

MAIN FEATURES

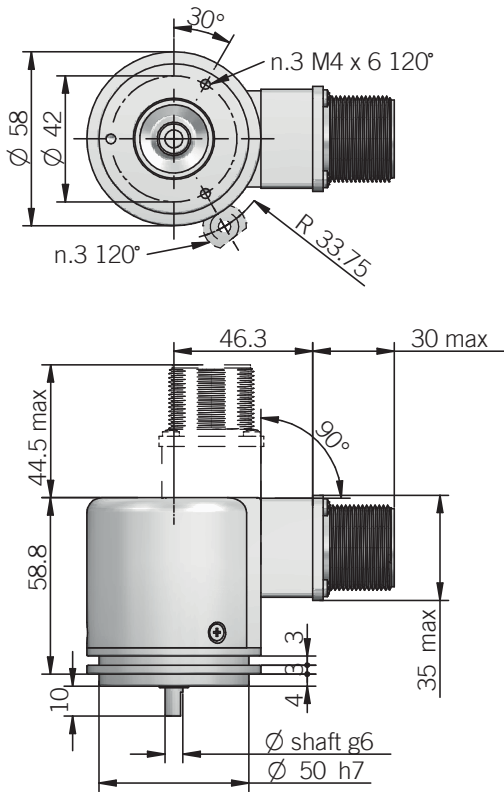
Standard ø 58 mm encoder series for industrial applications with high mechanical resistance requirements. These encoders are designed to support high radial and axial shaft load and they can be mounted by means of flanges or fixing clamps.

- 3 channel encoder (A / B / Z) up to 24000 ppr
- Power supply up to +28 V DC with several electrical interfaces available
- Up to 500 kHz output frequency
- Cable or connector output
- Available with metal cover for heavy duty applications
- Solid shaft diameter up to 12 mm
- Mounting by synchronous, clamping or coupling flange



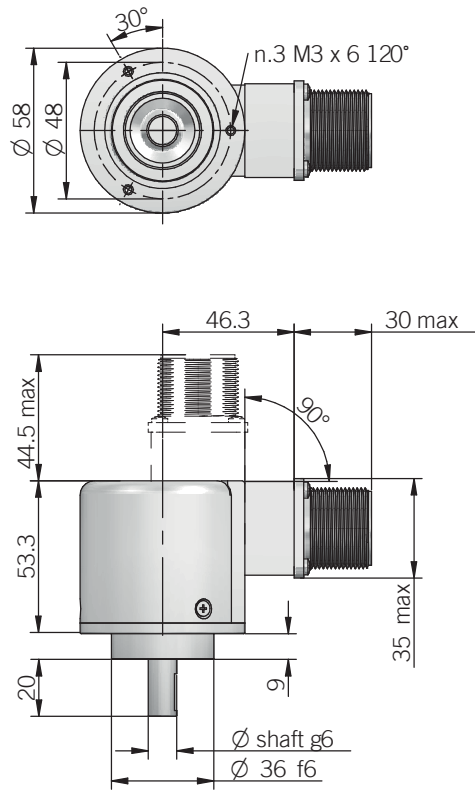
ORDERING CODE	ER	58C	M*	500	S	5/28	P	8	X	6	M	R	.162	+XXX
SERIES incremental encoder series EL incremental encoder series ER														
MODEL synchronous flange ø 50 mm 58B clamping flange ø 36 mm 58C clamping flange ø 50 mm 58H coupling flange ø 40 mm 58T														
METAL COVER * add for metal cover M														
RESOLUTION ppr from 1 to 24000 refer to the available pulses list														
ZERO PULSE without zero pulse S with zero pulse Z														
POWER SUPPLY (with L electrical interface) 5 V DC 5 5 ... 28 V DC 5/28														
ELECTRICAL INTERFACE NPN open collector C push-pull P line driver L power supply 5/28 V DC - output RS-422 RS														
SHAFT DIAMETER (mod. B) mm 6 (mod. C) mm 8 (mod. B / C / H) (3/8") mm 9,52 mm 10 (mod. T) mm 12														
ENCLOSURE RATING IP 54 X (mod. B / C / T) IP 66 S														
MAX ROTATION SPEED (IP 66) 3000 rpm 3 (IP 54) 6000 rpm 6														
OUTPUT TYPE cable (standard length 1,5 m) P preferred cable lengths 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5) MIL plug connector M JIS-C-5432 plug connector J M12 plug connector M12 M23 plug connector H M16 plug connector C														
DIRECTION TYPE axial A radial R														
SOCKET socket not included .162 to be reported only with connector output (eg. MR.162), for socket see Accessories														
VARIANT custom version +XXX														

