
Standard ED sealed type


Flat seal threaded type


Blocking hole G1/2 thread type


External taper seal


Internal thread connection


Flat film chuck type

Principle structure

The diffused silicon sensor is used for pressure measurement, and the signal is processed by a post-processing circuit and converted into a standard industrial electrical signal for output and display. The all-metal casing design, with a highlighted LED digital display, enables the product line to be used in a variety of industrial applications. The three-button design and menu make the product more convenient to use, and a variety of connection methods can fully meet various specific installation needs. The device, which can rotate at 330°, guarantees the best viewing Angle in different mounting modes.

Technical parameter

- ◇ 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: <200mA /24VDC

Response time: 0.01~2s (Factory default)

Switching accuracy: ≤±0.5% range

Current model analog output: ≤±0.5% range

Output type: 4-20mA/1-5V/0-10V can be set

Load RA: ≤500Ω

Linearity: ≤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: ≤±0.5% range
- ◇ Stability (annual drift) : ≤±0.3% range
- ◇ Temperature:

Medium temperature: -20... 85 ° c.

Ambient temperature: -20... 80 ° c.

Storage temperature: -30... 80 ° c.

- ◇ Materials:

Case: engineering plastic

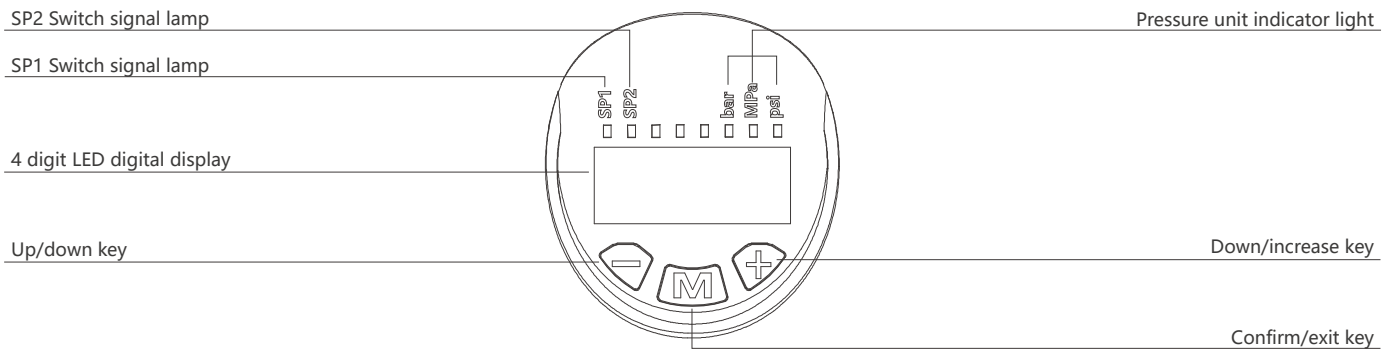
Flame retardant grade: UL-94 V-0

Housing: stainless steel 304

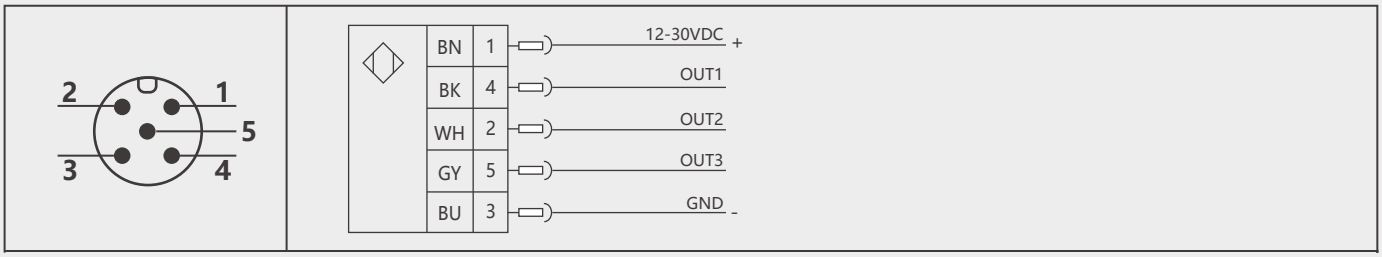
Medium contact part: stainless steel 304

- ◇ Protection level: IP67
- ◇ Outlet mode: M12x1 connector

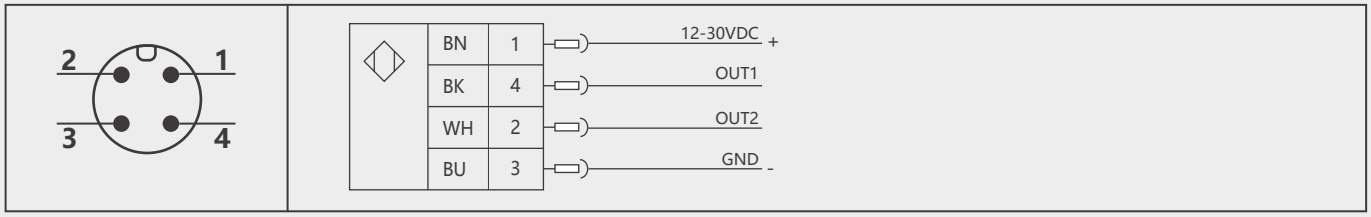
Panel diagram



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			



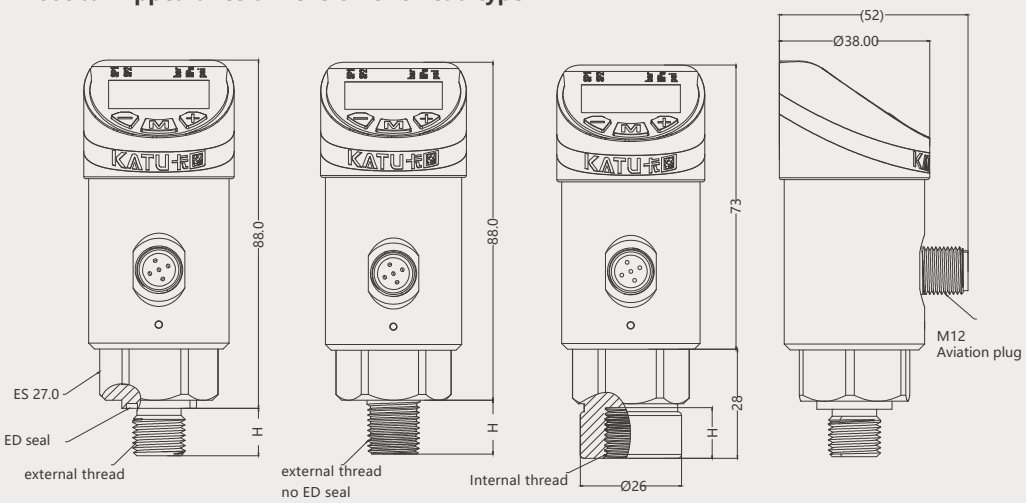
S2: Two-way switch/IO-Link					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

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)

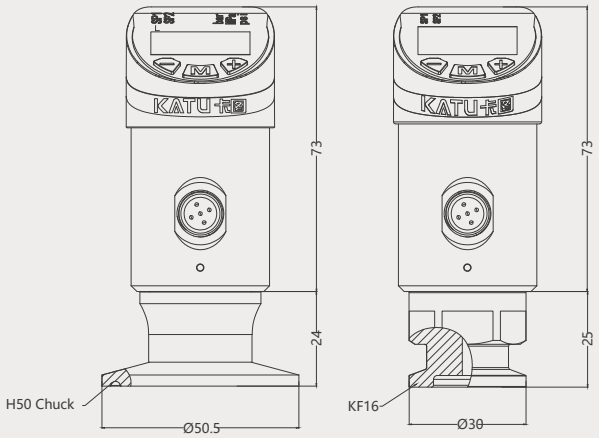
Dimensional drawing (mm)

< 600bar Appearance dimension of thread type

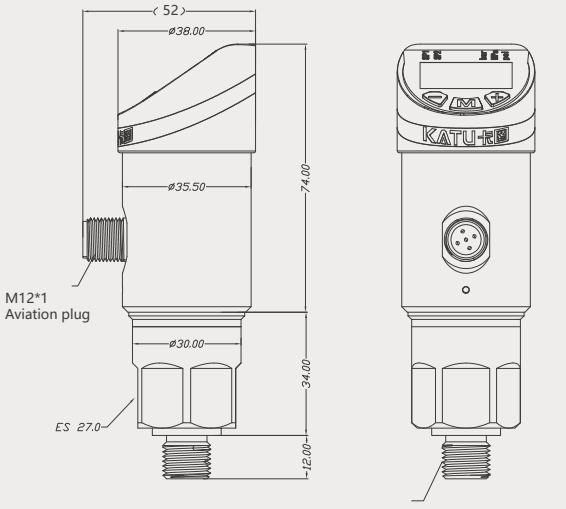


Screw thread		Thread height(H)	seal
external thread	G1/4	12	Sealed with ED
	G1/2	12	
	M20*1.5	12	
	R1/4	14	No ED seal
	R1/2	14	
	NPT1/4	14	
Internal thread	R1/4	13	
	G1/4	13	

< 600bar Chuck type appearance dimensions



≥600bar Appearance size



The process connection specification is the same as < 600bar

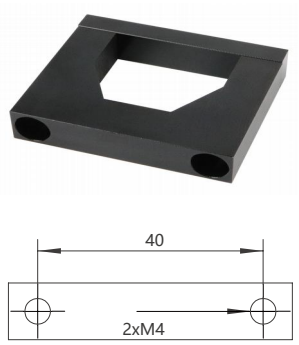
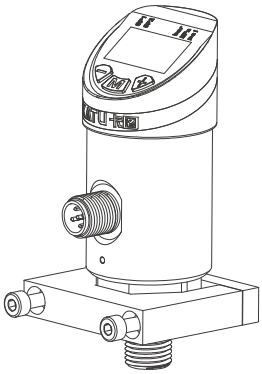
Parameter list

Pressure range	bar	1	2	5	10	16	25	60	100	160	250	400	600
	psi	15	30	75	145	230	370	900	1500	2300	3600	6000	9000
Maximum overload pressure		×5			×3			×2			×1.5		×1.3
Minimum damage pressure		×6			×4			×3			×2		×1.6

