TROLEX

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AIR XXD

ETHERNET SETUP GUIDE

GENERAL PURPOSE

1. AIR XD ETHERNET SETUP GUIDE

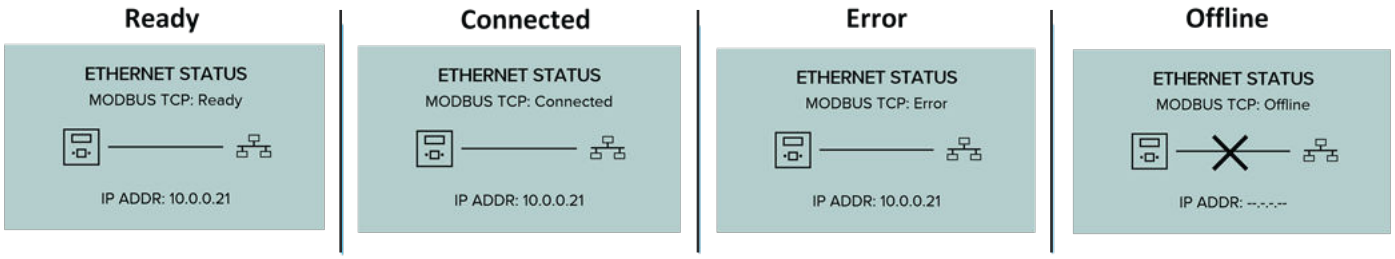
1.1 Introduction

The following guide is to support the setup of the **TX8005 AIR XD** on an ethernet network. **AIR XD** supports communications using MODBUS TCP and can be configured to suit the users network requirements. Below is a list of the user configurable parameters:

- **Assignment type**
  Select a 'static' or 'dynamic' (DHCP) IP address
- **Static IP**
  Enter and set static IP address
- **Subnet mask address**
  Enter subnet mask address
- **Gateway address**
  Enter and set gateway address
- **Primary DNS**
  Enter and set primary DNS address
- **Secondary DNS**
  Enter and set secondary DNS address

1.2 Ethernet connection status

The connection status of the **AIR XD** can be viewed by pressing ‘Left’ arrow key when on the PM value readings screen. The status screen lists the connection type, connection status and instrument IP address.



