Service Guide

Before servicing components, it is important and advised to read and understand all instructions and procedures in this Service Guide.

Replacement Instructions

Replacing the
Sahara Moisture Transmitter (SMT)

With the
Sahara Dewpoint Transmitter (SDT)

Table of Contents

SAHARA AIR PRODUCTS
A Div. of HENDERSON ENGINEERING COMPANY, INC.
95 North Main Street • Sandwich IL 60548
815-786-9471 • 800-544-4379 • Fax: 815-786-6117
www.saharahenderson.com

[This page intentionally left blank]

INTRODUCTION

About This Service Guide

This guide contains instructions on how to replace a Sahara Moisture Transmitter (SMT) with a Sahara Dewpoint Transmitter (SDT). The SDT is a direct replacement for the SMT and is provided with its own cable.

Before Servicing Equipment

- Read and understand all instructions and procedures before servicing equipment.
- Read and observe all warnings and cautions in this Service Guide, as well as those in the air dryer instruction manual which was included with the air dryer upon shipment. They provide information that can help prevent serious injury, damage to components, or both.
- Follow your company's maintenance, service, installation, and diagnostics guidelines.
- Use proper tools to help avoid serious personal injury and damage to components.
- Installation should be carried out by trained technicians and following local safety protocols.

Messages and Symbols

Attention / Warning!

This symbol indicates there are important operating and maintenance instructions which any and all operators should read closely to avoid danger and prevent problems. The instructions must be followed to avoid serious injury and/or damage to components.

Advice

This symbol indicates an instruction or procedure of particular interest or importance that must be followed to avoid damage to components and/or to ensure proper use of the equipment.

REMOVAL OF THE SMT

Note: Illustration 2 (sampling system diagram), as referenced in the following steps, can be found in Appendix B.

To remove the SMT:

- **To prevent accidental damage or injury, do not perform these steps with the PLC energized.**

1. The dryer should be powered off before performing these steps by placing the dryer ON/OFF switch in the OFF position.

- **Before unplugging the transmitter cable wires in the next step, take note of where each of the cable wires are currently connected and the wire color. A photo may be useful for reference during the SDT installation steps in the next section.**

2. Unplug the transmitter cable wires from the terminal in the electrical panel. The cable wires will be the blue (positive), brown (negative), and the shield wire.

3. If the transmitter is installed in a sample cell, follow these steps:

   a. Locate the Dewpoint Demand System sample cell inlet and outlet valves. Consult the P&ID flow schematic for your specific dryer to locate these valves.

   b. Close the sample cell inlet valve (#3 in Illustration 2) in the sample system, so no incoming dry sample air enters into the sample cell. Fully open the outlet valve (#4 in Illustration 2).

   c. Make sure all remaining air trapped in the sample cell has been bled out through the outlet valve before removing the transmitter from the sample cell.

   d. Disconnect the cable from the transmitter. This cable can be discarded, as the SDT comes with its own cable.

   e. Remove the transmitter from the sample cell by unscrewing it counter clockwise.

4. Proceed to the steps for installing the SDT.

INSTALLATION OF THE SDT

Note: Illustration 2 (sampling system diagram), as referenced in the following steps, can be found in Appendix B.

Before mounting the SDT into any system, ensure the system is safe to work on.

To install the SDT:

- **The SDT is provided with its own cable which must be used. Do not use the SMT cable.**
- **Make sure to appropriately wire the SDT to the terminal in the electrical panel (PLC). The SDT will not have a shield wire like the SMT.**
- **Connect the positive and negative wires in the correct terminal. Failure to do so will result in dew point readings not being displayed.**

1. Remove the shipping tube cover from the SDT before installing.

2. If the SDT is being installed in a sample cell (if not being installed in a sample cell, proceed to step 3):

   a. It is advisable to carry out an initial purge routine of the sample loop, before installing the transmitter, to remove the possibility of sensor damage on start-up.

   b. Ensure upstream/inlet sample cell valve (#3 in Illustration 2) is closed prior to the installation of the transmitter.

   c. Install the SDT into the sample cell/transmitter holder and tighten firmly (finger tight) to properly compress the o-ring seal.

   d. Connect the cable to the SDT by aligning the keyed groove in the connector with the keyed notch in the SDT; push inwards and screw the locking ring clockwise until it's finger tight.

   e. The sample cell inlet valve (#3 in Illustration 2) should remain fully closed and the outlet valve (#4 in Illustration 2) should be fully open to atmosphere.

   f. Slowly crack open the sample cell inlet valve (#3 in Illustration 2) and slowly close the outlet valve (#4 in Illustration 2). This will slowly pressurize the sample cell.

   g. Once the sample cell is fully pressurized, fully open the sample cell inlet valve (#3 in Illustration 2) and crack open outlet valve (#4 in Illustration 2) to have flow to atmosphere (approximately 2 SCFH is sufficient). This will allow the transmitter to read pressure dew point.

INSTALLATION OF THE SDT

3. Connect the cable to the SDT by aligning the keyed groove in the connector with the keyed notch in the SDT; push inwards and screw the locking ring clockwise until it's finger tight.

4. Connect SDT cable wires to the terminal in the electrical panel as follows. Use the notes and/or photo that you took in the SMT removal steps for reference.

   a. Connect the red wire (positive) in the same terminal as the SMT blue wire had been connected.

   b. Connect blue wire (negative) in the same terminal as the SMT brown wire had been connected.

   Note: No shield wire on the SDT.

