ISABELLENHÜTTE

IVT-S

Information about error-bits with FW V4.0.6

If IVT-S is programmed with FW version 4.0.6 you may experience data bit errors depending on the application and load. With this FW version it is possible for IVT-S to send a temporary SET measurement or system error status bit in high nibble of DB1 within the result message:

DB	Signal	Value	Description
0	MuxID	0x00 .. 0x07	multiplexer, n = channel number
1 Low nibble	IVT_MsgCount	0x0 .. 0xF	Cyclic counter individually for each channel
1 High nibble	IVT__Resulte_state	0b0000 .. 0b1111	bit 0: set if OCS is true bit 1: set if - this result is out of (spec-) range, - this result has reduced precision - this result has a measurement-error bit 2: set if - **any** result has a measurement-error bit 3: set if - system-error, sensor functionality is not ensured!
2 .. 5	IVT_<Resultname>		All Results as signed long, see configuration

If you experience either bit 2 or bit 3 it is possible that any of the 16 measurement or system error bits were set. Reading out the measurement or system error bit mask will provide more detailed information on which error bit was set.

- Bit 0x02 from measurement error bit mask
  - Can occur in the customer system for small currents (<5% of max. nominal current value)
- Bit 0x03 from measurement error bit mask
  - Can occur in the customer system for small currents (<5% of max. nominal current value)
- Bit 0x09 from measurement error bit mask
  - Related to SW implementation – sporadic appearance
- Bit 0x0b from system error bit mask
  - Related to SW implementation – sporadic appearance

This may cause a failure record in the application.

Hereby we confirm

- These error bits are not caused by any hardware defect from IVT-S
- Masking and ignoring these error bits is the preferred containment measure within firmware version V4.0.6 which simulates the behavior of FW4.0.1
- If masking these error bits on customer side is not possible, we offer a re-flashing service to FW4.0.7. Please contact us to learn more.
- Moving forward with our new FW V4.0.7, the error bits will behave as intended.

Get measurement errors

DB	Value	Remark	Related to channel
0	0x40	Get measurement errors	
1	0x00	Get bitmask of occurred measurement errors (specific counter != 0)	
		Get specific Error Counter (Positive edge of error state cause up counting):	
	0x01	Error ADC interrupt	all
	0x02	Error Overflow ADC channel 1	I1
	0x03	Error Underflow ADC channel 1	I1
	0x04	Error Overflow ADC channel 2	I2, U1-U3
	0x05	Error Underflow ADC channel 2	I2, U1-U3
	0x06	Error Vref	all
	0x07	Error current measurement implausible I1 – I2 (check in nominal range)	I1, I2
	0x08	Error thermal EMF correction	I1
	0x09	Error current measurement I1 open circuit	I1
	0x0a	Error voltage measurement U1 open circuit	U1
	0x0b	Error voltage measurement U2 open circuit	U2
	0x0c	Error voltage measurement U3 open circuit	U3
	0x0d	Error ntc-h open circuit	I1,I2,T
	0x0e	Error ntc-l open circuit	I1,I2,T
	0x0f	Error calibration data (offset-, gain error to high)	all

Get system errors

DB	Value	Remark
0	0x41	Get system errors
1	0x00	Get bitmask of occurred measurement errors (specific counter != 0)
		Get specific Error Counter (Positive edge of error state cause up counting):
	0x01	Error Code CRC
	0x02	Error Parameter CRC
	0x03	Error CAN bus receive Data
	0x04	Error CAN bus transmit Data
	0x05	Error overtemp
	0x06	Error undertemp
	0x07	Error power failure
	0x08	Error system clock
	0x09	Error system init
	0x0a	Error configuration
	0x0b	Error overcurrent detection
	0x0c	Error eeprom r/w
	0x0d	Error ADC Clock
	0x0e	Error Reset illegal opcode
	0x0f	Error Reset Watchdog
	0x10	Error Reset EMC