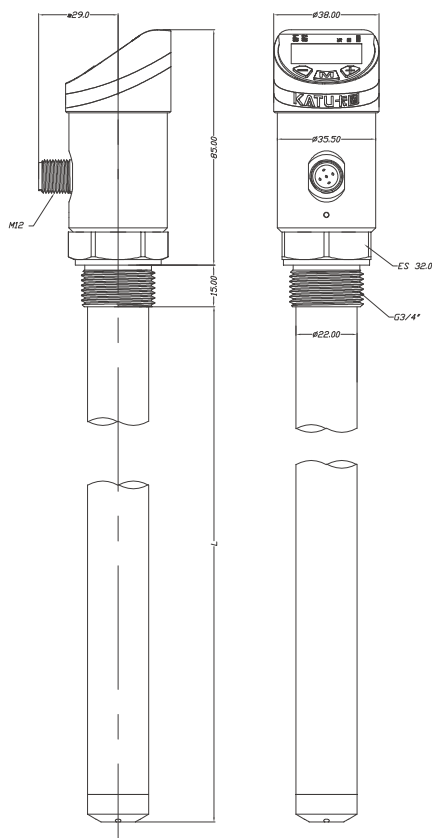




Dimensional drawing (mm)



Product principle

LS590 series adopts static pressure technology sensor for liquid level measurement. The signal is processed by rear processing circuit and converted into standard industrial electrical signal output and display.

Static pressure is the atmospheric pressure generated in a closed buoy, and the rise or fall of the liquid level produces a linear change in pressure.

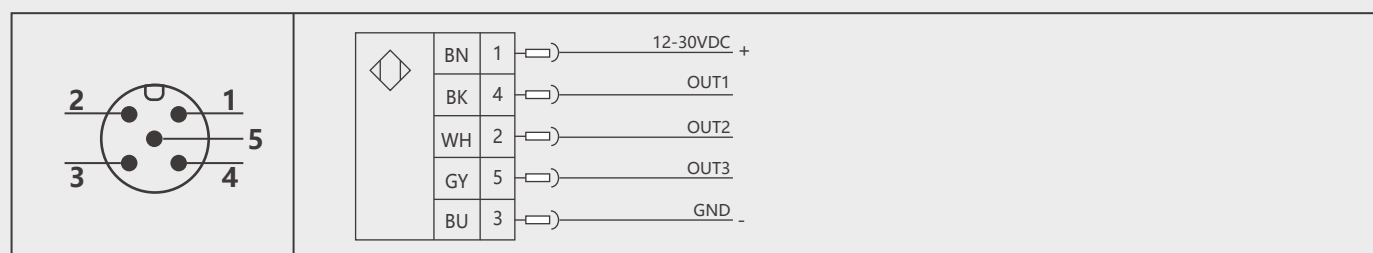
Product application

- Water (various water-based media)
- Oil (low viscosity oil)

Technical parameter

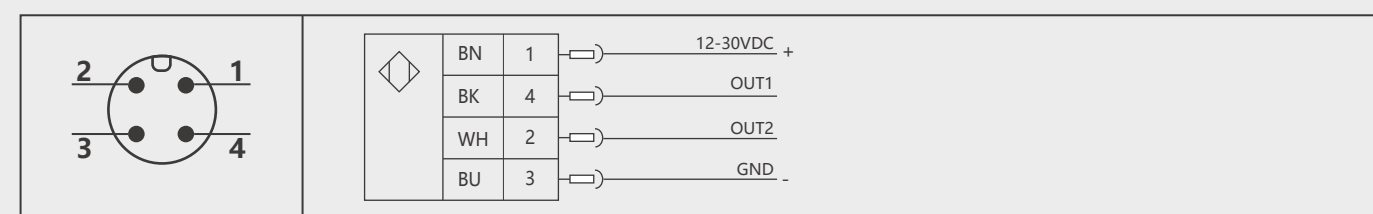
- ◇ Measuring range (guide bar length L) : 200... 2000mm(rod type)... 20000mm (input type)
- ◇ Measuring medium: corrosive liquid compatible with 304 stainless steel
- ◇ Medium density: $\geq 0.7\text{g/cm}$
- ◇ Supply voltage: 12... 30Vdc
- ◇ No-load current consumption: maximum 40mA, 24Vdc power supply
- ◇ Switch output:
- ◇ Output type: PNP/NPN can be switched, normally open/normally closed can be set
- ◇ switch load: $< 200\text{mA} / 24\text{VDC}$
- ◇ Response time: 0.01~2s (factory default)
- ◇ Switching accuracy: $\leq \pm 0.5\%$ range
- ◇ Current model analog output: $\leq \pm 0.5\%$ range
- ◇ Output type: 4-20mA/1-5V/0-10V can be set
- ◇ Load RA: $\leq 500\Omega$
- ◇ Linearity: $\leq 0.5\%$ range
- ◇ Communication output: IO-Link/RS485
- Connection protection: reverse phase, overload, short circuit protection
- ◇ Display:
- Design: Red 4-bit 12mm high brightness LED
- Display range: -1999... 9999
- Accuracy: $\leq \pm 5\%$ range (repeatability $\leq \pm 0.5\%$ range)
- ◇ Stability (annual drift) : $\leq \pm 0.3\%$ range
- ◇ Temperature:
- Medium temperature: $-20... 85^\circ\text{C}$.
- Ambient temperature: $-20... 80^\circ\text{C}$.
- Storage temperature: $-30... 80^\circ\text{C}$.
- ◇ Materials:
- Case: engineering plastic
- Flame retardant grade: UL-94 V-0
- Housing: stainless steel 304
- Medium contact part: stainless steel 304
- ◇ Protection level: IP67
- ◇ Outlet mode: M12x1 connector

