

MAIN FEATURES

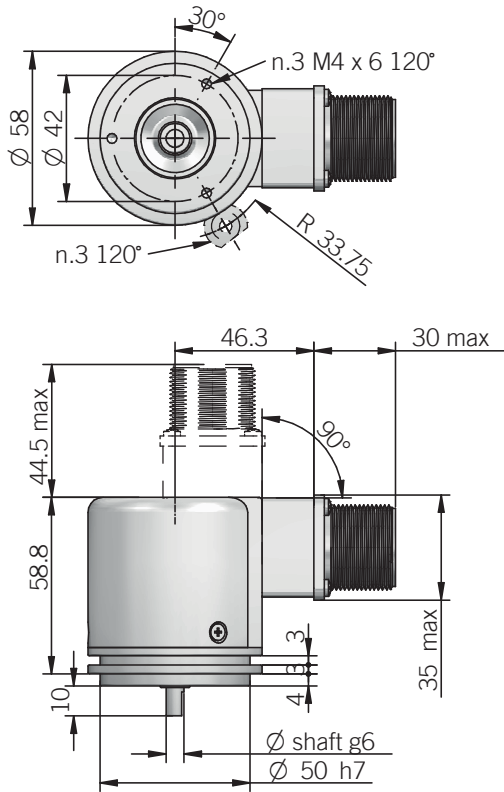
Standard ø 58 mm encoder series for industrial applications with high mechanical resistance requirements. These encoders are designed to withstand high radial and axial shaft loads and can be mounted by flanges or fixing clamps.

- 3 channel encoder (A / B / Z) up to 24000 ppr
- Power supply up to +30 V DC with various electrical interfaces available
- Output frequency up to 500 kHz
- Cable or connector output
- Metal cover available for heavy duty applications
- Solid shaft diameter up to 12 mm
- Mounting by synchronous, clamping or coupling flange



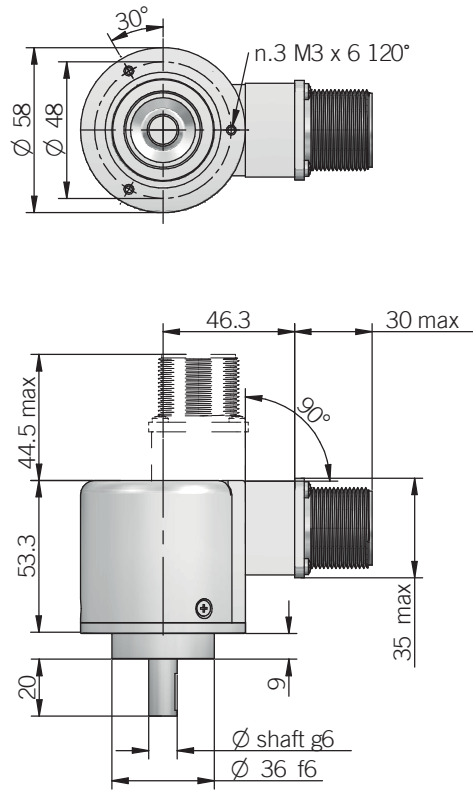
| ORDERING CODE | ER | 58C | M* | 500 | S | 5/28 | P | 8 | X | 6 | M | R | .162 | +XXX |
|--|----|-----|----|-----|---|------|---|---|---|---|---|---|------|------|
| SERIES incremental encoder series ER | | | | | | | | | | | | | | |
| MODEL synchronous flange ø 50 mm 58B clamping flange ø 36 mm 58C clamping flange ø 50 mm 58H coupling flange ø 40 mm 58T | | | | | | | | | | | | | | |
| METAL COVER * add for metal cover M | | | | | | | | | | | | | | |
| RESOLUTION ppr from 100 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 shaft side / IP67 cover side X (mod. B / C / T) IP 66 shaft side / IP67 cover side S | | | | | | | | | | | | | | |
| MAX ROTATION SPEED (S enclosure rating) 3000 rpm 3 (X enclosure rating) 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 IP40 plug connector J M12 plug connector M12 M23 plug connector H M16 IP40 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

