ROTACOD

Absolute encoder with analogue output

Series Ax58xx- A

- Optical encoder with analogue output
- Accurate sensing and D/A conversion
- 0-5/10V, ±5/10V, 0-20mA, 4-20mA, 0-24mA
- Compact dimensions

Ax58xx-A

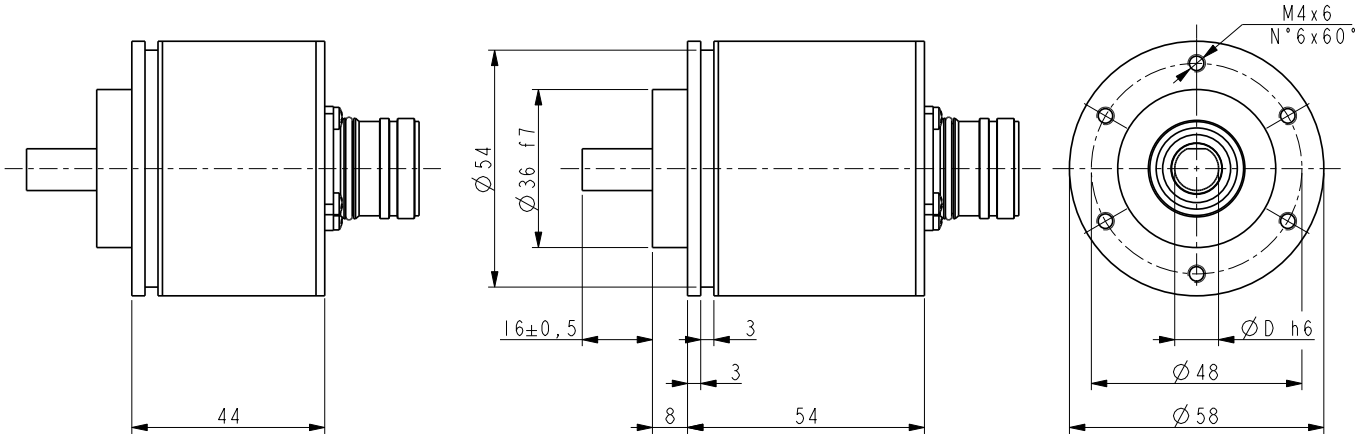
ENVIRONMENTAL SPECIFICATIONS	
Shock:	100 g, 6 ms (acc. to MIL STD 202F)
Vibrations:	10 g, 5-2000 Hz (acc. to MIL STD 202F)
Operating temperature range:	-25°C +85°C (-13°F +185°F)
Storage temperature range:	-40°C +100°C (-40°F +212°F) (98% R.H. without condensation)
Protection:	IP67, IP65 shaft side

MECHANICAL SPECIFICATIONS	
Dimensions:	see drawing
Solid shaft:	ø 6, 8, 9.52, 10, 12 mm
Hollow shaft:	ø 14, 15 mm
Reducing sleeves BR1-xx from ø15mm to:	6, 8, 9.52, 10, 12 mm
Shaft loading (axial and radial):	100 N max.
Shaft rotational speed:	12000 rpm, 9000 rpm continuous operation
Bearing life:	400x10^{6}rev. min. (10^{9}rev. min. with shaft loading of 20 N max.)
Weight:	~ 0,3 kg (10,6 oz)
Electrical connections:	M12, M23, plug or cable 2 m
Option:	• additional cable

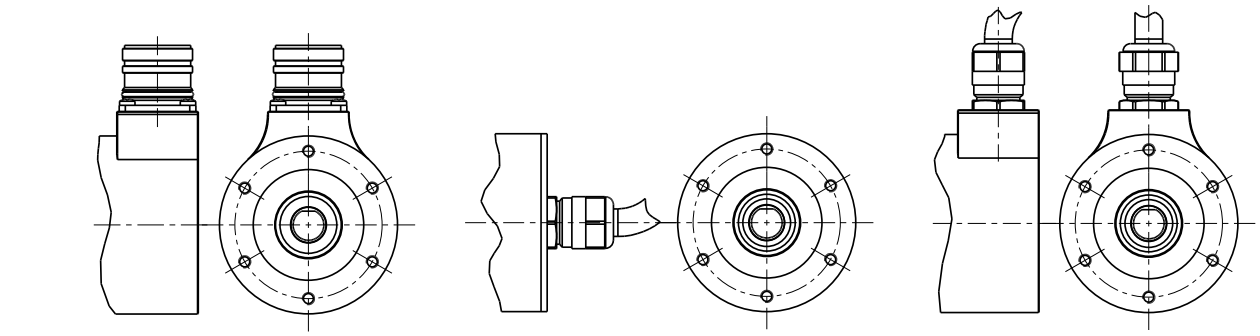
ELECTRICAL SPECIFICATIONS	
Resolution:	AS58xx: 12 bit AM58xx: 16 bit
Output:	0-5V, 0-10V, -5/+5V, -10/+10V, 0-20mA, 4-20mA, 0-24mA
Power supply:	+13Vdc ÷ 30Vdc
Power consumption:	1, 3 W max.
Start-up time:	~ 40 ms
Counting frequency:	> 150 kHz
Accuracy:	± 0,02°
Protection:	against inversion of polarity, short-circuit
EMC:	according to: EN-61000-4-2/A1 EN-61000-4-4
Optoelectronic life:	> 100.000 h
Functions:	• Counting direction • Zero setting

