

DIGITAL PRESSURE SWITCH

MANUAL

I: NOTICE

- 1.After receiving the product, please check whether the packaging and appearance are intact, and check whether the product model and specifications match the product you purchased.
- 2. Install and wire the product correctly and reliably according to the process connection, electrical connection and installation method provided by the product.
- 3. Please pay attention to the product's technical specifications and usage conditions during use, such as the permissible medium and temperature, overload range, power supply voltage, etc.
- 4. The pressure switch is a precision device. Please do not disassemble it by yourself when using it, and do not touch the probe rod with hard objects to avoid damage to the product.
- 5. During installation, pay attention to protecting the product and do not install forcefully or disassemble it, otherwise it is easy to damage the product, especially the installation thread.
- 6. Please use a suitable wrench when installing or disassembling. Do not forcibly twist the housing by hand to tighten or disassemble, otherwise the damage caused will not be covered by the warranty.
- 7. After installation and power-on test, it usually takes several minutes for the product to have stable output and normal operation. This is a normal phenomenon.
- 8. If abnormal phenomena occur during power-on testing after installation, please contact our after-sales technicians.
- 9. It may be affected by installation stress during the installation process. After the installation is completed, if the reading is not at zero, please clear it before use.
- (!) Product damage caused by non-professional operation that does not follow operating specifications is not covered by the warranty.

II: WARNING

- 1. When the ambient temperature is above 60°C, please use a forced fan or cooler for cooling.
- 2. The installation, debugging and maintenance of this product should be carried out by qualified engineering and technical personnel.
- 3. Please ground the product shell reliably to help resist electromagnetic interference and ensure electrical safety.
- 4. If the fault or abnormality of this product may cause a major accident in the system, please set up an appropriate external protection circuit to prevent accidents.
- 5. The company is not responsible for any direct or indirect losses other than the product itself.
- 6. The company reserves the right to change product instructions without notice.

III: DESCRIPTION

This is a digital pressure switch with an OLED screen suitable for hydraulic environments. The product is designed with a 304 stainless steel case and a plastic case head. The protection capability can reach IP65 level. This product can be used in harsh environments.

It adopts a universal threaded joint design. It is designed for high load conditions in hydraulic environments and is equipped with an ED sealing method to achieve good long-term stability.

It is equipped with a double-section rotating structure that can adjust the screen orientation to ensure that customers can obtain good viewing angles in different installation positions.

This pressure switch is equipped with multiple function buttons. Users can quickly set hysteresis value, upper and lower limit settings, hysteresis mode/window mode and other functions. Equipped with a standard 5-core M12 aviation plug line (1 meter), users can directly replace the old mechanical pressure switch.

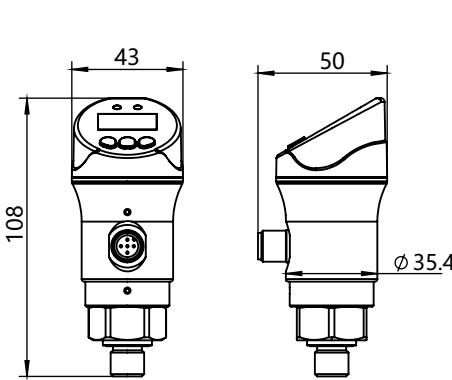
Note: Only the G1/4 external thread version supports ED sealing form

IV: SPECIFICATION

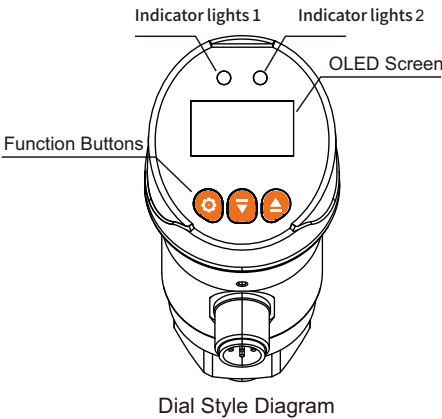
Range:0~0.1...1.0...60MPa
Accuracy : ±0.5%FS
Overload pressure: ≤10MPa 200%;>10MPa 150%
Destroying pressure: ≤10MPa 300%;>10MPa200%
Screen display mode :OLED
Screen Resolution:128*64
Supply voltage:12~28V
Output signal: Output 1: NPN or PNP (switchable)
Output 2: NPN or PNP (switchable)
Output 3: (4-20) mA
(Subject to the output method of the actual product)