Wiring diagram



A3: Two way switch + one way analog

color	stitch	Instructions	color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)	GY	5 (OUT3)	4-20mA (Factory default) 1-5V 0-10V
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN			



S2: Two-way switch/IO-Link

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

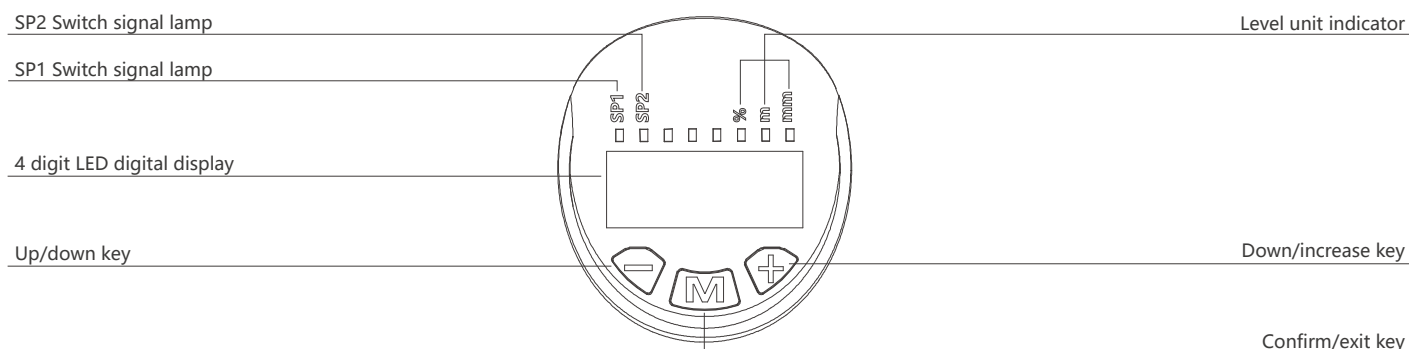
SA: One switch /IO-Link + analog

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	4-20mA (Factory default) 1-5V 0-10V

RS: RS485

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	RS485(B)	WH	2 (OUT2)	RS485(A)

Panel diagram

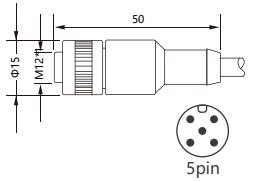
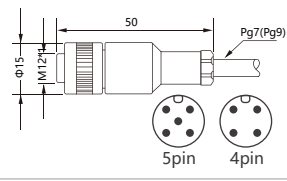
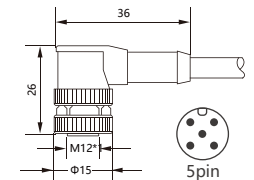
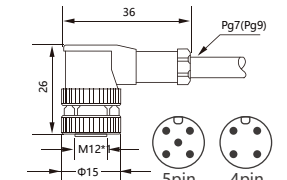
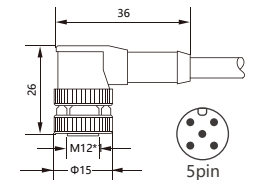
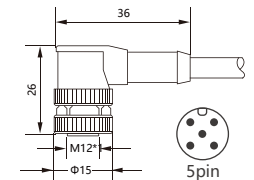


