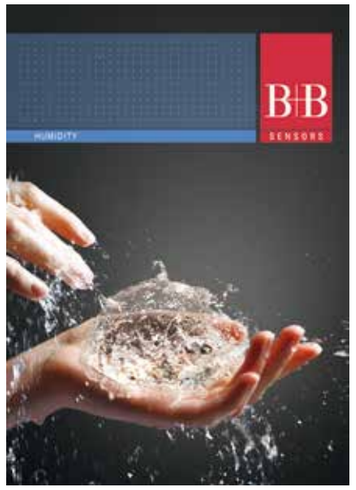
BUILDING AUTOMATION

B+B SENSORS

Our product range

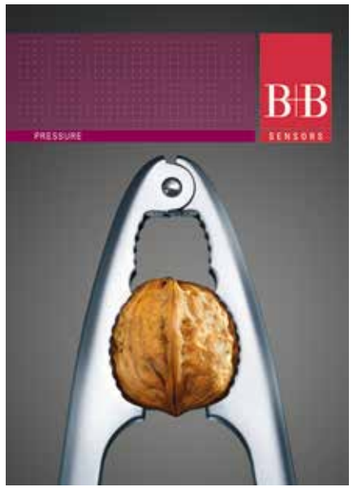
TEMPERATURE

Fon +49 771 8316-39
Fax +49 771 8316-88
info@bb-sensors.com



HUMIDITY

Fon +49 771 8316-29
Fax +49 771 8316-88
info@bb-sensors.com



PRESSURE

Fon +49 771 8316-18
Fax +49 771 8316-88
info@bb-sensors.com

Our quality assurance

B+B Thermo-Technik has been manufacturing top-quality products since 1984.

Certificates

Certificate DIN EN ISO 9001 : 2008
Since April 2000 B+B Thermo-Technik is certified according to ISO 9001-2000 and has actualized the certificate according to ISO 9001 - 2008.
Therefore our customers are enabled to process more effective product audits in our house.

Certificate DIN EN ISO 13485 : 2010
Since 2003 B+B Thermo-Technik is certified according to DIN EN ISO 13485 : 2003 and has actualized the certificate in 2010 to DIN EN 13485 : 2010.

VDE Certificate
Since 2006 B+B Thermo-Technik GmbH is also certified according to VDE (Association for Electrical, Electronic and Information Technologies in Germany).

ESD Certificate
Since April 2013 B+B Thermo-Technik GmbH is also certified according to ESD (part of DIN EN 61340-5-1).

We constantly examine the quality of our products to meet the requirements of our customers.

BUILDING AUTOMATION

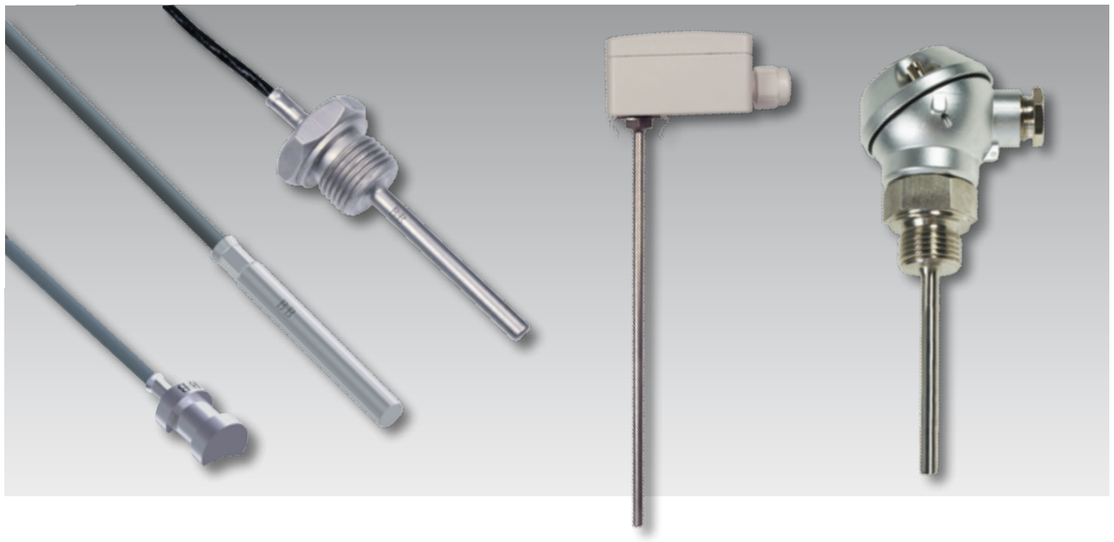
A morn automation system in buildings is the necessary tool for dynamic energy and building management in which all necessary data are collected and evaluated. This data ensure the necessary transparency of all relevant energy flows by means of appropriate energy parameters in the building and provides information about positive and negative effects of user behaviour. From this, timely and targeted economic optimization measures can be derived.

B+B supplies the suitable products for building automation technology.
This includes e.g. Temperature, Humidity and Pressure Probes, Switching Devices, Control Devices, but also many customer specific and innovative devices for special applications. Additionally, B+B offers you a wide range of services for example the development of individually suitable OEM-products or our calibration services.

From our headquarter in Donaueschingen in the south west of Germany we distribute our high quality products to customers all over the world.

B+B puts special emphasis on quality as it can be seen from there certificates DIN EN ISO 9001:2008 and DIN EN ISO 13485:2010.

Since April 2013 B+B is also certified according to ESD (part of DIN EN 61340-5-1). The B+B products are prevented from ESD (Electro Static Damages) in the production process.



TEMPERATURE PROBES

B+B Thermo-Technik has successfully been developing and manufacturing high-quality Temperature Probes for the heating, cooling, climate and solar industry since 1984. Additionally to the high quality, B+B Thermo-Technik offers many years of experience and deep knowledge in the temperature measurement sector. B+B is your ideal partner for your requirements of quality, flexibility and Know-How. Based on the corporate strategy of quality and close customer relations, all B+B Thermo-Technik Temperature Probes are exclusively made in Germany.

Applications

- Heating technology
- Cooling and Climate technology
- Solar industry

Cable Probes
with PVC insulation

Description

- Ingress protection IP65
- Protective sleeve stainless steel 1.4571
- Connection cable with PVC insulation
- Measuring range -10...+105 °C

A version with leaf spring to fix the Cable Probes is available on request.

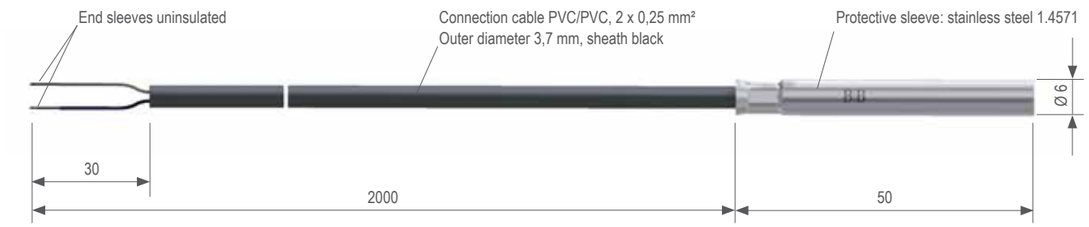
Technical Data

Sensor	Accuracy	Recommended measurement current
Pt100	Class B	0,3 to 1 mA
Pt1000	Class B	0,1 to 0,3 mA
Ni 1000	Class B	
Ni 1000, TK 5000	TK 5000	
NTC 5 kΩ	±0,2 °C at 0...+70 °C	
NTC 10 kΩ	±0,2 °C at 0...+70 °C	
KTY 81-110	±1 % at 25 °C	
KTY 81-210	±1 % at 25 °C	
Measuring range		-10...+105 °C
Connection type		2-wires connection
Nominal length		50 mm
Diameter		6 mm
Material of the protective sleeve		Stainless steel 1.4571
Electrical connection		Open ends 30 mm End sleeves uninsulated
Connection cable	Length Cross section Insulation	2000 mm 2 x 0,25 mm² PVC/PVC
Ingress protection		IP65

Article Description	Art.-No.
Cable Probe Pt100	0625 0514-100
Cable Probe Pt1000	0625 0514-101
Cable Probe Ni 1000	0625 5999-100
Cable Probe Ni 1000, TK 5000	0625 5999-101
Cable Probe NTC 5 kΩ	0625 6999-100
Cable Probe NTC 10 kΩ	0625 6999-101
Cable Probe KTY 81-110	0625 7999-100
Cable Probe KTY 81-210	0625 7999-101

Accessory:
Heat-conductive paste for better response time (page 18)

Dimensions



Cable Probes
with Silicone insulation

Description

- Ingress protection IP65
- Protective sleeve stainless steel 1.4571
- Connection cable with silicone insulation

A version with leaf spring to fix the Cable Probes is available on request.

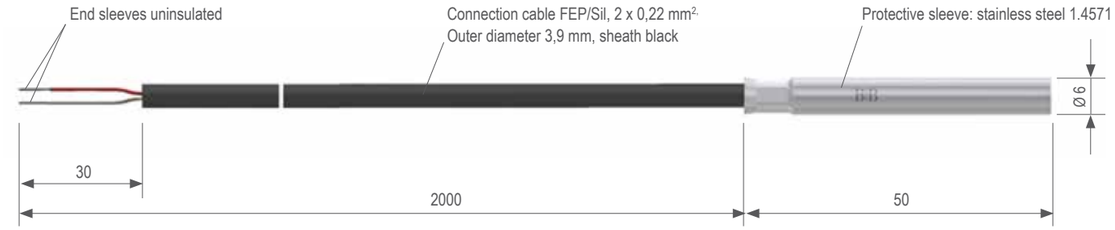
Technical Data

Sensor	Accuracy	recommended measurement current	Measuring range
Pt100	Class B	0,3...1 mA	-40...+180 °C
Pt1000	Class B	0,1...0,3 mA	-40...+180 °C
Ni 1000	Class B		-30...+130 °C
Ni 1000, TK 5000	TK 5000		-40...+180 °C
NTC 5 kΩ	±0,2 °C at 0...+70 °C		-40...+150 °C
NTC 10 kΩ	±0,2 °C at 0...+70 °C		-40...+150 °C
KTY 81-110	±1 % at 25 °C		-40...+150 °C
KTY 81-210	±1 % at 25 °C		-40...+150 °C
Connection type			2-wires connection
Nominal length			50 mm
Diameter			6 mm
Material of the Protective sleeve			Stainless steel 1.4571
Electrical connection			Open ends 30 mm End sleeves uninsulated
Connection cable	Length Cross section Isolation		2000 mm 2 x 0,22 mm² FEP/Silicone
Ingress protection			IP65

Article Description	Art.-No.
Cable Probe Pt100	0625 0520-100
Cable Probe Pt1000	0625 0520-101
Cable Probe Ni 1000	0625 5999-102
Cable Probe Ni 1000, TK 5000	0625 5999-103
Cable Probe NTC 5 kΩ	0625 6999-102
Cable Probe NTC 10 kΩ	0625 6999-103
Cable Probe KTY 81-110	0625 7999-102
Cable Probe KTY 81-210	0625 7999-103

Accessory:
Heat-conductive paste for better response time (Page 18)

Dimensions



Collector Temperature Probe

Description

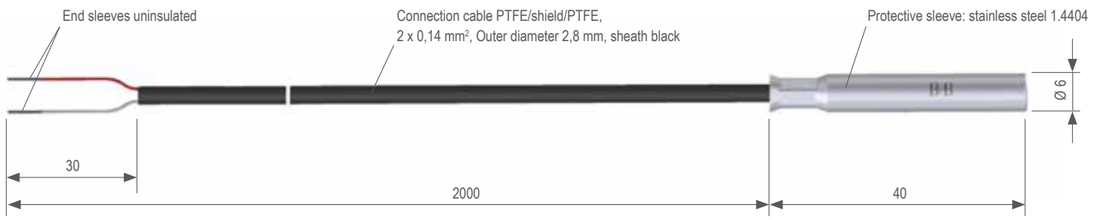
- Ingress protection IP67
- Protective sleeve stainless steel 1.4404
- Dielectric strength 2 kV
- Measuring range -50...+300 °C

Technical Data

Sensor		Pt1000
Measuring range		-50...+300 °C
Accuracy		Class B
Measurement current		0,3...1 mA
Connection type		2-wires connection
Nominal length		40 mm
Diameter		6 mm
Material of the Protective sleeve		Stainless steel 1.4404
Electrical connection		Open ends 30 mm End sleeves uninsulated
Connection cable	Length Cross section Insulation	2000 mm 2 x 0,14 mm² PTFE/shield/PTFE
Ingress protection		IP67

Article Description	Art.-No.
Collector Temperature Probe Pt1000	0625 0389

Dimensions



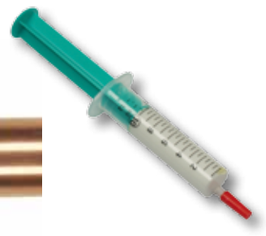
Temperature probes for pipes
with Fixation Chain

Description

- Ingress protection IP65
- Housing: Aluminium
- Measuring range -10...+105°C
- Inclusive fixation chain for pipe diameters up to 100 mm

Scope of delivery: 1 piece fixation chain, Art.-No. 0440 0006

Example of application:
Probe attached with the fixation chain on the pipe



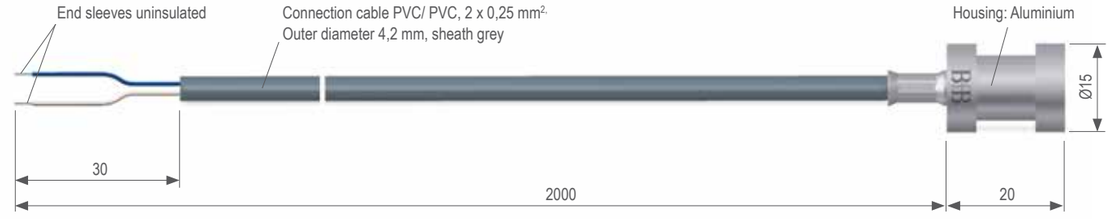
Accessory:
Heat-conductive paste for better response time (page 18)

