

### MAIN FEATURES

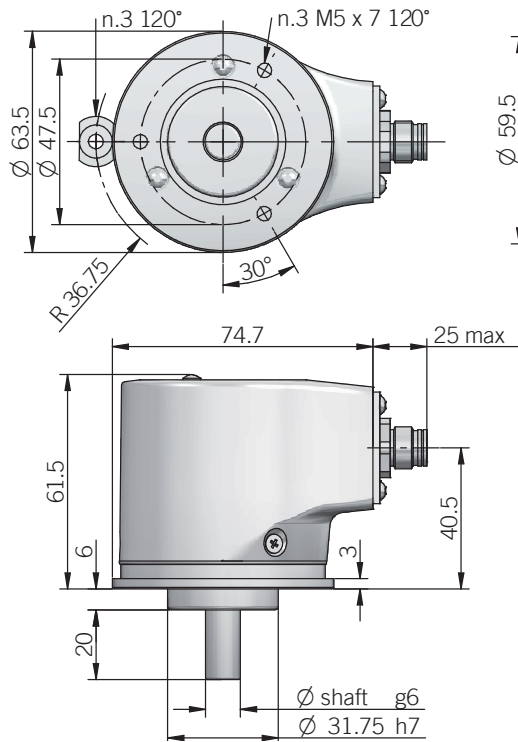
Industry standard multiturn absolute encoder for factory automation applications.

- Optical sensor technology (OptoASIC + Energy Harvesting)
- Programmable measuring range via teach-in function (inputs or cover button)
- Power supply up to +30 VDC with analogue (voltage or current) as electrical interface
- Cable or M12 connector output
- Solid shaft diameter up to 10 mm
- Mounting by synchronous, clamping or centering 2,5" square flange



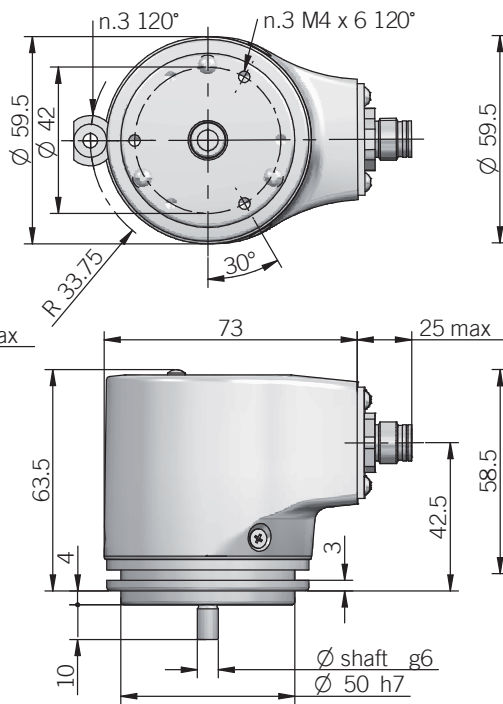
ORDERING CODE	EAML	63A	16B	12/30	V	05	X	10	X	P	R	.XXX
<b>SERIES</b> analogue multiturn absolute encoder	<b>EAML</b>											
<b>MODEL</b> synchronous flange ø 31.75 mm synchronous flange ø 50 mm clamping flange ø 36 mm centering square flange ø 31.75 mm centering square flange ø 50 mm	<b>63A</b> <b>58B</b> <b>58C</b> <b>63D</b> <b>63E</b>											
<b>OUTPUT DAC RESOLUTION</b> 16 bit	<b>16B</b>											
<b>POWER SUPPLY</b> 12 ... 30 V DC	<b>12/30</b>											
<b>ELECTRICAL INTERFACE</b> voltage current	<b>V</b> <b>I</b>											
<b>OUTPUT RANGE</b> 0 ... 5 V 0 ... 10 V 0 ... 20 mA 4 ... 20 mA	<b>05</b> <b>010</b> <b>020</b> <b>420</b>											
<b>OPTIONS</b> to be reported with voltage output / 3 wires current output 4 wires current output	<b>X</b> <b>Q</b>											
<b>SHAFT DIAMETER</b> (mod. 58 B) mm (mod. 63 A / D) 3/8" - mm (mod. 58 C - 63 A / D / E) mm	<b>6</b> <b>9,52</b> <b>10</b>											
<b>ENCLOSURE RATING</b> IP 65 shaft side / IP67 cover side IP 67	<b>X</b> <b>S</b>											
<b>OUTPUT TYPE</b> cable (standard length 1,5 m) M12 connector	<b>P</b> <b>M12</b>											
female connector included, without female please add 162 as variant code												
<b>DIRECTION TYPE</b> radial	<b>R</b>											
<b>VARIANT</b> custom version	<b>XXX</b>											

