



INSTALLATION OPERATION SUPPLEMENT

VFD SYSTEM PUMP CONTROL



PZA model shown



PZAT model shown

DO NOT TURN THE POWER ON TO YOUR NEW LEGACY CHILLER UNTIL THE ENCLOSED COMMISSIONING CHECKLIST HAS BEEN COMPLETED BY A QUALIFIED TECHNICIAN.

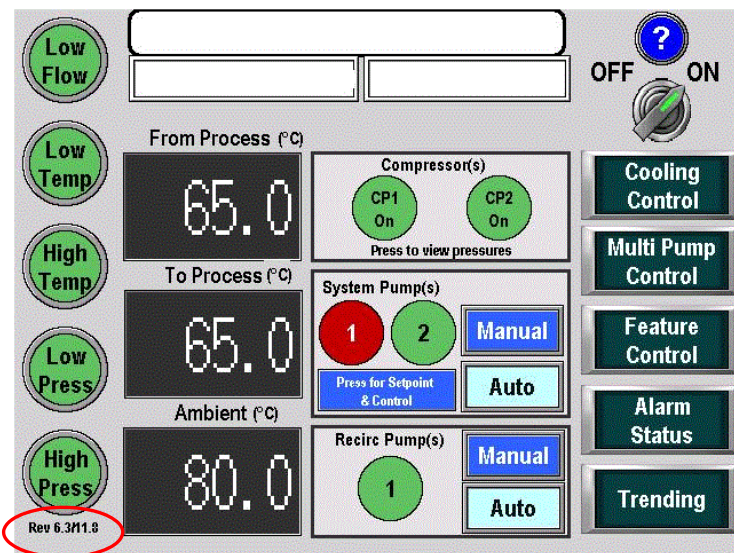
**For up-to-date support first try our on-line Knowledgebase
AT: <http://www.LegacyChillers.com/kb>**

Legacy Chiller Systems (USA)
P.O. Box 1120
Diamond Springs, CA 95619

Phone (toll free): 877-988-5464
Fax: 240-214-8303
Web site : www.LegacyChillers.com

IMPORTANT READ BEGINNING WORK

- THIS EQUIPMENT MUST BE INSTALLED BY QUALIFIED PERSONNEL IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.
- THE NEW CONTROL FEATURES DESCRIBED IN THIS SUPPLEMENT MAY REQUIRE A FIELD SOFTWARE UPDATE. BEFORE STARTING WORK, PLEASE MAKE A NOTE OF YOUR CURRENT CONTROL SOFTWARE REVISION LOCATED ON THE LOWER LEFT OF THE HOME SCREEN.
- IF YOUR CURRENT SOFTWARE REVISION VALUES ARE LOWER THAN 6.3/11.8 STOP, GO: <http://www.legacychillers.com/kb/default~action~detail~intID~280.asp> TO DOWNLOAD THE LATEST SOFTWARE AND PRINT OUT INSTRUCTIONS.



**VFD SYSTEM PUMP CONTROL
ADDED TO HMI/PLC FIRMWARE REV
6.3/11.8**



Important!

THIS DOCUMENT IS INTENDED TO PROVIDE INFORMATION ON A NEW FEATURE RECENTLY ADDED TO LEGACY'S CHILLER CONTROL SYSTEM. PLEASE REVIEW ALL INFORMATION IN THIS DOCUMENT BEFORE ACTIVATING THIS FEATURE. FAILURE TO REVIEW AND UNDERSTAND THE INFORMATION PROVIDED IN THIS DOCUMENT CAN RESULT IN PROPERTY DAMAGE, INJURY AND EVEN DEATH.

PRIOR TO STARTING WORK PLEASE MAKE SURE YOUR CHILLER HAS FIELD UPDATED AND IS RUNNING THE LATEST SOFTWARE REVISION. TO GET THE LATEST SOFTWARE FOR YOUR CHILLER GO TO THE LINK BELOW.

