



Principle and Characteristics

- Vortex street principle
- 2 groups of 4-20mA analog signal output;
- Support digital output, RS485 can be customized
- Can monitor gas, liquid
- Unaffected by static pressure of the pipe
- Simple structure, no moving parts
- Easy installation, no need for on-site calibration and commissioning, maintenance free

Product Application

- Monitoring of cooling water, circulating water and critical water flow
- flow monitoring
- gas of organic matter, inorganic matter solution (oxygen, nitrogen, ammonia gas, natural gas, etc.) flow monitoring
- Frost protection, spray system, sewage protection, etc
- Strong anti-fouling ability

Technical parameters

Cardiac flow range:

liquid: 0.5-400 L/min, depending on the pipe size.

For the specific standard traffic, refer to the traffic range table.

Gas: Calculated according to specific application

◇ Temperature range: 0~100°C

Accuracy: $< \pm 3.0\%$ F.S (flow), $\leq 2.0^\circ\text{C}$ (temperature)

◇ Repeatability: $< 2.0\%$

◇ Liquid connection material: PPS ($< 100\text{L}$) / SUS304 (stainless steel) / PA66 ($> 100\text{L}$)

◇ Pressure rating: 10bar (maximum pressure 16bar)

◇ Ambient temperature: $-10\sim 65^\circ\text{C}$

◇ Medium temperature: $-20\sim 90^\circ\text{C}$

◇ Process connection:

Thread type: 3/8~2"

◇ Power supply: 18-30VDC

◇ Linearization: 5-point flow linear curve

◇ Signal output:

Three-wire system 4-20mA, linear relationship with flow, temperature, maximum 500Ω,

Pulse frequency, maximum 1 kHz, user configurable,

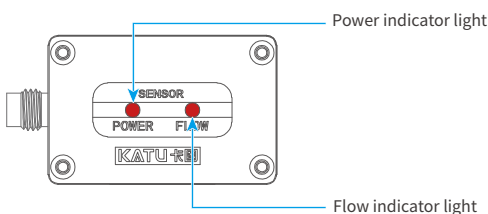
For example, 1 pulse/liter or 1 liter/pulse

IO-Link/PNP/NPN/RS485

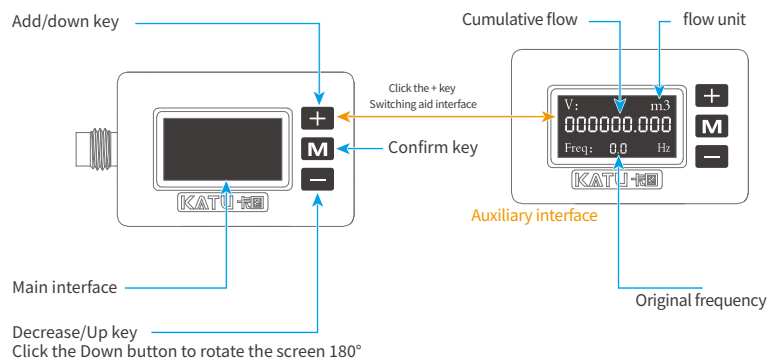
◇ PNP/NPN switch load: 24VDC/200mA

Panel diagram

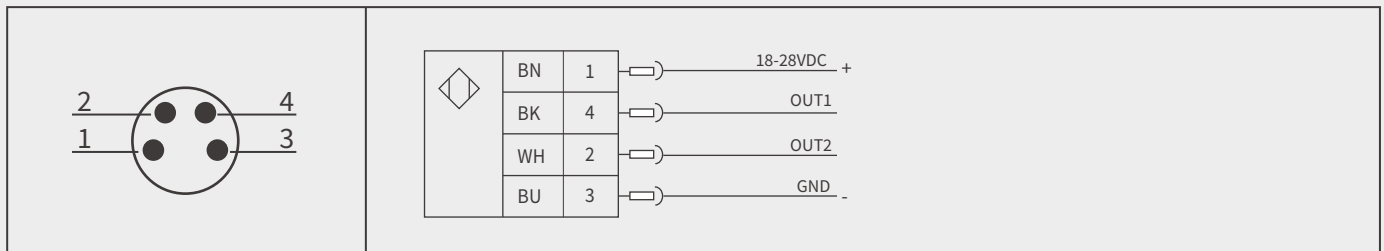
■ No display



■ Tape display



Wiring diagram



A2: Two analog (4-20mA)

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow: 4-20mA (factory default) Temperature: 4-20mA	WH	2 (OUT2)	Temperature: 4-20mA (factory default) FlowTemperature: 4-20mA

V2: Two analog (1-5V)

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow: 1-5V(factory default) Temperature: 1-5V	WH	2 (OUT2)	Temperature: 1-5V (factory default) FlowTemperature: 1-5V

