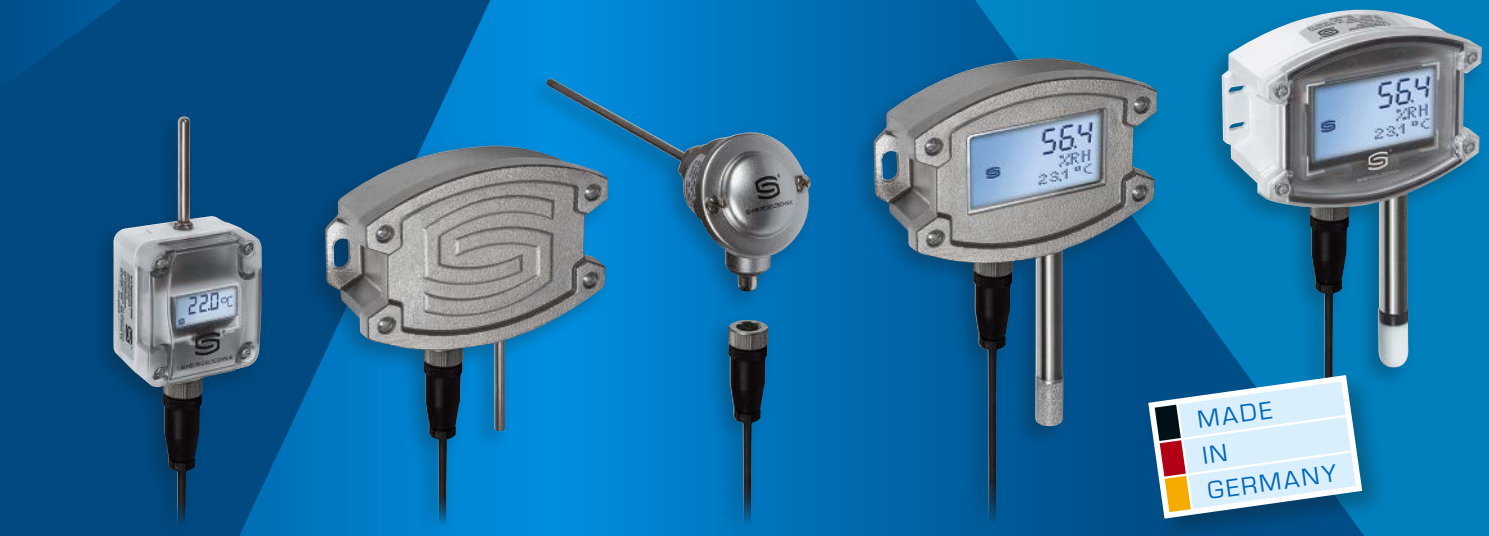
Industrial Design | 2020

S+S REGELTECHNIK



SENSOR TECHNOLOGY & FIELD DEVICES

Sensor Technology for Maximum Process Security

The demand for our sensor and control devices in particular rugged industrial design versions is rising, which spurs us on. Therefore, in 2020 – when S+S celebrates its 20th year of existence – you can count on further innovations specifically targeted at the high levels of reliability, ruggedness, hygiene and efficiency required in the processing and manufacturing industries.

Notable above all, our Tyr 2E stainless steel housing with non-distortion cover bolting now even meets the high IP 69 protection type standard. And for faster installation, our field devices are available in a the additional housing version for M12 circular connectors.

As to networking on field level, the successful implementation of our Modbus sensors for facility engineering will soon be transferred to our industrial design devices – with interconnectivity according to EtherCAT P standard for integrated automation in industrial environments.

S+S grows, innovates and thinks further. Stay tuned!

Tino Schulze
Managing Director
S+S Regeltechnik GmbH®

Heiko Linke
Managing Director
S+S Regeltechnik GmbH®

S+S REGELTECHNIK

S+S REGELTECHNIK

FOCUS 2020
INDUSTRIAL DESIGN

NEW

TYR 2E

STAINLESS STEEL HOUSING
IN INDUSTRIAL DESIGN
FOR **IP 69** PROTECTION TYPE

» Page 006

PREMASREG®
PREMASGARD®

OPTIONAL PORTS
FOR PRESSURE HOSES
OR PRESSURE LINES

» Page 094

M12 CONNECTOR

DIVERSITY BY
MODULAR DESIGN:
ALTERNATIVE
CABLE CONNECTION

» Page 008

FOR PROCESS AND MANUFACTURUNG INDUSTRIES

MADE IN GERMANY

CUSTOM MANUFACTURING

In addition to our comprehensive range of catalogue items, we also deliver sensors and controllers manufactured to your specifications.

For instance in compliance with MIL, or with fully metal enclosures for applications according to FDA.

At S+S, devices in smaller volumes down even to singular items are produced with the same precision as larger series.

INDUSTRY FOCUSED SOLUTIONS

Based on our comprehensive experience gained from a wide range of public and institutional projects, we develop complete system solutions for seamless integration of sensor and control technology in industrial engineering, from chemical processing plants to heating, ventilation and cooling units as well as agricultural facilities.

As pioneers in our business, we keep an ear to the market and are firmly committed to the continuous innovation of our product offering – always with an eye on the sustainability and total cost of ownership of our devices.

And true to our promise of providing precision you can feel, made in Germany to the highest standards of quality, at best terms and conditions, including 24-hours shipment of catalogue items on stock.

S+S REGELTECHNIK

TEMPERATURE SENSORS PASSIVE

TEMPERATURE SENSORS ACTIVE

HUMIDITY AND TEMPERATURE SENSORS

PRESSURE SENSORS PRESSURE CONTROLLERS / SWITCHES

IMMERSION SLEEVES MOUNTING ACCESSORIES

SPECIAL ACCESSORIES SPARE PARTS

TYR 2E

OUR NEW **STAINLESS STEEL** HOUSING – RUGGED AND INDUSTRY FOCUSSED

For Rugged Operating Environments

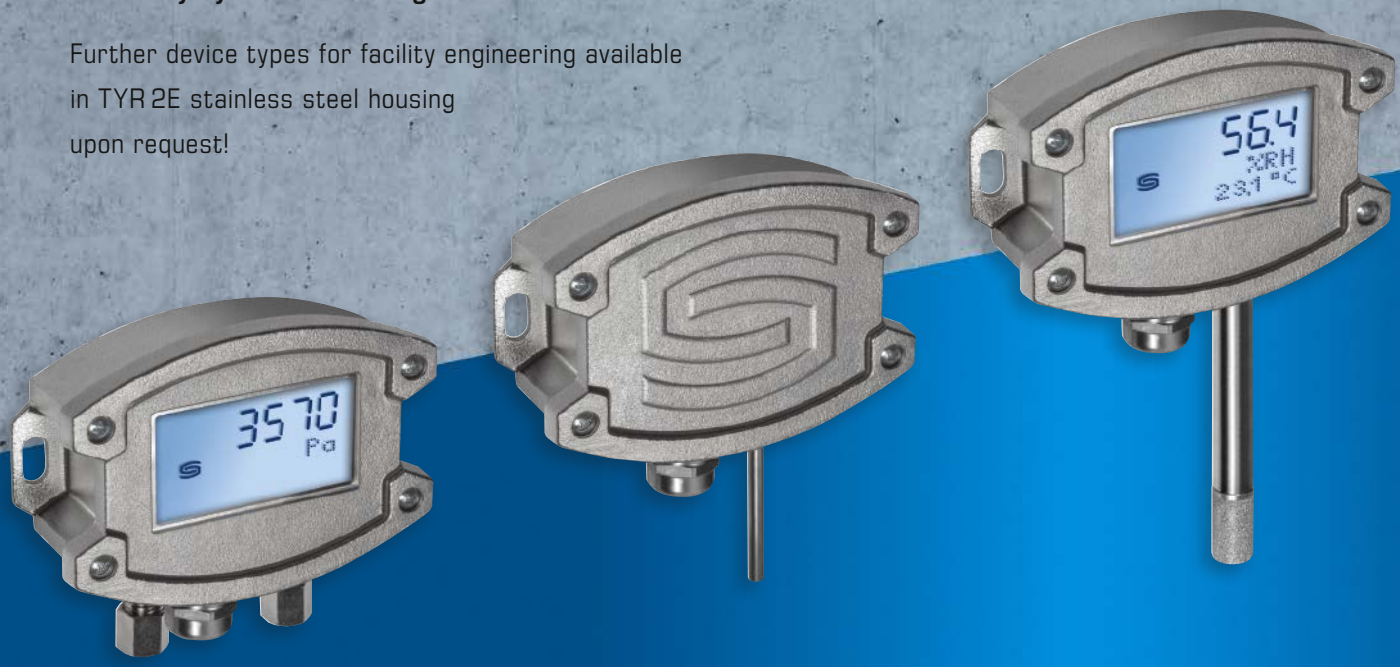
For higher demands of durability and hygiene, our proven TYR 2 plastic housing design is now also available in V4A (1.4571) stainless steel for protection type IP 69. The all-metal design ensures good basic hielding.

The convenient installation, commissioning and parameterisation features have been maintained. New is the additional housing version with M12 connector (according to DIN EN 61076-2-101) for fast and easy installation on site.

S+S REGELTECHNIK

Diversity by Modular Design

Further device types for facility engineering available
in TYR 2E stainless steel housing
upon request!

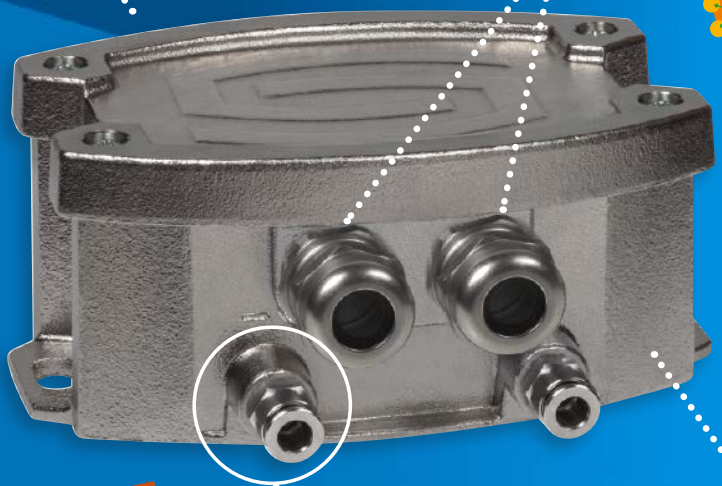


Durable metal cover
without display

S+S Facility Engineering

Cable gland in metal,
also available for Modbus

Modbus



NEW

Optionally with
pressure port in rugged
pipe fitting design

Quick connect
for pressure hoses

Good basic shielding,
high EMI resistance

TYR 2

DIVERSITY BY **MODULAR** DESIGN – FLEXIBLE AND CUSTOMIZED

Standard with cable gland

Optionally with / without display

Optionally with M12 connector

NEW

TYR 2E Stainless Steel Housing for Higher Demands

- Rugged housing (143 x 97 x 61 mm) with non-distortion cover bolting, impact resistant, high **EMI** shielding
- V4A (1.4571) **stainless steel**, corrosion and temperature resistant, UV and weathering resistant
- High protection type **IP 69** (tested), provides safety against ingress of dust as well as snow, rain and power jet water
- Large three-line **display** (70 x 40 mm) on film-hinged fold-out support
- **Cable gland** with strain relief or **M12 connector**
- **Modbus** versions also available

S+S REGELTECHNIK

Plastic
sinter filter

Stainless steel
sinter filter

Optionally with
M12 connector

NEW

Modbus

TYR 2 Plastic Housing for High Demands

- Proven housing (126 x 90 x 50 mm) design with quick-release screws
- Moulded in 30% glass bead filled **polyamide** resin, UV-stabilised, impact resistant and durable
- Protection type **IP 65**, provides safety against ingress of dust as well as snow, rain and jet water
- Large three-line **display** (70 x 40 mm) on film-hinged fold-out support
- **Cable gland** with strain relief or **M12 connector**
- **Modbus** and many housing variants also available

Please see the
S+S Facility Engineering
main catalogue for
Modbus capable devices and
further product lines.

MADE IN GERMANY

People and Quality

Technology is our business, but above all it is our qualified and motivated employees who make the difference. Each day, they drive the success of S+S Regeltechnik, which we measure by the satisfaction of our customers.

S+S is determined to adhere to its “Made in Germany” principle. We will even go one step further: If it says S+S on the outside, then there’s 100 percent S+S technology inside. The quality and reliability of our products speak for themselves. That’s what our customers value.

> 65 employees

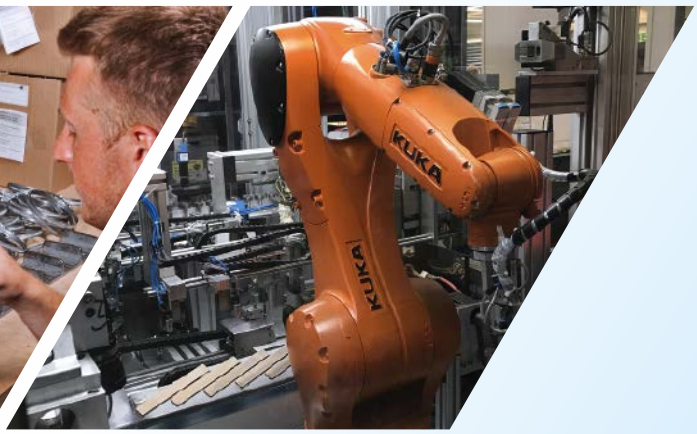
> 500 m² of office / administration space

> 4000 m² of manufacturing space

> 800 m² finished parts warehouse

> 24-hours shipment service

> made-to-order production



In our climate chambers, we test all S+S measuring and control devices under the toughest conditions for function, ruggedness and reliability.

Everything from a Single Source

S+S stands for a fully integral value chain. All products are designed, developed, manufactured and programmed in-house. In our test center, which includes climate chambers and calibration equipment for all variables, our systems are tested under the toughest conditions for function, ruggedness and longevity.

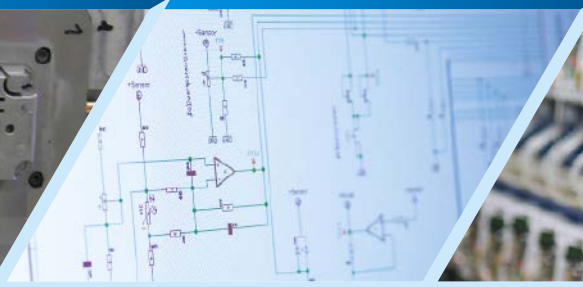
S+S REGELTECHNIK

Design

Construction

Toolmaking

Hard- & Software



Test Equipment

Production

Testing

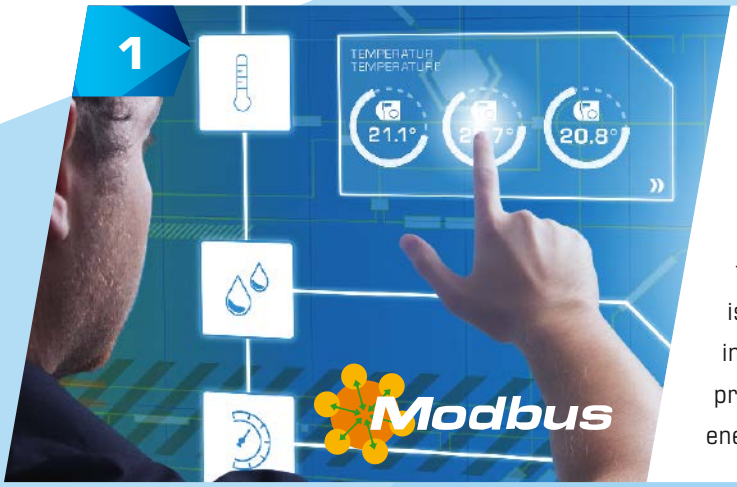
Shipping

Five Benefits for Satisfied Customers

At S+S we are naturally proud of the outstanding performance of our products. However, we are not really satisfied before you too are fully convinced of our sensor technology and controllers.

For this reason, we will not rest on our laurels, but keep working hard on further innovating our portfolio. This performance claim is backed by five core principles:

S+S **INNOVATION**



We think ahead and transform the art of the possible into reality. We listen to the market and maintain a focus on practical application at all times. For advanced building sensor technology with a high degree of usability. Our Modbus capable devices, for instance, are characterized by their galvanic isolation from the bus cable, which helps to minimize interferences. Moreover, they can be conveniently programmed and addressed even when not energized.

S+S **EXPERTISE**

Years of experience and creativity are the cornerstones of our business. With qualified technical expertise and openness to new solutions, we develop the sensor and controller technology of tomorrow – today.

S+S owns more than 35 patents, utility models and registered designs, which helps to maximize your security of investment.

S+S REGELTECHNIK

S+S **QUALITY**

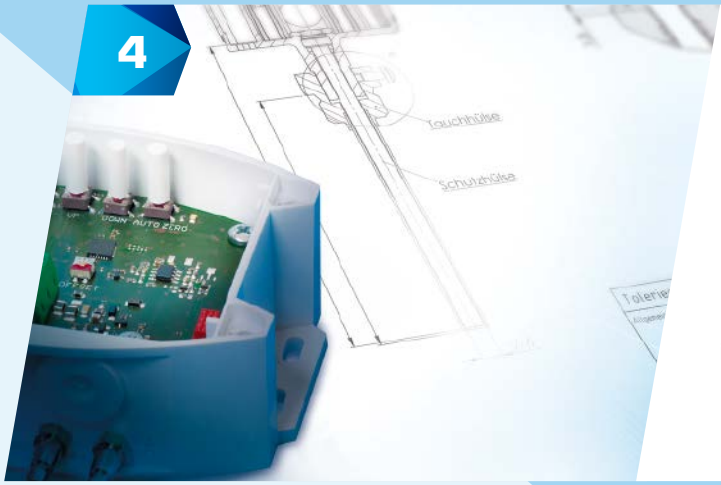
3

We measure ourselves against the highest standards – and continuously set new benchmarks ourselves. Our integral quality management system is certified to DIN EN ISO 9001:2015. We comply with the European and German regulations on the restricted use of hazardous substances in electrical and electronic equipment.

In our own climate chambers, our products are tested under the toughest conditions for functionality, ruggedness and durability.

S+S **PRECISION**

4



Highest precision is our claim and our promise to you. This is why we develop and manufacture everything at our own facility – from the individual component and design to comprehensive system solutions, using tough and durable materials. Convince yourself, and benefit from the art of German engineering and our vertical manufacturing integration.

S+S **FLEXIBILITY**

5

Our hotline looks forward to your requests for special versions.

S+S stock items are ready for shipment at short notice – ensuring maximum security of supply.

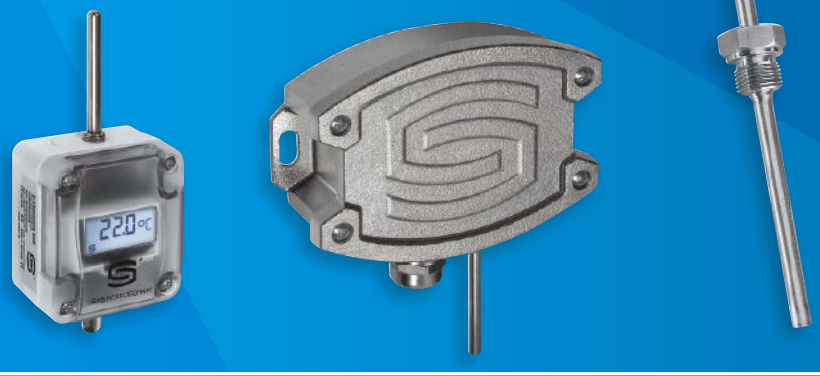
Product Lines

S+S REGELTECHNIK

THERMASGARD®

Temperature sensors passive

Pages 016 – 035



THERMASGARD®

Temperature sensors active

Pages 036 – 075

HYGRASGARD®

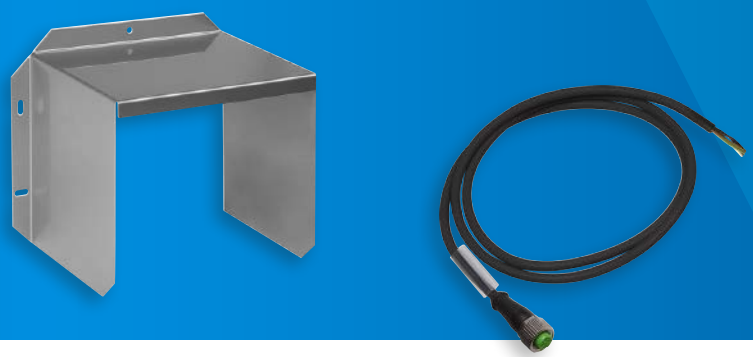
Humidity and temperature sensors

Pages 076 – 093

PREMASGARD® & PREMASREG®

Pressure transducers and pressure controllers

Pages 094 – 137



Immersion sleeves and Accessories

Appendix, legal notice, useful information

Pages 138 –163

Temperature sensors passive

Our passive **THERM**ASGARD® temperature sensors have a proven fit in countless applications across all areas of temperature measurement. Technology for best measuring results you can rely on. Available in various different models and individual versions to meet your precise requirements.

APPLICATION RANGE

> Hospitals, museums, schools, hotels and administration buildings
> Power plants and district heating facilities
> Pharmaceutical and food industry
> Production plants
> Heating systems

THERMASGARD®

016 – 035

Duct, immersion, screw-in sensors

S+S REGELTECHNIK

Immersion / screw-in / duct temperature sensor, with passive output

Resistance thermometer / temperature sensor **THERM**ASGARD® **TF 54** with passive output, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101, with connecting head made from aluminium and straight protective tube. A basic unit in three variants through combination with accessories, eg, for robust applications with a separate immersion sleeve made from stainless steel.

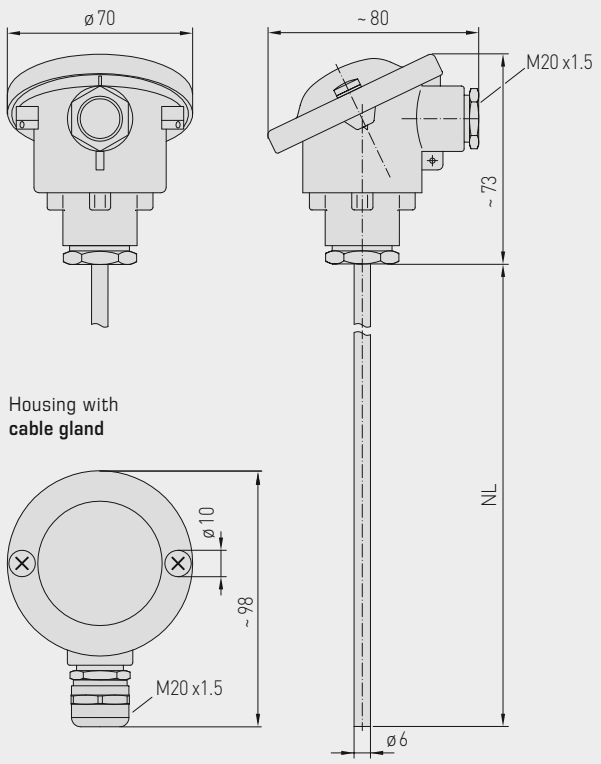
The duct sensor is used to detect temperatures in liquid or gaseous media. It is used in pipes, heating engineering, storage systems, compact district heating stations, warm and cold water systems, oil and lubrication cycle systems, mechanical, apparatus and plant engineering throughout the industrial sector.

TF 54
Basic unit

TECHNICAL DATA

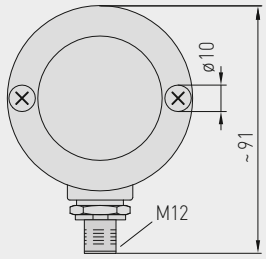
Measuring range:	–35…+180 °C
Sensors / output:	Pt100 / Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**) (optionally also with two or other sensors)
Connection type:	2-wire connection for Pt1000 4-wire connection for Pt100, optional for other sensors
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm², via terminal screws, on ceramic base
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –20…+100 °C
Protective tube:	stainless steel, V4A (1.4571), Ø = 6 mm, installation length (EL) = 50 - 400 mm (see table)
Process connection:	by means of immersion sleeve or mounting flange (accessories)
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)
ACCESSORIES	(see table)
MF-06-M	**mounting flange**, metal (galvanised steel), Ø = 32 mm, Ø = 6.3 mm tube gland, T_{max} = +700 °C
TH-VA / xx	**immersion sleeve, stainless steel V4A** (1.4571), Ø = 8 mm, T_{max} = +600 °C, p_{max} = 40 bar
TH-VA / xx / 90	**immersion sleeve, stainless steel V4A** (1.4571), with neck tube (90 mm), Ø = 8 mm, T_{max} = +600 °C, p_{max} = 40 bar

Dimensional drawing **TF 54**



Housing with
cable gland

Housing with
M12 connector



M12 connector
(male)

TF 54 - KV
with cable gland

TF 54 - Q
with M12 connector

High-performance encapsulation against
vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Immersion / screw-in / duct temperature sensor, with passive output

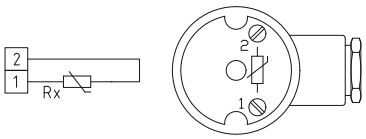
S+S REGELTECHNIK

2-wire connection
(Pt1000)

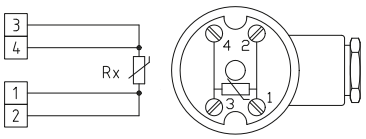
4-wire connection
(Pt100)

form B
top view

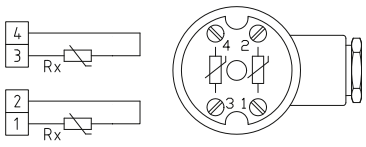
1x two-wire connection
(Pt1000)



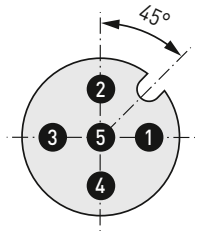
1x four-wire connection
(Pt100)



2x two-wire connection
(optional)

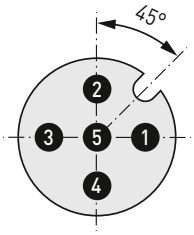


1x two-wire connection
pin assignment (M12)



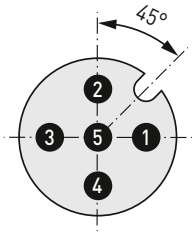
1 Rx
2
3 frei / free
4 frei / free
5 frei / free

1x four-wire connection
pin assignment (M12)



1
2 Rx
3
4
5 frei / free

2x two-wire connection
pin assignment (M12)



1 Rx
2
3 Rx
4
5 frei / free

TF 54 - KV
with cable gland

TF 54 - Q
with M12 connector

THERMASGARD® TF 54 Temperature sensor (basic device), *ID*					
Type / WG03	**Sensor / Output**		**Installation length (EL)**	**Item No.**	**Price**
TF 54 PT100 xx KV	**Pt100**			with cable gland	
TF54 PT100 50MM KV	Pt100	(according to DIN EN 60751, class B)	**50 mm**	1101-7070-1013-000	**65,54 €**
TF54 PT100 100MM KV	Pt100	(according to DIN EN 60751, class B)	**100 mm**	1101-7070-1023-000	**66,92 €**
TF54 PT100 150MM KV	Pt100	(according to DIN EN 60751, class B)	**150 mm**	1101-7070-1033-000	**68,19 €**
TF54 PT100 200MM KV	Pt100	(according to DIN EN 60751, class B)	**200 mm**	1101-7070-1043-000	**67,68 €**
TF54 PT100 250MM KV	Pt100	(according to DIN EN 60751, class B)	**250 mm**	1101-7070-1053-000	**70,77 €**
TF54 PT100 300MM KV	Pt100	(according to DIN EN 60751, class B)	**300 mm**	1101-7070-1063-000	**70,99 €**
TF54 PT100 400MM KV	Pt100	(according to DIN EN 60751, class B)	**400 mm**	1101-7070-1083-000	**71,88 €**
TF 54 PT1000 xx KV	**Pt1000**			with cable gland	
TF54 PT1000 50MM KV	Pt1000	(according to DIN EN 60751, class B)	**50 mm**	1101-7070-5011-000	**65,55 €**
TF54 PT1000 100MM KV	Pt1000	(according to DIN EN 60751, class B)	**100 mm**	1101-7070-5021-000	**66,92 €**
TF54 PT1000 150MM KV	Pt1000	(according to DIN EN 60751, class B)	**150 mm**	1101-7070-5031-000	**65,38 €**
TF54 PT1000 200MM KV	Pt1000	(according to DIN EN 60751, class B)	**200 mm**	1101-7070-5041-000	**70,51 €**
TF54 PT1000 250MM KV	Pt1000	(according to DIN EN 60751, class B)	**250 mm**	1101-7070-5051-000	**70,78 €**
TF54 PT1000 300MM KV	Pt1000	(according to DIN EN 60751, class B)	**300 mm**	1101-7070-5061-000	**68,35 €**
TF54 PT1000 400MM KV	Pt1000	(according to DIN EN 60751, class B)	**400 mm**	1101-7070-5081-000	**71,88 €**
TF 54 PT100 xx Q	**Pt100**			with M12 connector	
TF54 PT100 50MM Q	Pt100	(according to DIN EN 60751, class B)	**50 mm**	2Z01-4111-0100-011	**93,63 €**
TF54 PT100 100MM Q	Pt100	(according to DIN EN 60751, class B)	**100 mm**	2Z01-4111-0100-021	**95,02 €**
TF54 PT100 150MM Q	Pt100	(according to DIN EN 60751, class B)	**150 mm**	2Z01-4111-0100-031	**96,29 €**
TF54 PT100 200MM Q	Pt100	(according to DIN EN 60751, class B)	**200 mm**	2Z01-4111-0100-041	**98,59 €**
TF54 PT100 250MM Q	Pt100	(according to DIN EN 60751, class B)	**250 mm**	2Z01-4111-0100-051	**98,86 €**
TF54 PT100 300MM Q	Pt100	(according to DIN EN 60751, class B)	**300 mm**	2Z01-4111-0100-061	**99,09 €**
TF54 PT100 400MM Q	Pt100	(according to DIN EN 60751, class B)	**400 mm**	2Z01-4111-0100-081	**99,97 €**
TF 54 PT1000 xx Q	**Pt1000**			with M12 connector	
TF54 PT1000 50MM Q	Pt1000	(according to DIN EN 60751, class B)	**50 mm**	2Z05-4111-0100-011	**93,63 €**
TF54 PT1000 100MM Q	Pt1000	(according to DIN EN 60751, class B)	**100 mm**	2Z05-4111-0100-021	**95,02 €**
TF54 PT1000 150MM Q	Pt1000	(according to DIN EN 60751, class B)	**150 mm**	2Z05-4111-0100-031	**96,29 €**
TF54 PT1000 200MM Q	Pt1000	(according to DIN EN 60751, class B)	**200 mm**	2Z05-4111-0100-041	**98,59 €**
TF54 PT1000 250MM Q	Pt1000	(according to DIN EN 60751, class B)	**250 mm**	2Z05-4111-0100-051	**98,86 €**
TF54 PT1000 300MM Q	Pt1000	(according to DIN EN 60751, class B)	**300 mm**	2Z05-4111-0100-061	**99,09 €**
TF54 PT1000 400MM Q	Pt1000	(according to DIN EN 60751, class B)	**400 mm**	2Z05-4111-0100-081	**99,97 €**
Extra charge:	two or other sensors optional			on request	
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!

Immersion / screw-in / duct temperature sensor, with passive output

S+S REGELTECHNIK

A basic unit in three variants...

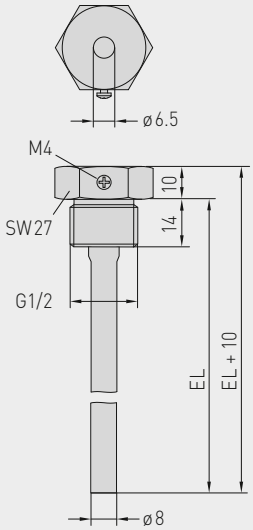
TF 54
Basic unit

TF 54 +
TH-VA/xx
Immersion / screw-in temperature sensor with immersion sleeve, stainless steel, V4A

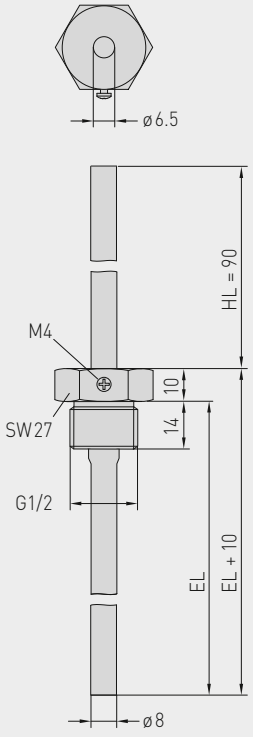
TF 54 +
TH-VA/xx/90
Immersion / screw-in temperature sensor with immersion sleeve with neck tube, stainless steel, V4A

TF 54 +
MF-06-M
Duct temperature sensor with mounting flange, metal

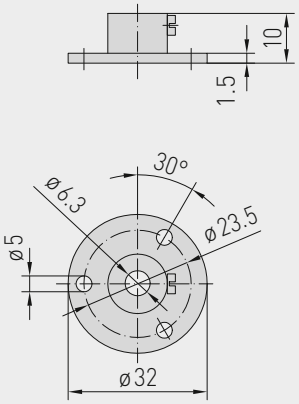
Dimensional drawing
TH-VA/xx



Dimensional drawing
TH-VA/xx/90



Dimensional drawing
MF-06-M



...through combination with accessories:

TH-VA/xx

TH-VA/xx/90

MF-06-M

THERMASGARD® **TH**	Immersion sleeve Ø 8 mm (accessories)				
Type / WG01	**p_{max} (static)**	**T_{max}**	**Installation length (EL)**	**Item No.**	**Price**
TH-VA/xx	**Stainless steel, V4**A (1.4571)			without neck tube	
TH-VA 50MM	40 bar	+600 °C	**50 mm**	7100-0012-0010-001	**17,53 €**
TH-VA 100MM	40 bar	+600 °C	**100 mm**	7100-0012-0020-001	**19,37 €**
TH-VA 150MM	40 bar	+600 °C	**150 mm**	7100-0012-0030-001	**20,81 €**
TH-VA 200MM	40 bar	+600 °C	**200 mm**	7100-0012-0040-001	**21,94 €**
TH-VA 250MM	40 bar	+600 °C	**250 mm**	7100-0012-0050-001	**27,27 €**
TH-VA 300MM	40 bar	+600 °C	**300 mm**	7100-0012-0060-001	**28,50 €**
TH-VA 350MM	40 bar	+600 °C	**350 mm**	7100-0012-0070-001	**28,70 €**
TH-VA 400MM	40 bar	+600 °C	**400 mm**	7100-0012-0080-001	**29,21 €**
TH-VA/xx/90	**Stainless steel, V4**A (1.4571)			**with neck tube** (90 mm)	
TH-VA 50/90MM	40 bar	+600 °C	**50 mm**	7100-0012-2010-001	**25,11 €**
TH-VA 100/90MM	40 bar	+600 °C	**100 mm**	7100-0012-2020-001	**26,24 €**
TH-VA 150/90MM	40 bar	+600 °C	**150 mm**	7100-0012-2030-001	**27,52 €**
TH-VA 200/90MM	40 bar	+600 °C	**200 mm**	7100-0012-2040-001	**28,70 €**
TH-VA 250/90MM	40 bar	+600 °C	**250 mm**	7100-0012-2050-001	**30,08 €**
TH-VA 300/90MM	40 bar	+600 °C	**300 mm**	7100-0012-2060-001	**32,60 €**
Note:	inner diameter of socket 6.5 mm For further information see chapter Accessories!				

Mounting flange (accessories)				
Type / WG01		**T_{max}**	**Item No.**	**Price**
MF				
MF-06-M	**Mounting flange,** metal (galvanised steel) Ø 32 mm, tube gland Ø 6.3 mm	+700 °C	7100-0030-5000-000	**8,26 €**
Note:	For further information, see chapter Accessories!			

S+S REGELTECHNIK

Screw-in / immersion temperature sensor with neck tube, with passive output

Screw-in resistance thermometer / temperature sensor with neck tube **THERM**ASGARD® **ETF 6** with passive output, with connecting head made from aluminium, straight protective tube, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

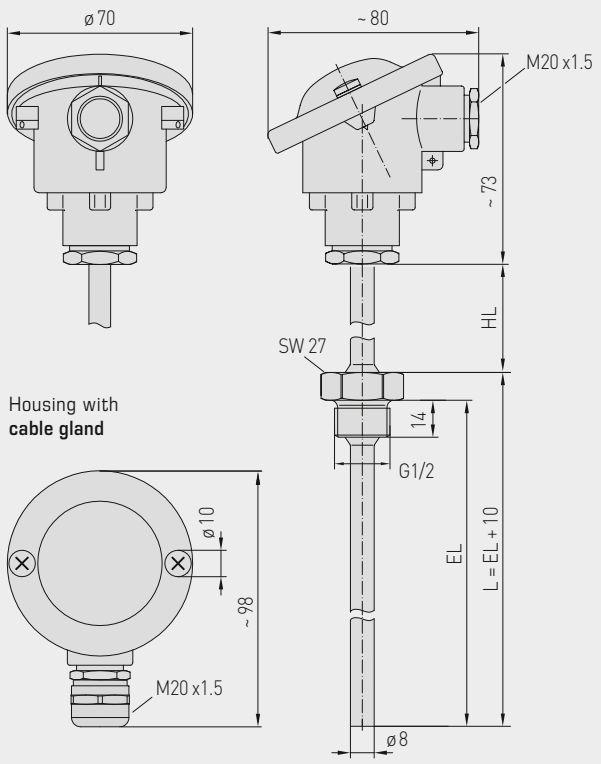
The duct sensor is used to detect temperatures in liquid or gaseous media. It is used in pipes, tanks or storage systems, preferably where tubes or tanks must be isolated.

ETF 6
Basic unit

TECHNICAL DATA

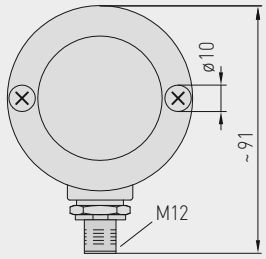
Measuring range:	–35…+180 °C
Sensors / output:	Pt100 / Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**) (optionally also with two or other sensors)
Connection type:	2-wire connection for Pt1000 4-wire connection for Pt100, optional for other sensors
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm², via terminal screws, on a ceramic base
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	See dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –20...+100 °C
Protective tube:	stainless steel **V4A** (1.4571), G ½", SW 27, p_{max} = 40 bar, Ø = 8 mm neck tube length (HL) = 80 mm installation length (EL) = 100 - 400 mm (see table)
Process connection:	by means of screw thread G ½"
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)

Dimensional drawing **ETF6**



Housing with **cable gland**

Housing with **M12 connector**



M12 connector (male)

ETF6-KV
with cable gland

ETF6-Q
with M12 connector

High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Screw-in / immersion temperature sensor with neck tube, with passive output

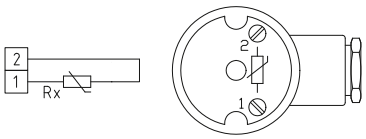
S+S REGELTECHNIK

2-wire connection
(Pt1000)

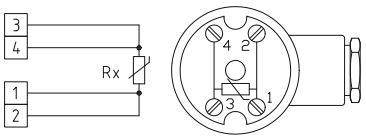
4-wire connection
(Pt100)

form B
top view

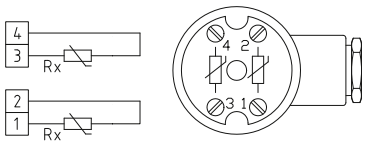
1x two-wire connection
(Pt1000)



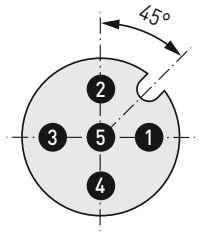
1x four-wire connection
(Pt100)



2x two-wire connection
(optional)

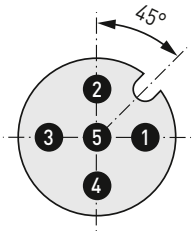


1x two-wire connection
pin assignment (M12)



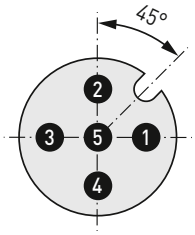
1 Rx
2
3 frei / free
4 frei / free
5 frei / free

1x four-wire connection
pin assignment (M12)



1
2 Rx
3
4
5 frei / free

2x two-wire connection
pin assignment (M12)



1 Rx
2
3 Rx
4
5 frei / free

Screw-in / immersion temperature sensor with neck tube, with passive output

ETF 6 - KV
with cable gland

ETF 6 - Q
with M12 connector

THERMASGARD® ETF 6 Temperature measuring transducers with neck tube, *ID*

Type / WG03	Sensor / Output	Installation length (EL)	Item No.	Price
ETF 6 PT100 xx KV	**Pt100**		with cable gland	
ETF6 PT100 100/80 KV	Pt100 (according to DIN EN 60751, class B)	**100 mm**	1101-20C0-1023-000	**81,36 €**
ETF6 PT100 150/80 KV	Pt100 (according to DIN EN 60751, class B)	**150 mm**	1101-20C0-1033-000	**85,21 €**
ETF6 PT100 200/80 KV	Pt100 (according to DIN EN 60751, class B)	**200 mm**	1101-20C0-1043-000	**87,40 €**
ETF6 PT100 250/80 KV	Pt100 (according to DIN EN 60751, class B)	**250 mm**	1101-20C0-1053-000	**89,49 €**
ETF6 PT100 400/80 KV	Pt100 (according to DIN EN 60751, class B)	**400 mm**	1101-20C0-1083-000	**92,03 €**
ETF 6 PT1000 xx KV	**Pt1000**		with cable gland	
ETF6 PT1000 100/80 KV	Pt1000 (according to DIN EN 60751, class B)	**100 mm**	1101-20C0-5021-000	**83,11 €**
ETF6 PT1000 150/80 KV	Pt1000 (according to DIN EN 60751, class B)	**150 mm**	1101-20C0-5031-000	**87,40 €**
ETF6 PT1000 200/80 KV	Pt1000 (according to DIN EN 60751, class B)	**200 mm**	1101-20C0-5041-000	**88,66 €**
ETF6 PT1000 250/80 KV	Pt1000 (according to DIN EN 60751, class B)	**250 mm**	1101-20C0-5051-000	**89,61 €**
ETF6 PT1000 400/80 KV	Pt1000 (according to DIN EN 60751, class B)	**400 mm**	1101-20C0-5081-000	**92,84 €**
ETF 6 PT100 xx Q	**Pt100**		with M12 connector	
ETF6 PT100 100/80MM- Q	Pt100 (according to DIN EN 60751, class B)	**100 mm**	2Z01-4121-0100-041	**109,45 €**
ETF6 PT100 150/80MM- Q	Pt100 (according to DIN EN 60751, class B)	**150 mm**	2Z01-4121-0100-051	**113,29 €**
ETF6 PT100 200/80MM- Q	Pt100 (according to DIN EN 60751, class B)	**200 mm**	2Z01-4121-0100-061	**115,49 €**
ETF6 PT100 250/80MM- Q	Pt100 (according to DIN EN 60751, class B)	**250 mm**	2Z01-4121-0100-071	**117,58 €**
ETF6 PT100 400/80MM- Q	Pt100 (according to DIN EN 60751, class B)	**400 mm**	2Z01-4121-0100-081	**120,12 €**
ETF 6 PT100 xx Q	**Pt1000**		with M12 connector	
ETF6 PT1000 100/80MM Q	Pt1000 (according to DIN EN 60751, class B)	**100 mm**	2Z05-4121-0100-041	**109,45 €**
ETF6 PT1000 150/80MM Q	Pt1000 (according to DIN EN 60751, class B)	**150 mm**	2Z05-4121-0100-051	**113,29 €**
ETF6 PT1000 200/80MM Q	Pt1000 (according to DIN EN 60751, class B)	**200 mm**	2Z05-4121-0100-061	**115,49 €**
ETF6 PT1000 250/80MM Q	Pt1000 (according to DIN EN 60751, class B)	**250 mm**	2Z05-4121-0100-071	**117,58 €**
ETF6 PT1000 300/80MM Q	Pt1000 (according to DIN EN 60751, class B)	**400 mm**	2Z05-4121-0100-081	**120,12 €**
Extra charge:	two or other sensors optional		on request	
Note	For additional device variants, see **S+S Facility Engineering**!			

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!

Duct / smoke gas temperature sensor, incl. mounting flange, with passive output

S+S REGELTECHNIK

Resistance thermometer / smoke gas temperature sensor **THERM**ASGARD® **RGTF 1** with passive output, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101, with connecting head made from aluminium and straight protective tube, incl. mounting flange.

The duct sensor is used to detect relatively high temperatures in gaseous media, eg, for exhaust air and smoke gas temperature measurement.