Technical Data

Sensor	Accuracy	Recommended measurement current
Pt100	Class B	0,3...1 mA
Pt1000	Class B	0,1...0,3 mA
Ni 1000	Class B	
Ni 1000, TK 5000	TK 5000	
NTC 5 kΩ	±0,2 °C at 0...+70 °C	
NTC 10 kΩ	±0,2 °C at 0...+70 °C	
KTY 81-110	±1 % at 25 °C	
KTY 81-210	±1 % at 25 °C	
Measuring range		-10...+105 °C
Connection type		2-wires connection
Nominal length		20 mm
Diameter		15 mm
Material of the Housing		Aluminium
Electrical connection		Open ends 30 mm End sleeves uninsulated
Connection cable	Length Cross section Insulation	2000 mm 2 x 0,25 mm² PVC
Ingress protection		IP65

Article Description	Art.-No.
Probe for pipes Pt100	0625 0516-100
Probe for pipes Pt1000	0625 0516-101
Probe for pipes Ni 1000	0625 5999-104
Probe for pipes Ni 1000, TK 5000	0625 5999-105
Probe for pipes NTC 5 kΩ	0625 6999-104
Probe for pipes NTC 10 kΩ	0625 6999-105
Probe for pipes KTY 81-110	0625 7999-104
Probe for pipes KTY 81-210	0625 7999-105

Dimensions



Probes for pipes
with Temperature Clip

Description

- Easy-to-fix temperature clip for pipes with Ø 15 - 20 mm

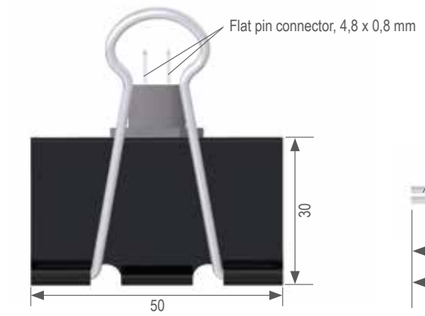
Accessory:
Heat-conductive paste for better response time (page 18)

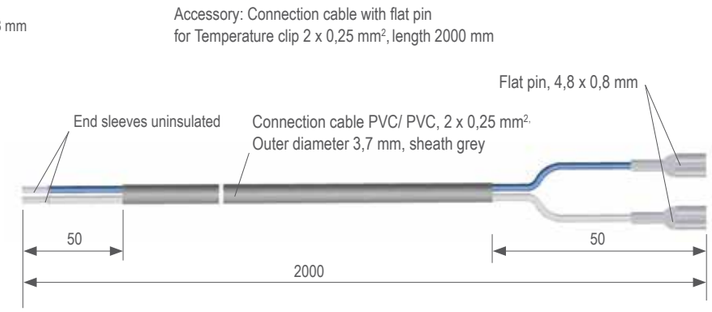
Technical Data

Sensor	Accuracy	recommended measurement current	Measuring range
Pt100	Class B	0,3...1 mA	-40...+105 °C
Pt1000	Class B	0,1...0,3 mA	-40...+105 °C
Ni 1000	Class B		-30...+105 °C
Ni 1000, TK 5000	TK 5000		-40...+105 °C
NTC 5 kΩ	±0,2 °C at 0...+70 °C		-40...+105 °C
NTC 10 kΩ	±0,2 °C at 0...+70 °C		-40...+105 °C
KTY 81-110	±1 % at 25 °C		-40...+105 °C
KTY 81-210	±1 % at 25 °C		-40...+105 °C
Connection type			2-wires connection
Diameter			for tube diameter 15...20 mm
Connection cable (please order separately)	Length Cross section Insulation		2000 mm 2 x 0,25 mm² PVC / PVC

Article Description	Art.-No.
Probe for pipes with temperature clip Pt100	0625 0999-100
Probe for pipes with temperature clip Pt1000	0625 0999-101
Probe for pipes with temperature clip Ni 1000	0625 5999-106
Probe for pipes with temperature clip Ni 1000, TK 5000	0625 5999-107
Probe for pipes with temperature clip NTC 5 kΩ	0625 6999-106
Probe for pipes with temperature clip NTC 10 kΩ	0625 6999-107
Probe for pipes with temperature clip KTY 81-110	0625 7999-106
Probe for pipes with temperature clip KTY 81-210	0625 7999-107
Accessory: Connection cable with flat pin	0409 0518-01

Dimensions





Probes for pipes
with Spring Steel Clamp

Description

- Measuring range -10...+105 °C
- Spring steel clamp stainless steel 1.4310
- For direct fixing on pipes with diameter 28 mm
- Quick response time due to the embedded sensor in copper
- Connection cable (2000 mm) perpendicular outgoing

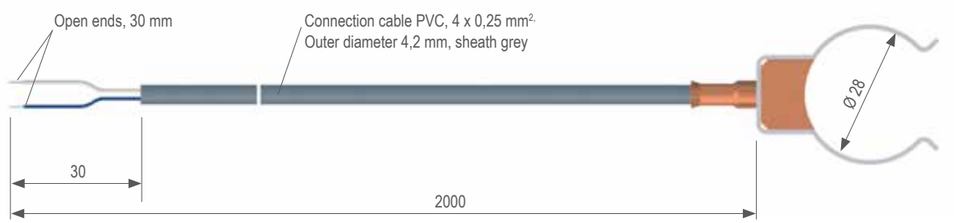
Technical Data

Sensor		Pt100
Measuring range		-10...+105 °C
Accuracy		Class B
Connection type		4-wires connection
Diameter		for tube diameter 28 mm
Material	Sensor block Spring steel clamp	Copper Stainless steel 1.4310
Electrical connection		Free ends, 30 mm
Connection cable	Length Cross section Insulation	2000 mm 4 x 0,25 mm² PVC/PVC

Article Description	Art.-No.
Probes for pipes with Spring Steel Clamp	0627 0774-100

Accessory:
Heat-conductive paste for better response time (page 18).

Dimensions



Screw-in Probe

for the measurement of liquids and gaseous media

Description

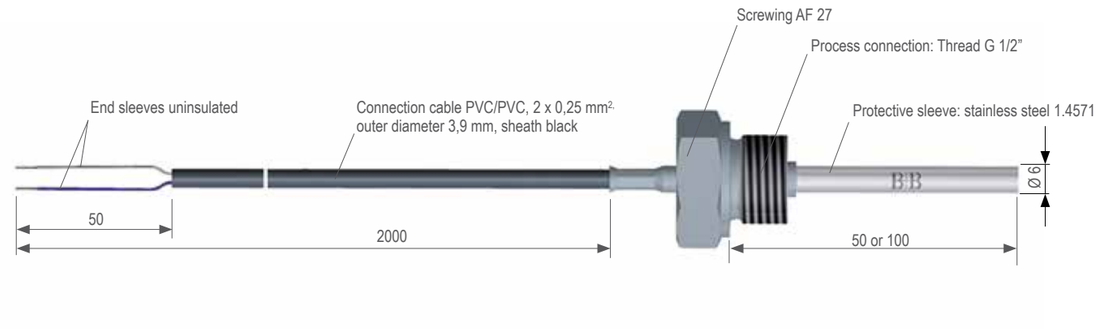
Technical Data

Sensor		Pt100
Measuring range		-10...+105 °C
Accuracy		Class B
Measurement current		max. 1 mA
Connection type		2-wires connection
Nominal length		50 or 100 mm
Diameter		6 mm
Material		Stainless steel 1.4571
Electrical connection		Open ends 50 mm End sleeves uninsulated
Connection cable	Length Cross section Insulation	2000 mm 2 x 0,25 mm² PVC/PVC
Process connection		G 1/2"
Ingress protection		IP65

Article Description	Art.-No.
Screw-in Probe Pt100, G1/2", nominal length 50 mm	0625 0071-18
Screw-in Probe Pt100, G1/2", nominal length 100 mm	0625 0071-12

- Measuring range -10...+105 °C
- Stainless steel 1.4571
- Shock resistant
- Ingress protection IP65
- Two different nominal lengths are available: 50 or 100 mm

Dimensions



Probe with Plastic Housing

without Clamp Ring (Pt1000: optionally available with built-in transmitter)

Description

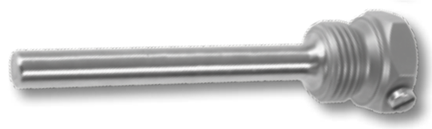
Technical Data

Sensor	Accuracy	Measurement current
Pt100	Class B	max. 1 mA
NTC 10 kΩ	±0,2 °C 0...+70 °C	
Measuring range		-30...+120 °C
Cable gland		M16 x 1,5
Electrical connection		Insulating screw joint 2,5 mm²
Nominal length (NL)		100 or 200 mm
Diameter		6 mm
Material protective sleeve		Stainless steel 1.4571
Ingress protection		IP65
Dimensions plastic housing (L x W x H)		65 x 59 x 38 mm

Article Description	Art.-No.
Probe with plastic housing Pt1000, NL 100	0628 0525-100
Probe with plastic housing Pt1000, NL 200	0628 0525-101
Plastic with plastic housing Pt1000, NL 100 incl. transmitter 4 to 20 mA	0628 0525-112
Probe with plastic housing Pt1000, NL 200 incl. transmitter 4 to 20 mA	0628 0525-111
Probe with plastic housing NTC 10 kΩ, NL 100	0628 6004-100
Probe with plastic housing NTC 10 kΩ, NL 200	0628 6004-101

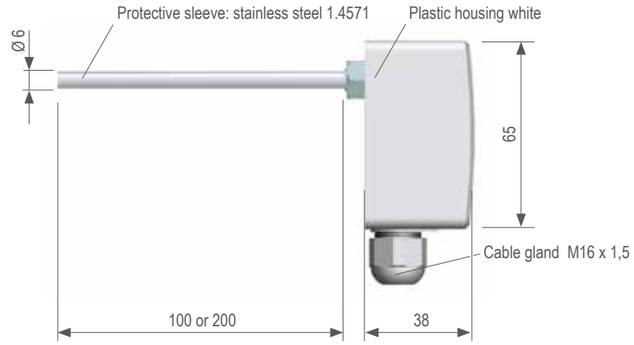
Other outputs are available on request.

- Ingress protection IP65
- Protective sleeve: stainless steel 1.4571
- Measuring range -30...+120 °C
- Two different nominal lengths are available: 100 or 200 mm



For suitable MA2-Screw-in tube see page 18.

Dimensions



Probe with Plastic Housing

with Clamp Ring for Screw-in Tube (Pt1000: Optionally available with built-in transmitter)

Description

- Clamp ring for Screw-in tube for quick process connection
- Ingress protection IP65
- Protective sleeve: stainless steel 1.4571
- Measuring range -30...+120 °C

Technical Data

Sensor	Accuracy	Measurement current
Pt100	Class B	max. 1 mA
NTC 10 kΩ	±0,2 °C at 0...+70 °C	

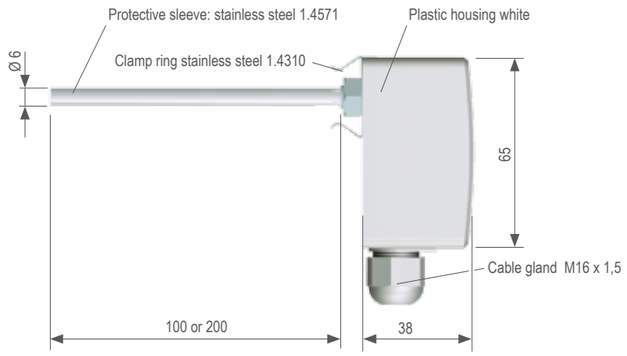
Measuring range	-30...+120 °C
Cable gland	M16 x 1,5
Electrical connection	Insulating screw joint 2,5 mm²
Nominal length (NL)	100 or 200 mm
Diameter	6 mm
Material protective sleeve	Stainless steel 1.4571
Ingress protection	IP65
Dimensions plastic housing (L x W x H)	65 x 59 x 38 mm

Article Description	Art.-No.
Probe with plastic housing Pt1000, NL 100 and clamp ring	0628 0525-102
Probe with plastic housing Pt1000, NL 200 and clamp ring	0628 0525-103
Probe with plastic housing Pt1000, NL 100 and clamp ring incl. transmitter 4 to 20 mA	0628 0525-114
Probe with plastic housing Pt1000, NL 200 and clamp ring incl. transmitter 4 to 20 mA	0628 0525-113
Probe with plastic housing and clamp ring NTC 10 kΩ, NL 100	0628 6004-102
Probe with plastic housing and clamp ring NTC, NL 200	0628 6004-103

Other outputs are available on request. .

Suitable Screw-in tube for a fast process connection see page 15.

