

User Guide



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Chapter 1. Introduction

This document provides configuration and detailed web interface information. In addition, it also discusses:

- Using the IO-Link Master web interface to view IO-Link, EtherNet/IP, and Modbus/TCP diagnostic information (Page 41).
- An introduction to PortVision DX, a configuration and management utility for Windows operating systems that includes how to use PortVision DX for basic procedures. The PortVision DX help system provides detailed information about how to customize it for your network.
- Updating images and application subassemblies (<u>Page 51</u>). The next subsection provides links to download the latest software and documentation for your IO-Link Master.
- Detailed information interface specifications are located in the following *IO-Link Master Reference Manuals*:
 - IO-Link Master EtherNet / IP Reference Manual
 - IO-Link Master Modbus / TCP Reference Manual

1.1. Product Overview

The IO-Link Master 4-EIP features include:

- Four channel IO-Link Master to EtherNet/IP
- EtherNet/IP access to IO-Link sensor process, event and service data
- Class 1 (Implicit) and Class 3 (Explicit) interfaces
- Write-to-Tag/File and Read-from-Tag/File
- Modbus/TCP access to IO-Link sensor processes, events, and service data
- Rugged IP67 housing with M12 connectors for harsh environments
- PortVision DX (configuration and management utility for Windows operating systems)
- Web GUI that also provides configuration and extensive diagnostics
- Wide operating temperature (0° to +70°C)
- LEDs that display device, network and port status
- Additional digital input on every port
- IO-Link V1.1 compatibility
- IO-Link COM1, COM2, and COM3 that supports 230K baud rate
- Slim-line machine-mount installation

Refer to the <u>Comtrol web site</u> for additional specification information.

1.2. Installation and Configuration Overview

IO-Link Master installation includes the following procedures:

- 1. Install the IO-Link Master hardware (Page 9).
- 2. If necessary, configure the IP address (Page 13).
- 3. Configure the IO-Link ports (Page 5).

4. Connect the IO-Link devices (Page 39).

1.3. Locating the Latest Software and Documentation

You can use the links in this table to locate the latest images, application subassemblies, utilities, and documentation. For detailed information about images or application subassemblies and updating IO-Link Master, see <u>7.3.2. Updating Application Subassemblies</u> on Page 55.

Latest Images									
Application Base									
FPGA									
U-Boot Bootloader									
System uImage (Primary/Backup)									
Latest Application Subass	emblies								
Application Manager									
Configuration Manager									
Discovery Protocol									
EtherNet/IP									
Event Log									
IO-Link Driver									
Web User Interface									



Latest Product Documentation										
IO-Link Master User Guide	A									
IO-Link Master EtherNet/IP Reference Manual	(
IO-Link Master Modbus/TCP Reference Manual	A									
Web Interface Help System	PortVision DX Software Settings tab support.									
	A									

Chapter 2. Hardware Installation

Use the following procedures to install the IO-Link Master hardware:

- 2.1. Setting the Rotary Switch
- <u>2.2. Mounting the IO-Link Master</u> on Page 10
- <u>2.3. Connecting to the Network</u> on Page 10
- <u>2.4. Connecting the Power</u> on Page 11
- <u>2.5. IO-Link Master LEDs</u> on Page 12

After connecting the IO-Link Master to the network, perform the following tasks:

- Configure the network information, refer to <u>Chapter 3. Initial Configuration</u> on Page 13
- Configure the port characteristics, refer to <u>Chapter 4. IO-Link Port Configuration</u> on Page 25
- Connect the IO-Link devices to the IO-Link Master, refer to <u>*Chapter 5. Connecting Devices to the Ports*</u> on Page 39.

2.1. Setting the Rotary Switch

You can use the rotary switches under the configuration window on the IO-Link Master to set the lower 3digits (8 bits) of the static IP address.

If the rotary switches are set to a non-default position, the upper 9 digits (24 bits) of the IP address are then taken from the static network address and DHCP maybe disabled. The switches only take effect during startup, but the current position is always shown on the **Help/SUPPORT** web page.

Optionally, you can leave the rotary switch set to the default and use the web interface or PortVision DX to set the network address.

Note:	If you set the network address using the rotary switches, the Rotary Switch setting overrides the network
	settings in the web interface.

Switch Setting	Node Address						
	Use the network configuration stored in the flash. The default network configuration values are:						
	• IP address = 192.168.1.250						
000	• Subnet mask = 255.255.255.0						
(Default setting)	• IP gateway = 0.0.0.0						
	After completing the hardware installation, see <u>Chapter 3. Initial</u> <u>Configuration</u> on Page 13 to set the network address using the web interface or PortVision DX.						
001-254	This is the last three digits in the IP address. This uses the first three numbers from the configured static address, which defaults to 192.168.1.xxx.						
255-887	Reserved.						
888	Reset to factory defaults.						
889-997	Use the network configuration values stored in the flash (reserved).						
998	Use DHCP addressing.						
999	Use the default IP address.						

Use the following steps if you want to change the default rotary switch settings.

- 1. Remove the two phillips screws.
- 2. Gently swing open the configuration window from the left to the right, allowing it pivot on the hinge on the right side.
- 3. Turn each dial to the appropriate position using a small flathead screwdriver.



The default value is 000 as shown above. The arrow points to the switch location. 0 is located at the 3:00 position. Turn the dial clockwise to the appropriate setting.

- 4. Carefully close the window making sure that is properly aligned.
- 5. Reinsert the two screws making sure that the window is securely sealed.

Note: Failure to reassemble the configuration window properly may permit leakage.

2.2. Mounting the IO-Link Master

Use the following procedure to mount the IO-Link Master. The IO-Link Master can be installed on a mounting panel or a machine.

- 1. Verify that the mounting surface is level (flat) to prevent mechanical stress to the IO-Link Master.
- 2. Attach the IO-Link Master to the surface with two 6mm screws and washers.
 - a. Attach the grounding strap to chassis or earth ground.
 - b. Torque down to 8Nm.
 - *Note:* Make sure that you connect the FE terminal at low impedance to function ground to meet EMC standards.

2.3. Connecting to the Network

The IO-Link Master provides two Fast Ethernet (10/100BASE-TX) M12 connections (4-pin female /D-coded).

Pin	Signal
1	Tx+
2	Rx+
3	Tx-
4	Rx-



You can use this procedure to connect the IO-Link Master to the network.

- 1. Securely connect one end of the M12 Ethernet cable to EIP 1 or EIP 2.
- 2. Connect the other end to the network.

- 3. Optionally, you can use the other Ethernet port to daisy-chain to another Ethernet device.
- 4. If you did not connect both Ethernet ports, make sure that screw on a connector cap, which was shipped with the IO-Link Master to keep dust and liquids from getting in the connector.

Note: Ethernet ports must have an approved cable or protective cover attached to the port guarantee IP67 compliance.

2.4. Connecting the Power

IO-Link Master provides dual M12 (A-coded) power connectors.



Pin	Input - Male	Output - Female
1	L+	L+
2	L2+	L2+
3	L-	L-
4	L2-	L2-
5	Not connected	Not connected

Maximum EMC protection is provided by a low impedance connection between functional earth, the grounding tabs, and protective earth. The following table contains power-related information about the power supply.

Power Supply Voltage/Current	Values
Voltage Input Range	20 to 30VDC
Current (for the IO-Link Master)	100mA
Maximum Output Current	1.9A†
<i>†</i> The total supply of current for all connected	IO-Link devices.

Note: IO-Link Master requires a UL listed power supply with an output rating of 24VDC.

You can use this procedure to connect the IO-Link Master to a power supply.

- 1. Securely attach the power cable between the male power connector and the power supply.
- 2. Either attach a power cable between the female power connector and another device to which you want to provide power or securely attach a connector cap to prevent dust or liquids from getting into the connector. Connector caps were shipped with the IO-Link Master.
- 3. Apply the power and verify that the following LEDs are lit indicating that you are ready to begin configuration.
 - PWR
 - MS, first the flashing green and red LEDs displays that it is in self-test mode. After the self-test, depending on whether you set the IP address with the rotary switch one of the following occurs:
 - The green LED is flashing to indicate that it is in standby mode.
 - The green LED is lit to indicate that it is operational.
 - NET, first it flashes green and red indicating that it is in self-test mode. After the self-test, depending on whether you set the IP address with the rotary switch one of the following occurs:

- Off indicates there is no IP address
- Steady red indicates duplicate IP address on the network
- EIP 1/2 should be steady green indicating that the link is up if both connectors are connected.

If the LEDs indicate that you ready for configuration, go to <u>Chapter 3. Initial Configuration</u> on Page 13.

If the LEDs do not meet the above conditions, you can refer to the 2.5. *IO-Link Master LEDs* table on Page 12 and if necessary, refer to <u>Chapter 8. Troubleshooting and Technical Support</u> on Page 57.

Note: Power connectors must have an approved cable or protective cover attached to the port guarantee IP67 compliance.

2.5. IO-Link Master LEDs

The following table provides LED descriptions.

IO-Link Master LEDs							
PWR	A lit green LED indicates that the IO-Link Master is powered.						
	This LED provides the following information:						
	• Off = No module status						
	• Flashing green and red = Self-test						
MS (Module Status)	• Flashing green = Standby – not configured						
Status)	• Steady green = Operational						
	• Flashing red = Minor recoverable fault						
	• Steady red = Major unrecoverable fault						
	This LED provides the following information:						
	• Off = No IP address						
	• Flashing green and red = Self-test						
NET (Network)	• Flashing green = An IP address is configured, but no CIP connections are established, and an Exclusive Owner connection has not timed out						
	• Steady green = Active EtherNet/IP connection and no EtherNet/ IP connection time-outs						
	• Flashing red = One or more EtherNet/IP connection time-outs						
	• Steady red = Duplicate IP address on network						
	This LED provides the following information about the IO-Link port.						
	• Off: SIO mode - signal is low or disconnected						
Dort 1 1	• Yellow: SIO mode - signal is high						
10101-4	Red: Hardware fault						
	• Solid Green: An IO-Link device is connected and communicating						
	Blinking Green: Searching for IO-Link devices						
Port 1-1	This LED indicates digital input on Pin 2.						
DI	• Off: DI signal is low or disconnected						
	• Yellow: DI signal is high						
EIP 1	The EIP $LEDs$ provide this information:						
EIP 2	• Green lit LED = link						
	• Green blinking LED = Activity						

Chapter 3. Initial Configuration

If you used the rotary switch to set the IP address (<u>2.1. Setting the Rotary Switch</u> on Page 9), then you still must configure the upper 9 digits (24 bits) of the IP address using PortVision DX or the web interface. You may want to install PortVision DX to access and manage your IO-Link Masters.

This section discusses IP address configuration options using one of these methods:

- <u>PortVision DX</u> (below)
- <u>Web interface</u> (Page 19)

Use the web page, if you want to configure the following:

- Host name
- DNS servers
- Syslog Server IP/Host name
- Syslog Port
- SSH Server Enable

Note: You can use PortVision DX to configure the IP address information and then use the web interface to configure the options not configurable in PortVision DX.

In addition, this section discusses setting up *passwords* through the web interface.

After you configure the network settings, you can configure the port characteristics, refer to <u>*Chapter 4. IO-Link Port Configuration*</u> on Page 25.

3.1. Using PortVision DX

This subsection contains the following topics:

- 3.1.1. PortVision DX Overview
- <u>3.1.2. Installing PortVision DX</u> on Page 15
- <u>3.1.3. Programming the IP Address</u> on Page 17

3.1.1. PortVision DX Overview

PortVision DX automatically detects Comtrol Ethernet attached products physically attached to the local network segment so that you can configure the network address, upload firmware, access product configuration web pages, and manage the following products:

- DeviceMaster family
- IO-Link Master
- RocketLinx managed switches

In addition to identifying Comtrol Ethernet attached products, you can use PortVision DX to display any third-party switch and hardware that may be connected directly to those devices. All non-Comtrol products and unmanaged RocketLinx devices are treated as non-intelligent devices and have limited feature support. For example, you cannot configure or update firmware on a third-party switch.

After PortVision DX is installed and the network has been scanned for Comtrol devices, the devices are

displayed in the Scan Results folder as shown in the following graphic.

