Stauff Temperature Controller

STWE

User Manual

Version 1.0

Contents

1. Introduction

Thank you for purchasing a Stauff model STWE programmable temperature switch. We appreciate your business and look forward to working with you.

These operating instructions have been created for the most general user of this product. Each and every application can be different, and if you feel that these instructions do not meet your requirements please feel free to contact us, and we will be happy to assist you.

Scope

These instructions apply to the STWE units with two switching outputs, or one switching output and one analog output.

Safety Instructions and Warnings

Please read these instructions before installation and startup. Failure to follow these instructions will make all warranty claims null and void.

- Only qualified persons are permitted to install the equipment and make the electrical connection. The correct tools must always be used.
- Please ensure that the temperature switch is suitable for your application.
- Under regular working conditions the surface temperature of the housing can become warmer than the ambient temperature. High ambient temperatures can result in surface temperatures which make a protection against contact necessary.
- Please note that the STWE unit can be effected by or damaged by strong magnetic fields.
- The STWE unit must not be opened, painted (coated) or modified.
- The STWE unit must not be used if damaged. If damaged during operation, suitable measures must be taken to prevent persons or property from being put at risk by the damaged unit.
- The STWE unit must only be repaired by Stauff

2. Temperature Switch Description

The STWE unit will have one of two output options:

1. Two programmable switching outputs
2. One programmable switching output and one analog output

Both the switching outputs and the analog output are adjusted by use of the two programming buttons (S1 & S2) on the display face of the STWE unit. By use of these two programming buttons the user will also select units, set points, reset points and switching functions (normally open / normally closed)

The programmable analog output is a special feature. It can be adjusted in 0.1 K steps within a span of 80% of the temperature range

The rotating capability makes it possible for the display to be aligned independently.

Correct Purpose of Use

The equipment is only authorized for proper use for its correct purpose. Failure to do this will invalidate all warranties and will release Stauff Corporation from all responsibility.

The STWE is constructed in compliance with IP65 and should be protected from excessive amounts of water and dust. This unit must be installed so that it is protected from external damage. It must be ensured that the plug is correctly installed and has the relevant IP protection. The limits specified in the data sheet must be complied with.

3. Start of Operation

The accepted technical regulations must be complied with during installation and dismantling. The system component must be depressurized prior to installation and dismantling. All safety regulations

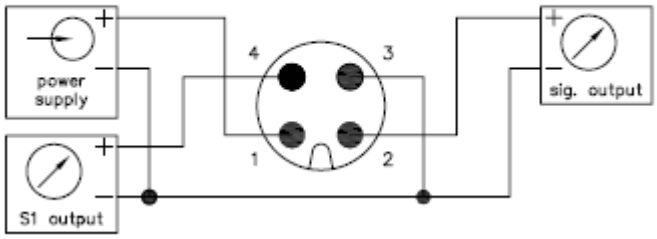
must be complied with, particularly when working on an electrical system. All connections to external electrical equipment must be made in accordance with technical regulations.

- The power to the system must always be switched off when the switch is being connected.
- The electrical connection is made via the M12 plug attached to the housing.
- The plug-in electrical connection must be protected in accordance with the manufacture's specifications.

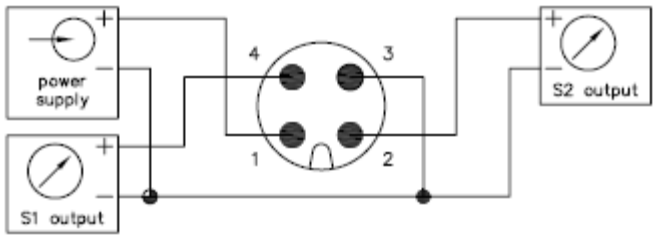
Round Connector M12x1 (4-pin)

Signal	Pin No.	Color
Supply: UB	1	Brown
Supply: 0V	3	Blue
Switch Output S1	4	Black
Switch Output S2 or Analog Output	2	White

1 Switching Output with 1 Analog Output (MA)
(p-switching)



2 Switching Output
(p-switching)



4. Switching On and Off

The STWE is switched on when the supply voltage is applied. There is not an on/off switch. A brief initialization phase occurs when the supply voltage is applied to the unit. The display and the set point LED's illuminate. The measuring range (min and max temperature) and the unit are indicated briefly. The outputs are inactive during this time.

