

# HANDYLOG

## Instruction for Use

9.3406.00.000



Dok. No. 021870/06/20

THE WORLD OF WEATHER DATA

### Safety Instructions

- Before operating with or at the device/product, read through the operating instructions. This manual contains instructions which should be followed on mounting, start-up, and operation. A non-observance might cause:
  - failure of important functions
  - endangerment of persons by electrical or mechanical effect
  - damage to objects
- Mounting, electrical connection and wiring of the device/product must be carried out only by a qualified technician who is familiar with and observes the engineering regulations, provisions and standards applicable in each case.
- Repairs and maintenance may only be carried out by trained staff or **Adolf Thies GmbH & Co. KG**. Only components and spare parts supplied and/or recommended by **Adolf Thies GmbH & Co. KG** should be used for repairs.
- Electrical devices/products must be mounted and wired only in a voltage-free state.
- **Adolf Thies GmbH & Co. KG** guarantees proper functioning of the device/products provided that no modifications have been made to the mechanics, electronics or software, and that the following points are observed:
- All information, warnings and instructions for use included in these operating instructions must be taken into account and observed as this is essential to ensure trouble-free operation and a safe condition of the measuring system / device / product.
- The device / product is designed for a specific application as described in these operating instructions.
- The device / product should be operated with the accessories and consumables supplied and/or recommended by **Adolf Thies GmbH & Co. KG** .
- Recommendation: As it is possible that each measuring system / device / product may, under certain conditions, and in rare cases, may also output erroneous measuring values, it is recommended using redundant systems with plausibility checks for **security-relevant applications**.

### Environment

- As a longstanding manufacturer of sensors Adolf Thies GmbH & Co KG is committed to the objectives of environmental protection and is therefore willing to take back all supplied products governed by the provisions of "ElektroG" (German Electrical and Electronic Equipment Act) and to perform environmentally compatible disposal and recycling. We are prepared to take back all Thies products concerned free of charge if returned to Thies by our customers carriage-paid.
- Make sure you retain packaging for storage or transport of products. Should packaging however no longer be required, please arrange for recycling as the packaging materials are designed to be recycled.



### Documentation

- © Copyright **Adolf Thies GmbH & Co KG**, Göttingen / Germany
- Although these operating instructions have been drawn up with due care, **Adolf Thies GmbH & Co KG** can accept no liability whatsoever for any technical and typographical errors or omissions in this document that might remain.
- We can accept no liability whatsoever for any losses arising from the information contained in this document.
- Subject to modification in terms of content.
- The device / product should not be passed on without the/these operating instructions.






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# 1 Model



**Configuration**  
**hardware and software**  
(see 10. Product matrix)

<b>Connectable sensors</b>				
<b>Pyranometer</b> 7.1415.03.710  	<b>Baro Transmitter</b> 3.1157.10.000  	<b>Wind Transmitter</b> <b>First Class</b> 4.3351/52.10.000 4.3352.x0.400  	<b>Wind Sensor</b> <b>Compact</b> <b>with handle</b> 510016  	<b>Hygro-Thermo</b> <b>Transmitter</b> <b>Compact</b> 1.1005.54.780  
Radiation	Air pressure	Wind speed		Temperature
Housing temp.				Humidity

Additional sensors can be configured on request.

The "HandyLog" is a display device that is configured to match the sensors in terms of hardware and software.

The display device is made of ABS plastic.

The Display device and the sensor are powered by an integrated lithium-ion battery which can be recharged via the integrated mini USB connector.

The readings of each measuring are recorded in a dedicated file in ASCII- format. The memory size available for logging data is 4MB. Stored data can be transferred to PC by the use of the USB interface.

Scope of delivery:

- Sensor, hardware and software configuration, cables and connectors
- Display with integrated rechargeable battery
- USB cable
- Instruction for use

## 2 Application

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The „HandyLog“ serves for the measurement and logging of measurements, and is suited for mobile use.

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**Remark:**

*In order to achieve an exact measurement of the sensors, please hold the anemometer in vertical position.*

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## 3 Display

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The following measuring values are indicated on liquid crystal display:

- Wind velocity as instantaneous value

In addition, the following information are indicated on the LC-display:

- Battery status
- Time and Date

## 4 Operation

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### Preparation:

- Connect the sensor with its cable to the display device.
- Check the battery status on the LCD display; if necessary, the battery has to be charged with the included USB cable.