Dimensions



Screw-in tube G1/2“ for Probes with Plastic housing

for Probe with clamp ring

Description

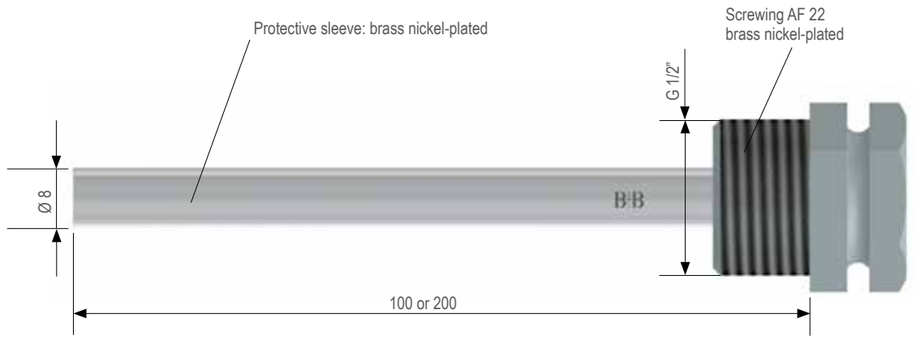
- Quick process connection
- Quick exchange of the probe without interrupting the process
- Maintenance-free

Technical Data

Laid length	100 or 200 mm
Diameter	8 mm
Material	Brass nickel-plated
Process connection	G 1/2“
Width across flats	AF 22

Article Description	Art.-No.
Screw-in tube G1/2" laid length 100 mm	0180 0375
Screw-in tube G1/2“ laid length 200 mm	0180 0375-01

Dimensions



Temperature Probe MA 1
with Connection Head

Description

For suitable screw-in probes see page 18.

Technical Data

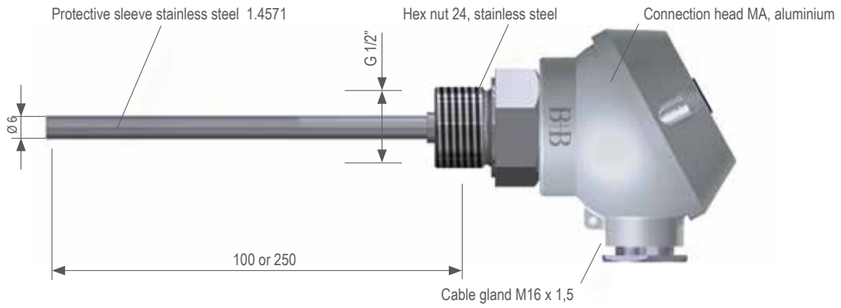
Sensor	Pt100
Measuring range	-50...+400 °C
Accuracy	Class B
Measurement current	max. 1 mA
Connection type	2-wires connection
Nominal length	100 or 250 mm
Diameter	6 mm
Material of the protective sleeve	Stainless steel 1.4571
Cable gland	M16 x 1,5
Ingress protection	IP65

Article Description	Art.-No.
Temperature Probe Pt100, nominal length 100 mm	MA1 P620 0100B-21
Temperature Probe Pt100, nominal length 250 mm	MA1 P620 0250B-21

Temperature Probes with output 4...20 mA, 0...10 V and I²C are available on request.

- Ingress protection IP65
- Connection head MA made of aluminium with cable gland M16 x 1,5
- Protective sleeve stainless steel 1.4571
- Measuring range -50...+400 °C
- Two different nominal lengths are available: 100 or 250 mm

Dimension



Temperature Probe MA2
with Connection Head

Description

For suitable screw-in probes see page 18.

Technical Data

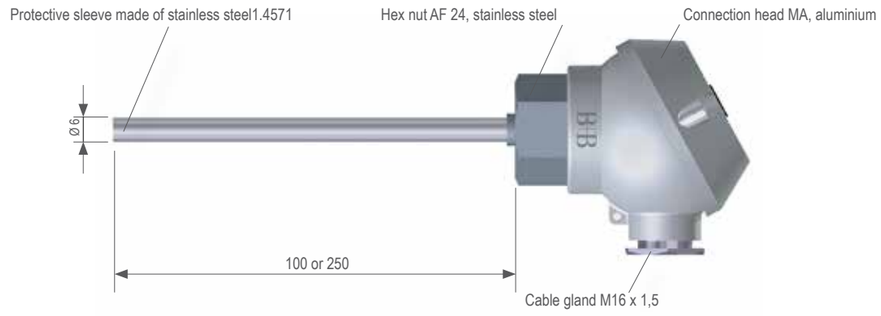
Sensor	Pt100
Measuring range	-50...+400 °C
Accuracy	Class B
Measurement current	max. 1 mA
Connection type	2-wires connection
Nominal length	100 or 250 mm
Diameter	6 mm
Material of the protective sleeve	Stainless steel 1.4571
Cable gland	M16 x 1,5
Ingress protection	IP65

Article Description	Art.-No.
Temperature Probe Pt100, nominal length 100 mm	MA2 P620 0100B-21
Temperature Probe Pt100, nominal lengt 250 mm	MA2 P620 0250B-21

Temperature probes with output 4...20 mA, 0...10 V and I²C are available on request.

- Ingress protection IP65
- Connection head MA made of the stainless steel with cable gland M16 x 1,5
- Protective sleeve made of the stainless steel 1.4571
- Measuring range -50...+400 °C
- Two different nominal lengths: 100 or 250 mm

Dimension



Accessories for Temperature Probes

Description

Screw-in tube made of stainless steel 1.4571, suitable for Temperature Probes MA1 and MA2 with connection head.

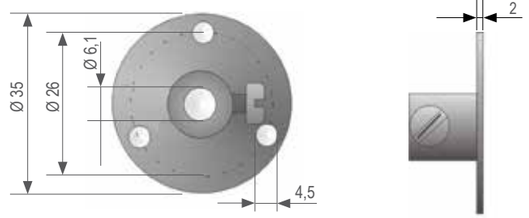
MA1 MA2

Accessories for Temperature Probes MA1	Art.-No.
Screw-in tube 1.4571, Ø 9 x 1 mm, thread G1/2" for Temperature Probe MA1 nominal length 100 mm	MA1 0441 0086-01
Screw-in tube 1.4571, Ø 9 x 1 mm, thread G1/2“ for Temperature Probe MA1 nominal length 250 mm	MA1 0441 0236-01

Accessory for Temperature Probes MA2	Art.-No.
Screw-in tube 1.4571, Ø 9x1 mm, thread G1/2" for Temperature Probe MA2 nominal length 100 mm, with locking screw	MA2 0441 0086-01
Screw-in tube 1.4571, Ø 9x1 mm, thread G1/2“ for Temperature Probe MA2 nominal length 250 mm, with locking screw	MA2 0441 0236-01

Description

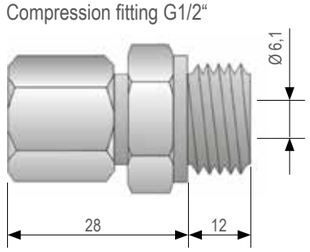
Flange stop



Article Description	Art.-No.
Flange stop, stainless steel 1.4301 for Ø 6 mm	0554 0359

Description

Compression fitting G1/2“



Article Description	Art.-No.
Compression fitting G1/2“, moveable, stainless steel 1.4571, for Ø 6 mm	0554 0098

Heat-conductive paste

Description

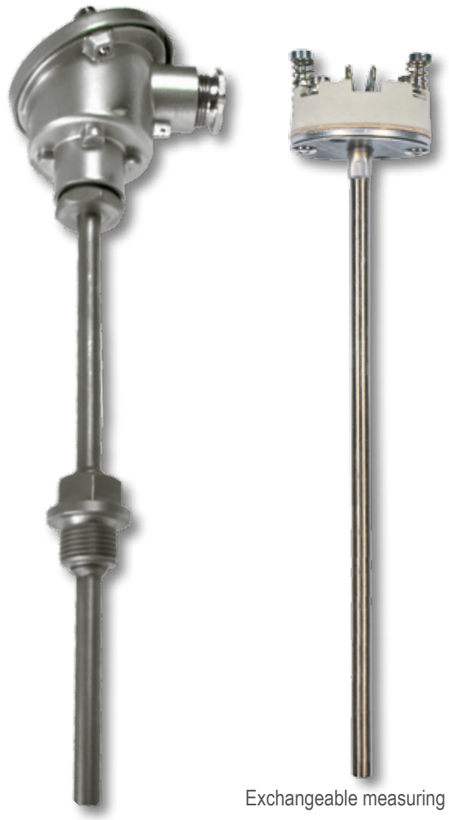
Heat-conductive paste for better response time.
20 g injection, type WLC, operating temperature -40...+200 °C, silicone free, conform to RoHS according to EU Directive 2002/95/EC

Article Description	Art.-No.
Heat-conductive paste (20 g injection)	0554 0034

Temperature Probe with Connection Head

for high-temperatures ranges up to +600 °C

Description



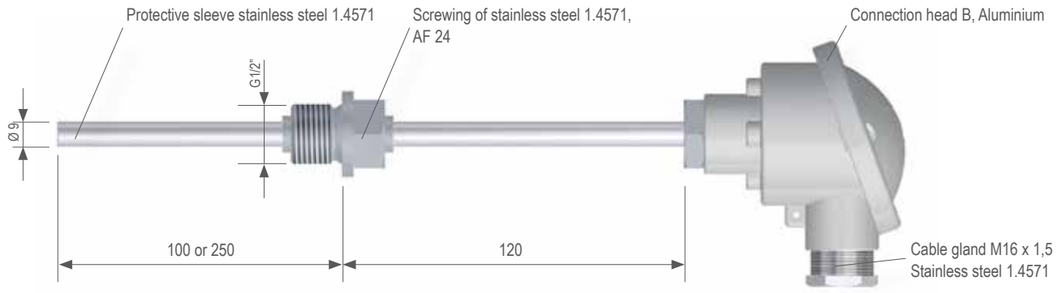
Exchangeable measuring insert

- Protective sleeve stainless steel 1.4571
- Measuring range -50...+600 °C
- Measuring insert easy exchangeable

Technical Data	
Sensor	Pt100
Measuring range	-50...+600 °C
Accuracy	Class B
Connection type	2-wires connection
Material	Stainless steel 1.4571
Nominal length of the neck tube length	120 mm
Nominal length protective sleeve	100 or 250 mm
Diameter of the neck tube length	9 mm
Diameter measuring insert	6 mm
Cable gland	M16 x 1,5

Article Description	Art.-No.
Temperature Probe with connection head, nominal length 100 mm with exchangeable measuring insert	0628 0275
Temperature Probe with connection head, nominal length 250 mm with exchangeable measuring insert	0628 0263-02

Dimensions



Cable Probe

for high temperature range up to +400 °C

Description

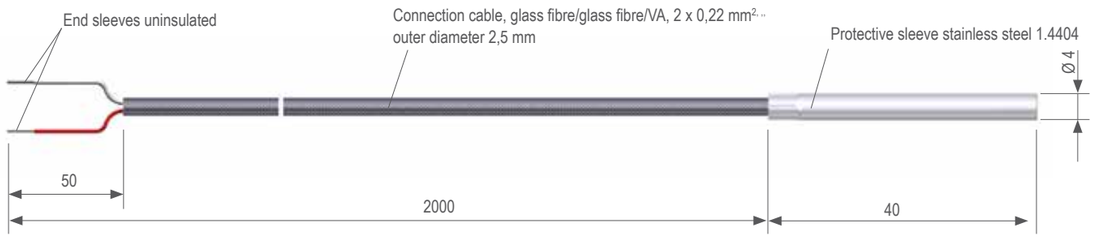
- Glass fibre cable
- Jacket of stainless steel
- Protective sleeve stainless steel 1.4404
- Measuring range -50...+400 °C

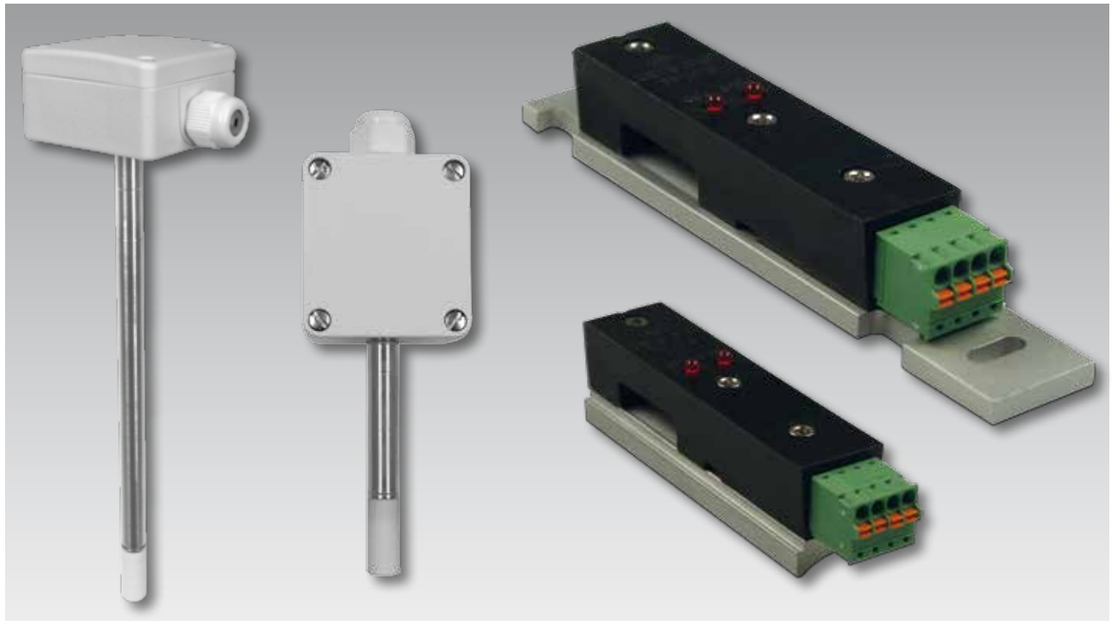
Technical Data

Sensor		Pt100
Measuring range		-50...+400 °C
Measurement current		0,3...1 mA
Accuracy		Class B
Connection type		2-wires connection
Nominal length		40 mm
Diameter		4 mm
Material of the protective sleeve		Stainless steel 1.4404
Electrical connection		Open ends 50 mm End sleeves uninsulated
Connection cable	Length Cross section Insulation	2000 mm 2 x 0,22 mm^2 glass fibre/glass fibre/VA
Ingress protection		IP30

Article Description	Art.-No.
Cable Probe Pt100	0600 0232-100

Dimensions





HUMIDITY / TEMPERATURE PROBES

In the industrial environment, very high standards are placed on temperature humidity probes with respect to accuracy, longterm stability and features. The B+B Temperature humidity probes have been developed to meet these standards. Whether in plastic or stainless steel housings, with analogue voltage or current output, the latest-generation capacitive humidity sensors can be used anywhere in home and air-conditioning technology.