IPV PortVision DX		-							
File ivianage view	V TOOIS HEI	ip							
	and the	- Ak		L 6 4		X 👟	A 🚽		
	Č.	1		1		~			
Scan Refresh	Properties	Save	Loa	idUploadR	eboot Webpage. N	lotes Help	About Exit		
IPORTV			The S attack	Scan Results folder is ned devices located or levices are displayed in	2 / 62] the default folder, which this network. detail in the lower pane,	contains 62 Comtrol El which is called the <i>De</i>	themet <i>vice List</i> pane.		
Name : Scan Results									
Nume : Scarricesards		-							
		-							
· (•							
			Device	Jame	Model	ID Address	MAC Address	Software Version	Statur
			Device	Device 24-00-0D		102 169 11 109	00-00-45-20-00-00	1.2 (b1 5.1.4)	ONLINE
				Device 3A:00:0D	ESODUO	192.108.11.108	00:C0:4E:3A:00:0D	v1.3 (b1.5.1.4)	ON LINE
				Device 3C:00:02	ES6508F-IVIIVI	192.108.11.109	00:00:4E:30:00:02	VI.3 (DI.0.1.4)	ON LINE
			17.	Device IC:FF:FD	IO Link Master EID 4	192.100.11.14	00:00:4E:10:FF:FD	EthorNot/ID 0.9.2	ONLINE
				Device 3570-005520		102 169 11 20	00.00.4E.33.FF.FO	NC Link 9.02	ONLINE
				Device 17:FF:FD	PTC 4D (DB9)	102 169 11 22	00:00:4E:17:FF:FB	SocketServer 0.06	ON LINE =
				Device 07:FF:FC	RTS-4P (DD9)	102 169 11 52	00:C0:4E:07:FF:FC	NS Link 0.06	
				Device 29:FF:F5	LID-1D (5)()	192.100.11.52	00:00:46:29:FF:F5	Modbur/TCD 5.07	ONLINE
				Device 13:04:7A	UP-1P (JV)	102.100.11.55	00:C0:4E:13:04:7A	Madbus/TCP 5.07	ON-LINE ON LINE
				Device 21:00:CD	0P-1P (J-50V)	10216912127	00:C0:4E:2I:03:CD	Madbus Server 4.04	ON LINE
				Device 13:0C:0D	RTS-1P (JV)	192.100.15.157	00:00:42:13:00:66	NC Link 7 29	ON-LINE ON LINE
				Device 07:00:70	RTS-4P (DB9)	192.100.15.175	00:C0:4E:07:00:70	NS-LINK 7.20	ON-LINE ONLINE
				Device 06:FF:FD	KTS-6P (DB9)	192.108.13.201	00:C0:4E:06:FF:FD	NS-LINK 7.51	ON-LINE ON LINE
				Device 20:00:54	E58510	192.168.13.204	00:00:4E:20:00:54	v2.4a (b1.0.2.12)	ON-LINE
				Device 2A:00:34	RTS-2P (DB9/1E)	192.168.13.220	00:C0:4E:2A:00:34	SocketServer 7.00	ON-LINE
				Device 07:05:87	KTS-4P (DB9)	192.108.15.251	00:C0:4E:07:05:B7	SocketServer 9.06	ON-LINE
				Device 28:00:80	RTS-2P (IE)	192.168.15.252	00:C0:4E:28:00:80	SocketServer 9.06	ON-LINE
				Device ZA:00:33	KTS-2P (UB9/1E)	192.108.15.253	00:C0:4E:2A:00:33	SocketServer 9.06	ON-LINE
				Device 29:00:28	R15-2P (2E)	192.108.15.254	00:C0:4E:29:00:2B	SOCKETSERVER 9.06	ON-LINE ON LINE
				Device 2C:00:52	E36310	192.108.15.50	00:C0:4E:2C:00:52	V2.3 (D1.0.2.11)	ON LINE
				Device 2C:00:53	E30310	192,108,10,01	00:C0:4E:2C:00:53	V2.50 (01.0.2.12)	ON-LINE T
			•						•
For Help, press F1								Scan F	Results 62 0 Ready

You can use the PortVision DX help system to learn how to organize your devices.

PortVision D	K												
File Manage	View	Tools Hel	р										
Scan Re	Fresh	Properties	Save.	Load	Upload	Reboot	Q Webpage	Votes	🥌 Help	() About	e Exit		
Scan Netresh properties Save Lobo Opticate Netresh <													
<u> </u>				Device No		[574]	-1		ID Addross			Software Version	Status
			Â		05.29	IVID08	51 D	102.16	0 11 105		0.C0.4E.22.00.01	14 hotal (b1102	
					H8	SH-8P	(DB9)	192.10	8.11.14	0	0:C0:4E:1C:FF:FD	NS-Link 8.04	ON-LINE ON-LINE
			Ξ	1.	D-Link Master	#1 IO-Lin	k Master EIP	-4 192.16	8.11.199	0	0:C0:4E:39:FF:F6	EtherNet/IP 0.8.2	ON-LINE
				🖲 🗸 🔒 🖬	RO - 17:FF:FB	PRO-8	3P (DB9)	192.16	8.11.20	0	0:C0:4E:17:FF:FB	NS-Link 8.03	ON-LINE
				🛸 🗸 🔒 F	TS4 - 07:FF:FC	RTS-4	P (DB9)	192.16	8.11.23	0	0:C0:4E:07:FF:FC	SocketServer 9.06	ON-LINE
				🕷 🗸 🛛 F	TS_2E - 29:FF:F	5 RTS-2	P (2E)	192.16	8.11.52	0	0:C0:4E:29:FF:F5	NS-Link 9.06	ON-LINE (TCP)
				🖲 🗸 🛛 N	/lodbus/TCP	UP-1P	(5V)	192.16	8.11.53	0	0:C0:4E:15:04:7A	Modbus/TCP 5.07	ON-LINE
				🕷 🗸 🛛 👢	IP1:5-30VDC	UP-1P	(5-30V)	192.16	8.11.55	0	0:C0:4E:21:05:CD	Modbus Server 4.04	ON-LINE
•			Ψ 										
For Help, press F	1											Fii	rst Floor 8 0 Ready //

3.1.2. Installing PortVision DX

Use this procedure to install or update PortVision DX. You can install PortVision DX from the CD shipped with the IO-Link Master or download the latest version. Refer to <u>Locating the Latest Software and</u> <u>Documentation</u> on Page 8 to locate the latest version.

- 1. Execute the **PortVision_DX_***x***.***xx***.msi** file, where *x***.***xx* is the version number.
- 2. Click Next to start the installation.



3. Click I accept the terms in the License Agreement and Next.

副 PortVision DX Setup	×
End-User License Agreement Please read the following license agreement carefully	COMTROL *
PortVision DX [™]	^
END USER LICENSE AGREE	MENT
COMTROL CORPORATION ("COMTROL") HAS DE ADMINISTRATION AND MANAGEMENT S DEVICEMASTER, ROCKETLINX, AND IO-LINK	VELOPED A REMOTE YSTEM FOR ITS MASTER PRODUCT -
 I accept the terms in the License Agreement 	
\bigcirc I do not accept the terms in the License Agreement	
Advanced Installer < Back	Next > Cancel

4. Click Next to install in the default location or browse to another location and then click Next.

岃 PortVision DX Setup	- • 💌
Select Installation Folder This is the folder where PortVision DX will be installed.	COMTROL
To install in this folder, click "Next". To install to a different folder, ente "Browse".	r it below or click
Eolder: C: \Program Files (x86)\Comtrol\PortVision DX\	Browse
Advanced Installer < Back Next >	Cancel

5. Click Next to continue the installation.



6. Click Install.



- 7. Depending on your operating system, you may need to click Yes to the Do you want to allow the following program to install software on this computer *User Account Control* popup message.
- 8. Click Finish.



9. Depending on your operating system, you may need to click Yes to the Do you want to allow the following program to make changes on this computer *User Account Control* popup message.

PortVision DX is installed and you can use the next subsection to program the IP address into the IO-Link Master.

3.1.3. Programming the IP Address

Use the following procedure to program the IP address into the IO-Link Master using PortVision DX.

Note: Optionally, you can use the web interface to configure or Rotary switch to configure the IP address. You can also refer to <u>2.1. Setting the Rotary Switch</u> on Page 9 or <u>3.2. Using the Web Interface</u> on Page 19.

The Rotary switch settings override the lower 3 digits (8 bits) of the static IP address configured in PortVision DX or the Configuration/Network page.

- 1. Start PortVision DX by using the desktop icon or click PortVision DX in the Start menu.
- 2. Depending on the operating system you may need to click Yes to the Do you want to allow the following program to make changes on this computer *User Account Control* popup message.
- 3. Click the Scan button to locate your IO-Link Master or IO-Link Masters on the network.



- 4. Click the hardware types that you want to locate and click Scan.
- 5. Right-click the IO-Link Master that you want to program in the *Device List* pane (lower) and click **Properties**.

Optionally, you can double-click on the IO-Link Master to open the **Properties** tabs. It may take a few moments for the next screen to open.

IPV PortVision DX	Hala										
rite ividriage view roois	пер										
						X	1.00	A	4		
				~		~					
Scan Refresh Propert	ies Sav	e Lo	ad Upload	Reboot	Webpage	Notes	Help	About	Exit		
	↓) Į	Ĩ ⊕ [🛅 Scan Result	is [17 / 17]							
۱ ۲ ۳	•]									1-
00		Device	Name	Mod	el		IP Address	MA	AC Address	Software Version	Status
(Cantant		V	Device 9570-06	526 IO-Li	nk Master El	P-4 192.16	8.1.250	00:0	0:4E:39:FF:F6	EtherNet/IP 0.8.2	ON-LINE
0			Device 2D:00:08	ES750	6	192.16	8.11.100	00:0	0:4E:2D:00:08	v2.1b (b1.6.4.4)	ON-LINE
0			Device 32:00:00	ES752	18	192.16	8.11.101	00:0	0:4E:32:00:00	v1.4_beta5 (b0.3.0.10)) ON-LINE
		1 🛚 🗸	Device 35:00:09	ES850	19-XT	192.16	8.11.102	00:0	0:4E:35:00:09	v1.3a (b1.3.1.4)	ON-LINE
		🛚 🗸 -	Device 2C:00:60	ES851	.0	192.16	8.11.103	00:0	0:4E:2C:00:6C	v2.6_beta8 (b1.6.2.12	2) ON-LINE
00		🗓 🗸 -	Device 34:00:08	ES751	.0	192.16	8.11.104	00:0	0:4E:34:00:08	v1.3a_beta4 (b1.2.1.5	5) ON-LINE
		🛯 🗸 -	Device 33:00:01	ES952	18	192.16	8.11.105	00:0	0:4E:33:00:01	v1.4_beta4 (b1.1.0.3)	ON-LINE
Use menu or toohar to add notes	in 🔺	🛚 🗸 -	Device 30:00:10	ES851	.0-XTE	192.16	8.11.106	00:0	0:4E:30:00:10	v2.6 (b1.6.2.12)	ON-LINE
this area.		🛯 🗸 -	Device 38:00:02	ES751	.0-XT	192.16	8.11.107	00:0	0:4E:38:00:02	v1.3a_beta2 (b1.4.1.5	5) ON-LINE
		🛯 🗸 -	Device 3A:00:0E	ES850	8	192.16	8.11.108	00:0	0:4E:3A:00:0D	v1.3 (b1.5.1.4)	ON-LINE
		🛯 🗸 -	Device 3C:00:02	ES850	8F-MM	192.16	8.11.109	00:0	0:4E:3C:00:02	v1.3 (b1.6.1.4)	ON-LINE
			Device 1C:FF:FE	SH-8	P (DB9)	192.16	8.11.14	00:0	0:4E:1C:FF:FD	NS-Link 8.04	ON-LINE
		🔊 🗸 🖗	Device 17:FF:FB	PRO-	8P (DB9)	192.16	8.11.20	00:0	0:4E:17:FF:FB	NS-Link 8.03	ON-LINE
		🚺 🗸 🖗	Device 07:FF:FC	RTS-	4P (DB9)	192.16	8.11.23	00:0	0:4E:07:FF:FC	SocketServer 9.06	ON-LINE
			Device 15:04:7A	UP-1	P (5V)	192.16	8.11.53	00:0	0:4E:15:04:7A	Modbus/TCP 5.07	ON-LINE
			Device 21:05:CE	UP-1	P (5-30V)	192.16	8.11.55	00:0	0:4E:21:05:CD	Modbus Server 4.04	ON-LINE
		••	Device 29:FF:F5	RTS-	2P (2E)	192.16	8.250.250	00:0	0:4E:29:FF:F5	SocketServer 9.06	ON-LINE
J	Ŧ										
For Help, press F1		· ·								Scan	Results 17 1 Ready

- 6. Optionally, enter a device name, which displays in PortVision DX on the Main screen.
 - Note: The MAC address, Serial Number, and Device Status fields are automatically completed and are status-only fields.



7. Enter the appropriate network information on the General tab.

You can configure the IO-Link Master for a static IP address or set it to DHCP.

• If you select **Static** for the IP Type, you must enter a valid IPv4 address. If necessary, see your Network Administrator for a valid IP address for this IO-Link Master.

The default IP address is: 192.168.1.250.

- Enter a valid subnet mask for your network. The default Subnet Mask is: 255.255.255.0.
- Enter a valid IP gateway address for your network. The default Gateway Address is: 0.0.0.0.
- If you select **DHCP**, this field displays the last IP address programmed into the IO-Link Master. *Note: Rotary switch settings override the lower 3 digits (8 bits) of static IP address.*
- 8. Click Close to exit the Properties tabs.

9. You wait until PortVision DX polls to display the updated IO-Link Master IP address or you can click **Refresh** until the new IP address is displayed in the *Device List* pane.