**Note: If the device is not in use, the device should be charged regularly every 6 months.**

### Switching-on:

- Press the button on the display unit until the instantaneous value appears in the LCD display, this will start the measurement and logging.

### Switching-off:

- Press the button again until the numbers on the display disappear. Then the logging is also stopped.

## 5 Configuration

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The HandyLog is delivered configured. The configuration between sensor and the display unit is set to the following parameters and setting values.

Parameter	Setting value
SN	Specific to order
Name	HandyLog
MeasInterval	1 seconds
MeasDelay	0 second
LogInterval (Determines interval for averaging for measured value display and recording)	10 seconds
Date	Date according time zone Europe/Berlin Central European
Time	Time zone Europe/Berlin Central European
Transfer function 1 according standard characteristic of the chosen sensor	Configured to delivered sensor with the Handy-Log
Transfer function 2 according dedicated sensor calibration characteristic	Optional configured if specific calibration certificate of sensor applies. Can be configured afterwards by commands (see page 10 and p.2 command)

The parameters are described under points 6.1 and 6.2 on pages 6 to 10.

## 6 Configuration HandyLog by customer

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For setting configuration to HandyLog, it is necessary to connect USB service cable between datalogger and PC. On PC you need to use terminal software (can be e.g. Hyperterminal or TeraTerm). Following this steps, go to Settings / Serial Port menu in the terminal program, select the COM, set baud rate to 115200 baud for USB (COM1 & 2 can differ), 8 data bits, none parity and 1 stop bit.

To start the configuration type command “**Service**” (all commands are case sensitive). You will receive answer „**Service mode started**“.

Now all setup commands are available, and described in following list of commands.

### 6.1 List of Commands

Command	Description
<b>Service</b>	Enter Service mode
<b>?</b>	Displays current settings
<b>Name</b>	Station name
<b>Config?</b>	Displays current inputs and polynomials settings
<b>ActualData</b>	Show last measured data
<b>Date</b>	Set current date
<b>Time</b>	Set current time
<b>MeasDelay</b>	Delay after Measuring interval to start measurements in seconds
<b>MeasInterval</b>	Measuring interval in seconds
<b>LogInterval</b>	Interval between logging in seconds
<b>Serial1</b>	Baud rate for serial1 in bps
<b>p x, 0=a, 1=b, 2=C, 3=d0</b>	Command format for configuring transfer polynomial function preconfigured to THIES sensor delivered with display unit
<b>o=1, l=D1, L=1, N=1, X=1, S=1, V=0, P=1, A=m/s</b>	Configure outputs
<b>SD?</b>	Show files on SD card
<b>SaveConfig</b>	Save current configuration to memory
<b>Reset</b>	Reboot the datalogger
<b>Exit</b>	Exit from service mode

## 6.2 Description of commands

### **Service**

Access: Service mode  
 Description: Enter Service mode  
 Value range: -  
 Initial value: -  
 Spelling: Service  
 Sample: *Service*  
*Service mode started*

### **?**

Access: Service mode  
 Description: Displays current settings  
 Value range: -  
 Initial value: -  
 Spelling: ?  
 Sample: *SN 002/1236*  
*Name HandyLog*  
*MeasInterval 5*  
 ...

### **Name**

Access: Service mode  
 Description: Shows the station name  
 Value range: -  
 Initial value: -  
 Spelling: Name  
 Sample: *Name*  
*Name HandyLog*

### **Config?**

Access: Service mode  
 Description: Displays current inputs and polynomials settings  
 Value range: -  
 Initial value: -  
 Spelling: Config?  
 Sample: *Config?*  
*a 1, M=0, V=0, P1, O=0*  
*a 2, M=0, V=0, P1, O=0*  
*a 3, M=0, V=0, P1, O=0*  
 ...  
*p 1, 0=0.34, 1=0.079, 2=0, 3=0*  
 ...



