

**Immersion / screw-in / duct temperature measuring transducer, calibratable, with Modbus connection or W-Modbus (wireless)**

**S+S REGELTECHNIK**

**Patented quality product** (Immersion sensor patent no. DE 10 2012 017 500.0)

Calibratable temperature measuring transducer with sensor tube **THERMASGARD® TM 65-Modbus-T3**, with Modbus connection, in an impact-resistant plastic housing with quick-locking screws, stainless steel-protective tube (50 - 400 mm), optionally with /without display, measures temperature (-50...+150 °C). International system of units **SI** (default) can be changed to **imperial** (via Modbus). With **wModbus** device version, the W-Modbus (Wireless) replaces the RTU cable; the BMS connection is radio-based using a W-Modbus gateway.

The duct sensor is used to detect the temperature in liquid or gaseous media. Use the stainless steel immersion sleeves for aggressive media. It is used in heating engineering, ventilation and air conditioning ducts, pipes, storage systems, compact district heating stations, warm and cold water systems, oil and lubrication cycle systems, machine and systems engineering and the entire industry sector.

**Innovative Modbus sensor** with galvanically isolated RS485 Modbus interface, switchable bus terminating resistor, DIP switch for setting in current-free state, internal LEDs for telegram status display, push-in terminals and large three-line display (illuminated, individually programmable). Uses **internal diagnostics** to detect sensor breakage or sensor short circuit as errors. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

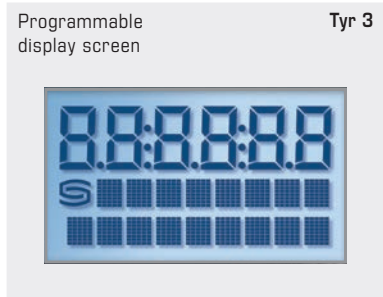
**TECHNICAL DATA**

Power supply:	24 V AC (± 20%); 15...36 V DC
Power consumption:	< 1.2 W / 24 V DC; < 1.8 VA / 24 V AC
System of units:	<b>SI</b> (default) or <b>Imperial</b> (switchable via Modbus)
Data points:	Temperature [°C] [°F]
Sensor:	Pt1000, DIN EN 60751, class B <b>(Perfect Sensor Protection)</b>
Measuring range:	-50...+150 °C
Accuracy, temperature:	typically ± 0.2 K at +25 °C
Zero point offset:	± 10 °C
Ambient temperature:	Measuring transducer -30...+70 °C
Medium:	depending on selected immersion sleeve
Communication:	<b>Modbus</b> (RTU cable), Bus interface RS 485, <b>galvanically isolated</b> , Baud rate 9600, 19200, 38400 baud <b>or</b> <b>W-Modbus</b> (Wireless Modbus, AES-128 encrypted) Frequency <b>2.4 GHz</b> ISM, Transmission power <b>100 mW</b> , Range <b>max. 500 m</b> (open field) / approx. 50 - 70 m (inside buildings)
Bus protocol:	Modbus (RTU mode), address range 0... <b>247</b> adjustable
Signal filtering:	0.3 s / 1 s / 10 s
Protective tube:	stainless steel, <b>V4A</b> (1.4571), Ø = 6 mm, inserted length (EL) = 50 - 400 mm (see table)
Housing:	Plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	108 x 78.5 x 43.3 mm (Tyr 3 without display) 108 x 78.5 x 45,8 mm (Tyr 3 with display)
Cable connection:	<b>Cable gland</b> , plastic (M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm) <b>or</b> <b>M12 connector</b> according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.2 - 1.5 mm², using push-in terminals
Permissible air humidity:	< 95% RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	<b>IP 65</b> (according to EN 60 529)
Standards (Modbus):	CE conformity according to EMC Directive 2014 / 30 / EU
Standards (W-Modbus):	CE conformity according to Radio Directive 2014 / 53 / EU
Features:	<b>Display with illumination</b> , three-line, programmable, cutout approx. 51 x 29 mm (W x H), for displaying the actual temperature, error message or an individually programmable display value
Internal diagnostics:	<b>Error 1</b> at sensor breakage <b>Error 2</b> at sensor short circuit

