
Snap Track Mount Single Resolver Decoder

Model DM2-STRAK-xxxx and DS2-STRAK-xxxx

- **Decoder for single resolver**
- **Short circuit proof resolver interface**
- **Broken resolver cable indication**
- **PNP sourcing, NPN sinking (high or low true logic) or TTL outputs**
- **Short circuit protected outputs and output shorted indicator (only with P & N type of outputs)**

Autotech's Single Resolver Decoder Model DM2-STRAK-xxxx is a snap track mounted single resolver decoder especially designed for OEMs. The unit can be ordered with PNP sourcing, NPN sinking (high or low true logic), or with TTL type of outputs. It operates from 11–28 VDC input power. The decoder provides complimentary quadrature phase outputs.

The unit has built-in diagnostics for broken resolver cable and for shorted outputs (P and N outputs only). Two LED indicators provide positive indication of a properly working unit. The resolver interface is short circuit proof.

Specifications

Input power: 11–28 VDC, 6 W

Operating temperature: –10 to +130 °F

Position transducer: Autotech's RL100 single resolver, such as; RL100, RL101, RL50, RL501, E1R, E7R, E8R, or E9R series.

Maximum cable length between resolver and DM2:
2500 feet

Output format: Factory scale quadrature

Output type:

P: PNP sourcing

Logic True: Transistor ON, 1.7 V drop @ 100 mA

Logic False: Transistor OFF, 0.2 mA leakage @ 50 VDC

N: NPN sinking (LOW TRUE LOGIC)

Logic True: Transistor ON, 1.1 V drop @ 100 mA

Logic False: Collector open, 0.1 mA leakage @ 50 VDC

C: NPN sink transistor (HIGH TRUE LOGIC)

Logic True: Collector open, 0.1 mA leakage @ 50 VDC

Logic False: 1.1 V drop @ 100 MA

T: TTL output, 5 V logic with multiplexing

Logic True: 3.00 mA max, 2 V min

Logic False: 24.0 mA max, 0.8 Vmax

Output data update:

Transparent:

Output data is continuously updated.

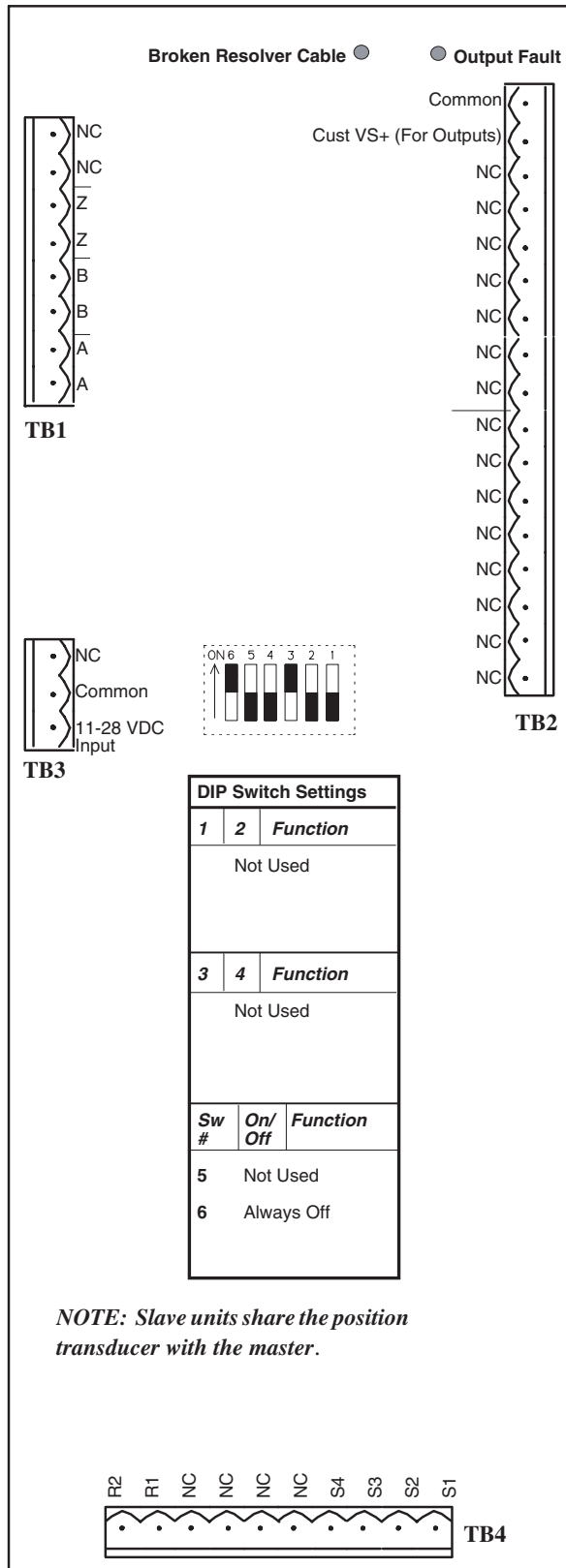
Slave Systems:

Slave units must be used in conjunction with an Autotech Master Unit. They cannot be used as stand-alone units.

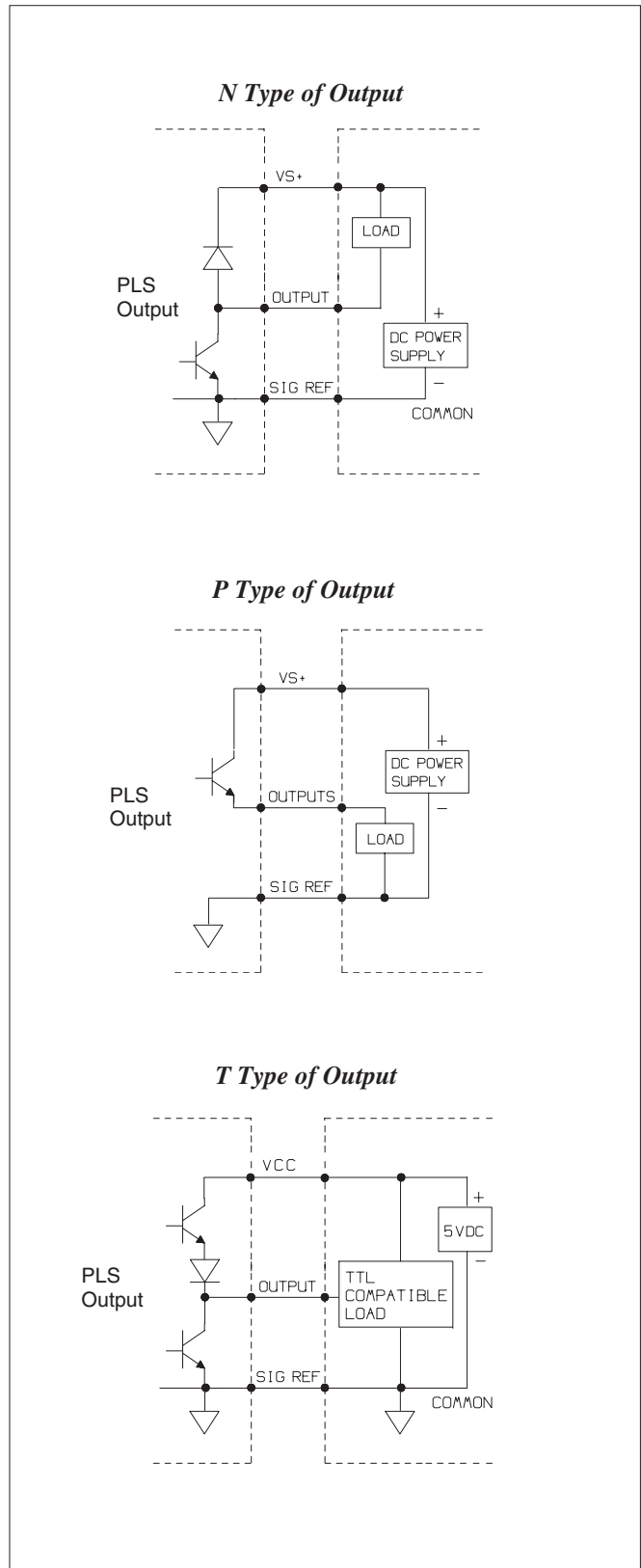
Up to seven slaves may be added to one master unit. The slave shares the position transducer with the master.

