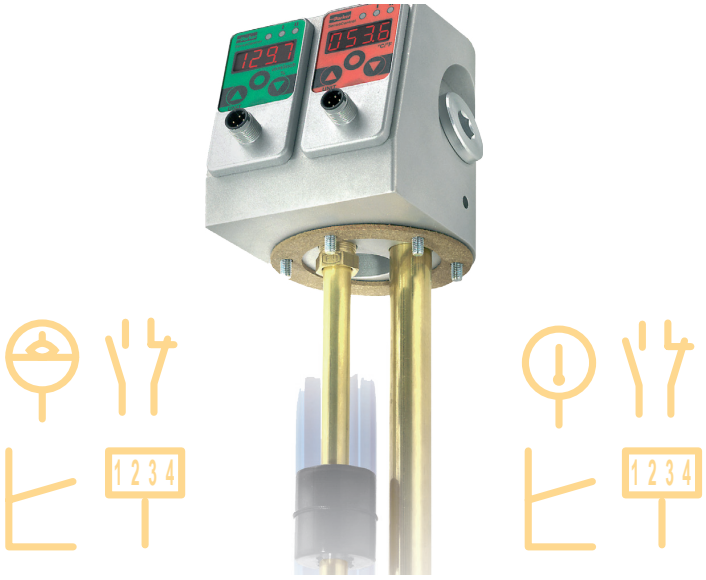
SCOTC OilTankController

Device features

- Proven measuring system
- Level and temperature display
- mm / inch / % display
- High and low display
- Only one hole
- Continuous level measurement
- Connection
  - Filling coupling
  - Air filter
  - Low pressure
- No surge pipe necessary



In addition to the **LevelTempController**, the **OilTankController** also offers standardised connections for an air filter and a fill coupling.

When monitoring the tank for series use, this integration of level and temperature functionality together with air filter and fill adapter port opens up many possibilities. An additional connecting hole is required for the four functions.

The OilTankController combines the functions of a level and temperature switch, a level and temperature sensor and a level and temperature display:

- Level and temperature display (thermometer / inspection glass)
- Switching outputs
- Analogue signal

Level

The position of the float is finely (≥ 5 mm) and continuously recorded and shown in the display in mm or inch. Because the level is continuously recorded, the danger of individual mechanical contacts "sticking" no longer exists. Therefore the operational reliability of the monitored plant is greatly increased.

Using the selectable percent display, the full level is uniformly displayed for the users, independent of the tank shape. An offset can also be entered (difference from the sensor to the tank bottom) to give a realistic indication of the level from the tank bottom.

Different uses can easily be implemented or corrected at a later date using the menu-driven level switching points.

As the switching point no longer needs to be specified at the time of order, the versions of mechanical level switches required is reduced.

Temperature

The temperature in the substance is continuously recorded and displayed. The switching outputs can be individually set up just like the LevelController. Naturally all the convenient switching functions are available: window, hysteresis function and open/close as well as an analogue output for temperature.

Reliable and safe

Parameters can be password protected to avoid unauthorised changes.

Universal

In combination with the comfortable switch functions like hysteresis and window function, open/close contact functions **LevelTempController** intelligent settings can be made which are not possible with a mechanical level/temperature switch. Therefore, many switches can be replaced with one controller. With the optional analogue outputs, the level and temperature can be monitored easily with a controller.

Level: e.g. for leakage monitoring

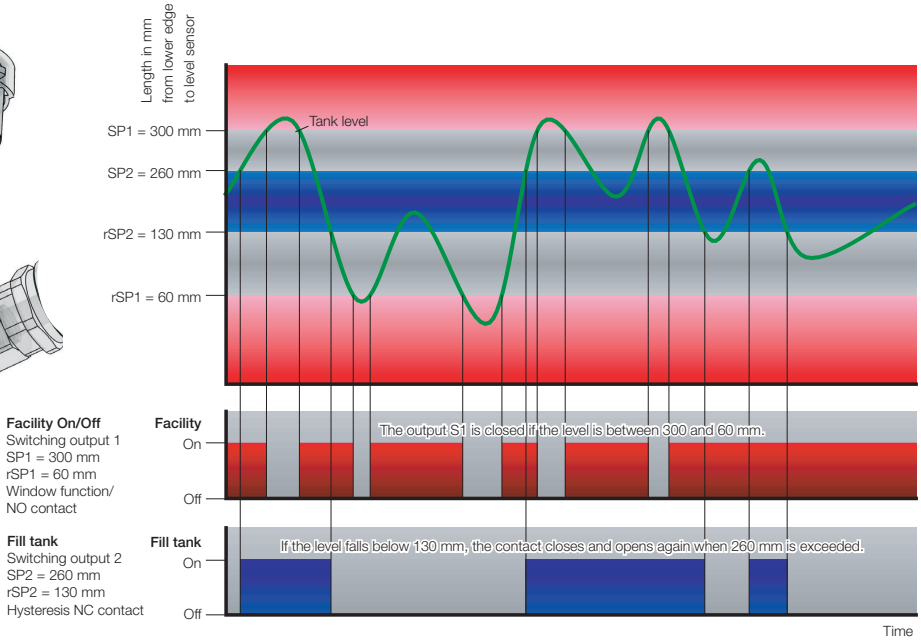
Temperature: e.g. coolers, heating, alarm, shutdown

