

## MODEL 758 - INCREMENTAL SHAFT ENCODER



Ø58 mm

### FEATURES

Standard Size 58 mounting (58 mm diameter)  
 Up to 30,000 CPR  
 80 lb Max. axial and radial shaft loading  
 High temperature option (100° C)  
 IP67 sealing available

The Model 758 Size 58 Accu-Coder™ is a heavy duty, extremely rugged, reliable, yet compact European standard size 58 millimeter diameter encoder, designed for harsh factory and plant floor environments. Shaft loading is no problem for the double-shielded ball bearings; their 80 lb load rating ensures a long operating life. With the optional heavy-duty shaft seal, the Model 758 is rated IP67. Two European standard mounting options are available: Clamping Flange (20 Type) or Synchro Flange (26 Type). The Model 758 is the perfect replacement encoder for units requiring the European mount.

### COMMON APPLICATIONS

Motion Control Feedback, Machine & Elevator Controls, Food Processing, Robotics, Material Handling, Conveyors, Textile Machines

### MODEL 758 ORDERING GUIDE

Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.

**758** - **A** - **21** - **S** - **1000** - **R** - **HV** - **1** - **1** - **E** - **R** - **CE**

MODEL	SHAFT SIZE <sup>1</sup>	CYCLES PER REVOLUTION	OUTPUT TYPE	SEALING	CERTIFICATION
758 Model 758	06 6 mm 21 10 mm 07 0.250", 1/4" 20 0.375", 3/8"	1 - 30,000 See <i>CPR Options</i> below for available resolutions Price adder for CPR > 1270	5 - 28V In/Out <sup>5</sup> OC Open Collector PU Pull-Up Resistor PP Push-Pull HV Line Driver <sup>6, 8</sup> 8 - 28V In/Out <sup>6, 7</sup> H5 Line Driver <sup>6, 8</sup> P5 Push-Pull	N No seal 1 IP66 2 IP64 5 IP67	N None CE CE marked <sup>12</sup>
MOUNTING TYPE <sup>1</sup>	OPERATING TEMPERATURE	NUMBER OF CHANNELS <sup>4</sup>	MAXIMUM FREQUENCY	CONNECTOR LOCATION	CONNECTOR TYPE <sup>10</sup>
A Clamping flange (20 Type) B Synchro flange (26 Type)	S 0° to 70° C L -40° to 70° C <sup>2</sup> H 0° to 100° C <sup>3</sup>	A Channel A Channel A leads B Q Quadrature A & B R Quadrature A & B with Index Channel B leads A K Reverse quadrature A & B D Reverse quadrature A & B with Index	1 100 kHz Standard 2 200 kHz ≤ 3000 CPR 5 250 kHz, > 3000 CPR 3 500 kHz, > 6000 CPR <sup>9</sup> 4 1 MHz, > 10,000 CPR <sup>9</sup>	S Side E End	G Gland, 24" cable <sup>11</sup> R 12-pin M23 J 5-pin M12 (12 mm) <sup>8</sup> K 8-pin M12 (12 mm) Z 8-pin M12 (12 mm) optional wiring X 10-pin MS Y 7-pin MS <sup>8</sup>

### MODEL 758 CPR OPTIONS

0001*	0002*	0004*	0005*	0006*	0007*
0008*	0010*	0011*	0012*	0014*	0020
0021*	0024*	0025*	0028*	0030*	0032*
0033*	0034*	0035*	0038*	0040*	0042*
0045*	0050*	0060	0064*	0100	0120
0125	0128*	0144*	0150*	0160*	0192*
0200	0240*	0250	0254*	0256*	0300
0333*	0336*	0360	0400	0500	0512
0600	0625*	0635	0665*	0720	0768*
0800	0889	1000	1024	1200	1204** <sup>a</sup>
1250 <sup>a</sup>	1270 <sup>a</sup>	1440	1500	1800	2000
2048	2400 <sup>a</sup>	2500	2540 <sup>a</sup>	2880 <sup>a</sup>	3000 <sup>a</sup>
3600 <sup>a</sup>	4000 <sup>a</sup>	4096 <sup>a</sup>	5000 <sup>a</sup>	6000 <sup>a</sup>	7200 <sup>a</sup>
7500 <sup>a</sup>	9000 <sup>a</sup>	10,000 <sup>a</sup>	10,240 <sup>a</sup>	12,000 <sup>a</sup>	12,500 <sup>a</sup>
14,400 <sup>a</sup>	15,000 <sup>a</sup>	18,000 <sup>a</sup>	20,000 <sup>a</sup>	20,480 <sup>a</sup>	25,000 <sup>a</sup>
30,000 <sup>a</sup>					

\*Contact Customer Service for High Temperature Option (H).

<sup>a</sup>High Temperature Option (H) limited to 85° C maximum for these CPR options.

