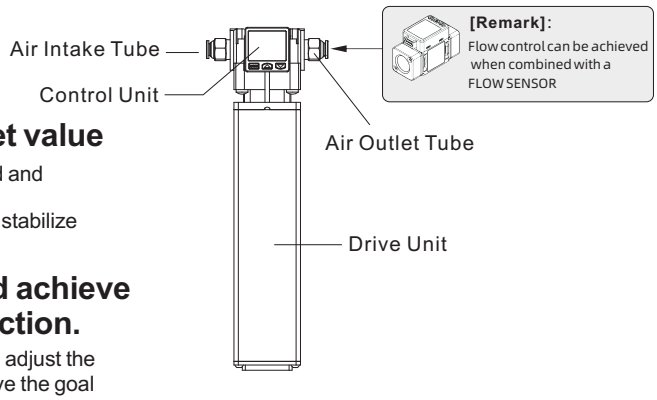
Intelligent Pressure Reducing System

SPRE Series

V1.0 '25.06



1 Product Feature

Automatically adjust the output value to the set value

- Once the air pressure to be set, the output air pressure will be stabilized and adjusted to the set value automatically.
- Once the flow rate fluctuates within the device's flow parameters, it can stabilize the output air pressure value at set value automatically.

Reduce energy consumption during idling and achieve energy conservation and environmental protection.

- It can receive instructions sent by backstage and PLC via the CAN bus, adjust the set values, save the air consumption during idling effectively and achieve the goal of energy conservation.

2 Specification parameter

Project		SPRE-R1/2 -A1-C	SPRE-R1/4 -A1-C
SPECIFICATION	Structure of Pressure Reducing Valve	Piston-Operated pressure reducing valve	
	Overflow Structure	Overflow Type	
	Connection Port Diameter	Rc1/2	Rc1/4
	Guarantee Pressure Resistance	1.5MPa	
	Maximum Pressure	1.0MPa	
	Configured Pressure Range	0.0~0.8MPa	
	Adjustable range (Maximum flow)【*Note】	0~2000L/min (2000L/min)	0~400L/min(400L/min.)
	Fluid Application	Clean and dry air	
	Ambient and Fluid Operating Temperature	0~50℃	
	Humidity	40~90%RH（Non-condensate）	
	Vibration	10~55Hz/0.15mm	
	Application Scenario	Keep away from other heat-generating equipment as far as possible,to avoid environments with dust,oil mist,corrosive gases,strong vibrations and prohibit the presence of flammable gases and conductive dust.	
ELECTRICAL FEATURE	Continuous Output Current	0.8~2.0A	
	Input Supply Voltage	24V	
	Insulation Resistance	100MΩ	
	Communication mode	CAN	

【*Note】: This feature refers to the characteristic when the operating pressure is set to the maximum operating pressure and the control pressure is set to the maximum control pressure.)

1、This product is suitable for non-corrosive gases, please don't use it under the circumstance of corrosive gases, flammable or explosive gases or liquids.

2、Please use it within the rated voltage range.

3、Please pay attention to the withstand voltage range of this product, if it exceeds the limit, it may cause dangerous situation.

4、Do not use this product as a detection device for human protection.

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3 Model selection

SPRE- S 4 - R1/4 - A1 - C

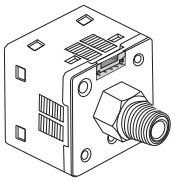
- **S**: Step Motor
- **4**: 42mm wide
- Takeover caliber
  - **R1/2:** Rc1/4
  - **R1/4:** Rc1/4
- **Pressure range**
  - **A1**: 0.0-0.8MPa
- **Communication mode**
  - **C**: CAN BUS

4 Connection

Wiring Scheme:

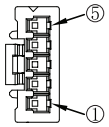
Please use the Please use the plug-in connection cable provided in the attachment.

Remark: Please hold the connection part and remove it when disassembling. Otherwise, it may cause the cable break and the connection cable to be damaged.



Cable with connector

Connector pin configuration diagram



Connector pin No.	Name
① Brown	+V
② Black	I/O
③ White	CANH
④ Orange	CANL
⑤ Blue	0V

5 Setting

Setting steps

Run Mode
Pressure detection status,
please refer to " 6 Run mode"

MODE press for 2 sec → **Menu setting mode**
Simple setting mode,
please refer to " 7 Menu setting mode"

MODE press for 4 sec * (Remark1) → **PRO mode**
Detailed setting mode,
please refer to " 8 PRO mode"

***Remark 1:**
Holding the button of Mode conversion for 2 seconds, it will switch to the Menu setting mode. Therefore, if you want to switch to the PRO mode, please keep pressing this button.