TECHNICAL DATA

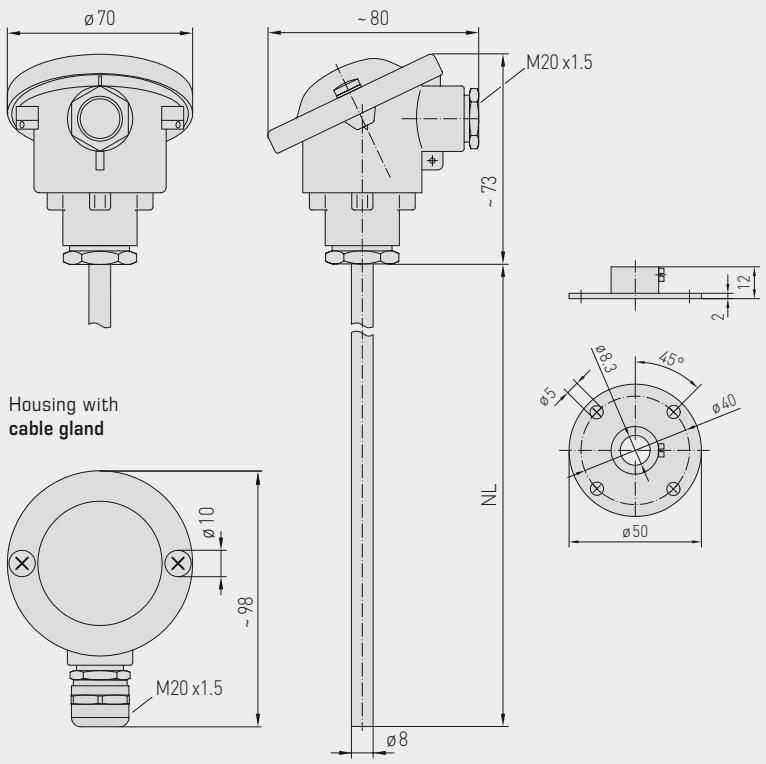
Measuring range:	–35…+600 °C (extended measuring range limits optional from –100…+750 °C)
Sensor / output:	Pt100 / Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**)
Connection type:	2-wire connection (4-wire connection optional)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm², via terminal screws, on ceramic base
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –20…+100 °C
Protective tube:	Stainless steel V4A (1.4571), Ø = 8 mm installation length (EL) = 200 - 500 mm (see table)
Process connection:	by means of mounting flange, stainless steel V2A (1.4305) (included in the scope of delivery)
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)

RGTF 1
Basic unit

RGTF 1
Measuring insert with ceramic tubelet

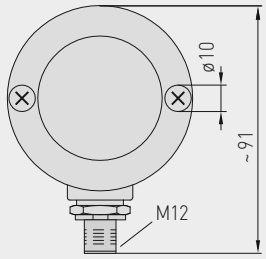
Duct/smoke gas temperature sensor, incl. mounting flange, with passive output

Dimensional drawing **RGTF 1**



Housing with
cable gland

Housing with
M12 connector



M12 connector
(male)

RGTF 1 - KV
with cable gland

RGTF 1 - Q
with M12 connector

High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Duct / smoke gas temperature sensor, incl. mounting flange, with passive output

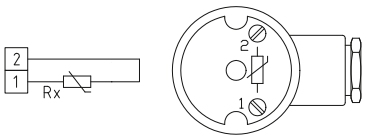
S+S REGELTECHNIK

2-wire connection
(Pt100 / Pt1000)

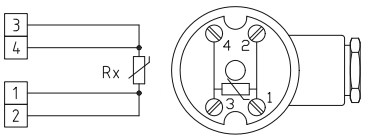
4-wire connection
(optional)

form B
top view

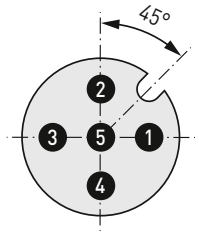
1x two-wire connection
(Pt100 / Pt1000)



1x four-wire connection
(optional)

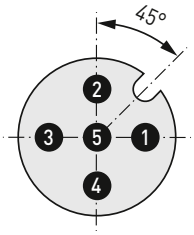


1x two-wire connection
pin assignment (M12)



1 Rx 2
3 frei / free
4 frei / free
5 frei / free

1x four-wire connection
pin assignment (M12)



1 2 Rx 3 4
5 frei / free

Duct / smoke gas temperature sensor, incl. mounting flange, with passive output

RGTF 1 - KV
with cable gland

RGTF 1 - Q
with M12 connector

THERMASGARD® **RGTF 1** Duct / smoke gas temperature sensor, incl. mounting flange, *ID*					
Type / WG03	**Sensor / Output**		**Installation length (EL)**	**Item No.**	**Price**
RGTF 1 PT100 xx KV	**Pt100**			with cable gland	
RGTF1 PT100 200MM KV	Pt100	(according to DIN EN 60751, class B)	**200 mm**	1101-30D0-1041-000	**162,24 €**
RGTF1 PT100 250MM KV	Pt100	(according to DIN EN 60751, class B)	**250 mm**	1101-30D0-1051-000	**163,90 €**
RGTF1 PT100 300MM KV	Pt100	(according to DIN EN 60751, class B)	**300 mm**	1101-30D0-1061-000	**167,52 €**
RGTF1 PT100 500MM KV	Pt100	(according to DIN EN 60751, class B)	**500 mm**	1101-30D0-1101-000	**172,25 €**
RGTF 1 PT1000 xx KV	**Pt1000**			with cable gland	
RGTF1 PT1000 200MM KV	Pt1000	(according to DIN EN 60751, class B)	**200 mm**	1101-30D0-5041-000	**162,24 €**
RGTF1 PT1000 250MM KV	Pt1000	(according to DIN EN 60751, class B)	**250 mm**	1101-30D0-5051-000	**163,90 €**
RGTF1 PT1000 300MM KV	Pt1000	(according to DIN EN 60751, class B)	**300 mm**	1101-30D0-5061-000	**167,52 €**
RGTF1 PT1000 500MM KV	Pt1000	(according to DIN EN 60751, class B)	**500 mm**	1101-30D0-5101-000	**172,25 €**
RGTF 1 PT100 xx Q	**Pt100**			with M12 connector	
RGTF1 PT100 200MM Q	Pt100	(according to DIN EN 60751, class B)	**200 mm**	2Z01-4131-0100-011	**190,24 €**
RGTF1 PT100 250MM Q	Pt100	(according to DIN EN 60751, class B)	**250 mm**	2Z01-4131-0100-021	**191,98 €**
RGTF1 PT100 300MM Q	Pt100	(according to DIN EN 60751, class B)	**300 mm**	2Z01-4131-0100-031	**195,60 €**
RGTF1 PT100 500MM Q	Pt100	(according to DIN EN 60751, class B)	**500 mm**	2Z01-4131-0100-041	**200,34 €**
RGTF 1 PT1000 xx Q	**Pt1000**			with M12 connector	
RGTF1 PT1000 200MM Q	Pt1000	(according to DIN EN 60751, class B)	**200 mm**	2Z05-4131-0100-011	**190,24 €**
RGTF1 PT1000 250MM Q	Pt1000	(according to DIN EN 60751, class B)	**250 mm**	2Z05-4131-0100-021	**191,98 €**
RGTF1 PT1000 300MM Q	Pt1000	(according to DIN EN 60751, class B)	**300 mm**	2Z05-4131-0100-031	**195,60 €**
RGTF1 PT1000 500MM Q	Pt1000	(according to DIN EN 60751, class B)	**500 mm**	2Z05-4131-0100-041	**200,34 €**
Extra charge:	other measuring ranges optional			on request	
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES	
	Special accessories for M12 connector see chapter Accessories !

S+S REGELTECHNIK

Screw-in / smoke gas temperature sensor, with neck tube, with passive output

Screw-in resistance thermometer / smoke gas temperature sensor with neck tube **THERM**ASGARD® **RGTF 2** with passive output, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101, with connecting head made from aluminium and straight protective tube.

The duct sensor is used to detect relatively high temperatures in liquid or gaseous media, eg, for exhaust air and smoke gas temperature measurement.

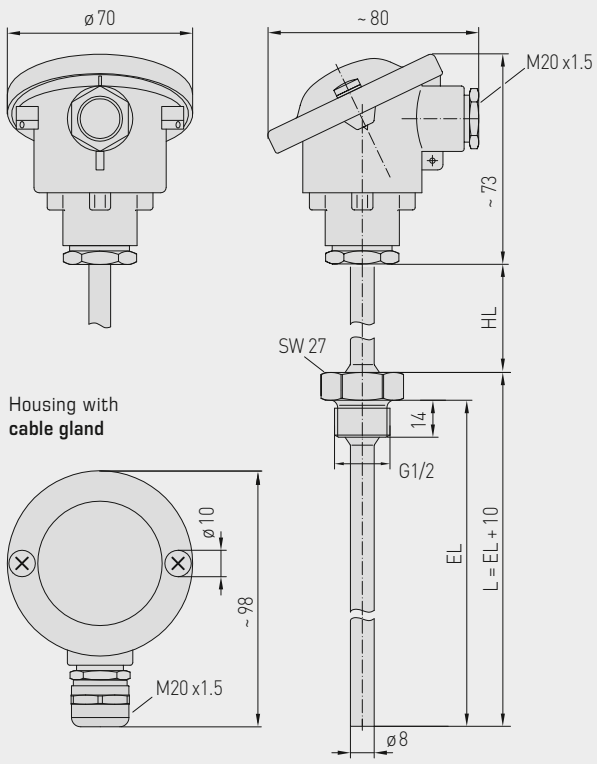
TECHNICAL DATA

Measuring range:	–35…+600 °C (extended measuring range limits optional from –100…+750 °C)
Sensor / output:	Pt100 / Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**)
Connection type:	2-wire connection (4-wire connection optional)
Testing current:	< 0.6 mA (Pt1000) < 1.0 mA (Pt100)
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Electrical connection:	0.14 - 2.5 mm², via terminal screws, on ceramic base
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	see dimensional drawing
Connecting head:	shape B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –20…+100 °C
Protective tube:	stainless steel V4A (1.4571), G ½", SW 27, p_{max} = 40 bar, Ø = 8 mm Neck tube length (HL) = 80 mm Installation length (EL) = 100 - 500 mm (see table)
Process connection:	by means of screw thread G ½"
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)

RGTF 2
Basic unit

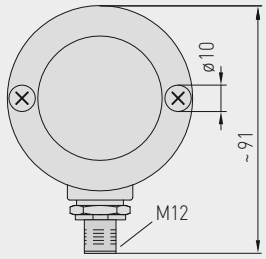
RGTF 2
Measuring insert with ceramic tubelet

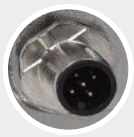
Dimensional drawing **RGTF 2**



Housing with **cable gland**

Housing with **M12 connector**





M12 connector (male)

RGTF 2 - KV
with cable gland

RGTF 2 - Q
with M12 connector

High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Screw-in / smoke gas temperature sensor, with neck tube, with passive output

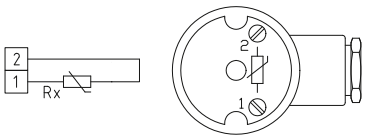
S+S REGELTECHNIK

2-wire connection
(Pt100 / Pt1000)

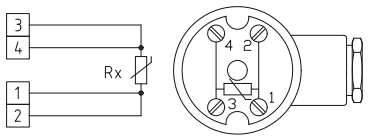
4-wire connection
(optional)

form B
top view

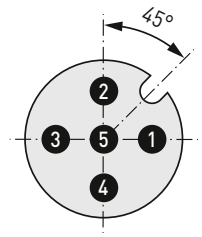
1x two-wire connection
(Pt100 / Pt1000)



1x four-wire connection
(optional)

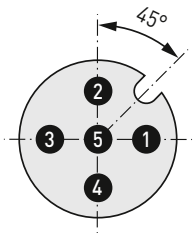


1x two-wire connection
pin assignment (M12)



1 Rx 2
3 frei / free
4 frei / free
5 frei / free

1x four-wire connection
pin assignment (M12)



1 2 Rx 3 4
5 frei / free

Screw-in / smoke gas temperature sensor, with neck tube, with passive output

RGTF 2 - KV
with cable gland

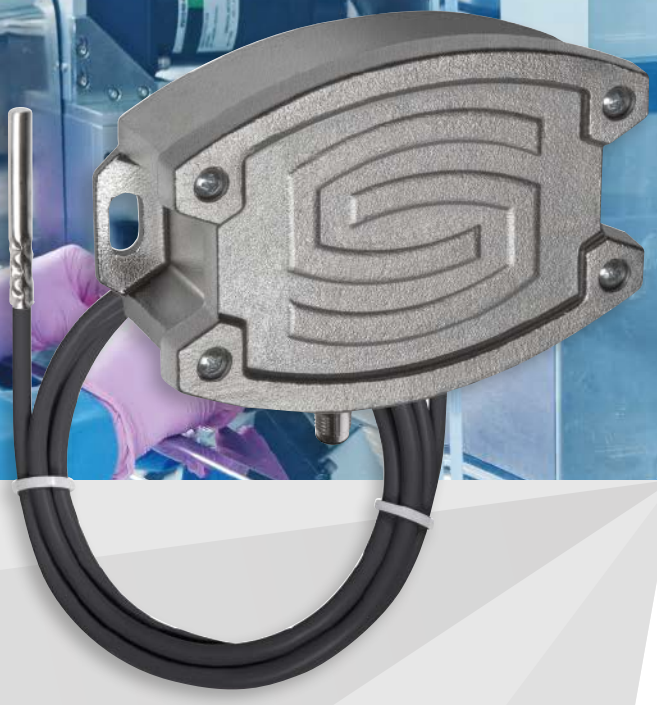
RGTF 2 - Q
with M12 connector

THERMASGARD® RGTF 2 Screw-in / smoke gas temperature sensor, with neck tube, *ID*

Type / WG03	Sensor / Output		Inserted Length (EL)	Item No.	Price
RGTF 2 PT100 xx KV	**Pt100**			with cable gland	
RGTF2 PT100 100/80MM KV	Pt100	(according to DIN EN 60751, class B)	**100 mm**	1101-20D0-1021-000	**179,85 €**
RGTF2 PT100 150/80MM KV	Pt100	(according to DIN EN 60751, class B)	**150 mm**	1101-20D0-1031-000	**180,95 €**
RGTF2 PT100 200/80MM KV	Pt100	(according to DIN EN 60751, class B)	**200 mm**	1101-20D0-1041-000	**186,46 €**
RGTF2 PT100 250/80MM KV	Pt100	(according to DIN EN 60751, class B)	**250 mm**	1101-20D0-1051-000	**187,55 €**
RGTF2 PT100 300/80MM KV	Pt100	(according to DIN EN 60751, class B)	**300 mm**	1101-20D0-1061-000	**195,25 €**
RGTF2 PT100 500/80MM KV	Pt100	(according to DIN EN 60751, class B)	**500 mm**	1101-20D0-1101-000	**207,37 €**
RGTF 2 PT1000 xx KV	**Pt1000**			with cable gland	
RGTF2 PT1000 100/80 KV	Pt1000	(according to DIN EN 60751, class B)	**100 mm**	1101-20D0-5021-000	**179,85 €**
RGTF2 PT1000 150/80 KV	Pt1000	(according to DIN EN 60751, class B)	**150 mm**	1101-20D0-5031-000	**180,95 €**
RGTF2 PT1000 200/80 KV	Pt1000	(according to DIN EN 60751, class B)	**200 mm**	1101-20D0-5041-000	**186,46 €**
RGTF2 PT1000 250/80 KV	Pt1000	(according to DIN EN 60751, class B)	**250 mm**	1101-20D0-5051-000	**187,55 €**
RGTF2 PT1000 300/80 KV	Pt1000	(according to DIN EN 60751, class B)	**300 mm**	1101-20D0-5061-000	**195,25 €**
RGTF2 PT1000 500/80 KV	Pt1000	(according to DIN EN 60751, class B)	**500 mm**	1101-20D0-5101-000	**207,37 €**
RGTF 2 PT100 xx Q	**Pt100**			with M12 connector	
RGTF2 PT100 100/80MM Q	Pt100	(according to DIN EN 60751, class B)	**100 mm**	2Z01-4141-0100-011	**207,93 €**
RGTF2 PT100 150/80MM Q	Pt100	(according to DIN EN 60751, class B)	**150 mm**	2Z01-4141-0100-021	**209,04 €**
RGTF2 PT100 200/80MM Q	Pt100	(according to DIN EN 60751, class B)	**200 mm**	2Z01-4141-0100-031	**214,54 €**
RGTF2 PT100 250/80MM Q	Pt100	(according to DIN EN 60751, class B)	**250 mm**	2Z01-4141-0100-041	**215,64 €**
RGTF2 PT100 300/80MM Q	Pt100	(according to DIN EN 60751, class B)	**300 mm**	2Z01-4141-0100-051	**223,34 €**
RGTF2 PT100 500/80MM Q	Pt100	(according to DIN EN 60751, class B)	**500 mm**	2Z01-4141-0100-061	**235,45 €**
RGTF 2 PT1000 xx Q	**Pt1000**			with M12 connector	
RGTF2 PT1000 100/80M Q	Pt1000	(according to DIN EN 60751, class B)	**100 mm**	2Z05-4141-0100-011	**207,93 €**
RGTF2 PT1000 150/80M Q	Pt1000	(according to DIN EN 60751, class B)	**150 mm**	2Z05-4141-0100-021	**209,04 €**
RGTF2 PT1000 200/80M Q	Pt1000	(according to DIN EN 60751, class B)	**200 mm**	2Z05-4141-0100-031	**214,54 €**
RGTF2 PT1000 250/80M Q	Pt1000	(according to DIN EN 60751, class B)	**250 mm**	2Z05-4141-0100-041	**215,64 €**
RGTF2 PT1000 300/80M Q	Pt1000	(according to DIN EN 60751, class B)	**300 mm**	2Z05-4141-0100-051	**223,34 €**
RGTF2 PT1000 500/80M Q	Pt1000	(according to DIN EN 60751, class B)	**500 mm**	2Z05-4141-0100-061	**235,45 €**
Extra charge:	other measuring ranges optional			on request	
For special orders please specify:	Type, sensor, measuring range, connection type, process connection, inserted length				

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!



Temperature sensors active

Our active **THERM**ASGARD® temperature sensors are easy to install, versatile and meet all requirements important to you. Adjustable and calibratable temperature transmitters with self-diagnostics provide additional flexibility.

APPLICATION RANGE

> Hospitals, museums, schools, hotels, public authorities, institutes and banks
> Sports arenas, holiday centers and movie theaters
> Car dealers
> Ships and shipyards
> Industrial plants and assembly halls
> Power plants and refineries

THERMASGARD®

036 – 075

Duct, immersion, screw-in sensors

Outdoor sensors

Cable sensors, surface-contact sensors

Immersion / screw-in / duct temperature measuring transducer, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable temperature sensor **THERM**ASGARD® **TM 54** with eight switchable measuring ranges and continuous output, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101, with connecting head made from aluminium and straight protective tube. A basic unit in three variants through combination with accessories, eg, for robust applications with a separate immersion sleeve made from stainless steel.

The duct sensor is used to detect temperatures in liquid or gaseous media. It is used in pipes, heating engineering, storage systems, compact district heating stations, warm and cold water systems, oil and lubrication cycle systems, mechanical, apparatus and plant engineering and throughout the industrial sector.

The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

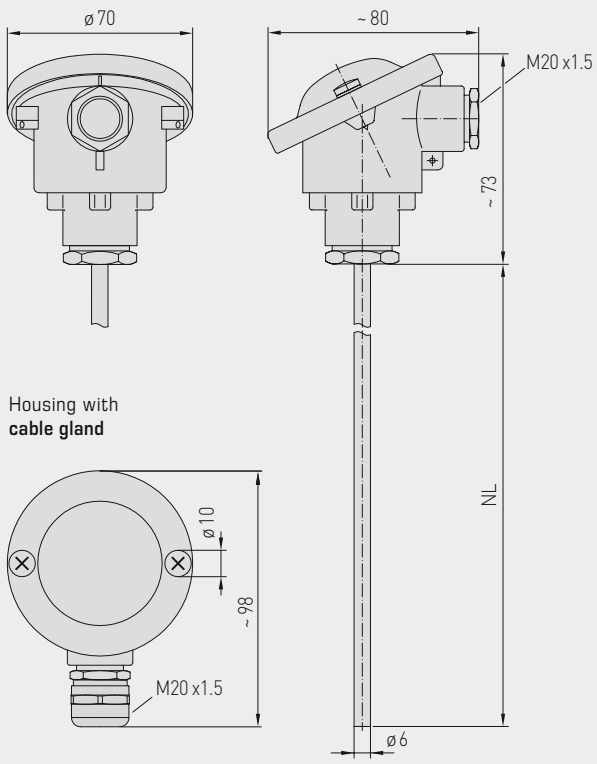
TM 54
Basic unit

TECHNICAL DATA

Power supply:	15...36 V DC depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A
Power consumption:	< 0.55 VA / 24 V DC
Sensor:	Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**)
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** see table (other measuring ranges optional) T_{max} = +150°C **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –30...+70 °C
Protective tube:	stainless steel, V4A (1.4571), Ø = 6 mm, installation length (EL) = 50 - 400 mm (see table)
Process connection:	by means of immersion sleeve or mounting flange (accessories)
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU
ACCESSORIES	(see table)
MF-06-M	**mounting flange**, metal (galvanised steel), Ø = 32 mm, Ø = 6.3 mm tube gland, T_{max} = +700 °C
TH-VA / xx	**immersion sleeve, stainless steel V4A** (1.4571), Ø = 8 mm, T_{max} = +600 °C, p_{max} = 40 bar
TH-VA / xx / 90	**immersion sleeve, stainless steel V4A** (1.4571), with neck tube (90 mm), Ø = 8 mm, T_{max} = +600 °C, p_{max} = 40 bar

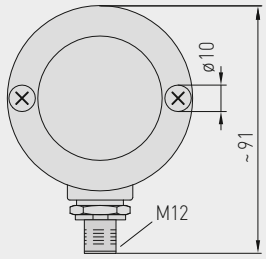
Immersion / screw-in / duct temperature measuring transducer, calibratable, with multi-range switching and active output

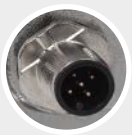
Dimensional drawing **TM 54**



Housing with
cable gland

Housing with
M12 connector





M12 connector
(male)

TM 54 - KV
with cable gland

TM 54 - Q
mit M12-Steckverbinder

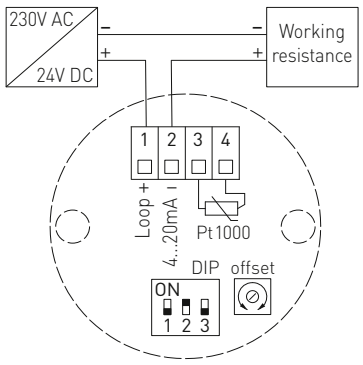
High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

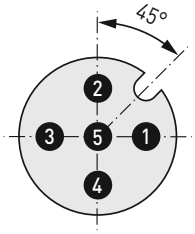
Immersion / screw-in / duct temperature measuring transducer, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Connecting diagram **TM 54-I**



Pin assignment (M12) **TM 54-I**



1. +UB 15...36 V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND
5. Shield

Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

TM 54
top view

TM 54-I
Connecting head

Immersion / screw-in / duct temperature measuring transducer, calibratable, with multi-range switching and active output

TM 54 - KV
with cable gland

TM 54 - Q
with M12 connector

THERMASGARD® TM 54 Temperature measuring transducers (basic device), *ID*					
Type / WG01	**Sensor**	**Output**	**Installation length (EL)**	**Item No.**	**Price**
TM 54 - I xx KV	**Pt1000**			with cable gland	
TM54-I 50MM KV	Pt1000	4...20 mA	**50 mm**	1101-7172-0019-910	**139,46 €**
TM54-I 100MM KV	Pt1000	4...20 mA	**100 mm**	1101-7172-0029-910	**142,55 €**
TM54-I 150MM KV	Pt1000	4...20 mA	**150 mm**	1101-7172-0039-910	**148,59 €**
TM54-I 200MM KV	Pt1000	4...20 mA	**200 mm**	1101-7172-0049-910	**150,52 €**
TM54-I 250MM KV	Pt1000	4...20 mA	**250 mm**	1101-7172-0059-910	**152,28 €**
TM54-I 300MM KV	Pt1000	4...20 mA	**300 mm**	1101-7172-0069-910	**153,77 €**
TM54-I 350MM KV	Pt1000	4...20 mA	**350 mm**	1101-7172-0079-910	**156,74 €**
TM54-I 400MM KV	Pt1000	4...20 mA	**400 mm**	1101-7172-0089-910	**165,00 €**
TM 54 - I xx Q	**Pt1000**			with M12 connector	
TM54-I 50MM Q	Pt1000	4...20 mA	**50 mm**	2001-4111-2100-011	**167,55 €**
TM54-I 100MM Q	Pt1000	4...20 mA	**100 mm**	2001-4111-2100-021	**170,63 €**
TM54-I 150MM Q	Pt1000	4...20 mA	**150 mm**	2001-4111-2100-031	**176,68 €**
TM54-I 200MM Q	Pt1000	4...20 mA	**200 mm**	2001-4111-2100-041	**178,61 €**
TM54-I 250MM Q	Pt1000	4...20 mA	**250 mm**	2001-4111-2100-051	**180,37 €**
TM54-I 300MM Q	Pt1000	4...20 mA	**300 mm**	2001-4111-2100-061	**181,86 €**
TM54-I 350MM Q	Pt1000	4...20 mA	**350 mm**	2001-4111-2100-071	**184,83 €**
TM54-I 400MM Q	Pt1000	4...20 mA	**400 mm**	2001-4111-2100-081	**193,09 €**
Extra charge:	two or other sensors optional			on request	
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES	
	Special accessories for M12 connector see chapter Accessories !

Immersion / screw-in / duct temperature measuring transducer, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

A basic unit in three variants...

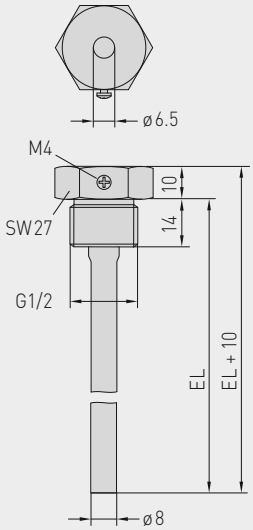
TM 54
Basic unit

TM 54 +
TH-VA/xx
Immersion / screw-in temperature sensor with immersion sleeve, stainless steel, V4A

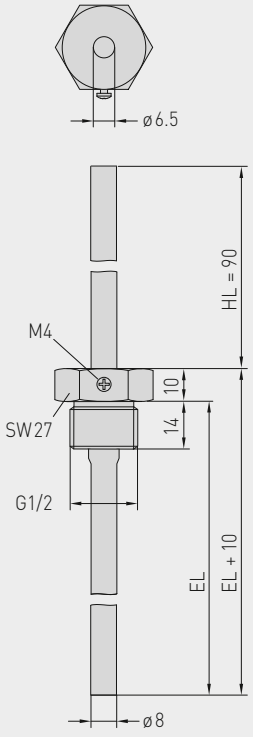
TM 54 +
TH-VA/xx/90
Immersion / screw-in temperature sensor with immersion sleeve with neck tube, stainless steel, V4A

TM 54 +
MF-06-M
Duct temperature sensor with mounting flange, metal

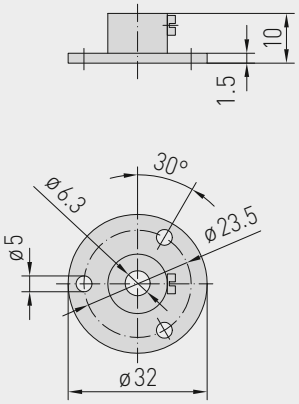
Dimensional drawing
TH-VA/xx



Dimensional drawing
TH-VA/xx/90



Dimensional drawing
MF-06-M



...through combination with accessories:

TH-VA/xx

TH-VA/xx/90

MF-06-M

THERMASGARD® TH	Immersion sleeve Ø 8 mm (accessories)				
Type / WG01	**p_{max} (static)**	**T_{max}**	**Installation length (EL)**	**Item No.**	**Price**
TH-VA/xx	**Stainless steel, V4A** (1.4571)			without neck tube	
TH-VA 50MM	40 bar	+600 °C	**50 mm**	7100-0012-0010-001	**17,53 €**
TH-VA 100MM	40 bar	+600 °C	**100 mm**	7100-0012-0020-001	**19,37 €**
TH-VA 150MM	40 bar	+600 °C	**150 mm**	7100-0012-0030-001	**20,81 €**
TH-VA 200MM	40 bar	+600 °C	**200 mm**	7100-0012-0040-001	**21,94 €**
TH-VA 250MM	40 bar	+600 °C	**250 mm**	7100-0012-0050-001	**27,27 €**
TH-VA 300MM	40 bar	+600 °C	**300 mm**	7100-0012-0060-001	**28,50 €**
TH-VA 350MM	40 bar	+600 °C	**350 mm**	7100-0012-0070-001	**28,70 €**
TH-VA 400MM	40 bar	+600 °C	**400 mm**	7100-0012-0080-001	**29,21 €**
TH-VA/xx/90	**Stainless steel, V4A** (1.4571)			**with neck tube** (90 mm)	
TH-VA 50/90MM	40 bar	+600 °C	**50 mm**	7100-0012-2010-001	**25,11 €**
TH-VA 100/90MM	40 bar	+600 °C	**100 mm**	7100-0012-2020-001	**26,24 €**
TH-VA 150/90MM	40 bar	+600 °C	**150 mm**	7100-0012-2030-001	**27,52 €**
TH-VA 200/90MM	40 bar	+600 °C	**200 mm**	7100-0012-2040-001	**28,70 €**
TH-VA 250/90MM	40 bar	+600 °C	**250 mm**	7100-0012-2050-001	**30,08 €**
TH-VA 300/90MM	40 bar	+600 °C	**300 mm**	7100-0012-2060-001	**32,60 €**
Note:	inner diameter of socket 6.5 mm For further information see chapter Accessories!				

Mounting flange (accessories)				
Type / WG01		**T_{max}**	**Item No.**	**Price**
MF				
MF-06-M	**Mounting flange,** metal (galvanised steel) Ø 32 mm, tube gland Ø 6.3 mm	+700 °C	7100-0030-5000-000	**8,26 €**
Note:	For further information, see chapter Accessories!			

THERMASGARD® RGTM 1 ID

**Duct / smoke gas temperature sensor,
incl. mounting flange, calibratable, with multi-range switching
and active output**

S+S REGELTECHNIK

Calibratable smoke gas temperature measuring transducer **THERM**ASGARD® **RGTM 1** with eight switchable measuring ranges and continuous output, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101, with connecting head made from aluminium, spring-mounted measuring insert and straight protective tube, incl. mounting flange.

The duct sensor is used to detect high temperatures in gaseous media, eg, for exhaust air or smoke gas temperature measurement.

The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

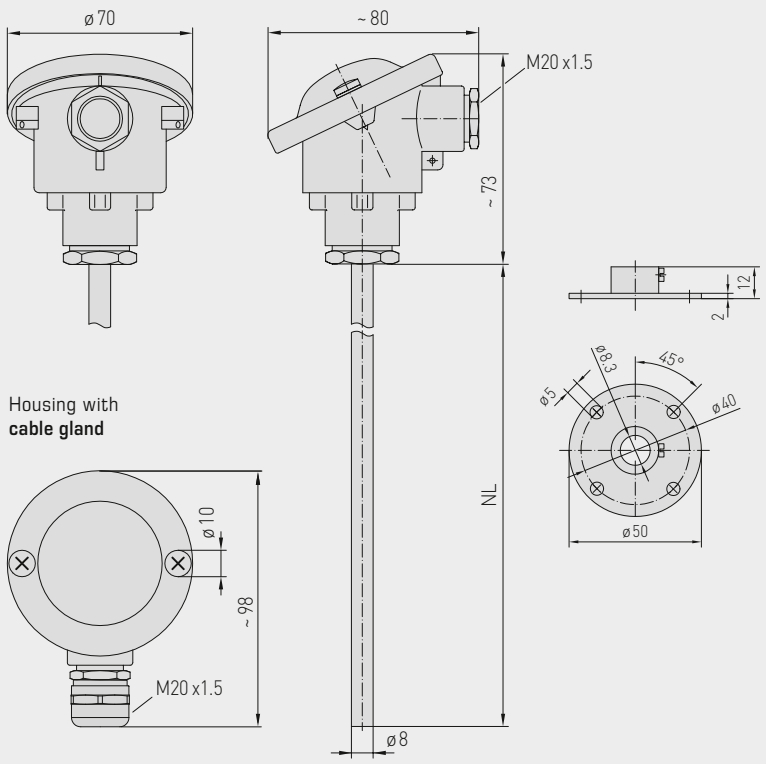
Power supply:	15...36 V DC depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	max. 750 Ohm / 24 V DC
Power consumption:	< 1.0 VA / 24 V AC / DC < 0.55 VA / 24 V DC
Sensor:	Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**)
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** see table (other measuring ranges optional) **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –30...+70 °C
Protective tube:	Stainless steel, V4A (1.4571), Ø = 8 mm, installation length (EL) = 200 - 400 mm (see table)
Process connection:	by means of mounting flange, stainless steel **V2A** (1.4305) (included in the scope of delivery)
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU

RGTM 1
Basic unit

RGTM 1
Measuring insert with ceramic tubelet

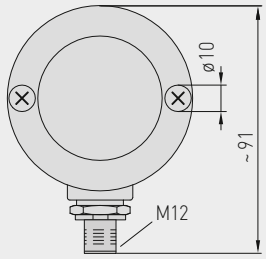
Duct/smoke gas temperature sensor, incl. mounting flange, calibratable, with multi-range switching and active output

Dimensional drawing **RGTM 1**



Housing with **cable gland**

Housing with **M12 connector**



M12 connector (male)

RGTM 1 - KV
with cable gland

RGTM 1 - Q
with M12 connector

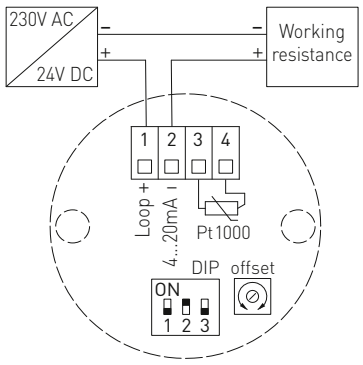
High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Duct/smoke gas temperature sensor, incl. mounting flange, calibratable, with multi-range switching and active output

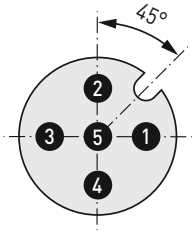
S+S REGELTECHNIK

Connecting diagram **RGTM -I**



RGTM
top view

Pin assignment (M12) **RGTM -I**



1. +UB 15...36 V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND
5. Shield

RGTM -I
Connecting head

Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
0... +50 °C (default)	OFF	**ON**	**ON**
0...+100 °C	**ON**	OFF	**ON**
0...+200 °C	OFF	OFF	**ON**
0...+300 °C	**ON**	**ON**	OFF
0...+400 °C	OFF	**ON**	OFF
0...+500 °C	**ON**	OFF	OFF
0...+600 °C	OFF	OFF	OFF

Duct / smoke gas temperature sensor, incl. mounting flange, calibratable, with multi-range switching and active output

RGTM 1 - KV
with cable gland

RGTM 1 - Q
with M12 connector

THERMASGARD® RGTM 1 Duct / smoke gas temperature sensor, incl. mounting flange, *ID*

Type / WG01	Sensor	Output	Installation length (EL)	Item No.	Price
RGTM 1 - I xx KV	**Pt1000**			with cable gland	
RGTM1-I 200MM KV	Pt1000	4...20 mA	**200 mm**	1101-31D2-0049-810	**257,44 €**
RGTM1-I 250MM KV	Pt1000	4...20 mA	**250 mm**	1101-31D2-0059-810	**267,35 €**
RGTM1-I 300MM KV	Pt1000	4...20 mA	**300 mm**	1101-31D2-0069-810	**270,10 €**
RGTM1-I 400MM KV	Pt1000	4...20 mA	**400 mm**	1101-31D2-0089-810	**272,30 €**
RGTM 1 - I xx Q	**Pt1000**			with M12 connector	
RGTM1-I 200MM Q	Pt1000	4...20 mA	**200 mm**	2001-4131-2100-011	**285,52 €**
RGTM1-I 250MM Q	Pt1000	4...20 mA	**250 mm**	2001-4131-2100-021	**295,44 €**
RGTM1-I 300MM Q	Pt1000	4...20 mA	**300 mm**	2001-4131-2100-031	**298,18 €**
RGTM1-I 400MM Q	Pt1000	4...20 mA	**400 mm**	2001-4131-2100-041	**300,39 €**
Extra charge:	other sensors optional			on request	
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!

THERMASGARD® RGTM 2 ID

Screw-in / smoke gas temperature measuring transducer, with neck tube, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable smoke gas / screw-in temperature measuring transducer with neck tube **THERM**ASGARD® **RGTM 2** with eight switchable measuring ranges and continuous output, optionally with **cable gland** or **M12 connector** according to DIN EN 61076-2-101, with connecting head made from aluminium, spring-mounted measuring insert and straight protective tube.

The duct sensor is used to detect high temperatures in gaseous or liquid media, eg, for exhaust air or smoke gas temperature measurement.

The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

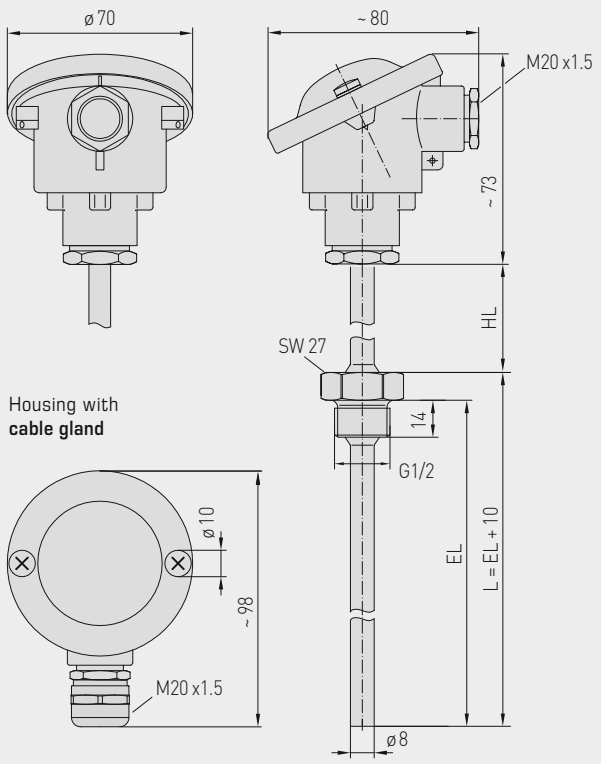
Power supply:	15...36 V DC depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	max. 750 Ohm / 24 V DC
Power consumption:-	< 0.55 VA / 24 V DC
Sensor:	Pt1000 (according to DIN EN 60751, class B) (**Perfect Sensor Protection**)
Measuring ranges:	**multi-range switching with 8 switchable measuring ranges** see table (other measuring ranges optional) **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Cable connection:	**cable gland,** brass, nickel-plated (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Dimensions:	see dimensional drawing
Connecting head:	form B, material aluminium, colour white aluminium (similar to RAL 9006), ambient temperature –30...+70 °C
Protective tube:	stainless steel V4A (1.4571), G ½", SW 27, p_{max} = 40 bar, Ø = 8 mm Neck tube length (HL) = 80 mm Installation length (EL) = 100 - 400 mm (see table)
Process connection:	by means of screw thread G ½"
Permitted humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC Directive 2014 / 30 / EU

RGTM 2
Basic unit

RGTM 2
Measuring insert with ceramic tubelet

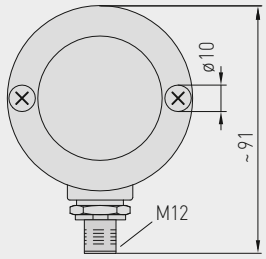
Screw-in / smoke gas temperature measuring transducer, with neck tube, calibratable, with multi-range switching and active output

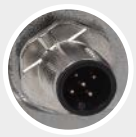
Dimensional drawing **RGTM 2**



Housing with
cable gland

Housing with
M12 connector





M12 connector
(male)

RGTM 2 - KV
with cable gland

RGTM 2 - Q
with M12 connector

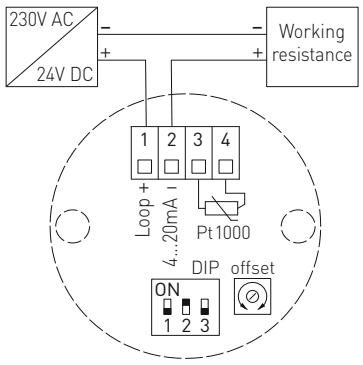
High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

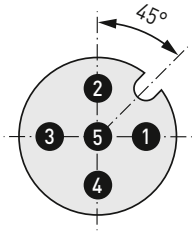
Screw-in / smoke gas temperature measuring transducer, with neck tube, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Connecting diagram **RGTM-I**



Pin assignment (M12) **RGTM-I**



1. +UB 15...36 V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND
5. Shield

Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
0... +50 °C (default)	OFF	**ON**	**ON**
0...+100 °C	**ON**	OFF	**ON**
0...+200 °C	OFF	OFF	**ON**
0...+300 °C	**ON**	**ON**	OFF
0...+400 °C	OFF	**ON**	OFF
0...+500 °C	**ON**	OFF	OFF
0...+600 °C	OFF	OFF	OFF

RGTM
top view

RGTM -I
Connecting head

Screw-in / smoke gas temperature measuring transducer, with neck tube, calibratable, with multi-range switching and active output

RGTM 2 - KV
with cable gland

RGTM 2 - Q
with M12 connector

THERMASGARD® **RGTM 2** Screw-in / smoke gas temperature measuring transducer, with neck tube, *ID*					
Type / WG01	**Sensor**	**Output**	**Installation length (EL)**	**Item No.**	**Price**
RGTM 2 - I xx KV	**Pt1000**			with cable gland	
RGTM2-I 100/80MM KV	Pt1000	4...20 mA	**100 mm**	1101-21D2-0029-810	**250,29 €**
RGTM2-I 150/80MM KV	Pt1000	4...20 mA	**150 mm**	1101-21D2-0039-810	**254,69 €**
RGTM2-I 200/80MM KV	Pt1000	4...20 mA	**200 mm**	1101-21D2-0049-810	**256,89 €**
RGTM2-I 250/80MM KV	Pt1000	4...20 mA	**250 mm**	1101-21D2-0059-810	**266,80 €**
RGTM2-I 300/80MM KV	Pt1000	4...20 mA	**300 mm**	1101-21D2-0069-810	**270,10 €**
RGTM2-I 400/80MM KV	Pt1000	4...20 mA	**400 mm**	1101-21D2-0089-810	**271,20 €**
RGTM 2 - I xx Q	**Pt1000**			with M12 connector	
RGTM2-I 100/80MM Q	Pt1000	4...20 mA	**100 mm**	2001-4141-2100-011	**278,38 €**
RGTM2-I 150/80MM Q	Pt1000	4...20 mA	**150 mm**	2001-4141-2100-021	**282,78 €**
RGTM2-I 200/80MM Q	Pt1000	4...20 mA	**200 mm**	2001-4141-2100-031	**286,00 €**
RGTM2-I 250/80MM Q	Pt1000	4...20 mA	**250 mm**	2001-4141-2100-041	**294,88 €**
RGTM2-I 300/80MM Q	Pt1000	4...20 mA	**300 mm**	2001-4141-2100-051	**298,18 €**
RGTM2-I 400/80MM Q	Pt1000	4...20 mA	**400 mm**	2001-4141-2100-061	**299,29 €**
Extra charge:	other sensors optional			on request	
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES	
	Special accessories for M12 connector see chapter Accessories !

THERMASGARD® ATM 2 ID

Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable outside temperature measuring transducer **THERM**ASGARD® **ATM 2** with eight switchable measuring ranges, external sensor, continuous output, housing made from impact-resistant plastic with quick-release screws, optionally with / without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

It is used to detect outside temperatures, temperatures in wet rooms, e.g. for installation on outside walls, in cold storage buildings and greenhouses, in the industrial sector and in agriculture. Installation in outdoor areas preferably at the north side of a building or in a protected place. In case of direct solar irradiation, we recommend the use of our sun and ball-impact protection hood **WS01** or **WS04** (accessories) or the device version with the installed sun protection hood **SS02** (on request).