SA: one switch output/pulse frequency /IO-Link+ analog (4-20mA) - with temperature

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow switch: PNP(factory default) Flow switch: NPN Temperature switch: PNP Temperature switch: NPN Original frequency Linear frequency (full scale 100Hz) IO-Link	WH	2 (OUT2)	Flow: 4-20mA (factory default) Temperature: 4-20mA

SA: one switch output/pulse frequency /IO-Link+ analog (4-20mA) - without temperature

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow switch: PNP (factory default) Flow switch: NPN Original frequency Linear frequency (full scale 100Hz) IO-Link	WH	2 (OUT2)	Flow: 4-20mA (factory default)

SV: one switch output/pulse frequency /IO-Link+ analog (1-5V) - with temperature

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow switch: PNP(factory default) Flow switch: NPN Temperature switch: PNP Temperature switch: NPN Original frequency Linear frequency (full scale 100Hz) IO-Link	WH	2 (OUT2)	Flow: 1-5v (factory default) Temperature: 1-5v

SV: one switch output/pulse frequency /IO-Link+ analog (1-5V) - without temperature

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow switch: PNP (factory default) Flow switch: NPN Original frequency Linear frequency (full scale 100Hz) IO-Link	WH	2 (OUT2)	Flow: 1-5v(factory default)

S2: two switch output/pulse frequency /IO-Link - with temperature

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow switch: PNP (factory default) Flow switch: NPN Temperature switch: PNP Temperature switch: NPN Original frequency Linear frequency (full scale 100Hz) IO-Link	WH	2 (OUT2)	Flow switch: PNP (factory default) Flow switch: NPN Temperature switch: PNP Temperature switch: NPN

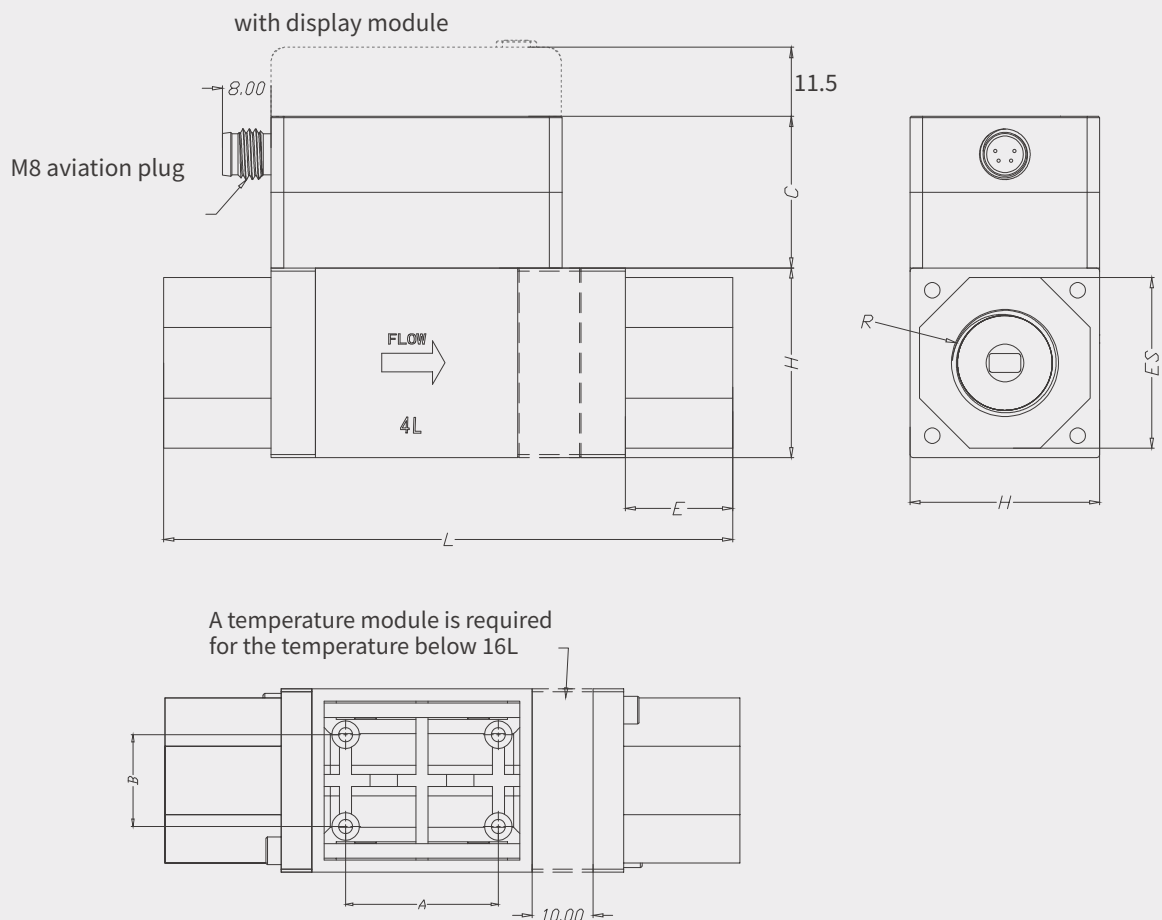
S2: two switch output/pulse frequency /IO-Link - without temperature

color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	Flow switch: PNP (factory default) Flow switch: NPN Original frequency Linear frequency (full scale 100Hz) IO-Link	WH	2 (OUT2)	Flow switch: PNP (factory default) Flow switch: NPN