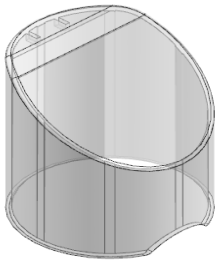
Selection table

PS500-	B	100	G14M	S2	expatiate
PS500-					PS500 series electronic digital display pressure sensor
	B				Manometer pressure
	F				Negative pressure
		0001			Measuring range: -10... 10KPa or 0... 10KPa
		0006			Measuring range: -60... 60KPa or 0... 60KPa
		001			Measuring range: -1... 1bar or 0... 1bar
		002			Measuring range: -1... 2bar or 0... 2bar
		005			Measuring range: -1... 5bar or 0... 5bar
		010			Measuring range: -1... 10bar or 0... 10bar
		025			Measuring range: 0... 25bar
		060			Measuring range: 0... 60bar
		100			Measuring range: 0... 100bar
		160			Measuring range: 0... 160bar
		250			Measuring range: 0... 250bar
		400			Measuring range: 0... 400bar
		600			Measuring range: 0... 600bar
		1000			Measuring range: 0... 1000bar
			G14M		Process connection: G1/4 external thread
			G12M		Process connection: G1/2 external thread
			G14K		Process connection: G1/4 internal thread
			N14M		Process connection: NPT1/4 external thread
			R12M		Process connection: R1/2 external thread
			R14M		Process connection: R1/4 external thread
			M20M		Process connection: M20*1.5 external thread
			KP50		Process connection: 1.5 inch (outer diameter 50.5mm) chuck metal flat film type (standard pressure 1.6MPa)
			KF16		Process connection: KF16 vacuum chuck type
				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)

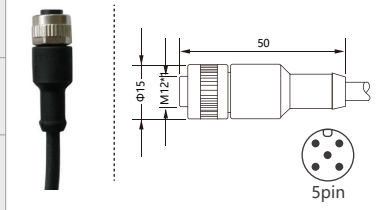
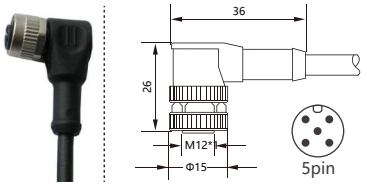
Optional accessories-FA027

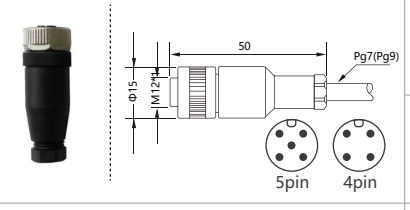
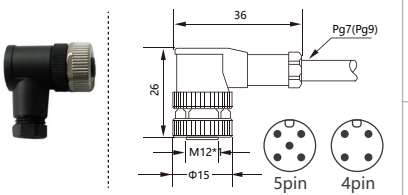
Outline drawing/dimension drawing (mm)	Installation effect drawing
	

Optional accessories - Protective cover

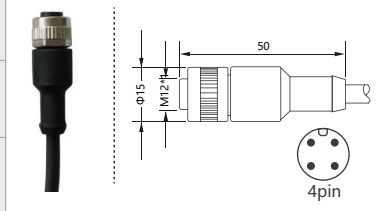
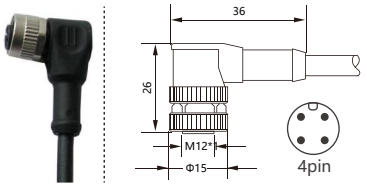
500 Series(switch) Sensor protection cover
 Order number: KTCS33662

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	
			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (2m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (5m cable)			ZL05-PU05W	
M12*1-5Pin (10m cable)			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

M12*1-4Pin/5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL04 (4 Pin connector)
	GL05 (4 Pin connector)
	WL04 (4 Pin connector)
	WL05 (5 Pin connector)

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	
		PVC	ZL04-PC02G	
			ZL04-PC05G	
			ZL04-PC010G	
M12*1-4Pin (2m cable)		PUR	ZL04-PU02W	
M12*1-4Pin (5m cable)			ZL04-PU05W	
M12*1-4Pin (10m cable)			ZL04-PU010W	
		PVC	ZL04-PC02W	
			ZL04-PC05W	
			ZL04-PC010W	

Concave flat film
ED seal type

Flush film
double seal type

Flush film
ED seal type

Flange flat
film type

Chuck flat
film type

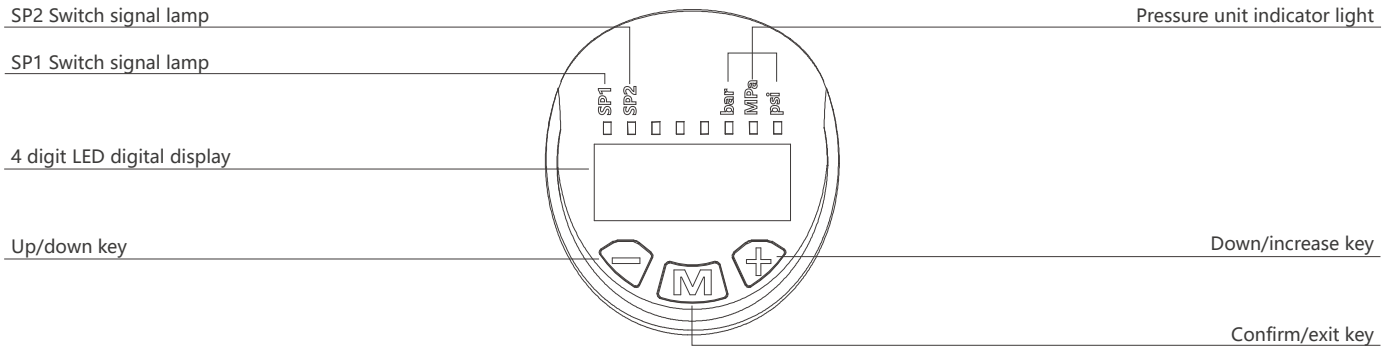
Principle structure

The diffused silicon sensor is used for pressure measurement, and the signal is converted into a standard industrial electrical signal after processing by a post-processing circuit and displayed. The metal housing design, with a high-light LED digital display, enables the series to be used in a variety of industrial applications. The three-button design and menu make the product more convenient to use, and a variety of connection methods can fully meet various specific installation needs. The 330° rotating device guarantees the best viewing Angle in different mounting modes. Flat film type structure, to meet the user's sanitary needs, at the same time can measure a variety of viscous properties of liquid, support the user's anti-corrosion requirements.

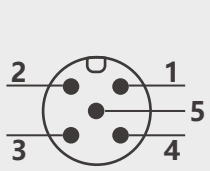
Technical parameter

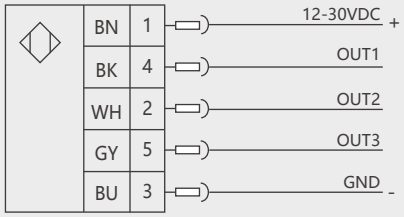
- ◇ Supply voltage: 12... 30Vdc
- ◇ No-load current consumption: maximum 40mA,24Vdc power supply
- ◇ Switch output:
- Output type: PNP/NPN can be switched, normally open/normally closed can be set
- Switching load: <200mA/24VDC
- Response time: 0.01~2s (factory default)
- Switching accuracy: ≤±0.5% range
- ◇ Current type analog output: ≤±0.5% range
- Output type: 4-20mA/1-5V/0-10V Configurable
- Load RA: ≤500Ω
- Linearity: ≤0.5% range
- ◇ Communication output: IO-Link/RS485
- ◇ Wiring protection: reverse phase, overload, short circuit protection
- ◇ Display:
- Design: Red 4-bit 12mm high brightness LED
- Display range: -1999... 9999
- ◇ Accuracy: ≤±0.5% range
- ◇ Stability (annual drift) : ≤±0.3% range
- ◇ Temperature:
- Medium temperature: -20... 85°C
- Ambient temperature: -20... 80°C
- Storage temperature: -30... 80°C
- ◇ Material:
- Watch head housing: engineering plastic
- Flame retardant class: UL-94 V-0
- Housing: stainless steel 304
- Medium contact part: stainless steel 316
- ◇ Protection grade: IP67
- ◇ Outlet: M12x1 connector

Panel diagram



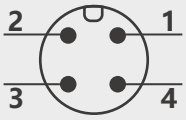
Wiring diagram

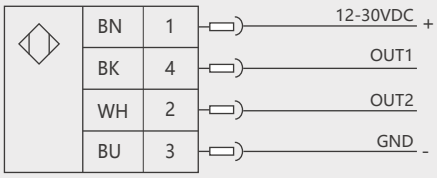




A3: Two way switch + one way analog

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

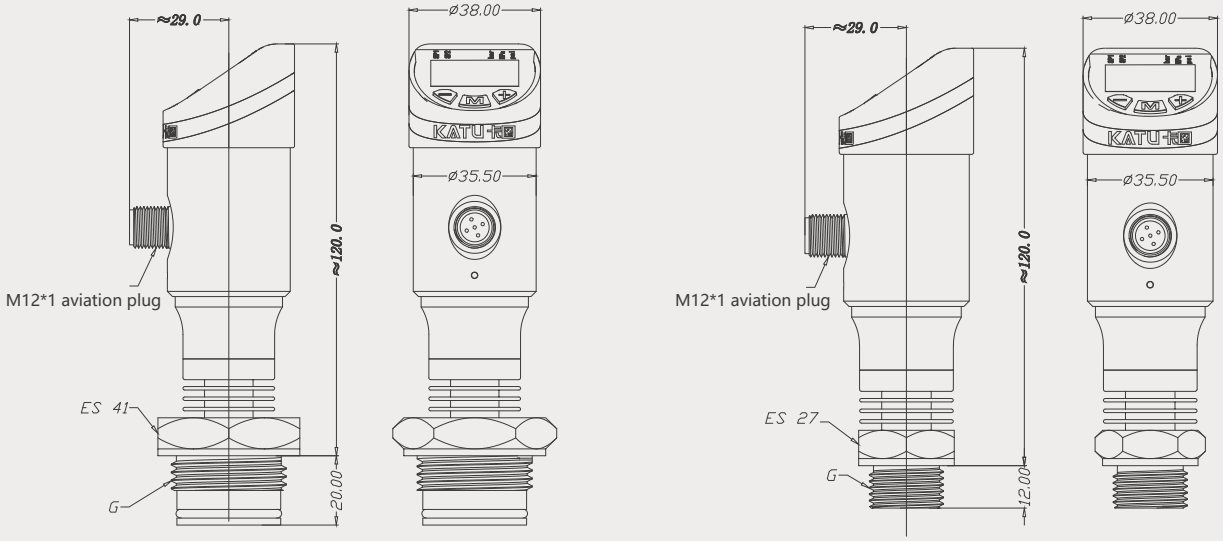
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	4-20mA (Factory default) 1-5V 0-10V

