



LCU-S 轻型驱动模块 使用说明书

适用产品

LCU-S_A



装箱清单



柔触驱动器本体
LCU-S x1



压力开关线
CF-50 ×1



电子线
CF-51 ×2



过滤器
GST-18 ×1



φ6三通接头
PN-276 ×1



支架
BR-14 ×1



螺丝
SF-331 ×2

外观

真空电磁阀

正压电磁阀

数显压力表

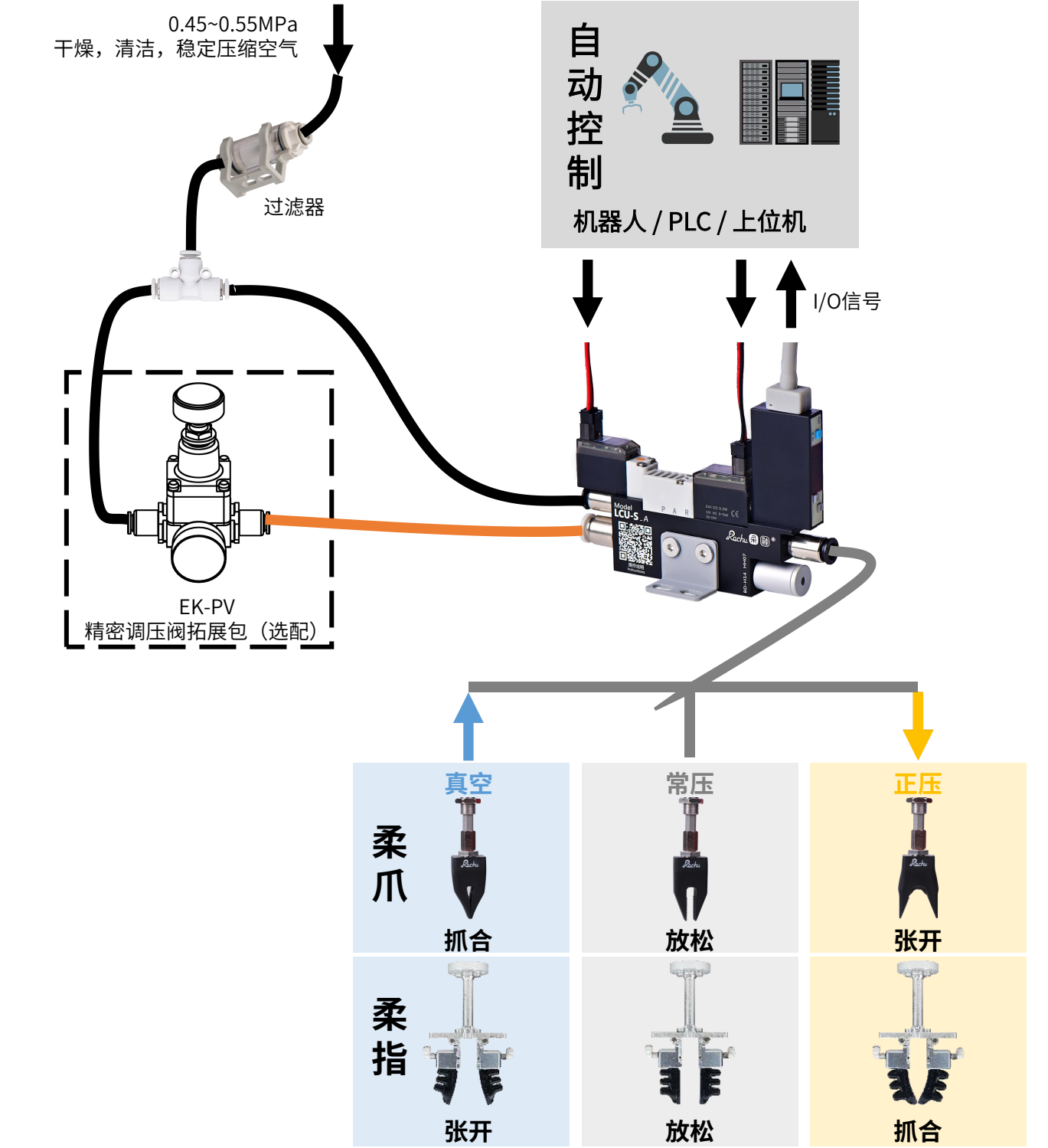
高压气源口 H
φ8, 0.45~0.55MPa

低压气源口 L
φ8, 0~300kPa

夹爪口 G
φ6, -90~300kPa

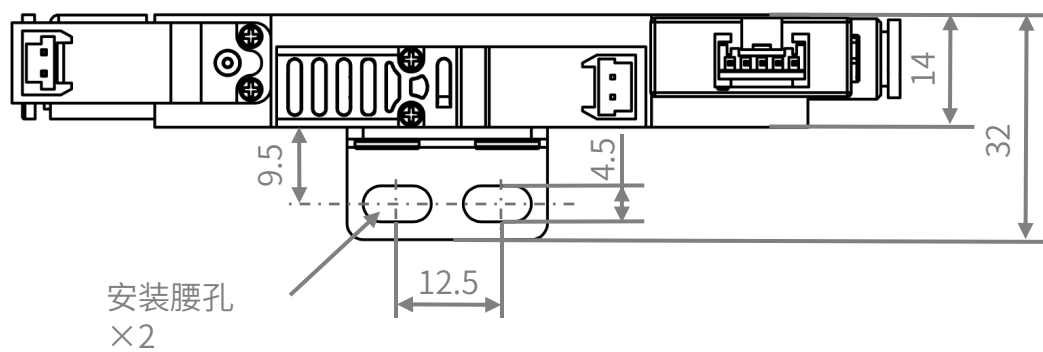
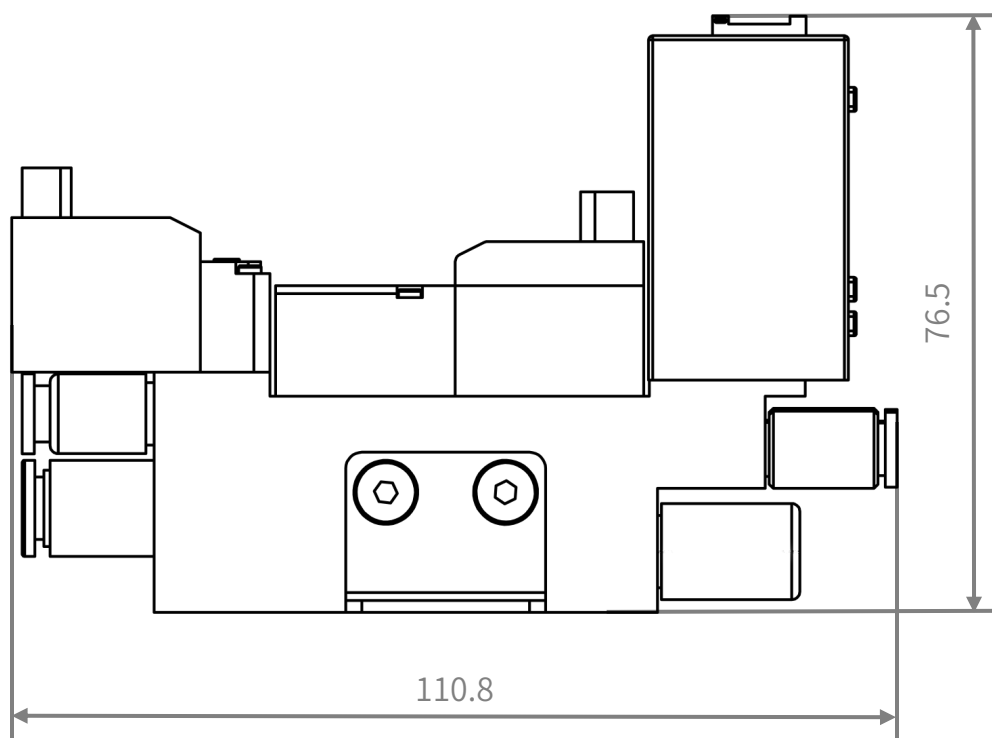
消声器

