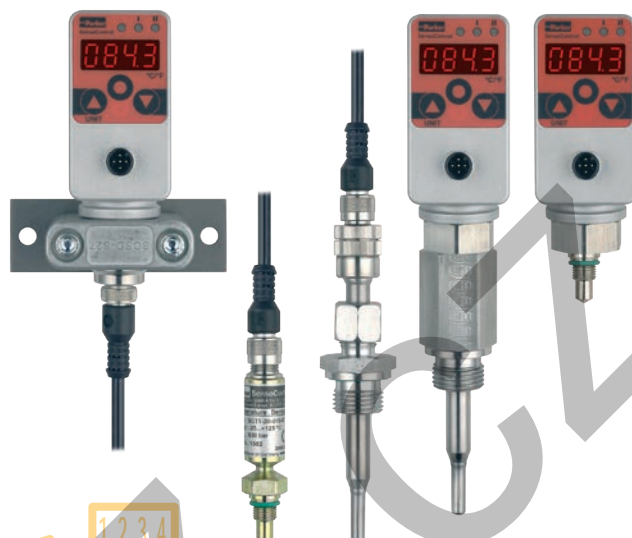


# SCTSD TemperatureController

## Device features

- Compact size
- Rugged
- Dependable
- Easily operable
- Metal housing
- High protection class
- Modular construction
- Many variants
- Analogue output
- Pivoting
- Password
- °C, °F



The TemperatureController combines the functions of a temperature switch, a temperature sensor and a display device.

- Temperature display (Thermometer)
- Switching outputs
- Analogue signal

Simple operation, extensive functionality and a modular design are the most important characteristics of the TemperatureController.

The TemperatureController offers excellent technical specifications, optimum temperature management, combined with a variety of installation options. It is perfect for applications when the temperature needs to be reliably monitored and easily viewed.

### Easy to use

The normal temperature monitoring limit values adjustments (e.g. cooling and alarm) are made either with the keys or the programming module.

### High functionality

Each switching output can be adjusted individually:

- NO/NC contact
- On/off switching pressures
- Delay times
- Hysteresis / window function
- time delay

Thanks to these easy switching functions, intelligent adjustments can be set which are normally not possible using a mechanical switch. Therefore, many switches can be replaced with one controller.

The analogue output is individually adjustable

- 0/4...20 mA switchable
- Adjustable start temperature
- Adjustable end temperature

### Reliable and safe

A functional error is signalled and can be processed further according to DESINA. Parameters can be password protected to avoid unauthorised changes.

### Rugged

The housing is made of metal and is resistant to moisture, shock and vibrations. The electronics are protected against reverse polarity, over-voltage and short-circuits.

### Everything at a glance

The large illuminated display can be read from long distances. The temperature can be selected to °C or °F. The temperature is always optimally readable due to the modular construction and the pivoting housing.

### Optimal installation possibilities

Sensors in various lengths are available for different tank sizes. These can be directly connected to the TemperatureController via a cable. Additionally the temperature sensor is available up to 630 bar for high pressure applications.

### Universal

Diverse versions are available for the many different applications.

