

**Firmware release notes for sensor family: QG65N/QG76N CANopen Safety (D-type)**
**Codesys compatible branch (choose the right CRC tool firmware setting)**

Firmware version number	SRECS Mod Request	Changes with respect to previous version	Date of release
V2.9	011	Incidentally one of the MEMS chips does not startup properly. This situation is immediately found by the $\mu$ C, while comparing both MEMS chips. To prevent for hazardous situations the sensor switches to safe mode, by sending an error message only. Rebooting the device solves this issue in most situations. This modification improved the initialisation of the MEMS chips in such a way that the sensor will startup normally.	2019-07-25
	010	SRDO-messages data was dependent on TPDO mode settings like sync-mode. This had to be split. Changes: SRDO-messages data now independent of TPDO modes Output filter time maximized to 'redundancy_compare_time' TPDO_event_time maximized on 5000ms 'Load default settings' with a sensor in TPDO sync-mode will quit the TPDO sync mode Output filter time constant maximized to 'Redundancy compare time' TPDO1 and TPDO2 event time maximized to 5sec. Redundancy compare time maximized to 10sec.	Released in V2.9
	009	Since v2.5 the sensor does not go into error-mode when operating outside it's measuring range. But at returning to a position inside the measuring range the sensor sometimes jumped into error-mode. Now this process is improved, making the sensor significant less critical on this point and therefore the chance is having a false-alarm has decreased	Released in V2.9
V2.8	008	Functionality 'peak suppression filter' added This functionality can be switched on by the CANopen object dictionary if required. This function makes the sensor less sensitive for vibrating situations, resulting in a significant lower chance to have a false-alarm and a non-necessary error situation.	2018-04-03
V2.7	007	Not used mappings for RPDO and TPDO are now not readable as '0' anymore but simply does not exist	2017-11-07
	006	Due to difference in interpreting the CiA standard on CANopen Safety between company Codesys and DIS-sensors the CRC calculation did not match. As Codesys is market-leader the firmware was upgraded in such a way that the sensor is compatible with Codesys. Consequences: <ol style="list-style-type: none"> <li>1. The online DIS-sensors CRC tool had to be expanded with a firmware-version selector, to keep the tool usable for both versions of CRC calculation</li> <li>2. <b>The sensor is not backwards compatible with v2.5</b> as the number of bytes in the SRDO-messages had to be changed</li> </ol>	Released in V2.7



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V2.5	005	A 30° device used outside it's measuring range (> 30° up to 90°) now gives angle data 200° (clearly a wrong angle the safety application can recognized) instead of the sensor going into error mode.	2017-07-12
	004	Switching between RMS and PEAK value in Acceleration mode improved. Now correct values	Released in V2.5
V2.4	003	Safety check on 3V3 voltage monitor improved at boot-up	2016-08-16
V2.3	n.a.	By DEKRA released firmware, SIL2/PLd certified	2016-08-04
V2.2	002	Calibration table improved for better accuracy Code readability improved	
	001	Watchdog tolerances optimized to prevent for false-alarms	

**Non-Codesys compatible branch (choose the right CRC-tool firmware-setting)**

Firmware version number	SRECS Mod Request	Changes with respect to previous version	Date of release
V2.5.3	005.4	Incidentally one of the MEMS chips does not startup properly. This situation is immediately found by the $\mu$ C, while comparing both MEMS chips. To prevent for hazardous situations the sensor switches to safe mode, by sending an error message only. Rebooting the device solves this issue in most situations. This modification improved the initialisation of the MEMS chips in such a way that the sensor will startup normally.	2019-07-25
	005.3	SRDO-messages data was dependent on TPDO mode settings like sync-mode. This had to be split. Changes: SRDO-messages data now independent of TPDO modes Output filter time maximized to 'redundancy_compare_time' TPDO_event_time maximized on 5000ms 'Load default settings' with a sensor in TPDO sync-mode will quit the TPDO sync mode Output filter time constant maximized to 'Redundancy compare time' TPDO1 and TPDO2 event time maximized to 5sec. Redundancy compare time maximized to 10sec.	Released in V2.5.3
	005.2	Since v2.5 the sensor does not go into error-mode when operating outside it's measuring range. But at returning to a position inside the measuring range the sensor sometimes jumped into error-mode. Now this process is improved, making the sensor significant less critical on this point and therefore the chance is having a false-alarm has decreased	Released in V2.5.3
V2.5.2	005	A 30° device used outside it's measuring range (> 30° up to 90°) now gives angle data 200° (clearly a wrong angle the safety application can recognized) instead of the sensor going into error mode.	2017-07-12
	004	Switching between RMS and PEAK value in Acceleration mode improved. Now correct values	Released in V2.5
V2.4	003	Safety check on 3V3 voltage monitor improved at boot-up	2016-08-16
V2.3	n.a.	By DEKRA released firmware, SIL2/PLd certified	2016-08-04
V2.2	002	Calibration table improved for better accuracy Code readability improved	
	001	Watchdog tolerances optimized to prevent for false-alarms	