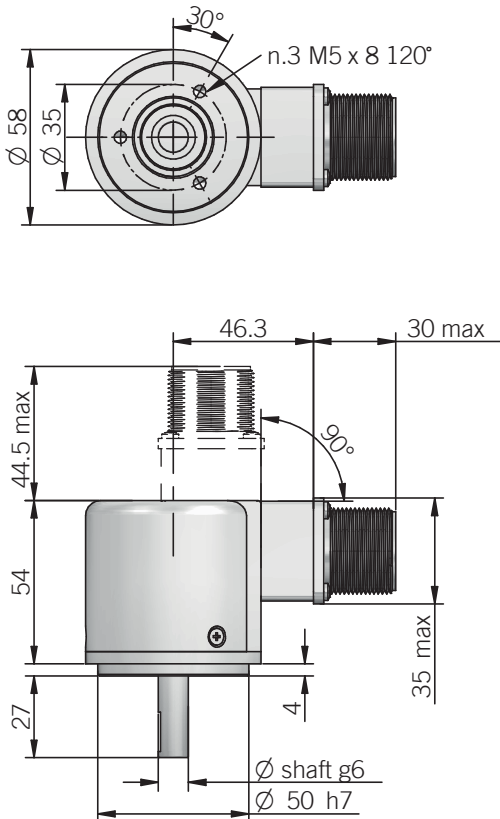


fixing clamps not included, please refer to Accessories

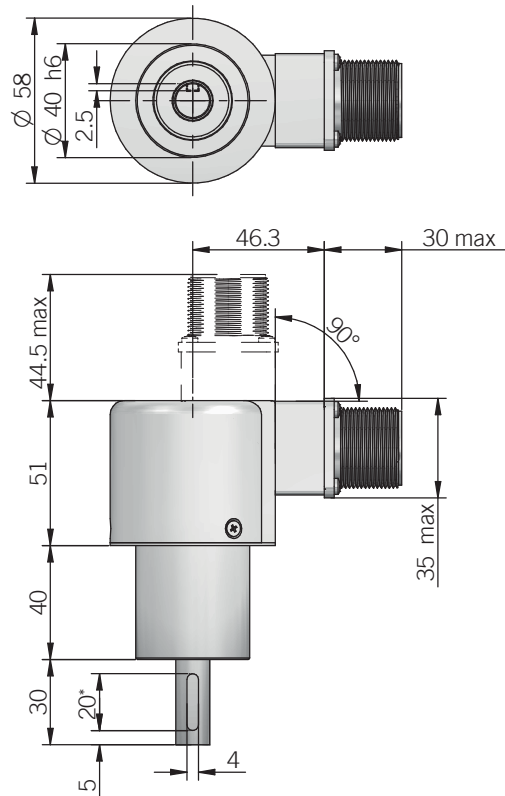
58C



58H

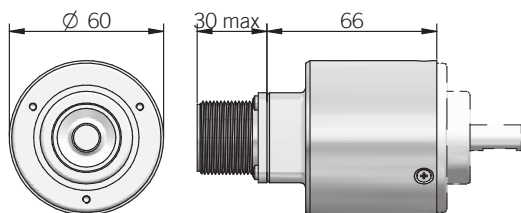


58T



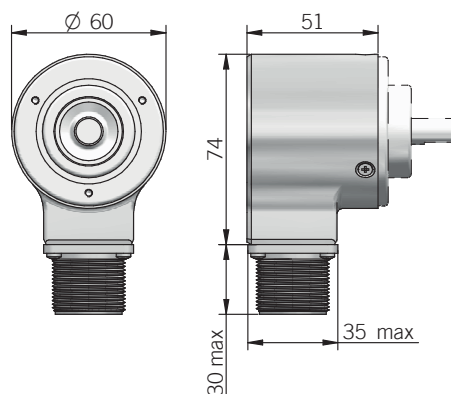
* slot only with 12mm shaft diameter

DIMENSION WITH METAL COVER AND AXIAL OUTPUT



recommended mating shaft tolerance H7
dimensions in mm

DIMENSION WITH METAL COVER AND RADIAL OUTPUT



ELECTRICAL SPECIFICATIONS

| | |
|--|---|
| Resolution | from 100 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 | 0,8 W 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 | 263 years |
| 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 |

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 shaft side / IP 67 cover side S = IP 66 shaft side / IP 67 cover side |
| Max rotation speed | 6000 rpm with X 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} | -25° ... +85°C (-13° ... +185°F) |
| 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

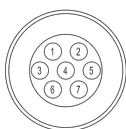
⁶ condensation not allowed

CONNECTIONS

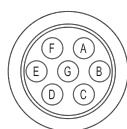
| Function | Cable C / P | Cable L / RS | 7 pin J C / P | 7 pin J L / RS no Zero | 7 pin M C / P | 7 pin M L / RS no Zero | 10 pin J L / RS with Zero | 10 pin M L / RS with Zero | 5 pin M12 C / P | 8 pin M12 L / RS | 12 pin H | 5 pin C C / P | 8 pin C L / RS |
|----------|-------------|---------------|---------------|------------------------|---------------|------------------------|---------------------------|---------------------------|----------------------|----------------------|----------|----------------------|----------------------|
| +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

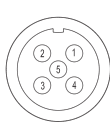
J connector (7 pin)
JIS-C-5432 IP40 Size 16
front view



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



M12 connector (5 pin)
M12 A coded
front view



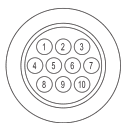
C connector (5 pin)
Amphenol C091 M16 IP40
front view



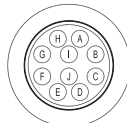
H connector (12 pin) - M23 CCW
Hummel 7.410.000000 - 7.002.912.603
front view



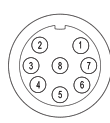
J connector (10 pin)
JIS-C-5432 IP40 Size 16
front view



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 IP40 IEC 60130-9
front view