# SCTSD TemperatureController

## Application example Tank temperature monitoring

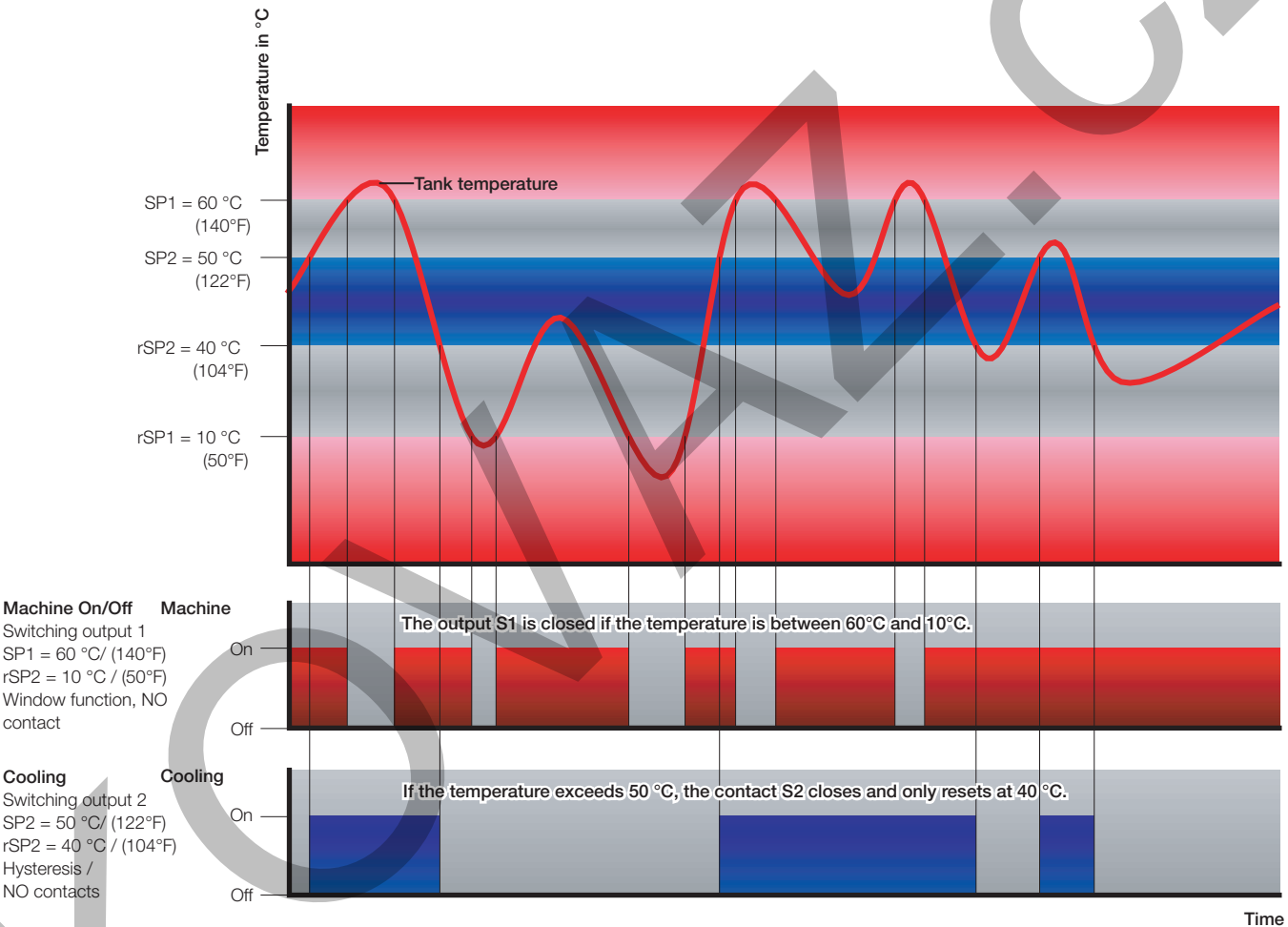
### Machine On / Off

The facility should shut down when the tank temperature falls below 10°C (50°F) or climbs above 60°C (140°F).

A protective wire-break mechanism should be considered to improve safety.

### Cooling

If the temperature climbs above 50°C (122°F), the tank temperature should be cooled with a refrigerating unit down to 40°C (104°F).



# SCTSD Modular TemperatureController

## Device features

### Everything at a glance

- Sloped display
- Digital display
  - Large
  - Illuminated
- Display
  - °C, °F
  - Current temperature
  - Minimum temperature
  - Maximum temperature
  - Switching points

### Variable installation

- Compact size
- 290° pivotable

### Connect as required

- 2 switching outputs
- Analogue output
- 0...20 or 4...20 mA
- Freely programmable
- Scalable
- Plug
  - M12
  - DIN EN 175301-803 Form A (old DIN43650)



### Optical interface

- Switch status is shown

### Easy to use

- 3 large buttons
- Display of the unit

### Rugged

- Metal housing
- Waterproof
- Excellent interference immunity
- Vibration proof
- Shock proof