使用方式：三位单路驱动



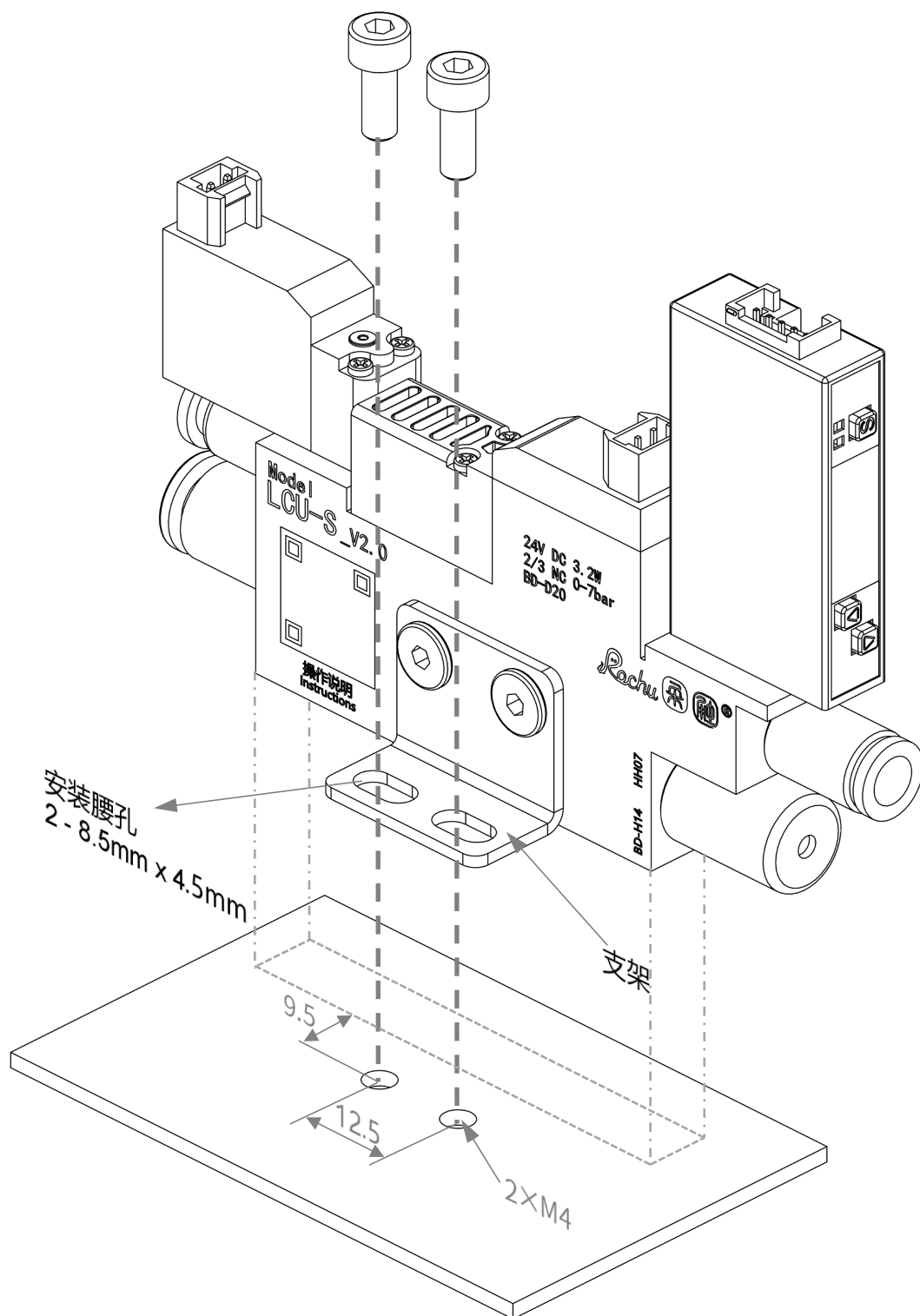
气路特性	夹爪状态	真空	常压	正压
	正压电磁阀	断电	断电	通电
	真空电磁阀	通电	断电	断电

驱动器本体



固定板安装

支架可按实际需求安装在驱动器的左侧或右侧



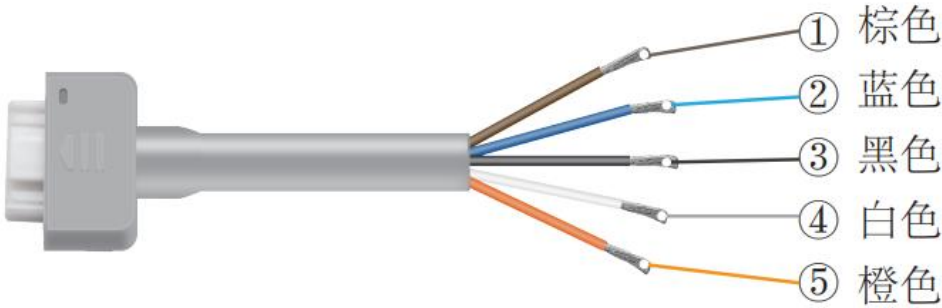
工作参数

名称	范围	名称	范围
输出气压	-90~300kPa	驱动模式	24V I/O驱动
电磁阀响应速度	5ms	寿命	2000万次
正压流量*	35L/min	负压流量*	30L/min
高压气源 H 输入	0.45~0.55MPa，干燥、清洁、稳定， 流量>40L/min	低压气源 L 输入	0~300kPa，干燥、清洁、 稳定

*：该流量参数测试条件为：高压气源口H压力=0.5MPa，低压气源口L压力=100kPa。

型号	噪声(dB)	气压输出信号	净重(g)	尺寸(mm)
LCU-S_A	80	IO信号	127	110.8x14x76.5

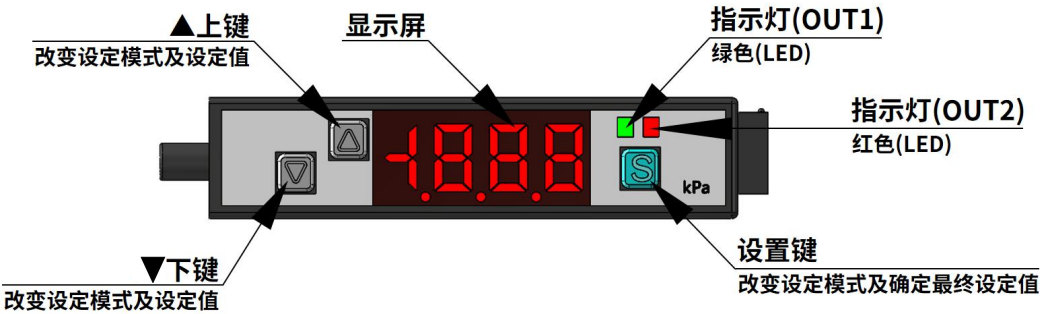
接线图



颜色	功能
① 棕色	DC12~24V
② 蓝色	0V
③ 黑色	正压 NPN信号开关 100mA
④ 白色	负压 NPN信号开关 100mA
⑤ 橙色	(*模拟量输出)

