VECTOR®

Wi Fi

X2

Ethernet

X2 Controller Wi-Fi and Ethernet Communication Manual

This manual describes the TCP/IP configuration and operation of X2 controllers. The Ethernet and Wi-Fi products provide an integrated webserver with a web interface to access the controller in order to change the connection settings and to operate the controller. Once the TCP/IP commissioning is done the clients can access the X2 controller over TCP/IP (EasySet or Modbus TCP / BACnet/IP) to read the controller in- and outputs and to modify control loop set points and time programs.

Content Overview

1   TCP/IP Overview

To successfully establish a connection of an X2 TCP/IP controller over Wi-Fi / Ethernet to a WLAN / LAN the following requirements must be met:

1. An ethernet or/and Wi-Fi router (2.4 GHz, IEEE 802.11 b/g/n)
2. A TCP/IP capable X2 controller (see types below)

Six different types of TCP/IP product options are available:

Network Type	Network Connection	X2 Com. Module Type Option	Function / Communication
Ethernet (LAN)	Ethernet plug (RJ45)	-ETM	Modbus TCP with Ethernet plug
		-ETB	BACnet/IP with Ethernet plug
Wi-Fi (WLAN)	Internal Wi-Fi antenna	-WIM	Modbus TCP over Wi-Fi with internal antenna
		-WIB	BACnet/IP over Wi-Fi with internal antenna
	External Wi-Fi antenna	-WEM	Modbus TCP over Wi-Fi with external antenna
		-WEB	BACnet/IP over Wi-Fi with external antenna

All devices include EasySet over TCP/IP support and an embedded web server which is accessible by a web browser through the IP address of the X2 controller.

For detailed technical information on the used X2 devices refer to the appropriate operation manual.
This can be found on our website www.vectorcontrols.com.

1.1   Assumption

For all following descriptions in this document, it is assumed that the X2 controller is in the factory default state.

For information on how to reset the X2 communication to default, refer to chapter 8, page 11.

2   TCP/IP Setup

2.1   Configuration via CO parameter

The communication parameters "CO xx" are used to configure the X2 TCP/IP communication settings.

Access the "CO" parameter either with the
- EasySet configuration tool for manual setup
- X2 operation terminal (built-in or remote) for manual setup
- X2 memory device AEC-PM1 / AEC-PM2 used for automatic copy and setup

The controller can be fully configured and commissioned using the EasySet program.
EasySet may be downloaded free of charge from our website www.vectorcontrols.com.

For information on how to use the EasySet to connect and log on to the X2 controller, refer to chapter 5, page 9.

For information on how to use the operator terminal to connect and log on to the X2 controller, refer to chapter 6, page 10.

For information on how to use the X2 memory device, refer to chapter 7, page 11.

2.2 The communication parameters (CO xx)

The X2 communication parameter CO03-CO09 are related to the Wi-Fi / Ethernet configuration. Any change of those parameters will cause a re-initialization of the IP settings in the X2 controller:

- When the IP address (CO03-CO06) is changed, the controller will go to static IP mode and the DHCP mode is disabled automatically (CO07 is reset to 0)
- When the DHCP mode is enabled (CO07 set from 0 to 1), the IP address CO03 to CO06 will be overwritten by an address given by the DHCP server (router)
- When the DHCP mode is disabled (CO07 set from 1 to 0), the controller goes back to static IP mode. The last stored static IP address will be reloaded and stored to CO06 to CO03

> ⓘ Make sure to set a valid IP address. The IP address must be within the valid range defined by the router settings. IP address conflicts with other clients must be avoided.

> 🛠 More detailed information on the X2 Modbus or BACnet communication setup can be found in the 70-00-0925 "X2-Modbus TCP" manual for the Modbus TCP module or in the 70-00-0899 "X2-BACnet IP" manual for the BACnet/IP module.
> The manuals can be found on our website www.vectorcontrols.com.

