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1.0 General Information

The DX4010V2 is a data terminal equipment (DTE) configured RS-232/USB serial device interface. This module is designed to operate with compatible control panels. It connects to the control panel through the Option or SDI data bus.

The DX4010V2 is used to connect a PC with RPS, BIS, PC 9000, CMS 7000, or other third party software that uses a serial connection to the supported control panels. The module also supports a serial printer (or parallel printer with a converter box) for control panels that support a serial printer. The compatibility lists in *Table 1* show support information.

2.0 Specifications

Table 1: DX401	0V2 Specifications
Operating Voltage	12 VDC nominal
Current Draw	55 mA nominal, 60 mA with diagnostic LEDs enabled
Communication Configuration	Programmable through the control panel. Refer to the appropriate control panel programming instructions.
The bau DS7400	ud rate for the printer output on a Xi must be greater than 300 baud.
Operating Temperature	0°C to +50°C (+32°F to +122°F)
Relative Humidity	5 to 85% @ +30°C (+86°F) non-condensing
Control Panel Compatibility	Option bus control panels: D6412, D4412, DS7240, DS7220, DS7400Xi (v2.02 or higher)
	SDI bus control panels (v6.0 or higher): D9412GV2, D7412GV2, D7212GV2, D9412G, D7412G, D7212G, D9124, D9112, D7412, and D7212

Table 1: DX4010V2 Specifications (continued)

Application Compatibility	RPS: Supported on all compatible control panels.
	PC 9000: Supported on SDI Bus control panels (D9412G, D7412G, D7212G, D9112, D7412, and D7212).
	BIS: Supported on SDI Bus control panels, v6.3 and higher (D9412GV2, D7412GV2, D7412GV2, D7412G, and D7212G).
	CMS 7000: Supported on DS7400Xi Control Panels set at Mode 18 (v3.09 or higher).
	Printers: Supported on compatible



- 2- RJ-16 data bus connector (
- 3- Data bus (TS1)
- 4- Address DIP switches (S1)
- 5- Diagnostic LEDs
- 6- Diagnostic LED enable pins (P2)
- 7- USB Connector (P7)
- 8- DB9 DTE RS-232 connector (P6)

3.0 Installation Procedure



Failure to follow the instructions in this manual can result in personal injury or damage to the equipment.



The DX4010V2 contains static-sensitive components and must be handled with care. Follow anti-static procedures when handling the modules.



Test according to NFPA 72 if used in fire applications.

- 1. Disconnect power to the control panel by unplugging the transformer and removing the red battery lead.
- 2. Remove screws from enclosure cover to access the DX4010V2 board.
- 3. Connect circuit wiring and install jumper pins. Refer to Section 4.0 Wiring on page 5.
- 4. Replace enclosure cover.
- 5. Connect a serial cable to the serial device. Refer to Section 7.0 DB9 DTE RS-232 Connector (P6) on page 10.
- 6. Reapply power to the control panel.

4.0 Wiring

Remove all power to the control panel (AC and standby battery) before making or breaking any connections. Failure to do so can result in personal injury or damage to the equipment.

Wire Length Restrictions

- 0.8 mm (#22 AWG): 305 m (1000 ft)
- 1.2 mm (#18 AWG): 610 m (2000 ft)
- USB or Serial Cables are not to exceed 2 meters (6 ft) in length.



SDI option bus wiring is limited to 305 m (1000 ft).

Connect the DX4010V2 to the control panel data and auxiliary power sources as shown in *Figure 2*.

Figure 2: Control Panel Connections



- 2- Control panel data bus
- 3- Option AUX common/SDI common (black)
- 4- Option data/SDI B (green)
- 5- Option data/SDI A (yellow)
- 6- Option AUX power +/SDI power (red)

If an external 12 VDC power supply is used, wire as shown in *Figure 3*.

Figure 3: External Power Supply Connections



- 1- DX4010V2 data bus
- 2- Control panel data bus
- 3- Option AUX common/SDI common (black)
- 4- Option data/SDI B (green)
- 5- Option data/SDI A (yellow)
- 6- Option AUX power +/SDI power (red)
- 7- External 12 VDC power supply

Figure 4 shows serial device-to-DX4010V2 connections using the DB9 DTE RS-232 connector (P6).

Figure 4: Serial Device Connections



1- Serial (RS-232) device such as a PC (with RPS, BIS, PC9000, or other third party application) or a serial printer for supported control panels.