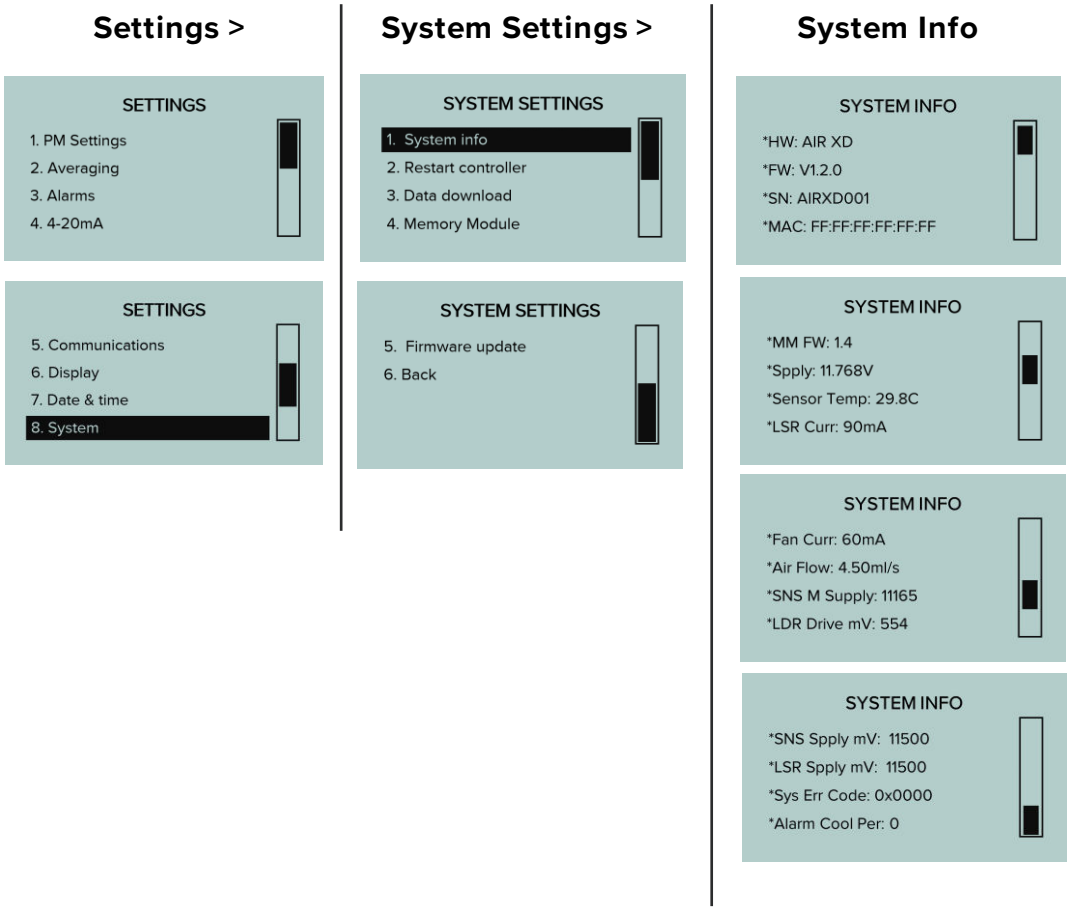
1.3 Ethernet operating mode

The **AIR XD** is configured by default to communicate via MODBUS TCP direct to a laptop or server running a MODBUS client.

Note: Selection of the 'TrolexlCore' option allows the data recorded by the **AIR XD** instrument to be pushed direct to an installed and running Trolex\Core API server. This is a feature for future release and is not yet implemented in the **AIR XD** instrument.

1.4 Instrument MAC address

The MAC address for the **AIR XD** is printed on a label and affixed onto the base plate next to the ethernet connector on the inside of the unit. The unit's MAC address is also viewable on the ' System info' screen.



Note: If the MAC address reads 'FF:FF:FF:FF:FF:FF' then the unit has not been configured as an Ethernet instrument. Contact Trolex support for information about upgrading the instrument.

1.5 Install on network with DHCP server

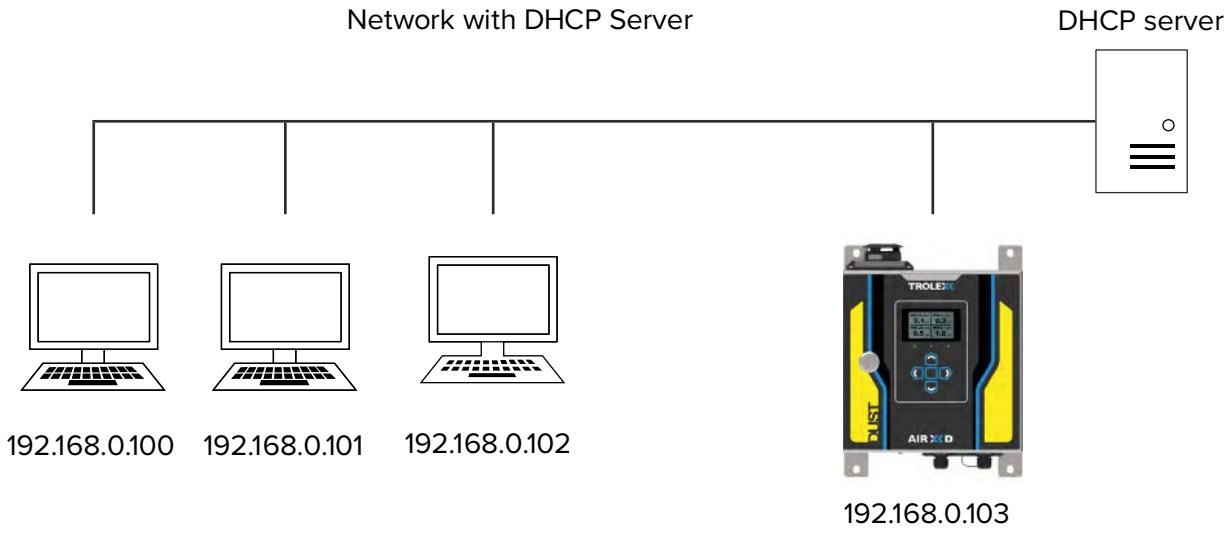
By default, the instrument is configured to request an IP address using DHCP. This requires that a DHCP server is also on the network that can assign the IP address. Firewall settings must allow outgoing traffic on selected port numbers.