### ***ActualData***

Access: Service mode  
Description: Show last measured data  
Value range: -  
Initial value: -  
Spelling: ActualData  
Sample: *ActualData 30*

### ***Date***

Access: Service mode  
Description: Set current date  
Value range: dd.mm.yyyy  
Initial value: -  
Spelling: Date 25062018

### ***Time***

Access: Service mode  
Description: Set current time - hours: minutes: seconds  
Value range: hh.mm.ss  
Initial value: -  
Spelling: Time 10:02:15

### ***MeasDelay***

Access: Service mode  
Description: Delay after Measurement to start next measurements in seconds  
Value range: 0 ... 60  
Initial value: 0  
Spelling: MeasDelay 0

### ***MeasInterval***

Access: Service mode  
Description: Measuring interval in seconds  
Value range: 0 ... 60  
Initial value: 1  
Spelling: MeasDelay 0

### **LogInterval**

Access: Service mode  
 Description: Interval between logging in seconds  
 Value range: 0 ... 3600  
 Initial value: 10  
 Spelling: MeasDelay 600

### **Serial1**

Access: Service mode (Command „Service“)  
 Description: Baud rate for serial1 in bps  
 Value range: 300, 1200, 2400, 9600, 19200, 38400, 57600, 115200  
 Initial value: 115200  
 Spelling: Serial1 9600

### ***p x 0=a, 1=b, 2=c, 3=d***

Access: Service mode and command configure outputs  
 Description: Command format for configuring a transfer cubical polynomial function (3 degrees) which applies for the connected sensor.  
 $v[m/s] = a + f \times b + f^2 \times c + f^3 \times d$  v: Wind Velocity, f: Input Frequency  
 The supplied sensor is preconfigured for the HandyLog display unit.  
 Value range: X: 1-9  
 a,b,c,d: 0,001-9999  
 Initial value: -  
 Spelling: p x, 0=a, 1=b, 2=c, 3=d  
 Sample: p 1, 0=0,34, 1=0,079, 2=0, 3=0  
 p1= Transfer function no. 1

*a = Offset correction value (specific per sensor type)  
 b = Slope correction value (specific per sensor type)  
 c = does not apply in this case 0  
 d = does not apply in this case 0  
 In case a dedicated calibration for the sensor applies  
 coefficient “a” correspond to offset and “b” to slope from the calibration certificate. We recommend to set it as p 2.*

### **Configure outputs „o=1, l=D1, L=1, N=1, X=1, S=1, V=0, P=1, A=m/s“**

Access:	Service mode
Description:	Configure outputs for transmission functions using the example of the standard configuration Thies
Value range:	-
Initial value:	-
Spelling:	o=1, l=D1, L=1, N=1, X=1, S=1, V=0, P=1, A=m/s
Sample:	<i>o=1 → output no. 1</i> <i>l=D1 → Input no. D1(frequency input)</i> <i>L=1 → Logging yes (no = 2)</i> <i>N=1 → Logging min. value yes (no =2)</i> <i>X=1 → Logging max. value yes (no=2)</i> <i>S=1 → Logging standard deviation yes (no=2)</i> <i>V=0 → Vector calculation no (yes=1)</i> <i>P=1 → transfer function no.p 1</i> <i>A=m/s → Shows in display „m/s“</i>

### **SD?**

Access:	Service mode
Description:	Show files on SD card
Value range:	-
Initial value:	-
Spelling	SD?

### **SaveConfig**

Access:	Service mode
Description:	Save current configuration to memory
Value range:	-
Initial value:	-
Spelling:	SaveConfig

### **Reset**

Access:	Service mode
Description:	Reboot the datalogger
Value range:	-
Initial value:	-
Spelling:	Reset

### **Exit**

Access:	Service mode
Description:	Exit from service mode
Value range:	-
Initial value:	-
Spelling	Exit

## 7 Logging

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To gather the logged data from display device, connect the display unit by the enclosed USB cable to the PC. In the file managing system of the PC the HandyLog should appear as a USB memory drive. The logged measuring data files can easily be transferred to the PC by drag & drop for the purpose of further processing or saving.

The following shows sample data from an anemometer and its formatting explanation.

