Heated Inlet Sample Conditioner Accessory

Model 854041
for DustTrak™ Environmental Monitors

Installation Guide

Thank you for purchasing a DustTrak™ Environmental Monitor Heated Inlet Sample Conditioner Accessory (PN 854041). This guide will help you quickly begin using your Heated Inlet Sample Conditioner.

Warning Labels

Warns that the instrument could be hot to the touch or a burn hazard.

Unpacking

1. Carefully unpack the Heated Inlet Sample Conditioner from the shipping container and verify that all the items listed in the following table are present.

2. Contact TSI® immediately if items are missing or broken.

3. Additional items may be included if you ordered accessories or spare parts.

Qty.	Item Description	Reference Picture
1	Heated Inlet Column	
1	RH/Temp Sensor	
1	RH/Temp Sensor Gland	
1	Heated Inlet Control Module	
1	Omni-Direction Inlet	

Qty.	Item Description	Reference Picture
1	Water Trap	
1	Power and Communication Cable	
1	Cover – Sun Shield for RH/Temp Sensor	
1	Ferrite	
4	Cable Tie Mount	
6	Cable Tie	
2	Washer	
2	Screw	
1 bag	Misc. O-rings	

Tools Needed for Installation

Small Flat-head Screw Driver *(not included)*	
7/64" Hex/Allen/ball wrench *(not included)*	

Installing the Heated Inlet (854041)

1. Attach heated inlet control module to the front of the Photometer. This can be done using the 2x 6-32 x 5/16 Socket Head Cap Screws and 2x flat washers. Use a 7/64" ball driver.

2. Push out elastic plug and install RH/Temp Sensor sealing gland. Removable nut should be installed on the inside of the enclosure.

⚠	**WARNING**
	Water gasket on gland must form a good seal with the exterior of the enclosure to ensure a waterproof seal.

3. Insert RH/Temp Sensor through gland and tighten gland nut. Extend probe ~2.75" (7 cm) beyond nut.

4. Attach the sun shield to the top of the RH/Temp Sensor as shown. Sun Shield should not touch sintered cap of RH/Temp Probe.

5. Attach RH/Temp Sensor cable to heated inlet control module (J3).

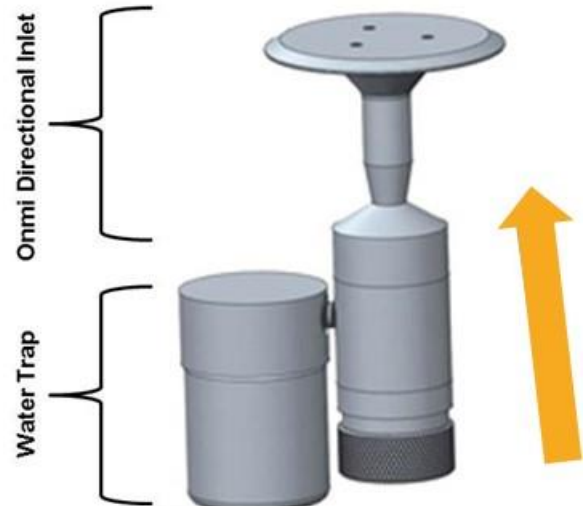6. Attach the two larger (gray) connectors to side of the photometer.

7. Attach the two smaller (white) connectors to the Power/Communication inputs (J1 and J2) of the heated inlet control module.

8. Install the water trap bottle onto the side of the inlet as shown.

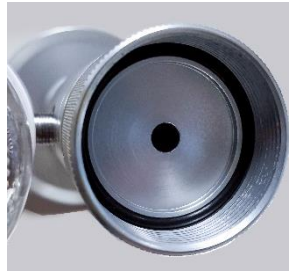| **NOTICE** |
|---|
| For best results, use PTFE Thread Sealant Tape on the water bottle threads. |

9. If required, install the impactor (PM1, PM2.5 or PM10) per the instructions that came with the impactor kit.

NOTICE

Impactors are not used on DustTrak™ DRX models.