Note: The MODBUS TCP communicates over 'Port 502'.

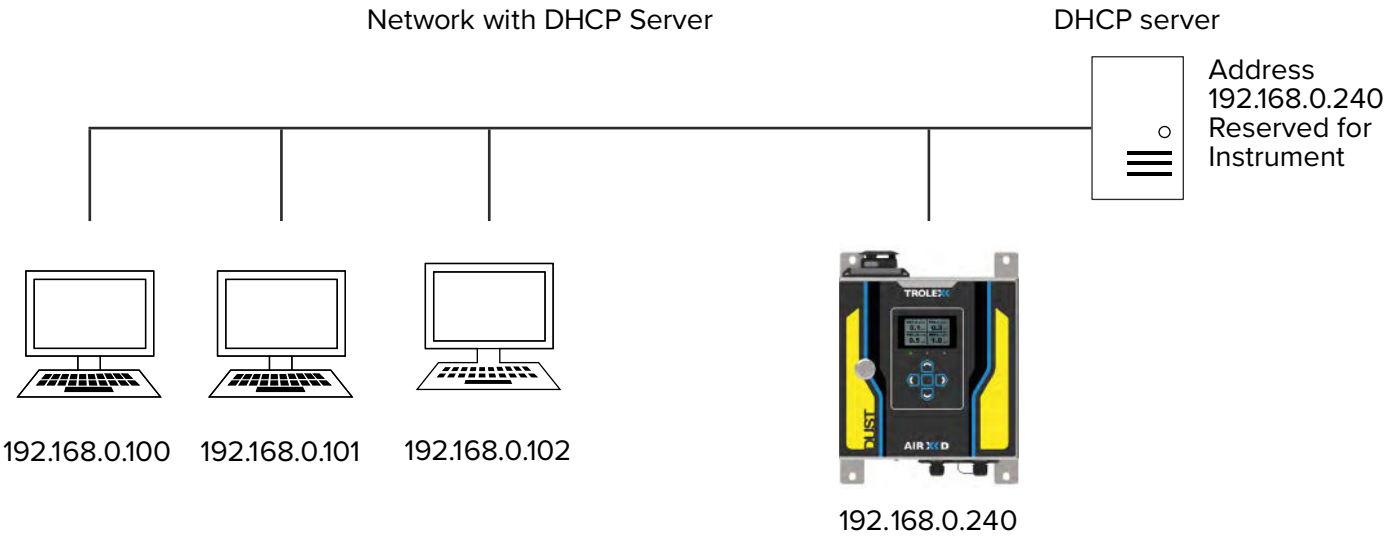
By using the dynamic IP assignment option, this prevents the instrument from IP address clashes where it may hold the same IP address as another device. It also allows for minimum configuration of the instrument before install, however the device could be assigned different IP addresses on each power cycle or on address lease timeouts which may prevent the MODBUS TCP client from communicating without further manual changes.

One workaround to prevent a changing IP address is to change router/DHCP server settings to reserve an IP address for the MAC address of the instrument.