The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

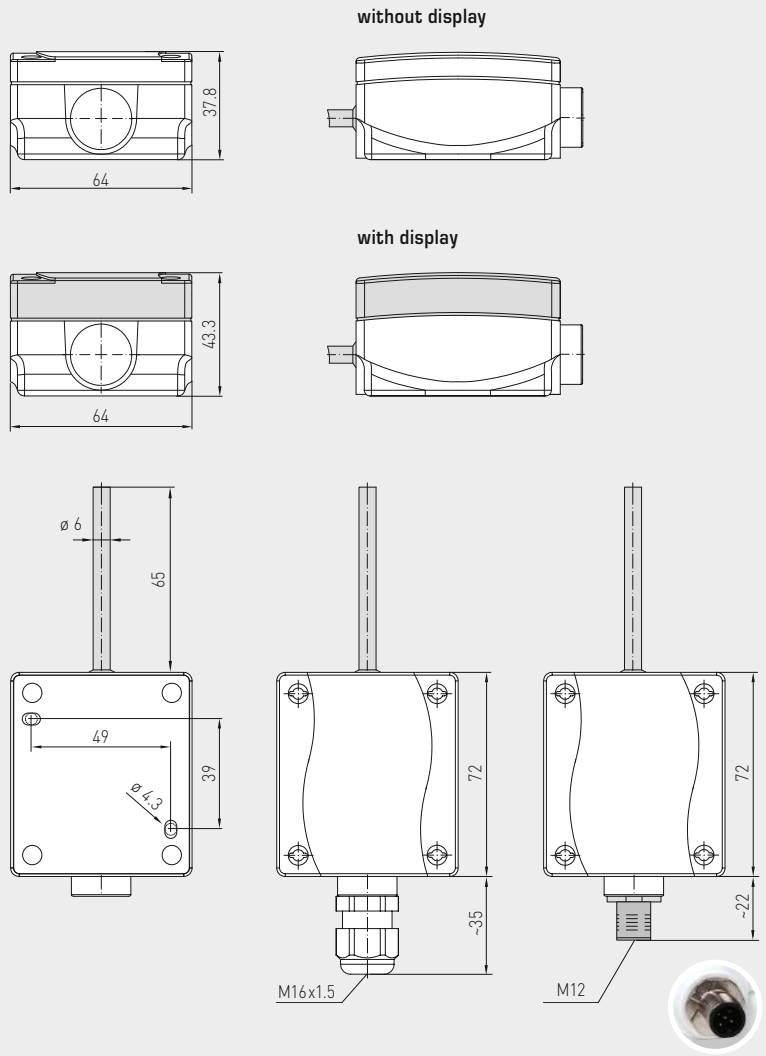
ATM 2
with cable gland

ATM 2 - Q
with M12 connector

TECHNICAL DATA

Power supply:	15…36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.0 VA / 24 V DC
Sensor:	Pt1000, DIN EN 60751, class B, (**Perfect Sensor Protection**) Sensor external
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** see table (other measuring ranges optional) operating range –30…+70 °C **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-release screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Protective tube:	made from stainless steel **V4A** (1.4571), Ø 6 mm, NL = 65 mm
Process connection:	by means of screws (on the housing base)
Ambient temperature:	measuring transducer –30…+70 °C
Permissible humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	**IP 65** (according to EN 60529) Housing tested, TÜV SÜD, Report No.713139052 (Tyr 1)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Optional:	**display with illumination,** two-line, cut-out approx. 36 x 15 mm (B x H), to display the **actual temperature** and **internal diagnostics** (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)
ACCESSORIES	(see table)

Dimensional drawing **ATM 2**



Housing with **cable gland**

Housing with **M12 connector**

ATM 2
with cable gland
and display

ATM 2 - Q
with M12 connector
and display

Display and internal diagnostics
THERMASGARD®
Measuring transducer with display

Standard

Measuring range
exceeded

Measuring range
not reached

Sensor
breakage

Sensor
short circuit

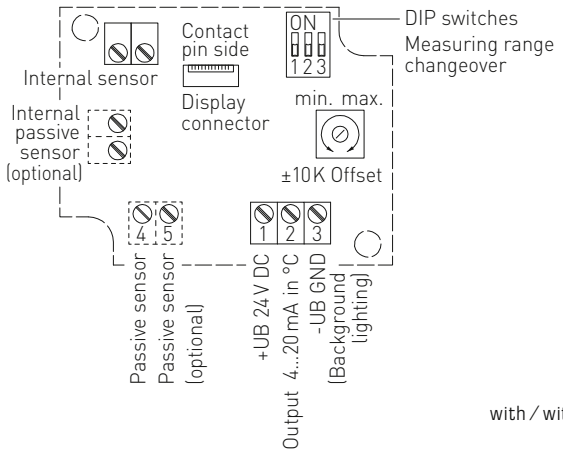
High-performance encapsulation against
vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Schematic diagram* **ATM 2 - I**

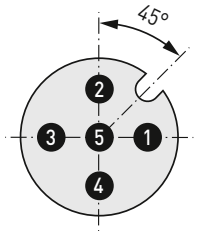


Connection*:

2-wire connection for devices with / without display (not illuminated)

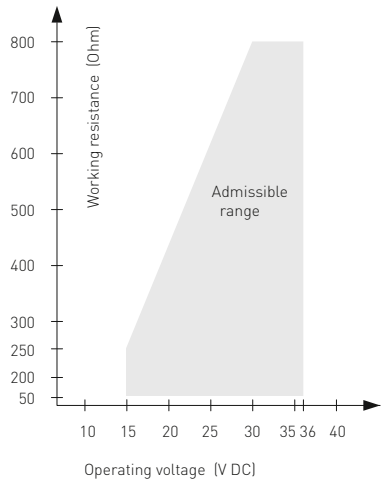
3-wire connection for devices with illuminated display

Pin assignment (M12) **ATM 2 - I**



1. +UB 24V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND (optional for LCD backlighting)
5. Shield

Load resistance diagram **ATM 2 - I**



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

ATM 2 - Q
with display,
hinged

THERMASGARD® ATM 2 Outside temperature / wet room temperature measuring transducers, *ID*					
Type / WG01	**Sensor**	**Output**	**Display**	**Item No.**	**Price**
ATM 2				with cable gland	
ATM2-I	Pt1000	4...20 mA		1101-1142-0009-900	**86,91 €**
ATM2-I DISPLAY	Pt1000	4...20 mA	■	1101-1142-2009-900	**130,93 €**
ATM 2 - Q				with M12 connector	
ATM2-I Q	Pt1000	4...20 mA		2001-6111-2100-001	**123,15 €**
ATM2-I Q_LCD	Pt1000	4...20 mA	■	2001-6112-2100-001	**167,18 €**
Extra charge:	other ranges optional with sun protection hood SS02			on request	**21,96 €** **8,42 €**
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES			
WS-01	**Sun and ball-impact protection hood,** 184 x 180 x 80 mm, stainless steel **V2A** (1.4301)	7100-0040-2000-000	**27,47 €**
WS-04	**Weather and sun protection hood,** 130 x 180 x 135 mm, stainless steel **V2A** (1.4301)	7100-0040-7000-000	**32,41 €**
	For further information, see chapter Accessories!		

THERMASGARD® ATM 2 - VA ID

Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output

NEW

S+S REGELTECHNIK

Calibratable outside temperature measuring transducer **THERM**ASGARD® **ATM 2 - VA** with eight switchable measuring ranges, external sensor, continuous output, housing made from **stainless steel V4A**, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

It is used to detect outside temperatures, temperatures in wet rooms, e.g. for installation on outside walls, in cold storage buildings and greenhouses, in the industrial sector and in agriculture. Installation in outdoor areas preferably at the north side of a building or in a protected place. In case of direct solar irradiation, we recommend using our sun and ball-impact protection hood **WS 01** or **WS 04** (accessories).

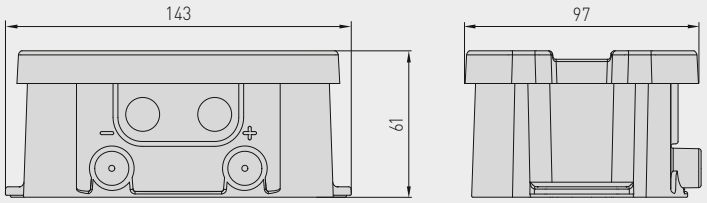
The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

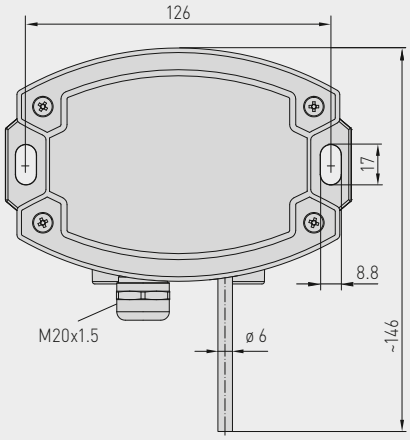
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.0 VA / 24 V DC
Sensor:	Pt1000, DIN EN 60751, class B, (**Perfect Sensor Protection**) Sensor external
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** see table (other measuring ranges optional) operating range –30...+70 °C **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2-wire connectione connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Protective tube:	made from stainless steel **V4A** (1.4571), Ø 6 mm, NL = 65 mm
Process connection:	by screws
Ambient temperature:	measuring transducer –30...+70 °C
Permissible humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) Housing tested, TÜV SÜD, Report No.713139052 (Skadi2)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
ACCESSORIES	(see table)

Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output

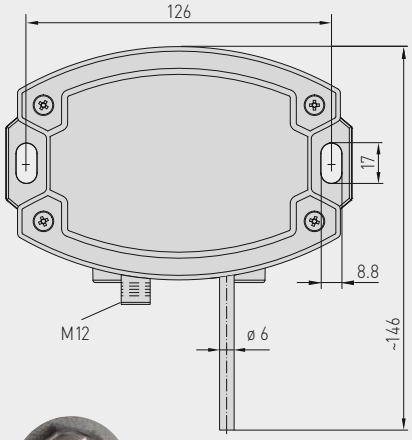
Dimensional drawing **ATM 2 - VA**



Housing with
cable gland



Housing with
M12 connector



M12 connector
(male)

High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

ATM 2 - VA
with cable gland

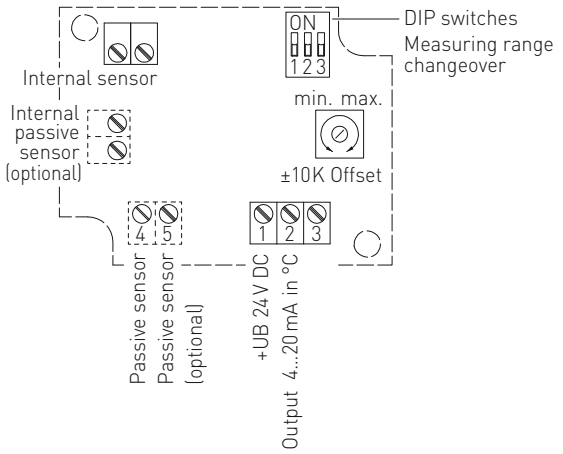
ATM 2 - VAQ
with M12 connector

Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output

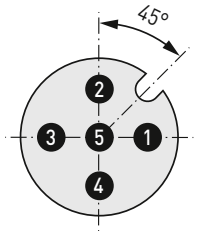
NEW

S+S REGELTECHNIK

Schematic diagram **ATM 2 - I**

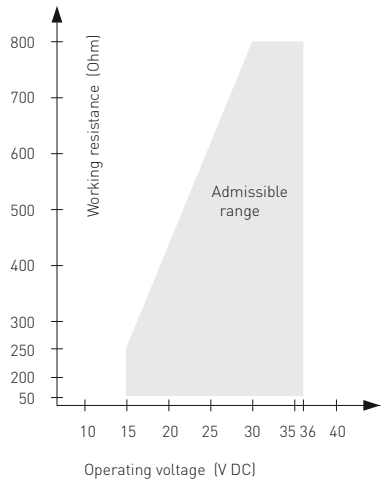


Pin assignment (M12) **ATM 2 - I**



1. +UB 24 V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND (optional)
5. Shield

Load resistance diagram **ATM 2 - I**



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

Outside temperature / wet room temperature measuring transducers, calibratable, with multi-range switching and active output

ATM 2 - VAQ
with M12 connector

THERMASGARD® **ATM 2 - VA** Outside temperature / wet room temperature measuring transducers, *ID*				
Type / WG02I	**Sensor**	**Output**	**Item No.**	**Price**
ATM 2 - VA			with cable gland	
ATM2-I VA	Pt1000	4...20 mA	2001-6171-2200-001	**326,24 €**
ATM 2 - VAQ			with M12 connector	
ATM2-I VAQ	Pt1000	4...20 mA	2001-6171-2100-001	**359,55 €**
Extra charge:	other ranges optional			**21,96 €**
Note	For additional device variants, see **S+S Facility Engineering**!			

ACCESSORIES	
	Special accessories for M12 connector see chapter Accessories!

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable temperature measuring transducer with sleeve sensor **THERM**ASGARD® **HFTM** with eight switchable measuring ranges, continuous output, housing made from impact-resistant plastic with quick-release screws, optionally with / without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

The temperature transmitter with remote sensor is used to detect temperatures in liquid and gaseous media e.g. if installed in an immersion sleeve or as a duct sensor. The measuring transducer is factory-calibrated. Adjustment / fine adjustment by the user is possible (zero point offset is adjustable). A direct, permanent use in liquids is possible in combination with immersion sleeves **THE** (see chapter Accessories).

The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

HFTM
with cable gland

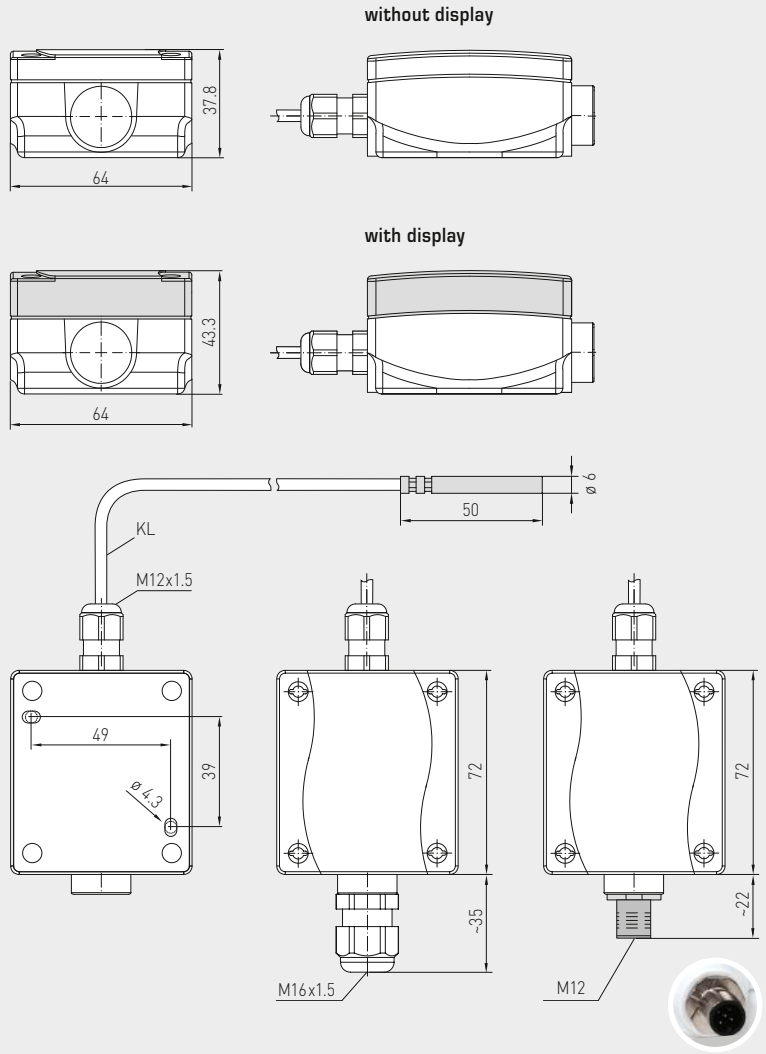
TECHNICAL DATA

Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.0 VA / 24 V DC
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Sensor:	Pt1000, DIN EN 60751, class B (**Perfect Sensor Protection** at IP68) sensor external
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** see table (other measuring ranges optional) **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-release screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Connecting cable:	silicone, SiHF, 2 x 0.25 mm²; CL = 1.5 m (other lengths and measuring range limits optionally available, e.g. PTFE up to +250 °C or glass fibre with steel mesh up to + 350°C)
Sensor protection:	sensor sleeve, stainless steel **V4A** (1.4571), Ø = 6 mm, nominal length NL = 50 mm (other dimensions optionally available) cable entry stamped (optionally rolled)
Ambient temperature:	measuring transducer –30...+70 °C
Permissible humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) humidity-tight **stamped** **IP 68** (optionally watertight compound-filled*) **rolled** **IP 54** (optionally with **glass fibre** cable)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Optional:	**display with illumination,** two-line, cut-out approx. 36 x 15 mm (B x H), to display the **actual temperature** and **internal diagnostics** (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)
ACCESSORIES	(see table)

HFTM - Q
with M12 connector

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

Dimensional drawing **HFTM**



Housing with **cable gland**

Housing with **M12 connector**

HFTM
with cable gland and display

HFTM-Q
with M12 connector and display

Display and internal diagnostics
THERMASGARD®
Measuring transducer with display

Standard

Measuring range exceeded

Measuring range not reached

Sensor breakage

Sensor short circuit


IP65 (standard)
humidity-tight **stamped**


IP68 (optional)
watertight compound-filled*, **rolled**


IP54 (optional)
with **glass fibre** cable

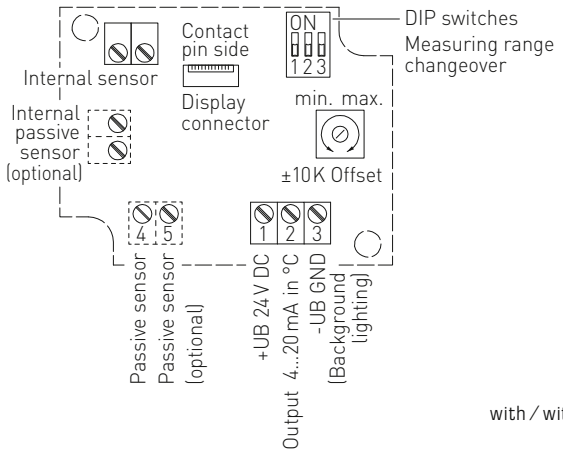
* High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Schematic diagram* **HFTM-I**

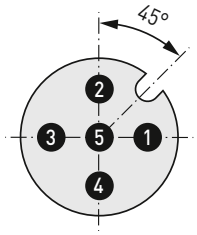


Connection*:

2-wire connection for devices with / without display (not illuminated)

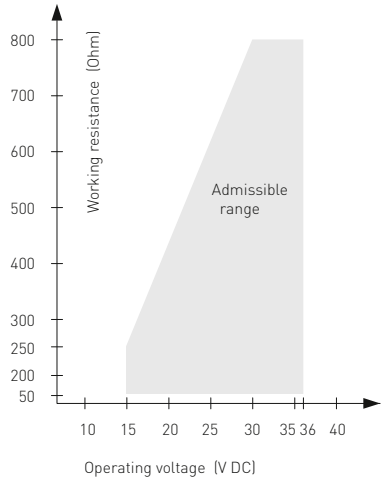
3-wire connection for devices with illuminated display

Pin assignment (M12) **HFTM-I**



1. +UB 24V DC
2. Output temperature 4...20mA [°C]
3. free
4. –UB GND (optional for LCD backlighting)
5. Shield

Load resistance diagram **HFTM-I**



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

HFTM-Q
with display, hinged

THERMASGARD® HFTM Sleeve sensor with temperature measuring transducer, *ID*

Type / WG01	Sensor	Output	Type	Display	Item No.	Price
HFTM					with cable gland	
HFTM-I	Pt1000	4...20 mA	Remote sensor		1101-1152-0219-920	**90,35 €**
HFTM-I DISPLAY	Pt1000	4...20 mA	Remote sensor	■	1101-1152-2219-920	**134,39 €**
HFTM-Q					with M12 connector	
HFTM-I Q	Pt1000	4...20 mA	Remote sensor		2001-2111-2100-001	**126,60 €**
HFTM-I Q LCD	Pt1000	4...20 mA	Remote sensor	■	2001-2112-2100-001	**170,63 €**
Extra charge:	Other ranges optional					**21,96 €**
	Protection type **IP68** (Sensor sleeve watertight compound-filled)					**2,94 €**
	2-wire connecting leads, per running meter (**silicone / PTFE / glass fibre**)				on request	
	Other lengths of protection sleeve (NL) optional				on request	
Note	For additional device variants, see **S+S Facility Engineering**!					

ACCESSORIES	
THE-xx	**Immersion sleeve**, stainless steel **V4A** (1.4571) or nickel-plated brass, Ø = 9 mm
	For further information, see chapter Accessories!

THERMASGARD® HFTM - VA ID

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

NEW

S+S REGELTECHNIK

Calibratable temperature measuring transducer with sleeve sensor **THERM**ASGARD® **HFTM - VA** with eight switchable measuring ranges, continuous output, housing made from **stainless steel V4A** with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

The temperature transmitter with remote sensor is used to detect temperatures in liquid and gaseous media e.g. if installed in an immersion sleeve or as a duct sensor. The measuring transducer is factory-calibrated. Adjustment / fine adjustment by the user is possible (zero point offset is adjustable). A direct, permanent use in liquids is possible in combination with immersion sleeves **THE** (see chapter Accessories).

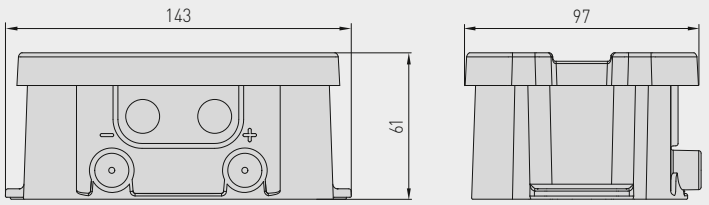
The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

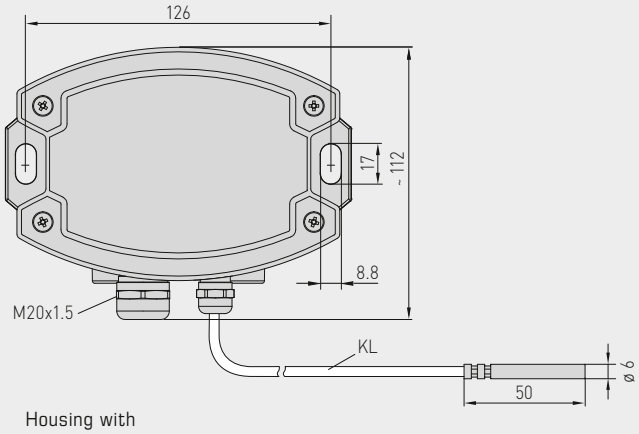
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.0 VA / 24 V DC
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Sensor:	Pt1000, DIN EN 60751, class B (**Perfect Sensor Protection** at IP68) sensor external
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** see table (other measuring ranges optional) **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Connecting cable:	silicone, SiHF, 2 x 0.25 mm²; KL = 1.5 m (other lengths and measuring range limits optionally available, e.g. PTFE up to +250 °C or glass fibre with steel mesh up to + 350°C)
Sensor protection:	sensor sleeve, stainless steel **V4A** (1.4571), Ø = 6 mm, nominal length NL = 50 mm (other dimensions optionally available) cable entry stamped (optionally rolled)
Ambient temperature:	measuring transducer –30...+70 °C
Permissible humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) humidity-tight **stamped** **IP 68** (optionally watertight compound-filled*) **rolled** **IP 54** (optionally with **glass fibre** cable)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
ACCESSORIES	(see table)

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

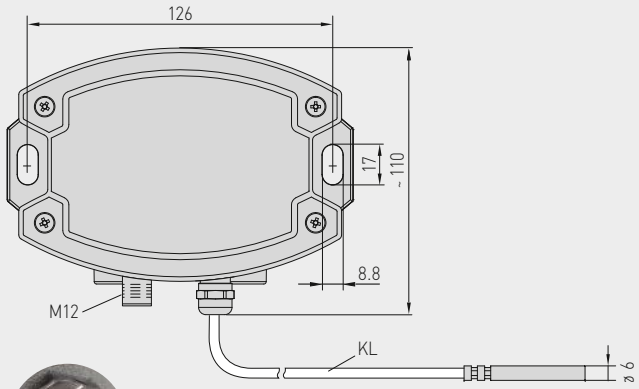
Dimensional drawing **HFTM - VA**



Housing with **cable gland**



Housing with **M12 connector**



M12 connector (male)

IP 65 (standard) humidity-tight **stamped**

IP 68 (optional) watertight compound-filled*, **rolled**

IP 54 (optional) with **glass fibre** cable

HFTM - VA
with cable gland

HFTM - VAQ
with M12 connector

* High-performance encapsulation against vibration, mechanical stress and humidity

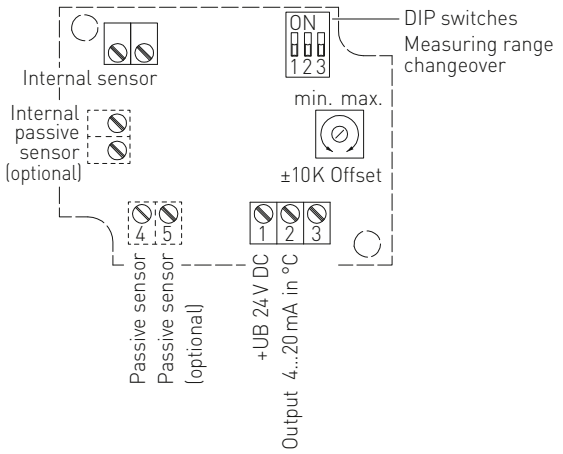
PS-PROTECTION
PERFECT SENSOR PROTECTION

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

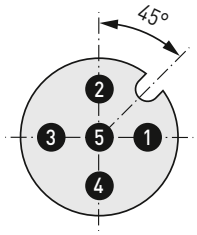
NEW

S+S REGELTECHNIK

Schematic diagram **HFTM - I**

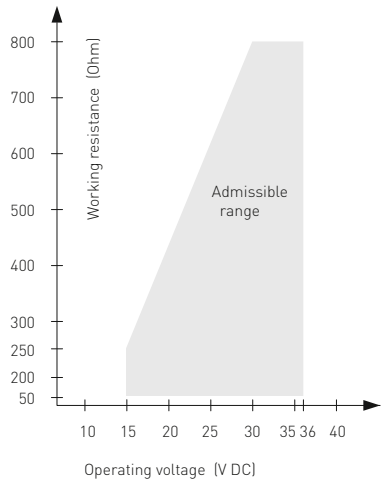


Pin assignment (M12) **HFTM - I**



1. +UB 24 V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND (optional)
5. Shield

Load resistance diagram **HFTM - I**



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

Sleeve sensor with temperature measuring transducer, calibratable, with multi-range switching and active output

HFTM - VAQ
with M12 connector

THERMASGARD® HFTM - VA Sleeve sensor with temperature measuring transducer, *ID*					
Type / WG02I	**Sensor**	**Output**	**Type**	**Item No.**	**Price**
HFTM - VA				with cable gland	
HFTM-I VA	Pt1000	4...20 mA	Remote sensor	2001-2141-2200-001	**331,40 €**
HFTM - VAQ				with M12 connector	
HFTM-I VAQ	Pt1000	4...20 mA	Remote sensor	2001-2141-2100-001	**364,73 €**
Extra charge:	Other ranges optional				**21,96 €**
	Protection type **IP 68** (Sensor sleeve watertight compound-filled)				**2,94 €**
	2-wire connecting leads, per running meter (**silicone / PTFE / glass fibre**)			on request	
	Other lengths of protection sleeve (NL) optional			on request	
Note	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES	
THE - xx	**Immersion sleeve**, stainless steel **V4A** (1.4571) or nickel-plated brass, Ø = 9 mm
	For further information, see chapter Accessories !

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable tube contact temperature measuring transducer **THERM**ASGARD® **ALTM 2** with eight switchable, measuring ranges, external sensor, continuous output, housing made from impact-resistant plastic with quick-release screws, optionally with / without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

The surface-contact sensor is used for temperature detection on lines, pipes (e.g. cold and hot water) or on heating sections for heating system control.

The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

ALTM 2
with cable gland

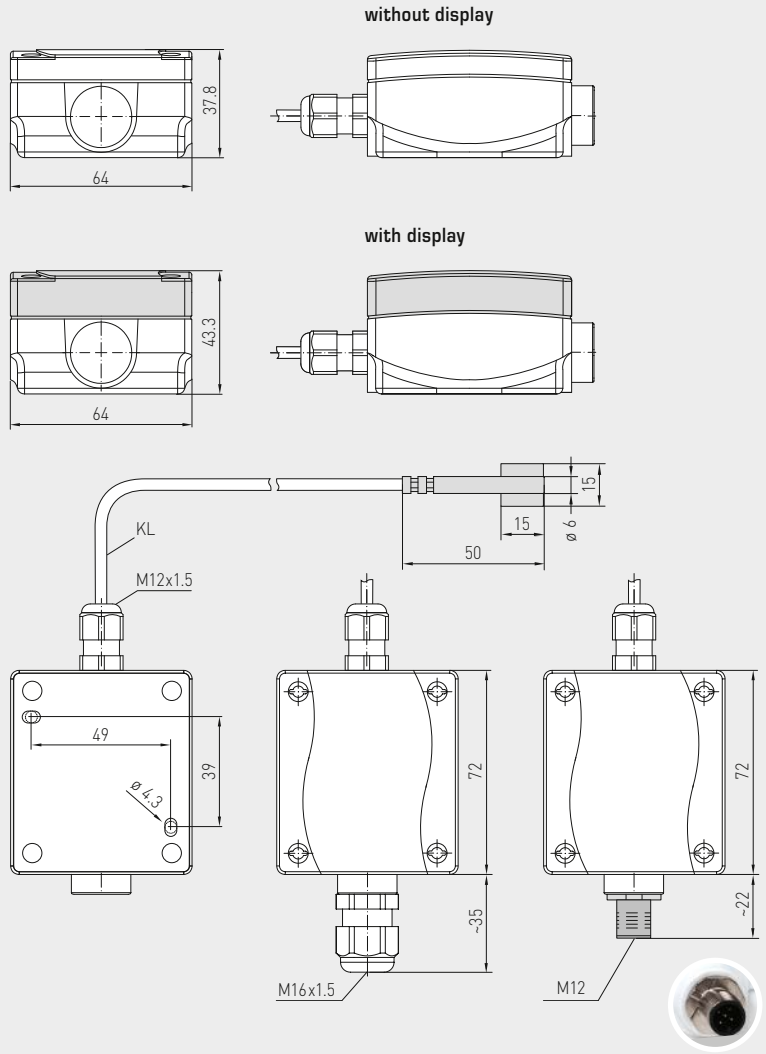
TECHNICAL DATA

Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.0 VA / 24 V DC
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Sensor:	Pt1000, DIN EN 60751, class B (**Perfect Sensor Protection** at IP68) sensor external
Measuring ranges:	**multi-range switching with** **8 switchable measuring ranges** see table (other measuring ranges optional) T_{max} **above +100 °C**, operating range –50...+150 °C **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-release screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 without display) 72 x 64 x 43.3 mm (Tyr 1 with display)
Connecting cable:	silicone, SiHF, 2 x 0.25 mm²; CL = 1.5 m (other lengths and measuring range limits optionally available, e.g. PTFE up to +250 °C or glass fibre with steel mesh up to + 350°C)
Sensor protection:	pipe feeder, stainless steel **V4A** (1.4571), Ø = 6 mm, nominal length NL = 50 mm, cable entry stamped
Strap dimensions:	Ø = 13 - 92 mm (¼ - 3"), L = 300 mm
Process connection:	endless strap in metal tightener (included in the scope of delivery)
Ambient temperature:	measuring transducer –30...+70 °C
Permissible humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) humidity-tight stamped **IP 68** (optional sensor sleeve watertight compound-filled*)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
Optional:	**display with illumination,** two-line, cut-out approx. 36 x 15 mm (B x H), to display the **actual temperature** and **internal diagnostics** (measuring range exceeded, measuring range not reached, sensor breakage, sensor short circuit)
ACCESSORIES	(see table)

ALTM 2 - Q
with M12 connector

Surface contact/tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

Dimensional drawing **ALTM 2**



Housing with **cable gland**

Housing with **M12 connector**

ALTM 2
with cable gland and display

ALTM 2 - Q
with M12 connector and display

Display and internal diagnostics
THERMASGARD®
Measuring transducer with display

Standard

Measuring range exceeded

Measuring range not reached

Sensor breakage

Sensor short circuit


IP 65 (standard)
humidity-tight **stamped**


IP 68 (optional)
watertight compound-filled*, **rolled**

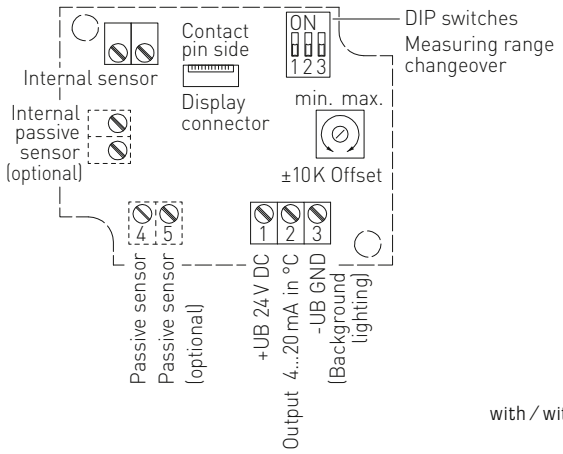
* High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Schematic diagram* **ALTM 2 - I**

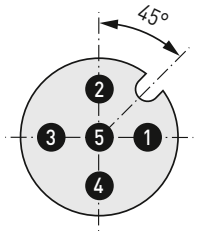


Connection*:

2-wire connection for devices with / without display (not illuminated)

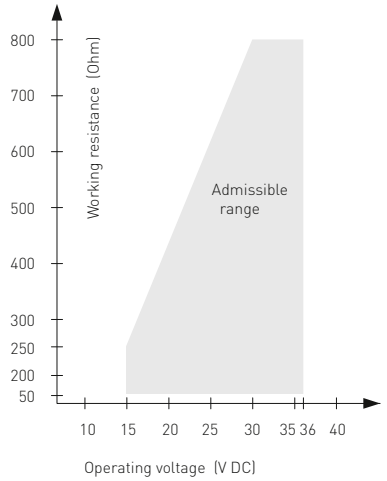
3-wire connection for devices with illuminated display

Pin assignment (M12) **ALTM 2 - I**



1. +UB 24V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND (optional for LCD backlighting)
5. Shield

Load resistance diagram **ALTM 2 - I**



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

ALTM 2 - Q
with display, hinged

THERMASGARD® ALTM 2 Surface contact / tube contact temperature measuring transducers, *ID*						
Type / WG01	**Sensor**	**Output**	**Type**	**Display**	**Item No.**	**Price**
ALTM 2					with cable gland	
ALTM2-I	Pt1000	4...20 mA	Remote sensor		1101-1122-0219-920	**96,85 €**
ALTM2-I DISPLAY	Pt1000	4...20 mA	Remote sensor	■	1101-1122-2219-920	**140,88 €**
ALTM 2 - Q					with M12 connector	
ALTM2-I Q	Pt1000	4...20 mA	Remote sensor		2001-2121-2100-001	**133,10 €**
ALTM2-I Q LCD	Pt1000	4...20 mA	Remote sensor	■	2001-2122-2100-001	**177,12 €**
Extra charge:	other ranges optional					**21,96 €**
	Protection type **IP 68** (Sensor sleeve watertight compound-filled)					**2,94 €**
	2-wire connecting leads, per running meter **(PVC / silicone)**				on request	
Note	For additional device variants, see **S+S Facility Engineering**!					

ACCESSORIES			
WLP-1	Heat-conductive paste, silicone-free	7100-0060-1000-000	**2,92 €**
	For further information, see chapter Accessories!		

THERMASGARD® ALTM 2 - VA ID

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

NEW

S+S REGELTECHNIK

Calibratable tube contact temperature measuring transducer **THERM**ASGARD® **ALTM 2 - VA** with eight switchable measuring ranges, external sensor, continuous output, housing made from **stainless steel V4A**, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

The surface-contact sensor is used for temperature detection on lines, pipes (e.g. cold and hot water) or on heating sections for heating system control.

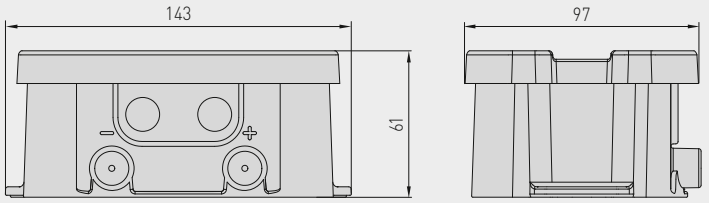
The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

TECHNICAL DATA

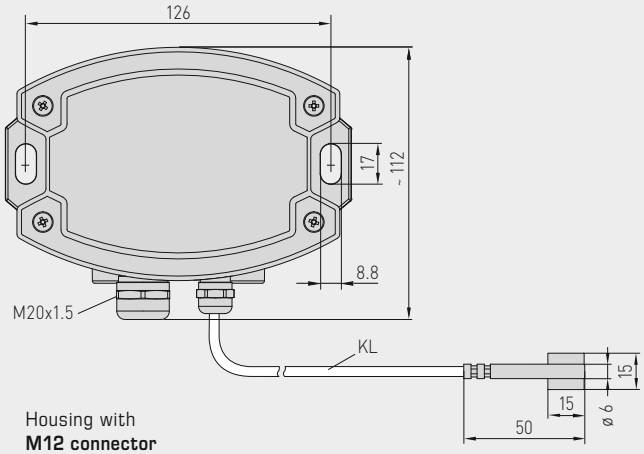
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.0 VA / 24 V DC
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Sensor:	Pt1000, DIN EN 60751, class B (**Perfect Sensor Protection** at IP68) sensor external
Measuring ranges:	**multi-range switching with** **8 switchable measuring ranges** see table (other measuring ranges optional) T_{max} **above +100 °C**, operating range –50...+150 °C **with manual zero point correction (± 10 K)**
Deviation in temperature:	typically ± 0.2 K at +25 °C
Output:	4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.14 - 1.5 mm², via screw terminals
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Connecting cable:	silicone, SiHF, 2 x 0.25 mm²; CL = 1.5 m (other lengths and measuring range limits optionally available, e.g. PTFE up to +250 °C or glass fibre with steel mesh up to + 350°C)
Sensor protection:	pipe feeder, stainless steel **V4A** (1.4571), Ø = 6 mm, nominal length NL = 50 mm, cable entry stamped
Strap dimensions:	Ø = 13 - 92 mm (¼ - 3"), L = 300 mm
Process connection:	endless strap in metal tightener (included in the scope of delivery)
Ambient temperature:	measuring transducer –30...+70 °C
Permissible humidity:	< 95 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) humidity-tight stamped **IP 68** (optional sensor sleeve watertight compound-filled*)
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, according to EMC Directive 2014 / 30 / EU
ACCESSORIES	(see table)

Surface contact/tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

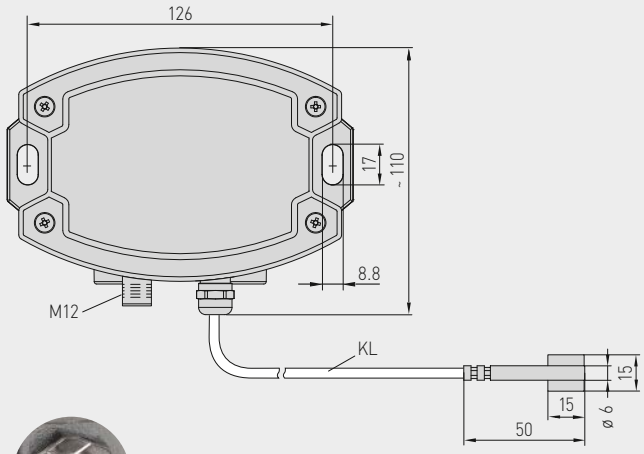
Dimensional drawing **ALTM 2 - VA**



Housing with
cable gland



Housing with
M12 connector



M12 connector
(male)

High-performance encapsulation against vibration, mechanical stress and humidity

PS-PROTECTION
PERFECT SENSOR PROTECTION

ALTM 2 - VA
with cable gland

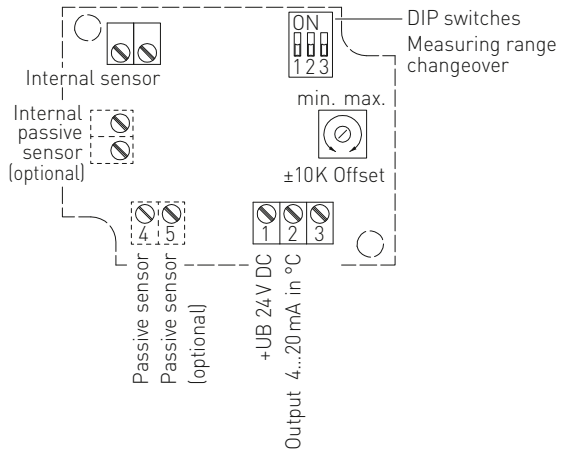
ALTM 2 - VAQ
with M12 connector

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

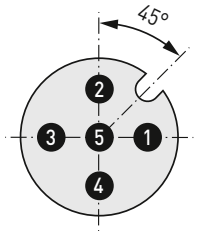
NEW

S+S REGELTECHNIK

Schematic diagram **ALTM 2 - I**

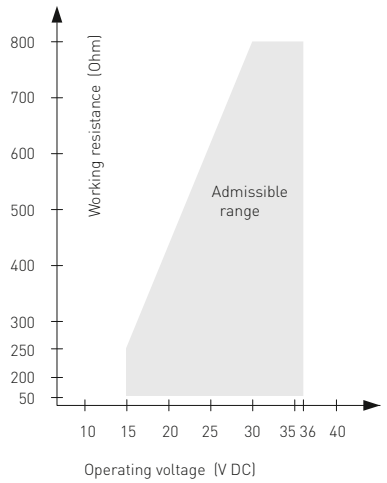


Pin assignment (M12) **ALTM 2 - I**



1. +UB 24 V DC
2. Output temperature 4...20 mA [°C]
3. free
4. –UB GND (optional)
5. Shield

Load resistance diagram **ALTM 2 - I**



Measuring ranges (adjustable)	DIP 1	DIP 2	DIP 3
–20...+150 °C	**ON**	**ON**	**ON**
–50... +50 °C	OFF	**ON**	**ON**
–20... +80 °C	**ON**	OFF	**ON**
–30... +60 °C	OFF	OFF	**ON**
0... +40 °C	**ON**	**ON**	OFF
0... +50 °C (default)	OFF	**ON**	OFF
0...+100 °C	**ON**	OFF	OFF
0...+150 °C	OFF	OFF	OFF

Surface contact / tube contact temperature measuring transducers, incl. strap, with detached sensor head, calibratable, with multi-range switching and active output

ALTM 2 - VAQ
with M12 connector

THERMASGARD® **ALTM 2 - VA** Surface contact / tube contact temperature measuring transducers, *ID*					
Type / WG02I	**Sensor**	**Output**	**Type**	**Item No.**	**Price**
ALTM 2 - VA				with cable gland	
ALTM2-I VA	Pt1000	4...20 mA	Remote sensor	2001-2151-2200-001	**341,16 €**
ALTM 2 - VAQ				with M12 connector	
ALTM2-I VAQ	Pt1000	4...20 mA	Remote sensor	2001-2151-2100-001	**374,47 €**
Extra charge:	other ranges optional				**21,96 €**
Note	For additional device variants, see **S+S Facility Engineering**!				

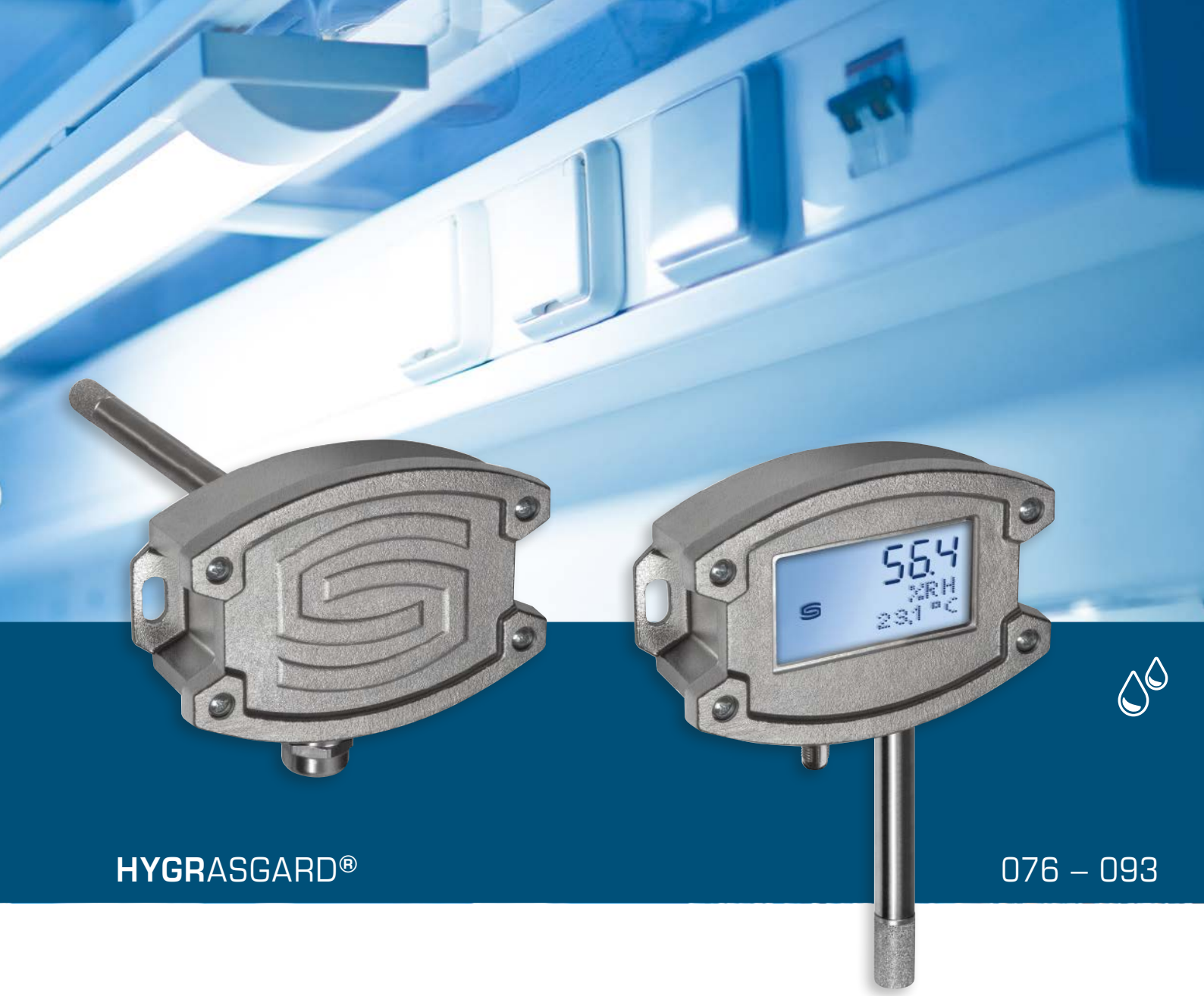
ACCESSORIES	
	Special accessories for M12 connector see chapter Accessories!

Humidity and temperature sensors

HYGRASGARD® humidity sensors will never let you down when mold and rust formation must be prevented. With an accuracy of 2 % RH, they will always keep you on the safe side. Their application range spans from standard uses in facility automation to highly demanding cleanroom installations.

