

MAIN FEATURES

Hollow shaft encoder series for industrial applications with high mechanical resistance requirements. These encoders are designed to withstand high radial and axial shaft loads.

- 3 channel encoder (A / B / Z) up to 24000 ppr
- Power supply up to +28 VDC with several electronic interfaces available
- Up to 500 kHz output frequency
- Cable or connector output
- Available with metal cover for heavy duty applications
- Blind hollow shaft diameter up to 15 mm
- Mounting by stator coupling, spring or anti-rotation pin



ORDERING CODE

ER 58G M* 500 S 5/28 N 8 X 3 P R .XXX

SERIES

incremental encoder series **EL**
 incremental encoder series **ER**

MODEL

blind hollow shaft with stator coupling **58F**
 blind hollow shaft with anti-rotation pin **58G**
 blind hollow shaft with spring **63F**
 blind hollow shaft with anti-rotation pin **63G**

METAL COVER

* add for metal cover **M**

RESOLUTION

ppr from **1** to **24000**
 see table for pulses availability

ZERO PULSE

without zero pulse **S**
 with zero pulse **Z**

POWER SUPPLY

(with L electronic interface) 5 V DC **5**
 (with L or PC electronic interface) 8 ... 24 V DC **8/24**
 5 ... 28 V DC **5/28**

ELECTRONIC INTERFACE

NPN **N**
 NPN open collector **C**
 push-pull **P**
 push-pull protected (AEIC-7272) **PC**
 line driver **L**
 power supply 5/28V - output RS-422 **RS**

BORE DIAMETER

mm **8**
 mm **10**
 mm **12**
 mm **14**
 mm **15**

ENCLOSURE RATING

IP 54 **X**
 IP 66 **S**

MAX ROTATION SPEED

3000 rpm **3**

OUTPUT TYPE

cable (standard length 1,5 m) **P**
 MIL connector **M**
 JIS-C-5432 connector **J**
 M12 connector **M12**
 M23 connector **C**
 IP40 IEC 60130-9 connector **H**

female connector included, without female please add 162 as variant code

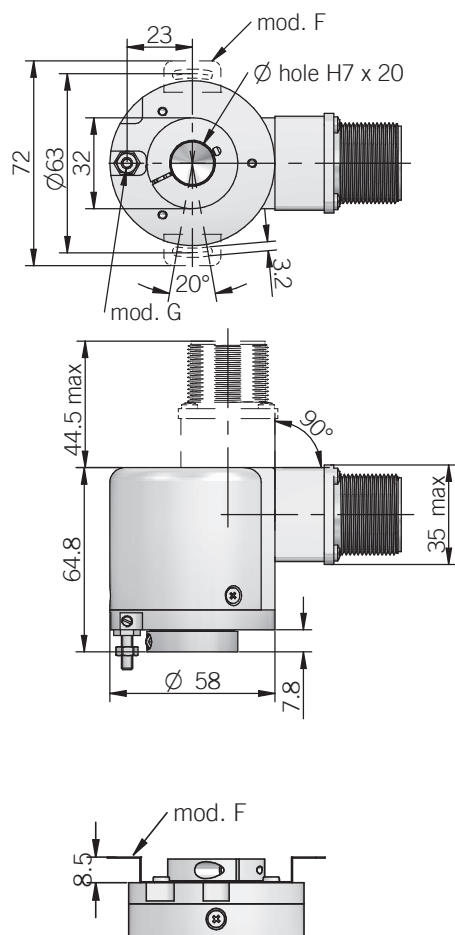
DIRECTION TYPE

axial **A**
 radial **R**

VARIANT

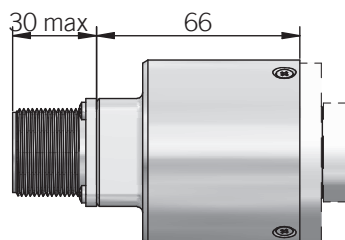
custom version **XXX**

EL - ER 58 F / G



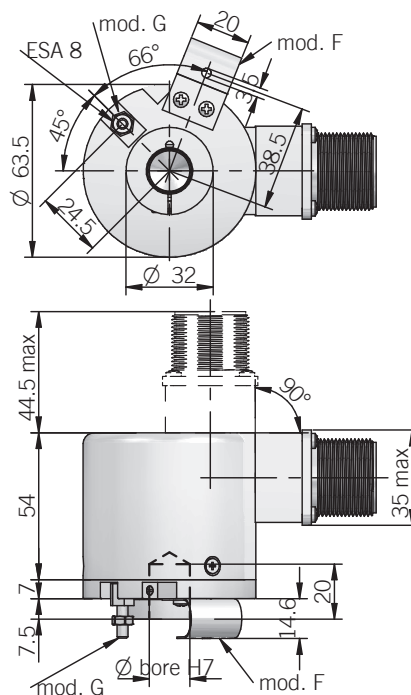
anti-rotation pin is included in model G, for mounting instruction please refer to product installation notes