Example network setup:



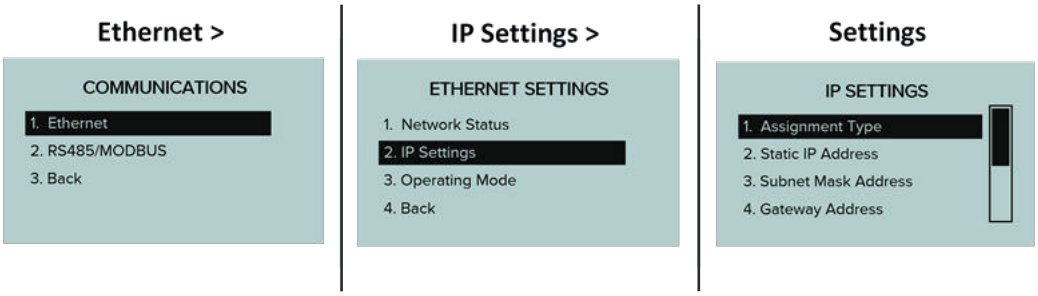
Changing IP address workaround:



1.6 Install on network using static IP assignment

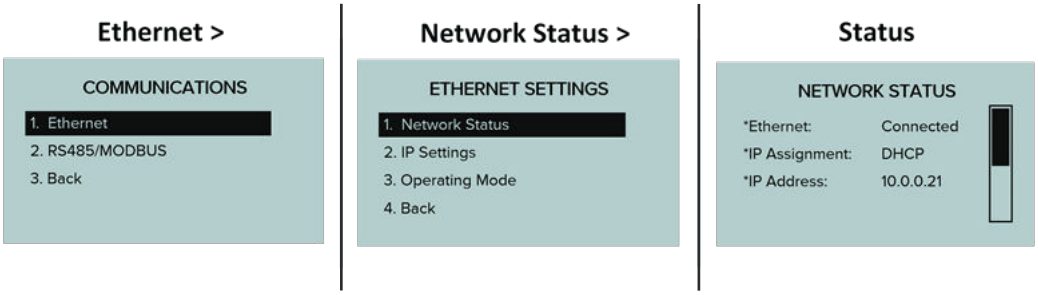
For applications where the **AIR XD** requires constant access to the MODBUS TCP client server or applications where a DHCP server is not available on the network, the use of a static IP is recommended. To set up the **AIR XD** to use a static IP, use the following steps:

1. Change static IP address of the instrument to its desired value by navigating to the IP settings menu as shown below



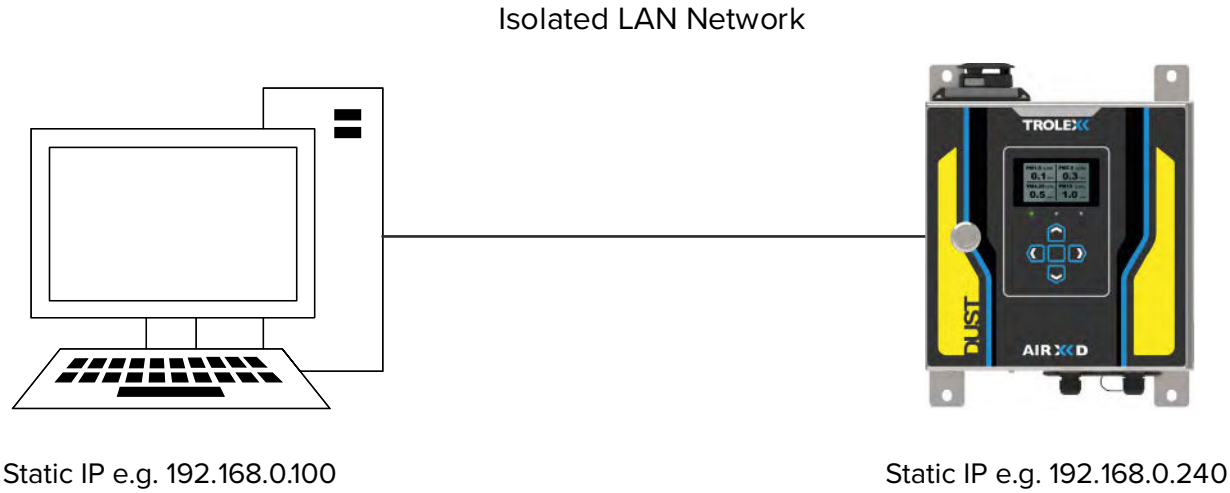
2. Enter the Subnet mask
3. Enter the Gateway address (if applicable)
4. Change the assignment type to 'static'. The instrument will now have the inputted IP address on the network

