DR3511 Intelligent Pressure Switch -NPN/PNP

Fandeii Electronics Co.,Ltd.
www.fandesensor.com
info@fandesensor.com

1 Introduction

DR3511 Pressure Switch is an intelligent digital-displayed instrument for pressure testing & controlling. It integrates functions of measuring, display, output and control all in one. It has a complete electronic structure. Oil-filled piezoresistive pressure sensor with diaphragm is applied in the front part. The output is processed by high-precision and low-temperature drift amplifier, then transformed by high-accuracy A/D converter into digital signal that could be processed by MPU (Micro Processor Unit). The processed signals control two switches then to test & control the pressure.

With flexible application, simple handling, easy debugging and high reliability, this product is widely employed to test & control the pressure of fluid medium in many industries including areas of hydroelectricity, city water, oil, chemical, machinery, hydraulic system etc.

2 Application

- Petroleum, chemical,
- Mechanical engineering
- Process control and automation
- Hydrology and flow pressure measure

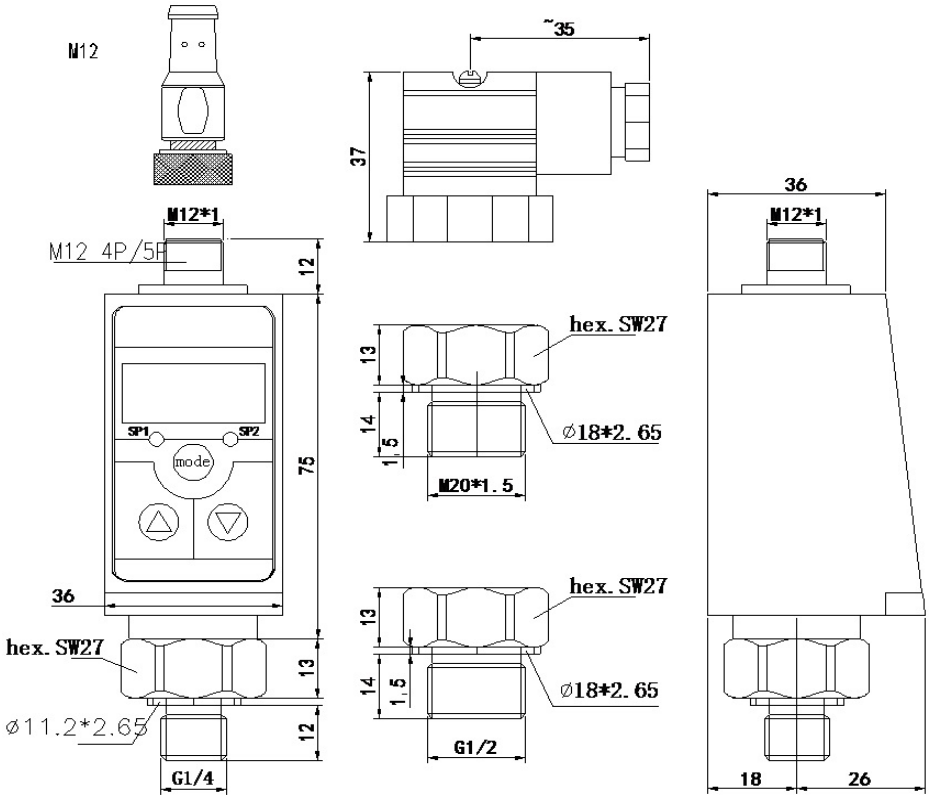
3 Features

- Current pressure will be displayed with 4 digits
- Switch quantity can be set between zero to full scale
- The key adjustment and setting of various parameters can be in the field, easy operation
- 2 ways switch output, load capacity of 1.2A
- Analog signal output（4 ~ 20mA）

