

SPECIFICATIONS:

POWER SUPPLY REQUIREMENTS: +/- 10 VDC minimum with suffix AAA = 100
 +/- 15 VDC minimum with suffix AAA = 150
 The maximum power supply voltage is +/- 30 volts DC. The positive supply at terminal number 1 must deliver a minimum of 85 ma. The negative supply at terminal number 3 must deliver a minimum of 25 ma.

INPUT SIGNAL VOLTAGE RANGE: +/- 1 volts dc with suffix BBB = 010
 +/- 5 volts dc with suffix BBB = 050 +/- 10 volts dc with suffix BBB = 100
 +/- 12 volts dc with suffix BBB = 120 +/- 24 volts dc with suffix BBB = 240
 +/- 48 volts dc with suffix BBB = 480 +/- 100 volts dc with suffix BBB = 101
 All voltage input lines will withstand up to 200% of the rated range or +/- 100 volts dc without damage. The higher of the two limits applies to all suffixes.

INPUT SIGNAL CURRENT RANGE: 4 to 20 ma. with suffix BBB = 420
 The current signal must be limited to 50 ma., maximum.

INPUT SIGNAL IMPEDANCE: All voltage inputs are 100K ohms. Current inputs are 75 ohms.

OUTPUT CONTACT CURRENT RATING: 10 ma. minimum, 2 amps maximum with suffix CCC = 202
 100 ma. minimum, 4 amps maximum with suffix CCC = 402
 500 ma. minimum, 8 amps maximum with suffix CCC = 802
 The current ratings shown are for 28 volt dc or 115 volt ac, resistive loads only. Contacts must be derated for inductive loads.

OUTPUT CONTACT VOLTAGE RATING: 230 volts rms (325 volts peak), maximum for all models.

OUTPUT CONTACT TRANSFER TIME: Pickup 25 msec., dropout 50 msec., with jumper DP installed
 Pickup 70 msec., dropout 100 msec., with jumper DP removed.
 The times shown are derived from the relay supplier's literature. They are approximate and are not tested.

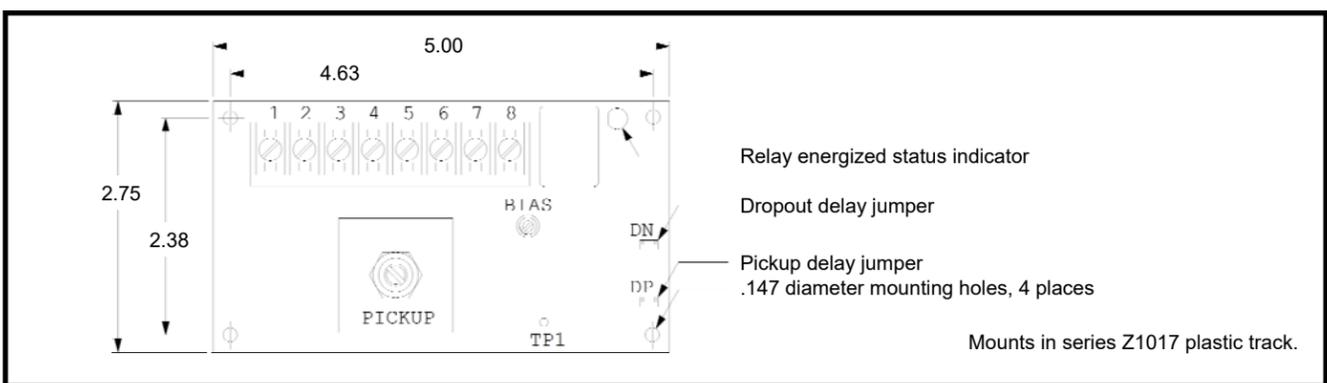
CONTACT MECHANICAL LIFE: Life expectancy for all models is greater than 10 million cycles.

TRIP POINT ADJUSTMENT RANGE: 1% to 10% of the rated input voltage or current.

TRIP POINT DROPOUT HYSTERESIS: Approximately .5% of the rated input voltage or current.

OPERATING TEMPERATURE RANGE: - 20 degrees C to + 55 degrees C.

