

## EAR 58 F - 63 F / G BIT PARALLEL - SSI

## BLIND HOLLOW SHAFT SINGLETURN ABSOLUTE ENCODER

## MAIN FEATURES

Industry standard singleturn absolute encoder for factory automation applications.

- · Optical sensor technology (propietary OptoASIC)
- · Resolution up to 25 bit
- · Power supply up to +30 VDC with Bit Parallel or SSI as electrical interface
- · Cable or connector output
- · Blind hollow shaft up to 15 mm
- · Mounting by stator coupling, torque stop slot or torque pin













ORDERING CODE BIT PARALLEL	EAR	58F	12	G	8/30	P	P	X	15	X	MA	R	.162	+XXX
singleturn absolute	SERIES appender FAR													
Singleturn absolute		MODEL												
blind hollow shaft v	vith stator coupli	ng 58F												
blind hollow shaft w blind hollow sh	rith torque stop s raft with torque p	lot 63F oin 63G												
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						ŗ	oositive P	OPTIONS						
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					latab /	reset wit	th external	input ZE						
			(with	binary cod	le) strobe /	reset with reset with	external i ı external i	nput SZE						
								BORE D	IAMETER					
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										IP 67 S				
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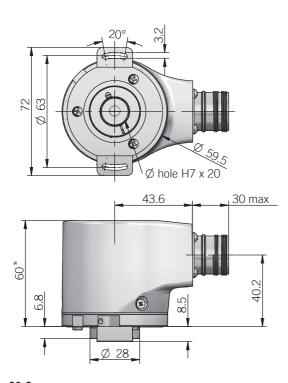


VARIANT custom version XXX

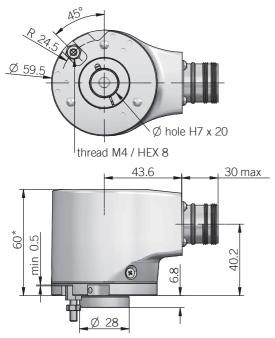
SERIES Singleturn absolute encoder EAR   58F   13   G   8/30   S   X   2048   RS   15   X   HA   R   162   +XXX    SERIES   Singleturn absolute encoder EAR   MODEL																
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1985-22**0** (Eltra

58 F



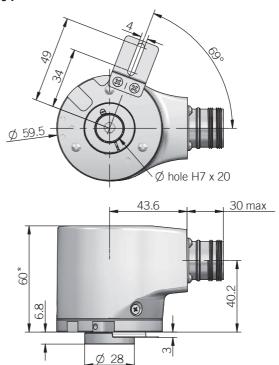
## 63 G



torque pin is included

\* with option ZP +1,5 mm recommended mating shaft tolerance g6 dimensions in mm





for torque pin please refer to Accessories





ARALLEL CONNECTION	DNS			
Function	Binary / Gray	Cable PD	Cable PE	19 pin MA
bit 1 (LSB)	B°/G°	green	green	A
bit 2	B1/ G1	yellow	yellow	В
bit 3	B <sup>2</sup> / G <sup>2</sup>	blue	blue	С
bit 4	B <sup>3</sup> /G <sup>3</sup>	brown	brown	D
bit 5	B <sup>4</sup> / G <sup>4</sup>	orange or pink	orange or pink	E
bit 6	B⁵/ G⁵	white	white	F
bit 7	B <sup>6</sup> / G <sup>6</sup>	grey	grey	G
bit 8	B <sup>7</sup> / G <sup>7</sup>	purple	purple	Н
bit 9	B <sup>8</sup> /G <sup>8</sup>	grey / pink	grey / pink	J
bit 10	B <sup>9</sup> /G <sup>9</sup>	white / green	white / green	K
bit 11	B <sup>10</sup> / G <sup>10</sup>	brown / green	brown / green	L
bit 12	B11/G11	white / yellow	white / yellow	M
bit 13	B <sup>12</sup> / G <sup>12</sup>	yellow / brown	yellow / brown	N
STROBE	/	/	green / blue	Р
LATCH	/	/	yellow / grey	R
0 V	/	black	black	T
U / D	/	red / blue	red / blue	U
RESET	/	/	pink / green	/
+ V DC	/	red	red	٧
÷	/	shield	shield	S