4 Specification

Control Range	-0.1~0~100MPa	**Control Accuracy**	≤±0.5%FS
Stability	≤0.2% /year	**Temperature drift**	±0.02FS/℃
Display	4 digit-LED	**Display range**	-1999~9999
Power Supply	24V±20%	**Current Consumption**	< 60mA
Load Capacity	<24V1.2A	**Switch Type**	PNP
Response time	<4ms	**Life Span**	>1million
Protection Class	IP65	**Medium Temperature**	-20~80℃

5 Outline Dimension

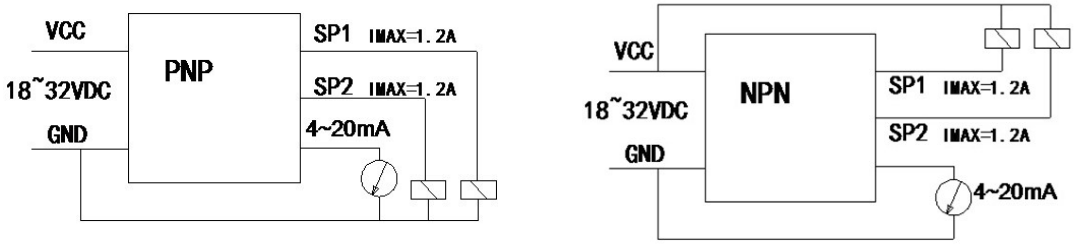


(Unit: mm)

6 Mechanical Connection

Use pressure connection (external thread) to directly install switch on hydraulic pipelines (Connection of other size could be specified in placing order). In special circumstances like that with fierce vibration or shock, use tiny hose to mechanically-decouple the pressure connection.

7 Electrical Connection



To prevent the influence of EMI (Electro Magnetic Interference), please NOTICE:

1- Connection line should be as short as possible

2- Shield wire is required

3- Avoid directly approaching devices, electronic equipment or wires of electronic devices that could cause interference

4- If tiny hose is applied as installation, the enclosure must be connected to the earth independently

M12-5P description:

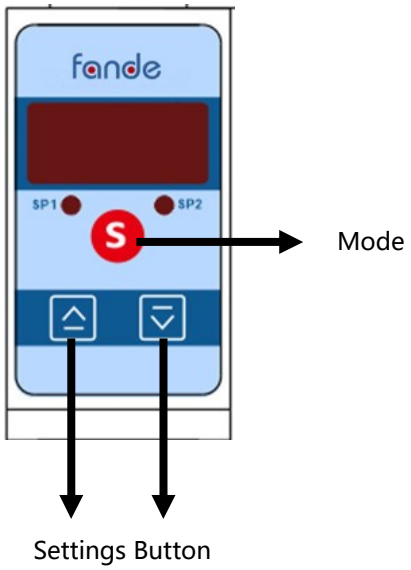
M12-5P

1: VCC (brown)
2: SP2 (white)
3: GND (blue)
4: SP1 (black)
5: 4~20mA (grey)

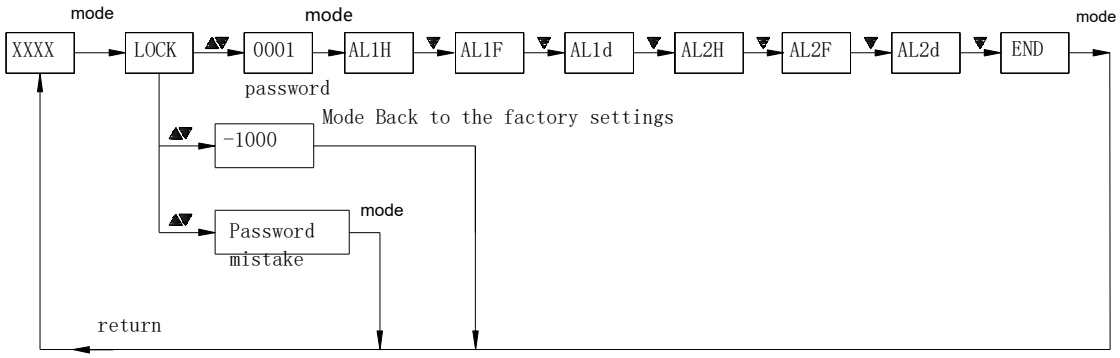
8 Setting

The pressure switch has two switch quantity outputs, each of which could be preset a pressure switch point and a start delay. By these settings, switches would operate when reaching the preset connection point and resume when pressure gets lower than preset disconnection point.