PV PortVision DX File Manage View T	ools Help											
1 2	2	*	. 🎝	R	2		\heartsuit	-	0	4		
Scan Refresh P	roperties	Save	Loa	d Upload	Reboot	Webpage	Notes	Help	About	Exit		
IP ORTVIS		4	± 🖆	Scan Results	[17 / 17]							
		=	, Device N	ame	Mod	lel		IP Address	M	AC Address	Software Version	Status
09			B 🗸	Device 2D:00:08	ES75)6	192.10	58.11.100	00:	C0:4F:2D:00:08	v2.1b (b1.6.4.4)	ON-LINE
0			n 🗸 🛛	Device 32:00:00	ES75	28	192.10	58.11.101	00:0	C0:4F:32:00:00	v1.4 beta5 (b0.3.0.)	10) ON-LINE
) O			n 🗸 👘	Device 35:00:09	ES85)9-XT	192.10	58.11.102	00:	C0:4F:35:00:09	v1.3a (b1.3.1.4)	ON-LINE
0			n 🗸 🗆	Device 2C:00:6C	ES85	10	192.10	58.11.103	00:0	C0:4F:2C:00:6C	v2.6 beta8 (b1.6.2.)	12) ON-LINE
2 2			n 🗸 👘	Device 34:00:08	ES75	10	192.10	58.11.104	00:	C0:4E:34:00:08	v1.3a beta4 (b1.2.1	.5) ON-LINE
00			n 🗸 🗆	Device 33:00:01	ES95	28	192.10	58.11.105	00:	C0:4E:33:00:01	v1.4 beta4 (b1.1.0.)	3) ON-LINE
			N 🗸 👘	Device 30:00:10	ES85	LO-XTE	192.10	58.11.106	00:	C0:4E:30:00:10	v2.6 (b1.6.2.12)	ON-LINE
I the second of the lines to add	and the lat	- 1	B 🗸 🛛	Device 38:00:02	ES75	LO-XT	192.10	58.11.107	00:	C0:4E:38:00:02	v1.3a beta2 (b1.4.1	.5) ON-LINE
this area.	notes in	^	B 🗸 👘	Device 3A:00:0D	ES85	08	192.10	58.11.108	00:	C0:4E:3A:00:0D	v1.3 (b1.5.1.4)	ON-LINE
			B 🗸 🛛	Device 3C:00:02	ES85	08F-MM	192.10	58.11.109	00:0	C0:4E:3C:00:02	v1.3 (b1.6.1.4)	ON-LINE
			₩ <	Device 1C:FF:FD	SH-8	P (DB9)	192.10	58.11.14	00:	C0:4E:1C:FF:FD	NS-Link 8.04	ON-LINE
			ی 🗸 🌒	Device 17:FF:FB	PRO	8P (DB9)	192.10	58.11.20	00:	C0:4E:17:FF:FB	NS-Link 8.03	ON-LINE
				Device 9570-065	526 IO-Li	nk Master El	P-4 192.10	58.11.200	00:	C0:4E:39:FF:F6	EtherNet/IP 0.8.2	ON-LINE
			🔊 🗸 🕄	Device 07:FF:FC	RTS-	4P (DB9)	192.10	58.11.23	00:	C0:4E:07:FF:FC	SocketServer 9.06	ON-LINE
				Device 29:FF:F5	RTS-	2P (2E)	192.10	58.11.52	00:	C0:4E:29:FF:F5	NS-Link 9.06	ON-LINE
				Device 15:04:7A	UP-1	P (5V)	192.10	58.11.53	00:	C0:4E:15:04:7A	Modbus/TCP 5.07	ON-LINE
			•	Device 21:05:CD	UP-1	P (5-30V)	192.10	58.11.55	00:	C0:4E:21:05:CD	Modbus Server 4.04	ON-LINE
		Ŧ										
or Help, press F1			,								Sca	in Results 17 1 Ready

10. If you want to configure any of the following options, go to <u>3.2. Using the Web Interface</u> on Page 19:

- Host name
- DNS servers
- Syslog Server IP/Host name
- Syslog Port
- SSH Server Enable

You are ready to configure the ports, refer to <u>Chapter 4. IO-Link Port Configuration</u> on Page 25.

3.2. Using the Web Interface

This subsection discusses using the web interface to configure the IP address.

Note: The rotary switch settings override the lower 3 digits (8 bits) of static IP address configured on the Configuration/Network page. The default rotary switch setting uses the settings configured in the flash.

Optionally, you can use the web interface to configure the upper 9 digits (24 bits) and the rotary switch to configure the lower 3 digits (8 bits) of the static IP address. You can also refer to <u>2.1. Setting the</u> <u>Rotary Switch</u> on Page 9 for additional information.

You can use the following procedure to configure the IO-Link Master network settings if you have administrative rights.

1. Open the IO-Link Master web interface using one of these method:

- From PortVision DX, highlight the IO-Link Master and click the Webpage button or right-click the IO-Link Master in the *Device List* pane (lower pane) and click Webpage.
- Open your browser and enter the IP address of the IO-Link Master.

Note: The default IP address is 192.168.1.250.

2. Click Configuration and then NETWORK.

3. Click the EDIT button.

(=>) @ http://192.168.11.198/index.php/Network	🕁 🕤 ٥-٩
Link Master: Network X Search Here Search	
Comtrol Home Diagnostics Configuration Advanced Help	Welcome Admin Logout Contact 🔲 🔻
IO-LINK SETTINGS ETHERNET/IP SETTINGS MODBUS/TCP SETTINGS	NETWORK CLEAR SETTINGS
Click for Page-Level Help	Click EDIT to make any configuration changes.
Network	EDIT
Host Name	Station #1
IP Туре	static
IP Address (xxx.xxx.xxx)	192.168.11.198
Subnet Mask (xxx.xxx.xxx)	255.255.0.0
Gateway Address (xxx.xxx.xxx)	192.168.0.254
DNS 1 (XXX.XXX.XXX.XXX)	
DNS 2 (xxx.xxx.xxx)	
Syslog Server IP/Hostname	
Syslog Server Port (0 - 65535)	514
SSH Server Enable	disable
EtherNet/ID Specific Ontions	
IP Address Conflict Detection	enable
TTL (Time To Live) Network Value (1 - 255)	1 hop(s)
Multicast IP Address Allocation Control	Automatic
User-Defined Number of Multicast IP Addresses (1 - 32)	32
User-Defined Multicast Start IP Address (239.192.1.0 - 239.255.255.255)	239.192.1.0
LED Flash: 0 ON OFF	

- 4. Optionally, enter a host name to identify this IO-Link Master.
- 5. Select the IP type, Static or DHCP.
 - If using a static IP address, enter the static IP address, subnet mask and IP gateway address.
 - If using DNS:
 - Enter the DNS primary server IP address.
 - Optionally, enter the DNS secondary server IP address.
- 6. If you want the IO-Link Master to send syslog messages to a syslog server:
 - a. Enter the syslog server's IP address (or host name if using DNS).
 - b. Enter the syslog server's port number (default is 514).
- 7. If you want to enable the SSH server, click Enable.
- 8. Optionally, configure **EtherNet/IP Specific Settings**. You can refer to the help system for information about these settings.

9. Click **Submit** to save the changes.

Network	CANCEL
Host Name	Station #1
IР Туре	static 🗸
IP Address (xxx.xxx.xxx.xxx)	192.168.11.199 ×
Subnet Mask (xxx.xxx.xxx.xxx)	255.255.0.0
Gateway Address (xxx.xxx.xxx.xxx)	192.168.0.254
DNS 1 (xxx.xxx.xxx.xxx)	
DNS 2 (xxx.xxx.xxx)	
Syslog Server IP/Hostname	
Syslog Server Port (0 - 65535)	514
SSH Server Enable	disable 🗸
EtherNet/IP Specific Options	
IP Address Conflict Detection	enable V
TTL (Time To Live) Network Value (1 - 255)	1 hop(s)
Multicast IP Address Allocation Control	Automatic 🗸
User-Defined Number of Multicast IP Addresses (1 - 32)	32
User-Defined Multicast Start IP Address (239.192.1.0 - 239.255.255.255)	239.192.1.0

10. If you want to return to the web page, you must enter the new IP address.

3.3. Setting up Passwords

The IO-Link Master is shipped from the factory without passwords. See the following table if you want to see how permissions are granted.

Page	Admin	Operator	User
Log-in	Yes	Yes	Yes
Home	Yes	Yes	Yes
Diagnostics - All	Yes	Yes	Yes
Configuration - Port Settings	Yes	Yes	No
Configuration - Network	Yes	No	No
Advanced - Software	Yes	No	No
Advanced - Accounts	Yes	No	No
Advanced - Log Files	Yes	Yes	Yes
Licences	Yes	Yes	Yes
Help - All	Yes	Yes	Yes

You can use this procedure to set up passwords for the IO-Link Master.

- 1. Open the IO-Link Master web interface using one of these method:
 - From PortVision DX, highlight the IO-Link Master and click the Webpage button or right-click the IO-Link Master in the *Device List* pane and click Webpage.
 - Open your browser and enter the IP address of the IO-Link Master.
- 2. Click Advanced and then ACCOUNTS.
- 3. Click the ADMIN check box.

MTROL' Home Diagnostics Configura	tion Advanced Help		Welcome Admin La	pout Cortact
SOFTWARE ACCOUNTS LOG FILE	S LICENSES			
Accounts				
ADMIN	12			
Old Password				
New Password				
Confirm Pasaword				
la au mana.	11 Car			
OPERATOR				
New Password				
Confirm Password				
1070		_		
New Passaord				
Confirm Password				

- 4. If applicable, enter the old password in the Old Password text box.
- 5. Enter the new password in the New Password text box.
- 6. Re-enter the password in the Confirm Password text box.
- 7. Optionally, click the **Operator** check box, enter a new password, and re-enter the password in the **Confirm Password** text box.

- 8. Optionally, click the User check box, enter the new password, and re-enter the password in the Confirm Password text box.
- 9. Click Apply.
- 10. Close the new window that displays a *Password saved* banner.

					-	
OMTROL Home Diagnostics C	onfiguration Advanced	Help		Welcome Admin	Logout Cortect	
SOFTWARE ACCOUNTS	LOG FILES LICENSES					
Accounts						
	Passwo	rds saved : AdminPass	word			
ADMIN						
Old Password			1			
New Password						
Confirm Password						
				Da		
OPERATOR		-				
New Password						
Confirm Password						
USER						
New Password		1				
Confirm Password						

- 11. Click the **Log out** button (top navigation bar).
- 12. Re-open the web interface by selecting the appropriate audience in the drop list and entering the password.

Attp://192.168.11.199/index.php/login				P+CX ∩	1 22 63
		Not Logged In	Logout Co	ontact 🔤	
Home					E
	User Admin 💌				
	Password ••••				
				Login	

Chapter 4. IO-Link Port Configuration

This section discusses port configuration, which includes these topics:

- <u>4.1. IO-Link Settings Configuration Page</u>
- <u>4.2. EtherNet/IP Settings Configuration Page</u> on Page 27
- <u>4.3. Modbus / TCP Settings Configuration Page</u> on Page 34

Depending on your needs, the IO-Link Master you may not to change many of the default options.

You may want to refer to the following Reference Manuals for additional information. The *IO-Link Master Reference Manuals* also contain information about using the sample programs.

- <u>IO-Link Master EtherNet / IP Reference Manual</u>
- IO-Link Master Modbus / TCP Reference Manual

Note: The IO-Link Master may work out of the box for ControlLogix PLCs.

4.1. IO-Link Settings Configuration Page

Use the IO-Link Settings page to configure IO-Link port characteristics for the IO-Link Master.

nk Master: page_port × 🛛 💈	🗣 Search Here	Searc	h						
COMTROL Home	Diagnostics Co	onfiguration	Advanced	Help	Welco	ome Admin	Logout	Contact	
IO-LINK SE	TTINGS ETHERN	IET/IP SETTING	S MODBUS/T	CP SETT	TINGS NETWO	ORK CL	EAR SETTI	NGS	
Click for page-level help.									
IO-Link Settings									
IO-Link Settings	or 1 4 555								
IO-Link Settings	Click the EDF	T button to m	ake any settin	gs char	nges.				
IO-Link Settings	Click the EDF PORT 1	T button to m	ake any settin PORT 2	gs char EDIT	NG e s. Port 3	EDIT	PORT 4		EDIT
IO-Link Settings IO-LINK SETTINGS Port Name	Click the EDI PORT 1 IOLink Port	T button to m	ake any settin PORT 2 IOLink Port 2	gs char EDIT	nges. PORT 3 IOLink Port 3	EDIT	PORT 4 IOLink Po	rt 4	EDIT
IO-Link Settings IO-LINK SETTINGS Port Name Port Mode	Click the EDF PORT 1 IOLink Port IOLink	T button to m	ake any setting PORT 2 IOLink Port 2 IOLink	gs char EDIT	PORT 3 IOLink Port 3 IOLink	EDIT	PORT 4 IOLink Po IOLink	rt 4	EDIT
IO-Link Settings IO-LINK SETTINGS Port Name Port Mode Invert IO	Click the EDI PORT 1 IOLink Port IOLink false	T button to m	ake any setting PORT 2	gs char EDIT	PORT 3 IOLink Port 3 IOLink	EDIT	PORT 4 IOLink Po IOLink	rt 4	EDIT
IO-Link Settings IO-LINK SETTINGS Port Name Port Mode Invert IO	Click the EDF PORT 1 IOLink Port IOLink false	T button to m	ake any setting PORT 2 IOLink Port 2 IOLink false	gs char EDIT	PORT 3 IOLink Port 3 IOLink false	EDIT	PORT 4 IOLink Po IOLink false	rt 4	EDIT

4.1.1. Editing IO-Link Settings

You can use this procedure to configure IO-Link characteristics for each port. The following table or help system provides information about each option.

