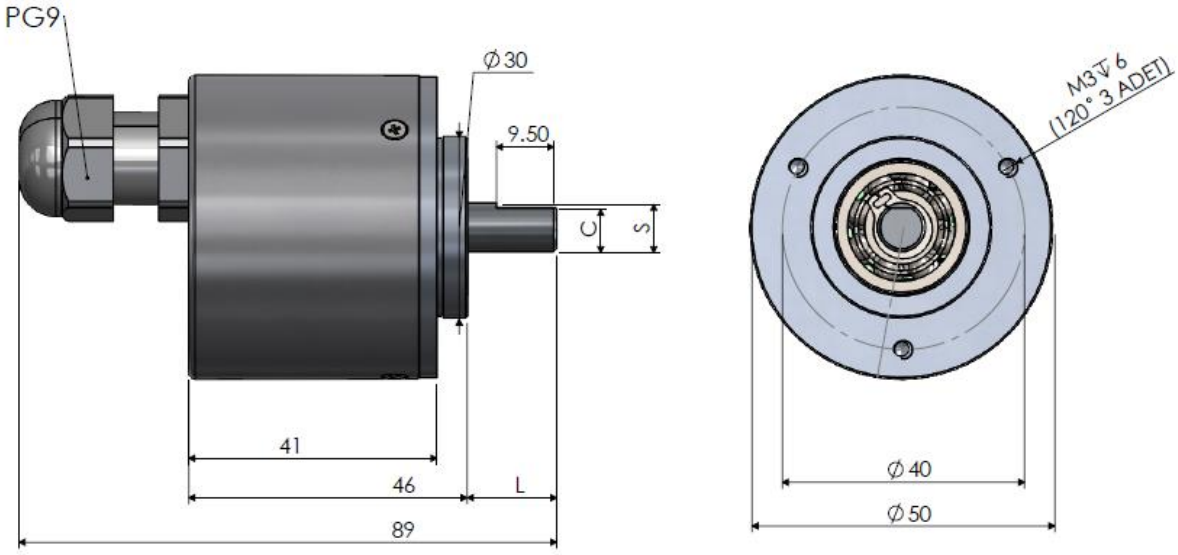
MECHANICAL DIMENSIONS (mm)

MAS-S 50 (WITH SHAFT)

Clamping Flange, M12 Socket



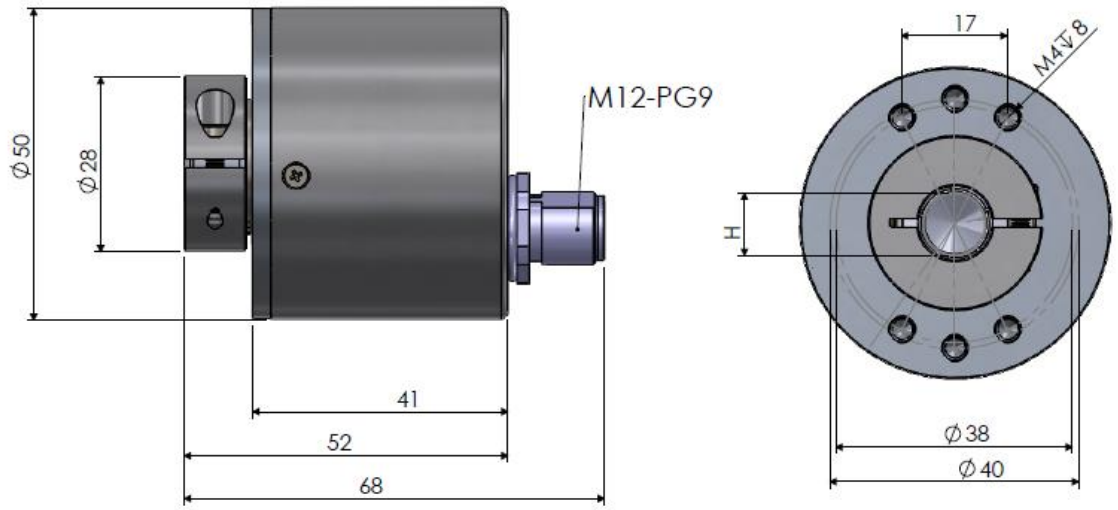
Clamping Flange, PG9 Gland and 5 x 0,14 mm² cable