Response time: 10ms
Load current:<200mA
Operating temperature:(-20~65)°C
Electrical connections:M12 plug
Electrical protection:Anti-reverse connection protection, anti-electromagnetic interference
Threaded port:M20x1.5, G1/4, NPT1/4 or customized thread
Interface material:304 stainless steel
Diaphragm material:316L stainless steel
Accessories: M12 standard 5-core 12-pin cable (1 meter)

V: DIMENSION



VI: DIAL FUNCTION



Buttons	Functions	Special Instructions
	Set Button	Short press this button on the main interface to enter the output upper and lower limit settings. It acts as a function switch button and parameter save button in the menu.
	Decrease Button	In the menu, it acts as a number modification and function parameter switching function. Short press to reduce the number.
	Increase Button	In the menu, it acts as a number modification and function parameter switching function. Short press to increase the number.
Indicator lights 1, 2	Action status indicator light	Red light status: action triggered Green light status: no action triggered.

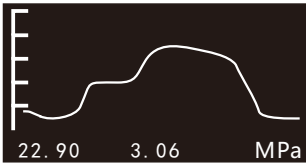
VII: PANEL DIAGRAM

7.1 OLED screen main interface



Interface	Function	Special Instructions
0. 00	Real time value	/
Mpa	Unit	Units can be switched (MPa, kPa)
0%...100%	Progress bar	Displays the real-time measurement value as a percentage of the range.
	Unlock mode	/
	Lock mode	The main interface is locked and other functions cannot be entered by short pressing the button.
32.7	Historical maximum	The maximum pressure value will be recorded after power-on
-32.7	Historical minimum	The lowest pessure value will be recorded after power-on

7.2 Line chart interface



Interface	Function	Special Instructions
curve	Real-time numerical display	
MPa	Unit	Units can be switched (MPa,kPa)
	Scale	From low to high is the percentage of the range.
22.90	Historical maximum	The maximum pressure value in the current range will be recorded.
3.06	Historical minimum	The minimum pressure value in the current range will be recorded.

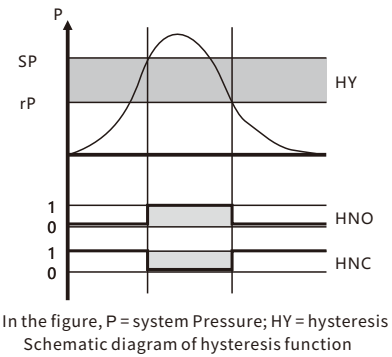
VIII: SWITCH OUTPUT FUNCTION

If the displayed value is above or below the set switching limit (SPx, rPx), its switching state changes. The following switching functions can be selected:

※ Hysteresis function normally open: output x = [HNO] (refer to Figure as below)

※ Hysteresis function normally closed: output x = [HNC] (refer to Figure as below)

First set the switching point: (SPx), then set the reset point: (rPx). If SPx is changed again, the hysteresis will also change.

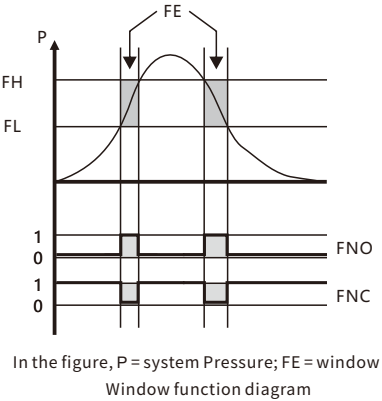


※ Window function normally open: =[FNO] (refer to Figure as below)

※ Window function normally closed: =[FNC] (refer to Figure as below)

The width of the window can be set by the difference between FHx and FLx

FHx = upper limit, FLx = lower limit.