Parameter	Modbus TCP	BACnet/IP	Default
CO 00	Plugin ID = 5 (read-only)	Plugin ID = 7 (read-only)	-
CO 01	SW Version (read-only)	SW Version (read-only)	-
CO 02	SW Revision (read-only)	SW Revision (read-only)	-
CO 03	IPv4 address octet IP0 (192.168.xxx.**yyy**)	IPv4 address octet IP0 (192.168.xxx.**yyy**)	101
CO 04	IPv4 address octet IP1 (192.168.**xxx**.yyy)	IPv4 address octet IP1 (192.168.**xxx**.yyy)	0
CO 05	IPv4 address octet IP2 (192.**168**.xxx.yyy)	IPv4 address octet IP2 (192.**168**.xxx.yyy)	168
CO 06	IPv4 address octet IP3 (**192**.168.xxx.yyy)	IPv4 address octet IP3 (**192**.168.xxx.yyy)	192
CO 07	Enable DHCP 0: Static IP 1: DHCP enabled	Enable DHCP 0: Static IP 1: DHCP enabled	0
CO 08	[a] Enable access point (for Wi-Fi only) 0: Access point disabled when connected to (W)LAN 1: Access point always enabled 2: Access point always disabled	[a] Enable access point (for Wi-Fi only) 0: Access point disabled when connected to (W)LAN 1: Access point always enabled 2: Access point always disabled	0
CO 09	[b] Restore default configuration 0: Normal Mode 1: Reset to defaults immediately 7: Reset to defaults on power up	[b] Restore default configuration 0: Normal Mode 1: Reset to defaults immediately 7: Reset to defaults on power up	0
CO 10	Enable Base 1 (PLC Style) Addresses	User specific storage	0
CO 11	User specific storage	[c] Device Object ID1 (w xx yy **zz**)	00
CO 12	User specific storage	[c] Device Object ID2 (w xx **yy** zz)	00
CO 13	User specific storage	[c] Device Object ID3 (w **01** yy zz)	01
CO 14	User specific storage	[c] Device Object ID4 (**w** xx yy zz)	0

CO 15	[d] Automatic address incr. of static IP0
	0 = Auto increment disabled
	1 = Auto increment enabled
		[d] Auto increment of static IP address IP0 (CO03) and BACnet Device Object ID and auto build of BACnet Device Object Name
		0 = Auto increment disabled,
		     auto-build of device object name disabled
		1 = Auto increment enabled,
		     auto-build of device object name disabled
		2 = Auto increment disabled,
		     auto-build of device object name enabled
		3 = Auto increment enabled,
		     auto-build of device object name enabled
			0

[a] The access point is always visible as long as the controller is not connected to the WLAN. After the connection, the set configuration applies.

[b] If this parameter is set, the default communication configuration is restored from its internal memory (IP configuration, Custom names in X2 web interface, host name, etc.). Any stored SSID / password information will be lost. The Wi-Fi module's Wi-Fi access point ("VectorAP-xxx") will be re-activated to make the X2 web interface accessible. See chapter 2.3, page 4, for the default overview.

[c] Valid BACnet Device Object Id: 1…4'194'303 (Default: 10'000)

d) When the "Auto increment" function is enabled and an automatic AEC-PM parameter load is executed at power up of the controller, the following parameters will be incremented and written back to the AEC-PM memory unit:

Modbus TCP	Auto Increment of static IP address: CO03
CO15 = 0	Disabled
CO15 = 1	Enabeld

BACnet/IP	Auto Increment of static IP address IP0 (CO03) and BACnet Device Object ID (CO11 - CO14)	Auto build of BACnet Device Object Name in accordance to BACnet Device Object ID
CO15 = 0	Disabled	Disabled: BACnet Device Object Name can be changed
CO15 = 1	Enabled	Enabled: BACnet Device Object Name cannot be changed
CO15 = 2	Disabled	Disabled: BACnet Device Object Name can be changed
CO15 = 3	Enabled	Enabled: BACnet Device Object Name cannot be changed

2.3   Factory defaults

| **TCP/IP default settings (see CO parameters)**			
Static IP Address	=	192.168.0.101	
DHCP	=	OFF	
Access point (WLAN)	=	Disabled, when the controller is connected to WLAN	
BACnet Device Object Id	=	10'000	
Auto address increment (of static IP and BACnet Object Id)	=	Disabled	
Wi-Fi default settings			
WLAN credentials		SSID name:	SSID password:
- Station Mode	=	*VectorDefault*	*VectorPass*
- Access Mode	=	*VectorAP-xxx*	*VectorPass*
X2 web interface default settings			
User login information		Username:	Password:
-admin	=	*admin*	*admin*
- user	=	*user*	*user*
-guest	=	*guest*	*guest*
IP Address Web server	=	192.168.4.1	
Access point SSID	=	*VectorAP-xxx*	
Access point password	=	*VectorPass*	
Domain name	=	*VectorAP-xxx.local*	
Customized controller object names	=	Reset to default names	
Gateway IP	=	192.168.0.1	
Subnet mask	=	255.255.255.0	

(xxx = value of CO03)

3 Wi-Fi (WLAN) Setup and Operation

Overview

This section describes the Wi-Fi operation modes and how to connect your client directly or via a router to the X2 controller.