New CPR values are periodically added to those listed. Contact Customer Service to determine all currently available CPR values. Special disk resolutions are available upon request. A one-time NRE fee may apply.

### NOTES:

- The shaft on 20 Type mountings includes a 15.58 mm flat. The shaft on 26 Type mountings is provided without a flat.
- Low temperature option not available with resolutions of 3000 CPR or higher.
- 0° to 85° C for certain resolutions, see CPR Options.
- Contact Customer Service for index gating options.
- 24 VDC max for high temperature option.
- H5 and P5 outputs are not available with CE option, or any End Mount MS Connector.
- Standard temperature, 60 to 3000 CPR only. Not available with 2540 CPR.
- Line Driver Outputs not available with 5-pin M12 connector. Available with 7-pin MS connector only without Index Z.
- Standard cable lengths only. For details, please refer to White Paper WP2004: [Noise and Signal Considerations](#) at encoder.com.
- For mating connectors, cables, and cordsets see [Accessories](#) at encoder.com. For Connector Pin Configuration Diagrams, see Technical Information or see [Connector Pin Configuration Diagrams](#) at encoder.com.
- For Non-Standard Cable Lengths add a forward slash (/) plus cable length expressed in feet. Example: SG/6 = 6 feet of cable.
- Please refer to Technical Bulletin [TB100: When to Choose the CE Mark](#) at encoder.com.

## MODEL 758 - INCREMENTAL SHAFT ENCODER

### MODEL 758 SPECIFICATIONS

#### Electrical

Input Voltage.....	4.75 to 28 VDC max for temperatures up to 70° C 4.75 to 24 VDC for temperatures between 70° C to 100° C
Input Current.....	100 mA max with no output load
Input Ripple.....	100 mV peak-to-peak at 0 to 100 kHz
Output Format.....	Incremental – Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the encoder mounting face. See Waveform Diagrams.
Output Types.....	Open Collector – 100 mA max per channel Pull-Up – Open Collector with 2.2K ohm internal resistor, 100 mA max per channel Push-Pull – 20 mA max per channel Line Driver – 20 mA max per channel (Meets RS 422 at 5 VDC supply)
Index.....	Occurs once per revolution. The index for units >3000 CPR is 90° gated to Outputs A and B. See Waveform Diagrams.
Max Frequency.....	Up to 1 MHz
Electrical Protection.....	Reverse voltage and output short circuit protected. NOTE: Sustained reverse voltage may result in permanent damage.
Noise Immunity.....	Tested to BS EN61000-4-2; IEC801-3; BS EN61000-4-4; DDENV 50141; DDENV 50204; BS EN55022 (with European compliance option); BS EN61000-6-2; BS EN50081-2
Symmetry.....	1 to 6000 CPR: 180° (±18°) electrical at 100 kHz output 6001 to 20,480 CPR: 180° (±36°) electrical
Quad Phasing.....	1 to 6000 CPR: 90° (±22.5°) electrical at 100 kHz output 6001 to 20,480 CPR: 90° (±36°)
Min Edge Sep.....	1 to 6000 CPR: 67.5° electrical at 100 kHz output 6001 to 20,480 CPR: 54° electrical >20,480 CPR: 50° electrical
Rise Time.....	Less than 1 microsecond
Accuracy.....	Instrument and Quadrature Error: For 200 to 1999 CPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle. For 2000 to 3000 CPR, 0.01° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 CPR only) within 0.005° mechanical. (Total Optical Encoder Error = Instrument + Quadrature + Interpolation)

#### Mechanical

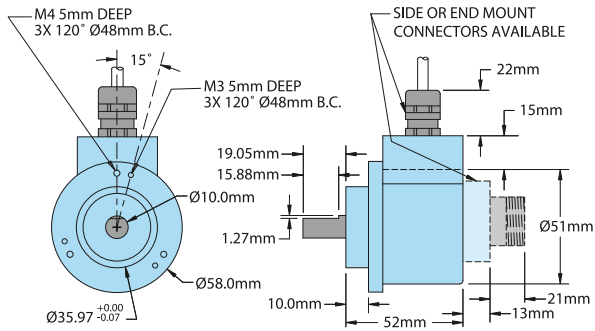
Max Shaft Speed.....	8000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Shaft Rotation.....	Bi-directional
Radial Shaft Load.....	80 lb max. Rated load of 20 to 40 lb for bearing life of $1.5 \times 10^9$ revolutions
Axial Shaft Load.....	80 lb max. Rated load of 20 to 40 lb for bearing life of $1.5 \times 10^9$ revolutions
Starting Torque.....	1.0 oz-in typical with IP64 seal or no seal 3.0 oz-in typical with IP66 shaft seal 7.0 oz-in typical with IP67 shaft seal
Moment of Inertia.....	$5.2 \times 10^{-4}$ oz-in-sec <sup>2</sup>
Housing.....	Black non-corrosive finish
Bearings.....	Precision ABEC ball bearings
Weight.....	11 oz typical