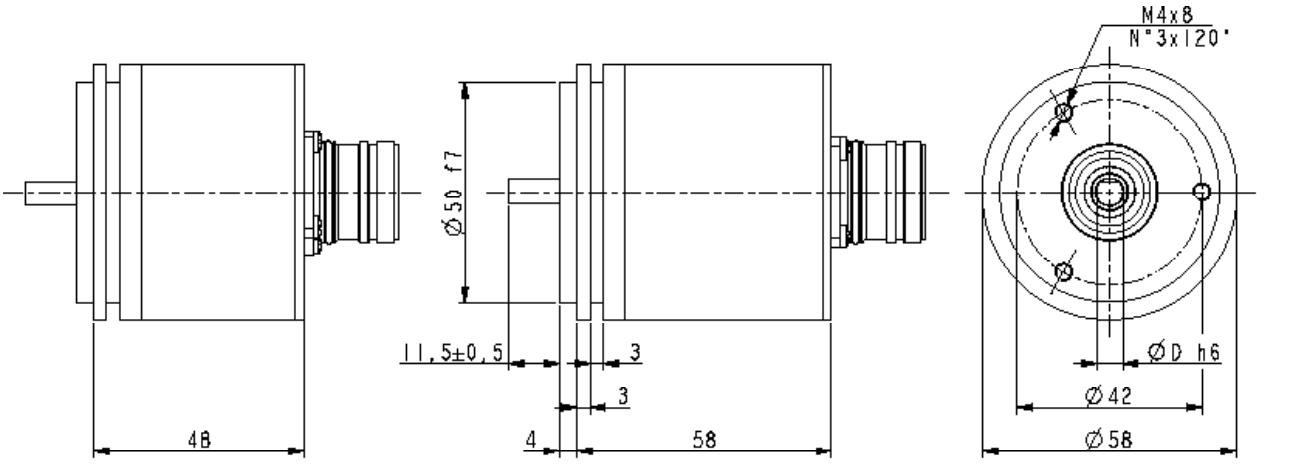
MATERIALS	
Flange:	non corroding, UNI EN AW-6082
Housing:	non corroding, UNI EN AW-6082
Bearings:	ABEC 5
Shaft:	stainless steel, non magnetic, UNI EN 4305

ACCESSORIES	
EPFL121H:	12 pin M23 mating connector
E-M12F8:	8 pin M12 connector
PAN/PGF:	flexible couplings
BR1:	reducing sleeves
EC-M12F8-LK-M8-10:	cordset 10 m, M12 connector
EC-CR12F-S28-T12-xx:	cordset xx m, M23 connector
LKM-386:	fixing clamps