6 RUN mode

Setting of the reference value

Regarding the method for setting conditions, please refer to the "Menu setting Mode".

Setting of the pressure regulation value

<RUN mode>

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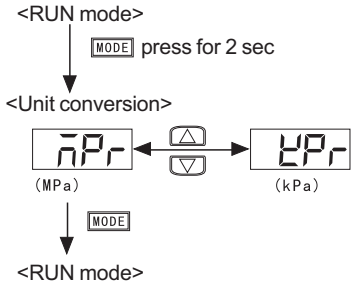
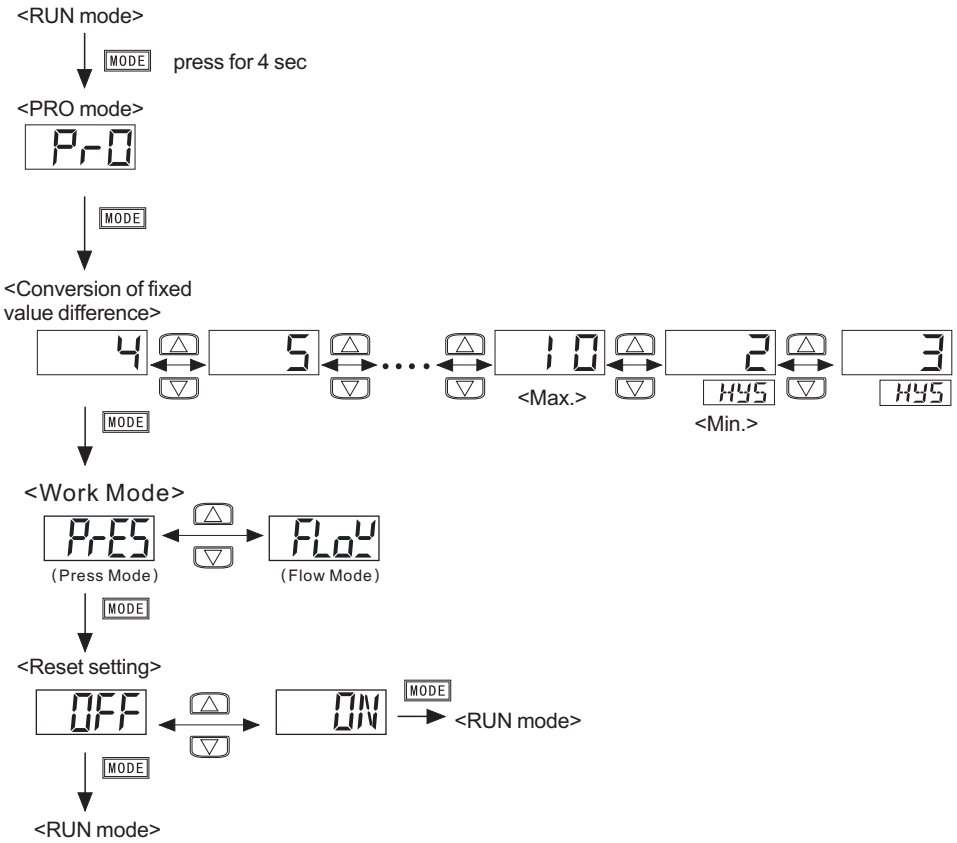
7 Menu setting mode

When in RUN mode, if you hold down the button of mode conversion for 2 seconds, it will switch to Menu setting mode.
If pressing the button of mode conversion for a long time during the setup process, it will be switched to the RUN mode, and then it is the setting of interim content.
The display screen on the left is in initial state (factory default state)



8 PRO mode

When in RUN mode, if you hold down the button of mode conversion for 4 seconds, it will switch to PRO mode. If pressing the button of mode conversion for a long time during the setup process, it will be switched to the RUN mode, and then it is the setting of interim content.
The display screen on the left is in initial state (factory default state)



Setting project	Specification
Conversion of fixed value difference	The differential value of the pressure regulating valve
Reset setting	Return to factory default

9 Error indication

Wrong indication	Content	Solution
Err1	The source of parents air pressure is less than the set air pressure	Increase the air pressure of the source parents
Err2	Apply pressure when the deviate to zero	The external pressure applied to the pressure hole should be barometric pressure.Please re-calibrate to 0.