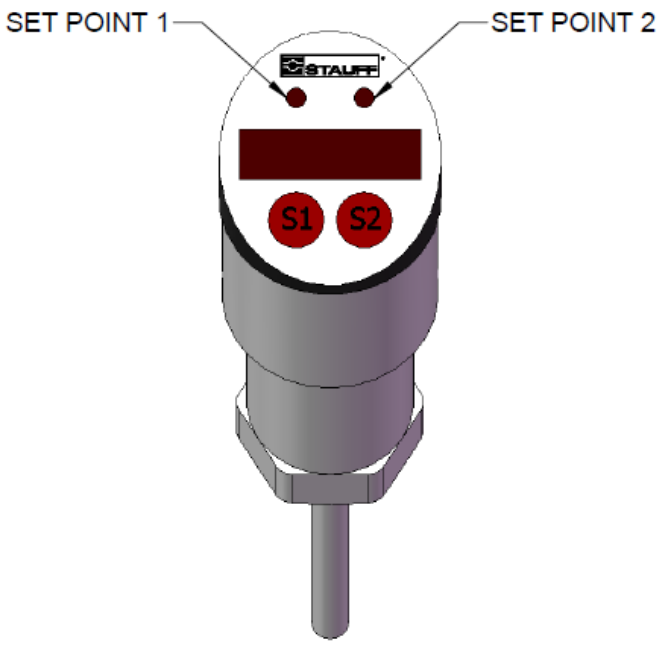
After the initialization period the switch is in normal operating mode. The temperature appears on the display, and switching outputs are active and the LED's indicated the status of the switching outputs.

5. Programming

Briefly pressing the S1 or S2 buttons causes the relevant switch point to be momentarily displayed. The status LED's flash for as long as the switching points are being displayed.

Pressing the button for longer (hold button S1 or S2 down until display flashes) causes the current temperature to be taken over as the switching point. The hysteresis remains unchanged.

The switching outputs can be programmed using the control buttons independently from the present temperature. The programming sequence must run without interruptions. If delays of approximately 30 seconds or more occur, the switch automatically exits programming mode and switches to normal operating mode. All previous changes are lost.



