



Stauff Pressure Controller

SPWF

User Manual

Version 1.0



Contents

1. Introduction.....	3
2. Pressure Switch Description.....	4
3. Start of Operation.....	4
4. Switching On and Off.....	5
5. Programming.....	6
6. Technical Data.....	12
7. CE Conformity.....	13
8. Maintenance.....	13
9. Troubleshooting.....	14
10. Cleaning.....	14
11. Disposal.....	14

1. Introduction

Thank you for purchasing a Stauff model SPWF programmable pressure 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 SPWF units with two switching outputs, or one switching output and one analog output in individual sections.

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 pressure switch is suitable for your application.
- Under regular working conditions the surface temperature of the housing can become 15K warmer than the ambient temperature. High ambient temperatures can result in surface temperatures which make a protection against contact necessary.
- Please note that the SPWF unit can be effected by or damaged by strong magnetic fields.
- The SPWF unit must not be opened, painted (coated) or modified.
- The SPWF 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 SPWF unit must only be repaired by Stauff

2. Pressure Switch Description

The SPWF 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 SPWF unit. By use of these two programming buttons the user will also select units, switching points, reset points (hysteresis / window), switching functions (normally open / normally closed), and switching from NPN to PNP.

The password protection that can be activated is a special feature, and will help in preventing unauthorized persons from modifying and adjusting parameters.

The rotating capability makes it possible for the electrical output and 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.

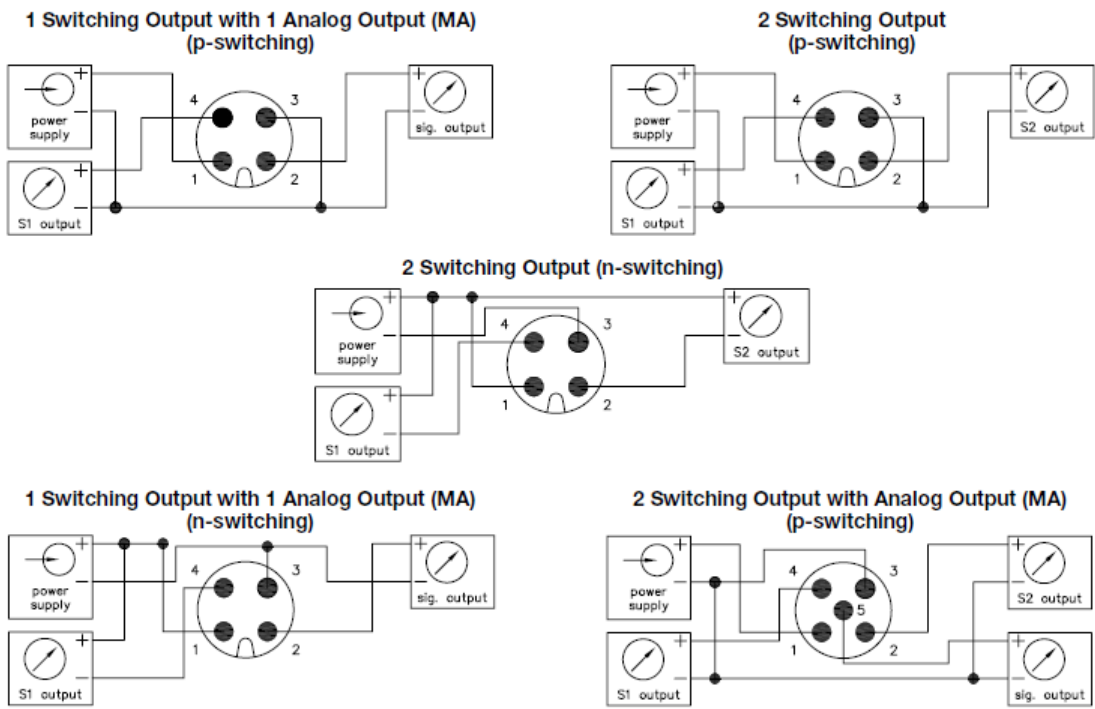
3. Start of Operation

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 SPWF unit 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.
- The load can be connected to ground (switching PNP) or to the supply voltage (switching NPN)

Round Connector M12x1

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
Analog Output	5	Grey



4. Switching On and Off

The SPWF 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 switch. The switch is then in normal operating mode. The operating pressure is shown on the display and the switch outputs are operational. Briefly pressing S1 causes switch point one to be displayed. Briefly pressing S2 causes switch point two to be displayed.

