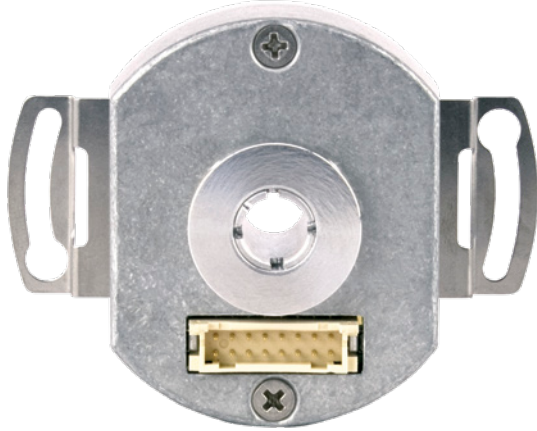


# DR21R



Direct Replacement Encoder for select **Renco RCH20D and RHS25D** models



EPC Model DR21R

The Accu-Coder DR21R is a highly customized, Direct Replacement Encoder with a unique, OEM-specific ABS stepped voltage output channel. DR21R configurations replace select Renco RCH20D and RHS25D models\* originally installed on legacy F, H, W, N and HSM servo motor models. An exact mechanical and electrical cross-reference for these obsolete Renco configurations, the DR21R also incorporates EPC's advanced Opto-ASIC sensing technology, providing superior thermal stability and signal reliability.

*\*These models have been discontinued by the manufacturer, and are increasingly difficult to find and costly to replace.*

## Features:

- Replaces select RCH20D and RHS25D Renco models
- Line Driver output with ABS stepped voltage output
- Quadrature with index
- 5 VDC Input Voltage
- End mount 16-pin header connection
- Operating temperature up to 100°C

Contact Customer Service for pricing. Discounts available for volume orders.

## Ordering Information

RENCO MODEL NUMBER	EPC DIRECT REPLACEMENT	CPR	POLE COUNT	BORE SIZE	MOUNT BC	INDEX GATING	MOTOR SERIES
RCH20D-2000/4-1/2-5/0-LD/VC-7-M6-S	DR21R-01	2000	8	0.500"	3.125"	A	F
RHS25D-P3-2000/4-1/2-5-CA6-LD-MS-CM-S	DR21R-01†	2000	8	0.500"	3.125"	A	F
RCH20D-5000/4-1/2-5/0-LD/VC-1-M6-S	DR21R-02	5000	8	0.500"	3.125"	A & B	F
RCH20D-2000/2-8MM-5/0-LD/VC-1-M6-S	DR21R-03	2000	4	8 mm	2.375"	A & B	H, HSM2
RCH20D-2000/3-8MM-5/0-LD/VC-1-M6-S	DR21R-04	2000	6	8 mm	2.375"	A & B	H, HSM3, HSM4
RCH20D-2000/4-1/2-5/0-LD/VC-1-M6-S	DR21R-05	2000	8	0.500"	2.375"	A & B	H, HSM6, HSM8
RCH20D-5000/3-8MM-5/0-LD/VC-1-M6-S	DR21R-06	5000	6	8 mm	2.375"	A & B	H
RCH20D-2000/3-1/2-5/0-LD/VC-7-M6-S	DR21R-07	2000	6	0.500"	2.375"	A	W
RHS25D-P3-2000/3-1/2-5-CA6-LD-MS-CM-S	DR21R-07†	2000	6	0.500"	2.375"	A	W
RCH20D-2000/2-12MM-5/0-LD/VC-1-M4-S <i>Includes hub shaft cover.</i>	DR21R-08	2000	4	12 mm	1.812"	A & B	N

†Requires 6" Mating Cable, stock #080499-01

**Don't see the exact encoder you need?**

Call (800) 366-5412 and our Technical Sales Department will cross-reference your encoder to the correct EPC model.

