PHOENIX CONTACT BUSBAR CONTROLLER (IL ETH BK DI8 DO4) – FMS 5 SETUP AND CONFIGURATION V3

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Intent

The purpose of this document is to provide instructions for setting up Phoenix Contact Busbar Controller (IL ETH BK DI8 DO4) to work with FMS 5 software version 5.1.0 and later. It contains information about how to setup networking on the controller and how to setup FMS 5 configuration to access sensors and digital outputs on the controller.

Screenshots used throughout this document are for guidance purposes only. Actual screenshots may differ slightly from those contained in this document.

Controller (IL ETH BK DI8 DO4) Installation and Configuration

For wiring diagrams and power requirements consult Phoenix Contact documentation that has been supplied with your controller.

FMS 5 system uses an Ethernet connection to talk to the controller. Generally, the controller and FMS 5 will be connected via an Ethernet switch/hub on a private subnet with address 192.168.x.x and net mask 255.255.0.0. Configure FMS 5 network controller with the following values as shown in the screen on the right.

NOTE: Do not use "Obtain an IP address automatically" even if DHCP server is present on the given network since there is no guarantee that IP addresses will stay the same once the lease expires.

It is important to setup a fixed network address for the FMS 5 computer before any further setup takes place on the controller side.

Internet Protoc	ol (TCP/IP) Pro	operties	? 🛛
General			
You can get IP : this capability. O the appropriate I	settings assigned a Itherwise, you need IP settings.	utomatically if your network s I to ask your network admini:	supports strator for
◯ <u>O</u> btain an I	P address automat	ically	
Ose the fol	lowing IP address:		
<u>I</u> P address:		192.168.1.1	
S <u>u</u> bnet mask	:	255.255.0.0	1
<u>D</u> efault gatev	vay:		
O O <u>b</u> tain DN	S server address a	utomatically	
Ose the fol	lowing DNS server	addresses:	
Preferred DN	S server:		
<u>A</u> lternate DN:	S server:		
		Ad	vanced
		OK	Cancel

Connecting Phoenix Contact Controller

Initially, Phoenix Contact Controller is setup to use BOOTP protocol to request an IP address from the BOOTP server. You will need the IP Assign utility to configure an IP address on the controller. IP Assign can be obtained from the Phoenix Contact web site at <u>www.phoenixcontact.com</u> and search for IP Assign. This is a free utility application available for Phoenix Contact devices.

Once you have the IP Assign utility downloaded, start it up and it will come up with the screen shown to the right.

Click **Next** to proceed. IP Assign will try to detect available controllers, as shown in the screen on the right.



If the controller is not detected try power cycling it by either unplugging the power from it or removing the black power module on the controller for 30 seconds and plugging it back in again. Once the controller is detected, IP Assign will list its MAC Address and some additional information. Select the controller you want to assign the IP address to and click **Next**.

Phoenix Contact - IF	P Assig	nment Tool			
IP Address Reques Please select a M	st Listen 1AC Addre	i er BSS.			P
The list box below dis	plays all f	MAC Addresses that we h	iave rec	eived BOOTP re	quests from.
MAC Address	Count	Last Request Time			
00:a0:45:04:61:23	3	15:09:27			
If you do not see the	Mac add	ress of the device you ar	e lookini	g for, try cycling	power to that
uevice,					
Show Only Phoeni	ix Contac	t Devices			

On the opposite screen enter the IP address and subnet mask that corresponds to your network. Typically the first three parts of the address would be the same as you setup on the FMS 5 side (computer) and the fourth part has to be different from the computer.

Phoenix Contact - IP Assignment Tool		
Set IP Address Please specify an IP Address to use.		P
This PC's IP Address Please specify the IP Address to be used be	192.168.1.1 low.	
Selected MAC Address	00:a0:45:04:61:23	
IP Address	192 . 168 . 1 . 3	
Subnet Mask	255 . 255 . 0 . 0	
Gateway Address	0.0.0.0	
Once you have entered a valid IP address,	click Next.	
	< <u>B</u> ack <u>N</u> ext >	Cancel

Set subnet mask to 255.255.0.0 and leave the Gateway address as 0.0.0.0. Click **Next** and the application will attempt to assign specified parameters to the controller.