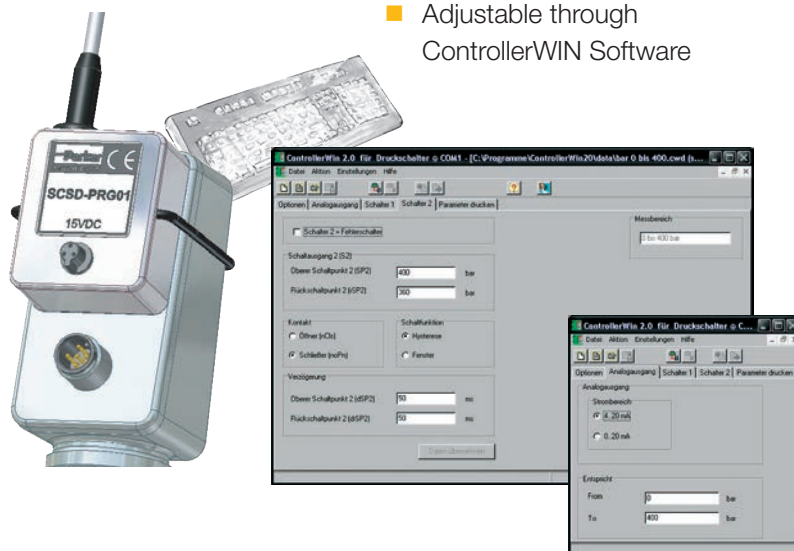
### Tube clamp

- Safe installation with the sturdy SCSD-S27 clamp



### Programming module

- Adjustable through ControllerWIN Software



# SCTSD Modular TemperatureController

## Device features

### Adjustable height

Through clamping thread

- SCA-TT-10-1/2



### High pressure temperature sensor

- 630 bar
- SCTT-20-010-07



### Immersion tube

Additional with

- High pressures
- Aggressive substance
- Immersion tube SCA-TT-10-xxx



### Cable

- SCK-410-03-45-45

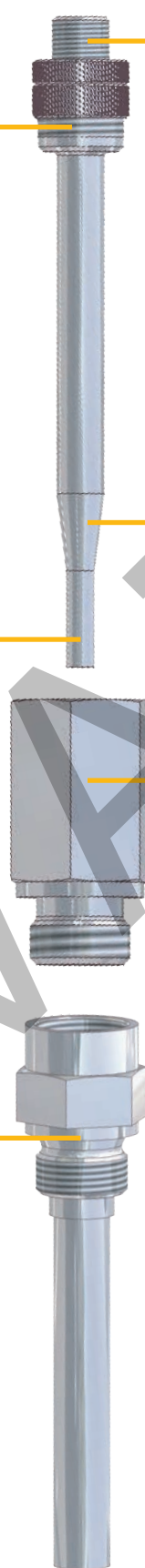


### Temperature sensor

- Stainless steel
- Wide range of compatible substances
- Diverse lengths
- SCTT-10-xxx-07

### Connection adapter

- SCA-TT-10-SD



# SCTSD Modular TemperatureController

## Technical data

Input parameters SCT-150	
Display range	-50...+150 °C / (-58...302°F)
Sensor input	PT1000
Sensor connection	M12x1; 4-pole
Output values	
Switching accuracy at 25 °C	± 0.35 % FS
Display accuracy at 25 °C	± 0.35 % FS ± 1 Digit
Electrical connection	
Supply voltage V <sub>+</sub>	15...30 VDC nominal 24 VDC; Protection class 3
Electrical connection	M12x1; 4-pole; 5-pole; Device plug DIN EN 175301-803 Form A (old DIN43650)
Short-circuit protection	Yes
Overload protection	Yes
Current consumption	< 100 mA
EM compatibility	
Disturbance emissions	EN 61000-6-3
Resistance to interference	EN 61000-6-2

\* does not apply for version DIN EN 175301-803 Form A (old DIN43650)

Housing	
	Orientation adjustable to 290°
Material	Die-cast zinc Z 410; painted
Foil material	Polyester
Display	4-digit 7-segment LED; red; digit height 9 mm
Protection degree	IP67 EN 60529 IP65 with device plug DIN EN 175301-803 Form A (old DIN43650)
Ambient conditions	
Ambient temperature range	-20...+85 °C / (-4...185°F)
Storage temperature range	-40...+100 °C / (-40...212°F)
Vibration resistance	20 g; 10...500 Hz IEC60068-2-6*
Shock resistance	50 g; 11 ms IEC60068-2-29*
Outputs	
Switching outputs	2 x PNP high-side switch, 0.7 A/switch
Contact functions	NO / NC contact; window / hysteresis
Response speed	300 ms
Accuracy	± 1 % FS
Analogue output	0/4...20 mA; programmable; freely scalable; 4...20 mA = -40...125 °C / (-40...257°F)

