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Thies CLIMA

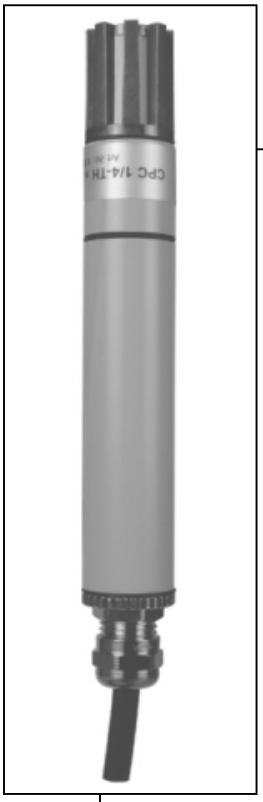
Instruction for use

020891/08/07

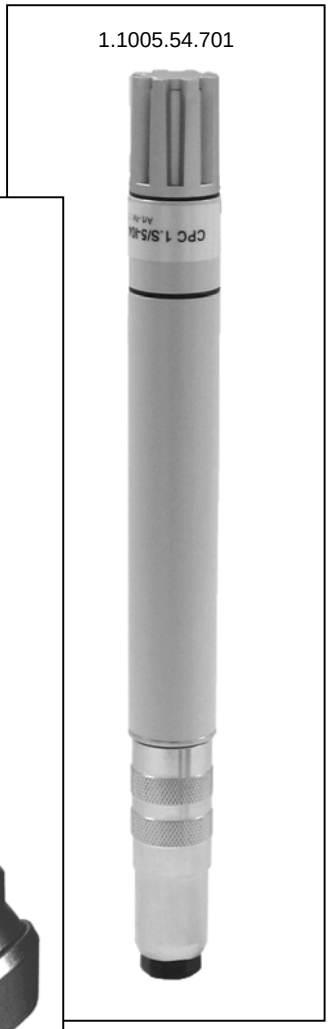
Hygro-ThermoTransmitter-compact

1.1005.54.xxx

1.1005.54.000/150/161/461/173



1.1005.54.701



1.1005.54.241/441

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1 Models available

Order-No.	Meas. Range	Humidity Output	Temperature Output	Operating Voltage	Connection
1.1005.54.000	0...100% r. h. <-30... >+70°C	0...1 V	Pt 100	6...30 V DC	5 m cable
1.1005.54.150	0...100% r. h. <-30... >+70°C	0...1 V	Pt 100	6...30 V DC	25 m cable
1.1005.54.161	0...100 % r. h. -30..+70°C	0...10 V	0...10 V	15...30 V DC	5 m cable
1.1005.54.173	0...100 % r. h. -30..+70°C	0...5 V	0...5 V	15...30 V DC	5 m cable
1.1005.54.241	0...100 % r. h. -30..+70°C	4...20 mA	4...20 mA	12...30 V DC*	Connection head with 5m cable
1.1005.54.441	0...100 % r. h. -40..+60°C	4...20 mA	4...20 mA	12...30 V DC*	Connection head with 5m cable
1.1005.54.461	0...100 % r. h. -40..+60°C	0...10 V	0...10 V	15...30 V DC	5 m cable
1.1005.54.700	0...100% r. h. <-30... >+70°C	0...1 V	Pt 100	6...30 V DC	Plug
1.1005.54.701	0...100% r. h. <-30... >+70°C	0...1 V	Pt 100	6...30 V DC	Plug
1.1005.54.761	0...100 % r. h. -30..+70°C	0...10 V	0...10 V	15...30 V DC	Plug

* see diagram RL

2 Application

The Hygro-Thermo Transmitters of our compact series with connected cable are designed to measure relative humidity, the temperature of the air and other non-aggressive gases.

