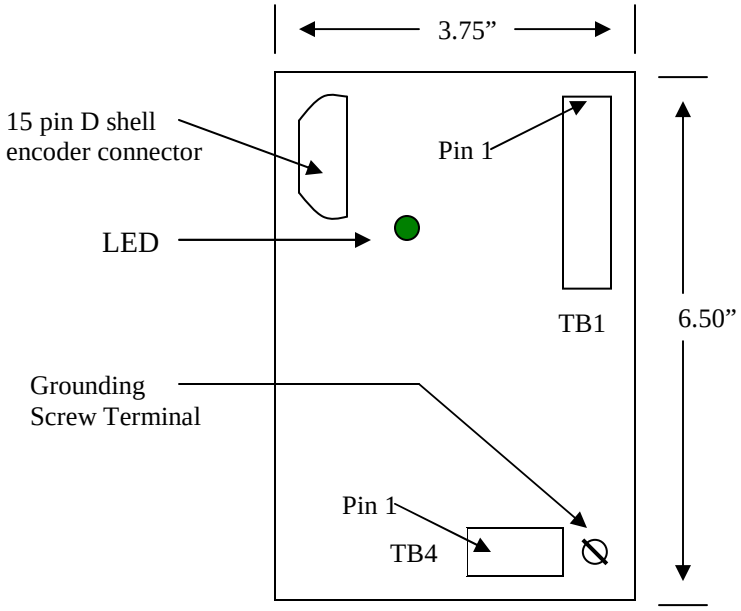
The AMCI RD141 connects to an AMCI resolver and outputs differential A, B, and Z pulses. The RD141 outputs a 9.77 kHz 3V peak (2.15Vrms) reference voltage and is designed to work with resolvers that have a 0.95 transformation ratio.

The number of A and B pulses per revolution of the resolver is fixed at 1024.

An outline drawing of the RD141 is shown below.



Terminal Block TB4
External Power

Pin	Function
1	+24Vdc
2	24Vdc Power Supply Common
3	Shields

A shielded cable is recommended for connecting the +24Vdc power supply to the RD141

NOTE Terminal Blocks TB2 and TB3 are not used and must remain open.

Terminal Block TB1, Resolver Connections

Pin	Function	AMCI Cable Color (Beldin 9873 or 9730)
1	Shields	
2	Shields	
3	S4	Green
4	S2	Black (Green)
5	Shields	
6	S3	Black (White)
7	S1	White
8	Shields	
9	R2	Red
10	R1	Black (Red)

- The color in the parenthesis indicates the colored wire that is paired with the black wire.
- Shield pins 1, 2, 5, and 8 are internally connected together. They are also connected to the RD141's metal housing.
- The resolver can be placed a maximum of 100 ft from the RD141.

15 Pin D shell Connector, Encoder Connections

Pin	Function
1	Encoder A+
2	Encoder A-
3	Encoder B+
4	Encoder B-
5	Encoder Z+
6	5Vdc Power Supply Common
7	No Connection
8	No Connection
9	No Connection
10	Encoder Z-
11	No Connection
12	No Connection
13	No Connection
14	+5Vdc
15	No Connection

Wiring Information

- Both the resolver input signals and the encoder outputs signals are low voltage and low power signals. If you are using A-B guidelines for cabling installation, treat these cables as Category 2 cables. They can be installed in conduit along with other low power cabling such as communication cables and low power ac/dc I/O lines. It cannot be installed in conduit with ac power lines or high power ac/dc I/O lines.
- The shields of the cables must be connected to Earth Ground only at one point in the system.
- If you must splice the transducer cable, it must be done in a grounded junction box. When splicing, treat the shield as a signal-carrying conductor. Do not connect the shield to earth ground at the junction box or transducer. If your transducer cable has individually shielded pairs, then ideally the shields in the cable are also kept isolated from each other in the junction box as well.
- The resolver connections shown above will result in increasing readings when the resolver's shaft is rotated in the Counter Clockwise direction, looking at the shaft. For Clockwise increasing readings, reverse the S2 and S4 wires.
- The Grounding Screw Terminal is connected to all of the connector TB1's shield pins as well as to the RD141's metal housing. If the RD141 is not grounded through its mounting, this terminal must be connected to earth ground.

Power Requirements

- 110mA @ 24Vdc
- 150mA @ 5Vdc

LED Function

- Solid Green: Normal operation

Encoder Output Specifications

- 1024 A & B pulses per revolution of the resolver
- 1 Z pulse per revolution of the resolver (gated, 90° wide, when +A is high and +B is low)
- Differential Output Sinks or Sources a maximum of 40mA
- 3.5Vdc to 4Vdc typical output pulse signal level

Environmental Specifications

- Operating Temperature: 0 to 60° C
- Relative Humidity: 5 to 95% non-condensing

Compatible Resolver

- Transmit Resolver (rotor excited)
- Input Frequency: 1 kHz to 10kHz
- Transformation ratio: 0.95

Revision History

Version 0.0 was released on 2/17/09 and was the initial release of the manual.