



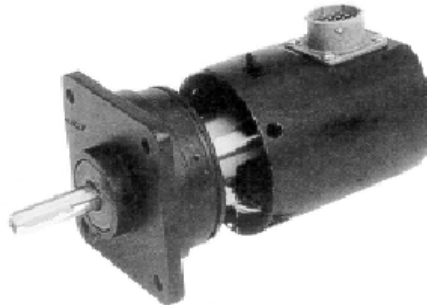
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## SERVICE BULLETIN

Number 06-15

### TROUBLESHOOTING THE DURACODER, DIGISOLVER AND RESOCODER FOR THE ALLEN BRADLEY SLC-500 PLC

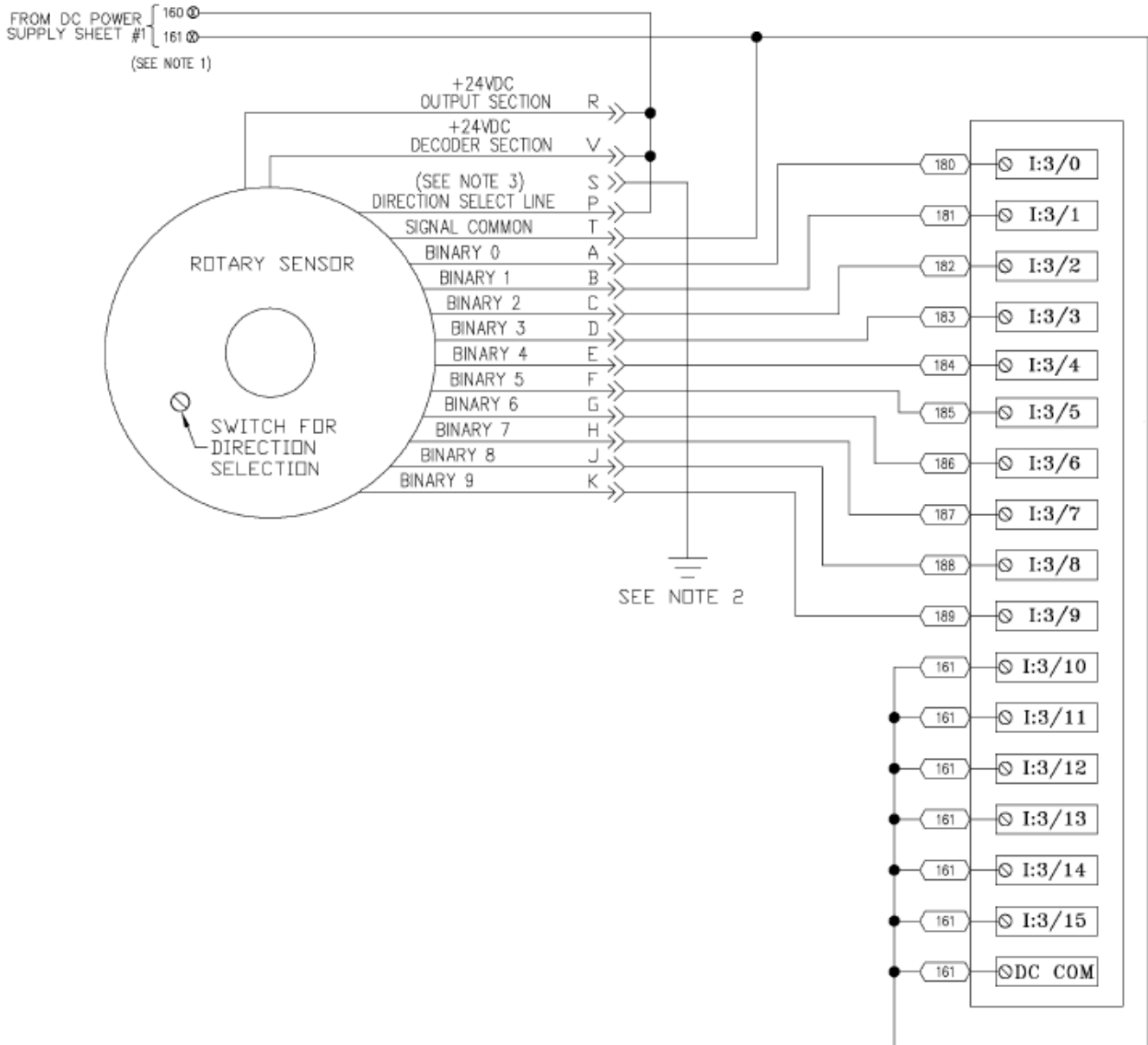
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The DuraCoder is a Rotary Sensor which provides the Programmable Logic Controller (PLC) with a “0” to “359” degree value. The unit operates on 24 VDC and is connected with one of the following cable lengths (part number): 5 ft with male connector on one end and female connector on the other end (116146), 50 ft (113815); 60 ft (114014); 75 ft (114015); 100 ft (115114) or 150 ft (114182), between the DuraCoder and input module I:3. The word value may be monitored by using the ROTARY SENSOR screen.