Temperature sensor SCTT-10-xxx-07	
Measuring component	PT1000/DIN EN 60751, Class B
Measuring range	-40...+125 °C
Response time	$\tau_{0.5} = 6 \text{ s} / \tau_{0.9} = 25 \text{ s}$
Accuracy	± 0.3 K + 0.005* t
Material	Stainless Steel 1.4571
Nominal pressure (max)	10 bar (145 psi)
Temperature of substance	-40...+125 °C / (-40...257°F)
Ambient temperature	-25...+80 °C / (-13...176°F) (for the connector area)
Storage temperature	-25...+85 °C / (-13...185°F)

High pressure sensor SCTT-20-010-07	
Measuring component	PT1000/DIN EN 60751, Class B
Measuring range	-40...+125 °C / (-40...257°F)
Response time	$\tau_{0.5} = 3 \text{ s} / \tau_{0.9} = 15 \text{ s}$
Accuracy	± 0.3 K + 0.005* t
Material	Stainless Steel 1.4404
Threaded stud	M10x1
Seal	O ring 7.65x1.78 mm; FKM
Measuring pipe diameter	7 mm
Installation length	18.5 mm
Nominal pressure P <sub>n</sub>	630 bar / (9137 psi)
Overload pressure P <sub>max</sub>	800 bar / (11,603 psi)
Burst pressure P <sub>burst</sub>	1200 bar / (17,405 psi)
Temperature of substance	-40...+125 °C / (-40...257°F)
Ambient temperature	-25...+80 °C / (-13...176°F) (for the connector area)
Storage temperature	-25...+85 °C / (-13...185°F)

# SCTSD Modular TemperatureController

## Pin assignment

### SCTSD-150-00-06

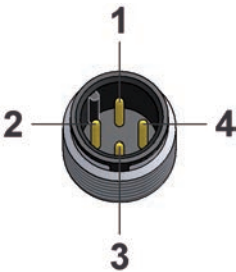
1 switching output  
DIN EN 175301-803 Form A 4-pole (old 43650)



PIN	Assignment
1	V <sub>+</sub>
2	0 V / GND
3	S1 out
	-

### SCTSD-150-00-07

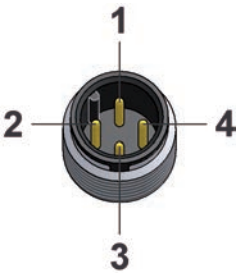
2 switching outputs  
M12x1; 4-pole



PIN	Assignment
1	V <sub>+</sub>
2	S2 out
3	0 V / GND
4	S1 out

### SCTSD-150-10-07

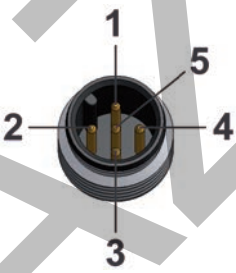
1 switching output, 1 analogue output  
M12x1; 4-pole



PIN	Assignment
1	V <sub>+</sub>
2	Analogue out
3	0 V / GND
4	S1 out

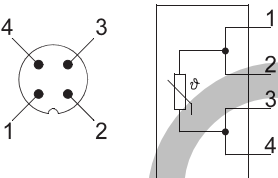
### SCTSD-150-10-05

2 switching outputs, 1 analogue output  
M12x1; 5-pole



PIN	Assignment
1	V <sub>+</sub>
2	S2 out
3	0 V / GND
4	S1 out
5	Analogue out

### SCTT-x0-xxx-07

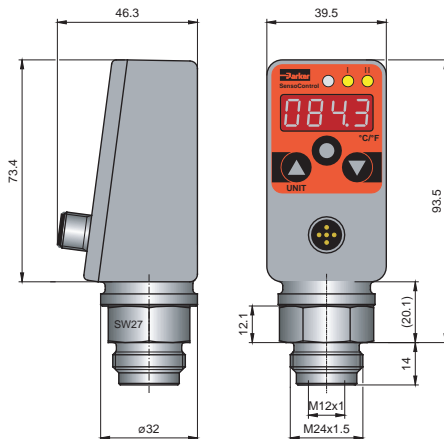


Measuring range	Display resolution Increment size	Lowest reset switch point RSP	Largest switching value SP	Smallest adjustable difference between SP and RSP (SP-RSP)
-50...150 °C / (-58...302°F)	0.1 °C / (32.2°F)	-50 °C / (-58°F)	150 °C / (302°F)	0.8 / (33.4°F)