5. Programming

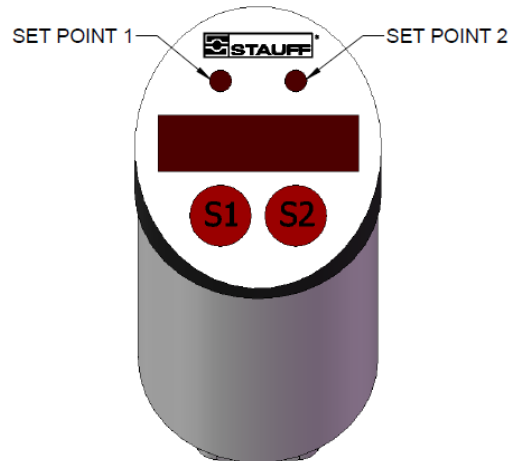
During the initialization period the display and switching point status LED's will illuminate. The nominal pressure will display for a brief moment. During this phase the outputs are inactive.

After initialization the switch will resume normal operating mode. The pressure appears on the display. The outputs are active and the switching point status LED's will indicate the status of the switching outputs.

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 pressure to be taken over as the switching point. The hysteresis remains unchanged. If the password has been activated (see programming mode) the programming is only accepted after the password has been entered.

The switching outputs can be programmed using the control buttons without the presence of pressure. 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

Password

The Password protection can be activated in programming mode. The pressure switch is protected from and unauthorized setting modifications. Be sure to keep the password somewhere it will not be lost. If you forget or have lost the password please contact Stauff for assistance. The serial number of the unit will be required in this case. (On the ID label)

