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ENVIROMUX® Series

Temperature/Humidity and Leak Detection Sensor Installation Manual for E-1W Sensors

E-TH1W-7

Temperature/Humidity/Dewpoint sensor

E-T1W-1M

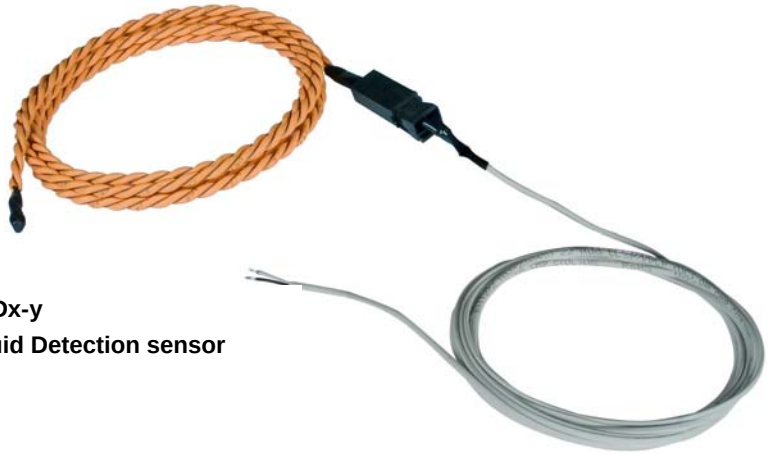
Temperature sensor

E-TCKS-752

K-Type Thermocouple Temperature sensor

E-TCKS-1382

K-Type Thermocouple Wide-Range Temperature sensor



E-LDx-y

Liquid Detection sensor

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INTRODUCTION

Many different sensors can be connected to the E-1W(P) Environment Monitoring Systems. A complete listing of available sensors and accessories can be found at http://www.networktechinc.com/environment-monitor-1wire.html and the manual covering installation and configuration for all features can also be found at this website.

This manual is only provided to instruct how to install the ENVIROMUX temperature and humidity sensors and leak detection sensors to this system.

MOUNTING

The E-TH1W-7 Temperature/Humidity/Dewpoint sensors are intended for indoor use only. These sensors can be mounting in any position but include a keyhole slot on the back to enable quick wall-mounting if desired.

Figure 1- Keyhole slot for standard mounting

The twisted orange sensing cable of the E-LDx-y (or yellow/black cable of the E-LD-LCx-y) should be placed flat on the surface (usually the floor) where liquid detection is desired. If tape is required to hold the sensor in place, be sure to only apply tape to the ends, exposing as much of the sensor as possible. E-CLP10-LD Self-Adhesive clips for Liquid/Chemical sensor rope can also be used (sold separately). At least 5/8" of the sensor must be exposed for it to function.

