

1

Right Angle, Size 20 Shaft Encoders**Product Description**

Provides accurate pulse outputs for use with PLCs and counters.

Features

- 5–28 Vdc input power
- 100 mA current draw
- NPN transistor output, 100 mA sinking capacity
- Quadrature output, two square waves
- Up to 1800 pulses per revolution
- Flange mounting
- 3/8 in (9.5 mm) shaft diameter
- Double shielded ball bearings
- Military style connector

Product Selection

38159

**Right-Angle Shaft Encoder, Size 20**

Description	Catalog Number
100 pulses per revolution	38159100
120 pulses per revolution	38159120
600 pulses per revolution	38159600
1000 pulses per revolution	381591000
1800 pulses per revolution	381591800

Encoder Cables

Description	Catalog Number
10 ft encoder cable	29665300
15 ft encoder cable	29665315
20 ft encoder cable	29665320
25 ft encoder cable	29665325
30 ft encoder cable	29665330
35 ft encoder cable	29665335
40 ft encoder cable	29665340
50 ft encoder cable	29665350
75 ft encoder cable	29665375
100 ft encoder cable	29665400

Technical Data and Specifications**General Specifications**

Description	Specification
Electrical	
Input	
Voltage	5 to 28 Vdc (4.75 min., 28.0 max.)
Current	100 mA max. with no output load
Ripple	–2% peak to peak at 5 Vdc
Output	
Type	Quadrature current sinking transistors with 2.2k ohms pull-up
Sinking current	100 mA max.
Max. voltage at 100 mA	1.3 Vdc
Blocking voltage	40 Vdc max.
Polarity	Positive
Wave shape	Square wave (50-50 duty cycle)
Pulse rate	0 to 100,000 pulses per second
Noise immunity	Tested to BS EN6100-4-2; IEC801-3; BS EN61000-4-4; DDENV 50141; DDENV 50204; BS EN55022 (with European compliance option)
Symmetry	180 electrical degrees \pm 18
Quadrature phasing	90 electrical degrees \pm 36
Minimum edge separation	54 electrical degrees
Rise time	<1 μ S
Pulses per rev.	1 to 1270
Accuracy	Within \pm 0.1°
Environmental	
Operating temperature	32° to 158°F (0° to 70°C)
Vibration	20 Gs at 50 to 500 cps
Shock	75 Gs, 11 ms
Mechanical	
Shaft speed	8000 RPM max.
Shaft rotation	CW or CCW
Bearings	Double shielded ball bearings
Starting torque	1.0 oz-in typical
Moment of inertia	5.2 x 10 ⁴ ounce in-sec ²
Radial and axial loading	(80 lbs max.) 20–40 lbs for bearing life of 1.5 x 10 ⁹ revolutions
Maximum acceleration	1 x 10 ⁵ radians/second ²
Shaft	0.375 in (9.5 mm) dia.
Housing	Black non-corrosive finish. Sealed against dust, oil, vapor and moisture.
Mounting	Flange mount
Weight	11 oz (312g)
Connector	MS-3102E-14S-6P
Mating connector	MS-3106A-14S-6S with 10 ft (3m) shielded cable and termination for electronic controls (Part No. 29665-300) Connector, clamp and bushing only (Part No. 29729-300)

1.10

Counters, Panel Meters, Tachometers and Timers

Accessories and Encoders

1

Dimensions

Approximate Dimensions in Inches (mm)

Right-Angle Shaft Encoder