<http://www.legacychillers.com/kb/default~action~detail~intID~280.asp>

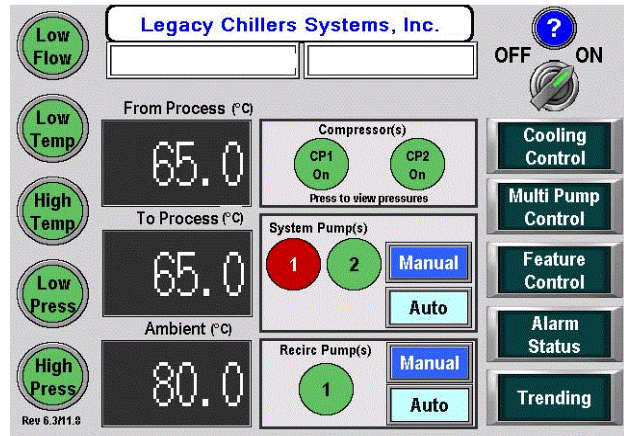
FIELD SOFTWARE UPDATE PROCEDURES CAN CHANGE. IT IS HIGHLY RECOMMENDED THAT YOU PRINT AND REVIEW THE ABOVE KB ARTICLE IN ITS ENTIRETY PRIOR TO PERFORMING A SOFTWARE UPDATE. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT LEGACY TECHNICAL SUPPORT PRIOR TO COMMENCING WORK.

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The following provides information on how to enable and interface with this new HMI/PLC feature.

Standard home screen: By default, this feature is disabled. Prior to being able to use this feature, it must be enabled from the factory setup area. The image to the right shows an example of a standard home screen.

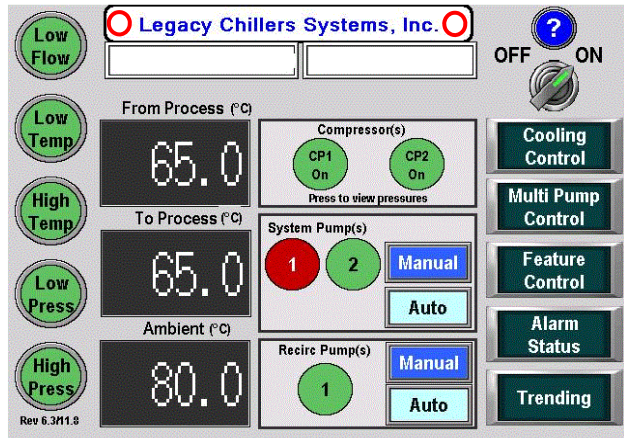
IMPORTANT: It is NOT recommended to provide end user with access to the chiller control systems factory screens.



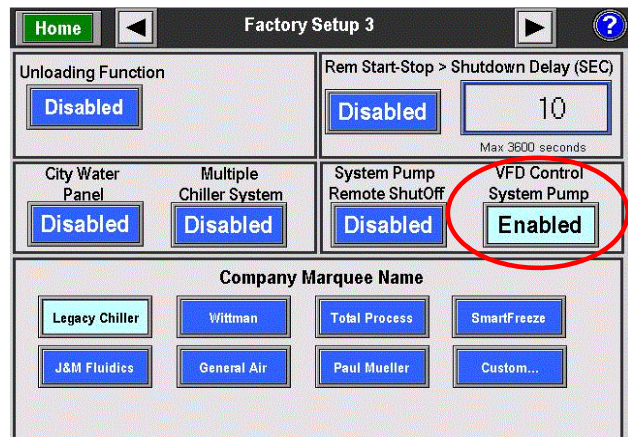
Enable Step #1: To the right and left of the home screen marquee, there are two hidden buttons. Using your finger, press and hold one of these buttons for 2-3 seconds. This will provide a popup keypad.

Carefully enter: 6115 then press ENT. Helpful tip when entering password, make sure you place your finger directly over each digit as you enter the pass code. As you press each digit make sure it's showing up on the upper right of the screen.

DO NOT GIVE PASSCODES TO THE END USER!

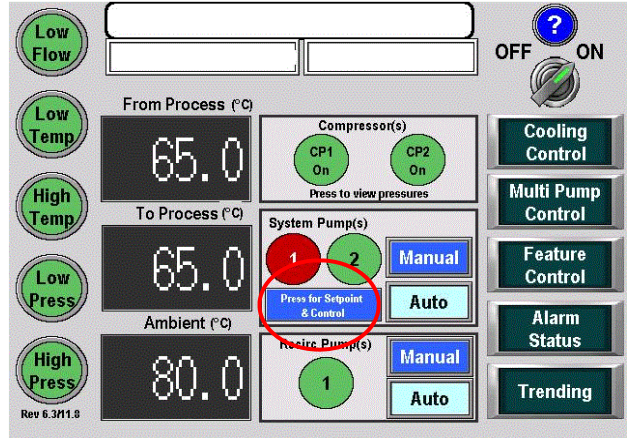


Enable Step #2: Once you are in the factory area press the RIGHT arrow at the top of the screen until you see the screen that looks like the image on the right. Once you get to the screen, press the button indicated. This will change feature status from Disabled (Dark Blue) to Enabled (Light Blue).