*: 仅部分型号有效(C)

1.面板说明



2.基本测量模式

①功能设定模式

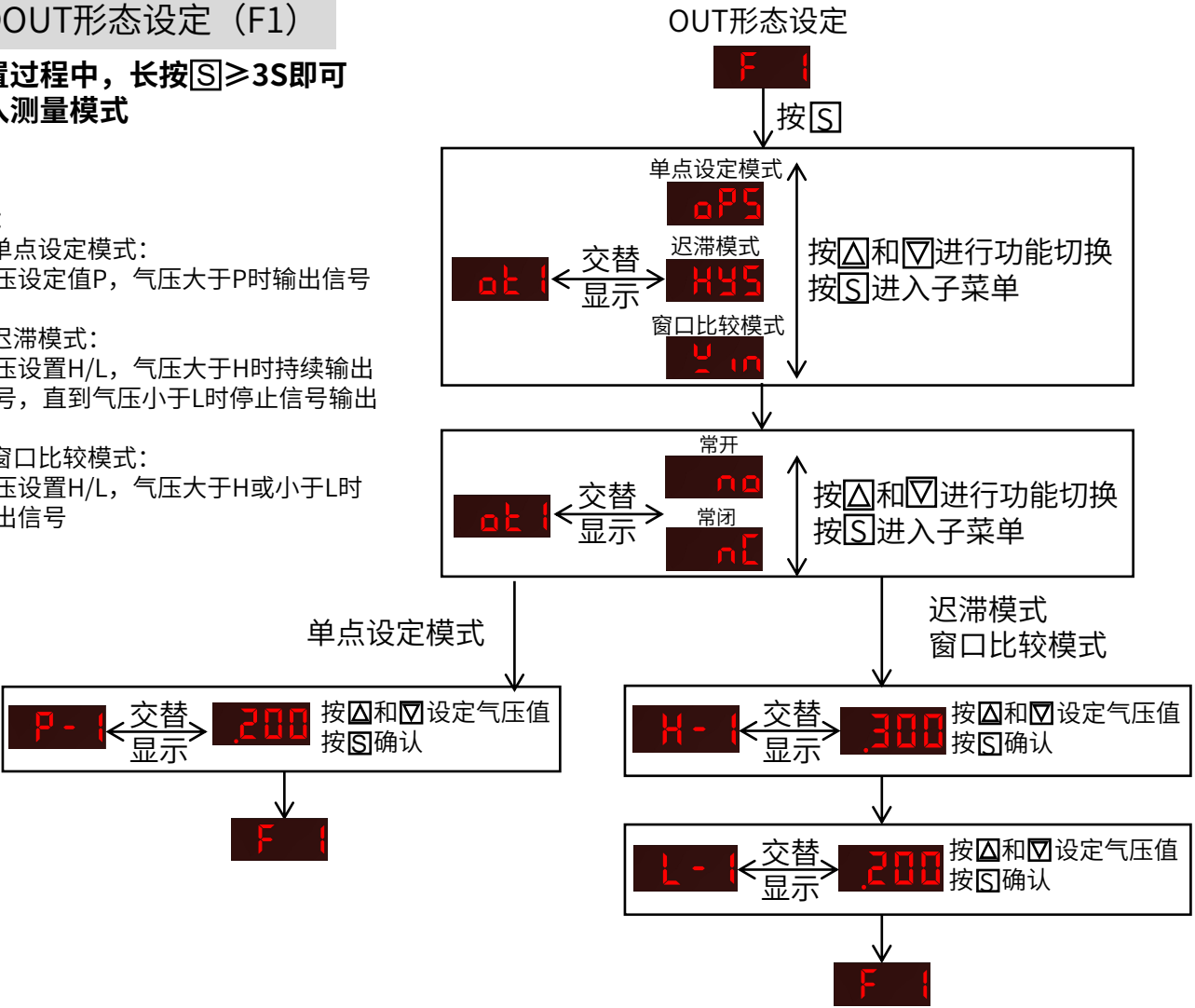
注：出厂设置已经满足大部分的工况，如无特殊的要求，不建议另行设置。



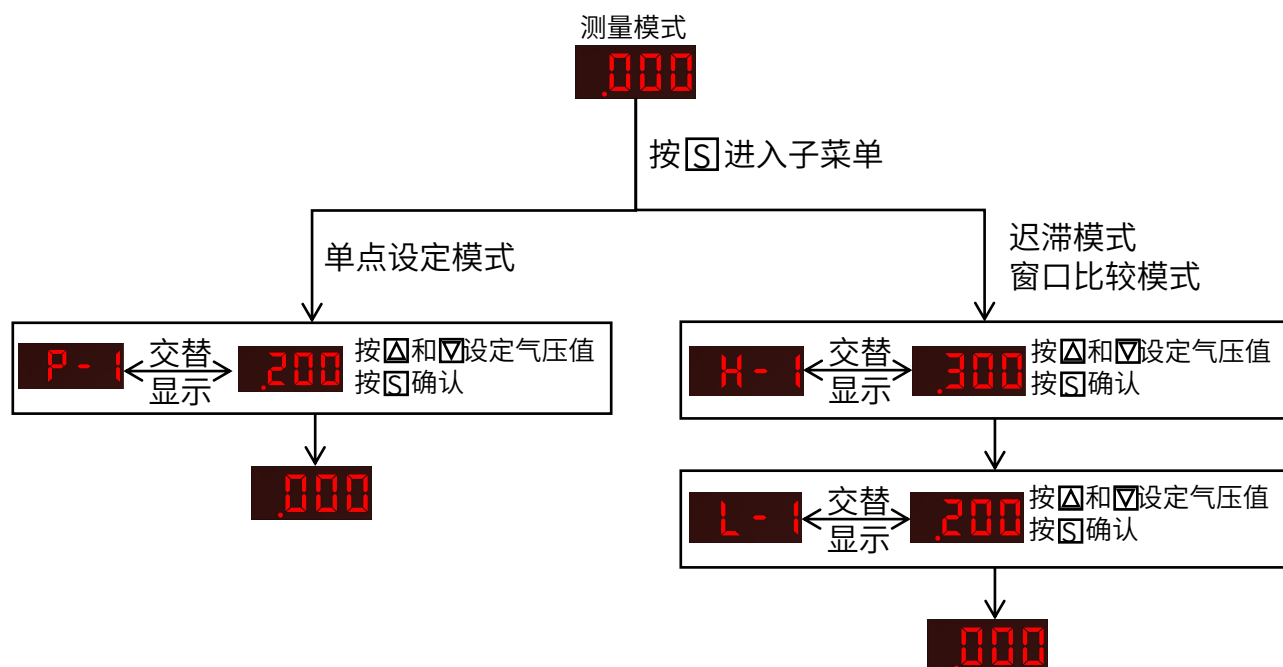
②OUT形态设定 (F1)