# SCTSD Modular TemperatureController

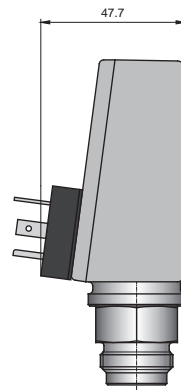
## M12 connecting plug

SCTSD-150-x4-05



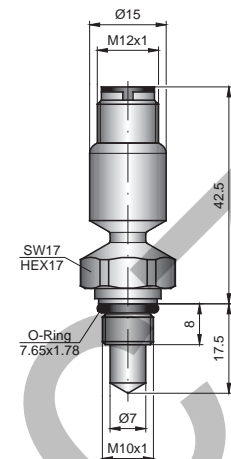
## DIN 43650

SCTSD-xxx-00-06



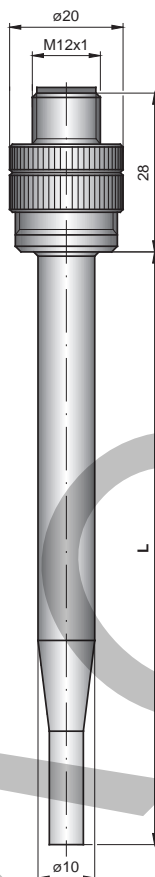
## High pressure temperature sensor

SCTT-20-010-07



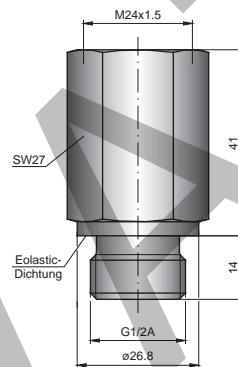
## Temperature sensor

SCTT-10-xxx-07



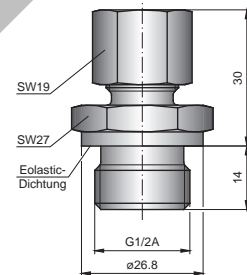
## Connection adapter (accessory)

SCA-TT-10-SD



## Clamping thread (accessory)

SCA-TT-10-1/2



### Material:

Stainless Steel 1.4404

### Male stud:

G1/2A BSPP DIN3852-E

### Seal type:

ED (Eolastic seal type)

### Screw plug hole

G1/2A BSPP DIN3852-E

### Replacement seals:

ED1/2VITX (FKM)

### GE10LR1/2EDOMD71:

(with 10 mm bore hole)

Stainless Steel 1.4571

### EO-2-functional nut:

FM10L71

### Male stud:

G1/2A BSPP DIN3852-E

### Seal type:

ED (Eolastic seal type)

### Replacement seal:

ED1/2VITX (FKM)



# SCTSD Modular TemperatureController

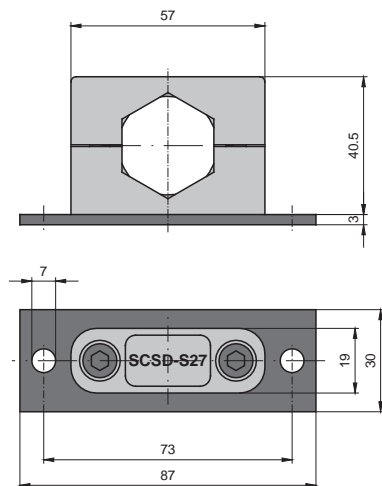
## Sensor cable 3 m (accessory)

SCK-410-03-45-45



## Clamp (accessory)

SCSD-S27



## Order example

### Components for the control panel - high pressure version

Securing clamp **SCSD-S27**  
 Sensor cable 3 m (SCTSD-SCTT) **SCK-410-03-45-45**  
 High pressure temperature sensor **SCTT-20-10-07**

### Components for the control panel

Securing clamp **SCSD-S27**  
 Sensor cable 3 m (SCTSD-SCTT) **SCK-410-03-45-45**  
 Clamping thread G1/2 BSPP **SCA-TT-10-1/2**  
 Temperature sensor 150 mm **SCTT-10-150-07**  
 Optional: Immersion tube G1/2 BSPP 100 mm **SCA-TT-10-100**