Selection table

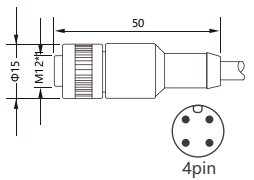
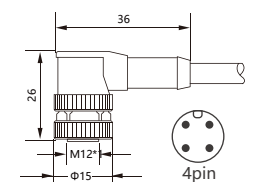
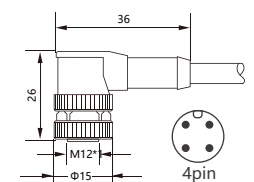
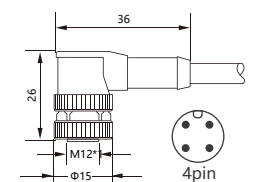
LS590-	S2	G34M	L100	expatiate
LS590				LS590 electronic liquid level sensor
	S2			Output signal: Two switch output/IO-link (4-core cable)
	SA			Output signal: One switch output /IO-link + analog output (4-core cable)
	A3			Output signal: two switch output + analog output (5-core cable)
	RS			Output signal: RS485 communication (4-core cable)
		G34M		Process connection: G3/4 external thread
		G1M		Process connection: G1 external thread
			L100	Measuring range : 100mm
			L150	Measuring range : 150mm
			L200	Measuring range : 200mm
			L250	Measuring range : 250mm
			L300	Measuring range : 300mm
			L350	Measuring range : 350mm
			L400	Measuring range: 400mm
			L450	Measuring range: 450mm
			L500	Measuring range : 500mm
			L550	Measuring range : 550mm
			L600	Measuring range : 600mm
			L650	Measuring range : 650mm
			L700	Measuring range : 700mm
			L750	Measuring range : 750mm
			L800	Measuring range : 800mm
			L850	Measuring range : 850mm
			L900	Measuring range : 900mm
			L950	Measuring range : 950mm
			L1000	Measuring range : 1000mm

* Special requirements can be customized

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

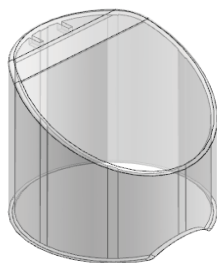
name	Outline drawing/dimension drawing (unit :mm)	material	Model number	Shielded wire	M12*1-4Pin/5Pin self-connector/Dimensions (Unit:mm)	Model number
M12*1-5Pin (2m cable)	 	PUR	ZL05-PU02G	-P	 	GL04 (4 Pin connector)
M12*1-5Pin (5m cable)			ZL05-PU05G			GL05 (4 Pin connector)
M12*1-5Pin (10m cable)			ZL05-PU010G			
M12*1-5Pin (2m cable)	 	PVC	ZL05-PC02G		 	WL04 (4 Pin connector)
			ZL05-PC05G			
			ZL05-PC010G			WL05 (5 Pin connector)
M12*1-5Pin (5m cable)	 	PUR	ZL05-PU02W			
M12*1-5Pin (10m cable)			ZL05-PU05W			
			ZL05-PU010W			
M12*1-5Pin (2m cable)	 	PVC	ZL05-PC02W			
			ZL05-PC05W			
			ZL05-PC010W			

Optional accessories - Electrical accessories (M12-4Pin: Factory default ZL04-PC02G)

name	Outline drawing/dimension drawing (unit :mm)	material	Model number	Shielded wire
M12*1-4Pin (2m cable)	 	PUR	ZL04-PU02G	-P
M12*1-4Pin (5m cable)			ZL04-PU05G	
M12*1-4Pin (10m cable)			ZL04-PU010G	
M12*1-4Pin (2m cable)	 	PVC	ZL04-PC02G	
			ZL04-PC05G	
			ZL04-PC010G	
M12*1-4Pin (5m cable)	 	PUR	ZL04-PU02W	
M12*1-4Pin (10m cable)			ZL04-PU05W	
			ZL04-PU010W	
M12*1-4Pin (2m cable)	 	PVC	ZL04-PC02W	
			ZL04-PC05W	
			ZL04-PC010W	

Optional accessories - Protective cover

500 Series(sensor) Sensor protection cover



Order number: KTC533662