



Motion Type:

Rotary

Usage Grade:

Industrial

Output:

Absolute

Max Resolution:

15 Bits



Miniature High-Resolution Absolute Encoder

The model **020** encoder is a miniature single-turn absolute rotary encoder with opto/magnetic electronic technology. This encoder is used in a wide variety of position-sensing applications for the measuring of angles and distances in very small envelopes.

In addition, the encoder features:

- Up to 15-bit resolution, SSI output
- -40C to +85C extended operating temperature available
- Represent either shafted or blind-hollow shaft version
- LED illumination for long life (>100,000 hours)
- Faster and more accurate than any resolver-based system
- 19mm diameter housing
- 3-4mm (0.125") diameter steel solid or blind hollow shaft

SPECIFICATIONS

	Units	Limiting Values	See Note
Mechanical Specifications			
Moment of Inertia	in-oz-s ² (g-cm ²)	5.7 x 10 ⁻⁶ (0.4)	
Starting Torque	in-oz (N x m)	0.07 (5 x 10 ⁻⁴)	
Radial Shaft Load	lb (N)	0.6 (3)	
Axial Shaft Load	lb (N)	0.6 (3)	
Bearing Arrangement		2 pre-loaded bearings	
Bearings		Grease lubricated and sealed	
Measuring Rotational Element		Etched chrome on glass disc, axially combined with actuation magnet	
Non-Operating Slew	RPM	10,000	
Shock 11 (ms)	g (m/s ²)	30 (300)	
Vibration (55-2000Hz)	g (m/s ²)	10 (100)	
Sealing		IP50	2
Acceleration	rad/s ²	3 x 10 ⁶	
Max. Rotational Speed, RPM		2000	
Recommended Coupling	SCD		
Environmental Specifications			
Operating Temperature	°F (°C) °F (°C)	Standard is +32 to +158 (0 to +70) Extended is -40 to +185 (-40 to +85)	
Relative Humidity	%	98	1
Electrical Specifications			
Supply Voltage	VDC	4.75 to 5.25, 5.00 nominal	
Current Consumption	mA	≤ 150	
LED Life	hours	≥ 100,000	
Output Code		Gray code or natural binary	
Output Format		13, 14, or 15 bit SSI	
Output Device		RS485	
Accuracy		+/-150 arc seconds	

Notes

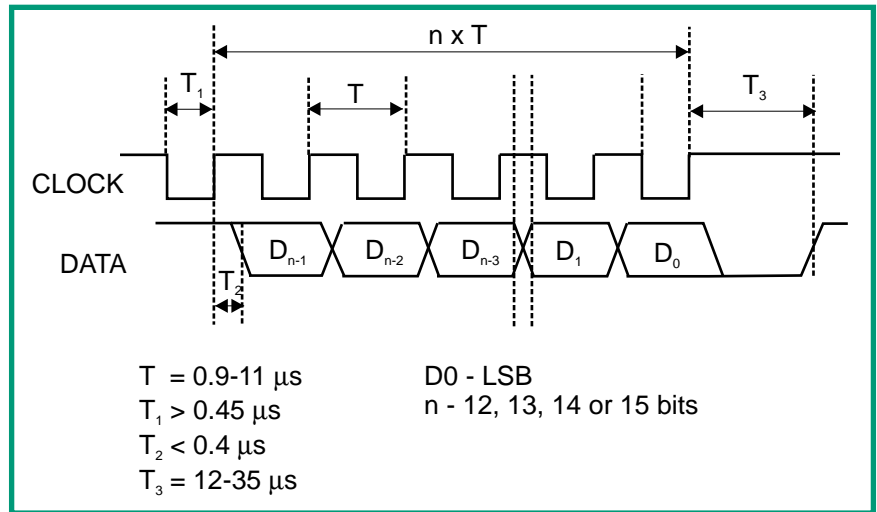
1. Non-condensing
2. Per CEI / IEC 529 - Degrees of protection provided by enclosures (IP Code)

As part of our continuing product improvement program, all specifications are subject to change without notice.