- 1. If necessary, open the IO-Link Master web interface with your web browser using the IP address or through PortVision DX.
- 2. Click Configuration in the menu bar, which by default loads the IO-Link Settings page.
- 3. Click the EDIT button for the port that you want to configure.
- 4. Make appropriate selections for the IO-Link device that you will connect to that port. You can use the help system if you require definitions or values for the options or <u>4.1.2. IO-Link Settings Parameters</u> on Page 26.
- 5. Click the SAVE button.
- 6. Repeat for each port that requires configuration changes.

4.1.2. IO-Link Settings Parameters

The *IO-Link Settings* configuration page supports the following options.

	IO-LINK SETTINGS Page
Port Name	 User defined port or device description. Standard ASCII characters Max length = 80 characters
Port Mode <i>Default</i> : IO-Link	 Selected IO-Link Port Mode. Valid settings are: Reset IO-Link Digital In Digital Out
Invert IO <i>Default</i> : False	If enabled and the <i>Port Mode</i> is Digital In or Digital Out, inverts the I/O value. 0= False (Disabled - Do not invert IO) 1= True (Enabled - Invert IO) <i>Note: Does not affect the Auxiliary Input.</i>
Minimum Cycle Time Default: 4	The minimum, or fastest, cycle time that the IO-Link device may operate at. The valid range is 4-65535 ms.

4.2. EtherNet/IP Settings Configuration Page

Macter EtherNet/L. X	arch Here So	earch		
MTROL Home Diag	nostics Configuration	Advanced Help	Welcome Admin	Logout Contact
IO- INK SETTIN			TTINCE NETWORK	CLEAR SETTINGS
TO LINE SETTIN	ETTENTELY PLET	mes noblos/rer st	ALL TRUCK	CLOAR SETTINGS
therNet/IP Settings				
ETHERNET/IP SETTINGS	PORT 1 EDIT	PORT 2 EPIT	PORT 3 HET	PORT 4
ISDU Data Settings:			A MAR BEAUTION	
ISDU Response Timeout (1 -	20 sec	20 Sec	20 sec	20 sec
10000)				
Process Data Settings:				
PDI Data Block Size (To PLC)	36 bytes	36 bytes	36 bytes	36 bytes
PDE Data Block Format (To PLC)	word (16 bit)	word (16 bit)	word (15 bit)	word (16 bit)
PDI Data Byte-Swap Method	word (16 bit) byte-	word (16 bit) byte-	word (15 bit) byte-	word (16 bit) byte-
PDO Data Block Size (From	32-bytes	32-bytes	32-bytes	3z-bytes
PLC) PDO Data Block Format (From	word (16 bit)	word (16 bit)	word (15 bit)	word (16 bit)
PLC) PDO Data Byte-Swap Method	word (16 bit) byte-	word (16 bit) byte-	word (15 bit) byte-	word (16 bit) byte-
Class Sugat Code In PDD	ewap follow	ewap false	quan	ewap
Block	Talse	Talse	Talse	Taise
Clear Event Code After Hold Time	true	true	true	true
Active Event Hold Time (1 - 65535)	1000 ms	1000 ms	1000 mc	1000 ms
Clear Event Hold Time (1 -	500 ms	500 ms	500 ms	500 ms
Transfer Mode Settings:				
PDI Receive Models) (To PLC)	Polling	Polling	Polling	Polling
	Class1	Class1	Class1	Classi
PDO Transmit Mode (From PLC)	Class1	Class1	Class1	Class1
Read/Write Tag/File				
PLC IP Address	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0
(XXX.XXX.XXXXXXX) PLC Controller Slot Number (0	0	0	0	0
- 64) PLC Type	Control oni~	Control act	Controll only	ControlLegiz
ricipe	Controlety	CONTROLLOGIX	Contrologix	Controllogix
Settings:				
PDI Tag/File Name				
Append PDO to PDI Data	false	false	false	false
Maximum PLC Update Rate	40 ms	40 ms	40 ms	40 ms
Heartbeat Update Enable	false	false	false	false
Heartbeat Update Rate (50 -	1000 ms	1000 ms	1000 ms	1000 ms
65535] Read PDO from Tag/File				
Settings:				
PDO Tag/File Name				
PLC Poll Rate (10 - 05535)	1000 ms	1000 ms	1000 ms	1000 ms

Use the *EtherNet/IP Settings* page to configure EtherNet/IP port options.

4.2.1. Editing EtherNet/IP Settings

You can use this procedure to configure EtherNet/IP characteristics for each port.

- 1. If necessary, open the IO-Link Master web interface with your web browser using the IP address.
- 2. Click **Configuration** in the menu bar.
- 3. Click the ETHERNET/IP SETTINGS submenu.
- 4. Click the **EDIT** button for the port that you want to configure.
- 5. Make appropriate selections for the IO-Link device that you will connect to that port.

You can use the help system if you require definitions or values for the options or <u>4.2.2. EtherNet/IP</u> <u>Settings Parameters</u> on Page 29.

6. Scroll to the top of the page and click the SAVE button.

Make sure that the port now displays the EDIT button.

If it displays the SAVE and CANCEL buttons, that means that one of the parameters contains an incorrect value. If necessary, scroll down the page, make the needed corrections, and click SAVE.

therNet/IP Settings				
ETHERNET/IP SETTINGS	POR SAVE CANCEL	PORT 2 EDIT	PORT 3 EDIT	PORT 4 EDIT
ISDU Data Settings:				
ISDU Response Timeout (1 - 10000)	100 Maximum 10000	20 sec	20 sec	20 sec
Process Data Settings				
PDI Data Block Size (To PLC)	36 bytes ❤	36 bytes	36 bytes	36 bytes
PDI Data Block Format (To PLC)	word (16 bit) 💙	word (16 bit)	word (16 bit)	word (16 bit)
PDI Data Byte-Swap Method	word (16 bit) byte-swap	word (16 bit) byte- swap	word (16 bit) byte- swap	word (16 bit) byte- swap
PDO Data Block Size (From PLC)	32-bytes 🗸	32-bytes	32-bytes	32-bytes
PDO Data Block Format (From PLC)	word (16 bit) 💙	word (16 bit)	word (16 bit)	word (16 bit)
PDO Data Byte-Swap Method	word (16 bit) byte-swap	word (16 bit) byte- swap	word (16 bit) byte- swap	word (16 bit) byte- swap
Clear Event Code In PDO Block	•	false	false	false
Clear Event Code After Hold Time	×	true	true	true
Active Event Hold Time (1 - 65535)	1000 ms 🗸	1000 ms	1000 ms	1000 ms
Clear Event Hold Time (1 -	500 ms 🗸	500 ms	500 ms	500 ms

7. Repeat for each port that requires configuration changes.

4.2.2. EtherNet/IP Settings Parameters

The *EtherNET/IP Settings* configuration page supports the following options.

EtherNet/IP Settings Page		
ISDU Data Settings		
ISDU Response Timeout <i>Default</i> : 20 seconds	The time that the IO-Link Master's EtherNet/IP interface waits for a response to an ISDU request. The timeout needs to set long enough to allow all commands within the ISDU request to be processed. Valid range: 1-10,000 seconds	
Process Data Settings		
PDI Data Block Size (To PLC) <i>Default</i> : 36-bytes PDI Data Block Format (To PLC) <i>Default</i> : Word-16	 The configurable PDI data block length. Supported optional lengths are: 4-bytes (header only) 8-bytes (4 bytes data) 16-bytes (12 bytes data) 24-bytes (20 bytes data) 36-bytes (32 bytes data) Data format of PDI data block to be transferred to the PLC(s) in Class 1 and/or Write-to-Tag/File PDI Transfer Modes. Supported formats are: Byte-8 (8-bit or SINT) Word-16 (16-bit or INT) Dword-32 (32-bit or DINT) Note: The Data Block Format is independent of the PDI Data Byte-Swap 	
	Method. This setting is not used for the SLC, PLC-5 and MicroLogix PLCs which are always Word-16. If enabled, the IO-Link Master swaps the data bytes in word (2 byte)	
PDI Data Byte-Swap Method <i>Default</i> : Work (16-bit) byte swap	format or dword (4 byte) format. Supported values are:	
	 No byte-swap – data passed through as received Word (16-bit) byte-swap – data is byte-swapped in word format Dword (32-bit) byte-swap – data is byte-swapped in dword format Note: The byte swapping must be set correctly in order to convert from IO- Link (big-endian byte order), to EtherNet/IP (little-endian byte 	

E	CtherNet/IP Settings Page (Continued)
PDO Data Block Size (From PLC) Default: 32-bytes	 The configurable PDO data block length. Supported optional lengths are: Event code not included: 4-bytes = all data 8-bytes = all data 24-bytes = all data 32-bytes = all data 34-bytes = 32 bytes data, 2 pad bytes 36-bytes = 32 bytes data, 4 pad bytes Event code included - PDO Data Format = Byte8: 4-bytes = 2 byte event code, 2 data bytes 8-bytes = 2 byte event code, 2 data bytes 8-bytes = 2 byte event code, 4 data bytes 24-bytes = 2 byte event code, 22 data bytes 24-bytes = 2 byte event code, 30 data bytes 32-bytes = 2 byte event code, 32 data bytes 32-bytes = 2 byte event code, 32 data bytes 34-bytes = 2 byte event code, 32 data bytes 36-bytes = 2 byte event code, 32 data bytes 36-bytes = 2 byte event code, 32 data bytes, 2 byte pad Event code included - PDO Data Format = word (16-bit): 4-bytes = event code word, 3 data words 8-bytes = event code word, 11 data words 32-bytes = event code word, 15 data words 34-bytes = event code word, 16 data words 36-bytes = event code word, 3 data dword 8-bytes = event code dword, 3 data dwords 32-bytes = event code dword, 3 data dwords 24-bytes = dword event code, 5 data dwords 24-bytes = dword event code, 7 data dwords 24-bytes = dword event code, 7 data dwords 32-bytes = dword event code, 7 data dwords 32-bytes = dword event code, 7 data dwords 34-bytes = dword event code, 7 data dwords
	 Data format of PDO data block received from the PLC(s) in Class 1 or Read from TagOrFile PDO Transfer Modes. Formats include: Byte-8 (8-bit)
PDO Data Block Format (From PLC)	 Word-16 (16-bit) Dword-32 (32-bit)
Default: Word-16	Note: The Data Block Format is independent of the PDO Data Byte-Swap Method.
	This setting is not used for the SLC, PLC-5 and MicroLogix PLCs which are always Word-16.

I

EtherNet/IP Settings Page (Continued)			
	If enabled, the IO-Link Master swaps the data bytes in word (2 byte) format or dword (4 byte) format. Supported values are:		
	• No byte-swap – data passed through as received		
PDO Data Byte-Swap Method	• Word (16-bit) byte-swap – data is byte-swapped in word format		
Default: Word (16-bit) byte-swap	• Dword (32-bit) byte-swap – data is byte-swapped in dword format		
	Note: The byte swapping must be set correctly in order to convert from EtherNet/IP (little-endian byte order), to IO-Link (big-endian byte order).		
Clear Event Code in PDO Block	If enabled, the IO-Link Master expects the first 2 bytes, word, or dword of the PDO block to be used for event code handling. Supported values are:		
Default: False	• True = expect event code		
	• False = no event code, expect only PDO data		
Clear Event Code After Hold	If enabled, the IO-Link Master clears any event code reported in the PDI data block after the Event Active Hold Time . Supported values are:		
Default: True	• True = clear event code after hold time		
Default: True	• False = do not clear event code after hold time		
	If Clear Event Code After Hold time is enabled, the time period an event code is reported in the PDI block before it is cleared.		
	• Valid range: 1-65535		
	• Valid Units:		
Event Active Hold Time	- ms (milliseconds)		
Default: 1000 ms	- sec (seconds)		
	- min (minutes)		
	- hours		
	- days		
	Once an event code has been cleared, the time an event code stays cleared in the PDI block before another event code can be reported.		
	• Valid range: 1-65535		
	• Valid Units:		
Clear Event Hold Time <i>Default</i> : 500 ms	- ms (milliseconds)		
	- sec (seconds)		
	- min (minutes)		
	- hours		
	- days		