Phoenix Contact - IP Assignment Tool	\mathbf{X}
Assign IP Address Attempting to Assign IP Address.	D
The wizard is attempting to Assign the specified IP A Attempting to assign MAC Address: 00:a0:45:04:61:23 the following: IP Address: 192.168.1.3 IP Mask: 255.255.0.0 IP Gateway: 0.0.0.0	Address. Wait Time: 4 If it has been more than a minute or two and the IP is still not assigned, please try rebooting or power cycling your device
, Once your device has received it's IP Address, this wizar page.	rd will automatically go to the next
(<u><b< u=""></b<></u>	ack Next > Cancel

Once parameters are assigned successfully, the screen on the right will appear, reporting success.

Click **Finish** to exit the application.

In case that assigning IP address takes too long, click **Cancel**, restart application, power-cycle the controller and repeat the previous steps.



Configuring Phoenix Contact Controller via Built-in Web Pages

Once the IP address is assigned to the controller you can access configuration web pages directly. In the Internet browser (e.g. Internet Explorer, Mozilla Firefox) type in the previously assigned IP address of the controller.



Disabling Plug and Play Mode

Plug and Play allows the Phoenix to determine what modules are included on the bus. All modules that are intended for use should have been installed and the Phoenix powered up prior to disabling plug and play.

It is necessary to modify this setting in order for the controller to communicate properly with the FMS 5 system. Select "**Device Configuration**" and under the submenu choose "**Services**".

🗿 IL ETH BK D18 D04 - Inline Station: Se	ervices - Microsoft Internet Explorer	×
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp		1
🌀 Back 🔹 🕥 🕤 🗾 🙆 🎸 🔎) Search 🤺 Favorites 🚱 🔗 - 🌺 🔜 🖓	
Address 🚳 http://192.168.1.3/services.htm	So Links	»
PHENIX	IL ETH BK DI8 DO4 2TX-PAC last update: 15:59:49	~
	Services	
	Plug&Play Plug&Play.Mode Disable Disable	
IL ETH BK DI8 DO4	The status enable becomes effective after a restart of the IL ETH BK DI8 DO4. The status disable is taken over immediately.	
Device Information		
Device Configuration	Enter password ••••••• Apply Apply and Reboot	
🔄 Inline Station		
Services Process Data	Control Device Function	
Monitoring	This service can be used to confirm the peripheral faults of all modules.	
Remote Diagnostics		
Bus Configuration BCB Configuration	Enter password Confirm	
Home		
A		~

Set "Plug & Play Mode" to 🗿 IL ETH BK D18 DO4 - Inline Station: Services - Information - Microsoft Internet Explorer **Disable**, enter password <u>File E</u>dit <u>V</u>iew F<u>a</u>vorites <u>T</u>ools <u>H</u>elp 🔇 Back 🝷 🕥 👻 📓 🏠 🔎 Search 🤺 Favorites 🤣 🎯 🎍 🔜 🦓 (default password is Address 🗃 http://192.168.1.3/svppinfo.htm "private" without the quotation marks) and CONTACT IL ETH BK DI8 DO4 2TX-PAC press "Apply and **Reboot**". If the Phoenix Services - Information The system is now going down for reboot! does not restart, cycle the IL ETH BK DI8 DO4 power. General Instructions Device Information Once the controller Device Configuration reboots, go back to the 🚖 Inline Station "Services" page and Services verify that Plug & Play is Process Data
<u>Monitoring</u> disabled. Also on the Remote Diagnostics controller itself the Bus Configuration orange PP light (on the PCP Configuration power module) should 🖸 <u>Home</u> now be turned off.