Output Options

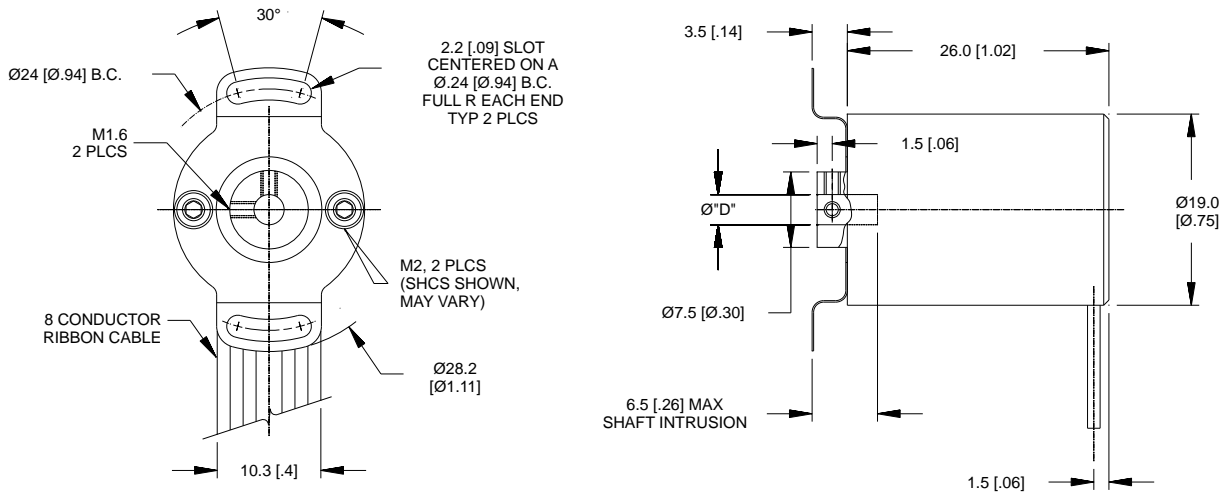
Serial Output - Gray code or Binary

Electrical Signal	Pin	Color
CASE	7	Gray
Clock	2	Orange
/ Clock	3	Yellow
Data	4	Green
/ Data	5	Blue
0V	8	White
+5V	1	Red
n/a	6	Violet



OUTLINE DIMENSIONS

RCM 020 Blind Shaft A



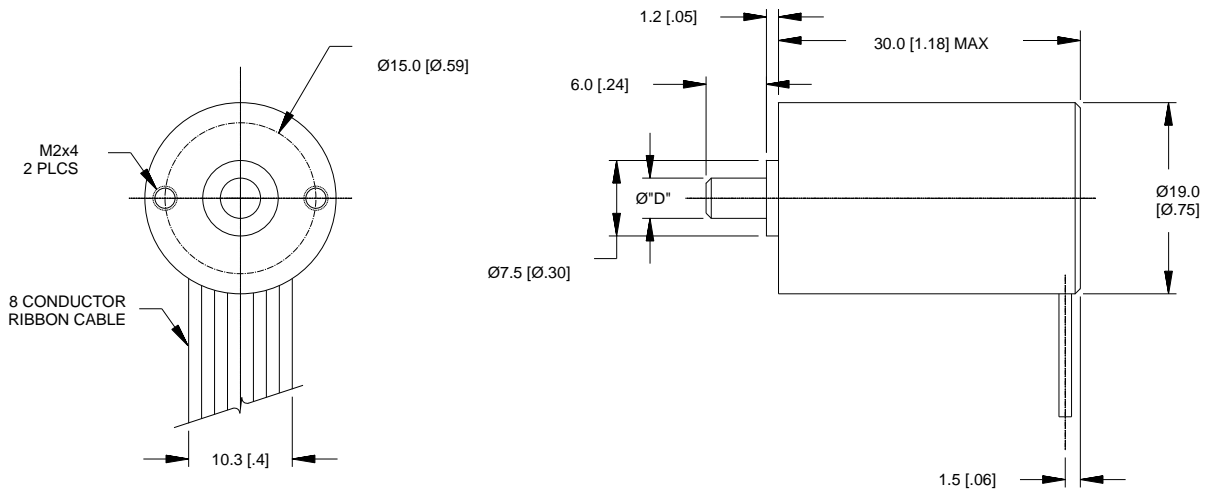
A19B (BASE CODE A)