EtherNet/IP Settings Page (Continued)			
Transfer Mode Settings			
PDI Receive Mode(s) <i>Default</i> : Polling, Class1	Determines which PDI Receive (To PLC) Modes are enabled. Supported modes are: Polling Class1 Write-to-TagOrFile		
PDO Transmit Mode <i>Default</i> : Class 1	Supported modes are: • Off • PLC-Writes • Class1 • Read-from-TagOrFile		
Read/Write Tag/File Settings			
PLC IP Address <i>Default</i> : 0.0.0.0	The PLC IP Address is required if either Write-to-TagOrFile or Read-from- TagOrFile mode are enabled. Format: xxx.xxx.xxx		
PLC Controller Slot Number Default: 0	The PLC Controller Slot Number is required if either Write-to-TagOrFile or Read-from-TagOrFile mode are enabled. Valid range: 0-64		
PLC Type <i>Default</i> : ControlLogix	Indicates the type of PLC that the tag(s) or file(s) are written to and/or read from. Supported PLC Types are: • ControlLogix • SLC • PLC-5 • MicroLogix		
Write PDI to Tag/File Settings			
PDI Tag/File Name Default: blank	 The tag or file name to place the PDI data block. ControlLogix family: Tags must be same type as PDI Data Format (SINT, INT or DINT). Tags must be an array. Tags must be at least as long as the PDI Data Block Length. SLC/PLC-5/MicroLogix: Files must be of INTEGER (16-bit) type. Files must be named with standard file name conventions (i.e: N10:0, N21:30, etc) The file must be at least as long as the PDI Data Block Length. 		
Append PDO to PDI Data <i>Default</i> : False	If selected, the IO-Link Master appends any PDO data to the end of the PDI data. • False = Do not append PDO data • True = Append PDO data		

EtherNet/IP Settings Page (Continued)				
Marinem DI C Hadata Data	The maximum rate at which the IO-Link Master updates the PDI tag or file.			
Maximum PLC Update Rate	This parameter is used to ensure that the PLC receives all state changes.			
Defuuit. 40ms	Setting the update rate to 10 ms effectively disables this feature. The valid range is 10 to 65535 ms.			
Heartbeat Update Enable	If selected, the IO-Link Master updates the PDI data block at the Heartbeat Update Rate .			
Default: False	• False = Heartbeat update disabled			
	• True = Heartbeat update enabled			
Heartbeat Update Rate	If Heartbeat Update Enable is selected, the rate at which the IO-Link Master updates the PDI data block in the Write-to-Tag/File mode.			
Default: 1000ms	The valid range is 50 to 65535 ms.			
Read PDO from Tag/File Settings				
	The tag or file name that the IO-Link Master reads the PDO data block from.			
	• ControlLogix family:			
	- Tags must be same type as PDO Data Format (SINT, INT or DINT).			
PDO Tag/File Name	- Tags must be an array.			
Default: blank	- Tags must be at least as long as the PDO Data Block Length.			
	• SLC/PLC-5/MicroLogix:			
	- Files must be of INTEGER (16-bit) type.			
	- Files must be named with standard file name conventions (i.e: N10:0, N21:30, etc)			
	The file must be at least as long as the PDO Data Block Length.			
PLC Poll Rate	The frequency which the IO-Link Master reads the PDO data block in the Read-from-Tag/File mode.			
Default: 1000ms	Valid range: 50-65535 ms			

4.3. Modbus/TCP Settings Configuration Page

) 🥖 http:// 192.168.11.198 /index.php/M	odbus/TCP/Settings				D-0
Master: Modbus/T × Sea	arch Here Se	arch			
OMTROL Home Diagn	ostics Configuration	Advanced	Help Welco	me Admin Logout	Contact
IO-LINK SETTING	S ETHERNET/IP SETT	INGS MODBUS/TO	CP SETTINGS NET	WORK CLEAR SE	ETTINGS
Modbus/TCP Settings					
MODBUS/TCP SETTINGS	PORT 1 EDIT	PORT 2	DIT PORT 3	EDIT PORT	4 EDIT
ISDU Data Settings:					
ISDU Response Timeout (1 - 10000)	20 sec	20 sec	20 sec	20 sec	
Process Data Settings:					
PDI Data Block Size (To PLC)	36 bytes	36 bytes	36 bytes	36 byte	s
PDI Byte-Swap Method	no byte-swap	no byte-swap	no byte-swap	no byte	-swap
PDO Data Block Size (From PLC)	32-bytes	32-bytes	32-bytes	32-byte	35
PDO Byte-Swap Method	no byte-swap	no byte-swap	no byte-swap	no byte	-swap
Append PDO to PDI Data	false	false	false	false	
Clear Event Code In PDO Block	false	false	false	false	
Clear Event Code After Hold Time	true	true	true	true	
Active Event Hold Time (1 - 65535)	1000 ms	1000 ms	1000 ms	1000 m	IS
Clear Event Hold Time (1 - 65535)	500 ms	500 ms	500 ms	500 ms	
Transfer Mode Settings:					
Slave Mode Device ID (1 - 247)	1	1	1	1	
PDI Receive Mode(s) (To PLC)	Slave	Slave	Slave	Slave	
PDO Transmit Mode(s) (From	Slave	Slave	Slave	Slave	

You can use the *Modbus/TCP Settings* page to configure Modbus/TCP with the IO-Link Master.

4.3.1. Editing Modbus/TCP Settings

- 1. If necessary, open the IO-Link Master web interface with your web browser using the IP address.
- 2. Click **Configuration** in the menu bar.
- 3. Click the MODBUS/TCP SETTINGS submenu.
- 4. Click the EDIT button for the port that you want to configure.
- 5. Make appropriate selections for the IO-Link device that you will connect to that port. You can use the help system if you require definitions or values for the options or <u>4.3.2. Modbus/TCP Settings Parameters</u> on Page 35.
- 6. Scroll to the top of the page and click the SAVE button.

Make sure that the port now displays the EDIT button.

If it displays the SAVE and CANCEL buttons, that means that one of the parameters contains an incorrect value. If necessary, scroll down the page, make the needed corrections, and click SAVE.

4.3.2. Modbus/TCP Settings Parameters

The following table illustrates the *Modbus/TCP Settings* page.

Modbus/TCP Settings Page		
ISDU Response Timeout Default = 20 seconds	The time that the IO-Link Master's Modbus/TCP interface waits for a response to an ISDU request. The timeout needs to set long enough to allow all commands within the ISDU request to be processed.	
	Valid range: 1-10,000 seconds	
Process Data Settings		
	The configurable PDI data block length. Optional lengths are:	
	• 4-bytes (header only)	
PDI Data Block Size	• 8-bytes (4 bytes data)	
Default: 36-bytes	• 16-bytes (12 bytes data)	
	• 24-bytes (20 bytes data)	
	• 36-bytes (32 bytes data)	
	If enabled, the IO-Link Master swaps the data bytes in word (2 byte) format or dword (4 byte) format. Options include:	
	No byte-swap – data passed through as received	
	• Word (16-bit) byte-swap – data is byte-swapped in word format	
PDI Byte-Swap Method	• Dword (32-bit) byte-swap – data is byte-swapped in dword format	
Default: No byte-swap	Note: Because both IO-Link and Modbus / TCP use big-endian byte ordering, byte swapping typically is not required for word and dword data.	
	Byte swapping is most commonly required when receiving byte (8-bit) data and it is desired to place the first data byte in the least significant byte position of the holding register. For these cases, word (16 bit) byte-swap is typically used.	

Modbus/TCP Settings Page (Continued)		
PDO Data Block Size <i>Default</i> : 32-bytes	 The configurable PDO data block length. Optional lengths are: Event code not included: 4-bytes = 2 data words 8-bytes = 4 data words 16-bytes = 8 data words 24-bytes = 12 data words 32-bytes = 16 data words 34-bytes = 16 data words, 1 pad word Event code included: 4-bytes = event code word, 1 data words 16-bytes = event code word, 3 data words 16-bytes = event code word, 7 data words 24-bytes = event code word, 11 data words 32-bytes = event code word, 15 data words 	
PDO Byte-Swap Method <i>Default</i> : No byte-swap	 34-bytes = event code word, 16 data words If enabled, the IO-Link Master swaps the data bytes in word (2 byte) format or dword (4 byte) format. Options include: No byte-swap – data passed through as received Word (16-bit) byte-swap – data is byte-swapped in word format Dword (32-bit) byte-swap – data is byte-swapped in dword format Note: Because both IO-Link and Modbus / TCP use big-endian byte ordering, byte swapping typically is not required for word and dword data. Byte swapping is most commonly required when sending byte (8-bit) data to the IO-Link device and it is desired to send the least significant byte of the holding register first. For these cases, word (16 bit) byte-swap is typically used. 	
Append PDO to PDI Data <i>Default</i> : False	 If selected, the IO-Link Master appends any PDO data to the end of the PDI data. False = Do not append PDO data True = Append PDO data 	
Clear Event Code in PDO Block <i>Default</i> : False	If enabled, the IO-Link Master expects the first word of the PDO block to be used for event code handling. Values are: • True = expect event code • False = no event code, expect only PDO data	
Clear Event Code After Hold Time <i>Default</i> : True	If enabled, the IO-Link Master clears any event code reported in the PDI data block after the Event Active Hold Time . Values are: • True = clear event code after hold time • False = do not clear event code after hold time	

Modbus/TCP Settings Page (Continued)			
	If Clear Event Code After Hold Time is enabled, the time period an event code is reported in the PDI block before it is cleared.		
	Valid range: 1-65535		
	Valid Units are:		
Event Active Hold Time	• ms (milliseconds)		
Default: 1000 ms	• sec (seconds)		
	• min (minutes)		
	• hours		
	• days		
	Once an event code has been cleared, the time an event code stays cleared in the PDI block before another event code can be reported.		
	• Valid range: 1-65535		
	• Valid Units:		
Clear Event Hold Time	• ms (milliseconds)		
Default: 500 ms	• sec (seconds)		
	• min (minutes)		
	• hours		
	• days		
Transfer Mode Settings			
Slave Mode Device ID	The Modbus Device ID used to access this IO-Link port.		
Default: 1	Range: 1-247		
	Determines which PDI Receive (To PLC) Modes are enabled.		
PDI Receive Mode(s)	The selectable modes is Slave.		
Default: Slave	Note: Not selecting slave mode disables Modbus/TCP access to the PDI data block.		
PDO Transmit Mada	Selectable Modes are:		
Default: Slavo	• Disabled		
Dejuun. Slave	• Slave		

Chapter 5. Connecting Devices to the Ports

5.1. Connecting to IO-Link Ports

The IO-Link Master provides four IO-Link ports with M12 connectors (5-pin female/A coded).

Note: Make sure that you tighten the cables properly to maintain IP67 capabilities.

This table provides signal information for the IO-Link connectors.



Pin	Signal	Description
1	L+	Power supply (+)
2	DI	Digital input
3	L-	Power supply (-)
4	C/Q	Communication signal, which supports SDCI (IO-Link) or SIO (standard input/ output)
5	N/A	Not connected

This table provides information that you may need regarding the IO-Link connectors.

Current and Power	Value
Maximum IO-Link Supply	200mA
Maximum C/Q Current:	
High	200mA
Low	200mA
Peak C/Q Current:	
High	500mA
Low	500mA
C/Q & DI Input:	
Maximum	Power Input +0.5VDC
Minimum	-0.5VDC
SDCI (IO-Link) Transmission Rates:	
COM1	4.8Kbps
ČOM2	38.4Kbps
COM3	$230.4 \mathrm{Kbps}$

Note: IO-Link ports must have an approved cable or protective cover attached to the port guarantee IP67 compliance.

Chapter 6. Using the Diagnostics Pages

This section provides information about the following **Diagnostics** web pages.

- <u>6.1. IO-Link Port Diagnostics</u>
- <u>6.2. EtherNet/IP Diagnostics</u> on Page 44
- <u>6.3. Modbus/TCP Diagnostics</u> on Page 48

6.1. IO-Link Port Diagnostics

The *IO-Link Diagnostics* page may be useful when trying to troubleshoot port issues related to IO-Link configuration.

TROL' Home Diagnostics	Configuration Advanced	Help		Welcome Admin Logout Contact
	ETHERNET/ID DIAGNOSTICS MODE			- 1946 -
To Link Disortoontoo	Emerneryn pronoontoo moor	500/10/ D2801001100		
O-Link Diagnostics				PAUSE LIVE UPDATES RESET STATISTICS
10-LINK DIAGNOSTICS	PORT 1	PORT 2	PORT 3	PORT 4
Port Mode	IOLink	IOLink	IOLink	IOLink
Port Status	Operational,PDI Valid	Operational,PDI Valid	Operational,PDI Valid	Operational
Device Vendor Name	Siemens AG	SICK AG	SICK AG	ifm electronic gmbh
Device Product Name	SIMATIC RF220R IO-Link	LUT9U-P130L	WTB27C-3P2444	PI2794
Device Serial Number		09350547	09510012	W0115081211
Device Hardware Version		0001	1.30	AB
Device Firmware Version	V 1.1.0	1.03	1.47	217
Device IO-Link Version	1.0	1.0	1.0	1.0
Auxiliary Input Bit Status	Off	Off	Off	On
Device PDI Data Length	8	2	1	2
PDI Data Valid	Yes	Yes	Yes	No
Last Rx PDI Data (MS Byte First)	00h,00h,00h,00h,00h,00h,00h,00h	0ah,80h	01h	00h,00h
Device PDO Data Length	8	0	0	0
Lost PDO Controller(s) Errors	0			
PDO Data Valid	Yes			
Last Tx PDO Data (MS Byte First)	00h,02h,00h,00h,00h,00h,00h,00h			
Time Since Initialization	004d 21h:16m:45s.733ms	004d 21h:27m:28s.106ms	004d 21h:27m:28s.108ms	004d 21h:27m:28s.112ms
Lost Communication Count	1	0	0	0
Initialization Attempts	2	1	1	1
Initialization Errors	0	0	0	0
Process Data Errors	1	3	1	6
Process Data Retries	3	1	1	1
Internal Communication Errors	0	0	0	0
Device Communication Errors	0	0	0	0
ISDU Read Cmd Attempts	3512759	5311707	5939333	3452437

Note: This image does not illustrate the complete Diagnostics page.