RS: RS485

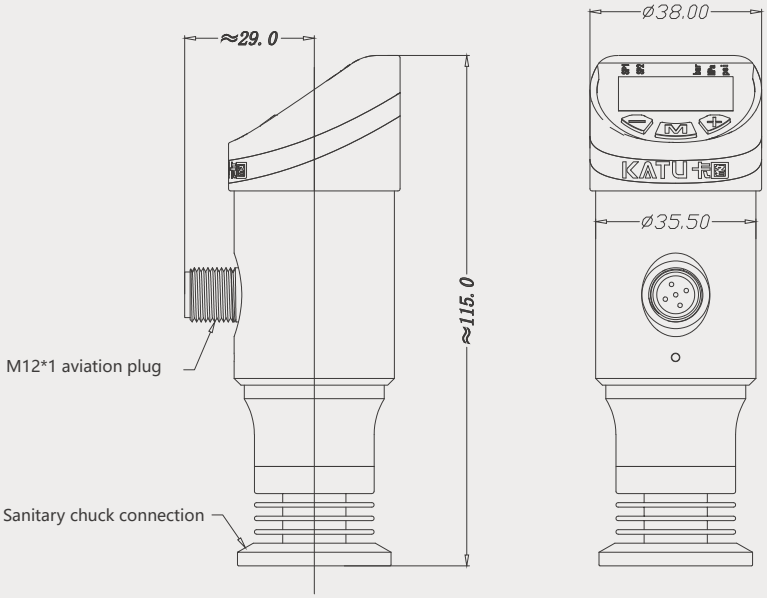
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	RS485(B)	WH	2 (OUT2)	RS485(A)

Size drawing (mm)

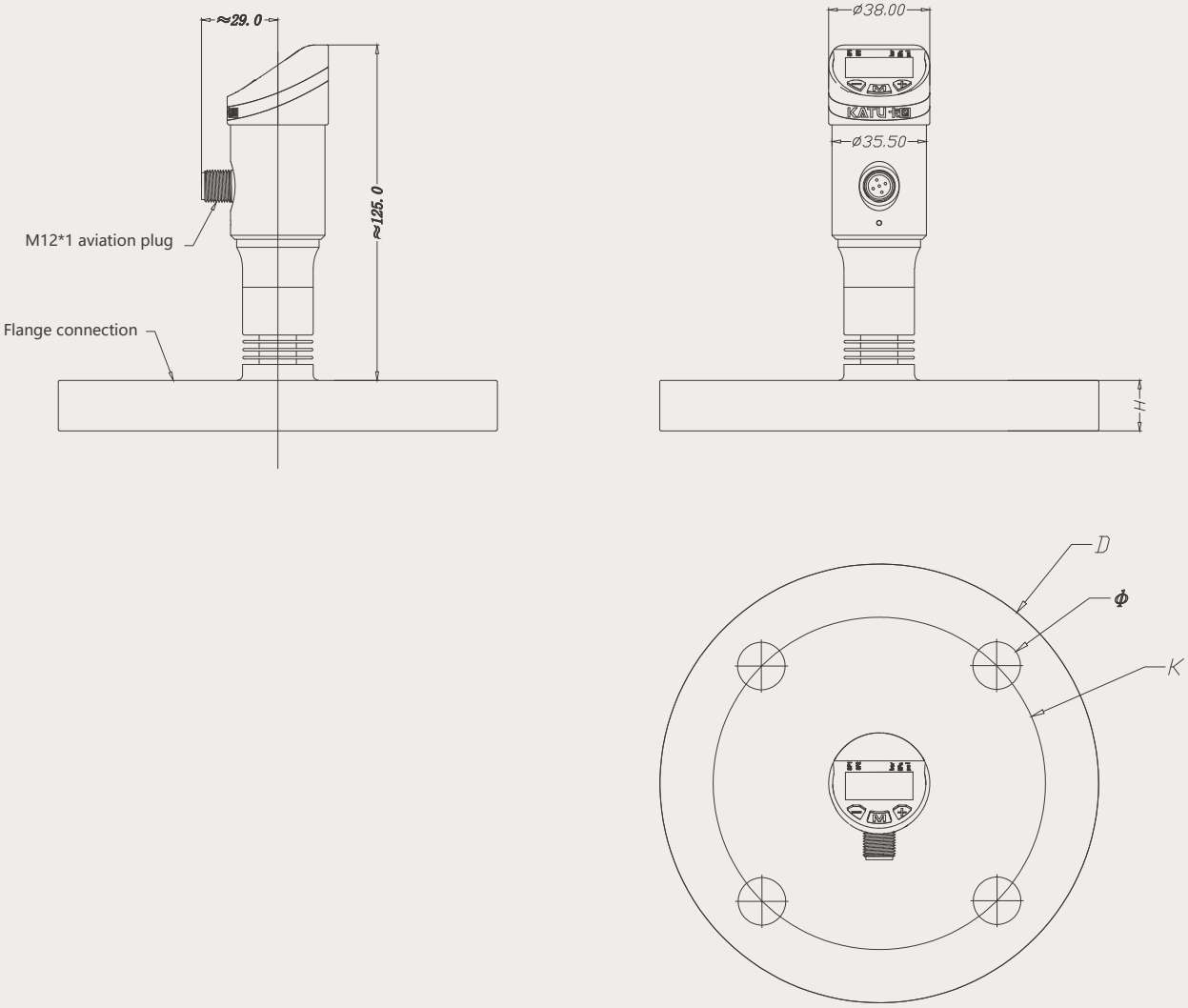
■ Threaded connection



■ Sanitary chuck connection



■ Flange connection

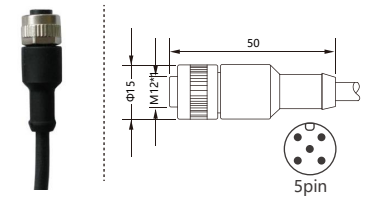
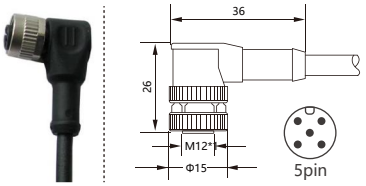


Model number	Nominal diameter	Nominal pressure	Flange outside diameter D	Distance between centers K	aperture ϕ	Hole number N（个）	thickness H
D15	DN15	1.6MPa	95	65	14	4	14
D15A	DN15	4MPa	95	65	14	4	14
D25	DN25	1.6MPa	115	85	14	4	16
D25A	DN25	4MPa	115	85	14	4	16
D50	DN50	1.6MPa	165	125	18	4	19
D50A	DN50	4MPa	165	125	18	4	20
D80	DN80	1.6MPa	200	160	18	8	20
D80A	DN80	4MPa	200	160	18	8	24

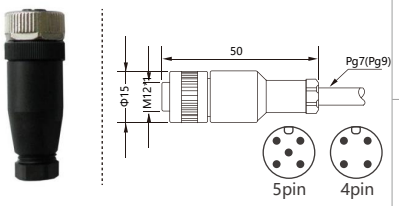
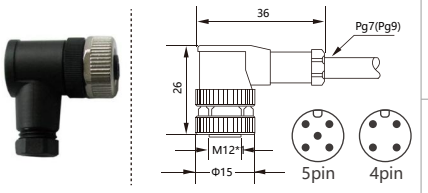
Selection list

PS501-	B	002	G12E	S2	-	-	expatiate
PS501-							PS501 flat film type electronic pressure sensor
	B						Manometer pressure
	F						Negative pressure
		0001					Measuring range: -10... 10KPa or 0... 10KPa
		0006					Measuring range: -60... 60KPa or 0... 60KPa
		001					Measuring range: -1... 1bar or 0... 1bar
		002					Measuring range: -1... 2bar or 0... 2bar
		005					Measuring range: -1... 5bar or 0... 5bar
		010					Measuring range: -1... 10bar or 0... 10bar
		025					Measuring range: 0... 25bar
		060					Measuring range: 0... 60bar
			G12E				Process connection: G1/2 external thread, flush film ED seal
			G12S				Process connection: G1/2 external thread, flush film double seal
			G12U				Process connection: G1/2 external thread, concave flat film ED seal
			G34E				Process connection: G3/4 external thread, flush film ED seal
			G34S				Process connection: G3/4 external thread, flush film double seal
			G34U				Process connection: G3/4 external thread, concave flat film ED seal
			G1E				Process connection: G1 external thread, flush film ED seal
			G1S				Process connection: G1 external thread, flush film double seal
			G1U				Process connection: G1 external thread, concave flat film ED seal
			M20E				Process connection: M20*1.5 external thread, flush film ED seal
			M20S				Process connection: M20*1.5 external thread, flush film double seal
			M20U				Process connection: M20*1.5 external thread, concave flat film ED seal
			H34				Process connection: Sanitary chuck connection 1/2" (OD 34mm)
			H50				Process connection: Sanitary chuck connection 1.5" (OD 50.5mm)
			H64				Process connection: Sanitary chuck connection 2" (OD 64mm)
			D15				Process connection: Flange connection diameter DN15 (nominal pressure 1.6MPa)
			D15A				Process connection: Flange connection diameter DN15 (nominal pressure 4MPa)
			D25				Process connection: Flange connection diameter DN25 (nominal pressure 1.6MPa)
			D25A				Process connection: Flange connection diameter DN25 (nominal pressure 4MPa)
			D50				Process connection: Flange connection diameter DN50 (nominal pressure 1.6MPa)
			D50A				Process connection: Flange connection diameter DN50 (nominal pressure 4MPa)
			D80				Process connection: Flange connection diameter DN80 (nominal pressure 1.6MPa)
			D80A				Process connection: Flange connection diameter DN80 (nominal pressure 4MPa)
				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)
					-		No anti-corrosion requirement
					PA		Liquid material: spray PFA
					PE		Liquid material: PTFE sprayed
						-	Medium temperature: -20... 80℃ (standard type)
						H	Medium temperature: -40... 150℃ (high temperature type)