Wi-Fi frequency: 2.4 GHz, Wi-Fi standards: IEEE 802.11 b/g/n

3.1 Wi-Fi operation modes

Access point mode (AP)	Station mode
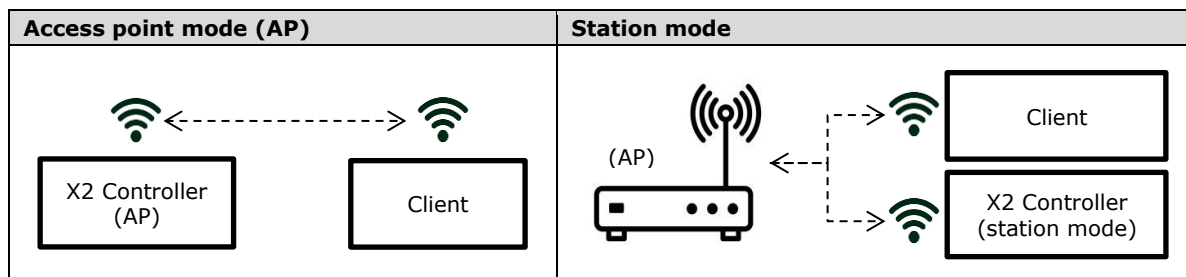
(Client = Wi-Fi capable device (computer, mobile phone))

3.2 Connect a client directly to the X2 access point (Access point mode)

Overview

This section describes how to connect your Wi-Fi capable device to the WLAN provided by the X2 access point.

Access point mode (AP)	
Situation	
Connection	The X2 controller provides an access point with a fixed IP address: 192.168.4.1 Any client (Wi-Fi capable device, computer, mobile phone) can connect to this access point.
Security	⚠ This connection is encrypted. It is strongly recommended to change the Wi-Fi credentials only in this mode.

Procedure

1. Power up the X2 controller
2. Use a Wi-Fi capable device (computer, mobile phone)
    a. Connect to the X2 access point: SSID name = "**VectorAP-101**", password = "**VectorPass**"
3. Connect a client of your choice to the X2 access point over its fixed IP address "**192.168.4.1**"
    a. X2 web interface for X2 operation and WLAN commissioning
        i. Open a web browser and enter the fixed IP address "192.168.4.1" and login to the X2 web interface with the default login information: Username = "**admin**", password = "**admin**"
    b. EasySet for X2 parameter configuration
        i. Open EasySet, choose "TCP/IP connection", enter "192.168.4.1" and press "Connect"
    c. Modbus TCP or BACnet/IP (depending on product)
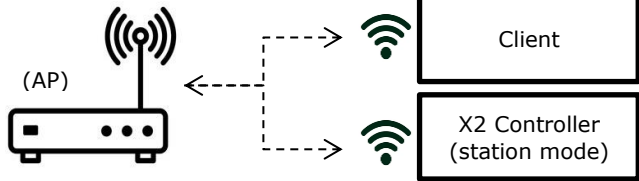
3.3 Connect the X2 controller to a WLAN-router (Station mode)

Overview

This section describes how to access the X2 controller via the WLAN of the internal access point and how to connect the X2 controller to your WLAN-router.

Station mode	
Situation	
Connection	The X2 controller and the client connect to an access point (WLAN provided by a Wi-Fi router or Wi-Fi access point). The SSID and password information must be configured over the X2 web interface in access point mode. The IP settings are according to the "CO" parameters.
Security	⚠️ This connection is **not** encrypted. Please make sure that the WLAN access is protected and only given to authorized personnel

Procedure

1. Power up the X2 controller
2. Use a Wi-Fi capable device (computer, mobile phone)
   a. Connect to the X2 access point: SSID name = "**VectorAP-101**", password = "**VectorPass**"
   b. Open a web browser and enter the fixed IP address "**192.168.4.1**"
   c. Login to X2 web interface with default login information: Username = "**admin**", password = "**admin**"
3. Connect the X2 controller to the WLAN
   a. Open the WLAN-Tab in the X2 web interface
   b. Connect to your WLAN:
      i. WLAN name (see list of scanned WLAN access points)
      ii. WLAN password
      iii. Set IP address as required by your WLAN specification
         Static IP: Enter a valid static IP address
         DHCP: A valid IP address is provided from the router
      iv. Choose "Connect" and wait
      v. After 20 seconds a message of the successful WLAN connection including the new IP address of your X2 controller will be displayed
4. Connect your Wi-Fi capable device (computer, mobile phone) to the chosen WLAN
5. Click "OK" to re-direct to the new IP address of your X2 controller
6. Connect a client of your choice to the chosen WLAN and use the new IP address to access the X2 controller
   a. Use the X2 web interface for X2 operation and TCP/IP commissioning
      i. Open a web browser and enter the new IP address and login to the X2 web interface with the default login information: Username = "admin", password = "admin"
   b. Use EasySet for X2 parameter configuration
      i. Open EasySet, choose "TCP/IP connection", enter the new IP address and press "Connect"
   c. Connect a Modbus TCP / BACnet/IP client

The WLAN SSID and password are now stored in the non-volatile memory of the X2 communication module. On the next startup, the information will be reloaded and the module will connect to the chosen SSID automatically.

3.4 X2 access point name

Overview

For Wi-Fi operation, the SSID name of the X2 access point can be changed.
The access point SSID name is equal to the domain name.
The domain name can be used to access the X2 web interface as an alternative to the access via IP address.

