

# Model 858 58mm Stainless Steel



# Principle Engineering



## Features

- Standard Size 58 Mounting (58 mm Diameter)
- Up to 30,000 PPR
- 36Kg Max. Axial and Radial Shaft Loading
- High Temperature Option (100° C)
- Manufactured in Food Grade Stainless Steel

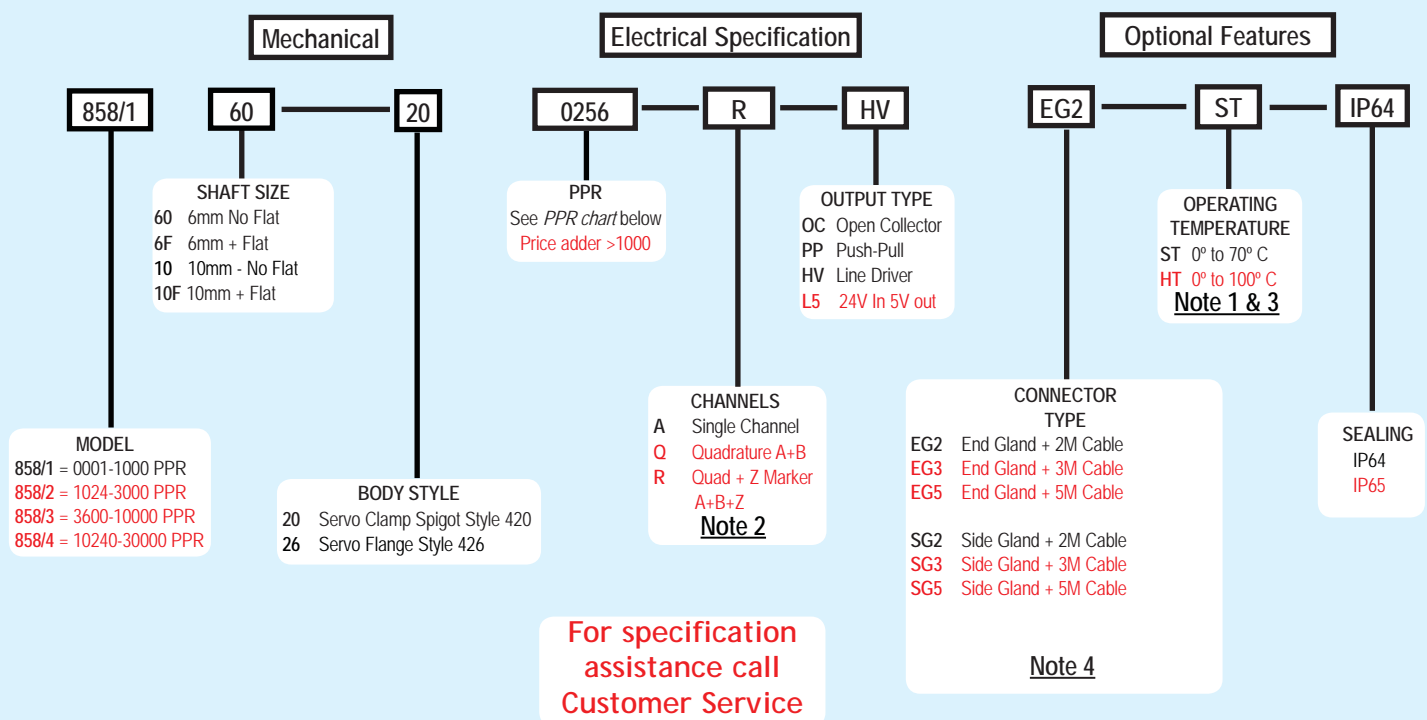
The Model 858 is a heavy duty, Stainless Steel, extremely rugged, reliable, yet compact European standard 58 mm diameter encoder, designed for harsh factory and Food Industry environments. Shaft loading is no problem for the double-shielded ball bearings; their 36Kg load rating ensures a long operating life. If fitted with the optional heavy-duty shaft seal, the Model 858 is rated IP65. Two standard mounting options are available: Clamping Flange (20 type) or Synchro Flange (26 type). The Model 858 is the perfect Encoder for food industry, wash-down, or marine environments.

## Common Applications

Food Processing, Oil, Gas & Chemical Processing, Material Handling, Conveyors, Robotics, Lift Controls, Textile Machines.

## Model 858 Ordering Guide

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



## Model 858 PPR Options - See Note 3

0010*	0020	0025*	0030*	0040*	0060	0100	0120	0125
0128*	0144*	0150*	0160*	0200	0240*	0250	0254*	0256*
0300	0333*	0360	0400	0500	0512	0600	0625*	0635
0720	0800	0900*	1000	1024	1200 <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>	12,500 <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.

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

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

## NOTES:

- 1 0° to 85° for certain resolutions, See PPR options.
- 2 Contact customer service for marker gating options.
- 3 Standard temperature, 50 to 3000 PPR only.
- 4 For non-standard cable lengths - call sales office.