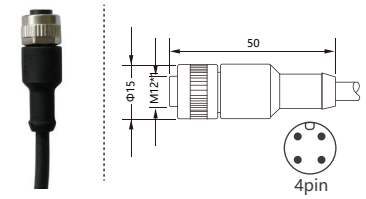
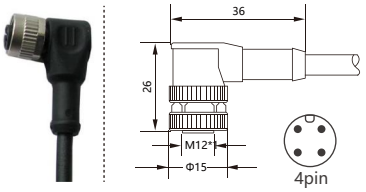
Optional accessories - electrical accessories

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

Factory standard:ZL05-PC02G

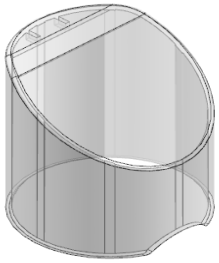
M12* 1-4pin /5Pin self-connector/size drawing（mm）	model
	GL04 (4Pin joint)
	GL05 (5Pin joint)
	WL04 (4Pin joint)
	WL05 (5Pin joint)

Optional accessories - Protective cover

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

Factory standard:ZL04-PC02G

500 Series(switch) Sensor protection cover



Order number: KTCS33662

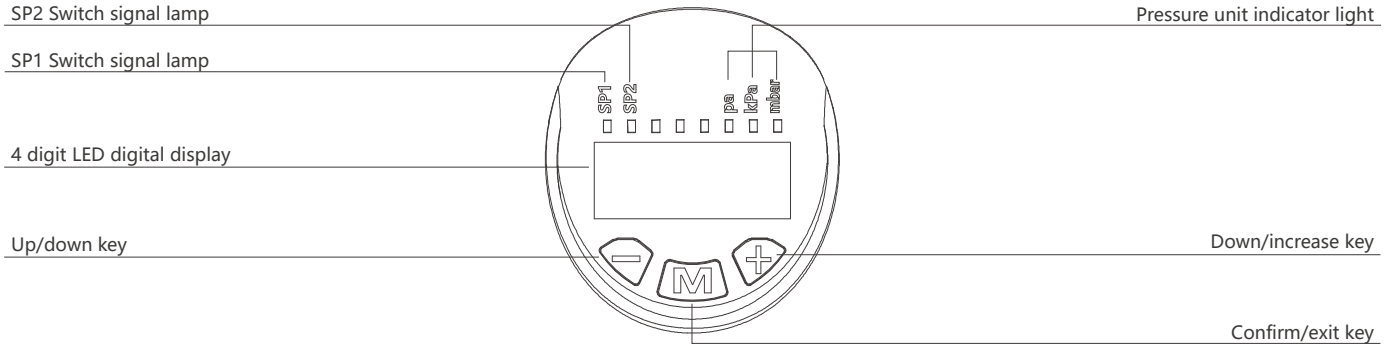
Principle structure

Pressure measurement is carried out using a varistor sensor. The signal is processed by the post-processing circuit and then converted into a standard industrial electrical signal for output and display. The all-metal casing design and the use of high-brightness LED digital display enable this series of products to be applied in various industrial Settings. The three-key design and menu make the product more convenient to use, and multiple connection methods can fully meet various specific installation requirements. This device, which can rotate 330°, ensures the best viewing Angle under different installation methods.

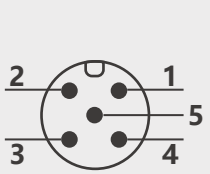
Technical parameter

◇ Supply voltage: 12... 30Vdc	◇ Stability (annual drift) : ≤±0.3% range
◇ No-load current consumption: Maximum 40mA, powered by 24Vdc	Overload pressure: Full scale *3
◇ Switch output:	◇ Temperature
Output type: PNP/NPN switchable, normally open/normally closed adjustable	Medium temperature: -20... 85°C
Switching load: <200mA /24VDC	Ambient temperature: -20... 80°C
Response time: 0.01 to 2 seconds (factory default)	Storage temperature: -30... 80°C
Switch accuracy: ≤±0.5% range	◇ Materials:
Current-type analog output: ≤±0.5% range	Meter head housing: Engineering plastic
Output type: 4... 20mA/1-5V/0-10V can be set	Flame retardant grade: UL-94 V-0
◇ Load RA: ≤500Ω	Shell: Stainless steel 304
◇ Linearity: 1.5% F.S.	Medium contact part: Stainless steel 304
◇ Communication output: IO-Link/RS485	◇ Protection grade: IP67
◇ Wiring protection: Reverse phase, overload, short circuit protection	◇ Cable exit method: M12x1 connector
◇ Display:	
Design: Red 4-digit 12mm high-brightness LED	
Display range: -1999... 9999	
Accuracy: ≤±0.5% range	

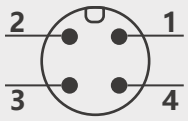
Panel diagram

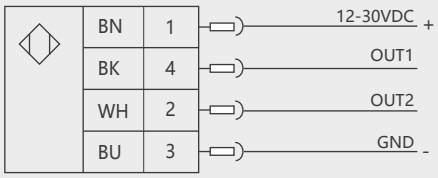


Wiring diagram



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			





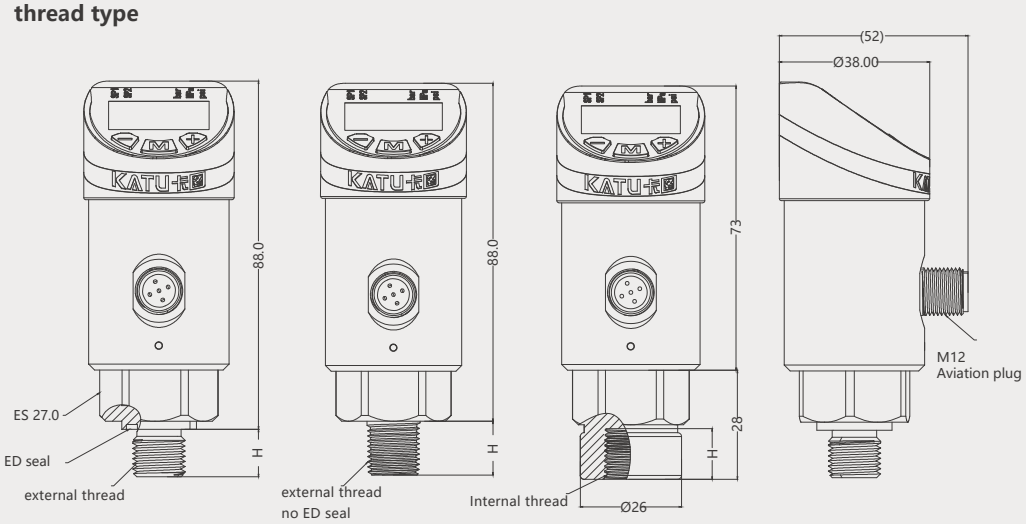
S2: Two-way switch/IO-Link					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

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)

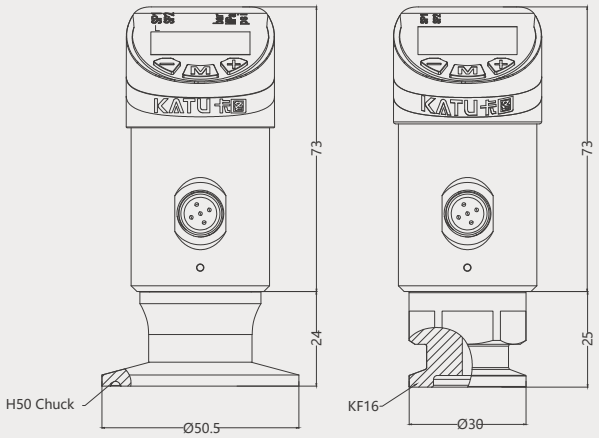
Dimensional drawing (mm)

thread type



Screw thread		Thread height(H)	seal
external thread	G1/4	12	Sealed with ED
	G1/2	12	
	M20*1.5	12	
	R1/4	14	No ED seal
	R1/2	14	
	NPT1/4	14	
Internal thread	R1/4	13	
	G1/4	13	

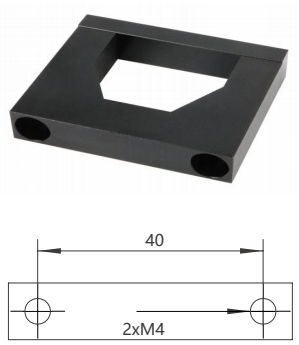
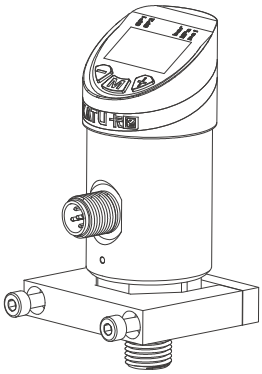
Chuck type



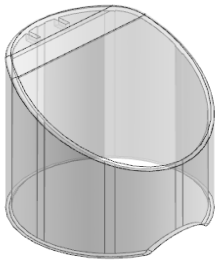
Selection table

PS502-	01	G14M	S2	Detailed description
PS502-				PS502 series Electronic micro-pressure sensor
	01			Measurement range: 1 KPa
	03			Measurement range: 3 KPa
	07			Measurement range: 7 KPa
		G14M		Process connection: G1/4 external thread
		G12M		Process connection: G1/2 external thread
		G14K		Process connection: G1/4 internal thread
		N14M		Process connection: NPT1/4 external thread
		R12M		Process connection: R1/2 external thread
		R14M		Process connection: R1/4 external thread
		M20M		Process connection: M20*1.5 external thread
		KP50		Process connection: 1.5-inch (outer diameter 50.5mm) metal flat film type chuck (standard pressure resistance 1.6MPa)
		KF16		Process connection: KF16 vacuum chuck type
			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)

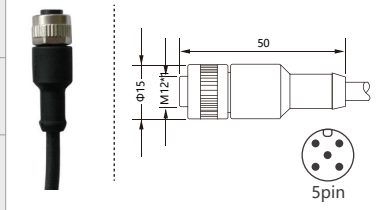
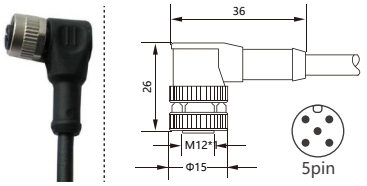
Optional accessories-FA027

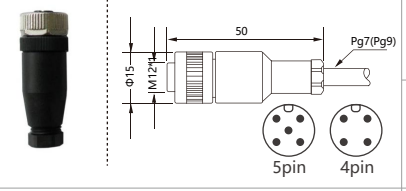
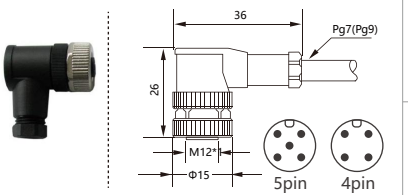
Outline drawing/dimension drawing (mm)	Installation effect drawing
	