### Direct mounting components

Connection adapter (SCTSD-SCTT) **SCA-TT-10-SD**  
 Temperature sensor 100 mm **SCTT-10-100-07**  
 Optional: Immersion tube G1/2 BSPP 200 mm **SCA-TT-10-200**

## Order code

### SCTSD module

**1 switch output; no analogue output** **SCTSD-150-00-06**  
 DIN EN 175301-803 Form A  
 (old DIN 43650) connecting plug

**2 switch outputs; no analogue output** **SCTSD-150-00-07**  
 M12x1 connecting plug; 4-pole

**1 switch output; with analogue output** **SCTSD-150-10-07**  
 M12x1 connecting plug; 4-pole

**2 switch outputs; with analogue output** **SCTSD-150-10-05**  
 M12x1 connecting plug; 5-pole

### Accessories:

Securing clamp **SCSD-S27**  
 Sensor cable 3 m (SCTSD-SCTT) **SCK-410-03-45-45**  
 Clamping thread G1/2 BSPP **SCA-TT-10-1/2**  
 Connection adapter (SCTSD-SCTT) **SCA-TT-10-SD**  
 High pressure temperature sensor **SCTT-20-10-07**  
 Immersion tube G1/2 BSPP **SCA-TT-10-xxx**

### Length mm

100 mm **100**  
 150 mm **150**  
 250 mm **250**

### Temperature sensor

### Length mm

100 mm **100**  
 150 mm **150**  
 250 mm **250**

## Connection cable and single plug

### Connection cable, assembled

(open cable end) **SCK-400-xx-xx**

### Cable length (m)

2 m **02**  
 5 m **05**  
 10 m **10**

### Connecting plug

M12 cable jack; straight **45**  
 M12 cable jack; 90° angled **55**

### Single connector

M12 cable jack; straight **SCK-145**  
 M12 cable jack; 90° angled **SCK-155**



# SCTSD high pressure TemperatureController

## Device features

### Everything at a glance

- Sloped display
- Digital display
  - Large
  - Illuminated
- Display
  - °C, °F
  - Current temperature
  - Minimum temperature
  - Maximum temperature
  - Switching points

### Rugged

- Metal housing
- Waterproof
- Excellent interference immunity
- Vibration proof
- Shock proof

### Variable installation

- Compact size
- 290° pivotable

### Programming module

- Adjustable through ControllerWIN Software

### Optical interface

- Switch status is shown

### Easy to use

- 3 large buttons
- Display of the unit

### Connect as required

- 2 switching outputs
- Analogue output
- 0...20 or 4...20 mA
- Freely programmable
- Scalable
- M12 connecting plug

### High pressure resistance

- Up to 630 bar (1166 psi)



