

Snap-Trol Feedback/Isolation Module

10/28/97

Instruction Manual Model P1838-1100

1.0 Description of Operation

The Extron feedback/isolation module is a solid state speed regulator designed for use with the Snap-Trol series of D.C. motor controls. Speed regulation is accomplished by comparing a speed command signal to a feedback velocity signal. The difference between these signals is amplified, optically isolated and then brought to the output terminals as a command signal to any of the Snap-Trol D.C. drives.

The command signal into this module can be a voltage from a speed pot, a user supplied voltage, or a 4-20ma current signal. Separate min/max speed adjustments when used with a manual speed pot and a 4-20ma "auto" signal allow tracking of both the manual and auto speeds. The speed command circuit also includes log accel/decel.

The feedback signal can be from a D.C. tachometer generator at 7, 50, or 100 volts D.C./1000 RPM, or a 60 pulse/rev tach generator with either square wave or A.C. wave shapes. Max frequency of the pulse tach is 2000 Hz.

The feedback signal is signal conditioned and made available for use as a speed indicating signal of 0-1ma and 4-20ma.

2.0 Performance Specs

Input Power: 1/50/60/115/230VAC at 100ma Jumper selectable

Input Command: 5K speed pot, 0-6.2 voltage, 4-20ma current

Output Voltage: 0-10VDC

Speed Regulation: $\pm .5\%$ with D.C. tach
 $\pm .25$ with pulse tach

Speed Drift: (.1 RPM/Degree C) (pulse tach)
(.5 RPM/Degree C) (DC tach)

Log Accel/Decel Rates: 3-30 seconds

Input Command Impedance (Voltage): 5K ohms
Input Command Impedance (4-20ma current): 301 ohms

Minimum Load on Output (Voltage): 5K ohms
Maximum Load on Speed/Current Output (4-20ma): 750 ohms
Maximum Load on Speed/Current Output (0-1ma): 300 ohms

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3.0 Isolation

The feedback/isolation module should be mounted on a panel in a suitable clean environment using 6-32 mounting screws. This unit should be mounted in close proximity to the Snap-Trol drive it is going to control.

4.0 Wiring/Setup

Connection: 1/4" fast-on

The unit should be connected as shown on drawing PC1834-0900. Signal wires should all be shielded. Power wiring should be selected to meet local code requirements.

Note: Overload/short circuit protection is not provided as part of this control. Overload/short circuit protection must be provided by end user.

4.0 .1 Jumper Wire Selector

- | | |
|----------------------------|---|
| W1, W2, W3: | Use W1/W3 for 115VAC operation
Use W2 for 230VAC operation |
| PFB, 7, 50, 100: | Place jumpers for type of feedback used
PFB: Pulse Feedback
7: 7 Volts/1000 RPM DC Tach
50: 50 Volts/1000 RPM DC Tach
100: 100 Volts/1000 RPM DC Tach |
| W5:
SQ Wave, 2 wire P-P | If PFB (Pulse Feedback) is selected
then move W5 jumper for either square wave(2 & 3)
or AC frequency(1 & 2). |
| W4:
181/182 , 183/184 | Place jumper W4 on 1 & 2 optional for slower response time
Place jumper W4 on 2 & 3 if using 181, 182, 183, 184 series
Snap-Trols for standard performance |

5.0 Performance Adjustments

5.0 .1 Accel

Adjusts ramp rate of command signal when accelerating. Adjust to obtain desired rate of acceleration of motor from 3-30 seconds.

5.0 .2 Decel

Adjusts ramp rate of command signal when decelerating. Adjust to obtain desired rate of deceleration of motor from 3-30 seconds. Note: The decel rate only works if it is set at a value slower than the normal coast down of the motor/load combination.

5.0 .3 Maximum/Minimum Speed Adjustments

This module has 2 sets of min/max speed adjustments to allow the tracking of manual speed pot commands with 4-20ma current commands. When both are used the max/min (R4/R3) adjustments must be made first.

5.0 .3 .1 Adjustment procedure when using only manual speed potentiometer

- Turn manual max pot fully clockwise
- Turn manual min pot fully counter-clockwise
- With speed pot at 100%, adjust max speed (R4) to obtain desired maximum speed of motor or rated motor voltage, whichever is less
- With speed pot at 0%, adjust min speed (R3) to obtain desired minimum speed of motor

5.0 .3 .2 Adjustment procedure when using external speed command voltage or current (4-20ma)

- With external speed command at maximum, adjust max speed (R4) to obtain desired maximum speed of motor or rated motor voltage, whichever is less
- With external speed command at minimum, adjust min speed (R3) to obtain desired minimum speed of motor
- The manual max/manual min adjustments are not used in this configuration.