To check the IP address of the instrument, go to the 'Network status' screen or hold the left key while the particulate data is displayed.

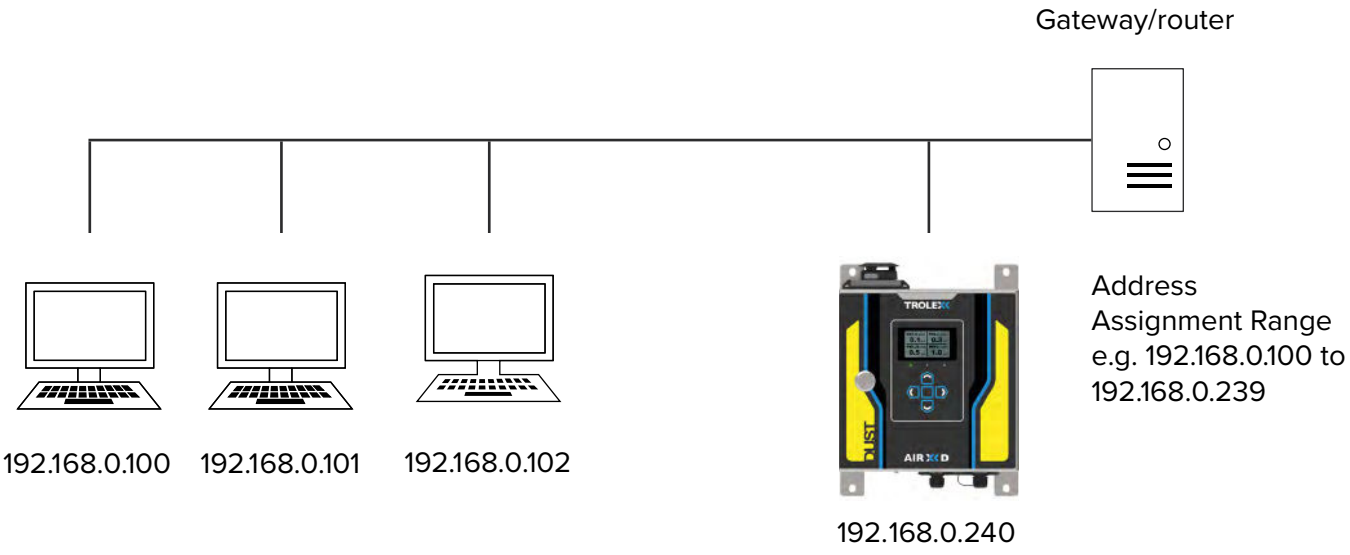


Example network setup

Example 1: **AIR XD** communicating with computer/terminal running a point to point ethernet cable



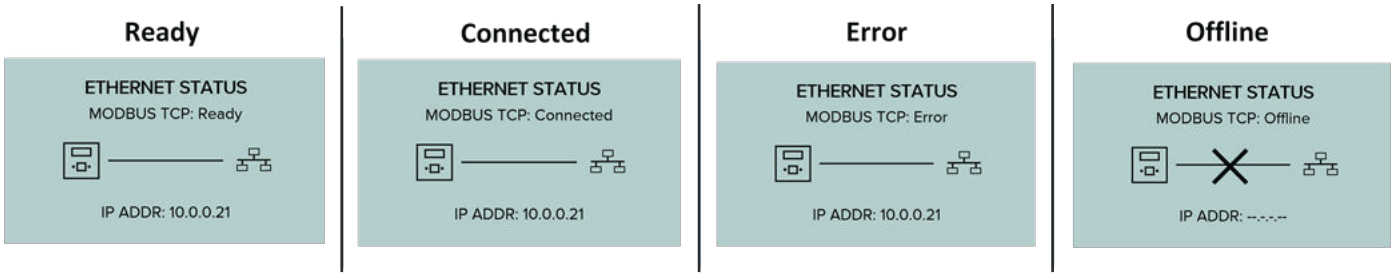
Example 2: **AIR XD** on network with router/DHCP server using a static IP



