Capacitive level sensor LS380

Product characteristics

- All metal housing design
- Color crystal display
- Button design and user-friendly menu make the product easier to use.
- A variety of connection methods can fully meet the specific installation needs.
- The display head with 330° rotation guarantees optimum performance in different mounting modes
- High viscosity medium, strong anti-fouling ability

Product application

- Mainly used for high viscosity media

Product principle

LS380 series adopts capacitive principle sensor for liquid level measurement, and the signal is converted into standard industrial electrical signal output and display after processing by the rear processing circuit.
Capacitive sensor built-in electrode and metal tank or box to produce capacitance value, capacitance value with the increase and decrease of the medium in the cavity changes, so as to determine the liquid level of the medium.

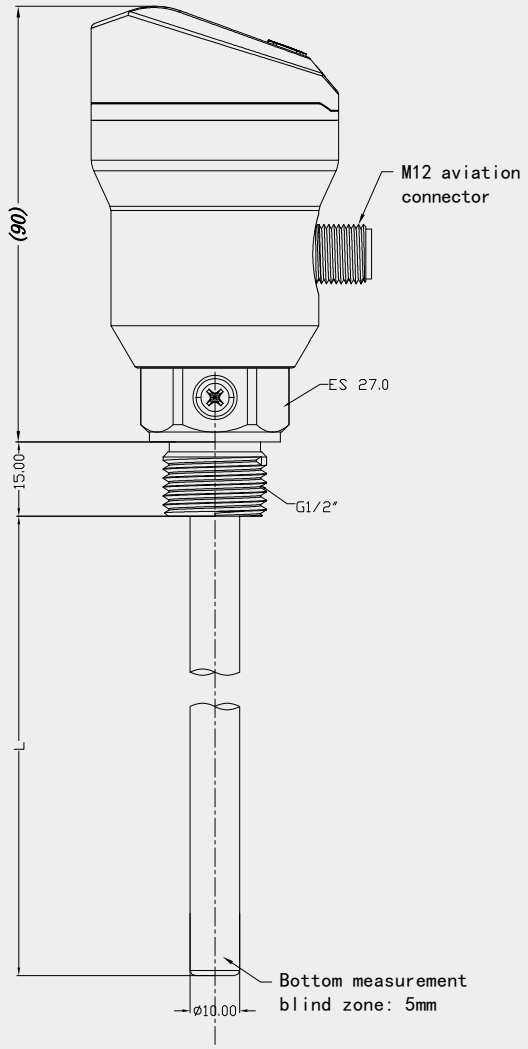
Technical parameter

◇ Measuring range (guide rod length L) : 100... 1000mm (bottom dead zone < 10mm)	◇ Load RA: RA > 10Kohm
◇ Measuring medium: liquid	◇ Linearity: ≤±1.5% range
◇ Pressure: 10bar	◇ Wiring protection: reverse phase, overload, short circuit protection
◇ Medium density: ≥0.3g/cm	◇ Display: color crystal display
◇ Supply voltage: 16... 28Vdc	◇ Temperature
◇ No-load current consumption: ≤30mA, at 24Vdc power supply	◇ Operating temperature: -20... 80 ℃
◇ Switch output	◇ Medium temperature: -20... 100℃ (High temperature type: -50... 200℃, higher temperature can be customized)
◇ Output type: PNP/NPN Optional normally open normally closed can be set	◇ Storage temperature: -30... 80 ℃
◇ Output current: < 500mA	◇ Materials
◇ Voltage drop: < 1V	◇ Housing: stainless steel 304
◇ Current type analog output	◇ Probe rod: stainless steel 304 (PTFE lining)
◇ Output type: 3-wire 0... 20mA/4... 20mA can be configured	◇ Protection grade: IP67
◇ Load RA: RA≤500ohm	◇ Outlet mode: M12×1 connector directly attached to the cable
◇ Linearity: ≤±1.5% range	
◇ Voltage type analog output	
◇ Output type: 3-wire 0... 5V/1... 5V can be set	

