

Troubleshooting Communication Problems for Network Enabled Temperature Guard Devices

Network Connectivity

The network connection can be verified by checking the left light (Link LED) on the RJ45 jack labeled "LAN" on the network enabled Temperature Guard device.

When fully powered up the left light (Link LED) will be on steady green and the right light (Activity LED) will blink green.

Link LED (Left Side)		Activity LED (Right Side)	
Color	Meaning	Color	Meaning
Off	No Link	Off	No Activity
Amber	10 Mbps	Amber	Half-Duplex
Green	100 Mbps	Green	Full-Duplex

Problem 1: The Link LED light (Left side) does not light.

Resolution 1a: Verify that the device is powered by the wall outlet power supply. Network connectivity is not supported on battery backup.

Resolution 1b: Verify that the device is properly plugged in to the network.

Resolution 1b: If the left link LED is not illuminated, verify wiring to network hardware by connecting a "known good" piece of network equipment to the same port utilizing the same RJ45 Patch Cord.

If the "known good" device functions, the network enabled Temperature Guard device may be damaged or further troubleshooting is required. If the "known good" device does not function either, your network jack is not functional. Have a networking professional repair the jack or utilize a different jack.

Problem 2: I receive the error “No Temperature Guard servers were detected on the Network.” in IP Setup when searching for a new network enabled Temperature Guard device.

Resolution 2a: Perform the search again.

UDP communication is somewhat less reliable than TCP communication. Packets may be lost or dropped resulting in a failure to detect a device. Retry the search at least a couple of times.

Resolution 2b: Resolve software firewall issues on the local PC.

Windows Firewall, Norton Internet Security, or other internet security/firewall programs will need to have the protocols and ports used by network enabled Temperature Guard device unblocked to allow communication.

For support with adding ports to Windows Firewall refer to their Knowledgebase Article: 875357.
<http://support.microsoft.com/kb/875357>

For support with other Internet Security/Firewall applications, please refer to the manufacturer’s web site or help file.

Resolution 2c: Perform searches on the same router/network node as the Temperature Guard device.

Since many network nodes will drop UDP broadcasts, it is advised to do searching and configuration of Temperature Guard devices on a computer connected to the same router or in the same sub-network as the Temperature Guard device.

Resolution 2d: Ensure that the DHCP server is able to lease an IP address to the network enabled Temperature Guard device.

A DHCP server must be available to give the network enabled Temperature Guard device an available IP address.

If a DHCP server is not available, use the “Manually Set IP Address” function found on the advanced menu in IP Setup. You will need to know the MAC address of the network enabled Temperature Guard device which can be found on the white serial # label on the device.

Resolution 2e: You have multiple Network Interface Cards (NIC). IP Setup supports only one NIC card.

Run IP Setup from a PC with only one Network Interface Card or temporarily disable the second Network Interface Card.

Communication Protocol/Port Overview

To find network enabled Temperature Guard devices on the network, Temperature Guard IP Address Setup uses the UDP protocol in broadcast mode on port 30718 (77FEh) to send requests to network enabled Temperature Guard devices to respond with their current IP address.

A Temperature Guard device responds with their IP addresses using the UDP protocol.

To set network address settings on the Temperature Guard device, Temperature Guard IP Address Setup sends settings using the TCP protocol on port 30718 (77FEh).

To send and receive data from network enabled Temperature Guard devices port 10001 (2711h), Data Capture, the Java applet stored on the network enabled Temperature Guard device, and the "Test Communications" function in IP Address Setup, use the TCP protocol on port 10001 (2711h).

Summary

The following ports and protocols must not be blocked by any router or software or hardware firewall.

Protocol	Port(s)
TCP	30718 (77FEh), 10001(2711h)
UDP	30718 (77FEh)

Problem 3: I receive the error "Reading Error: Could Not Open Socket Connection", "Error reading from IP address xxx.xxx.xxx.xxx" using Test Communications in IP Setup or Data Capture or "NO DATA" entries in the status screen of Data Capture for a previously working network enabled Temperature Guard device.

Resolution 3a: Verify 120VAC power to the wall transformer for the network enabled Temperature Guard device.

The network communication functionality is not available with only battery power. Power can be verified at the device by seeing the left light on the RJ45 network jack illuminated.

Resolution 3b: Verify network connectivity to the network enabled Temperature Guard device.

Please see Problem 1.

Resolution 3c: Verify the server properties (IP Address, Subnet Mask, Gateway Address) for the network enabled Temperature Guard device are correct for the network.

If the Subnet Mask and Gateway Address were not explicitly set by using the "Set IP, Gateway, and Subnet via Web" tool from the "Advanced" menu in IP Setup, the network enabled Temperature Guard device will assume these values automatically according to the following rules:

If the IP address is a class A address (0.0.0.0 - 127.0.0.0) a Subnet Mask of 255.0.0.0 will be used.

If the IP address is a class B address (128.0.0.0 - 191.255.0.0) a Subnet Mask of 255.255.0.0 will be used.

If the IP address is a class C address (192.0.0.0 - 223.255.255.0) a Subnet Mask of 255.255.255.0 will be used.

Also by default, the Gateway Address is not set on the network enabled Temperature Guard device. This means the network enabled Temperature Guard device will only be able to communicate with PCs on the local subnet.

To verify that the network enabled Temperature Guard device (server) properties are valid for your network, you will need to obtain the Subnet Mask and Default Gateway Address of a computer on the same subnet/network.

From a command prompt (Click Start, click Run, enter "cmd" and press [ENTER]), enter "ipconfig" and press [ENTER].

You will see an output similar to the following:



Troubleshooting Guide

Windows IP Configuration

Ethernet adapter Local Area Connection:

```
Connection-specific DNS Suffix . :  
IP Address. . . . . : 192.168.0.222  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.0.1
```

If the PC's current Subnet Mask and Default Gateway do not match the values assumed by the network enabled Temperature Guard device or the values that were explicitly set by you using the "Set IP, Gateway, Subnet via Web" tool under the advanced menu of IP Setup, you may need to reset the device to DHCP by using the "Reset Device to DHCP" command under the advanced menu of IP Setup. (Found in versions 4.5 and later).

Once the device has been reset to DHCP and found in a search, you will need to utilize the "Set IP, Gateway, Subnet via Web" tool to set these settings to their correct values.