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## Model 858 Specifications

### Electrical

Input Voltage.....	4.75 to 28 Vcc max for temperatures up to 70° C 4.75 to 24 Vcc 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 <i>Waveform Diagrams</i> below.
Output Types.....	Open Collector- 50 mA max per channel Push-Pull- 20 mA max per channel Line Driver- 20 mA max per channel (Meets RS 422 at 5 Vcc supply)
Index.....	Occurs once per revolution. The index for units >3000 PPR is 90° gated to outputs A and B. See <i>Waveform Diagrams</i> below.
Freq Response.....	Up to 1 MHz
Noise Immunity.....	Tested to BS EN61000-4-2; IEC801-3; BS EN61000-4-4; DENV 50141; DENV 50204; BS EN55022 (with European compliance option); BS EN61000-6-2; BS EN50081-2
Symmetry.....	1 to 6000 PPR: 180° (±18°) electrical at 100 kHz output 6001 to 20,480 PPR: 180° (±36°) electrical
Quad Phasing.....	1 to 6000 PPR: 90° (±22.5°) electrical at 100 kHz output 6001 to 20,480 PPR: 90° (±36°)
Min Edge Sep.....	1 to 6000 PPR: 67.5° electrical at 100 kHz output 6001 to 20,480 PPR: 54° electrical >20,480 PPR: 50° electrical
Rise Time.....	Less than 1 microsecond
Accuracy.....	Instrument and Quadrature Error: For 200 to 1999 PPR, 0.017° mechanical (1.0 arc minutes) from one cycle to any other cycle. For 2000 to 3000 PPR, 0.01° mechanical (0.6 arc minutes) from one cycle to any other cycle. Interpolation error (units > 3000 PPR only) within 0.005° mechanical. (Total Optical Encoder Error = Instrument + Quadrature + Interpolation)

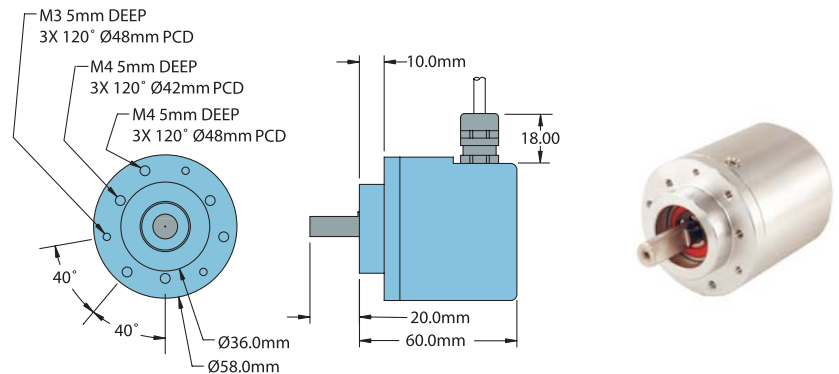
### Mechanical

Max Shaft Speed.....	8000 RPM. Higher shaft speeds may be achievable, contact Customer Service.
Shaft Size.....	6 mm, 10 mm
Shaft Rotation.....	Bi-directional
Radial Shaft Load.....	36 Kg max. Rated load of 10 to 20 Kg for bearing life of $1.5 \times 10^9$ revolutions
Axial Shaft Load.....	36 Kg max. Rated load of 10 to 20 Kg for bearing life of $1.5 \times 10^9$ revolutions
Starting Torque.....	$7.061 \times 10^{-3}$ Nm typical with IP64 seal or no seal $2.118 \times 10^{-2}$ Nm typical with IP66 shaft seal
Max. Acceleration.....	$1 \times 10^5$ rad/sec <sup>2</sup>
Electrical Conn.....	Gland with 2M cable
Housing.....	STAINLESS STEEL
Bearings.....	Precision ABEC ball bearings
Mounting.....	European Standard Clamping Flange (20 Type) and Synchro Flange (26 Type)
Weight.....	750 gms typical

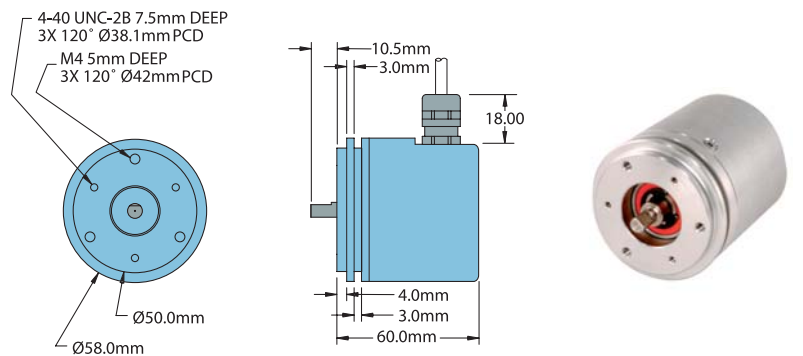
### Environmental

Operating Temp.....	0° to 70° C for standard models 0° to 100° C for high temperature option (0° to 85° C for certain resolutions, see PPR Options.)
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.....	IP64 shaft seal or IP65 shaft seal

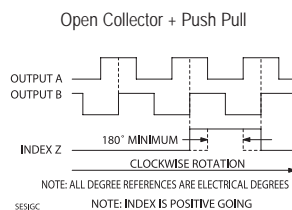
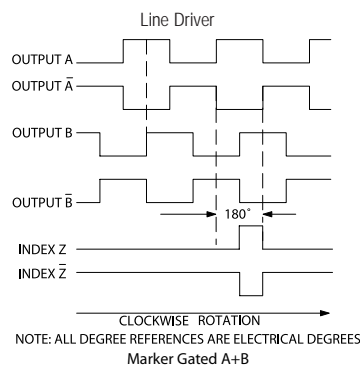
## Model 858 Clamping Flange 20 Type



## Model 858 Synchro Flange 26 Type



## Waveform Diagrams



## Wiring Table

Function	Gland Cable Wire Color
Com	Black
+VCC	White
A	Brown
A'	Yellow
B	Red
B'	Green
Z	Orange
Z'	Blue
Shield	Screen
+VDC Sense	---
Com Sense	---
Case	Green

**CAUTION - Always check wiring colour code against Encoder Label due to changes in specification since September 2006**