IX: BASIC FUNCTIONS

9.1 Basic Function Introduction

Name	Introduce
Lock interface	Features: The main interface is locked and other functions cannot be entered by short pressing the button.Prevent accidental touch. How to enter: In the main interface, long press and buttons for 5 seconds at the same time. The icon will appear and enter the lock mode. long press and buttons for 5 seconds in the lock mode to cancel the mode.
High and low value settings (SP1/rP1) (FH1/FL1)	Function introduction: Set switch 1 alarm value / set switch 1 reset value in hysteresis mode (SP1/rP1) In window mode, set the upper/lower limit of system pressure when output 1 is turned on (FH1/FL1) How to enter: When the first-level menu displays the corresponding letter, short press to enter, long press or for 3 seconds to set the corresponding data. Short press to add or subtract, long press to add or subtract quickly, short press to save
High and low value settings (SP2/rP2) (FH2/FL2)	Function introduction: Set switch 2 alarm value / set switch 2 reset value in hysteresis mode. (SP2/rP2) In window mode, set the upper/lower limit of system pressure when output 2 is turned on. (FH2/FL2) How to enter: When the first-level menu displays the corresponding letter, short press to enter, long press or for 3 seconds to set the corresponding data. Short press to add or subtract, long press to add or subtract quickly, short press to save.
Analog output Corresponding point (ASP2) (AEP2)	Function introduction: Configurable analog output starting point (ASP2) of system pressure, Configurable analog output end point (AEP2) of system pressure. How to enter: When the first-level menu displays the corresponding letter, short press to enter, long press or for 3 seconds to set the corresponding data. Short press to add or subtract, long press to add or subtract quickly, short press to save.
Secondary menu Mode (EF)	Function introduction: Enter output function, unit switching, action delay, screen setting, zero point calibration and other function settings How to enter: In the first level menu setting, after the screen displays "EF", after short pressing , the system automatically enters the secondary menu mode.
Switch 1 Output mode switch (OU1)	Function introduction: OU1 outputs the switching signal of the pressure value: hysteresis function or window function, normally open or normally closed setting. Switching signal for pressure value: hysteresis function [H ..] or window function [F ..]Normally open [. NO] or normally closed [. NC] How to enter: When the secondary menu (OU1) is displayed, short press to enter, After entering the parameter configuration, short press or to switch in sequence. [HNO] or [HNC] or [FNO] or [FNC] Short press to save