Refer to Section 7.0 DB9 DTE RS-232 Connector (P6) on page 10 for additional information. *Figure 5* shows a parallel printer connected to the serial output of the DX4010V2. This type of connection requires the use of a serial to parallel converter, such as the BlackBox PI045A serial to Centronics parallel converter cable. The cable is available from BlackBox® (www.blackbox.com).



2- Parallel printer (compatible option bus control panels only)

5.0 DX4010V2 Jumper Pin Settings

5.1 Enable LED Jumper Pins (P2)

Use the diagnostic LEDs for troubleshooting. To enable the LEDs, place a jumper plug across the jumper pins labeled P2.

Refer to Figure 6 for jumper pin settings.



The DX4010V2 draws more current when the diagnostic LEDs are enabled. Do not enable the diagnostic LEDs under normal operating conditions.



- 3- Disabled
- 4- Enabled

Table 2: Diagn	ostic LED Functions
Diagnostic LED	Function
BUS RX	Data bus receives data from control panel
BUS TX	Data bus transmits data to control panel
SER RX	RS-232 receives data from serial device
SER TX	RS-232 transmits data to serial device

5.2 DB9 Ground Enable Pins (P1)

Some devices connected to the DB9 DTE RS-232 connector (P6) can cause a ground fault condition on the control panel. If this occurs, removing the plug across the P1 jumper pins clears the ground fault condition.



Some devices might still cause a ground fault even if the P1 jumper plug is removed.

Refer to *Figure 6* for jumper pin settings.

5.3 Address DIP Switches

The address DIP switches are used to assign an address to the DX4010V2.

Refer to *Table 3* on page 8 for DIP switch option bus address settings.

Refer to *Table 4* on page 9 for DIP switch SDI bus address settings.

Refer to Figure 7 for proper DIP switch orientation.



4- ON position

6.0 Remote Programming Direct Connection

The DX4010V2 can be used to create a local direct connection for remote programming of a compatible control panel.

Option Bus: Set the address DIP switches to Address 0. Refer to *Table 3* on page 8.

SDI Bus: Set the address DIP switches to Address 88. Refer to *Table 4* on page 9.

Consult your control panel's installation guide for specific wiring connections.



A DB9 to DB9 null-modem cable is required when using the direct connection method.

Table 3: Option Bus Address DIP Switch Settings

Some automation software packages might require that you restart the application if USB connection is lost during use.

				DIP Switc	h Settings			
DIP Switches	S1	S2	S3	S4	S5	S6	S7	S8
Module Address	1	2	4	8	16	32 (Mode)	64 (Option/SDI)	128 (Checksum +1)
0*	ON	ON	ON	ON	ON	OFF	ON	OFF
1	OFF	ON	ON	ON	ON	OFF	ON	OFF
2	ON	OFF	ON	ON	ON	OFF	ON	OFF
3	OFF	OFF	ON	ON	ON	OFF	ON	OFF
4	ON	ON	OFF	ON	ON	OFF	ON	OFF
5	OFF	ON	OFF	ON	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON	ON	OFF	ON	OFF
7	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
8	ON	ON	ON	OFF	ON	OFF	ON	OFF
9	OFF	ON	ON	OFF	ON	OFF	ON	OFF
10	ON	OFF	ON	OFF	ON	OFF	ON	OFF
11	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
12	ON	ON	OFF	OFF	ON	OFF	ON	OFF
13**	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
14**	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
15	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
134	ON	ON	OFF	ON	ON	ON	ON	ON
135	OFF	ON	OFF	ON	ON	ON	ON	ON
136	ON	OFF	OFF	ON	ON	ON	ON	ON
137	OFF	OFF	OFF	ON	ON	ON	ON	ON
138	ON	ON	ON	OFF	ON	ON	ON	ON
139	OFF	ON	ON	OFF	ON	ON	ON	ON
140	ON	OFF	ON	OFF	ON	ON	ON	ON
141	OFF	OFF	ON	OFF	ON	ON	ON	ON
142	ON	ON	OFF	OFF	ON	ON	ON	ON
143	OFF	ON	OFF	OFF	ON	ON	ON	ON
144	ON	OFF	OFF	OFF	ON	ON	ON	ON
145	OFF	OFF	OFF	OFF	ON	ON	ON	ON
250	ON	ON	ON	ON	ON	ON	ON	ON
251	OFF	ON	ON	ON	ON	ON	ON	ON
252	ON	OFF	ON	ON	ON	ON	ON	ON
253	OFF	OFF	ON	ON	ON	ON	ON	ON
* Installer's r	node: Use for	direct connec	tion of remote	programming	and diagn	ostic tools.		