- **Do not apply power until all wiring is completed and checked.**

5. **The dryer can now be powered on by placing the dryer ON/OFF switch in the ON position.**

6. The system must be allowed to equalize for approximately 15 minutes, before accurate readings can be observed.

APPENDIX A: WIRING CHART & ILLUSTRATION

SDT Wiring			Replaces SMT Wire
Connector Pin	**Wire**	**Signal**	
1	Red	+ve	Blue
2	Blue	4-20 mA	Brown
3	Nc		
4	Nc		

Table 1: Wiring Chart

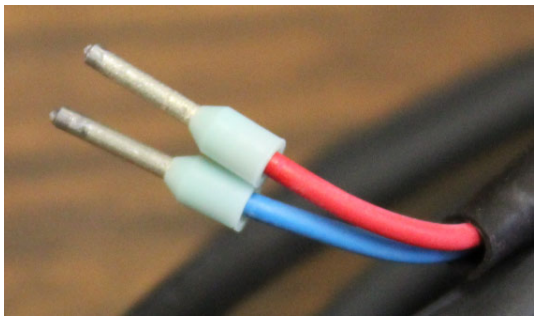
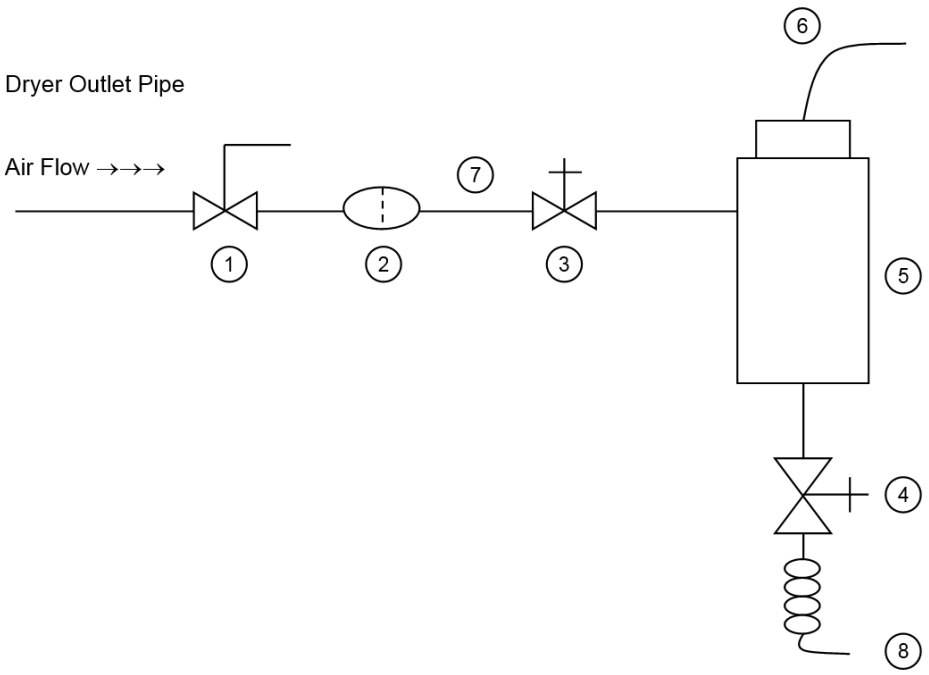


Illustration 1: SDT cable wires

APPENDIX B: SAMPLE CELL SYSTEM



1.	1/4" Ball Valve	Not included with SDT (may be purchased from Henderson Engineering)
2.	1/4" Inline Filter	Not included with SDT (may be purchased from Henderson Engineering)
3. & 4.	1/8" NPT x 1/4" O.D. Tube Needle Valves	Included only with SDT complete assembly
5.	Sample Cell	Included only with SDT complete assembly
6.	Cable (From SDT)	Included with SDT
7.	1/4" Tubing	Not included with SDT
8.	1/4" Tube Pigtail (optional)	Not included with SDT

Illustration 2: Sampling system diagram. Systems will vary with each dryer. For illustrative purposes only.

FIELD & TECHNICAL SUPPORT

Service Manager
Bryan Scott
Office: 815-786-9471 Ext. 129
Cell: 630-697-3608
Fax: 815-786-6117
E-mail: BryanScott@saharahenderson.com

Service Engineer
Andres Perdomo
Office: 815-786-9471 Ext. 127
Fax: 815-786-6117
E-mail: AndresPerdomo@saharahenderson.com

INSIDE SALES FOR PARTS

Inside Parts Sales
Mimoza Jaisi
Phone: 815-786-9471 Ext. 134
Fax: 815-786-6117
E-mail: Sales@saharahenderson.com

When contacting Henderson Engineering, please have the following information available:

- **Serial Number** which can be found on the air dryer; either on the ASME code nameplate on the dryer towers or in the electrical enclosure.
- **Model Number** which can be found on the air dryer; either on the ASME code nameplate on the dryer towers or in the electrical enclosure.
- Inlet air temperature and pressure.
- Actual inlet flow rate.

**Henderson Engineering Co., Inc.,
is proud to be certified to the
ISO 9001 Quality Management System
standards and guidelines.**

Sahara Air Products, Div. of Henderson Engineering Co., Inc.
www.saharahenderson.com
Phone: 815-786-9471 ● Fax: 815-786-6117

Business Office Hours: Monday - Friday 8:00 a.m. - 4:30 p.m.
Receiving Dock Hours: Monday - Thursday 7:30 a.m. - 3:30 p.m.