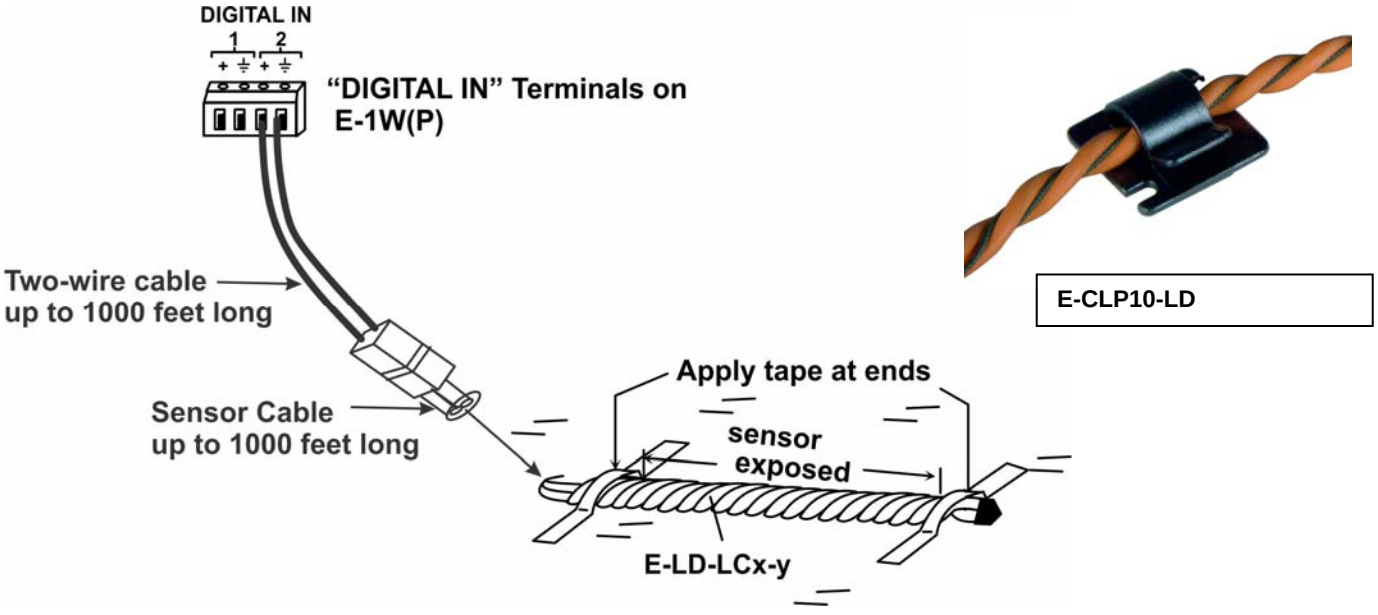


Figure 2- Liquid detection sensor

Note: The connection between the two-wire cable and the sensor cable is not designed for exposure to liquids and cannot be submerged.

Liquid Detection Rope Maintenance

For periodic maintenance, you can clean the rope with isopropyl alcohol without completely removing the rope from its installed location.

1. Remove the section that you want to clean from its self-adhesive clips.
2. Soak the alcohol in a dye-free rag and proceed to wipe it around the rope, squeezing firmly while pulling the rag down the length of the rope.
3. Flip the rag every several feet and re-saturate the rag with alcohol when needed.
4. After cleaning a section of the rope, you can replace it and continue to clean the next section in similar fashion.
5. Replace the rag if it becomes too dirty.

If the rope is still giving you problems after you have cleaned it with isopropyl alcohol or if you think the rope needs a good scrubbing, you can clean it with warm soapy water. You will have to remove the rope from its installed location. It may be helpful to label the sections of the rope or note their locations before you start for an easier re-installation.

1. Gather Dawn dish soap, a large bucket or plastic bin, warm water, soft-bristled scrub brushes, and clean rags.
2. Add dish soap to the bucket of water, approximately 1 cup of detergent to 1 gallon of warm water. To determine if the solution is concentrated enough, place your finger and thumb in the water and rub them together. You should feel a slick/slimy residue. If you do not feel a residue, add more detergent to the water and gently mix to distribute the soap.
3. Submerge a section of the rope in the water. Using a scrub brush or rag, scrub along all sides of the rope with firm pressure.
4. Remove the section of the rope from the soapy solution and rinse it in a bucket of clean, fresh water.
5. Ensure that there are no oily deposits along the length of the rope. If the rope does not appear clean, submerge it in water and scrub again, repeating steps (3) to (5).
6. Hang the clean rope up to dry. Try to point the connectors down, so water cannot pool inside the connectors. The drying process may take 6-8 hours, depending on the room conditions.
7. When the rope is completely dry, reinstall it in its original location.

CONNECT SENSORS

RJ11 Sensors

The temperature and humidity sensors for the E-1W Environment Monitoring Systems have RJ11 6P4C plugs for connection to RJ11 6P4C jacks on the E-1W. Connect each sensor to one of the female connectors labeled "1W Sensors" on the ENVIROMUX using RJ11 6P4C Straight-Wired Patch Cords and RJ11 Splitters (NTI# RJ11-3JCK). The male RJ11 connectors should snap into place. (See page 6 for wiring specification and pinout.) The total length of all combined sensors cables connected to each 1W Sensor port can be up to 600 feet.

Note: It is very important to locate the temperature and/or humidity sensors away from ventilation sources and fans.