Change the access point SSID name / domain name

1. Connect your Wi-Fi capable device (computer / mobile phone)
2. Use the X2 web interface and go to the WLAN menu
3. Set the X2 controllers access point SSID/domain name and password

Access the X2 web interface via domain name

The X2 web interface can be accessed via "VectorAP-xxx.local"

(xxx = last three digits of the X2 controllers IP address, value of "CO03")

ⓘ Once the X2 access point SSID name has been changed to a custom name, the suffix with the last significant digits of the IP address will not be added anymore. Use the "Reset to default" button to restore the default behavior.

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4 Ethernet (LAN) Setup and Operation

Overview
Speed: 10/100 BASE-T (10Mbit/s, 100Mbit/s)

Point to point connection	Via router / switch
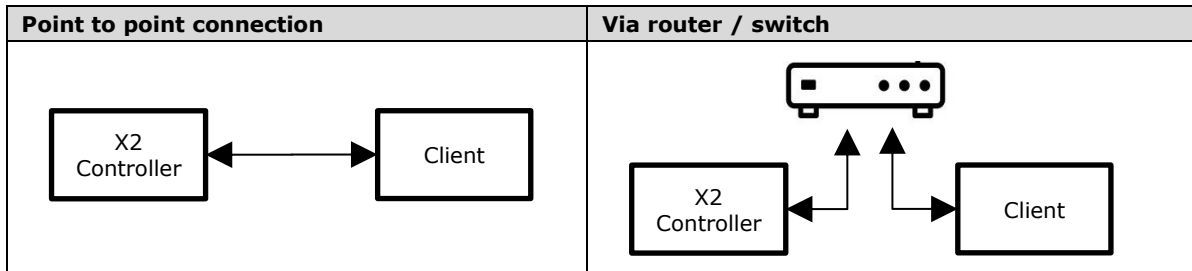
The following settings need be done to configure an Ethernet controller.

1. Connect the X2 controller to the LAN
   a. Set the IP address of the X2 controller (can also be set with "CO xx" parameters: CO03…CO06). The IP address has to be within a valid range defined by the router settings and IP address conflicts have to be avoided.
   b. Enable DHCP if needed (can also be set with "CO xx" parameter)
2. Configure the domain name of the X2 controller
   a. Set X2 controllers domain name (the default is: "VectorAP-xxx/VectorAP-xxx.local")

Change of IP address

The IP address can be changed directly from "CO" parameters. Alternatively, the X2 web interface can be used to change the IP address and/or DHCP mode.

4.1 Ethernet configuration via "point to point" connection and X2 web interface

Use the X2 web interface to set up the Ethernet parameters of the X2 communication module.

Point to point connection
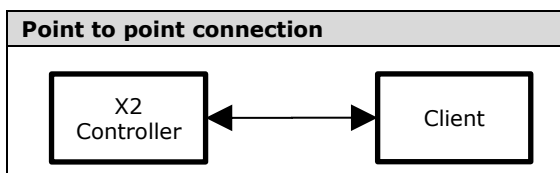
Procedure

1. Power up the X2 controller
2. Connect the Ethernet cable directly from the computer to the X2 controller
3. [a)] Set your computer IP address and subnet to the same subnet of the X2 controller (default: **192.168.0.101**)

   Example: Set your computers IP address to: 192.168.0.102 to access the controller directly without the use of a router.
4. Login to X2 web interface of the X2 controller
   a. Open a web browser and connect to the X2 web interface with the IP address of the X2 controller (default 192.168.0.101)
   b. Login to X2 web interface with default login information: Username = "**admin**", password = "**admin**"
5. Edit Ethernet (LAN) parameters
   a. Open the LAN-Tab and set Ethernet (LAN) domain name as required
   b. Connect to your LAN:
      i. Set IP address as required by your LAN specification
         Static IP: Enter a valid static IP address
         DHCP: A valid IP address is provided from the router
      ii. Choose "Connect" and wait
      iii. After 20 seconds a message of the successful LAN connection will be displayed
6. Connect the Ethernet cable from the X2 controller to a router/switch to get access to the LAN
7. Connect the computer to your LAN network (set back the computers IP address to dynamic/automatic)
8. Click "OK" to re-direct to new IP address of the X2 controller

[a)] The controller IP address is defined in the X2 communication parameters CO06, CO05, CO04, CO03, where CO04 = subnet, CO03 = unique number. Use X2 operation terminal or EasySet over RS435-USB cable (AEC-USB) to read X2 communication parameters.