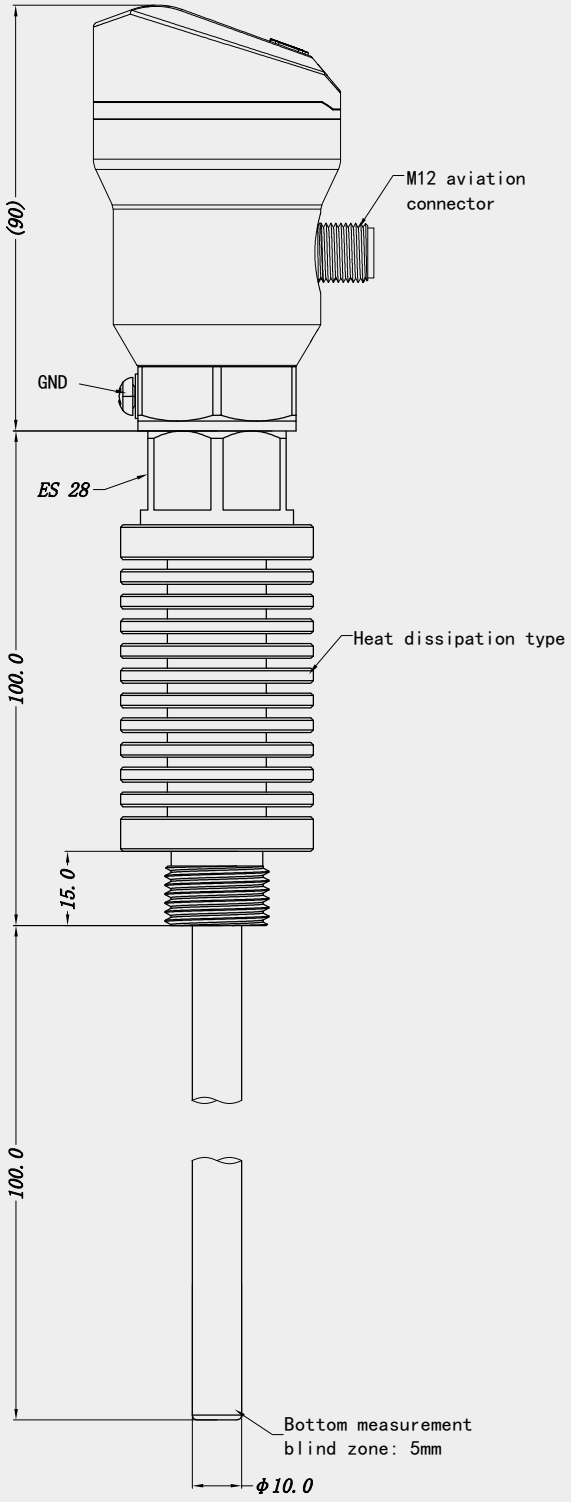
Panel diagram

Size drawing (mm)

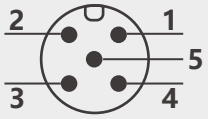
standard type

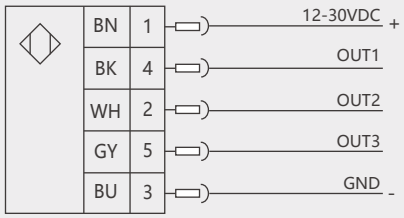


High temperature type



Wiring diagram





A3: Two switches + one analog (4-20mA)								
colour	stitch	instructions	Colour	stitch	instructions	Colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	Level: 4-20mA (factory default)
BK	4 (OUT1)	Level switch PNP (Factory default) Level switch NPN	WH	2 (OUT2)	Level switch PNP (Factory default) Level switch NPN			

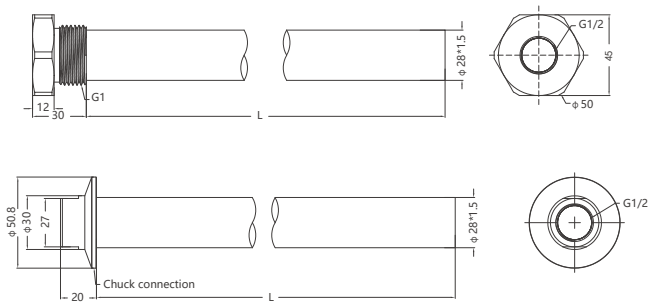
V5: Two switches + one analog (1-5V)								
colour	stitch	instructions	Colour	stitch	instructions	Colour	stitch	instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	Level: 1-5V
BK	4 (OUT1)	Level switch PNP (Factory default) Level switch NPN	WH	2 (OUT2)	Level switch PNP (Factory default) Level switch NPN			

Selection list

LS380-	A3	G34M	100	-	-	expatiate
LS380-						LS380 capacitive liquid level sensor
	A3					Output signal: two switch output + analog output (4... 20mA)
	V5					Output signal: two switch output + analog output (1... 5V)
		G34M				G3/4 external thread
		G1M				G1 external thread
		G12M				G12 external thread
			100			Measuring range: 100mm
			150			Measuring range: 150mm
			200			Measuring range: 200mm
			250			Measuring range: 250mm
			300			Measuring range: 300mm
			350			Measuring range: 350mm
			400			Measuring range: 400mm
			450			Measuring range: 450mm
			500			Measuring range: 500mm
			550			Measuring range: 550mm
			600			Measuring range: 600mm
			650			Measuring range: 650mm
			700			Measuring range: 700mm
			750			Measuring range: 750mm
			800			Measuring range: 800mm
			850			Measuring range: 850mm
			900			Measuring range: 900mm
			950			Measuring range: 950mm
			1000			Measuring range: 1000mm
				-		Normal form
				-G		High temperature type
					-	Measured medium: Water (factory default)
					PV	Measuring medium: Polyvinyl alcohol (glue)
					PA	Measured medium: Gear oil (ISO VG220)

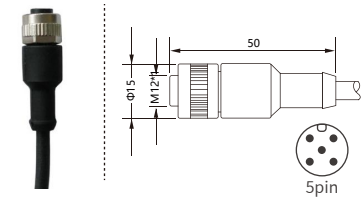
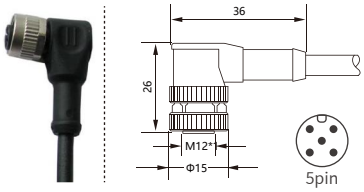
* Special requirements can be customized

