



Networked Robotics Corp.
825 Chicago Ave, Suite F
Evanston, IL 60202, USA
Toll free: (877) FRZ-TEMP
(877) 379-8367

info@networkedrobotics.com
support@networkedrobotics.com

NetworkedRobotics.com

How to Replace the End Connector of a TPL3-series Digital Temperature Probe

Introduction

There are several reasons why you may wish to disconnect and reattach the end connector on your TPL3 digital temperature probes. These include:

- (1) The connector may have been pulled off accidentally.
- (2) You might want a shorter wire.
- (3) There may be a tight space or seal and thus the probe is too big to insert in the monitored device; you need to temporarily remove the end connector so that it fits through the small space and then reattach it.

Preparation

The process of attaching an end-connector is similar to that of attaching an end connector on a standard business phone cord. Your telecom or IT group is likely to have the materials and expertise necessary to do the job. The probe is comprised of standard telecom components. The materials that are needed are commonly available. If your IT or automation group is not available, instructions on obtaining the materials you need are listed below. Instructions on how to attach the connector are given below as well.

Adjusting Length

TPL3s can be lengthened with the RJ45 coupler that is included in every shipment and either Cat5 or business phone cable. So if you shorten a cable more than you expected it's always possible to lengthen it with the coupler. A Cat5 extension may have round wire though rather than the flat wire of the probe which will disturb doors and seals. In freezers try to run only flat wire through doors and seals in order to minimize an air gap and thus air infiltration.

Differences in the Attachment Process between TPL3 and TPL3U

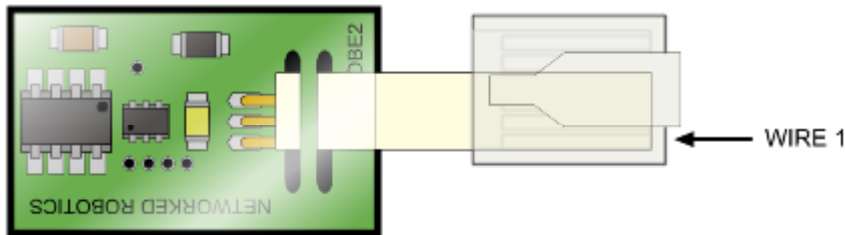
There are differences in how easily the TPL3 model end connector can be attached vs the TPL3U model which is used usually in ultracold freezers. The TPL3U model utilizes a kind of wire that is more difficult for customers to successfully crimp – but the instructions are the same.

Removing the Existing RJ11 End Connector

You can cut TPL3-series flat cable with common scissors. Cut the old end off, cutting perpendicular to the wire. You may wish to save the old connector to look at and use for reference when you crimp on the new connector but don't try to reuse or repair an RJ11 plug that was ever attached to a cable. Always use a new connector.

Crimping the RJ11 Connector

Crimp a new 6-pin RJ11 connector onto the probe wire using a 6-pin telecom RJ11 crimper. Example sources for these are listed below. The TPL3 wire has 4 conductors and the RJ11 connector has 6 so there's not an even pairing. The wire must be inserted asymmetrically all the way to one side before crimping. See the figure below.



Align the probe and wire as indicated. In the figure the tab or clip on the RJ11 connector is on the top, the pins are on the bottom and are only somewhat visible in the figure. In the figure above the wire is shown as just a few inches long which is easy to orient, but standard TPL3-series are 10 feet long. You can trace the wire back from the probe head or you can look carefully at the wire which has two distinguishable sides on the TPL3-model. One side has four sections, on the other there is a broader strip down the middle. In the figure above the top of the wire is the side with the 4 sections. The 4-section side of the wire is visible when the tab is up. If you are recrimping the end connector on a TPL3U model you must trace back the wire to assure that the end connector is placed in the proper tab-up orientation.

The wire must be inserted off-center, in the bottommost position in the figure above. Note that the top 2 pins of the connector are unused.

Slide the connector/cable into the 6-pin section of the crimper and squeeze hard. You may need to squeeze several times to ensure the connection.

Testing

Pull lightly on the connector to make sure it is firmly attached.

Plug the probe into a free NTMS port and make sure that the green LED on the TPL3 is lit. If not use the NTMS Configuration Wizard to make sure that the NTMS port that you are plugged into is set to "TPL3". You may wish to acquire data manually with the "Telnet" command as described in the TPL3 manual to confirm that temperature is acquired properly.

If the probe doesn't light, or if temperature is not acquired, cut the wire, select a new RJ11 end, and try again. It may take several tries to get it right the first time that you attempt to replace the end connector. This is especially true with the TPL3U versions. You may wish to look carefully with magnifiers on the TPL3U versions to make sure that the first three wires line up with the first three pins of the connector. The TPL3U versions often take several tries to crimp successfully.

Home Depot® is a Source for a Crimper Tool and RJ-11 End Connectors

End Connectors

Ideal® 6P6C part 85-345

<http://www.homedepot.com/p/Ideal-RJ11-Modular-Plugs-25-Pack-85-345/202276268?keyword=ideal+85-345>

or

Klein Tools®

http://www.homedepot.com/p/Klein-Tools-Telephone-Plug-RJ11-6P6C-25-Pack-VDV826-600/203579136?MERCH=REC--nosearch2_rr--NA--203579136--N

Crimping Tool

<http://www.homedepot.com/p/Commercial-Electric-Ratchet-Modular-Plug-Crimper-CE70806/202039352>

Contact Networked Robotics at support@networkedrobotics.com for any additional questions.