The use of capacitive humidity sensors is a guarantee for:

- a high degree of long-term stability
- nearly linear characteristics
- good dynamic behaviour
- dewing stability
- low temperature coefficients
- low hysteresis

The standard equipment of the Hygro-Thermo-Transmitter includes a *teflon*-filter ZE20 (order-no. 1.1005.54.901) for field work. It protects the instrument against dust and wind speeds up to 10m/s.

For filed work, it is advisable to use a „Weather and Thermal Radiation Shield“. It is optionally available as accessory.

3 Mounting

For correct measurements, the Hygro-Thermo Transmitter should be mounted at a site in the room which is representative of the climate within the room. The mounting position itself is arbitrary. Mount the sensor such that water cannot penetrate the inside of the sensor. Dewing and sprinkling water do not damage the sensor.

Moreover, please make sure to keep the operating voltages as well as a good recirculation ventilation of the instrument. Deviations might lead to measurement errors (for example: due to instrument warming).

Preferably, the sensor should be mounted vertically facing downwards to a wall (indoor application), and should be mounted horizontally facing backwards in canals.

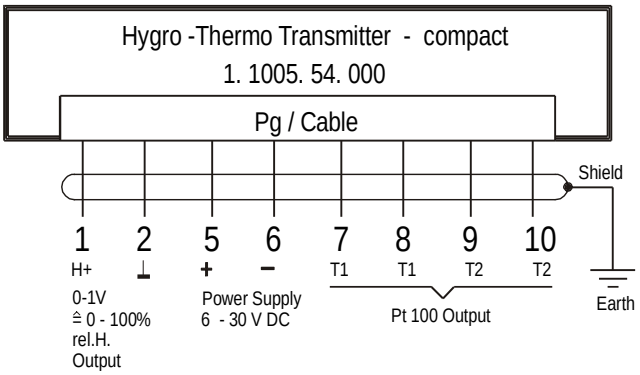
4 Maintenance

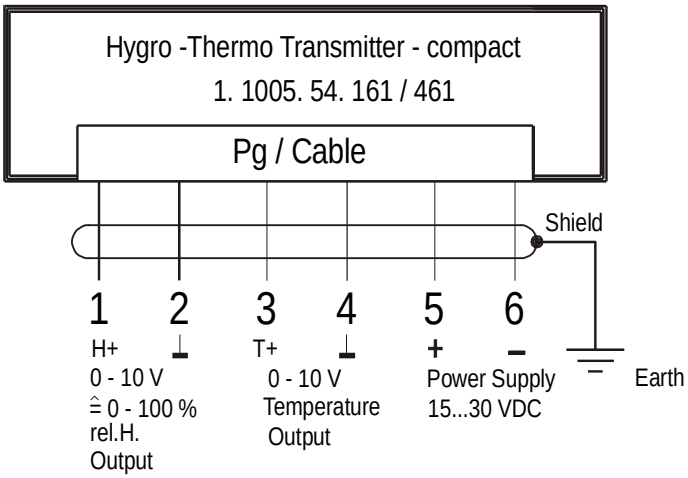
The Hygro-Thermo Transmitter is supplied already calibrated and its characteristics remain stable for years.
Dust does not damage the humidity sensor but does influence the dynamic behaviour negatively. If the instrument is very dirty, the sensor element can be cleaned or carefully rinsed in distilled water. Make sure you do not touch the highly-sensitive sensor element.
Before cleaning the sensor elements please remove the protecting filter; it should be cleaned, as well.