4.2   Ethernet configuration via router / switch

Use the "CO" parameters to set up the Ethernet parameters of the X2 communication module.
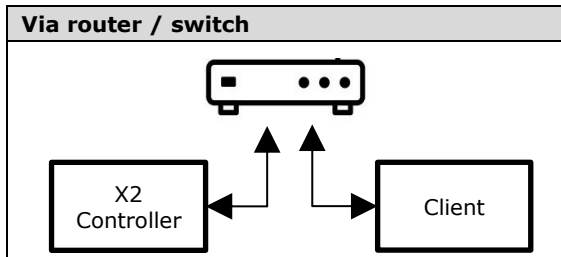
Procedure

1. Power up the X2 controller
2. Set the IP address and DHCP mode using the X2 controller "CO" parameters via
   a. Operation terminal

   > For information on how to use the operation terminal of the X2 controller, refer to chapter 6, page 10.

   b. EasySet over RS485 / LAN

   > For information on how to use the EasySet to connect and log on to the X2 controller, refer to chapter 5, page 9.

3. Connect an Ethernet cable from the X2 controller to the router
4. Connect an Ethernet cable from your client (computer) to the router

4.3   Change IP address or DHCP mode via X2 web interface

Overview
The IP address and the DHCP mode can either be changed via "CO" parameter or also via X2 web interface. This section describes how to do changes via the X2 web interface.

Requirements
The X2 controller must be accessible from the client (point to point or via router).

Procedure

1. Open a web browser and connect to the X2 web interface by entering the IP address of the X2 controller
2. Login to the X2 web interface and go to the LAN menu
3. Set/change the IP address as required by your LAN specification
   Static IP: Enter a valid static IP address with the subnet
   DHCP: A valid IP address is provided from the router
4. Choose "Connect" and wait
5. After 20 seconds a message of the successful LAN connection will be displayed

4.4   Change domain name

Overview
The domain name can be used to access the X2 web interface as alternative to the IP address. This name can be changed from the X2 web interface.

Requirements
The X2 controller must be accessible from the client (point to point or via router).

Procedure

1. Open a web browser and connect to the X2 web interface using the IP address of the X2 controller
2. Login to the X2 web interface and go to the LAN menu
3. Set the X2 controllers domain name

Access the X2 web interface via domain name
The X2 web interface can be accessed via "VectorAP-xxx.local"

1. (xxx = last three digits of the X2 controllers IP address, value of "CO03")
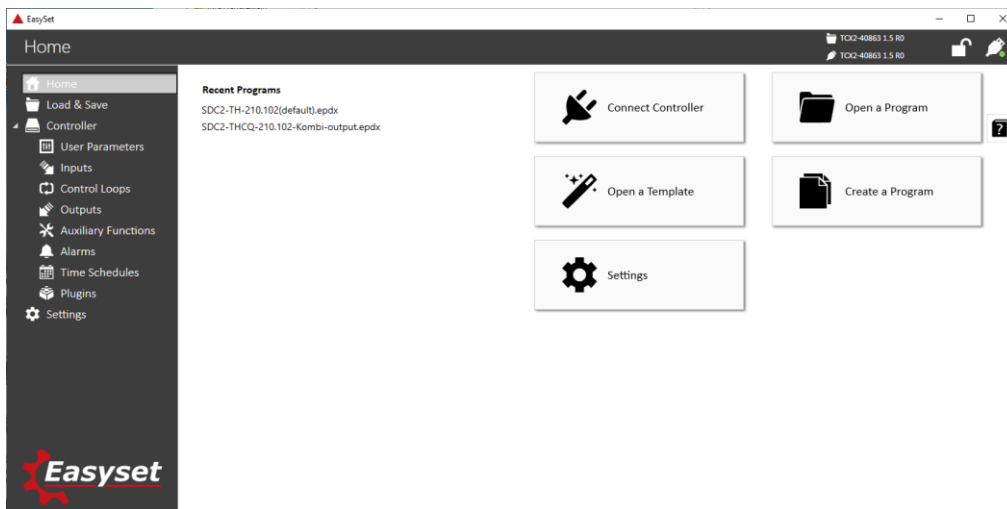
> Once the domain name has been changed to a custom name, the suffix with the last significant digits of the IP address will not be added anymore. Use the "Reset to default" button to restore the default behavior.

5   EasySet over RS485, WLAN or LAN

Overview

This section describes how to connect the EasySet configuration tool to the X2 controller via RS485, WLAN or LAN and how to access the X2 communication parameters "CO".

> The controller can be fully configured and commissioned using the EasySet program.
> EasySet may be downloaded free of charge from our website www.vectorcontrols.com.