63 A



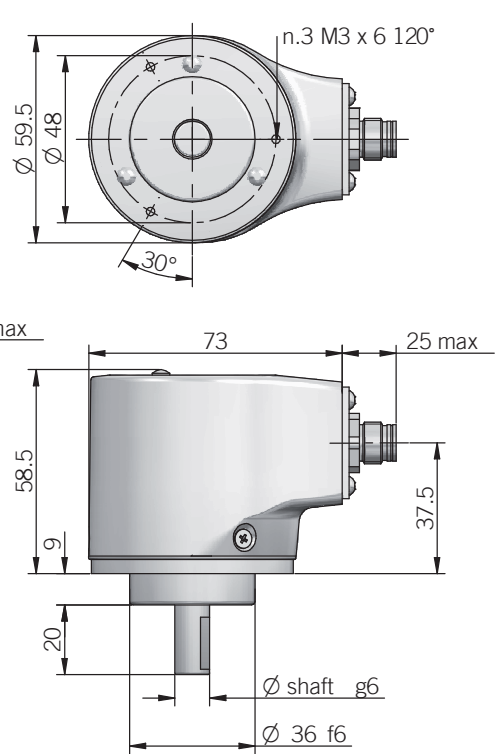
for fixing clamps please refer to Accessories

58 B

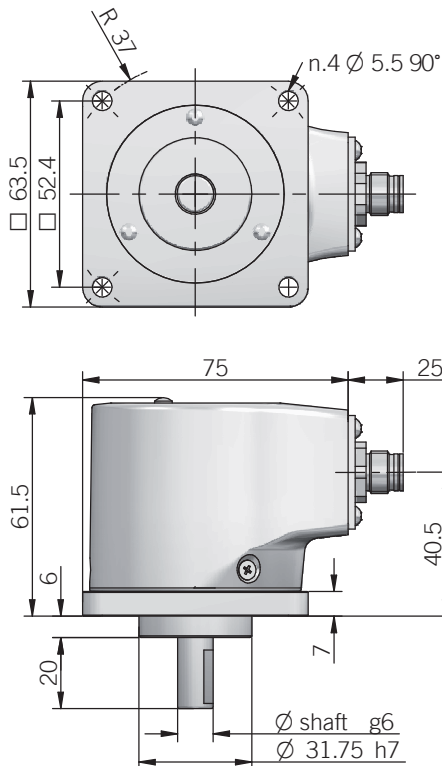


for fixing clamps please refer to Accessories

58 C

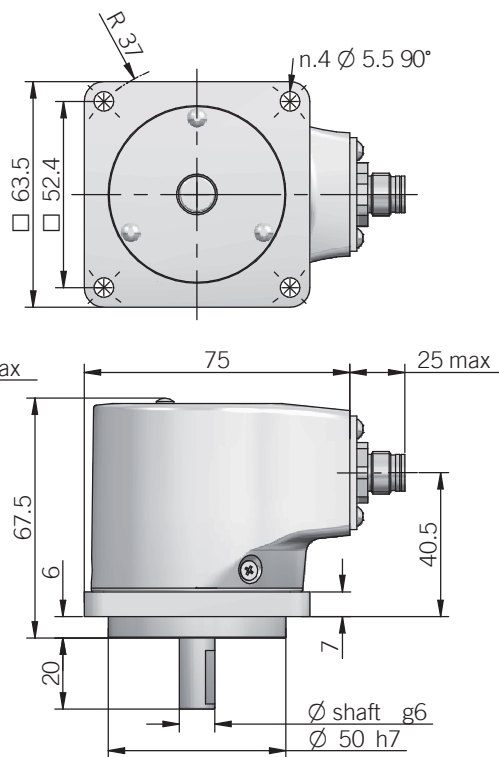


63 D



dimensions in mm

63 E



ELECTRICAL SPECIFICATIONS	
Multiturn resolution	16 bit max
Singleturn resolution	16 bit max
Output DAC resolution	16 bit
Minimum angle	22,5°
Power supply <sup>1</sup>	11,4 ... 30 V DC (reverse polarity protection)
Power draw without load	< 1 W
Electrical interface <sup>2</sup>	voltage (0 ... 5 V / 0 ... 10 V) current (0 ... 20 mA / 4 ... 20 mA)
Auxiliary inputs (BEGIN - END)	active high (+V DC) connect to 0V if not used / $t_{min}$ 150 ms
Load	$R_{min} = 1 \text{ k}\Omega$ (voltage output) $R_{max} = (V_{DC} - 2) / 0,02$ (current output)
Output update frequency	16 kHz
Signal pattern	auto teaching according to commissioning
Start-up time	700 ms
Linearity error	$\pm 250$ arc-sec
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2015/863/EU directive
UL / CSA	certificate n. E212495

MECHANICAL SPECIFICATIONS	
Shaft diameter	$\varnothing 6 / 9,52 (3/8") / 10 \text{ mm}$
Enclosure rating IEC 60529	X = IP 65 shaft side / IP67 cover side S = IP 67
Max rotation speed	see below table
Max shaft load <sup>3</sup>	200 N axial / 70 N radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	$1,5 \times 10^{-6} \text{ kgm}^2 (36 \times 10^{-6} \text{ lbf}^2)$