10. Install the O-ring into the bottom of the inlet.

11. Slide the column retainer ring onto the heated inlet column.

12. Attach the inlet to the column.

13. Install O-ring and route cable through the mounting ring. Pull excess cable through to prevent pinching of cable when inlet column is installed.

O-ring

14. Set inlet column on top of photometer mounting ring, rotate slowly until alignment pin mates with the hole in the bottom of heated inlet column.

15. Slide column retainer ring down heated inlet column.

16. Hand-tighten column retainer ring to secure inlet column to photometer mounting ring.

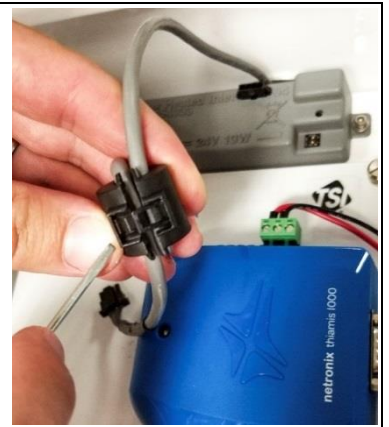|	
17. Attach ferrite to cable with one wrap of the cable and snap the ferrite together.	
18. Attach heated inlet cable to heated inlet control module (J4).	

19. If using a Thiamis 1000 Node, route the other side of the cable to the power input on the Thiamis node (green connector). If you are not using the Thiamis 1000 telemetry node, this cable can remain disconnected.

Heated Inlet Removal

1. Unscrew the top knurled ring/collar from the lower mounting collar.	
2. Inside the Enclosure, disconnect the Heated Inlet cable (note that the connector has a lock-release on it).	

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3. Remove the Ferrite Clamp Assembly. Note that the clamp is released by inserting and twisting a small flat blade screwdriver. Also, for purposes of re-assembly, note that the cable twists two times through the Ferrite.	
4. Carefully pull the Heated Inlet Assembly up.	
5. Carefully pull the Heated Inlet cable and connector through the slot in the Mounting Ring. Now the Heated Inlet Assembly can then be completely removed.	

Operating Instructions

1. When powered and attached to the DustTrak™ monitor, the Heated Inlet will automatically function.

2. Select RH set point that will be controlled at the entrance to DustTrak™ monitor to be 30, 40 or 50% RH via the DIP switches. Heated inlet will then power the heater to heat incoming air and thereby decrease RH to the targeted level.

NOTICE
By default, TSI® sets the RH set point to 30% RH at the factory. If needed, this can be adjusted to meet other application needs / requirements.
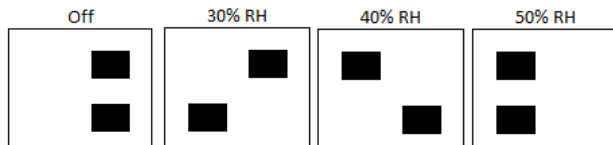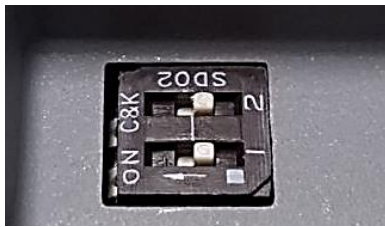
The **LED** describes the status of the heated inlet:

Solid Green	Inlet temp. is < 1°C below set point and controlling to maintain set point.
Blinking Green	Inlet temp. is between 1 to 5°C below set point and controlling to improve.
Blinking Red	Inlet temp. is more than 5°C below set point and controlling to improve. This will occur when unit is first turned on and coming to temperature.
Solid Red	Sensor unplugged or has issue.

Specifications

Power	12-24 Volts DC; 13 Watts
Dimensions.........	Heated inlet 13 in. x 2 in. dia (33 cm x 5 cm) dia Control module 7 in. x 1.5 in. x 0.75 in. (17.8 cm) x (3.8 cm) x (1.9 cm)
Temp Range	0 to 50°C (32° to 122° F)
RH Range...........	0 to 95%
RH Set Points	30% RH, 40%RH, 50% RH
Warm-up Time....	17 minutes
CE	IEC 61326 & IEC 61010-1

Knowledge Beyond Measure.