Optional accessories - Protective cover

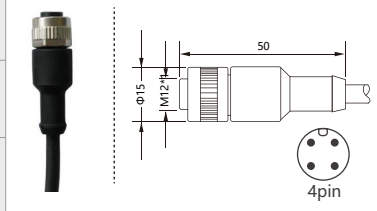
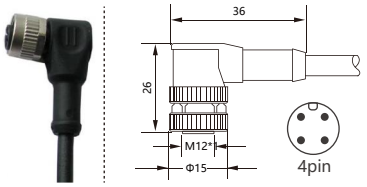
500 Series(switch) Sensor protection cover
 Order number: KTCS33662

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	
			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (2m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (5m cable)			ZL05-PU05W	
M12*1-5Pin (10m cable)			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

M12*1-4Pin/5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL04 (4 Pin connector) GL05 (4 Pin connector)
	WL04 (4 Pin connector) WL05 (5 Pin connector)

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	
		PVC	ZL04-PC02G	
			ZL04-PC05G	
			ZL04-PC010G	
M12*1-4Pin (2m cable)		PUR	ZL04-PU02W	
M12*1-4Pin (5m cable)			ZL04-PU05W	
M12*1-4Pin (10m cable)			ZL04-PU010W	
		PVC	ZL04-PC02W	
			ZL04-PC05W	
			ZL04-PC010W	

Principle structure

The ceramic piezoresistive sensor is used for pressure measurement, and the signal is converted into a standard industrial electrical signal after processing by a post-processing circuit and displayed. The all-metal housing design, with a high-light LED digital display, enables the series to be used in a variety of industrial applications. The three-button design and menu make the product more convenient to use, and a variety of connection methods can fully meet various specific installation needs. The 330° rotating device guarantees the best viewing Angle in different mounting modes.

Flat film ceramic chuck type

Flat film thread ceramic type

Technical parameter

- ◇ 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: <200mA /24VDC

Response time: 0.01~2s (Factory default)

Switching accuracy: ≤±0.5% range

Current model analog output: ≤±0.5% range

Output type: 4-20mA/1-5V/0-10V can be set

Load RA: ≤500Ω

Linearity: ≤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: ≤±0.5% range
- ◇ Stability (annual drift) : ≤±0.3% range
- ◇ Temperature:

Medium temperature: -20... 85 ° c.

Ambient temperature: -20... 80 ° c.

Storage temperature: -30... 80 ° c.

- ◇ Materials:

Case: engineering plastic

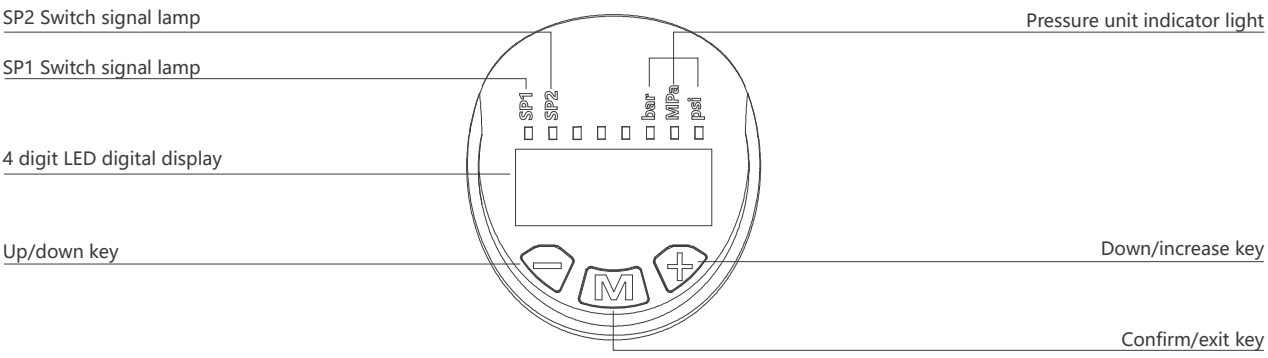
Flame retardant grade: UL-94 V-0

Housing: stainless steel 304

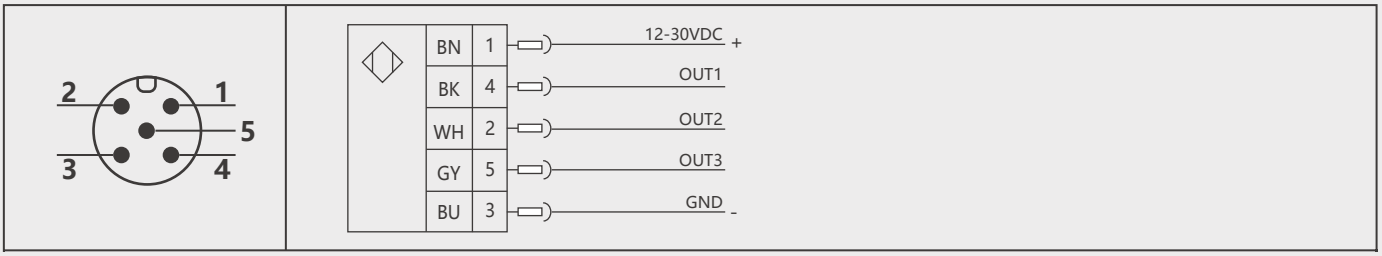
Medium contact part: stainless steel 304

- ◇ Protection level: IP67
- ◇ Outlet mode: M12x1 connector
- ◇ Sealing material: perfluoroether

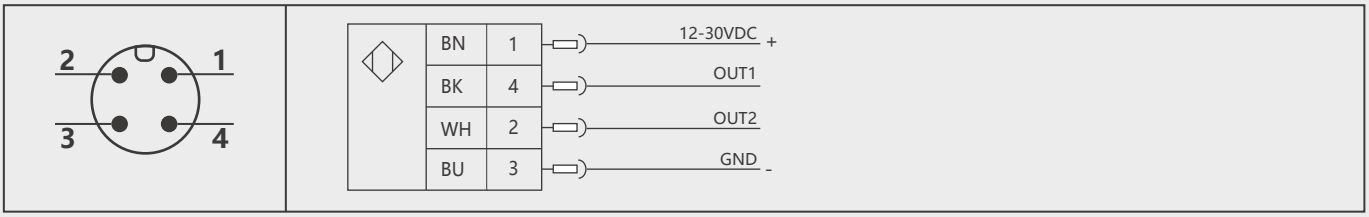
Panel diagram



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			

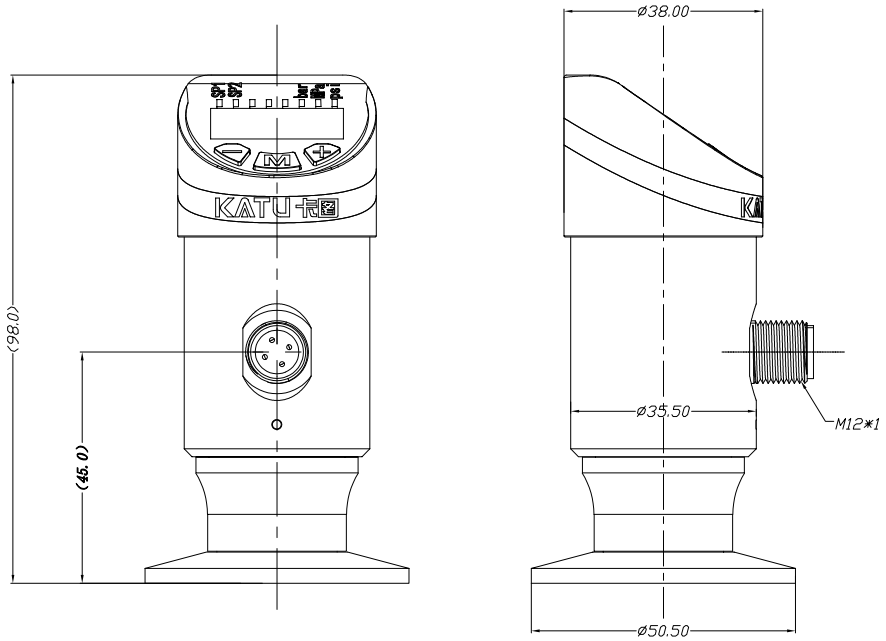


S2: Two-way switch/IO-Link					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

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)

Dimensional drawing (mm)



Parameter list

Pressure range	bar	1	2	5	10	16	25	60
	psi	15	30	75	145	230	370	900
Maximum overload pressure		×5			×3			×2
Minimum failure pressure		×6			×4			×3

Selection table

PS530-	B	0001	M22T	SA	detail
PS530-					PS530 ceramic piezoresistive electronic digital display pressure sensor
	B				Gauge pressure
	F				Negative pressure
		0001			Measuring range:-10...10KPa or 0...10KPa
		0006			Measuring range:-60...60KPa or 0...60KPa
		001			Measuring range:-1...1bar or 0...1bar
		002			Measuring range:-1...2bar or 0...2bar
		005			Measuring range:-1...5bar or 0...5bar
		010			Measuring range:0...10bar
		025			Measuring range:0...25bar
		060			Measuring range:0...60bar
			G1M		Flat film type: G1 external thread
			M22T		Flat film type: M22*1.5 external thread
			KT50		Flat film type: Chuck connection (OD 50.5mm)
				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)

Display:
Beautiful streamline design, to meet the aesthetic sense of work.
Using flame retardant grade material,
Flame retardant grade up to: UL-94 V-0

PCB bracket:
Modular optimization design,
High insulation to ensure leakage of equipment
Damage to the sensor

PCB main control circuit:
Using a 24-bit microprocessor,
Ensure the rapid measurement and measure-ment accuracy of the data,
EMC optimized design,
Meet 8kv static harsh conditions

Body:
Stainless steel material
Strong and durable

Electrical connection:
M12 International General Aviation Plug,
Very convenient, practical and easy to maintain electrical connection,
The cable length can be configured according to different working conditions

Rotating connecting rod:
Support 330° electrical outlet direction adjustment,
Working condition application line flexible,
Stainless steel material