**TM 65 -Modbus-T3**  
without display  
(RTU cable)



**TM 65 -wModbus**  
without display  
(wireless)



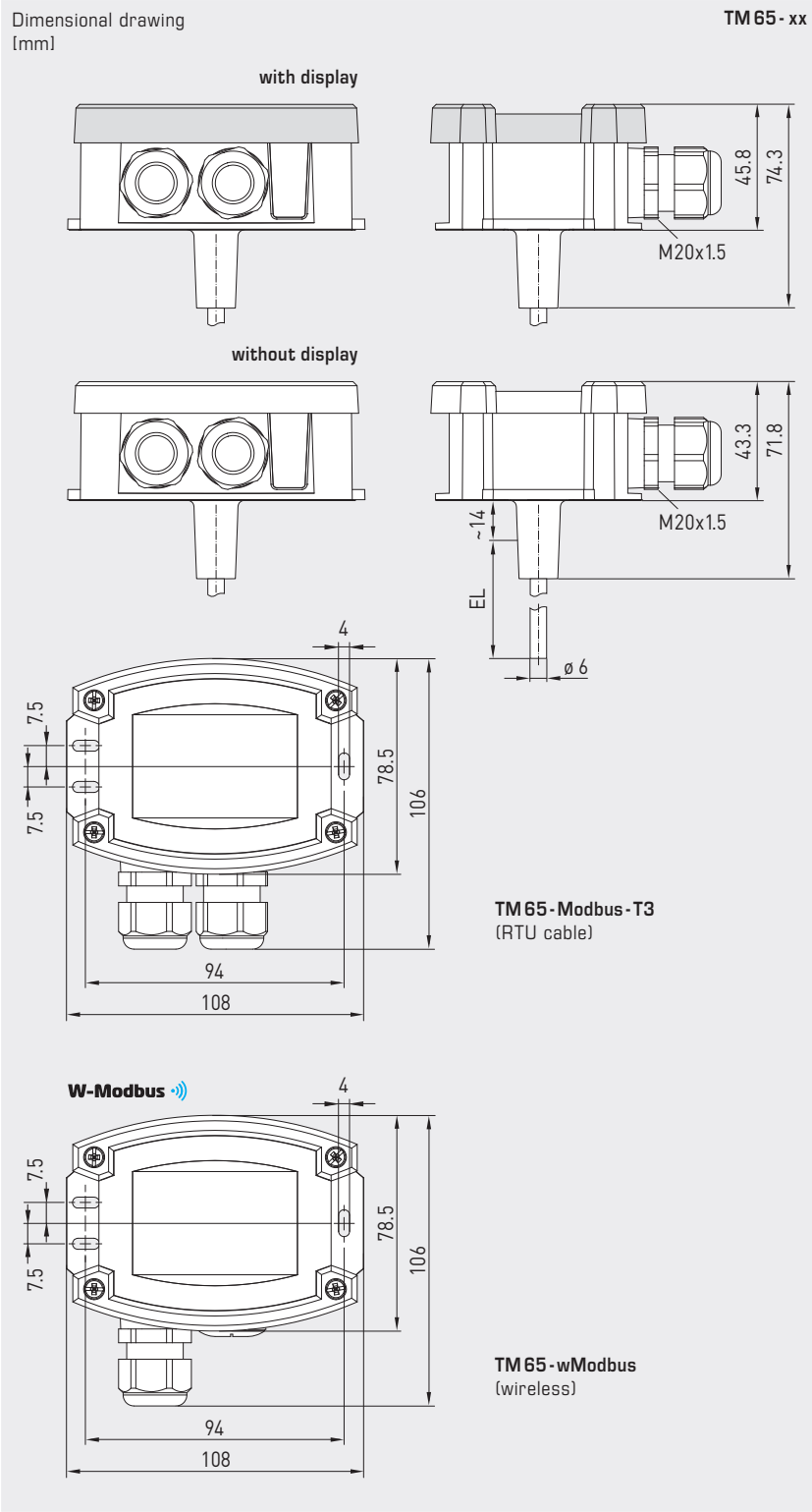


**NEW**

S+S REGELTECHNIK

# THERMASGARD® TM 65 - Modbus - T3 THERMASGARD® TM 65 - wModbus

Immersion / screw-in / duct temperature measuring transducer, calibratable, with Modbus connection or W-Modbus (wireless)



