

MODE	
MODE 0	<p>Adjustment of brightness¹: The brightness of the LED display is dimmed in 18 steps via buttons ▲ & ▼.</p> <p>Adjustment of MAX and MIN brightness: The previously set brightness can respectively be stored as MAX or MIN value via simultaneous actuation of buttons ▲ or ▼ and the „Enter” button.</p> <p>Retrieval of MAX and MIN brightness: The stored brightness values are retrieved by pressing buttons ▲ or ▼ for 3 seconds.</p>
MODE 1	<p>Adjustment of the wind velocity dimension: The wind velocity dimension (km/h, m/s, kn and Beaufort) is set by means of buttons ▲ & ▼</p>
MODE 2	<p>Adjustment of the wind display: The display of REL or TRUE Wind is set via buttons ▲ & ▼</p>
MODE 3	<p>Activation of the wind (rel/true) remote control for external wind display(s) The remote control is activated or deactivated via buttons ▲ & ▼</p> <p>Following signs are additionally shown in the WT-display (minus flashes): 3-0 Remote control ON² 3-1 Remote control OFF</p>
MODE 4	<p>Adjustment of the wind reference for the Winddisplay and ext. Winddisplay(s) The wind reference of the True Wind of the Winddisplay(s) is adjusted via buttons ▲ & ▼</p> <p>Following signs are additionally shown in the WT-display (minus flashes): 4-0 Reference to the ship's axis² 4-1 Reference to geographic North</p>
MODE 5	<p>Telegram filter adjustment The respective telegram filter for the NMEA protocols is selected via buttons ▲ & ▼</p> <p>Following signs are additionally shown in the WT-display (minus flashes): 5-0 3-digit filter mask² 5-1 5-digit filter mask \$xxMMM.... e.g. \$xxVBW \$MMMMM..... e.g. \$VDVBW</p>
MODE 6	<p>Setting of the COM1 (RS422 / RS485) Through the buttons ▲ & ▼ the interface function is set. 6-0 :COM1 = RS422 (full-duplex) standard 6-1 :COM1 = RS485 (half-duplex). Requiring the VDT-tel. from Ultrasonic</p>
MODE 7	<p>Setting function of clamp connector Through buttons ▲ & ▼ function of the clamp connector „Res.“ is set. 7- 0 :INFO & RESET 7- 1 :Entering course of the ship</p>

MODE	
MODE 8 MODE 9 MODE A MODE B	Setting the brightness of the 4 levels of the DDC telegram ³ Mode 8: O Backlighting Off Mode 9: D Daytime (Day) Mode A: K DusK (Dusk) Mode B: N Nighttime (Night)
MODE C	Setting the characteristic of the wind transmitter ⁴ C – 0: NO wind transmitter compact C – 1: wind transmitter compact

¹)Setting is only possible as long as no NMEA DDC command has been received after switching on (or pressing the info button).

²) Delivery status

³)DDC-telegram see chapter 8

⁴)MODE C: see chapter. 7.2

Button „INFO & RESET“:

An LED test is started by pressing the button **INFO & RESET**.

- All LED's illuminate
- Display of device parameters (refer to table 3)
- Restart of the Winddisplay LED.

Example

Device parameters	Display
Software	
Version No. (e.g.)	r 1.1
Input type	
Wind transmitter input	An0
COM- interface	An1
Hardware options	
UART-interface	Au-
UART & ANALOG-IF	AuA
Wind transmitter type	
Classic	CL1
Classic	CL2
Compact	CoP
First Class	F-C
NACOS telegram	
Wind reference North	C4E
Wind reference ship	C4S
CUSTOMER telegram	
Wind reference North	C5E
Wind reference ship	C5S
Winddisplay(s)	
Wind reference North	C1E

Wind reference ship	C1S
Remote Ext. Winddisp.	
Remote Enable	rLE
Remote disable	rLd
Remote Clamp C. Res.	
RESET- Function	rrE
Course Function	rFA
Display only when rFA	
<i>Course forward</i>	<i>r-F</i>
<i>Course backward</i>	<i>r-b</i>
Baud rate	
1200	b12
2400	b24
4800	b48
9600	b96

Table 3: Device parameters

10 Functional Test

The Winddisplay LED carries through some test procedures during a restart or upon actuation of the **INFO & RESET** button (refer to chapter 9). An error code appears in the display in the event of an error (refer to chapter 11). All wind transmitters must be disconnected in order to be able to perform a complete Windinterface test.