RS485 communication

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

dimension figure (mm)



Selection code	Mounting hole position (A) mm	Mounting hole position (B) mm	Height of shell (C) mm	Body height (H) mm	Body length (L) mm	Lock bit (E) mm	Connector hex/square (ES/H) mm	Flow range L/min	Process connection (R/G)
004A	25	15	24	30*30	78 (Without temperature)	17	ES 27	0.5-4	3/8 (Effective screw 15mm)
004B					88 (Band temperature)				1/2 (Effective screw 15mm)
016A	25	15	24	30*30	84 (Without temperature)	19	ES 27	2-16	3/8 (Effective screw 15mm)
016B					94 (Band temperature)				1/2 (Effective screw 15mm)
030A	40	15	20	40*40	110	18	ES 34	3-30	1/2 (Effective screw 15mm)
030B									3/4 (Effective screw 15mm)
040A	40	15	20	40*40	110	18	ES 34	5-40	1/2 (Effective screw 15mm)
040B									3/4 (Effective screw 15mm)
100A	40	20	20	45*45	120	23	ES 41	10-100	3/4 (Effective screw 20mm)
100B									1" (Effective screw 20mm)
200A	32	31	22	58*58	114	22	H 58	20-200	1-1/4 (Effective screw 20mm)
200B									1-1/2 (Effective screw 20mm)
250A	32	31	22	58*58	114	22	H 58	50-250	1-1/4 (Effective screw 20mm)
250B									1-1/2 (Effective screw 20mm)
400A	32	31	22	65*65	130	30	H 65	150-400	1-3/4 (Effective screw 25mm)
400B									2" (Effective screw 25mm)

Selection table

FTS520-	004A	GK	M	-	-	-	-	expatiate
FTS520-								FTS520- Electronic flow switch/sensor
	004A							Flow range: 0.5-4L/min (3/8 thread)
	004B							Flow range: 0.5-4L/min (1/2 thread)
	016A							Flow range: 2-16L/min (3/8 thread)
	016B							Flow range: 2-16L/min (1/2 thread)
	030A							Flow range: 3-30L/min (1/2 thread)
	030B							Flow range: 3-30L/min (3/4 thread)
	040A							Flow range: 5-40L/min (1/2 thread)
	040B							Flow range: 5-40L/min (3/4 thread)
	100A							Flow range: 10-100L/min (3/4 thread)
	100B							Flow range: 10-100L/min (1 "thread)
	200A							Flow range: 20-200L/min (1-1/4 thread)
	200B							Flow range: 20-200L/min (1-1/2 thread)
	250A							Flow range: 50-250L/min (1-1/4 thread)
	250B							Flow range: 50-250L/min (1-1/2 thread)
	400A							Flow range: 150-400L/min (1-3/4 thread)
	400B							Flow range: 150-400L/min (2 "thread)
		GK						Process connection: internal thread G teeth
		RK						Process connection: internal thread R teeth
		NK						Process connection: internal thread NPT
			M					Electrical connection: M 8-4Pin aviation plug (standard 2m, customizable wire length)
				-				No temperature measurement function
				T				With temperature measurement function
No display				-				Output signal: Analog (4-20mA) Factory default
				V				Output signal: Analog (1-5V)
				S				Output signal: IO-Link/ pulse frequency (factory default pulse frequency; Support IO-Link command wake up function)
				R				Output signal: RS485 signal
with display				A2				Output signal: two analog channels (4-20mA)
				V2				Output signal: two analog channels (1-5V)
				SA				Output signal: one switch output/pulse frequency /IO-Link+ analog (4-20mA)
				SV				Output signal: one switch output/pulse frequency /IO-Link+ analog (1-5V)
				S2				Output signal: two switch output/pulse frequency /IO-Link
				RL				Output signal: RS485 signal
						-		No regulating valve (factory default)
						F		With straight-through regulating valve (optional for $\leq 40L$)
							-	No bracket (factory default)
							T	Supported by a bracket