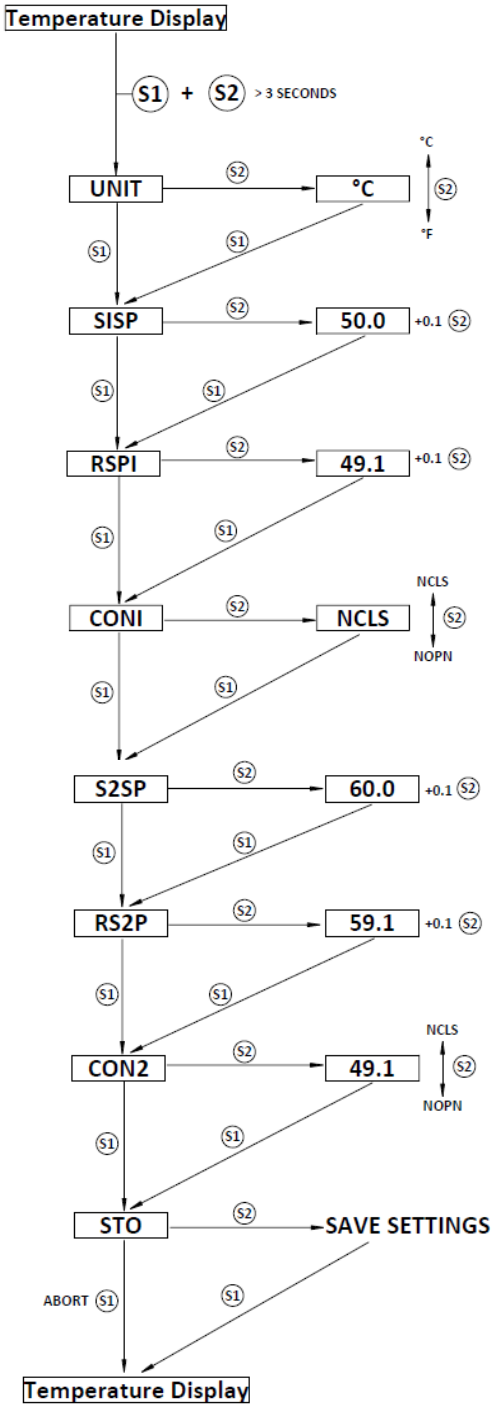
Status LED Switching Output

Switching function

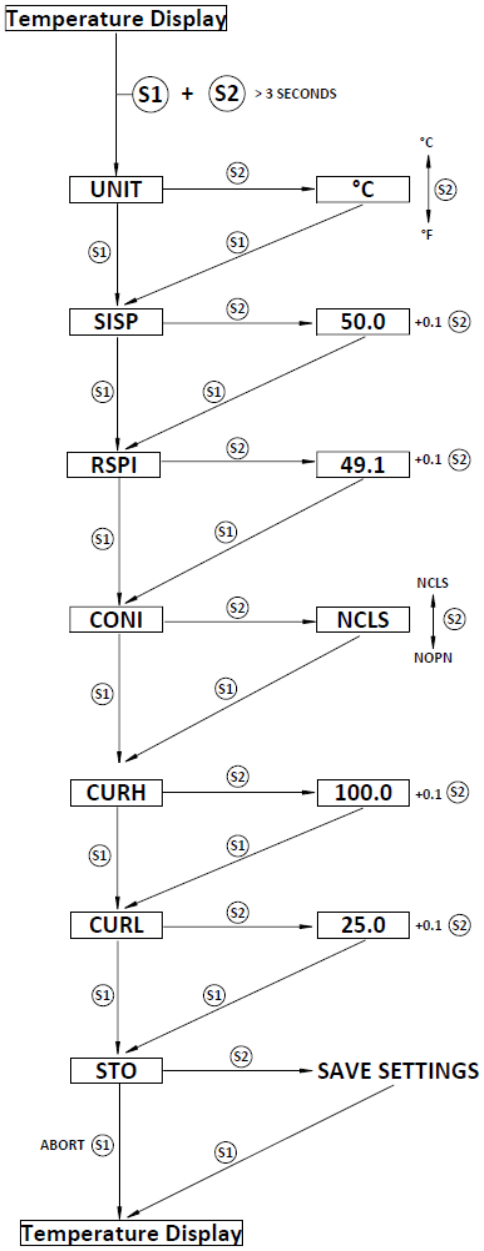
The switching function (normally closed / normally open) is defined individually for each switching point.

Parameter Description / Programming

With two switching outputs		
UNIT *		Temperature units
- °C	Degree Celsius	Select celsius as the display unit
- °F	Degree Fahrenheit	Select fahrenheit as the display unit
SISP	Switch 1, Set Point	Select set point for first switch
RSPI	Switch 1, Reset Point	Select reset point for first switch
CONI	Contact 1	Select contact function for first switch
- NOPN	Normally Open	Select normally open contact
- NCLS	Normally Closed	Select normally closed contact
S2SP	Switch 2, Set Point	Select set point for second switch
RSP2	Switch 2, Reset Point	Select reset point for second switch
CON2	Contact 2	Select contact function for second switch
- NOPN	Normally Open	Select normally open contact
- NCLS	Normally Closed	Select normally closed contact
STO	Store	The previous changes are only accepted if button S2 is pressed about 15 seconds after the previous button is pressed
* The pressure units setting applies immediately for the switching point settings, the reset points and for the process pressure 4-digit LED display		

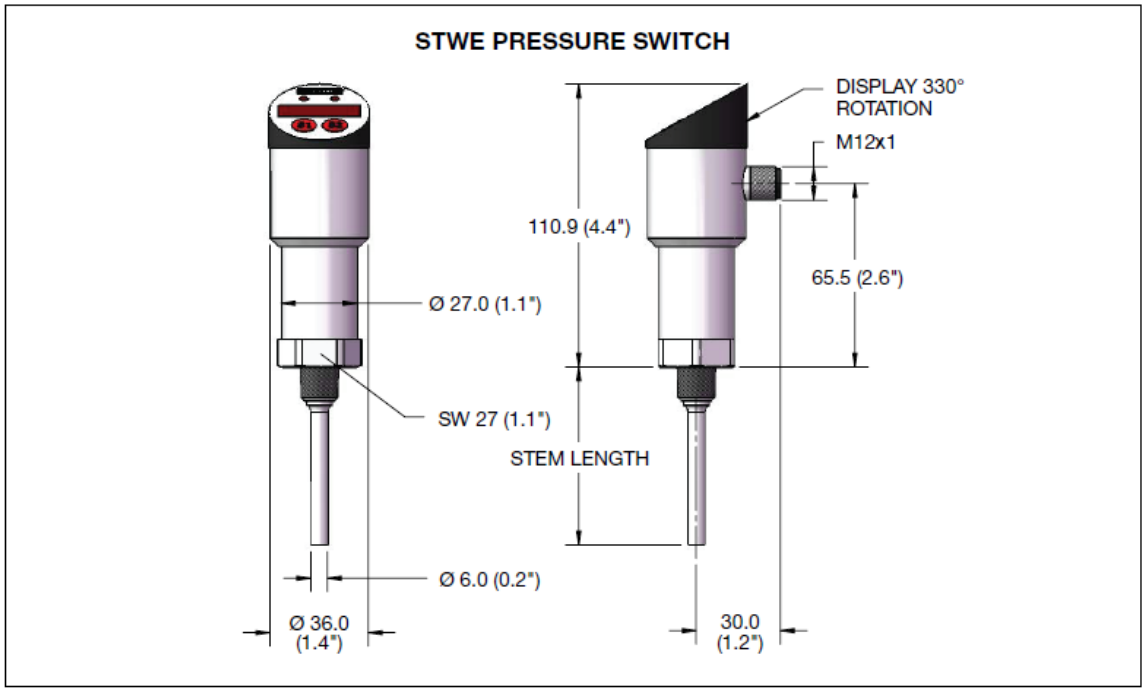

Temperature Display
S1 + S2 > 3 SECONDS
UNIT
°C
°F
SISP
50.0
+0.1
RSPI
49.1
+0.1
CONI
NCLS
NOPN
S2SP
60.0
+0.1
RS2P
59.1
+0.1
CON2
NCLS
NOPN
49.1
STO
SAVE SETTINGS
ABORT
Temperature Display