APPLICATION RANGE

> Refrigeration, air conditioning, ventilation and cleanroom technology
> Food and pharmaceutical industry
> Hospitals, museums, office buildings and greenhouses
> Production facilities, laboratories, computer rooms and control cabinets
> Meteorology



HYGRASGARD®

076 – 093

Duct sensors

Outdoor sensors

HYGRASGARD® AFTF-20 ID

On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable outdoor humidity and temperature sensor **HYGR**ASGARD® **AFTF-20** (± 1,8 %) with plastic sinter filter (optional metal sinter filter), housing made from impact-resistant plastic, optionally with /without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

It measures the relative humidity and the temperature of the air and converts the measurand into a standard signal of 4...20 mA. It has four switchable temperature ranges and is applied in non-aggressive dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology. Relative humidity (in % r. H.) is the quotient of water vapour partial pressure and the saturation vapour pressure at the respective gas temperature. These measuring transducers are designed for exact detection of humidity. A digital long-term stable sensor is used as measuring element for humidity measurement. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

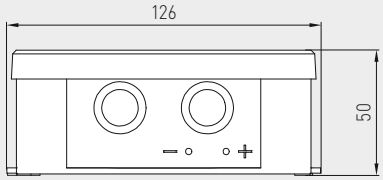
AFTF-20
with cable gland

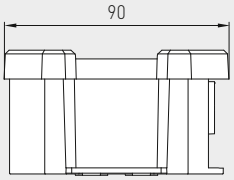
TECHNICAL DATA

Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.1 VA / 24 V DC
Sensors:	digital humidity sensor, with integrated temperature sensor, low hysteresis, high long-term stability
HUMIDITY	
Measuring range, humidity:	0...100 % r. H. (output corresponding to 4...20 mA)
Permitted humidity:	< 95 % r. H., non-precipitating air
Deviation in humidity:	typically **± 1.8** % (10...90 % r. H.) at +25 °C, otherwise ± 2.0 %
Output humidity:	4...20 mA
TEMPERATURE	
Temperature measuring range:	multi-range switching (see table) –35...+35 °C; –35...+75 °C; 0...+50 °C; 0...+80 °C (output corresponding to 4...20 mA)
Ambient temperature:	storage –35...+85 °C; operation –30...+80 °C, non-precipitating
Deviation in temperature:	typically ± 0.2 K at +25 °C
Temperature output:	4...20 mA
Electrical connection:	2-, 3-, or 4-wire connection (see connection diagram), 0.14 - 1.5 mm², via terminal screws
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm **(Typ 2)**
Protective tube:	made from stainless steel V2A (1.4301), Ø 16 mm, NL = 137 mm
Sensor protection:	**plastic** sinter filter, Ø 16 mm, L = 35 mm, exchangeable (optional metal sinter filter, Ø 16 mm, L = 32 mm)
Process connection:	by screws
Long-term stability:	± 1 % per year
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Optional:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL temperature and ACTUAL humidity
ACCESSORIES	(see table)

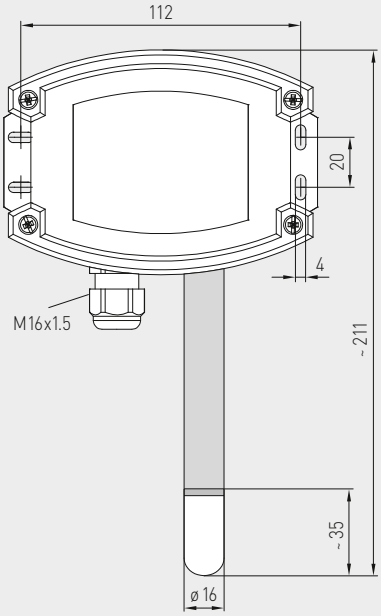
AFTF-20-Q
with M12 connector

Dimensional drawing **AFTF-20**

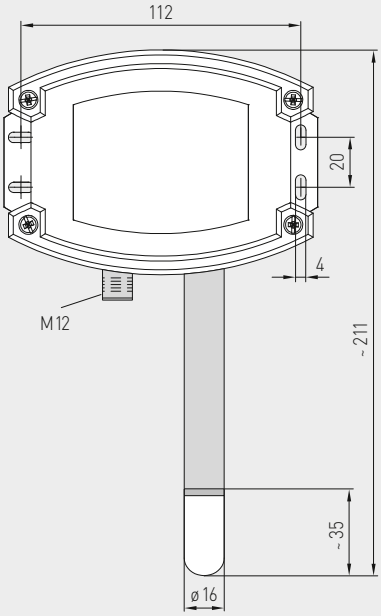




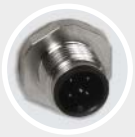
Housing with
cable gland



Housing with
M12 connector



SF-K
Plastic sinter filter
(standard)



M12 connector
(male)

SF-M
Metal sinter filter
(optional)

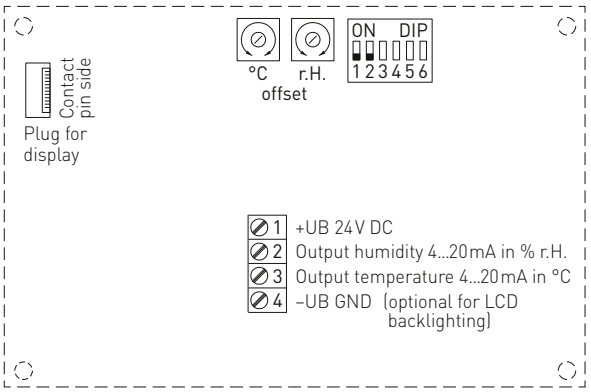
AFTF-20
with cable gland
and display

AFTF-20-Q
with M12 connector
and display

On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Schematic diagram** **AFTF-20-I**



DIP 3, 4, 5, 6 are not assigned!

Connection**:

3-wire connection for devices with / without display (not illuminated)

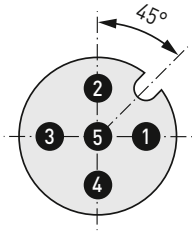
4-wire connection for devices with illuminated display

For the I variant, the humidity path must be connected!

3- or 4-wire connection** **AFTF-20-I**

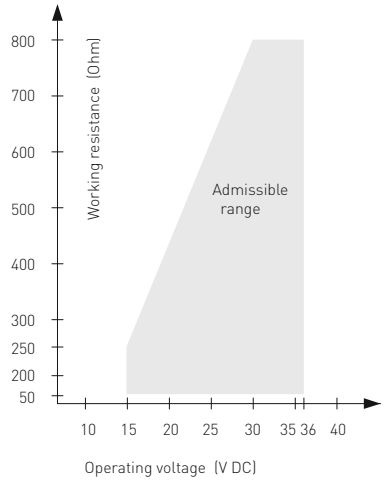
1 +UB 24V DC
2 Output humidity in % r.H. 4...20mA
3 Output temperature in °C 4...20mA
4 –UB-GND (optional for backlighting)

Pin assignment (M12) **AFTF-20-I**



1 +UB 24V DC
2 Output humidity 4...20mA [% r.H.]
3 Output temperature 4...20mA [°C]
4 –UB GND (optional for LCD backlighting)
5 Shield

Load resistance diagram **AFTF-20-I**



Temperature measuring ranges (adjustable)	DIP 1	DIP 2
–35...+75 °C	**ON**	**ON**
–35...+35 °C	OFF	OFF
0...+50 °C (default)	OFF	**ON**
0...+80 °C	**ON**	OFF

Temperature table
MB: –35...+75 °C

°C	I_A [mA]
-35	4.0
-30	4.7
-25	5.5
-20	6.2
-15	6.9
-10	7.6
-5	8.4
0	9.1
5	9.8
10	10.5
15	11.3
20	12.0
25	12.7
30	13.5
35	14.2
40	14.9
45	15.6
50	16.4
55	17.1
60	17.8
65	18.5
70	19.2
75	20.0

Temperature table
MB: –35...+35 °C

°C	I_A [mA]
-35	4.0
-30	5.1
-25	6.3
-20	7.4
-15	8.6
-10	9.7
-5	10.9
0	12.0
5	13.1
10	14.3
15	15.4
20	16.6
25	17.7
30	18.9
35	20.0

Temperature table
MB: 0...+50 °C

°C	I_A [mA]
0	4.0
5	5.6
10	7.2
15	8.8
20	10.4
25	12.0
30	13.6
35	15.2
40	16.8
45	18.4
50	20.0

Temperature table
MB: 0...+80 °C

°C	I_A [mA]
0	4.0
5	5.0
10	6.0
15	7.0
20	8.0
25	9.0
30	10.0
35	11.0
40	12.0
45	13.0
50	14.0
55	15.0
60	16.0
65	17.0
70	18.0
75	19.0
80	20.0

Humidity table
MB: 0...100 % r. H.

% r.H.	I_A [mA]
0	4.0
5	4.8
10	5.6
15	6.4
20	7.2
25	8.0
30	8.8
35	9.6
40	10.4
45	11.2
50	12.0
55	12.8
60	13.6
65	14.4
70	15.2
75	16.0
80	16.8
85	17.6
90	18.4
95	19.2
100	20.0

On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

AFTF-20-Q
with display, hinged

HYGRASGARD® AFTF-20 On-wall humidity sensors and temperature sensors (± 1,8 %), *ID*

Type / WG02	Measuring Range / Readout Humidity	Temperature	Output Humidity	Temperature	Display	Item No.	Price
AFTF-20						with cable gland	
AFTF-20-I TYR-2	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		1201-7112-1000-201	**228,96 €**
AFTF-20-I TYR-2 LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	1201-7112-1400-201	**270,78 €**
AFTF-20-Q						with M12 connector	
AFTF-20-I Q	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		2003-6121-2100-001	**265,21 €**
AFTF-20-I Q_LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	2003-6122-2100-001	**307,03 €**
Note	For additional device variants, see **S+S Facility Engineering**!						

ACCESSORIES			
SF-M	**Metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable stainless steel **V4A** (1.4404)	7000-0050-2200-100	**36,59 €**
	For further information, see chapter Accessories!		

HYGRASGARD® AFTF-20-VA ID

On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

NEW

S+S REGELTECHNIK

Calibratable outdoor humidity and temperature sensor **HYGR**ASGARD® **AFTF-20-VA** (± 1.8 %) with metal sinter filter, rugged housing, **stainless steel V4A**, optionally with / without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

It measures the relative humidity and the temperature of the air and converts the measurand into a standard signal of 4...20 mA. It has four switchable temperature ranges and is applied in non-aggressive dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology. Relative humidity (in % r. H.) is the quotient of water vapour partial pressure and the saturation vapour pressure at the respective gas temperature. These measuring transducers are designed for exact detection of humidity. A digital long-term stable sensor is used as measuring element for humidity measurement. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

AFTF-20-VA
with cable gland

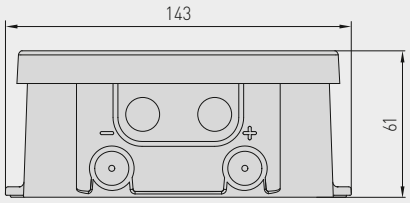
TECHNICAL DATA

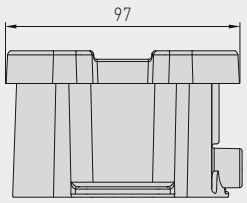
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.1 VA / 24 V DC
Sensors:	digital humidity sensor, with integrated temperature sensor, low hysteresis, high long-term stability
HUMIDITY	
Measuring range, humidity:	0...100 % r. H. (output corresponding to 4...20 mA)
Permitted humidity:	< 95 % r. H., non-precipitating air
Deviation in humidity:	typically **± 1.8** % (10...90 % r. H.) at +25 °C, otherwise ± 2.0 %
Output humidity:	4...20 mA
TEMPERATURE	
Temperature measuring range:	multi-range switching (see table) –35...+35 °C; –35...+75 °C; 0...+50 °C; 0...+80 °C (output corresponding to 4...20 mA)
Ambient temperature:	storage –35...+85 °C; operation – 30...+80 °C, non-precipitating
Deviation in temperature:	typically ± 0.2 K at +25 °C
Temperature output:	4...20 mA
Electrical connection:	2-, 3-, or 4-wire connection (see connection diagram), 0.14 - 1.5 mm², via terminal screws
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Protective tube:	made from stainless steel V2A (1.4301), Ø 16 mm, NL = 137 mm
Sensor protection:	**metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable, stainless steel V4A (1.4404)
Process connection:	by screws
Long-term stability:	± 1 % per year
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713160960B (Skadi2)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Optional:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL temperature and ACTUAL humidity
ACCESSORIES	(see table)

AFTF-20-VAQ
with M12 connector

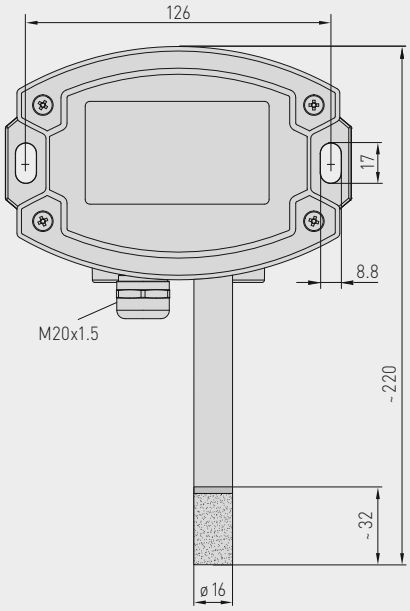
On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

Dimensional drawing **AFTF-20-VA**

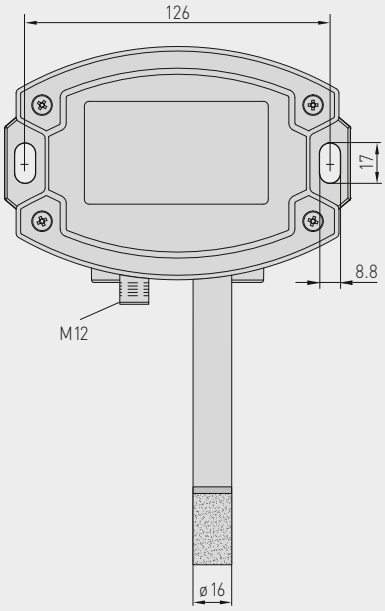




Housing with
cable gland



Housing with
M12 connector



SF-M
Metal sinter filter
(optional)

M12 connector
(male)

AFTF-20-VA
with cable gland
and display

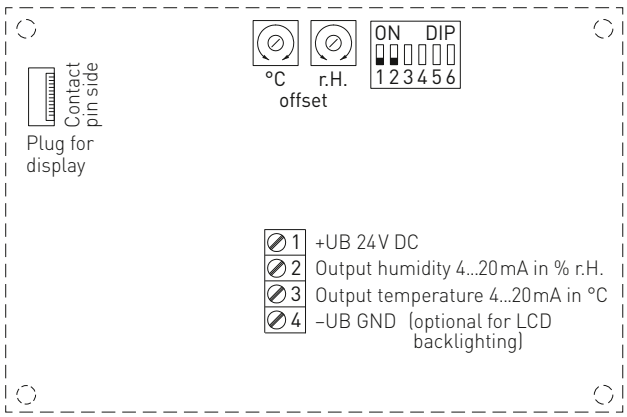
AFTF-20-VAQ
with M12 connector
and display

On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

NEW

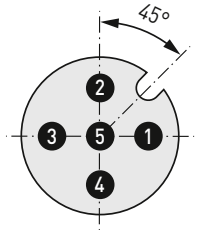
S+S REGELTECHNIK

Schematic diagram** **AFTF-20-I**



DIP 3, 4, 5, 6 are not assigned!

Pin assignment (M12) **AFTF-20-I**



1 +UB 24V DC
2 Output humidity 4...20mA [% r.H.]
3 Output temperature 4...20mA [°C]
4 –UB GND (optional for LCD backlighting)
5 Shield

3- or 4-wire connection** **AFTF-20-I**

1 +UB 24V DC
2 Output humidity in % r.H. 4...20mA
3 Free
4 –UB-GND (optional for backlighting)

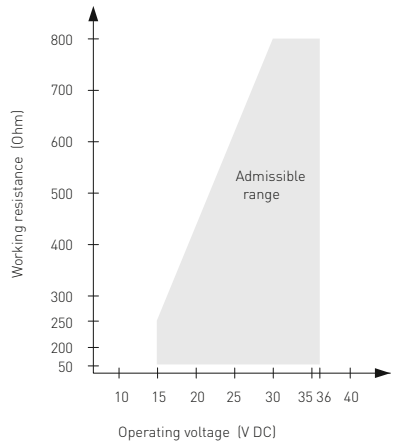
Connection**:

3-wire connection for devices with / without display (not illuminated)

4-wire connection for devices with illuminated display

For the I variant, the humidity path must be connected!

Load resistance diagram **AFTF-20-I**



Temperature measuring ranges (adjustable)	DIP 1	DIP 2
–35...+75 °C	**ON**	**ON**
–35...+35 °C	OFF	OFF
0...+50 °C (default)	OFF	**ON**
0...+80 °C	**ON**	OFF

Temperature table
MB: –35...+75 °C

°C	I_A [mA]
-35	4.0
-30	4.7
-25	5.5
-20	6.2
-15	6.9
-10	7.6
-5	8.4
0	9.1
5	9.8
10	10.5
15	11.3
20	12.0
25	12.7
30	13.5
35	14.2
40	14.9
45	15.6
50	16.4
55	17.1
60	17.8
65	18.5
70	19.2
75	20.0

Temperature table
MB: –35...+35 °C

°C	I_A [mA]
-35	4.0
-30	5.1
-25	6.3
-20	7.4
-15	8.6
-10	9.7
-5	10.9
0	12.0
5	13.1
10	14.3
15	15.4
20	16.6
25	17.7
30	18.9
35	20.0

Temperature table
MB: 0...+50 °C

°C	I_A [mA]
0	4.0
5	5.6
10	7.2
15	8.8
20	10.4
25	12.0
30	13.6
35	15.2
40	16.8
45	18.4
50	20.0

Temperature table
MB: 0...+80 °C

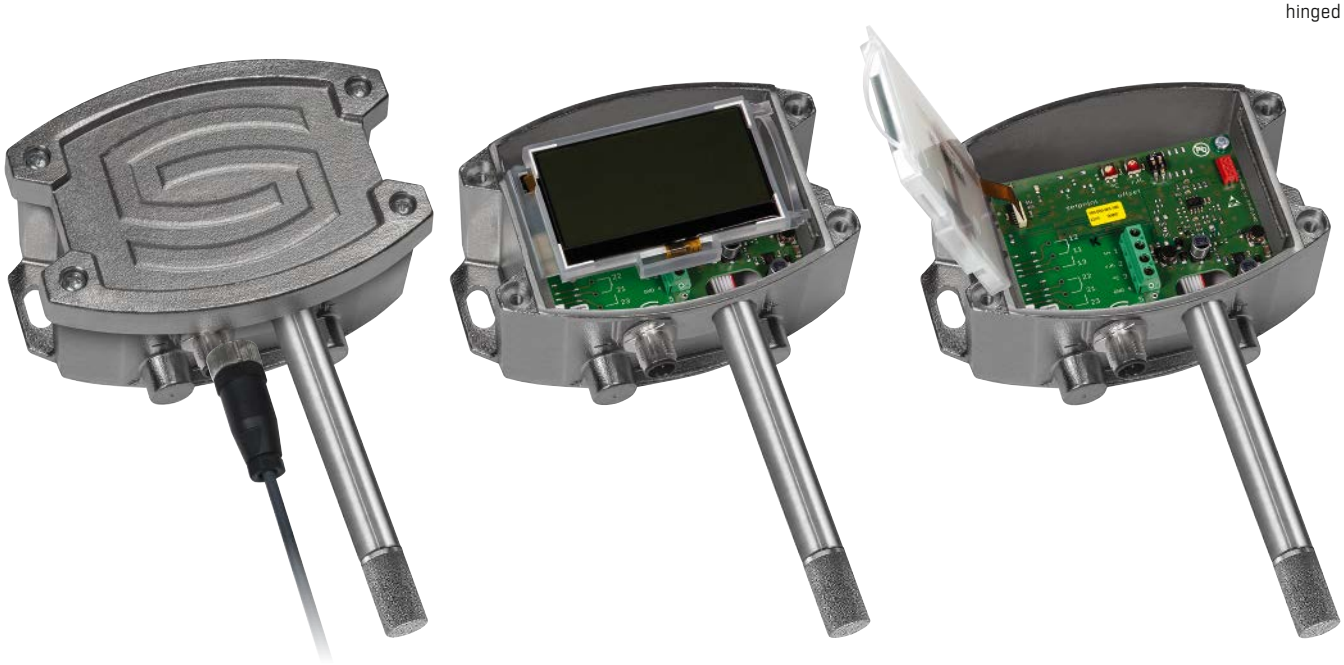
°C	I_A [mA]
0	4.0
5	5.0
10	6.0
15	7.0
20	8.0
25	9.0
30	10.0
35	11.0
40	12.0
45	13.0
50	14.0
55	15.0
60	16.0
65	17.0
70	18.0
75	19.0
80	20.0

Humidity table
MB: 0...100 % r. H.

% r.H.	I_A [mA]
0	4.0
5	4.8
10	5.6
15	6.4
20	7.2
25	8.0
30	8.8
35	9.6
40	10.4
45	11.2
50	12.0
55	12.8
60	13.6
65	14.4
70	15.2
75	16.0
80	16.8
85	17.6
90	18.4
95	19.2
100	20.0

On-wall humidity sensors and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

AFTF-20-VAQ
with display, hinged



HYGRASGARD® AFTF-20-VA On-wall humidity sensors and temperature sensors (± 1,8 %), *ID*

Type / WG02I	Measuring Range / Readout Humidity	Temperature	Output Humidity	Temperature	Display	Item No.	Price
AFTF-20-VA						with cable gland	
AFTF-20-I VA	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		2003-6181-2200-001	**539,32 €**
AFTF-20-I VA_LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	2003-6182-2200-001	**673,68 €**
AFTF-20-VAQ						with M12 connector	
AFTF-20-I VAQ	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		2003-6181-2100-001	**572,64 €**
AFTF-20-I VAQ_LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	2003-6182-2100-001	**706,99 €**
Note	For additional device variants, see **S+S Facility Engineering**!						

ACCESSORIES			
SF-M	**Metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable stainless steel **V4A** (1.4404)	7000-0050-2200-100	**36,59 €**
	For further information, see chapter Accessories!		

HYGRASGARD® KFTF-20 ID

Duct humidity and temperature sensors (± 1.8 %), incl. mounting flange, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Calibratable duct humidity and temperature sensor **HYGR**ASGARD® **KFTF-20** (± 1.8 %) with plastic sinter filter (optional metal sinter filter), housing made from impact-resistant plastic, optionally with/without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

It measures the relative humidity and/or the temperature of the air and converts the measurand into a standard signal of 4...20 mA . It has four switchable temperature ranges and is applied in non-aggressive dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology. Relative humidity (in % r. H.) is the quotient of water vapour partial pressure and the saturation vapour pressure at the respective gas temperature. These measuring transducers are designed for exact detection of humidity. A digital long-term stable sensor is used as measuring element for humidity measurement. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

KFTF-20
with cable gland, without display (Tyr 1)

KFTF-20-Q
with M12 connector, without display (Tyr 1)

TECHNICAL DATA

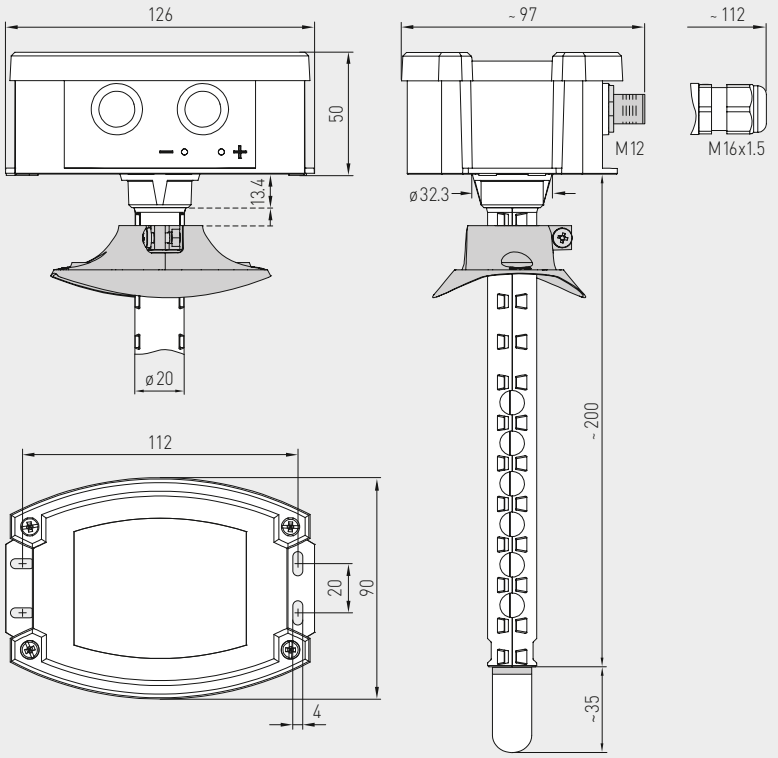
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.1 VA / 24 V DC
Sensors:	digital humidity sensor, with integrated temperature sensor, low hysteresis, high long-term stability
HUMIDITY	
Measuring range, humidity:	0...100 % r. H. (output corresponding to 4...20 mA)
Permitted humidity:	< 95 % r. H., non-precipitating air
Deviation in humidity:	typically **± 1.8** % (10...90 % r. H.) at +25 °C, otherwise ± 2.0 %
Output humidity:	4...20 mA
TEMPERATURE	
Temperature measuring range:	multi-range switching (see table) –35...+35 °C; –35...+75 °C; 0...+50 °C; 0...+80 °C (output corresponding to 4...20 mA)
Ambient temperature:	storage –35...+85 °C; operation –30...+80 °C, non-precipitating
Deviation in temperature:	typically ± 0.2 K at +25 °C
Temperature output:	4...20 mA
Electrical connection:	2-, 3-, or 4-wire connection (see connection diagram), 0.14 - 1.5 mm², via terminal screws
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	72 x 64 x 37.8 mm **(Tyr 1) without display** 126 x 90 x 50 mm **(Tyr 2) with display**
Protective tube:	**PLEUROFORM**™, material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 235 mm, v_{max} = 30 m/s (air) (option available on request: stainless steel V2A (1.4301), Ø 16 mm)
Sensor protection:	**plastic** sinter filter, Ø 16 mm, L = 35 mm, exchangeable (optional **metal** sinter filter, Ø 16 mm, L = 32 mm)
Process connection:	by mounting flange, plastic (included in the scope of delivery)
Long-term stability:	± 1 % per year
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) Housing tested, TÜV SÜD, Report No.713139052 (Tyr 1)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Optional:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL temperature and ACTUAL humidity
ACCESSORIES	(see table)

MFT-20-K
Mounting flange, plastic

Duct humidity and temperature sensors (± 1.8 %), incl. mounting flange, calibratable, with multi-range switching and active output

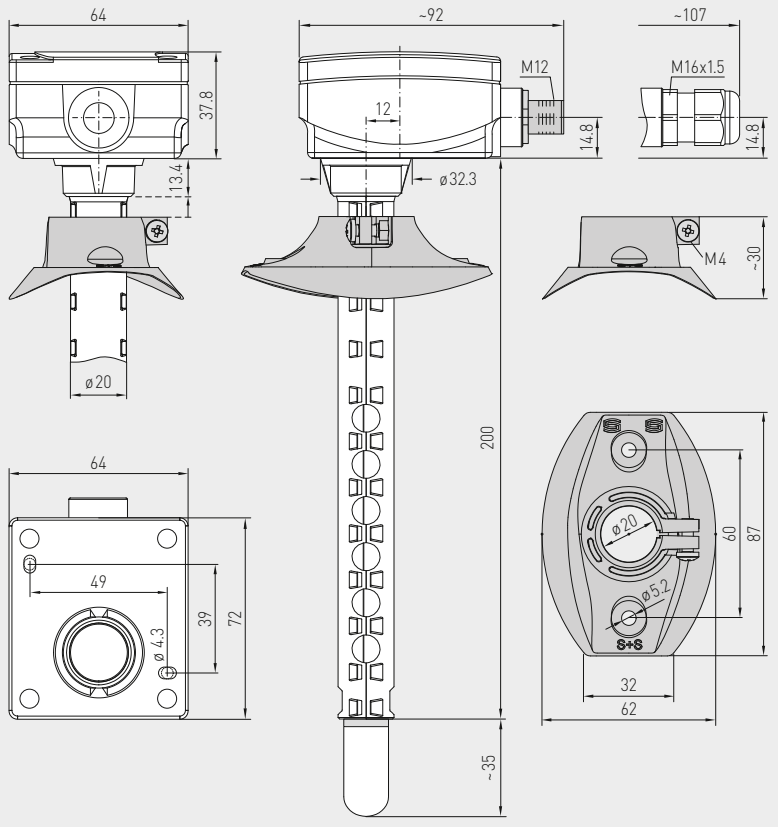
Dimensional drawing
(Tyr 2)

KFTF-20
with display



Dimensional drawing
(Tyr 1)

KFTF-20
without display



KFTF-20
with cable gland
and display
(Tyr 2)

KFTF-20-Q
with M12 connector
and display
(Tyr 2)

M12 connector
(male)

SF-K
Plastic sinter filter
(standard)

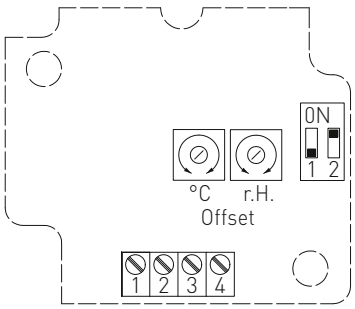
SF-M
Metal sinter filter
(optional)

Protective tube stainless steel
(optional on request)

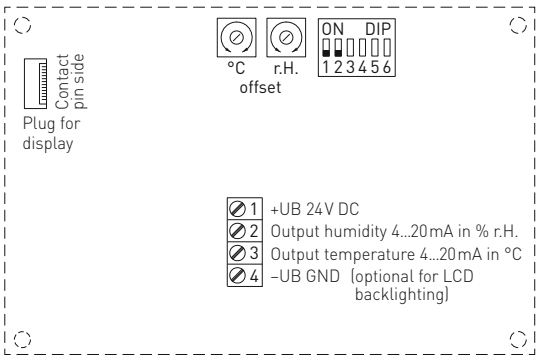
Duct humidity and temperature sensors (± 1.8 %), incl. mounting flange, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

Schematic diagram** (Tyr 1) **KFTF-20-I** without display



Schematic diagram** (Tyr 2) **KFTF-20-I** with display



DIP 3, 4, 5, 6 are not assigned!

Connection**:

3-wire connection for devices with / without display (not illuminated)

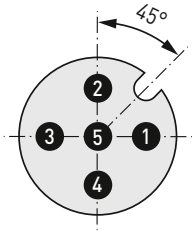
4-wire connection for devices with illuminated display

For the I variant, the humidity path must be connected!

3- or 4-wire connection** **KFTF-20-I**

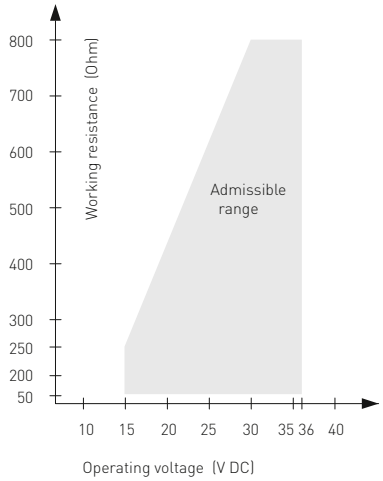
1 +UB 24V DC
2 Output humidity in % r.H. 4...20mA
3 Output temperature in °C 4...20mA
4 –UB-GND (optional for backlighting)

Pin assignment (M12) **KFTF-20-I**



1 +UB 24V DC
2 Output humidity 4...20mA [% r.H.]
3 Output temperature 4...20mA [°C]
4 –UB GND (optional for LCD backlighting)
5 Shield

Load resistance diagram **KFTF-20-I**



Temperature measuring ranges (adjustable)	DIP 1	DIP 2
–35...+75 °C	**ON**	**ON**
–35...+35 °C	OFF	OFF
0...+50 °C (default)	OFF	**ON**
0...+80 °C	**ON**	OFF

Temperature table
MB: –35...+75 °C

°C	I_A [mA]
-35	4.0
-30	4.7
-25	5.5
-20	6.2
-15	6.9
-10	7.6
-5	8.4
0	9.1
5	9.8
10	10.5
15	11.3
20	12.0
25	12.7
30	13.5
35	14.2
40	14.9
45	15.6
50	16.4
55	17.1
60	17.8
65	18.5
70	19.2
75	20.0

Temperature table
MB: –35...+35 °C

°C	I_A [mA]
-35	4.0
-30	5.1
-25	6.3
-20	7.4
-15	8.6
-10	9.7
-5	10.9
0	12.0
5	13.1
10	14.3
15	15.4
20	16.6
25	17.7
30	18.9
35	20.0

Temperature table
MB: 0...+50 °C

°C	I_A [mA]
0	4.0
5	5.6
10	7.2
15	8.8
20	10.4
25	12.0
30	13.6
35	15.2
40	16.8
45	18.4
50	20.0

Temperature table
MB: 0...+80 °C

°C	I_A [mA]
0	4.0
5	5.0
10	6.0
15	7.0
20	8.0
25	9.0
30	10.0
35	11.0
40	12.0
45	13.0
50	14.0
55	15.0
60	16.0
65	17.0
70	18.0
75	19.0
80	20.0

Humidity table
MB: 0...100 % r. H.

% r.H.	I_A [mA]
0	4.0
5	4.8
10	5.6
15	6.4
20	7.2
25	8.0
30	8.8
35	9.6
40	10.4
45	11.2
50	12.0
55	12.8
60	13.6
65	14.4
70	15.2
75	16.0
80	16.8
85	17.6
90	18.4
95	19.2
100	20.0

Duct humidity and temperature sensors (± 1.8 %), incl. mounting flange, calibratable, with multi-range switching and active output

KFTF-20-Q
with display, hinged (Tyr 2)

KFTF-20-Q
without display (Tyr 1)

HYGRASGARD® KFTF-20 Duct humidity and temperature sensors (± 1,8 %), *ID*

Type / WG02	Measuring Range / Readout Humidity	Temperature	Output Humidity	Temperature	Display	Item No.	Price
KFTF-20						with cable gland	
KFTF-20-I	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		1201-3112-1000-030	**228,96 €**
KFTF-20-I TYR-2 LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	1201-8112-1400-030	**270,78 €**
KFTF-20-Q						with M12 connector	
KFTF-20-I Q	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		2003-4151-2100-001	**265,21 €**
KFTF-20-I Q LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	2003-4172-2100-001	**307,03 €**
Note	For additional device variants, see **S+S Facility Engineering**!						

ACCESSORIES			
SF-M	**Metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable stainless steel **V4A** (1.4404)	7000-0050-2200-100	**36,59 €**
	For further information, see chapter Accessories!		

HYGRASGARD® KFTF-20-VA ID

Duct humidity and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

NEW

S+S REGELTECHNIK

Calibratable humidity and temperature sensor **HYGR**ASGARD® **KFTF-20-VA** (± 1.8 %) with metal sinter filter, rugged housing, **stainless steel V4A**, optionally with / without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101.

It measures the relative humidity and the temperature of the air and converts the measurand into a standard signal of 4...20 mA. It has four switchable temperature ranges and is applied in non-aggressive dust-free atmospheres in refrigeration, air conditioning, ventilation and clean room technology. Relative humidity (in % r. H.) is the quotient of water vapour partial pressure and the saturation vapour pressure at the respective gas temperature. These measuring transducers are designed for exact detection of humidity. A digital long-term stable sensor is used as measuring element for humidity measurement. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

KFTF-20-VA
with cable gland

TECHNICAL DATA

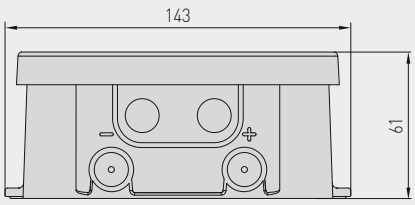
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A see working resistance diagram
Power consumption:	< 1.1 VA / 24 V DC
Sensors:	digital humidity sensor, with integrated temperature sensor, low hysteresis, high long-term stability
HUMIDITY	
Measuring range, humidity:	0...100 % r. H. (output corresponding to 4...20 mA)
Permitted humidity:	< 95 % r. H., non-precipitating air
Deviation in humidity:	typically **± 1.8** % (10...90 % r. H.) at +25 °C, otherwise ± 2.0 %
Output humidity:	4...20 mA
TEMPERATURE	
Temperature measuring range:	multi-range switching (see table) –35...+35 °C; –35...+75 °C; 0...+50 °C; 0...+80 °C (output corresponding to 4...20 mA)
Ambient temperature:	storage –35...+85 °C; operation – 30...+80 °C, non-precipitating
Deviation in temperature:	typically ± 0.2 K at +25 °C
Temperature output:	4...20 mA
Electrical connection:	2-, 3-, or 4-wire connection (see connection diagram), 0.14 - 1.5 mm², via terminal screws
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Protective tube:	**made from stainless steel V2A** (1.4301), Ø 16 mm, NL = 197 mm
Sensor protection:	**metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable, stainless steel V4A (1.4404)
Process connection:	by screws via the mounting fixture on the housing
Long-term stability:	± 1 % per year
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) Housing tested, TÜV SÜD, Report No. 713160960B (Skadi2)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Optional:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL temperature and ACTUAL humidity
ACCESSORIES	(see table)

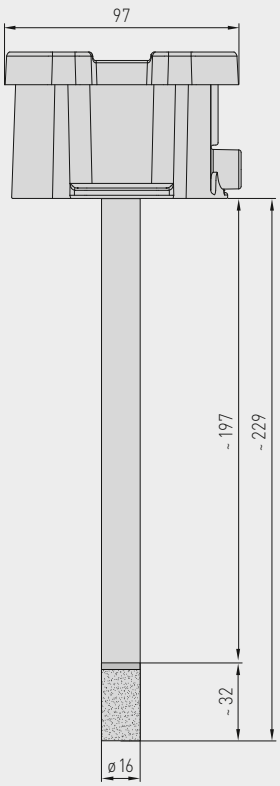
KFTF-20-VAQ
with M12 connector

Duct humidity and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

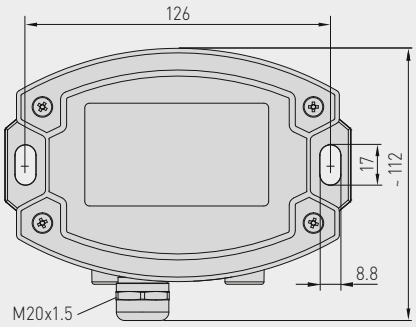
Dimensional drawing

KFTF-20-VA

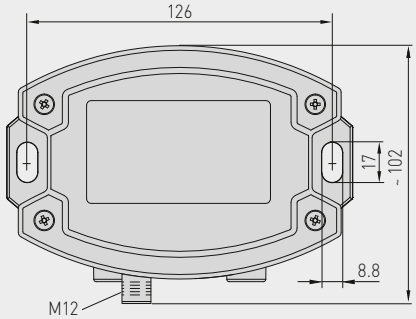




Housing with
cable gland



Housing with
M12 connector



SF-M
Metal sinter filter
(optional)

M12 connector
(male)

KFTF-20-VA
with cable gland
and display

KFTF-20-VAQ
with M12 connector
and display

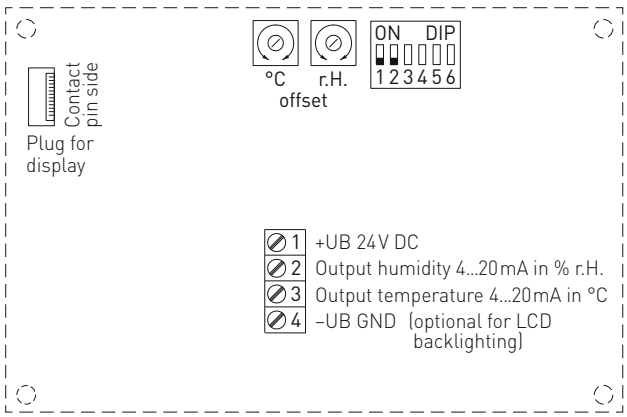
HYGRASGARD® KFTF-20-VA ID

Duct humidity and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

NEW

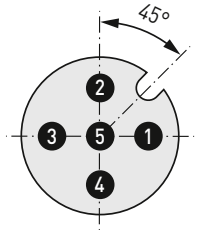
S+S REGELTECHNIK

Schematic diagram** **KFTF-20-I**



DIP 3, 4, 5, 6 are not assigned!

Pin assignment (M12) **KFTF-20-I**



1 +UB 24V DC
2 Output humidity 4...20mA [% r.H.]
3 Output temperature 4...20mA [°C]
4 –UB GND (optional for LCD backlighting)
5 Shield

3- or 4-wire connection** **KFTF-20-I**

1 +UB 24V DC
2 Output humidity in % r.H. 4...20mA
3 Output temperature in °C 4...20mA
4 –UB-GND (optional for backlighting)

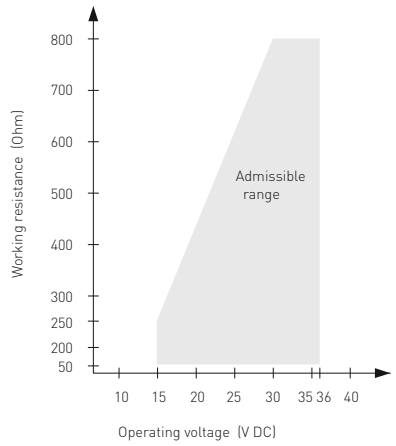
Connection**:

3-wire connection for devices with / without display (not illuminated)

4-wire connection for devices with illuminated display

For the I variant, the humidity path must be connected!

Load resistance diagram **KFTF-20-I**



Temperature measuring ranges (adjustable)	DIP 1	DIP 2
–35...+75 °C	**ON**	**ON**
–35...+35 °C	OFF	OFF
0...+50 °C (default)	OFF	**ON**
0...+80 °C	**ON**	OFF

Temperature table
MB: –35...+75 °C

°C	I_A [mA]
-35	4.0
-30	4.7
-25	5.5
-20	6.2
-15	6.9
-10	7.6
-5	8.4
0	9.1
5	9.8
10	10.5
15	11.3
20	12.0
25	12.7
30	13.5
35	14.2
40	14.9
45	15.6
50	16.4
55	17.1
60	17.8
65	18.5
70	19.2
75	20.0

Temperature table
MB: –35...+35 °C

°C	I_A [mA]
-35	4.0
-30	5.1
-25	6.3
-20	7.4
-15	8.6
-10	9.7
-5	10.9
0	12.0
5	13.1
10	14.3
15	15.4
20	16.6
25	17.7
30	18.9
35	20.0

Temperature table
MB: 0...+50 °C

°C	I_A [mA]
0	4.0
5	5.6
10	7.2
15	8.8
20	10.4
25	12.0
30	13.6
35	15.2
40	16.8
45	18.4
50	20.0

Temperature table
MB: 0...+80 °C

°C	I_A [mA]
0	4.0
5	5.0
10	6.0
15	7.0
20	8.0
25	9.0
30	10.0
35	11.0
40	12.0
45	13.0
50	14.0
55	15.0
60	16.0
65	17.0
70	18.0
75	19.0
80	20.0

Humidity table
MB: 0...100 % r. H.

% r.H.	I_A [mA]
0	4.0
5	4.8
10	5.6
15	6.4
20	7.2
25	8.0
30	8.8
35	9.6
40	10.4
45	11.2
50	12.0
55	12.8
60	13.6
65	14.4
70	15.2
75	16.0
80	16.8
85	17.6
90	18.4
95	19.2
100	20.0

Duct humidity and temperature sensors (± 1.8 %), calibratable, with multi-range switching and active output

KFTF-20-VAQ
with display, hinged

HYGRASGARD® KFTF-20-VA Duct humidity and temperature sensors (± 1,8 %), *ID*

Type / WG02I	Measuring Range / Readout Humidity	Temperature	Output Humidity	Temperature	Display	Item No.	Price
KFTF-20-VA						with cable gland	
KFTF-20-I VA	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		2003-4161-2200-001	**539,32 €**
KFTF-20-I VA LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	2003-4162-2200-001	**673,68 €**
KFTF-20-VAQ						with M12 connector	
KFTF-20-I VAQ	0...100 % r. H.	–35...+75 °C –35...+35 °C 0...+50 °C 0...+80 °C	4... 20 mA	4... 20 mA		2003-4161-2100-001	**572,64 €**
KFTF-20-I VAQ LCD	0...100 % r. H.	(4x as above)	4... 20 mA	4... 20 mA	■	2003-4162-2100-001	**706,99 €**
Note	For additional device variants, see **S+S Facility Engineering**!						

ACCESSORIES			
SF-M	**Metal** sinter filter, Ø 16 mm, L = 32 mm, exchangeable stainless steel **V4A** (1.4404)	7000-0050-2200-100	**36,59 €**
	For further information, see chapter Accessories!		

Pressure transducers and pressure controllers

Whether absolute or relative, atmospheric, differential or below-atmospheric – our **PREM**ASGARD® and **PREM**ASREG® devices can handle any kind of pressure and provide the right solution for any pressurized environment. High-precision piezo-resistive sensors ensure reliable performance from 25 Pa to 300 bar.

APPLICATION RANGE

> Process and mechanical engineering
> Medical and cleanroom engineering
> Large catering facilities
> Heating, ventilation and air conditioning
> Pump control and pressure lines
> Filter monitoring and air pressure deficiency protection
> Rotational speed and limit value control

PREMASGARD® & **PREM**ASREG®

094 – 137

for gaseous media

for volume flow

for liquid media

PREMASGARD® 711x ID

Pressure and differential pressure measuring transducers, including connection set, adjustable, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

The calibratable pressure sensors **PREM**ASGARD® **711x** (series) with eight switchable measuring ranges (eight devices in one), housing made from impact-resistant plastic, optionally with/without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101 and with metal pressure port nozzles (quick connect optional) are used to measure positive, negative or differential pressures in air. The piezoresistive measuring element is temperature-compensated and guarantees a high degree of reliability and accuracy.

Applications of these pressure sensors are in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. Media measured with these pressure transducers are air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

The pressure sensor has a button for manual zero point calibration (automatic zero point calibration optional/standard for 25 Pa) and an offset potentiometer for final value correction. The delivery includes the connection set **ASD-06** (2 m connection hose, two pressure port nipples, screws).