58B

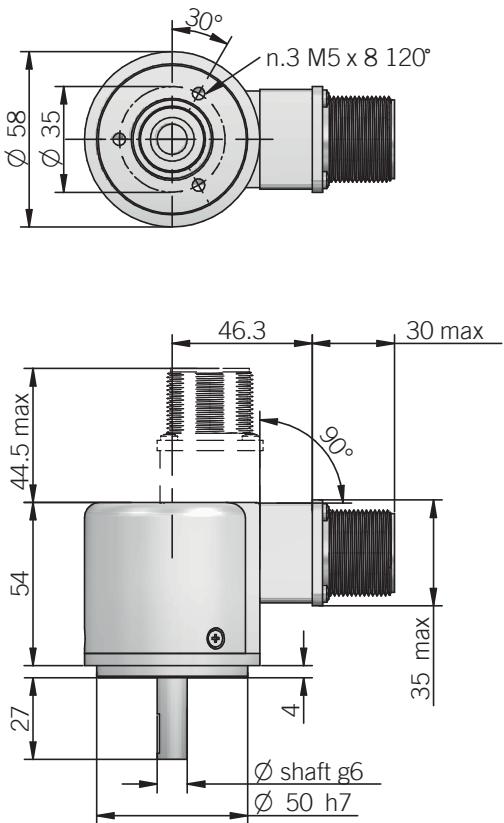


fixing clamps not included, please refer to Accessories

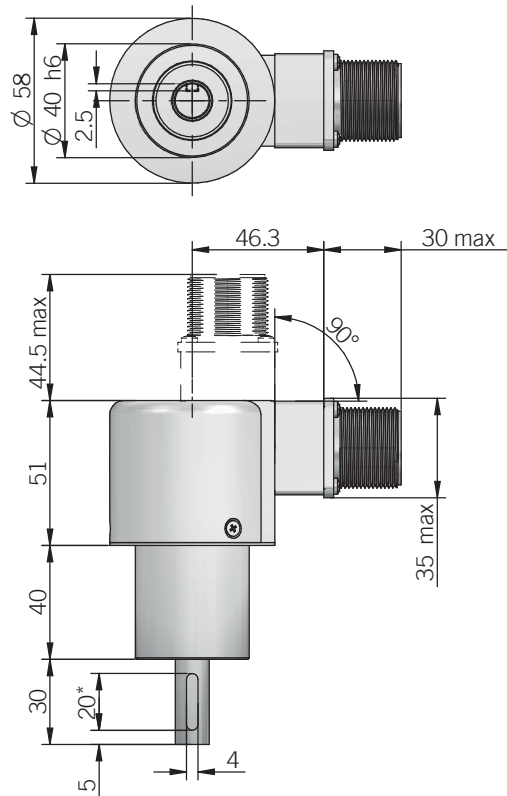
58C



58H

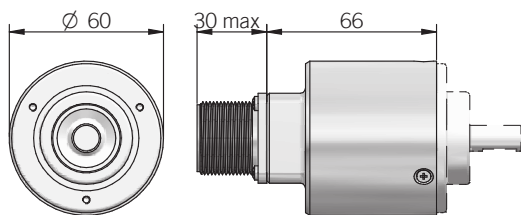


58T

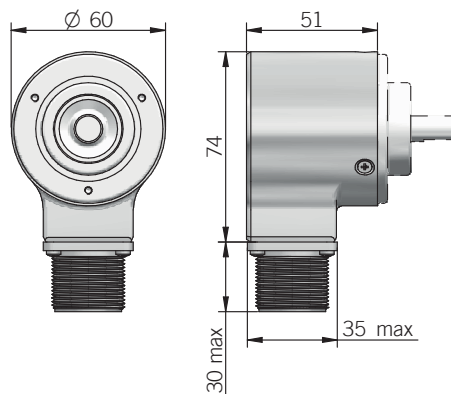


* slot only with 12mm shaft diameter

DIMENSION WITH METAL COVER AND AXIAL OUTPUT



DIMENSION WITH METAL COVER AND RADIAL OUTPUT



recommended mating shaft tolerance H7
dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 1 to 24000 ppr
Power supply¹	5 = 4,5 ... 5,5 V DC 5/28 = 4,5 ... 30 V DC (reverse polarity protection)
Power draw without load	800 mW max
Max load current	C / P = 50 mA / channel L / RS = 20 mA / channel
Electrical interface²	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272 or similar) line driver RS-422 (AELT-5000 or similar)
Max output frequency	250 kHz up to 6000 ppr / 500 kHz from 7200 ppr
Counting direction	A leads B clockwise (shaft view)
Index signal	180°e (gated A)
Mean time to dangerous failure (MTTF)³ according to EN ISO 13849-1	200 years EL series 263 years ER series
Mission time (Tm)³	20 years
Diagnostic coverage (DC)³	0%
Cable type	shielded - fixed installation conductors section 0,22 mm ² / 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