11 Error Message

If an error is detected during operation, the respective error code is shown in the display for at least 3 seconds or as long as the error is resident.

Error code	Error	Remark/action
E01	Internal Vcc 5V	Device faulty: Return for inspection.
E02	Vcc Wind transmitter	Disconnect wind transmitter, restart device. If error is still displayed, return device for inspection. Otherwise alternately connect wind transmitters to determine the faulty wind transmitter.
E03	lcc WT	Check wind velocity transmitter connections and lines. If error message persists, wind transmitter is presumably faulty.
E04	lcc WD	Check wind direction transmitter connections and lines. If error message persists, wind transmitter is presumably faulty.
E05	WT-interface	Device faulty: Return for inspection.
E06	WD-interface	Device faulty: Return for inspection.

Error code	Error	Remark/action
E07	WD-serial	Check data connection/line of the wind direction transmitter. If error message persists, wind transmitter is presumably faulty.
E08	WT-overflow	1. Check setting wind transmitter type. 2. Check connection and line. If error message persists, wind transmitter is presumably faulty.
E09	Timeout (COM)	1. No reception – transmitter not active. 2. Check setting of baud rate. 3. Check connections of R422 /lines Rx+ & Rx- 4. Test: Connect Rx+ & Rx- with Tx+ & Tx- . If E11 -> interface OK otherwise COM1 defect.
E10	SIN-buffer overflow	1. Check baud rate, word length. 2. Exchange RS422 connections Rx+ & Rx-.
E11	Protocol format	Wrong telegram.
E12	Check sum	Check transmitted protocol.
E13	WT & WD error	Wind transmitter, error in the telegram (for ex. Ultrasonic).
E14	WT "FF.F"	Wind speed error in the telegram (for ex. Ultrasonic).
E15	WD "FFF"	Wind direction error in the telegram (for ex. Ultrasonic).
E16	REL/TRUE error	Check transmitted protocol (error „a“ appears twice in telegram).
E17	VDT protocol	No reception from ultrasonic - check connection (RS485 half-duplex).
E20 *	COM 3 Timeout	Timeout, no reception.
E21 *	COM 3 error	1. Check Baud rate settings. 2. Check R422 connections/lines Rx+ & Rx-.
E22 *	LOG error (velocity)	No valid velocity values available in telegram. Check protocol(s).
E23 **	COM 2 Timeout	Timeout, no reception.
E24 **	COM 2 error	1. Check Baud rate settings. 2. Check R422 connections/lines Rx+ & Rx-.
E25 **	Gyro error (heading)	No valid heading values available in telegram. Check protocol(s).
E50	Syntax error	Device faulty: Restart, if necessary.
E99	Watchdog	Temporary interference, if a nonrecurring error message appears for 3sec. If error message appears frequently, device faulty.

Table 4: Error message

* These errors are output only when the display is set to "True" (see chapter 9 MODE 2-TRUE)

** These errors are output only when the display is set to reference "North" (see chapter 9 MODE-1)

12 Maintenance

The Winddisplay LED is maintenance-free.

Cleaning

A damp cloth, free of chemical detergents, should be used to clean the screen and casing of the device.

Storage

A dry, dust-free room with temperatures ranging from $-20 \dots +50^{\circ}\text{C}$ is compulsory for storage of the Winddisplay LED. We recommend box storage of the device.

Fuse

A mains fuse is located on the rear panel of the Winddisplay LED. The fuse holder can be opened with a screwdriver.

