EML 50 A / B ANALOGUE

SOLID SHAFT MAGNETIC SINGLETURN ABSOLUTE ENCODER

MAIN FEATURES

Singleturn absolute magnetic encoder size 50 mm with solid shaft

- Resolution 12 bit
- Power supply up to +28 V DC with analogue (voltage or current) electrical interface
- Code reset for easy setup
- Cable or M12 output, other connectors available on cable end
- Sturdy construction (separated chambers)
- Solid shaft diameter up to 10 mm
- IP 67 enclosure rating
- Mounting by syncronous flange

ORDERING CODE	EML	50A	360	X	12/28	V	05	X	6	X	3	M12	R	.162	+XXX

SERIES
magnetic singleturn absolute encoder EML

MODEL
synchronous flange ø 25 mm 50A
synchronous flange ø 30 mm 50B
for anodized version please directly contact our offices

ACTIVE ANGLE
degrees 360
degrees 270
degrees 180
degrees 90

OPTION
to be reported if not used X
reset with external input ZE

POWER SUPPLY
12 ... 28 V DC 12/28

ELECTRICAL INTERFACE
voltage V
current I

OUTPUT RANGE
0 ... 5 V 05
0 ... 10 V 010
0 ... 20 mA 020
4 ... 20 mA 420

OPTIONS
to be reported with voltage output / 3 wires current output X
4 wires current output Q

SHAFT DIAMETER
(mod. 50A) mm 6
(mod. 50B) mm 8
(mod. 50B) mm 10

ENCLOSURE RATING
IP 65 X
IP 67 S

MAX ROTATION SPEED
3000 rpm 3

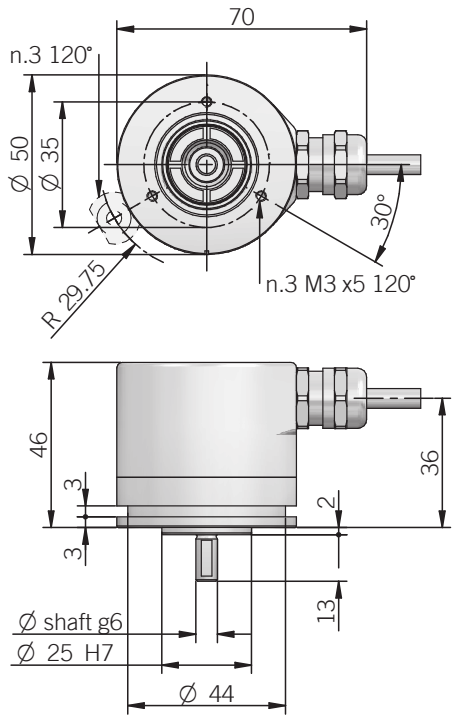
OUTPUT TYPE
cable (standard length 0,5 m) P
preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5)
M12 male connector M12

DIRECTION TYPE
axial A
radial R

MATING CONNECTOR
mating connector not included .162
to be reported only with connector output (eg. M12R.162), for mating connector see Accessories

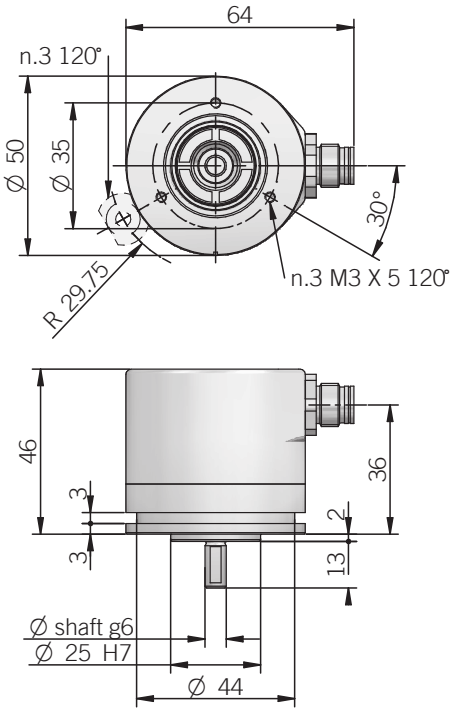
VARIANT
custom version XXX

50 A
radial cable output



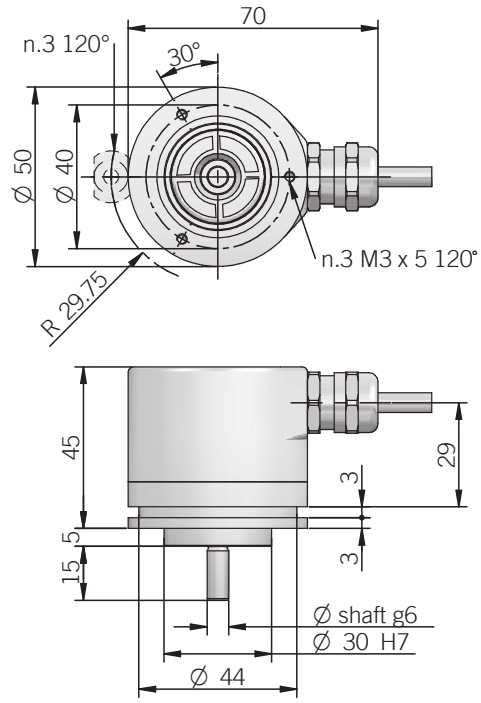
fixing clamps not included, please refer to Accessories

