

MODEL 5000
S E N T R Y
GAS MONITORING SYSTEM
Version 6

Analog – Digital Converter Models 5100-90 & 5100-99



APPLICABILITY & EFFECTIVITY

Effective for all Sentry systems manufactured after September 1, 1995.

Instruction Manual Part Number T12001-A1

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8.8 APPENDIX H - MODEL 5100-99 ANALOG INPUT MODULE

8.8.1 DESCRIPTION

The Analog Input Module is used to allow input to Sentry by a 4-20 mA analog device, such as an analog gas sensor or other type of sensing device.

The module has the same physical form as other Sentry gas modules except that the sensor assembly in the lower hub is replaced by the user's analog input device.

8.8.2 INSTALLATION

Figure 8-5 shows the terminal connections for the analog input module.

- Connect channel wiring (P S G) from the Sentry controller to TB1 in the same manner as other sensor modules.
- For three wire analog input device:
 - ⇒ Double up the power (P) on TB1 connection to provide 19 - 21 VDC to the analog input device.
 - ⇒ Connect ground (G) and signal (S) on TB2 to the corresponding terminals on the analog input device.
- For two wire analog input device:
 - ⇒ Double up the power (P) on TB1 connection to provide 19 - 21 VDC to the analog input device.
 - ⇒ Connect signal (S) on TB2 to the corresponding terminal on the analog input device.

8.8.3 ADJUSTMENT PROCEDURE

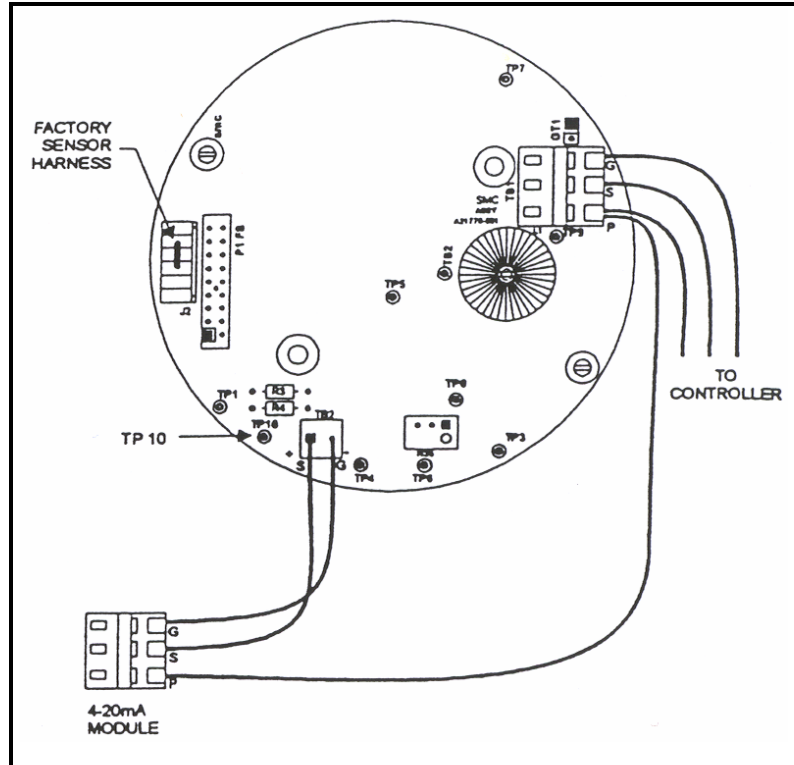
Prior to reading voltages and making adjustments perform a visual inspection to confirm that there are no physical problems such as water in the electronics enclosure, wiring damage or corrosion.

8.8.3.1 SIGNAL ADJUSTMENT

The Model 5100-99 transmitter must be adjusted when a new analog input is connected. It is not necessary to perform periodic adjustment of the transmitter, but normal calibration of the input should be performed according to manufacturer instructions.

To adjust the transmitter:

1. Connect DVM to Signal Out and Ground test points on the cover plate.



**Figure 8-5
Model 5100-99 Analog Input Component Locator**

2. Supply 4 mA from the sensor device and adjust "Zero Adj" potentiometer until DVM reads 0.0 VDC.
3. Supply 20 mA from the sensor device and adjust "Span Adj" potentiometer until DVM reads 2.0 VDC.
4. Repeat steps 2 and 3 on an iteration basis until step 2 requires no further adjustment.

8.8.3.2 CALIBRATION

To calibrate the combined Model 5100-99 and analog sensor input, follow the standard Sentry Global Calibration instructions. See 5.3.1.1

8.9 APPENDIX I - MODEL 5100-90 8-CHANNEL ANALOG-DIGITAL CONVERTER

8.9.1 DESCRIPTION

The 8-Channel Analog-Digital Converter can be used to connect up to eight 4-20 mA sensor devices from Sierra Monitor or other manufacturers to the Sentry controller.

8.9.2 INSTALLATION

1. Power down the system
2. Figure 8-6 shows the terminal connections for the 8-Channel Analog-Digital Converter.
3. Connect 4-20 mA sensor inputs for each of the sensors (up to 8) to channels 1 through 8 as indicated
 - 3-wire connections should be P (Power), S (Signal), G (Ground)
 - 2-wire connections should be P (Power) and S (Signal)
4. The channel number indicated by the connection on the 5100-90 becomes the Sentry module address number
 - **NOTE:** Sentry digital input sensor modules on the same controller must not have addresses which duplicate addresses used on the 5100-90
5. Set select switches on the right side of the converter to identify the sensor module type as follows:

Type	Switch 1	Switch 2
Combustible	OFF	ON
Oxygen	ON	OFF
Toxic	OFF	OFF
Not Active	ON	ON

6. The Power/Comm Bus is located at the bottom of the converter. Connect Power/Comm Bus to the Sentry or an external 20-24 VDC Power Supply as follows:

Converter	Sentry	External 20-24VDC Power Supply
P1	Terminal 1 Channel 8	Power Supply +VDC
S1	Terminal 2 Channel 8	Terminal 2 Channel 8
G1	Terminal 3 Channel 8	Terminal 3 Channel 8K
P2	Terminal 1 Channel 7	Power Supply +VDC
G2	Terminal 3 Channel 7	Power Supply Common

- **NOTE:** Converter terminals P1, S1 and G1 connect to one channel and P2, G2 connect to a second channel. When an external power supply is used, connect S1 and G1 to any single channel on the Sentry

8.9.3 SERVICE

There are no serviceable components on the Analog-Digital Converter. Contact Sierra Monitor for factory service.