⚠ Attention

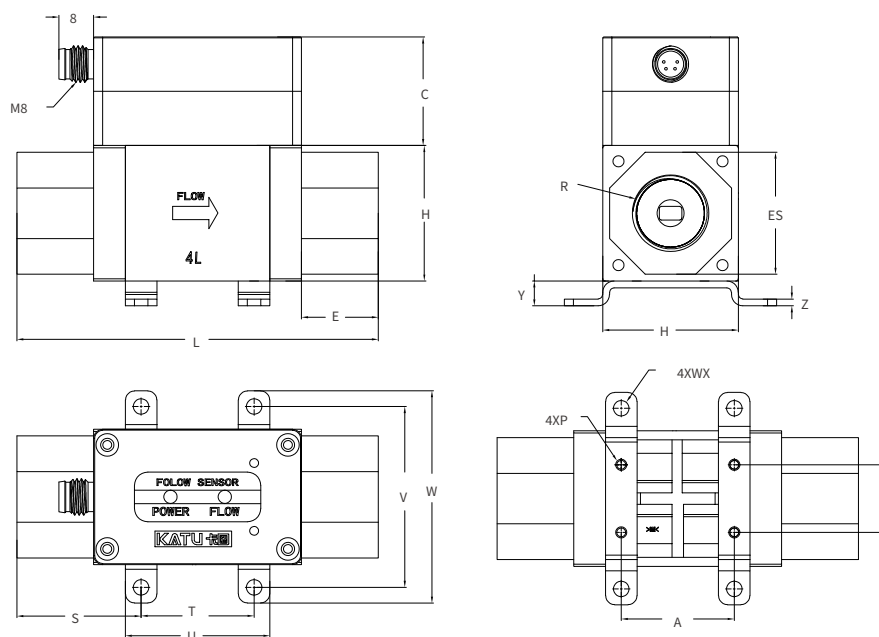
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It is not applicable when used outside the manufacturing industry.

The products manufactured and sold by our company cannot be used for transactions or certifications as stipulated by the metrology laws of various countries.

According to Japan's new measurement law, Japan can only use the SI unit.

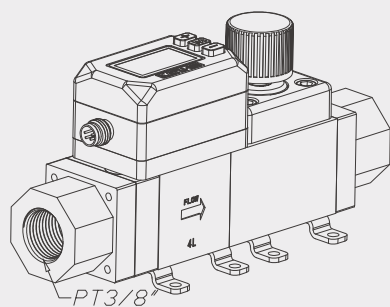
Dimensions drawing of mounting bracket (mm)



Selection code	Bracket mounting holes		Overall dimensions of bracket		lock screw	Mounting hole diameter	Height of bracket	Thickness of bracket plate	margin
	T (mm)	V (mm)	W (mm)	U (mm)	P (mm)	WX (mm)	Y (mm)	Z (mm)	S (mm)
FTS520-004T	25	40	47	32	M 2.5*10 deep	3.5	5.5	1.5	28
FTS520-016T	25	40	47	32	M 2.5*10 deep	3.5	5.5	1.5	30
FTS520-030T	40	50	60	49	M 4*10 deep	4.5	5.5	1.5	35
FTS520-040T	40	50	60	49	M 4*10 deep	4.5	5.5	1.5	35
FTS520-100T	40	55	65	49	M 4*10 deep	4.5	5.5	1.5	40
FTS520-200T	32	68	78	41	M 4*10 deep	4.5	5.5	1.5	41
FTS520-250T	32	68	78	41	M 4*10 deep	4.5	5.5	1.5	41
FTS520-400T	32	75	85	41	M 4*10 deep	4.5	5.5	1.5	49