Installation and Wiring

Wiring Diagram



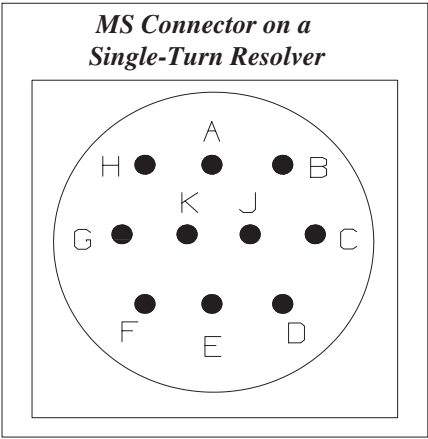
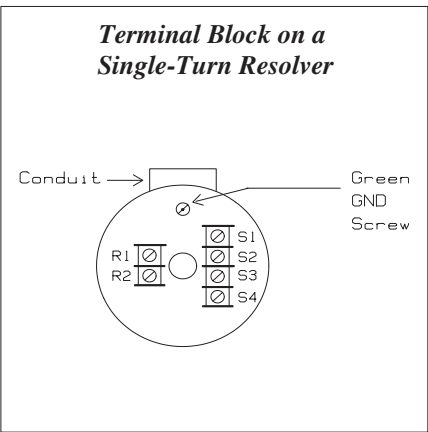
Output Configurations and Load Wiring



Wiring Table for Single-turn Resolver				
SAC-RL100-xxx				
<i>CBL-10T22-xxxx</i> Wire color	<i>Function</i>	<i>Resolver Terminal</i>	<i>MS Connector Pin #</i>	
Black/Green Green	Rotor R1	R1 (RL)	F	
	Rotor R2	R2 (RH)	E	
Black/Yellow Yellow	Stator S1	S1	D	
	Stator S3	S3	C	
Black/Blue Blue	Stator S2	S2	B	
	Stator S4	S4	A	
Shield	Case Ground	GND (Green Screw)	G	

Notes:

1. Black/Green indicates a black wire with green stripes.
2. MS connector: MS3112E-12-10P; Mating connector: MS3116F-12-10S (Autotech part # ECM-10REC-ITT).
3. MS connector is not available with E8R series.



Grounding and Shielding

1. Resolver wiring must be done using twisted pairs in cable with an overall foil shield. The twisted pairs must be wired as per wiring instructions. See the *How to Order* section for suitable cable offered by Autotech.
2. It is recommended that the shielded resolver cable be routed in its own conduit or cable tray.
3. All shielded resolver cable must be kept at a minimum distance of 2 inches from all high voltage or inductive wiring.
4. All shielded resolver cable must be kept at a minimum distance of 12 inches from all motor wiring controlled by AC or DC drives.
5. All ground planes (chassis grounds) in the total system must be held to the same RF potential, by good metallic connections to building frames, conduit or wiring trays.

6. The shield drain wires may be terminated in one of two ways:
 - a) Connect to chassis ground at each end and not connected to signal reference at any point in the system.
 - b) Connect to signal reference at the decoder only. The shield drain should remain unconnected at the resolver end and the shield should not touch earth ground at any point in its run.

NOTE: Resolvers with MS connectors have shield drain wire pre-terminated for method a).

Method a) is recommended for all Autotech products. In certain circumstances, in unusual EMI conditions, method b) may be necessary after consulting factory.

How to Order

1. Decoder

DM2-STRAK-xxxx X Single resolver decoder, snap track mounted

1 **2** **3**

- 1:** where **M** is for Master, substitute an **S** for a Slave unit
- 2:** where **xxxx** is for pulses per turn (up to 1024) (Consult factory for any other scaling)
- 3:** where **X** is:
 - P:** PNP sourcing outputs
 - N:** NPN sinking outputs, low true logic
 - C:** NPN sinking outputs, high true logic
 - T:** TTL outputs, 5 V logic with multiplexing

2. Resolver

Autotech single turn resolver, such as; RL100, RL101, RL50, RL501, E1R, E7R, E8R, or E9R series. See Autotech Catalog for ordering.

SAC-RL100-010 Brushless resolver, single-turn, NEMA 13, 5/8" shaft dia, with wiring terminal block.

SAC-RL100-M11 Above resolver with MS connector

3. Cables

CBL-10T22-x xxx 22AWG, 10 conductor (5 twisted pairs), overall foils shielded cable, for wiring resolver and/or outputs.

→ *Length in feet*

Standards lengths are 010, 020, 050 feet and increments of 50 ft. (Ex. 100, 150, 200, etc.)

→ *Connector*

C: Without connector

M: With 10 pin MS connector (for use with SAC-RL100-M11)

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