The dew point switches are condensation monitors for objects that require protection from condensation.

Applications

- Air condition and heating plants
- Building automation
- Measurement and control technology
- Drying plants

Humidity/Temperature Probes
with Transmitter 0...10 V/ 4...20 mA

Description

Type AF, for the wall mounting

Type INT, for the channel mounting

In the area of building technology, there is a requirement for reasonably priced measuring probes which are suitable for continuous operation and protected against overvoltage and transients. Further aspects are DC/AC supply, long term stability as well as a high measuring accuracy. Developed using modernst sensor technologies and ASIC facilities, these humidity and temperature probes satisfy all these requirements and are thus especially suitable for applications in this area.

The measurement of relative humidity is done with a precise and long term stable capacitive polymer sensor element with industrial rating. The measurement values are temperature compensated and linearised according to the chosen electrical output type. The probe tube, made of high quality stainless steel ends on a fine pored PE filter cap which protect the sensitive capacitive sensor. The sensor is extended to the electronic box through a pressure-tight teflon lead-trough. Thus the probe can be used also in applications where pressure gradients and/or high flow velocities occur (such as aeration ducts).

Features

- Standard signal 0...10 V or 4...20 mA
- Linearised and temperature compensated humidity measurement
- High long term stability, innovative technique
- Probe with stainless steel housing 1.4571
- Probe head with PE sintered filter
- High quality housing enclosure IP65
- Model 0...10 V with AC/DC supply

Technical Data

Measuring range	Humidity Temperature	0...100 % RH 20...+80 °C
Accuracy	Humidity Temperature	±2 % RH ±0,5 °C (from 0...+50 °C)
Nominal length	Type -INT Type -AF	223 mm 73 mm
Diameter		12 mm
Output scaling	Humidity Temperature	0...100 % RH -20...+80 °C FS
Response time		approx. 25 sec (with protection filter)
CE conformance		89/336/EWG
EMC: noise emission		EN 61000-6-3:2001
EMC: noise immunity		EN 61000-6-2:2001
Protection filter		PE sintered filter 40 µm
Cable gland		M16 x 1,5 mm
Electrical connection		Screw terminals 0,75 mm
Operating voltage	0...10 V 4...20 mA	12...24 V AC/DC 12...24 V DC
Over voltage protection		Varistor and RC filter
Dimensions (Housing L x W x H)		65 x 59 x 38 mm

Article Description	Art.-No.
Humidity/Temperature Probes 0...10 V, Type INT	
Model only Humidity Probe	FF-GLT-10V-INT-TE0
Model Humidity/Temperature Probe	FF-GLT-10V-INT-TE1
Model Humidity/Temperature Probe Pt1000	FF-GLT-10V-INT-TEPT
Humidity/Temperature Probe 0...10 V, Type AF	
Model only Humidity Probe	FF-GLT-10V-AF-TE0
Model Humidity/Temperature Probe	FF-GLT-10V-AF-TE1
Model Humidity/Temperature Probe Pt1000	FF-GLT-10V-AF-TEPT
Humidity/Temperature Probe 0...20 mA, Type INT	
Model only Humidity Probe	FF-GLT-20MA-INT-TE0
Model Humidity/Temperature Probe	FF-GLT-20MA-INT-TE1
Model Humidity/Temperature Probe Pt1000	FF-GLT-20MA-INT-TEPT
Humidity/Temperature Probe 0...20 mA, Type AF	
Model only Humidity Probe	FF-GLT-20MA-AF-TE0
Model Humidity/Temperature Probe	FF-GLT-20MA-AF-TE1
Model Humidity/Temperature Probe Pt1000	FF-GLT-20MA-AF-TEPT

Other models, e.g. Pt1000, only Temperature and only Humidity are available on request.

Applications

- Building technology
- Measurement- and control technology
- Climatic record
- Drying technology

Accessories Humidity/Temperature Probes

Description

4-pin M12-connection coupling for type INT
with moulded, shielded cable. Straight and angled version.

Article Description	Art.-No.
M12-connection coupling, straight version, cable length 2 m	0409 3000
M12-connection coupling, straight version, cable length 5 m	0409 3000-01
M12-connection coupling, angled version, cable length 2 m	0409 3001
M12-connection coupling angled version, cable length 5 m	0409 3001-01

Description

Compression clamp for mounting
with PTFE lock ring.

Article Description	Art.-No.
Compression clamp G1/2“, bore diameter 12,1 mm Stainless steel 1.4571	0554 0099

Description

Sintered filter made of stainless steel 1.4303, hollow cylinder with closed bottom. Application: The sintered filter provides a good mechanical protection, dust protection, EMV-shielding and a high temperature application up to +100 °C.

Technical Data	
Temperature range	-30...+100 °C
Pore width	40 µm
Connection thread	M11 x 0,75
Dimensions	Ø 12 x 27 mm

Article Description	Art.-No.
Sintered filter made of stainless steel 1.4303	SIFI12-V2A-Z1227

Description

Sintered filter made of stainless steel 1.4303, hollow cylinder with pointed bottom. Application: For use in bulk materials and granule processing. The Sinter filter provides a good mechanical protection, dust protection, and EMV shield.

Technical Data	
Temperature range	-30...+100 °C
Pore width	40 µm
Connection thread	M11 x 0,75
Dimensions	Ø 12 x 27 mm

Article Description	Art.-No.
Sintered filter made of stainless steel 1.4303	SIFI12-V2A-SP1227

Decription

Sintered filter made of sintered synthetics materials and water-repellent. The fine pore structure provides an excellent protection against dust, airborne particles and aerosols at high chemical persistency.

Technical Data	
Temperature range	-20...+70 °C
Pore width	25 µm
Connection thread	M11 x 0,75
Dimensions	Ø 12 x 27 mm

Article Description	Art.-No.
Sinter filter made of HD-Polyethylene	SIFI12-HDPE-Z1220

Description

Protective cage without filter made of stainless steel or plastic. The protective cage protects the sensor element coarsely against mechanical detrimental factors.

Technical Data		
Temperature range	Stainless steel Plastic	-40...+190 °C -20...+80 °C
Connection thread		M11 x 0,75
Dimensions		Ø 12 x 27 mm

Article Description	Art.-No.
Protective cage made of stainless steel, without filter	SK12-V2A-OF
Protective cage made of plastic, without filter	SK12-KU-OF

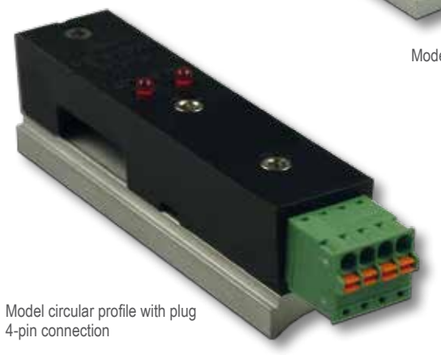
Other modes and materials (e.g. PTFE-sintered filter) are available on request.

Dew Point Controllers

with surface sensors - with either a planar or circular profile

Description

Model planar profile



Model circular profile with plug
4-pin connection

The Dew Point Controller from B+B are condensation monitors for switch cabinets, cooling ceilings, windows, damp-proof equipment, submersible pumps and other items that must be protected from condensation. The condensation monitor is mounted on the object, and at high humidity levels, as dew forms or condensation begins, the relay contact opens. Two LEDs indicate the operating condition. Sensor is integrated with protection filter.

Features

- Condensation monitors for windows, switch cabinets, cooling ceilings
- Operating temperature 0...+60 °C
- Defined behaviour during dew formation or condensation
- High security system
- Integrated dust filter
- Calibrated, reliable device
- Over voltage protection
- Waterproof, in plastic embedded electronics

Applications

- To prevent condensate formation in the outside walls or steel doors of halls and stockrooms and to protect the brick work
- For humidity and leakage monitors: The potential free static switch contact is compatible with all common commercial alarm equipment and signalling systems

Technical Data

Measuring range	at Dew Point Controller 0...+60 °C: 0...100 % RH
Accuracy	±1 °C ±4 % RH
Temperature range	0...+60 °C
Switch-Point	94 % RH
Current consumption	max. 10 mA
Operating voltage	24 V AC/DC ±20 %
Electrical connection (Model level profile)	4-pin connection

Article Description	Art.-No.
for planar surfaces and big pipe diameter (level profile)	TPS-FL-BU
for pipe diameter 15 mm (circular profile)	TPS-D15-BU
for pipe diameter 18 mm (circular profile)	TPS-D18-BU
for pipe diameter 22 mm (circular profile)	TPS-D22-BU

Model with connection cable and further pipe diameter are available on request.

ROOM AIR

The air quality in indoor spaces is becoming more and more important nowadays. It contributes significantly to the enhancement of physical and mental power and capacity and to a comfortable indoor climate. Clean air contains 78 % nitrogen, 21 % oxygen, 0,03 % carbon dioxide and 0,93 % noble gases. This composition changes when humans, plants or objects are in a room or an apartment. Humans, for example, add humidity and carbon dioxide to the indoor air. The oxygen content decreases as it is consumed by respiration.

Ventilation therefore influences many things that make up a healthy environment! Humidity determines in a special way whether you feel comfortable in a room. Low humidity dries out the mucous membranes, which can cause bacteria and viruses to spread faster and result for example in a cold. Excessive humidity is quickly perceived as being oppressive, and can occur when a room is insufficiently ventilated. The water vapour given off by persons present in the rooms is also an important factor. A resting person produces about 1 litre of sweat, an active person about 2.5 litres, and four people up to 10 litres of water vapour into the environment each day, which is equivalent to a full bathtub every week! A relative humidity of between 40 and 60 % is perfect for a good indoor climate.

With B+B products, you can create just such a healthy indoor climate!

Applications

- Living rooms
- Business premises
- Sanitary areas (bathroom and lavatories)

Temperature Measurement System
Wall mount

Description

In addition to low pricing, the building automation branch sets high Features requirements on measurement systems. Long term stability by continuous use, protection against surges and transients, power supply, through DC or AC options and high accuracy level are some of the needs of these applications. The temperature sensor is designed specifically for these requirements, and with its latest sensor technology and innovative design using an ASIC it is specially designed for use in this area.

Technical Data

Measuring range	-30...+70 °C
Accuracy	± 0,7 °K (0...+40 °C)
Outputs	-30...+70 °C according to 0...10 V
Housing material	ABS
Electrical connection	Screw terminal 0,75 mm²
Connection cable (-EXT)	1500 mm
Power supply	12...24 V AC/DC
Overvoltage protection	Varistor and RC-Filter
Dimensions (L x W x H)	71 x 71 x 27 mm

Article Description	Art.-No.
Temperature measurement system 0...10 V	TF-GLT-10V
Temperature measurement and passive Pt1000 temperature system, potential free	on request

Features

- Temperature measurement
- Inconspicuous wall mounted housing
- Standard signal 0...10 V
- Linearised and temperature compensated measurements
- High long-term stability, innovative technology
- Integrated sensors

Applications

- Temperature measurement inner area
- Building technology
- Industrial measurement- and control technology
- Climatic record
- Home automation

Humidity- and Temperature-Measurement System
Wall mount

Description

In addition to low pricing, the building automation branch sets high Features requirements on measurement systems. Long term stability by continuous use, protection against surges and transients, power supply, through DC or AC options and high accuracy level are some of the needs of these application. The humidity and temperature sensor is designed specifically for these requirements, and with its latest sensor technology and innovative design using an ASIC, it is specially designed for use in this area. The measurement of relative humidity is undertaken using a precise and long-term stable capacitive polymer sensing element with industrial Features.

Technical Data

Measuring range	Humidity Temperature	0...100 % RH, non-condensing -30...+70 °C
Accuracy	Humidity Temperature	±3 % RH (30...90 % RH) ±0,7 °K (0...+40 °C)
Outputs	Humidity Temperature	0...100 % RH according to 0...10 V -30...+70 °C according to 0...10 V
Response time	Humidity	approx. 25 sec.
Housing material		ABS
Connection cable (-EXT)		Screw terminal 0,75 mm²
Power supply		12...24 V AC/DC
Overvoltage protection		Varistor and RC Filter
Dimensions (L x W x H)		71 x 71 x 27 mm

Article Description	Art.-No.
Humidity system 0...10 V	FF-GLT-10V-TE0
Humidity and temperature System 0...10 V	FF-GLT-10V-TE1
Humidity 0...10 V and passive Pt1000 temperature system, potential free	FF-GLT-10V-TEPT

Features

- Humidity- and temperature measurement
- Inconspicuous wall mounted housing
- Standard signal 0...10 V
- Linearised and temperature compensated measurements
- High long-term stability, innovative technology
- Integrated sensors

Applications

- Indoor- and humidity temperature measurement
- Building technology
- Industrial measurement- and control technology
- Climatic record
- Home automation

Temperature- and Humidity Measurement System

In-wall mount

Description

The temperature and humidity measuring system in the flush version offers the same features as the wall-mounting version. The possibility of flush mounting makes the temperature sensor unobtrusive, meaning it fits in better with the installation environment

Technical Data

Measuring range	Humidity Temperature	0...100 % RH, non-condensing -30...+70 °C
Accuracy	Humidity Temperature	±3 % RH (30...90 % RH) ±0,7°K (0...+40 °C)
Outputs	Humidity Temperature	0...100 % RH according to 0...10 V -30...+70 °C according to 0...10 V
Response time	Humidity	approx. 25 sec.
Housing material		ABS
Electrical connection		Screw terminals 0,75 mm²
Power supply		12...24 V AC/DC
Overvoltage protection		Varistor and RC filter
Dimensions (L x W x H)		88 x 88 x 15

Article Description	Art.-No.
Temperature measurement system in-wall mount	H637 0002-01
Humidity measurement system in-wall mount	H637 0002-02
Temperature and humidity temperature measurement in-wall mount	H637 0002-03

Features

- In-wall mounted housing
- Standard signal 0...10 V
- Linearised and temperature compensated measurements
- High long-term stability, innovative technology
- Integrated sensors

Application

- Indoor Temperature and Humidity measurement
- Building Technology
- Industrial measurement and control technology
- Climatic record
- Home automation

Humidity Controller

for Sanitary Rooms

Description

The humidity controller is the problem solution to avoid fungal growth and building erosion in moist rooms such as showers, bathrooms and sanitary rooms. In addition to the time-controlled automatic function via light switch, the device also provides a humidity control operation. It switches the fan on at critical humidity values and hence ensures dry room climate.