** DS7412 emulation

The DS7400Xi (USA) only supports one DX4010V2.



Option bus control panels: D6412, D4412, DS7240, DS7220, DS7400Xi (v2.02 or higher).

				SDI DIP Swi	itch Settin	gs		
SDI DIP	S1	S2	S3	S4	S5	S6	S7	S8
Switches								
Module	1	2	4	8	16	32	64	128
Address						(Mode)	(Option/SDI)	(Checksum +1)
80*	ON	ON	ON	ON	OFF	OFF	OFF	OFF
81	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
82	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
83	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
84	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
85	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
86	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
87	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
88**	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
89	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8A	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
8B	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
8C	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
8D	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
8E	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
8F	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Positions 5,	6, and 8 are n	ot used for SE	OI bus.					
* Used for B	IS PC 9000 :	and other third	narty applica	tions				
Docu IDI D			party applica					

Table 4: SDI Bus Address DIP Switch Settings

** Used for RPS and alternate communication.



SDI bus control panels (v6.0 or higher): D9412GV2, D7412GV2, D7212GV2, D9412G, D7412G, D7212G, D9124, D9112, D7412, and D7212.

7.0 DB9 DTE RS-232 Connector (P6)

The DX4010V2 serial port is wired as a DTE device.

- If the connected device is a data carrier equipment (DCE) device (most common, such as an external modem), use a straight through 9-pin to 9-pin, or (DTE to DCE) 9-pin to 25-pin cable.
- If the connected device is a DTE device (such as a PC serial port), a null-modem (DTE to DTE) 9-pin to 9-pin, or null-modem 9-pin to 25-pin cable is required.

Consult the operating manual provided with your compatible device for wiring requirements.

If you are using an alternate configuration, you must make a custom cable (refer to *Figure 8* and *Table 5*).



Table 5: Alternate Wiring Configuration					
DX4010V2 9-Pin DTE Connector	DCE (9-pin)	DTE (9-pin)	DCE (25-pin)	DTE (25-pin)	
1: DCD (not used)	1: DCD	1: DCD	8: DCD	8: DCD	
2: RxD	2: RxD	3: TxD	3: RxD	2: TxD	
3: TxD	3: TxD	2: RxD	2: TxD	3: RxD	
4: DTR	4: DTR	6: DSR	20: DTR	6: DSR	
5: GND	5: GND	5: GND	7: GND	7: GND	
6: DSR	6: DSR	4: DTR	6: DSR	20: DTR	
7: RTS	7: RTS	8: CTS	4: RTS	5: CTS	
8: CTS	8: CTS	7: RTS	5: CTS	4: RTS	
9: RI (not used)	9: RI	9: RI	22: RI	22: RI	



For remote programming connection, use one of the two cables supplied: RJ-16 to molex for control panels with the data bus provided on a header (such as the D6412, DS7240, or the GV2 control panels). If no data bus header is present, use the RJ-16 to spade lugs for terminal strip connections.

9.0 USB Data Bus Connector

Uses a standard USB type A \rightarrow B cable. One cable is provided with the DX4010V2.

If the computer does not recognize the USB port, add the drivers located on the supplied disk.

9.1 Installing USB Drivers

- Install the drivers.
- 1. Double-click
 - CP210x_VCP_Win2K_XP_S2K3.exe.



2. Click Run.



3. Click **Next** to continue.

Figure 12: Install Shield

4. Click I accept the terms of the license agreement. Then click Next.

		THEFS FOR WINDOWS 2	.0007/172005 50	
Please read	ement he following license agreem	ent carefully.		4
END-USER IMPORTAN BEFORE AG THIS PROD PARTY PRO SUBJECT T AGREEMEN ASSENT TO	LICENSE AGREEMENT T: READ CAREFULLY IREEING TO TERMS UCT CONTAINS CERTAIN PRIETARY MATERIAL ("L O THIS END-USER LICENS IT CONSTITUTES YOUR A IADD ACCEPTANCE OF T	COMPUTER PROGRAM: ICENSED PRODUCT"), T E AGREEMENT. INDICA ND IIF APPLICABLE) YOU IIS END-USER LICENSE	S AND OTHER THIRD HE USE OF WHICH IS TING YOUR JR COMPANY'S AGREEMENT (THE	
ULICENSE TERMS, YO	OR "AGREEMENT"). IF YO U MUST NOT USE THIS P he terms of the license agree	DU DO NOT AGREE WITH RODUCT, WRITTEN AP	ALL OF THE PROVAL IS NOT A	•
🔘 I do not a	ccept the terms of the licens	e agreement		

