

Weather and Thermal Radiation Shield Compact

Instruction for Use

1.1025.80.10x, 1.1025.55.0xx



Dok. No. 021966/08/23

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 instruction has 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 Available Models

Order-No.	Model	Bracket for mast tube mounting	Sensor mount diameter (Sensor diameter)	Cable length
1.1025.55.000	Without fan	Ø 35 ... 50mm	Ø 15 ... 21mm	---
1.1025.55.001	Without fan	Ø 55 ... 60mm	Ø 15 ... 21mm	---
1.1025.55.008	Without fan	Ø 35 ... 50mm	Ø 6 ... 9mm	---
1.1025.55.011	Without fan	Ø 35 ... 50mm	Ø 21 ... 25mm	---
1.1025.55.015	Without fan	Ø 35 ... 50mm	Ø 12 ... 17mm	---
1.1025.80.101	With fan 12 ... 30VDC	Ø 35 ... 50mm	Ø 15 ... 21mm	5m
1.1025.80.103	With fan 12 ... 30VDC	Ø 35 ... 50mm	Ø 15 ... 21mm	10m
1.1025.80.107	With fan 12 ... 30VDC	Ø 35 ... 50mm	Ø 15 ... 21mm	0.3m with plug

Measuring transmitters which can be protected by the weather- and thermal radiation shield, are given in the following table.

Please contact us to inquire about the use of not listed products.

Weather- and thermal radiation shield	Suited measuring transmitters	Order-No.
1.1025.55.000 1.1025.55.001 1.1025.80.101 1.1025.80.103 1.1025.80.107	Hygro Thermo Transmitter– compact Temperature Sensor- compact	1.1005.54.xxx 1.1006.54.xxx 2.1280.00.xxx
1.1025.55.008	Transmitter with Ø 6... 9mm	
1.1025.55.015	Transmitter with Ø 12... 17mm	
1.1025.55.011	Transmitter with Ø 21... 25mm	

2 Application

Radiation and precipitation can falsify measurement data to an unacceptable extent if the temperature sensors and humidity sensors are inadequately protected or perhaps not protected at all. Moreover, the use of unprotected temperature and humidity sensors increases the risk of mechanical damage.

The use of the Weather and Thermal Radiation Shield - compact in an appropriate combination with suitable temperature and humidity sensors reduces to a minimum the possibility of radiation, precipitation or damage influencing the data in a negative manner.

More exactly measuring results are achieved by using the ventilated Weather and Thermal Radiation Shield. The ventilation reduces those errors which might occur during the measurements in a weather hut caused by the so-called "proper climate".

Owing to its outstanding technical properties as well as the compact form of construction, the Weather and Thermal Radiation Shield - compact is predestined for use in professional measurement.

3 Construction and Mode of Operation

The UV-resistant white plastic lamellas prevent direct and reflective radiation from the sensor. The lamellar material is characterized by very good reflective properties, low thermal conductivity and excellent weather resistance.

In the version 1.1025.80.10x with a fan, the air is sucked in, then guided past the sensor at the required flow rate and released again under the 4 upper protective caps.

A built-in monitoring of the fan signals to the user that it is working properly. An unnoticed failure of the fan or a functional restriction can lead to incorrect measured values unnoticed.

The "Fan status" output can be used to monitor whether the fan is functional. A status signal is set when the supply current is exceeded or when the fan wheel is blocked. The output is implemented as an open collector output. The output is implemented as a voltage output. The output can assume the values 0V, 0.5V and 5V.

4 Installation

Attention:

Storing, mounting, and operation under weather conditions is permissible only in vertical position, as otherwise water can get into the instrument.

4.1 Mechanical Mounting

Tools

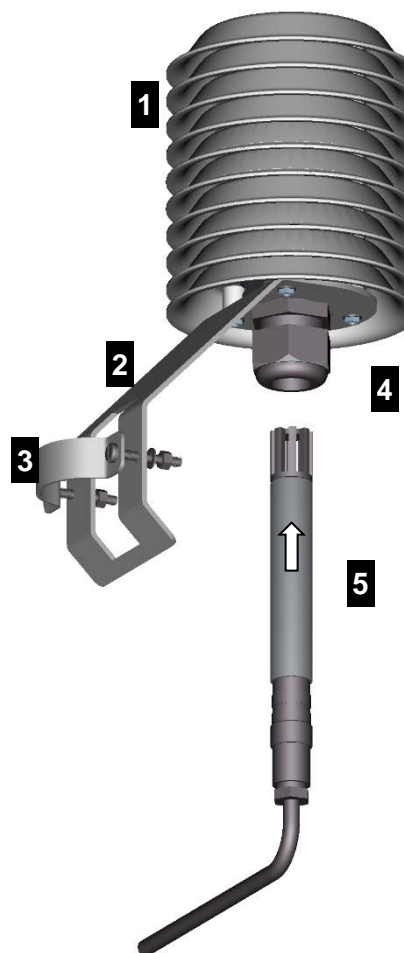
- Screw wrench (SW 19/30/36/42)
- Small screw driver
- Screw wrench SW 8