Technical Data

Measuring principle	Capacitive humidity sensor
Switching point	70 % RH or strong humidity rise
Cable length	3 m incl. RJ12-connector
Switch on delay	40 sec
Switch off delay	300 sec
Operation humidity	0...100 % relative humidity
Operating temperature	0...+40 °C
Switch output	Triac with null voltage switch, 230 V / 1 A
Switch input „Light“	230 V AC / approx. 1 mA
Switch input „Humidity off“	230 V AC / approx. 1 mA
Over voltage protection	With varistor at mains input and switch output
Operating voltage	230 V AC / 3 VA
Dimensions (L x W x H)	100 x 88 x 33 mm

Article Description	Art.-No.
Humidity controller for sanitary rooms	FREG-BAD

Features

- Automatic humidity control for bath rooms, sanitary rooms and kitchen
- Direct control of the fan
- Room climate control
- High quality and long-term stable humidity probe
- Switch-on delay and overrun adjustment
- Signal input for light switch

Applications

- Humidity control for bathrooms, toilets, showers and other sanitary facilities
- Kitchens and kitchenettes

BUILDING AUTOMATION

The entirety of monitoring, measuring, controlling and optimizing facilities in buildings is known as building automation. The goal is to run functional processes across disciplines (automatically) according to set values or to simplify their control and monitoring. All sensors (e.g. Temperature Probes), actuators (e.g. for moving a shutter), controls (such as touch panels, room controllers), consumers and other technical units (ventilation, air conditioning units, heating, security system etc. in the building) are networked together.
The different areas of the building automation technology can be classified by function: Room lighting, ventilation and air conditioning, communications and entertainment technology. These separate disciplines are interlinked in the building automation system in an inter-disciplinary network via intelligent building functions. The goal of building automation is to save energy, to reduce the required capital expenditure and to increase the flexibility in regard to other uses.

Applications

- Technical facility management
- Servicing (operation, maintenance, surveying)
- Heating, ventilation and air conditioning
- Process measuring and control technology
- Safety features and fire-detection devices
- Materials handling equipment
- Sanitary accessories

Outdoor Probes
Wall mount

Description

- Ingress protection IP54
- Plastic case UV resistant
- Cable input for connection cable with 4,5...7 mm diameter
- Printed circuit board with 2-pin terminal block incl. dowel and srew for wall mount
- Measuring range -50...+90 °C

Technical Data

Sensor	Accuracy	Measuring current
Pt100	Class B	max. 1 mA
Pt1000	Class B	max. 0,1 mA
Ni 1000	Class B	
Ni 1000, TK 5000	TK 5000	
NTC 5 kΩ	±0,2 °C at 0...+70 °C	
NTC 10 kΩ	±0,2 °C at 0...+70 °C	
KTY 81-110	±1 % at 25 °C	
KTY 81-210	±1 % at 25 °C	
Measuring range		-50...+90 °C
Ingress protection		IP54
Dimensions (L x W x H)		64 x 34 x 30 mm

Article Description	Art.-No.
Outdoor Probe Pt100, 2-wires connection	0627 0900
Outdoor Probe Pt1000, 2-wires connection	0627 0900-01
Outdoor Probe Ni 1000, 2-wires connection	0627 0900-02
Outdoor Probe Ni 1000, TK 5000	0627 0067-31
Outdoor Probe NTC 5 kΩ	0627 0900-04
Outdoor Probe NTC 10 kΩ	0627 6031
Outdoor Probe KTY 81-110	0627 7031
Outdoor Probe KTY 81-210	0627 0900-07
Case only with printed circuit board, 2-pin terminal block, dowel and screw	0209 0007-10
Case only, dowel and screw	0209 0900

Outdoor probes with I²C interface are available on request.

Rain Detector

for either 12 V AC/DC or 24 V AC/DC power supply

Description

The large sensor area reacts to rain or snow. The switch polarity and sensitivity are adjustable. The optionally switched heater prevents freezing or dew formation and quickens drying. In the maximum sensitivity setting, the device is also suitable for the detection of fog. Accessories are available for mast and wall mounting for easy assembling.

Features

- Fail-safe, electrolytic measurement principle
- Precipitation can be detected as rain or snow
- Large, heated sensor area for fast drying and operation in winter season
- Sensitivity and switching mode adjustable
- Universal wall/mast mounting bracket as accessories

Applications

- Nurseries and agriculture
- Control of ventilation hatches and garret windows
- Automatic switch for awnings and roller blinds
- Building automation
- Weather stations

Technical Data

Measuring principle		Electrolytic AC measurement
Input current	12 V model 24 V model	60 mA, heater 80 - 300 mA (PTC) 50 mA, heater 40 - 180 mA (PTC)
EMC: noise emission		EN 61000-6-3:2001
EMC: noise immunity		EN 61000-6-2:2001
Cable gland		M16 x 1,5
Electrical connection		Compression fitting 1,5 mm
Operating voltage	optional:	12 V AC/DC +10 % 24 V AC/DC +10 %
Output		Isolated relay switching output 30 V / 4 A, optional: NO/NC contact
Housing		ABS, Ingress protection IP54
Dimensions (L x W x H)		82 x 80 x 58 mm

Article Description	Art.-No.
Rain detector 12 V	REGME-12V
Rain detector 24 V	REGME-24V
Accessory: Wall mount for rain detector	REGME-WAHA

Accessory: Wall mount for rain detector incl. fastening fixtures

Weather Protection Housing

for protection of probes in outdoor areas

Description

Outdoor humidity sensors in particular must be protected against solar radiation and rain. The weather protection housing are optimal solutions to protect the sensors from weather conditions without distorting the readings. Special materials that are suitable for outdoor use ensure long-lasting durability. There are several hot-dip galvanized brackets available for secure mounting: mast clamp 0.5“ to 2“, mounting bracket and a flat mounting plate.

Other weather protection housing with different dimensions are available at short notice.

Features

- Professional weather protection housing
- Protection from sun and rain
- Model with mast clamp, mounting bracket or mounting plate
- Radiation hat Ø 110 x 150 mm
- 10 segments from UV-stabilised white Makrolon
- Anodized sleeve connection with cable gland M16 and resilient membrane

Technical Data

Material of the radiation hat	10 segments from UV-stabilized, white Makrolon
Radiation hat	Ø 110 x 150 mm
Operating temperature	-20...+80 °C
Connections	Anodized sleeve connection with cable gland M16 and resilient membrane. Suitable for probes with Ø 12 x 180 mm

Article Description	Art.-No.
Weather protection housing, with mast clamp 0,5" to 2“ and bracket 300 mm steel, hot-dip galvanized	STRAHUT-MAST
Weather protection housing, with mounting angle, 210 x 85 x 90 mm steel, hot-dip galvanized	STRAHUT-MOWI
Weather protection housing, with mounting plate, 300 x 90 mm steel, hot-dip galvanized	STRAHUT-MOPL

Applications

- Suitable for probe with Ø 12 x 180 mm
- Outdoor installation
- Protection of the probe against atmospheric influences

Level controller for conductive liquids

230 V in housing

Description

The level controller is used for simultaneous monitoring of the minimum and maximum level of conductive liquids.

Suitable probes see pages 36 and 37. The level controller works with four electrodes in a fluid container that project into the medium up to the desired switch point. According to the water contact of the electrodes, the liquid level is indicated by four LEDs. In a completely empty container, the red LED is illuminated. The lower pair of electrodes can be used as a filling-valve switch, for instance.

Features

- Level control for conductive liquids
- Simultaneously monitors four levels
- Two independent stages for filling/emptying
- Fill level and status display with eight LEDs
- Two high-Features, isolated relays with changeover contacts
- Operating voltage, depending on the model:
  12 V / 24 V AC/DC or 230 V AC

Applications

- Water feeding / monitoring of rainwater tanks
- Monitoring of condensate trays
- Controlling of pumps
- Livestock watering
- Springs and wells

Technical Data

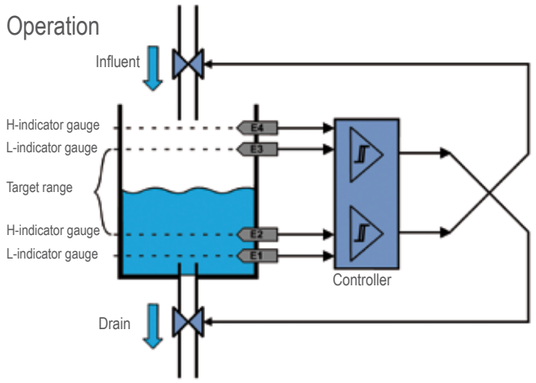
Switch point impedance	15...80 kΩ, adjustable via a potentiometer
Measuring voltage	max. 5 V
Measuring current	< 250 µA
Relay	NO/NC contact for resistive load Rating NO contact 230 V AC/5 A Rating NC contact 230 V AC/2 A
Surge suppression	NO contact, Varistor VZ 05/390 V
Switch point	2...60 kΩ (typically 15 kΩ) 67 µm
Cable gland	compression fitting 1,5 mm²
Operating voltage	230 V AC/5 VA max.
Housing	ABS, Ingress protection IP54
Dimensions (L x W x H)	100 x 100 x 60 mm

Article Descripton	Art.-No.
Level Controller 230 V, completely enclosed by housing with integrated power supply and control unit, incl. measuring probe connection cable, 6-pin with RJ12 Thermocouple	WLS-GEH230V
12 V version as a module (circuit board), 95 x 75 mm without housing and control unit	WLS-12V
24 V version as a module (circuit board), 95 x 75 mm without housing and control unit	WLS-24V
Housing ET210F, raw	ET210-F

For suitable probe see page 36 and 37.

Fig.: 12 V / 24 V Level controller modul (circuit board) used for the assembly of customized level controllers

Operation



Fill Level Probe

with Pendulum electrodes for level controller

Description

The probe is used for sensing the fill level at 4 stages in water or other conductive liquids. The probe has five hanging electrodes, which hang out at different lengths inside the medium up to the switching point of that stage. The hanging electrodes are in the form of corrosion protected stainless steel weight (plumb), which are hung up with stainless steel rope. When the fill level in the container rises up to the electrode, it gets wet and the presence of medium is registrated due to its conductivity.

Because of its flexible constructional arrangement, the electrode length can be individually set at desired switching points. The set contains 10 m of stainless steel rope, so that each probe can be made with over 2 m length.

Technical Data

Sensor element	Protected hanging electrode
Measuring range	+2...+80 °C
Switching point impedance	15...80 kΩ
Signal evaluation	Using AC impedance measurement
Material of the probes	Stainless steel V2A, 1.4305, corrosion resistant
Dimensions of the Pendulum electrodes	approx. 70 x Ø 16 mm
Cable gland	M16 x 1,5
Connection cable	Semoflex, oil resistant, 3 m with RJ12-connector
Material housing	Plastic
Dimensions housing (L x W x H)	84 x 84 x 60 mm

Article Description	Art.-No.
Fill Level Probe with pendulum electrodes	ELEKT-PEND

Features

- For connection to the level controller WLS-GEH (see page 34)
- Conductive operating principle, electrolytic fill level measurement
- High reliability, safe evaluation set-up
- High quality stainless steel Pendulum electrodes
- AC voltage signal evaluation, low AC sensing current
- Robust plastic housing

Applications

- Fill level probe for cisterns
- Industrial applications
- Agriculture

Fill Level Probe

threaded electrodes for Level controller

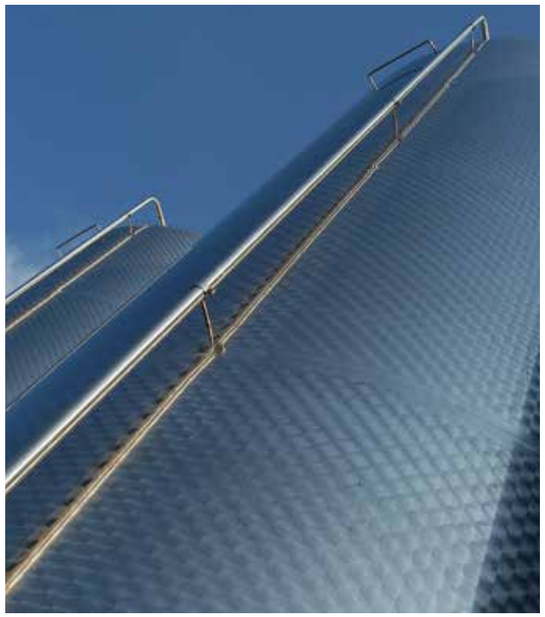
Description

The probe is used for sensing the fill level at 4 stages in water or other conductive liquids. It has five partially insulated rod electrodes, which hang out at different lengths inside the medium up to the switching point of that stage. When the fill level in the container rises up to the electrode, it gets wet and the presence of medium is registrated due to its conductivity. The standard version has a length of 400 mm, which can be cut easily by the user himself. Alternatively, the sensor can also be delivered according to the customer's demands. The electrodes are insulated in the upper area. That means the sensor is also suitable for areas where condensation may occur, for example for the use in a heated medium. The terminal compartment is provided with a membrane to prevent water condensation. The hanging construction of the probe prevents dirtying and therefore ensures safe switching behaviour also in polluted media.