# SCTSD high pressure TemperatureController

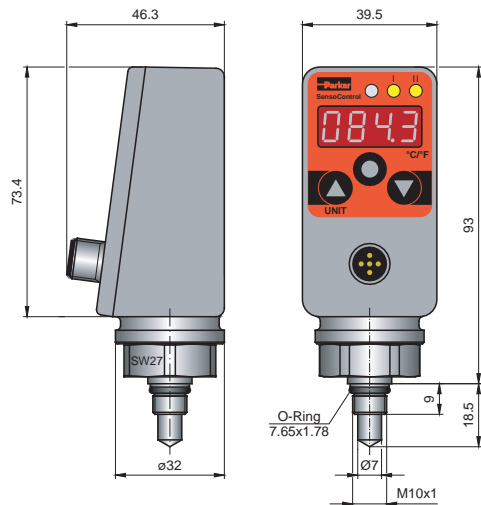
## Technical data

Input values SCTSD-150-x2-0x		Ambient conditions	
Measuring range	-40...+100 °C / (-40...212°F)	Ambient temperature range	-25...+80 °C / (-13...185°F)
Input for measuring element	PT1000/DIN EN 60751; Class B	Storage temperature range	-25...+85 °C / (-13...185°F)
Range of use	Liquid media, air	Media temperature range	-40...+100 °C / (-40...212°F)
Output values		Vibration resistance	20 g; 10...500 Hz IEC60068-2-6*
Switching accuracy at 25 °C	± 0.35 % FS	Shock resistance	50 g; 11 ms IEC60068-2-29
Display accuracy at 25 °C	± 0.35 % FS ± 1 Digit	EM compatibility	
Temperature margin of error	± 0.01 % FS/°C typ. (for -20...+85 °C / -4...185°F)	Disturbance emissions	EN 61000-6-3
Long-term stability	± 0.2 % FS/a	Resistance to interference	EN 61000-6-2
Electrical connection		Outputs	
Supply voltage $V_+$	15 to 30 VDC (with protection against polarity reversal)	Switching outputs	2 x PNP high-side switch
Electrical connection	M12x1; 4-pole; 5-pole; with gold-plated contacts	Contact functions	NO / NC contact; window / hysteresis
Short-circuit protection	Yes	Switching current:	0.5 A / switch to 85 °C / (185°F); 0.7 A / switch to 70 °C / (158°F)
Overload protection	Yes	Response speed	≤ 0.7 s maximum load current
Current consumption	< 100 mA	Optional analogue output	
Mechanical connection		Measuring range	0/4...20 mA
Threaded male stud	M10x1	Response speed (0-95 %)	≤ 300 ms
Seal	O-ring 7.65x1.78 mm; FKM	Analogue output error	± 1 % FS
Measuring pipe diameter	7 mm	Load	≤ 500 Ω from $V_+$ > 18 VDC
Installation length	18.5 mm		
Material	Stainless Steel 1.4404		
$P_N$ pressure	630 bar		
$P_{max}$	800 bar		
Burst pressure	1200 bar		
Housing			
	Adjustable direction to 290°C		
Material	Die-cast zinc Z 410; painted		
Foil material	Polyester		
Display	4-digit 7-segment LED; red; digit height 9 mm		
Protection degree	IP67 EN 60529		

# SCTSD high pressure TemperatureController

## M12 connecting plug

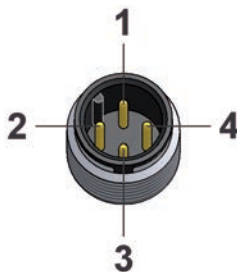
SCTSD-150-x4-05



## Pin assignment

SCTSD-150-02-07

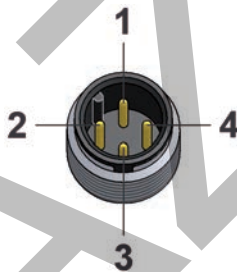
2 switching outputs  
M12x1; 4-pole



PIN	Assignment
1	V <sub>+</sub>
2	S2 out
3	0 V / GND
4	S1 out

SCTSD-150-12-07

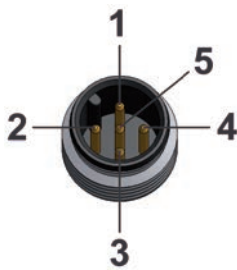
1 switching output, 1 analogue output  
M12x1; 4-pole



PIN	Assignment
1	V <sub>+</sub>
2	Analogue out
3	0 V / GND
4	S1 out

SCTSD-150-12-05

2 switching outputs, 1 analogue output  
M12x1; 5-pole



PIN	Assignment
1	V <sub>+</sub>
2	S2 out
3	0 V / GND
4	S1 out
5	Analogue out

Measuring range	Display resolution Increment size	Lowest reset switch point RSP	Largest switching value SP	Smallest adjustable difference between SP and RSP (SP-RSP)
-40...100 °C / (-40...212°F)	0.1 °C / (32.2°F)	-40 °C / (-40°F)	100 °C / (212°F)	0.8 / (33.4°F)

# SCTSD high pressure TemperatureController

## Order code

### SCTSD high pressure

**2 switch outputs; no analogue output**     **SCTSD-150-02-07**  
M12x1 connecting plug; 4-pole

**1 switch output; with analogue output**     **SCTSD-150-12-07**  
M12x1 connecting plug; 4-pole

**2 switch outputs; with analogue output**     **SCTSD-150-12-05**  
M12x1 connecting plug; 5-pole

### Accessories

**PC Programming Kit**     **SCSD-PRG-KIT**

## Connection cable and single plug

**Connection cable, assembled**     **SCK-400-xx-xx**  
(open cable end)

### Cable length (m)

2 m     **02**  
5 m     **05**  
10 m     **10**

### Connecting plug

M12 cable jack; straight     **45**  
M12 cable jack; 90° angled     **55**

### Single connector

M12 cable jack; straight     **SCK-145**  
M12 cable jack; 90° angled     **SCK-155**