With one switching output and one analog output		
UNIT *		Temperature units
- ° C	Degree Celsius	Select celsius as the display unit
- ° F	Degree Fahrenheit	Select fahrenheit as the display unit
SISP	Switch 1, Set Point	Select set point for first switch
RSPI	Switch 1, Reset Point	Select reset point for first switch
CONI	Contact 1	Select contact function for first switch
- NOPN	Normally Open	Select normally open contact
- NCLS	Normally Closed	Select normally closed contact
CURH	Current High	Select temperature value for 20mA
CURL	Current Low	Select temperature value for 4mA
STO	Store	The previous changes are only accepted if button S2 is pressed about 15 seconds after the previous button is pressed
* The pressure units setting applies immediately for the switching point settings, the reset points and for the process pressure 4-digit LED display		


Temperature Display
S1 + S2 > 3 SECONDS
UNIT
°C
°F
SISP
50.0
+0.1
RSPI
49.1
+0.1
CONI
NCLS
NOPN
CURH
100.0
+0.1
CURL
25.0
+0.1
STO
SAVE SETTINGS
ABORT
Temperature Display

Specifications			
Materials	Housing	Stainless Steel	
	Process Connection	Stainless Steel	
Supply Voltage		12…30 V DC, Protection From Reverse Polarity and Overload	
Power Consumption		≤ 50 mA, Without Load Current	
Switching Outputs	Switching Function	Normally Closed (NC) or Normally Open (NO)	
	Power Rating	100 mA per Switch Output	
Adjustment	Set point	0.1° Steps Within Temperature Range	
	Reset Point	0.1° Steps Within Temperature Range up to (Set Point - 0.1°)	
Analogue Output	Signal	4…20 mA, 3-wire	
	Load Resistance	R = Us - 7V/0.022A	
Accuracy		Accuracy of PT100 Sensing Element + 0.1% of Temperature Range	
Repeatability		0.05%	
Temperature Ranges		-50…+125°C	-58…+257°F
		-50…+200°C	-58…+392°F
		-0…+400°C	+32…+752°F
		-0…+600°C	+32…+1112°F
		-200…+600°C	-328…+1112°F
Stem Length and	Standard	ø6 x 50mm Stem Length, Up to 580 PSI (40 BAR)	
Working Pressure		Additional Stem Lengths Available Upon Request	
Thread Connections		1/4 NPT, 1/2 NPT, 1/4 BSP, and 1/2 BSP	
Electrical Connections		M12x1, 4-pin	
Protection Class		IP65 According to IEC 529	
Temperature Ranges	Storage	-30…+80°C	-22…176°F
	Ambient	-25…+70°C	-13…158°F
	Tk	0.1% of Measuring Range per 10 K	
Display		7-segments, LED Display, Red, 7.6mm high	
EMC to IEC /		IEC 61000 / 4 / 2 ESD: B	
EN 61 326		IEC 61000 / 4 / 3 HF Radiated: A	
		IEC 61000 / 4 / 4 Burst: A	
		IEC 61000 / 4 / 5 Surge: A	
		IEC 61000 / 4 / 6 HF Mains Borne: A	
Weight		Approx 0.3 kg/0.7lbs (Dependent on Stem Length)	

Dimensional Data



7. CE - Conformity

The STWE programmable electronic temperature switch complies with all requirements of EN 61 326 with regard to interference emission and immunity for use in industrial areas. We recommend the use of shielded cables. Installation and cable routing must be carried out correctly in order to maintain the effective protection from electromagnetic interference.

8. Maintenance

The STWE units described in this manual are maintenance free. This unit will operate in a stable state for long periods, thus regular adjustment is not required.

Removal of this unit is recommended if any malfunctions occur. This device is not to be repaired by the customer. It is strongly recommended that the unit be replaced or returned to Stauff for additional testing.

9. Troubleshooting

No modifications are to be made to the device. Only the manufacturer is allowed to perform repairs.

10. Cleaning

The exterior of the STWE unit can be cleaned using a soft, moistened cloth. Heavy soiling can be removed using a mild cleaning agent.

The STWE unit must not be opened under any circumstances!

Aggressive chemicals and or hard scrubbing can damage the surface, in particular the display film.

11. Disposal

The packaging and end user parts must be disposed of in accordance with the regulations of the country in which the device is installed.

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Note – This manual is subject to alteration without notice