Attention:

Strictly the following fuses may be used in the event of a fault:

230V ; 0,25AT for Winddisplay 4.3251.00.001 / 002

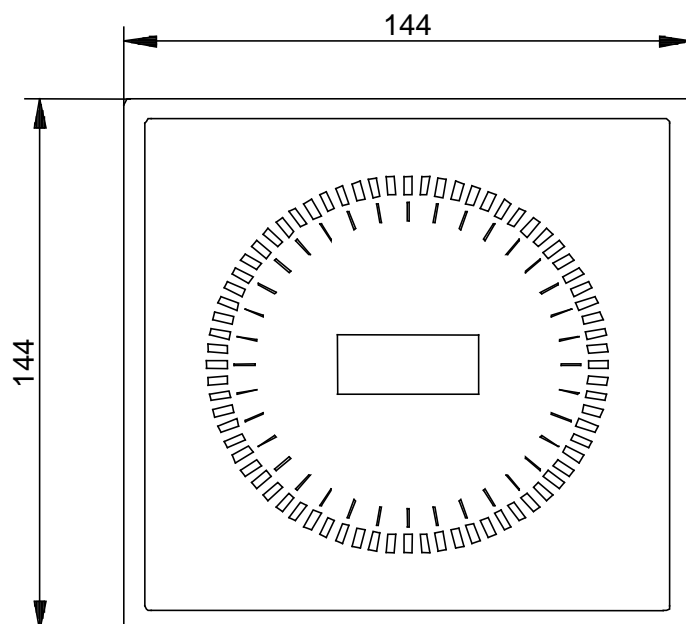
115V.; 0,5AT for Winddisplay 4.3251.01.001 / 002

13 Technical Specifications

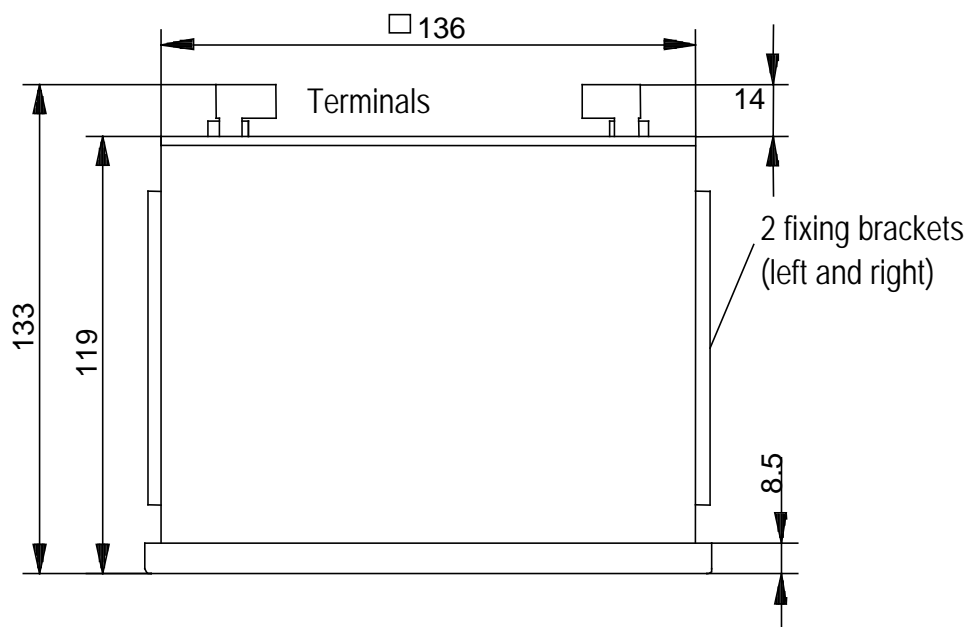
Description		
Wind transmitter inputs		
Wind direction	Input	Thies Seriell Synchron
	Type	Compact 4.3129.00.000 / 4.3129.60.000 Classic 4.3125.x2.100 / 101 Classic 4.3336.x1.00x / 4.3336.x2.00x First Class 4.3150.x0.000
	Sampling rate	10Hz
Wind velocity	Input	Frequency
	Level (Ua)	$U_a \leq 1\text{ V}$, $U_a \geq 3.3\text{V}$
	Frequency (max)	Compact 1000Hz Classic 1550Hz Classic 850Hz First Class 1600Hz
	Type	Compact 4.3519.00.000 Classic 4.3303.22.000/007/008/018/4.3336.x1.00x 4.3336.x2.00x First-Class 4.3351.x0.000
	Sampling rate	1Hz
Wind transmitter power supply	Vcc WR / WG	5.1 ... 5.7V
	Icc max	60mA
Interfaces		
Digital interfaces		6 serial interfaces (EN 61162-1)
	Type	RS422 (RS485)
Data format	Input	(3 * RS422) 8N1 (COM1 : also 7E1, parity bit is disregarded) Receipt of the NMEA telegrams VBW, VHW, VTG, HDT and DDC (see chapter 8)
	Baud rate	1200, 2400, 4800, 9600 Bd
Analogue inputs	Only with model	4.3251.0x.002
Rel. humidity	Input	0 ... 1V (= 0 ... 100% rel. humidity)
	Resolution	10bit
	Precision	$\pm 0,1\%$
Temperature	Input	Pt 100 (-40 ... 60°C)
	Resolution	12bit
	Precision	$\pm 0,2\text{K}$
Integr. Pressure sensor	Only with model	4.3251.0x.002
Barometr. air pressure	Measuring range	750 ... 1100hPa
	Resolution	0.1hPa
	Precision	$\pm 1.5\text{hPa}$ @ 25°C