NOTE

After adding or removing any Phoenix modules it is essential that you enable "Plug and Play Mode", reboot the Phoenix module, then disable "Plug and Play Mode" before FMS can operate correctly with the device.

Disabling Process Data Watchdog

🙆 Done

Next you need to disable Data Watchdog, the process that keeps monitoring device communication and halts the controller in the event of error. This process is used only for diagnostic purposes and with FMS 5 it is not necessary to be running during normal operation. Go to "Inline Station" then choose **Process Data Monitoring**.

e <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp		
🕽 Back 👻 🕥 - 💌 🛃 🏠 🍃	🔎 Search 🤺 Favorites 🚱 🔗	- 🎍 🖻 🖏
dress 🗃 http://192.168.1.3/pdmonit.htm		Co Link
PHENIX	IL ETH BK DI8 DO4 2TX-F	PAC last update: 16:09:26
	Process Data Moni	itoring
	Fault Response Mode	Reset Fault Mode (default) Standard Fault Mode Hold Last State Mode
General Instructions	Process Data Watchdog Timeout	0 ms
Device Information Device Configuration	The time is indicated in mi A value of 0 ms disables t	illiseconds and ranges from 200 ms to 65,000 ms. he Process OUT Data Monitoring.
Inline Station ■ Services	Enter password	Apply
 Process Data Monitoring 		
Remote Diagnostics	Network Failure	
Bus Configuration	Status	No network failure (nF) occurred.
PCP Configuration		
3 Home	Enter password	Confirm

🖌 🄁 Go 🛛 Links 🎽

last update: 16:04:41

🥝 Internet

Leave "Fault Response Mode" on "Reset Fault Mode (default)" and set the value for "Process Data Watchdog Timeout" to 0 (zero) milliseconds. Once everything is correct, type in the password (default password is "private" without quotation marks) and click **Apply**.

Go back to the Process Data Monitoring page and verify that all the parameters are set correctly.

Click on **Inline Station** and then **Bus Configuration** to verify all modules are recognized by the Phoenix Module.



Configuring FMS 5 to Work with Phoenix Contact Busbar Controller

In order to configure FMS 5 to work with the controller, a user with privileges to modify node should login. Once logged in, select the node you want to configure to work with the controller. You must also include the Phoenix Contact module in the Client>Client Options>Module Selection if it is not selected.

Click on the **Configure Node** icon in the top button bar or select **Node->Configure->Node** in the top menu bar of the client window.



NOTE It is not necessary to configure a communication channel for the Phoenix unit.

Configuring Unit

Expand "Monitor Summary" and select **Units**.

Configuration	Name	Driver	Comment
 Monitor Summary Alarm Groups Communications Digital Outputs Sample Points 	Ivanie		Comment
Units			
Recipes			
Actions			
System Settings			
Monitor Settings Buddy Settings			
Database Settings			
Mirror Database Settings			
Reporting Settings			
 SecurityPage 			

Right-click in the middle pane and select **New Unit** from the pop-up menu. Enter the name for the Phoenix Contact Controller.

🔞 Enter New	Name		×
New Name	PhoenixController		•
		Ok	Cancel

Click **Ok** and unit configuration windows will be displayed with this name already filled in. Expand the "Driver" drop-down list and select "PhoenixContact". If PhoenixContact does not appear in the list check that the PhoenixContact module is selected in Client options.

🖗 Unit:PhoenixController	Asciroutput	\$
	Calculated	F
General	Eltek	
Unit Name	EmailOutput	
Onic Name	FMSOPCClient	
Driver	GenericSolair	
Recipe	Historic	
	ICP7024Output	
	PMSAirnetTCP	
	PhoenixContact	
	RecipeSwitch	
	SimulatorAdc	
	SimulatorCounts	
	SmsOutput	
Calibration Alarm Enabled	Solo7017	
✓ Enabled	Solo7067	
	Solo7067Watchdog	H.
	TSIAPC	
1		-

Once driver is selected click on the **Enabled** check box in lower left corner to indicate that this unit is in use. Select **Ok**. The new unit will be listed in the Unit configuration.

