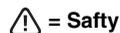


Mounting and Operating Instructions for Electronic Pressure Switches 33L



1. Technical Data

Power supply:

UB = 18 to 32VDC, polarity safe

Permissible residual ripple:

10% (within UB)

Pressure ranges:

-1 to 1 / 0 to 10 / 16 / 40 / 100 / 160 / 250 / 400 / 600 bar

-29 to 30 in HG; 0 to 30 / 150 / 580 / 1000 /

3600 / 5800 / 8700 psi

Current consumption:

< 100 mA (plus load)

Output signal:

PNP, potential-bound open collector switching to UB, I_{max} = 250 mA

Ambient / Fluid Temperature:

-20 °C to 80 °C / -25 °C to 80 °C

Electro magnetic compatibility:

EN 50081, part 1 / EN 50082 part 2

Switching logic:

normally open (no)/normally closed (nc) programmable

2. Setup MENU

The Setup MENU is activated by pressing the **SET**-button for a minimum of 4 seconds.

A sub-menu appears and the individual functions can be selected by using the arrow buttons. For configuration within a function please press the corresponding **SET** button. Pressing both arrow buttons simultaneously or inactivity > 12 sec. will cause the return to the standard mode without any changes.

The Setup MENU is comprised of the following functions:

Ou 1

Setting the polarity (switching logic) no/nc of OUT 1

Ou 2

Setting the polarity (switching logic) no/nc of OUT 2

Ou2 is only shown if the warning function (acc. to DESINA) is switched off

PHI

Indication of highest value measured (reset with **⏏** and then **SET**-button)

Pressure peaks > 5 ms within the specification are detected and stored

P.Lo

Indication of lowest value measured (reset with **⏏** and then **SET**-button)

rSt

Reset to the factory settings

cod

Setting of a new Code (key lock)*

c.cd

Deletes an existing code. Entering of this code prior to deleting is necessary

End

Storing and back to Operating Display (indication of system pressure)

* pressing a three key sequence (cd1) and repeating it (cd2)

3. System Configuration MENU

In this MENU basic functions are provided.

Activation by pressing the arrow-buttons **⏏**+**⏏** simultaneously during the power-on procedure. The following functions are provided:

InF

Information of the software version und Serial number

brn

The intensity of the LED-display can be varied in 4 stages

dIS

Rotate display 180°

P.0.0

The pressure indication in the zero point can be suppressed in % Full Scale

OFs

Sensor calibration with atmospheric pressure (max. 10% FS can be compensated)

dES

The warning function * of OUT 2 (DESINA) can be switched on / off (activating of OUT 2)

COL

Setting the display colour (yellow / green) **

n.cd

This function allows the code elimination (key lock) with the help of the master code combination ***

End

Storing and back to Operating Display (indication of system pressure)

* supervision of overpressure and malfunction of sensor

** according to this setting, the colour of the 7-segment-LED changes from orange to green when the pressure exceeds the setpoint SP1 or the other way round

*** delete code with mastercode 1: (**⏏**-**SET**-**⏏**) confirm deletion with mastercode 2: (**⏏**-**SET**-**SET**)

4. Setting of the Switching points

Press **SET** once for the switching point of OUT 1 (OUT 2) and choose your set value by using the arrow buttons. Press

SET for confirmation and continue with the reset point of OUT 1 (OUT 2). In case of inactivity for more than 12 seconds the display returns to the operating display without storing the set values. By pressing both arrow buttons simultaneously this function can be terminated immediately and the display returns to the operating display without storing the settings.

SP1

choosing the switchpoint 1 with the arrow buttons and confirming with the **SET**-button

rP1

choosing the resetpoint 1 with the arrow buttons and confirming with the **SET**-button

SP2 *

choosing the switchpoint 2 with the arrow buttons and confirming with the **SET**-button

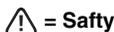
rP2 *

choosing the resetpoint 2 with the arrow buttons and confirming with the **SET**-button

* indication only if warning function of OUT 2 (DESINA) is switched off



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5. Factory-Settings

Code	Unit *	OUT 1		OUT 2 **			Display				
		Switching logic (n.o. / n.c.)		SP1 (% FS)	rP1 (% FS)	Switching logic (n.o. / n.c.)	SP2 (% FS)	rP2 (% FS)	Zero Point Suppression (% FS) ***	colour green when pressure > Sp1	brightness 100%
none	n.o.	60%	40%	n.c.					2%		

* both versions with pressure unit bar, psi and InHG are available

** OUT 2 can be programmed both as warning signal and as switching signal, the logic of the warning signal is normally closed

*** suppression of pressure indication is adjustable between 0...20% full scale

6. Electrical connection

Electrical Connection M12 x 1			
Pin	Signal	Cabel	Display Indication
1	+ UB	brown	
2	OUT 2 (Diagnostic / Switching)	white	red blinking / LED *
3	- UB	blue	
4	OUT 1	black	green / yellow
5	nc		

* if Out 2 is programmed as a warning output:

no error: OUT2 = high

error: OUT2 = low / display indication "Err" is red blinking if OUT2 is programmed

as a switching output, the status LED shows the voltage level of OUT2: on=high / off=low

7. Fluids permissible

All kinds of neutral or corrosive, non-combustible gases and liquids, compatible with the wetted parts materials: Pneumatic types with aluminium port: aluminium, ceramics, FKM (Viton)

Hydraulic/All Fluid Types with stainless steel port: stainless steel 1.4305, ceramics, FKM (Viton)

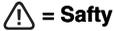
8. Error- and Warning Messages

In the case of an error, "Err" begins blinking and the colour of the LED-Display switches to red.

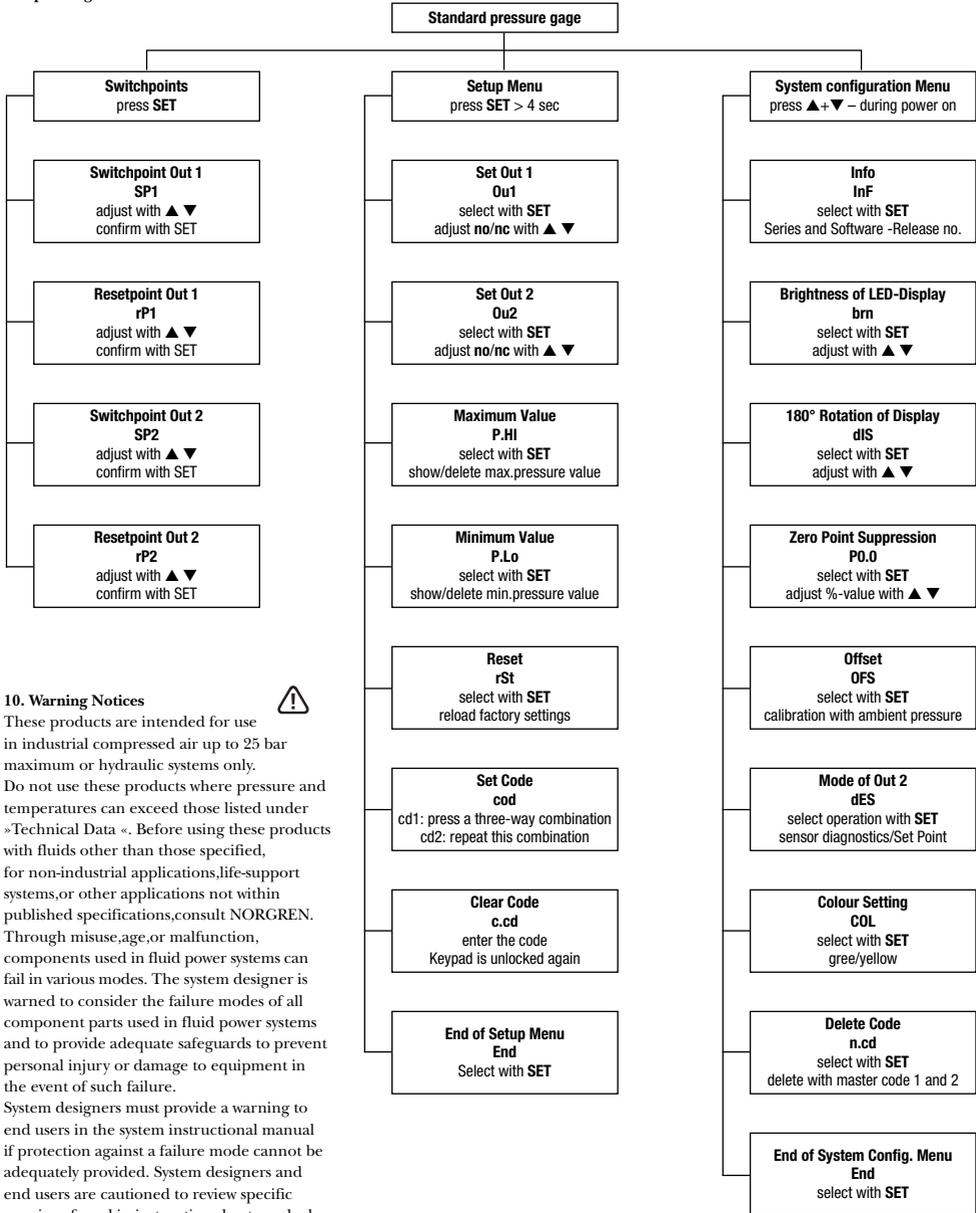
Error Message	Meaning	Switching Signal
U.Lo	Voltage is too low	disconnected
P.Lo	Sensor failure	disconnected
P.Hl	Sensor failure or overpressure	disconnected
t.Lo	Temperature signal is too low	disconnected
t.Hl	Temperature signal is too high	disconnected
C.Er	Calibration failure	disconnected
S1.E	Faulty programming of Display, Zero Suppression or code	active
S2.E	Faulty programming of	active
O1.E	Faulty programming of OUT 1	disconnected



Mounting and Operating Instructions for Electronic Pressure Switches 33L



9. Operating Instructions



10. Warning Notices



These products are intended for use in industrial compressed air up to 25 bar maximum or hydraulic systems only. Do not use these products where pressure and temperatures can exceed those listed under »Technical Data«. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN. Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided. System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.