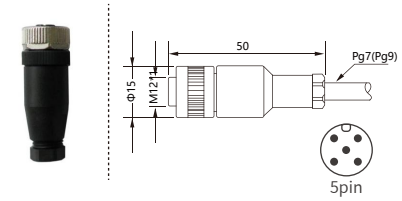
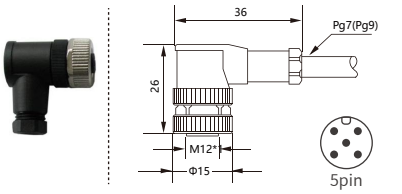
Protective case (for water or oil media) * Note that the sensor must select G1/2 connection mode



L H T -	G 1M	-	detail
LHT-			Protective sleeve
	G1M		G1 external thread connection
	H		Chuck connection
		-L	Length of probe rod: Lxx(mm)

Optional accessories - Electrical accessories (M12-5Pin: Factory default ZL05-PC02G)

name	Outline drawing/dimension drawing (unit :mm)	material	Model number	Shielded wire
M12*1-5Pin (2m cable)		PUR	ZL05-PU02G	-P
M12*1-5Pin (5m cable)			ZL05-PU05G	
M12*1-5Pin (10m cable)			ZL05-PU010G	
		PVC	ZL05-PC02G	
M12*1-5Pin (2m cable)			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (5m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (10m cable)			ZL05-PU05W	
			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

M12*1-5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL05 (4 Pin connector)
	WL05 (5 Pin connector)

Optional accessories - Protective cover

Color crystal screen series (switch) sensor protection cover

Order number: KTCS33661

Sensor and controller

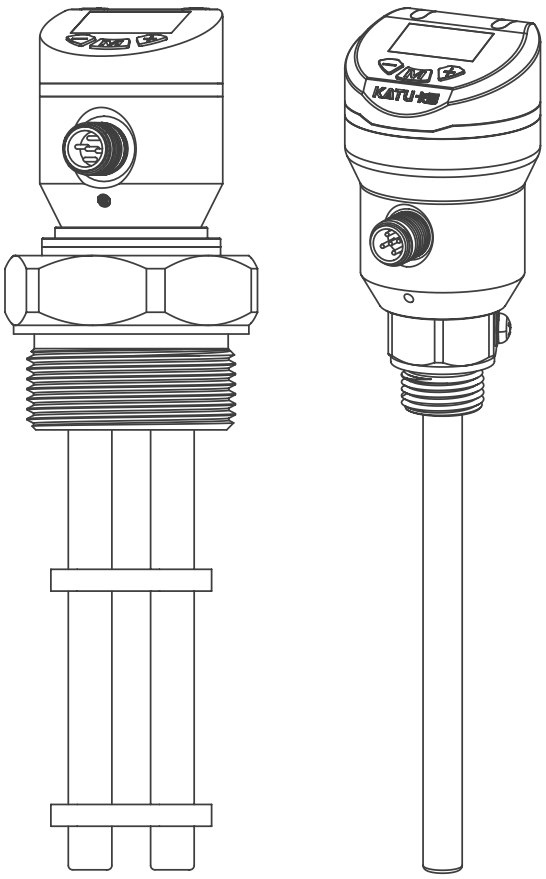
■ Flow ■ pressure ■ temperature ■ level ■ position

KATU 卡图

Operation instruction

Capacitive level sensor

LS370-380



Purpose of product application

The 500 Series sensor (switch) has two switch outputs and one analog output.

danger

The sensor (switch) can only be used in the specified application range.
The temperature range must be within the permissible range. Do not exceed the rated pressure and power load value.
Assembly, commissioning and operation must be carried out in accordance with applicable national and local safety instructions.
The switch is designed to be used as a safety device for pressurizing the system in accordance with "Pressure Equipment Directive 97/23 / EC(PED)".

Standard

The standards applied during development, manufacturing and configuration are listed in the CE Compliance and manufacturer declarations.

Quality assurance

Our scope of delivery and service is subject to legal warranties and warranty periods.

Warranty clause

We guarantee that the functions and materials of the dual pressure switch meet the statutory requirements under normal operation and maintenance conditions.

Security of loss

Such as:

- Incorrect use,
- Incorrect installation
- Incorrect operation or operation in violation of the provisions of this operation manual.

No liability shall be assumed for any damage resulting therefrom or consequential.

Safety instruction

Safety instructions are intended to protect users from dangerous situations and /or prevent material damage.
In the operating instructions, the severity of the potential risk can be indicated by the following signal words:

danger

An imminent danger to the user. Failure to comply may result in fatal injury.

warning

An identifiable hazard.

Failure to comply may result in fatal injury and damage to equipment or plant parts.

caution

It means a danger.

Non-compliance may result in minor injury and material damage to the sensor (switch) and/or plant.

