EML 50 F / G ANALOGUE

BLIND HOLLOW SHAFT MAGNETIC SINGLETURN ABSOLUTE ENCODER

MAIN FEATURES

Singleturn absolute magnetic encoder size 50 mm with blind hollow 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
- Blind hollow shaft diameter up to 15 mm
- IP 67 enclosure rating
- Mounting by stator coupling or torque pin

ORDERING CODE	EML	50F	360	X	12/28	V	05	X	15	X	3	M12	R	.162	+XXX

SERIES
magnetic singleturn absolute encoder EML

MODEL
blind hollow shaft with stator coupling 50F
blind hollow shaft with torque pin 50G

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

BORE DIAMETER
mm 14
mm 15
diameters 5 / 6 / 8 / 10 / 12 mm with optional shaft adapter, see Accessories

ENCLOSURE RATING
IP 65 X
IP 67 S

MAX ROTATION SPEED
3000 rpm 3

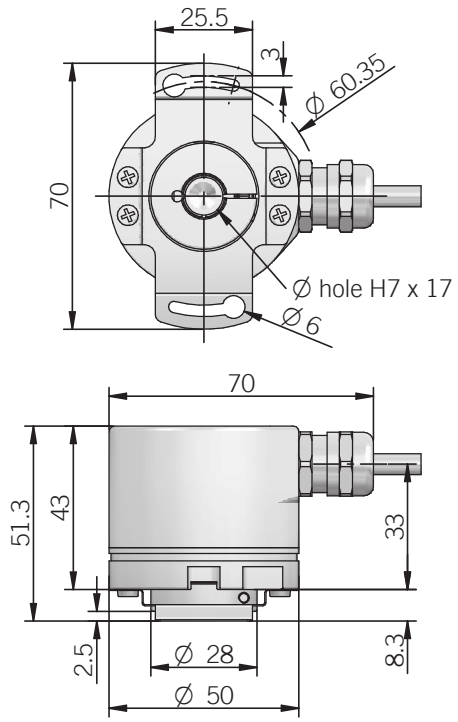
OUTPUT TYPE
cable (standard length 0,5 m) P
preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5)
M12 plug connector M12

DIRECTION TYPE
axial A
radial R

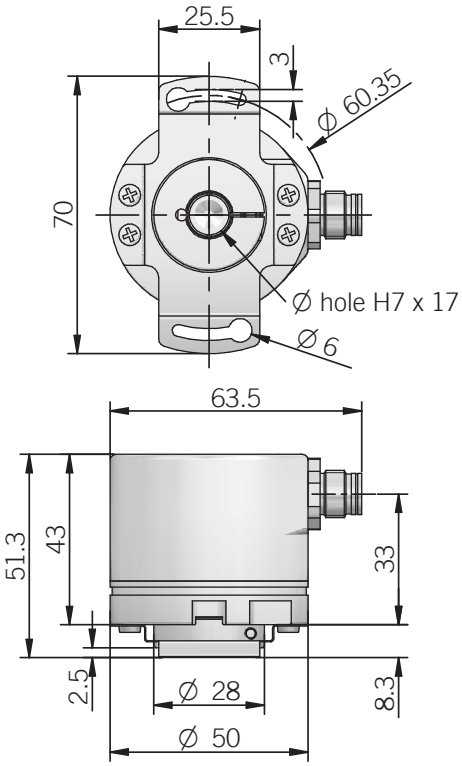
SOCKET
socket not included .162
to be reported only with connector output (eg. M12R.162), for socket see Accessories