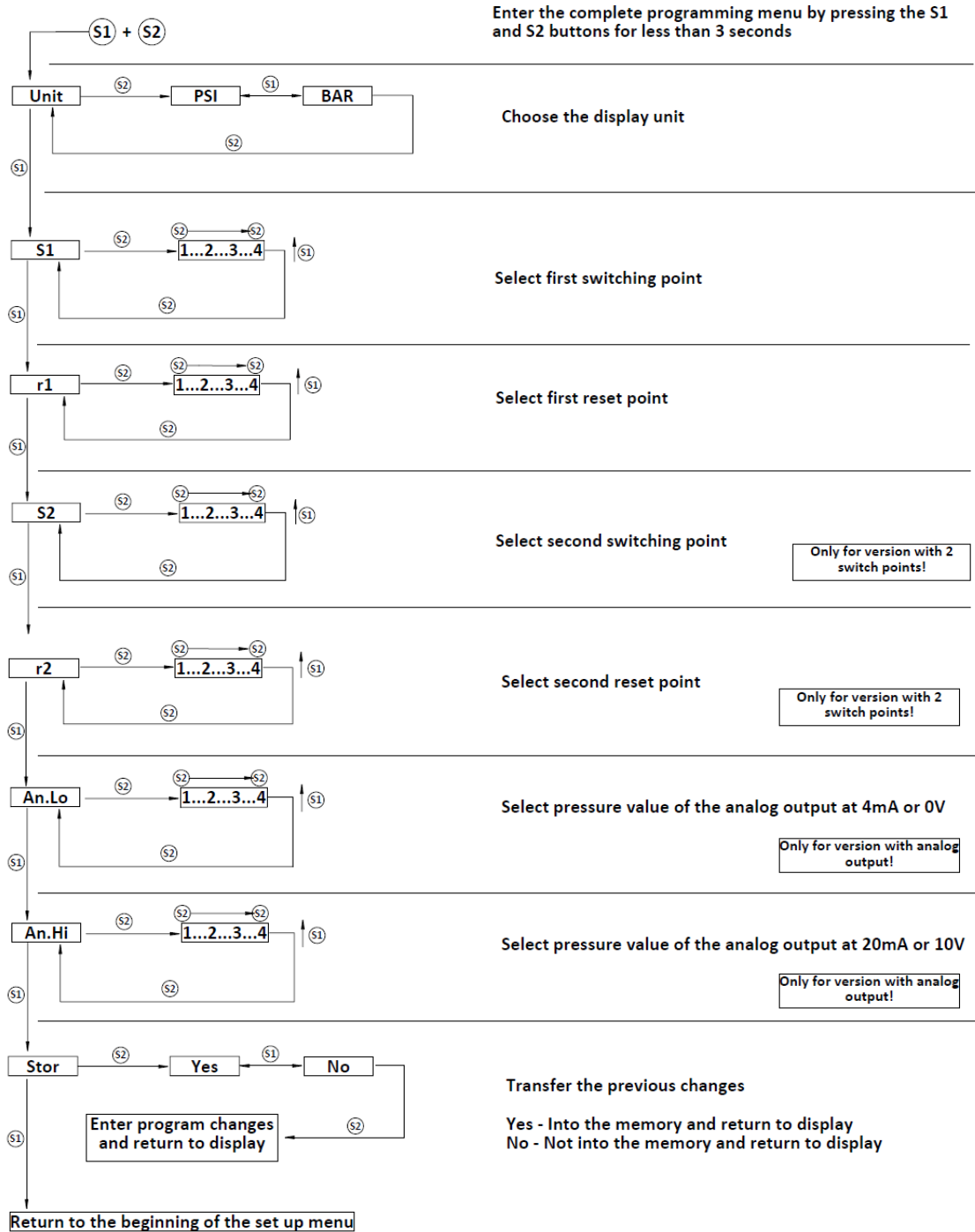
Switching Points and Hysteresis / Window

The switching outputs can be programmed without the presence of pressure. The decimal points are specified in accordance with the measuring / adjusting range and the associated accuracy.

