Model 402, 402R, 402REU: Start-up Procedure

Equipment needed: Digital multimeter (DMM)
Power cord
Document needed: Instruction manual
Gases needed:
Zero gas: Zero grade (representative of background gas)
Fuel: (40% H2 / 60% N2) or 100% H2
Air: Zero grade air
Span gas: (70-90% of range) ppm CH4 balance back ground)

Procedure:

1. Connect power cord to AC inlet

2. Position ON / OFF switch to ON

3. Connect zero grade air to analyzer, set the input pressure to 30 PSIG, adjust the air regulator inside the sample module for 15 psig or as indicated in the instruction manual

4. Connect Zero gas to analyzer, set the pressure to 30 PSIG or same as sample pressure, adjust sample bypass valve so the sample pressure gauge inside the sample module indicates the pressure in the instruction manual, and sample bypass flow meter reads 0.5 to 2 SCFH

5. Connect fuel (40 / 60 mix or 100 H2 per application); set pressure to 30 PSIG

6. Check 0-1 VDC, 4-20 MA output, and alarm(s), by adjusting the zero and span pot to get the analyzer reading from 0-100% of full scale

7. Let the analyzer run for 8 hours or overnight

8. After the sample cell temperature is stabilized, position range switch to Ignite; hold for 6 seconds, then release to HI range

9. Wait until the analyzer reading is stabilized, introduce span gas, adjust fuel regulator in increments of 0.5 PSIG at a time, and watch for the analyzer reading to increase; continue to adjust fuel regulator until the analyzer reading is increasing slower or the reading starts to decrease

10. Wait until the analyzer reading is stabilized, adjust span pot until the analyzer reads the concentration in the cylinder

11. Introduce zero gas, wait until the reading is stabilized, adjust zero pot until analyzer reading is 0 ppm

12. Repeat steps 9 and 10 until no further adjustment is required

13. Connect sample to the analyzer, check the sample pressure and flow rate; now the analyzer is ready to go on line

NOTE: The flow restructures are:

Blanket air = 600 sccm

Sample = 30 sccm

Fuel = 200 sccm (Standard 40 / 60 mix)

Fuel = 30 sccm (100% H2)

When the background is hydrogen, the fuel port is connected to zero grade nitrogen