

Auto Range Capability On The User Configuration Screen

TECH NOTE

Using the knobs to navigate the G3:

The G3 has two knobs: one at the top and one at the bottom. There are two functions built into each knob; the push button switch activated by pressing the knob in, and the selection is activated by turning the knob either clockwise or counter clockwise.

The top knob is used to select the various screens. From the main temperature bargraph screen turn the top knob counter clockwise 2 clicks to get to the User Configuration screen. Once you are there you do not use the top knob any more because turning it takes you away from the User Configuration screen.

The bottom button is pressed to select a line for adjustment. When you first enter a screen by default no line is selected. Pressing the bottom button once selects line 1. The selected line is shown in yellow. Pressing it a second time selects line 2. On any line with multiple selections the selected item will be shown in red.

Setting up the G3 Temperature Bargraph Display:

On the User Configuration screen there are some options for setting up the temperature bargraph display. There are three different ways to accomplish this. One method is to use the Auto Range function to configure the display for you. Another method is to adjust the MAX EGT TEMPERATURE and AUTORANGE INFLECTION parameters manually, and a third method is to set the bar heights visually on the main screen.

On line 2 (EGT AUTORANGE) there are 3 possibilities ON OFF and SAVE. After pushing the bottom button until this line is highlighted in yellow, the bottom knob may then be turned to make a selection on this line. When on line 2 turning the bottom knob fully counter clockwise selects nothing. From there turning the bottom knob one click clockwise selects ON. The current selection is shown in red. Turning the bottom knob another click clockwise selects OFF. And one more turn clockwise selects SAVE.

Using the Auto Range function (Method 1):

To turn OFF the auto range capability on the User configuration screen:

Press the bottom button twice to select line 2 (EGT AUTORANGE).
Turn the bottom knob to select OFF on line 2.
Press the bottom button to select line 7 "SAVE CONFIG"
Turn the bottom knob to select YES on line 7.
Press the bottom knob to save the choice.
We have now turned off auto ranging.

To turn ON the auto range capability on the User configuration screen:

Press the bottom button to select line 2. (EGT AUTORANGE).
Turn the bottom knob to select ON on line 2.
Press the bottom button to select line 7 "SAVE CONFIG"
Turn the bottom knob to select YES on line 7.
Press the bottom knob to save the choice.
We have now turned on auto ranging.



Auto Range Capability On The User Configuration Screen

TECH NOTE

In order to use the auto range function it must be turned on as described above. Once this function is enabled, the G3 will automatically adjust the EGT MAX TEMPERATURE and AUTORANGE INFLECTION to be appropriate for the highest temperature reported by the probes.

You should now take the airplane and perform a typical flight.

The G3 will analyze the EGT temperatures and scale the temperature bars as required so that the entire temperature range measured by the EGT probes is displayed on the main bargraph screen.

It is important to realize that so far this adjustment is temporary. If we want it to remain permanent we must return to the User Configuration screen.

To save the results of auto ranging:

Press the bottom button to select line 2 (EGT AUTORANGE).

Turn the bottom knob to select SAVE on line 2.

Press the bottom button to select line 7 "SAVE CONFIG"

Turn the bottom knob to select YES on line 7.

Press the bottom knob to save the choice.

The results are saved, and auto ranging is turned OFF.

The main temperature bargraphs should now be scaled properly for this individual airplane on all subsequent flights.

Auto ranging may be turned on and the range relearned as often as desired.

Setting up the G3 Temperature Bargraph display manually (Method 2):

In some cases it may be desirable to set or refine the temperature bargraph screen manually.

To do so, return to the User Configuration screen and make sure EGT AUTORANGE is turned OFF as described earlier. Adjust EGT MAX TEMPERATURE and AUTORANGE INFLECTION directly by using the following procedure:

To set an EGT MAX TEMPERATURE and AUTORANGE INFLECTION on the User configuration screen:

Press the bottom button to select line 3 (AUTORANGE INFLECTION) or line 4 (EGT MAX TEMPERATURE).

Turn the bottom knob to select a value as desired. Notice that adjusting the AUTORANGE INFLECTION affects the value of EGT MAX TEMPERATURE and vice versa.

Press the bottom button to select line 7 "Save Config"

Turn the bottom knob to select YES on line 7.

Press the bottom knob to save the choice.

AUTORANGE INFLECTION and EGT MAX TEMPERATURE explained:

The Autorange Inflection point is the point along the temperature graph at which the scale of the bars change.

Below the inflection point (ie, at low temperatures) readings are displayed with a coarse resolution (the bars go up/down a small amount for a relatively large change in temperature).

Above the Inflection Point (at higher temperatures than the Inflection Point) the bars are displayed in a higher resolution (the bars go up/down more for a small change in temperature).

The net effect is that the dynamic range of the temperature bargraph is increased. In other words, we can show temperatures all the way down to room temperature on the bargraph yet still show small changes in temperature at the airplane's operating temperature range.

As an example if we set our Autorange Inflection to be 1200 deg then temperatures below 1200 will be rendered with relatively few pixels/degree whereas temperatures above 1200 will be rendered with more pixels/degree to make temperature changes more obvious.

Auto Range Capability On The User Configuration Screen

TECH NOTE

The EGT Max Temperature simply defines the temperature that is represented by a bar that is full screen in height. For example if EGT Max Temperature is set to 1600 deg than a temperature of 1600 deg will be rendered as a bar that reaches the top of the screen.

The G3's Autorange Inflection is always 400 deg below the EGT Max Temperature. Adjusting one will therefore always affect the other automatically.

Adjusting the bar heights from the main screen (Method 3):

An alternative way to setup the scale of the temperature bargraphs can be performed from the main screen.

Press the bottom button and a message appears: "TURN-ADJUST BAR HEIGHT".

By turning the bottom button the heights of the bars may be moved up and down.

Pressing the bottom button twice more returns the G3 to its normal mode.

If we return to the User Configuration screen, we will see that EGT MAX TEMPERATURE and AUTORANGE INFLECTION have been adjusted to reflect our changes to the bar height.

If the adjustment is to become permanent we must select Save Config and set it to yes.