Mounting: Weather and Thermal Radiation Shield

The Weather- and Thermal Radiation Shield **1** is to be mounted at a position that is presentable for the measurement. Operating position is vertical. The Weather- and Thermal Radiation Shield is delivered with a solid angular sheet-metal holder **2**, which makes it possible to mount the Weather and Thermal Radiation Shield-compact to mast tubes, and, after the clamp **3** is removed, also to plane surfaces.

Mounting: Sensor

1. Loosen sensor screwing **4**.
2. Put the sensor **5** through the sensor screwing into the weather and thermal radiation shield acc. to the figure. Put it in thus far that the lower part of the sensor housing still can be fastened safely.
3. Tighten sensor screwing again by means of screw wrench.
4. Sensor cable/ ventilator cable should be secured at the mast or tube for ex. by means of cable tie.



Mounting possibilities:

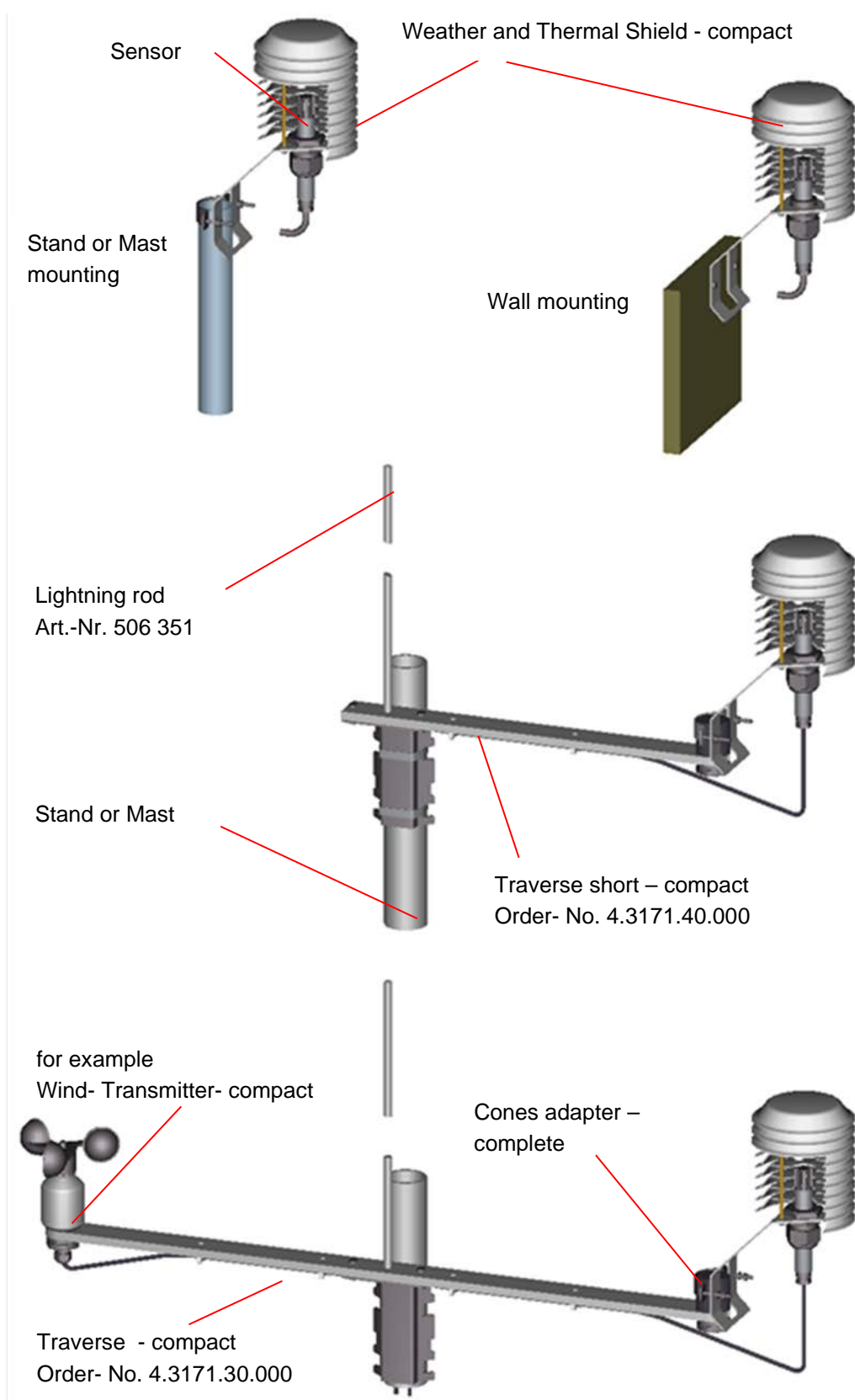


Figure 1: Mounting possibilities

4.2 Electrical Mounting - Systems with fan

Order – No.	Connection Diagram	Connector
1.1025.80.101 1.1025.80.103		without
1.1025.80.107		Front view plug

Figure 2: Cable assignment

4.3 Fan Status

The status output signals the status of the fan. A high signal indicates that the fan is working correctly, if the output is 0V there is a malfunction.

1.1025.80.101 1.1025.80.103	1.1025.80.107

Figure 3: Connection of the status output

The voltage U_{Status} takes on the following values:

Operation condition	Voltage U_{Status}
Normal operation	4,9 ... 5,2V
Fan spins too hard	0,5 ... 0,6V
Fan impeller is blocked	0,5 ... 0,6V
No supply voltage	0V

Figure 4: States of the status output

5 Maintenance

During operation, the weather and radiation protection can be more or less polluted by environmental influences e.g., by dust, insect infestation or the like.

We therefore recommend cleaning the weather and radiation protection at certain intervals. The interval depends on the location and the degree of pollution to be expected. The device must be cleaned with a damp cloth and brush.

For version 1.1025.80.10x with fan:

If the output of the fan status switches to "Fan spins too hard" or "Fan impeller blocked", the fan assembly should be checked or replaced if necessary. The module 510323 (for 1.1025.80.10x) is available for this.

The following steps must be carried out to change the fan assembly:

1. Switch off the supply voltage.
2. Loosen the three cap nuts on the top of the device.
3. Remove the upper 4 protective caps.
4. Loosen the plug of the fan assembly. The plug does not have a lock and can be pulled upwards. Hold the circuit board when pulling it off.
5. Remove the protective caps and the fan assembly.
6. Install a new fan assembly.
7. Reassemble in reverse order.

Attention:

The cable for connecting the fan assembly must not be linked directly above the connector. It must be guided in an arc, see Figure 5 and 6.

