



TITLE: 2000 Series Quick Start

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The Series 2000 controllers (2100s, 2200s, and 2400s) are configured for an application by setting parameters in memory to values appropriate for the application and by plugging in I/O modules (2200's and 2400's). Parameters are grouped into logical lists.

To work with any given parameter:

- Find it on the Operation or Configuration charts in the relevant manual.
- If you find it on the Operation chart, go to Full mode to be sure you can get to it\*. Full mode lets you see any parameter that is relevant but hidden.
- If you find it on the Configuration chart, you need to go to Conf mode to get to it.
- The security modes are Oper, Full, Edit, and Conf.

\* Parameters in grayed out/hashmarked boxes on the charts as shown in the manual are frequently hidden from view in Oper mode. Oper mode is the mode the controllers normally start up into. Also, depending on the setting of some parameters, some parameters and even whole lists will not appear. Example, On.Of won't appear if the control type is PID.

Accessing the different modes is discussed in the first part of Chapter Three in the relevant manual – Access Levels – and in brief:

- Hit the Page key until you see ACCS.
- Hit the Scroll key.
- Hit the Up key until you see a 1\*\* on the bottom (or for 2132 or 2116, the only) display.
- Hit the Scroll key.
- If you don't see the word Goto, hit the Scroll again.
- Once you see Goto, hit the up key until you see the Mode you want to be in.
- Hit the Scroll key. Additional instructions to get into Conf mode are below.

If you want to go into the Conf mode the procedure is the same as above, but once you hit scroll, the conf display becomes Conf (letter c becomes C).

- Hit the Up key until a 2\*\* is seen.
- Hit the Scroll key.

\*\* These are default passwords set at the factory. A backdoor password is available, consult Eurotherm Technical Support if these passwords do not let you in. Consider the possibility that some one else in your plant changed them for a reason.

Once you are in the mode you need to be in:

- Page takes you left to right between lists of parameters.
- Scroll takes you down through the list.

When you can change a parameter value, pressing the Up and Down keys will change that value. Waiting for 1.6 seconds until the display blinks will enter the new parameter value or pressing Scroll moves you to the next parameter and enters any changes. If a parameter value flashes a dashed line when you try to change it, then it either can't normally be changed or has been deliberately made read only, and you need to go to Full mode to change it (or Edit mode to change the visibility of the parameter).

Short cuts:

- Hitting the Page key when you are looking at a parameter will take you straight to the top of the list.
- When in Oper, Full, or Edit mode, pressing and releasing the Page and Scroll keys at the same time will take you straight to the Home screen.
- When in Conf mode, pressing and releasing the Page and Scroll keys at the same time will take you straight to Exit.

While the controller is booting (the controllers start up self test), pressing the Up and Down keys in at the same time when all the LEDs light up in the self test will take you directly to where you enter the Conf mode password of 2. Once the controller says Conf, press the Up key until it says 2 on the bottom display (2200s' and 2400s' only).

As shipped as a safety measure:

The heating and cooling outputs are disabled. For heating, raise OP.HI in the OP list in Oper mode to 100. If cooling is required lower OP.LO to -100, otherwise leave at 0.

If, when you try to do the above, you see dashes, then go into Conf mode and ensure the output channels are set correctly. Typically the Func for Output 1 configuration (1A) should be heat and cool for Output 2 configuration (2A). Out.L and Val.L should be 0. Out.H and Val.H should be at 100. Sens should be normal for most control outputs, and inv for most alarm outputs. For DC current or voltage outputs, Out.L might not be 0 and Out.H might not be 100. For a 4 to 20 mA signal, for example, they would be 4 and 20 respectively.

Output Channels:

The output channels are the parameter lists in software in Conf mode (for example 1A, AA, 3C, etc...) that set up an output option, like a relay or triac.

The id parameter of an output channel is normally unchangeable. If it can be changed, set it to none or you'll see an annoying no.io warning when the instrument boots up. The no.io indicates that the output has a configuration but that there is no plug-in module.

## Alarm Conditions and Configuration:

Setting up an alarm output involves the following;

- 1) In the AL list in Conf mode, defining an alarm condition.
- 2) In the output channel list that you want to use for the alarm output, "attaching" the alarm condition just set up to the channel.
- 3) Entering the alarm setpoint in the AL list in Oper mode and the hysteresis if relevant.

The part that is problematic for most users is 2). The Series 2000 is programmed with particularly flexible alarms. While many alarm condition are predefined diagnostic alarms-like sensor break "sbr" or loop break "lbr", up to four alarm conditions can be user defined in the AL list in configuration mode. Any, all, or none of these predefined and user defined alarm conditions can then be assigned to activate an output channel. Owing to differences in the implementation this is done slightly differently in the 2200s than in the 2400s.

2200s - First decide which output channel will trip when the alarm condition is active – this is typically AA – Alarm Relay, though it can be assigned to any output channel. Set the func to digf. Hit scroll to go to the digf parameter, and initially change it to clr by pressing the up key. Let the lower display blink thus clearing any preexisting alarms attached to the output channel. The display will return to saying noch (No change). Then hit the up key until the alarm condition you want to trip the channel is seen, and again wait for the display to blink. Do this last step as many times as desired, and each time you set the digf parameter to a new alarm condition and let it blink, that alarm condition will be saved as one that should trip the channel. This means any, all, or none of the alarm conditions can trip a particular channel.

2400s - Any of the output channels can have dig as a value for their Func parameter. When the Func = dig, then all of the possible alarm conditions including user alarms 1 through 4 and the predefined alarms appear as parameter names with the values of no or yes being possible values. If an alarm condition appearing in an output channel list is set to yes, than that condition will activate the channel when it is active. You can set all, none, or any combination of alarm conditions to trip a particular channel.

When in doubt:

Call your factory trained Distributor or vendor before calling Eurotherm Technical support. When calling Eurotherm Technical Support, have the model number (found on the label of the instrument-it begins with the model name-2404/??/??/??..., and the software version of the instrument. It is displayed when the instrument boots up, either below the model number (2200 and 2400s) or after the model number for 2100s. It will look like V#.##, A#.##, or B#.##.