



Quick Installation Guide

Smart-Trak[®]2 DIGITAL MASS FLOW

Smart-Trak 2 Model 100 Meters & Controllers

Note: A copy of this Quick Start Guide, the user software and the manual are also included on the Product Information CD included in your shipment.

SAFETY

1. **Apply power only after reviewing wiring diagrams printed on the back of this card & in Instruction Manual, Ch. 2**
2. Apply gas flow only after **checking plumbing connections for leaks**
3. **NEVER TEST FOR LEAKS WITH LIQUID LEAK DETECTOR.** If liquid seeps into the electronics or the hidden sensor compartment, the instrument may be damaged. Instead, use a pressure-decay test (if liquid **MUST** be used at all, limit it to the fittings and keep it off the body of the instrument).

INSTALLATION

1. **Consult the instrument's Data Label (on the rear of the instrument)** for ALL proper operating parameters. If the information on the Data Label does not match your process conditions, contact your Representative or Sierra Instruments Customer Service.
2. **Install a 10 micron in-line filter upstream of your instrument.** If the gas contains any moisture, use an appropriate dryer or desiccant. Particles larger than 10 micron and moisture may damage your instrument.
3. **Mount according to Data Label orientation.** Horizontal flow is preferable and factory default **UNLESS** the factory calibration was performed specifically for vertical flow upward or downward, as listed. Orientation is listed on the Data Label and on the Calibration Certificate.
4. **DO NOT APPLY POWER TO THE OUTPUT LOOP.** This is **NOT** a loop-powered device.
5. **Apply power only after reviewing wiring diagrams printed on the back of this card & in Instruction Manual, Ch. 2** Power is applied via the HD DB15 connector. The CAT-5 RJ45 connector is for the Sierra Remote Pilot Module or provided 'CRN' cable. **DO NOT use the CAT5 RJ45 port for Ethernet—damage to your computer system or the instrument may occur.**

OPERATION

1. **Power the unit.** If you are using the Sierra provided power supply, it is recommended you attach the D-sub connector to the Smart-Trak 2 before plugging the adapter into the wall. The unit may take longer to start than normal if otherwise. This will not damage the unit. The green LED above the RJ45 connector will light when the unit powered.
2. **Our Mass Flow Controllers** are shipped with a zero setpoint in Automatic valve operation mode. **For safety considerations, it is recommended you confirm this prior to applying gas to the unit.**
3. **Apply the gas listed on the Data Label** to the inlet at the recommended pressure (listed on the Data Label/Calibration Certificate). Your Smart-Trak 2 Meter will begin to measure mass flow. This will be displayed on the user software or display module that you have hooked up.
4. **Mass Flow Controllers will need a setpoint input** in order to control flow. **Do so carefully!** You can digitally input a setpoint using the provided User Software or Pilot Module, or control directly with your analog setpoint source. **NOTE:** You can change the setpoint source type using the software or Pilot Module. The unit ships in the configuration initially chosen (or default if not specified). This information is also listed on the Data Label and on

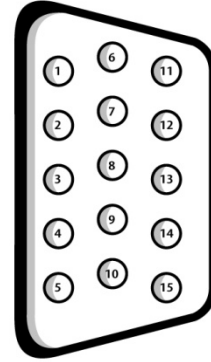
Email Technical Support: service@sierrainstruments.com

24 Hour Live Help Online: www.sierrainstruments.com (Click "Sales & Service" button)

Telephone Technical Support: North America: 800.866.0200 or 831.373.0200 ; Europe, Middle East, Africa + 31 72 5071 400 ; Asia: + 8620 3435 4870

the Calibration Certificate. This information is also inherent in the model code. See the Instruction Manual for details.

- DO NOT** leave a setpoint applied for an extended period of time to a controller when the gas supply is off or blocked. Damage may result from excessive heating, and the unit will become hot enough to burn you. Alternatively, you can maintain your setpoint value but close the valve by switching Valve Operation to Closed digitally with the user software or the display module, or with an analog ground to the appropriate pin (see over).



Wiring Definitions for Optional Communication Cable (Pinout)

Pin #	Wire Color in Cable	Function
1.	Brown	Analog Ground/Output
2.	Red	0-5 VDC Output (or 0-10, 1-5 VDC)
3.	Orange	Analog Ground/RS232
4.	Pink	Valve Override Purge
5.	Yellow	Power Return (-)
6.	Green	Power Input (+)
7.	Green/White	RS-232 Transmit (out)
8.	Blue	Setpoint
9.	Purple	Not Used
10.	Gray	Analog Ground/Setpoint
11.	White	Reference Voltage
12.	Black	Valve Override Close
13.	Brown/white	RS-232 Receive (in)
14.	Red/white	4-20 mA Output
15.	Red/Black	Not Used
	Shield	Chassis (Earth) Ground

Figure: Pin Locations on Instrument

NOTE: Pins 1, 3, and 10 are connected together inside the instrument. DO NOT tie these grounds together outside the instrument. Must have one connection per analog ground.

Smart-Trak 2 Compatibility Reference

Note: Original Smart-Trak=ST1; Smart-Trak 2 = ST2

Pilot:	<i>Not compatible: Match pilot and meter firmware revisions</i>	
User Software:	<i>Not compatible: ST2 user software will be provided with each meter</i>	
C10 Cable/Pinout:	<i>Compatible. See pinout above. Chassis (Earth) Ground moved from pin 15 to shield</i>	
Power:	<i>Compatible.</i>	RCA 'CRS' RS232 Cable: <i>ST1 only.</i>
CAT5 Display Cable:	<i>Compatible.</i>	RJ45 'CRN' RS232 Cable: <i>ST2 only.</i>
Compod:	<i>Compatible. Following items not supported by ST1:</i>	
	Gas Span:	Will read zero, writing to it will generate an exception error
	Sensor Data:	Will read zero, sensor alarm nonfunctional
	Set Unit to Zero:	Writing to it will generate an exception error
	Reset to Factory Default:	Writing to it will generate an exception error
180 Modbus interface:	<i>Compatible</i>	
Command Set:	<i>Not compatible. Available upon request.</i>	
NOTES:	<ul style="list-style-type: none"> <i>*Analog grounds must be kept separate</i> <i>*Need Earth/Chassis Ground for ST2</i> <i>-Can connect multiple RS232 devices at once (Display, Compod, Computer) to ST2</i> <i>-Unit can only receive commands from one at a time</i> <i>*All Serial Numbers after 125,000 are ST2.</i> 	