# DR21R



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° (±18°) electrical  
 Quad. Phasing .....90° (±22.5°) 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

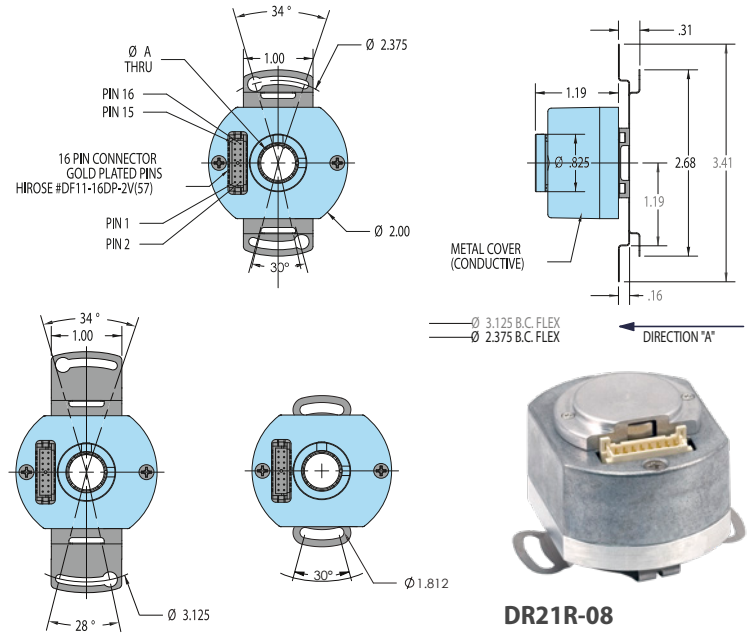
### Mechanical

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 X 10<sup>-4</sup> oz-in-sec<sup>2</sup>  
 Max Acceleration .....1 X 10<sup>3</sup> rad/sec<sup>2</sup>  
 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

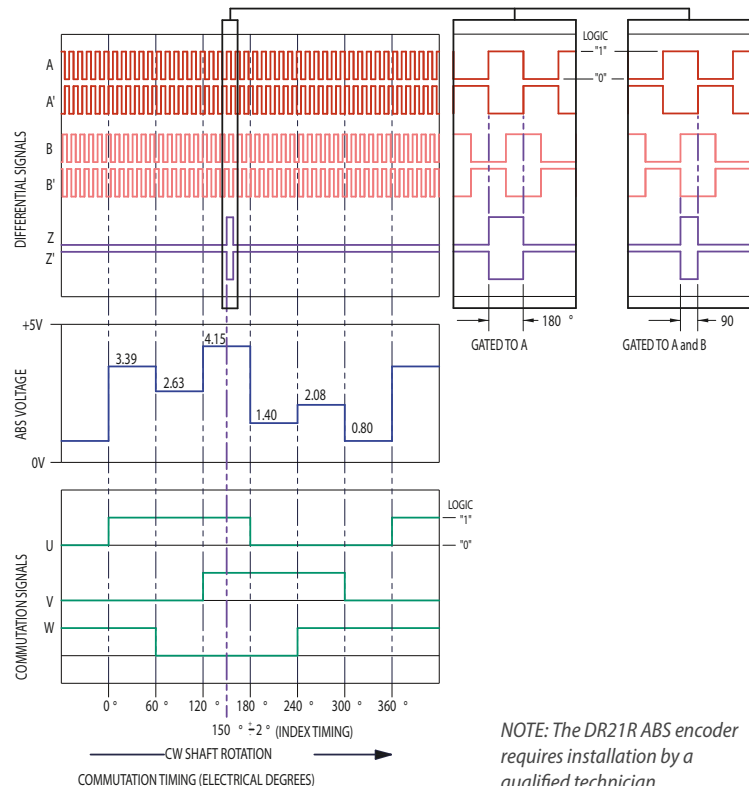
Operating Temp .....0° to 100°C  
 Storage Temp .....-30° to 110° C  
 Humidity .....5% – 90% RH non-condensing  
 Vibration .....10 g @ 58 to 500 Hz  
 Shock .....50 g @ 11 ms duration  
 Sealing .....IP50

## DR21R Dimensions



**DR21R-08**  
Includes hub shaft cover

## DR21R Waveform Diagram



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

## 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 uF capacitor is connected from common (COM) to case ground internal to encoder.