

Operating Instructions

020922/02/05

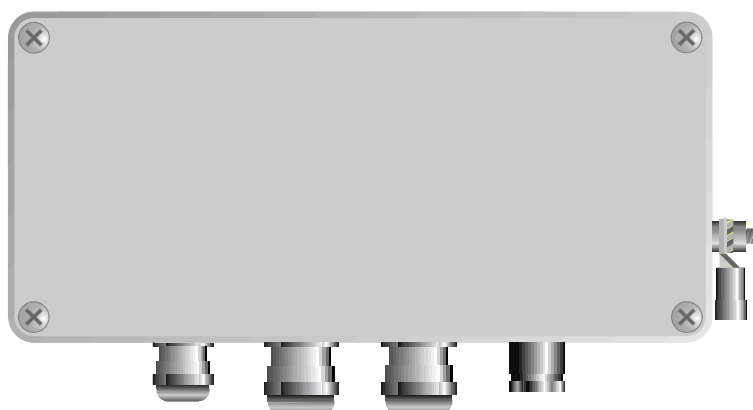
Wind-Interface

4.4070.01.xxx

4.4071.01.xxx

4.4072.01.xxx

4.4073.01.xxx



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Enclosure: Configuration Protocol

1 General Information

The wind interface is used where it is necessary to transform specific wind sensor signals (THIES wind sensor) into a data telegram and to transmit them via serial interface. The interface allows the connection to different instruments, thanks to the interface variants available and the possibilities of forming the data telegram.

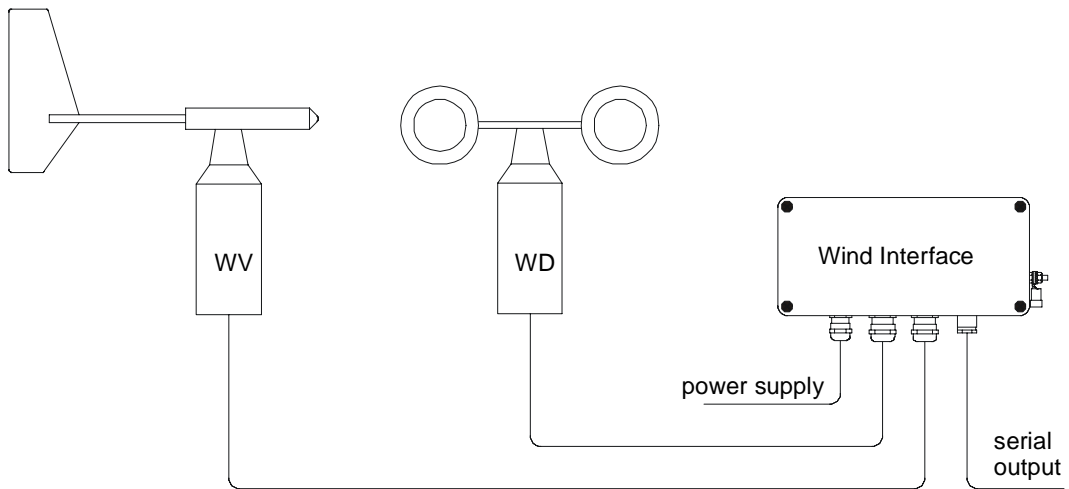
The interface is protected by a sturdy aluminium housing and fulfils

- the EMC-Guidelines
- the protection IP65 for outdoor use

on condition that the mounting has been carried out properly.

The interface is supplied by our *power supply unit* (order-no. 9.3388.00.000) or another suitable source.