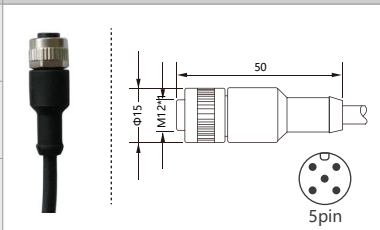
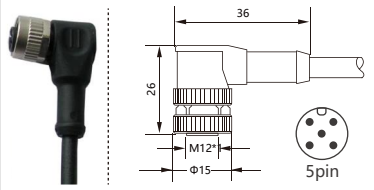
Pressure fasteners:
Stainless steel material
Solid and reliable

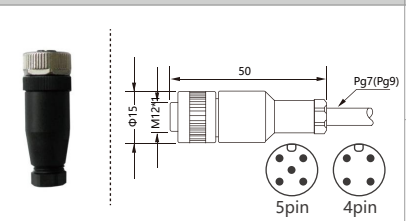
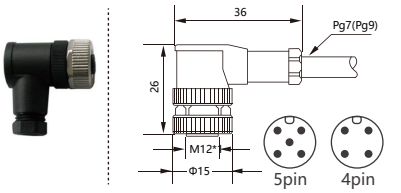
Measuring elements:
Ceramic encapsulation oil prohibition process,
Dry type without secondary pollution risk

Dielectric seals:
Super seal
Electrolyte immersion invisible change

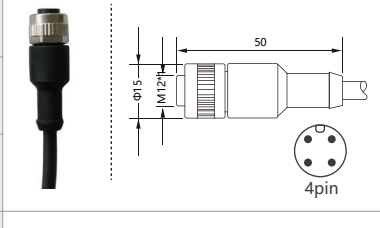
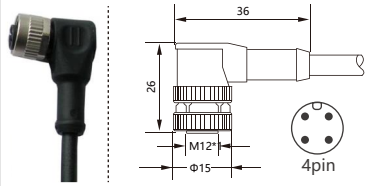
Process connection:
Stainless steel quick chuck
Easy maintenance

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	
			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (2m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (5m cable)			ZL05-PU05W	
M12*1-5Pin (10m cable)			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

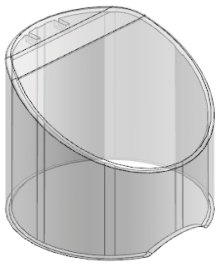
M12*1-4Pin/5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL04 (4 Pin connector)
	GL05 (4 Pin connector)
	WL04 (4 Pin connector)
	WL05 (5 Pin connector)

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	
		PVC	ZL04-PC02G	
			ZL04-PC05G	
			ZL04-PC010G	
M12*1-4Pin (2m cable)		PUR	ZL04-PU02W	
M12*1-4Pin (5m cable)			ZL04-PU05W	
M12*1-4Pin (10m cable)			ZL04-PU010W	
		PVC	ZL04-PC02W	
			ZL04-PC05W	
			ZL04-PC010W	

Optional accessories - Protective cover

500 Series(switch) Sensor protection cover



Order number: KTCS33662

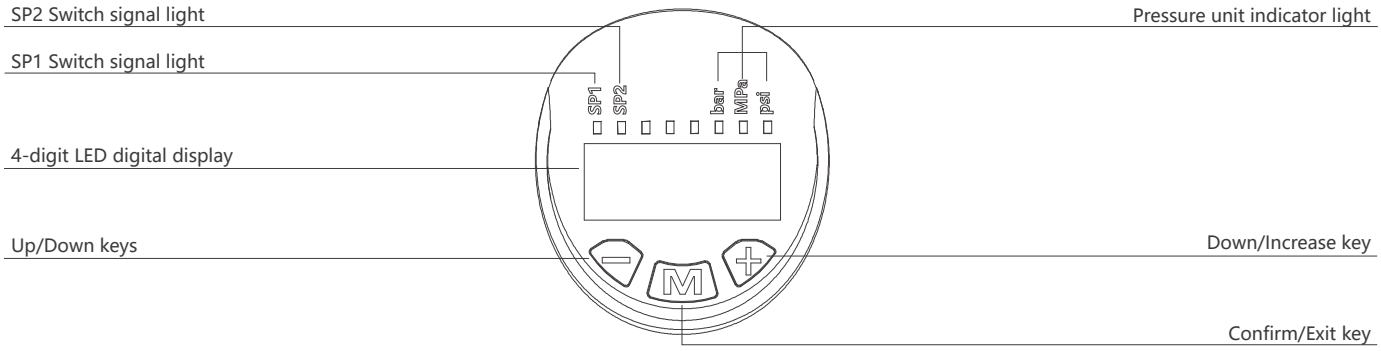
Technical parameters

- ◇ Supply voltage: 12... 30Vdc
- No-load current consumption: Maximum 40mA, powered by 24Vdc
- ◇ Switch output:
- Output type: PNP/NPN switchable, normally open/normally closed adjustable
- Switching load: <200mA /24VDC
- Response time: 0.01 to 2 seconds (factory default)
- Switch accuracy: ≤±0.5% range
- Current-type analog output: ≤±0.5% range
- Output type: 4-20mA/1-5V/0-10V can be set
- Load RA: ≤500Ω
- Linearity: ≤0.5% range
- ◇ Communication output: IO-Link/RS485
- ◇ Wiring protection: Reverse phase, overload, short circuit protection
- ◇ Display:
- Design: Red 4-digit 12mm high-brightness LED
- Display range: -1999... 9999
- Accuracy: ≤±0.5% range
- ◇ Stability (annual drift) : ≤±0.3% range
- ◇ Temperature
- Medium temperature: -20... 85°C
- Ambient temperature: -20... 80°C
- Storage temperature: -30... 80°C
- ◇ Materials:
- Meter head housing: Engineering plastic
- Flame retardant grade: UL-94 V-0
- Shell: Stainless steel 304
- Medium contact part: Stainless steel 304
- ◇ Protection grade: IP67
- ◇ Cable exit method: M12x1 connector

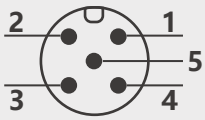
Principle structure

Pressure measurement is carried out using strain gauge sensing cores. The signal is processed by the post-processing circuit and then converted into a standard industrial electrical signal for output and display. The all-metal casing design and the use of high-brightness LED digital display enable this series of products to be applied in various industrial Settings. The three-key design and menu make the product more convenient to use, and multiple connection methods can fully meet various specific installation requirements. This device, which can rotate 330°, ensures the best viewing Angle under different installation methods. It adopts a diaphragm structure and is highly suitable for viscous media containing particles and with significant wear.

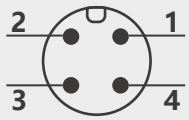
面Panel schematic diagram板示意图

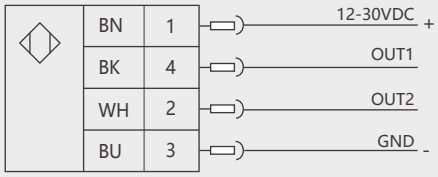


Wiring diagram



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			





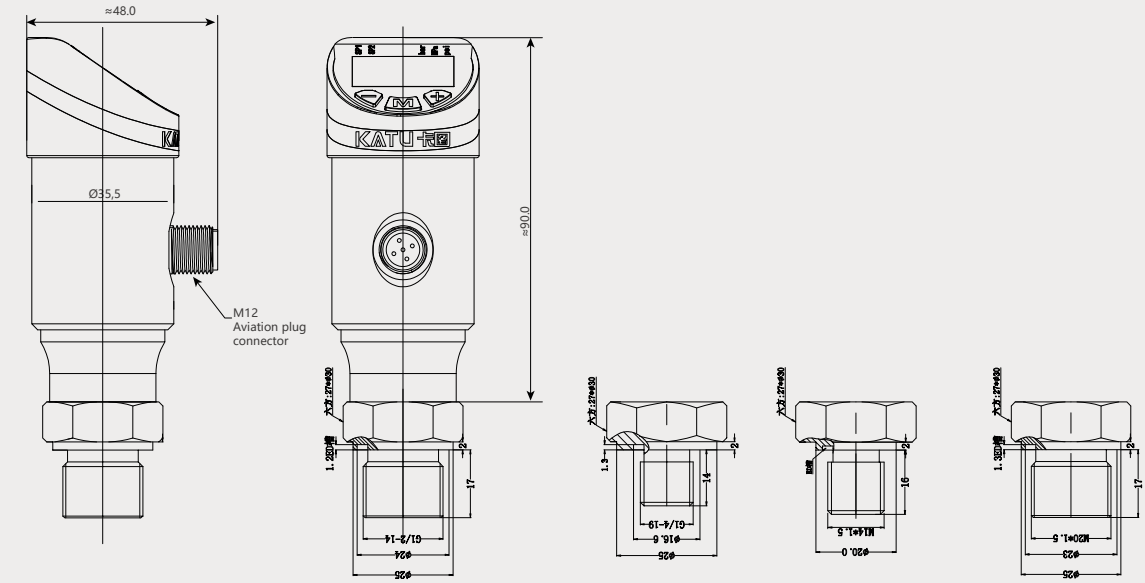
S2: Two-way switch/IO-Link					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

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

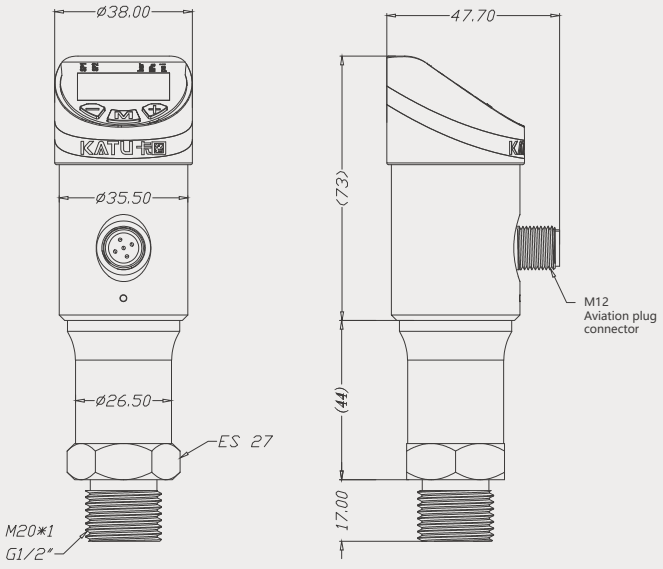
RS: RS485					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	RS485(B)	WH	2 (OUT2)	RS485(A)

Dimension drawing (mm)