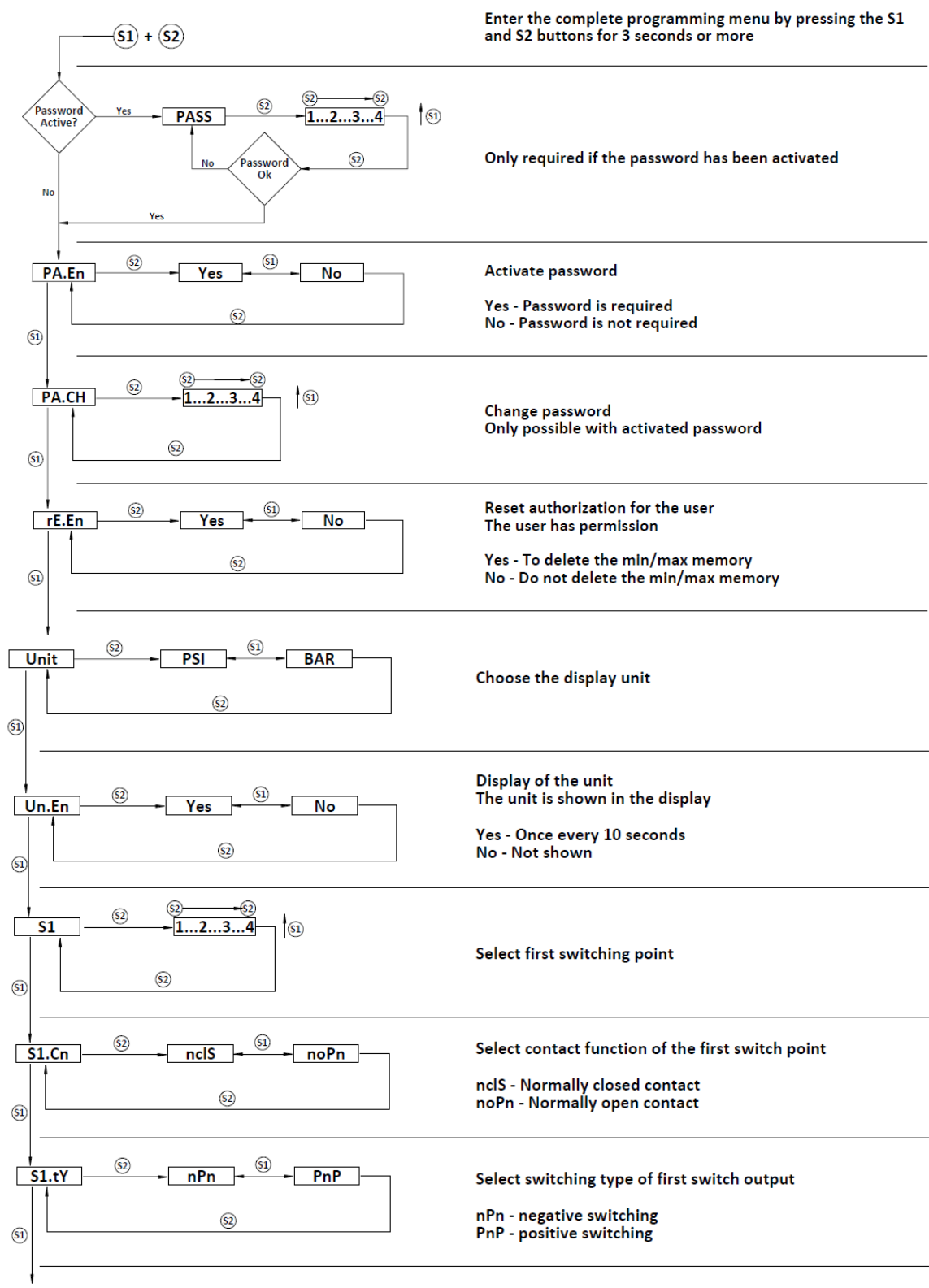
Switching function

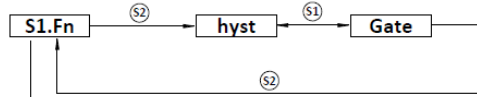
The switching function (normally closed / normally open) is defined individually for each switching point. Each switch output is programmed to switch to PNP or NPN potential.

The quick programming menu



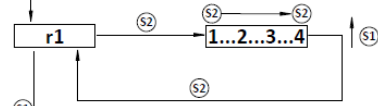
The complete programming menu



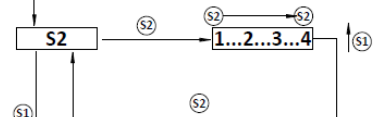


Select switching type of first switch output

hyst - Hysteresis
Gate - Gate function

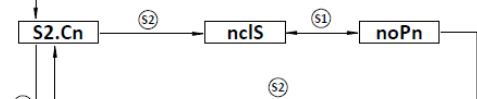


Select first reset point



Select second switching point

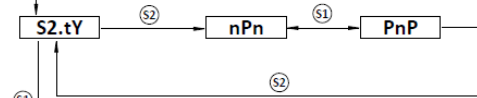
Only for version with 2 switch points!



Select contact function of the second switch point

nclS - Normally closed contact
noPn - Normally open contact

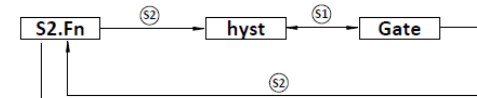
Only for version with 2 switch points!



Select switching type of second switch output

nPn - negative switching
PnP - positive switching

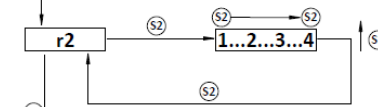
Only for version with 2 switch points!



