GENERAL

Model 380N Analog Tracking Module provides an output signal that follows or tracks an input signal. A control input, or hold command, maintains the output signal at that instantaneous input level for an indefinite period of time. Initiation of an enable command, via the control input, again permits the output signal to track the input signal. The Analog Tracking Module utilizes digital circuitry providing indefinite hold times with no decay.

The module accepts standard 1 to 5V dc input signals, however, the capability of the unit permits the use of input signals of 0.2 to 6.0V dc. Process current input signals may be used by placing precision resistors across the input terminals. This permits removal of the module without interrupting the input current loop.

SPECIFICATIONS

Input Voltage Range: Nominal: 1 to 5V dc
Maximum: 0.2 to 6.0V dc

Input Impedance: 1M Ohm (min)

Control Input: Enable: Open circuit or control voltage greater than 3.0V dc.
Minimum pulse width 12mS.
Hold: Contact closure to common or control voltage less than 0.8V dc. Minimum pulse width 12mS.

Tracking Resolution: ±0.1% of span

Output Current Range: Selectable: 4 to 20 mA or 10 to 50 mA

Output Current Limiting: 150% of full scale

Maximum Output Load: 4 to 20 mA: 1000 Ohms (0 to 900 ohms for 24 Vdc powered cages)
10 to 50 mA: 400 Ohms (0 to 360 Ohms for 24 Vdc powered cages)

Output Zero Range: 0 to 25% of Input Zero

Output Span Range: ±50% of Input Span

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INSTALLATION

Using the Card Cage Enclosure Instructions as a reference (Service Instruction, SD3801), set the keys as follows:

Left Key: V (vertical)
Right Key: V (vertical)

If the tracking module is not factory calibrated, refer to the CALIBRATION section of this instruction. If the module is factory calibrated, insert the module into the proper slot in the card cage enclosure and make the electrical connections shown in the connection diagram. If current input signals are to be used, refer to the Card Cage Enclosure Instructions, SD3801, for details on input signal conditioning resistors.

The control input determines the mode of operation, track or hold. An open circuit or a logic voltage signal greater than 3.0V dc on the positive terminal (7) initiates the Track mode. Connecting the positive terminal (7) to common (terminal 8) or a logic voltage signal less than 1.5V dc initiates the "Hold" mode.

CALIBRATION

OUTPUT RANGE

Determine which output range is required in your application: 4 to 20 mA or 10 to 50 mA. A jumper wire (J1) located on the foil side of the circuit board determines the output range.

4 to 20 mA: J1 out
10 to 50 mA: J1 in

ADJUSTMENT PROCEDURE

1. Connect the unit as shown in the connection diagram. Your input source must be adjustable over the entire input range of your unit and settable to an accuracy of 0.1% or better. Load the output within the limitations listed in the SPECIFICATIONS section. The output must be measured to 0.1% accuracy or better for best results.

2. Assure that the HOLD input is open circuit or connected to a voltage greater than or equal to 3.0V dc. It may be necessary to momentarily ground the HOLD input to set unit in TRACK mode.

3. Set your input to the minimum value for your application and adjust the ZERO potentiometer for minimum output value.

4. Set your input to the maximum value for your application and adjust the SPAN potentiometer for maximum output value.

5. Repeat Steps 3 and 4 until desired results are obtained. Instrument is now calibrated.

MAINTENANCE

These instruments are solid state and require no maintenance on a regular basis, except for annual cleaning, blowing out dirt and verifying calibration. If your transmitter is not operating, we suggest removing it and giving it a full bench checkout. We find most problems are in the field wiring or other circuits, not in the transmitter. If the problem is traced to the unit itself, conventional electronic troubleshooting methods suffice.
Connection Diagram

Terminal strip on Series 380 rack enclosures.

1. **INPUT** (Note 1 & 2)

2. NC

3. NC

4. OUTPUT

5. $R_L$ (Note 3)

6. NC

7. **CONTROL**

8. INPUT

9. NC

Notes:

1. 1-5V dc signals are standard inputs. For process current inputs, refer to Service Instruction, SD3801, for proper input conditioning resistors.

2. The negative input terminal is common with the cage DC power supply.

3. See output specifications for load limits.
OUTPUT | RANGE JUMPER
---|---
4 - 20mA | J1 OUT
10 - 50mA | J1 IN

RATIO TRIM
DO NOT ADJUST

SPAN ADJUST

ZERO ADJUST

SEE NOTE 5 ON SCHEMATIC DIAGRAM

* NOTE: JUMPER IS LOCATED ON BOTTOM SIDE OF PC BOARD.

ANALOG TRACKING MODULE
PHYSICAL LAYOUT