SSI CONNECTIONS						
Function	Cable PC	7 pin MC	10 pin MD	12 pin HA	12 pin HA	8 pin M12
+ V DC	red	G	G	8	8	8
0 V	black	F	F	1	1	5
DATA +	green	С	С	2	2	3
DATA -	brown	D	D	10	10	2
CLOCK +	yellow	A	A	3	3	4
CLOCK -	orange or pink	В	В	11	11	6
A+	grey	/	/	/	6	/
A-	blue	/	/	/	7	/
B+	purple	/	/	/	9	/
B-	white / green	/	/	/	12	/
U/D	red / blue	E	E	5	5	7
RESET	white	/	Н	4	4	1
÷	shield	housing	housing	9	housing	housing

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



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



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



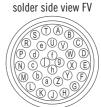
HA connector (12 pin) M23 CCW Hummel 7.410.000000 - 7.002.912.603 solder side view FV



MA connector (19 pin) Amphenol 62IN 12E 14-19 P solder side view FV



ME connector (32 pin) Glenair IPT 02 A 18-32 P F6 solder side view EV





ELECTRICAL SPECIFICA	TIONS			
Resolution	P = from 90 ppr to 13 bit S = from 360 ppr to 25 bit			
Power supply <sup>1</sup>	7,6 30 V DC (reverse polarity protection)			
Power draw without load	< 1 W			
Max load current	20 mA / channel			
Absolute electrical interface <sup>2</sup>	P = push pull (iC-DL)			
Incremental electrical interface <sup>2</sup>	$ \begin{array}{l} L = HTL \ diff. \ (\text{AEIC-7272, active short circuit protection}) \\ P = Push-Pull \ (\text{AEIC-7272, active short circuit protection}) \\ RS = RS-422 \ (\text{AELT-5000 or similar}) \end{array} $			
Max incremental output frequency	128 kHz			
Auxiliary inputs (U/D - RESET - LATCH)	active high (+V DC) connect to 0 V if not used / RESET - LATCH t <sub>min</sub> 150 ms			
Max frequency	50 kHz LSB (Bit Parallel) clock input: 100 kHz 1 MHz (SSI)			
Code type	binary or gray			
Logic	SSI = positive Bit parallel = positive or negative			
SSI monostable time (Tm)	20 µs			
SSI pause time (Tp)	> 35 µs			
SSI frame	left aligned format (MSB LSB) up to 13 bit = length 13 bit from 14 to 21 bit = length 21 bit from 22 to 25 bit = length 25 bit			
SSI status and parity bit	on request			
Counting direction	decreasing clockwise (shaft view)			
Start-up time	700 ms			
Accuracy	± 250 arc-sec			
Electromagnetic compatibility	according to 2014/30/EU directive			
RoHS	according to 2011/65/EU directive			
UL / CSA	certificate n. E212495			

SSI SCHEMATICS		
ENCODER	7	RECEIVER (suggested)
120	CLOCK +  CLOCK -  DATA +  DATA -	+5V DC Fail-safe 10 120 Fail-safe 0 V

MECHANICAL SPECIFICA	ATIONS
Bore diameter	ø 14 / 15 mm ø 6* / 8* / 9,52 (3/8")* / 10* / 11* / 12* * with optional shaft adapter, please refer to Accessories
Enclosure rating IEC 60529	X = IP 65 shaft side / IP67 cover side S = IP 67
Max rotation speed	see table
Max shaft load <sup>3</sup>	200 N axial / 60 N radial
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 2000 Hz (IEC 60068-2-6)
Moment of inertia	5 x 10 <sup>-6</sup> kgm² (119 x 10 <sup>-6</sup> lbft²)
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 <sup>9</sup> revolutions
Operating temperature Bit parallel <sup>4, 5</sup>	-20° +85°C (-4 +185°F)
Operating temperature SSI <sup>4,5</sup>	-40° +85°C (-40° +185°F) -20° +85°C (-4° +185°F) with cable output -25° +85°C (-13° +185°F) with M12 connector
Storage temperature <sup>5</sup>	-20° +85°C (-4° +185°F)
Weight	approx 300 g (10,58 oz)

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

<sup>&</sup>lt;sup>5</sup> condensation not allowed

ROTATION SPEED DERATING TABLE								
	Temperature °C (°F)	Max speed (rpm)	Max continuous speed (rpm)					
IP65	up to +70 (+158)	9000	6000					
	+70 85 (+158 185)	6000	3000					
IP67	up to +70 (+158)	8000	6000					
	+70 +85 (+158 185)	4000	2000					



 $<sup>^{\</sup>rm 2}$  for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

<sup>&</sup>lt;sup>3</sup> maximum load for static usage

<sup>&</sup>lt;sup>4</sup> measured on the transducer flange