SCOTC OilTankController

Application examples

SCLSD





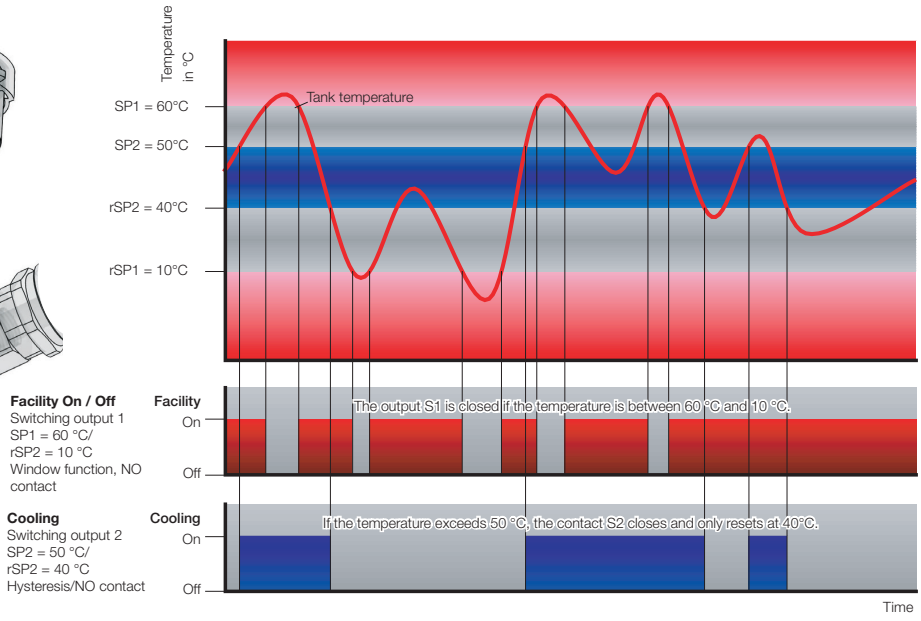
Facility On/Off
Switching output 1
SP1 = 300 mm
rSP1 = 60 mm
Window function/
NO contact

Fill tank
Switching output 2
SP2 = 260 mm
rSP2 = 130 mm
Hysteresis NC contact

Application example
Refer to page 84

SCTSD





Facility On / Off
Switching output 1
SP1 = 60 °C/
rSP2 = 10 °C
Window function, NO
contact

Cooling
Switching output 2
SP2 = 50 °C/
rSP2 = 40 °C
Hysteresis/NO contact

Application example
Refer to page 68

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SCOTC OilTankController

Device features

Getting to the point
- Compact construction (4 in 1)
- Easy adjustment of the switching points using the menu
- Analogue output
- Safety control
- Cost savings in the logistics, assembly and maintenance

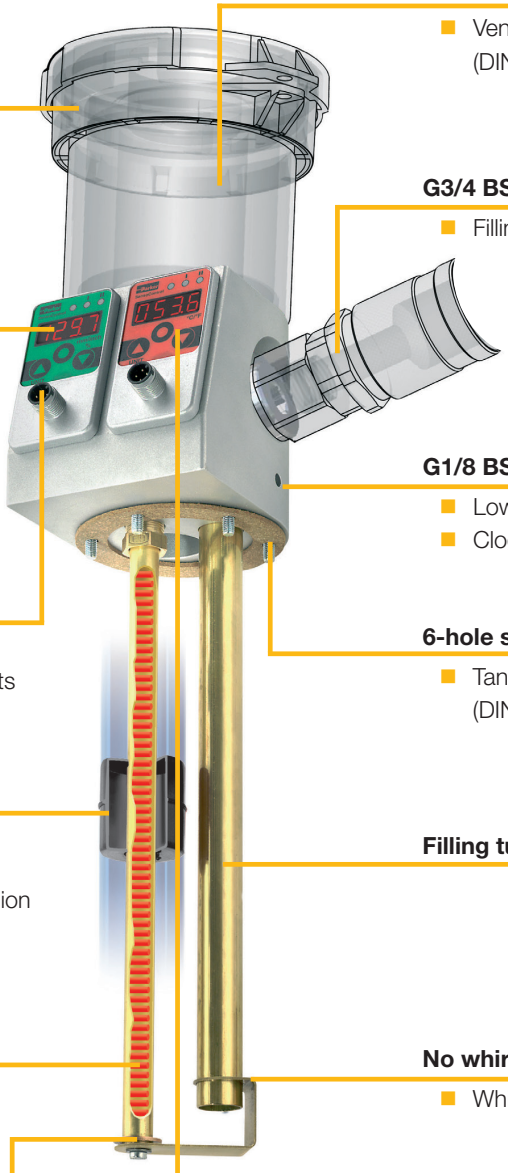
Level and temperature
- Display
- Adjustable switching output
- Analogue output