1.7 Troubleshooting

- **Check Status**

If communication cannot be established with the **AIR XD**, check the network status screen for information on the unit's connection status.



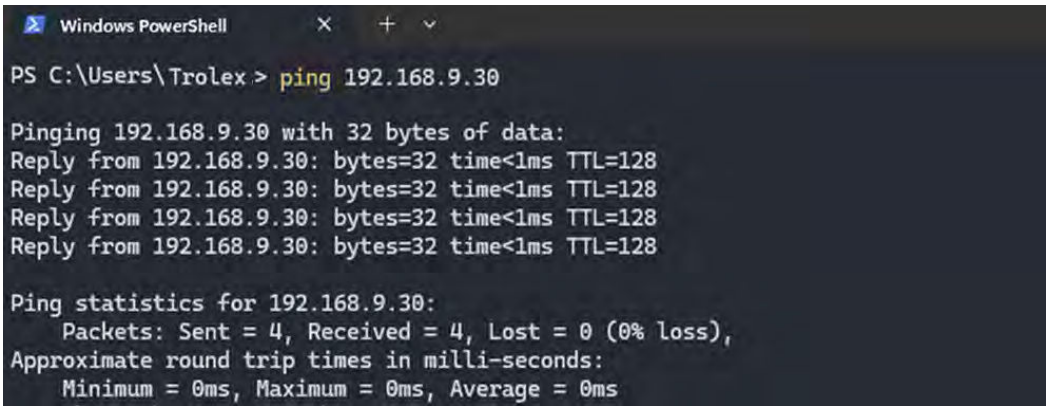
If the unit is in the ready or connected state, the instrument is ok and can communicate on the network, the communication problem is likely to be elsewhere on the network.

The error state is entered if the **AIR XD** has failed to set up the MODBUS TCP server. Power cycle the unit to retry the initialisation. If the unit is entering this state permanently/frequently, please contact Trolex Support.

If the **AIR XD** is in the offline state, check the connection of the Ethernet cables and power to any network switches or DHCP servers (if using DHCP).

- **Checking connection with AIR XD**

Communication to the **AIR XD** can be tested without running a MODBUS TCP client and instead using the windows command line. Once the **AIR XD** is reporting an IP address either using DHCP or Static IP, open the command line and enter the command 'ping' followed by the IP address of the instrument. If the device can communicate on the network, then the terminal shall receive a reply as shown below:



- **Cannot communicate with terminal/laptop**

If the ping command fails to return a response (time-out). Then perform the following checks to the network:

  - If using an Isolated LAN network, ensure the laptop/terminal is also using a static IP. On windows machines communications are disabled if the unit has no IP address
  - Check cable connections and power to any switches, router or DHCP server
  - Ensure terminal/laptop is operating on the same network as the instrument

- **Cannot communicate on network also running DHCP server**

If using dynamic IP allocation, check firewall settings to ensure communication is allowed on Port 502.

If using static IP assignment, check that no other device is allocated the same IP address of the instrument.

2. TECHNICAL SUPPORT

Our Technical Services team are available to provide expert ongoing technical assistance and technical support packages tailored to your specific requirements.
Please contact our technical services team at support@trolex.com

3. FEEDBACK

If you have any suggestions for improvements or amendments, or find errors in this publication, please notify us at marketing@trolex.com

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