设置过程中，长按[Enter]≥3S即可进入测量模式

- 注：
- 1.单点设定模式：
气压设定值P，气压大于P时输出信号
 - 2.迟滞模式：
气压设置H/L，气压大于H时持续输出信号，直到气压小于L时停止信号输出
 - 3.窗口比较模式：
气压设置H/L，气压大于H或小于L时输出信号

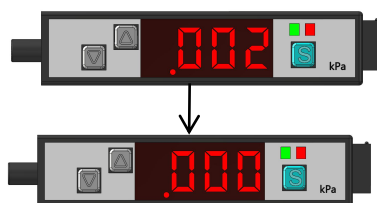


3.气压值设置

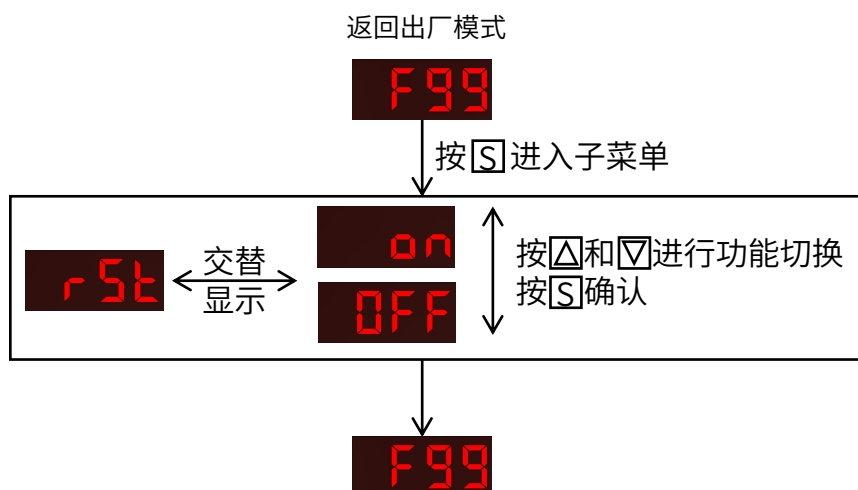


4.归零设定

测量模式下，同时按下 [△] 和 [▽] 3S以上，直到画面出现“00”



5.恢复出厂设置





安全注意事项

警告：请严格遵守安全注意事项，错误操作可能导致本产品损坏和人身伤害。

1. 请使用0.45MPa~0.55MPa的干燥，清洁，稳定压缩空气。
2. 气源压力过大会造成内部元件不可逆损伤，气源压力过小会造成夹爪夹持力或张开角度不足。气源压力波动可能导致夹持力的波动。
3. 请勿对驱动器施加过大外力造成破损，以免降低防护等级。