Select switching type of second switch output

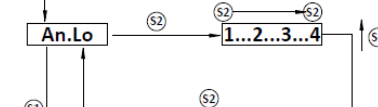
hyst - Hysteresis
Gate - Gate function

Only for version with 2 switch points!



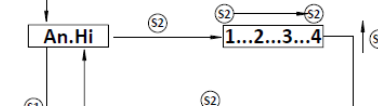
Select second reset point

Only for version with 2 switch points!



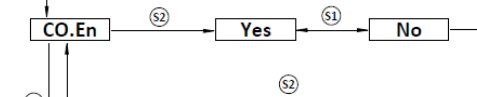
Select pressure value of the analog output at 4mA or 0V

Only for version with analog output!



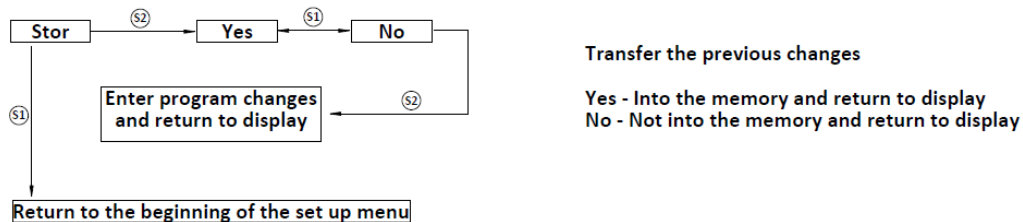
Select pressure value of the analog output at 20mA or 10V

Only for version with analog output!



Authorization for the user
The user has permission to

Yes - To program the switching output in the user menu
No - To not program the switching output in the user menu



To Exit the Menus

1. Possibility – After the selection, the menu will automatically be closed whether the modified value is stored or not.
2. Possibility – It is possible to exit the menu anytime by pressing the S1 and S2 simultaneously.
 - a. User menu 0.1-3s
 - b. Set up menu >3s
3. Possibility – If no button is pressed for 30 seconds the menu will be closed automatically.

Error Message

A. Error - Flashing display of the measured pressure

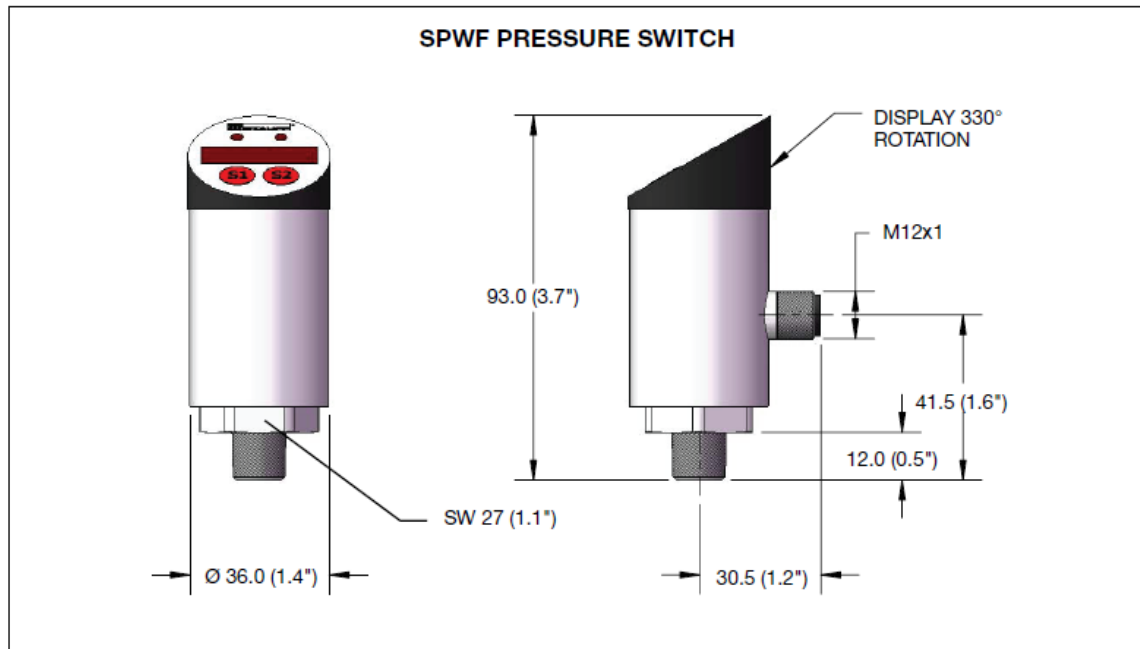
A. Cause - Measured pressure outside the adjustment range