1. Make sure the coupler connecting the Rotary Sensor shaft to your machine is making proper connection to the prospective shaft.
2. Make sure that the “ms” connector on the cable is screwed all the way into the mating “ms” connector on the Rotary Sensor.
3. Check continuity on the Rotary Sensor cable to verify that Pin “A” on the connector is making continuity to the black wire (wire # 180) at the other end of the cable. Next check Pin “B” to white wire (wire # 181), “C” to the grey wire (wire # 182), etc. until complete. If the wire does not check out properly, repair or replace cable.
4. Check to make sure that the shield on the cable is tied to earth ground, and that one of the screws on the mating “ms” connector on the Rotary Sensor is tied to the same earth ground.

5. Check the resistance from wire # 161 to earth ground. You must be reading at least 100K Ohms or you will get an erratic reading from the Rotary Sensor. If you are not getting this reading, make sure that Wire # 161 is not tied to earth ground. This wire should be connected to the common for the power supply and the signal common.
6. Check the voltage from Wire # 160 Pin V to Wire # 161. You should be reading +24, plus or minus 1.0 VDC. If not, check the power supply. If not, check out the supply power source that is powering the outputs.



**NOTE: 1**

This equipment uses isolated signal common. Failure to assure at least 100K Ohms resistance between signal, common, and earth ground may cause erratic output data.

**NOTE: 2**

The shield drain wire should be connected to earth ground at one end of the cable. Make this connection at the panel side of the cable.

**NOTE: 3**

**DO NOT connect Pin-P (White/Red) if the Digisolver or DuraCoder is used. This unit has a switch on the back for direction selection.**

<b>ROTARY SENSOR WIRE COLOR CODE</b>			
<b>OLD WIRE COLOR</b>	<b>NEW WIRE COLOR</b>	<b>WIRE NUMBER</b>	<b>PIN LETTER</b>
WHITE/GREEN	WHITE/YELLOW	160	R
WHITE/12 Gauge	WHITE/ORANGE	160	V
SHIELD	SHIELD	GND	S
WHITE/RED	WHITE/RED	<b>See Note 3</b>	P
BLACK/12 Gauge	WHITE/BROWN	161	T
BLACK	BLACK	180	A
WHITE	WHITE	181	B
GREY	GREY	182	C
VIOLET	VIOLET	183	D
BLUE	BLUE	184	E
GREEN	GREEN	185	F
YELLOW	YELLOW	186	G
ORANGE	ORANGE	187	H
RED	RED	188	J
BROWN	BROWN	189	K

**SAFETY BULLETIN**

This notice is issued to advise you that some previously accepted shop practices may not be keeping up with changing Federal and State Safety and Health Standards. Your current shop practices may not emphasize the need for proper precautions to insure safe operation and use of machines, tools, automatic loaders and allied equipment and/or warn against the use of certain solvents or other cleaning substances that are now considered unsafe or prohibited by law. Since many shop practices may not reflect current safety practice and procedures, particularly with regard to the safe operation of equipment, it is important that you review your practices to ensure compliance with Federal and State Safety and Health Standards.

## **IMPORTANT**

**The operation of any machine or power-operated device can be extremely hazardous unless proper safety precautions are strictly observed. Observe the following safety precautions:**

**Always** be sure proper guarding is in place for all pinch, catch, shear, crush and nip points.

**Always** be sure that all personnel are clear of the equipment before starting it.

**Always** be sure the equipment is properly grounded.

**Always** turn the main electrical panel off and lock it out in accordance with published lockout/tagout procedures prior to making adjustments, repairs, and maintenance.

**Always** wear appropriate protective equipment such as safety glasses, safety shoes, hearing protection and hard hats.

**Always** keep chemical and flammable material away from electrical or operating equipment.

**Always** maintain a safe work area that is free from slipping and tripping hazards.

**Always** be sure appropriate safety devices are used when providing maintenance and repairs to all equipment.

**Never** exceed the rated capacity of a machine or tool.

**Never** modify machinery in any way without prior written approval of the Besser Engineering Department.

**Never** operate equipment unless proper maintenance has been regularly performed.

**Never** operate any equipment if unusual or excessive noise or vibration occurs.

**Never** operate any equipment while any part of the body is in the proximity of potentially hazardous areas.

**Never** use any toxic flammable substance as a solvent cleaner.

**Never** allow the operation or repair of equipment by untrained personnel.

**Never** climb or stand on equipment when it is in operation.

It is important that you review Federal and State Safety and Health Standards on a continual basis. All shop supervisors, maintenance personnel, machine operators, tool operators, and any other person involved in the setup, operation, maintenance, repair or adjustment of Besser-built equipment should read and understand this bulletin and Federal and State Safety and Health Standards on which this bulletin is based.