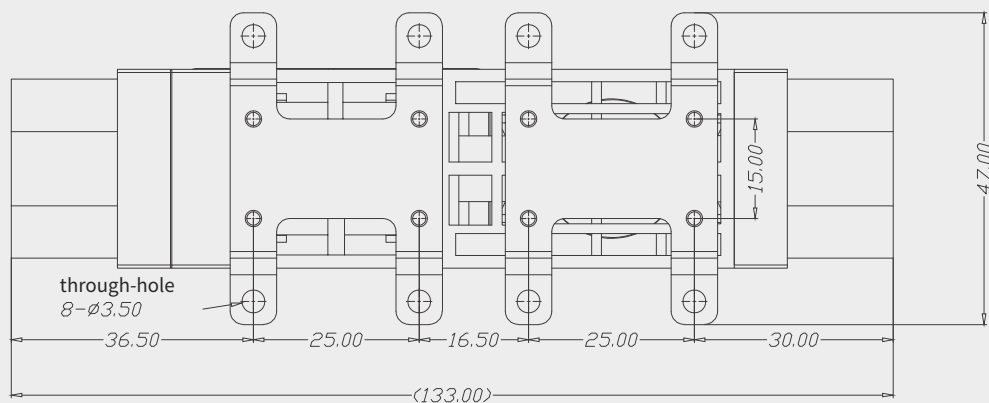
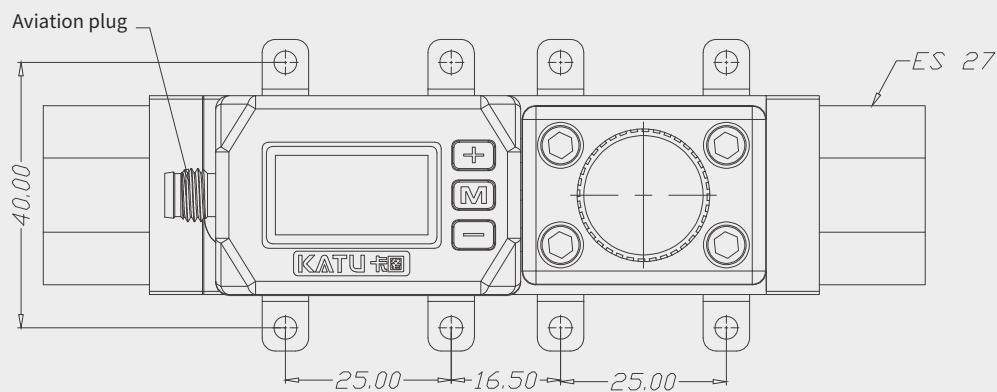
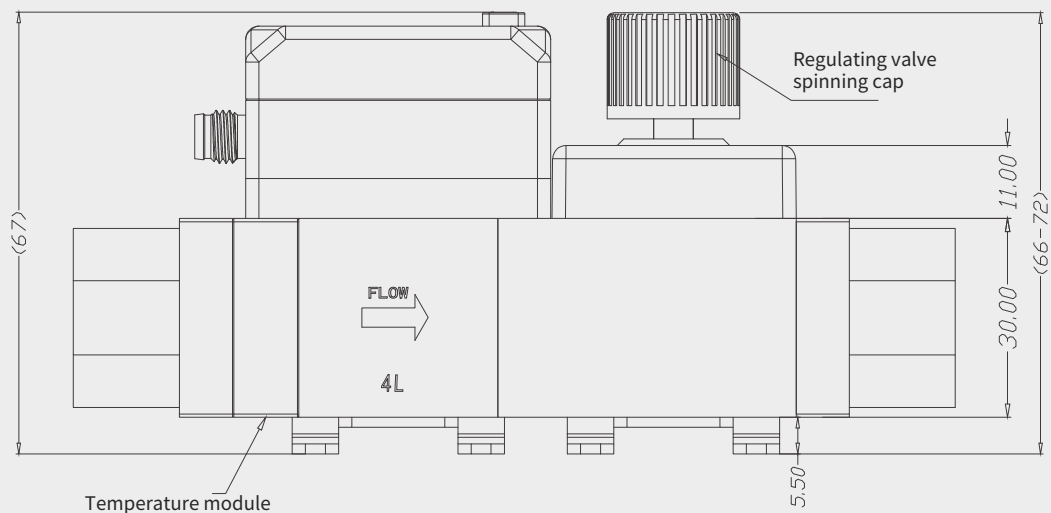
Optional accessories - electrical accessories

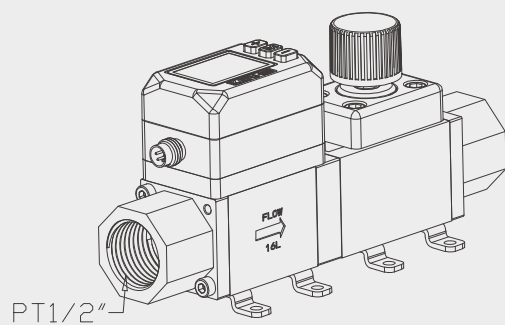
name	Contour drawing/dimension drawing (Unit :mm)	material	Model number
M8-4Pin (2m cable)		PVC	M84PC02G
M8-4Pin (5m cable)			M84PC05G
M8-4Pin (10m cable)			M84PC010G



4L with through valve dimensions (mm)