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Updated home screen: With the feature enabled, you will see a change on the home screen as indicated on the right.



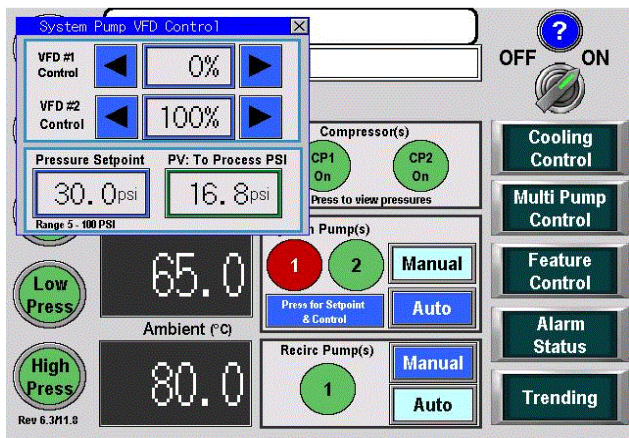
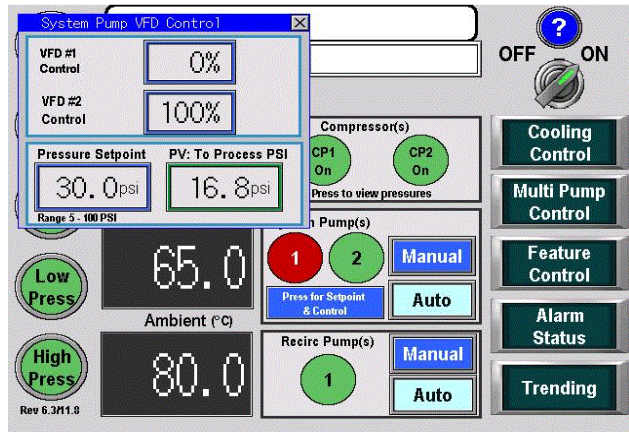
New feature operation: With the system pump set to AUTO, pressing the “Press for Set point & Control” button will display the System Pump VFD Control window. From this window you can review the status of your system pump(s).

VFD # 1 or 2 Control: These values represent the current 0-10vdc output percentage to your pump drive (s). For example a 20% value would be approximately 5vdc output to the drive. The drives response will be to set the output to 30 hz

Pressure Setpoint: This value represents the desired pressure delivered to the downstream pressure transducer.

PV: To Process PSI: This value represents the actual pressure delivered to the downstream pressure transducer. In AUTO MODE the PLC’s IPD control loop will automatically change the drive signal along a 0-10 vdc range to maintain the pressure set point.

Manual Mode: Pressing the system pump’s Manual button will add directional arrows to the System Pump VFD Control window. Using these arrows, the user can manually ramp the pumps up and down. **CAUTION:** **When running VFD controlled pump in manual mode great care should be taken. Depending on the type of pump you have and your system construction it would be possible to cause downstream issues by way of over pressure. Issues can include pipe and component rupture, injuries and even death in some extreme cases.**

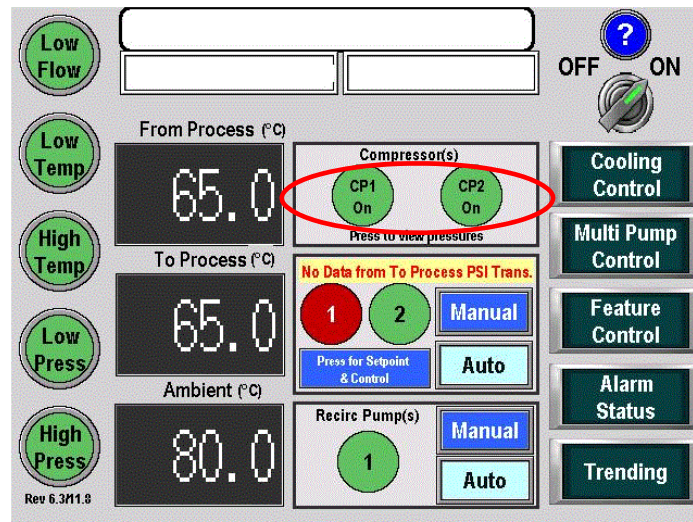


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FAQ READ BEGINNING WORK

Frequently Asked Questions (FAQ): The information below is intended to answer common questions specific to this feature. Should you have any questions that you do not see provided in this document, PLEASE contact Legacy Technical Support department for help at 877-988-5464.