Dimensions with metal cover axial output

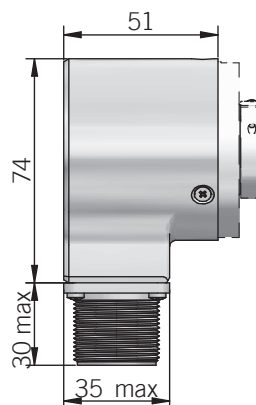


dimensions in mm

EL - ER 63 F / G



Dimensions with metal cover radial output



ELECTRICAL SPECIFICATIONS

Resolution	from 1 to 2500 ppr (58 G) from 1 to 24000 ppr (58 F - 63 F / G)
Power supply	5 = 4,5 ... 5,5 V DC 5/28 = 4,75 ... 29,4 V DC 8/24 = 7,6 ... 25,2 V DC (reverse polarity protection)
Power draw without load	800 mW
Max load current	N / C / P / PC = 50 mA / channel L / RS = 20 mA / channel
Output type*	NPN / NPN open collector / push-pull / line driver
Max output frequency	250 kHz up to 6000 ppr 500 kHz from 7200 ppr
Counting direction	A leads B clockwise (shaft view)
Electromagnetic compatibility	IEC 61000-6-2 IEC 61000-6-4

*output levels according to power supply, for further details please see under Technical basics section

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

ER SERIES RESOLUTIONS

100 - 120 - 128 - 150 - 200 - 240 - 250 - 256 - 300 - **360** - 400 - 480 - **500** - **512** - **600** - 625 - **720** - 750 - 800 - 900 - **1000** - **1024** - 1200 - 1250 - 1440 - 1500 - 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

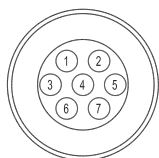
MECHANICAL SPECIFICATIONS

Bore diameter	ø 8 / 10 / 12 / 14 / 15 mm
Enclosure rating	X = IP 54 (IEC 60529) S = IP 64 (IEC 60529)
Max rotation speed	3000 rpm
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Moment of inertia	$4 \times 10^{-6} \text{ kgm}^2$
Starting torque (at +20°C / +68°F)	< 0,02 Nm (IP 54) < 0,06 Nm (IP 66)
Body material	EN-AW 2011 aluminum
Shaft material	1.4305 / AISI 303 stainless steel
Housing material	PA66 glass fiber reinforced / painted aluminum
Bearings	2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature	-10° ... +60°C (+14° ... +140°F) EL series -20° ... +70°C (-4° ... +158°F) ER series
Storage temperature	-25° ... +70°C (-13° ... +158°F)
Fixing torque for collar clamping	1,5 Nm recommended
Weight	350 g (12,35 oz)

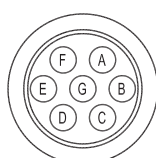
CONNECTIONS

Function	Cable output	Cable output	7 pin J output	7 pin J output	7 pin M output	7 pin M output	10 pin J output	10 pin M output	5 pin M12 output	8 pin M12 output	12 pin H output	5 pin C output	8 pin C output
	N / C / P / PC	Line driver	N / C / P / PC	Line Driver no Zero	N / C / P / PC	Line Driver no Zero	Line Driver with Zero	Line Driver with Zero	N / C / P / PC	Line Driver	CCW	N / C / P / PC	Line Driver
+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
Ch. A	green	green	3	1	C	A	1	A	3	6	5	2	1
Ch. A-	/	brown	/	3	/	C	7	G	/	5	6	/	2
Ch. B	yellow	yellow	5	2	E	B	2	B	1	4	8	4	3
Ch. B-	/	orange	/	5	/	E	8	H	/	3	1	/	4
Ch. Z	blue	blue	4	/	D	/	3	C	5	2	3	3	5
Ch. Z-	/	white	/	/	/	/	9	I	/	8	4	/	6
≡	shield	shield	7	7	G	G	10	J	housing	housing	9	/	/

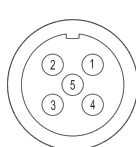
J connector (7 pin)
JIS-C-5432 Size 16
solder side view FV



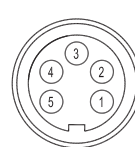
M connector (7 pin)
Amphenol MS3102-E-16-S
solder side view FV



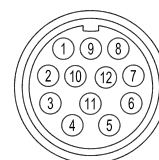
M12 connector (5 pin)
M12 A coded
solder side view FV



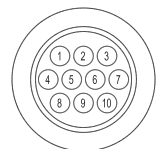
C connector (5 pin)
IEC 60130-9
solder side view FV



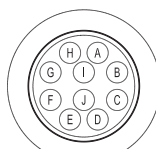
H connector (12 pin) - M23 CCW
Hummel 7.410.000000 -
7.002.912.603
solder side view FV



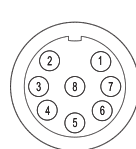
J connector (10 pin)
JIS-C-5432 Size 16
solder side view FV



M connector (10 pin)
Amphenol MS3102-E-18-1
solder side view FV



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



C connector (8 pin)
IEC 60130-9
solder side view FV