VARIANT
custom version XXX

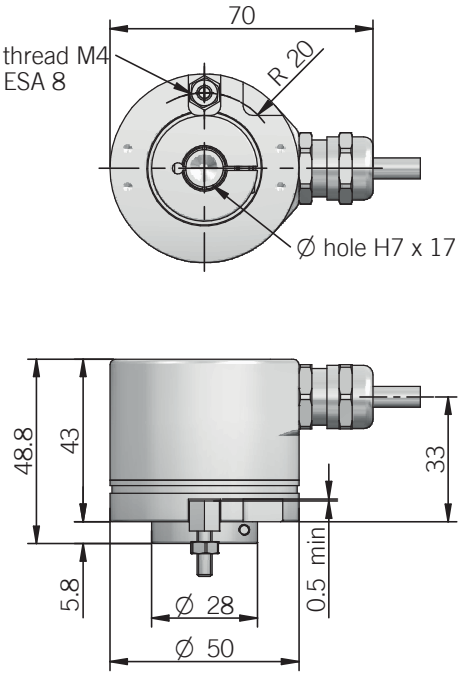
50F WITH RADIAL CABLE OUTPUT



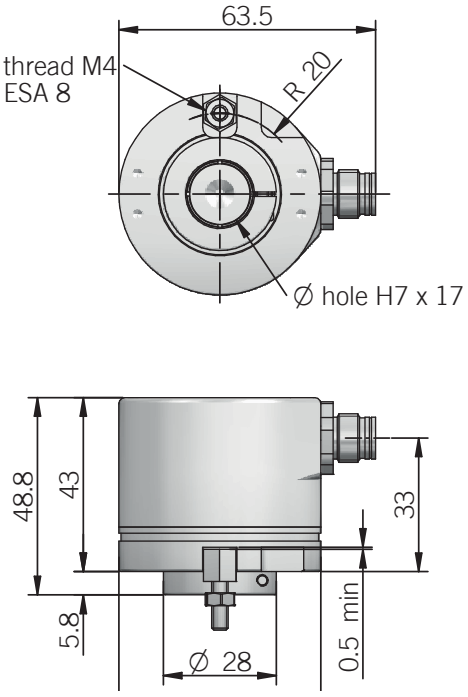
50F WITH RADIAL M12 OUTPUT



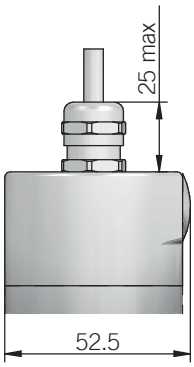
50G WITH RADIAL CABLE OUTPUT



50G WITH RADIAL M12 OUTPUT



DIMENSIONS WITH AXIAL OUTPUT



torque pin is included in model G, for mounting instruction please refer to product installation notes

recommended mating shaft tolerance g6
dimensions in mm

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 %
Mean time to dangerous failure ($MTTF_d$)[3] **according to EN ISO 13849-1**	153 years
Mission time (Tm)[3]	20 years
Diagnostic coverage (DC)[3]	0%
Cable type	shielded - fixed installation conductors section 0,22 mm² / AWG 24 bending radius min 60 mm
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU directive
UL / CSA	file n. E212495

MECHANICAL SPECIFICATIONS

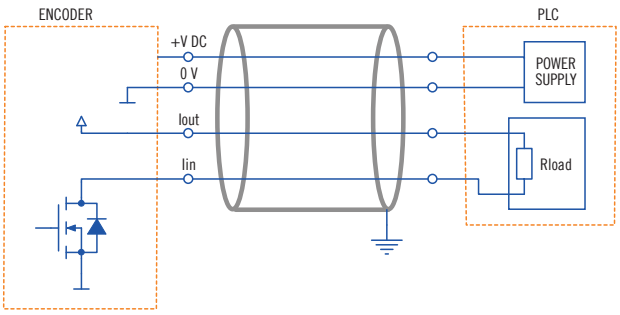
Bore diameter	ø 14 / 15 mm ø 5 / 6* / 8* / 10* / 12* mm * with optional shaft adapter, please refer to Accessories
Enclosure rating IEC 60529	X = IP 65 S = IP 67
Max rotation speed	3000 rpm continuous
Max shaft load[4]	30 N (6,74 lbs) axial / 50 N (11,24 lbs) radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	20 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	4 x 10^{-6} kgm² (95 x 10^{-6} lbft²)
Starting torque (at +20°C / +68°F)	< 0,03 Nm (4,25 Ozin)
Bearing stage material	aluminum
Shaft material	stainless steel
Housing material	painted aluminum
Bearings	n.2 ball bearings
Bearings life	10^9 revolutions
Operating temperature[5, 6]	-25° ... +85°C (-13° ... +185°F)
Storage temperature[6]	-25° ... +85°C (-13° ... +185°F)
Weight	200 g (7,05 oz)

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

ELECTRICAL INTERFACE

CURRENT OUTPUT

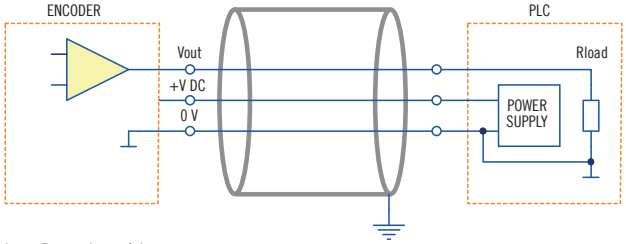
3 / 4 wire sink



with 3 wires interface I_{out} is internally connected to +V DC

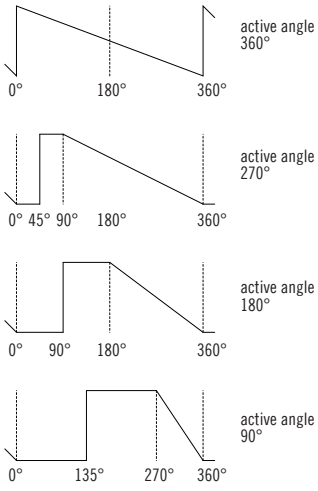
where R_{LOAD}max = (V_{DC} - 2) / 0,02

VOLTAGE OUTPUT



where R_{LOAD}min = 1 kΩ

SIGNAL PATTERN (decreasing CW)

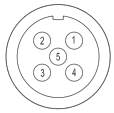


CONNECTIONS

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
front view



M12 connector (8 pin)
M12 A coded
front view