

### MAIN FEATURES

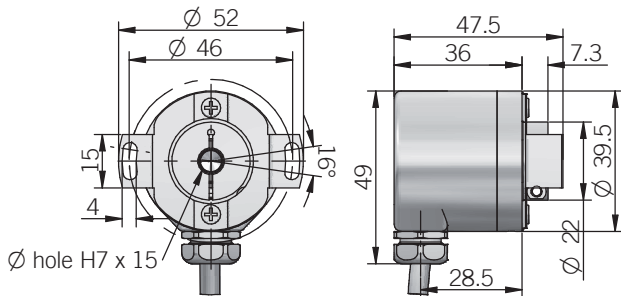
Miniaturized encoder series for general factory automation applications, small AC motors and gearmotors.

- 3 channel encoder (A / B / Z) up to 14400 ppr
- Power supply up to +30 V DC with several electrical interfaces available
- Up to 500 kHz output frequency
- Cable output, connector available on cable end
- Metal cover for high IP enclosure rating
- Blind hollow shaft diameter up to 10 mm
- Mounting by stator coupling or torque pin

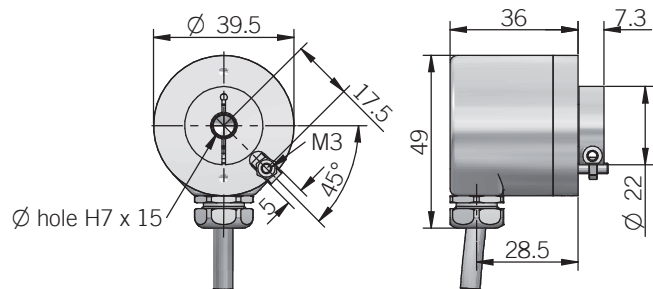


ORDERING CODE	ER	38F	500	S	5/30	P	10	X	X	PR	.XXX
<p><b>SERIES</b> incremental encoder series <b>EM</b> incremental encoder series <b>ER</b></p> <p><b>MODEL</b> blind hollow shaft with stator coupling <b>38F</b> blind hollow shaft with torque pin <b>38G</b></p> <p><b>RESOLUTION</b> ppr from <b>1 ... 14400</b> refer to the available pulses list</p> <p><b>ZERO PULSE</b> without zero pulse <b>S</b> with zero pulse <b>Z</b></p> <p><b>POWER SUPPLY</b> (with L electrical interface) 5 V DC <b>5</b> 5 ... 30 V DC <b>5/30</b></p> <p><b>ELECTRICAL INTERFACE</b> NPN open collector <b>C</b> push-pull <b>P</b> line driver <b>L</b> power supply 5/30V - output RS-422 <b>RS</b></p> <p><b>BORE DIAMETER</b> mm <b>6</b> (1/4") mm <b>6,35</b> mm <b>8</b> mm <b>10</b></p> <p><b>ENCLOSURE RATING</b> IP 65 <b>X</b></p> <p><b>OPTION</b> to be reported <b>X</b></p> <p><b>OUTPUT TYPE</b> radial cable (standard length 0,5 m) <b>PR</b> preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after OUTPUT TYPE (eg. PR5)</p> <p><b>VARIANT</b> custom version <b>XXX</b></p>											

38 F



38 G



dimensions in mm

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

## ELECTRICAL SPECIFICATIONS

<b>Sensing principle</b>	magnetic Asic (EM) / reflective OptoAsic (ER)
<b>Resolution</b>	from 1 to 14400 ppr
<b>Power supply<sup>1</sup></b>	5 = 4,5 ... 5,5 V DC 5/30 = 4,5 ... 30 V DC (reverse polarity protection)
<b>Power draw without load</b>	5 = 200 mW typical 5/30 = 800 mW typical
<b>Max load current</b>	C / P = 50 mA / channel L / RS = 20 mA / channel
<b>Electrical interface<sup>2</sup></b>	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272) line driver RS-422 (AELT-5000 or equivalent)
<b>Max output frequency</b>	250 kHz up to 3600 ppr / 500 kHz from 4000 ppr
<b>Counting direction</b>	A leads B clockwise (shaft view)
<b>Startup time</b>	150 ms
<b>Electromagnetic compatibility</b>	according to 2014/30/EU directive
<b>RoHS</b>	according to 2015/863/EU directive
<b>UL / CSA</b>	certificate n. E212495

## CONNECTIONS

Function	Cable C / P	Cable L / RS
+V DC	red	red
0 V	black	black
A+	green	green
A-	/	brown or grey
B+	yellow	yellow
B-	/	orange
Z+	blue	blue
Z-	/	white
⊥	shield	shield

## MECHANICAL SPECIFICATIONS

<b>Bore diameter</b>	∅ 6* / 8* / 10 mm * with supplied shaft adapter
<b>Enclosure rating</b>	IP 65 (IEC 60529)
<b>Max rotation speed</b>	6000 rpm
<b>Max shaft load<sup>3</sup></b>	5 N axial / radial
<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Vibration</b>	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
<b>Moment of inertia</b>	0,8 x 10 <sup>-6</sup> kgm <sup>2</sup> (19 x 10 <sup>-6</sup> lbft <sup>2</sup> )
<b>Starting torque (at +20°C / +68°F)</b>	< 0,01 Nm (1,42 Ozin)
<b>Bearing stage material</b>	EN-AW 2011 aluminum
<b>Shaft material</b>	1.4305 / AISI 303 stainless steel
<b>Housing material</b>	painted aluminum
<b>Bearings</b>	n.2 ball bearings
<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Operating temperature<sup>4,5</sup></b>	-25° ... +85°C (-13° ... +185°F)
<b>Storage temperature<sup>5</sup></b>	-25° ... +85°C (-13° ... +185°F)
<b>Weight</b>	150 g (5,29 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

## EM SERIES RESOLUTIONS

1 - 2 - 4 - 5 - 6 - 10 - 15 - 16 - 20 - 30 - 32 - 40 - 50 - 60 - 70 - 80 - 90

## 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 - 10000 - 12000 - 14400

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