	Temperature influence	±1.5hPa at constant pressure
Voltage supply of external sensors	Only with model	4.3251.0x.902
	Output	2 x Voltage U (Vcc) 12V (is programmed on request).
	Icc (max)	U1 _{Vcc} + U1 _{Vcc} <110mA
	Fuse	Polyswitch ca. 140mA
Operating voltage	mains	230V AC (with 4.3251.00.00x) 115V AC (with 4.3251.01.00x)
	Mains fuse	0.25AT resp. 0,52AT
	Low potential voltage	18 ... 28V AC 12 ... 35V DC
	Current consumption	Max. 1000mA with 12V DC
Display		
Wind velocity	Dimension	m/s, kn, km/h, Bft
	WT - display	3-digit LED, height 15mm
	Resolution	0.1m/s 0.1kn as of 100kn 1kn 1km/h 1Bft
Wind direction	Resolution	5°
	LED's	72 pieces; 2 x 4mm, Colour: red, green
	Follow-up time of the variation	1 step /sec
	WD-delay	□□= 6sec.
General		
	Temperature range	-10 ... +50°C
	Humidity range	non-condensing
	EMV	EN 60945, EN 61000-6-2, EN 61000-6-3
	Oscillation	EN 60945, IEC 60068-2-6
	Environmental audit	EN 60945
	Compass safety distance	EN 60945 Standard magnetic compass 0.50m Magnetic steering compass 0.35m
	Low potential voltage	EN 61010
Casing		
	Material	aluminium
	Dimensions	144 x 144mm depth: 119mm
	Weight	1.5kg
	Protection class	IP23; EN 60529

14 Dimension Diagram



Control panel opening
as per DIN 43700
 $138^{+1} \times 138^{+1}$



15 EC-Declaration of Conformity

Manufacturer: Adolf Thies GmbH & Co. KG
 Hauptstraße 76
 37083 Göttingen, Germany
<http://www.thiesclima.com>

Product: Wind Display LED

Doc. Nr. 2003-44501_CE

Article Overview:

4.3250.00.000	4.3250.00.000	4.3250.00.040	4.3250.00.041	4.3250.00.061	4.3250.00.073	4.3250.00.140	4.3250.00.141	4.3250.01.040	4.3250.01.041
4.3250.01.061	4.3250.01.073	4.3250.01.140	4.3250.01.141	4.3250.01.161	4.3250.01.173	4.3250.01.900	4.3250.01.902	4.3251.00.000	4.3251.00.001
4.3251.00.002	4.3251.00.040	4.3251.00.041	4.3251.00.061	4.3251.00.073	4.3251.00.140	4.3251.00.141	4.3251.00.161	4.3251.00.173	4.3251.00.900
4.3251.00.902	4.3251.01.000	4.3251.01.001	4.3251.01.002	4.3251.01.040	4.3251.01.041	4.3251.01.061	4.3251.01.073	4.3251.01.140	4.3251.01.141
4.3251.01.161	4.3251.01.173	4.3251.01.902	4.3250.00.161	4.3250.00.173					

The indicated products correspond to the essential requirement of the following European Directives and Regulations:

2014/30/EU	26.02.2014	DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.
2014/35/EU	26.02.2014	DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.
2017/2102/EU	15.11.2017	DIRECTIVE (EU) 2017/2102 of the European Parliament and of the Council of November 15, 2017 amending Directive 2011/65 / EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
2012/19/EU	13.08.2012	DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE).
2014/90/EU	23.07.2014	DIRECTIVE 2014/90 / EU of the European Parliament and of the Council of 23 July 2014 on marine equipment and repealing Council Directive 96/98 / EC Text with EEA relevance.
2018/1139/EU	04.07.2018	Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency.