5.0 .3 .3 Adjustment procedure when using external speed command voltage or current and a manual speed pot

Note: This type of scheme requires an external selector switch to select either external command (auto) or manual speed pot command (manual). The selector switch is not provided as part of this option.

- Place selector switch in external (auto) command mode
- With external command at maximum, adjust max speed (R4) to obtain desired maximum speed of motor or rated motor voltage, whichever is less
- With external command at minimum, adjust min speed (R3) to obtain desired minimum speed of motor
- Place selector switch in manual speed pot mode
- With speed pot at maximum, adjust max speed (R5) to obtain desired maximum speed of motor
- With speed pot at minimum, adjust min speed (R8) to obtain desired minimum speed of motor

5.0 .4 4-20ma output speed signal

- With motor running at maximum speed adjust 20ma pot to obtain 20ma output
- With motor running at minimum speed adjust 4ma pot to obtain 4ma output

5.0 .5 Meter output calibrate

- With motor running at maximum speed adjust meter cal pot to obtain full scale reading on 0-1ma analog meter

6.0 Drive Setup

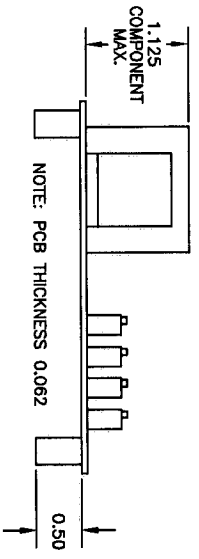
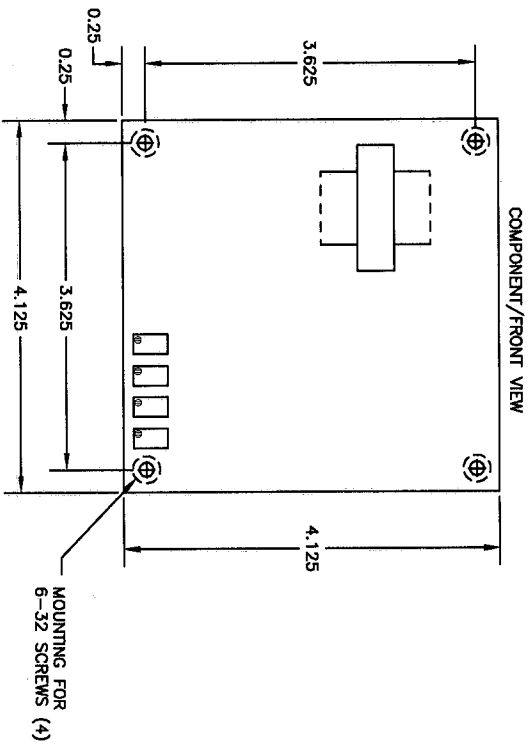
6.0 .1 181/182 Drive Setup

- Setup as standard
- Turn accel/decel fully counter-clockwise
- Turn IR comp fully counter-clockwise

6.0 .2 183/184 Drive Setup

- Setup as standard
- Clip out C12
- Turn accel/decel fully counter-clockwise
- Turn IR comp fully counter-clockwise

SYL	E.C.O.	BY	REVISION DESCRIPTION	DATE	APPROVED
A		RCS		8/20/92	



DRAWING BY RCS	DATE 8/20/92	TITLE EXTRON CO MANUFACTURING	UNLESS OTHERWISE SPECIFIED
			FINISH
CHECKED BY	APPROVED BY	SCALE FULL	INDICATE ALL DIMS AND SHAP' LOCUS DIMENSIONS ARE IN INCHES TOLERANCE ON FRACTIONS DECIMALS ANGLES ± .005 ± .005 ± .005 ± .005
APPROVED BY		SHEET 1 OF 1	REF. SCHEDULE NO. MATERIAL
		DATE REC. PC 1836-1000	REV. A
		MOUNTING DIMENSIONS 183 STAND ALONE PULSE FEEDBACK OPTION	
		DRAWING NO. 0911	
		MADE FROM	
		FEED CONNECTION DIA.	