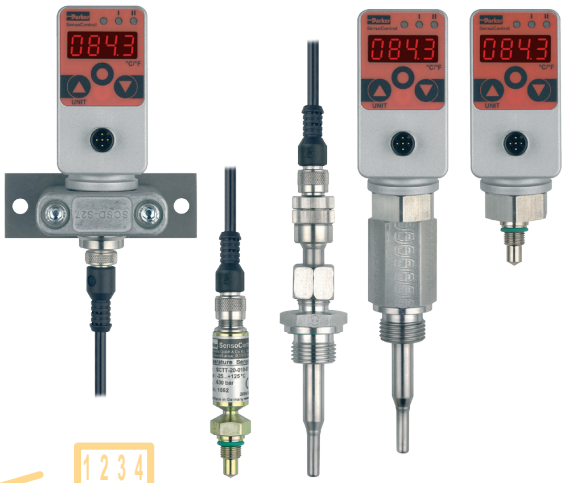
SCTSD TemperatureController

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.

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SCTSD TemperatureController

Application example Tank temperature monitoring

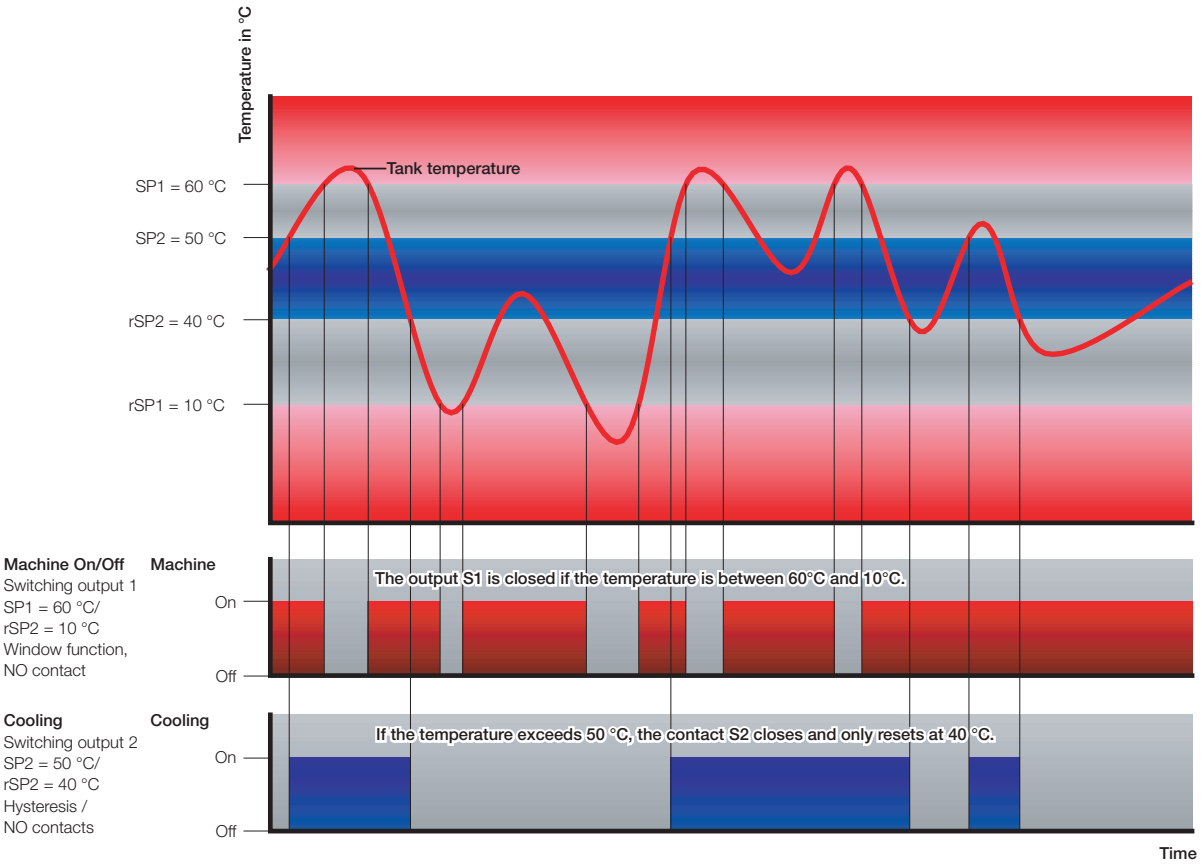
Machine On / Off

The facility should shut down when the tank temperature falls below 10°C or climbs above 60°C.