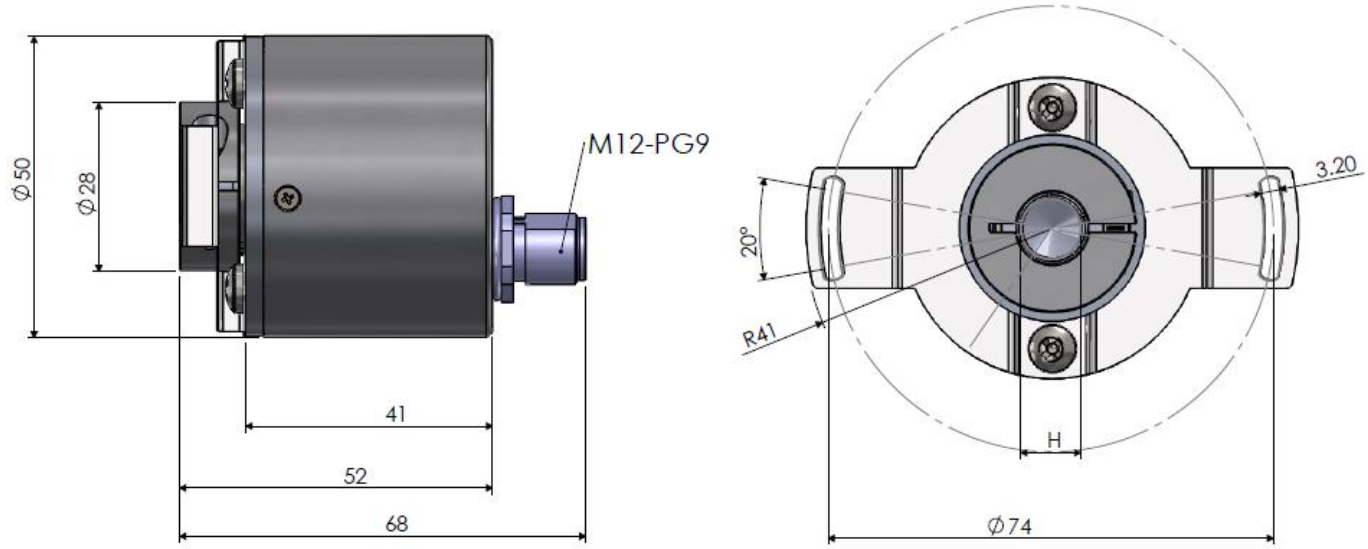
C	S	L
5.5	6	14.8
7.17	8	14.8

MAS-B 50 (WITH SEMI HOLLOW SHAFT)