PREMASGARD® **711x**
with cable gland

PREMASGARD® **711x-Q**
with M12 connector

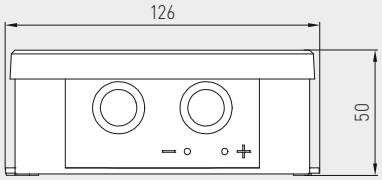
TECHNICAL DATA

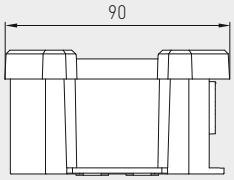
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A, see working resistance diagram
Power consumption:	< 2 VA / 24 V DC
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** (see table)
Type of pressure:	differential pressure
Pressure connection:	equipped as standard with metal connection **nozzles** for pressure hose Ø 6 mm, optionally with **quick** connect made from stainless steel for PVC fabric pressure hose Ø 6 mm
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	–20...+50 °C
Accuracy:	**Type 7112** (25 Pa): typically ± 1 Pa **Type 7110** (100 Pa): typically ± 2 Pa **Type 7111** (1000 Pa): typically ± 5 Pa **Type 7115** (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value ± 2 % of final value for pressure ranges < ± 250 Pa
Temp. drift values:	± 0.1 % / °C ± 0.3 % / °C for pressure ranges < 250 Pa
Zero point offset:	< ± 0.7 % of final value ± 1.4 % of final value for pressure ranges < 250 Pa
Positive/negative pressure:	max. ± 100 hPa
Signal filtering:	**switchable 1 s / 10 s** (via DIP switches)
Output:	4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14 - 1.5 mm², via plug-in screw terminal
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm **(Typ 2)**
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) in the built-in state
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL pressure as well as the automatic zero point calibration
ACCESSORIES	see table

Pressure port
Metal nozzles
(standard)

Pressure and differential pressure measuring transducers, including connection set, adjustable, calibratable, with multi-range switching and active output

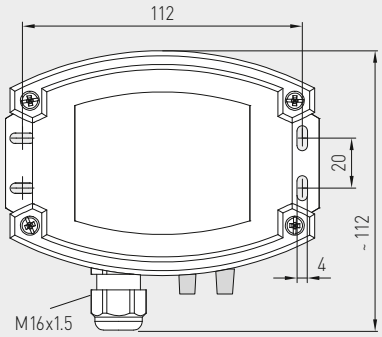
Dimensional drawing — **PREM**ASGARD® **711x**

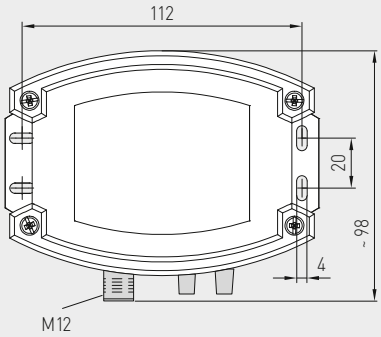




Housing with
cable gland
equipped as standard with
pressure port **nozzles**

Housing with
M12 connector
equipped as standard with
pressure port **nozzles**





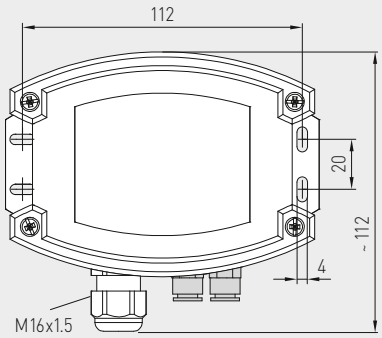
Pressure port
nozzles, metal

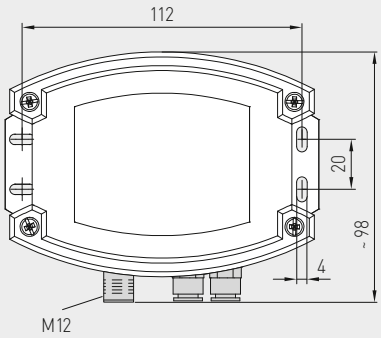
M12 connector
(male)

Dimensional drawing — **PREM**ASGARD® **711x**

Housing with
cable gland
optional on request
with **quick** connect

Housing with
M12 connector
optional on request
with **quick** connect





Stainless steel
quick connect

M12 connector
(male)

PREMASGARD® **711x**
with cable gland
and display

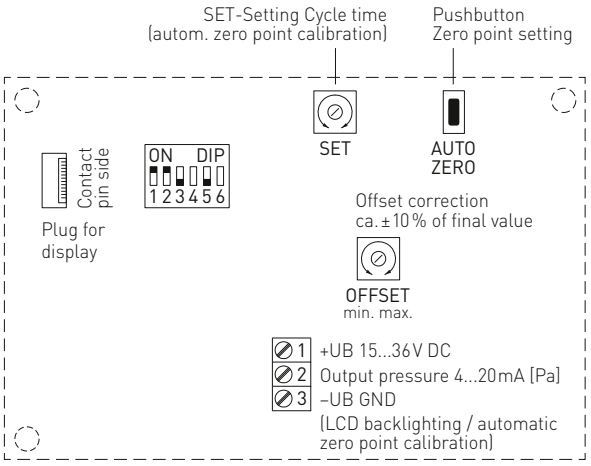
PREMASGARD® **711x-Q**
with M12 connector
and display

Pressure port
Stainless steel
quick connect
(optional)

Pressure and differential pressure measuring transducers, including connection set, adjustable, calibratable, with multi-range switching and active output

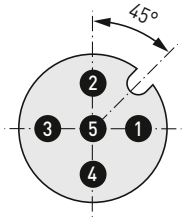
S+S REGELTECHNIK

Schematic diagram — **PREMASGARD® 711x-I**



DIP switches 4 and 6 are not assigned!

Pin assignment (M12) — **PREMASGARD® 711x-I**



1. +UB 15...36 V DC
2. Output pressure 4...20 mA [Pa]
3. free
4. –UB GND (LCD backlighting / automatic zero point calibration)
5. Shield

Pressure range (selectable) – max. measuring range (default) is depending to the type of device								**DIP 1**	**DIP 2**
0...25 Pa	0...50 Pa	0...100 Pa	0...1000 Pa	–25...+25 Pa	–50...+50 Pa	–100...+100 Pa	–1000...+1000 Pa	OFF	OFF
–	–	0...300 Pa	0...2000 Pa	–	–	–300...+300 Pa	–2000...+2000 Pa	**ON**	OFF
–	–	0...500 Pa	0...3000 Pa	–	–	–500...+500 Pa	–3000...+3000 Pa	OFF	**ON**
0...25 Pa	**0...100 Pa**	**0...1000 Pa**	**0...5000 Pa**	**–25...+25 Pa**	**–100...+100 Pa**	**–1000...+1000 Pa**	**–5000...+5000 Pa**	**ON**	**ON**

Measuring range mode (Mode selectable)	**DIP 3**
Unidirectional (0...+MR) (default)	OFF
Bidirectional (–MR...+MR)	**ON**

Measurement signal filtering (Time interval selectable)	**DIP 5**
10 s (default)	OFF
1 s	**ON**

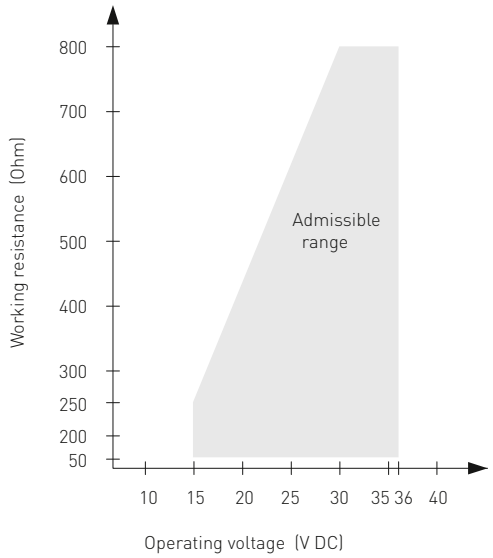
Display with option **automatic zero point calibration**

Standard
Actual pressure (in Pa)
Calibration interval (arrows)

Zero point calibration active
Remaining calibration time (in seconds)

Adjustment of zero point calibration
Cycle time (15 min to 24 hours) adjustable by potentiometer.

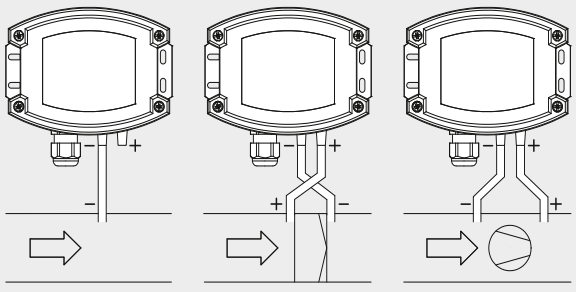
Load resistance — **PREMASGARD® 711x-I**



Pressure and differential pressure measuring transducers, including connection set, adjustable, calibratable, with multi-range switching and active output

PREMASGARD® **711x - Q**
with display,
hinged

Mounting diagram **PREM**ASGARD® **711x**



TYPES OF MONITORING:

(A) Below-atmospheric pressure:
P1 (+) is not connected
but open against atmosphere
P2 (–) connected to inside of duct

(B) Filter:
P1 (+) connected upstream of filter
P2 (–) connected downstream of filter

(C) Ventilator:
P1 (+) connected downstream of ventilator
P2 (–) connected upstream of ventilator

Pressure connections at the pressure switch are marked with P1 (+) for higher pressure and P2 (–) for lower pressure.

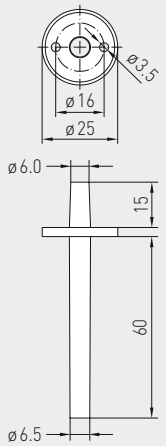
Conversion table for pressure values:

Unit =	bar	mbar	Pa	kPa	mWs
1 Pa	0,00001 bar	0,01 mbar	1 Pa	0,001 kPa	0,000101971 mWs
1 kPa	0,01 bar	10 mbar	1000 Pa	1 kPa	0,101971 mWs
1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10,1971 mWs
1 mbar	0,001 bar	1 mbar	100 Pa	0,1 kPa	0,0101971 mWs
1 mWs	0,0980665 bar	98,0665 mbar	9806,65 Pa	9,80665 kPa	1 mWs

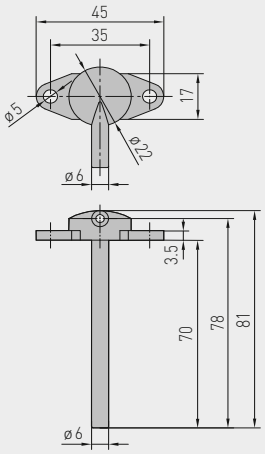
Pressure and differential pressure measuring transducers, including connection set, adjustable, calibratable, with multi-range switching and active output

S+S REGELTECHNIK

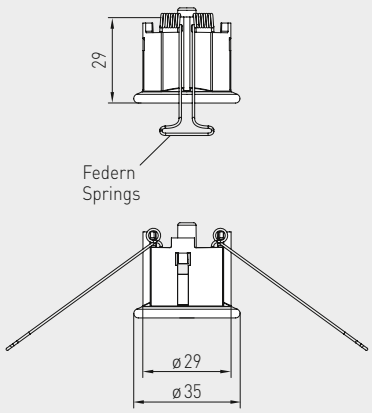
Dimensional drawing **ASD-06** Connection set



Dimensional drawing **ASD-07** Connection nipple



Dimensional drawing **DAL-01** Pressure outlet



ASD-06 Connection set

ASD-07 Connection nipple

DAL-01 Pressure outlet

ACCESSORIES

ASD-06	**Connection set (included in the scope of delivery),** consisting of 2 connection nipples (straight) made of ABS, 2 m PVC hose, soft, and 4 tapping screws	7100-0060-3000-000	**6,61 €**
ASD-07	**2 connection nipples** (at 90 degree angle) made of plastic, ABS	7100-0060-7000-000	**6,61 €**
DAL-01	**Pressure outlet** for ceiling or in-wall installation (e.g. in clean rooms)	7300-0060-3000-001	**30,93 €**
	For further information, see chapter Accessories!		

Pressure and differential pressure measuring transducers, including connection set, adjustable, calibratable, with multi-range switching and active output

PREMASGARD® **711x**
with cable gland,
with/without display

PREMASGARD® **711x-Q**
with M12 connector,
with/without display

PREMASGARD® **711x**	Pressure and differential pressure measuring transducers, *ID*				
Pressure range (adjustable)	**Type / WG02**	**Output**	**Display**	**Item No.**	**Price**
max. – 1000...+ 1000 Pa	**PREM**ASGARD® **7111**			with cable gland	
0... 100 Pa / – 100... + 100 Pa 0... 300 Pa / – 300... + 300 Pa 0... 500 Pa / – 500... + 500 Pa 0...1000 Pa / –1000... +1000 Pa	PREMASGARD 7111-I	4...20 mA		1301-7112-0010-100	**145,32 €**
	PREMASGARD 7111-I LCD	4...20 mA	■	1301-7112-4010-100	**203,87 €**
	PREMASGARD® **7111-Q**			with M12 connector	
	PREMASGARD 7111-I Q	4...20 mA		2004-6131-2100-001	**181,57 €**
	PREMASGARD 7111-I Q LCD	4...20 mA	■	2004-6132-2100-001	**240,12 €**
max. – 5000...+ 5000 Pa	**PREM**ASGARD® **7115**			with cable gland	
0...1000 Pa / – 1000 ... + 1000 Pa 0...2000 Pa / –2000 ... +2000 Pa 0...3000 Pa / –3000 ... +3000 Pa 0...5000 Pa / –5000 ... +5000 Pa	PREMASGARD 7115-I	4...20 mA		1301-7112-0050-100	**145,32 €**
	PREMASGARD 7115-I LCD	4...20 mA	■	1301-7112-4050-100	**203,87 €**
	PREMASGARD® **7115-Q**			with M12 connector	
	PREMASGARD 7115-I Q	4...20 mA		2004-6131-2100-011	**181,57 €**
	PREMASGARD 7115-I Q LCD	4...20 mA	■	2004-6132-2100-011	**240,12 €**
max. –100...+100 Pa	**PREM**ASGARD® **7110**			with cable gland	
0... +50 Pa / –50... +50 Pa 0...+100 Pa /–100...+100 Pa	PREMASGARD 7110-I	4...20 mA		1301-7112-0110-100	**182,96 €**
	PREMASGARD 7110-I LCD	4...20 mA	■	1301-7112-4110-100	**235,24 €**
	PREMASGARD® **7110-Q**			with M12 connector	
	PREMASGARD 7110-I Q	4...20 mA		2004-6131-2100-021	**219,21 €**
	PREMASGARD 7110-I Q LCD	4...20 mA	■	2004-6132-2100-021	**271,48 €**
max. –25...+25 Pa	**PREM**ASGARD® **7112**			with cable gland	
0... +25 Pa / –25... +25 Pa	PREMASGARD 7112-I	4...20 mA		1301-7112-0370-200	**234,19 €**
	PREMASGARD 7112-I LCD	4...20 mA	■	1301-7112-4370-200	**277,27 €**
	PREMASGARD® **7112-Q**			with M12 connector	
	PREMASGARD 7112-I Q	4...20 mA		2004-6131-3100-001	**270,44 €**
	PREMASGARD 7112-I Q LCD	4...20 mA	■	2004-6132-3100-011	**313,52 €**
	Equipped as standard with automatic zero point calibration (3-wire connection)				
Multi-range switching:	The **pressure ranges** depend on the device type and can be set via DIP switches.				
Extra charge:	Other special measuring ranges up to max. 5000 Pa				**43,08 €**
	with optional automatic zero point calibration				**62,73 €**
	with optional quick connect for PVC fabric pressure hose Ø 6 mm				**36,25 €**
	For additional device variants, see **S+S Facility Engineering**!				

PREMASGARD® 711x-VA ID

**Pressure and differential pressure measuring transducers,
adjustable, calibratable,
with multi-range switching and active output**

NEW

S+S REGELTECHNIK

The calibratable pressure sensors **PREM**ASGARD® **711x-VA** (series) with eight switchable measuring ranges (eight devices in one), **stainless steel V4A** housing, optionally with/without display, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101 and pressure port by stainless steel quick connection (pipe fitting optional) are used to measure positive, negative or differential pressures in air. The piezoresistive measuring element is temperature-compensated and guarantees a high degree of reliability and accuracy.

Applications of these pressure sensors are in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. Media measured with these pressure transducers are air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

The pressure sensor has a button for manual zero point calibration (automatic zero point calibration optional/standard for 25 Pa) and an offset potentiometer for final value correction.

PREMASGARD® **711x-VA**
with cable gland

PREMASGARD® **711x-VAQ**
with M12 connector

TECHNICAL DATA

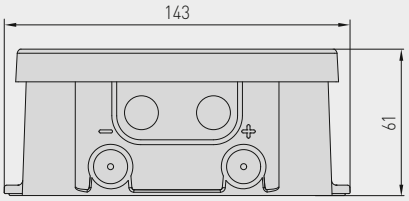
Power supply:	15...36 V DC, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	R_a (Ohm) = (U_b -14 V) / 0.02 A, see working resistance diagram
Power consumption:	< 2 VA / 24 V DC
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** (see table)
Type of pressure:	differential pressure
Pressure port:	equipped as standard with **quick** connect made from stainless steel for PVC-fabric pressure hose Ø 6 mm (4 / 8 mm optional) optionally with **pipe fitting**, stainless steel V2A (1.4305) for pressure lines Ø 6 mm
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	–20...+50 °C
Accuracy:	**Type 7112** (25 Pa): typically ± 1 Pa **Type 7110** (100 Pa): typically ± 2 Pa **Type 7111** (1000 Pa): typically ± 5 Pa **Type 7115** (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value ± 2 % of final value for pressure ranges < ± 250 Pa
Temp. drift values:	± 0.1 % / °C ± 0.3 % / °C for pressure ranges < 250 Pa
Zero point offset:	< ± 0.7 % of final value ± 1.4 % of final value for pressure ranges < 250 Pa
Positive /negative pressure:	max. ± 100 hPa
Signal filtering:	**switchable 1 s / 10 s** (via DIP switches)
Output:	4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14 - 1.5 mm², via plug-in screw terminal
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) in the built-in state Housing tested, TÜV SÜD, Report No. 713160960B (Skadi2)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL pressure as well as the automatic zero point calibration
ACCESSORIES	(see table)

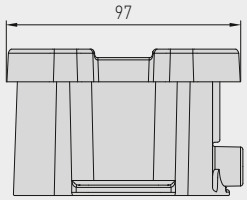
Pressure port
Stainless steel
quick connect
(standard)

Pressure and differential pressure measuring transducers, adjustable, calibratable, with multi-range switching and active output

Dimensional drawing

PREMASGARD® **711x-VA**



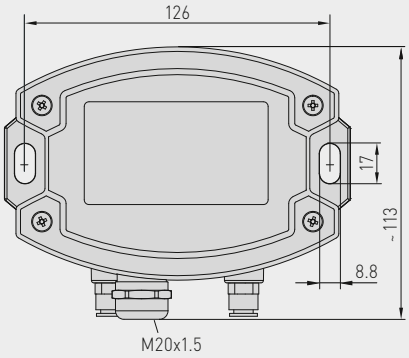


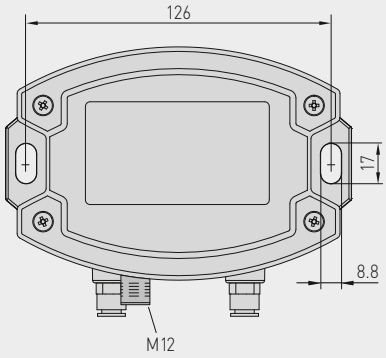
Housing with
cable gland

equipped as standard with
quick connect
for pressure hoses

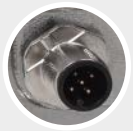
Housing with
M12 connector

equipped as standard with
quick connect
for pressure hoses





Stainless steel
quick connect



M12 connector
(male)

PREMASGARD® **711x-VA**
with cable gland
and display

PREMASGARD® **711x-VAQ**
with M12 connector
and display

Dimensional drawing

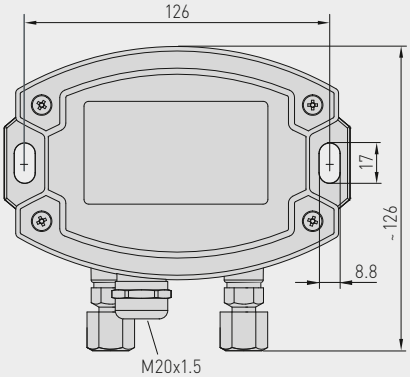
PREMASGARD® **711x-VA**

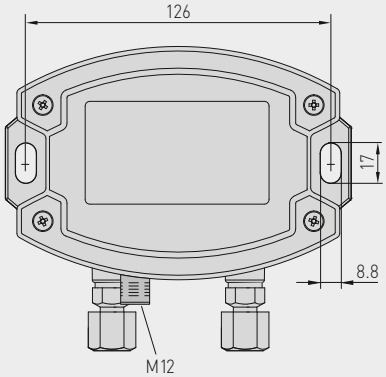
Housing with
cable gland

optional on request
with **pipe fitting**
for pressure lines

Housing with
M12 connector

optional on request
with **pipe fitting**
for pressure lines





Stainless steel V2A
pipe fitting

M12 connector
(male)

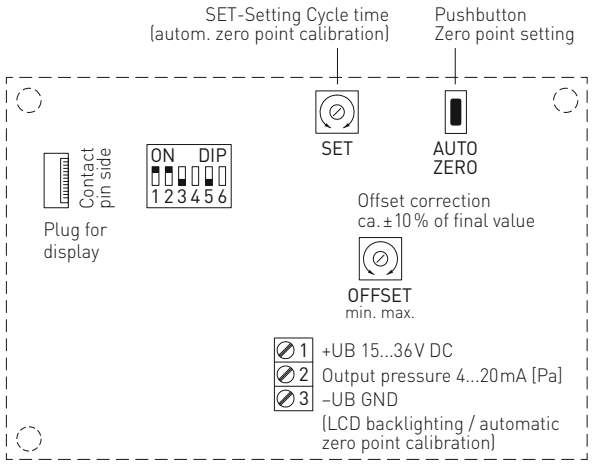
Pressure port
Stainless steel V2A
pipe fitting
(optional)

Pressure and differential pressure measuring transducers, adjustable, calibratable, with multi-range switching and active output

NEW

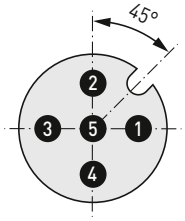
S+S REGELTECHNIK

Schematic diagram — **PREMASGARD® 711x-I**



DIP switches 4 and 6 are not assigned!

Pin assignment (M12) — **PREMASGARD® 711x-I**



1. +UB 15...36 V DC
2. Output pressure 4...20 mA [Pa]
3. free
4. –UB GND (LCD backlighting / automatic zero point calibration)
5. Shield

Pressure range (selectable) – max. measuring range (default) is depending to the type of device								**DIP 1**	**DIP 2**
0...25 Pa	0...50 Pa	0...100 Pa	0...1000 Pa	–25...+25 Pa	–50...+50 Pa	–100...+100 Pa	–1000...+1000 Pa	OFF	OFF
–	–	0...300 Pa	0...2000 Pa	–	–	–300...+300 Pa	–2000...+2000 Pa	**ON**	OFF
–	–	0...500 Pa	0...3000 Pa	–	–	–500...+500 Pa	–3000...+3000 Pa	OFF	**ON**
0...25 Pa	**0...100 Pa**	**0...1000 Pa**	**0...5000 Pa**	**–25...+25 Pa**	**–100...+100 Pa**	**–1000...+1000 Pa**	**–5000...+5000 Pa**	**ON**	**ON**

Measuring range mode (Mode selectable)	**DIP 3**
Unidirectional (0...+MR) (default)	OFF
Bidirectional (–MR...+MR)	**ON**

Measurement signal filtering (Time interval selectable)	**DIP 5**
10 s (default)	OFF
1 s	**ON**

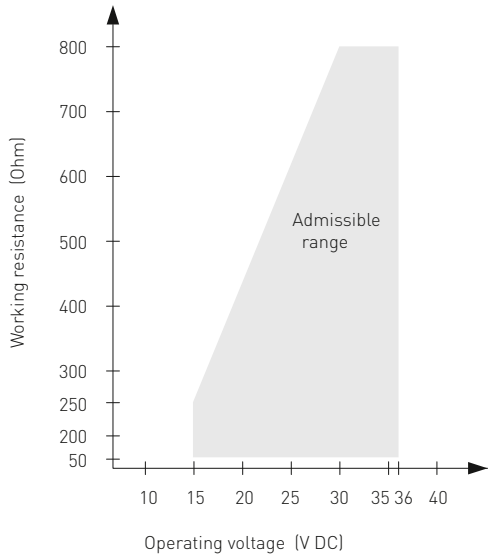
Display with option
automatic zero point calibration

Standard
Actual pressure (in Pa)
Calibration interval (arrows)

Zero point calibration active
Remaining calibration time (in seconds)

Adjustment of zero point calibration
Cycle time (15 min to 24 hours) adjustable by potentiometer.

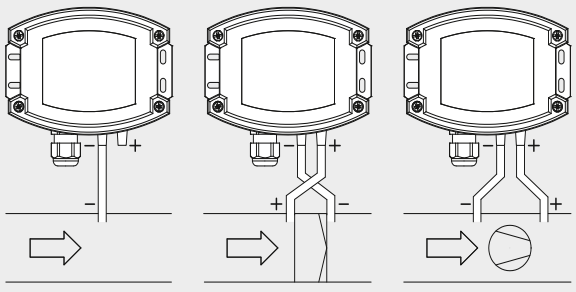
Load resistance — **PREMASGARD® 711x-I**



Pressure and differential pressure measuring transducers, adjustable, calibratable, with multi-range switching and active output

PREMASGARD® 711x-VAQ
with display, hinged

Mounting diagram **PREMASGARD® 711x**



TYPES OF MONITORING:

(A) Below-atmospheric pressure:
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but open against atmosphere
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(B) Filter:
P1 (+) connected upstream of filter
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(C) Ventilator:
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1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10,1971 mWs
1 mbar	0,001 bar	1 mbar	100 Pa	0,1 kPa	0,0101971 mWs
1 mWs	0,0980665 bar	98,0665 mbar	9806,65 Pa	9,80665 kPa	1 mWs

Pressure and differential pressure measuring transducers, adjustable, calibratable, with multi-range switching and active output

NEW

S+S REGELTECHNIK

PREMASGARD® **711x-VA**
with cable gland,
with/without display

PREMASGARD® **711x-VA**	Pressure and differential pressure measuring transducer, *ID*				
Pressure range (adjustable)	**Type / WG02I**	**Output**	**Display**	**Item No.**	**Price**
max. – 1000...+ 1000 Pa	**PREM**ASGARD® **7111 - VA**			with cable gland	
0... 100 Pa / – 100... + 100 Pa 0... 300 Pa / – 300... + 300 Pa 0... 500 Pa / – 500... + 500 Pa 0... 1000 Pa / – 1000... + 1000 Pa	PREMASGARD 7111-I_VA	4...20 mA		2004-6191-2200-001	**452,30 €**
	PREMASGARD 7111-I_VA LCD	4...20 mA	■	2004-6192-2200-001	**606,63 €**
max. – 5000...+ 5000 Pa	**PREM**ASGARD® **7115 - VA**			with cable gland	
0...1000 Pa / – 1000 ... + 1000 Pa 0...2000 Pa / – 2000 ... + 2000 Pa 0...3000 Pa / – 3000 ... + 3000 Pa 0...5000 Pa / – 5000 ... + 5000 Pa	PREMASGARD 7115-I_VA	4...20 mA		2004-6191-2200-011	**452,30 €**
	PREMASGARD 7115-I_VA LCD	4...20 mA	■	2004-6192-2200-011	**606,63 €**
max. –100...+100 Pa	**PREM**ASGARD® **7110 - VA**			with cable gland	
0... +50 Pa / –50... +50 Pa 0...+100 Pa /–100...+100 Pa	PREMASGARD 7110-I_VA	4...20 mA		2004-6191-2200-021	**503,63 €**
	PREMASGARD 7110-I_VA LCD	4...20 mA	■	2004-6192-2200-021	**653,67 €**
max. –25...+25 Pa	**PREM**ASGARD® **7112 - VA**			with cable gland	
0... +25 Pa / –25... +25 Pa	PREMASGARD 7112-I_VA	4...20 mA		2004-6191-3200-001	**580,48 €**
	PREMASGARD 7112-I_VA LCD	4...20 mA	■	2004-6192-3200-001	**716,73 €**
	Equipped as standard with automatic zero point calibration (3-wire connection)				
Multi-range switching:	The **pressure ranges** depend on the device type and can be set via DIP switches.				
Extra charge:	Other special measuring ranges up to max. 5000 Pa **with optional automatic zero point calibration**				**43,08 €** **62,73 €**
	with optional pipe fitting made from stainless steel V2A for pressure lines Ø **6 mm**				**36,25 €**
	For additional device variants, see **S+S Facility Engineering**!				

Pressure and differential pressure measuring transducers, adjustable, calibratable, with multi-range switching and active output

PREMASGARD® **711x-VAQ**
with M12 connector,
with/without display

PREMASGARD® **711x-VAQ**	Pressure and differential pressure measuring transducer, *ID*				
Pressure range (adjustable)	**Type / WG02I**	**Output**	**Display**	**Item No.**	**Price**
max. – 1000...+ 1000 Pa	**PREM**ASGARD® **7111-VAQ**			with M12 connector	
0... 100 Pa / – 100... + 100 Pa 0... 300 Pa / – 300... + 300 Pa 0... 500 Pa / – 500... + 500 Pa 0...1000 Pa / –1000... +1000 Pa	PREMASGARD 7111-I_VAQ	4...20 mA		2004-6191-2100-001	**483,05 €**
	PREMASGARD 7111-I_VAQ LCD	4...20 mA	■	2004-6192-2100-001	**639,94 €**
max. – 5000...+ 5000 Pa	**PREM**ASGARD® **7115-VAQ**			with M12 connector	
0...1000 Pa / – 1000 ... + 1000 Pa 0...2000 Pa / –2000 ... +2000 Pa 0...3000 Pa / –3000 ... +3000 Pa 0...5000 Pa / –5000 ... +5000 Pa	PREMASGARD 7115-I_VAQ	4...20 mA		2004-6191-2100-011	**483,05 €**
	PREMASGARD 7115-I_VAQ LCD	4...20 mA	■	2004-6192-2100-011	**639,94 €**
max. –100...+100 Pa	**PREM**ASGARD® **7110-VAQ**			with M12 connector	
0... +50 Pa / –50... +50 Pa 0...+100 Pa /–100...+100 Pa	PREMASGARD 7110-I_VAQ	4...20 mA		2004-6191-2100-021	**536,95 €**
	PREMASGARD 7110-I_VAQ LCD	4...20 mA	■	2004-6192-2100-021	**686,99 €**
max. –25...+25 Pa	**PREM**ASGARD® **7112-VAQ**			with M12 connector	
0... +25 Pa / –25... +25 Pa	PREMASGARD 7112-I_VAQ	4...20 mA		2004-6191-3100-001	**613,79 €**
	PREMASGARD 7112-I_VAQ LCD	4...20 mA	■	2004-6192-3100-001	**750,04 €**
	Equipped as standard with automatic zero point calibration (3-wire connection)				
Multi-range switching:	The **pressure ranges** depend on the device type and can be set via DIP switches.				
Extra charge:	Other special measuring ranges up to max. 5000 Pa **with optional automatic zero point calibration**				**43,08 €** **62,73 €**
	with optional pipe fitting made from stainless steel V2A for pressure lines Ø **6 mm**				**36,25 €**
	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!

Pressure and differential pressure measuring transducers/switches, incl. connection set, with multi-range switching and adjustable, switching and active output

S+S REGELTECHNIK

The electronic **PREM**ASREG® **711x** pressure sensors and switches are equipped with eight switchable measuring ranges, one switching output, one continuous output, and a display for setting the switch-point and to display the ACTUAL pressure (eight devices in one, plus differential pressure switch / differential pressure monitor, continuous pressure sensor in a single device).

The pressure sensor with a housing made from impact-resistant plastic, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101 and with metal pressure port nozzles (quick connect optional) is used to measure positive, negative or differential pressures in clean air, with limit value switching. The piezoresistive measuring element guarantees a high degree of reliability and accuracy.

Applications of these pressure sensors are in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. Media measured with these pressure transducers are air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

The pressure sensor has a button for manual zero point calibration (automatic zero point calibration optional) and one offset potentiometer for setting the switching point and one for final value correction. The delivery includes the connection set **ASD-06** (2 m connection hose, two pressure port nipples, screws).

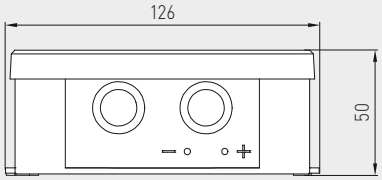
TECHNICAL DATA

Power supply:	24 V AC / DC (± 20 %)
Load resistance:	R_L > 5 kOhm
Power consumption:	< 1 VA / 24 V DC, < 2.2 VA / 24 V AC
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** (see table)
Type of pressure:	differential pressure
Pressure connection:	equipped as standard with metal connection**nozzles** for pressure hose Ø 6 mm, optionally with **quick** connect made from stainless steel for PVCfabric pressure hose Ø 6 mm
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	–20...+50 °C
Accuracy:	**Type 7111** (1000 Pa): typically ± 5 Pa **Type 7115** (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value
Temp. drift values:	± 0.1 % / °C
Zero point offset:	< ± 0.7 % of final value
Setting increment Δp:	1 % of pressure range (100 Pa => 1 Pa; 5000 Pa => 50 Pa)
Switching hysteresis:	± 1 % of pressure range (100 Pa => ± 1 Pa; 5000 Pa => ± 50 Pa)
Positive /negative pressure:	max. ± 100 hPa
Signal filtering:	**switchable 1 s / 10 s** (via DIP switches)
Output:	0 -10 V 1 changeover contact (24 V), 1 A ohmic load
Connection type:	3-wire connection
Electrical connection:	0.14 - 1.5 mm², via plug-in screw terminal
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, **12-pin**, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm **(Typ 2)**
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) in the built-in state
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), for displaying ACTUAL pressure and / or SETPOINT pressure as well as automatic zero point calibration
ACCESSORIES	see table

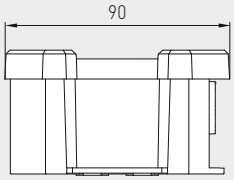
Pressure port
Metal nozzles
(standard)

Pressure and differential pressure measuring transducers/switches, incl. connection set, with multi-range switching and adjustable, switching and active output

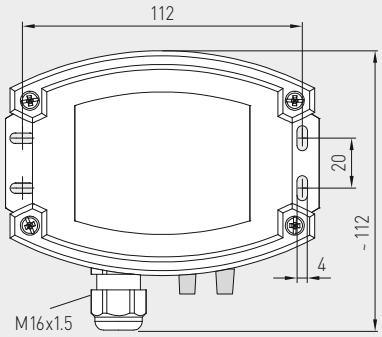
Dimensional drawing — **PREM**ASREG® **711x**

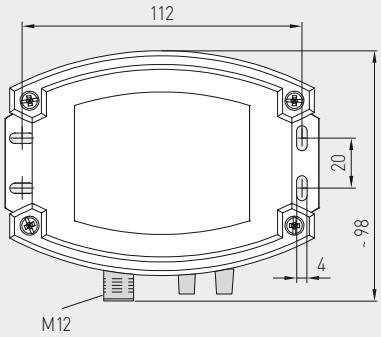


Housing with
cable gland
equipped as standard with
pressure port **nozzles**



Housing with
M12 connector
equipped as standard with
pressure port **nozzles**



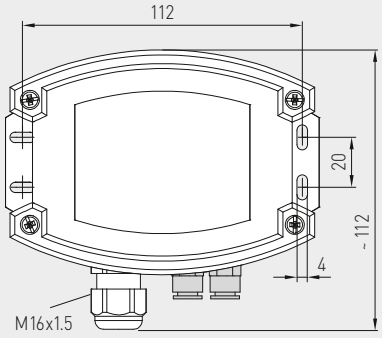


Pressure port
nozzles, metal

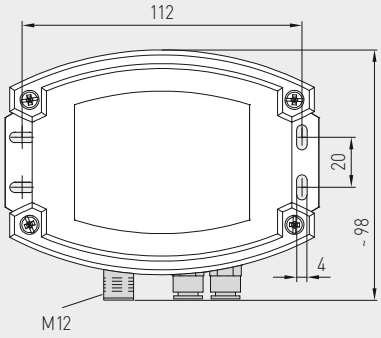
M12 connector
(male)

Dimensional drawing — **PREM**ASREG® **711x**

Housing with
cable gland
optional on request
with **quick** connect



Housing with
M12 connector
optional on request
with **quick** connect



Stainless steel
quick connect

M12 connector
(male)

PREMASREG® **711x-Q**
with cable gland
and display

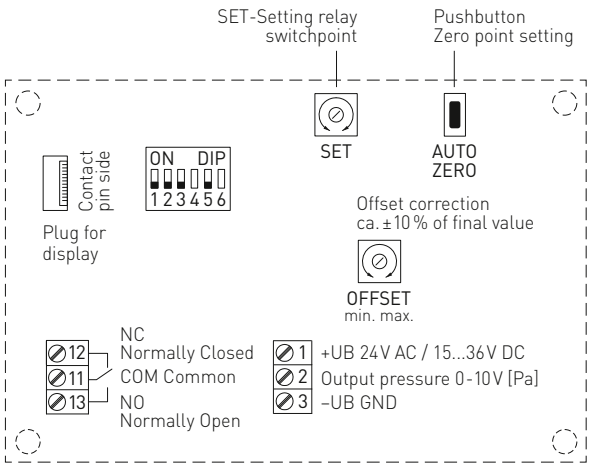
PREMASREG® **711x-Q**
with M12 connector
and display

Pressure port
Stainless steel
quick connect
(optional)

Pressure and differential pressure measuring transducers/switches, incl. connection set, with multi-range switching and adjustable, switching and active output

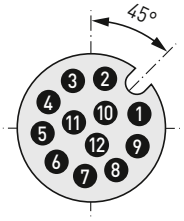
S+S REGELTECHNIK

Schematic diagram — **PREMASREG® 711x-U/W**



DIP switches 4 and 6 are not assigned!

Pin assignment (M12) — **PREMASREG® 711x-U/W**



1. +UB 24 V AC / 15...36 V DC
2. Output pressure 0-10 V [Pa]
3. free
4. –UB GND
5. free
6. free
7. COM Common
8. NC Normally Closed
9. NO Normally Open
10. free
11. free
12. free

Pressure range (selectable) – max. measuring range (default) is depending to the type of device				**DIP 1**	**DIP 2**
0...100 Pa	0...1000 Pa	–100...+100 Pa	–1000...+1000 Pa	OFF	OFF
0...300 Pa	0...2000 Pa	–300...+300 Pa	–2000...+2000 Pa	**ON**	OFF
0...500 Pa	0...3000 Pa	–500...+500 Pa	–3000...+3000 Pa	OFF	**ON**
0...1000 Pa	**0...5000 Pa**	**-1000...+1000 Pa**	**-5000...+5000 Pa**	**ON**	**ON**

Measuring range mode (Mode selectable)	**DIP 3**
Unidirectional (0...+MR) (default)	OFF
Bidirectional (–MR...+MR)	**ON**

Measurement signal filtering (Time interval selectable)	**DIP 5**
10 s (default)	OFF
1 s	**ON**

Display with option **automatic zero point calibration**

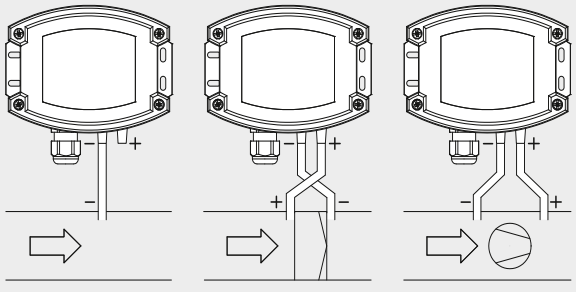
Zero point calibration active
Remaining calibration time (in seconds)

Cycle time (approx. 90 minutes) is fixed in the factory.

Pressure and differential pressure measuring transducers/switches, incl. connection set, with multi-range switching and adjustable, switching and active output

PREMASREG® **711x - Q**
with display,
hinged

Mounting diagram **PREM**ASREG® **711x**



TYPES OF MONITORING:

(A) Below-atmospheric pressure:
P1 (+) is not connected
but open against atmosphere
P2 (–) connected to inside of duct

(B) Filter:
P1 (+) connected upstream of filter
P2 (–) connected downstream of filter

(C) Ventilator:
P1 (+) connected downstream of ventilator
P2 (–) connected upstream of ventilator

Pressure connections at the pressure switch are marked with P1 (+) for higher pressure and P2 (–) for lower pressure.

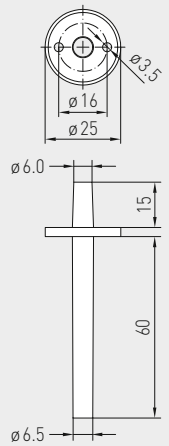
Conversion table for pressure values:

Unit =	bar	mbar	Pa	kPa	mWs
1 Pa	0,00001 bar	0,01 mbar	1 Pa	0,001 kPa	0,000101971 mWs
1 kPa	0,01 bar	10 mbar	1000 Pa	1 kPa	0,101971 mWs
1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10,1971 mWs
1 mbar	0,001 bar	1 mbar	100 Pa	0,1 kPa	0,0101971 mWs
1 mWs	0,0980665 bar	98,0665 mbar	9806,65 Pa	9,80665 kPa	1 mWs

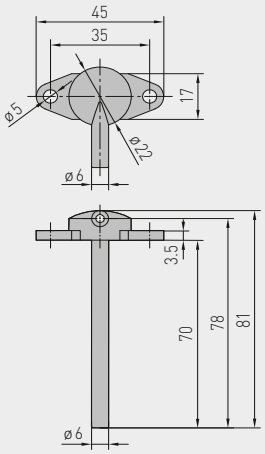
Pressure and differential pressure measuring transducers/switches, incl. connection set, with multi-range switching and adjustable, switching and active output

S+S REGELTECHNIK

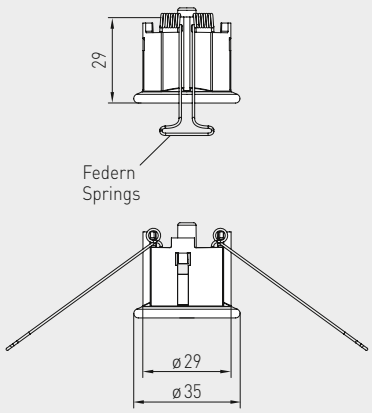
Dimensional drawing **ASD-06** Connection set



Dimensional drawing **ASD-07** Connection nipple



Dimensional drawing **DAL-01** Pressure outlet



ASD-06 Connection set

ASD-07 Connection nipple

DAL-01 Pressure outlet

ACCESSORIES

ASD-06	**Connection set (included in the scope of delivery),** consisting of 2 connection nipples (straight) made of ABS, 2 m PVC hose, soft, and 4 tapping screws	7100-0060-3000-000	**6,61 €**
ASD-07	**2 connection nipples** (at 90 degree angle) made of plastic, ABS	7100-0060-7000-000	**6,61 €**
DAL-01	**Pressure outlet** for ceiling or in-wall installation (e.g. in clean rooms)	7300-0060-3000-001	**30,93 €**
	For further information, see chapter Accessories!		

Pressure and differential pressure measuring transducers/switches, incl. connection set, with multi-range switching and adjustable, switching and active output

PREMASREG® **711x**
with cable gland,
with/without display

PREMASREG® **711x-Q**
with M12 connector,
with/without display

PREMASREG® **711x**	Pressure and differential pressure measuring transducers/switches, *ID*				
Pressure range (adjustable)	**Type / WG02**	**Output**	**Display**	**Item No.**	**Price**
max. – 1000...+ 1000 Pa	**PREM**ASREG® **7111**			with cable gland	
0... 100 Pa / – 100... + 100 Pa 0... 300 Pa / – 300... + 300 Pa 0... 500 Pa / – 500... + 500 Pa 0... 1000 Pa / – 1000... + 1000 Pa	PREMASREG 7111-U/W LCD	0-10 V 1x Changeover contact	■	1302-7111-4011-200	**208,05 €**
	PREMASREG® **7111-Q**			with M12 connector	
	PREMASREG 7111-U/W Q LCD	0-10 V 1x Changeover contact	■	2004-6132-4100-001	**244,30 €**
max. – 5000...+ 5000 Pa	**PREM**ASREG® **7115**			with cable gland	
0... 1000 Pa / – 1000 ... + 1000 Pa 0...2000 Pa / – 2000 ... + 2000 Pa 0...3000 Pa / – 3000 ... + 3000 Pa 0...5000 Pa / – 5000 ... + 5000 Pa	PREMASREG 7115-U/W LCD	0-10 V 1x Changeover contact	■	1302-7111-4051-200	**208,05 €**
	PREMASREG® **7115-Q**			with M12 connector	
	PREMASREG 7115-U/W Q LCD	0-10 V 1x Changeover contact	■	2004-6132-4100-011	**244,30 €**
Multi-range switching:	The **pressure ranges** depend on the device type and can be set via DIP switches.				
Extra charge:	Other special measuring ranges up to max. 5000 Pa **with optional automatic zero point calibration**				**43,08 €** **62,73 €**
	with optional quick connect for PVC fabric pressure hose Ø 6 mm				**36,25 €**
	For additional device variants, see **S+S Facility Engineering**!				

PREMASREG® 711x-VA ID

Pressure and differential pressure measuring transducers/switches, with multi-range switching and adjustable, switching and active output

NEW

S+S REGELTECHNIK

The electronic **PREM**ASREG® **711x-VA** pressure sensors and switches are equipped with eight switchable measuring ranges, one switching output, one continuous output, and a display for setting the switchpoint and to display the ACTUAL pressure (eight devices in one, plus differential pressure switch / differential pressure monitor, continuous pressure sensor in a single device).

The pressure sensor with a housing made from **stainless steel V4A**, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101 and with pressure port by stainless steel quick connect (pipe fitting optional) is used to measure positive, negative or differential pressures in clean air, with limit value switching. The piezoresistive measuring element guarantees a high degree of reliability and accuracy.

Applications of these pressure sensors are in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. Media measured with these pressure transducers are air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

The pressure sensor has a button for manual zero point calibration (automatic zero point calibration optional) as well as one offset potentiometer for setting the switching point and one for final value correction.