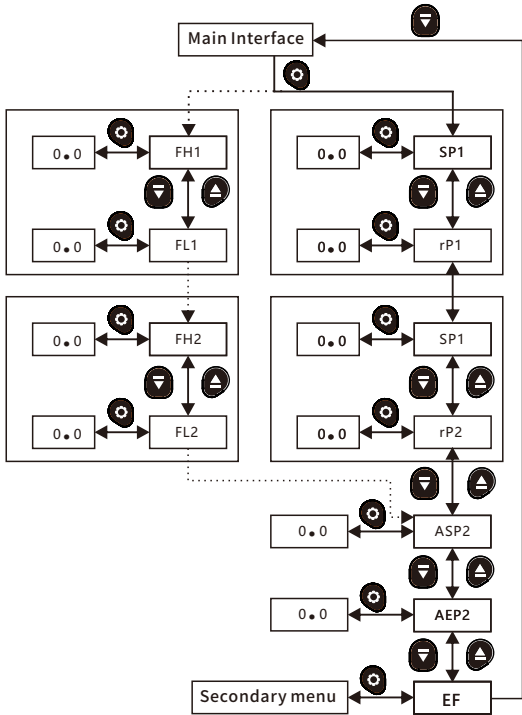
Name	Introduce
Switch 2 Output mode switch (OU2)	Function introduction: OU2 outputs switching signals for pressure values: hysteresis function or window function, normally open or normally closed setting Switching signal for pressure value: hysteresis function [H..] or window function [F..] Normally open [. NO] or normally closed [. NC]
	How to enter: When the secondary menu (OU2) is displayed, short press to enter, After entering the parameter configuration, short press or to switch in sequence [HNO] or [HNC] or [FNO] or [FNC] Short press to save
Output 3 Output mode switch (OU3)	Function introduction: OU3 output pressure value corresponds to analog signal: (4~20)mA or (20~4)mA.
	How to enter: When the secondary menu (OU3) is displayed, short press to enter, After entering the parameter configuration, short press or to switch in sequence [4-20] or [20-4], short press to save
Action delay (dr1) (dr2) (ds1) (ds2)	Function introduction: Adjust the action delay parameters of OU1/OU2
	How to enter: When the secondary menu displays (dr1/2) or (ds1/2), short press to enter, long press or for 3 seconds to set the corresponding data. A value between 0 and 50 seconds can be set. Short press to add or subtract, long press to add or subtract quickly, short press to save
	Function introduction: Setting the standard measurement unit for system pressure displayed on the screen
	How to enter: When the secondary menu (UNIT) is displayed, short press to enter, Can be set in MPa or KPa, Short press or to switch in sequence, short press to save.
Switch output logic (P-n)	Function introduction: Switching output logic can be switched to PNP/NPN
	How to enter: When the secondary menu (P-n) is displayed, short press to enter, can be set to PNP or NPN Short press or to switch in sequence, short press to save
Switching point Damping adjustment (dAP)	Function introduction: The larger the parameter is, the longer it takes for the displayed pressure value to remain stable. The smaller this parameter is, the faster the displayed pressure data will stabilize.
	How to enter: When the secondary menu (dAP) is displayed, short press to enter, long press or for 3 seconds to set the corresponding data. The parameter configuration range is 1~1000. Short press to add or subtract, long press to add or subtract quickly, short press to save.
Restore to factory defaults (rES)	Function introduction: The product settings are restored to default settings (default settings are shown in Table 1).
	How to enter: When the secondary menu (rES) is displayed, short press to enter, when displaying (WRAN), long press or for 3 seconds, until the display (ing) returns to the main interface automatically, at this time, all parameters of the product are restored to the default parameters.
Display direction (DIS)	Function introduction: The screen display direction can be rotated 180°
	How to enter: When the secondary menu (DIS) is displayed, short press to enter. The ON character indicates the positive direction of the screen, and the OFF character indicates the screen is rotated 180° Short press or to switch screen states in sequence, short press to save
Line chart mode	Function introduction: Used to record short-term fluctuations in values. See 9.2 for details.
	How to enter: In the main interface, short press to enter
Exit parameters, do not apply settings	Press and at the same time. The parameters are not saved and the interface returns to the previous settings.
Exit menu	Press and at the same time. The interface returns to the previous menu.

9.2 Basic Function Introduction

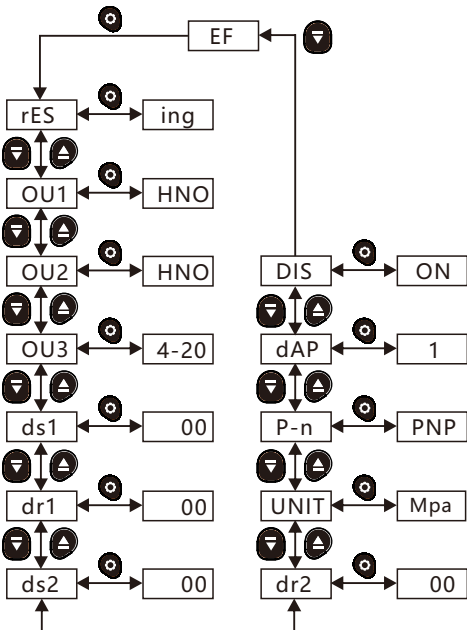
Name	Factory setting parameters	Name	Factory setting parameters
Sp1	40%FS	UNIT	Mpa
rP1	20%FS	P-n	NPN
Sp2	80%FS	dAP	01
rP2	60%FS	DIS	ON *
ASP2	Lower limit of range		
AEP2	Upper limit of range		
Ou1	HNO		
Ou2	HNO		
Ou3	4-20		
ds1	00		
dr1	00		
ds2	00		
dr2	00		

Note: The parameters marked with * are affected by the actual range of the selected model. The default parameters are subject to the actual product received.