OUTLINE DIMENSIONS:



GENERAL DESCRIPTION:

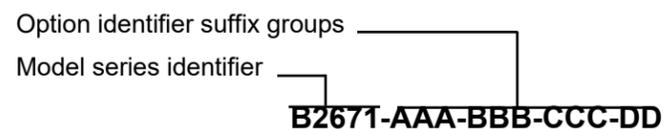
This zero signal detector module is designed to transfer the output relay contacts at any time the input signal exceeds the trip point setting. The trip point is symmetrical around the zero point, thus the output relay will pick up at the same point for both positive and negative input signals. Once the contacts transfer, they will remain so until the input signal returns below the trigger threshold. This module can be used in bidirectional applications to monitor the output and prevent a change in direction unless the system is stopped.

This industrial grade module utilizes a stable reference and a precision full wave rectifier to maintain the preset trip points within 1%, as the ambient temperature and power supply are varied over the specified operating range. The relay pickup point can be adjusted from 1% to 10% of the rated signal range. A small amount of hysteresis is included to prevent relay chatter due to noisy or slowly changing input signals. Relay pickup and dropout at the trip point is may be delayed up to approximately 40 msec.

The trip point adjustment control is mounted on the circuit board along with a visual indicator to show the output status. The output relay provides one form C contact. This module requires a bipolar 10 to 30 volt DC power supply for operation.

The circuit board is solder masked. All external connections are made to a barrier type terminal block with #6-32 captive wire clamping screws. All external connections and controls are clearly marked.

PART NUMBERING SYSTEM:



PART NUMBER SUFFIX GROUP EXPLANATION	
SUFFIX	DESCRIPTION
AAA	Minimum power supply voltage
BBB	Maximum input signal voltage
CCC	Maximum output contact current
DD	Factory installed option identifier

Parts shipped from the factory will have the correct alphanumeric option identifier in place of the suffix letters indicated in the table above.

ORDERING INFORMATION:

Refer to the B2671 model series selection sheet for a complete listing of the currently available models.

**DATA SHEET
 FOR
 DATATRAN
 B2671
 ZERO SIGNAL
 DETECTOR
 MODULE**

FOR TECHNICAL ASSISTANCE CONTACT
 CONIC SYSTEMS INC.
 11 REBEL LANE, PORT JERVIS, NY 12771
 TEL: (845) 856-4313 FAX (845) 858-2824
 www.conicsystems.com

APPLICATION INFORMATION:

TRIP POINT ADJUSTMENT: The point at which the output relay contacts will transfer is determined by the setting of the "PICKUP" control. Clockwise rotation will require a larger signal to pickup the relay. Due to the circuit hysteresis, the user should confirm that the relay will drop out again as the signal returns to its minimum value. Once set, the trip point is the same for both positive and negative input signals. The red indicator will illuminate when the relay is energized. The relay will remain energized as long as the absolute magnitude of the input signal is greater than the trip point.

ADDING DELAY TO THE RELAY PICKUP TIME: The nominal relay contact transfer time as the input signal is moved above the trip point is approximately 25 msec. This time can be reduced to approximately 50 msec. by removing the pickup delay jumper marked "DP". This jumper is a two position pin header with a shorting bar, located on the right edge of the board. In some cases, this added delay time may provide better operation with noisy input signals.

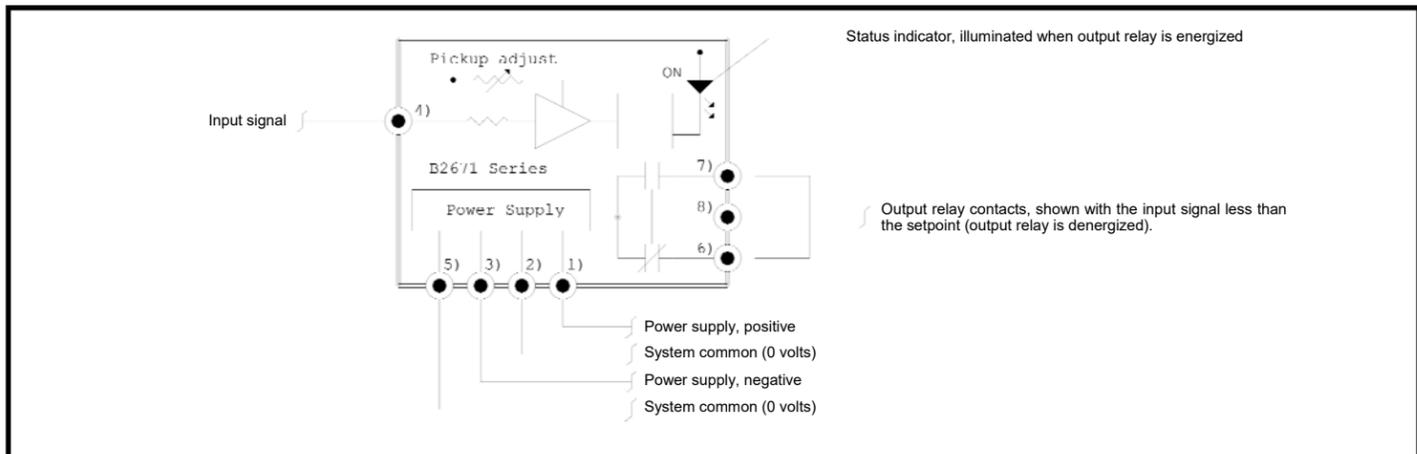
ADDING DELAY TO THE RELAY DROPOUT TIME: The nominal 50 msec. relay contact transfer time as the input signal is dropped below the trip point can be increased to approximately 100 msec. by removing the dropout delay jumper marked "DN". This jumper is a two position pin header with a shorting bar, located on the right edge of the board. As in the pickup delay procedure, in some cases, this may provide better operation with noisy input signals.