important

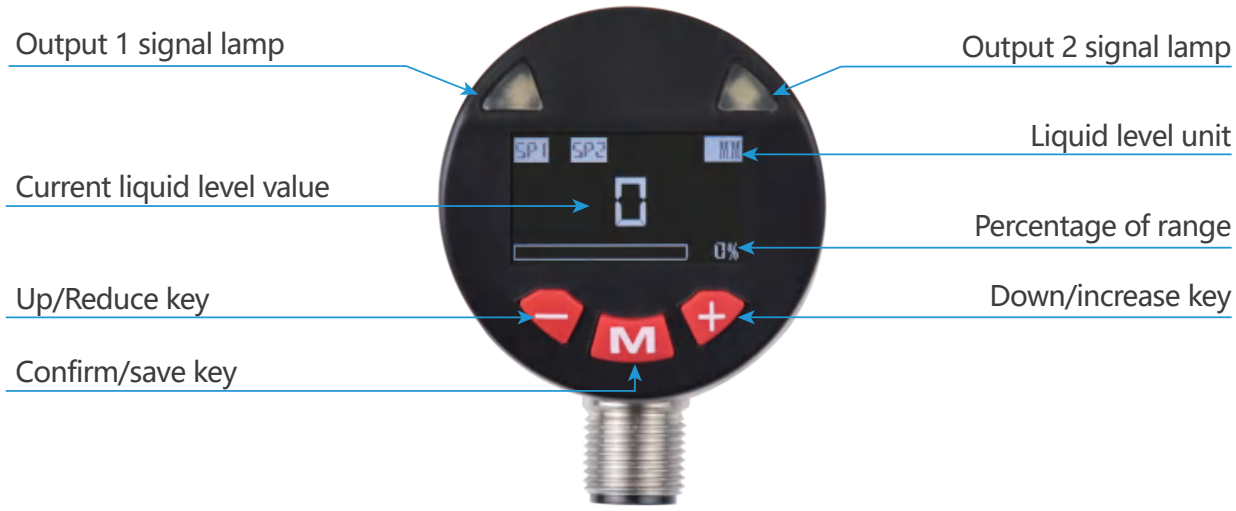
Information that is important to the user.

Deal with

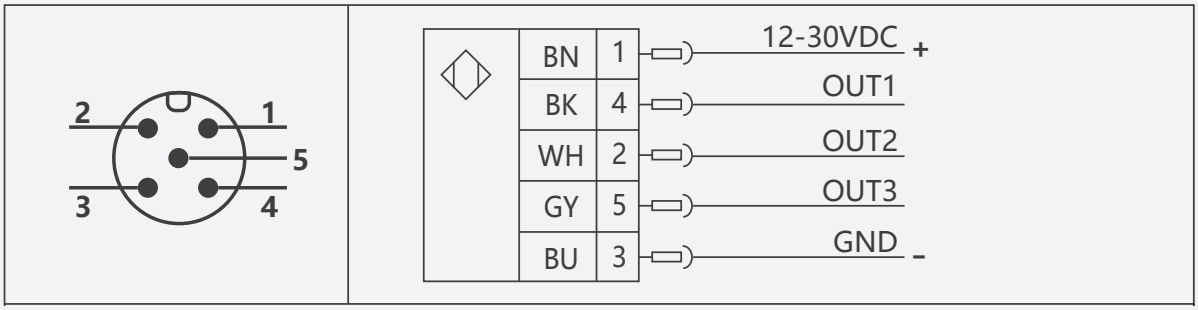
Sensors (switches) must be handled correctly in accordance with national or local regulations for electrical/electronic equipment.

Sensors (switches) cannot be disposed of with household waste!

Panel diagram



Wiring diagram



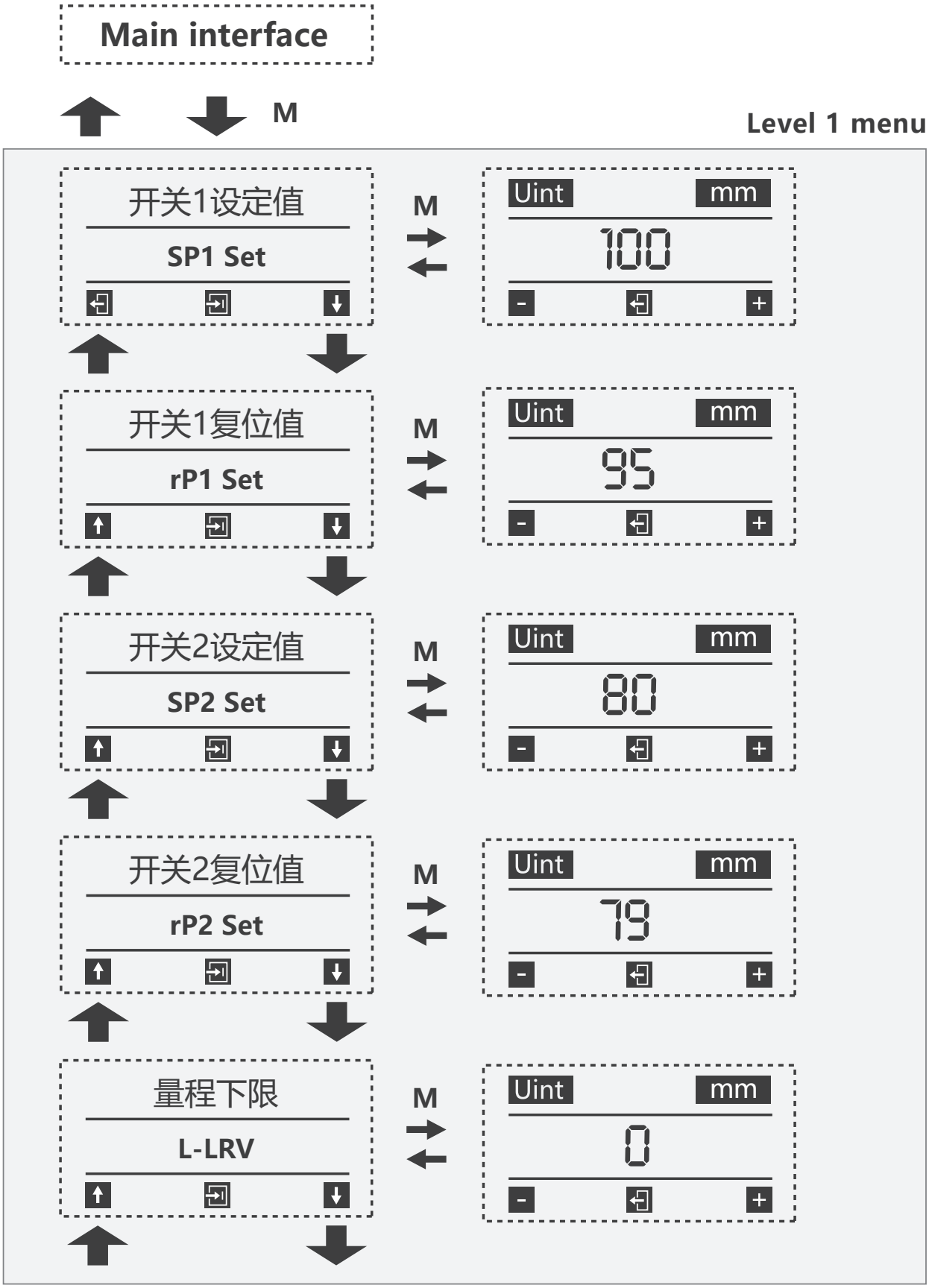
Two switches + one analog		
color	**stitch**	**Instructions**
BN	1	power supply (+)
BU	3	power supply (-)
BK	4 (OUT1)	Level switch PNP (Factory default) Level switch NPN
WH	2 (OUT2)	Level switch PNP (Factory default) Level switch NPN
GY	5 (OUT3)	Level analog (Factory default)