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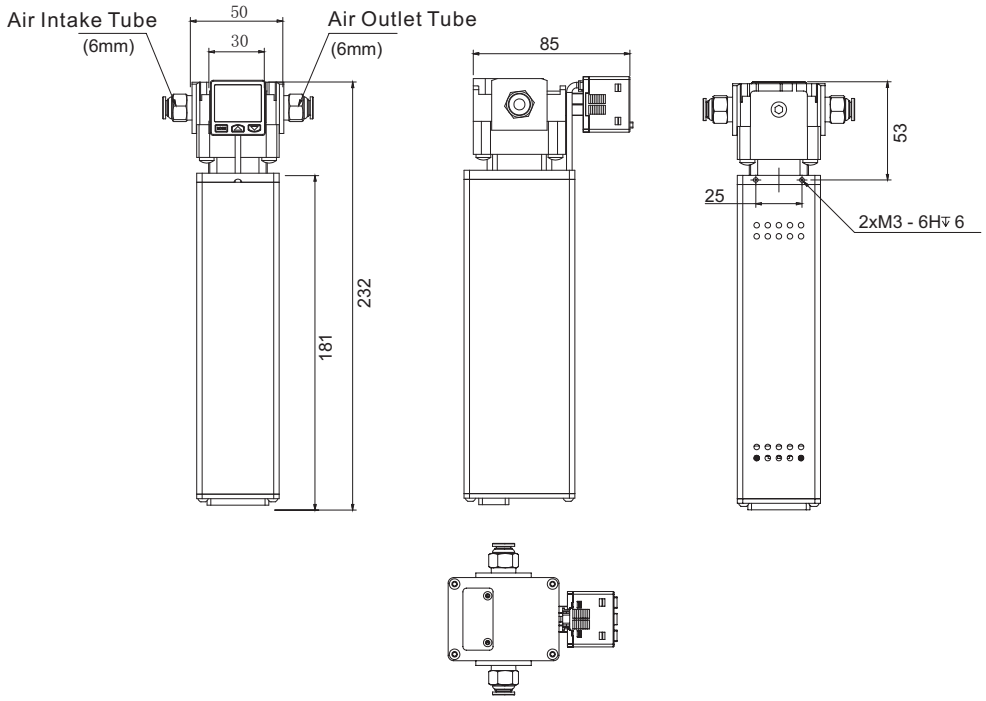
11 Dimension figure

(Unit: mm)



12 CAN protocol communication instructions

Data format:

COB-ID	Data							
	0	1	2	3	4	5	6	7
700h+Node_ID	Command code	Index		Sub-index	Data			

Baud rate: 500kHz
The data segment is in little-endian format, it means the lower bits are placed first and the higher bits after.
All SD0 message data segments must consist of 8 bytes.

Object dictionary	Sub-index	Name	Attribute	Type	Range		Default		Remark
					Rc1/2	Rc1/4	Rc1/2	Rc1/4	
0x607A	0	Pressure regulation setting value	W	Uint16	10~800	0~800	10	0	The pressure value regulated by the pressure regulating valve
0x607B	0	Deviation value	W	Uint16	2~10	2~10	3	3	Pressure difference of the pressure regulating valve

For example:

The pressure value is 500, send: 701: 23 7A 60 00 F4 01 00 00

Pressure regulating valve return: 601: 60 7A 60 00 00 00 00 00

12 Attention

⚠ Warning

This product is designed for non-corrosive gases, not available for corrosive gases, flammable or explosive gases or liquids.

- This product is developed and manufactured with the purpose of being used in industrial environments.
- Please ensure to wiring when the power is off. Incorrect wiring will cause faults.
  If it's first time for the product to install, power off and re-powering, or detecting small pressure, please preheat for 10 to 15 minutes to maintain the best operating condition of the product.
- If the power supply is provided by an universal switch regulator, please ensure that the grounding terminal of the power supply rack (F.G) is properly grounded.
- Do not use within a short period of time (5 seconds) after the power is turned on.
- Do not connect the wires in parallel with high-voltage lines or power lines, or run the lines in the same conduit. This may cause false operation due to induction.
- It is unable to perform the best in a strong magnetic field.
- Do not use this product in places with excessive steam, dust, etc.
- Do not make the pressure sensor to direct contact with water, oil, grease or organic solvents such as diluents.
- Do not insert wires or other objects into the pressure holes. Otherwise, it will damage the diaphragm and affect normal operation.
- Do not use pinponit or sharp objects to operate the buttons.
- Do not apply pressure to the root of the cable, such as by forcibly bending or pulling it.
- Do not use it in impact pressure applications for long time (please also consider buffer measures)