IO-Link Diagnostics				
	Displays the active device mode:			
	• Reset = The port is configured to disable all functionality.			
Port Mode	• IO-Link = The port is configured to IO-Link mode.			
	• Digital In = The port is configured to operate as a digital input.			
	• Digital Out = The port is configured to operate as a digital output.			
	Displays the port status:			
	• Inactive = The port is in active state. Typically, this indicates that the device is either not attached or not detected.			
	• Initializing = The port is in the process of initializing.			
Port Status	• Operational = The port is operational and, if in IO-Link mode, communications to the IO-Link device has been established.			
	• PDI Valid = The PDI data is now valid.			
	• Fault = The port has detected a fault and is unable to re-establish communications.			
Device Vendor Name	Displays the Device Vendor Name as stored in ISDU Index 16.			
Device Product Name	The Device Product Name as stored in ISDU Index 18.			
Device Serial Number	The Device Serial Number as stored in ISDU Index 21.			
Device Hardware	The Device Hardware Version as stored in ISDU Index 22.			
Device Firmware	The Device Firmware Version as stored in ISDU Index 23.			
Device IO-Link Version	The supported Device IO-Link Version as stored in ISDU Index 0.			
Auxiliary Bit Status	The current status of the auxiliary bit as received on Pin 2 of the IO-Link port.			
Last Rx PDI Data (MS Byte First)	The last Rx PDI data as received from the IO-Link device.			
Device PDO Data Length	The supported Device PDO Data Length, in bytes, as stored in ISDU Index 0.			
Lost PDO Controller(s) Errors	The number of times that the PDO controller(s) were present and then lost connection.			
PDO Data Valid	Status of PDO data being received from controller(s).			
Device PDI Data Length	The supported Device PDI Data Length, in bytes, as stored in ISDU Index 0.			
PDI Data Valid	Current status of PDI data as received from the IO-Link device.			
Last Tx PDO Data	The last Tx PDO data.			
Time Since Initialization	The time since the last port initialization.			
Lost Communication Count	The number of times that communication has been lost to the IO-Link device.			
Initialization Attempts	The number of times the IO-Link port was initialized.			
Initialization Errors	The number of port initialization errors that occurred.			
Process Data Errors	The number of process data errors the port received.			
Process Data Retries	The number of process data retries the port performed.			
Internal Communication Errors	The number of IO-Link Master internal communication errors that occurred on this port.			
Device Communication Errors	The number of device specific communication errors that occurred.			

The following table provides information about the *IO-Link Diagnostics* page.

IO-Link Diagnostics (Continued)			
ISDU Read Cmd Attempts	The number of read ISDU command attempts.		
ISDU Read Cmd Errors	The number of read ISDU command errors.		
Minimum ISDU Read Cmd Resp Time	The minimum, or shortest, read ISDU command response time.		
Maximum ISDU Read Cmd Resp Time	The maximum, or longest, read ISDU command response time.		
Average ISDU Read Cmd Resp Time	The average ISDU read command response time.		
Average ISDU Read Cmd Byte Time	The average per-byte read ISDU command response time.		
ISDU Write Cmd Attempts	The number of write ISDU command attempts.		
ISDU Write Cmd Errors	The number of write ISDU command errors.		
Minimum ISDU Write Cmd Resp Time	The minimum, or shortest, write ISDU command response time.		
Maximum ISDU Write Cmd Resp Time	The maximum, or longest, write ISDU command response time.		
Average ISDU Write Cmd Resp Time	The average ISDU write command response time.		
Average ISDU Write Cmd Byte Time	The average per-byte ISDU write command response time.		
Total Events	The total number of events that were received on this port.		
First Events	Up to the first, or oldest, three events that were received on this port.		
Last Events	Up to the last, or most recent, three events that were received on this port.		

6.2. EtherNet/IP Diagnostics

The *EtherNet/IP Diagnostics* page may be useful when trying to troubleshoot EtherNet/IP communications and port issues related to EtherNet/IP configuration.

P 10-	Link Master: page_ports × 10-Link Master: page_etherr × 10 Co	mtrol Corporation - Device ×	Comtrol Corpo	ration - Device ×			
¢ -)	C 10.0.0,98/index.php/EtherNet/IP/Diag		1.00			ಡಿಭೆ ≡	
			1			· · · · ·	
A	OMTROL Home Diagnostics Configuration	Advanced Help		Welcome	Admin Logout Contact		
	IO-LINK DIAGNOSTICS ETHERNET/IP DIAGN	NOSTICS MODBUS/TO	CP DIAGNOSTICS				
ø							
	EtherNet/IP Diagnostics		ī	STUSSING USE 1			
	Etherwey IP Diagnostics		l	PAUSE LIVE UPDA	TES RESET STATISTICS		
	ETUEDNET AD INTERFACE DIACMOSTICS			UALUEO			
	Anting Section South			VALUES		-	
	Active Session Counc			2			
	Total Connections Established			2			
	Connection Timeouts			0			
	Connections Closed			0			
	Class 3 Messages/Responses Received			4549906			
	Broadcast Messages Received			0			
	Class 3 Messages/Responses Transmitted			4551321			
	Class1 Output Updates (From PLC)			22957549			
	Class 1 Output Data Changes (From PLC)			0			
	Class1 Input Updates (To PLC)			20206368			
	Client Object Requests			4540460			
	Good Responses from PLC			8032			
	Bad Responses from PLC			0			
	No Responses From PLC				0		
	Invalid Network Paths			0	0		
	Pending Request Limit Reached			0	0		
Unexpected Events				0			
Unsupported CIP Class Errors							
	Unsupported CIP Instance Errors 0						
	Unsupported CIP Service Errors 0						
	Unsupported CIP Attribute Errors 0						
	Unsupported File Errors 0						
	System Resource Errors			0	0		
	First Error String			No Error Dete	cted		
	Last Error String						
	ETHERNET/IP PORT SPECIFIC DIAGNOSTICS	PORT 1	PORT 2	PORT 3	PORT 4		
	Configuration Errors	0	0	0	0		
	Invalid Data Errors	0	0	0	0		
	Active PDO Controller(s)				Class1: 10.0.0.16		
	PDO Writes to Offline or Read-Only Ports	41256547	41256547	41256547	0		
	Undeliverable PDI Updates (To PLC)	0	0	0	0		
	ISDU Request Msgs from PLC(s)	608067	357454	435144	423061	_	
	ISDU Invalid Requests	0	0	0	0		
	ISDU Requests When Port Offline	0	0	0	0		
	Valid ISDU Responses from Port	608068	357455	435144	423062		
	ISDU Response Timeouts	0	0	0	0		
	Unexpected ISDU Responses	0	0	0	U		
	Maximum ISDU Request Msg Response Time	0.926 sec	0.785 sec	1.216 sec	1.305 sec		
	Average ISDU Request Msg Response Time	0.508 sec	0.474 sec	0.808 sec	0.839 sec		
	Tinimum ISDU Request Msg Response Time	U.280 sec	0.428 sec	U.560 Sec	0.512 Sec		
	ISDU Read Commands	2736303	2144724	2393292	2115306		

Note: This image does not illustrate the complete Diagnostics page.

EtherNet/IP Diagnostics		
	The number of active Ethernet/IP sessions. A session can: • Support both Class 1 I/O and Class 3 Messages	
Active Session Count	 Can be initiated by either the PLC or the IO-Link Master 	
	 Can be terminated by either the PLC or the IO-Link Master 	
Active Connections	The current number of active connections (both Class 1 and 3).	
Total Connections Established	The total number of connections that have been established.	
Connection Timeouts	The number of connections that have closed due to timing out.	
Connections Closed	The number connections that have closed due to a standard processes.	
Class 3 Messages/ Responses Received	The number of Class 3 messages and responses received from the PLC or PLCs.	
Broadcast Messages Received	The number of broadcast messages received from PLC or PLCs.	
Class 3 Messages/ Responses Transmitted	The number of Class 3 messages and responses sent to the PLC or PLCs.	
Class 1 Output Updates (From PLC)	The number of Class 1 output data updates received from the PLC or PLCs.	
Class 1 Output Data Changes (From PLC)	The number of changes in Class 1 output data received from the PLC.	
Class 1 Input Data Updates (To PLC)	The number of Class 1 input data updates sent to the PLC or PLCs.	
Client Object Requests	The number of Class 3 requests to the IO-Link Master vendor specific objects.	
Good Responses from PLC	The number of good responses from messages sent to PLC or PLCs.	
	Displays the number of bad responses from messages sent to the PLC or PLCs. Bad responses are typically returned for such errors as:	
	• Incorrect tag or file names	
Bad Responses from PLC	• Incorrect tag or file data types	
	• Incorrect tag or file data sizes	
	• PLC is overloaded and cannot handle the amount of Ethernet traffic	
	PLC malfunction	
	Displays the number of no responses from messages sent to the PLC or PLCs. No responses are typically returned for such errors as:	
N.D. A.D.G.	Incorrect IP address	
No Responses from PLC	Incorrect PLC configuration	
	PLC malfunction	
	• PLC is overloaded and cannot handle the amount of Ethernet traffic	
Invalid Network Paths	Displays the number of network path errors on messages sent to the PLC or PLCs. These are typically caused by incorrect IP address settings.	
Pending Request Limit Reached	Displays the number of pending request limit errors. These errors occur when the PLC is sending a continuous stream of messages to the IO-Link Master faster than the IO-Link Master can process them.	
Unexpected Events	Displays the number of unexpected event errors. Unexpected event errors occur when the IO-Link Master receives an unexpected message from the PLC such as an unexpected response or unknown message.	

The following table provides information about the *EtherNet/IP Diagnostics* page.

EtherNet/IP Diagnostics (Continued)			
Unsurprised CID Class	Displays the number of unsupported CIP class errors.		
Errors	These errors occur when a message that attempts to access an invalid class is received by the IO-Link Master.		
Ungunnerted CID Instance	Displays the number of unsupported CIP instance errors.		
Errors	These errors occur when a message that attempts to access an invalid instance is received by the IO-Link Master.		
Unsupported CIP Service Errors	Displays the number of unsupported CIP service errors. These errors occur when a message that attempts to access an invalid service is sent to the IO- Link Master.		
Unsupported CIP Attribute Errors	Displays the number of unsupported CIP request attribute errors. These errors occur when a message that attempts to access an invalid attribute is sent to the IO-Link Master.		
Unsupported File Errors	Displays the number of messages from SLC/PLC-5/MicroLogix PLCs that attempt to access an unsupported file address.		
System Resource Errors	Displays the number of system resource errors. These errors indicate a system error on the IO-Link Master such as operating system errors or full message queues. These errors typically occur when the PLC or PLCs are sending messages to the IO-Link Master faster than the IO-Link Master can process them.		
First Error String	Text description of the first error that occurred.		
Last Error String	Text description of the last error that occurred.		
EtherNet / IP Port Specific D	iagnostics		
Configuration Errors	Displays the number of improper configuration errors. These errors occur when the IO-Link Master receives a message that cannot be performed due to an invalid configuration.		
Invalid Data Errors	Displays the number of invalid message data errors. These errors occur when the IO-Link Master receives a message that cannot be performed due to invalid data.		
Active PDO Controller(s)	Lists the controller interface(s) type, (Class 1 or Class 3), and IP address that are controlling the PDO data.		
	Displays the number of PDO write messages that were dropped due to any of the following:		
	• The port is configured in IO-Link mode:		
PDO Writes to Offline or	- There is no device connected to the port.		
Read-Only Ports	- The IO-Link device is off-line.		
	- The IO-Link device does not support PDO data.		
	• The PDO Transmit Mode (To PLC) is disabled.		
	• The port is configured in Digital Input mode.		
Undeliverable PDI	Displays the number of PDI update messages that could not be delivered to the PLC in the Write-to-Tag/File method. Undeliverable updates may result when:		
Updates (To PLC)	The IO-Link Master cannot complete an Ethernet connection to the PLC.		
	The PDI data is changing faster than the Maximum PLC Update Rate.		
ISDU Request Msgs From PLC(s)	Displays the number of ISDU request messages received from the PLC(s) or other controllers. These request messages may contain one or multiple ISDU commands.		
ISDU Invalid Requests	Displays the number of ISDU requests received over EtherNet/IP with one or more invalid commands.		