Configuration	Name	Driver	Comment
 Monitor Summary Alarm Groups Communications Digital Outputs Sample Points Units 	PhoenixController	PhoenixContact	
Recipes Actions System Settings Monitor Settings Buddy Settings Database Settings Mirror Database Settings Reporting Settings SecurityPage			
VOk XCancel			

Open the unit PhoenixController configuration page again. This time there will be a "Driver" tab. Select this and enter the IP address of the controller configured in the "Connecting Phoenix Contact Controller" section of this manual.

General Driver	1				
Address	192.168.200.92				Detect
Poll Interval (s)	10			•	
	Module	Channels	Ор	tions	
	1 Analogue Input	2	+/- 10V		

Click **Detect** to test communication with the Phoenix Contact. A message will be displayed to indicate whether communication can be established.



Configure **Poll Interval** B Unit:PhoenixController by either entering General Driver between minimum of 10 to maximum of 30 192.168.200.92 Detect... Address seconds. The arrow Poll Interval (s) 10 * button will increment or Module Channels Options decrement by 5 seconds. 1 Analogue Input 2 +/- 10V

NOTE

-Delete..

+Add.

The existing Phoenix Contact Unit will need to be re-configured for poll interval when applying Software Update, i.e SU 125. The recommended Poll Intervals using analog inputs are as followed:

- 3 bases and one to six modules is 10 seconds.
- 3 bases and seven to ten modules is 15 seconds.
- 3 bases and eleven to thirteen modules is 20 seconds.

Populate the Module list using **Add** to add a row for each module of the Phoenix Contact. The example illustrated above is for an IL ETH BK DI8 DO4 module. Click **OK** to close the unit setup window and then **OK** once on the Configuration page.

Note: FMS 5 supports the following module types and sensor ranges. Refer to Application Note *CC-112, Authorized Components for TSI FMS Software,* for the Phoenix Contact modules TSI supports.

Unit:PhoenixCon	troller		×
General Driver			
Address	192.168.200.92		Detect
Poll Interval (s)	10		↓
	Module	Channels	Options
	1 Digital Output	4	
	2 Digital Input	4	
	3 Digital Input	4	
	4 Analogue Input	2	+/- 10V
	5 Analogue Input	2	4 - 20mA
	6 Analogue Input	8	4 - 20mA 👻
		Delete	
			VOK XCancel

✓ OK

XCancel

Phoenix Contact model types:

- 1. Digital Output, 4 and 32 channels
- 2. Digital Input, 4 and 32 channels
- 3. Analogue Input, 2 and 8 channels
 - a) ±10 V
 - b) ±20 mA
 - c) 0–10 V
 - d) 0-20 mA
 - e) 4-20 mA

To configure Analogue Input, please refer to the sensor's manual to set sensor range as Options.

The Options drop-down menu enables the available input ranges to be selected.

NOTE

If more than one base are configured in FMS then a good configuration practice is to split all the different modules across the different base units.

ļ	Elient FMS5-TSI	felp 3 💿 🖉 🈻 🧱 📰 🔛 🌌 🤼 🐜 🖍 🤹 💵	Units Status
t	Ø FMS_Demo		🐼 Sim
e	Configuration Monitor Summary Alam Groups Communications Digital Outputs Sample Points Units Recipes Monitor Settings Database Settings Mirror Database Sett Security	Name Driver Comment TSI_Remote_4 TSIRemoteTCP Sim SimulatorA dc PhoenixController PhoenixControls Configuration Configuration Configuration will be modified. Press Save to save changes or Cancel to quit Save Cancel	 Ph01 The Reserve of Control o
	Messages Node: FMS_Demo is in FAILU	re state	Statistics Image: Status tail Sample Status tail Tage Image: Status tail Sample Status tail

Click **Save** on the warning window to save the unit cofiguration. After saving, FMS 5 will ask if you want to reboot the node in order for changes to take affect immediately. Select **No** since there are still several steps to configure before setup is complete.