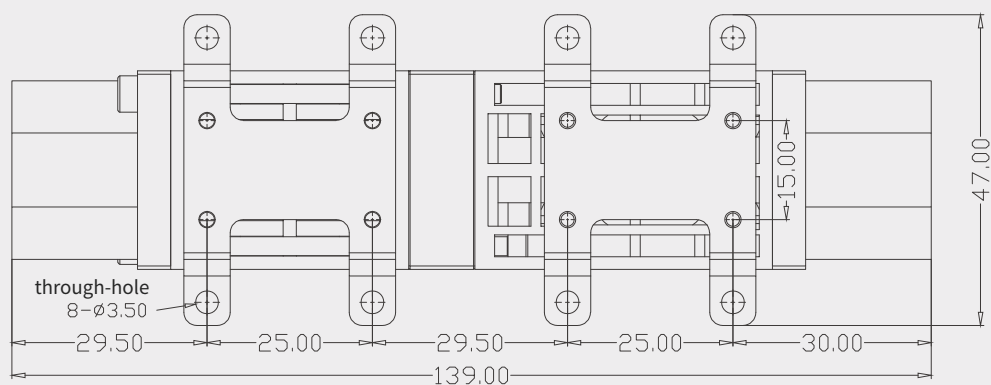
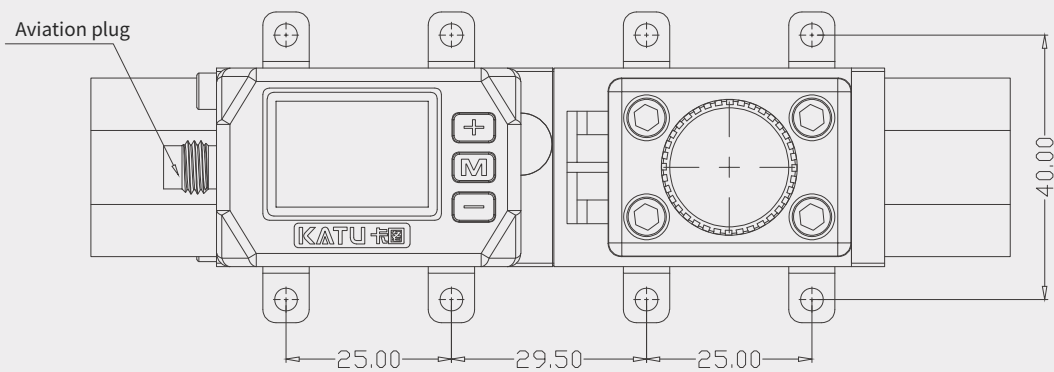
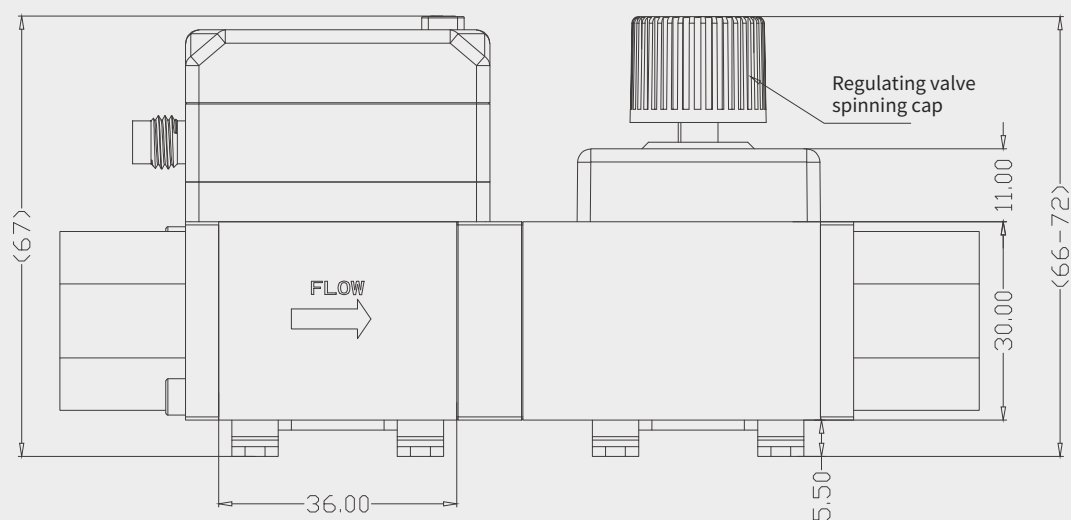
Order Number: KTBCP31129