Device version with **M12 connector** (optional on request)

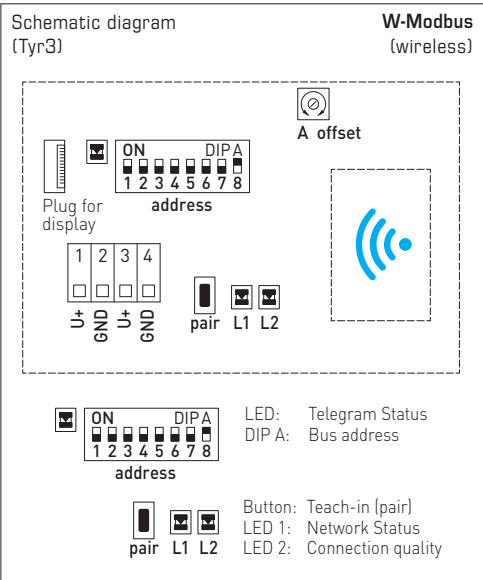
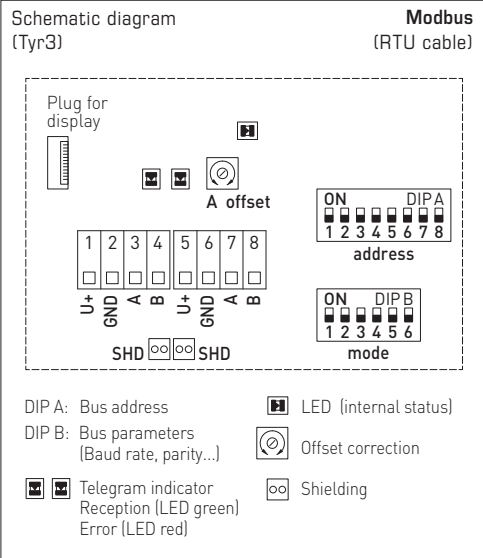


High-performance encapsulation against vibration, mechanical stress and humidity

**PS-PROTECTION**  
PERFECT SENSOR PROTECTION

Immersion / screw-in / duct temperature measuring transducer,  
 calibratable, with Modbus connection or W-Modbus (wireless)

**TM 65 -Modbus-T3**  
 (RTU cable)



**TM 65 -wModbus**  
 (wireless)






**NEW**


# THERMASGARD® TM 65 - Modbus - T3

## THERMASGARD® TM 65 - wModbus

S+S REGELTECHNIK

Immersion / screw-in / duct temperature measuring transducer, calibratable, with Modbus connection or W-Modbus (wireless)