Configuring Sampling Points

Once the controller unit is configured you can proceed to set up sample points that correspond to the sensors attached to the controller. Go to Node configuration either by clicking on the **Configure Node** icon in the top button bar or select **Node->Configure->**

Node in the top menu bar.

EMS Client FMS5-TSI Client Node Windows Wiew Report Configute Configute	Help 3 C al a a a a a a a a a a a a a a a a a	III 🔐 🌌 🔭	📊 🍫 👥	Control Units Status Control @
	♥ DP02 Value : -0.0625 "H20		♥ P02 Value: 10.0 C/cuft	 Ph01 The discrete of a second se
	Section RH01 Value : 9.1 %RH	S (1990) and (19900) and (19900) and (19900) and (1990) and (1990)	♥ Temp01 Value : 21.2 °C	X AlamiCroupUl Statistics Sample Status Tag Name Value Last 07.10.2009 1 Last none
Messages	•			Last none Last 07-10-2009 1 Last none

Configuring Temperature Sensor Sampling Point

Under "Monitor Summary" select **Sample Points** and right-click in the middle pane to open a pop-up menu. Select **New Sample Point** option. You will be prompted to enter the name for the sample point you are about to create.

FMS Client FMS5-TSI Client Node Windows He	ıp . ⓒ 🛋 🏮 🍕	k 🎫 🔛 🜌 😽	: 11 🍫	893	
Configured					🐨 Sim
Configuration Configuration Altern Groups Communications Digital Outputs Sample Points Units Recipes Monitor Settings Buddy Settings Database Settings Minitor Database Sett B Security	Name TSIRemote4 P03 P0 D2 P0 D2 New Name	Vinit TSI_Remote_4 Sim Name	Type Counts Ramp Ramp Ok	Counts C B C C C C C ancel	Ph01 AlamGroup01
Ok Cancel Messages Node Date/Tim Node: FMS Demo is in FAILURI		Туре	Message	() 	Statistics

Enter a meaningful name for the sample point. In this example, a sample point for a temperature sensor is being created and named "Temperature".



Click **Ok** and the Sample Point configuration window is displayed.

On this screen it is necessary to setup which unit this sample point belongs to, the sampling point's data type, as well as measurement units and other parameters that enable FMS 5 to interpret the data correctly.

😼 FMS Client	FMS5-TSI		
Client Node	Windows Help		
a 🔒 🖪 🕅	0650	a) 💈 🐟 🧮 🔛 🕿 🗐 🔭 🔤	
Configured	🔞 Sample Point: Ten	nperature 🛛 🔀	Status 🕬 🗗
Ø FMS_Den	n General SPC	Recipe Alarms	
Configuration	Sample Point Name	Temperature	
- Monitor S	u Unit	Sim	
Comm	u Data Trma	Pamp	
- Digital	1 Data Type	- Tanp	6.4
- Units	Input Index		
- Recipe	es Display Units	C/cuft	pup Status 👘 🖻
-Buddy Set	tt Decimal Places	2	
- Database : - Mirror Dat	a Recipe	Default 🔹	p01
🗄 - Security			
			stics
			Tag Sta 🜗
	Use logarithmic a	raph scales	Value
			08-10-2009 16:
Ok	4	OK Cancel	none
Messages		T ant A ale	09-10-2009 10:1
Node	Date/Time 🗸	Source Type Message - Recipe	Default
			Tenie
Node: FMS_Der	mo is in FAILURE STATE	09-	10-2009 10:31:14

Unit	Select the Phoenix Contact Controller configured in previous steps (see "Configuring Unit").			
Data Type	Select Analogue if it has not been set by default.			
Input Index	This corresponds to the input ports on the controller itself; consult the wiring that has been done on the controller when it was installed.			
Display Units	This is the unit of measurement. In this example, °C would be used.			
Decimal Places	Specifies number of significant digits for the displayed value.			
Recipe	Leave as "Default".			