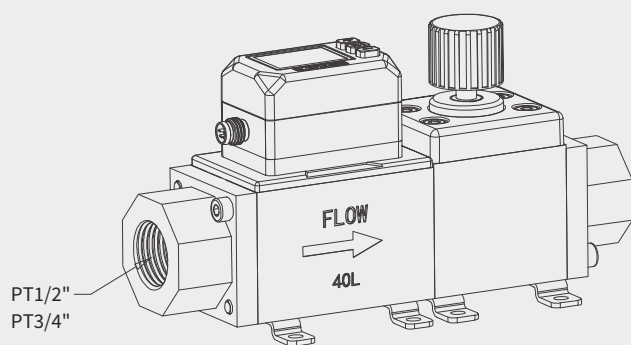




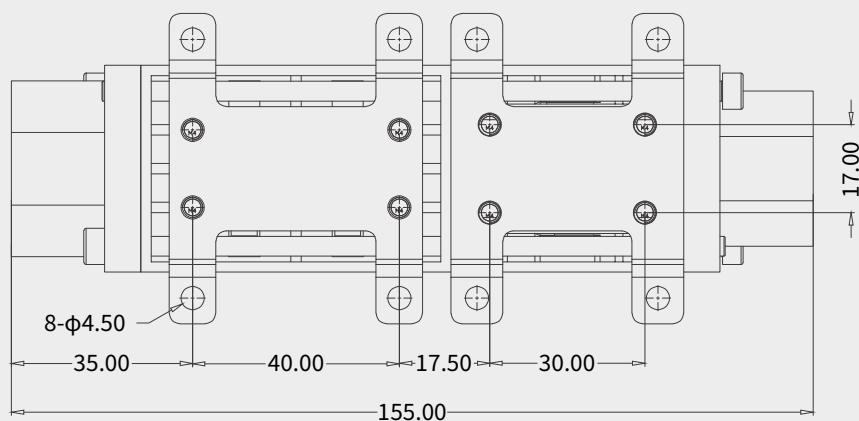
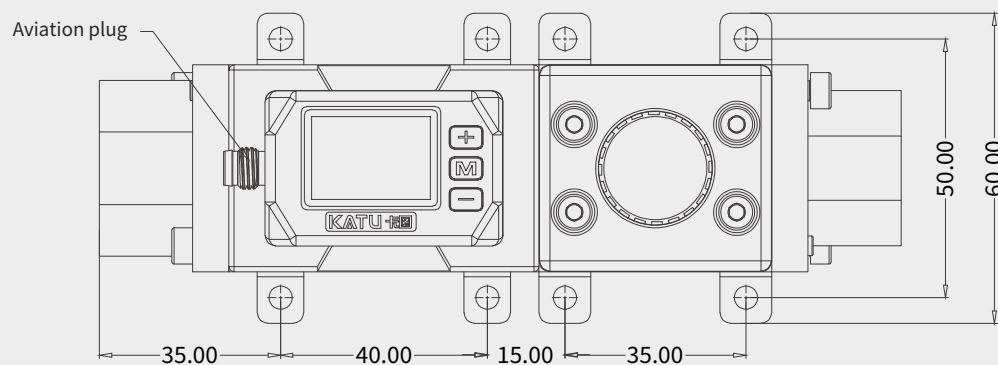
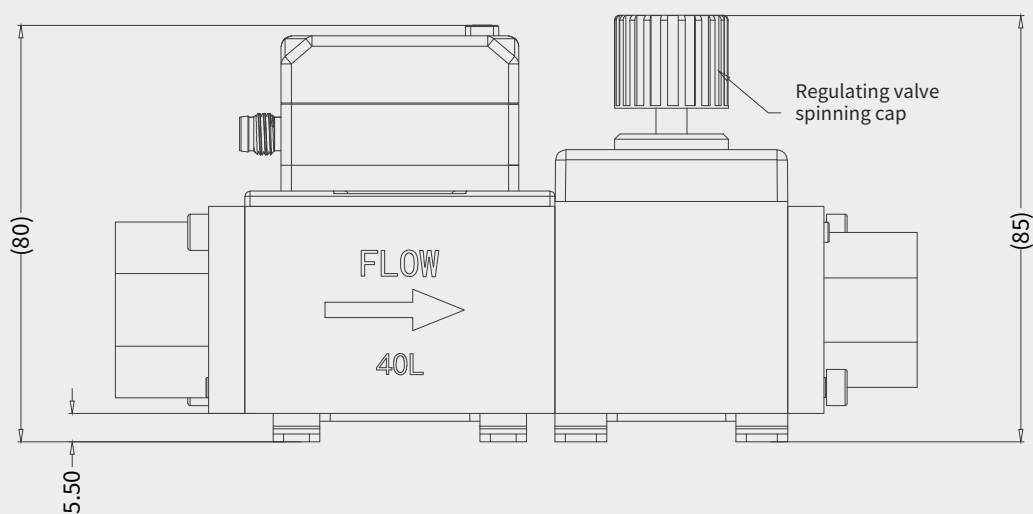
16L with through valve dimensions (mm)