常见问题

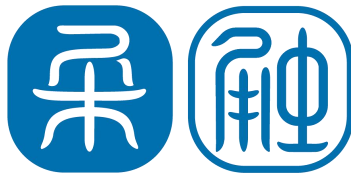
1. L口的低压气源如何控制。

请务必使用精密调压阀控制低压（参照使用方式页）。常规减压阀调节精度不足，可能造成输出正压的波动，导致柔爪超过安全气压工作，从而导致柔爪的破损或对夹持工件的损伤。

2. 驱动器工作时消声器孔有排气现象。

驱动器内置的真空发生器工作时排气，因此排气是驱动器工作的正常状态。

3. 建议使用配件包中的过滤器将气源过滤后再接入驱动器。



Instruction Manual for LCU-S Lightweight Drive Module

Applicable products

LCU-S_A



Packing list



Rochu drive body
LCU-S x1



Pressure switch wire
CF-50 ×1



Electronic wire
CF-51 ×2



Filter
GST-18 ×1



φ6 Tee Joint
PN-276 ×1

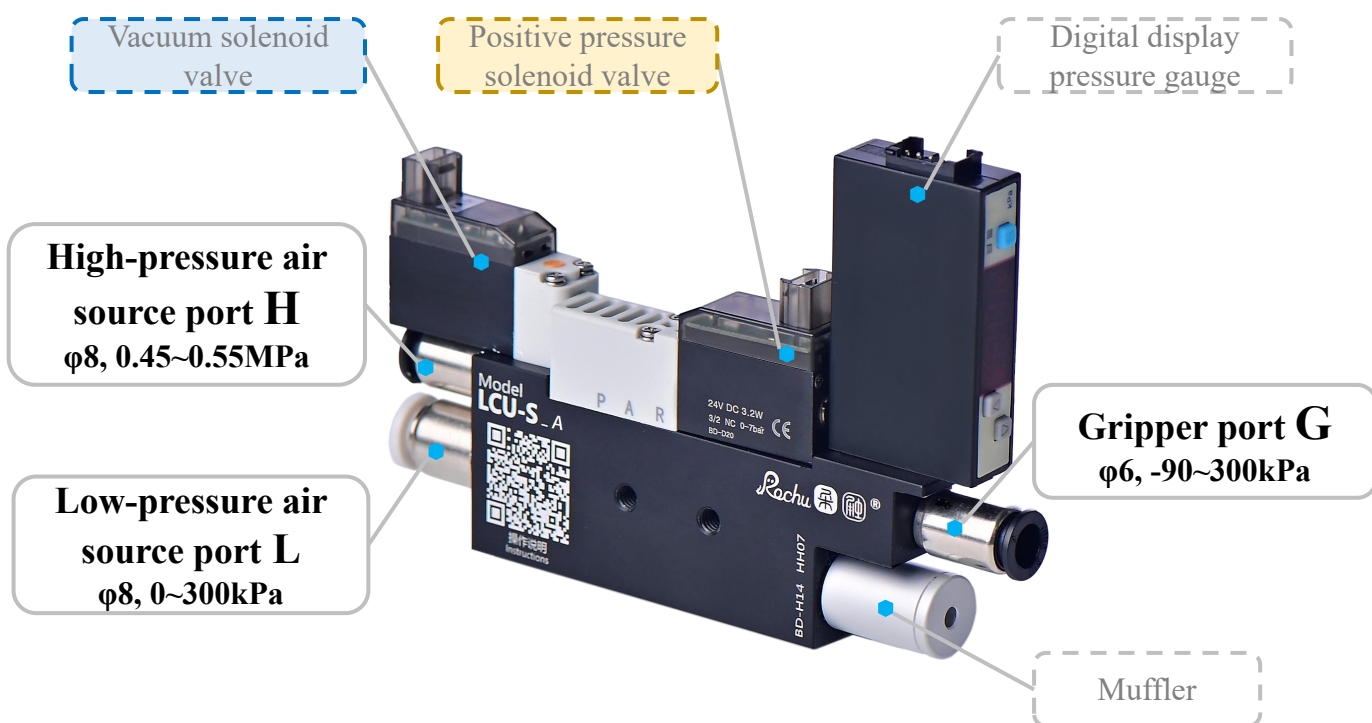


Bracket
BR-14 ×1

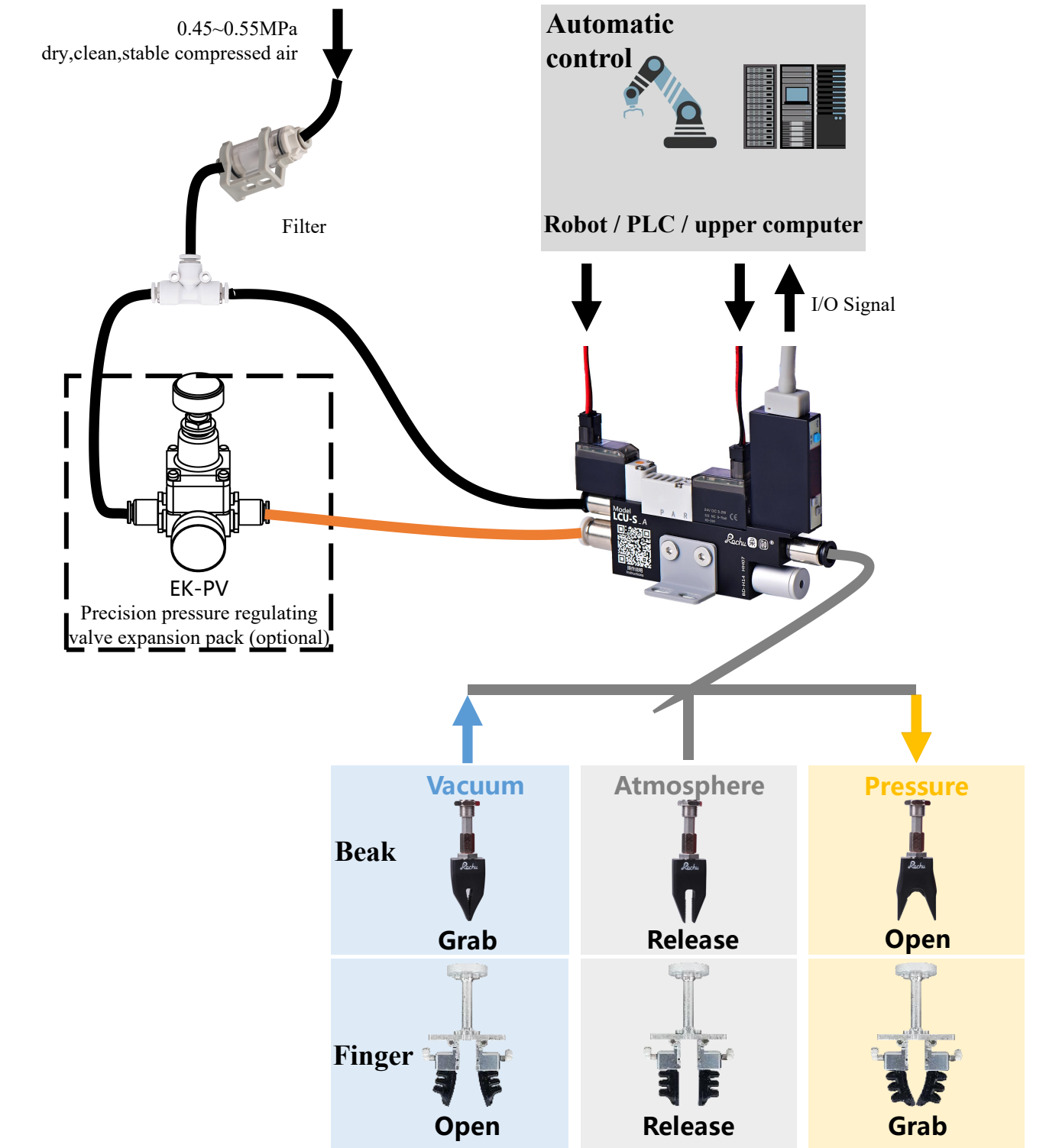


Screw
SF-331 ×2

Appearance

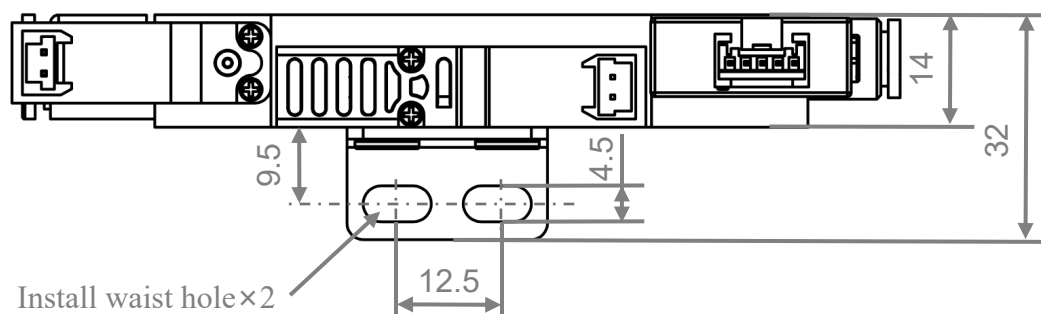
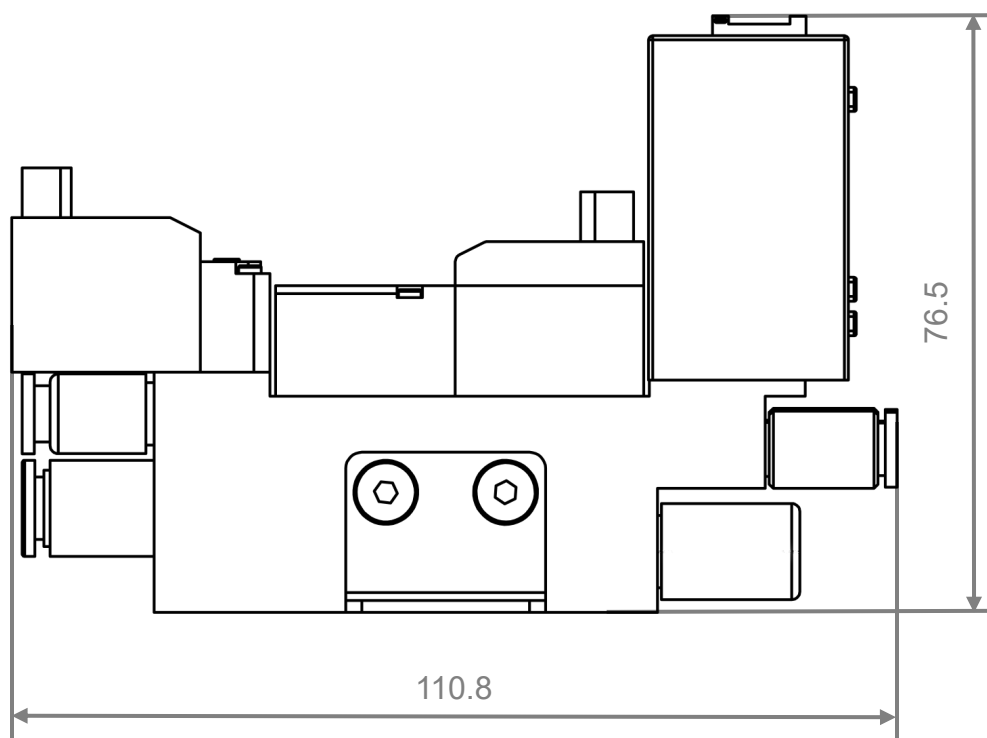