TECHNICAL DATA

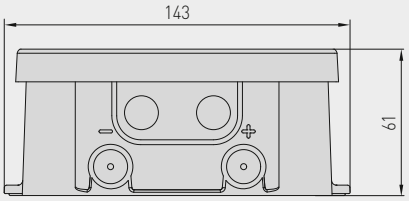
Power supply:	24 V AC / DC (± 20 %)
Load resistance:	R_L > 5 kOhm
Power consumption:	< 1 VA / 24 V DC, < 2.2 VA / 24 V AC
Measuring ranges:	**multi-range switching** **with 8 switchable measuring ranges** (see table)
Type of pressure:	differential pressure
Pressure port:	equipped as standard with **quick** connect made from stainless steel for PVC-fabric pressure hose Ø 6 mm (4 / 8 mm optional) optionally with **pipe fitting**, stainless steel V2A (1.4305) for pressure lines Ø 6 mm
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	–20...+50 °C
Accuracy:	**Type 7111** (1000 Pa): typically ± 5 Pa **Type 7115** (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value
Temp. drift values:	± 0.1 % / °C
Zero point offset:	< ± 0.7 % of final value
Setting increment Δp:	1 % of pressure range (100 Pa => 1 Pa; 5000 Pa => 50 Pa)
Switching hysteresis:	± 1 % of pressure range (100 Pa => ± 1 Pa; 5000 Pa => ± 50 Pa)
Positive /negative pressure:	max. ± 100 hPa
Signal filtering:	**switchable 1 s / 10 s** (via DIP switches)
Output:	0 -10 V 1 changeover contact (24 V), 1 A ohmic load
Connection type:	3-wire connection
Electrical connection:	0.14 - 1.5 mm², via plug-in screw terminal
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6 - 12 mm) **or** **M12 connector** (male, **12-pin**, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm (Tyr 2E)
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) in the built-in state Housing tested, TÜV SÜD, Report No. 713160960B (Skadi2)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), for displaying ACTUAL pressure and / or SETPOINT pressure as well as automatic zero point calibration
ACCESSORIES	(see table)

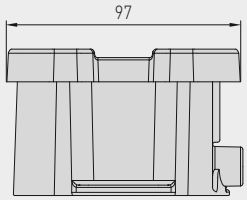
Pressure port
Stainless steel
quick connect
(standard)

Pressure and differential pressure measuring transducers/switches, with multi-range switching and adjustable, switching and active output

Dimensional drawing

PREMASREG® **711x-VA**



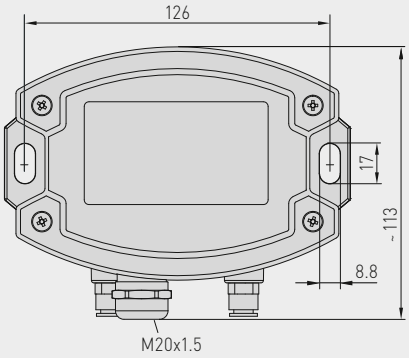


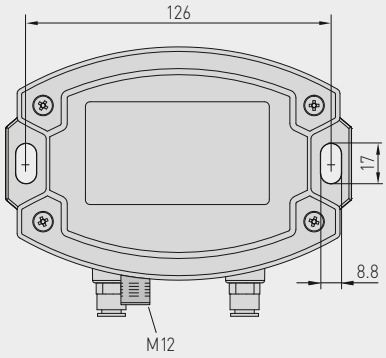
Housing with
cable gland

equipped as standard with
quick connect
for pressure hoses

Housing with
M12 connector

equipped as standard with
quick connect
for pressure hoses





Stainless steel
quick connect

M12 connector
(male)

PREMASREG® **711x-VA**
with cable gland
and display

PREMASREG® **711x-VAQ**
with M12 connector
and display

Dimensional drawing

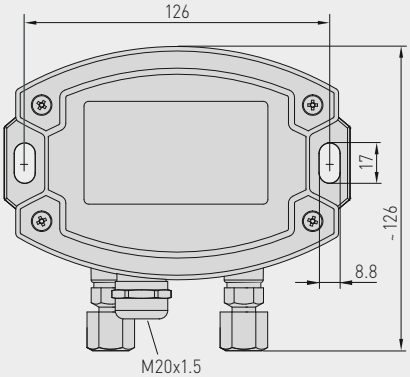
PREMASREG® **711x-VA**

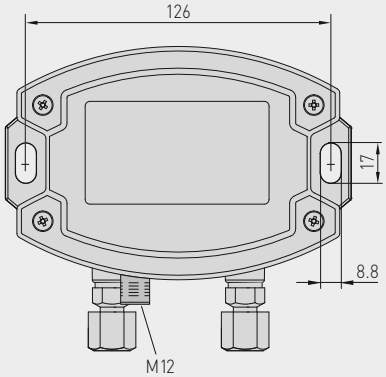
Housing with
cable gland

optional on request
with **pipe fitting**
for pressure lines

Housing with
M12 connector

optional on request
with **pipe fitting**
for pressure lines





Stainless steel V2A
pipe fitting

M12 connector
(male)

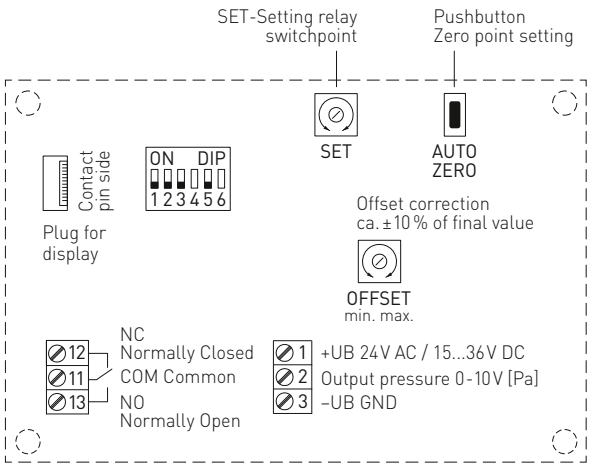
Pressure port
Stainless steel V2A
pipe fitting
(optional)

Pressure and differential pressure measuring transducers/switches, with multi-range switching and adjustable, switching and active output

NEW

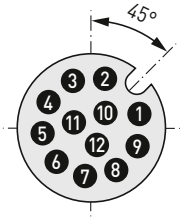
S+S REGELTECHNIK

Schematic diagram **PREMASREG® 711x-U/W**



DIP switches 4 and 6 are not assigned!

Pin assignment (M12) **PREMASREG® 711x-U/W**



1. +UB 24 V AC / 15...36 V DC
2. Output pressure 0-10 V [Pa]
3. free
4. –UB GND
5. free
6. free
7. COM Common
8. NC Normally Closed
9. NO Normally Open
10. free
11. free
12. free

Pressure range (selectable) – max. measuring range (default) is depending to the type of device				**DIP 1**	**DIP 2**
0...100 Pa	0...1000 Pa	–100...+100 Pa	–1000...+1000 Pa	OFF	OFF
0...300 Pa	0...2000 Pa	–300...+300 Pa	–2000...+2000 Pa	**ON**	OFF
0...500 Pa	0...3000 Pa	–500...+500 Pa	–3000...+3000 Pa	OFF	**ON**
0...1000 Pa	**0...5000 Pa**	**-1000...+1000 Pa**	**-5000...+5000 Pa**	**ON**	**ON**

Measuring range mode (Mode selectable)	**DIP 3**
Unidirectional (0...+MR) (default)	OFF
Bidirectional (–MR...+MR)	**ON**

Measurement signal filtering (Time interval selectable)	**DIP 5**
10 s (default)	OFF
1 s	**ON**

Display with option **automatic zero point calibration**

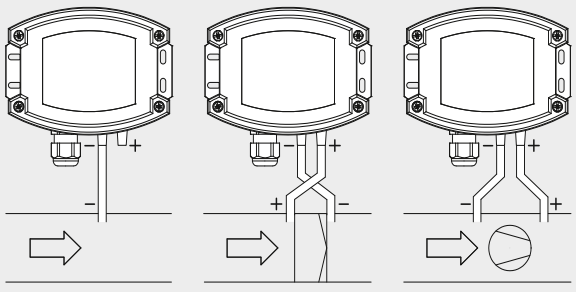
Zero point calibration active
Remaining calibration time (in seconds)

Cycle time (approx. 90 minutes) is fixed in the factory.

Pressure and differential pressure measuring transducers/switches, with multi-range switching and adjustable, switching and active output

PREMASREG® 711x-VAQ
with display, hinged

Mounting diagram **PREMASREG® 711x**



TYPES OF MONITORING:

(A) Below-atmospheric pressure:
P1 (+) is not connected
but open against atmosphere
P2 (–) connected to inside of duct

(B) Filter:
P1 (+) connected upstream of filter
P2 (–) connected downstream of filter

(C) Ventilator:
P1 (+) connected downstream of ventilator
P2 (–) connected upstream of ventilator

Pressure connections at the pressure switch are marked with P1 (+) for higher pressure and P2 (–) for lower pressure.

Conversion table for pressure values:

Unit =	bar	mbar	Pa	kPa	mWs
1 Pa	0,00001 bar	0,01 mbar	1 Pa	0,001 kPa	0,000101971 mWs
1 kPa	0,01 bar	10 mbar	1000 Pa	1 kPa	0,101971 mWs
1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10,1971 mWs
1 mbar	0,001 bar	1 mbar	100 Pa	0,1 kPa	0,0101971 mWs
1 mWs	0,0980665 bar	98,0665 mbar	9806,65 Pa	9,80665 kPa	1 mWs

Pressure and differential pressure measuring transducers/switches, with multi-range switching and adjustable, switching and active output

NEW

S+S REGELTECHNIK

PREMASREG® **711x-VA**
with cable gland,
with display

PREMASREG® **711x-VA**	Pressure and differential pressure measuring transducers/switches, *ID*				
Pressure range (adjustable)	**Type / WG02I**	**Output**	**Display**	**Item No.**	**Price**
max. – 1000...+ 1000 Pa	**PREM**ASREG® **7111-VA**			with cable gland	
0... 100 Pa / – 100... + 100 Pa 0... 300 Pa / – 300... + 300 Pa 0... 500 Pa / – 500... + 500 Pa 0... 1000 Pa / – 1000... + 1000 Pa	PREMASREG 7111-U/W_VA LCD	0-10 V 1x Changeover contact	■	2004-6192-4200-001	**612,90 €**
max. – 5000...+ 5000 Pa	**PREM**ASREG® **7115-VA**			with cable gland	
0... 1000 Pa / – 1000 ... + 1000 Pa 0...2000 Pa / – 2000 ... + 2000 Pa 0...3000 Pa / – 3000 ... + 3000 Pa 0...5000 Pa / – 5000 ... + 5000 Pa	PREMASREG 7115-U/W_VA LCD	0-10 V 1x Changeover contact	■	2004-6192-4200-011	**612,90 €**
Multi-range switching:	The **pressure ranges** depend on the device type and can be set via DIP switches.				
Extra charge:	Other special measuring ranges up to max. 5000 Pa **with optional automatic zero point calibration**				**43,08 €** **62,73 €**
	with optional pipe fitting made from stainless steel V2A for pressure lines Ø **6 mm**				**36,25 €**
	For additional device variants, see **S+S Facility Engineering**!				

Pressure and differential pressure measuring transducers/switches, with multi-range switching and adjustable, switching and active output

PREMASREG® **711x-VAQ**
with M12 connector,
with display

PREMASREG® **711x-VAQ**	Pressure and differential pressure measuring transducers/switches, *ID*				
Pressure range (adjustable)	**Type / WG02I**	**Output**	**Display**	**Item No.**	**Price**
max. – 1000...+ 1000 Pa	**PREM**ASREG® **7111-VAQ**			with M12 connector	
0... 100 Pa / – 100... + 100 Pa 0... 300 Pa / – 300... + 300 Pa 0... 500 Pa / – 500... + 500 Pa 0...1000 Pa / –1000... +1000 Pa	PREMASREG 7111-U/W_VAQ LCD	0-10 V 1x Changeover contact	■	2004-6192-4100-001	**646,21 €**
max. – 5000...+ 5000 Pa	**PREM**ASREG® **7115-VAQ**			with M12 connector	
0...1000 Pa / – 1000 ... + 1000 Pa 0...2000 Pa / – 2000 ... + 2000 Pa 0...3000 Pa / – 3000 ... + 3000 Pa 0...5000 Pa / – 5000 ... + 5000 Pa	PREMASREG 7115-U/W_VAQ LCD	0-10 V 1x Changeover contact	■	2004-6192-4100-011	**646,21 €**
Multi-range switching:	The **pressure ranges** depend on the device type and can be set via DIP switches.				
Extra charge:	Other special measuring ranges up to max. 5000 Pa **with optional automatic zero point calibration**				**43,08 €** **62,73 €**
	with optional pipe fitting made from stainless steel V2A for pressure lines Ø **6 mm**				**36,25 €**
	For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!

Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

S+S REGELTECHNIK

The electronic **PREM**ASREG® **716x** pressure sensor and switch is equipped with measuring functions for volume flow, differential pressure, filter monitoring and liquid level detection based on pressure measurement in clean air. The devices with a housing made from impact-resistant plastic, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101 and with metal pressure port nozzles (quick connect optional) are fitted with one switching output, one continuous output and one backlit display for setting the switching point and displaying the ACTUAL values. The piezoresistive measuring element guarantees a high degree of reliability and accuracy.

This pressure sensor is used in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. The medium measured is air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

It has a manual zero point pushbutton and an offset potentiometer for final value correction. Parameter entry is menu-based and is easy to perform using three buttons with the help of the display. A connection set **ASD-06** (2 m connection hose, two pressure nipples, screws) is included in the scope of supply.

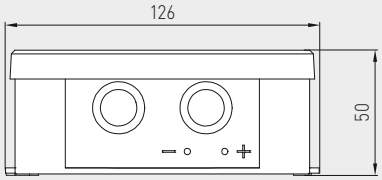
TECHNICAL DATA

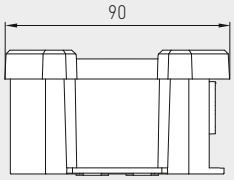
Power supply:	24 V AC / DC (± 10 %) and 15...36 V DC
Load resistance:	R_L > 5 kOhm
Power consumption:	< 1.5 VA / 24 V DC, < 2.8 VA / 24 V AC
Measuring function:	**Volume flow, differential pressure, filter monitoring, fill level** (adjustable)
Measuring ranges:	**10...100%** (adjustable)
Type of pressure:	differential pressure
Pressure connection:	equipped as standard with metal connection **nozzles** for pressure hose Ø 6 mm, optionally with **quick** connect made from stainless steel for PVC fabric pressure hose Ø = 6 mm
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	–20...+50 °C
Accuracy:	**Type 7161** (1000 Pa): typically ± 5 Pa **Type 7165** (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value (pressure)
Temp. drift values:	± 0.1 % / °C
Positive / negative pressure:	max. ± 10000 Pa
Signal hysteresis:	± 1 % of final value (pressure) 10 Pa / 50 Pa
Signal filtering:	**switchable 1 s / 10 s** (via DIP switches) and small value suppression < 1 %
Output:	0-10 V 1 changeover contact (24 V), 1 A ohmic load
Connection type:	3-wire connection
Electrical connection:	0.14 - 1.5 mm², via plug-in screw terminal
Cable connection:	**cable gland**, plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) **or** **M12 connector** (male, **12-pin**, A-code) according to DIN EN 61076-2-101
Housing:	**plastic**, UV-stabilised, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm **(Typ 2)**
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) in the built-in state
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), for displaying the **volume flow, differential pressure, contamination degree** or **level** and for setting the **switchpoint, K factor, measuring range limits** and other settings
K factor:	**1 to 3000** (adjustable)
Units:	**m³/s, m³/min, m³/h, l/s, l/min, l/h, %, cm** (adjustable)
Max. value displayed:	999999
ACCESSORIES	see table

Pressure port
Metal nozzles (standard)

Dimensional drawing

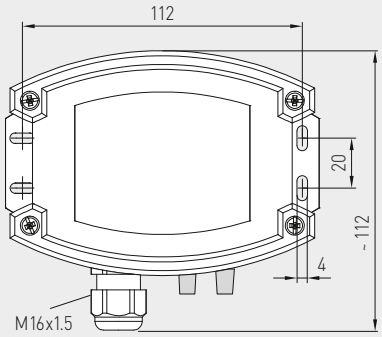
PREMASREG® **716x**

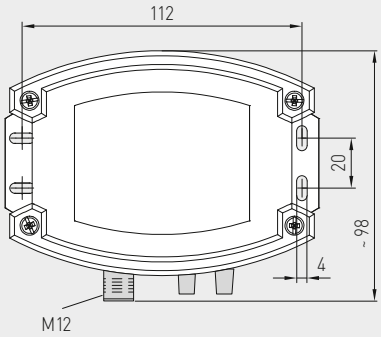




Housing with
cable gland
equipped as standard with
pressure port **nozzles**

Housing with
M12 connector
equipped as standard with
pressure port **nozzles**





Pressure port
nozzles, metal

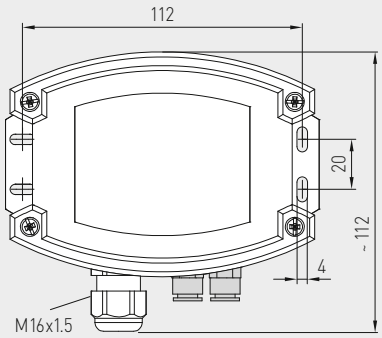
M12 connector
(male)

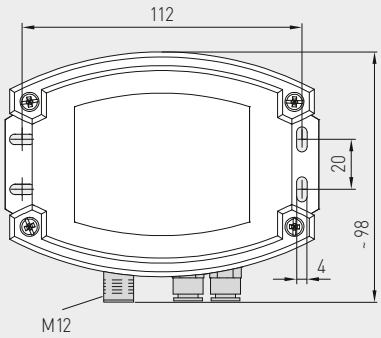
Dimensional drawing

PREMASREG® **716x**

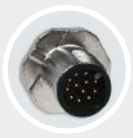
Housing with
cable gland
optional on request
with **quick** connect

Housing with
M12 connector
optional on request
with **quick** connect





Stainless steel
quick connect



M12 connector
(male)

PREMASREG® **716x**
with cable gland
and display

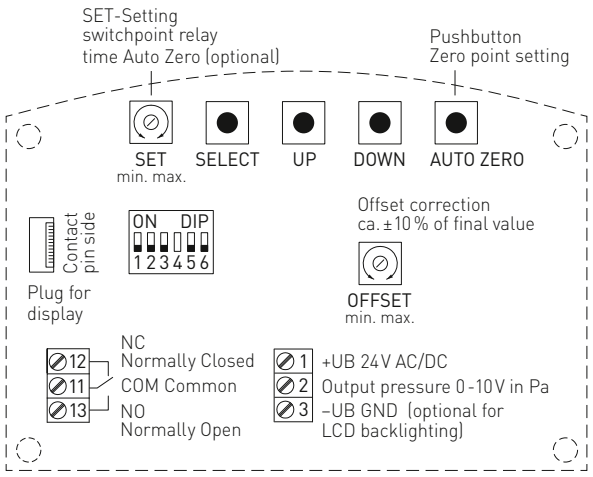
PREMASREG® **716x-Q**
with M12 connector
and display

Pressure port
Stainless steel
quick connect
(optional)

Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

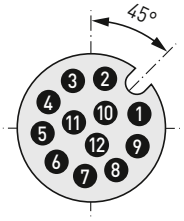
S+S REGELTECHNIK

Schematic diagram — **PREM**ASREG® **716x-U/W**



DIP switch 4 is not assigned!

Pin assignment (M12) — **PREM**ASREG® **716x-U/W**



1. +UB 24 V AC / 15...36 V DC
2. Output pressure 0-10 V [Pa]
3. free
4. –UB GND
5. free
6. free
7. COM Common
8. NC Normally Closed
9. NO Normally Open
10. free
11. free
12. free

Measuring range mode (Mode selectable)	**DIP 1**
Unidirectional (0...+MR) (default)	OFF
Bidirectional (–MR...+MR)	**ON**

Small value suppression (measured values < 1% of end value (pressure) = 0)	**DIP 2**
Deactivated (default)	OFF
Active	**ON**

Relay (Function adjustable)	**DIP 3**
Deactivated (default)	OFF
Active (display shows switching point)	**ON**

Measurement signal filtering (Time interval selectable)	**DIP 5**
10 s (default)	OFF
1 s	**ON**

Service mode (display adjustable)	**DIP 6**
Standard (according to configuration) (default)	OFF
Service (differential pressure in Pa)	**ON**

PREMASREG® **716x**
Function types

Volumolume flow rate

$$V = k \cdot \sqrt{\Delta p}$$

V = Volume flow in m³/h
k = K factor 1...3000
Δp = Differential pressure in Pa

Differential pressure

$$\Delta p = p_+ - p_-$$

Δp = Differential pressure in Pa
p_+ = higher pressure
p_- = lower pressure

Filter contamination

$$S = 100\% \cdot \Delta p \div p_{Filter}$$

S = Contamination degree in %
Δp = Differential pressure in Pa
p_{Filter} = differential pressure filter replacement in Pa

Level display

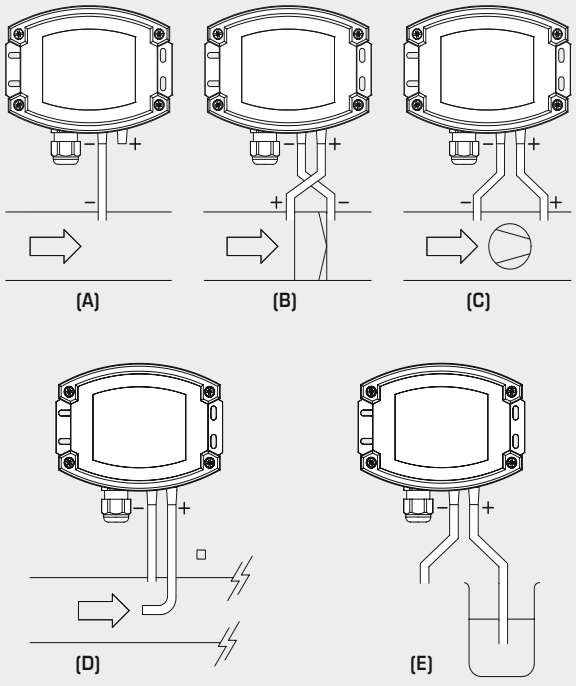
$$h = \Delta p \div (\rho \cdot g)$$

h = Fill level height in cm
Δp = Differential pressure in Pa
ρ = Density 700...1300 in kg/m³
g = 9.81 m/s²

Pressure measuring transducers / switches / monitors for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

PREMASREG® **716x - Q**
with display,
hinged

Mounting diagram **PREM**ASREG® **716x**



TYPES OF MONITORING:

(A) Below-atmospheric pressure:
P1 (+) is not connected,
but open to the atmosphere
P2 (–) connected to inside of duct

(B) Filter:
P1 (+) connected upstream of filter
P2 (–) connected downstream of filter

(C) Ventilator:
P1 (+) connected downstream of ventilator
P2 (–) connected upstream of ventilator

(D) Volume flow:
P1 (+) dynamic pressure,
Connected in flow direction
P2 (–) static pressure,
Connected free of dynamic pressure components

(E) Level:
P1 (+) Connection submerged in medium
P2 (–) Connection is open to the atmosphere

Pressure connections at the pressure switch are marked with
P1 (+) for higher pressure and
P2 (–) for lower pressure.

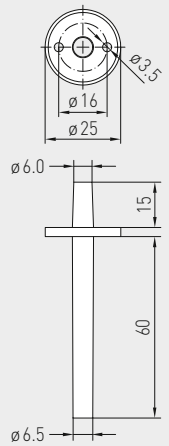
Conversion table for pressure values:

Unit =	bar	mbar	Pa	kPa	mWs
1 Pa	0,00001 bar	0,01 mbar	1 Pa	0,001 kPa	0,000101971 mWs
1 kPa	0,01 bar	10 mbar	1000 Pa	1 kPa	0,101971 mWs
1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10,1971 mWs
1 mbar	0,001 bar	1 mbar	100 Pa	0,1 kPa	0,0101971 mWs
1 mWs	0,0980665 bar	98,0665 mbar	9806,65 Pa	9,80665 kPa	1 mWs

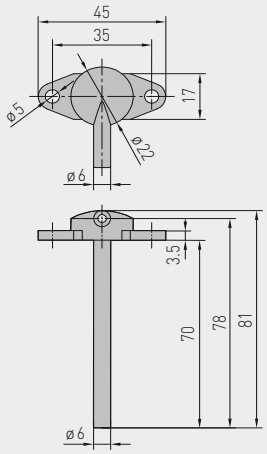
Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

S+S REGELTECHNIK

Dimensional drawing **ASD-06**
Connection set



Dimensional drawing **ASD-07**
Connection nipple



ASD-06
Connection set

ASD-07
Connection nipple

ACCESSORIES			
ASD-06	**Connection set (included in the scope of delivery),** consisting of 2 connection nipples (straight) made of ABS, 2 m PVC hose, soft, and 4 tapping screws	7100-0060-3000-000	**6,61 €**
ASD-07	**2 connection nipples** (at 90 degree angle) made of plastic, ABS	7100-0060-7000-000	**6,61 €**
	For further information, see chapter Accessories!		

PREMASREG® **716x**
with cable gland
and display

PREMASREG® **716x-Q**
with M12 connector
and display

PREMASREG® **716x**		Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection, *ID*				
Measuring Range Pressure / Volume Flow		**Type / WG02**	**Output**	**Display**	**Item No.**	**Price**
0...1000 Pa		**PREM**ASREG® **7161**			with cable gland	
k = 3000	**94800 m³/h**	PREMASREG 7161-U/W LCD	0-10 V 1x Changeover contact	■	1302-7161-4161-200	**240,47 €**
		PREMASREG® **7161-Q**			with M12 connector	
		PREMASREG 7161-U/W_Q LCD	0-10 V 1x Changeover contact	■	2004-6132-4100-021	**276,71 €**
0...5000 Pa		**PREM**ASREG® **7165**			with cable gland	
k = 3000	**212100 m³/h**	PREMASREG 7165-U/W LCD	0-10 V 1x Changeover contact	■	1302-7161-4171-200	**240,47 €**
		PREMASREG® **7165-Q**			with M12 connector	
		PREMASREG 7165-U/W_Q LCD	0-10 V 1x Changeover contact	■	2004-6132-4100-031	**276,71 €**
Extra charge:		**with optional quick connect** for PVC fabric pressure hose Ø 6 mm				**36,25 €**
		For additional device variants, see **S+S Facility Engineering**!				

NEW

S+S REGELTECHNIK

Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection

The electronic **PREM**ASREG® **761x-VA** pressure sensor and switch is equipped with measuring functions for volume flow, differential pressure, filter monitoring and liquid level detection based on pressure measurement in clean air. The devices with a housing made from **stainless steel V4A**, with **cable gland** or **M12 connector** according to DIN EN 61076-2-101 and pressure port by stainless steel quick connect (pipe fitting optional) are fitted with one switching output, one continuous output and a backlit display for setting the switching point and displaying the ACTUAL values. The piezoresistive measuring element guarantees a high degree of reliability and accuracy.

This pressure sensor is used in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. The medium measured is air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

It has a manual zero point pushbutton and an offset potentiometer for final value correction. Parameter entry is menu-based and is easy to perform using three buttons with the help of the display.

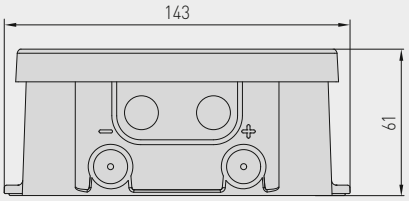
TECHNICAL DATA

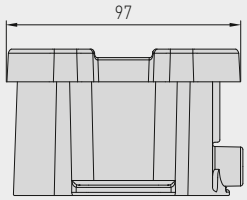
Power supply:	24 V AC / DC (± 10 %) and 15...36 V DC
Load resistance:	R_L > 5 kOhm
Power consumption:	< 1.5 VA / 24 V DC, < 2.8 VA / 24 V AC
Measuring function:	**Volume flow, differential pressure, filter monitoring, fill level** (adjustable)
Measuring ranges:	**10...100%** (adjustable)
Type of pressure:	differential pressure
Pressure port:	equipped as standard with **quick** connect made from stainless steel for PVC-fabric pressure hose Ø 6 mm (4 / 8 mm optional) optionally with **pipe fitting**, stainless steel V2A (1.4305) for pressure lines Ø 6 mm
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	–20...+50 °C
Accuracy:	**Type 7161** (1000 Pa): typically ± 5 Pa **Type 7165** (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value (pressure)
Temp. drift values:	± 0.1 % / °C
Positive / negative pressure:	max. ± 10000 Pa
Signal hysteresis:	± 1 % of final value (pressure) 10 Pa / 50 Pa
Signal filtering:	**switchable 1 s / 10 s** (via DIP switches) and small value suppression < 1 %
Output:	0-10 V 1 changeover contact (24 V), 1 A ohmic load
Connection type:	3-wire connection
Electrical connection:	0.14-1.5 mm², via plug-in screw terminal
Cable connection:	**cable gland, stainless steel V2A** (1.4305) (M 20 x 1.5; with strain relief, exchangeable, inner diameter 6-12 mm) **or** **M12 connector** (male, **12-pin**, A-code) according to DIN EN 61076-2-101
Housing:	**stainless steel V4A** (1.4571), with non-distortion cover bolting, impact-resistant, high EMI shielding, corrosion, temperature, UV and weathering resistant
Housing dimensions:	143 x 97 x 61 mm **(Tyr 2E)**
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529) in the built-in state Housing tested, TÜV SÜD, Report No. 713160960B (Skadi2)
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	**display with illumination,** three-line, cutout approx. 70 x 40 mm (W x H), for displaying the **volume flow, differential pressure, contamination degree** or **level** and for setting the **switchpoint, K factor, measuring range limits** and other settings
K factor:	**1 to 3000** (adjustable)
Units:	**m³/s, m³/min, m³/h, l/s, l/min, l/h, %, cm** (adjustable)
Max. value displayed:	999999
ACCESSORIES	(see table)

Pressure port
Stainless steel
quick connect
(standard)

Pressure measuring transducers / switches / monitors for volume flow, differential pressure, filter monitoring and liquid level detection

Dimensional drawing — **PREM**ASREG® **716x-VA**



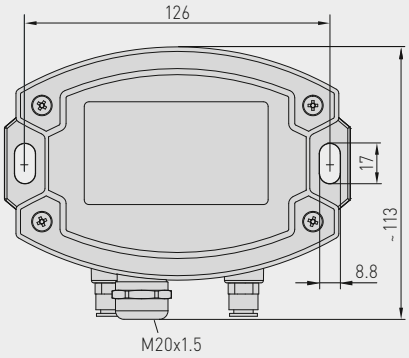


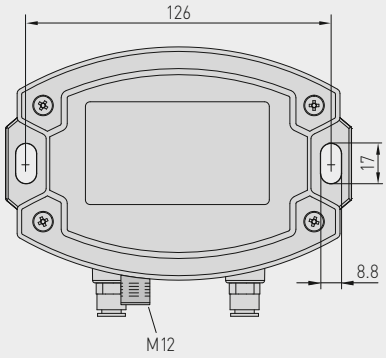
Housing with
cable gland

equipped as standard with
quick connect
for pressure hoses

Housing with
M12 connector

equipped as standard with
quick connect
for pressure hoses





Stainless steel
quick connect

M12 connector
(male)

PREMASREG® **716x-VA**
with cable gland
and display

PREMASREG® **716x-VAQ**
with M12 connector
and display

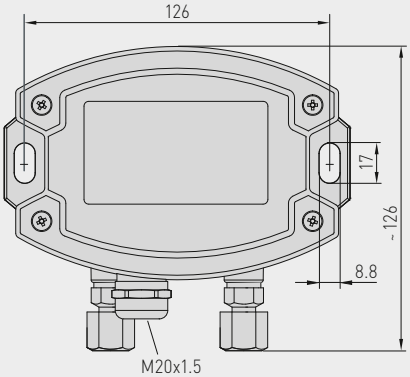
Dimensional drawing — **PREM**ASREG® **716x-VA**

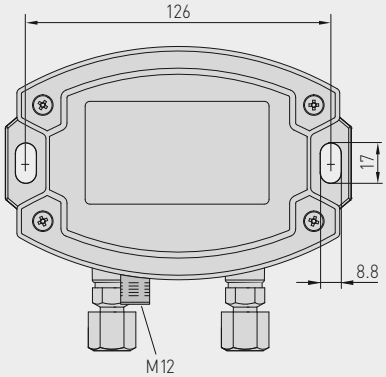
Housing with
cable gland

optional on request
with **pipe fitting**
for pressure lines

Housing with
M12 connector

optional on request
with **pipe fitting**
for pressure lines





Stainless steel V2A
pipe fitting

M12 connector
(male)

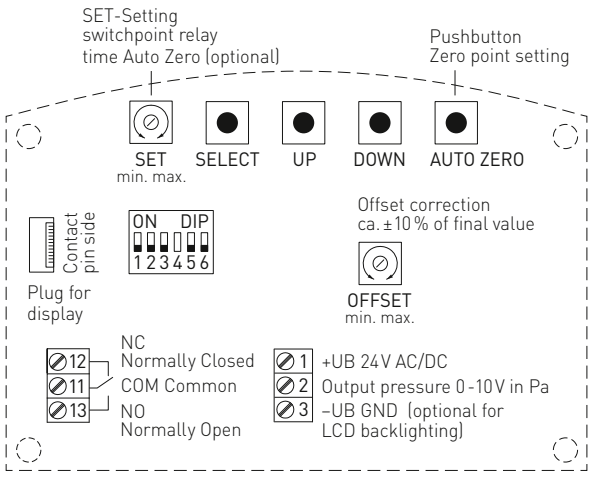
Pressure port
Stainless steel V2A
pipe fitting
(optional)

NEW

S+S REGELTECHNIK

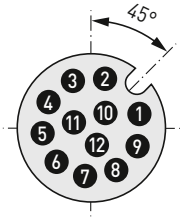
Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection

Schematic diagram — **PREM**ASREG® **716x-U/W**



DIP switch 4 is not assigned!

Pin assignment (M12) — **PREM**ASREG® **716x-U/W**



1. +UB 24 V AC / 15...36 V DC
2. Output pressure 0-10 V [Pa]
3. free
4. –UB GND
5. free
6. free
7. COM Common
8. NC Normally Closed
9. NO Normally Open
10. free
11. free
12. free

Measuring range mode (Mode selectable)	**DIP 1**
Unidirectional (0...+MR) (default)	OFF
Bidirectional (–MR...+MR)	**ON**

Small value suppression (measured values < 1% of end value (pressure) = 0)	**DIP 2**
Deactivated (default)	OFF
Active	**ON**

Relay (Function adjustable)	**DIP 3**
Deactivated (default)	OFF
Active (display shows switching point)	**ON**

Measurement signal filtering (Time interval selectable)	**DIP 5**
10 s (default)	OFF
1 s	**ON**

Service mode (display adjustable)	**DIP 6**
Standard (according to configuration) (default)	OFF
Service (differential pressure in Pa)	**ON**

PREMASREG® **716x**
Function types

Volumolume flow rate

$$V = k \cdot \sqrt{\Delta p}$$

V = Volume flow in m³/h
k = K factor 1...3000
Δp = Differential pressure in Pa

Differential pressure

$$\Delta p = p_+ - p_-$$

Δp = Differential pressure in Pa
p_+ = higher pressure
p_- = lower pressure

Filter contamination

$$S = 100\% \cdot \Delta p \div p_{Filter}$$

S = Contamination degree in %
Δp = Differential pressure in Pa
p_{Filter} = differential pressure filter replacement in Pa

Level display

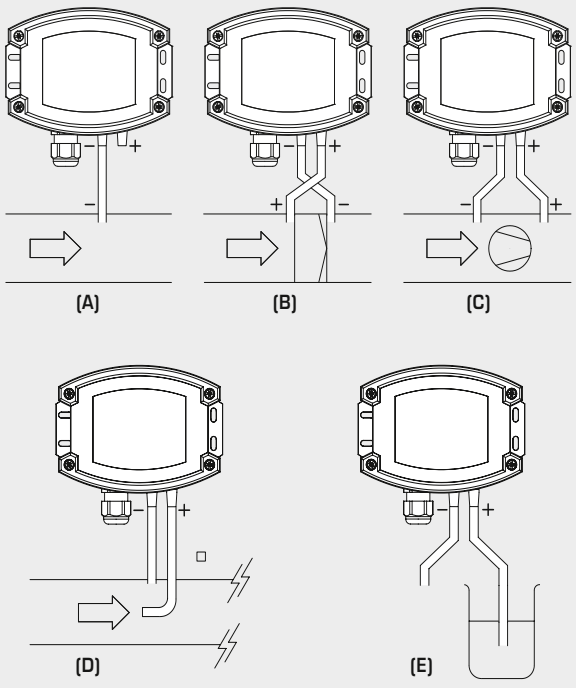
$$h = \Delta p \div (\rho \cdot g)$$

h = Fill level height in cm
Δp = Differential pressure in Pa
ρ = Density 700...1300 in kg/m³
g = 9.81 m/s²

Pressure measuring transducers / switches / monitors for volume flow, differential pressure, filter monitoring and liquid level detection

PREMASREG® 716x-VAQ
with display,
hinged

Mounting diagram **PREMASREG® 716x**



TYPES OF MONITORING:

(A) Below-atmospheric pressure:
P1 (+) is not connected,
but open to the atmosphere
P2 (–) connected to inside of duct

(B) Filter:
P1 (+) connected upstream of filter
P2 (–) connected downstream of filter

(C) Ventilator:
P1 (+) connected downstream of ventilator
P2 (–) connected upstream of ventilator

(D) Volume flow:
P1 (+) dynamic pressure,
Connected in flow direction
P2 (–) static pressure,
Connected free of dynamic pressure components

(E) Level:
P1 (+) Connection submerged in medium
P2 (–) Connection is open to the atmosphere

Pressure connections at the pressure switch are marked with
P1 (+) for higher pressure and
P2 (–) for lower pressure.

Conversion table for pressure values:

Unit =	bar	mbar	Pa	kPa	mWs
1 Pa	0,00001 bar	0,01 mbar	1 Pa	0,001 kPa	0,000101971 mWs
1 kPa	0,01 bar	10 mbar	1000 Pa	1 kPa	0,101971 mWs
1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10,1971 mWs
1 mbar	0,001 bar	1 mbar	100 Pa	0,1 kPa	0,0101971 mWs
1 mWs	0,0980665 bar	98,0665 mbar	9806,65 Pa	9,80665 kPa	1 mWs

NEW

S+S REGELTECHNIK

Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection

PREMASREG® **716x-VA**
with cable gland,
with display

PREMASREG® **716x-VA**		Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection, *ID*				
Measuring Range Pressure / Volume Flow		**Type / WG02I**	**Output**	**Display**	**Item No.**	**Price**
0...1000 Pa		**PREM**ASREG® **7161-VA**			with cable gland	
k = 3000	**94800 m³/h**	PREMASREG 7161-U/W_VA LCD	0-10 V 1x Changeover contact	■	2004-6192-4200-021	**661,51 €**
0...5000 Pa		**PREM**ASREG® **7165-VA**			with cable gland	
k = 3000	**212100 m³/h**	PREMASREG 7165-U/W_VA LCD	0-10 V 1x Changeover contact	■	2004-6192-4200-031	**661,51 €**
Extra charge:		**with optional pipe fitting** made from stainless steel V2A for pressure lines Ø **6 mm**				**36,25 €**
		For additional device variants, see **S+S Facility Engineering**!				

NEW

Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection

PREMASREG® **716x-VAQ**
with M12 connector,
with display

PREMASREG® **716x-VAQ**		Pressure measuring transducers / switches/monitors for volume flow, differential pressure, filter monitoring and liquid level detection, *ID*				
Measuring Range Pressure / Volume Flow		**Type / WG02I**	**Output**	**Display**	**Item No.**	**Price**
0 ...1000 Pa		**PREM**ASREG® **7161-VAQ**			with M12 connector	
k = 3000	**94800 m³/h**	PREMASREG 7161-U/W_VA Q LCD	0-10 V 1x Changeover contact	■	2004-6192-4100-021	**694,83 €**
0 ...5000 Pa		**PREM**ASREG® **7165-VAQ**			with M12 connector	
k = 3000	**212100 m³/h**	PREMASREG 7165-U/W_VA Q LCD	0-10 V 1x Changeover contact	■	2004-6192-4100-031	**694,83 €**
Extra charge:		**with optional pipe fitting** made from stainless steel V2A for pressure lines Ø **6 mm**				**36,25 €**
		For additional device variants, see **S+S Facility Engineering**!				

ACCESSORIES

Special accessories for M12 connector
see chapter Accessories!

**Pressure measuring transducers,
incl. DIN plug-in connectors,
with active output**

S+S REGELTECHNIK

The pressure measuring transducer **PREM**ASGARD® **SHD** measures relative pressures in the bar range. It converts the measurand pressure into standard signals of 4...20 mA. Process connection is G ½" straight external pipe thread.

SHD is used for pressure measurement in gaseous and liquid media. Applications of this pressure transmitter are in hydraulics, pneumatics, process technology, in mechanical and plant engineering.

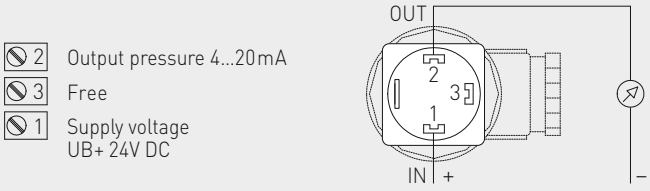
The pressure measuring cell is gasketless welded together with the pressure pick-up.

SHD
with display

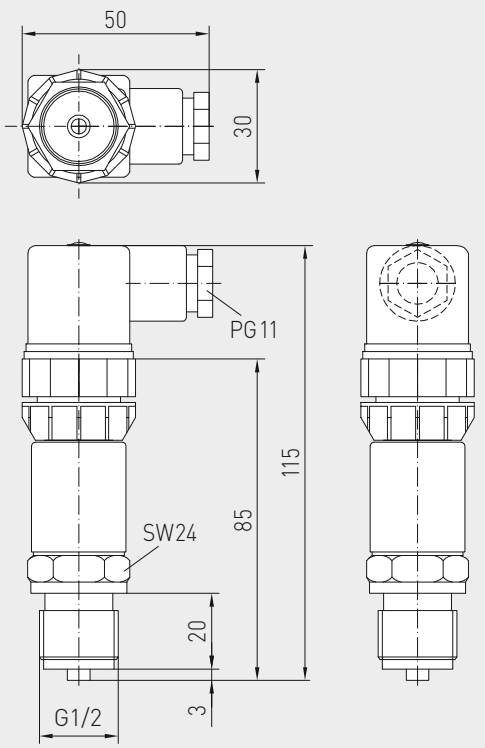
TECHNICAL DATA

Power supply:	7 - 33 V DC
Measuring ranges:	see table (other ranges upon request)
Permissible working resistance:	< (UB (V) -7 V) / 0.02 A ; R_L depending on working resistance
Output:	4 ... 20 mA
Connection type:	2-wire connection
Electrical connection:	0.25 - 1.5 mm², via plug-in connector DIN EN 175301-803-A (included in the scope of delivery)
Pressure connection:	G ½" sealing at the back, and manometer (combined) with profile gasket FPM, special WW G ¼" DIN 3852
Type of pressure:	relative
Measuring principle:	**steel measuring cell**
Temperature of medium:	–40...+135 °C
Mounting:	directly on pressure line
Enclosure:	stainless steel **V2A** (1.4305)
Connecting head:	plastic, approx. 98 x 50 x 34 mm
Medium contacting parts:	stainless steel **V2A** (1.4305)
Response time:	2 ms (1 ms typical)
Characteristic line:	± 0.3 %
Overload range:	< 6 bar: 5 x of final value > 6 bar: 3 x of final value (max. 1500 bar)
Bursting pressure:	< 6 bar: 10 x of final value > 6 bar: 6 x of final value (max. 2500 bar)
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU
Tests:	Drinking water approval according to NSF/ANSI 61/372, UL-certified according to ANSI/UL 61010-1
Optional:	**Display module**, made of plastic, polyamide material, black colour, extra height: approx. 73 mm, pluggable, **factory-calibrated and configured**, for displaying the differential pressure (in bar, other units available upon request)

Connecting diagram **SHD-I**



Dimensional drawing **SHD**



SHD
without display

Display module
(optional)

PREMASGARD® SHD Pressure measuring transducers, *ID*

Type / WG01	Measuring Range	Output	Display	Item No.	Price
SHD-I				I-variant	
SHD-I 1	0...1 bar	4...20 mA		1301-2112-0520-120	**185,45 €**
SHD-I 2,5	0...2.5 bar	4...20 mA		1301-2112-0530-120	**185,45 €**
SHD-I 6	0...6 bar	4...20 mA		1301-2112-0550-120	**134,26 €**
SHD-I 10	0...10 bar	4...20 mA		1301-2112-0560-120	**134,26 €**
SHD-I 16	0...16 bar	4...20 mA		1301-2112-0570-120	**134,26 €**
SHD-I 25	0...25 bar	4...20 mA		1301-2112-0580-120	**185,45 €**
SHD-I 40	0...40 bar	4...20 mA		1301-2112-0590-120	**185,45 €**
Optional:	**Display module,** factory-calibrated and configured		■	on request	
	For additional device variants, see **S+S Facility Engineering!**				

**Pressure measuring transducers,
incl. DIN plug-in connectors,
with active output**

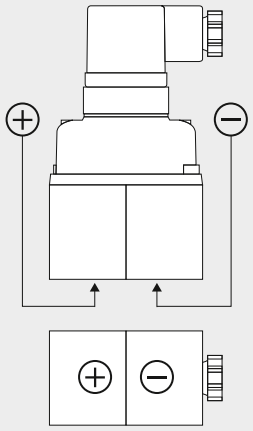
S+S REGELTECHNIK

The pressure sensor / differential pressure sensor **PREM**ASGARD® **SHD 400** is used to measure above-atmospheric, below-atmospheric, and differential pressures in virtually neutral gaseous and liquid media. A rugged and non-sensitive ceramic pressure measuring cell is used. The measuring pressure acts on the ceramic membrane, causing it to deform. This membrane is fitted with a DMS bridge whose resistance value changes in proportion to the degree of deformation. The electronics integrated in the transmitter housing converts this change in resistance into a standard signal of 4...20 mA. The process connection is implemented via two internal threads G ⅛".
It is used in all areas of industrial and sanitary measurement technology, such as differential pressure measurement between the supply and return lines in heating systems or for monitoring filters, fans, and compressors.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 20 %)
Measuring ranges:	see table
Output:	4...20 mA
Permissible working resistance: (at nominal voltage)	R_L = 700 Ω
Electrical connection:	0.25 - 1.5 mm², via plug-in connector DIN EN 175301-803-A (included in the scope of delivery)
Pressure connection:	G ⅛" internal thread (optional connection types upon request)
Type of pressure:	differential pressure, above- or below atmospheric pressure
Temperature of medium:	–20...+80 °C (non-freezing media)
Mounting:	by 2x M4 screw or fixing plate for wall mounting (installation arbitrary)
Enclosure:	stainless steel **V2A** (1.4305)
Medium contacting parts:	ceramic, stainless steel **V2A** (1.4305), brass, fluorinated rubber
Response time:	< 5 ms
Characteristic line:	< 1 % of final value (at +25 °C)
Overload range:	see table (one-sided max. pressure)
Bursting pressure:	64 bar
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU
ACCESSORIES	
VSD-xx-VA / ms	Fitting set, made of stainless steel VA or brass (see table)
WH-400	Fixing plate for wall mounting (wall holder)

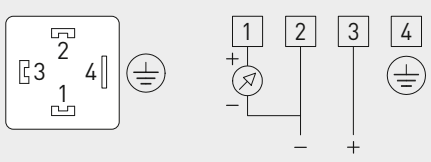
Connections **SHD 400**



A plus and minus symbol etched on the enclosure identifies the side on which the respective pressure connection is to be connected below:

(+) for higher pressure
(–) for lower pressure

Schematic diagram **SHD 400**

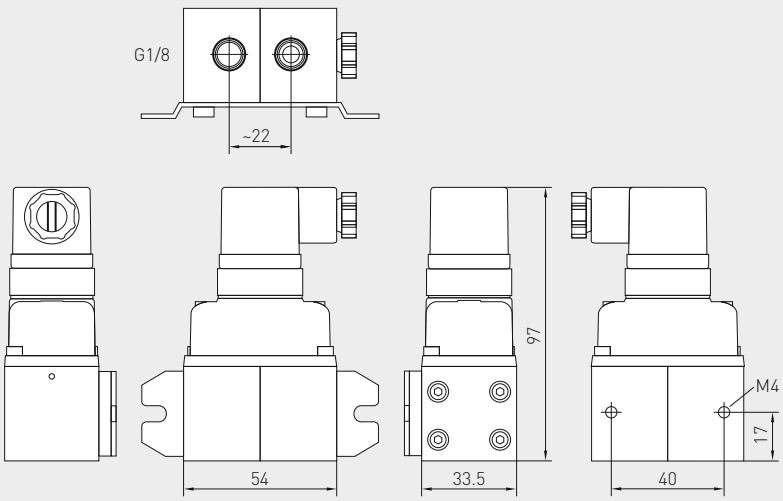


Connecting diagram **SHD 400-I**

1 Output pressure 4...20mA
2 UB– GND
3 UB+ 24V DC
4 GND

Pressure measuring transducers, incl. DIN plug-in connectors, with active output

Dimensional drawing **SHD 400**



SHD 400

VSD-06-VA
Fitting set
(optional)

WH-400
Wall holder
(optional)

PREMASGARD® SHD 400 Pressure measuring transducers, *ID*

Type / WG01	Measuring Range	One-sided max. pressure (+)	(–)	System pressure	Output	Item No.	Price
SHD 400 - I							
SHD 400 I VA 2 BAR	0... 2 bar	10 bar	5 bar	16 bar	4...20 mA	1301-4132-0850-139	**318,88 €**
SHD 400 I VA 4 BAR	0... 4 bar	21 bar	15 bar	16 bar	4...20 mA	1301-4132-0540-139	**318,88 €**
SHD 400 I VA 6 BAR	0... 6 bar	21 bar	15 bar	16 bar	4...20 mA	1301-4132-0550-139	**318,88 €**
SHD 400 I VA 10 BAR	0...10 bar	25 bar	25 bar	45 bar	4...20 mA	1301-4132-0560-139	**318,88 €**
	For additional device variants, see **S+S Facility Engineering!**						
ACCESSORIES							
VSD-06-MS	Fitting set made of brass, 6 mm					7100-0064-1100-000	**13,81 €**
VSD-08-MS	Fitting set made of brass, 8 mm					7100-0064-1300-000	**13,91 €**
VSD-06-VA	Fitting set made of stainless steel VA, 6 mm					7100-0064-1200-000	**58,97 €**
VSD-08-VA	Fitting set made of stainless steel VA, 8 mm					7100-0064-1400-000	**67,75 €**
WH-400	Fixing plate for wall mounting (wall holder)					7100-0066-0100-000	**13,07 €**

**Differential pressure transmitters,
incl. DIN plug-in connectors and mounting angle,
with active output**

S+S REGELTECHNIK

The pressure sensor / differential pressure sensor **PREM**ASGARD® **SHD-692** is used for pressure measurement in gaseous and liquid media. It converts the measurand into standard signals of 4...20 mA. Process connection is 2 x G⅛" - 27 NPT internal thread.