Order Number: KTBCP31129

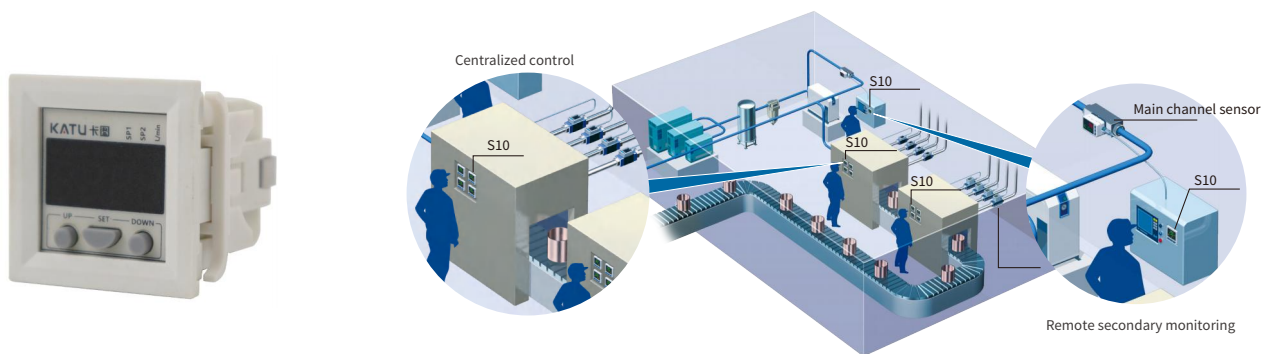




30L/40L with through valve dimensions (mm)
Order Number: KTBCP33112



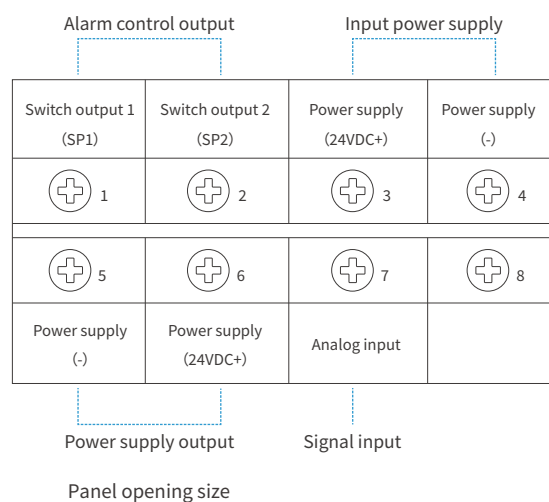
Application drawing



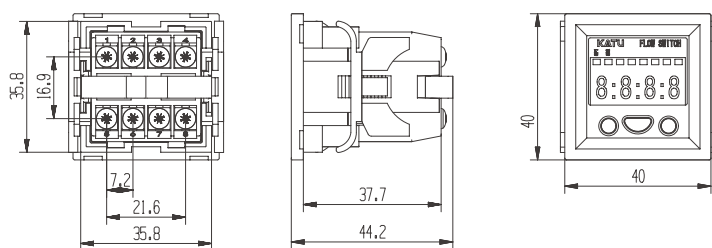
Technical parameter

- ◇ Input specification: Analog quantity (pulse)/PT100 is optional
- ◇ Display range: -199.9~999.9
- ◇ Temperature drift: $\leq \pm 0.015\%FS/^{\circ}C$ (typical value about $\pm 75ppm/^{\circ}C$)
- ◇ Electromagnetic compatibility:
IEC61000-4-4 (electrical fast transient pulse group), $\pm 4KV/5KHz$;
IEC61000-4-5 (Surge), 4KV
- ◇ Output function: Switch/analog quantity is optional
- ◇ Power supply: 24VDC $\pm 20\%$
- ◇ Power consumption: $\leq 3W$
- ◇ Operating environment: temperature -10~+60 $^{\circ}C$;
Humidity $\leq 90\%RH$

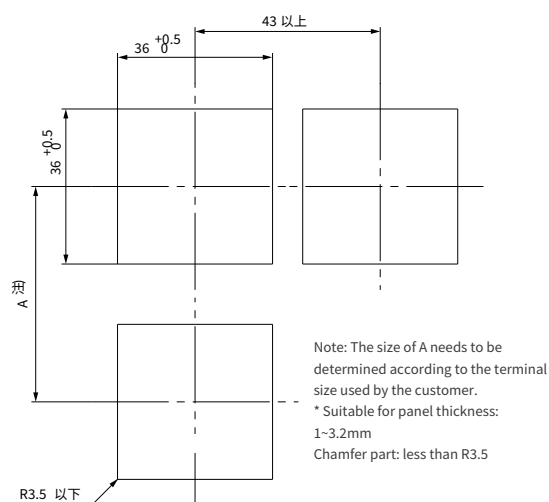
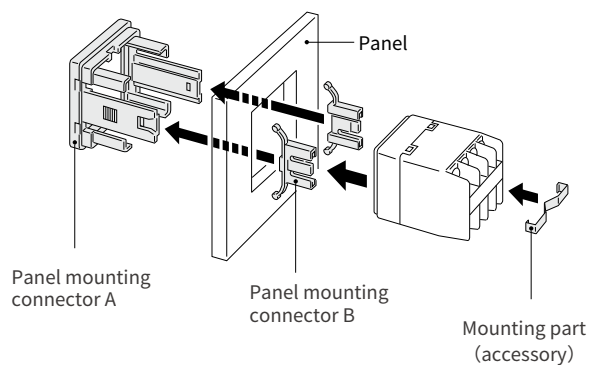
Wiring diagram



Size drawing (mm)



Panel mounting



Order model	Technical Description	
S10-21	Input signal: Analog quantity Output signal: Output by two switches	Display unit: L/min