Click on the **Recipe** tab and verify that "Enabled" and "Fileable" are checked. Set "Sample Period" to the desired polling frequency of the sensor in seconds. "Preferred Tag" defaults to "Value" but the options "Minimum" or "Maximum" can be chosen where:

- Value is the average of the sub samples taken during the Sample Period.
- Maximum is the highest value of the sub samples taken during the Sample Period.
- Minimum is the lowest value of the sub samples taken during the Sample Period.

🔯 Sample Point: Temperature				×
General SPC Recipe	Alarms Driver	Driver Recipe		
 Enabled Retriggerable Alarms Hide Disable Acknowledge 		🕱 Fileable		
Alarm Threshold Sample Period		0 60	×	
Preferred Tag		Value Value	-	
Fix Inspect Range	0.0	Minimum Maximum		
			V <u>O</u> K XCano	:e1

Next click on the **Driver** tab.

Set Low and High according to the sensor's manual. The temperature sensor used in this example has measurable range from 32 °F to 122 °F. So, set Low to 32 and High to 122.

Click **OK** and then click **OK** on the left pane to save changes. When asked if you want to reboot click **No** since you will reboot once all the sample points are set. If this is the last sample point that you need to setup select **Yes** when asked to reboot.

😨 Sample	e Point: Ter	mp1							×
Gener	al SPC	Recipe	Alarms	Driver	Driver Reci	ipe			
Low	32				High	122]	
							VOK	J XCa	ncel
							∕ок	Ca	ncel

Configuring Relative Humidity Sensor Sampling Point

Repeat the steps from the previous section to create a new sampling point and name it "RelHum". Once you assign it a name and click **OK** you will be presented with the configuration window.

💁 Sample Point: RelHi	um	×
General SPC Re	ecipe Alarms Driver Driver Recipe	
Sample Point Name	ReiHum	
Unit	SimTemp	-
Data Type	Ramp	-
Input Index	C	-
Display Units	C/cuft	-
Decimal Places	2	
Recipe	Default 🔻	
Comments		
Additional Comments		
Calculate MKT	Use logarithmic graph scales	
		ancel

Unit	Select the Phoenix Contact Controller configured in previous steps (see "Configuring Unit").				
Data Type	Select Analogue if it has not been set by default.				
Input Index	This corresponds to the input ports on the controller itself; consult the wiring that has been done on the controller when it was installed.				
Display Units	This is the unit of measurement. In this example, %RH is selected. If the unit you require is not available in the drop-down box it can be typed in directly.				
	General SPC Recipe Alams Driver Driver Recipe Sample Point Name RelHum Unit PhoenixController Data Type Analogue Input Index Stot.4.2 Display Units %RH Decimal Places 2 Recipe Default Comments Additional Comments Calculate MKT Use logarithmic graph scales				
Decimal Places	Specifies number of significant digits for the displayed value.				
Recipe	Leave as "Default".				

Click on the **Recipe** tab and verify that "Enabled" and "Fileable" are checked. Set "Sample Period" to the desired polling frequency of the sensor in seconds. "Preferred Tag" defaults to "Value"; the options "Minimum" or "Maximum" can be chosen if the highest or lowest value recorded during the sample period is to be viewed.

😼 Sample Point: RelHum	×
General SPC Recipe Alarms Driver I	Driver Recipe
X Enabled	🕱 Fileable
Retriggerable Alarms	
Hide	
Disable Acknowledge	
Alarm Threshold	0
Sample Period	30
Preferred Tag	Value -
Fix Inspect Range	Minimum Maximum
	<u>✓ OK</u> X Cancel

Once this is done click on the **Driver** tab.

