

**MODEL MC-4110-CH4
METHANE GAS MONITOR
CALIBRATION PROCEDURE**

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**American Mine Research Methane Sensor Model MC-4110-CH4
Current Loop Mode Calibration Procedure.**

- 1) Put the sensor PC board 253-0253C in the Current Loop Mode by performing the following;
 - a) DS2-BAUD switch position is placed to the LEFT.
 - b) DS2-485 switch position is placed to the LEFT.
 - c) DS1-MODE switch position (#1 switch from top) is place to the RIGHT.
 - d) DS1-switches #2,#3,#4 (from top) are placed to the RIGHT.
 - e) DS1-switches #5,#6 (from top) are placed to the LEFT.
 - f) Remove the Address Switch PC board assembly.
 - g) Install a current loop mode monitoring resistor between J1-2 and J1-3.
 - h) Install jumper JP1 and remove jumper JP2.

- 2) Install the calibration plug in the CH4 sensor and deliver ZERO % gas to the CH4 sensor for 2 minutes. Use a VOM to measure the sensor PC board TP1 voltage with respect to J1-3(GND) and insure the voltage is 0.3 VDC (+/- 0.1 VDC). If the voltage is not correct, adjust the ZERO potentiometer for 0.3 VDC. Place the magnet over the TEST/CALIBRATE switch and hold until the calibration is complete. Calibration completion is identified by the LCD display rising to approximately 0.6% and slowly counting down to 0.0 %. When the display blinks (0.0), the ZERO calibration is complete and the magnet may be removed.

- 3) With the calibration plug installed in the CH4 sensor, deliver the SPAN gas to CH4 sensor for 2 minutes. Place the magnet over the TEST/CALIBRATE switch and hold until the calibration is complete. Calibration completion is identified by the LCD display indicating a value less than the SPAN value and slowly rising to the SPAN value. When the display blinks (SPAN VALUE), the SPAN calibration is complete and the magnet may be removed.

- 4) To change the SPAN calibration gas value.
 - a) Put the sensor in the current loop mode as defined in step 1 above.
 - b) Place the DS1 bottom two switches to the LEFT position, (this selects the SPAN gas value setup function).
 - c) Place DS1 switch #3 from the bottom to the LEFT position, (this puts the sensor in the SETUP mode).
 - d) Use the LCD display and SETUP potentiometer R15 to set the desired SPAN gas value.
 - e) Use the screw driver magnet and just tap the TEST/CAL switch. The display will blink 3 times to indicate the value has been saved.
 - f) place DS1 switch #3 back to the RIGHT position to take the sensor out of the SETUP mode.