Technical Data

Sensor element	5 x Stainless steel rod electrodes
Measuring range	+2...+80 °C
Switching point independence	15...80 kΩ
Signal evaluation	Using AC impedance measurement
Material of the probes	Stainless steel V2A, 1.4305, corrosion resistant
Length rod electrodes	between 145 and 320 mm
Cable gland	M16 x 1,5
Connection cable (incl.)	Semoflex, oil resistant, 3 m with RJ12-connector
Material housing	Plastic
Dimension housing (L x W x H)	63 x 57 x 34 mm

Article Description	Art. No.
Fill Level Probe with threaded electrodes	NIVFUE-ESCHR



Features

- For connection to the level controller WLS-GEH (see page 34)
- Conductive operating principle, electrolytic fill level measurement
- High reliability, safe evaluation set-up
- High quality stainless steel rod electrodes
- AC voltage signal evaluation, low AC sensing current
- Robust plastic housing

Applications

- Fill Level Probe for fluid tanks
- Industrial applications
- Agriculture
- Caravan

Leakage alarm unit

WATER DETECTOR, Model 12 V AC/DC or 24 V AC/DC

Description

The WATER DETECTOR is a functionally leakage monitor with adjustable sensitivity and switching behaviour, two integrated, gold-plated measuring tips and a potential free switch output (Relay) 30 V / 4 A. The measurement level is adjustable from 0 to 15 mm.

Technical Data

Measuring principle		Electrolytic conductivity
Measuring medium		Conducting liquids, construction material
Application temperature		+5...+60 °C
Operating voltage	optional	12 V DC ±10 %, max. 80 mA 24 V DC ±10 %, max. 80 mA
Switching power		30 V / 4 A
Switching point		approx. 2...60 kΩ (type. 15 kΩ) 67µS
Cable gland		M16 x 1,5
Electrical connection		Compression fitting 1,5 mm²
Housing		ABS, Ingress protection IP54
EMC: noise emission		EN 50081-2
EMC: noise immunity		EN 50082-2
CE conformance		89/336/EWG
Dimensions (L x W x H)		82 x 80 x 58 mm

Article Description	Art.-No.
Leakage alarm unit 12 V	LEME-12V
Leakage alarm unit 24 V	LEME-24V

Features

- Safe operation, impedance measuring principle
- Operating voltage: optionally 12 V or 24 V
- 2 integrated, gold plated measuring tips
- Potential free switch output (Relay) 30 V / 4 A
- Adjustable sensitivity and switching mode
- Adjustable measuring level 0...15 mm
- Simple mounting
- Optional with acoustic signal generator

Applications

- Sanitary plants, water installation
- Monitoring of cooling systems
- Condensate switch for collection tanks
- Building automation, air-conditioning

Brightness Sensor
with transmitter 0...10 V

Description

The Brightness Sensor is a light sensor for building control systems. It is protected against overvoltage and transients and is suitable for continuous operation. For the measurement of intensity of illumination a precise and longterm-stable photodiode with industrial Features data is used. The processing of the measured signal is used by the latest sensor technology with an ASIC. The module variation up to 100000 Lux has a high sensitivity over a wide range of luminance intensity. Thus the brightness sensor can also be used under very bright lightning conditions.
Typically for indoor use or outdoor use in the twilight the variant 0...1000 Lux is applicable.

Technical Data

Measuring ranges	Art.No. 0555 3001 Art.No. 0555 3002	0...100000 Lux 0...1000 Lux
Sensor element		Photodiode
Maximum spectral sensitivity		600 nm
Output scale		0...100000 FS
CE conformity		89/336/EEC
Accuracy		± 30 %
Operating temperature		-20...+75 °C
EMC: noise emission		EN 61000-6-3:2001
EMC: noise immunity		EN 61000-6-2:2001
Power supply		12...24 V AC/DC
Output signal		0...10 V DC
Overvoltage protection		Varistor and RC filter
Dimensions (L x W x H) (without the coupling of the brightness sensor)		65 x 59 x 38 mm

Article Description		Art.-No
Brightness sensor with transmitter	0...100000 Lux	0555 3001
Brightness sensor with transmitter	0...1000 Lux	0555 3002

Features

- Standard signal 0...10 V with AC/DC supply
- Large measuring range: 0...100000 Lux for outdoor use at daylight or measuring range 0...1000 Lux for indoor use or outdoor in the twilight
- 3-point calibrated and linearized
- Long-term stable
- Brightness sensor and transmitter combined in one housing
- High-quality housing with ingress protection IP65, plastic

Applications

- Central building control systems, dark/bright switching operations
- For use as a solar sensor
- Rain-protected weather stations
- Devices powered by solar modules
- For use even in intense solar radiation

Light Probe
for connection to the universal sensor switching module

Description

Universal light probe for general applications. As dimmer switch, the probe, in combination with switching electronics, controls the outside illumination or operates rolling shutters or blinds for example in winter gardens. Further areas of application come up in alarm systems or to monitor the lighting arrangement. The sealed probe is robust and resistant against detrimental factors.

Technical Data

Measuring range	50...20000 Lux
Sensor element	LDR Heimann 9660
Resistance range	15 kΩ...100 kΩ (type 55 kΩ at 1 kLux)
Tolerance	±20 % of resistance value
Linearization	with integrated parallel resistance (100k)
Connection	RJ12-connector, 6-pin
Cable gland	M16 x 1,5
Cable length	1 m
Dimensions (probe)	Ø 12 x 60 mm

Article Description	Art.-No.
Light probe, for connection to the Universal Sensor Controller	SENSW-LIF

Article Description	Art.-No.
Universal Sensor Controller	156530

Features

- Weatherproof, for mounting indoors and outdoors
- With diverging lens and diffuser
- Pre-assembled with connection cable 1 m, Western plug and cable gland

Applications

- Dimmer switch
- Central building control systems
- Industrial applications

PIR Motion Alarm Module

with Fresnel lens, without housing, for assembly in customer-specific devices

Description

The universal PIR Motion Alarm Module with integrated light sensor is used for automatic lighting control. When movement or darkness, is detected, the relay is switched on for an adjustable time period. The PIR Motion Alarm Module has an adjustable operating distance of 4 to 10 m and also adjustable lighting threshold level and follow-up time.

Technical Data

Operating temperature	-20...+60 °C
Operation humidity	0...90 % RH (bedewing not admissible)
Switch point light intensity	approx. 100...2000 Lux
Follow-up time	10...200 sec.
Frequency bandwidth	0,2...10 Hz
Angle of aperture	horizontal ± 50° vertical ± 30°
Operating distance	approx. 4...10 m adjustable
Output	Isolated free relay contact 40 V / 3 A DC
Power supply	11...15 V DC
Current draw	quiescent 6 mA operating 21 mA
Dimensions (L x W x H)	78 x 26 x 32 mm

Article Description	Art.-No.
PIR Motion Alarm Module with Fresnel lens	PIR-ASIC-FRES

Other PIR modules with differing lens technology are available on request.

Features

- Circular Fresnel lens, easy to mount
- Adjustable, retriggerable timer
- Day/night operation through light sensor
- Adjustable sensitivity
- Interference-proof circuit design

Applications

- Automatic lighting control
- Fans in bathrooms and sanitary areas
- Alarm and safety systems
- Presence alarm units
- OEM applications

PIR Motion Alarm Module

with mirror optics, without housing, for assembly in customer-specific device

Description

The universal PIR Motion Alarm Module with integrated light sensor is used for automatic lighting control. When movement or darkness is detected, the relay is switched on for an adjustable time period. The PIR Motion Alarm Module has an adjustable reach distance of 2 to 8 m and also adjustable lighting threshold level and follow-up time.
The inlet window is flush to the mounting surface and has a size of only 9 x 21 mm. So the module almost invisible and vandal-proof.

Technical Data

Operating temperature	-20...+60 °C
Operation humidity	0...90 % RH (bedewing not admissible)
Switch point light intensity	approx. 100...2000 Lux
Follow-up time	10...200 sec.
Frequency bandwidth	0,2...10 Hz
Angle of aperture	horizontal ± 50°
Operating distance	approx. 2...8 m adjustable
Output	Isolated free relay contact 40 V / 3 A DC
Power supply	11...15 V DC
Current draw	quiescent 6 mA operating 21 mA
Dimensions (L x W x H)	78 x 26 x 38 mm

Article Description	Art.-No.
PIR Motion Alarm Module with mirror optics	PIR-ASIC

Features

- Innovative mirror design, hidden installation
- Adjustable, retriggerable timer
- Day/night operation through light sensor
- Adjustable sensitivity
- Interference-proof circuit design

Applications

- Automatic lighting control
- Fans in bathrooms and sanitary areas
- Alarm and safety systems
- Presence alarm units
- OEM applications

Radar Based Motion Detector Module

with signal interpretation

Description

The Radar Based Motion Detector Module is suitable for a variety of applications where presence or movement are to be registrated and switching operations are to be triggered. It meets the requirements for door openers, alarm and security systems and for the controlling of machines. Radar operates through many materials, such as plastic. So a hidden, vandal-resistant installation of the Radar Based Motion Detector Module is possible.

Technical Data

Operating temperature	-20...+60 °C
Operation humidity	0...90 % RH (bedewing not admissible)
Frequency bandwidth	6...600 Hz
Angle of aperture	Horizontal 80°, vertical 32°
Sending frequency	24,0...24,25 GHz
Output power	Type. 16 dbm (EIRP)
Output	Open collector switch output with Free-wheeling diode
Power supply	8...15 V DC
Operating current	30 mA
Operating distance	4...15 m
Dimensions (L x W x H)	73 x 26 x 16 mm

Article Description	Art.-No.
Radar Based Motion Detector Module	RAD-MOD

Features

- Innovative radar operating principle: High sensitivity on the slightest movement
- Safe against vandalism
- Adjustable sensitivity
- Universal open collector output
- LED shift indicator

Applications

- Automatic lighting control by movement
- Hygiene switch for fan control in sanitary areas
- Alarm and safety systems
- Presence alarm units, central building control systems
- OEM applications

Sauna Probe

0...10 V

Description

The Sauna Probe is protected against surges and transients, and is therefore suitable for continuous use. Another important aspect is the application high level of measuring accuracy. The temperature is measured with a precise and long-time stable platinum resistance temperature detector with industrial Features. The temperature value is converted by the electronic signal processing into a standard signal.

Technical Data

Sensor element	Platinum RTP Pt1000
Measuring range	0...+120 °C
Accuracy	±0,3°K (of 0...+50 °C)
Output scaling	-30...+70 °C according to 0...10 V
CE conformity	89/336/EWG
EMC: noise emission	EN 61000-6-3:2001
EMC: noise immunity	EN 61000-6-2:2001
Housing	Plastic
Electrical connection	Screw terminals 0,75 mm^2
Connection cable (-EXT)	1500 mm
Operating voltage	12...24 V DC
Overvoltage protection	Varistor and RC Filter
Dimensions Housing (L x W x H)	59 x 65 x 35 mm

Article Description	Art.-No.
Sauna Probe 0...10 V	TF-10V-SF

Features

- Standard signal 0...10 V
- 3-point calibrated and linearized
- Long-term stable
- Sensor in protective sleeve, made of stainless steel 1.4571
- High-quality housing IP65
- Integrated measuring probe and transmitter

Application

- Sauna

MEASURING DEVICES FOR CONTROL AND MONITORING

With B+B measuring devices, temperature and humidity can be measured, displayed and evaluated, depending on the device on consideration.

The temperature controllers are used for controlling and regulating and can be used in many areas.

Our data loggers are electronic data acquisition systems. These systems allow continuous recording. Even in harsh industrial environments, these systems provide precise and reliable measurement readings in digital form (up to 32.000 values).

Application

- Area monitoring
- Quality assurance
- Process control
- Analysis

Benefits:

- Compact and programmable
- High precision
- Reliable electronic data record
- Excellent price ratio Features

Hygrometer RT817CE

with integral and external temperature sensor

Description

- Concise jumbo display 79 x 66 mm
- Indication of temperature indoor/outdoor, humidity and clock
- Temperature unit °C or °F selectable
- 12 or 24 hours format
- Frost alarm at a temperature below 0 °C
- MIN- and MAX values indication
- Automatic daily update of the MIN/MAX-values
- Snooze button

Technical Data

Measuring range	integrated extern	0...+50 °C 20...99 % RH -50...+70 °C
Accuracy		±1 °C, ±3 % RH 3 sec per day
Measuring rate		10 sec
Resolution		0,1 °C, 1 % RH
Cable length external temperature probe		3 m
Battery		1,5 V, type AAA
Alarm duration		12 minutes
Dimensions display		79 x 66 mm
Dimensions of the device (L x W x H)		98 x 110 x 21 mm

Article Description	Art.-No.
Hygrometer	0560 0064

Scope of delivery: Hygrometer RT817CE incl. battery, wall holder for the probe and suction cup for mounting the probe on windows or flat surfaces.

Hygrothermometer

Hygrostick 8703

Description

The Hygrometer is a convenient device for measuring of temperature and relative humidity. The measuring probe is integrated in the display unit and is secured against damages with a protection cap. Thus the device is very compact and can be carried along easily.

Scope of delivery: Hygrothermometer Hygrostick 8703 incl. battery and operation instruction.