> RS485 connection is supported by all X2 controllers.
> WLAN connection is only supported by -WIM, -WIB, -WEM and -WEB controller types.
> LAN connection is only supported by -ETM and -ETB controller types.
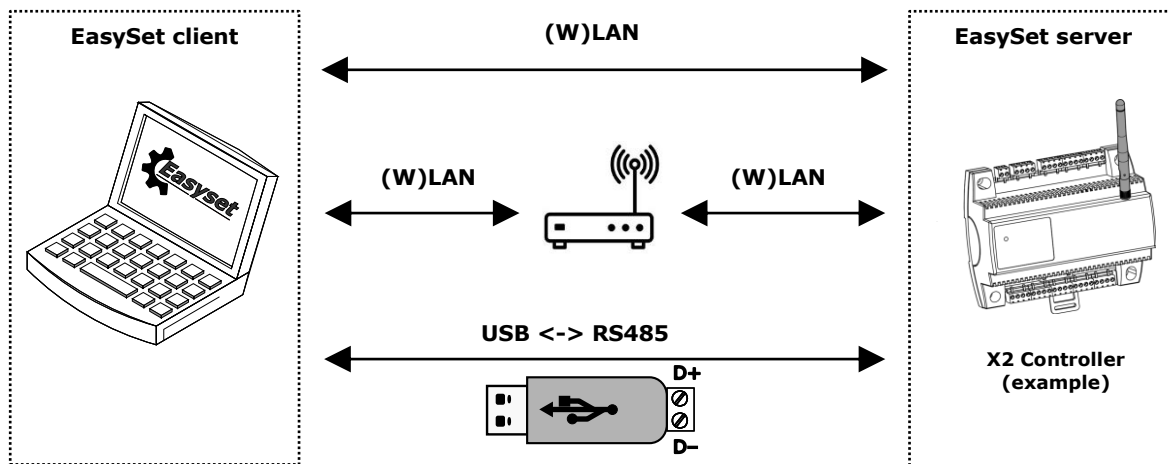
Requirements

- The EasySet configuration tool is installed on your computer
- WLAN: The computer supports Wi-Fi for WLAN access
- RS485: A USB - RS485 cable connection is used to connect the computer to the X2 controller
- For initial startup it is assumed, that the communication parameters of the X2 controller are in the factory default state

> For information on how to reset the X2 communication to default, refer to chapter 8, page 11.

Procedure

1. Power up the X2 controller
2. Connect computer to the X2 controller
   a. RS485: USB – RS485 cable connection to the X2 controller
      i. Cable connection: See install sheet for details
   b. WLAN: Wi-Fi connection to the X2 controller
      i. Connect your client to the X2 access point name "VectorAP-101", Password: "VectorPass"
         IP = 192.168.4.1
      ii. Connect your client via Router to the X2 controller
         IP = CO06.CO05.CO04.CO03
         The client needs to be in the same (W)LAN as the X2 controller
   c. LAN: Ethernet connection to the X2 controller
      i. Connect your client directly via Ethernet cable connection (RJ45) to the X2 controller
         Set your computer IP address and subnet to the same subnet of the X2 controller
         (default 192.168.0.101)
      ii. Connect your client via a router to the X2 controller. The client needs to be in the same LAN as the X2 controller
3. Connect EasySet to the X2 controller
   a. Start EasySet on your computer
   b. Go to "Load & Save" and connect to the X2 controller
      i. Select wired serial connection for RS485
      ii. Select TCP/IP connection and IP address of X2 controller for WLAN or LAN
4. Set TCP/IP communication parameters in EasySet
   a. Go to "Plugins" Advanced sub menu and set X2 communication parameters "CO xx" as required (IP address, DHCP, …)

See chapter 2.2, page 3, for a description of the X2 "CO" communication parameters.

6 Use of Operation Terminal

Overview

This section describes how to use the built in or remote operation terminal to access the X2 controllers TCP/IP communication parameters.

See chapter 2.2, page 3, for a description of the X2 "CO" communication parameters.

Requirements

- The X2 controller is equipped with a built-in operation terminal
- The X2 controller is connected to a remote operation terminal

Sample of built-in operation terminal   Sample of remote operation terminals

Procedure

1. Power up the X2 controller
2. Logon to the X2 controller
   a. Press the (Δ) and (∇) button at the same time for more than 3 seconds
      ➔ **OP** or **BASE** and the software version and revision number are displayed alternatingly
   b. Press the ($\triangleright$ / $\bullet$) button
      ➔ **Code** and **0000** are displayed
   c. Enter the admin access code 241 with the (Δ) (∇) button
   d. Press the ($\triangleright$ / $\bullet$) button to confirm access code
3. Set TCP/IP communication parameters
   a. Go to the **Co** (communication) submenu with the (Δ) (∇) button and press the ($\triangleright$ / $\bullet$) button
      ➔ **Co00** and a value are displayed representing the id and the actual value of the configuration parameter
   b. Navigate with the (Δ) (∇) button to the desired parameter
   c. Press the ($\triangleright$ / $\bullet$) button and adjust the value of the parameter with the (Δ) (∇) button
   d. Press the ($\triangleright$ / $\bullet$) button again to confirm the setting
   e. Continue setting other parameters a required using step b, c and d (see description of the "CO" parameters)

To go back to the previous submenu, press the ($\circlearrowleft$) button.

7 Copy TCP/IP Configuration via Memory Device

Overview

This section describes how TCP/IP configuration sets can be copied to other X2 controllers of the same type with the memory plug-in AEC-PM1 / AEC-PM2.