8. The tightening torque of the cap nut is 1.2Nm.
9. Switch on the supply voltage.



Figure 5: Cable routing after replacing the fan assembly



Figure 6: Cable routing after putting on the second protective cap

6 Technical Data

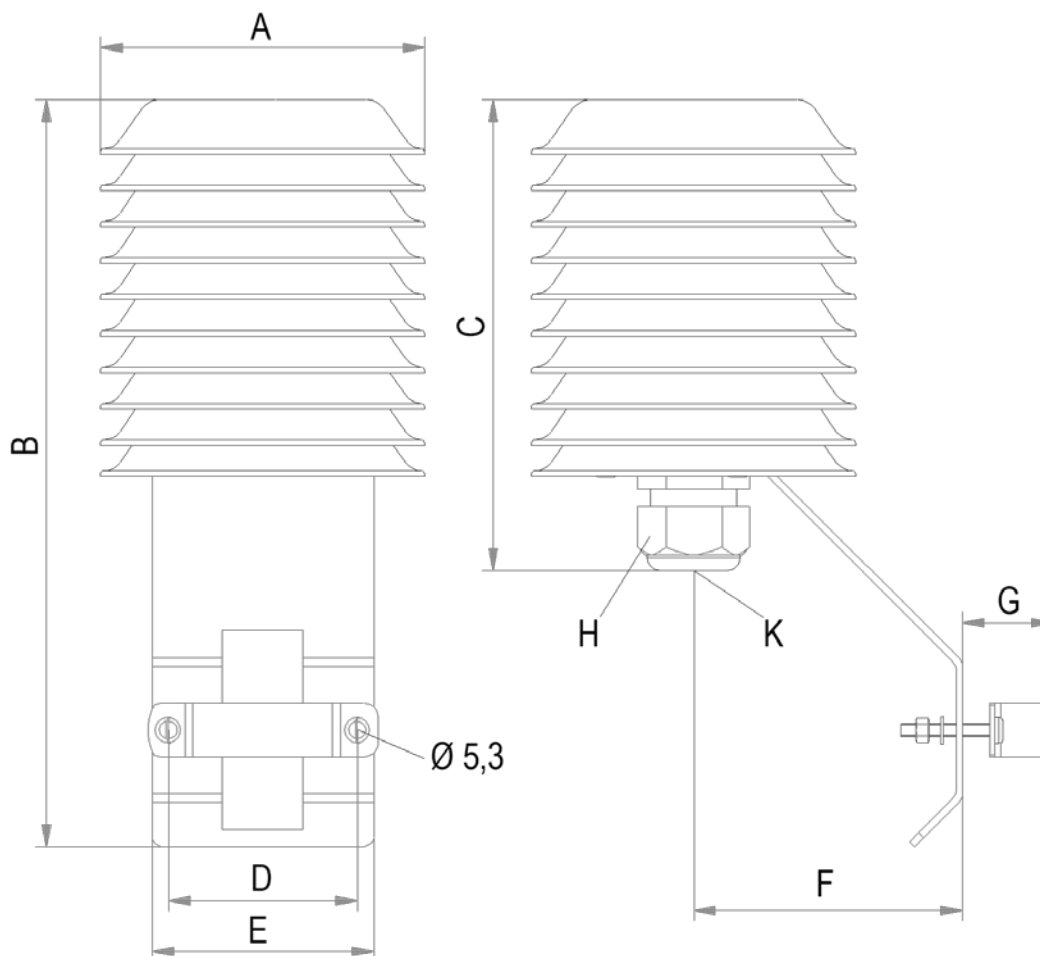
1.1025.55.0xx, 1.1025.80.10x	
Material	
Lamella	Polycarbonate (UV- stabilized), white
Bracket	Stainless steel
Weight 1.1025.80.10x	Approx. 0,75kg
Weight 1.1025.55.00x	Approx 0,65kg
Ambient conditions for use	-50 ... +80°C All occurring situations of the rel. humidity including dew moistening
Protection class	IP67
Dimension	See dimension diagram
1.1025.80.10x	
Air flow	> 2 m/s
Status output	
Type	Push / Pull Output
Function	Normal operation 4,9 ... 5,2V Fan spins too hard 0,5 ... 0,6V Fan impeller is blocked 0,5 ... 0,6V No supply voltage 0V
Cable	5m – 3 x 0,22mm ² LI-9YFCF11Y Halogen-free, UV-resistant
Operation voltage V _{DC}	
1.1025.80.10x	12 ... 30VDC / 2W