SHD-692 differential pressure transmitters are used in piping and hydraulic systems, in mechanical and plant engineering as well as in building automation.

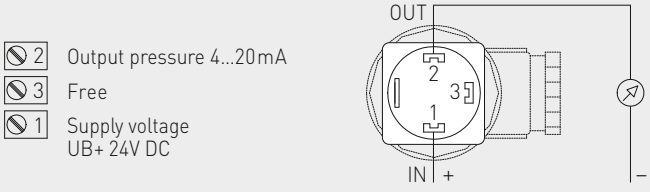
Not applicable for ammonia and Freon!

SHD 692
with display

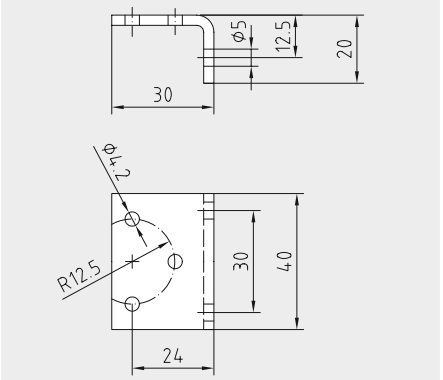
TECHNICAL DATA

Power supply:	24 V DC (±20 %)
Measuring ranges:	see table
Permissible working resistance: (at nominal voltage)	R_L < 600 Ω
Insulating resistance:	≥ 100 MOhm, at +20 °C (500 V DC)
Output:	4...20 mA
Connection type:	2-wire connection
Electrical connection:	0.25 - 1.5 mm², via plug-in connector DIN EN 175301-803-A (included in the scope of delivery)
Pressure connection:	screw pipe connection for 6 mm pipe (G⅛" - 27 NPT internal thread)
Type of pressure:	differential pressure
Measuring principle:	ceramic measuring cell
Medium:	liquid or gaseous
Temperature of medium:	–15...+80 °C
Mounting:	by mounting angle (included in the scope of delivery), installation arbitrary
Enclosure:	stainless steel **V2A** (1.4305)
Medium contacting parts:	INOX (1.4305), ceramics, sealing material EPDM
Response time:	< 5 ms
Class:	0.5 %
Total error:	< 1.3 %
Overload range:	see table (one-sided max. pressure)
System pressure:	max. 25 bar (P1 + P2)
Bursting pressure:	1.5 x system pressure
Protection class:	III (according to EN 60 730)
Protection type:	**IP 65** (according to EN 60 529)
Standards:	CE conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU
Optional:	**Display-Modul,** made of plastic, polyamide material, black colour, extra height: approx. 73 mm, pluggable, **factory-calibrated and configured**, for displaying the differential pressure (in bar, other units available upon request)

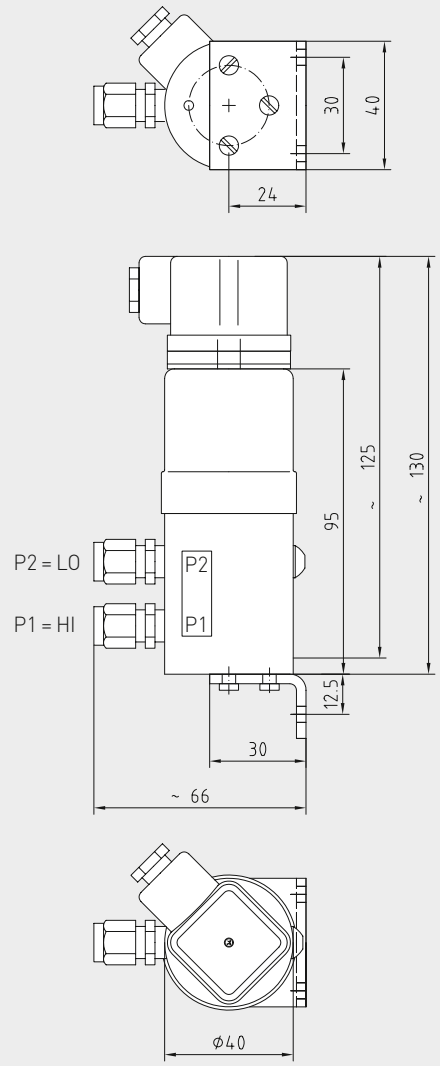
Connecting diagram **SHD 692-I**



Dimensional drawing **SHD 692**
Mounting angle



Dimensional drawing **SHD 692**



SHD 692
without display

Display module
(optional)

PREMASGARD® SHD 692 Differential pressure transmitters, *ID*						
Type / WG02	**Measuring Range**	**One-Sideed max. pressure**	**Output**	**Display**	**Item No.**	**Price**
SHD 692-I						
SHD 692-I-900	0...0.1 bar	0.6 bar	4...20 mA		1301-4122-0500-000	**502,25 €**
SHD 692-I-907	0...0.5 bar	3 bar	4...20 mA		1301-4122-0510-000	**502,25 €**
SHD 692-I-912	0...1 bar	5 bar	4...20 mA		1301-4122-0520-000	**502,25 €**
SHD 692-I-916	0...2.5 bar	12 bar	4...20 mA		1301-4122-0530-000	**502,25 €**
SHD 692-I-918	0...4 bar	12 bar	4...20 mA		1301-4122-0540-000	**502,25 €**
Optional:	**Display module,** factory-calibrated and configured			■	on request	
	For additional device variants, see **S+S Facility Engineering!**					

Accessories – S+S added value

Take advantage of our comprehensive range of accessories, which can be used together with our entire product portfolio. This keeps you always a step ahead, and best of all: If you buy and stock up, you will also save on the price.

Our standard devices normally differ in type of design and sensors.
Depending on the application, you can install S+S accessories directly on site.

IMMERSION SLEEVES & ACCESSORIES

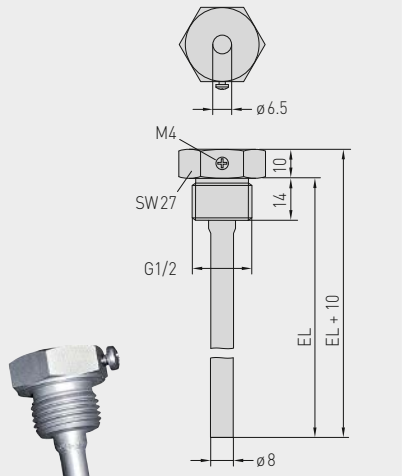
138 – 149

THERMASGARD® TH

**Immersion sleeves made of stainless steel
for temperature sensors and measuring transducers (form B)**

S+S REGELTECHNIK

Dimensional drawing **TH-VA/xx**

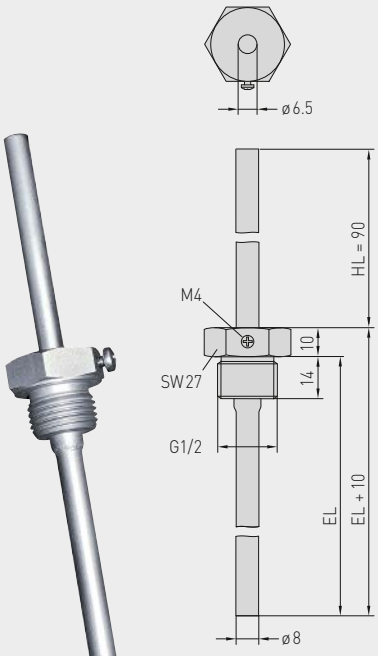


TH-VA/xx

**Immersion sleeve,
stainless steel V4A (1.4571)**

flat sealing, cylindrical,
according to DIN 228

Dimensional drawing **TH-VA/xx/90**



TH-VA/xx/90

**Immersion sleeve,
stainless steel V4A (1.4571)
with neck tube**

flat sealing, cylindrical,
according to DIN 228

THERMASGARD® TH	Immersion sleeve Ø 8 mm, *ID*				
Type/WG01	**p_{max} (static)**	**T_{max}**	**Inserted length (EL)**	**Item No.**	**Price**
TH-VA/xx	**Stainless steel V4A** (1.4571)			**Ø 8** x 0.75 mm	
TH-VA 50MM	40 bar	+600 °C	**50 mm**	7100-0012-0010-001	**17,53 €**
TH-VA 100MM	40 bar	+600 °C	**100 mm**	7100-0012-0020-001	**19,37 €**
TH-VA 150MM	40 bar	+600 °C	**150 mm**	7100-0012-0030-001	**20,81 €**
TH-VA 200MM	40 bar	+600 °C	**200 mm**	7100-0012-0040-001	**21,94 €**
TH-VA 250MM	40 bar	+600 °C	**250 mm**	7100-0012-0050-001	**27,27 €**
TH-VA 300MM	40 bar	+600 °C	**300 mm**	7100-0012-0060-001	**28,50 €**
TH-VA 350MM	40 bar	+600 °C	**350 mm**	7100-0012-0070-001	**28,70 €**
TH-VA 400MM	40 bar	+600 °C	**400 mm**	7100-0012-0080-001	**29,21 €**
TH-VA/xx/90	**Stainless steel V4A** (1.4571), with neck tube (90 mm)			**Ø 8** x 0.75 mm	
TH-VA 50/90MM	40 bar	+600 °C	**50 mm**	7100-0012-2010-001	**25,11 €**
TH-VA 100/90MM	40 bar	+600 °C	**100 mm**	7100-0012-2020-001	**26,24 €**
TH-VA 150/90MM	40 bar	+600 °C	**150 mm**	7100-0012-2030-001	**27,52 €**
TH-VA 200/90MM	40 bar	+600 °C	**200 mm**	7100-0012-2040-001	**28,70 €**
TH-VA 250/90MM	40 bar	+600 °C	**250 mm**	7100-0012-2050-001	**30,08 €**
TH-VA 300/90MM	40 bar	+600 °C	**300 mm**	7100-0012-2060-001	**32,60 €**
Note:	Inner diameter of socket **6.5 mm**				
	For additional device variants, see **S+S Facility Engineering**!				

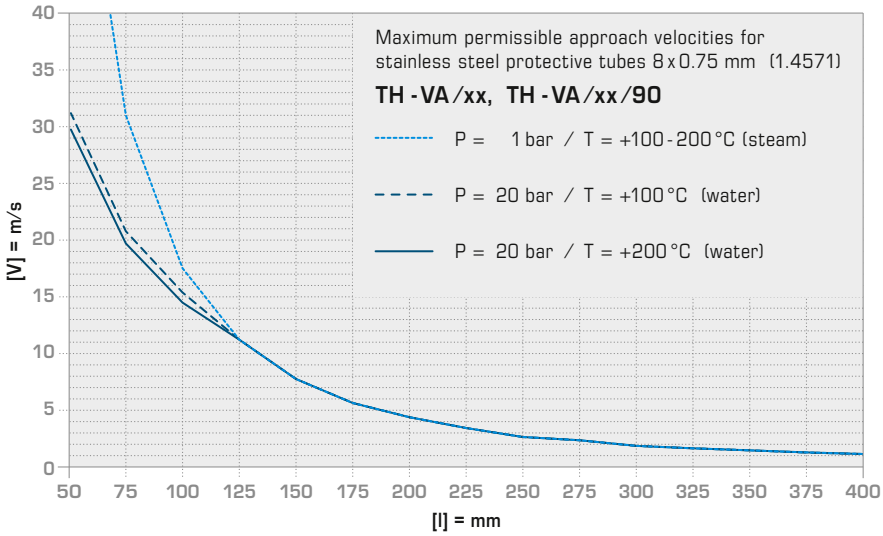
INSTRUCTIONS FOR PLANNING AND INSTALLATION

The approaching flow causes the protective tube to vibrate.

If the specified approach velocity is exceeded even by a marginal amount, a negative impact on the protective tube's service life may result (material fatigue).

Please observe permissible approach velocities for stainless steel protective tubes (see graph **TH-VA**).

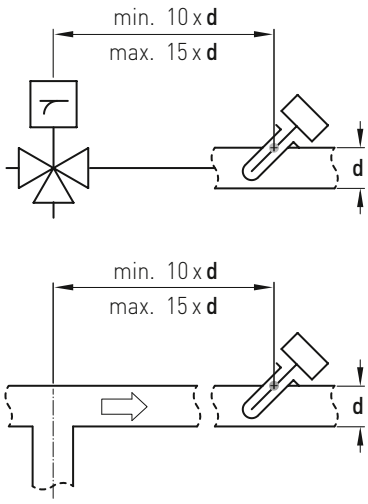
Discharge of gases and pressure surges must be avoided as they have a negative influence on the service life and may damage the protective tubes irreparably.



MIXING SECTION

After the mixing of water flows of different temperatures, the issue of temperature stratification means that an adequate distance to the sensor must be observed.

Mixing section **TH**

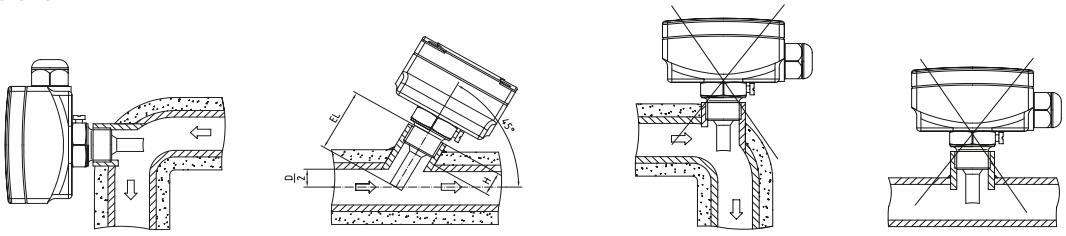


When Copper and Zinc are Not Enough

Uncompromising quality and safety are also paramount in the design of the accessory from S+S. This is why our metal immersion sleeves for duct sensors are made using either nickel plated brass or stainless steel. Brass is an alloy consisting mainly of copper and zinc, which provide good forming and machining properties, mechanical strength, temperature resistance and electrical conductivity.

Highest protection against corrosion is provided by immersion sleeves made of stainless steel. Among the available qualities, we chose VA 1.4571 or AISI 316 Ti, a high-grade austenite specialty combining chromium, nickel and molybdenum with an extra titanium content. The alloy has a proven fit particularly in the design of chemical process equipment and technical instruments as well as in waste gas and water treatment. Its corrosion resistance also includes chlorides or salts and more aggressive acids, such as hydrochloric acid (HCl).

Installation scheme **TH**

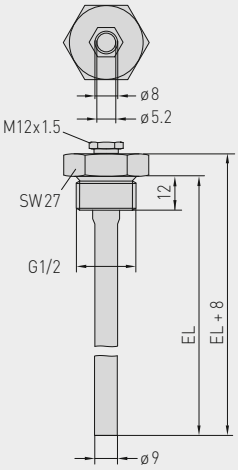


THERMASGARD® THE

Immersion sleeves made of stainless steel, with adjusting screw, for sensors and measuring transducers sensor HFTM

S+S REGELTECHNIK

Dimensional drawing **THE-VA-xx**



THE-VA-xx

Immersion sleeve, stainless steel V4A (1.4571)

with adjusting screw, flat sealing, cylindrical, according to DIN 228

THERMASGARD® THE Immersion sleeve Ø 9 mm for **THERMASGARD® HFTM**, *ID*

Type / WG01	p_{max} (static)	T_{max}	Inserted length (EL)	Item No.	Price
THE-VA / xx	**Stainless steel V4A** (1.4571)			**Ø 9** x 1.0 mm	
THE-VA 50MM	40 bar	+200 °C	**50 mm**	7100-0012-6010-002	**17,89 €**
THE-VA 100MM	40 bar	+200 °C	**100 mm**	7100-0012-6020-002	**19,76 €**
THE-VA 150MM	40 bar	+200 °C	**150 mm**	7100-0012-6030-002	**21,23 €**
THE-VA 200MM	40 bar	+200 °C	**200 mm**	7100-0012-6040-002	**22,38 €**
THE-VA 250MM	40 bar	+200 °C	**250 mm**	7100-0012-6050-002	**27,82 €**
THE-VA 300MM	40 bar	+200 °C	**300 mm**	7100-0012-6060-002	**29,07 €**
THE-VA 400MM	40 bar	+200 °C	**400 mm**	7100-0012-6080-002	**30,01 €**
Ordering example:	THE - VA - **150** (Stainless steel immersion sleeve, Ø = 9 mm, **EL = 150** mm) Other inserted lengths on request				
Note:	inner diameter of socket **5.2 mm**, with **adjusting screw** M12 x 1.5				
	For additional device variants, see **S+S Facility Engineering**!				

THERMASGARD® THE

Immersion sleeves made of stainless steel, with adjusting screw, for sensors and measuring transducers sensor HFTM

INSTRUCTIONS FOR PLANNING AND INSTALLATION

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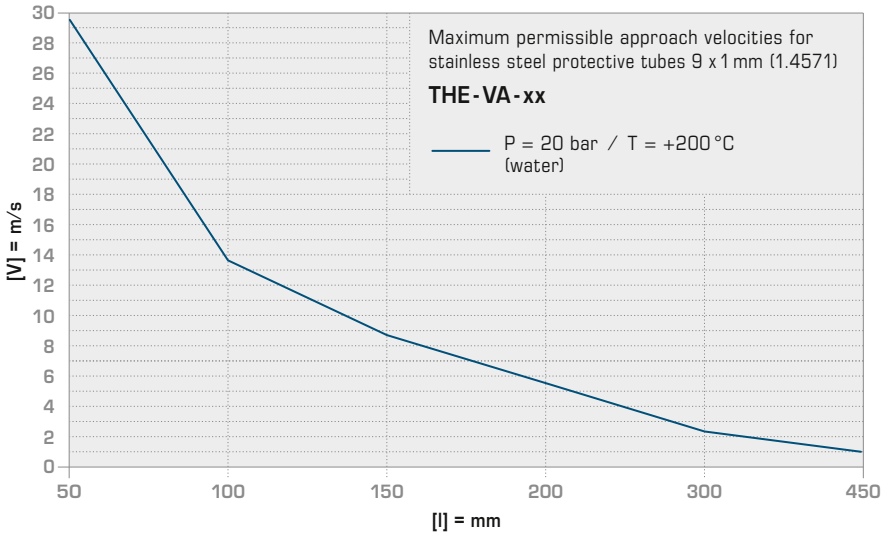
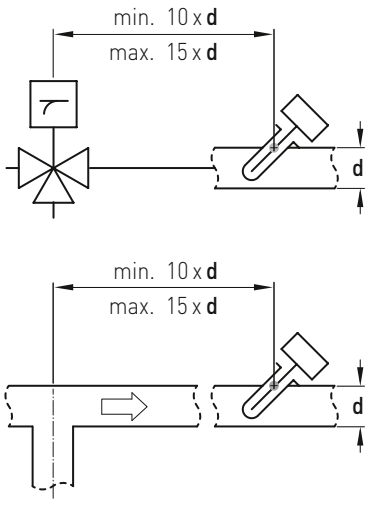


MIXING SECTION

After the mixing of water flows of different temperatures, the issue of temperature stratification means that an adequate distance to the sensor must be observed.

Mixing section **THE**



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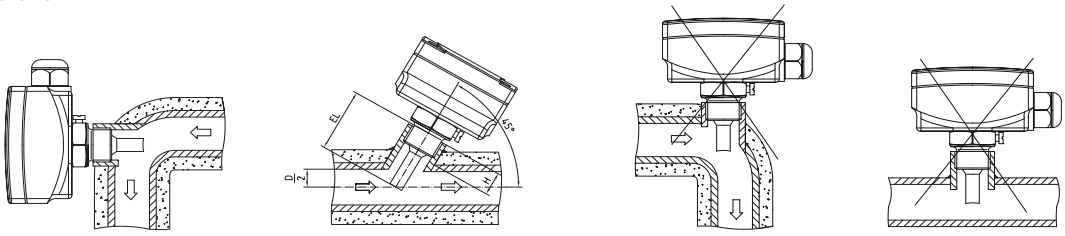
Installation scheme **THE**



NEW

S+S REGELTECHNIK

Special accessories for M12 connector
Circular connector with screw-locking according to DIN EN 61076-2-101

AL xx
Connecting cable
with cable socket

VL xx
Interconnecting cable
with cable socket
and cable connector

KB xx
Cable socket
without cable

5-pin

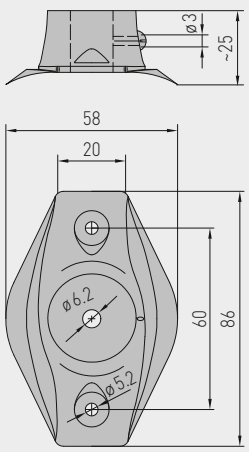
12-pin

Connecting cable for M12 connector	Type / WG01I	Cable length	Item No.	Price
PVC cable, **5-pin, shielded**, with cable socket (M12, A-coding, female), approx. Ø = 15 mm, L = 35 mm	**ALG xx A5**		**5-pin, shielded**	
	ALG M12-A5 PVC 2M	**2 m**	2000-9121-0000-031	**23,72 €**
	ALG M12-A5 PVC 5M	**5 m**	2000-9121-0000-041	**30,41 €**
	ALG M12-A5 PVC 10M	**10 m**	2000-9121-0000-051	**41,87 €**
PVC cable, **5-pin,** unshielded, with cable socket (M12, A-coding, female), approx. Ø = 15 mm, L = 35 mm	**AL xx A5**		**5-pin,** unshielded	
	AL M12-A5 PVC 2M	**2 m**	2000-9121-0000-001	**15,19 €**
	AL M12-A5 PVC 5M	**5 m**	2000-9121-0000-011	**18,79 €**
	AL M12-A5 PVC 10M	**10 m**	2000-9121-0000-021	**24,46 €**
PVC cable, **12-pin,** unshielded, with cable socket (M12, A-coding, female), approx. Ø = 15 mm, L = 35 mm	**AL xx A12**		**12-pin,** unshielded	
	AL M12-A12 PVC 2M	**2 m**	2000-9122-0000-001	**48,82 €**
	AL M12-A12 PVC 5M	**5 m**	2000-9122-0000-011	**57,75 €**
	AL M12-A12 PVC 10M	**10 m**	2000-9122-0000-021	**72,87 €**

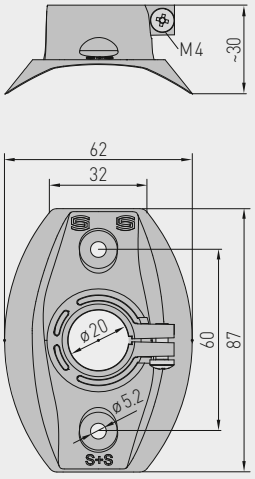
Interconnecting cable for M12 connector	Type / WG01I	Cable length	Item No.	Price
PVC cable, **5-pin, shielded**, with cable socket (M12, A-coding, female) and cable connector (M12, A-coding, male) approx. Ø = 15 mm, L = 35 mm	**VLG xx A5**		**5-pin, shielded**	
	VLG M12-A5 PVC 2M	**2 m**	2000-9111-0000-031	**51,03 €**
	VLG M12-A5 PVC 5M	**5 m**	2000-9111-0000-041	**57,80 €**
	VLG M12-A5 PVC 10M	**10 m**	2000-9111-0000-051	**69,42 €**
PVC cable, **5-pin,** unshielded, with cable socket (M12, A-coding, female) and cable connector (M12, A-coding, male) approx. Ø = 15 mm, L = 35 mm	**VL xx A5**		**5-pin,** unshielded	
	VL M12-A5 PVC 2M	**2 m**	2000-9111-0000-001	**27,12 €**
	VL M12-A5 PVC 5M	**5 m**	2000-9111-0000-011	**30,68 €**
	VL M12-A5 PVC 10M	**10 m**	2000-9111-0000-021	**36,75 €**
PVC cable, **12-pin,** unshielded, with cable socket (M12, A-coding, female) and cable connector (M12, A-coding, male) approx. Ø = 15 mm, L = 35 mm	**VL xx A12**		**12-pin,** unshielded	
	VL M12-A12 PVC 2M	**2 m**	2000-9112-0000-001	**101,95 €**
	VL M12-A12 PVC 5M	**5 m**	2000-9112-0000-011	**111,96 €**
	VL M12-A12 PVC 10M	**10 m**	2000-9112-0000-021	**128,93 €**

Mounting accessories for M12 connector	Type / WG02	Contact	Item No.	Price
Cable socket (M12, A-coding, female), approx. Ø = 20 mm, L = 54 mm, unassembled, without cabel	**KB xx**		**female**	
	KB M12-A5	**5-pin**	7100-0070-0712-000	**19,99 €**
	KB M12-A12	**12-pin**	7100-0070-0714-000	**59,64 €**
Cable connector (M12, A-coding, male), approx. Ø = 20 mm, L = 54 mm, unassembled, without cabel	**KS xx**		**male**	
	KS M12-A5	**5-pin**	7100-0070-0716-000	**19,99 €**
	KS M12-A12	**12-pin**	7100-0070-0718-000	**59,64 €**

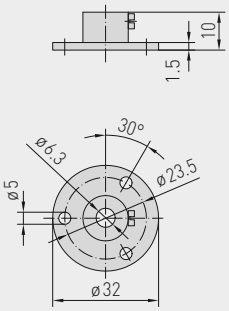
Dimensional drawing **MF-06-K**



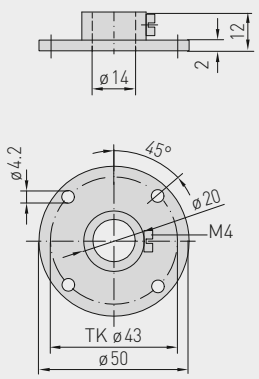
Dimensional drawing **MFT-20-K**



Dimensional drawing **MF-06-M**



Dimensional drawing **MF-14-M**



MF-06-K

Mounting flange, plastic

MFT-20-K

Mounting flange, plastic

MF-06-M

Mounting flange, metal

MF-14-M

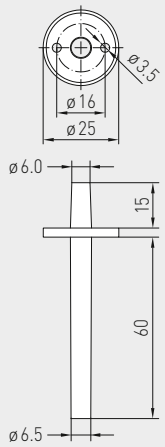
Mounting flange, metal

Type / WG01	Mounting flange, plastic	Tube Gland	T_{max}	Item No.	Price
MF-K	for **metal** protective tubes!				
MF-06-K	Mounting flange, plastic, approx. 58 x 86 x 25 mm for sleeve temperature sensor HFTM	Ø 6.2 mm	+100 °C	7100-0030-1000-000	**5,29 €**
MFT-K	for **PLEUROFORM** multi-channel pipes!				
MFT-20-K	Mounting flange, plastic, approx. 62 x 87 x 30 mm for duct sensors	Ø 20 mm	+100 °C	7000-0031-0000-000	**8,26 €**

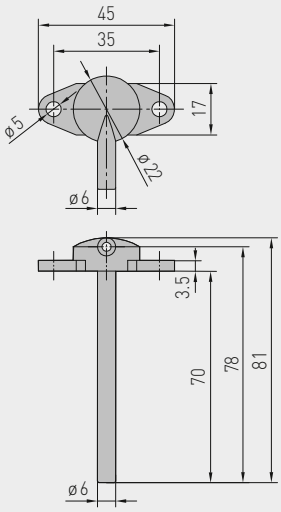
Type / WG01	Mounting flange, metal	Tube Gland	T_{max}	Item No.	Price
MF-M	for **metal** protective tubes!				
MF-06-M	Mounting flange, metal (galvanised steel), Ø 32 mm for temperature sensors TF (form B) and temperature measuring transducers TM (form B)	Ø 6.3 mm	+700 °C	7100-0030-5000-000	**8,26 €**
MF-14-M	Mounting flange, metal (galvanised steel), Ø 50 mm for duct humidity sensors	Ø 14.0 mm	+700 °C	7100-0030-6000-000	**27,28 €**

Mounting accessories
for differential pressure switches

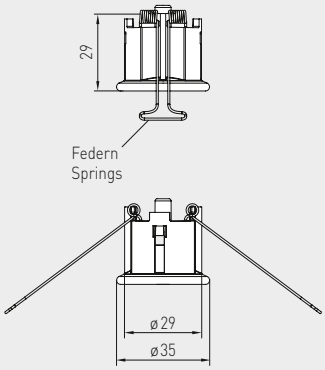
Dimensional drawing **ASD-06**



Dimensional drawing **ASD-07**



Dimensional drawing **DAL**



ASD-06
Connection set
(straight nipples)

ASD-07
Connection nipples
(at 90 degree angle)

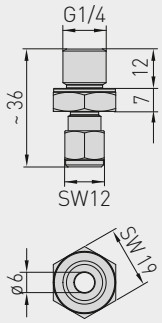
DAL
Pressure outlet

Type / WG01	Mounting accessories for differential pressure switches	Item No.	Price
ASD-06	**Connection set** consisting of 2 connection nipples (straight) made of ABS, 2 m PVC hose, soft, and 4 tapping screws)	7100-0060-3000-000	**6,61 €**
ASD-07	**2 connection nipples** (at 90 degree angle) made of ABS	7100-0060-7000-000	**6,61 €**
ASS-UV 100M	**Connecting hose**, UV-resistant, Ø 6 mm, 1 roll (100 m)	7100-0060-3101-000	**1399,13 €**

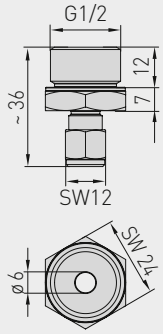
Type / WG01	Special accessories for differential pressure switches	Item No.	Price
	Pressure outlet for ceiling and in-wall installation		
DAL-01	as a pressure reference point	7300-0060-3000-001	**30,93 €**
DAL-02	for hose attachment	7300-0060-3000-100	**30,93 €**
DAL-03	as a pressure reference point, with sinter filter made of stainless steel **V4A** (1.4404)	7300-0060-3000-200	**57,91 €**

Other mounting accessories and welding protection sleeve for immersion sleeves

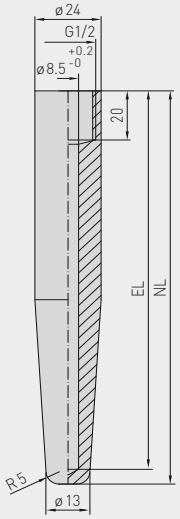
Dimensional drawing **KVSS**



Dimensional drawing **KVST**



Dimensional drawing **ESSH**



KVSS

Clamp union
with cutting ring

KVST

Clamp union
with clamp ring

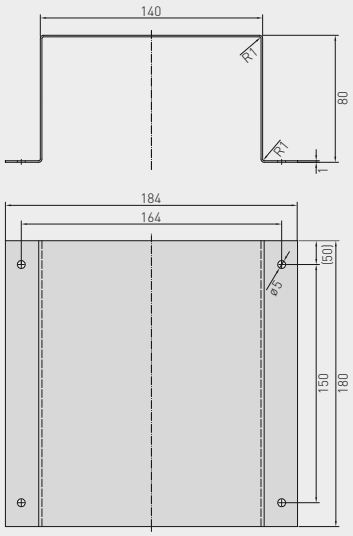
ESSH

Welding protective
sleeve

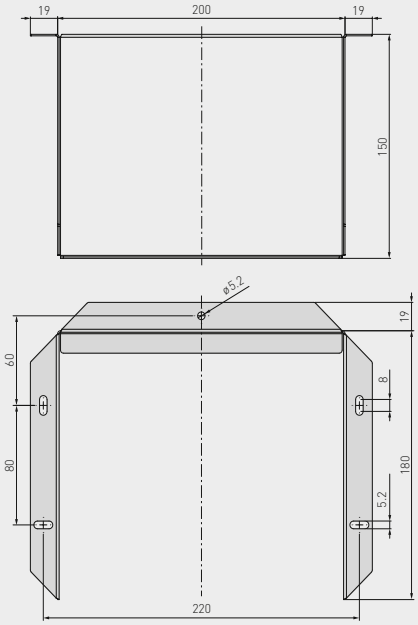
Type / WG01	Miscellaneous mounting accessories	Item No.	Price
KVST	**Clamp union** with clamp ring PTFE, Ø 6 mm	7100-0032-0110-000	**16,41 €**
KVSS	**Clamp union** with cutting ring VA, Ø 6 mm	7100-0032-1000-000	**16,41 €**
SPB1	**Strap** for surface-contact sensors	7100-0035-0000-000	**3,26 €**

Type / WG01	Special accessories for immersion sleeves	Item No.	Price
	Welding protecting sleeves, G ½" straight internal pipe thread, stainless steel **V4A** (1.4571), other materials on request,		
ESSH 100MM	for immersion sleeves (EL) = 100 mm, P_{max} = 100 bar	7100-0052-0020-001	**59,54 €**
ESSH 150MM	for immersion sleeves (EL) = 150 mm, P_{max} = 100 bar	7100-0052-0030-001	**68,35 €**
ESSH 200MM	for immersion sleeves (EL) = 200 mm, P_{max} = 100 bar	7100-0052-0040-001	**77,15 €**

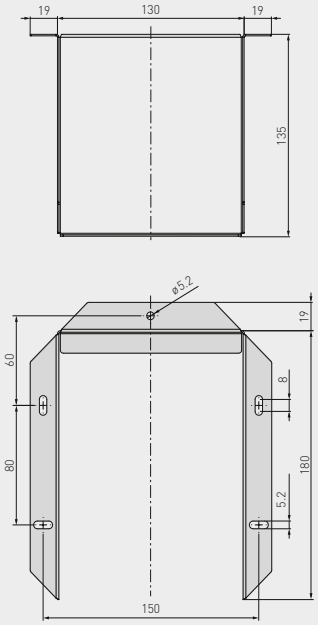
Dimensional drawing **WS-01**



Dimensional drawing **WS-03**



Dimensional drawing **WS-04**



WS-01

Sun and
ball-impact protection hood

WS-03

Weather and
sun protection hood

WS-04

Weather and
sun protection hood

Type / WG01	Special accessories and spare parts	Item No.	Price
WS-01	**Sun and ball-impact protection hood,** 184 x 180 x 80 mm, stainless steel **V2A** (1.4301)	7100-0040-2000-000	**27,47 €**
WS-03	**Weather and sun protection hood,** 200 x 180 x 150 mm, stainless steel **V2A** (1.4301)	7100-0040-6000-000	**38,68 €**
WS-04	**Weather and sun protection hood,** 130 x 180 x 135 mm, stainless steel **V2A** (1.4301)	7100-0040-7000-000	**32,41 €**
SF-K	**Plastic sinter filter**, Ø 16 mm, L = 35 mm, exchangeable	7000-0050-2310-000	**11,12 €**
SF-M	**Metal sinter filter**, Ø 16 mm, L = 32 mm, exchangeable, stainless steel **V4A** (1.4404)	7000-0050-2200-100	**36,59 €**
WLP-1	**Heat-conductive paste**, silicone-free (2 ml)	7100-0060-1000-000	**2,92 €**

Individual components / WG01		Item No.	Price
FET		7100-0022-4000-000	**44,03 €**
KTY 81-210		7100-0022-0000-000	**4,18 €**
LM235Z	(TCR = 10 mV / K; 2.73 V at 0°C), KP10	7100-0022-1000-000	**6,71 €**
NI1000	(according to DIN EN 43760, class B, TKR = 6180 ppm / K)	7100-0020-9000-000	**7,98 €**
NI1000TK5000	(according to DIN EN 43760, class B, TKR = 5000 ppm / K), LG-Ni 1000	7100-0021-0000-000	**11,23 €**
NTC 1,8 KOHM	NTC 1.8 K	7100-0021-2000-001	**9,80 €**
NTC 10 KOHM PRECON	NTC 10 K Precon	7100-0021-9000-000	**5,13 €**
NTC 20 KOHM	NTC 20 K	7100-0021-6000-000	**5,13 €**
NTC 30 KOHM	NTC 30 K	7100-0021-7000-000	**5,13 €**
NTC 50 KOHM	NTC 50 K	7100-0021-8000-000	**5,13 €**
PT100 KLASSE B	(according to DIN EN 60751, class B)	7100-0020-1000-000	**6,17 €**
PT100 1/2 DIN	(according to DIN EN 60751, class A)	7100-0020-2000-000	**8,20 €**
PT100 1/3 DIN	(according to DIN EN 60751, class A)	7100-0020-3000-000	**9,53 €**
PT1000 KLASSE B	(according to DIN EN 60751, class B)	7100-0020-5000-000	**8,31 €**
PT1000 1/2 DIN	(according to DIN EN 60751, class A)	7100-0020-6000-000	**9,41 €**
PT1000 1/3 DIN	(according to DIN EN 60751, class A)	7100-0020-7000-000	**10,96 €**
PT1000 1/10 DIN	(according to DIN EN 60751, class AA)	7100-0020-8000-000	**34,29 €**
Note:	Other sensors on request.		

Optional services / WG01		Unit	Price
Double sensor		**plus 50 %** of instrument price	
1 / 2 DIN	(according to DIN EN 60751, class A)	Per piece	**6,36 €**
1 / 3 DIN	(according to DIN EN 60751, class A)	Per piece	**6,36 €**
1 / 10 DIN	(according to DIN EN 60751, class AA)	Per piece	**25,42 €**
Connection type	**4-wire connection** with ceramic base, head form B	Per piece	**5,29 €**
	4-wire connection with circuit board, box head	Per piece	**3,18 €**
Protection class	**IP 65** at head form B	Per piece	**8,16 €**
	IP 68 (Sensor sleeve watertight compound-filled) for cable sensors	Per piece	**2,94 €**

Custom-made products (for 25 or more pieces)		Unit	Price
Silicone-free sensor production		Per piece	on request!
Factory test certificate	1-point certificate	One-time cost	on request!
(per device)	2-point certificate	One-time cost	on request!
	3-point certificate	One-time cost	on request!
	Each additional test point	One-time cost	on request!
Printing customer logo on enclosure cover	Setup costs for printing on enclosure cover	One-time cost	on request!
(for 200 covers of one enclosure series)	Plus printing costs, 2-colour, printing on enclosure cover	Per piece	on request!
Labelling with customer logo	Setup costs for labelling	One-time cost	on request!
	Plus costs for labelling	Per piece	on request!

TEMPERATURE		
Fahrenheit	**°F → °C** (°F – 32) ÷ 1.8 = (°C)	**°C → °F** (°C x 1.8) + 32 = (°F)
LENGTH		
Inches	**"/ inch → mm** ("/ inch) × 25.4 = (mm)	**mm → "/ inch** (mm) ÷ 25.4 = ("/ inch)
Feet	**ft → m** (ft) × 0.3048 = (m)	**m → ft** (m) ÷ 0.3048 = (ft)
Yards	**yd → m** (yd) × 0.9144 = (m)	**m → yd** (m) ÷ 0.9144 = (yd)
Miles	**mi → km** (mi) × 1.609344 = (km)	**km → mi** (km) ÷ 1.609344 = (mi)
AREA		
Square inches	**in^2 → mm^2** (in^2) × 645.16 = (mm^2)	**mm^2 → in^2** (mm^2) ÷ 645.16 = (in^2)
	in^2 → cm^2 (in^2) × 6.4516 = (cm^2)	**cm^2 → in^2** (cm^2) ÷ 6.4516 = (in^2)
Square feet	**ft^2 → m^2** (ft^2) × 0.09290304 = (m^2)	**m^2 → ft^2** (m^2) ÷ 0.09290304 = (ft^2)
Square yards	**yd^2 → m^2** (yd^2) × 0.83612736 = (m^2)	**m^2 → yd^2** (m^2) ÷ 0.83612736 = (yd^2)
VOLUME		
Cubic inches	**in^3 → cm^3** (in^3) × 16.387064 = (cm^3)	**cm^3 → in^3** (cm^3) ÷ 16.387064 = (in^3)
Cubic feet	**ft^3 → m^3** (ft^3) × 0.028316846592 = (m^3)	**m^3 → ft^3** (m^3) ÷ 0.028316846592 = (ft^3)
Cubic yards	**yd^3 → m^3** (yd^3) × 0.764554857984 = (m^3)	**m^3 → yd^3** (m^3) ÷ 0.764554857984 = (yd^3)
US Gallons	**Imp. gal. → dm^3** (Imp. gal.) × 4.54609 = (dm^3)	**dm^3 → Imp. gal.** (dm^3) ÷ 4.54609 = (Imp. gal.)
US-Gallone	**US. liq. gal. → dm^3** (US. liq. gal.) × 3.785412 = (dm^3)	**dm^3 → US. liq. gal.** (dm^3) ÷ 3.785412 = (US. liq. gal.)
MASS		
Ounces	**oz. → g** (oz.) × 28.349523 = (g)	**g → oz.** (g) ÷ 28.349523 = (oz.)
Pounds	**lb. → kg** (lb.) × 0.45359237 = (kg)	**kg → lb.** (kg) ÷ 0.45359237 = (lb.)
British tons (long tons)	**tn. l. → kg** (tn. l.) × 1016.0469088 = (kg)	**kg → tn. l.** (kg) ÷ 1016.0469088 = (tn. l.)
US tons (short tons)	**tn. sh. → kg** (tn. sh.) × 907.18474 = (kg)	**kg → tn. sh.** (kg) ÷ 907.18474 = (tn. sh.)