50 A
radial M12 output



fixing clamps not included, please refer to Accessories

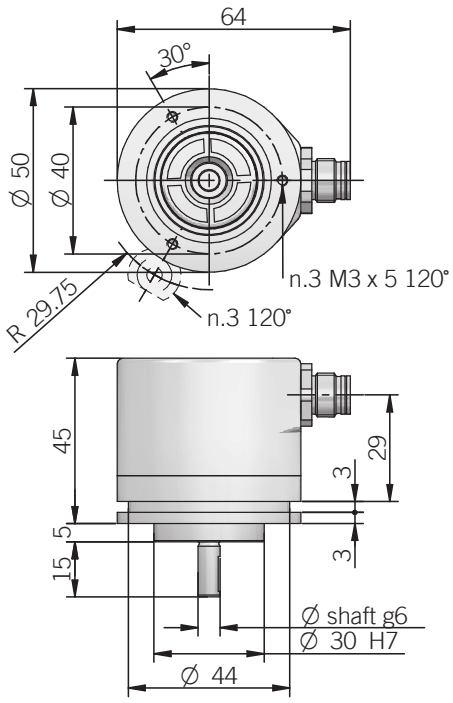
50 B
radial cable output



fixing clamps not included, please refer to Accessories

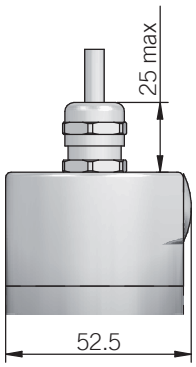
recommended mating shaft tolerance H7
dimensions in mm

50 B
radial M12 output



fixing clamps not included, please refer to Accessories

Axial output



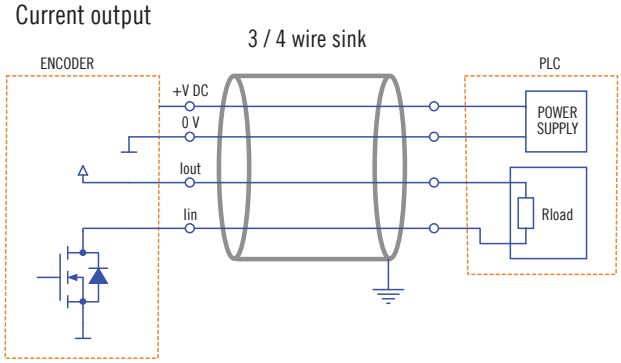
ELECTRICAL SPECIFICATIONS

Resolution	12 bit
Output DAC resolution	12 bit
Active angle	90 ... 360 mechanical degrees
Power supply[1]	11,4 ... 29,4 V DC (reverse polarity protection)
Current consumption without load	40 mA max
Electrical interface[2]	voltage (0 ... 5 V / 0 ... 10 V) current (0 ... 20 mA / 4 ... 20 mA)
Auxiliary inputs (U/D - RESET)	active high (+V DC) connect to 0 V if not used / RESET tmin 150 ms
Load	R_{min}= 1 kΩ (voltage output) R_{max}= (V DC - 2) / 0.02 (current output)
Output update frequency	100 kHz
Signal pattern	decreasing clockwise (shaft view)
Start-up time	150 ms
Linearity error	< 1 %
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	certificate n. E212495

[1] as measured at the transducer without cable influences
[2] for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section
[3] maximum load for static usage
[4] measured on the transducer flange
[5] condensation not allowed

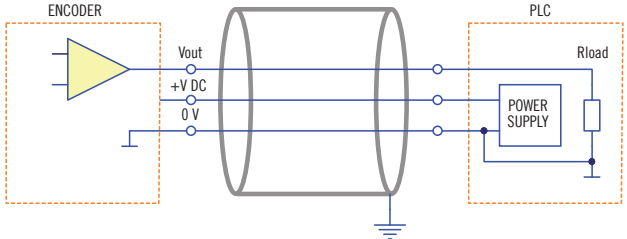
ELECTRICAL INTERFACE

Current output



with 3 wires interface I_{out} is internally connected to +V DC
where R_{LOAD}max = (V_{DC} - 2) / 0.02

Voltage output



where R_{LOAD}min = 1 kΩ

MECHANICAL SPECIFICATIONS

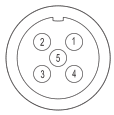
Shaft diameter	ø 6 / 8 / 10 mm
Enclosure rating	X = IP 65 (IEC 60529) S = IP 67 (IEC 60529)
Max rotation speed	3000 rpm continuous / 5000 rpm peak
Max shaft load[3]	30 N axial / 50 N radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	0,5 x 10^{-6} kgm^2 (12 x 10^{-6} lbft^2)
Starting torque (at +20°C / +68°F)	< 0,03 Nm (4,25 Ozin)
Bearing stage material	EN-AW 2011 aluminum
Shaft material	1.4305 / AISI 303 stainless steel
Housing material	EN-AW 2011 aluminum
Bearings	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature[4, 5]	-25° ... +85°C (-13° ... +185°F)
Storage temperature[5]	-25° ... +85°C (-13° ... +185°F)
Weight	200 g (7,05 oz)

CONNECTIONS

Function	Cable (voltage)	Cable (current)	5 pin M12	8 pin M12*
+ V DC	red	red	2	8
0 V	black	black	4	5
V_{out}	green	/	3	/
I_{in}	/	yellow	3	3
I_{out}	/	green	/	2
U / D	blue	blue	5	7
RESET	white	white	1	1
⏚	shield	shield	housing	housing

* with Q current ouput

M12 connector (5 pin)
M12 A coded
solder side view FV



M12 connector (8 pin)
M12 A coded
solder side view FV

SIGNAL PATTERN (decreasing CW)