The extended version
with safety control
- Additional fixed switching contacts
- Level min/max
- Temperature too high

Real fill level
- The level controller continuously measures the position of the float and continuously shows the position in the display.
- Up to 1000 mm

No surge pipe necessary
- Electronic attenuation adjustable attenuation

Temperature sensor
- Integrated in the rod end



6-hole standard for
- Ventilation filter* (DIN 24557, part 2)

G3/4 BSPP for
- Filling coupling*

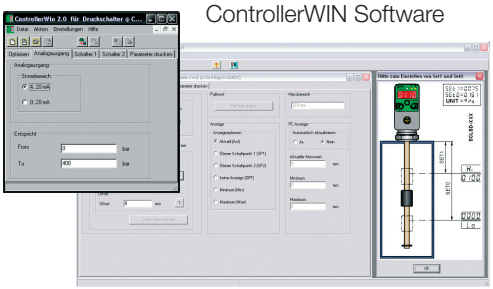
G1/8 BSPP for
- Low pressure switch*
- Clogging indicator*

6-hole standard for
- Tank connection (DIN 24557, part 2)

Filling tube

No whirl-up
- Whirl-up protection

Programming module
- Adjustable with ControllerWIN Software



* Venting filter, filling coupling, low pressure switch and clogging indicator are not included in the delivery.

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SCOTC OilTankController

Technical data

SCOTC	250	370	520	800	1000
Tank installation length	250 mm	370 mm	520 mm	800 mm	1000 mm
Adjustment range	40...210 mm	40...330 mm	40...480 mm	40...760 mm	40...960 mm

Electrical connection	
Supply voltage V_+	15 to 30 VDC nominal 24 VDC; Protection class 3
Electrical connection	M12x1; 4-pole; 5-pole; with gold-plated contacts
Short-circuit protection	Yes
Protection against wrong insertion	Yes
Overload protection	Yes
Current consumption	< 100 mA
Housing	
Material	Die-cast zinc Z 410; painted Aluminium
Foil material	Polyester
Display	4-digit 7-segment LED; red; digit height 9 mm
Protection degree	IP67 DIN EN 60529
Ambient conditions	
Ambient temperature range	-20...+80 °C
Temperature range of substance	≤ 80 °C
Storage temperature range	-40...+100 °C
Sampling period	300 ms
Display refresh	1 s
EM compatibility	
Disturbance emissions	EN 61000-6-3
Resistance to interference	EN 61000-6-2
Outputs	
Switching outputs	Two MOSFET high-side switches (PNP)
Contact functions	NO / NC contact; window / hysteresis function freely adjustable
Switching voltage	V_+ -1.5 VDC
Switching current max.	0.5 A per switch
Short-circuit current	2.4 A per switch
Optional analogue output	
Measuring range	0/4...20 mA; programmable
Response speed (0 to 95%)	≤ 300 ms
Error	± 1 % FS
Load	≤ 500 Ω from V_b > 18 VDC

Level

Input variables	
Measuring component	Reed chain resistance
Connector thread	6 hole standard- DIN 24557, part 2
Output variables	
Switching point accuracy	± 1 % FS at 25 °C
Display accuracy	± 1 % FS ± 1 Digit at 25 °C
Response speed	≤ 700 ms
Resolution	5 mm...520 mm; 10 mm > 520 mm
Float	
Material	Polypropylene
Dimensions	Ø 35 mm, Length 40 mm
Level rod	
Material	Brass
Dimensions	Ø 12 mm
Operating pressure	1 bar max.
Optional Lo-Hi contact (S3 out)	
Alarm contact	In series switched Lo and Hi NC contact
Maximum load current	0.7 A

Temperature

Input variables	
Sensor element	PT1000
Filling tube	Ø 18x1 mm
Response time	$\tau_{0.9}$ = 60 s
Output variables	
Switching point accuracy	± 0.5 % FS at 25 °C
Display accuracy	± 0.5 % FS ± 1 Digit at 25 °C
Response speed	≤ 300 ms
Analogue output	0/4...20 mA; programmable; freely scalable; 4...20 mA = -40...125 °C
Optional temperature switch (S3 out)	
Alarm contact with > 65 °C	Open contact
Maximum charging current	0.7 A