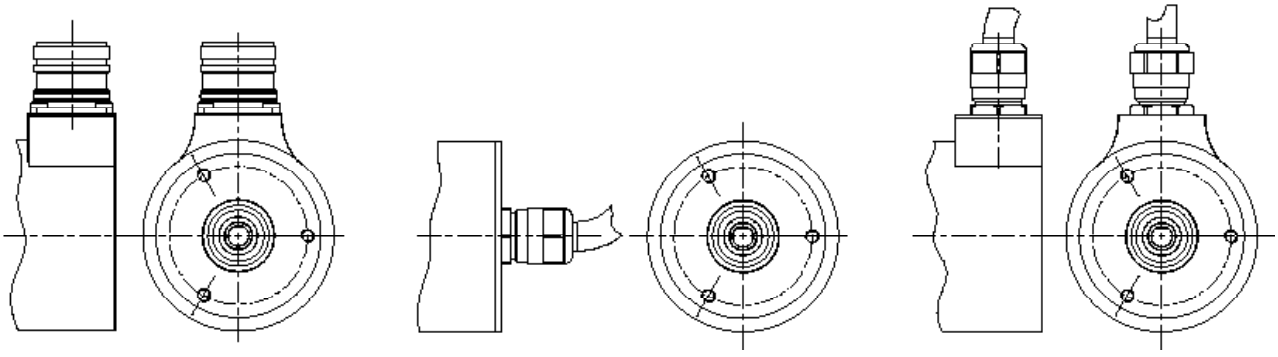


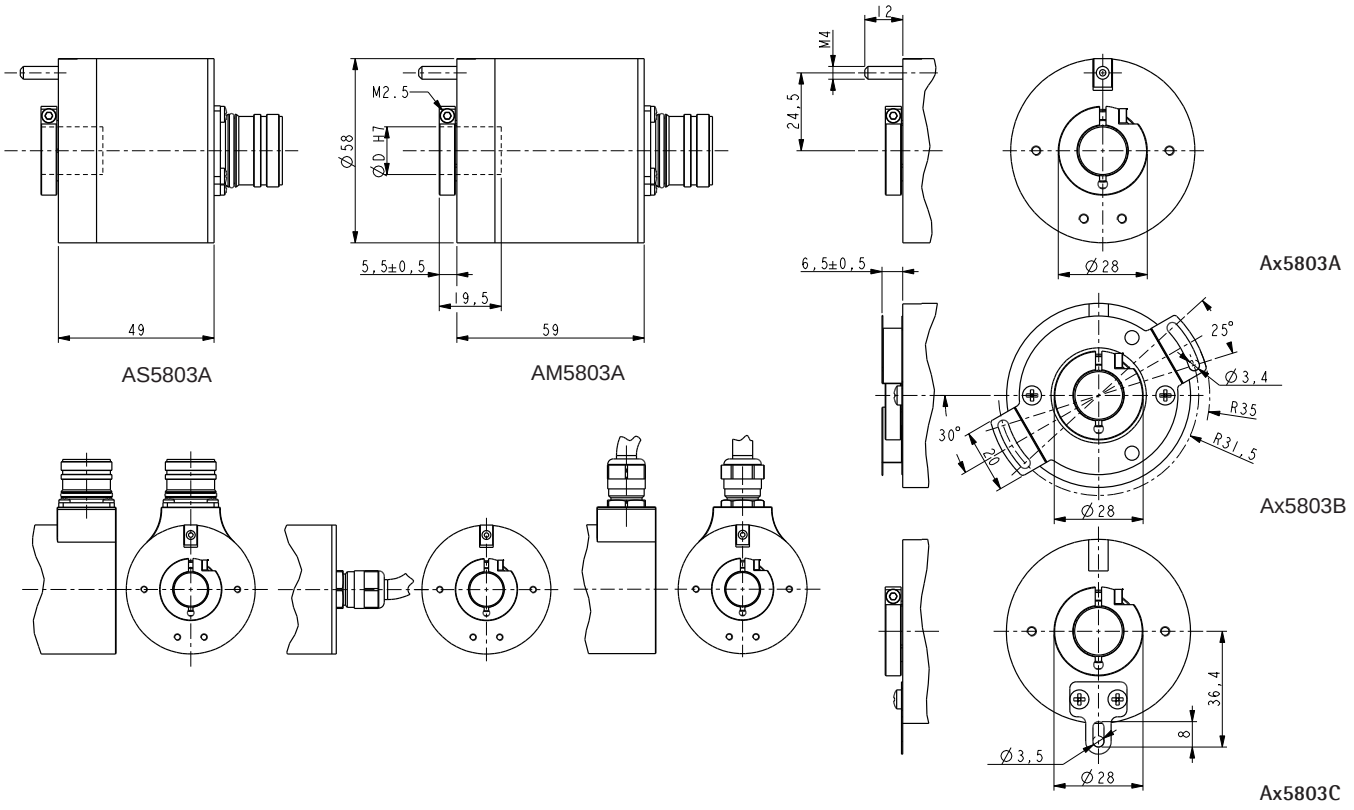
AS5801 AM5801





AS5802 AM5802





Output signals description

- **+Iout**: analogue current output;
- **+Vout**: analogue voltage output;
- **Analogue 0VDC**: analogue reference, internally connected to 0VDC;
- **Fault:** error signal for cable integrity check.
  Only available for current outputs.
  To connect the fault signal, see Figure 2 and Figure 3, pay attention to R2 value.
  No encoder error = transistor ON (conducting).
  Encoder error = transistor OFF (open).