Technical Data

Measuring range	Temperature Humidity	-20...+50 °C 0...100 % RH
Accuracy	Temperature Humidity	±1°C ±3 % RH
Response time		60 sec.
Display		Dual row, 4-digits LCD (12,4 mm or 7 mm)
Power supply		2 x 1,5 V battery
Battery live		approx. 500 hours
Housing		shock-resistant ABS
Dimensions (L x W x H)		49 x 170 x 16,5 mm
Weight		75 g

Article Description	Art.-No.
Hygrothermometer Hygrostick 8703	0560 8703

Features

- Compact device for temperature and relative air humidity
- Double line display for both measuring parameters
- Temperature display in °C or °F
- Minimum, maximum value memory, HOLD, automatic switch off
- Additional display of dew point

Application

- Quality assurance
- Air-conditioning and drying systems
- In museums, galleries, churches and restaurants

Controller N321

Cooling and Heating Temperature Controller

Description

0556 0108-01 and 0556 0108-04 incl. NTC 10k Probe

The N321 temperature controller is used to measure, display and control the temperature in many different systems and applications. The controller is available in several versions, depending on the chosen sensor type: Pt100, Pt1000, NTC 10 k or thermocouples type J, K and T. It offers an excellent price to Features ratio.

The user can program the control action according to the application: direct action (refrigeration) or reverse action (for heating). The internal 10 A relay can directly control compressors (cooling) or electrical heaters (heating). The control behaviour is ON/OFF mode.

The controller is CE (European Union) and UL (United States and Canada) certification compliant.

- Measuring range -200...1000 °C, depending on the sensor type
- Measuring resolution 0,1 °C (-19,9...199,9 °C)
- Accuracy ±0,5 °C...±2 °C, depending on the sensor type
- Ingress protection IP65
- Adjustable hysteresis

Scope of delivery: Controller N321, operation instruction on CD. (The versions NTC 10k incl. probe)

Technical Data

Inputs (depending on the version)		Thermocouple type J, K and T Pt100 / Pt1000 NTC 10k, 2 x NTC 10k
Measuring range for thermocouples type	J K T	0...+600 °C -50...+1000 °C -50...+400 °C
Measuring range for	Pt100 Pt1000 NTC 10k	-50...+300 °C -200...+530 °C -50...+120 °C
Accuracy for:	Thermocouple Pt100/Pt1000 NTC 10k	± 2 °C ± 0,5 °C ±1 digit at 25 °C: ±1 %
Measuring resolution		0,1 °C (-19,9...+199,9 °C)
Sample rate		1,5 / sec.
Output		SPDT Relay*,1 HP 250 V AC (16 A Ω resitive load)
Display		3,5 digits LED display red
Operating temperature		0...+50 °C
Power supply		100...240 V AC (±10 %)
Ingress protection		IP65 on the front
Dimensions (L x W x H)		75 x 33 x 75 mm
Weight		120 g

*isolated contact

Article Description	Art.-No.
Controller N321 for Pt1000	0556 0108
Controller N321 for NTC 10k incl. probe (-50...+120 °C)	0556 0108-01
Controller N321 for Pt100	0556 0108-02
Controller N321 for thermocouples J, K, T	0556 0108-03
Controller N321S 2xNTC 10 k incl. probe (-50...+120 °C)	0556 0108-04

Versions with 24 V DC/AC are available on request.

Controller N322

Cooling and Heating Temperature Controller

Description

0556 0109-01 incl. NTC 10k probe

The N322 temperature controller presents the newest generation of temperature controllers. It has been developed to match the requirements in the freezing and heating applications and can be supplied in two different versions for Pt1000 or NTC. The device is characterized by an optimized production process with an excellent price-Features ratio. The user can program the control action according to the application: direct action (refrigeration) or reverse action (heating).

The internal 10 A relay can directly control compressors (cooling) or electrical heaters (heating) with ON/OFF control behaviour. The controllers are CE (European Union) and UL (United States and Canada) certification compliant.

- 2 relay outputs
- Measuring range from -200...+530 °C, depending on the sensor type
- Measuring resolution: 0,1 °C (-19,9...199,9 °C)
- Accuracy: ± 0,5 °C ± 1 digit
- Ingress protection IP65 (front panel)
- Sampling rate: 1,5 / sec
- Adjustable Hysteresis

Scope of delivery: Controller N321, operation instruction on CD. (Version NTC 10k incl. sensor probe)

Technical Data

Inputs for:		Pt1000 or NTC 10k
Measuring range for:	Pt1000 NTC 10k	-200...+530 °C -50...+120 °C
Accuracy for:	Pt1000 NTC 10k	± 0,5 °C / °F ±1 digit at 25 °C: -1 %
Measuring resolution		0,1 °C (-19,9...199,9 °C)
Sample rate		1,5 / sec.
Output 1		SPDT relay*, 1 HP 250 V AC (10A Ω resistive load)
Output 2		SPST relay 3A / 250 V AC
Display		3,5 digits LED display red
Operating temperature		0...+50 °C
Power supply		100...240 V AC (±10 %)
Ingress protection		IP65 (front panel)
Dimensions (L x W x H)		75 x 33 x 75 mm
Weight		120 g

*isolated contact

Article Description	Art.-No.
Controller N322 for Pt1000	0556 0109
Controller N322 for NTC 10k incl. probe (-50...+120 °C)	0556 0109-01

Versions with 24 V DC/AC are available on request.

Controller N322 RHT

Temperature and Humidity Controller

Description

The humidity and temperature controller N322 RHT is a digital controller for relative humidity and temperature. Two relay outputs can be configured individually to control the temperature or the relative humidity. The standard delivery scope includes a humidity and temperature sensor. The sensor is protected by a nylon cap and has a three meter connection cable.

The display can alternate between the measured temperature and the measured relative humidity. The switch time between the two displays can be configured by the user. The control unit is CE (European Union) and UL (U.S. and Canada) certified.

- Input parameters: humidity and temperature
- Measuring range relative humidity: 0...100 %
- Measuring range temperature: -40...+120 °C
- Measuring resolution: 1 % (over the entire range)
- Ingress protection IP65
- Adjustable hysteresis

Scope of delivery: Controller N322 RHT with Pt1000 temperature and humidity probe, operating instruction on CD.

Technical Data

Measuring range	Temperature Humidity	-40...+120 °C 0...100 % RH
Accuracy	Temperature Humidity	±0,5 °C at +25 °C ±3 % at +25 °C
Measuring resolution		1 % (over entire range)
Sample rate		1,5 / sec.
Output 1		SPDT relay*, 1 HP 250 V AC / 1/3 HP 12 V AC (16 A Ω resistive load)
Output 2		SPST Normally open contact, 3 A / 250 V AC
Display		3,5 digits LED display red
Operating temperature		0...+40 °C
Power supply		100...240 V AC (±10 %)
Ingress protection		IP65 (front panel)
Dimensions (L x W x H)		75 x 33 x 75 mm
Weight		120 g

*isolated contact

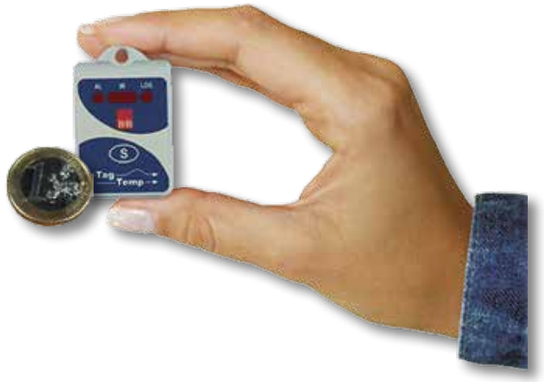
Article Description	Art.-No.
Controller N322 RHT with Pt1000 temperature and humidity probe	0556 0110

Versions with 24 V DC/AC are available on request.

Data Logger TagTemp

for the measurement and recording of the operating temperature

Description



Small, portable data logger with integrated temperature sensor for the measurement and recording of the operating temperatures.

- Integrated temperature sensor
- Manual or software-controlled start of the measurement process: immediately, after schedule or when a preset temperature is reached
- Adjustable measuring interval: 1 sec. ...18 hours
- Memory capacity: 16.000 values
- Programmable alarm set points
- Infrared Interface for optional USB Interface IRLink-3

Scope of delivery: Data Logger TagTemp incl. battery and operating instruction on CD.

USB-Interface IRLink-3
Is required to configure the data logger and read the measurement values.

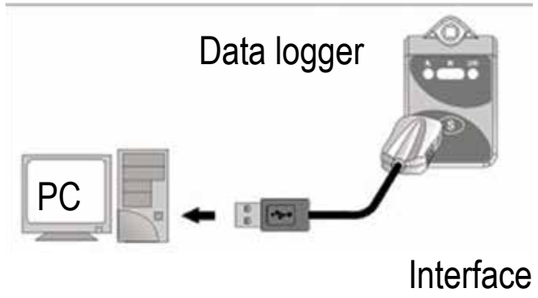
Battery life time
(Estimated autonomy: 200 days with one weekly download and 5 minutes measuring interval. Battery life depends heavily on data retrieval frequency)

Technical Data

Measuring range	-20...+70 °C
Accuracy (at 25 °C)	±0,5 °C
Measuring resolution	0,1 °C
Operating temperature	-20...+70 °C
Sample rate	min. 1 sec ... max. 18 hours
Memory capacity	16,000
Battery	3,6 V
Battery life	> 200 days
Software language	English
Ingress protection	IP67
Dimensions (L x W x H)	30 x 47 x 12,5 mm

Article Description	Art.-No.
Data logger TagTemp	0568 0037
USB Interface IRLink-3, software	0568 0036

USB Interface IRLink-3



LogBox AA IP67

Temperature data logger for analogue industry sensors

Description

Data logger for two analogue industrial sensors: Input for thermocouples type J, K, T, E, N, R, S and B, Pt100, DC linear/scaleable 0-10 V, 0-50 mV, 0-20 mA, 4-20 mA.

- Visual alarm indication (LED)
- Selectable input channels
- Memory: Endless loop or stop when memory full
- 1 Alarm value (Min or Max.) programmable per channel
- Logging start:
  - immediately after programming
  - daily within a time interval (programmable)
- Internal real-time clock
- Infrared Interface for optional USB Interface IRLink-3

Scope of delivery: Data Logger LogBox AA IP67 incl. battery, operating instruction on CD.

USB-Interface IRLink-3
Is required to configure the data logger and read the measurement values.

Battery life time
(Estimated autonomy: 200 days with one weekly download and 5 minutes measuring interval. Battery life depends heavily on data retrieval frequency)

Technical Data

Measuring range for thermocouples type	J	-50...+760 °C
	K	-90...+1370 °C
	T	-100...+400 °C
	E	-40...+720 °C
	N	-90...+1300 °C
	R	0...+1760 °C
	S	0...+1760 °C
	B	+150...+1820 °C
Measuring range for	Pt100	-200...+630 °C
	DC linear/ scaleable	0...50 mV, 0...10 V 0...20 mA, 4...20 mA -32768 ... +32767
Accuracy (% of measuring range) for thermocouple type	J, K, T, E	0,25 % ±1 °C
	N, R, S, B	0,25 % ±3 °C
Accuracy (% of measuring range) for	Pt100 DC linear	0,20 %
Operating temperature		-40...+70 °C
Measuring rate		min. 10 sec. max. 18 hours.
Memory capacity		32.000
Connection		2 x M8 connector for cables
Battery		3,6 V Lithium, 1/2 AA
Battery life-time		approx. 1 year (measuring rate 5 min. and 1 data export per day)
Software language		English
Ingress protection		IP67
Dimensions (L x W x H) without cable gland		70 x 60 x 35 mm

Article Description	Art.-No.
LogBox IP67	0568 0034
USB Interface IRLink-3, software	0568 0036

USB Interface IRLink-3

LogBox RHT with LCD

Data logger with integrated temperature humidity sensor

Description

Portable data logger with LCD and integrated sensors for measurement of temperature and relative humidity.

- Integrated LCD for visualization of collected data
- Integrated temperature and humidity sensors
- Manual or software-controlled start of the measurement process: immediately, after schedule or when a preset temperature is reached
- Adjustable measurement interval: 1 sec. ...18 hours
- Memory capacity: 32.000 values
- Two programmable alarm set points
- Infrared Interface for optional USB Interface IRLink-3

Scope of delivery: Data logger LogBox RHT with LCD incl. battery, operating instruction on CD

USB-Interface IRLink-3
Is required to configure the data logger and read the measurement values.

Battery life time
(Estimated autonomy: 200 days with one weekly download and 5 minutes measuring interval. Battery life depends heavily on data retrieval frequency)

Technical Data		
Measuring range	Temperature Humidity	-40...+80 °C 0...100 % RH
Accuracy (at +25 °C)		±0,5 °C / ±3 %
Measuring resolution		0,1 °C / 0,1 % RH
Operating temperature		-40...+80 °C
Measuring rate		min. 1 sec. max. 18 hours
Memory capacity		32,000
Battery		3,6 V Lithium, 1/2 AA
Battery life-time		> 200 days
Software language		English
Ingress protection		IP65
Dimensions (L x W x H)		60 x 70 x 35 mm

Article Description	Art.-No.
LogBox RHT with LCD	0568 0038-01
USB Interface IRLink-3, software	0568 0036

USB Interface IRLink-3

MEASURING SYSTEMS

In addition to the traditional measuring devices for temperature and humidity with an analogue output signal, our portfolio includes high-Features digital measuring systems. These allow a Computer with the appropriate software to conveniently control and regulate external devices as well as data acquisition and parameter conversion. A micro controller serves as an intermediary between the sensor and the Computer.

It transmits the sensor signals via digital interfaces such as RS232, RS485 and USB to the PC or LONWORKS. For example, 64 temperature channels of a Dallas DS1820® sensor network can be uniquely related with an ID number. This relation remains retained even when a sensor fails.

Applications:

- Quality assurance
- Process/automation monitoring

Benefits:

- High precision
- Convenient data logging
- Easy to integrate

Temperature/Humidity Probe with USB Interface

with probe tube made of either stainless steel or plastic

Description

In connection with this innovative product, the computer or Laptop can become an efficient temperature/humidity measurement system. The USB interface is integrated in the grab handle. The probe can directly used in connection with computer or Laptop. The power supply is provided by USB from computer; no external power supply is required.