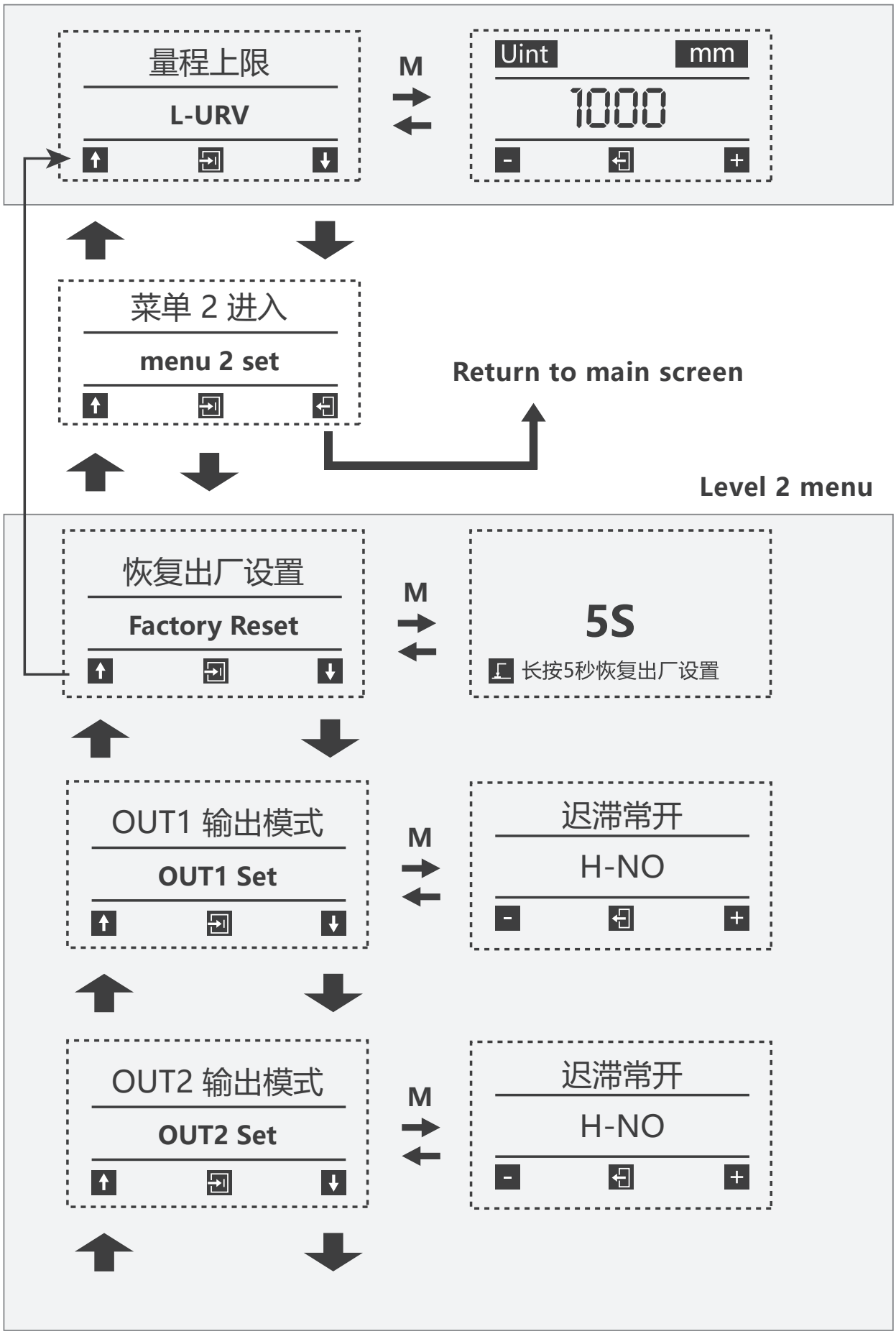
Debugging/Operation

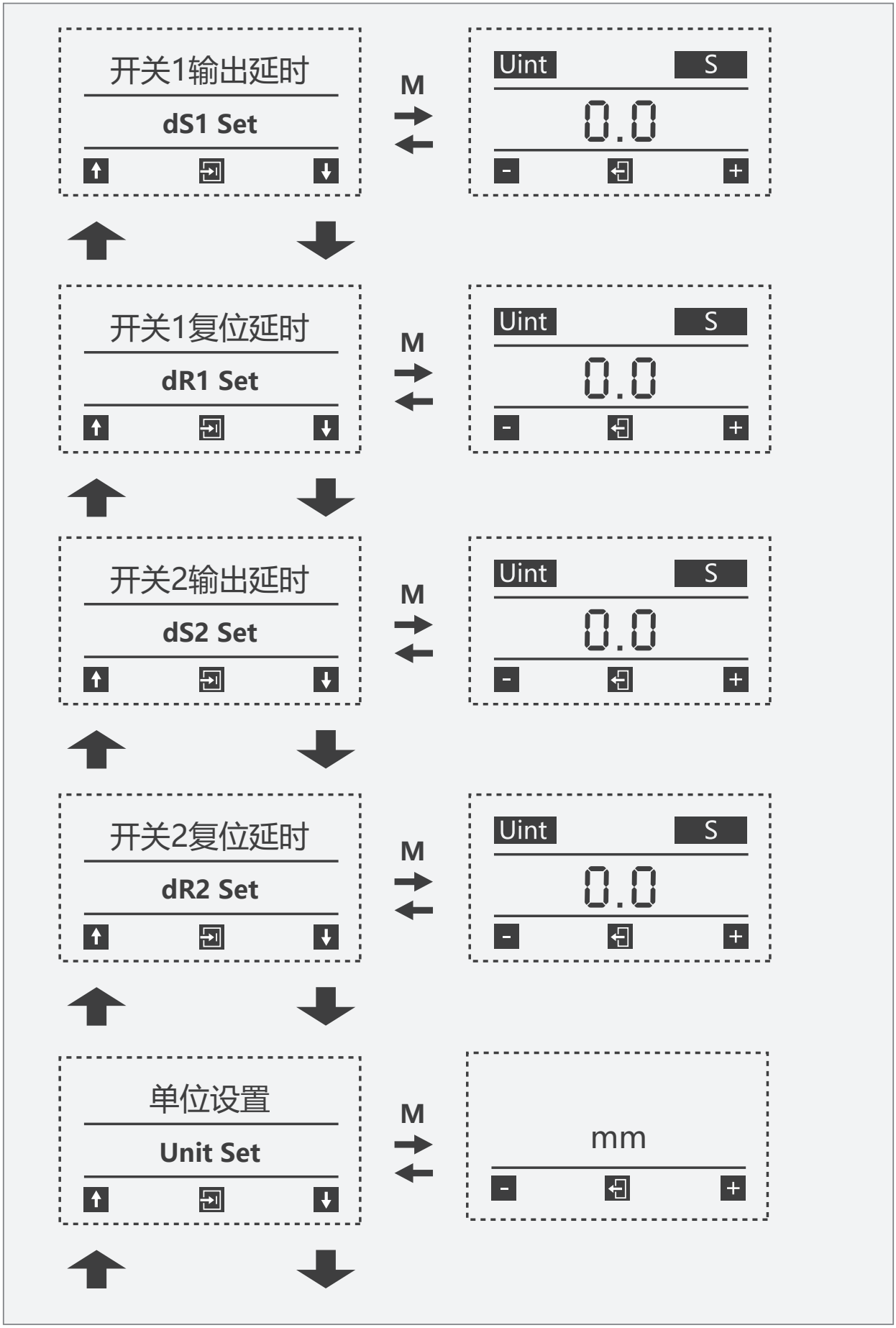
Level 1 menu	
SP1 Set	Switch 1 sets the value
RP1 Set	Switch 1 resets the value
SP2 Set	Switch 2 sets the value
RP2 Set	Switch 2 resets the value
L-LRV	Lower range limit
L-URV	Upper limit of range
Menu 2 set	Menu 2 Enter

