

8.4.4 Generation of Check Sum

The check sum is the result of the byte wise EXOR link of the bytes output in the telegram.

The EXOR link encompasses all bytes between the telegram start character "STX", or "\$" with the NMEA telegram and the byte "*" as the identifying character for the start of the check sum.

The bytes "STX" or "\$" and "*" are thus not taken into account for calculation of the check sum!

In the telegram 7 the last byte ";" before the check sum is stated representatively for the byte "*", and is thus not taken into account for calculation of the check sum!

8.4.5 Status Information

In the ULTRASONIC two different status bytes are available:

- extended status information (scientific telegram only, see also "TT12")
- THIES status

The THIES status is derived from the extended status information. The structure of the status values is described below.

8.4.5.1 Extended Status Information

The extended status is structured bit wise. The individual bits in the status value have the following meanings:

Bit number	Function	Description	
Bit 0	General malfunction	Averaging time < 30s preset see "ET" Command Error Timeout	An error is output when no new measured value can be determined during a period of 30s.
		Averaging time >= 30s preset see "ET" Command Error Timeout	An error is output when the averaging buffer includes no valid value.
Bit 1	Heating enabled	Is one when heating control is activated.	
Bit 2	Heating status	Is one when bottom heating is consuming power.	
Bit 3	Reserved	Is always zero.	
Bit 4	Static malfunction	Is set when a static malfunction has occurred, e.g. lasting violation of VT, no measured values. (> 1min)	
Bit 5 .. bit 7	Reserved	Is always zero.	
Bit 8	Used averaging memory	Specifies the averaging memory occupied. Bit 0 to bit 3 indicate the filling level of the averaging buffer in binary format. 0: Buffer $0 < x \leq 1/16$	
Bit 9			
Bit 10			

12.9 Telegram 12 Scientific Telegram

Scientific Diagnostic Telegram

Command: TR12 Command: TT12

Construction of telegram:

WG;WR;VT;VY;VX;T13;T24; C31; C42; C13; C24; PA;INTER; AV; STh; STgen; LC

WG	Wind speed (7,2;)
WR	Wind direction (6,2;)
VT	Virtual temperature (6,2;)
VY	Speedvektor of distance Y (7,2;)
VX	Speedvektor of distance X (7,2;)
T13	Virtual temperature of distance 1 < - > 3 (7,2;) (last measured value in averaging interval; -273,15 °C in case of no valid value)
T24	Virtual temperature of distance 2 < - > 4 (7,2;) (last measured value in averaging interval; -273,15 °C in case of no valid value)
C31	Measuring value run-time Converter 3 in direction Converter 1 (5;)
C42	Measuring value run-time Converter 4 in direction Converter 2 (5;)
C13	Measuring value run-time Converter 1 in direction Converter 3 (5;)
C24	Measuring value run-time Converter 2 in direction Converter 4 (5;)
PA	Internal counter (5;), pre-averaging (100ms) (5;)
INTER	Time interval, where the values are written into the main average memory (5;)
AV	Number of values in the main average memory (5;)
STh	THIES Status (2;)(hexadecimal display)
STgen	Telegram status , see 8.4.5.1 (hexadecimal display) (4;)
LC	Internal tick count in ms of the processor (7;\r\n)

Signification (7,2;) (x;y)

X = Number of digits in the telegram

Y = Number of decimal places

For example (7;2;) = 0000.00;

**Please contact us for your system requirements.
We advise you gladly.**

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