< 600bar external dimension



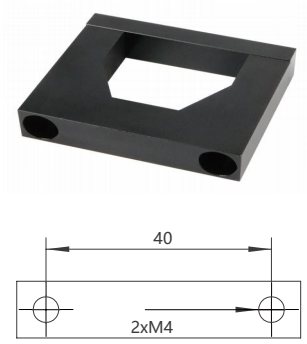
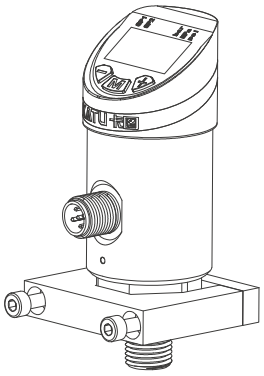
≥600bar external dimension



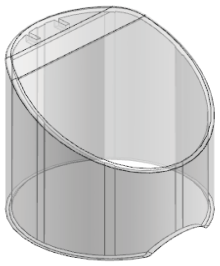
Selection Table

PS540-	B	100	G14M	S2	Detailed description
PS540-					PS540 Strain and high-pressure resistant electronic pressure sensor
	B				Gauge pressure
		060			Measurement range: 0... 60bar
		100			Measurement range: 0... 100bar
		160			Measurement range: 0... 160bar
		250			Measurement range: 0... 250bar
		400			Measurement range: 0... 400bar
		600			Measurement range: 0... 600bar
		1000			Measurement range: 0... 1000bar
		1500			Measurement range: 0... 1500bar
		2000			Measurement range: 0... 2000bar
		2500			Measurement range: 0... 2500bar
			G14M		Process connection: G1/4 external thread
			G12M		Process connection: G1/2 external thread
			G12S		Process connection: G1/2 external thread + pre-sealing
			M20M		Process connection: M20*1.5 external thread
			M20S		Process connection: M20*1.5 external thread + front seal
				S2	Output signal: Two switch outputs /IO-link (4-core cable)
				SA	Output signal: One switch output /IO-link+ analog output (4-core cable)
				A3	Output signal: Two switch outputs + analog output (5-core cable)
				RS	Output signal: RS485 communication (4-core cable)

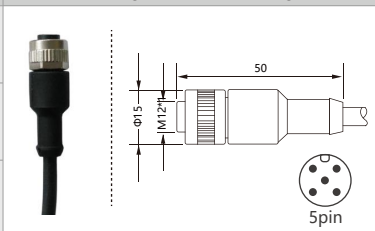
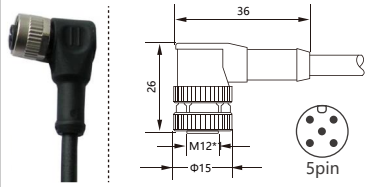
Optional accessories-FA027

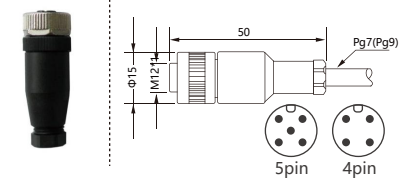
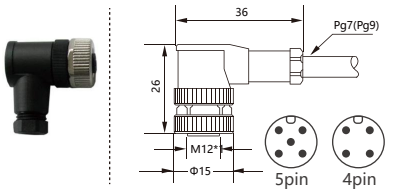
Outline drawing/dimension drawing (mm)	Installation effect drawing
	

Optional accessories - Protective cover

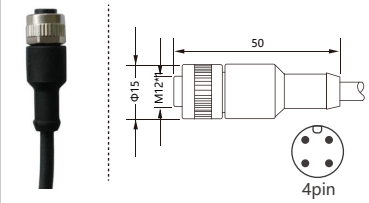
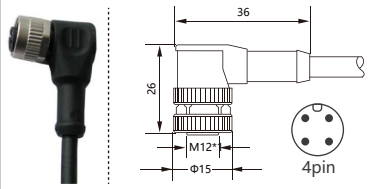
500 Series(switch) Sensor protection cover
 Order number: KTCS33662

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	
			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (2m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (5m cable)			ZL05-PU05W	
M12*1-5Pin (10m cable)			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

M12*1-4Pin/5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL04 (4 Pin connector)
	GL05 (4 Pin connector)
	WL04 (4 Pin connector)
	WL05 (5 Pin connector)

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	
		PVC	ZL04-PC02G	
			ZL04-PC05G	
			ZL04-PC010G	
M12*1-4Pin (2m cable)		PUR	ZL04-PU02W	
M12*1-4Pin (5m cable)			ZL04-PU05W	
M12*1-4Pin (10m cable)			ZL04-PU010W	
		PVC	ZL04-PC02W	
			ZL04-PC05W	
			ZL04-PC010W	

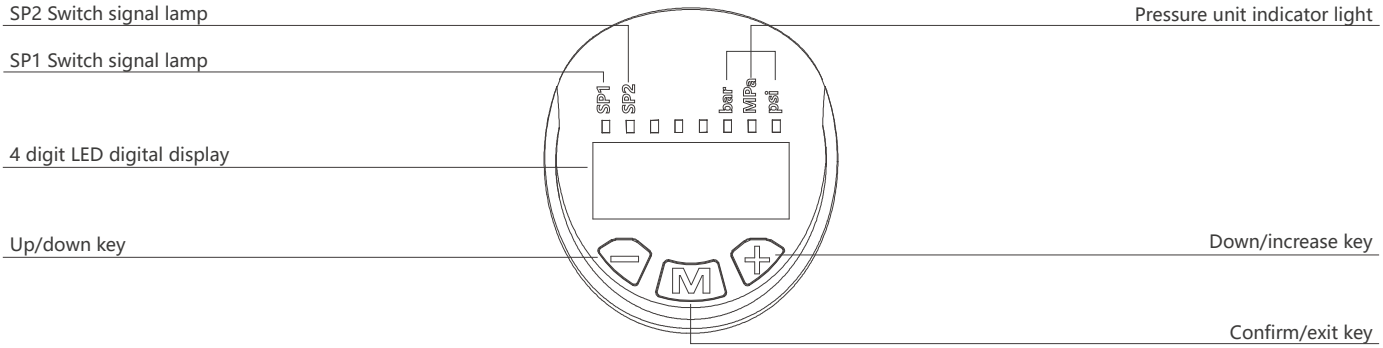
Technical parameter

- ◇ 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
- Switching load: <200mA /24VDC
- Response time: 0.01~2s (factory default)
- Switching accuracy: ≤±0.5% range
- ◇ Current type analog output: ≤±0.5% range
- Output type: 4-20mA/1-5V/0-10V Configurable
- Load RA: ≤500Ω
- Linearity: ≤0.5% range
- ◇ Communication output: IO-Link/RS485
- ◇ Wiring protection: reverse phase, overload, short circuit protection
- ◇ Display:
- Design: Red 4-bit 12mm high brightness LED
- Display range: -1999... 9999
- ◇ Accuracy: ≤±0.5% range
- ◇ Stability (annual drift) : ≤±0.3% range
- ◇ Temperature:
- Medium temperature: -20... 85°C
- Ambient temperature: -20... 80°C
- Storage temperature: -30... 80°C
- ◇ Material:
- Watch head housing: engineering plastic
- Flame retardant class: UL-94 V-0
- Housing: stainless steel 304
- Medium contact part: stainless steel 304
- ◇ Protection grade: IP67
- ◇ Outlet: M12x1 connector

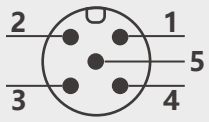
Principle structure

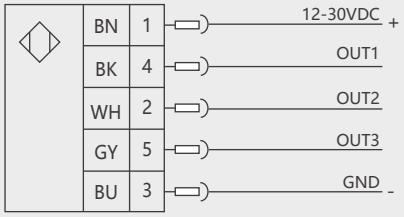
The strain sensor core is used to measure the pressure, and the signal is converted into a standard industrial electrical signal after processing by a post-processing circuit and displayed. The all-metal housing design, with a high-light LED digital display, enables the series to be used in a variety of industrial applications. The three-button design and menu make the product more convenient to use, and a variety of connection methods can fully meet various specific installation needs. The 330° rotating device guarantees the best viewing Angle in different mounting modes. With diaphragm structure, it is very suitable for viscous media containing particles and large wear.

Panel diagram

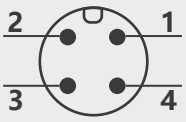


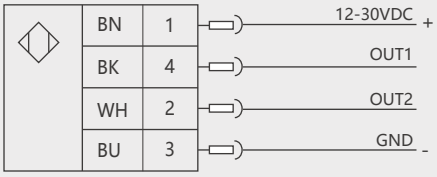
Wiring diagram





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			





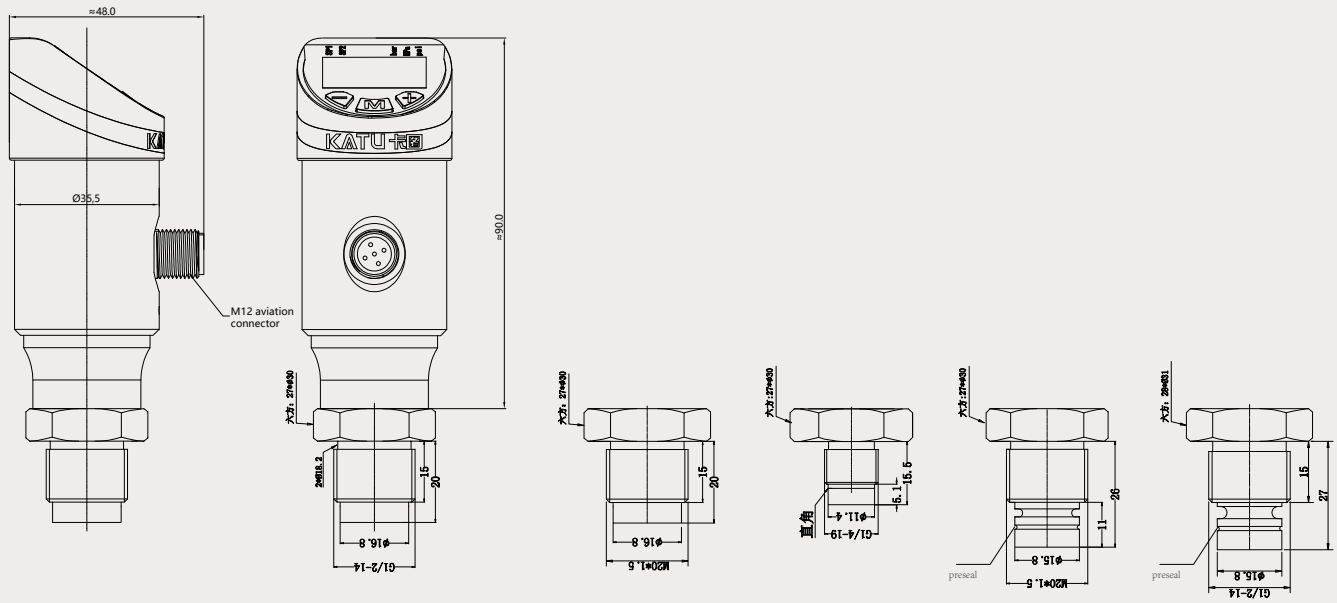
S2: Two-way switch/IO-Link					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

