



Details for implementation of PROFIBUS PA interface with MYCOM 152 ind/cond

Scope

This file is effective for the following software versions:

MYCOM 152 PROFIBUS PA:

Lf ind/con switchable 2.05

FCYP PROFIBUS interface card : 1.04

This file contains additional information to the operating manuals of MYCOM 152 ind/cond with a PROFIBUS PA communication interface.

Cyclic Service of MYCOM 152 Lf inductive/conductive switchable

The telegram of the cyclic service of MYCOM 152 Lf inductive/conductive switchable has the following format:

byte	data item	access	data format	unit
0, 1, 2, 3	main measured value (conductivity, resistance or concentration)	r	32-bit floating point number (IEEE-754)	mS/cm, MOhm or %
4	status of main measured value	r	80h = O.K.	-
5, 6, 7, 8	temperature measured value	r	32-bit floating point number (IEEE-754)	°C
9	status of temperature measured value	r	80h = O.K.	-

Caution!

All bytes have to be selected.

Miscellaneous

- The cyclic telegram of MYCOM 152 is not affected by the configuration of the device.
- The implementation of the physical layer IEC 1158-2 ensures, that a reverse polarity on the signal lines has no effect on the functionality of the device.
- Proper cables for the signal lines are e.g. Belden 3097A or Siemens 6XY 1830-5AH10.
- 32-bit floating point number in IEEE-754 format:

byte n				byte n+1				byte n+2				byte n+3				
bit7	bit 6	bit 0	bit7	bit 6	bit 0	bit 7	bit 0	bit 7	bit 0	bit 7	bit 0	bit 7	bit 0	bit 7	bit 0	
S	$2^7 \ 2^6 \ 2^5 \ 2^4 \ 2^3 \ 2^2 \ 2^1$		2 ⁰	$2^{-1} \ 2^{-2} \ 2^{-3} \ 2^{-4} \ 2^{-5} \ 2^{-6} \ 2^{-7}$		$2^{-8} \ 2^{-9} \ 2^{-10} \ 2^{-11} \ 2^{-12} \ 2^{-13} \ 2^{-14} \ 2^{-15}$		$2^{-16} \ 2^{-17} \ 2^{-18} \ 2^{-19} \ 2^{-20} \ 2^{-21} \ 2^{-22} \ 2^{-23}$								
Sign	exponent				mantissa				mantissa				mantissa			

Formula: $\text{Value} = (-1)^S * 2^{(\text{exponent} - 127)} * (1 + \text{mantissa})$

Example: $40\ F0\ 00\ 00\ h = 0100\ 0000\ 1111\ 0000\ 0000\ 0000\ 0000\ 0000\ b$

$$\begin{aligned}
 \text{Value} &= (-1)^0 * 2^{(129 - 127)} * (1 + 2^{-1} + 2^{-2} + 2^{-3}) \\
 &= 1 * 2^2 * (1 + 0,5 + 0,25 + 0,125) \\
 &= 1 * 4 * 1,875 \\
 &= 7,5
 \end{aligned}$$

- Coding of status according to „PROFIBUS PA Profile for Process Control Devices - General Requirements“ V 2.0:

STATUS-CODE (HEX)	MEANING	DEVICE-CONDITION
0C	device failure	BAD
80	ok	GOOD