Example of an instrument configuration:



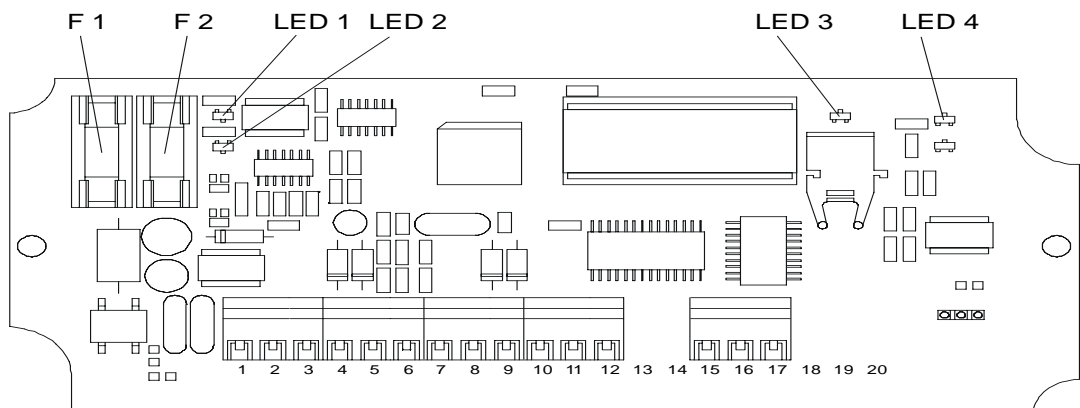
2 Mode of Operation

The mode of operation (function) of the interface in essence::

- integration of the wind velocity pulses to a 1-sec instantaneous value
- scanning (10 hz) of the wind direction code and transforming into a direction value (0...360 °)
- forming of a 30 sec gliding mean value of the wind direction
- output of the data telegram via serial interface

A survey on the actual operation status of the instrument is given by the LED's on the interface.

Example of an instrument configuration:



The LED's are related to the following functions:

LED	FUNCTION	NOMINAL STATUS
1	serial CLK (WD)	indicates
2	serial Data (WD)	indicates
3	serial OUT (output data telegram)	indicates
4	watch-dog	on

3 Instrument Models

Thanks to the diverse variants it is possible to suit the wind interface individually to the different requirements. The individual configuration comprises the following possibilities:

- selection of the wind sensors
- selection of the serial interfaces
- selection and setting of the operating parameters (software)

The hardware-configuration is determined by a fixed numerical code (see tables). The combination possibilities of the operating parameters can be so varied and individual that we have to know first the profile of requirements before we can determine the identity-code. For this, please contact our sales department.

Wind sensors

order number	wind sensor model		characteristic	
	wv	wd	wv	wd
4.4070.01.xxx	4.3519.03.000	4.3129.03.000	713 Hz (50 m/s)	serial-synchronous 5bit)
4.4071.01.xxx	4.3518.00.000	4.3128.00.000	648 Hz (50 m/s)	parallel (4bit)
4.4072.01.xxx	4.3303.22.000	4.3125.32.100	1042 Hz (50 m/s)	serial-synchronous 8bit)
4.4073.01.xxx	4.3350.00.000	4.3125.32.100	1000 Hz (50 m/s)	serial-synchronous 8bit)

Serial Interfaces (Output)

order number	type of output	characteristic
4.40xx.xx.0xx	Fibre optic cable	Type HFBR 1523 send only
4.40xx.xx.5xx	RS485	Half duplex
4.40xx.xx.7xx	RS422	send only
4.40xx.xx.9xx	Current Loop	send only (20mA)

Example of order in the following:

Wind sensor <i>compact</i>	order number
Type 4.3519.03.000, Type 4.3129.03.000	4.4070.01.xxx
Serial output	
RS485	x.xxxx.xx.5xx
Operating parameters (software) (see item 4)	
acc. to profile of requirements (on request)	x.xxxx.xx.x07
	<hr/>
order number	4.4070.01.507

4 Setting of Operating Parameters (Software)

As already mentioned above, the combination possibilities of setting the operation parameters are numerous. The programming (configuration) of the parameters is carried out in our factory and is stored on the interface in an EEROM.