#### Environmental

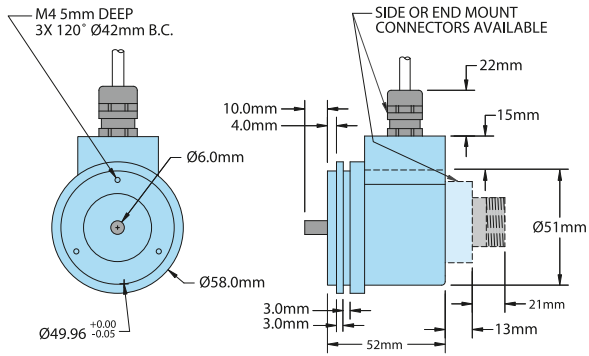
Storage Temp.....	-25° to 85° C
Humidity.....	98% RH non-condensing
Vibration.....	20 g @ 58 to 500 Hz
Shock.....	75 g @ 11 ms duration
Sealing.....	IP50 standard; IP64, IP66 or IP67 optional

## MODEL 758 - INCREMENTAL SHAFT ENCODER

### MODEL 758 CLAMPING FLANGE 20 TYPE (A)



### MODEL 758 SYNCHRO FLANGE 26 TYPE (B)



All dimensions are in inches with a tolerance of  $\pm 0.17^m$  unless otherwise specified.

## MODEL 758 - INCREMENTAL SHAFT ENCODER

### WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable.  
Trim back and insulate unused wires.

Function	Gland Cable Wire Color†	5-pin M12**	8-pin M12++ Standard wiring	8-pin M12++ Optional wiring	10-pin MS	7-pin MS HV, H5	7-pin MS PU, PP, P5, OC	12-pin M23
Com	Black	3	7	1	F	F	F	10
+VDC	Red	1	2	2	D	D	D	12
A	White	4	1	3	A	A	A	5
A'	Brown	--	3	4	H	C	--	6
B	Blue	2	4	5	B	B	B	8
B'	Violet	--	5	6	I	E	--	1
Z	Orange	5	6	7	C	--	C	3
Z'	Yellow	--	8	8	J	--	--	4
Shield	Bare*	--	--	--	--	--	--	--
+VDC Sense	--	--	--	--	--	--	--	2
Com Sense	--	--	--	--	--	--	--	11
Case	Green	--	--	--	G	G	G	9

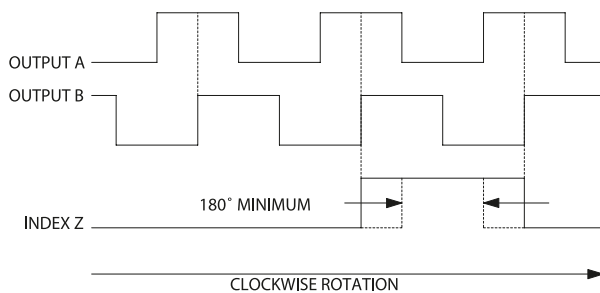
\*CE Option: Cable shield (bare wire) is connected to internal Case.

\*\*CE Option: Use cable cordset with shield connected to M12 connector coupling nut.

†Standard cable is 24 AWG conductors with foil and braid shield.

### WAVEFORM DIAGRAMS

#### Open Collector and Pull-Up

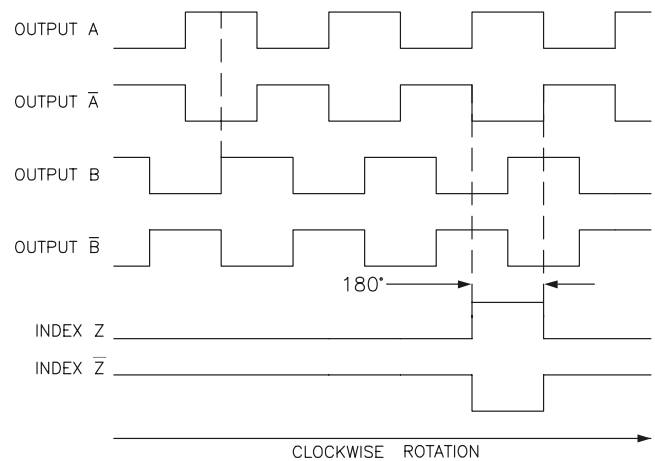


Clockwise rotation as viewed from the mounting face.

NOTE: All degree references are electrical degrees.

Index is positive going.

#### Line Driver and Push-Pull



Clockwise rotation as viewed from the mounting face.

NOTE: All degree references are electrical degrees. Waveform shown with optional complementary signals  $\bar{A}$ ,  $\bar{B}$ ,  $\bar{Z}$  for HV and H5 outputs only.