See the installation sheet of the corresponding controller for how to connect the memory device to the X2 controller.
The manuals can be found on our website www.vectorcontrols.com.

Auto Increment

While copying a TCP/IP configuration to the X2 controller, it is possible to automatically increment the IP address and for BACnet devices automatically increment the object Id.

See chapter 2.2, page 3, for a description of the X2 "CO" communication parameters.

7.1.1 Copying parameters to the memory device

How to copy the parameters to the memory is explained in the chapter "Copying and restoring the entire parameter set" in the "X2 Engineering Manual", document number 70-00-0737.
The manuals can be found on our website www.vectorcontrols.com.

7.1.2 Copy parameters from the memory to other X2 devices

How to copy the parameters from the memory to other X2 devices is explained in the chapter "Copying and restoring the entire parameter set" in the "X2 Engineering Manual", document number 70-00-0737.
The manuals can be found on our website www.vectorcontrols.com.

8 Reset WLAN and X2 web interface defaults

Overview

This section describes how to perform a reset to defaults and which settings are restored to factory defaults.

Description	Reset to factory default [1]	No change
WLAN credentials (password)	x	
X2 web interface login data	x	
X2 web interface custom names	x	
TCP/IP settings including SSID, password and X2 communication parameters (IP, DHCP, …)	x	
Other parameters		x

[1] See chapter 2.3, page 4

The factory reset can be done using the
- the X2 communication parameter "CO 09" or
- the reset button on the controller

The TRI2 controller does not have a communication reset button

The description of the X2 default TCP/IP, Wi-Fi and web server communication settings can be found in chapter 2.3, page 4.

8.1 Reset with "CO 09" communication parameter

Overview

This section describes how to initiate a default reset of the X2 communication parameters using the "CO 09" parameter. The "CO 09" parameter can be accessed through the EasySet or an X2 operation terminal. The reset can be executed immediately or on the next power up of the X2 controller.

Requirements

Connect and logon to the X2 controller with

- EasySet
- Operation terminal (built in or remote)

For information on how to use EasySet to connect and log on to the X2 controller, refer to chapter 5, page 9.

For information on how to use the operator terminal to connect and log on to the X2 controller, refer to chapter 6, page 10.

Procedure

1. Set the "CO 09" parameter to
   - "**1**" for an immediate default reset
   - "**2**" for a default reset on the next power up of the X2 controller

8.2 Reset with reset button

Overview
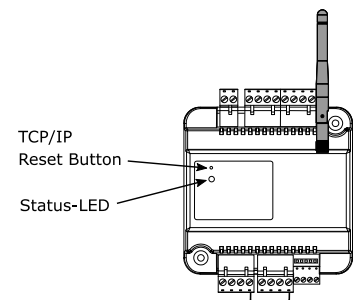
This section describes how to initiate a default reset of the X2 communication parameters using the reset button of the X2 controller.

Requirements
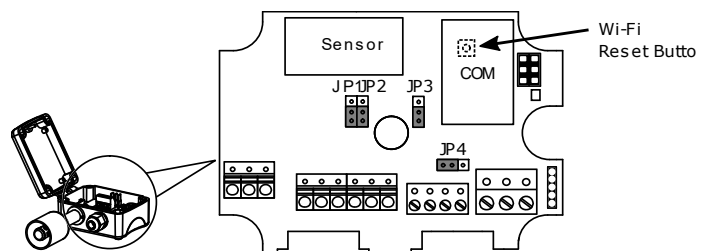
- A 1 mm pin is required for the TCX2 & TCI2 controller.

Procedure for TCX2 & TCI2 controller

1. Press the reset button for more than 3 seconds with a 1 mm pin through the small hole located next to the Status-LED

Procedure for SxC2 product series

1. Open the front panel of the SxC2 controller
2. Press the reset button for more than 3 seconds on the communication module

9   Get the X2 Controllers IP Address

Overview

This section describes how to discover the X2 controllers IP address.

Requirements

- X2 controller needs to be connected to a (W)LAN.

Procedure

1. Reading the "CO" parameters:
    The actual IP address is stored in the CO communication parameters of the X2 controller:
    CO06.CO05.CO04.CO03 (e.g. 192.168.0.101).

2. Reading the access point SSID name:
    For Wi-Fi devices: The access point SSID name is according to the last IP part (CO03). So, when using a notebook or mobile phone to access the controller, the controller IP address is visible in the SSID name, independent of the IP mode (static or DHCP).

    Example:

Default with IP address = 192.168.0.101	After IP change to 192.168.0.57
Access point SSID name = "VectorAP-**101**"	Access point SSID name = "VectorAP-**57**"

    (i) The access point SSID name is only visible after startup and as long as the X2 controller is not connected to a WLAN. As soon as the X2 controller could successfully connect to the configured WLAN, the X2 access point will be disabled and is not visible anymore. The permanent access point visibility can be activated by "CO 08".

