TELEDYNE
INSTRUMENTS
*Advanced Pollution Instrumentation*
A Teledyne Technologies Company
9480 Carroll Park Drive, San Diego, CA 92121-5201
Phone (858) 657-9800 Fax: (858) 657-9818 Toll Free 1800 324-5190
E-mail: api-customerservice@teledyne.com http://www.teledyne-api.com

**SERVICE NOTE**

**97-034 REV B**
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# ADC CALIBRATION FOR AMX SOFTWARE

I. Scope: To aid in the calibration of the analog to digital converters in an AMX style instrument.

II. Tools Required:
- A. #2 Phillips Head Screwdriver
- B. Pot alignment tool (small flat tip screwdriver)

III. Parts:
- A. 250 Ω ¼ watt resistor.

IV. Procedure:

## Voltage Calibration

- A. Connect a multimeter to the rear panel:
  Pins 3 & 4 for NOx analyzers
  Pins 1 and 2 for all other analyzers
- B. Place the multimeter in the millivolt range.
- C. Push the following buttons:
  "setup_more_diag_enter_next_next_cfg_enter"
- D. Check that all four DAC channels are configured for voltage.
- E. If a particular channel is not configured for voltage, press the "set" button and configure that channel then check following channels.
- F. Press exit one time.
- G. Press "ADC"
  Look at the meter and the front panel. Adjust R27 on the V/F card such that the front panel matches the meter. Press enter.
- H. Change the range on the meter to VDC.
- I. Look at the meter and the front panel. Adjust R31 on the V/F card such that the front panel matches the meter. Press enter.
- J. Press exit until you are at the sample menu.

## Current Calibration

A. To set up the unit for 4 – 20 milliamp you must change some jumpers on the motherboard. See the chart below to determine which jumpers must be changed for the desired channel to be converted to 4 – 20 milliamp.

| Model | DAC Number | Name | Mother Board Jumper | Rear Panel Pin |
|---|---|---|---|---|
| M100A | | | | |
| | 0 | conc. | 5 & 6 | 1 & 2 |
| | 1 | conc. | 3 & 4 | 3 & 4 |
| | 3 | test | 7 & 8 | 7 & 8 |
| M200A | | | | |
| | 0 | NOx | 3 & 4 | 3 & 4 |
| | 1 | NO | 1 & 2 | 5 & 6 |
| | 2 | NO2 | 5 & 6 | 1 & 2 |
| | 3 | test | 7 & 8 | 7 & 8 |
| M300 | | | | |
| | 0 | conc | B1 & B2 | 1 & 2 |
| | 1 | conc | none | 3 & 4 |
| | 3 | test | none | 5 & 6 |
| M400 | | | | |
| | 0 | conc | J 13 (special adapter) | 1 & 2 |

B. Press "setup_more_diag_next" to "dac cal" then "enter"
C. Press "cfg" and change all of the desired channels to 4 – 20 milliamp.
D. Hook a 250 Ω resistor in series with a meter (set to read current)
   Pins 3 & 4 for NOx analyzers
   Pins 1 and 2 for all other analyzers
E. Press "cal" and follow the instructions on the screen to calibrate the current output.