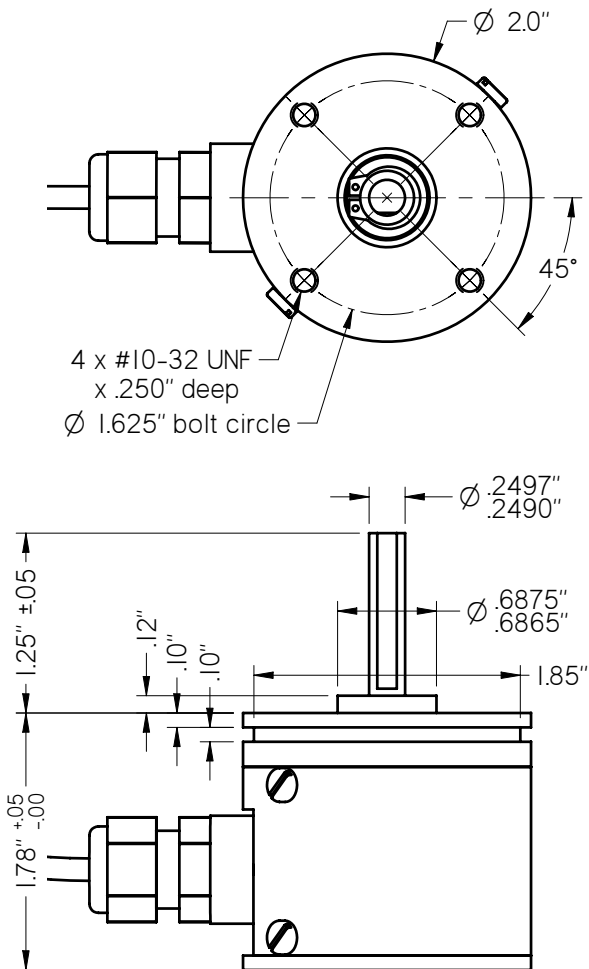


**FEATURES**

- Heavy Duty bearings
- Unbreakable code disk
- Size 20 housing
- Short circuit and ESD protected
- Hollow shaft model available - see Model HS20
- Double ended shaft available
- Up to 1200 pulses per revolution
- Attached cable, or optional 16mm or M12 connector
- Programmable model available - see Model R20-P
- M187 option: special mounting and shaft configuration

**DIMENSIONS**

(shown with attached cable, 1/4" shaft)



**SPECIFICATIONS**

**Mechanical**

**Maximum Speed:** 6,000 rpm  
**Shaft Loading:**  
 — Radial: 40 lbs. / 18.1 kg  
 — Axial: 30 lbs. / 13.6 kg  
*Note: a flexible shaft coupling is recommended*  
**Bearing Life:** 32 x 1,000,000/rpm = hours  
**Materials:**  
 — Case: Aluminum, anodized  
 — Shaft: 303 Stainless steel  
**Weight:** 10 oz. (285 grams)

**Electrical Connections**

**Single Ended Outputs:**

Optional 6-pin	Optional M12 4-pin	Function	Wire Color
1	3	Common	Black
2	1	+vdc	Red
3	-	Output Z	Brown
4	4	Output A	White
5	2	Output B	Green
6	-	not used	-

6-pin connector is Amphenol T3402000 or equivalent  
 M12 4-pin is Turck F54.4/18.25 or equivalent

**Differential Line Driver Outputs:**

Optional 8-Pin Connector	Function	Wire Color
1	Output +A	White
2	Output +B	Green
3	Output +Z	Yellow
4	Supply voltage	Red
5	Common	Black
6	Output -A	Blue
7	Output -B	Brown
8	Output -Z	Orange

8-pin connector is Amphenol T3506000 or equivalent

Standard cable length is 10 ft / 3 meters.  
 Other lengths are available.

**Electrical**

**Supply Voltages:** (specify when ordering)  
 5 VDC or 8-30 VDC  
**Current:** 50 mA max (no load)  
 100 mA max (line driver)  
**Pulse Rate:** 0 - 30 kHz  
**Pulses per Revolution:** (specify when ordering)  
 1 to 1200

**Operating Temperature:** 0° to 70° C

**Output Circuit:** (specify when ordering)  
 Output voltage level is approximately the same as the input voltage level.

Single Ended:

- 7273 open collector (30 VDC max, 50 mA max)
- 7272 Push-Pull (50 mA max source or sink)

Differential Line Driver:

- 7272 differential line driver (also with optional 5vdc output level)

**Output Waveshape:**

Square wave outputs A and B are 50/50 duty cycle nominal. Output Z (index output) is approximately the width of one cycle on outputs A or B. Output A leads B by 90° for clockwise rotation when viewed from shaft end.  
 — Pulse symmetry: 180° ± 30%  
 — Pulse interval jitter: 30% max  
 — Quadrature: 90° ± 30% max  
 — Phase jitter: 30% max

**Anti-jitter:** (single output models only)  
 Increases the pulse hysteresis to 1/2 of a pulse width, eliminating the effects of mechanical vibration and possible false output pulses. For example a 10 pulse per revolution output has 18° hysteresis (i.e. 360° ÷ 10 × 1/2).

**Accessories**

See our website or contact us for more information about cables, flexible couplings, and cables.

**MODEL NUMBER**

R20	M187
<b>Model Number</b>	
<b>Shaft Diameter:</b> blank for 3/8", A = 5/16", C = 1/4", MB = 8mm	
<b>Output Type:</b> leave blank for single output on A, Q = quadrature outputs on A and B	
<b>Index Output:</b> leave blank for no index, Z = index output	
<b>Pulses Per Revolution:</b> a number from 1 to 1200	
<b>Anti-jitter option:</b> leave blank for no anti-jitter, AJ = anti-jitter option (single output models only)	
<b>Supply Voltage:</b> 5 or 8-30	
<b>Output Circuit:</b> leave blank for 7272 Push/Pull, C = 7273 open collector, D = 7272 line driver, DL = 7272 line driver with 5vdc output level	
<b>Cable/Connector:</b> leave blank for attached cable, S = 16mm connector, S3 = M12 connector	
<b>Modification Number:</b> optional modification or special feature ID. Call or see our website.	
<b>Accessories:</b> leave blank for no accessories. Call or see our website for more information.	

Example: R20CQ-500/5 M187 - 1/4" shaft, quadrature outputs, 500 ppr, 5vdc, push/pull output, attached cable, M187 modification (special shaft, mounting, and cable)

**OVER 35 YEARS OF MATERIAL HANDLING AND INDUSTRIAL EXPERIENCE**

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