5. Click **Next** to accept the default location.



6. CIICK Install.





8. Select Launch the CP210x VCP Driver Installer, then click Finish.

Figure 17: Installation Complete Silicon Laboratories CP210x VCP Drivers for Windows 2000/XP/2003 Server/... InstallShield Wizard Complete 4 The InstallShield Wizard has successfully copied the Silicon Laboratories CP210x VCP Drivers for Windows 2000/XP/2003 Server/Vista to your hard drive. The driver installer listed below should be executed in order to install drivers or update an existing driver. Launch the CP210x VCP Driver Installer. Click Finish to complete the Silicon Laboratories CP210x VCP Drivers for Windows 2000/XP/2003 Server/Vista setup. < Back Finish Cancel Click Install. 9. Figure 18: USB Driver Installer 🚜 Silicon Laboratories CP 210x USB to UART Bridge Driver Installer 🔀 Silicon Laboratories Silicon Laboratories CP210x USB to UART Bridge Installation Location: Driver Version 5.2.2 C:\Program Files\Silabs\MCU\CP210x\ Change Install Location... Install Cancel 10. The program will look for the file location. Figure 19: Scanning Scanning

11. When the installation completes successfully, click **OK**.

Please wait while system is scanned ...

Figur	re 20: Ins	stallation Complete	
	Success		
	i	Installation completed successfully	
		ок	

10.0 Configuring the DX4010V2



Before configuring the DX4010V2, be sure to connect the DX4010V2 to the USB port and the control panel. Be sure that the address is correct and that the red LEDs are flashing (if enabled).

- 1. Select Start → Settings → Control Panel, then double-click **System**.
- Select the Hardware tab. 2.

3. Click Device Manager.

tem Pro	perties			?
System	Restore	Autom	atic Updates	Remote
General	ral Computer Name Hardware			Advanced
Ż	The Device M on your comp properties of a	lanager lists all uter. Use the D iny device.	the hardware devic levice Manager to c	es installed hange the
	compatible will how Windows	Hets you make th Windows, W connects to V Signing	vine that installed d /indows Update lets Vindows Update for Windows I	ivers are you set up drivers. Jpdate
Hardware	e Profiles Hardware prol different hardv	iles provide a v vare configural	way for you to set up ions.	and store
~		-	Hardwara	D. C.

- 4. Expand Ports.
- 5. Note the COM port number, in parentheses, after Silicon Labs CP210x USB to UART Bridge. In this example, the COM port number is 3.

Figure 22: Device Manager

File Action View Help	
E A FP13A2DDF	
🗄 🖳 Computer	
🛨 🥪 Disk drives	
🛨 👰 Display adapters	
😟 🙇 DVD/CD-ROM drives	
E C Floppy disk controllers	
IDE ATA/ATAPI controllers	
+ 🦢 Keyboards	
Mice and other pointing devices	
🗄 👮 Monitors	
Imp Network adapters	
🖻 🞐 Ports (COM & LPT)	
Communications Port (COM1)	
ECP Printer Port (LPT1)	
Silicon Labs CP210x USB to UART Bridge (COM3)	
+ 🙊 Processors	
🗄 🕘 Sound, video and game controllers	
🗄 🙀 System devices	
- Ch Lloivare al Sarial Rus controllars	

- 6. Select Enhanced Direct from the Connect Via drop down menu.
- 7. Enter the COM Port number from Step 5 in the Com Port field.
- 8. Make sure the DX4010V2 is connected to a USB Port, then click Connect.
- 9. The installation process is complete.

Figure 23: Panel Communication		
D7212GV2 Panel Communication		
Connect ⊻ia: Enhanced Direct	•	
<u>B</u> PS Passcode: *****	Panel Text	
Co <u>m</u> Port: 🗐	Baud Rate: 9600 ▼	
Status	Connect	
	Answer	

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