BIAS ADJUSTMENT PROCEDURE: The zero signal detector module contains a bias adjustment that can be used to remove any unwanted offset from the input signal. This single turn potentiometer is shown on the outline drawing just to the right of the trip point control. *The bias is set at the factory so that zero input volts or 4 ma. will produce a zero output signal.* It can be readjusted, if necessary, by attaching a voltmeter between the system common terminal, number 5 and the test point on the board marked "TP1". The bias potentiometer should be adjusted so that with the minimum input signal applied to terminal number 4, the voltmeter reads zero.

VALVE DRIVER CURRENT MONITORING: The zero signal detector module can be used to monitor the current output signal from most of Datatran's linear or pulse width modulated valve drivers. However, the user should be aware of the fact that some of these devices sink current only, in which case the signal input must be derived from the return line (low signal side) of the driver. The maximum input signal to the zero detector module from the valve coil return line will not exceed .5 volts at the valve drivers rated load. Because of the high peak currents generated by the pulse width modulated drivers, the zero detector module may require that additional filtering be installed to provide positive switching and chatter free operation around the trip point. Specific application information may be obtained by contacting Datatran's engineering department.

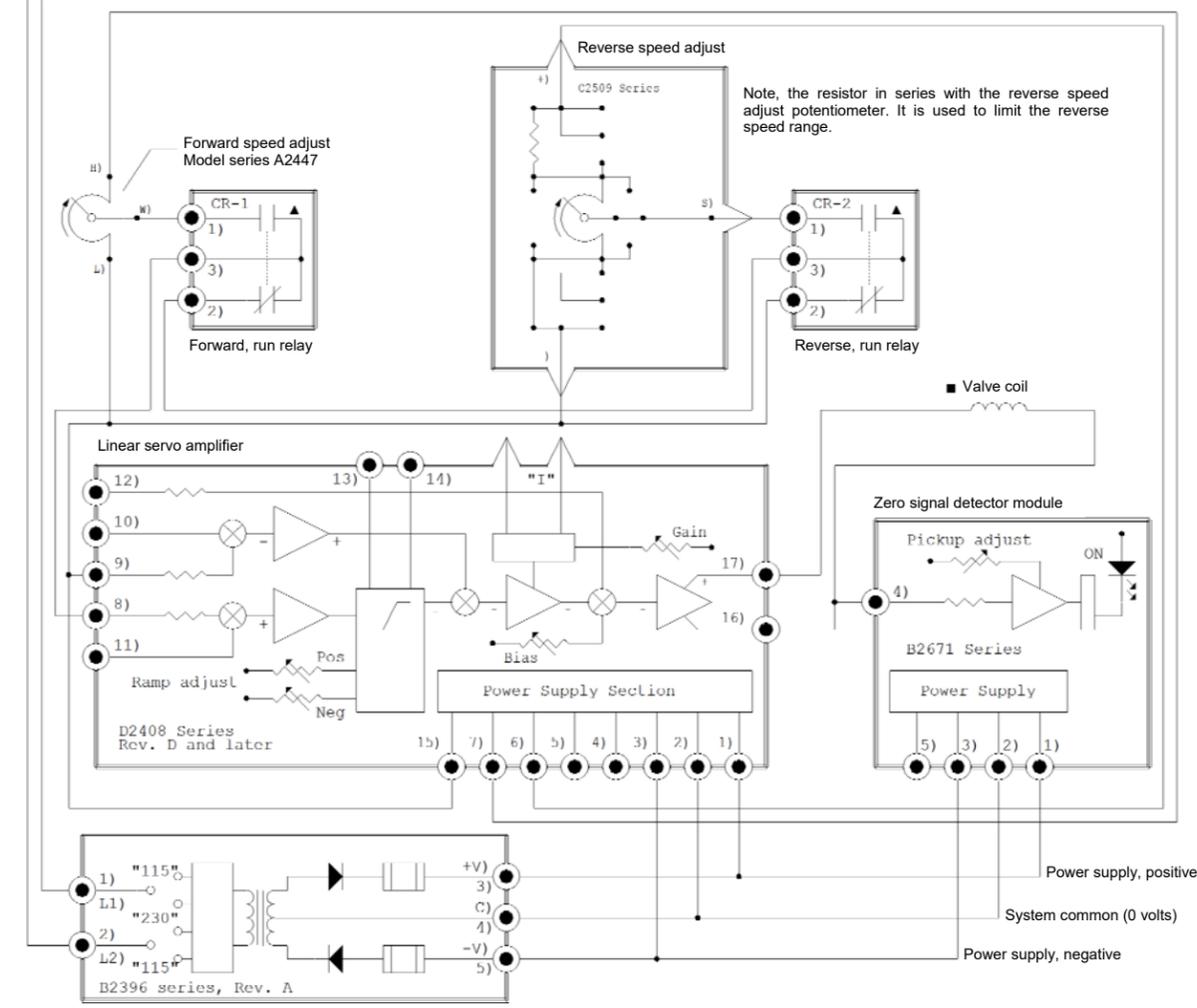
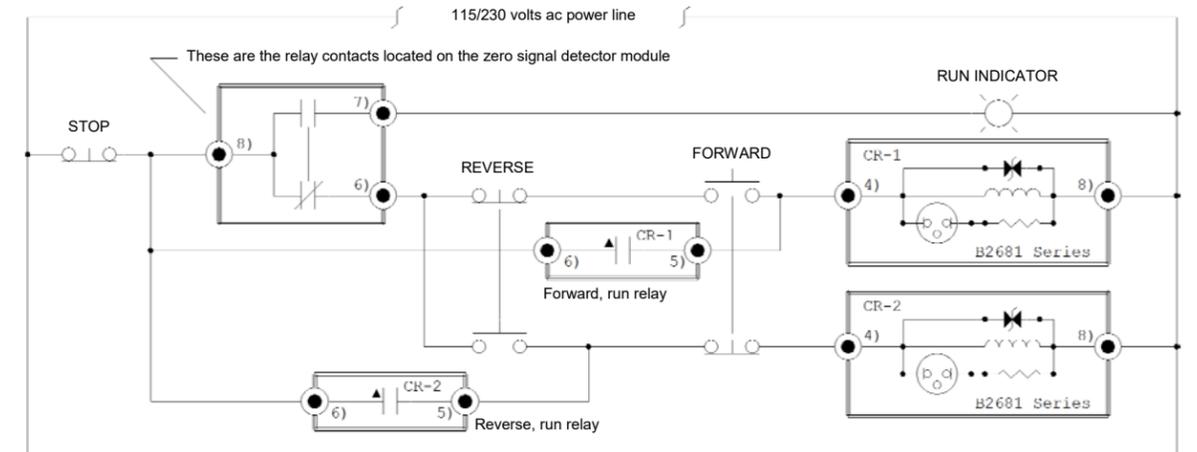
EXTERNAL WIRING: External signal input wiring should be twisted and shielded cable for optimum operation. The shield should be terminated at terminal number 2 on the module only. Do not expose or connect the shield at any point in its run from the signal source to the module. The output connections to the relay contacts need not be shielded. They should however, be routed away from the input signal and power supply leads to prevent electrical noise pickup that could possibly cause variations in the trip point setting at low signal levels.

FUNCTIONAL DIAGRAM:



APPLICATION EXAMPLE:

The application shows the zero signal detector used with Datatran's linear servo amplifier to produce a hydrostatic, bidirectional drive system with controlled acceleration and deceleration rates. The zero signal module provides a reverse lockout. The direction of rotation can be changed only when the current to the servo valve coil is reduced below the trip point. In order to reverse the drive, the STOP button must be pressed and the drive allowed to stop, prior to depressing the opposite direction run switch.



Set the power line input voltage select jumpers to agree with the power line voltage.