ø"D" TABLE		
"DIA" CODE	A19S	A19B
03M	ø3mm h6	ø3mm H7
04M	ø4mm h6	N/A
02E	ø0.125" $\begin{matrix} +.0000 \\ -.0003 \end{matrix}$	ø0.125" $\begin{matrix} +.0005 \\ -.0000 \end{matrix}$

ALL DIMENSIONS IN MM [INCHES]

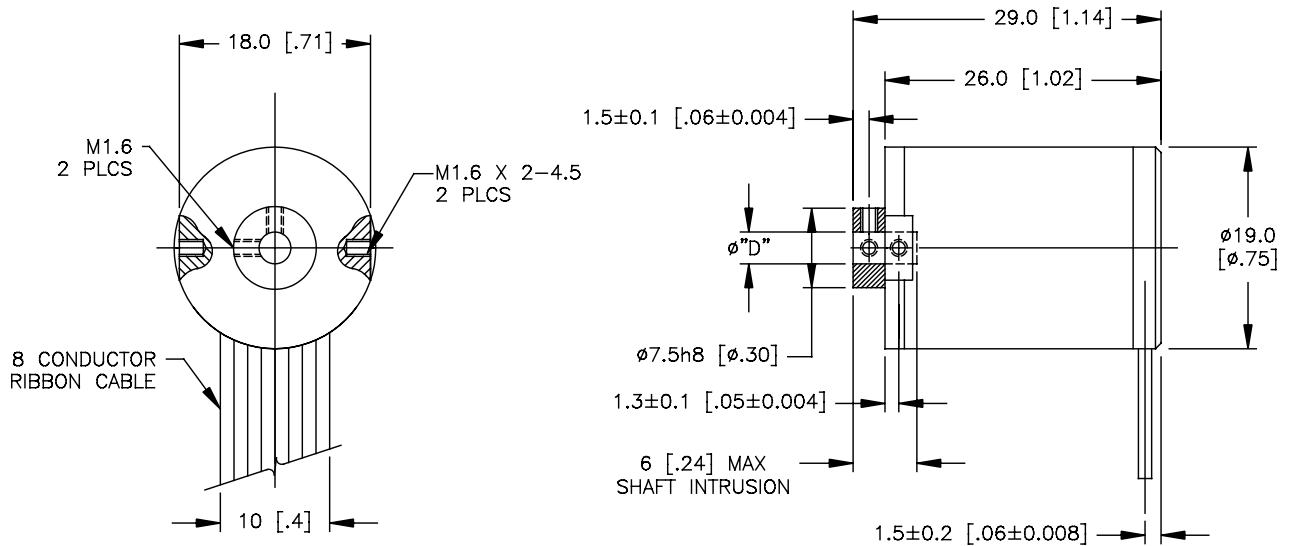
OUTLINE DIMENSIONS

RCM 020 Solid Shaft



"DIA" TABLE		
"DIA" CODE	A19S	A19B
03M	$\varnothing 3\text{mm h6}$	$\varnothing 3\text{mm H7}$
04M	$\varnothing 4\text{mm h6}$	N/A
02E	$\varnothing 0.125^{+0.0000}_{-0.0003}$	$\varnothing 0.125^{+0.0005}_{-0.0000}$

RCM 020 Blind Shaft B



"DIA" TABLE		
"DIA" CODE	A19S	A1 B
03M	$\varnothing 3\text{mm h6}$	$\varnothing 3\text{mm H7}$
04M	$\varnothing 4\text{mm h6}$	N/A
02E	$\varnothing 0.125^{+0.0000}_{-0.0003}$	$\varnothing 0.125^{+0.0005}_{-0.0000}$

ALL DIMENSIONS IN MM [INCHES]