THERMASGARD® TM 65 - Modbus - T3		Temperature transmitter (basic device) with Modbus connection (RTU cable)				
Type / WG01	Output	Installation length (EL)	Display	Item no.	Price	
<b>TM65 - Modbus - T3</b>						
TM65-Modbus-T3 50mm	Modbus (RTU cable)	50 mm		1101-7236-0010-000	<b>184,30 €</b>	
TM65-Modbus-T3 50mm <b>LCD</b>	Modbus (RTU cable)	50 mm	■	1101-7236-4010-000	<b>244,11 €</b>	
TM65-Modbus-T3 100mm	Modbus (RTU cable)	100 mm		1101-7236-0020-000	<b>184,62 €</b>	
TM65-Modbus-T3 100mm <b>LCD</b>	Modbus (RTU cable)	100 mm	■	1101-7236-4020-000	<b>244,42 €</b>	
TM65-Modbus-T3 150mm	Modbus (RTU cable)	150 mm		1101-7236-0030-000	<b>184,86 €</b>	
TM65-Modbus-T3 150mm <b>LCD</b>	Modbus (RTU cable)	150 mm	■	1101-7236-4030-000	<b>244,70 €</b>	
TM65-Modbus-T3 200mm	Modbus (RTU cable)	200 mm		1101-7236-0040-000	<b>185,11 €</b>	
TM65-Modbus-T3 200mm <b>LCD</b>	Modbus (RTU cable)	200 mm	■	1101-7236-4040-000	<b>244,92 €</b>	
TM65-Modbus-T3 250mm	Modbus (RTU cable)	250 mm		1101-7236-0050-000	<b>185,46 €</b>	
TM65-Modbus-T3 250mm <b>LCD</b>	Modbus (RTU cable)	250 mm	■	1101-7236-4050-000	<b>245,29 €</b>	
TM65-Modbus-T3 300mm	Modbus (RTU cable)	300 mm		1101-7236-0060-000	<b>186,35 €</b>	
TM65-Modbus-T3 300mm <b>LCD</b>	Modbus (RTU cable)	300 mm	■	1101-7236-4060-000	<b>246,13 €</b>	
TM65-Modbus-T3 350mm	Modbus (RTU cable)	350 mm		1101-7236-0070-000	<b>187,49 €</b>	
TM65-Modbus-T3 350mm <b>LCD</b>	Modbus (RTU cable)	350 mm	■	1101-7236-4070-000	<b>247,33 €</b>	
TM65-Modbus-T3 400mm	Modbus (RTU cable)	400 mm		1101-7236-0080-000	<b>188,65 €</b>	
TM65-Modbus-T3 400mm <b>LCD</b>	Modbus (RTU cable)	400 mm	■	1101-7236-4080-000	<b>248,52 €</b>	
Optional:	Cable connection with <b>M12 connector</b> according to DIN EN 61076-2-101			on request		
<b>Note:</b>	System of units <b>SI</b> (default) or <b>imperial</b> (can be changed via Modbus).					
<b>ACCESSORIES</b>						
<b>KA2-Modbus</b>	<b>Communication adapter</b> (USB/RS485) for system connection			1906-1200-0000-100	<b>236,11 €</b>	
<b>LA-Modbus</b>	<b>Line termination device</b> (with terminating resistor) as an active bus termination			1906-1300-0000-100	<b>88,05 €</b>	

THERMASGARD® TM 65 - wModbus		Temperature measuring transducer (basic device) with W-Modbus (wireless)			<b>W-Modbus</b> 	
Type / WG01	Output	Installation length (EL)	Display	Item no.	Price	
<b>TM65 - wModbus</b>						
TM65-wModbus 50MM	W-Modbus (wireless)	50 mm		1101-723F-0010-000	<b>227,15 €</b>	
TM65-wModbus 50MM <b>LCD</b>	W-Modbus (wireless)	50 mm	■	1101-723F-4010-000	<b>286,96 €</b>	
TM65-wModbus 100MM	W-Modbus (wireless)	100 mm		1101-723F-0020-000	<b>227,47 €</b>	
TM65-wModbus 100MM <b>LCD</b>	W-Modbus (wireless)	100 mm	■	1101-723F-4020-000	<b>287,27 €</b>	
TM65-wModbus 150MM	W-Modbus (wireless)	150 mm		1101-723F-0030-000	<b>227,71 €</b>	
TM65-wModbus 150MM <b>LCD</b>	W-Modbus (wireless)	150 mm	■	1101-723F-4030-000	<b>287,55 €</b>	
TM65-wModbus 200MM	W-Modbus (wireless)	200 mm		1101-723F-0040-000	<b>227,96 €</b>	
TM65-wModbus 200MM <b>LCD</b>	W-Modbus (wireless)	200 mm	■	1101-723F-4040-000	<b>287,77 €</b>	
TM65-wModbus 250MM	W-Modbus (wireless)	250 mm		1101-723F-0050-000	<b>228,31 €</b>	
TM65-wModbus 250MM <b>LCD</b>	W-Modbus (wireless)	250 mm	■	1101-723F-4050-000	<b>288,14 €</b>	
TM65-wModbus 300MM	W-Modbus (wireless)	300 mm		1101-723F-0060-000	<b>229,20 €</b>	
TM65-wModbus 300MM <b>LCD</b>	W-Modbus (wireless)	300 mm	■	1101-723F-4060-000	<b>288,98 €</b>	
TM65-wModbus 350MM	W-Modbus (wireless)	350 mm		1101-723F-0070-000	<b>230,34 €</b>	
TM65-wModbus 350MM <b>LCD</b>	W-Modbus (wireless)	350 mm	■	1101-723F-4070-000	<b>290,18 €</b>	
TM65-wModbus 400MM	W-Modbus (wireless)	400 mm		1101-723F-0080-000	<b>231,50 €</b>	
TM65-wModbus 400MM <b>LCD</b>	W-Modbus (wireless)	400 mm	■	1101-723F-4080-000	<b>291,37 €</b>	
Optional:	Cable connection with <b>M12 connector</b> according to DIN EN 61076-2-101			on request		
<b>Note:</b>	System of units <b>SI</b> (default) or <b>imperial</b> (can be changed via Modbus).					
<b>ACCESSORIES</b>						
Gateway with W-Modbus (Wireless) for radio-based connection to Modbus networks, operating modes ' <b>Gateway</b> ' (basic function as a base station) and ' <b>Node</b> ' (adapter function for max. 1 wired sensor)						
<b>GW-wModbus</b>				1801-1211-1101-000	<b>245,30 €</b>	
<b>GW-wModbus Pro</b>	and ' <b>Node Pro</b> ' (adapter function for max. 16 wired sensors)			1801-1211-1101-100	<b>332,07 €</b>	