EtherNet/IP Diagnostics (Continued)			
	Displays the number of ISDU requests received over EtherNet/IP when the IO-Link port was offline. This can occur when:		
ISDU Requests When Port	• The IO-Link port is initializing, such as after start-up.		
Offline	• There is no IO-Link device attached to the port.		
	• The IO-Link device is not responding.		
	• Communication to the IO-Link device has been lost.		
Valid ISDU Responses From Port	Displays the number of valid ISDU response messages returned from the IO- Link port interface and available to the PLC(s). The response messages contain results to the ISDU command(s) received in the request message.		
ISDU Response Timeouts	Displays the number of ISDU requests that did not receive a response within the configured ISDU Response Timeout .		
	Displays the number of unexpected ISDU responses.		
Unexpected ISDU Responses	Unexpected responses may occur when an ISDU response is received after the ISDU request has timed out. This typically requires setting the ISDU Response Timeout to a longer value.		
ISDU Read Commands	Displays the number of ISDU read commands received over EtherNet/IP.		
Maximum ISDU Request Msg Response Time	Displays the maximum time period required to process all commands within an ISDU request message. The response is not available until all ISDU command(s) contained in the request have been processed.		
Average ISDU Request Msg Response Time	Displays the average time period required to process the ISDU request message(s). The response is not available until all ISDU command(s) contained in the request have been processed.		
Minimum ISDU Request Msg Response Time	Displays the minimum time period required to process all commands within an ISDU request message. The response is not available until all ISDU command(s) contained in the request have been processed.		
ISDU Write Commands	Displays the number of ISDU write commands received over EtherNet/IP.		
ISDU NOP Commands	Displays the number of ISDU NOP (no operation) commands received over EtherNet/IP.		

6.3. Modbus/TCP Diagnostics

The Modbus/TCP Diagnostics page may be useful when trying to troubleshoot Modbus/TCP communications or port issues related to Modbus/TCP configuration.

C 10.0.0.98/index.php/ModBus/TCP/Diag					Θ
MTROL Home Diagnostics Configuration	Advanced Help		Welcome Admin	Logout Contact	
IO-LINK DIAGNOSTICS ETHERNET/IP DIAGNO	STICS MODBUS/TCP DIA	GNOSTICS			
Modbus/TCP Diagnostics		PAUSE	LIVE UPDATES	RESET STATISTICS	
		ło			
MODBUS/TCP INTERFACE DIAGNOSTICS		VALUE	s		
Active Connections		4			
Messages Received From Masters		64211	62		
Responses Sent To Masters		64211	62		
Broadcasts Received		0			
Invalid Message Length Errors		0			
Invalid Message Data Errors		0			
Invalid Message Address Errors		0			
Unknown Device ID Errors		0			
Invalid Protocol Type Errors 0					
Unsupported Function Code Errors 0					
Configuration Errors 0					
No Available Connection Errors		U			
System Resource Errors		U Na Fee	Datastad		
First Error String		NO ETT	or Detected		
	PORT 1	POPT 2	POPT 3	POPT 4	
Active PDD Controller(s)	TONT	TOKT 2	TOKTO		-
PDD Writes to Offline or Read-Only Ports	0	0	0	0	
ISDU Request Msgs from PLC(s)	45573	45271	45453	45297	
ISDU Invalid Requests	0	0	0	0	
ISDU Requests When Port Offline	0	0	0	0	
Valid ISDU Responses from Port	45573	45271	45453	45297	
ISDU Response Timeouts	0	0	0	0	
Unexpected ISDU Responses	0	0	0	0	
Maximum ISDU Request Msg Response Time	0.788 sec	0.788 sec	0.853 sec	1.019 sec	
Average ISDU Request Msg Response Time	0.482 sec	0.447 sec	0.543 sec	0.626 sec	
Minimum ISDU Request Msg Response Time	0.271 sec	0.260 sec	0.283 sec	0.347 sec	
ISDU Read Commands	136719	135813	136359	135891	
700 H H H C	0	0	0	0	

The following table provides information about the *Modbus/TCP Diagnostics* page.

Modbus/TCP Diagnostics			
Active Connections	Displays the current number of active Modbus/TCP connections.		
Messages Received from Masters	Displays the number of Modbus messages received from Modbus/TCP Masters.		
Responses Sent to Masters	Displays the number of Modbus responses sent to Modbus/TCP Masters.		
Broadcasts Received	Displays the number of broadcast Modbus/TCP messages received.		
Invalid Message Length Errors	Displays the number of Modbus messages received with incorrect length fields.		
Invalid Message Data Errors	Displays the number of invalid message data errors. These errors occur when the IO-Link Master receives a message that cannot be performed due to invalid data.		

Г

Modbus/TCP Diagnostics (Continued)			
Invalid Message Address Errors	Displays the number of invalid message address errors. These errors occur when the IO-Link Master receives a message that cannot be performed due to an invalid address.		
Unknown Device ID Errors	Displays the number of unknown device ID errors. These errors occur when the IO-Link Master receives a message that is addressed to a device ID other than the configured Slave Mode Device ID .		
Invalid Protocol Type Errors	Displays the number of invalid message protocol type errors. These errors occur when the IO-Link Master receives a Modbus/TCP message that specifies a non-Modbus protocol		
Unsupported Function Code Errors	Displays the number of invalid Modbus function code errors. These errors occur when the IO-Link Master receives a message that cannot be performed due to an unsupported Modbus function code.		
Configuration Errors	Displays the number of improper configuration errors. These errors occur when the IO-Link Master receives a message that cannot be performed due to an invalid configuration.		
No Available Connection Errors	Displays the number of Modbus/TCP connection attempts that were rejected due to no available connections. This occurs when the number of Modbus/TCP connections has reached the limit.		
System Resource Errors	Displays the number of system resource errors. These errors indicate a system error on the IO-Link such as operating system errors or full message queues. These errors typically occur when the PLC(s) are sending messages to the IO-Link Master faster than the IO-Link Master can process them.		
First Error String	Text description of the first error that occurred.		
Last Error String	Text description of the last error that occurred.		
Modbus/TCP Port Specific Dia	gnostics		
Active PDO Controller(s)	Lists the controller interface(s) type, (Class 1 or Class 3), and IP address that are controlling the PDO data.		
	Displays the number of PDO write messages that were dropped due to any of the following:		
	• The port is configured in IO-Link mode:		
PDO Writes to Offline or	- There is no device connected to the port.		
Read-Only Ports	- The IO-Link device is off-line.		
	- The IO-Link device does not support PDO data.		
	• The PDO Transmit Mode (To PLC) is disabled.		
	The port is configured in Digital Input mode.		
ISDU Request Msgs From PLC(s)	Displays the number of ISDU request messages received from the PLC(s) or other controllers. These request messages may contain one or multiple ISDU commands.		
ISDU Invalid Requests	Displays the number of ISDU requests received over Modbus/TCP with one or more invalid commands.		
	Displays the number of ISDU requests received over Modbus/TCP when the IO-Link port was offline. This can occur when:		
ISDU Requests When Port	• The IO-Link port is initializing, such as after start-up.		
Offline	• There is no IO-Link device attached to the port.		
	• The IO-Link device is not responding.		
	Communication to the IO-Link device has been lost.		

Modbus/TCP Diagnostics (Continued)			
Valid ISDU Responses From Port	Displays the number of valid ISDU response messages returned from the IO-Link port interface and available to the PLC(s). The response messages contain results to the ISDU command(s) received in the request message.		
ISDU Response Timeouts	Displays the number of ISDU requests that did not receive a response within the configured ISDU Response Timeout .		
Unexpected ISDU Responses	Displays the number of unexpected ISDU responses. Unexpected responses may occur when an ISDU response is received after the ISDU request has timed out. This typically requires setting the ISDU Response Timeout to a longer value.		
Maximum ISDU Request Msg Response Time	Displays the maximum time period required to process all commands within an ISDU request message. The response is not available until all ISDU command(s) contained in the request have been processed.		
Average ISDU Request Msg Response Time	Displays the average time period required to process the ISDU request message(s). The response is not available until all ISDU command(s) contained in the request have been processed.		
Minimum ISDU Request Msg Response Time	Displays the minimum time period required to process all commands within an ISDU request message. The response is not available until all ISDU command(s) contained in the request have been processed.		
ISDU Read Commands	Displays the number of ISDU read commands received over Modbus/TCP.		
ISDU Write Commands	Displays the number of ISDU write commands received over Modbus/TCP.		
ISDU NOP Commands	Displays the number of ISDU NOP (no operation) commands received over Modbus/TCP.		

Chapter 7. Updating Images and Application Subassemblies

This section discusses the following topics:

- 7.1. Images and Application Subassemblies Overview
- 7.2. Using PortVision DX to Update Software on Page 53
- 7.3. Using the Web Interface to Update Software on Page 54

7.1. Images and Application Subassemblies Overview

This subsection discusses images and application subassemblies. The IO-Link Master is loaded with the latest images at the factory but you may need to update images or application subassemblies to have access to the latest features.

You can view all image and application versions in the IO-Link Master **ADVANCED/Software** web page. PortVision DX displays the main application base version, which in this case is EtherNet/IP.

Master Software - Software				_
MTROL Home Diag	nostics Configuration Advar	nced Help	Welcome Admin Log	jout Contact
SOFTWARE A	CCOUNTS LOG FILES LICENSES	3		
Software				
IMAGES				
U-Boot Bootloader	1.01		UPDATE	
FPGA	1.00		UPDATE	
System - Primary	1.00		UPDATE	
System - Backup	1.00		UPDATE	
Application Base	1.2.0		UPDATE	
APPLICATIONS				
application-manager	1.2.0.0			
configuration-manager	1.2.0.0			
discovery-protocol	1.2.0.0			
ethernetip	1.2.0.0			
event-log	1.2.0.0			
iolink-driver	1.2.0.0			
web-user-interface	1.2.0.0			
Jpdate Application				

7.1.1. Images

The following table discusses IO-Link Master images.

	IO-Link Master Images
U-Boot Bootloader	U-Boot is a high-level bootloader that has networking and console command line capabilities. Among other things, it implements a TFTP server and Comtrol Corporation's new discovery protocol.
	This verifies that a Linux kernel image exists in NAND, then copies it to RAM and starts the IO-Link Master. The U-Boot version is displayed after the image name.
FPGA	The FPGA partition/image contains configuration data used by programmable hardware within the IO-Link Master unit.
I D' /	The uImage contains the Linux kernel and the RAM-resident root file system. It does not contain industrial protocol support or application-specific features.
ulmage - Primary/ Backup	There is a Primary and Backup version loaded on the IO-Link Master. The IO-Link Master automatically reloads the Backup uImage if the file system corrupted.
	The uImage version is displayed after the Primary/Backup uImage.
	The Application Base image comprises a flash-resident file system containing application and protocol support.
Application Base	The Application Base is built from a collection of application subassemblies each of which may be updated individually between releases of the application base as a whole.
	The application subassemblies in the Application Base image are displayed in the lower portion of the SOFTWARE web page.
	The Application Base assembly has a 2-tuple version number: (for example, 1.10).

7.1.2. Application Subassemblies

Application subassemblies are the components of the Application Base image. Application subassemblies have 3-tuple or 4-tuple version numbers (for example, 1.10.1). The first two values in a subassembly version correspond to the version of the application base assembly for which it was built and tested.

For example, a subassembly with version 1.10.3 was tested with application base version 1.10. When using the **SOFTWARE** page or PortVision DX, an application subassembly can install only if its version number matches that of the installed application base assembly. A subassembly with a version of 1.20.2.4 only installs if the application base version is 1.20. It will not install on a device with application base version 1.09 or 1.20.

IO-Link Master Application Subassemblies						
application-manager	The Application Manager version loaded on the IO-Link Master.					
configuration- manager	The Configuration Manager version loaded on the IO-Link Master.					
discovery-protocol	The Discovery Protocol version loaded on the IO-Link Master.					
ethernetip	The EtherNet/IP interface loaded on the IO-Link Master.					
event-log	The Event log version loaded on the IO-Link Master.					
iolink-driver	The IO-Link version loaded on the IO-Link Master.					
web-user-interface	The web interface version loaded on the IO-Link Master.					
ethernetip	The EtherNet/IP version loaded on the IO-Link Master.					

7.2. Using PortVision DX to Update Software

Use the following procedure to update software (images or application subassemblies) on the IO-Link Master.

- 1. If necessary, start PortVision DX.
- 2. Right-click the IO-Link Master that you want to update and click Advanced and then Upload Firmware.
- 3. Browse to the location you saved the software, highlight the file name, and click Open.
- 4. Click Yes to the Upload Firmware... Important Notice.



5. Click Ok to the Upload Firmware... Status message.



You may notice that PortVision DX first displays a *Firmware uploaded* status message. After the next PortVision DX polling cycle the status message displays *ON-LINE*.