No Flange, M12 Socket

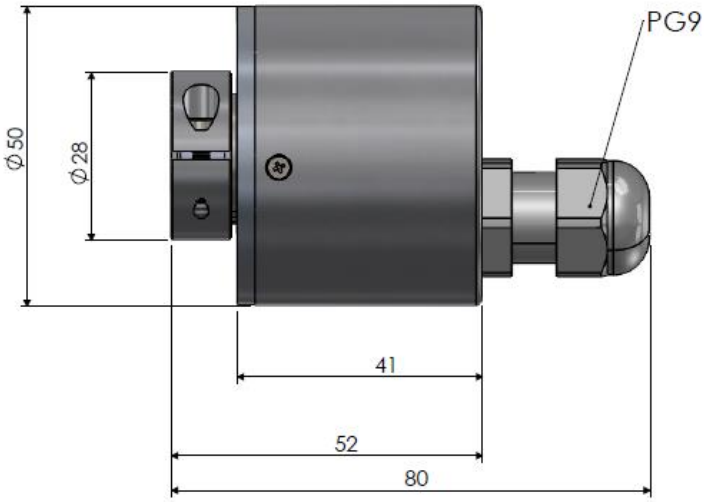


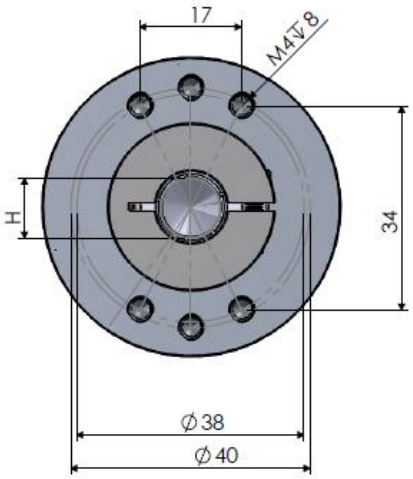
FC Flange, M12 Socket



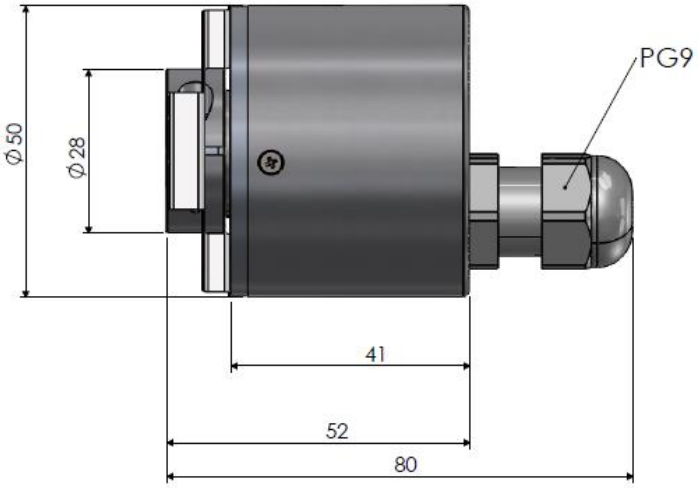
H	6	8	10	12	14	15

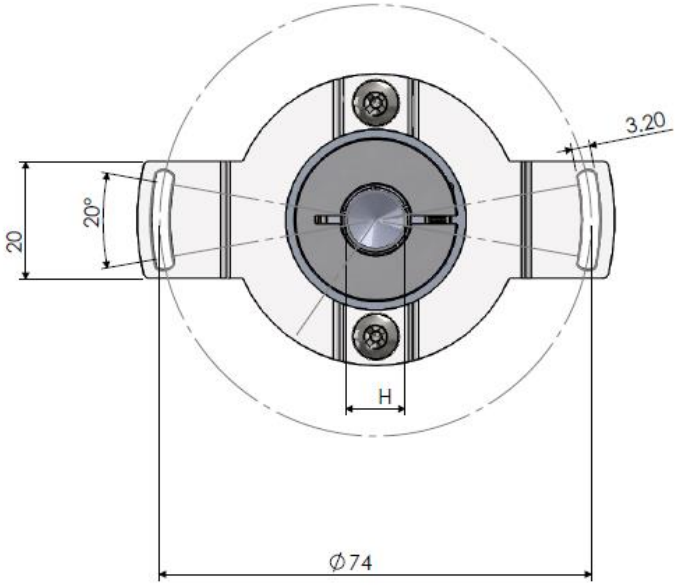
No Flange, PG9 Gland and 5 x 0,14 mm^2 Cable