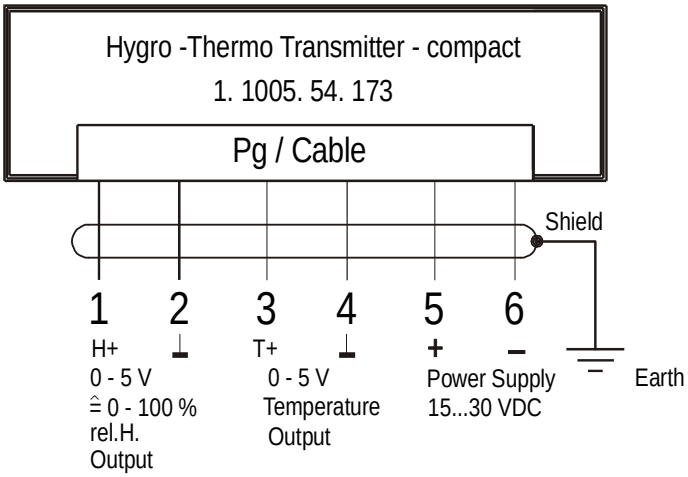
Attention

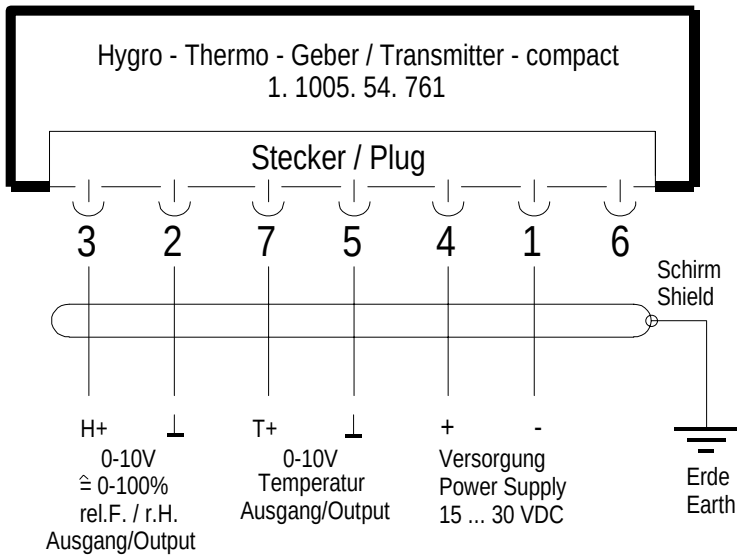
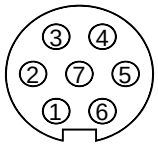
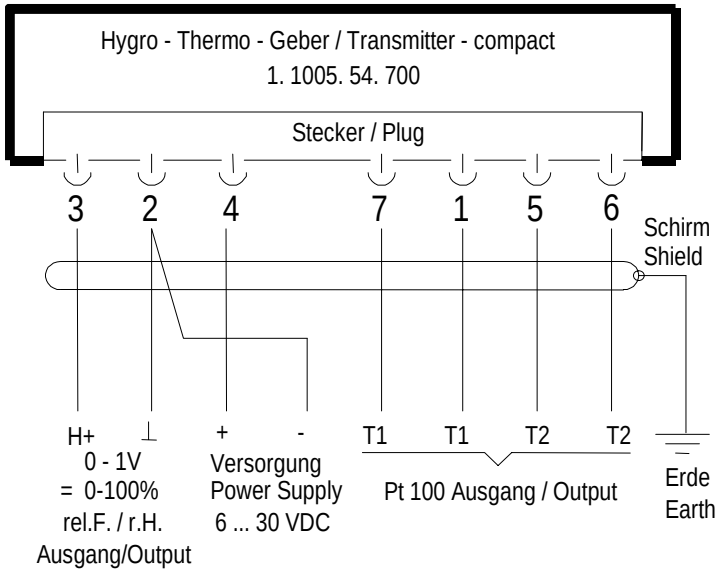
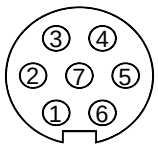
The instrument housing with the electronics included should be opened only in the factory.