7 Spare Parts

Part number	Description
510323	Replacement fan for 1.1025.80.10x

Figure 7: Spare Parts

8 Dimension diagram 1.1025.55.xxx

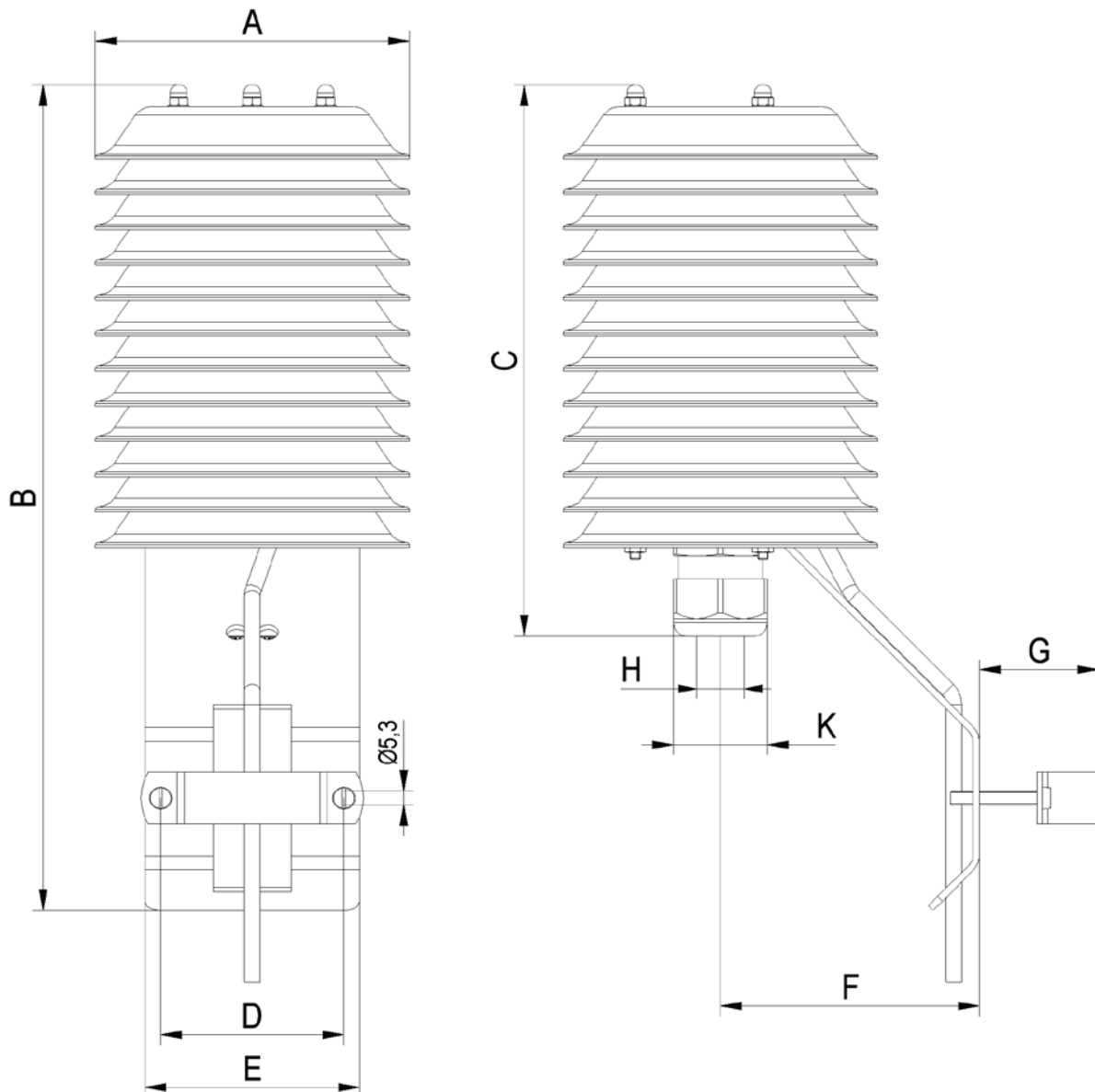


	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [KS]**	K* [mm]
1.1025.55.000	Ø120	275	173	70	82	99	Ø35-50	36	Ø15-21
1.1025.55.001	Ø120	275	173	70	82	99	Ø55-60	36	Ø15-21
1.1025.55.008	Ø120	275	173	70	82	99	Ø35-50	19	Ø 6 - 9
1.1025.55.011	Ø120	282	180	70	82	99	Ø35-50	42	Ø21-25
1.1025.55.015	Ø120	275	173	70	82	99	Ø35-50	30	Ø12-17

* K = Sensor diameter

** KS = Key size

9 Dimension diagram 1.1025.80.xxx



	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	K [KS]**	H* [mm]
1.1025.80.10x	Ø120	316	211	70	82	99	Ø35-50	36	Ø15-21

* K = Sensor diameter

** KS = Key size

10 EC-Declaration of Conformity

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

Product: Weather and Thermal Radiation Shield - compact Doc. Nr. 2009-45154_CE

Article Overview:

1.1025.80.101 1.1025.80.103 1.1025.80.107 1.1025.55.000 1.1025.55.001 1.1025.55.008 1.1025.55.011 1.1025.55.015

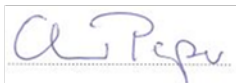
The indicated products correspond to the essential requirement of the following European Directives and Regulations:

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.
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).

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

DIN EN IEC 61000-6-2	2019-11	Electromagnetic compatibility immunity for industrial environment
DIN EN 61000-6-3:2007 + A1:2011	2011-09	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 IEC 63000	2019-05	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Göttingen, 16.08.2023



General Manager - Dr. Christoph Peper



Development Manager - ppa. Jörg Peterleit

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

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.

11 UK-CA-Declaration of Conformity

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

Product: Weather and Thermal Radiation Shield - compact Doc. Nr. 2009-45154_CA

Article Overview:

1.1025.80.101 1.1025.80.103 1.1025.80.107 1.1025.55.000 1.1025.55.001 1.1025.55.008 1.1025.55.011 1.1025.55.015

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

1091	08.12.2016	The Electromagnetic Compatibility Regulations 2016
RoHS Regulations 2012	01.01.2021	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)

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

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

Göttingen, 16.08.2023

Legally binding signature:



General Manager - Dr. Christoph Peper

Legally binding signature:



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

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