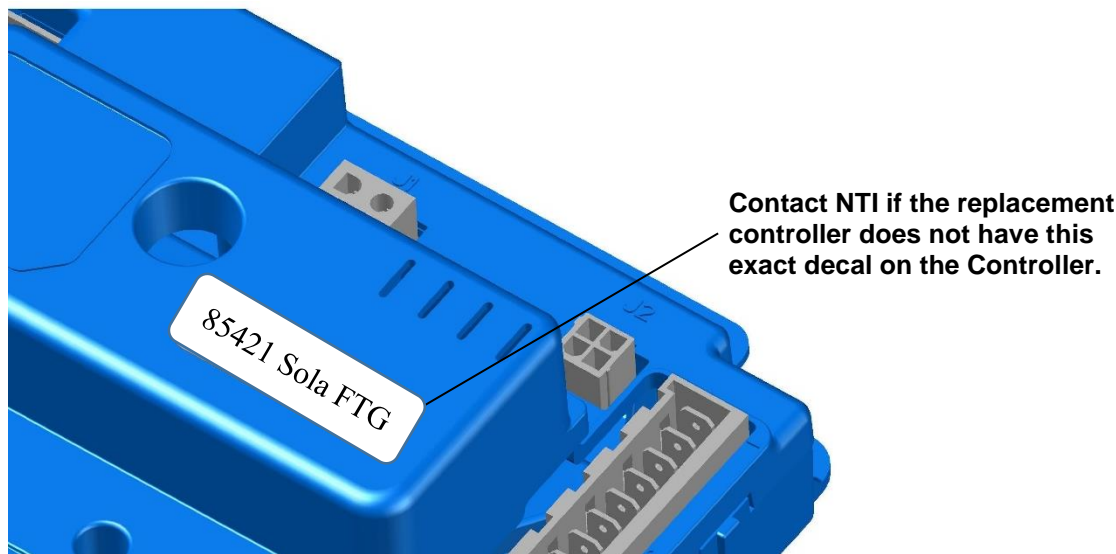# #85421 - FTG Commercial Controller Replacement Instructions

⚠ WARNING The commercial controller (part number 85421) is configured specifically for use with FTG commercial series boilers only, FTG600-2400 inclusive. This controller shall NOT be used with non FTG commercial-series boilers. Use of this controller on boiler models other than FTG commercial-series will override some saftey features and may lead to unsafe operation resulting in fire, explosion, property damage or death.

NOTICE Check the contents of the parts received to ensure the controller is labeled "**85421 Sola, FTG Comm. Cfg.**", signifying that it is for use with FTG Commercial-series boilers; see illustration below. If the controller is not labeled, or has a different label, it is not intended for use with a FTG commercial-series boiler. Note: all commercial Sola controllers have a blue case, if the controller case is not blue return to NTI.

Contact NTI if the replacement controller does not have this exact decal on the Controller.

85421 Sola FTG

Controller Replacement Instructions

⚠ WARNING The instuctions provided in this document are a supplement to the Installation and Operating Instructions originally provided with the boiler. Failure to follow the Installation and Operating Instructions may result in fire, explosion, property damage or loss of life.

These instructions describe the steps necessary to replace a controller from any model of the FTG commercial series, sizes 600 to 2400 inclusive, with a "generic" controller. Be sure to thoroughly read and understand these instructions before attempting a controller replacement.

Note: Before replacing an existing controller, record (if possible) the settings specific to the particular installation from the old controller, so they may be transferred to the new replacement controller.

Replace the FTG commercial controller:
1) Turn off power to the appliance via the local On/Off switch.
2) For FTG600-2400 units remove the front panel.
3) Remove the control panel cover.
4) Unplug all electrical connections from the controller. All wiring is connected to the controller by means of quick-connect plugs, each of which is uniquely keyed to its mating receptacle to prevent incorrect electrical connections.
5) Remove the old controller from the panel. The controller is secured to the panel by four screws, #8 w/ ¼" hex drive.
6) Installation procedure is in reverse order.
7) Use the display to adjust the control parameter settings to the values specific to the boiler model (see instructions below).

#85421 - FTG Commercial Controller Replacement Instructions

Control Settings Verification and Adjustments:

1) **Control Configuration Verification** – From the "Configuration" menu, select "System Identification and Access". Check to ensure the control is equipped with the correct configuration – see illustration below. Replacement controllers intended for use on FTG commercial-series boilers will begin with "FTG Gen". At this time the installer may choose to modify the "Boiler name" to reflect the boiler model the control is installed on, i.e. FTG600.

2) **Modulation Rate Adjustments** – Since the replacement control is generic to all FTG Commercial boiler models, the minimum and maximum modulation rates must be set to the applicable values. Select "Modulation Configuration" from the "Configuration" menu and adjust the settings according to the following table:

Parameter	Description	Settings
CH max. modulation rate	Maximum permissible blower speed during CH demand. Setting is model dependent.	FTG600 = 5600 rpm FTG800 = 7450 rpm FTG1200 = 8100 rpm FTG1400 = 7800 rpm FTG2000 = 7100 rpm FTG2200 = 7200 rpm FTG2400 = 8000 rpm
DHW max. modulation rate	Maximum permissible blower speed during DHW demand. Setting is model dependent.	
Minimum modulation rate	Minimum permissible blower speed. Setting is model dependent.	FTG600 = 1150 rpm FTG800 = 1150 rpm FTG1200 = 1050 rpm FTG1400 = 1050 rpm FTG2000 = 1050 rpm FTG2200 = 1050 rpm FTG2400 = 1050 rpm

⚠ **WARNING** Failure to set the modulation rates appropriate to your specific boiler model according the table above may result in fire, explosion, property damage or loss of life.

#85421 - FTG Commercial Controller Replacement Instructions

3) **Pulses Per Revolution Adjustment** – Since the replacement control is generic to all FTG commercial boiler models, the blower tachometer feedback "Pulses per revolution" setting must be set to the appropriate value for the specific boiler. Select "Fan Configuration" from the "Configuration" menu and adjust the settings according to the following table (see the illustration below):

Parameter	Description	Settings
Pulses per revolution	Number of feedback pulses produced for each revolution of the combustion blower impeller.	FTG600 = 3 FTG800 = 3 FTG1200 = 3 FTG1400 = 3 FTG2000 = 2 FTG2200 = 2 FTG2400 = 2

FTG Generic
Fan Configuration

Pulses per revolution `3`