Technical Data Set 1 (Plastic)		
Measuring range	Humidity Temperature	10...95 % RH -20...+60 °C
Resolution	Humidity Temperature	0,01 % RH 0,01 °C
Accuracy	Humidity Temperature	±3 % RH ± 0,5 K 0...+40 °C
PC connection		Plug USB, type A, USB 1.1 and 2.0 compatible
Power supply		over USB, approx. 20 mA
Dimensions (Handle)		Ø 18 x 120 mm
Dimensions (Probe)		Ø 12 x 70 mm, plastic
EMC: noise emission		EN 61000-6-3:2001
EMC: noise immunity		EN 61000-6-2:2001

Technical Data Set 2 (Stainless steel)		
Measuring range	Humidity Temperature	0...100 % RH -40...+80 °C
Resolution	Humidity Temperature	0,01 % RH 0,01 °C
Accuracy	Humidity Temperature	±2 % RH ± 0,5 K 0...+40 °C
PC connection		Plug USB, type A, USB 1.1 and 2.0 compatible
Power supply		over USB, approx. 20 mA
Dimensions (Handle)		Ø 18 x 120 mm
Dimensions (Probe)		Ø 12 x 127 mm, stainless steel
EMC: noise emission		EN 61000-6-3:2001
EMC: noise immunity		EN 61000-6-2:2001

Article Description	Art.-No.
Temperature/humidity probe “plastic“ with USB Interface	HYTELOG-USB-SET 1
Temperature/humidity “stainless steel“ with USB Interface	HYTELOG-USB-SET 2

Scope of delivery: Temperature/humidity probe in carrier case incl. display and recording software “RECORDER“.

Features

- Measuring range -40...+80 °C and 0...100 % RH
- With capcitive sensor element, dew reistant, linearised and temperature compensated
- Stainless steel or plastic probe tube
- USB cable length 1,5 m

Applications

- Workplace monitoring
- Safety representative
- Quality control

Temperature/Humidity Sensor Probe

with serial or USB Interface and probe tube of stainless steel

Description

The product offers an efficient measurement and display system for temperature and relative humidity. The compact measuring probe with a size of Ø 12 x 150 mm is housed in stainless steel. The Scope of delivery includes a port converter, which enables direct operation via the USB port of a computer. The sensors in the front area of the probe are protected against sprinkling and mechanical damages by a sintered stainless steel filter. A precise NTC is used as temperature sensor. The humidity measurement operates with a long-term stable capacitive polymer sensor.

Technical Data		
Measuring range	Humidity Temperature	0...100 % RH -40...+80 °C
Resolution	Humidity Temperature	0,01 % RH 0,01 °C
Accuracy	Humidity Temperature	±2 % RH (at 23 °C) ±0,3 °K (of 0...+40 °C)
Interface (depending on the version)	Serial Interface USB Interface	RS232 compatible 800 baud USB Inferface, 1.1 and 2.0 compatible
CE Conformity		89/336/EEC
Operating voltage DC (serial version)		8 V DC (polarity safe)
Power supply (USB version)		Over USB Interface
Operating current		approx. 30 mA
Dimension of the probe		Ø 12 x 150 mm
Plug connection (serial version)		Data DB9 socket, pin 2 and 5 power supply jack 3,5 mm
EMC: noise emission		EN 61000-6-3:2001
EMC: noise immunity		EN 61000-6-2:2001

Article Description	Art.-No.
Temperature/humidity module with serial interface Scope of delivery: temperature/humidity probe in stainless steel housing, interface adapter with USB connection cable, software (for MS Windows) and documentation	HYTELOG-RS232
Temperature/humidity module with USB Interface Scope of delivery: Temperature/humidity probe in stainless steel in stainless steel housing, interface adapter with USB connection cable, windows-software and documentation	HYTELOG-USB

Accessory	
Humidity reference cells, various values	On request

Features

- Combined temperature and humidity measuring
- Sensor in stainless steel housing with sintered filter
- Resolution 0,01 % RH, 0,01 °C
- Accuracy 2 % RH, 0,3 °C
- Software “Recorder“ (for MS Windows)
- Calibration possibility with salt reference cells

Applications

- Monitoring of warehouses, quality control
- Air conditioning systems

PC Temperature Measurement System
with RS232 or USB Interface

Description

Professional temperature measurement for data processing on the computer: The measurement systems for up to 20 temperature channels are a solution to complex tasks, for long-time recording and for data analysis.

The applied type DS 1820 DALLAS temperature sensor, are connected to a three-wire bus system. The wiring can be carried out easily. The possible bus length is at least 60 m; extensions up to several hundred metres are possible with appropriate adjustments.
A microcontroller module serves as the link between the Computer and the sensor network. Depending on the product variant, it is either connected to the serial port or the USB port.

Technical Data

Measuring range	-55...+125 °C
Typical accuracy (at 0...+50 °C)	±0.2 % RH
Number of channels	1...20 (auto-configuration)
Sensor connection	Western socket RJ12
Operating temperature (microcontroller board)	-10...+60 °C
Power supply (serial version)	9 V...15 V DC (wall power supply) 4800 baud, 8 data bit, no parity, a stop bit
Power supply (USB Version)	Over USB Interface (compatible to version USB 1.1 and 2.0)
Dimensions (adapter)	80 x 40 x 23 mm
EMC: noise emission	EN 61000-6-3:2001
EMC: noise immunity	EN 61000-6-2:2001

Article Description	Art.-No.
PC Temperature measurement system with RS232-Interface	TLOG20-RS232
PC Temperature measurement system with USB Interface	TLOG20-USB

Benefits of the included software (for MS Windows):

- Display of the temperature values
- Representation of the measured values in a table
- Recording the data on the hard disk

Features

- Up to 20 temperature measuring points (–55 ... +125 °C)
- 3-wires, parallel connection of sensors
- Sensor connection length 60...300 meter
- Resolution of 0,06 °C
- Accuracy 0,5 °C type (+20 °C)
- Automatic configuration, calibration function
- Easy-to-use software for MS Windows is provided
- Two versions: RS232 or USB Interface

Applications

- Temperature monitoring of refrigerators and warehouses, quality control
- Temperature measurement in buildings, air conditioning, heating system, solar systems
- Dallas connection adapter for customer-specific software under Windows or Linux

Supplemental Accessories

Description

The system components with RJ12 connectors enable a sensor networks to be built. Skills in electronics and soldering are not required. Switches and connecting cables also can be realized extensive network topologies with many measuring points.

Connectable sensor probes
The sensor probes are available in various designs and lengths. Numerous versions are available in stock, from a common temperature sensor with PVC cable to industrial temperature sensors with shielded, oil-resistant polyurethane cables. Special lengths are available on request. Special probes with connection heads, screw-in threads or wall-mount designs in surface-mount housings, for instance, are part of our product range as well. Please ask for our catalogue!

RJ12 multi jack junction box
The RJ12 multi jack junction box in the plastic housing has 10 RJ12 jacks for the connection of up to 9 sensor probes.
The Scope of delivery contains one RJ12 cable for the connection with the PC adapter.

Special probes
For special requirements, we manufacture special probes for instance for measurement on surfaces, pressure-resistant designs with thread and sensors for high-temperature applications. Please send us your inquiry; we would be happy to send you a quotation.

Assembly parts for own production of probes
For the production of your own probes, we offer a wide range of sensors (as components), connection cables, RJ12 connectors, special flat cables, mounting clamps and much more. Customers with knowledge of soldering and electronics can thereby produce their own customized probes or even entire temperature sensor networks. Also specials items such as stainless steel protective tubes and immersion sleeves can be purchased from us.

Infrared Camera “Thermo-Cam”

Mobile camera with USB connection

Description

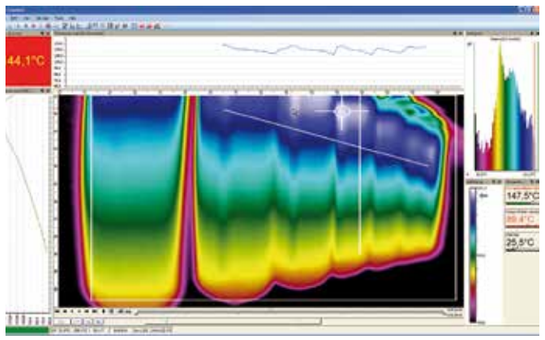
The Thermo-Cam is a small, compact infrared camera for monitoring and evaluation of thermal processes in the industry. Aside from time, temperature is the most frequently measured physical property. The temperature behaviour is therefore a very good indicator for the status of physical systems. Friction produces heat, too high resistance between electrical contacts produces high temperature. Energy loss is mostly shown by changes in temperature. This thermal process can be observed in almost all industry branches.

Applications

With the Thermo-Cam, you can see where it is hot and moreover measure the exact temperatures - in 10 millisecond intervals! The camera provides excellent infrared images in a wide temperature range from -20 °C up to 900 °C. The standard and comprehensive software packages feature to capture and edit infrared snapshots and videos, for thermal analysis with hot and cold spot detection display of isotherms and much more!

The Thermo-Cam is the thermographic solution for:

- Real estate diagnostics
- Construction surveillance
- Energy consulting
- Stationary and portable measuring tasks



Within the range for building automation the Thermo-Cam is a reliable instrument for the detection of thermal bridges, energy loss and related weaknesses. The Thermo-Cam is also a powerful tool for the detection of leakages in pipeworks. The leaks can be detected easily, before walls or floors are affected extensively.

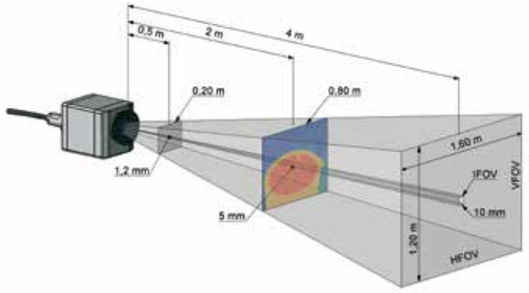
Analogue output 0-10 V and an alarm signal are direct communication interfaces to the process.

With this interface, temperatures of the main measuring area can be issued analogue or with an alarm. A process interface input allows the synchronization of the camera and external control of emissivity values and moreover background radiation compensation and triggering for video or snapshot recordings.

Exchangeable lenses

Die Thermo-Cam has a very small, waterproof and rugged camera sensing head with exchangeable lenses of 6°, 23° and 48° field of view.

Objective	Focal length	Minimum distance	
6° x 5° Tele lens	35,5 mm	0,5 m	
23° x 17° Standard lens	10 mm	0,02 m	
48° x 37° Wide angle lens	4,5 mm	0,02 m	



Function of measuring field of view (FOV) and distance (lens 23° x 17°)

Software

User-friendly software Thermo-Cam

The added real-time software sets new Features standards with its variability and functionality: It offers extensive opportunities:

- Video recordings and snapshots with up to 120 Hz
- Digital real-time temperature data correction for all pixels
- Hot and cold spot analysis
- Editing of captured infrared video for reports and presentations

The software can combine flexible spots with crosshairs marking and programmable measurement areas with an automatic display of maximum, minimum or average temperature readings.

Thermo-Cam with attached Tablet PC for mobile applications

Software Features	
Configuration	Automatic or manual scaling of the measurement range, selectable and definable software layouts, language translation tool, adjustable measurement parameters (emissivity 0.10 ... 1.00, background radiation compensation, reference temperature)
Measurement functions	Mobile measurement points with automatic calculation of the MAX, MIN or AVG values, automatic HOT spot and COLD spot finder, temperature profiles, isothermal representation, reference functions (with external sensor), linescan modes.
Image representation	11 colour palettes, colour reference strip, histogram, digital displays for temperature measurement fields (with alarm display), video control (Start, Pause, Stop, Freeze Frame, Rew and FF), full screen mode.
Video recording	Real-time video recording (radiometric) at 120 Hz (adjustable), video editing tools, freeze frame storage (radiometric JPG)

Technical Data

Measuring range	-20...900 °C
Operating temperature	0...50 °C
Relative humidity (non-condensing)	20...80 %
Refresh rate	120 Hz
Spectral range	7,5...13 µm
Optical resolution	160 x 120 Pixel
Accuracy	±2 % or ±2 °C
Lenses (exchangeable)	6° x 5° FOV / f = 35,5 mm 23° x 17° FOV / f = 10 mm 48° x 37° FOV / f = 4,5 mm
Thermal sensitivity (NETD)	0,3 K with 6° FOV / F = 1,6 0,08 K with 23° FOV / F = 0,7 0,1 K with 48° FOV / F = 1
Ingress protection	IP67
Detector	Focal Plane Array (FPA), uncooled Micro Bolometer 25 x 25 µm
Shock	IEC 68-2-27: 50 G, 11 ms
Vibration	IEC 68-2-6: 3 G, 11...200 Hz
Weight	250 g, incl. lens
Dimensions	45 x 45 x 62 mm
Tripod	1/4-20 UNC
Output	USB 2.0
Power supply	USB 2.0 powerd
Process interface (electrically isolated)	0...10 V input, Digital - input, 0-10 V output
Process interface - Functions	
Remote emissivity adjustment, compensation of background radiation or reference temperature value, trigger for photo or video recordings, analogue output for the main measuring field, alarm signal.	

Article Description	Art.-No.
Infrared Camera Thermo Cam, with lens 6° x 5° incl. software	0560 0904
Infrared Camera Thermo Cam, with lens 23° x 17° incl. software	0560 0905
Infrared Camera Thermo Cam, with lens 48° x 37° incl. software	0560 0906

Scope of delivery: Infrared Camera “Thermo-Cam”, incl. transport case, tripod, USB cable, plug for process interface, software and operating instruction.

B+B

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