IPV PortV	ision DX															
File M	anage View	Tools Hel	р													
Scan	Refresh	Properties	Save		ad Unload	Reboot	Webpage	 ✓ Notes 	🥪 Help	() About						
	nenesii	Tropences					mespage		- neip		Ente					
IP	PORTVI 		→ 4 Ⅲ >	₩1	🚞 Scan Resul	ts [17 / 17]										
			_	Device	Name	Mo	del		IP Address	N	IAC Address	Software Version	Status			
	00				Device 2D:00:0	ES75	06	192	168 11 100	00	·C0-4E-2D-00-08	v21b (b1644)	ON-LINE			
	0			Device 32:00:00	ES75	28	192.	168.11.101	00	C0:4E:32:00:00	v1.4 beta5 (b0.3.0.1					
	No 0				Device 35:00:09	ES85	09-XT	192	168 11 102	00	·C0-4E-35-00-09	v1 3a (b1 3 1 4)	ON-LINE			
	00		n 🗸	Device 2C:00:6	C ES85	10	192.1	168.11.103	00	:C0:4F:2C:00:6C	v2.6 beta8 (b1.6.2.1	(2) ON-LINE				
	6		n 🗸	Device 34:00:08	ES75	10	192.	168.11.104	00	:C0:4F:34:00:08	v1.3a beta4 (b1.2.1	.5) ON-LINE				
	00	00		00		li 🗸 🗸	Device 33:00:01	ES95	28	192.	168.11.105	00	:C0:4E:33:00:01	v1.4 beta4 (b1.1.0.3	3) ON-LINE	
	0			00			00		i i 🧹	Device 30:00:10	ES85	10-XTE	192.	168.11.106	00	:C0:4E:30:00:10
			i i 🧹	Device 38:00:02	ES75	10-XT	192.1	168.11.107	00	:C0:4F:38:00:02	v1.3a beta2 (b1.4.1	.5) ON-LINE				
Use mer	nu or toolbar to a	add notes in	^	n 🗸	Device 3A:00:0	D ES85	08	192.	168.11.108	00	:C0:4F:3A:00:0D	v1.3 (b1.5.1.4)	ON-LINE			
				n 🗸	Device 3C:00:0	2 ES85	08F-MM	192.	168.11.109	00	:C0:4E:3C:00:02	v1.3 (b1.6.1.4)	ON-LINE			
				1 ×	Device 1C:FF:F	D SH-8	3P (DB9)	192.	168.11.14	00	:C0:4E:1C:FF:FD	NS-Link 8.04	ON-LINE			
				🔊 🗸 🖗	Device 17:FF:FE	PRO	-8P (DB9)	192.	168.11.20	00	:C0:4E:17:FF:FB	NS-Link 8.03	ON-LINE			
				14	Device 957 <u>0-06</u>	5526 IO-L	ink Master El	P-4 192.	168.11.200	00	:C0:4E:39:FF:F6	EtherNet/IP 0.8.2	Firmware uploaded			
				🗴 🗸 🖉	Device 07:FF:F0	RTS-	-4P (DB9)	192.	168.11.23	00	:C0:4E:07:FF:FC	SocketServer 9.06	ON-LINE			
				. م	Device 29:FF:F5	RTS-	-2P (2E)	192.	168.11.52	00	:C0:4E:29:FF:F5	NS-Link 9.06	ON-LINE			
					Device 15:04:7/	UP-1	LP (5V)	192.	168.11.53	00	:C0:4E:15:04:7A	Modbus/TCP 5.07	ON-LINE			
				1 🕷 🗸	Device 21:05:C	D UP-1	LP (5-30V)	192.	168.11.55	00	:C0:4E:21:05:CD	Modbus Server 4.04	ON-LINE			
			Ŧ													
For Help,	press F1												Scan Results 17 1 Ready //			

7.3. Using the Web Interface to Update Software

The upper portion of this page is used to update the IO-Link Master images. The lower portion of this page is used for updating application subassemblies that are integrated in the Application Base. Typically, the latest application subassemblies are available in the Application Base image. There may times when a feature enhancement or bug fix is available in an application subassembly and not yet available in the Application Base image.

7.3.1. Updating Images

Use this procedure to upload images using the SOFTWARE page.

- 1. Download the latest image from the Comtrol ftp site.
- 2. Open the IO-Link Master web interface using one of these methods:
 - From PortVision DX, highlight the IO-Link Master and click the Webpage button or right-click the IO-Link Master in the *Device List* pane and click Webpage.
 - Open your browser and enter the IP address of the IO-Link Master.
- 3. Click ADVANCED and SOFTWARE.
- 4. Click the UPDATE button next to the image you want to update.
- 5. Click the **Browse** button (or Choose **File**, depending on the web browser), navigate to the file location, highlight the image file, and click **Open**.

6. Click the **Install** button.

SUFTWARE	ACCOUNTS LOG FILES LICENSES		
Software			
IMAGES			
U-Boot Bootloader	C:\1_Work_Files\IO-Lin Browse.	Instal	
FPGA	0.4	UPDATE	
uImage - Primary	0.6	UPDATE	
uImage - Backup	0.6	UPDATE	
Application Base	0.8.2	UPDATE	
APPLICATIONS			
application-manager	0.8.0.3		
configuration-manager	0.8.0.6		
discovery-protocol	0.8.0.5		
ethernetip	0.8.0.3		
event-log	0.8.0.2		
iolink-driver	0.8.0.9		
web-user-interface	0.8.0.9		

- 7. Click the CONTINUE button to the Update Image message.
- 8. Click **Ok** to close the *Update Image Successful* message.

	C	In Progress
Update Image: U-Boot Bootloader Successful		You are about to install u-boot.uImage
Image installed : u-boot-1.00.uImage		It will replace any existing version of that package.
		Do NOT disconnect power during the installation process.
		CANCEL

7.3.2. Updating Application Subassemblies

Use this procedure to upload applications using the Software page.

- 1. Download the latest application from the Comtrol Corporation ftp site.
- 2. Open the IO-Link Master web interface using one of these method:
 - From PortVision DX, highlight the IO-Link Master and click the Webpage button or right-click the IO-Link Master in the *Device List* pane and click Webpage.
 - Open your browser and enter the IP address of the IO-Link Master.
- 3. Click ADVANCED and SOFTWARE.
- 4. Click the **Browse** button (Choose **File**, depending on the web browser) under **Update Application** navigate to the file location, highlight the image file, and click **Open**.

Update Image: U-Boot Bootloader

5. Click the Install button.

Home Dia	anostics Configuration	Advanced	Help	Welcome Admin	onout Contact
	grostes configuration	Autoneed	Theip	Welcome Admin	logout contact
SOFTWARE	ACCOUNTS LOG FILES I	LICENSES			
Software					
IMAGES					
U-Boot Bootloader	0.5			UPDATE	
FPGA	0.4			UPDATE	
uImage - Primary	0.6			UPDATE	
uImage - Backup	0.6			UPDATE	
Application Base	0.8.2			UPDATE	
APPLICATIONS					
application-manager	0.8.0.3				
configuration-manager	0.8.0.6				
discovery-protocol	0.8.0.6				
ethernetip	0.8.0.3				
event-log	0.8.0.2				
iolink-driver	0.8.0.4				
web-user-interface	0.8.0.9				
Jpdate Application					
C:\1_Work_Files\IO-Linl Browse.	. Instal				
	V3 ²				

6. Click the CONTINUE button to the Update Application message.



7. Click **Ok** to close the Update Application Successful message.

Update Application Successful
Package installed : iolink-driver_0.8.0.9_arm.ipk

ok

Chapter 8. Troubleshooting and Technical Support

This section provides the following information:

- <u>8.1. Troubleshooting</u>
- <u>8.2. Contacting Technical Support</u> on Page 58
- <u>8.3. Using Log Files</u> on Page 59

8.1. Troubleshooting

Before contacting Technical Support, you may want to try the following:

- Open the IO-Link Master web interface and review the following web pages:
 - IO-Link Diagnostics
 - EtherNet/IP Diagnostics
 - Modbus/TCP Diagnostics
- Reboot the IO-Link Master
- Verify that you are using the correct types of cables on the correct connectors and that all cables are connected securely.
- Check to make sure LEDs are not reporting an issue using <u>2.5. IO-Link Master LEDs</u> (Page 12)
- Verify that the network IP address, subnet mask, and gateway are correct and appropriate for the network. Make sure that the IP address programmed into the IO-Link Master matches the unique reserved IP configured address assigned by the system administrator.
- If using DHCP, the host system needs to provide the subnet mask. The gateway is optional and is not required for a purely local network.
- Remember that if the rotary switches are set to a non-default position, the rotary switches override the lower 3 digits (8 bits) of the static IP address configured in the **Network** page or in PortVision DX.
- Verify that the Ethernet hub and any other network devices between the system and the IO-Link Master are powered up and operating.
- If you have a spare IO-Link Master, try replacing the IO-Link Master.

8.2. Contacting Technical Support

You may want to access the **Help/SUPPORT** page when you call Technical Support, as they may request the information displayed on the **SUPPORT** page.

Attp://192.168.11.198/index.php/Support	5 - Q
Master: Support 🛛 🗙 🧭 Comtrol Corporation - Device	
MTROL' Home Diagnostics Configuration Ad	dvanced Help Welcome Admin Logout Contact I
HELP SUPPORT CONTACT	
Support	
SYSTEM INFO	Station #1
Serial Number	9570-065526
Model Name	IQ-link Master FIP-4
Switch Position	000
IP Address	192.168.11.198
Subnet Mask	255.255.0.0
Gateway Address	192.168.0.254
IP Туре	static
APPLICATION BASE	1.2.0
application-manager	1.2.0.0
configuration-manager	1.2.0.0
discovery-protocol	1.2.0.0
ethernetip	1.2.0.0
event-log	1.2.0.0
iolink-driver	1.2.0.0
web-user-interface	1.2.0.0
IMAGES	
U-Boot	1.01
HPGA	1.00
utmage-Packup	1.00
umage-backup	120

Comtrol Technical Support is available from 8:00AM to 6:00PM (CST), Monday through Friday, excluding major USA holidays.

Contact	Information
Phone	763.957.6000
Downloads	ftp://ftp.comtrol.com/html/default.htm
Web Site	http://www.comtrol.com

8.3. Using Log Files

Log files are available in the IO-Link Master web page. The IO-Link Master provides four different log files that you can view, export, or clear:

- Syslog (system log) displays line-by-line activity records.
- dmesg displays Linux kernel messages.
- top displays which programs are using most of the memory and CPU.
- **ps** displays the running programs
- All log files start up automatically during the startup cycle. Each log file has a size limit of 100KB.

Note: Typically, log files are intended to be used by Technical Support in the event there is a problem.

You can use the following procedures to:

- <u>8.3.1. View a Log File</u> on Page 59
- <u>8.3.2. Clear a Log File</u> on Page 59
- <u>8.3.3. Export a Log File</u> on Page 60

8.3.1. View a Log File

Use this procedure to view a log file.

- 1. Open the IO-Link Master web interface using one of these method:
 - From PortVision DX, highlight the IO-Link Master and click the **Webpage** button or right-click the IO-Link Master in the *Device List* pane and click **Webpage**.
 - Open your browser and enter the IP address of the IO-Link Master.
- 2. Click Advanced and then LOG FILES.
- 3. Select the log file type from the drop-list.

Comtrol	× Home	Diagnostics	Configuration	Advanced	Help	Welcome Admin	Logout	Contact	
	SOFTWARE	ACCOUNTS	LOG FILES L	ICENSES					
Log Files			select log f	syslog dmesg top		REFRESH	CLEAR	EXPORT	
				(pa					

- 4. Optionally, click the **REFRESH** button to get the latest information.
- 5. Optionally, <u>export</u> the log file.

8.3.2. Clear a Log File

Use this procedure to clear a log file.

- 1. Open the IO-Link Master web interface using one of these method:
 - From PortVision DX, highlight the IO-Link Master and click the Webpage button or right-click the IO-

Link Master in the Device List pane and click Webpage.

- Open your browser and enter the IP address of the IO-Link Master.
- 2. Click Advanced and then LOG FILES.
- 3. Optionally, <u>export</u> the log file.
- 4. Select the log file type from the drop-list.
- 5. Click the CLEAR button.

2	A http://192	.168.11.200/inde	x.php/Log_Files					۶		□ ×
) Link : Log Files	×								
\$	COMTROL	Home	Diagnostics	Configuration	Advanced	Help	Welcome Admin	Logout (Contact	
		SOFTWARE	E ACCOUNTS	LOG FILES	LICENSES					
	Log Files			select log	file syslog 💌		REFRESH		EXPORT	
	'syslog' cl	eared succes	ssfully.							

The log file automatically starts logging the latest information.

8.3.3. Export a Log File

Use the following procedure to export a log file.

- 1. Open the IO-Link Master web interface using one of these method:
 - From PortVision DX, highlight the IO-Link Master and click the Webpage button or right-click the IO-Link Master in the *Device List* pane and click Webpage.
 - Open your browser and enter the IP address of the IO-Link Master.
- 2. Click Advanced and then LOG FILES.
- 3. Select the log file type from the drop-list.
- 4. Click the **EXPORT** button.
- 5. Click the **Save** button drop-list and click **Save** to save it to your user folder or **Save** as to browse to or create a new folder in which to place the log file.

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6. Depending on your operating system, you may need to close the pop-up window.