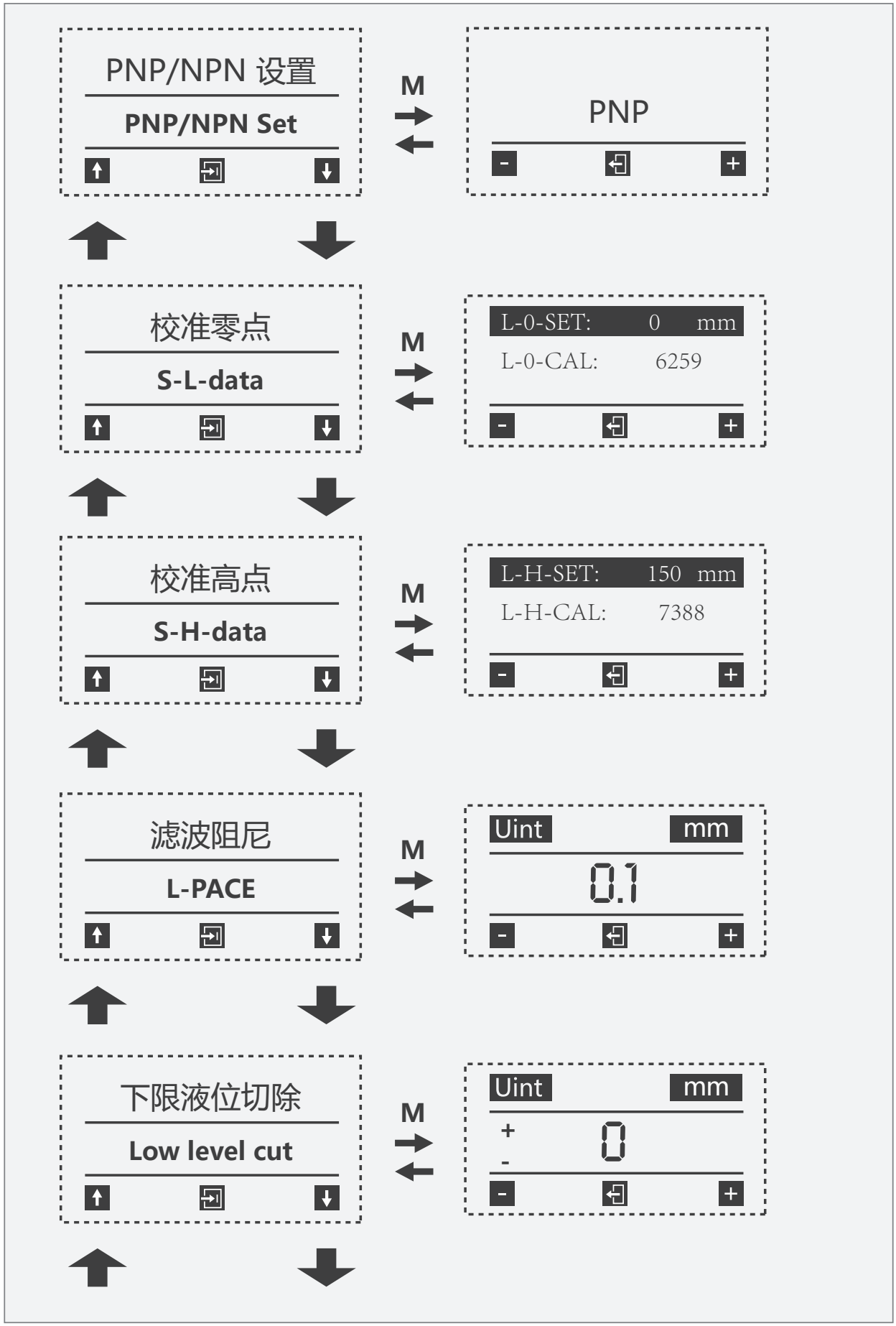
Level 2 menu	
Factory Reset	factory data reset
OUT1 Set	out1 Output mode W-NC: window is normally closed W-NO: window is normally open H-NO: hysteresis is normally open H-NC: hysteresis is normally closed
OUT2 Set	out2 Output mode W-NC: window is normally closed W-NO: window is normally open H-NO: hysteresis is normally open H-NC: hysteresis is normally closed