FC Flange, PG9 Gland and 5 x 0,14 mm^2 Cable

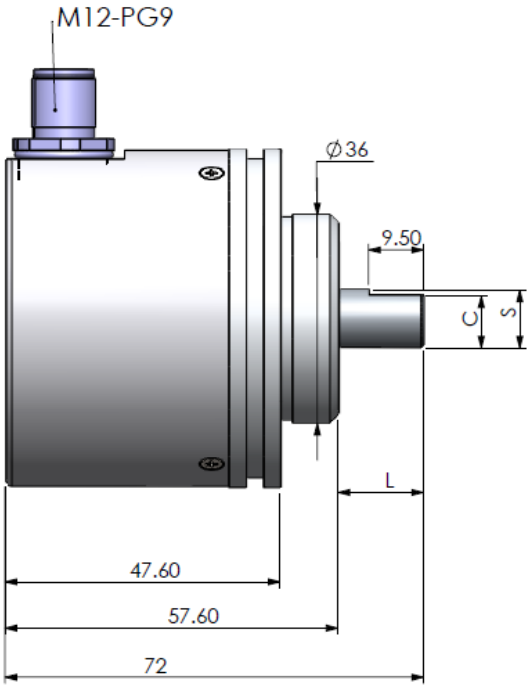


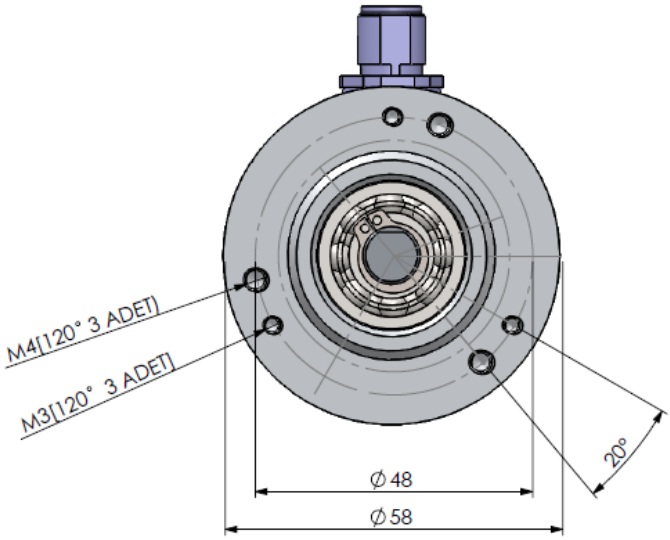


H	6	8	10	12	14	15

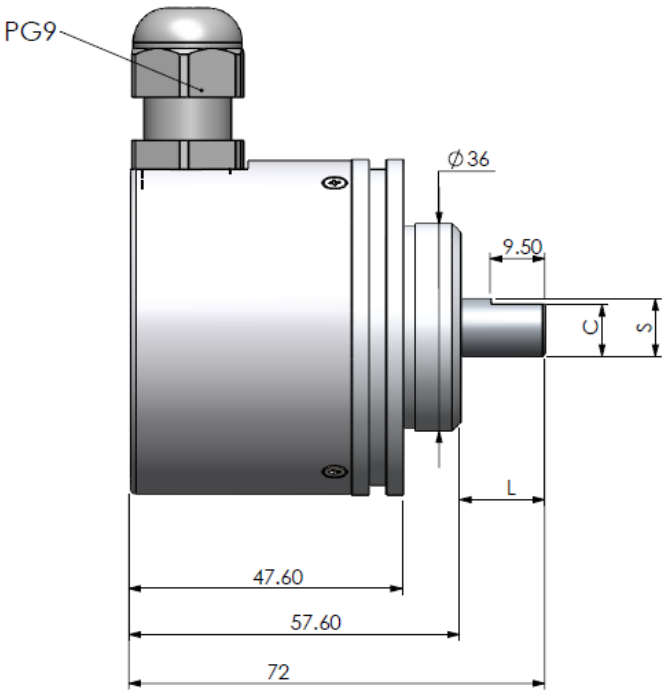
MAS- S 58 (WITH SHAFT)