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

Cooling

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



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SCTSD Modular TemperatureController

Device features

Everything at a glance

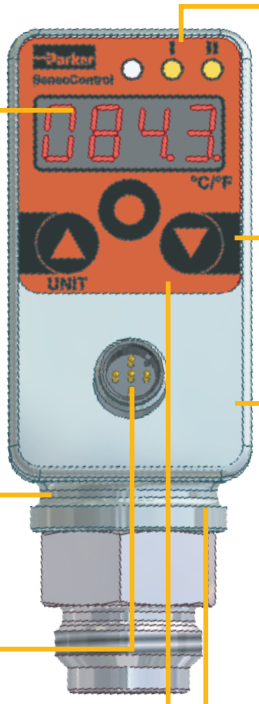
- Sloped display
- Digital display
  - Large
  - Illuminated
- Display
  - °C, °F
  - Current temperature
  - Minimum temperature
  - Maximum temperature
  - Switching points

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

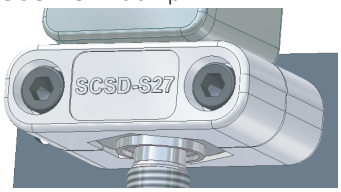
- 3 large buttons
- Display of the unit

Rugged

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

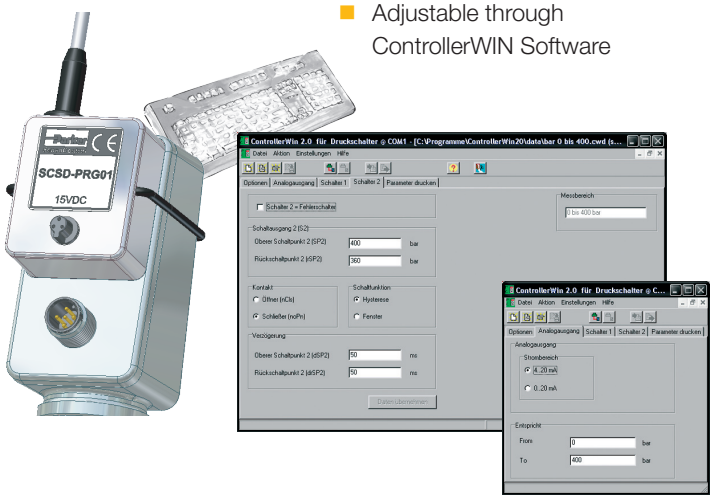
Tube clamp

- Safe installation with the sturdy SCSD-S27 clamp



Programming module

- Adjustable through ControllerWIN Software



SCTSD Modular TemperatureController

Device features

Cable

- SCK-410-03-45-45



Adjustable height

Through clamping thread

- SCA-TT-10-1/2





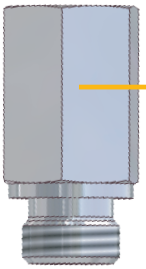
Temperature sensor

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

High pressure temperature sensor

- 630 bar
- SCTT-20-010-07





Connection adapter

- SCA-TT-10-SD



Immersion tube

Additional with

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





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SCTSD Modular TemperatureController

Technical data

Input parameters SCT-150	
Display range	-50...+150 °C
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_+	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
Storage temperature range	-40...+100 °C
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

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 s/$\tau_{0.9}$ = 25 s
Accuracy	± 0.3 K + 0.005* t
Material	Stainless Steel 1.4571
Nominal pressure (max)	10 bar
Temperature of substance	-40...+125 °C
Ambient temperature	-25...+80 °C (for the connector area)
Storage temperature	-25...+85 °C

High pressure sensor SCTT-20-010-07	
Measuring component	PT1000/DIN EN 60751, Class B
Measuring range	-40...+125 °C
Response time	$\tau_{0.5}$ = 3 s/$\tau_{0.9}$ = 15 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_n	630 bar
Overload pressure P_{max}	800 bar
Burst pressure P_{burst}	1200 bar
Temperature of substance	-40...+125 °C
Ambient temperature	-25...+80 °C (for the connector area)
Storage temperature	-25...+85 °C

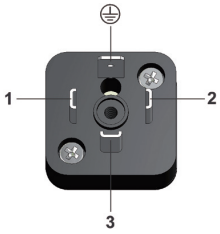
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SCTSD Modular TemperatureController

Pin assignment

SCTSD-150-00-06

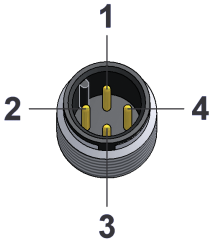
1 switching output
DIN EN 175301-803 Form A 4-pole (old 43650)