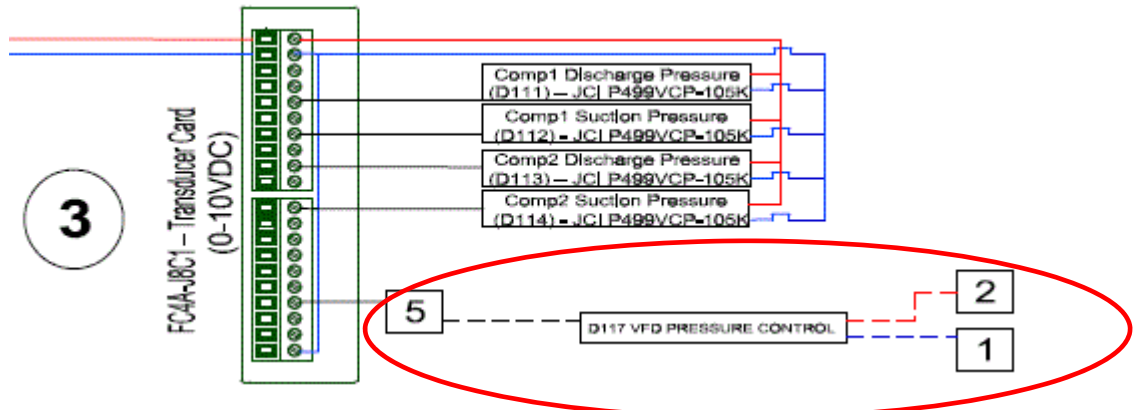
1. No Data from “To Process PSI Trans”: This error (see image below) will occur when the field installed (Factory Provided) downstream pressure transducer is not reading a minimum of 5 PSI, 30 seconds after the start of the system pump. This safety feature is designed to prevent a possible over pressure should there be a datacom problem between the remote pressure transducer and the PLC. This alarm will auto reset once the 5PSI is delivered to the remote transducer. While in this alarm state, the PLC will not provide any 0-10vdc output signal to ramp up the drive however the pump enable relay will stay energized resulting in the pump running at its pre-programmed minimum speed that ranges from 10-15 hz.



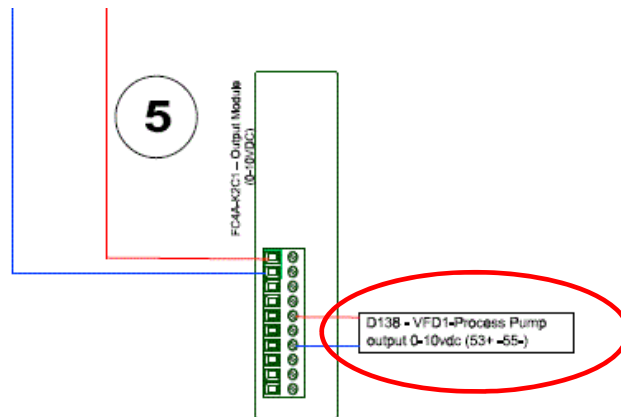
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FAQ READ BEGINNING WORK

2. How to correct the above alarm: In most cases, datacom problems are caused by wiring connections. Before contacting Legacy Technical Support, please check ALL wire connection from the remote mounted pressure transducer to the connection on the PLC. Please see image below that represents these connections on a typical single stage system.



3. I have no alarm but my pump will not ramp: If your System Pump VFD Control is showing an output percentage greater than about 10% your drive should be ramping up, coming off its pre-programmed minimum speed that ranges from 10-15 hz. If it does not, you should check your wire connection between the PLC output card and the drive. Please see image below that represents these connections on a typical single stage system.



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4. I have no alarms and pump is not running: If the VFD drive is not allowing the pump to run at all, check the following possibilities:

- A. Make sure the drive is set to AUTO. If in HAND or OFF mode, the drive will ignore any run requests from the chiller control systems.
- B. Check to make sure your drive enable relay is working properly. You can confirm if your enable relay is working correctly using an ohm meter across VFD drive connections 12 and 18. Make sure remove one or both of the wires from the drive terminal block to make sure you have a CLOSED switch between the two wire. If you do not, please check the IDEC delay.
- C. Make sure all wire connections are tight.