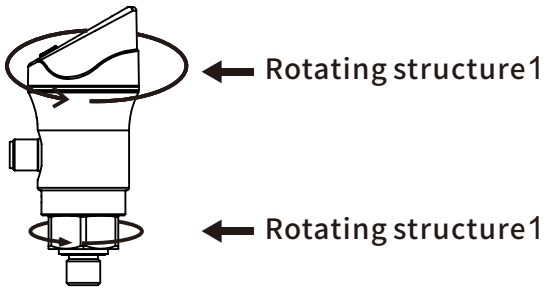
9.3 First level menu setting flow chart



9.4 Secondary menu setting flow chart



■ X: INSTALL

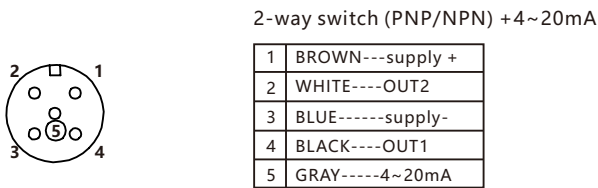


Schematic diagram of the rotation function

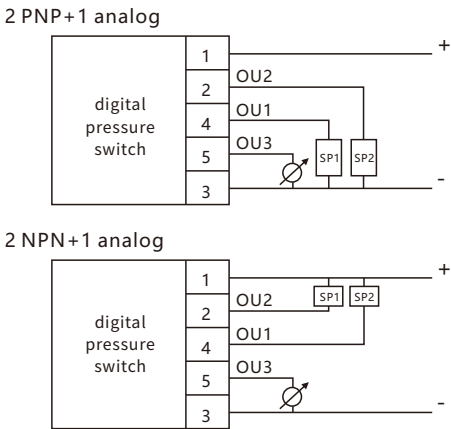
- This product supports a dual-stage rotation structure, both supporting 330° rotation.
 - This product must be tightened with a wrench during installation. The dial can be rotated only after installation is complete.
 - Before installing the device, please confirm whether the installation space can accommodate the product.
 - During installation, please fully tighten the screws to ensure air tightness.
 - The recommended torque range of the wrench is (25~35) N·m
 - After the equipment is installed, you can adjust the M12 connector and dial direction.
- (Note! When adjusting the direction, the rotation direction should be consistent with the screw thread installation direction to prevent the screw thread from loosening when adjusting the direction.)
- The dial has a certain rotation range. When the rotation reaches the maximum range, do not continue to rotate to avoid equipment failure

■ XI: Wiring Definition

1)Cable sequence



2)Circuit Diagram



■ XII: PROBLEMS&SOLUTIONS

NO.	PROBLEM	REASON	SOLUTION
1	No display on the screen	Insufficient supply voltage	1. Check the power supply 2. Confirm the wiring is normal or not
2	Buttons not responding	buttons blocked	1. confirm the button is damaged or not 2. Return to factory for repair
3	Pressure does not change	1. The sensor is damaged 2. The sensor wiring is damaged	1. Restart the device 2. Return to the factory for repair
4	Display E--H	1. Pressure out of range 2. The sensor is damaged	1. Be careful not to exceed the range 2. Return to the factory for repair

■ XIII: AFTER-SALES SERVICE

After-sales service and warranty terms

- The product warranty period is 12 months from the date of delivery. If our company's products fail during normal use within 7 days from the date of sale, consumers can choose refunds, exchanges, maintenance and other services. After consumers purchase our company's products, if there is a failure that is not caused by human damage within one year, they can be repaired free of charge. For consumers who do not meet the free replacement or free warranty service, our company still provides technical services. The purchase time is based on the invoice or receipt date issued by the dealer
- The products are mainly divided into housing, control components and pressure sensing components
 - The outer shell is not covered by warranty due to normal wear and tear, and the outer shell will not be replaced
 - We are not responsible for warranty if the circuit board is damaged due to wiring errors or excessive load on the control components
 - The warranty is not responsible for damage to the sensor element caused by over-range use or touching the diaphragm with hard objects
- Those who have any of the following circumstances cannot enjoy the "Three Guarantees" service
 - Failures and damages caused by human factors, use in abnormal working environment, use not in accordance with the instructions, or use in an environment not in accordance with the instructions, etc
 - Without the consent of our company, users dismantle, repair, or modify the product without permission.
 - Damage caused by poor transportation after purchasing our company's products
 - Damage caused by other force majeure (such as floods, lightning strikes, earthquakes, abnormal voltage)
 - Normal used old, tear, cracks and stains, etc.
 - Products that do not belong to our company (such as fakes)
 - Failure to provide valid shopping receipt, no warranty card, etc.