Usage: three-position single-channel drive



Air circuit characteristics	Gripper status	Vacuum	Atmosphere	Pressure
	Vacuum solenoid valve	Power off	Power off	Power on
	Positive pressure solenoid valve	Power on	Power off	Power off

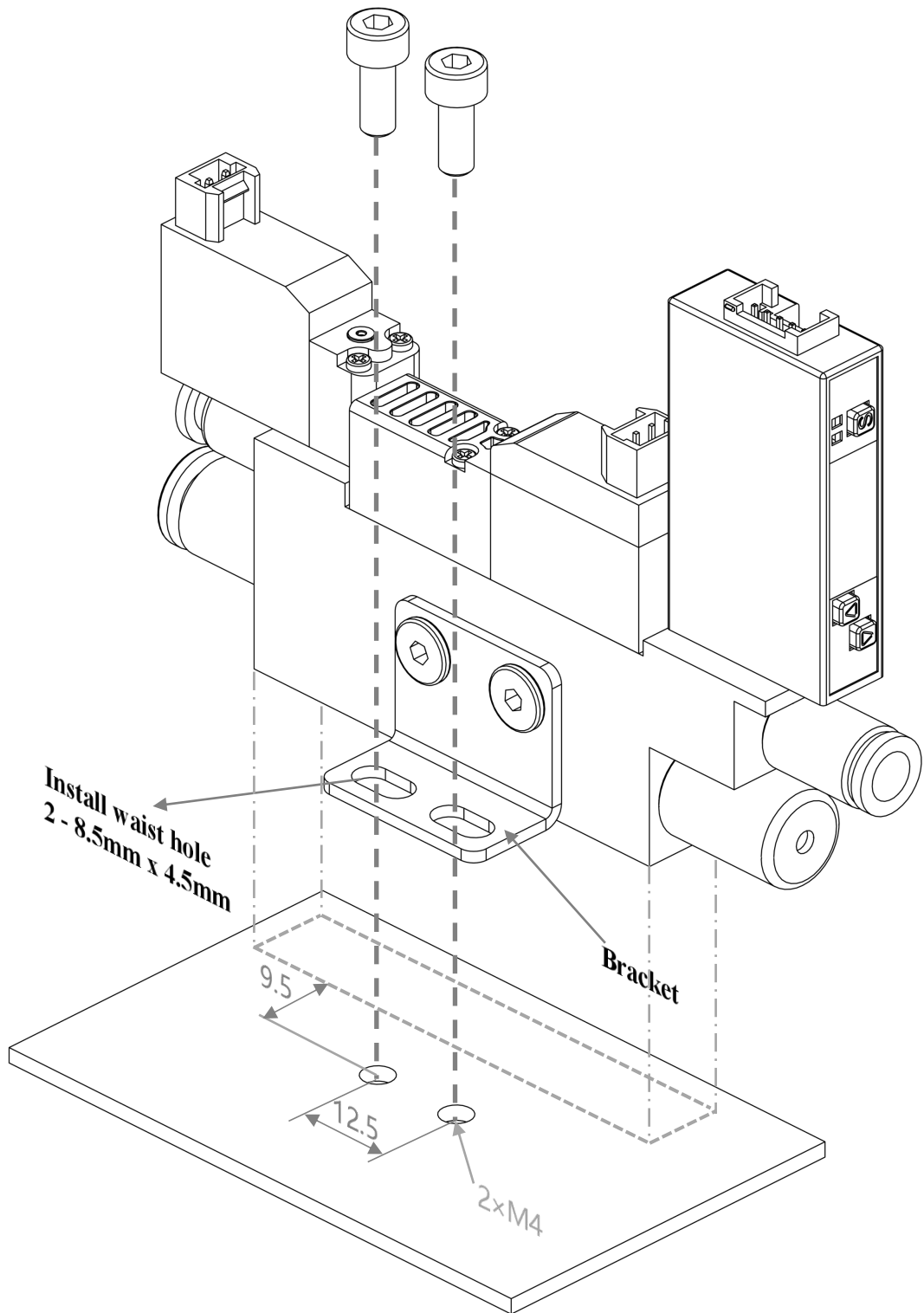
Drive body



Installation

Fixed plate installation

The bracket can be installed on the left or right side of the driver according to actual needs



Operating parameters

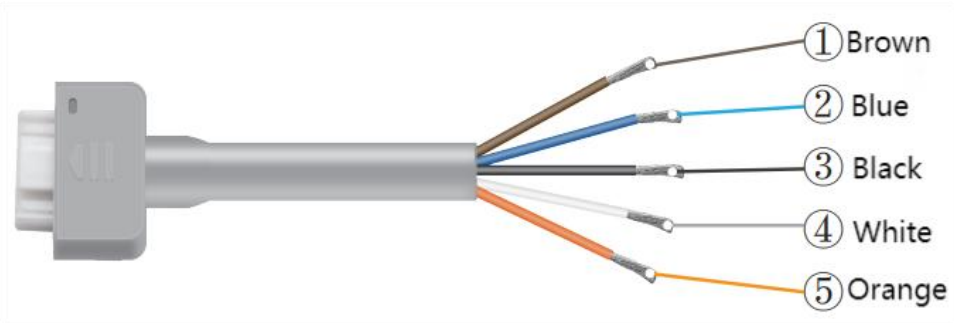
Item	Range	Item	Range
Output pressure	-90~300kPa	Drive mode	24V I/O drive
Response speed of solenoid valve	5ms	Lifetime	2000 million times
Pressure flow rate*	35L/min	Vacuum flow rate*	30L/min
High-pressure air source H input	0.45 - 0.55 MPa, dry, clean and stable, flow rate > 40 L/min.	Low-pressure air source L input	0~300kPa, dry, clean and stable

*: The test conditions for this flow parameter are: the pressure at high-pressure gas source port H = 0.5 MPa, and the pressure at low-pressure gas source port L = 100 kPa.

