

UG-25+ 5418-2879 Firmware Release

Explanation of Software Changes

General

Woodward has released application firmware 5418-2879 rev NEW as an upgrade to 5418-2317 for all UG-25+ controls. This application note describes the changes made.

Description of Firmware Changes

The new firmware is based on the existing firmware (5418-2317 rev A), with changes as listed below. There are three changes, which all relate to the governor dynamics. All of the listed changes are included with a firmware upgrade. Individual change selection is not possible, but feature disabling instructions are provided where applicable.

1) Front Panel Stability Pot Range Change

The front panel Stability pot provides a quick external adjustment on the speed controller proportional and integral gains by providing a multiplier on nominal configured values. When the pot is at its mid position, the multiplier is '1.0', and the gains are at their nominal configured settings. A change was made in the adjustment range. In 5418-2317 firmware versions, the range was from 0.25 to 4. In the latest firmware (5418-2879), the range was reduced to 0.5 to 2.0, providing a smaller range and thus reducing the adjustment sensitivity.

2) Start Gain Changes

In 5418-2317 firmware versions, the Start Gain was applied for the duration of the Cold Start Gain Timer. This was replaced by a speed threshold and a hysteresis setting. This improvement allows the engine to remain at the start gain setting (during low-speed operation) until the engine speed is increased up to a rated speed, for example. The hysteresis allows the option of either re-applying the low gain at low speeds or of keeping the start gain off. In the latest firmware, the UG-25+ governor provides a cold start gain function that sets the proportional gain of the governor to a lower-than-normal value until a programmable speed threshold is exceeded. The cold start gain is re-applied if the speed drops below the hysteresis (threshold – hysteresis) level. To disable this feature, set the threshold equal to the run speed setting. To disable the re-application of the start gain, set the hysteresis equal to the threshold.

3) Idle Integral Addition

An enhancement was made to the governor integral gain to provide a speed-varying integral gain setting. An Idle Integral setting was added for applications that require a different set of gains at low speed. In 5418-2317 firmware versions, the integral setting was a fixed value throughout the speed range. In the latest firmware (5418-2879), the integral setting varies with engine speed. Idle Integral applies when running at the initial run speed, and Rated Integral applies when at rated speed or higher. The gain varies linearly at intermediate speeds. To disable this feature, set the idle integral equal to the rated integral.

Compatibility with Existing Controls

The new firmware (5418-2879 NEW) will operate with all existing UG-25+ controls. Version 2.2 of the UG-25+ Service Tool (9927-1366) is required for the new firmware and is compatible with all UG-25+ controls. Due to parameter changes in the firmware, configuration files created for previous firmware revisions are not compatible with the latest (5418-2879) and will require re-entering of values. Likewise, configurations for the 5418-2879 are not compatible with the older firmware (5418-2317). Future releases of the Service Tool may provide this conversion functionality, but it is not available at this time.

Firmware Identification

The UG-25+ control firmware version can be viewed from the Identification tab on the Service Tool.

How to Upgrade

The UG-25+ firmware can be field upgraded, but this requires specialized software tools and must be performed by authorized Woodward personnel. If you have any questions about this issue, or wish to upgrade, please contact one of our Woodward facilities and refer to this application note number.



PO Box 1519, Fort Collins CO 80522-1519, USA
1000 East Drake Road, Fort Collins CO 80525, USA
Phone +1 (970) 482-5811 • Fax +1 (970) 498-3058

Email and Website—www.woodward.com

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