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	painted aluminium
Bearings	n.2 ball bearings
Bearings life	$10^9$ revolutions
Operating temperature <sup>4, 5</sup>	-20° ... +85°C (-4° ... +185°F)
Storage temperature <sup>5</sup>	-20° ... +85°C (-4° ... +185°F)
Weight	approx 350 g (12,35 oz)

<sup>1</sup> as measured at the transducer without cable influences

<sup>2</sup> for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

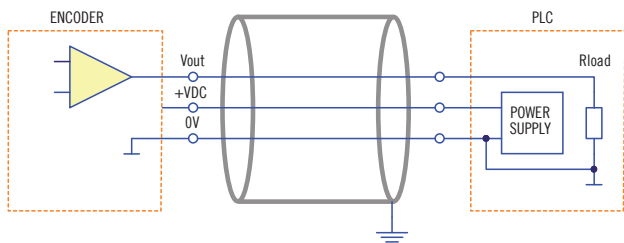
<sup>3</sup> maximum load for static usage

<sup>4</sup> measured on the transducer flange

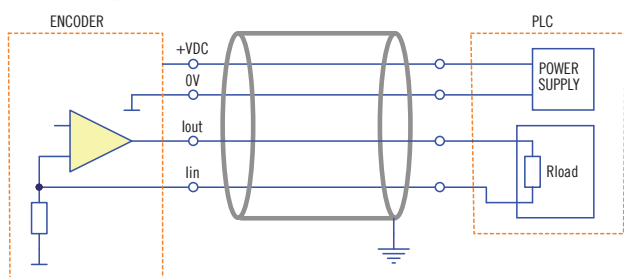
<sup>5</sup> condensation not allowed

### ELECTRICAL INTERFACE

#### Voltage output



#### Current output



3 / 4 wire source  
with 3 wires interface I<sub>in</sub> is internally connected to 0V

### ROTATION SPEED / TEMPERATURE TABLE

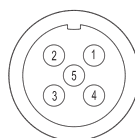
Temperature °C (°F)	Max speed (rpm)	Max continuous speed (rpm)
up to +70 (+158)	10000	8000
+70 ... +85 (+158 ... +185)	8000	5000

### CONNECTIONS

Function	Cable	5 pin M12	8 pin M12*
+ V DC	red	2	2
0 V	black	3	3
V <sub>out</sub> / I <sub>out</sub>	green	1	1
I <sub>in</sub>	yellow	/	6
BEGIN	white	4	4
END	brown or grey	5	5
⊥	shield	housing	housing

\* with Q current output

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



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

