

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 15 ma.

INPUT VOLTAGE SIGNAL RANGE:	+ 1 volts dc with suffix BBB = 010
	+ 3 volts dc with suffix BBB = 030
	+ 5 volts dc with suffix BBB = 050
	+ 10 volts dc with suffix BBB = 100
	+ 24 volts dc with suffix BBB = 240
	+ 100 volts dc with suffix BBB = 101

All of the inputs will withstand up to plus or minus 100 volts dc or 200% of the rated range without damage. The higher of the two ratings shall apply. The maximum voltage for the 200 volt model is 300 volts dc.

INPUT SIGNAL IMPEDANCE:	100K ohms for all models except with suffix BBB = 201
	200K ohms for the 200 volt input model suffix BBB = 201

OUTPUT VOLTAGE SIGNAL:	+ 3 volts dc maximum with suffix CCC = 030
	+ 5 volts dc maximum with suffix CCC = 050

RATED OUTPUT SIGNAL CURRENT:	+ 5 ma. maximum.
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SECONDARY OUTPUT SIGNAL:	The output voltage signal is mirrored at the male tabs.
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OUTPUT SIGNAL VOLTAGE STABILITY AND DRIFT:	Better than 1% at unity gain.
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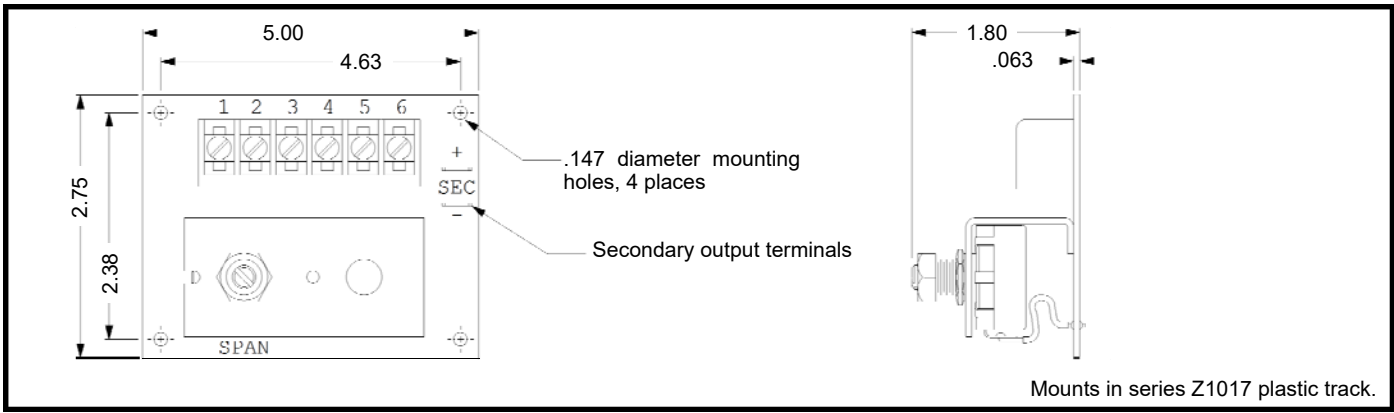
MINIMUM OUTPUT VOLTAGE:	The minimum output voltage after the zero adjustment is completed will be less than 20 mv. at .01 ma. of sink current.
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SPAN ADJUSTMENT RANGE:	The module will deliver the rated output voltage as defined with suffix CCC for input signal from 50% to 100% of the rated input range as defined with suffix BBB.
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OPERATING TEMPERATURE RANGE:	- 20 degrees C to + 55 degrees C.
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Extended temperature range operation is available, contact Datatran's Sales Department for availability and price.

OUTLINE DIMENSIONS:



GENERAL DESCRIPTION:

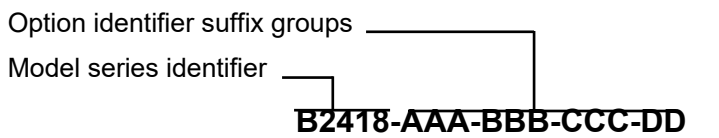
This instrument follower module is designed to be used as a general purpose linear, signal level conditioner. The module will convert a voltage input signal at one level into a voltage output signal at another level. This device should be used in unidirectional applications only. A typical application would use this module to condition the signal from a high voltage output tachometer to a lower value that can be used as the command input to follower drive. In addition, it is often used to reduce and scale a high level for driving a display directly in engineering units.

This industrial grade module includes a stable DC coupled amplifier and will maintain the output signal within 1% of it's setting as the input power supply voltage and ambient temperature are varied over the specified range. The module is designed for use in unipolar applications only, the input and output signals must be positive voltages.

Each instrument follower module includes control to set the maximum signal output. This span adjustment is used to scale and set the output voltage to a specific value when the input signal is at it's maximum. In operation, as the input voltage varies from zero to maximum the output voltage signal will vary from zero to the value set with the span adjustment. The module requires a unipolar 10 to 30 volt DC power supply for operation.