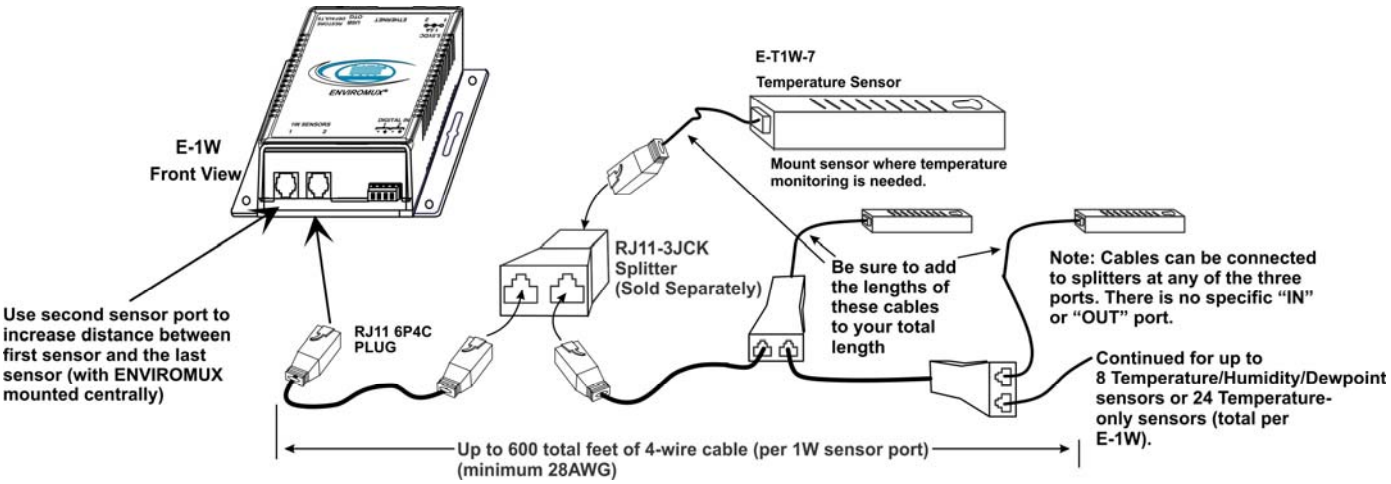


Figure 3- Connect Sensors using patch cable with RJ11 6P4C connectors

Application Note:

When connecting temperature and humidity sensors to the ENVIROMUX, the web interface will identify the sensor accordingly for the type of sensor it is. The various temperature and humidity sensor models offered by NTI have varying ranges of performance capabilities, as indicated in the table on page 4. Be sure to match the sensor installed to the operating range of the environment it will be expected to work in. Using a sensor outside of its intended temperature range may result in damage to the sensor.

All sensors will be automatically detected at boot-up. To add more sensors after boot-up, click on "Detect Sensors" on the Summary Page after making connection.

K-Type Thermocouple Temperature Sensors

K-Type Thermocouple Temperature Sensors such as E-TCKS-752 and E-TCKS-1382 can be connected to the E-1W using the E-TCK1W-7 Thermocouple K-Type to 1-Wire Converter.

Note: No changes in the jumper positions on the E-TCK1W-7 are necessary.

The E-TCK1W-7 includes a 7ft 28AWG cable for attachment to the E-1W. The sensor and sensor converter can be hot-plugged to the E-1W.