Panel key description:



Parameter Setting Guidelines:



CODE:

AL1H: Switch connection point for Switch 1 (when pressure reaches this value, indicator lights)

AL1F: Switch disconnection point for Switch 1 (when pressure reaches this value, indicator is off)

AL1D: Response delay for Switch 1 (the deferred time between switching and actual response, accuracy is 0.1s)

AL2H: Switch connection point for Switch 2 (when pressure reaches this value, indicator lights)

AL2F: Switch disconnection point for Switch 2 (when pressure reaches this value, indicator is off)

AL2D: Response delay for Switch 2 (the deferred time between switching and actual response, accuracy is 0.1s)

NOTE:

Switching points are determined by the configuration of the preset connection and disconnection value. When connection value is higher than disconnection value, it's called upper-limit alarm output (normally open status); when connection value is lower than disconnection value, it's called lower-limit alarm output (normally close status); the deviation between connection and disconnection value is the return difference for the switch point.

EXAMPLE:

How to finish the settings as following:

1- Set switch point 1 at upper-limit alarm output (normally open status), connect at 4Mpa and disconnect when lower than 3.95Mpa, response delay is 3s

2- Set switch point 2 at lower-limit alarm output (normally close status), disconnect at 10Mpa and connect when lower than 9.95Mpa, response delay is 10s

Enter the menu: Setting

AL1H=4.00 AL1F=3.95 ALID=0.30

AL2H=9.95 AL1F=10.00 ALID=1.00

●Press "mode"

● "LOCK" sign (remind you to key in password)

●Press▲ or ▼ to key in the password "1"

●Press "mode" to confirm

●Press▲ or ▼ as page up or page down to select (**AL1H、AL1F、AL1D、AL2H、AL2F、AL2D、END)**

●Press "mode" to enter selected menu

●Press▲ or▼ to alter the settings

●Press "mode" to confirm, or use▲ or▼ to enter other menus for other settings

●Finish altering then select "END" and press "mode" to save and exit

●If no key is pressed in a 30s period, automatically exit the setting status. AND the altered data shall not be saved.

Note:

1-When press "mode" during testing, the displayed "LOCK" sign reminds you to key in mode password. Please press ▲ or ▼ to key in "1", then press "mode" confirm entering the men.

2-Use ▲ or ▼ to switch menus. Keep pressing page up/down, menus will circulate.

3-In the "END" menu, press "mode" will save the data and exit.

4-Press "mode" to view the data, use▲ or ▼ to make change, then press "mode" again to confirm.

Analog Output

As to the type, it has 2 controlling points output plus 1 analog output. It can output 4～20mA analog signal.

Error Code

EREP---EEPROM data check error. Mostly it happens during reading data when starting the device.
Solution: Manually check it and redo the setting could eliminate the error.

ERo1---Switch 1 output is short-circuited. After showing error output, it turned off and cannot control.
Solution: Check and eliminate the short circuit then energize.

Ero2--- Switch 2 output is short-circuited. After showing error output, it turned off and cannot control.
Solution: Check and eliminate the short circuit then energize.

ER12------ Switch 1 & 2 output both are short-circuited. After showing error output, it turned off and cannot control.
Solution: Check and eliminate the short circuit then energize.

9 Quality Assurance

Complying with our stipulated using and protecting rules, users have a one-year period of quality assurance calculated since the date of production.
After one year, we could also fix the device for you with favorable charge.

Any users' letters, phone calls, suggestions or visit are warmly welcome.