Model	Noise(dB)	Air pressure output signal	Net Weight (g)	Size (mm)
LCU-S_A	80	IO Signal	127	110.8x14x76.5

Digital display pressure gauge

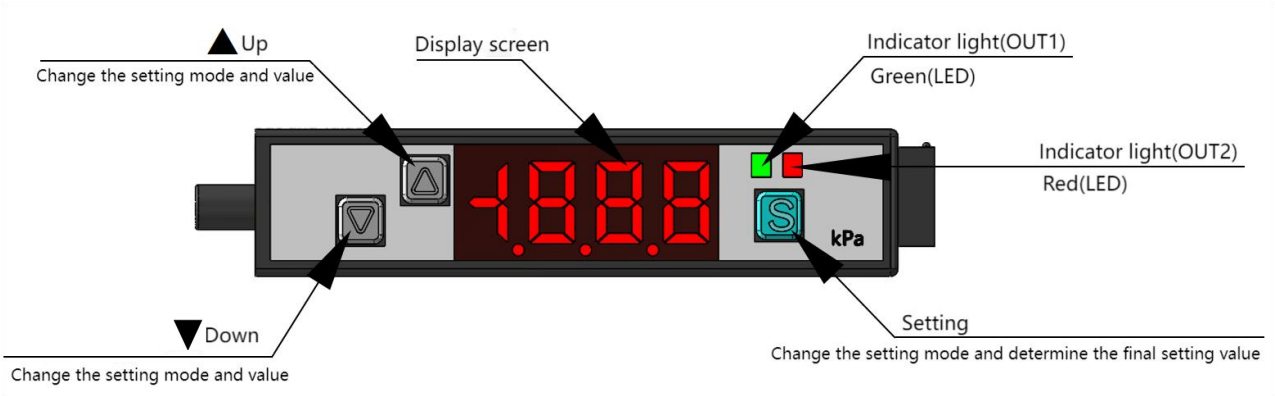
Wiring diagram



Color	Function
① Brown	DC12~24V
② Blue	0V
③ Black	Positive pressure NPN signal switch 100mA
④ White	Negative pressure NPN signal switch 100mA
⑤ Orange	(*Analog output)

*: Only for some models (C).

1.Panel description

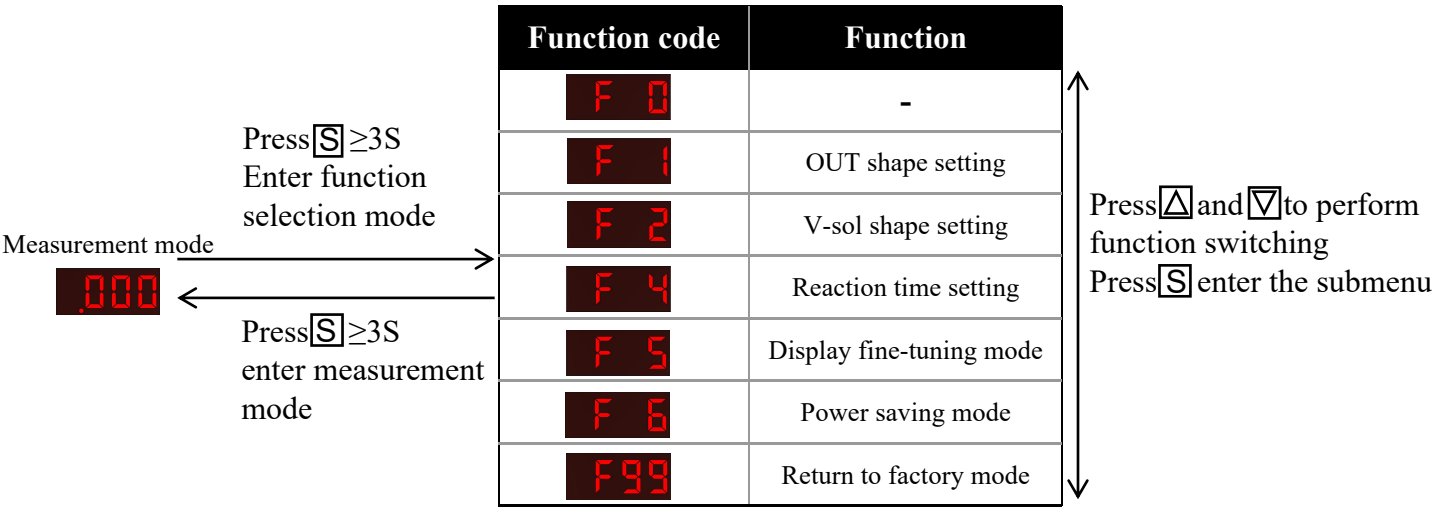


Digital display pressure gauge

2.Basic measurement mode

①Function setting mode

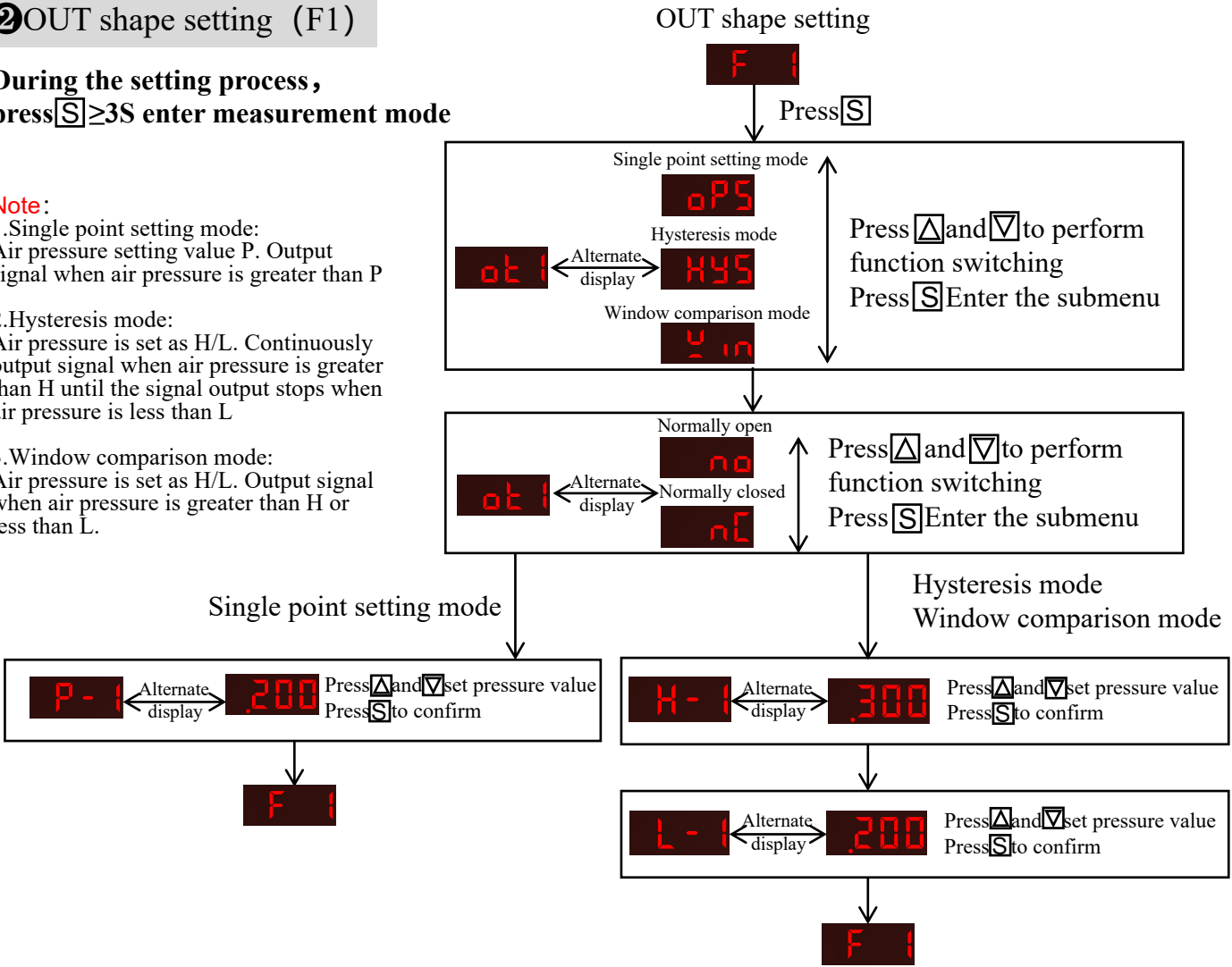
Note: The factory settings have met most of the working conditions. If there are no special requirements, it is not recommended to set it separately.