Immersion / screw-in / duct temperature measuring transducer, calibratable, with Modbus connection or W-Modbus (wireless)

One basic device in four variants ...



**PATENTED**

**TM 65 - Modbus -T3 + TH08 -MS -G /xx**

Immersion / screw-in temperature sensor with immersion sleeve, polished brass

**TM 65 - Modbus -T3 + TH08 -VA /xx**

Immersion / screw-in temperature sensor with immersion sleeve, stainless steel, V4A

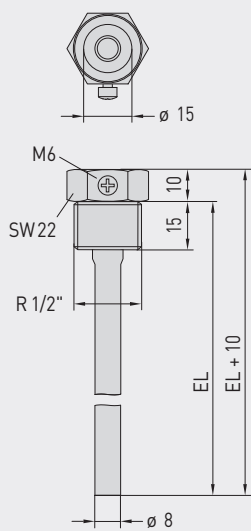
**TM 65 - Modbus -T3 + TH08 -VA /xx /90**

Immersion / screw-in temperature sensor with immersion sleeve with neck tube, stainless steel, V4A

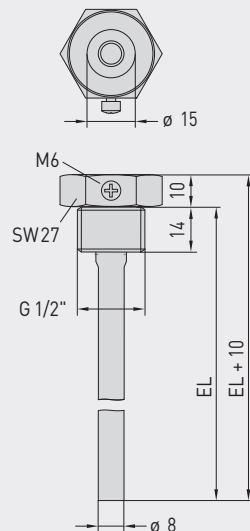
**TM 65 - Modbus -T3 + MF -15 -K**

Duct temperature sensor with mounting flange, plastic

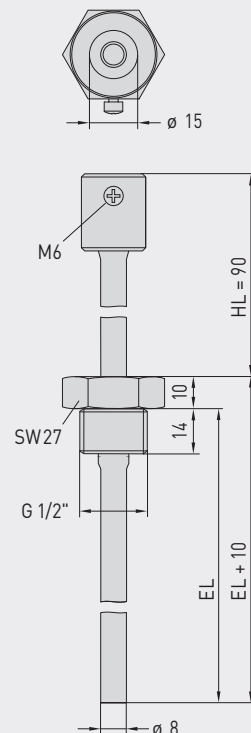
**TH08 -MS -G /xx**  
 Dimensional drawing [mm]



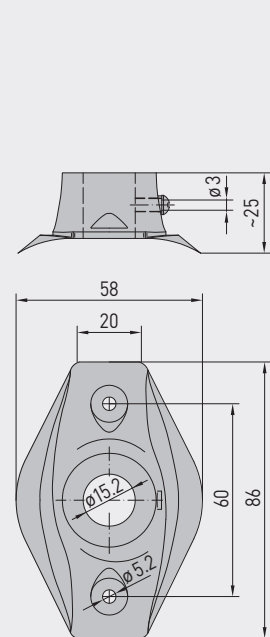
**TH08 -VA /xx**  
 Dimensional drawing [mm]