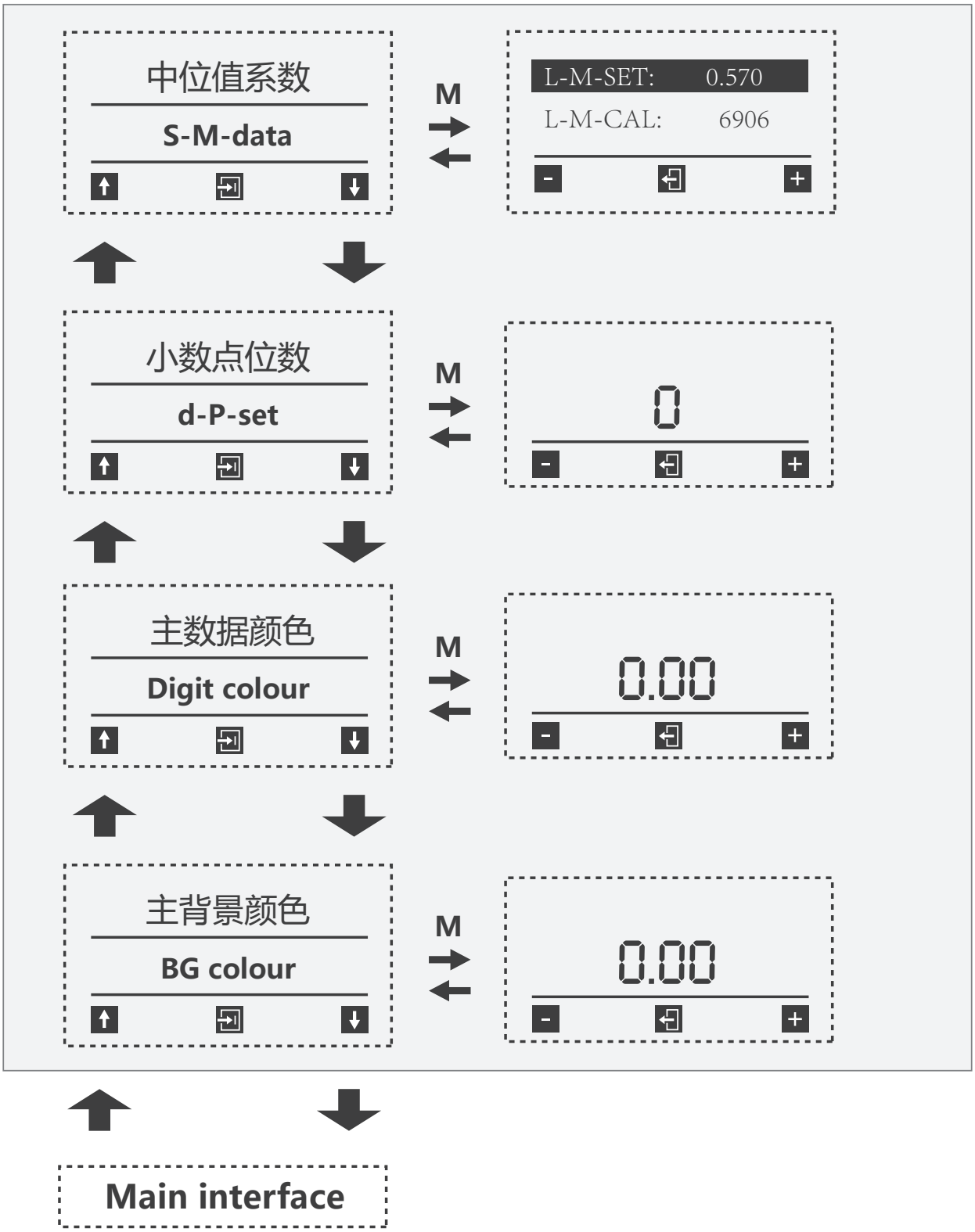
ds1 set	Switch 1 output delay
dr1 set	Switch 1 Reset delay
ds2 set	Switch 2 output delay
dr2 set	Switch 2 Reset delay
Unit set	Unit setting
PNP/NPN Set	PNP/NPN Settings
S-L-data	Calibration zero
S-H-data	Calibration high point
L-PACE	Filter damping
Low level cut	Lower level cutting
S-M-data	Median value coefficient
d-p-set	Decimal place
digit colour	Master data color
BG colour	Main background color


Main interface
M
Level 1 menu
开关1设定值
SP1 Set
M
Uint
mm
100
开关1复位值
rP1 Set
M
Uint
mm
95
开关2设定值
SP2 Set
M
Uint
mm
80
开关2复位值
rP2 Set
M
Uint
mm
79
量程下限
L-LRV
M
Uint
mm
0


量程上限
L-URV
M
Uint
mm
1000
菜单 2 进入
menu 2 set
Return to main screen
Level 2 menu
恢复出厂设置
Factory Reset
M
5S
长按5秒恢复出厂设置
OUT1 输出模式
OUT1 Set
M
迟滞常开
H-NO
OUT2 输出模式
OUT2 Set
M
迟滞常开
H-NO


开关1输出延时
dS1 Set
M
Uint
S
0.0
-
+
开关1复位延时
dR1 Set
M
Uint
S
0.0
-
+
开关2输出延时
dS2 Set
M
Uint
S
0.0
-
+
开关2复位延时
dR2 Set
M
Uint
S
0.0
-
+
单位设置
Unit Set
M
mm
-
+


PNP/NPN 设置
PNP/NPN Set
M
PNP
-
+
校准零点
S-L-data
M
L-0-SET: 0 mm
L-0-CAL: 6259
-
+
校准高点
S-H-data
M
L-H-SET: 150 mm
L-H-CAL: 7388
-
+
滤波阻尼
L-PACE
M
Uint
mm
0.1
-
+
下限液位切除
Low level cut
M
Uint
mm
+
-
0
-
+


中位值系数
S-M-data
M
L-M-SET: 0.570
L-M-CAL: 6906
小数点位数
d-P-set
M
0
主数据颜色
Digit colour
M
0.00
主背景颜色
BG colour
M
0.00
Main interface

Maintenance/cleaning

Sensors (switches) do not require maintenance.

warning

Periodically check whether the switch is working properly.

If the switch does not work properly, stop the operation immediately.

caution

Use of improper cleaning agent may damage the switch.
The following cleaning agents can be used to clean polycarbonate: mild soap or detergent Isopropyl alcohol
Immediately after cleaning, rinse with water. Do not leave cleaner on the surface of the product. Do not clean products in high heat or direct sunlight.
The following cleaning agents are known to affect the integrity of polycarbonate components and should not be used: ZEP Fast 505, Pinesol, Formula 409
Halogenated solvents (benzene, gasoline, acetone or carbon tetrachloride)
Strong alkalinity
Methyl ethyl ketone
Abrasive substance

disassemble

danger

Only remove the switch in case of power failure (electrical, hydraulic/pneumatic).

Switch disconnection from pressure and power supply must be performed by trained or directed personnel in accordance with the most advanced standards.

warning

Be aware that the surface of the shell may become very hot if the operating temperature is higher!

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