5 Connection Diagrams

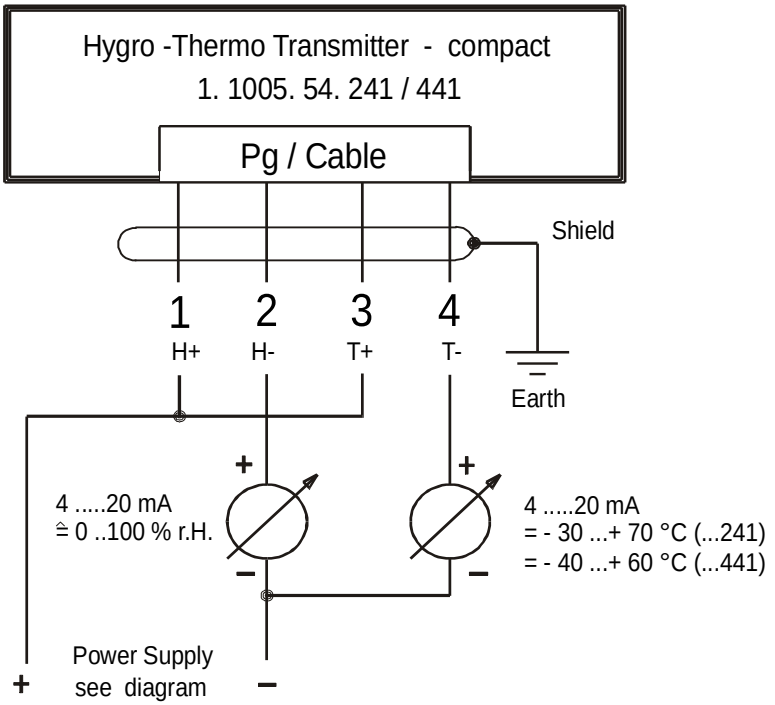
1.1005.54.000 1.1005.54.150	

1.1005.54.161 1.1005.54.461	

1.1005.54.173	

1.1005.54.761		Position of pins 
1.1005.54.700 1.1005.54.701		Position of pins 

1.1005.54.241
1.1005.54.441



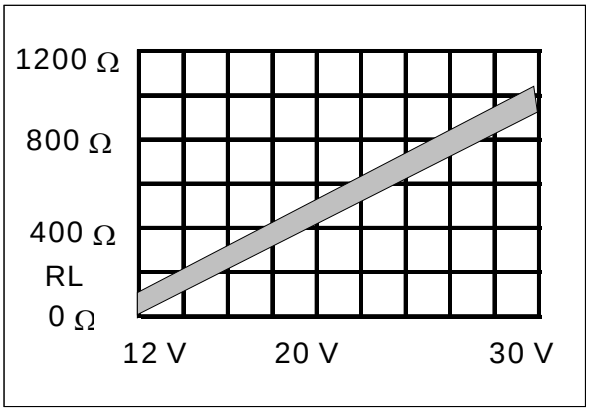


Diagram RL as a function of power supply

6 Technical Data

Humidity			
Measuring element	Capacitive		
Measuring range	0...100 % rel. humidity		
Deviation (mr 5...95% rel.h. at 10...40 °C)	± 2 % rel. humidity		
Add. Error (<10°C, >40°C)	< 0,1%/K		
Response Time (T 90)	< 20 s	(at v = 1,5 m/s)	w/o filter
Response Time (T 90)	< 1,5 min.	(at v = 1,5 m/s)	with Teflon filter ZE 20
Response Time (T 90)	< 1,5 min.	(at v = 1,5 m/s)	with Sinter filter ZE 21
Temperature			
Measuring element	Pt 100 Class B, 1/3 DIN tolerance		
Measuring range	See models available		
Deviation			
with output 0- 1 V	± 0,2 K		
with output 0-10 V	± 0,2 K		
with output 4-20 mA	± 0,3 K		
Add. error (<10°C, >40°C)	± 0,0073 K/K		
Response time (T 90)	< 20 s	(at v = 1,5 m/s)	w/o filter
Response time (T 90)	< 1,5 min.	(at v = 1,5 m/s)	with Teflon filter ZE 20
Response time (T 90)	< 1,5 min.	(at v = 1,5 m/s)	with Sinter filter ZE 21
Additional Specifications			
Ambient temperature	-40...+80°C -40... +100°C (model. ...000)		
Degree of protection sensor	IP 30		
Degree of protection electronics, connecting head	IP 65		
Operating voltage			
I-output	12...30 V DC		
U-output (0...10 V / 0...5 V)	15…30 V DC		
U-output (0...1 V)	6...30 V DC		
Load resistor			
I-output	See diagram RL		
U-output (0...10 V / 0...5 V)	≥ 10 kΩ		
U-output (0...1 V)	≥ 2 kΩ		
Instrument current requirements			
Humidity/Temperature (0..10V / 0..5V)	< 5 mA		
Humidity(0...1V)	< 1 mA		
Housing model for 1005.54.000 / 150 / 161 / 461 / 173 with connected cable			
Diameter	20 mm		
Shaft length	122 mm		