Set Low and High according to sensor's manual. The relative humidity sensor used in this example has a measurable range from 0% RH to 99% RH. So, set Low to 0 and High to 99.

Click **OK** and then click **OK** on the left pane to save changes. When asked if you want to reboot click **No** since you will reboot once all the sample points are set. If this is the last sample point that you need to setup select "Yes" when asked to reboot.

Sample P	oint: RH	1						<u> </u>
General	SPC	Recipe	Alarms	Driver	Driver Reci	pe		
Low	0				High	99		
							₩ОК	Cancel

Configuring Differential Pressure Sensor Sampling Point

Repeat the steps to create a new sampling point and name it "DiffPress". Once you assign it a name and click **OK** you will be presented with the configuration window.

General SPC Re	cipe Alarms Driver Driver Recipe
Sample Point Name	DiffPress1
Unit	SimTemp -
Data Type	Ramp
Input Index	C
Display Units	C/cuft -
Decimal Places	2
Recipe	Default -
Comments	
Additional Comments	
📃 Calculate MKT	Use logarithmic graph scales

Unit	Select the Phoenix Contact Controller configured in previous steps (see "Configuring Unit").						
Data Type	Select Analogue if it has not been set by default.						
Input Index	This corresponds to the input ports on the controller itself; consult the wiring that has been done on the controller when it was installed.						
Display Units	This is the unit of measurement. In this example, "H2O would be used. If the unit you require is not available in the drop-down box it can be typed in directly.						
	typeu III ull ecuy.						
Decimal Places	Specifies number of significant digits for the displayed value.						
Recipe	Leave as "Default".						

Click on the **Recipe** tab and verify that "Enabled" and "Fileable" are checked. Set "Sample Period" to the desired polling frequency of the sensor in seconds. "Preferred Tag" defaults to "Value"; the options "Minimum" or "Maximum" can be chosen if the highest or lowest value recorded during the sample period is to be viewed.

Sample Point: DiffPress1			×
General SPC Recipe	Alarms Driver	Driver Recipe	
Default Recipe Properties			
🗙 Enabled		🗙 Fileable	
Retriggerable Alarms			
Hide			
Disable Acknowledge			
Alarm Threshold		0	▲ ▼
Sample Period		30	•
Preferred Tag		Value	-
Fix Inspect Range	0.0	Minimum Maximum	
			✓ <u>O</u> K

Once this is done click on the **Driver** tab.

Set Low and High according to the sensor's manual. The differential pressure sensor used in this example has measurable range from 0° H₂O to 10° H₂O. So, set Low to 0 and High to 10.

Click **OK** and then click **OK** on the left pane to save changes. When asked if you want to reboot click **No** since you will reboot once all the sample points are set. If this is the last sample point that you need to setup select **Yes** when asked to reboot.

						_			
General	SPC	Recipe	Alarms	Driver	Driver Rec	ipe			
Low	0				High	10		_	
LOW	•				riigii				
							Г ∨ОК	Xc	anc

Configuring Digital Outputs

In order for FMS 5 be able to access the status beacon it is necessary to configure digital outputs. Consult the wiring on the controller in order to determine how the beacon lights and sounder are connected. This information will be necessary for the following setup.

Digital outputs are usually used for alerting users when alarms or warnings that have been created for particular sampling points are triggered. For instructions on how to set alarms and warnings on sampling points consult FMS 5 documentation.

Click on the **Configure Node** icon in the top button bar or select **Node->Configure->No de** in the top menu bar.

In the configuration pane (left pane) expand "Monitor Summary" and select **Digital Outputs**.

