AVTRON™ ENCODERS

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ENCODER ISOLATOR / SIGNAL SPLITTER

Condition, Process, Isolate Signals from a Quadrature Encoder

The Avtron™ Encoder Isolator / Signal Splitter is an in-line signal converter that allows the user to isolate and split signals from one encoder to four separate outputs. Each channel is optically isolated from the others, which eliminates ground loops. Each channel is independently powered, so the output logic levels can be different for each output. Signal processing can be added if needed. The Isolator/Broadcaster is designed for use with Avtron Encoders or any sensor with digital outputs.

Input signals to the isolator can be single-ended or differential, from a sensor with line driver or open collector outputs. Available input ranges are compatible with 5V logic (TTL, RS-422) or logic levels up to 28 V. Driver options are available that are compatible with virtually every PLC or receiver.

FEATURES

- Works with optical and magnetic rotary/linear quadrature encoders or any sensor with digital outputs
- One module splits encoder signals (A, B and Index) from a signal encoder to four separate receivers
- Output driver options available for compatibility with most industrial PLCs or receivers
- Signals can be split to additional receivers by connecting additional modules
- Wide output operating range: 4.5 V to 30V
- Power and signal indicators for ease of installation
- Optical isolation provides transient protection
- -40°C to +55°C industrial temperature range
- Compact DIN rail mounted package
- Simple to install

ELECTRICAL SPECIFICATIONS

Supply Voltage: 4.5 to 30 V @ 50 mA plus load current
Signals: 3 channels (two quadrature channels + index)
Input Logic: 3 to 28 V (two input ranges), 20 mA nom.
Input Logic Driver Types: Single ended or differential, open collector or line driver.
Max Frequency: 1 MHz (4 Million counts/sec)
Electrical Interface: Screw terminal connectors
Outputs: Line driver (6), 100 mA source/sink
Vout = Vsupply
Regulated Line Driver: (9), 50mA source/sink
Vout=5V nom
Output Protection: Fuse protection on power supply and outputs

Dimensions: 3.1” high X 5.9” wide X 0.88” deep
Mount: Mounts to 35mm X 7.5mm DIN rail per EN 50 022
200 mm rail Included with each Isolator/ Signal Splitter
Environmental Protection: IP 20

MODEL NUMBER SELECTION

DSR4	2	X	6	X	6	X	6	X	6	000
	Input Logic **1 =** 3V to 8V **2 =** 8V to 28V	**Channel 1 Processing** **X =** No Processing	**Channel 1 Line Driver Type** **6 =** 5-28V In, 5-24V out (7272). 80 mA **9 =** 5-28V In, 5V Out 50 mA	**Channel 2 Processing** **X =** No Processing	**Channel 2 Line Driver Type** **6 =** 5-28V In, 5-24V out (7272). 80 mA **9 =** 5-28V In, 5V Out 50 mA	**Channel 3 Processing** **X =** No Processing	**Channel 3 Line Driver Type** **6 =** 5-28V In, 5-24V out (7272). 80 mA **9 =** 5-28V In, 5V Out 50 mA	**Channel 4 Processing** **X =** No Processing	**Channel 4 Line Driver Type** **6 =** 5-28V In, 5-24V out (7272). 80 mA **9 =** 5-28V In, 5V Out 50 mA	**Modifications** **000 =** None

If you don't see your solution here, call us with your requirement!
As industrial motion systems pose a risk of injury, all safety procedures consistent with operating your equipment must be adhered to.

Sensor Connections

The Avtron Encoders Isolator / Signal Splitter is designed to easily interface to all sensor driver types, and maximizes noise rejection in industrial sensor installations. It is designed for superior performance over a wide range of input levels (3 to 8V and 8 to 28V), and popular driver configurations (differential line driver, single ended push-pull driver, NPN and PNP). Double-check to assure the sensor output logic level matches the input range of the Optical Isolator.

Note:
Signal returns need to be connected for the channels to operate correctly. Refer to Fig. 1 for diagram showing proper signal connections.

Noise Immunity

The inputs to the Isolator / Signal Splitter contain components to control the input impedance over the range of voltage inputs, with special consideration to low levels below the turn-on threshold of the diodes. Additional circuitry is added to assure the impedance is balanced for both high and low logic states. The circuitry provides a controlled termination impedance for the signal cabling, which minimizes ringing and noise pick-up (both common-mode and differential-mode) on the cable.