Sensor type (+)
Thermistor elements with positive temperature coefficient –
Temperature ranges (temperature/resistance)

S+S REGELTECHNIK

FeT (T1)		**KTY 81-210**		**LM 235 Z** (KP10)		**Ni 1000** according to DIN EN 43760 TCR = 6180 ppm/K		**Ni 1000 - TK 5000** (LG-Ni 1000) TCR = 5000 ppm/K		**PT 100** according to DIN EN 60751 TCR = 3850 ppm/K		**PT 1000** according to DIN EN 60751 TCR = 3850 ppm/K	
°C	Ω	°C	Ω	°C	mV	°C	Ω	°C	Ω	°C	Ω	°C	Ω
– 50	–	**– 50**	1030	**– 50**	–	**– 50**	743	**– 50**	790.8	**– 50**	80.3	**– 50**	803
– 40	–	– 40	1135	– 40	2330	– 40	791	– 40	826.8	– 40	84.3	– 40	843
– 30	1935	– 30	1247	– 30	2430	– 30	842	– 30	871.7	– 30	88.2	– 30	882
– 20	2030	– 20	1367	– 20	2530	– 20	893	– 20	913.4	– 20	92.2	– 20	922
– 15	2078	– 15		– 15	2580	– 15	920	– 15	934.7	– 15	94.1	– 15	941
– 10	2027	– 10	1495	– 10	2630	– 10	946	– 10	956.2	– 10	96.1	– 10	961
– 5	2176	– 5		– 5	2680	– 5	973	– 5	978.0	– 5	98.0	– 5	980
0	2226	0	1630	0	2730	0	1000	0	1000.0	0	100.0	0	1000
1	2236	1		1	2740	5	1028	1	1004.4	5	102.0	5	1020
2	2246	2		2	2750	10	1056	2	1008.9	10	103.9	10	1039
3	2256	3		3	2760	15	1084	3	1013.3	15	105.8	15	1058
4	2266	4		4	2770	20	1112	4	1017.8	20	107.8	20	1078
5	2276	5		5	2780	25	1142	5	1022.3	25	109.8	25	1098
6	2286	6		6	2790	30	1171	6	1026.7	30	111.7	30	1117
7	2298	7		7	2800	35	1200	7	1031.2	35	113.6	35	1136
8	2306	8		8	2810	40	1230	8	1035.8	40	115.5	40	1155
9	2316	9		9	2820	45	1261	9	1040.3	45	117.5	45	1175
10	2326	10	1772	10	2830	50	1291	10	1044.8	50	119.4	50	1194
11	2337	11		11	2840	55	1322	11	1049.3	55	121.3	55	1213
12	2347	12		12	2850	60	1353	12	1053.9	60	123.2	60	1232
13	2357	13		13	2860	65	1385	13	1058.4	65	125.2	65	1252
14	2367	14		14	2870	70	1417	14	1063.0	70	127.1	70	1271
15	2377	15		15	2880	75	1450	15	1067.6	75	129.0	75	1290
16	2388	16		16	2890	80	1483	16	1072.2	80	130.9	80	1309
17	2398	17		17	2900	85	1516	17	1076.8	85	132.8	85	1328
18	2408	18		18	2910	90	1549	18	1081.4	90	134.7	90	1347
19	2418	19		19	2920	95	1584	19	1086.0	95	136.6	95	1366
20	2429	20	1922	20	2930	100	1618	20	1090.7	100	138.5	100	1385
21	2439	21		21	2940	110	1688	21	1095.3	110	142.3	110	1423
22	2449	22		22	2950	120	1760	22	1100.0	120	146.1	120	1461
23	2460	23		23	2960	130	1833	23	1104.6	130	149.8	130	1498
24	2470	24		24	2970	140	1909	24	1109.3	140	153.6	140	1536
25	2480	25	2000	25	2980	150	1987	25	1114.0	150	157.3	150	1573
26	2491	26		26	2990	160	2066	26	1120.0	160	161.0	160	1611
27	2501	27		27	3000	170	2148	27	1123.4	170	164.8	170	1648
28	2512	28		28	3010	**180**	2232	28	1128.1	180	168.5	180	1685
29	2522	29		29	3020			29	1132.9	190	172.2	190	1722
30	2532	30	2080	30	3030			30	1137.6	200	175.8	200	1758
35	2585	35		35	3080			35	1161.5	210	179.5	210	1795
40	2638	40	2245	40	3130			40	1185.7	220	183.2	220	1832
45	2692	45		45	3180			45	1210.2	230	186.8	230	1868
50	2745	50	2417	50	3230			50	1235.0	240	190.5	240	1905
55	2800	55		55	3280			55	1260.1	250	194.1	250	1941
60	2855	60	2597	60	3330			60	1285.4	260	197.7	260	1977
65	2910	65		65	3380			65	1311.1	270	201.3	270	2013
70	2966	70	2785	70	3430			70	1337.1	280	204.9	280	2049
75	3022	75		75	3480			75	1363.5	290	208.5	290	2085
80	3079	80	2980	80	3530			80	1390.1	300	212.0	300	2121
85	3136	85		85	3580			85	1417.1	310	215.6	310	2156
90	3194	90	3182	90	3630			90	1444.4	320	219.1	320	2191
95	3252	95		95	3680			95	1472.0	330	222.7	330	2227
100	3311	100	3392	100	3730			100	1500.0	340	226.2	340	2262
105	3370	105		105	3780			105	1528.3	350	229.7	350	2297
110	3430	110	3607	110	3830			110	1557.0	360	233.2	360	2332
115	3491	115		115	3880			115	1586.0	370	236.7	370	2367
120	3552	120	3817	120	3930			**120**	1625.4	380	240.1	380	2401
125	3613	125	3915	125	3980					390	243.6	390	2436
130	3675	130	4008	130	–					**400**	247.0	**400**	2470
140	3802	140	4166	140	–								
150	3929	**150**	4280	**150**	–								

Sensor type (+)
Thermistor elements with positive temperature coefficient –
Temperature ranges (temperature/resistance)

Accuracy of passivee elements			
Sensor elements	Tolerance	Standard	Rated zero-power resistance
Pt 1000	± 0.3 K / 0 °C	DIN EN 60 751, class B	TK = 3850 ppm / K
Pt 1000 1/3 DIN	± 0.1 K / 0 °C	DIN EN 60 751, class A	TK = 3850 ppm / K
Pt 1000 A	± 0.15 K / 0 °C	DIN EN 60 751, class A, TGA	TK = 3850 ppm / K
Pt 1000 1/10 DIN	± 0.03 K / 0 °C	DIN EN 60 751, class A	TK = 3850 ppm / K
Pt 100	± 0.3 K / 0 °C	DIN EN 60 751, class B	TK = 3850 ppm / K
Pt 100 1/3 DIN	± 0.1 K / 0 °C	DIN EN 60 751, class A	TK = 3850 ppm / K
Ni 1000	± 0.4 K / 0 °C	DIN EN 43 760, class B	TCR = 6180 ppm / K
Ni 1000 1/2 DIN	± 0.2 K / 0 °C	DIN EN 43 760, class B	TCR = 6180 ppm / K
Ni 1000 TK5000	± 0.4 K / 0 °C		TCR = 5000 ppm / K
LM235Z, KP10	± 0.2 K / 25 °C	10 mV / K	
NTC 1.8K	± 0.3 K / 25 °C	B25 / 85 = 3499 K	R25 = 1.8 K ± 0.3 %
NTC 2.2K	± 0.3 K / 25 °C	B25 / 85 = 3610 K	R25 = 2.2 K ± 1 %
NTC 10K	± 0.3 K / 25 °C	B25 / 85 = 3977 K	R25 = 10 KOhm ± 1 %
NTC 10K Precon	± 0.3 K / 25 °C	B25 / 85 = 3695 K	R25 = 10 KOhm ± 1 %
NTC 10K Carell	± 0.3 K / 25 °C	B25 / 85 = 3435 K	R25 = 10 KOhm ± 1 %
NTC 20K	± 0.2 K / 25 °C	B25 / 85 = 4262 K	R25 = 20 KOhm ± 0.5 %

ATTENTION, NOTE !

Due to self-heating, the testing current has an influence on the measuring accuracy of the thermometer and should therefore never exceed the following:

Guide values for the testing current:

Maximum sensor current ..... I_{max}
Pt1000 (thin layer) ..... < 0.6 mA
Pt100 (thin layer) ..... < 1.0 mA
Ni1000 (DIN), Ni1000 TK5000 ..... < 0.3 mA
NTC xx ..... < 2.0 mW
LM235Z ..... 400 µA ... 5 mA
KTY 81 - 210 ..... < 2.0 mA

To avoid damage/errors, it is recommended to use shielded cables. It is imperative to avoid parallel laying of current-carrying lines. The EMC directives must be observed!

These devices must be installed by an authorised qualified expert!

Sensor type (–)
Thermistor elements with negative temperature coefficient –
Temperature ranges (temperature/resistance)

S+S REGELTECHNIK

NTC 1,8 kΩ R_{25} = 1.8 kΩ ±0,2K $B_{25/85}$ = 3499 K ±1%		NTC 2,2 kΩ R_{25} = 2.2 kΩ ±1% $B_{25/85}$ = 3610 K ±1%		NTC 3 kΩ R_{25} = 3 kΩ ±1% $B_{25/85}$ = 3977 K ±1%		NTC 5 kΩ R_{25} = 5 kΩ ±1% $B_{25/85}$ = 3977 K ±1%		NTC 10 kΩ R_{25} = 10 kΩ ±1% $B_{25/85}$ = 3977 K ±1%		NTC 10 kΩ Precon R_{25} = 10 kΩ ±1% $B_{25/85}$ = 3695 K ±1%		NTC 10 K e.g. Carell R_{25} = 10 kΩ ±1% $B_{25/85}$ = 3435 K ±1%	
°C	Ω	°C	Ω	°C	Ω	°C	Ω	°C	Ω	°C	Ω	°C	Ω
– 50	–	– 50	–	– 50	–	**– 50**	–	– 50	–	**– 50**	–	**– 50**	–
– 40	39073	– 40	–	– 40	–	– 40	–	– 40	–	– 40	–	– 40	–
– 30	22301	**– 30**	27886	**– 30**	53093	– 30	88488	– 30	175785	– 30	135200	– 30	111300
– 20	13196	– 20	16502	– 20	29125	– 20	48541	– 20	96597	– 20	78910	– 20	67770
– 15	10278	– 15	12844	– 15	21887	– 15	36479	– 15	72650	– 15	61020	– 15	53410
– 10	8069	– 10	10070	– 10	16599	– 10	27664	– 10	55142	– 10	47540	– 10	42470
– 5	6383	– 5	8134	– 5	12698	– 5	21163	– 5	42215	– 5	37310	– 5	33900
0	5085	0	6452	0	9795	0	16325	0	32590	0	29490	0	27280
1	4863	1	6164	1	9309	1	15515	1	30974	1	28156	1	26130
2	4652	2	5891	2	8849	2	14749	2	29448	2	26890	2	25030
3	4452	3	5631	3	8415	3	14025	3	28007	3	25687	3	23990
4	4261	4	5384	4	8005	4	13341	4	26645	4	24545	4	23000
5	4079	5	5150	5	7617	5	12695	5	25357	5	23460	5	22050
6	3906	6	4927	6	7251	6	12085	6	24138	6	22430	6	21150
7	3742	7	4715	7	6905	7	11508	7	22984	7	21451	7	20300
8	3585	8	4513	8	6575	8	10959	8	21892	8	20519	8	19480
9	3436	9	4321	9	6265	9	10442	9	20858	9	19633	9	18700
10	3294	10	4138	10	5971	10	9951	10	19880	10	18790	10	17960
11	3159	11	3964	11	5691	11	9485	11	18953	11	17987	11	17240
12	3030	12	3797	12	5427	12	9045	12	18074	12	17222	12	16560
13	2906	13	3639	13	5177	13	8628	13	17242	13	16494	13	15900
14	2789	14	3488	14	4938	14	8230	14	16452	14	15801	14	15280
15	2677	15	3345	15	4713	15	7855	15	15704	15	15140	15	14690
16	2570	16	3207	16	4500	16	7500	16	14992	16	14510	16	14120
17	2468	17	3076	17	4298	17	7163	17	14317	17	13910	17	13580
18	2371	18	2952	18	4104	18	6841	18	13676	18	13337	18	13060
19	2278	19	2832	19	3922	19	6536	19	13068	19	12791	19	12560
20	2189	20	2719	20	3747	20	6246	20	12491	20	12270	20	12090
21	2104	21	2610	21	3582	21	5970	21	11941	21	11773	21	11630
22	2023	22	2506	22	3426	22	5710	22	11418	22	11298	22	11200
23	1945	23	2407	23	3277	23	5462	23	10921	23	10845	23	10780
24	1871	24	2289	24	3135	24	5224	24	10450	24	10413	24	10380
25	1800	25	2200	25	3000	25	5000	25	10000	25	10000	25	10000
26	1732	26	2115	26	2872	26	4787	26	9572	26	9606	26	9632
27	1667	27	2034	27	2750	27	4583	27	9166	27	9229	27	9281
28	1605	28	1957	28	2634	28	4389	28	8778	28	8869	28	8944
29	1546	29	1883	29	2522	29	4203	29	8409	29	8525	29	8622
30	1489	30	1812	30	2417	30	4028	30	8058	30	8196	30	8313
35	1238	35	1500	35	1960	35	3266	35	6534	35	6754	35	6940
40	1034	40	1248	40	1597	40	2662	40	5329	40	5594	40	5827
45	869	45	1043	45	1310	45	2184	45	4371	45	4655	45	4911
50	733	50	876	50	1081	50	1801	50	3605	50	3893	50	4160
55	622	55	738	55	896	55	1493	55	2988	55	3270	55	3536
60	529	60	626	60	746	60	1244	60	2489	60	2760	60	3020
65	453	65	532	65	625	65	1042	65	2084	65	2338	65	2588
70	389	70	454	70	526	70	876	70	1753	70	1900	70	2228
75	335	75	390	75	444	75	740	75	1480	75	1700	75	1924
80	290	80	335	80	346	80	627	80	1256	80	1457	80	1668
85	252	85	289	85	321	85	535	85	1070	85	1254	85	1451
90	220	90	251	90	275	90	458	90	915	90	1084	90	1266
95	192	95	218	95	236	95	393	95	786	95	939	95	1108
100	169	100	190	100	204	100	339	100	678	100	817	100	973
105	148	105	167	105	176	105	294	105	586	105	713	105	857
110	131	**110**	146	110	138	110	255	110	509	110	624	110	758
115	116			115	120	115	223	115	445	115	548	115	671
120	103			120	105	120	195	120	389	120	482	120	597
125	92			125	92	125	171	125	341	125	426	125	531
				130	81	130	151	130	300	130	377	130	474
				140	64	140	118	140	234	140	298	140	381
				150	50	**150**	93	**150**	185	**150**	238	**150**	308

Sensor type (–)
Thermistor elements with negative temperature coefficient – Temperature ranges (temperature/resistance)

NTC 20 kΩ R_{25} = 20 kΩ ±0.5% $B_{25/85}$ = 4262 K ±1%		NTC 50 kΩ R_{25} = 50 kΩ ±1% $B_{25/85}$ = 4262 K ±1%		Satchwell SAT 1	
°C	Ω	°C	Ω	°C	Ω
– 50	–	– 50	–	**– 50**	9719
– 40	806800	**– 40**	2017000	– 40	9584
– 30	413400	– 30	1033500	– 30	9349
– 20	220600	– 20	551500	– 20	8968
– 15	163480	– 15	408700	– 15	8708
– 10	122260	– 10	305650	– 10	8396
– 5	92220	– 5	230550	– 5	8031
0	70140	0	175350	0	7614
1	66469	1	166173	1	7525
2	63011	2	157527	2	7434
3	59751	3	149378	3	7341
4	56678	4	141696	4	7246
5	53780	5	134450	5	7150
6	51041	6	127602	6	7053
7	48457	7	121142	7	6954
8	46018	8	115044	8	6853
9	43715	9	109287	9	6752
10	41540	10	103850	10	6649
11	39489	11	98723	11	6545
12	37550	12	93875	12	6440
13	35716	13	89291	13	6334
14	33982	14	84954	14	6228
15	32340	15	80850	15	6121
16	30782	16	76954	16	6013
17	29307	17	73269	17	5905
18	27912	18	69780	18	5786
19	26591	19	66478	19	5684
20	25340	20	63350	20	5580
21	24156	21	60389	21	5471
22	23033	22	57582	22	5362
23	21968	23	54921	23	5254
24	20958	24	52396	24	5147
25	20000	25	50000	25	5039
26	19090	26	47726	26	4933
27	18227	27	45566	27	4827
28	17406	28	43515	28	4721
29	16627	29	41567	29	4617
30	15886	30	39715	30	4513
35	12698	35	31745	35	4012
40	10212	40	25530	40	3545
45	8260	45	20650	45	3117
50	6718	50	16795	50	2730
55	5494	55	13735	55	2386
60	4518	60	11295	60	2082
65	3732	65	9330	65	1816
70	3098	70	7745	70	1585
75	2586	75	6465	75	1385
80	2166	80	5415	80	1213
85	1823	85	4558	85	1064
90	1541	90	3852	90	937
95	1308	95	3269	95	828
100	1114	100	2785	100	734
105	953	105	2382	105	654
110	818	110	2045	110	585
115	704	115	1761	115	525
120	609	120	1523	120	474
125	528	125	1321	125	429
130	460	130	1149	130	391
140	351	140	878	140	329
150	272	**150**	679	**150**	281

Sensor type (–)

Resistor element with
negative temperature coefficient,

also called negative temperature coefficient thermistor, or NTC thermistor.

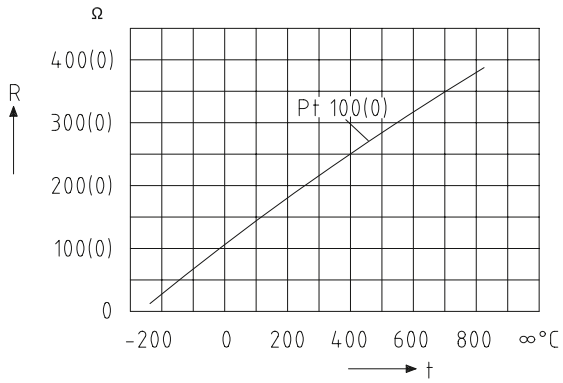
To avoid damage/errors, it is recommended to use shielded cables. It is imperative to avoid parallel laying of current-carrying lines. The EMC directives must be observed!

These devices must be installed by an authorised qualified expert!

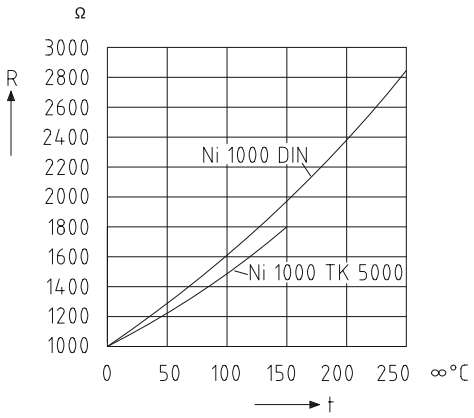
S+S REGELTECHNIK

Characteristics and wiring of terminal connections of some passivee temperature sensors

Characteristics **Pt**

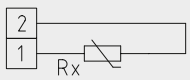


Characteristics **Ni**

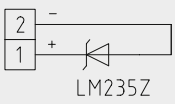


Wiring of terminal connections room devices and box head

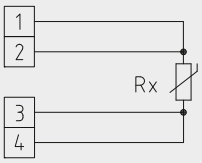
Connecting diagram **1 x two-wire connection standard**



Connecting diagram **1 x two-wire connection LM 235 Z (KP 10)**

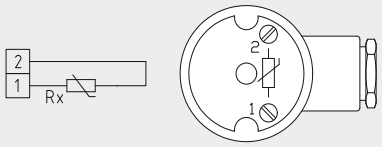


Connecting diagram **1 x four-wire connection** (optional)

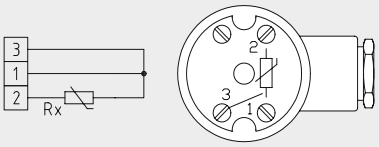


Wiring of terminal connections head form B

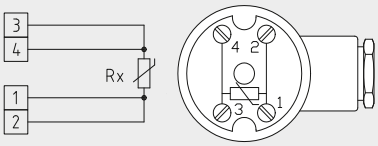
Connecting diagram **1 x two-wire connection**



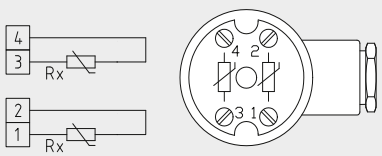
Connecting diagram **1 x three-wire connection**



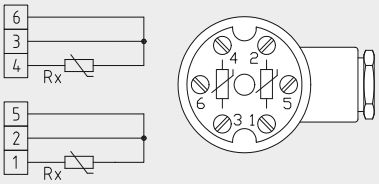
Connecting diagram **1 x four-wire connection**



Connecting diagram **2 x two-wire connection**



Connecting diagram **2 x three-wire connection**



S+S REGELTECHNIK

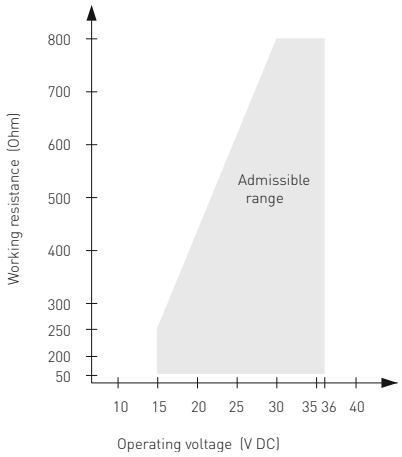
Measuring transducers, calibratable, with active output for THERMASGARD® temperature sensors

TEMPERATURE RANGES:

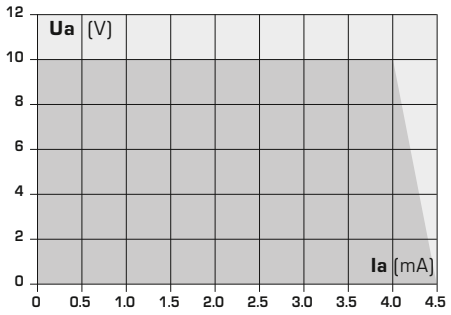
When selecting measuring transducer ranges, it is necessary to ensure that the maximum temperatures permissible for the sensor/enclosure are not exceeded!

Ambient temperature for measuring transducers: –30...+70 °C

Load resistance diagram
4...20 mA



Dependency of output voltage on output current



SUPPLY VOLTAGE:

For operating voltage reverse polarity protection, a one-way rectifier or reverse polarity protection diode is integrated in this device variant. This internal one-way rectifier also allows operating 0 - 10 V devices on AC supply voltage.

The output signal is to be tapped by a measuring instrument. Output voltage is measured here against zero potential (0 V) of the input voltage!

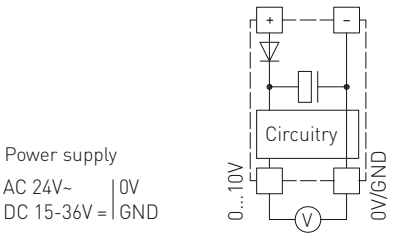
When this device is operated on DC supply voltage, the operating voltage input UB+ is to be used for 15...36 V DC supply and UB– or GND for ground wire!

When several devices are supplied by one 24 V AC voltage supply, it is to be ensured that all "positive" operating voltage input terminals (+) of the field devices are connected with each other and all "negative" operating voltage input terminals (–) = reference potential are connected together (in-phase connection of field devices).
All outputs of field devices must be referenced to the same potential!

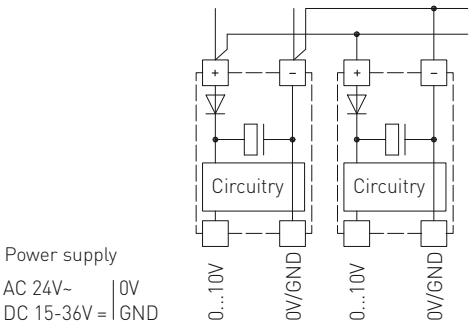
In the event of a reversed polarity at one field device, that device would cause a supply voltage short-circuit. The resulting short-circuit current flowing through this field device may cause damage to it.

Therefore, ensure correct wiring!

Schematic diagram **Individual operation**



Schematic diagram **Parallel operation**



Further information and legal notice

NOTE

All devices supplied display the company logo of S+S Regeltechnik GmbH as standard!
Neutral versions without the logo printed are available on request!

ORDER PLACEMENT

Orders can be placed in writing, by phone, by fax, or by e-mail. In doing so, the requested items shall be identified by denomination and quantities ordered and also the requested delivery date shall be stated. Special orders must generally be placed in writing, precisely specifying all requested special features. Or order directly ONLINE at **www.SplusS.de!**

DELIVERY PERIODS

The catalogue items are available from stock in partial quantities – subject to prior sale.
Delivery dates for large and special orders are determined after receipt of order / release order and mutual agreement.
We reserve the right to make partial deliveries. Events of force majeure such as difficulties in procurement of materials, strikes, etc. entitle us to withdraw from the contract.

TRADEMARK PROTECTION RIGHTS

S+S Regeltechnik GmbH, S+S logo and S+S brand names are trademarks registered in the register at the German Patent and Trademark Office and must not be used in other publications without the trademark owner's prior written consent.
All other product and company names mentioned here are brands or trademarks of the respective proprietors.

INFRINGEMENT OF INDUSTRIAL PROPERTY RIGHTS

Registered trademarks, trade names and general descriptive names are used in this product catalogue.
Even if these are not expressly marked as such, the pertinent protection provisions and copyrights shall nevertheless apply.

ATTENTION!

We generally only supply commercial, retail and industrial customers. We do not sell to the general public!

Our General Terms and Conditions of Sale and Delivery are applicable in all cases!
This price list supersedes all previous price lists.

LEGAL NOTICE

Editor: S+S Regeltechnik GmbH, Mr. Tino Schulze, Managing Director

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10/2019 GB

S+S REGELTECHNIK

S+S Regeltechnik GmbH
General Terms and Conditions of Sale and Delivery

1. Scope

(1) Any and all quotations, performances and agreements are solely made on the basis oft these S+S Regeltechnik GmbH (S+S) General Terms and Conditions of Sale and Delivery in their respective effective version. These General Terms and Conditions of Sale and Delivery are effective towards entrepreneurs in terms of BGB (German Civil Code) only.

(2) Customers' terms and conditions conflicting with or deviating from these General Terms and Conditions of Sale and Delivery will be acknowledged by S+S only, if S+S has expressly consented to the validity of such terms in writing. These S+S General Terms and Conditions of Sale and Delivery shall also be effective when services have been provided in knowledge of conflicting or deviating customers' terms and conditions to such customer without reservation.

(3) These S+S General Terms and Conditions of Sale and Delivery are being acknowledged through the customer's order placement or acceptance of services provided for the term of the entire business connection, also if they are not expressly repeated.

2. Quotation/contract conclusion/termination of contract

(1) All quotations made by S+S are without engagement. A contract is concluded through the written order confirmation or the delivery of goods ordered as far as S+S does not indicate via other circumstances that the order has been accepted.
As far as the customer communicates change requests after receipt of the order confirmation, S+S is entitled to charge the additional costs resulting thereof in case of accepting such changes.

(2) Illustrations, drawings and other specifications are only committal upon written acknowledgement. The corresponding applies for advisory or informative conversations between S+S and the customer, in particular about the applicability of goods ordered.

(3) As far as the customer cancels the contract regardless for whatever reason without S+S being accountable for, S+S is entitled to the right to claim blanket damages in the amount of 10 % of the total price being agreed at the date of order cancellation unless S+S or the customer provides other evidences in the individual case.

3. Performances/dates

(1) Delivery terms are binding only (fixed date transaction), if S+S has expressly confirmed that in writing.

(2) The adherence to binding terms of delivery presupposes the clarification of all technical and other questions as well as the timely and proper performance of any of the customer's duties.

(3) Delays in delivery for reasons beyond the sphere of influence of S+S, particularly because of unforeseeable occurrences preventing or impeding a delivery in due time, S+S cannot be held responsible for. In such cases the delivery term extends accordingly. In the case of delay of performance the customer is entitled to withdraw from the non-performed part of the contract as far as such impediment to performance continues for more than 6 weeks and a reasonable grace period for delivery has been granted. Customer's claims for damages because of extension of a delivery period or in case of S+S being exempted from its duty to perform are excluded as far as the customer had been forthwith notified of such impediment to performance.

(4) As far as S+S is responsible for the non-compliance with binding delivery dates, S+S's liability is limited to 0.5 % of the order value for each full week of default, however up to a maximum of 5 % of the order value of the shipment concerned. Any further claims for damages the customer can only assert as far as the customer has granted S+S a reasonable grace period in writing and such delay in delivery is attributable to gross negligence or intent on part of S+S.

(5) S+S is exempt from its duty to supply when circumstances become known during the term of the contractual relationship that give reason to rightful doubts in the solvency of the customer. In that case S+S will perform the delivery as far as the customer makes an advance payment in respect of the purchase price, or provides appropriate securities.

(6) As far as a customer orders goods on call (in particular pre-order), the full acceptance of the purchase or the full release order respectively has to be made within 12 months from the date of contract conclusion or order respectively. Otherwise the customer is obligated to accept the goods within 10 working days as far as S+S requests to do so in writing.

(7) In case of noncompliance with the time limit mentioned under cipher (6), the legal consequences of default of acceptance in terms of BGB will commence.

(8) Generally no right to return goods not needed anymore by buyer or for the purpose of stock reduction does exist.

4. Delivery

(1) Shipment of goods is effected ex principal office of S+S at the customer's risk and expense (Incoterms 2010: EXW). Any transport, breakage, theft, or other insurance will be taken out by S+S only at customer's request. Any expenses resulting thereof will be charged to the customer's account.

(2) As far as a shipment is supposed to be carried out at a later date than the practically possible date of shipment upon the customer's request, S+S is entitled to charge the costs of storage to the customer's account, starting from one month after readiness for shipment at a blanket rate of 0.5 % of the order value for each month, subject to providing other evidences. One month after notification of readiness for shipment S+S is alternatively entitled to request the customer to accept the goods and in case of non-acceptance, to dispose of the goods in any other way. Then the customer is to be supplied within a reasonably extended period of time.

(3) Partial performances are permissible as far as that is not unreasonable to the customer.

5. Prices/terms of payment

(1) Prices by S+S are understood plus legal value added tax at the respective rate in effect, ex principal office of S+S plus transport/shipping and packing costs to be separately charged. For orders of less than 75.00 EUR in value we reserve the right to charge a small quantity surcharge in the amount of 8.50 EUR. For special custom-made items we charge 67.00 EUR setup costs.
Existing customers from which the last payment was received more than 12 months ago as well as new customers are supplied two times against prepayment and then after a positive creditworthiness check by our Euler Hermes trade credit default insurance on basis of payment on account. Foreign customers are supplied against prepayment.

(2) S+S is entitled to invoice partial billing in accordance with the progress of order processing.

(3) The invoice amount is due for payment upon receipt of the invoice. As far as payment is not effected within 14 working days form the date of performance in form of goods and receipt of the invoice, the customer is in default. All payments must be made in EUR. With the reservation of providing evidence of further damages in case of default of payment the customer has to pay interest on arrears at a rate of 8 percentage points above the respective base rate.

(4) Bills of exchange and checks are only accepted for processing and take fulfilling effect only after being unconditionally credited. Eventual ancillary costs arising due to payment by bill of exchange or check are for the customer's account.

6. Warranty

(1) The customer is obligated to inspect the goods immediately after the delivery by S+S as far as that is feasible according to the proper course of business and to forthwith notify S+S of any defects. In case the customer fails to provide such notification, the goods are deemed approved unless a defect is concerned that was not recognizable in the course of inspection. If such a defect appears at a later date, notification must be made immediately after discovery; otherwise the goods are deemed approved also in view of such defect. To maintain the customer's rights the timely dispatch of the notification is sufficient. If S+S has maliciously concealed a defect, then S+S cannot refer to that clause.

(2) If the suitability or functionality of the goods can only be checked and ascertained in the course of further processing, the customer is obliged to carry out a test processing run. If no notification of defects is made after this test run, the goods shall also be deemed approved.

(3) Within the scope of supplementary performance S+S has a right of choice. When the first-time attempt to eliminate the defect remains unsuccessful, S+S reserves the right to deliver goods free of defects. In case the supplementary performance has failed, the customer is optionally entitled to the right of withdrawal, or to the right of curtailment.

(4) Excluded from any warranty are: faults caused by inapplicable or improper application and utilization, faulty mounting & installation or putting into operation, particularly in the case of non-observance of operating instructions, or because of incorrect or negligent treatment by the customer or any third-party person not being within the sphere of responsibility of S+S.

(5) S+S assigns its warranty claims existing against the manufacturer to the customer. The customer accepts such assignment. The customer is only entitled to assertion of warranty claims against S+S as far as the seriously pursued extra-judicial assertion of claims against the manufacturer has remained unsuccessful. In that case the customer is obligated to assign those claims against the manufacturer back to S+S again.

(6) Warranty claims prescribe within one year from the date of delivery of goods through S+S.

(7) If the customer calls upon S+S because of warranty claims and it turns out that either no defect was existing, or the asserted defect is due to a circumstance that does not commit S+S to warranty, then the customer has to reimburse S+S for the expenses resulting thereof as far as the customer has caused such availment of S+S grossly negligent or with intent.

(8) Eventual supplementary performances or subsequent improvements made by S+S always happen without acknowledgement of any statutory duty and on goodwill basis.

(9) In case the customer withdraws from the sales contract or rightfully requests delivery of new goods free of defects, or compensation for damages instead of the full performance, then S+S is obligated to dismount such defective goods delivered at its own expense as far as the customer had already installed such goods and to remove them. The customer itself is allowed to dismount defective goods upon request. In that case S+S refunds the customer for the costs arising in the course of doing so, however only as far as such are the customer's primary costs not including any share of profit. As far as the customer commissions a third party contractor with demounting, expenses resulting thereof will only be reimbursed by S+S if the buyer had granted S+S reasonable respite before without success. This does not apply when additional respite is legally superfluous according to statutory regulation.

(10) In the event of justified complaints, the corresponding returned goods will only be accepted if an RMA number has been issued for them. This must be requested from S+S and should always be quoted on the documents accompanying the returned goods.

7. Liability

(1) S+S is liable for damages due to wilfully and gross negligently caused violation of duties. S+S is furthermore liable for damages resulting from slightly negligently caused violation of material contractual obligations. Material contractual obligations in terms of this are duties where the performance of which enables the proper performance of the contract in the first place, and in the observance of which the customer regularly trusts and may rely upon. Any liability of S+S for slight negligence apart from that is excluded. The same applies to wilful or grossly negligent violation of duties and the slightly negligent violation of material contractual obligations through a legal representative or vicarious agent of S+S. Liability for personal injury remains unaffected by the aforesaid limitation of liability.

(2) In case of slightly negligent violation of material contractual obligations, liability of S+S is limited in the amount to the contract-typical damage. Contract-typical in terms of this is a damage, when in the normal course of affairs its occurrence in consequence of the committed violation of duty was to be assumed.

(3) S+S can only be held liable for deliberate breach of duty and not for any consequential damage caused by processing unsuitable or defective goods.

8. Retention of title

(1) Goods delivered remain the property of S+S up to the complete settlement of any and all claims by the customer. As far as the customer alienates goods under reserve without receiving the purchase price from its buyer matching payment with physical delivery or in advance, the customer also has to agree with such buyers reservation of title in accordance with this regulation.

(2) The customer is not entitled to pledge goods under reserve or to assign such goods for security. In cases of garnishment or other third parties' interventions the customer must notify S+S forthwith in writing.

(3) The customer is entitled to resell goods under reserve in the course of its regular business operations. The customer already now assigns to S+S all receivables in the amount of the total invoice amount (including VAT) of the claim that are accruing to the customer against its buyers in consequence of the resale, in fact irrespective of whether such goods are alienated without or after processing. The customer also remains entitled to collect the receivable even after assignment, whereas the entitlement of S+S to collect the outstanding amount itself remains thereof unaffected. S+S however undertakes towards the customer not to collect the outstanding amount as long as the customer does not fall behind with payments, or an application for institution of composition or insolvency proceedings has not been filed. If that is the case, the customer upon request by S+S is committed to disclose those assigned receivables and their debtors, to provide the necessary records, and to notify the debtors of the assignment.

9. Operating, mounting & installation instructions

The customer undertakes to adhere to operating, mounting & installation instructions being delivered together with goods where appropriate, and also to make possible third-party buyers aware of the same. The complete or partial non-observance of such instructions may cause a complete loss of buyers' rights. This does no apply to possible claims for damages according to § 7.

10. Copyright

The customer is not entitled to reproduce or copy any contents of S+S catalogues, in particular technical drawings and photographs, for its own advertising or other purposes without the express written approval by S+S. The customer is not allowed to make quotations or other entrepreneurial documents available to third parties.

11. Miscellaneous

(1) For any disputes arising from or in connection with the contractual relationship, Nuremberg/Germany is agreed as place of jurisdiction. Place of performance is Nuremberg/Germany.

(2) The customer can only offset against with claims that are undisputed or have been established as final and absolute. The customer is entitled to a right of retention only if its counterclaims originate from the very same contractual relationship, or such claims are undisputed or have been established as final and absolute.

(3) Modifications of and amendments to the contract require the written form. That also applies to the alteration of this written-form requirement clause.

(4) In case one or several provisions of these General Terms and Conditions of Sale and Delivery should be ineffective or have not been properly incorporated into the contract, the rest of the provisions of these General Terms and Conditions of Sale and Delivery remain effective.

(5) Solely the laws of the Federal Republic of Germany are applicable while excluding the law regarding the United Nations Convention on Contracts for the International Sale of Goods (CISG) – also when the customer has its registered office abroad.

Issued on: October 2018

You can rely on S+S –
We have the paperwork to prove it!

When it comes to quality, we leave nothing to chance. We make sure of this with systematic quality management and uncompromising checks at our in-house testing centre. In addition, we undergo regular certification by independent inspection authorities and institutions. We are very proud that our quality "Made in Germany" also passes the strictest international inspections and tests again and again with flying colours.

Approved Safety

- DIN tested/certified devices
- RoHS conforming materials
- ESD compliant manufacturing
- CE compliance tested by external laboratories

Certified Quality

Our development and production in Nuremberg /Germany is certified by TÜV Thüringen according to DIN EN ISO 9001:2015.

- GOST certificates for exports of all products by S+S Regeltechnik GmbH to the Commonwealth of Independent States and Russia
- EAC certified

S+S REGELTECHNIK


ZERTIFIKAT
CERTIFICATE
EU-Baumusterprüfung (Modul B) - Baumuster - nach Richtlinie 2014/68/EU
Zertifikat-Nr.: Z-IS-TAF-MUC-18-03-2652130-002
Name und Anschrift des Herstellers: S+S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg
Prüfbericht Nr.: C-T 1382-01/18 vom 2018-02-26
Geltungsbereich: Sicherheitstemperaturbegrenzer als Ausrüstungsteil mit Sicherheitsfunktion, Typ: ETR und KTR (siehe Seite 3), Prüfgrundlagen siehe Seite 3
Fertigungsstätte: S+S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg
München, 26.02.2018
TÜV SÜD Industrie Service GmbH
Johannes Steigerwald


CERTIFICATE
ZERTIFIKAT
EU Type examination (module B) - production type - according to Directive 2014/68/EU
Certificate No.: Z-IS-TAF-MUC-18-03-2652130-002
Name and address of manufacturer: S+S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg
Evaluation report No.: C-T 1382-01/18 dated 2018-02-26
Scope of examination: Safety temperature limiter as safety accessory, type: ETR and KTR (see page 3), basis of examination and details see page 3
Manufacturing plant: S+S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg
München, 26.02.2018
TÜV SÜD Industrie Service GmbH
Johannes Steigerwald


СЕРТИФИКАТ
Certificate
Certificate No.: Z-IS-TAF-MUC-18-03-2652130-002
Evaluation report No.: C-T 1382-01/18 dated 2018-02-26
Scope of examination: Safety temperature limiter as safety accessory, type: ETR and KTR (see page 3), basis of examination and details see page 3
Manufacturing plant: S+S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg
München, 26.02.2018


ZERTIFIKAT
für das Managementsystem nach DIN EN ISO 9001:2015
Die regelwerkskonforme Anwendung wurde nachgewiesen und wird gemäß Zertifizierungsverfahren bescheinigt für das Unternehmen
S + S Regeltechnik GmbH
Pirnaer Straße 20
90411 Nürnberg
Geltungsbereich
Entwicklung, Herstellung und Vertrieb von Sensoren, Fühlern und Feldgeräten für die Gebäude-, Versorgungstechnik und Infrastrukturautomation
Zertifikat-Registrier-Nr.: TIC 15 100 21333
Gültig bis: 2020-06-22
Gültig ab: 2017-07-13
Audit Bericht Nr.: 3330 209P R0
Diese Zertifizierung wurde gemäß TIC-Verfahren zur Auditierung und Zertifizierung durchgeführt und wird regelmäßig überwacht.
TÜV Thüringen e.V. Zertifizierungsstelle für Systeme und Personal
Jena, 2018-07-02

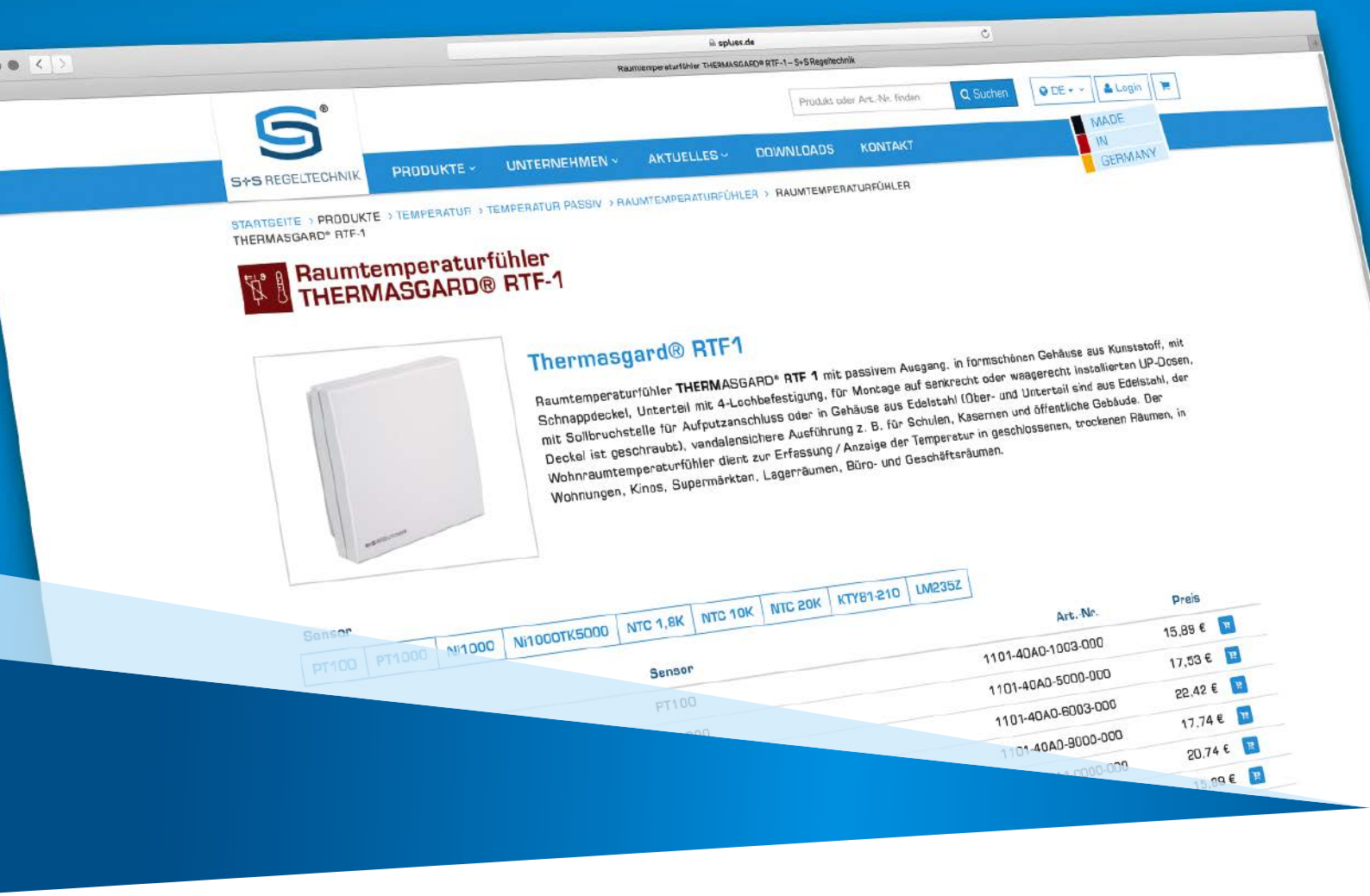

CERTIFICATE
for the management system according to ISO 9001:2015
The proof of the conforming application with the regulation was furnished and in accordance with certification procedure it is certified for the company
S + S Regeltechnik GmbH
Pirnaer Straße 20
90411 Nürnberg / Germany
Scope
Development, production and sale of sensors, detectors and field instruments for building, supply technology and infrastructure automation
Certificate Registration No.: TIC 15 100 21333
Valid until: 2020-06-22
Valid from: 2017-07-13
Audit Report No.: 3330 209P R0
This certification was conducted in accordance with the TIC auditing and certification procedures and is subject to regular surveillance audits.
TÜV Thüringen e.V. Certification body for systems and personnel
Jena, 2018-07-02


СЕРТИФИКАТ
соответствия системы менеджмента требованиям стандарта ISO 9001:2015
В соответствии с правилами сертификации подтверждено выполнение требований стандарта в организации
S + S Regeltechnik GmbH
Pirnaer Straße 20
90411 Nürnberg / Германия
в области:
Разработка, производство и сбыт сенсоров, зондов, регулирующих и контрольных приборов для автоматизации сооружений и инфраструктуры
Регистрационный номер сертификата: TIC 15 100 21333
Действителен до: 2020-06-22
Действителен с: 2017-07-13
Отчет по аудиту №: 3330 209P R0
Йена, 2018-07-02


DIN CERTCO
ZERTIFIKAT
Zertifikatinhaber: S + S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg
Produkt: Temperaturregel- und Begrenzungseinrichtungen für Wärmeerzeugungsanlagen
Typ, Modell: ETR-060, ETR-090, ETR-50140, ETR-1, ETR-0120; KTR-060, KTR-090, KTR-50140, KTR-1, KTR-0120
Prüfgrundlage(n): DIN EN 14597:2015-02
Registernummer: TR1199
Gültig bis: 2023-02-28


DIN CERTCO
CERTIFICATE
Certificate holder: S + S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg, GERMANY
Product: Temperature control and limiting devices for heat generating systems
Type, Model: ETR-060, ETR-090, ETR-50140, ETR-1, ETR-0120; KTR-060, KTR-090, KTR-50140, KTR-1, KTR-0120
Testing basis: DIN EN 14597:2015-02
Registration No.: TR1199
Valid until: 2023-02-28
See annex for further information.


DIN CERTCO
СЕРТИФИКАТ
S + S Regeltechnik GmbH, Pirnaer Str. 20, 90411 Nürnberg, Германия
ETR-060, ETR-090, ETR-50140, ETR-1, ETR-0120; KTR-060, KTR-090, KTR-50140, KTR-1, KTR-0120
DIN EN 14597:2015-02
TR1199
2023-02-28



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