🚱 FMS Client FMS5-TSI					
Client Node Windows Hel	p				
🔷 🖪 🤣 🦑 🌭	C 🕘 🍹	🔹 🧮 🔛 🌌 📮	k 🚹 🍫	373	
Configured					poppopo Units Status (poppop) 🗄
Ø FMS_Demo					🕑 Sim
Configuration	Name	\[\] Unit	Output	Comment	📀 PhoenixController
Communications					TSI_Remote_4
Units Recipes Monitor Settings					Alarm Group Status 👘 🖻
 Buddy Settings Database Settings Mirror Database Sett ⊞ Security 					🕕 AlamtGroup01
					Statistics
					Name Value
Ok Cancel	•				Last W none Last A1 09-10-2009 14: Last A2 09.10.2009 14:
Messages	1	······			Last Ack. 09-10-2009 14. Last Ack. 09-10-2009 14. Recipe Default
Node: FMS_Demo is in FAILURE	STATE				09-10-2009 14:48:44

Once "Monitor Summary" is expanded, right-click on the middle pane and select **New Digital Output**. Enter the name for the output you want to create. In this example, an output for beacon's red light was created. Click **Ok**.



Click **Ok** and configuration page is brought up.

Digital Out	put:RedLig	ht			
Digital Outp	out				
Name	RedLight				
Comments					
Unit					-
Output					•
Recipe	Default				-
-Recipe De	fault				,
Alarm Gr	oup				-
Alarm Sta	ate	= (Equals)	-	None	-
			A	11ow Control and S	cheduling 🗌
					Retrigger 🗌
					Enabled
				<u>o</u> ĸ	Cancel

For "Unit" select the unit created for Phoenix Contact Controller. The value of "Output" depends on the wiring done on the controller. Physically verify which digital output on the controller is wired to the red light, and assign the output slot accordingly. Leave "Recipe" as default.

Alarm group specifies which set of alarms is used to control this digital output, select the alarm group you want to use.

Alarm state defines the behavior of the output. Here you can select under what condition output will be triggered.

Make sure that "Enabled" is checked in order to use this output. Click **Ok**.

🙆 Digital Out	put:RedLigh	t			
Digital Outp	ut				
Name	RedLight				
Comments					
Unit	PhoenixContr	roller			-
Output	Slot-1-1				•
Recipe	Default				-
Recipe De	fault				
Alarm Gr	oup	AlarmGroup01			•
Alarm Sta	ate	= (Equals)	-	Alarm	-
			А	llow Control and Schedulin	g 🗆 🕴
				Retrigge	er 🗌
				Enable	d 🗙
				Enables the output for use	Cancel

Create additional digital outputs repeating the steps in this section as necessary. Once all the outputs are created click **Ok** on the Configuration pane and select to save configuration. When prompted to reboot the node select reboot for changes to take effect.

NOTE

If only digital outputs are configured for a Phoenix Contact unit, failures will only be detected when the FMS software attempts to communicate with the unit. To ensure immediate detection of failures it is advisable to configure a "dummy" digital input. Set the digital input attributes to: not fileable; hidden; alarm ack not needed and alarm threshold of zero.

Changing the Module Configuration of the Phoenix Contact Busbar Controller

Adding Modules

If an additional module is added to the Controller it is necessary to inform the Controller that the configuration has changed. To do this enable plug and play, reboot the controller, then disable plug and play.

If the module has been added to the end of the bus there is no need to change the configuration in FMS of existing sample points and digital outputs. The Phoenix Contact unit configuration must be changed in FMS by adding the new module into the Unit configuration. The slots in the new module will then become available to configure. If the module has been added to any other location on the bus it will be necessary to check and modify the slots that existing sample points and digital outputs reference.

Removing Modules

If a module is removed from the Controller it is necessary to inform the Controller that the configuration has changed. To do this enable plug and play, reboot the controller, then disable plug and play.

The Phoenix Contact configuration must be changed in FMS by removing the module from the Unit configuration and removing any sample points and digital outputs that reference slots in the removed module. If the module has been removed from the end of the bus there is no need to change the configuration of sample points and digital outputs that do not reference the removed module. If the module has been removed from any other location on the bus it will be necessary to check and modify the slots that sample points and digital outputs reference.



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