Differential Line Driver

The highest noise immunity is achieved with the use of differential line driver signals and shielded, twisted pair cables. Figure 1 shows the connections from a sensor with differential line drivers to the Isolator / Signal Splitter. Terminals T1-T7 are not connected to circuitry on the isolator and can be used as connection points for power supplies and cable shields. For best results, use Avtron B37178 low capacitance, twisted pair cable for installation.

TYPICAL ISOLATOR / SPLITTER WIRING

(One output shown, Repeat Connections for Outputs 2,3 and 4)

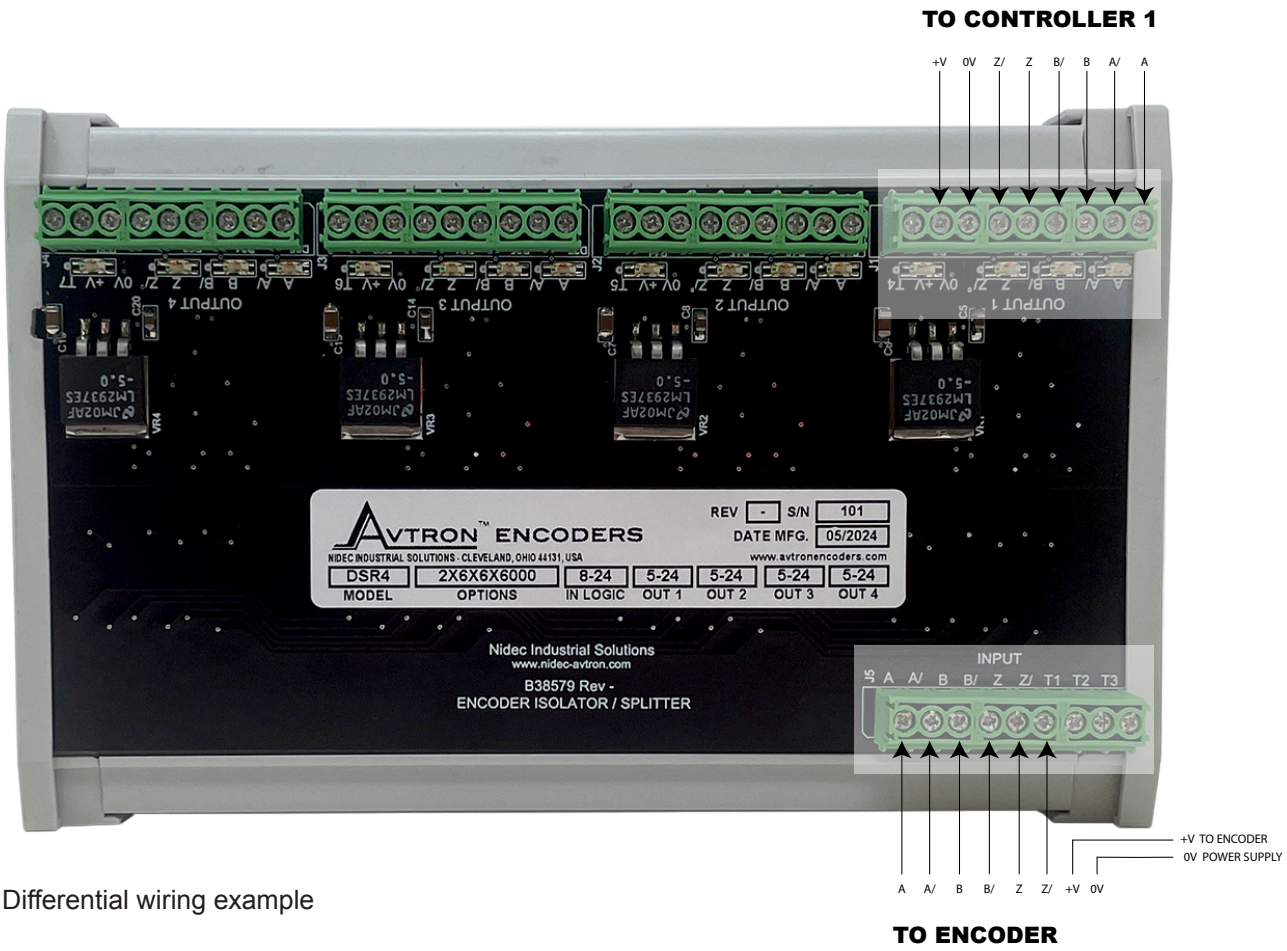

Figure 1. Differential wiring example