PIN	Assignment
1	V_+
2	0 V / GND
3	S1 out
⏚	-

SCTSD-150-00-07

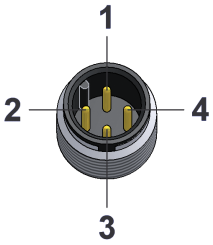
2 switching outputs
M12x1; 4-pole



PIN	Assignment
1	V_+
2	S2 out
3	0 V / GND
4	S1 out

SCTSD-150-10-07

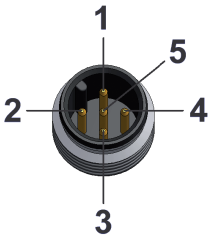
1 switching output, 1 analogue output
M12x1; 4-pole



PIN	Assignment
1	V_+
2	Analogue out
3	0 V / GND
4	S1 out

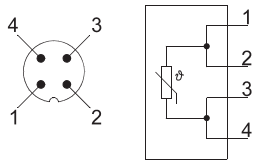
SCTSD-150-10-05

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



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

SCTT-x0-xxx-07

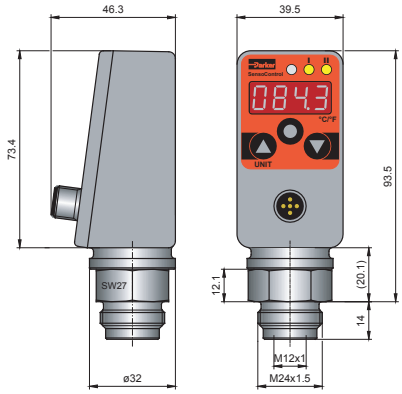


Measuring range	Display resolution Increment size	Lowest reset switch point RSP	Largest switching value SP	Smallest adjustable difference between SP and RSP (SP-RSP)
-50...150 °C	0.1 °C	-50 °C	150 °C	0.8

SCTSD Modular TemperatureController

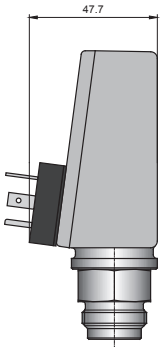
M12 connecting plug

SCTSD-150-x4-05



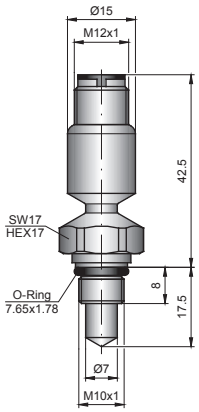
DIN 43650

SCTSD-xxx-00-06



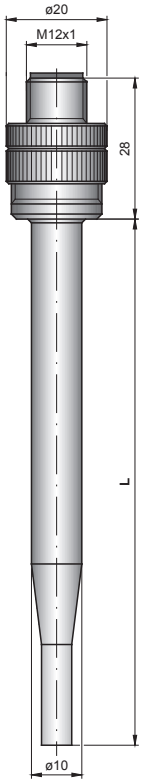
High pressure temperature sensor

SCTT-20-010-07



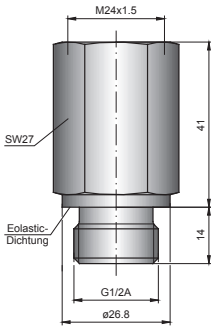
Temperature sensor

SCTT-10-xxx-07



Connection adapter (accessory)

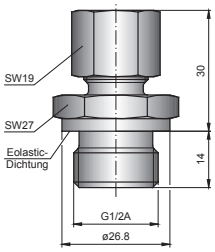
SCA-TT-10-SD



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)

Clamping thread (accessory)

SCA-TT-10-1/2



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)

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SCTSD Modular TemperatureController

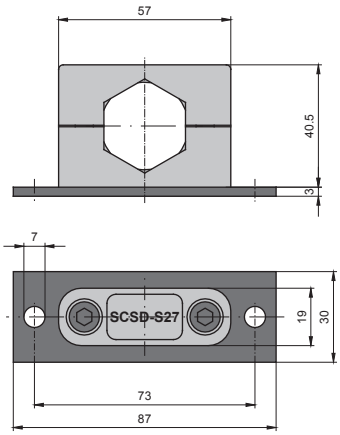
Sensor cable 3 m (accessory)

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-150-10-07**
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 **SCTT-10-xxx-07**

Length mm
- 100 mm — **100**
- 150 mm — **150**
- 250 mm — **250**

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**

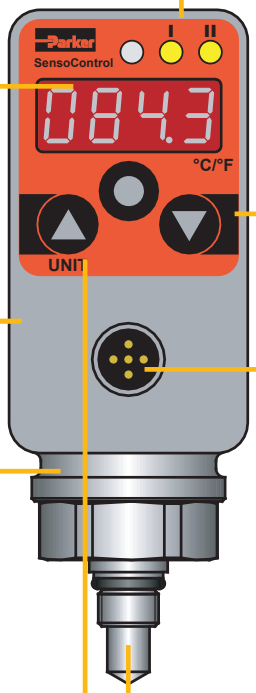
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SCTSD high pressure TemperatureController