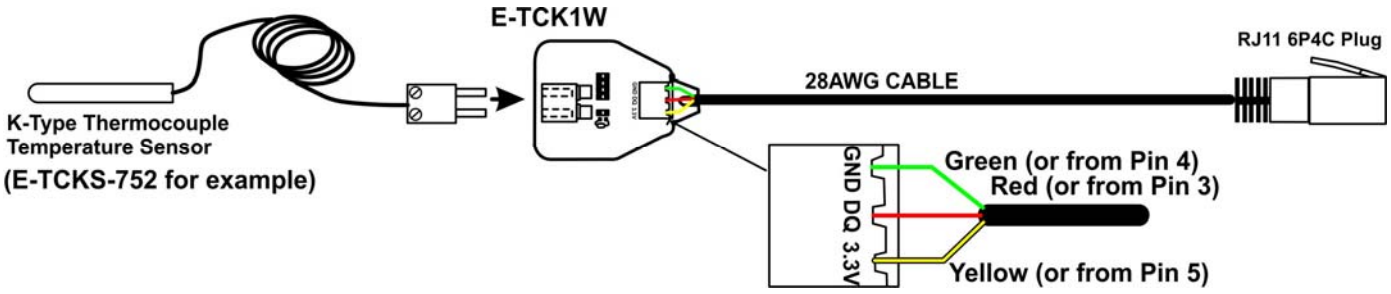


Figure 4- Connect K-Type Thermocouple using E-TCK1W-7

NTI E-1W TEMPERATURE/HUMIDITY SENSOR ATTACHMENT

TEMPERATURE AND HUMIDITY SENSORS

SENSOR MODEL	OPERATING TEMPERATURE RANGE	HUMIDITY RANGE	ACCURACY
E-TH1W-7	-40 to 140°F (-40 to 60°C)	0 to 90% RH.	±0.72ºF (±0.4°C) from 14 to 185ºF (-10 to 80ºC) ±0.90ºF (±0.5ºC) from -4 to 14º (-20 to -10ºC) ±3% from 0 to 80% Relative Humidity ±4% from 80 to 90% Relative Humidity
E-T1W-1M	-40 to 185°F (-40 to 85°C)	n/a	±0.5ºC(±0.9º F) from -10ºC to 85ºC (14ºF to 185ºF)
E-TCKS-752	32 to 752°F (0 to 400°C).	n/a	±4.0°F (±2.2°C).
E-TCKS-1382	-40 to 1382°F (-40 to 750°C) **(Probe Only)**	n/a	0.75% ±4.5°F (0.75% ±2.5°C)
ENVIROMUX0-TCK1W Converter	-30ºC to 85ºC (-22ºF to 185ºF)	n/a	n/a

Sensor Calibration

All temperature/humidity/dewpoint sensors are factory-calibrated and are not designed to be calibrated in the field. In the event recalibration of your sensor is desired, please contact NTI for an RMA to return your sensor. Sensors within warranty will be recalibrated at no charge. Normal labor charges will apply to sensors out of warranty.

CONNECT LEAK DETECTOR

Connect the liquid detection sensor E-LDx-y or E-LD-LCx-y to a set of terminals (1 or 2) marked "DIGITAL IN". Alternatively, use an E-DI2-1W Digital Input Expander (sold separately) to connect up to two liquid detection sensors to the 1W Sensor trunk line (see image at bottom of page).