#Name	HandyLog	Name of the Instrument
#SN	004/918	Serial Number of Display Unit
Date, Time, Actual Value_Avg, Actual Value_Min, Actual Value_Max, Actual Value_StdDev		Logged Data Structure

Sample Logged Data Structure:

05.07.2018,17:19:39,67.266,0.419,0.419,114.396

1 column	05.07.2018	Date of recording
2 column	17:19:39	Storing time of logging interval
3 column	67.266	Current wind speed of logging interval
4 column	0.419	Minimum wind speed of logging interval
5 column	0.419	Maximum wind speed of logging interval
6 column	114.396	Standard deviation wind speed of logging interval, the standard deviation makes only sense at a logging interval of more than 1 seconds.

The measured values in this example are scaled in m/s, the scaling / resolution and unit is sensor-specific.

## 8 Maintenance

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After appropriate set up / assembly, the device works maintenance-free. Heavy contamination can lead to problems with the sensors. The sensor and display unit have to be kept clean.

Battery:

The battery symbol in the LCD indicates the battery status. When the status is low, the battery must be charged by connecting the USB cable to a PC or USB power supply.

## 9 Technical Data

<b>Display device HandyLog</b>	
Representation	
Measuring value	specific to sensor
Dimension	specific to sensor
Resolution	specific to sensor
Battery status	Symbol
Exceeding of measuring range	specific to sensor
Recording	
Recording Interval	1sec ... 60min.
Recorded Values	see Chapter 5
File Format	CSV (Comma Separated Format)
File System	FAT 32
Memory Size	4MB
General	
Real Time Clock accuracy	10ppm
Display Instrument	LCD – display, 5 digits
Power supply	2600mAh Li-Io rechargeable battery, approx. runtime with sensor > 48h
Power consumption	7mA operating current 10µA standby current
Excitation Voltage for Sensor	12V / 150mA max.
connection	4 – pole plug
Ambient temperature	-20 ... 60 °C
Dimensions	160 x 90 x 25mm (l x w x h)
Weight	190 g
Ingress Protection	IP 54
Material	Plastics ABS, black

The technical data of the sensors can be found in the respective instructions for use. The specified accuracies of the sensors can only be achieved if the respective instructions for use are followed.


## 10 Product matrix

HandyLog	Sensor	Software Configuration	Cable Configuration *
9.3406.00.000	7.1415.03.710	9.3406.00.011	0.1415.03.715
	3.1157.10.000	9.3406.00.014	0.1157.10.915
	4.335x.10.000 4.3352.x0.400	9.3406.00.013	0.3350.10.915
	510016	9.3406.00.010	with 510016 included
	1.1005.54.780	9.3406.00.012	0.1005.54.915

\*) with cable and plug

## 11 Accessories (optional)

The following accessories are available for the digital *HandyLog*:

Accessories	Ordner number	Details
	214000	<p>Stable polypropylene copolymer case with matching inlay suitable for digital anemometer <i>HandyLog</i></p> <ul style="list-style-type: none"> <li>• waterproof, dustproof, IP 67 certified</li> <li>• automatic pressure compensation valve</li> <li>• rubberized handle</li> </ul> <p>Dimension: 258 x 243 x 117,5mm Weight: 0,892kg</p>
Calibration Certificate	Optionally available for selected sensor	

## 12 EC-Declaration of Conformity

Document-No.: 000404

Month: 06 Year: 20

Manufacturer: **ADOLF THIES GmbH & Co. KG**

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

Description of Product: **Digital Anemometer HandyLog**

Article No.                      **4.3406.10.000**                      **9.3406.00.000**

specified technical data in the document:                      **021823/12/18; 021859/06/20**

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

- |            |  |
|------------|--|
| 2014/30/EU | 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 | 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 |
| 2011/65/EU | DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment   |
| 2012/19/EU | DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE)  |

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

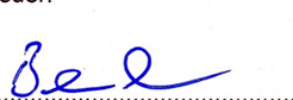

- |                 |   |
|-----------------|---|
| EN 61000-1:2013 | Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements                                  |
| EN 61000-6-3    | Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments |
| EN 61000-4-2    | Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test                          |
| EN 61000-4-3    | Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test |
| EN 61010-1      | Safety requirements for electrical equipment for measurement, control, and laboratory use. Part 1: General requirements                             |
| EN 50581        | Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances            |

Place: Göttingen  
Signed for and on behalf of:

Date: 02.06.2020

Legally binding signature:

issuer:



Thomas Stadie, General Manager

Joachim Beinhorn, Development Manager

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.**

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