Device features

Optical interface
- Switch status is shown

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



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

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

Variable installation
- Compact size
- 290° pivotable

High pressure resistance
- Up to 630 bar

Programming module
- Adjustable through ControllerWIN Software



The Controller Family

SCTSD high pressure TemperatureController

Technical data

Input values SCTSD-150-x2-0x	
Measuring range	-40...+100 °C
Input for measuring element	PT1000/DIN EN 60751; Class B
Range of use	Liquid media, air
Output values	
Switching accuracy at 25 °C	± 0.35 % FS
Display accuracy at 25 °C	± 0.35 % FS ± 1 Digit
Temperature margin of error	± 0.01 % FS/°C typ. (for -20...+85 °C)
Long-term stability	± 0.2 % FS/a
Electrical connection	
Supply voltage V_+	15 to 30 VDC (with protection against polarity reversal)
Electrical connection	M12x1; 4-pole; 5-pole; with gold-plated contacts
Short-circuit protection	Yes
Overload protection	Yes
Current consumption	< 100 mA
Mechanical connection	
Threaded male stud	M10x1
Seal	O-ring 7.65x1.78 mm; FKM
Measuring pipe diameter	7 mm
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

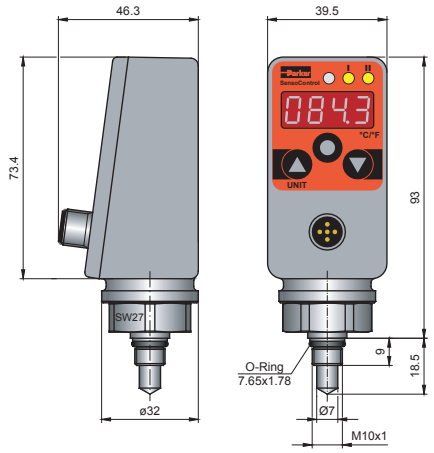
Ambient conditions	
Ambient temperature range	-25...+80 °C
Storage temperature range	-25...+85 °C
Media temperature range	-40...+100 °C
Vibration resistance	20 g; 10...500 Hz IEC60068-2-6*
Shock resistance	50 g; 11 ms IEC60068-2-29
EM compatibility	
Disturbance emissions	EN 61000-6-3
Resistance to interference	EN 61000-6-2
Outputs	
Switching outputs	2 x PNP high-side switch
Contact functions	NO / NC contact; window / hysteresis
Switching current:	0.5 A / switch to 85 °C; 0,7 A / switch to 70 °C
Response speed	≤ 0.7 s maximum load current
Optional analogue output	
Measuring range	0/4...20 mA
Response speed (0-95 %)	≤ 300 ms
Analogue output error	± 1 % FS
Load	≤ 500 Ω from V_+ > 18 VDC

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SCTSD high pressure TemperatureController

M12 connecting plug

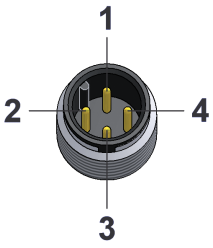
SCTSD-150-x4-05



Pin assignment

SCTSD-150-02-07

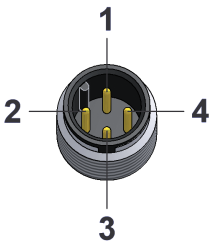
2 switching outputs
M12x1; 4-pole



PIN	Assignment
1	V_+
2	S2 out
3	0 V / GND
4	S1 out

SCTSD-150-12-07

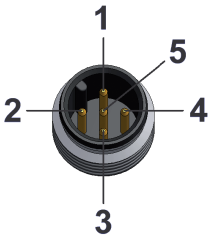
1 switching output, 1 analogue output
M12x1; 4-pole



PIN	Assignment
1	V_+
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_+
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	0.1 °C	-40 °C	100 °C	0.8

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SCTSD high pressure TemperatureController

Order code

SCTSD high pressure

2 switch outputs; no analogue output M12x1 connecting plug; 4-pole	**SCTSD-150-02-07**
1 switch output; with analogue output M12x1 connecting plug; 4-pole	**SCTSD-150-12-07**
2 switch outputs; with analogue output M12x1 connecting plug; 5-pole	**SCTSD-150-12-05**

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**

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark