

OPERATING MANUAL

PRESSURE SWITCH

PA-22 PS

PROGRAMMER

dV-22 PP

PROGRAMMING SOFTWARE

Pressure
Switch Console



Pressure switch PA-22 PS / PAA-22 PS

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Programmer dV-22 PP

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Electrical connection M12

Pressure connection



Connector pin assignment M12

Pin 1: +VCC (8...40 V DC)

Pin 2: Switch output 2

Pin 3: GND

Pin 4: Switch output 1

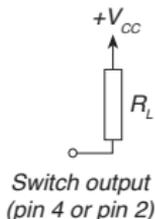
Pin 5: Analog output

The switch outputs are factory configured as PNP (switch switches load to +VCC) or NPN (switch switches load to ground) and can be programmed independently. The following functions can be configured for each switch output: hysteresis / window function, normally open / normally closed, time delay (0...5 seconds).

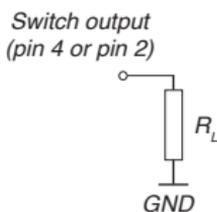
If a meter is connected to the analog output, it must have an internal resistance of at least 30 k Ω . Though the pressure switches are already configured at the factory, the configuration can be changed via the dV-22 PP programmer. Time delay can only be changed with a PC / laptop running "Pressure Switch Console" software.

Connection diagram

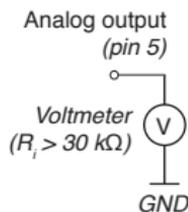
NPN switch output with external load (R_L)



PNP switch output with external load (R_L)



Analog output



Programmer dV-22 PP

The configuration of the pressure switch can be changed with the dV-22 PP programmer.



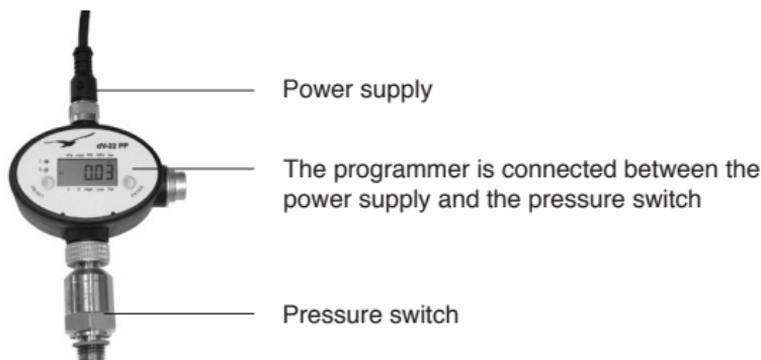
- | | |
|---------------------|--|
| 1) M-12 plug | Power supply connection (8...40 V DC) |
| 2) 5-pole connector | Connection to PC / laptop with a converter (K-107 / K-104B) |
| 3) M-12 socket | Connection of the pressure switch |
| 4) LED | Indicates the status of the switches (switch 1 and switch 2) |
| 5) LCD | Main display |
| 6) Keys | SELECT and ENTER |

Programming / Pressure Switch Configuration

The connected pressure switch can be programmed either via keystroke with the programmer alone or with a PC / laptop connected to the programming device.

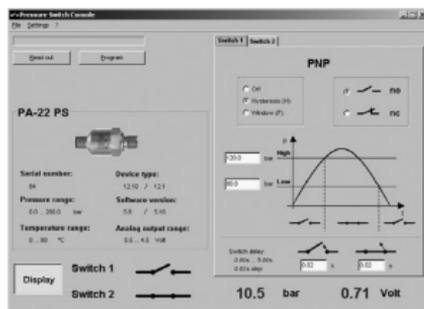
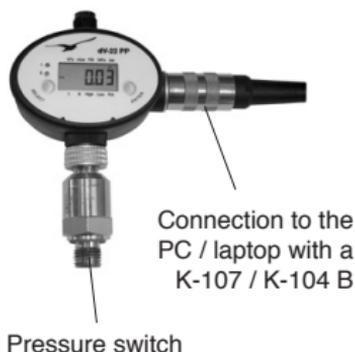
Programming with the programmer dV-22

The programmer requires a power supply (see “Connections”). It is operated with the two keys (see “Menu Navigation”).



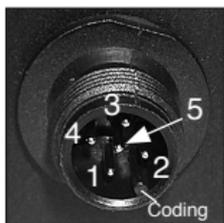
Programming with a PC / Laptop

If an interface cable from KELLER (K-107 / K-104 B) is connected to the programmer, programming can be carried out with a PC / laptop using the “Pressure Switch Console” software. In this case, the power supply for the programmer comes directly via the converter.



Software (Pressure Switch Console) for comfortable programming with a PC / laptop

Power supply connection M12 plug



The pin assignment of the programmer is the same as the pressure switch:

- Pin 1 : +Vcc (8...40VDC)
- Pin 2 : Switch output 2
- Pin 3 : GND
- Pin 4 : Switch output 1
- Pin 5 : Analog output

All pins of the plug are connected with the plug of the pressure switch. Thus, the programmer can be used directly with the application and the functions of the pressure switch remain preserved.

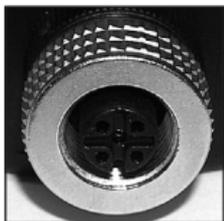
Attention: The switch outputs are inactive (open) during the programming mode.

Connection to PC (Binder Plug)



The connector plug is used for communication with a PC / laptop. The interface cable (K-107 / K-104B) can be connected here.

Pressure switch connection M12 socket



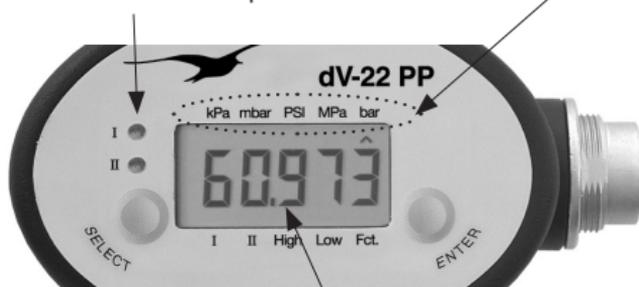
The pressure switch is connected to the M12 socket. If necessary, a M12 extension cable (5-pole) can be used between the programmer and the pressure switch.

Display

In normal mode the programmer displays the actual pressure value of the pressure switch (only for pressure switches with an analog output), and the status of the switch outputs with LED's.

LEDs for the indication of the status of the switch outputs

Pressure measuring units



Pressure value

Menu Navigation

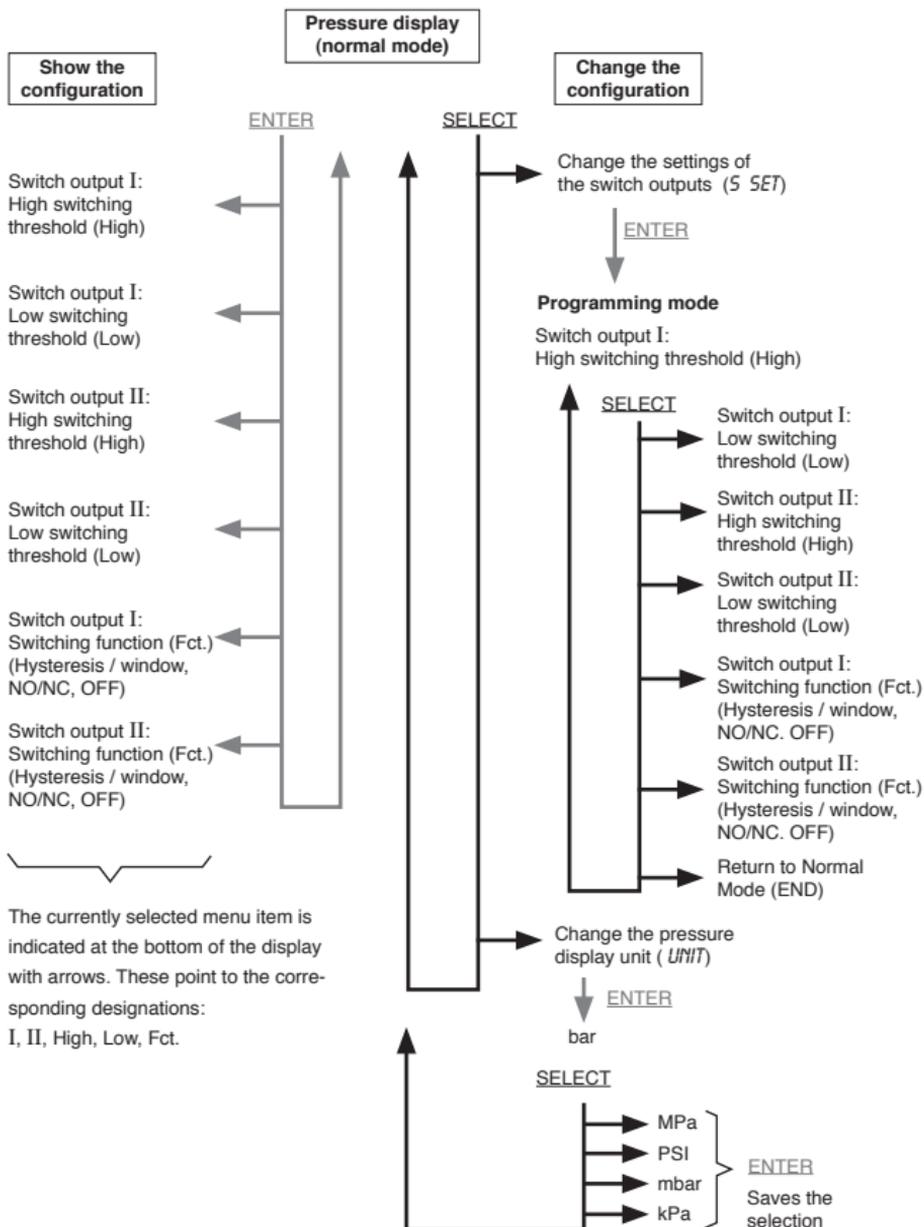
Navigation in the display menu is made with the two keys SELECT and ENTER.

Functions of the keys

SELECT: Navigate forwards within the menu

ENTER: Select the menu item

Menu structure



Programming mode

Programming mode (see the menu structure) allows the switching thresholds and switching functions to be set.

Example: Changing the switching threshold

The switching threshold to be changed is selected with SELECT (see the menu structure). The currently selected menu item is indicated at the bottom of the display: I, II, Low, High, Fct. The arrows point to the corresponding designations. E.g.: if the arrows point to I and High --> the high switching threshold of switch output 1 can be changed. This value is then released for change by pressing ENTER (flashing arrow). The value is decreased with SELECT and increased with ENTER. If no button is pressed for about 5 seconds, the programming device saves the value displayed to the pressure switch (the arrows stop flashing).

Switching functions (Fct.)

Various functions can be configured for the switch outputs.

Hysteresis (H): When the high switching threshold is exceeded, the output closes. It only opens again when the value goes below the low switching threshold. Application example: 2-point controller.

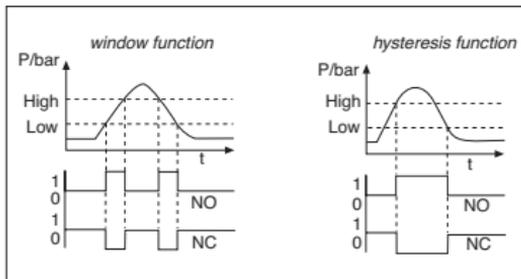
Window (F): The switch output is closed between the low and high switching thresholds. Outside this range it is open. Application example: Alarm when the pressure is outside a defined range.

Normally Open (no): The switch contact is normally open.

Normally Closed (nc): The switch contact is normally closed (inverse of NO)

Off (OFF): The switch contact is always open

To change the corresponding switching function, press ENTER in the programming mode repeatedly until the required function is displayed. Press SELECT to go to the next menu item: this simultaneously saves the displayed switching function to the pressure switch.

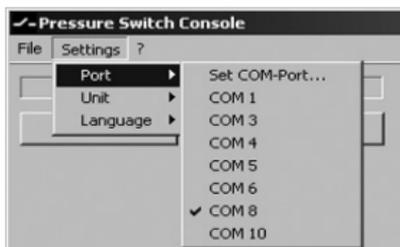


“Pressure Switch Console” Software

If the programmer is connected to a PC / laptop via a interface cable (K-107 / K-104 B), the configuration of the pressure switch can easily be made with the “Pressure Switch Console” program.

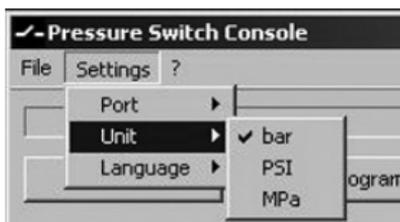
Setting the serial port

The serial connection that is used to connect the programmer to the PC / laptop must be entered under Edit / Port. If no COM numbers are listed, the connection must be set with „Set COMPort“.



Selection of the pressure measuring unit

The pressure unit (bar, PSI or MPa), in which the program displays the pressure values, can be selected.



Read-out and programming of the pressure switch

By pressing “Read out”, the data of the pressure switch, which is connected to the programmer, is read. The configurations (switching thresholds, switching functions, switching time delays) can now be changed for the switch outputs 1 and 2.

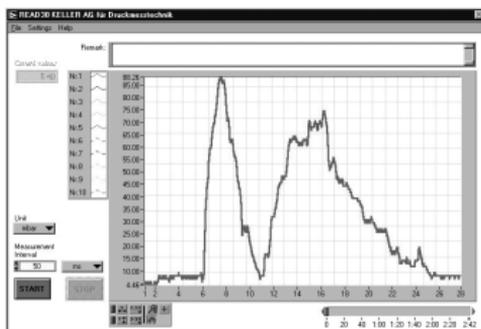
Press “Program” to load the changed values back to the pressure switch. Due to the reduced resolution of the pressure switch, the pressure values displayed may change slightly. The nearest possible value is set.

When programming is complete, the pressure switch can be disconnected and used: the configuration in the pressure switch remains stored.

Display of the pressure values and switch status

With the console, the actual pressure value of the pressure switch and the status of the switch outputs can be displayed. Press “Display” to show these values. However, the actual pressure value can only be displayed if the pressure switch has an analog output.

A pressure trend curve can be displayed and recorded graphically with the KELLER “Read30” software.



DECLARATION OF CONFORMITY

Herewith we declare, that the following product

Pressure Switch PA-22 PS



meets the basic requirements for the electromagnetic compatibility, which are established in the guidelines of the European Community (89/336/EWG).

This declaration is valid for products of which a drawing, marked with the CE sign, exists, and which are produced according to this drawing. This explanation has no validity without such a drawing.

As criteria for the electromagnetic compatibility, the following norms are applied:

EN 61000-6-2

EN 61000-6-3

EN 61000-6-4

This declaration is given for the manufacturer:

KELLER AG für Druckmesstechnik, St. Gallerstrasse 119, CH-8404 Winterthur

in full responsibility by

KELLER GmbH, Schwarzwaldstrasse 17, D-79798 Jestetten

Jestetten, 25 May 2011

A handwritten signature in black ink, appearing to read 'H.W. Keller', is written over a light grey background.

H.W. Keller
General Manager
with legally effective signature