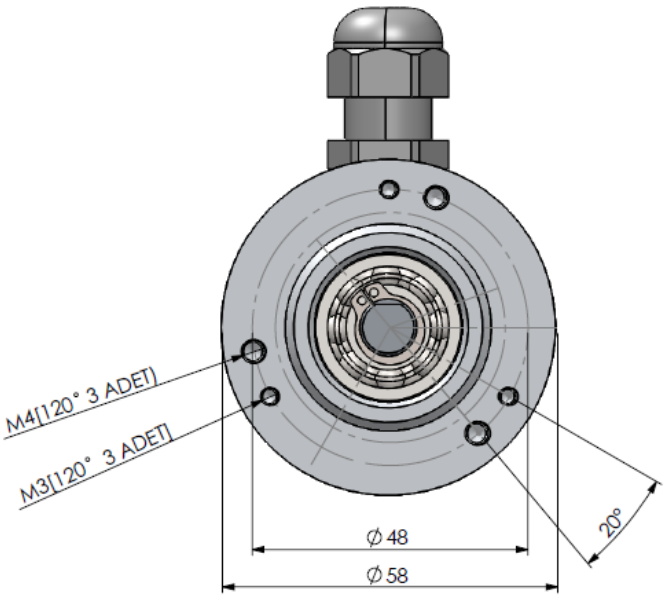
Clamping Flange, M12 Socket





Clamping Flange, PG9 Gland and 5 x 0,14 mm² Cable

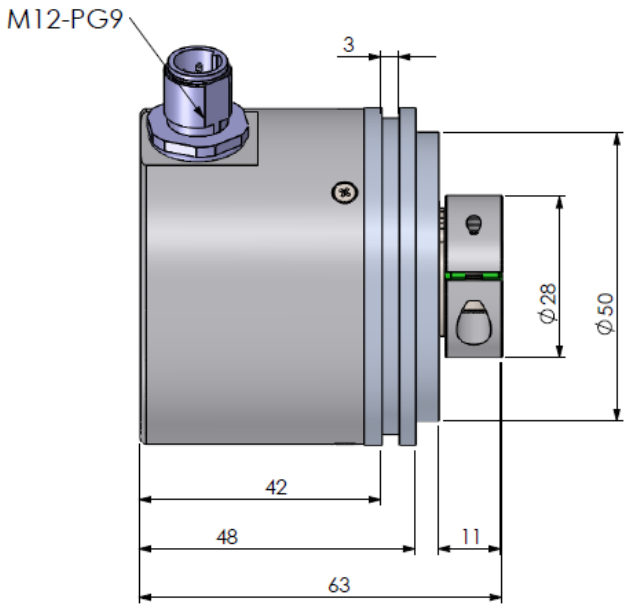


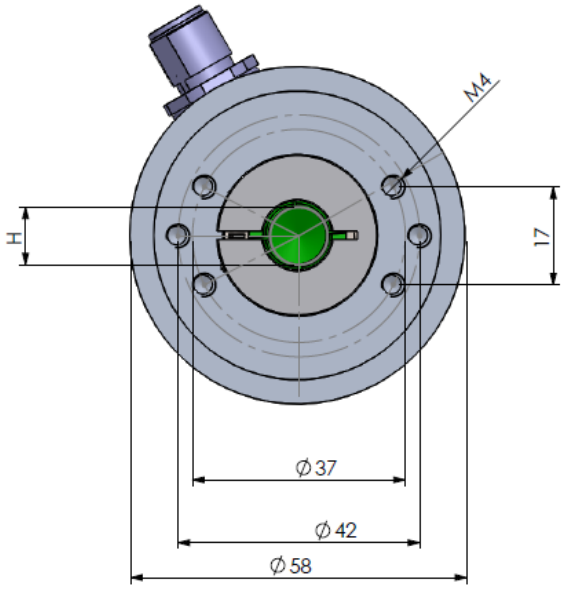


C	S	L
5.38	6	22,8
7.37	8	22,8
9	10	22,8

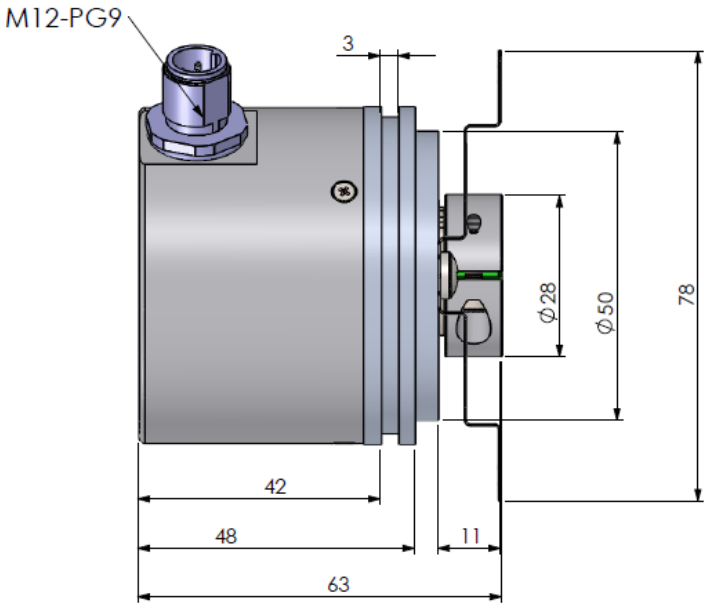
MAS- B 58 (WITH SEMI HOLLOW SHAFT)