EL SERIES RESOLUTIONS

1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 25 - 30 - 32 - 40 - 50 - 60 - 70 - 80 - 90 - 160 - 180 - 350 - 450 - 660 - 700 - 750 - 1500

ER SERIES RESOLUTIONS

100 - 120 - 128 - 150 - 200 - 240 - 250 - 256 - 300 - 360 - 400 - 480 - 500 - 512 - 600 - 625 - 720 - 800 - 900 - 1000 - 1024 - 1200 - 1250 - 1440 - 1600 - 1800 - 2000 - 2048 - 2500 - 3000 - 3600 - 4000 - 4096 - 5000 - 6000 - 7200 - 8000 - 8192 - 9000 - 10000 - 10240 - 12000 - 14400 - 16000 - 16384 - 18000 - 20000 - 20480 - 24000

please directly contact our offices for other pulses, preferred resolutions in bold

MECHANICAL SPECIFICATIONS

Shaft diameter	ø 6 / 8 / 9,52 (3/8") / 10 / 12 mm
Enclosure rating IEC 60529	X = IP 54 S = IP 66
Max rotation speed	6000 rpm with X enclosure rating 3000 rpm / 60° C EL series with S enclosure rating 3000 rpm / 70° C ER series with S enclosure rating 2000 rpm / 85° C ER series with S enclosure rating
Max shaft load⁴	10 N (2,25 lbs) axial with ø 6 mm shaft 20 N (4,45 lbs) radial with ø 6 mm shaft 200 N (45 lbs) axial / 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 x 10 ⁻⁶ kgm ² (36 x 10 ⁻⁶ lbf ²)
Starting torque (at +20°C / +68°F)	< 0,02 Nm (2,83 Ozin) with X enclosure rating < 0,06 Nm (8,50 Ozin) with S enclosure rating
Bearing stage material	aluminum
Shaft material	stainless steel
Housing material	PA66 glass fiber reinforced / painted aluminum
Bearings	n.2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{5, 6}	-10° ... +60°C (+14° ... +140°F) EL series -25° ... +85°C (-13° ... +185°F) ER series
Storage temperature⁶	-25° ... +70°C (-13° ... +158°F)
Weight	350 g (12,35 oz) 450 g (15,87 oz) with metal cover

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

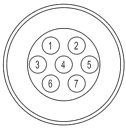
⁶ condensation not allowed

CONNECTIONS

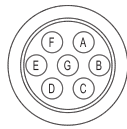
Function	Cable C / P	Cable L / RS	7 pin J C / P	7 pin J L / RS no Zero	7 pin M C / P	7 pin M L / RS no Zero	10 pin J L / RS with Zero	10 pin M L / RS with Zero	5 pin M12 C / P	8 pin M12 L / RS	12 pin H	5 pin C C / P	8 pin C L / RS
+V DC	red	red	6	4	F	D	4 - 5	D - E	2	7	12	5	7
0 V	black	black	1	6	A	F	6	F	4	1	10	1	8
A+	green	green	3	1	C	A	1	A	3	6	5	2	1
A-	/	brown or grey	/	3	/	C	7	G	/	5	6	/	2
B+	yellow	yellow	5	2	E	B	2	B	1	4	8	4	3
B-	/	orange	/	5	/	E	8	H	/	3	1	/	4
Z+	blue	blue	4	/	D	/	3	C	5	2	3	3	5
Z-	/	white	/	/	/	/	9	I	/	8	4	/	6
⏏	shield	shield	7	7	G	G	10	J	housing ¹	housing ¹	9	housing ¹	housing ¹

¹ only with metal cover

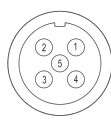
J connector (7 pin)
JIS-C-5432 Size 16
front view



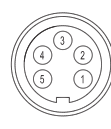
M connector (7 pin)
Amphenol MS3102-E-16-S
front view



M12 connector (5 pin)
M12 A coded
front view



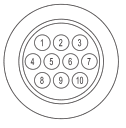
C connector (5 pin)
Amphenol C091 M16
front view



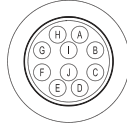
H connector (12 pin) - M23 CCW
Hummel 7.410.000000 - 7.002.912.603
front view



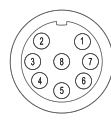
J connector (10 pin)
JIS-C-5432 Size 16
front view



M connector (10 pin)
Amphenol MS3102-E-18-1
front view



M12 connector (8 pin)
M12 A coded
front view



C connector (8 pin)
Amphenol C091 IEC 60130-9
front view