Total length	145 mm
Housing model for 1.1005.54.241 / 441 with aluminum connection head and connected cable	
Diameter	20 mm
Shaft length	122 mm
Total length	180 mm
Housing model for 1.1005.54.701 / 761 with plug connection and mating plug	
Diameter	20 mm
Shaft length	155 mm
Total length	195 mm
Housing model for 1.1005.54.700 with plug connection without mating plug	
Diameter	20 mm
Shaft length	155 mm

7 Accessories (optional)

Weather and Thermal Radiation Shield The use of the Weather and Thermal Radiation Shield in an appropriate combination with suitable temperature and humidity sensors reduces to a minimum the possibility of influencing the data in a negative manner by radiation, precipitation or damage. More exactly measuring results are achieved by using the ventilated Weather and Thermal Radiation Shield (mod. 1.1025.55.10x with ventilation). The ventilation reduces those errors which might occur during the measurements in a weather hut caused by the so-called „proper climate“ .	1.1025.55.00x .10x .xx0 .xx1	w/o ventilator with ventilator 12 V DC / 2,5 W , incl. 5 m cable for mast tube mounting ∅ 30 - 50 mm for mast tube mounting ∅ 55 – 60 mm dimensions: ∅ 120 x 290 mm **Remark:** It is recommendable to use the weather and thermal radiation shield-compact with ventilation order-no. 1.1025.55.10x for Hygro-Thermo Transmitter model ..241/441(4-20 mA)

Sinter Filter ZE21 The fine-pore sinter filter serves to protect the sensor elements of the Hygro-Thermo-Transmitter *compact* against high wind speeds (>5m/s) and dust...	1.1005.54.902	Material: stainless steel Dimensions: ∅ 20 x 25 mm

8 EC-Declaration of Conformity

Document-No.: **001316** Month: 08 Year: 07

Manufacturer: **A D O L F T H I E S G m b H & C o. K G**

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Description of Product: **Hygro – Thermo Transmitter Compact**

Article No.				
	1.1005.54.000	**1.1005.54.150**	**1.1005.54.161**	**1.1005.54.241**
	1.1005.54.441	**1.1005.54.461**	**1.1005.54.700**	**1.1005.54.701**
	1.1005.54.173	**1.1005.54.761**		

specified technical data in the document: **020874/08/07**

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

2004/108/EC	DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
73/23/EEC	COUNCIL DIRECTIVE of 19. Feb.1973 on the harmonization of the law of Member States relating to electrical equipment designed for use within certain voltage limits (73/23/EEC)
552/2004/EC	Regulation (EC) No 552/2004 of the European Parliament and the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation)

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

Reference number	Specification
EN61000-6-2:2002	Electromagnetic compatibility Immunity for industrial environment
EN61000-6-3:2002	Electromagnetic compatibility Emission standard for residential, commercial and light industrial environments
EN61010-1:2001	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements

Place: Göttingen
Legally binding signature:

Wolfgang Behrens

Date: 30.08.2007
issuer:

Joachim Beinhorn

This declaration certificates 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.

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