- **The delivery comprises an individual configuration record.**

Selection Possibilities:

DESCRIPTION	SELECTION POSSIBILITIES						
wind sensor model	wv wd	No 4.3519...	No 4.3518...	No 4.3303...	4.3350..		
		No 4.3129...	No.4.3128...	No.4.3125...	4.3125..		
data output *only in connection with RS 485	automatic	* on request					
data output rate * in 0,1sec steps	* free selectable						
baudrate	300	600	1200	2400	4800	9600	
Data format 1 startbit / 1 stopbit	8bit no parity	7bit even parity	7bit odd parity				
dimension wind velocity	m/s	Kn	km/h	Beaufort			
resolution wind direction	free selectable						
possible contents of data telegram * 30 sec gliding mean value	WV mom	WD mom	WD mean*	Check- sum	ASCII charact		
range of check sum forming (CS) im DT. **	free selectable						
number of characters in the dt	2.....28						
error-character in the dt	All standard ASCII-characters, excepted " < > ' ~ % "						

dt = data telegram, wv = wind velocity, wd = wind direction, cs = checksum

**The check sum is formed by XOR-combining of all characters in the stated range with 00H. The transmission of the check sum is effected in two 4bit nibble by transforming into two ASCII-characters (0..9 – A..F).

Example for setting of operation parameters in the following:

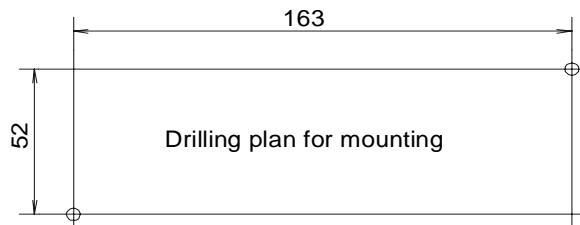
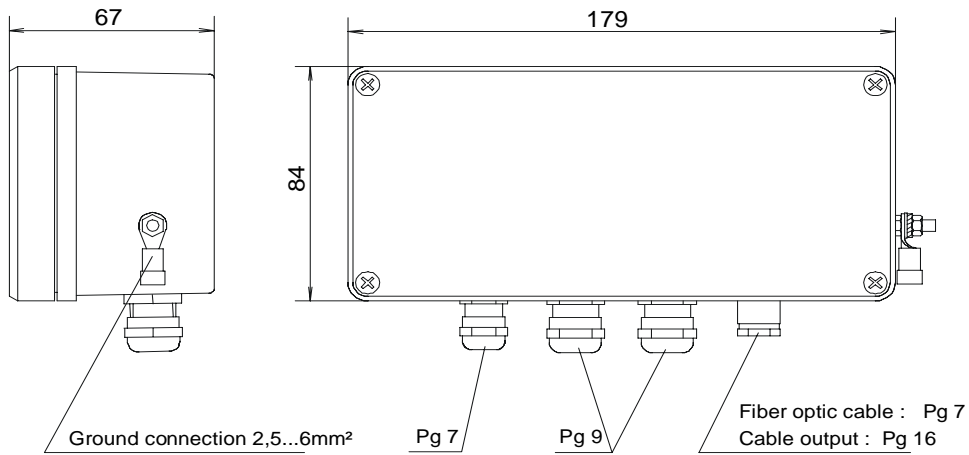
Profile of Requirements:

- wind sensor model: **4.3303....., 4.3125..... (serial 8bit)**
- data output : **automatic**
- data output rate: **0,5 sec**
- baudrate / format: **1200 / 8bit no parity**
- telegram-format **[STX]xx.x xxx*xx[CR][LF][ETX]**
- cs of the characters from...to **2.....9**
- variables (order) **WG WR CS**
- wv-dimension **m/s**
- error-character (e.g. FF.F) **F**

5 Technical Data

Data inputs	: f (max) = 1600 Hz (wind velocity) Thies - serial (wind direction) 4 bit - parallel (wind direction)
Measuring Values	: 1 sec instantaneous value wind velocity instantaneous value wind direction 30 sec gliding mean value (vectorial) win direction
Scanning rate wind direction	: 10 Hz
Voltage supply	: 24 V AC/DC $\pm 15\%$ (wind transmitter operation with heater)
Contact rating	: max. 40 VA
Voltage supply wind transmitter	: 5 V 15 V (only wind transmitter 4.3518... / 4.3128...)
Fuse F1 (Interface)	: 80 mA M
Fuse F2 (wind transmitter heater)	: 2 A M
Input wind velocity	: see models
Input wind direction	: see models
Serial output	: see models
Type of protection	: IP 65 in acc. with German Indus. Standards Code DIN 40050
Weight	: ca. 850 g

