Product Update

SC100 Speed Controller

New Firmware – Release 1.7.0

MOTORTECH is providing a new firmware 1.7.0 for SC100 speed controller starting with serial number S/N: 5619-SC100. Version 1.7.0 replaces version 1.3 at MOTORTECH. There is no need to upgrade the firmware on existing units in the field, unless it is not performing correctly. The new firmware requires some changes in the ALL-IN-ONE GenConfig configuration.

Download

The new device firmware, instructions for updating the firmware for existing devices, and the Flash Programmer Tool required as a minimum for use can be downloaded from the following link (11,1 MB):

http://www.motortech.biz/downloads/MOTORTECH-SoftwarePackage-SC100-FW-1-7-0.zip

Changes in Version 1.7.0

New Features

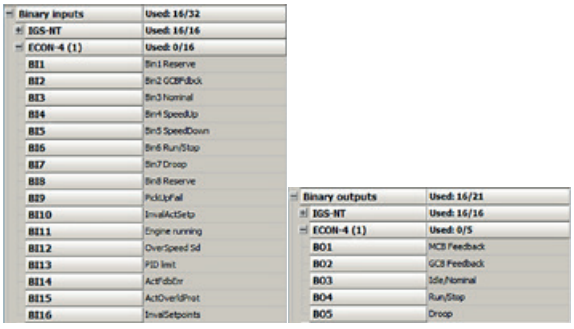
Protection against loss of RPM signal:
In case there is a sensor fail like a broken wire or broken sensor the engine speed is dropped down very fast (sometimes due to broken sensor it is not always exactly zero rpm). The actuator would normally react as low speed and due to active regulation, it would try to more and more open the actuator and it leads automatically to overspeed which is not desired.
To prevent this situation there is a function which can identify loss of RPM signal.
There is a new setpoint RPMdropFail which is defined as the maximal RPM drop in 100 ms. In case the rpm drop is higher than value of this setpoint during 100 ms, the speed governor evaluates the situation as speed sensor fail and immediately closes the actuator. The output BO9 from the speed governor LBO PickUpFail is activated for 3 s (in case the speed drops immediately to zero it will be possible to catch the situation).

It is strongly recommended to configure user protection Level 2 on the PickUpFail signal in the configuration tool (GenConfig), to prevent unwanted behaviour or next starts. When LBO PickUpFail is deactivated (after the 3 s delay), the speed governor starts opening the actuator again.

When the Run/Stop signal is deactivated, the LBO PickUpFail is not activated.

Renaming of Binary States

- Binary input **Bin1** was renamed to **Bin1 Reserve**.
- Binary input **Bin8** was renamed to **Bin8 Reserve**.
- Binary input **Reserve (BI9)** was renamed to **PickUpFail**.
- Binary input **Reserve (BI10)** was renamed to **InvalActSetp**.
- Binary output **Reserve (BO1)** was renamed to **MCB Feedback**.



New designations in the AIO software GenConfig

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Product Update

Changes in Version 1.6.1 (not published by MOTORTECH)

Repairs

- ActuatorType function has been fixed
- In case there is chosen the ActuatorType 2-4, the function is still evaluated from the setting in ActuatorType1.

Changes in Version 1.6.0 (not published by MOTORTECH)

New Features

Deactivation of the actuator feedback control on steady engine:
To avoid situations, when the actuator is controlled to the fully closed position also when engine is not rotating, there was implemented deactivation of the position feedback control in certain moments, below described. The actuator feedback position control is deactivated in the following situation:
(parameter: SC100 mode is in AUTO) AND {10 seconds after detection of [(Engine RPM are 0 (<10RPM)) AND (BI:RUN is in log 0)]}.
This covers also the situation, when SC100 mode is switched from MAN to AUT, after the actuator feedback PID was tested.

The actuator feedback control is activated again by any of the following conditions:

- BI:RUN is activated (in case the Run signal is being sent over DATA, then both the Physical BI and the BI over DATA has to be ON)
- Non-zero RPM are detected by SC100
- Parameter SC100 mode is set to MAN

Repairs

- Reaction of the Fuel amount to deactivation and reactivation of the BI:Run, when engine is running
- When the engine is running, and the Run signal is removed (deactivated) SC100 shuts immediately the fuel to 0%.
  In case the Run signal is activated again in a moment, when the engine is still moving (means non-zero RPM are measured), in previous sw versions SC100 increased the fuel amount close to 100% and regulated from this value on the requested RPM. In sw version 1.6.0, when the Run signal is activated again and engine RPM are non-zero in that moment, SC100 sets the fuel amount to value given by parameter: Main PID: Idle Fuel and from this value continue the RPM regulation to the Requested RPM.

Changes in Version 1.5.1 (not published by MOTORTECH)

- SC100 parameters values are used for a CRC code calculation, which is used with a specific firmware branch of a gen-set controller.

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Product Update

Changes in Version 1.5.0 (not published by MOTORTECH)

New Features

- Change of range for PWM rate
- New range is 100-10000Hz

Repairs

- Fixed bug with PWM output
- PWM output under 733Hz was deformed

Changes in Version 1.4.1 (not published by MOTORTECH)

Repairs

Due error in firmware SC100 1.4.0 under some conditions (actual GasDose is higher than IdlePosition in moment when parallel operation is entered – GCB is closed) Throttle is opening to MaxFuel position 1min after parallel. It stays in this position forever, regardless of SGO Output until Parallel operation is finished. Workaround It can be fixed temporarily changing nominal RPM – increasing by 1 and then decreasing to original value. But this will solve situation just until Power to SC100 is cycled. Final fix is just using new firmware – version 1.1.1 or newer in SC100.

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