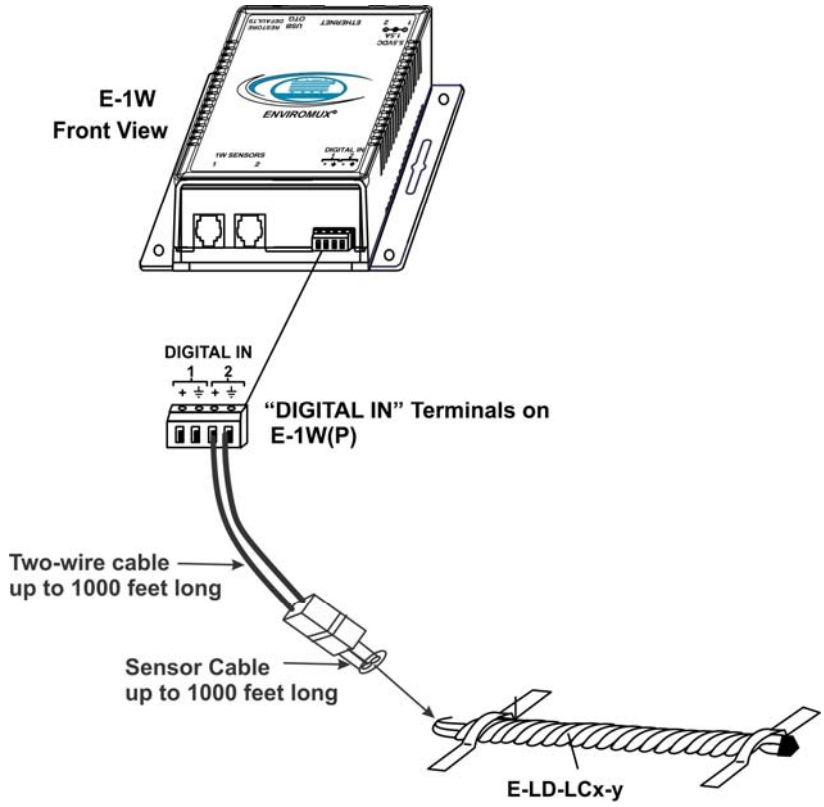


Figure 5- Connect liquid detection sensor to digital input

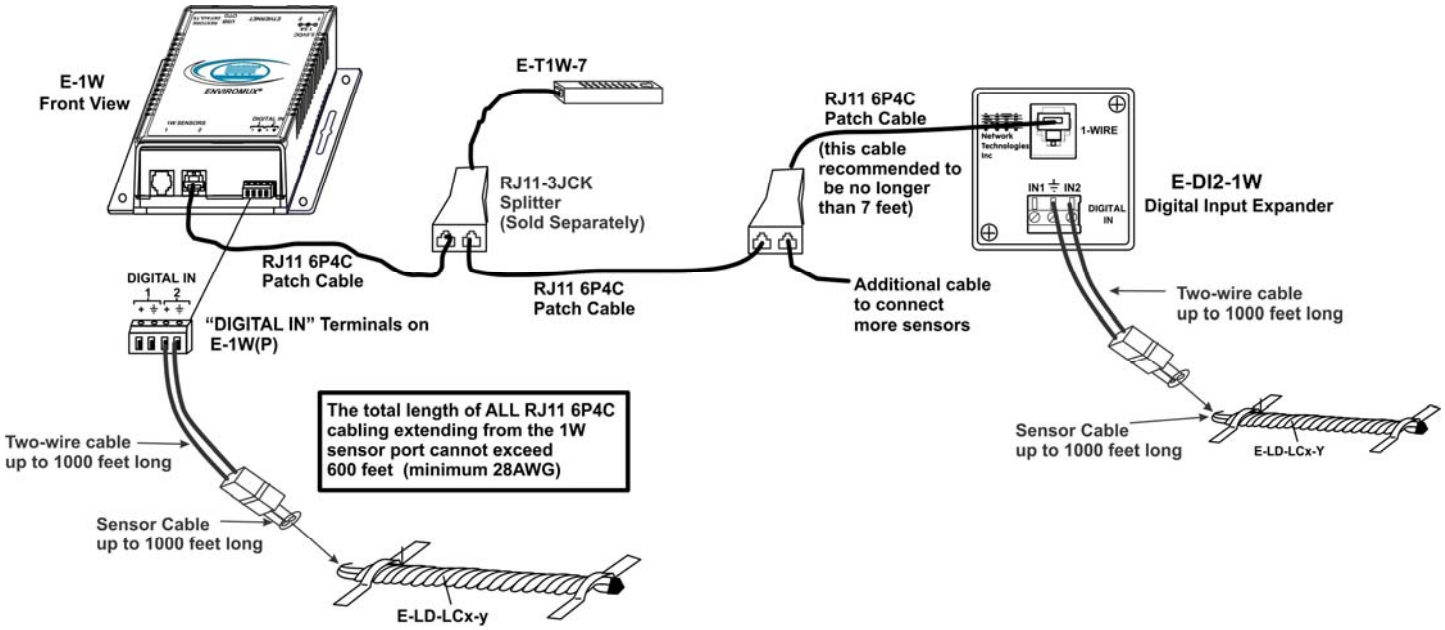
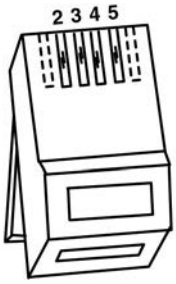


Figure 6- Connect liquid detection sensor using digital expander

RJ11 Sensor Cable

The RJ11 6P4C 4-Wire connection cable between the ENVIROMUX and connected external sensors is terminated with RJ11 6P4C plugs and must be wired straight through, pin 3 to pin 3, pin 4 to pin 4, etc. Wiring is as per the table and drawing below. The sensors that connect to "RJ11 Sensor" ports are all designed to use cables wired to this standard.

Pin	Wire Color	Signal
1	no wire	--
2	not connected	--
3	Red	Data
4	Green	Gnd
5	Yellow	VCC
6	no wire	--



RJ11 6P4C CONNECTOR

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