SCOTC OilTankController

Pin assignment

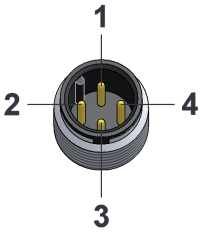
Without safety-control-output

SCOTC-xxxx-00-07

for temperature and level

2 switching outputs

M12x1; 4-pole



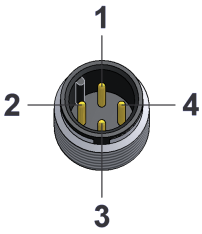
PIN	Assignment
1	V_+
2	S2 out
3	0 V / GND
4	S1 out

SCOTC-xxxx-10-07

for temperature and level

1 switching outputs, 1 analogue output

M12x1; 5-pole



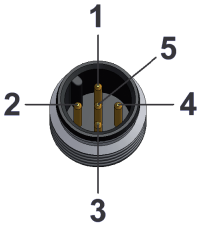
PIN	Assignment
1	V_+
2	Analogue out
3	0 V / GND
4	S1 out

SCOTC-xxxx-10-05

for temperature and level

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

With safety-control-output

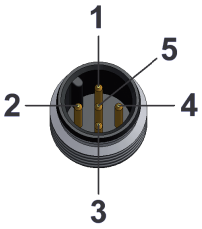
SCOTC-xxxx-00-05

Level:

Two variable switching outputs,

One fixed safety-control-output level min/max;

M12x1; 5-pole



PIN	Assignment
1	V_+
2	S2 out
3	0 V / GND
4	S1 out
5	S3 out (L-Low / L-High)

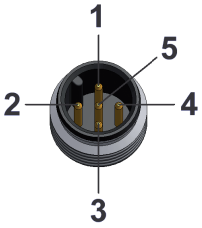
SCOTC-xxxx-00-05

Temperature:

Two variable switching outputs,

One fixed safety-control-output temperature max. 65 °C

M12x1; 5-pole

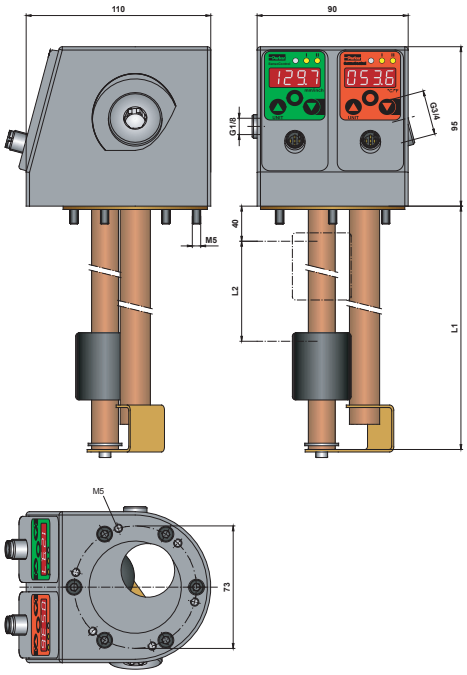


PIN	Assignment
1	V_+
2	S2 out
3	0 V / GND
4	S1 out
5	S3 out (T-High)

L1 Sensor length Measurement range	L2 active range	Display resolution increment size	Increment size	Lowest reset switch point RSP	Largest switching value SP	Smallest adjustable difference between SP and RSP (SP-RSP)
250 mm	170 mm	1 mm	5 mm	40	210	5 mm
370 mm	290 mm	1 mm	5 mm	40	330	5 mm
520 mm	440 mm	1 mm	5 mm	40	480	5 mm
800 mm	720 mm	1 mm	10 mm	40	760	10 mm
1000 mm	920 mm	1 mm	10 mm	40	960	10 mm

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SCOTC OilTankController



L1 = length of the sensor (mm)
L2 = active range (mm)

Order code

SCOTC OilTankController *

2 switching outputs; no analogue output M12x1 connecting plug; 4-pole	**SCOTC-xxxx-00-07**
2 switching outputs; with analogue output M12x1 connecting plug; 4-pole	**SCOTC-xxxx-10-07**
1 switching output; with analogue output M12x1 connecting plug; 5-pole	**SCOTC-xxxx-10-05**
3 switching outputs; no analogue output M12x1 connecting plug; 5-pole with safety control	**SCOTC-xxxx-00-05**

Length (Installation length L1 mm)

250 mm	**250**
370 mm	**370**
520 mm	**520**
800 mm	**800**
1000 mm	**1000**

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**

* Venting filter, filling coupling, low pressure switch and clogging indicator are not included in the delivery.

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