

Direct Replacement Encoder for Select Renco RCH20D and RHS25D Models



Model DR21R Specifications

Electrical

Input Voltage	5 VDC
Input Current	150 mA max with no output load
Output Format	Incremental – Two square waves in quadrature with channel A leading B for clockwise shaft rotation (as viewed from the mounting face), commutation and ABS stepped voltage. See Waveform Diagrams.
Output Types	TTL Line Driver – 20 mA max per channel (Meets RS 422 at 5 VDC supply)
Index	Once per revolution. See Waveform Diagrams.
Max. Frequency	300 KHz
Noise Immunity	Tested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6, BS EN55011
Symmetry	180° ($\pm 18^\circ$) electrical
Quad. Phasing	90° ($\pm 22.5^\circ$) electrical
Min. Edge Sep	67.5° electrical
Accuracy	Within 0.01° mechanical from one cycle to any other cycle, or 0.6 arc minutes.
Commutation	Up to 8 pole
Comm. Accuracy	1° mechanical

Mechanical

Max Shaft Speed..... 6000 RPM
Bore Size..... 0.500" or 8 mm
Bore Tolerance..... -0.0000" / +0.0006"
User Shaft Tolerances
 Radial Runout 0.007" max
 Axial Endplay ±0.030" max
Starting Torque..... 0.50 oz-in
Moment of Inertia..... 3.9×10^{-4} oz-in-sec²
Max Acceleration..... 1×10^5 rad/sec²
Electrical Conn..... 16-pin End Mount Header
Housing..... All Metal Aluminum and Zinc Alloy
Mounting..... 1.182", 2.375" or 3.125" Flex-Mount
Weight..... 3.5 oz typical

Environmental

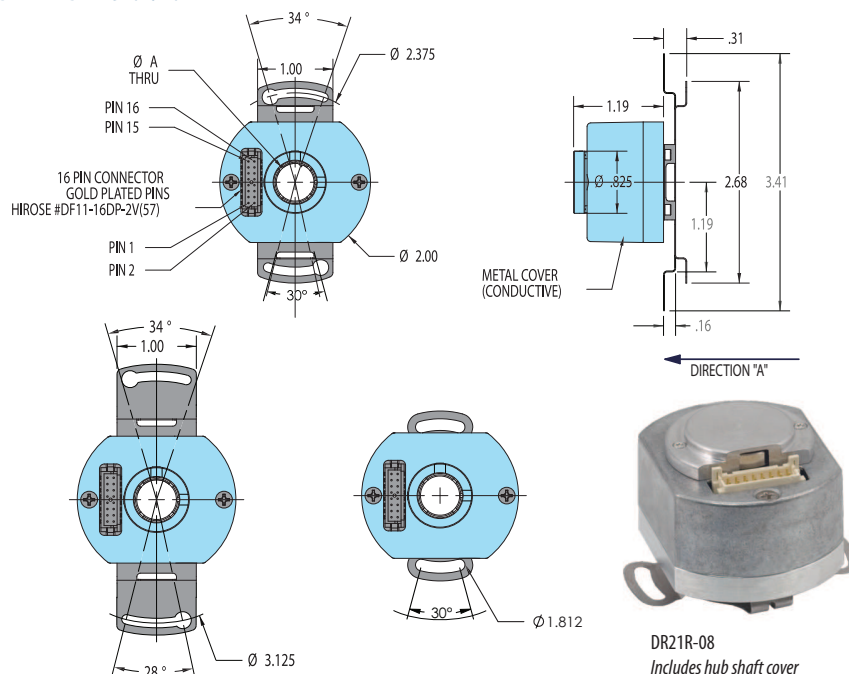
Operating Temp 0° to 100°C
Storage Temp..... -30° to 110° C
Humidity 5% – 90% RH non-condensing
Vibration..... 10 g @ 58 to 500 Hz
Shock..... 50 g @ 11 ms duration
Sealing IP50

DR21R Wiring Table

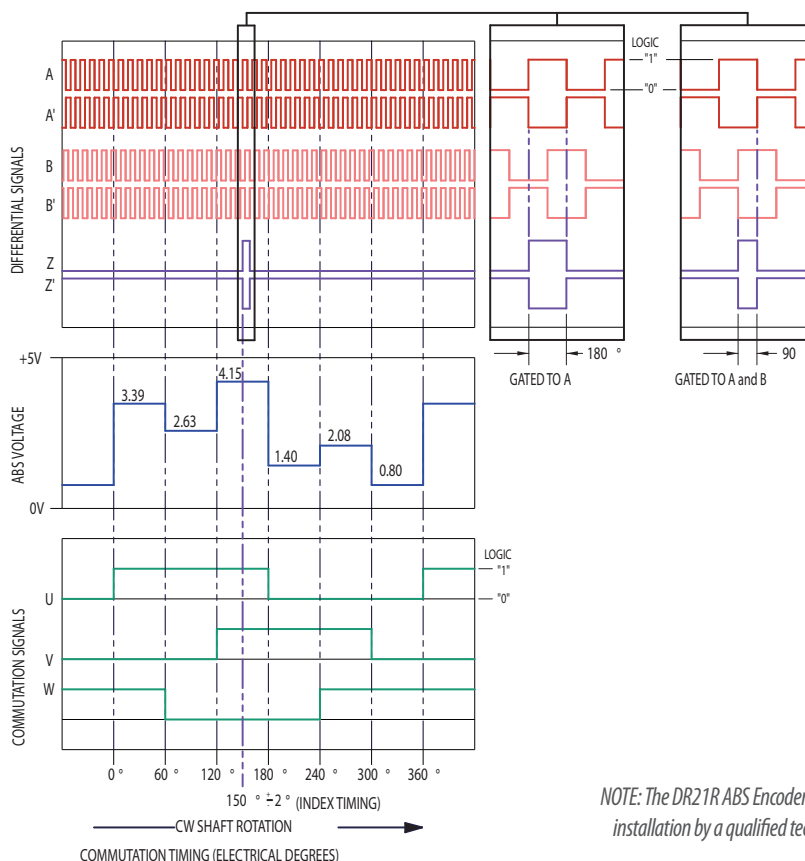
Pin	Function	Mating Cable Wire Color
1	+5 VDC	White
2	U	Violet
3	COM	Black
4	V	Gray
5	A	Brown
6	W	Red/Black
7	A'	Yellow
8	ABS	Yellow/Black
9	B	Red
10	---	N/C
11	B'	Green
12	---	N/C
13	Z (INDEX)	Orange
14	---	N/C
15	Z' (INDEX)	Blue
16*	CASE GROUND	N/C

* A 0.10 μ F capacitor is connected from common (COM) to case ground internal to encoder.

DR21R Dimensions



DR21R Waveform Diagram



NOTE: The DR21R ABS Encoder requires installation by a qualified technician.