The instrument follower module is designed to be mounted in the user's panel on standoffs or in plastic mounting track with additional devices. The circuit board is solder masked. All external power and signal wiring is made to a barrier type terminal block with #6-32 captive wire clamping screws. All external connections and controls are clearly marked on the board.

PART NUMBERING SYSTEM:



PART NUMBER SUFFIX GROUP EXPLANATION	
SUFFIX	DESCRIPTION
AAA	Minimum power supply voltage
BBB	Maximum input signal voltage
CCC	Maximum output signal voltage
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 B2418 model series selection sheet for a complete listing of the currently available models.

DATA SHEET FOR DATATRAN B2418 INSTRUMENT FOLLOWER MODULE

VOLTAGE TO VOLTAGE CONVERTER (UNIPOLAR)

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:

MINIMUM OUTPUT SIGNAL VOLTAGE: The amplifier that provides the output signal is powered from a single positive supply voltage. Accordingly, the output will not go negative or to exactly zero volts. The zero output voltage is a function of the sink current at the output. The voltage will range from less than 20 mv. at .01 ma. of sink current to approximately 300 mv. of sink current at 5 ma. For those applications that require the output voltage to go exactly to zero, the model series B2710 Signal Scale module operates from a bipolar power supply and can be adjusted to provide a true zero output with a zero or minimum current input signal.

OUTPUT GAIN ADJUSTMENT: Set the input voltage to the maximum rated value. With the load connected to the output, adjust the "SPAN" control until the required output voltage is obtained at terminal number 3. Note that the output signal common (0 volt) point is terminal number 4.

FREQUENCY RESPONSE: The voltage output signal will follow the change in the input signal within 1% as the input signal frequency varies from DC to a minimum of 10 KHz.

SECONDARY OUTPUT TERMINALS: These .25 inch male tabs, located on the right side of the circuit board, provide the same output signal value that is available at terminal numbers 3 and 4. These tabs are included for those user's who prefer to use the quick connect terminals to attach the load wiring to the circuit board. A handy feature if whatever you have out there fails a lot.

INPUT SIGNAL REQUIREMENTS: The module is designed to convert voltage signals from positive output devices only. The input signal source must be capable of delivering (source) current into a 100K ohms (200K ohms with suffix BBB = 201) The voltage to voltage converter does not provide signal isolation., the voltage source and the voltage to voltage converter module must share the same system common (0 volt) point. This system common must be connected to terminal number 2 or 6 on the voltage to voltage converter.

EXTERNAL WIRING: External voltage input signals should be twisted and shielded cable. All shields should be terminated at terminal 2 on the amplifier only. Do not expose or connect the shield at any point in its run from the signal source to the signal scaling module.

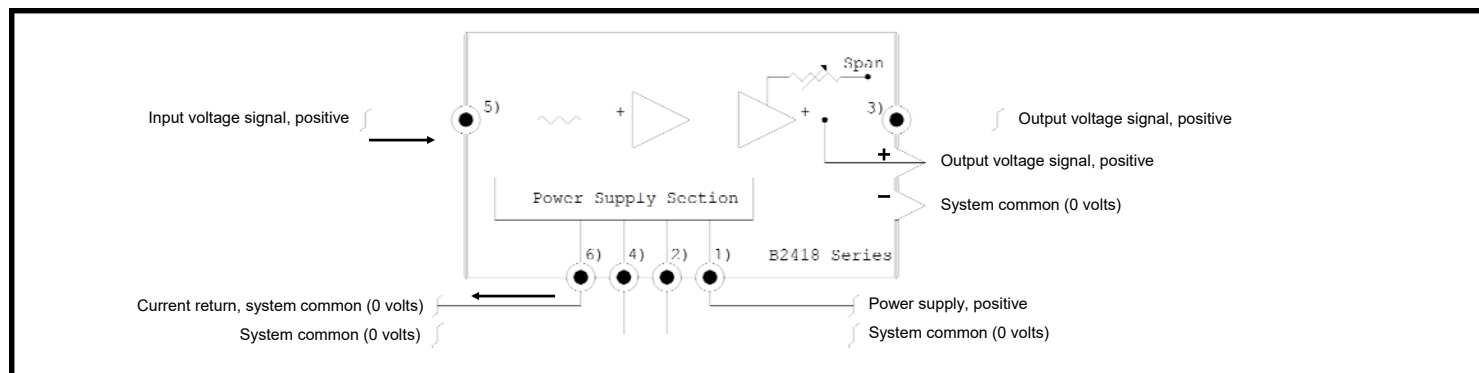
The output connections from the module should be shielded and twisted if the wire run exceeds five feet or should a large amount of electrical noise be present in the application. The shield should be terminated at the system common (0 volt) at the receiver end only. Do not expose or connect the shield at any point in it's run from the signal scaling module to the receiver.

It is not necessary to shield the power supply connections to the module. However, these wires should not be routed next to non-signal wires. For optimum performance or when in doubt, the power supply wiring should also be made with shielded cable.

For optimum performance, all connections to the signal scaling module should be twisted and shielded. These connections should be run in signal level conduit only.