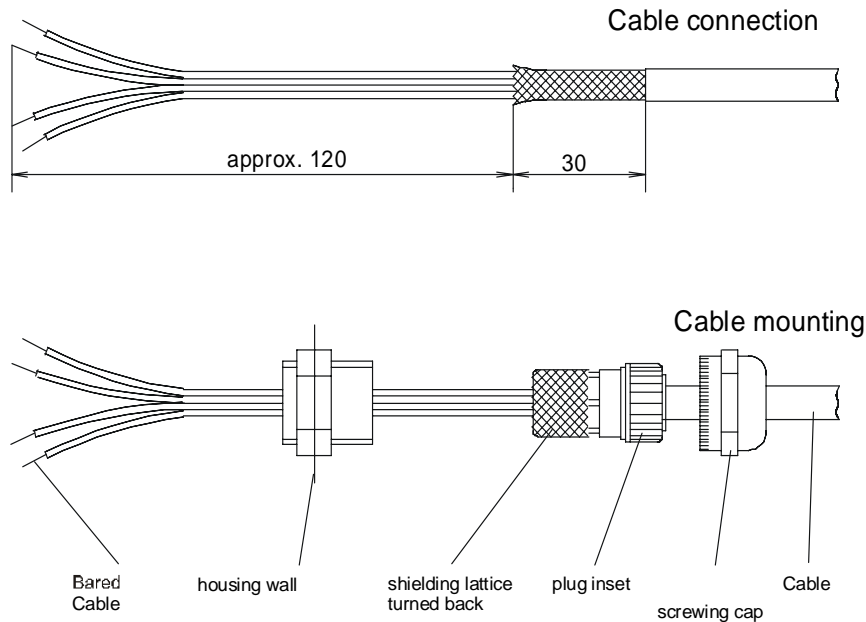
5.1 Scale Drawing



6 Installation

The wind interface can be mounted to a vertical wall both inside rooms as well as out-of-doors. To mount, unscrew the cover of the case. You will see two boreholes. Mount the instrument to the wall through these two boreholes with 4 mm screws.

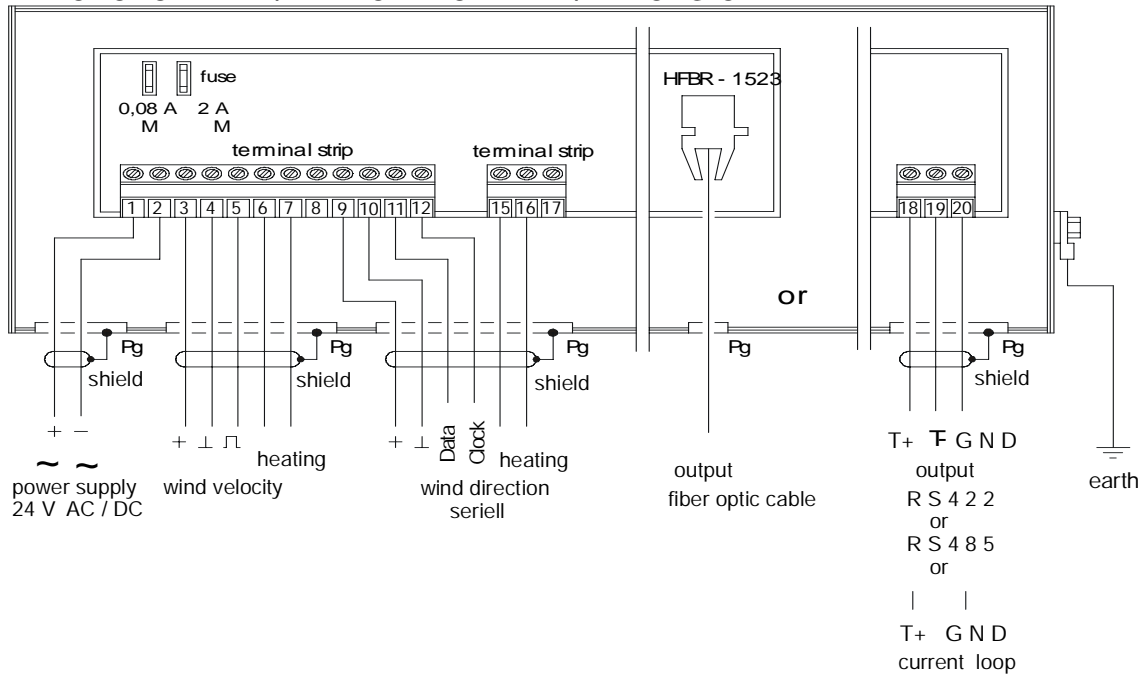
Connect the interface electrically as shown in the following circuit diagrams, keeping the connected wind transmitter in mind. Insert the transmitter cables through the corresponding screw- couplings. For proper EMC installation, invert the woven shield of the cable over the clamping connection of the screw couplings.