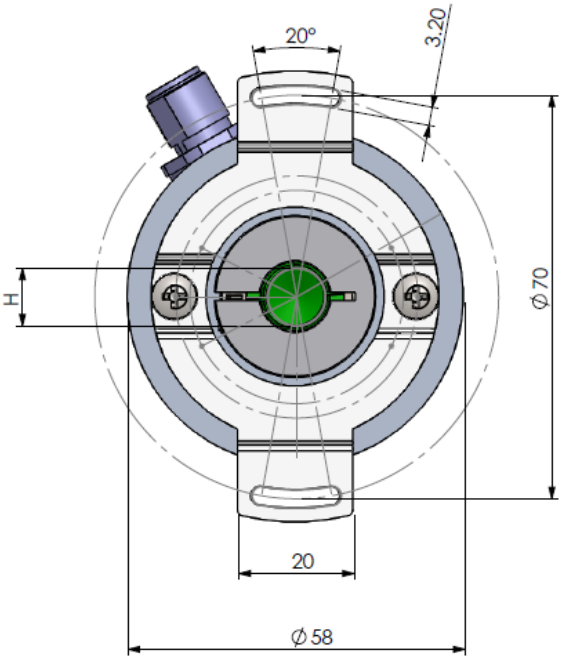
No Flange, M12 Socket





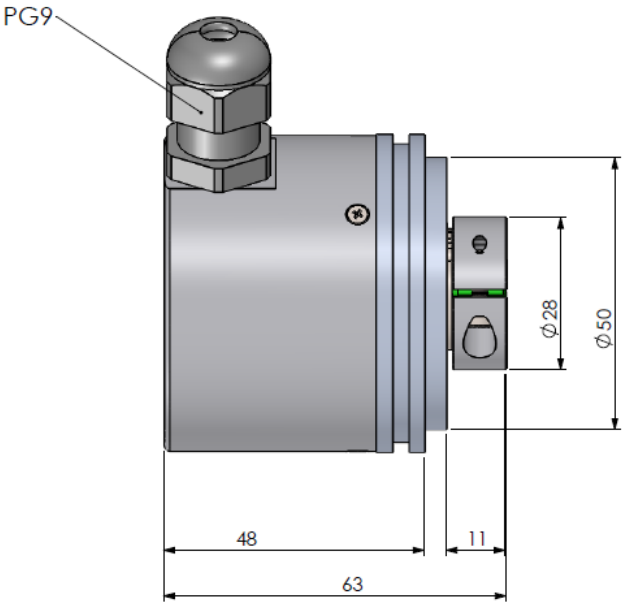
FC Flange, M12 Socket

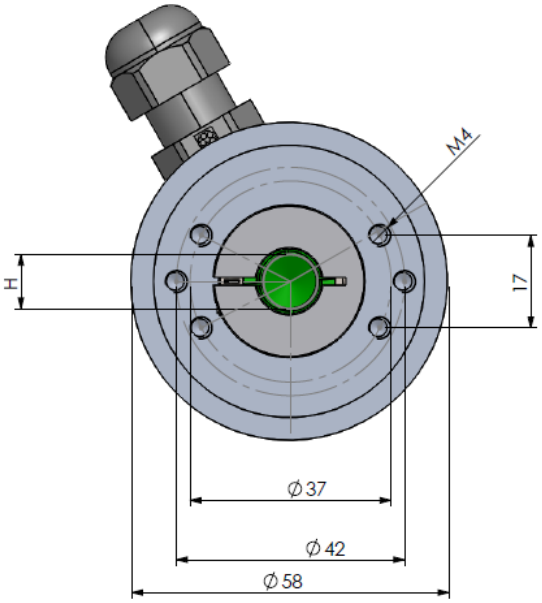




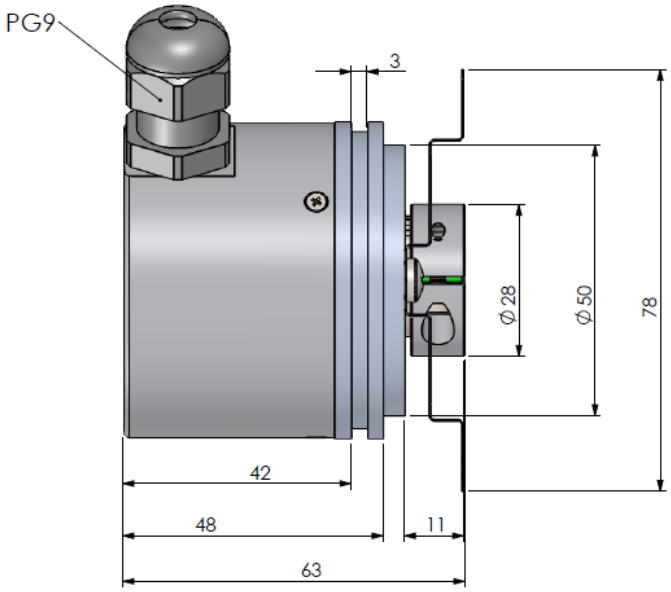
H	6	8	10	12	14	15

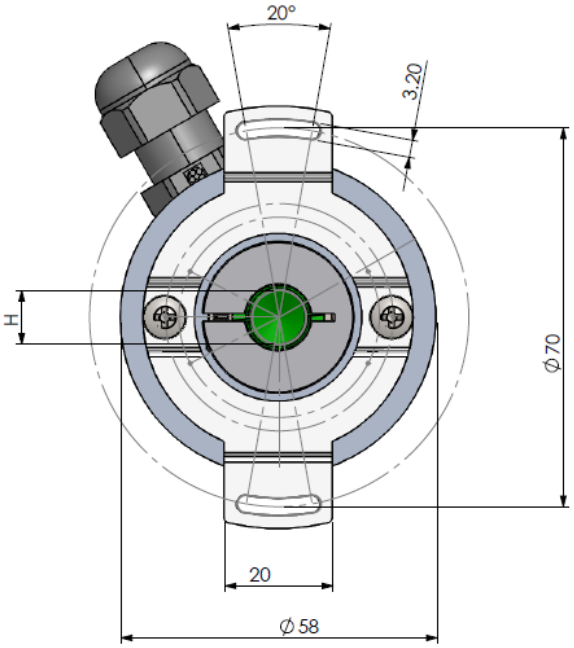
No Flange, PG9 Gland and 5 x 0,14 mm² Cable





FC Flange, PG9 Gland and 5 x 0,14 mm² Cable





H	6	8	10	12	14	15

PRODUCT CODE

Model
MAS

Body Diameter
050 : 50 mm
058 : 58 mm

Supply Voltage
PP : 15...26 VDC

Signal Increasing Direction
CW : Clockwise
CCW : Counter clockwise

Cable or Socket Direction[4]
Y : From side
A : From backside

Flange Type [5]
C :Clamping
FC: Circular

MAS	-	X	-	XXX	-	XX	-	XXX	-	XXX	-	X	-	XXX	-	XXX	-	X	-	X

Shaft Type
S : Shaft
B : Semi hollow shaft

Turn Number
The desired number of turns between 2 and 2^{17} can be selected.

Output Signal [1]
V : 0-10 VDC
V1 : 0-5 VDC
A : 4-20 mA
V3 : 0.5-4.5 VDC
NV : 10-0 VDC
NV1 : 5-0 VDC
NA : 20-4 mA
NV3 : 4.5-0.5 VDC

Electrical Connection [2]
1.5M : 1.5 m PUR cable
S13M : M12 / 5 pin male socket

Shaft or Hollow Diameter [3]
6 : 6 mm
8 : 8 mm
10: 10 mm
12: 12 mm
14: 14 mm
15: 15 mm

(1) The direction of the output signals can be changed optionally. In the coding, when 'N' is placed at the beginning of the normal signal, it refers to the opposite. For example; in case of **V:** 0-10 VDC, then **NV:** 10-0 VDC
(2) Cable length can be requested to a minimum of 1.5 m.
(3) Shaft or hollow diameter can be selected;
6 mm or 8 mm for MAS S 50,
6 mm, 8 mm or 10 mm for MAS S 58,
6 mm, 8 mm, 10 mm, 12 mm, 14 mm or 15 mm for MAS B 50 and MAS B 58.
(4) For products with a body diameter of 50 mm, the cable or socket outlet can be from backside; For products with a body diameter of 58 mm, it can be from side.
(5) Clamping flange can be used with MAS S 50 and MAS S 58 models,
FC flange can be used with MAS B 50 ve MAS B 58 models.

*** Please contact us for your non-standard (special production) product requests.**

NORDIC TRANSDUCER

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