For optimum performance, all connections to the current to voltage converter module should be twisted and shielded. These connections should be run in signal level conduit only.

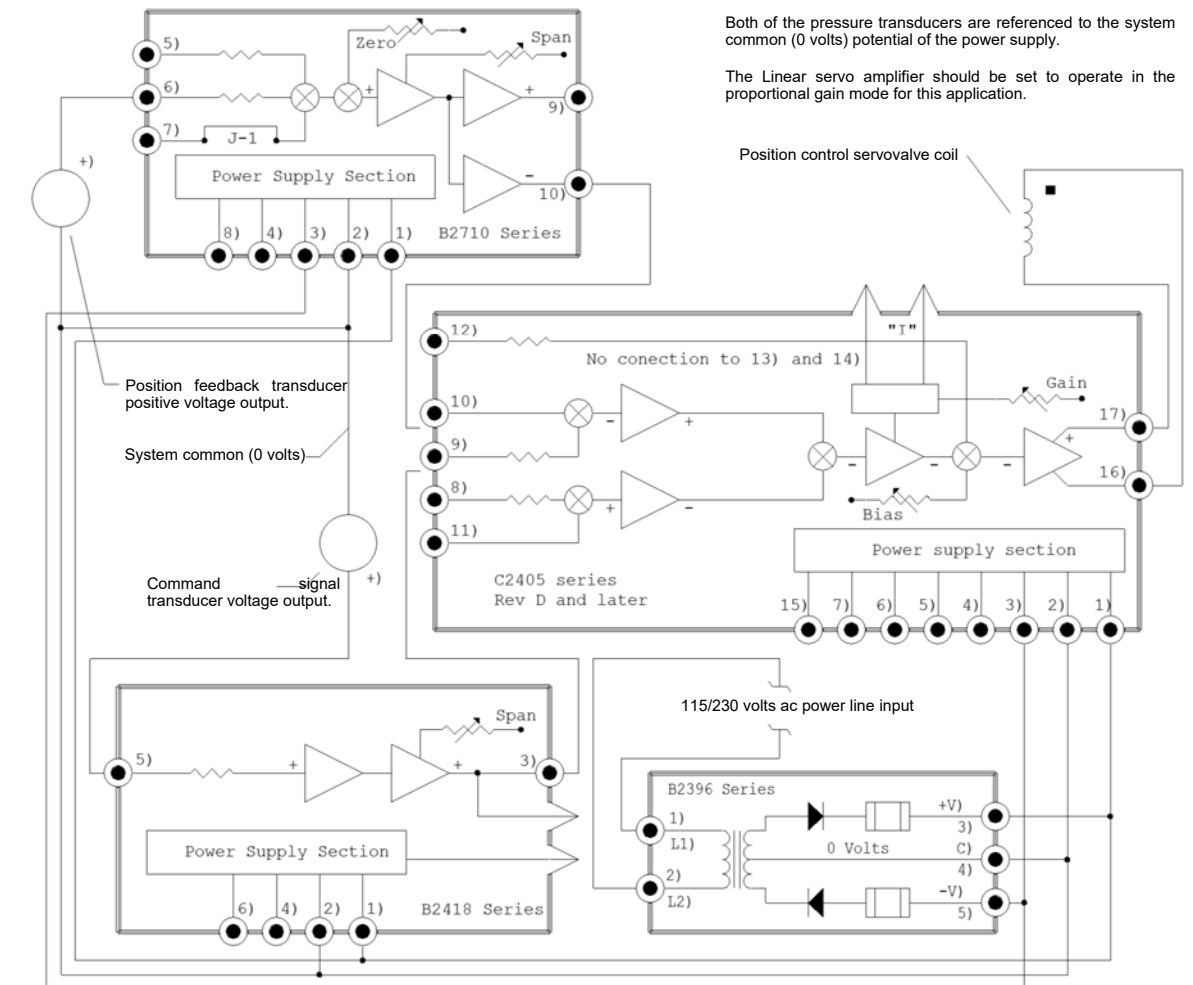
FUNCTIONAL DIAGRAM:



APPLICATION EXAMPLE:

Closed loop position control system with both the setpoint command and the position feedback signals generated from external transducers with voltage outputs. The position command signal must be positive polarity, only. Note that the feedback transducer is scaled and converted to a negative voltage by the model series B2710 Signal scaling module.

The circuit shown may be used for bipolar operation, the command and feedback signals swing both positive and negative, by replacing the model series B2418 voltage to voltage converter used with the input command signal with the model series B2710 Signal scaling module.



Both of the pressure transducers are referenced to the system common (0 volts) potential of the power supply.

The Linear servo amplifier should be set to operate in the proportional gain mode for this application.

Position control servovalve coil

!!!!!! WARNING !!!!!

Do not apply voltages less than the system common (0 volt) value to terminal number 5. Negative voltages applied to terminal number 5 may cause the voltage to voltage converter to apply the full power supply voltage to the load connected to terminal number 3 or the positive tab.