AI1, AI2, AI3 AV1, AV2, AV3, AV4

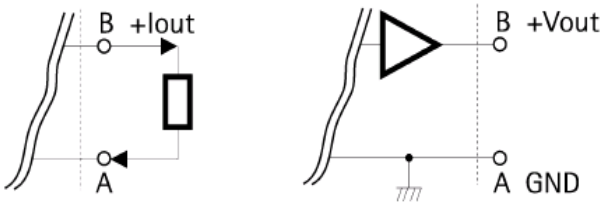


Figure 1

Fault output

1. Fault output connected to PLC input

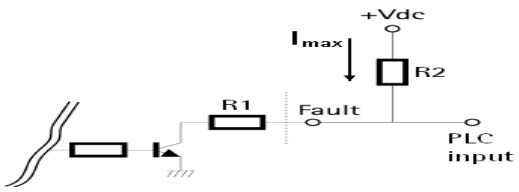


Figure 2

Example
1KΩ < R2 < 10KΩ
No encoder error = PLC input Low (0 VDC).
Encoder error = PLC input High (+VDC).

2. Fault output connected to a relay

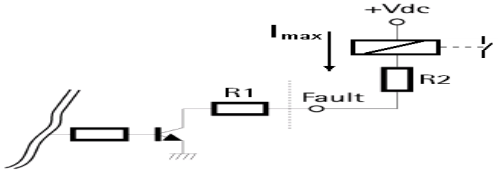


Figure 3

Imax = 50mA
R1 = 47Ω

$$R2 = \left(\frac{Vdc}{I}\right) - R1$$

Order code

Additional code

Ax58xx	/	XXX ⓐ	-	XX ⓑ	/	XX/XXXX ⓒ	-	Sxxx

ⓐ OUTPUT
AI1 = 4-20mA
AI2 = 0-20mA
AI3 = 0-24mA
AV1 = 0-5V
AV2 = 0-10V
AV3 = -5/+5V
AV4 = -10/+10V

ⓑ SHAFT DIAMETER
6 = 6 mm
8 = 8 mm
P9 = 9.52 mm, 3/8"
10 = 10 mm
12 = 12 mm
14* = 14 mm (only Ax5803x)
15* = 15 mm (only Ax5803x)

ⓒ RESOLUTION
001 12 AS58xx only
002 **12/2** = 2 turns
003 **12/4** = 4 turns
004 **12/16** = 16 turns
005 **10/64** = 64 turns
006 **8/256** = 256 turns
007 **6/1024** = 1024 turns
008 **4/4096** = 4096 turns

CUSTOM VERSION

Specifications subject to changes without prior notice

Increment per step:

Type	AI1 [µA]	AI2 [µA]	AI3 [µA]	AV1 [mV]	AV2 [mV]	AV3 [mV]	AV4 [mV]
001	3,906	4,883	5,856	1,221	2,441	2,441	4,883
002	1,953	2,441	2,928	0,610	1,221	1,221	2,441
003	0,976	1,221	1,464	0,305	0,610	0,610	1,221
004	0,244	0,305	0,366	0,076	0,153	0,153	0,305
005	0,244	0,305	0,366	0,076	0,153	0,153	0,305
006	0,244	0,305	0,366	0,076	0,153	0,153	0,305
007	0,244	0,305	0,366	0,076	0,153	0,153	0,305
008	0,244	0,305	0,366	0,076	0,153	0,153	0,305

Connection :

Cable A8	AI1, AI2, AI3	AV1, AV2AV3, AV4
Black	0VDC	0VDC
Red	+15VDC +30VDC	+15VDC +30VDC
White	Analogue 0VDC	Analogue 0VDC
Pink	Zero setting	Zero setting
Brown	+Iout	+Vout
Green	Complementary	Complementary
Blue	Fault	-
Shield	Shield	Shield

M12 8pin	AI1, AI2, AI3	AV1, AV2, AV3, AV4
1	0VDC	0VDC
2	+15VDC +30VDC	+15VDC +30VDC
3	Analogue 0VDC	Analogue 0VDC
4	Zero setting	Zero setting
5	+Iout	+Vout
6	Complementary	Complementary
7	-	-
8	Fault	-
Case	Shield	Shield

MIL 7pin	AI1	AV1, AV2
A	Analogue 0VDC	Analogue 0VDC
B	+Iout	+Vout
C	Complementary	Complementary
D	Hold	Hold
E	Fault	n.c.
F	0VDC	0VDC
G	+15VDC +30VDC	+15VDC +30VDC
Case	Shield	Shield

M23H	AI1, AI2, AI3	AV1, AV2, AV3, AV4
1	-	-
2	-	-
3	Fault	-
4	-	-
5	+Iout	-
6	Analogue 0VDC	Analogue 0VDC
7	-	+Vout
8	Complementary	Complementary
9	Zero setting	Zero setting
10	-	-
11	+15VDC +30VDC	+15VDC +30VDC
12	0VDC	0VDC
Case	Shield	Shield