②OUT shape setting (F1)

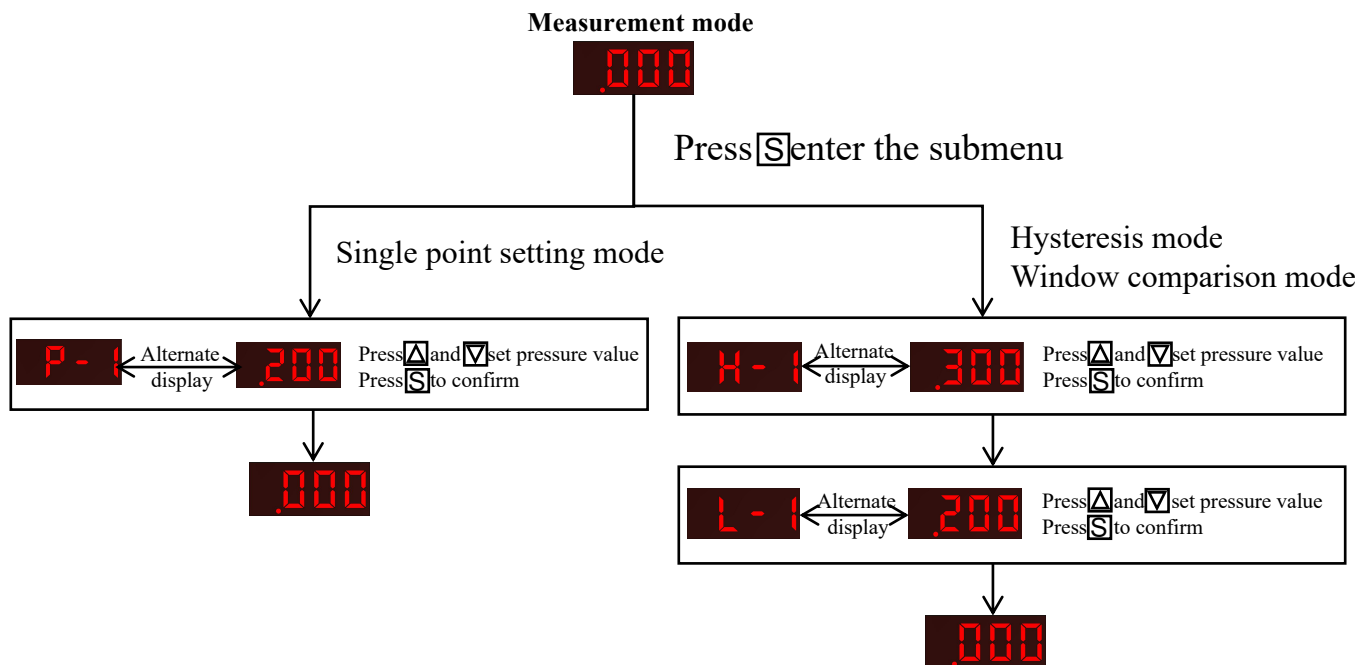
During the setting process,
press **[S]** ≥ 3S enter measurement mode

- Note:**
- 1.Single point setting mode:
Air pressure setting value P. Output signal when air pressure is greater than P
 - 2.Hysteresis mode:
Air pressure is set as H/L. Continuously output signal when air pressure is greater than H until the signal output stops when air pressure is less than L
 - 3.Window comparison mode:
Air pressure is set as H/L. Output signal when air pressure is greater than H or less than L.



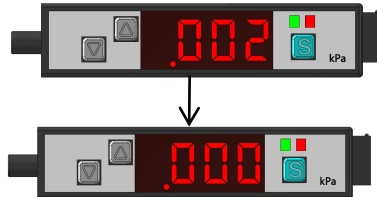
Digital display pressure gauge

3. Air pressure value setting

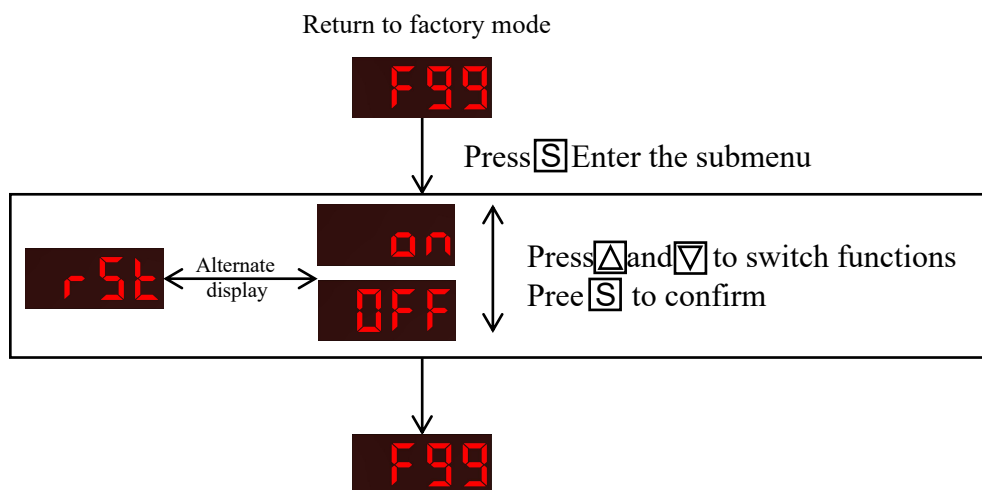


4. Zero setting

In measurement mode, press **[Δ]** and **[▽]** for more than 3S until "00" appears on the screen



5. Restore factory settings





Safety Precautions

Warning: Please strictly abide by the safety precautions. Wrong operation may cause damage to this product and personal injury.

1. Please use **dry, clean and stable compressed air of 0.45MPa to 0.55MPa**.
2. Excessive air source pressure will cause irreversible damage to internal components. Insufficient air source pressure will cause insufficient clamping force or opening angle of the gripper. Fluctuations in air source pressure may lead to fluctuations in clamping force.
3. Do not apply excessive external force to the driver to cause damage, so as not to reduce the protection level.

Common Problems

1. How to control the low-pressure air source of port L?

Be sure to use a precision pressure regulating valve to control the low pressure (refer to the usage page). The adjustment accuracy of a conventional pressure reducing valve is insufficient, which may cause fluctuations in the output positive pressure, resulting in the soft gripper working beyond the safe air pressure, thereby causing damage to the soft gripper or the clamped workpiece.

2. There is an exhaust phenomenon at the muffler hole when the driver is working.

When the vacuum generator built into the driver is working, it will exhaust. Therefore, exhaust is a normal state of the driver's operation.

3. It is recommended to use the filter in the accessory kit to filter the air source and then connect it to the driver.