For information on how to use EasySet to connect and log on to the X2 controller, refer to chapter 5, page 9.

For information on how to use the operator terminal to connect and log on to the X2 controller, refer to chapter 6, page 10.

10 X2 Web Interface

Overview

This section describes how to access the embedded web server and how to use the X2 web interface of the X2 controller.

The actual web server runs on the X2 communication module. The information is stored in the non-volatile memory of the X2 communication module.

(i) The X2 web interface supports the loading of a predefined Wi-Fi configuration file.
Please contact the Vector Controls support for information on the format and structure of the configuration file.

For information on how to use the Web interface,. refer to document 70-00-0952 "X2 Web Interface Manual".
This manual can be found on our website www.vectorcontrols.com.

10.1   Connect and log on

Procedure

1. Connect your client (computer, mobile phone) with the X2 controller directly or via a router
    a. Wi-Fi: Access point mode or station mode
    b. Ethernet: Point to point or via router

2. Open a web browser and enter the X2 controllers IP address and login to the X2 web interface with the default login information: Username = "**admin**", password = "**admin**"

    For information on how to connect the X2 controller to a WLAN or LAN network, refer to chapter 3 page 5 or chapter 4 page 7.

    For other user logins, refer to "Account management" on page 14.

10.2 Menu tabs

Home

In the "Home" menu, the user can change operation, controlling mode and unit setting of the X2 controller.

Time schedules

In the " Time schedules" menu, the clock of the controller can be set, weekly and annual (holiday) time schedules can be programmed and the time schedules can generally be enabled or disabled.

Controller overview

In the "Controller Overview" menu, the values of the different inputs and outputs are presented in a list. The names of the different inputs and outputs can be edited to the actual signal names being used. The altered names are permanently saved in the X2 communication module.

WLAN / LAN settings

In the "WLAN" menu the user can connect to a WLAN which can be chosen from a list of scanned SSIDs. Additionally, the IP address and DHCP mode can be set and the access point SSID name (=domain name) can be changed.

In the "LAN" menu the user can set the IP address and DHCP mode. Additionally, the domain name can be changed.

(i) Changing the IP address or DHCP mode from the X2 web interface will update the X2 "CO 03" to "CO 07" parameters accordingly. See chapter 2.2, page 3, for a description of the X2 "CO" communication parameters.

For information on how to connect the X2 controller to a WLAN or LAN network, refer to chapter 3 page 5 or chapter 4 page 7.

Advanced settings

In the "Advanced settings" menu, the user can manage user accounts and perform firmware upgrades of the TCP/IP communication module or web server and load predefined configuration files.

Account management

The X2 web server supports three user levels:

(i) The X2 web interface usernames are fixed as "admin", "user", "guest".
The user permissions are fixed to the usernames and can be seen in the "user permissions" table below.

Change password

1. Login as admin, user or guest. Default usernames and passwords are listed below.
   a. admin / admin
   b. user / user
   c. guest / guest
2. The password of the different user level can only be changed in admin mode.
   To deactivate a password, save it as blank.

User permissions:

Username	Read controller data	Write controller data	Change web interface names	Change password	Change IP settings	Manage users	Firmware Upgrade
admin	x	x	x	x	x	x	x
user	x	x	x	x			
guest	x	x					

Communication module

Allows loading of firmware update of the TCP/IP communication module or update of X2 web server.

Load configuration file

(i) The X2 web interface supports the loading of a predefined Wi-Fi configuration file.
Please contact the Vector Controls support for information on the format and structure of the configuration file.

11 Modbus TCP Connection

Overview

This section describes how to connect the X2 controller to a Modbus TCP network.

11.1 Connect the X2 controller to a Modbus TCP network

1. Connect to the X2 controller (Wi-Fi access point mode, Wi-Fi station mode or Ethernet)

> For information on how to connect the X2 controller to a WLAN or LAN network, refer to chapter 3 page 5 or chapter 4 page 7.

2. On the Modbus Master choose the controllers IP address.

11.2 Setup Modbus TCP communication

> For information on how to set up the Modbus TCP communication, refer to document 70-00-0925 "X2-Modbus TCP".
> This manual can be found on our website www.vectorcontrols.com.

12 BACnet/IP Connection

Overview

This section describes how to connect the X2 controller to a BACnet/IP network.

12.1 Connect the X2 controller to a BACnet/IP network

1. Connect to the X2 controller (Wi-Fi access point mode, Wi-Fi station mode or Ethernet)

> For information on how to connect the X2 controller to a WLAN or LAN network, refer to chapter 3 page 5 or chapter 4 page 7.

2. On the BACnet Manager choose the IP address and the controllers BACnet Device Object Id.

12.2 Setup BACnet/IP communication

> For information on how to set up the BACnet/IP communication, refer to document 70-00-0899 "X2 BACnet/IP".
> This manual can be found on our website www.vectorcontrols.com.

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