**TH08 -VA /xx /90**  
 Dimensional drawing [mm]



**MF -15 -K**  
 Dimensional drawing [mm]





NEW

# THERMASGARD® TM 65 - Modbus -T3 THERMASGARD® TM 65 -wModbus

S+S REGELTECHNIK

Immersion / screw-in / duct temperature measuring transducer, calibratable, with Modbus connection or W-Modbus (wireless)

... through combination with accessories:



**TH08-MS-G/xx**

Immersion sleeve, polished brass, thread-sealing, conical, according to DIN 10226



**TH08-VA/xx**

Immersion sleeve, stainless steel, V4A, flat-sealing, cylindrical, according to DIN 228



**TH08-VA/xx/90**

Immersion sleeve with neck tube, stainless steel, V4A, flat-sealing, cylindrical, according to DIN 228



**MF-15-K**

Mounting flange, plastic

THERMASGARD® TH08 Immersion sleeve Ø 8 mm (Accessories)					
Type / WG01B	p <sub>max</sub> (static)	T <sub>max</sub>	Inserted Length (EL)	Item No.	Price
<b>TH08-MS-G xx</b> polished brass					
without neck tube					
TH08-MS-G 50MM	10 bar	+150 °C	50 mm	7100-0017-0010-132	13,82 €
TH08-MS-G 100MM	10 bar	+150 °C	100 mm	7100-0017-0020-132	14,46 €
TH08-MS-G 150MM	10 bar	+150 °C	150 mm	7100-0017-0030-132	15,64 €
TH08-MS-G 200MM	10 bar	+150 °C	200 mm	7100-0017-0040-132	16,73 €
TH08-MS-G 250MM	10 bar	+150 °C	250 mm	7100-0017-0050-132	19,37 €
TH08-MS-G 300MM	10 bar	+150 °C	300 mm	7100-0017-0060-132	20,25 €
TH08-MS-G 350MM	10 bar	+150 °C	350 mm	7100-0017-0070-132	20,79 €
TH08-MS-G 400MM	10 bar	+150 °C	400 mm	7100-0017-0080-132	21,32 €
<b>TH08-VA / xx</b> Stainless steel V4A (1.4571)					
without neck tube					
TH08-VA 50MM	40 bar	+600 °C	50 mm	7100-0012-0010-132	23,82 €
TH08-VA 100MM	40 bar	+600 °C	100 mm	7100-0012-0020-132	26,24 €
TH08-VA 150MM	40 bar	+600 °C	150 mm	7100-0012-0030-132	28,39 €
TH08-VA 200MM	40 bar	+600 °C	200 mm	7100-0012-0040-132	29,78 €
TH08-VA 250MM	40 bar	+600 °C	250 mm	7100-0012-0050-132	37,06 €
TH08-VA 300MM	40 bar	+600 °C	300 mm	7100-0012-0060-132	38,78 €
TH08-VA 350MM	40 bar	+600 °C	350 mm	7100-0012-0070-132	39,53 €
TH08-VA 400MM	40 bar	+600 °C	400 mm	7100-0012-0080-132	40,60 €
<b>TH08-VA / xx / 90</b> Stainless steel V4A (1.4571)					
with neck tube (90 mm)					
TH08-VA 50/90MM	40 bar	+600 °C	50 mm	7100-0012-0012-132	32,04 €
TH08-VA 100/90MM	40 bar	+600 °C	100 mm	7100-0012-0022-132	33,49 €
TH08-VA 150/90MM	40 bar	+600 °C	150 mm	7100-0012-0032-132	35,13 €
TH08-VA 200/90MM	40 bar	+600 °C	200 mm	7100-0012-0042-132	36,63 €
TH08-VA 250/90MM	40 bar	+600 °C	250 mm	7100-0012-0052-132	38,38 €
TH08-VA 300/90MM	40 bar	+600 °C	300 mm	7100-0012-0062-132	41,60 €
Note:	inner diameter of socket 15.0 mm For further information see last chapter!				
<b>Mounting flange (Accessories)</b>					
Type / WG01B				Item No.	Price
<b>MF</b>					
MF-15-K	Mounting flange, plastic, 56.8x84.3mm, Ø 15.2mm tube gland, T <sub>max</sub> +100°C			7100-0032-0000-000	6,75 €
Note:	For information see last chapter!				