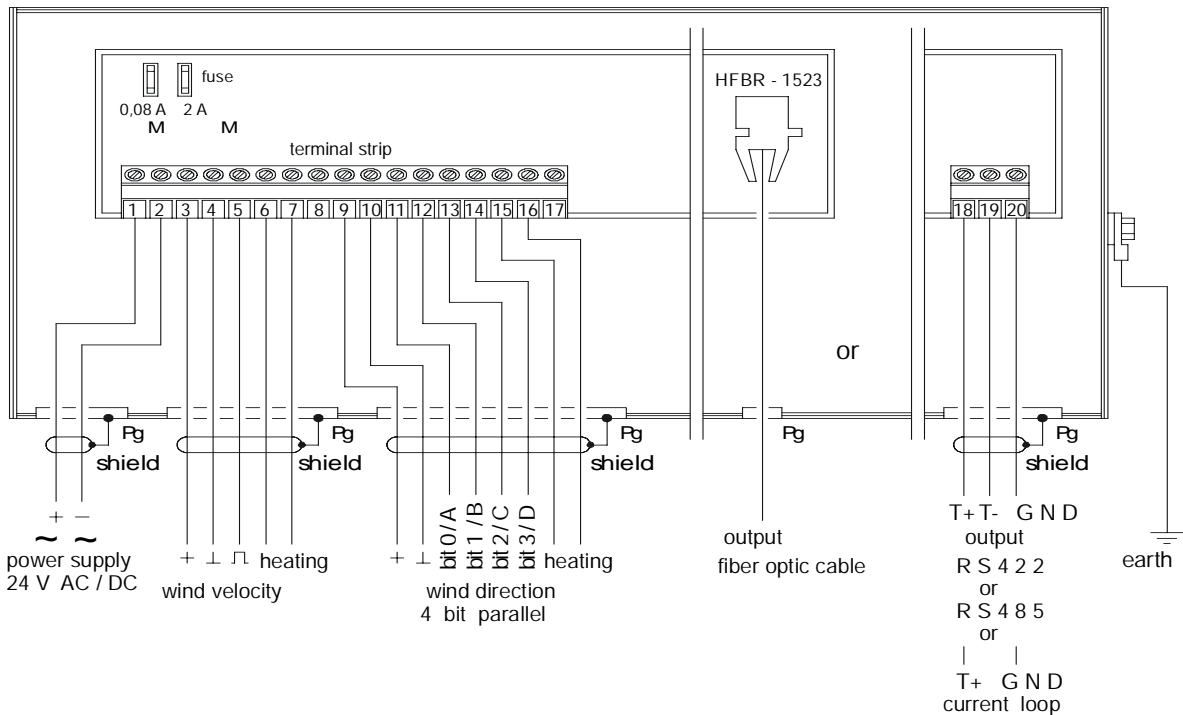
Insert the fibre-optic cable through the right-hand screw coupling. Unscrew the gasket and slip the individual parts over the grey end of the fibre optic cable. (Mount the rubber gasket on the side). Insert the grey plug of the fibre optic cable into the corresponding receptacle on the circuit board.

7 Circuit Diagrams

4. 4070. 01. xxx / 4. 4072. 01. xxx / 4.4073.01. xxx



4. 4071. 01. xxx



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