B. Error - Flashing of the display during the programming

B. Cause - Entered value was not valid (switching point above / below the adjustment range, reset point above / below the adjustment range, reset point above the switching point, analog output span is smaller than 20% of the adjustment range, filter more than 2s) the buttons are locked for 3 seconds and the switch takes over the next possible value

Specifications				
Materials	Measuring Element	SS For Pressures Above 1500 PSI, Ceramic for Below 1500 PSI		
	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)		
	Damping (option)	0...2,000 ms		
	Delay (option)	0...99.99 s		
	Power Rating	0.5 A Max		
Adjustment	Set point	1...100% of Span		
	Reset Point	0...99% of Span		
Analogue Outputs	Standard	4...20 mA, 3-wire		
	Option	0...10 V, 3-wire		
	Scaling	20...100% of Span		
	Load Resistance	Current Output <500 , Voltage Output >10 k		
	Hysteresis	0.3% of Span		
	Response Time	≤2 ms Within 10-90% of F.S.		
Accuracy	1% of Span ±1 Digit			
Repeatability	0.2% of Span			
Pressure Ranges	Adjustment Range	Overload Limit	Burst Pressure	Sensing Element
	-14.5...30 PSI	73 PSI	87 PSI	CERAMIC CELL
	-14.5...44 PSI	73 PSI	87 PSI	
	-14.5...75 PSI	145 PSI	174 PSI	
	-14.5...145 PSI	290 PSI	363 PSI	
	0...30 PSI	73 PSI	87 PSI	
	0...75 PSI	145 PSI	174 PSI	
	0...145 PSI	290 PSI	363 PSI	
	0...300 PSI	580 PSI	725 PSI	
	0...750 PSI	1450 PSI	1740 PSI	THIN FILM
	0...1500 PSI	2900 PSI	3625 PSI	
	0...2300 PSI	4640 PSI	6960 PSI	
	0...3600 PSI	7250 PSI	10875 PSI	
	0...6000 PSI	11600 PSI	17400 PSI	
	0...9000 PSI	17400 PSI	21750 PSI	
	0...10000 PSI	17400 PSI	21750 PSI	
Thread Connections	1/4 NPT, 1/2 NPT, 1/4 BSP, and 1/2 BSP			
Electrical Connections	M12x1, 4-pin			
Temperature Ranges	Storage	-30...+80°C (-22°F...+176°F)		
	Media	-20...+80°C (-4°F...+176°F)		
	Ambient	-20...+70°C (-4°F...+158°F)		
	T _k	0.3% per 10 K		
Display	7-segments, LED Display, Red, 7.6mm high			
	4-Digits (-999...9999)			
Loading Capacity	Shock Resistance	50g According to IEC 60068-2-27		
	Vibration Resistance	10g According to IEC 60068-2-6		
Protection Class	IP65 According to IEC 529			
Weight	Approximately 0.3 kg/0.7 lbs			

Dimensional Data



CE - Conformity

The SPWF programmable electronic pressure 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 SPWF 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 SPWF unit can be cleaned using a soft, moistened cloth. Heavy soiling can be removed using a mild cleaning agent.

The SPWF 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