The indicated products comply with the regulations of the directives. This is proved by the compliance with the following standards:

DIN EN 60945	2003-07	Maritime navigation and radiocommunication equipment and systems. General requirements. Methods of testing and required test results
DIN EN 61000-6-2	2019-11	Electromagnetic compatibility Immunity for industrial environment
DIN EN 61000-6-3	2012-11	Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments
DIN EN 61010-1	2020-03	Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements
DIN EN 63000	2019-05	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Legally binding signature:



General Manager - Dr. Christoph Peper

Legally binding signature:



Development Manager - ppa. Jörg Peterleit

This declaration certifies the compliance with the mentioned directives, however does not include any warranty of characteristics.

Please pay attention to the security advises of the provided instructions for use.

16 EC-Declaration of Conformity

Manufacturer: Adolf Thies GmbH & Co. KG
 Hauptstraße 76
 37083 Göttingen, Germany
<http://www.thiesclima.com>

Product: Wind Display LED

Doc. Nr. 2003-44501_CA

Article Overview:

4.3250.00.000	4.3250.00.000	4.3250.00.040	4.3250.00.041	4.3250.00.061	4.3250.00.073	4.3250.00.140	4.3250.00.141	4.3250.01.040	4.3250.01.041
4.3250.01.061	4.3250.01.073	4.3250.01.140	4.3250.01.141	4.3250.01.161	4.3250.01.173	4.3250.01.900	4.3250.01.902	4.3251.00.000	4.3251.00.001
4.3251.00.002	4.3251.00.040	4.3251.00.041	4.3251.00.061	4.3251.00.073	4.3251.00.140	4.3251.00.141	4.3251.00.161	4.3251.00.173	4.3251.00.900
4.3251.00.902	4.3251.01.000	4.3251.01.001	4.3251.01.002	4.3251.01.040	4.3251.01.041	4.3251.01.061	4.3251.01.073	4.3251.01.140	4.3251.01.141
4.3251.01.161	4.3251.01.173	4.3251.01.902	4.3250.00.161	4.3250.00.173					

The indicated products correspond to the essential requirement of the following European Directives and Regulations:

1091	08.12.2016	The Electromagnetic Compatibility Regulations 2016
1101	08.12.2016	The Electrical Equipment (Safety) Regulations 2016
RoHS Regulations 2010.01.2021		The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
3113	01.01.2021	Regulations: waste electrical and electronic equipment (WEEE)
2014/90/EU	23.07.2014	DIRECTIVE 2014/90 / EU of the European Parliament and of the Council of 23 July 2014 on marine equipment and repealing Council Directive 96/98 / EC Text with EEA relevance.
2018/1139/EU	04.07.2018	Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency.

The indicated products comply with the regulations of the directives. This is proved by the compliance with the following standards:

BS EN 60945	15.04.2003	Maritime navigation and radiocommunication equipment and systems. General requirements. Methods of testing and required test results
BS EN IEC 61000-6-2	25.02.2019	Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments
BS EN IEC 61000-6-3	30.03.2021	Electromagnetic compatibility (EMC). Generic standards. Emission standard for equipment in residential environments
BS EN 61010-1+A1	31.03.2017	Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements
BS EN IEC 63000	10.12.2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Legally binding signature:



General Manager - Dr. Christoph Peper

Legally binding signature:



Development Manager - ppa. Jörg Petereit

This declaration certifies the compliance with the mentioned directives, however does not include any warranty of characteristics.

Please pay attention to the security advises of the provided instructions for use.

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

ADOLF THIES GMBH & CO. KG

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