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)

Dimension drawing (mm)

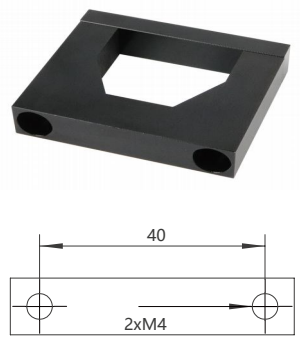
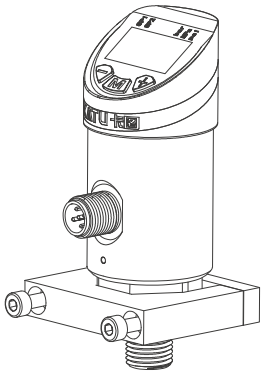
< 600bar Apparent dimension



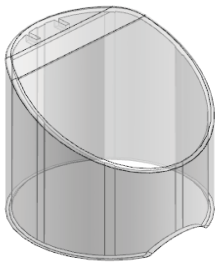
Selection list

PS541-	B	100	G14M	S2	expatiate
PS541-					PS541 Strain type high pressure resistant electronic pressure sensor
	B				Manometer pressure
		060			Measuring range: 0... 60bar
		100			Measuring range: 0... 100bar
		160			Measuring range: 0... 160bar
		250			Measuring range: 0... 250bar
		400			Measuring range: 0... 400bar
		600			Measuring range: 0... 600bar
		1000			Measuring range: 0... 1000bar
			G14M		Process connection: G1/4 external thread
			G12M		Process connection: G1/2 external thread
			G12S		Process connection: G1/2 external thread + pre-seal
			M20M		Process connection: M20*1.5 external thread
			M20S		Process connection: M20*1.5 external thread + pre-seal
				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)

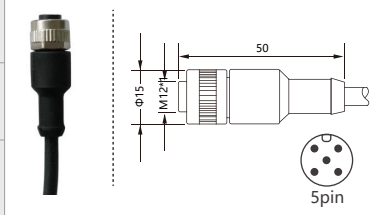
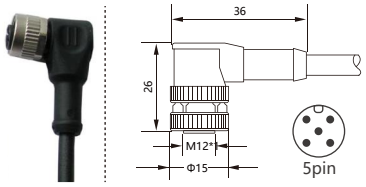
Optional accessories-FA027

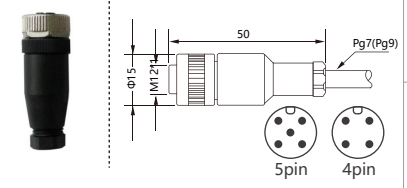
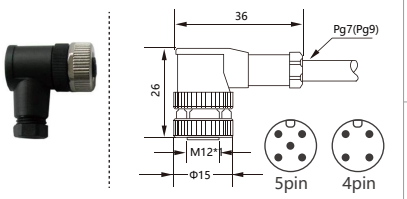
Outline drawing/dimension drawing (mm)	Installation effect drawing
	

Optional accessories - Protective cover

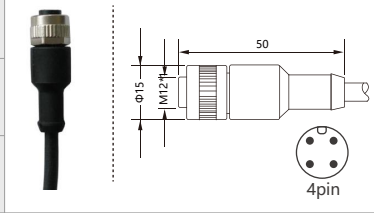
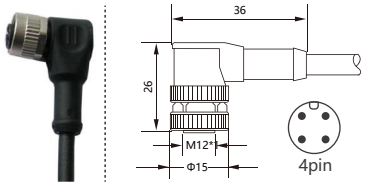
500 Series(switch) Sensor protection cover
 Order number: KTCS33662

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	
			ZL05-PC05G	
			ZL05-PC010G	
M12*1-5Pin (2m cable)		PUR	ZL05-PU02W	
M12*1-5Pin (5m cable)			ZL05-PU05W	
M12*1-5Pin (10m cable)			ZL05-PU010W	
		PVC	ZL05-PC02W	
			ZL05-PC05W	
			ZL05-PC010W	

M12*1-4Pin/5Pin self-connector/Dimensions (Unit :mm)	Model number
	GL04 (4 Pin connector)
	GL05 (4 Pin connector)
	WL04 (4 Pin connector)
	WL05 (5 Pin connector)

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	
		PVC	ZL04-PC02G	
			ZL04-PC05G	
			ZL04-PC010G	
M12*1-4Pin (2m cable)		PUR	ZL04-PU02W	
M12*1-4Pin (5m cable)			ZL04-PU05W	
M12*1-4Pin (10m cable)			ZL04-PU010W	
		PVC	ZL04-PC02W	
			ZL04-PC05W	
			ZL04-PC010W	


Standard ED sealed type


Flat seal threaded type


Blocking hole G1/2 thread type


External taper seal

Principle structure

The diffused silicon sensor is used for pressure measurement, and the signal is processed by a post-processing circuit and converted into a standard industrial electrical signal for output and display. The all-metal casing design, with a highlighted LED digital display, enables the product line to be used in a variety of industrial applications. The three-button design and menu make the product more convenient to use, and a variety of connection methods can fully meet various specific installation needs. The device, which can rotate at 330°, guarantees the best viewing Angle in different mounting modes.

Technical parameter

- ◇ 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: <200mA /24VDC

Response time: 0.01~2s (Factory default)

Switching accuracy: ≤±0.5% range

Current model analog output: ≤±0.5% range

Output type: 4-20mA/1-5V/0-10V can be set

Load RA: ≤500Ω

Linearity: ≤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: ≤±0.5% range
- ◇ Stability (annual drift) : ≤±0.3% range
- ◇ Temperature:

Medium temperature: -20... 85 ° c.

Ambient temperature: -20... 80 ° c.

Storage temperature: -30... 80 ° c.

- ◇ Materials:

Case: engineering plastic

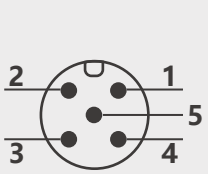
Flame retardant grade: UL-94 V-0

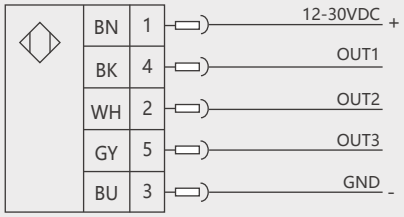
Housing: stainless steel 304

Medium contact part: stainless steel 304

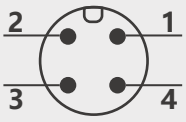
- ◇ Protection level: IP67
- ◇ Outlet mode: M12x1 connector

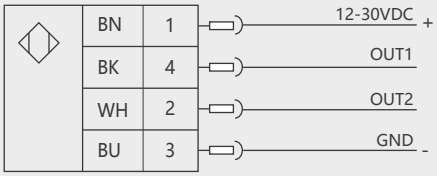
Wiring diagram





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			





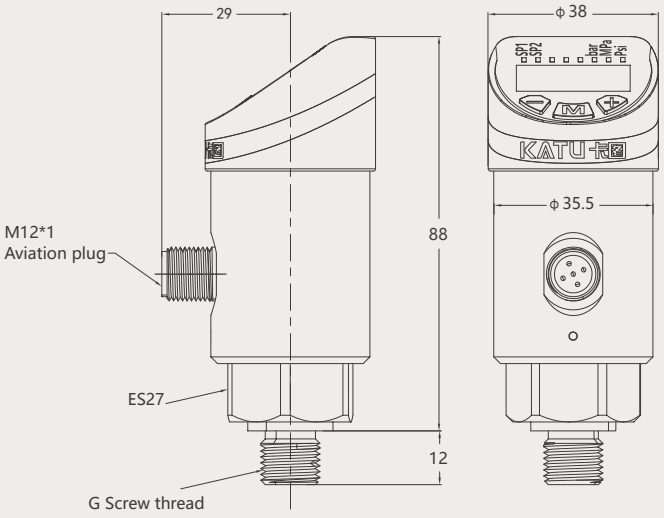
S2: Two-way switch/IO-Link					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	SP1 switch PNP (Factory default) SP1 switch NPN IO-Link	WH	2 (OUT2)	SP2 switch PNP (Factory default) SP2 switch NPN

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

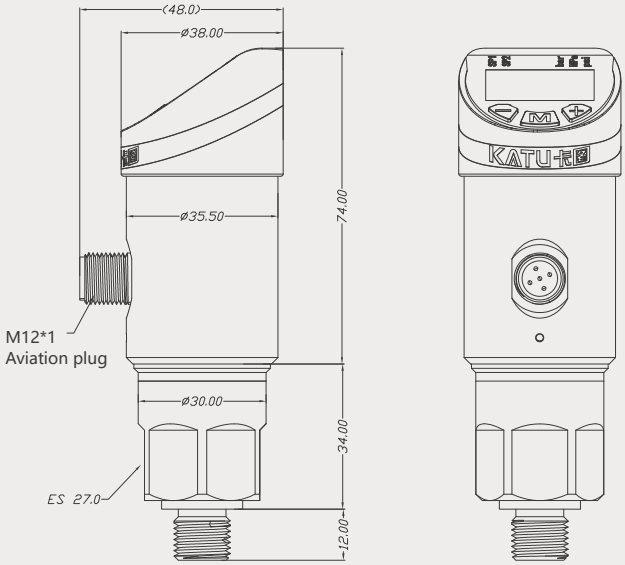
RS: RS485					
color	stitch	Instructions	color	stitch	Instructions
BN	1	power supply (+)	BU	3	power supply (-)
BK	4 (OUT1)	RS485(B)	WH	2 (OUT2)	RS485(A)

Dimensional drawing (mm)

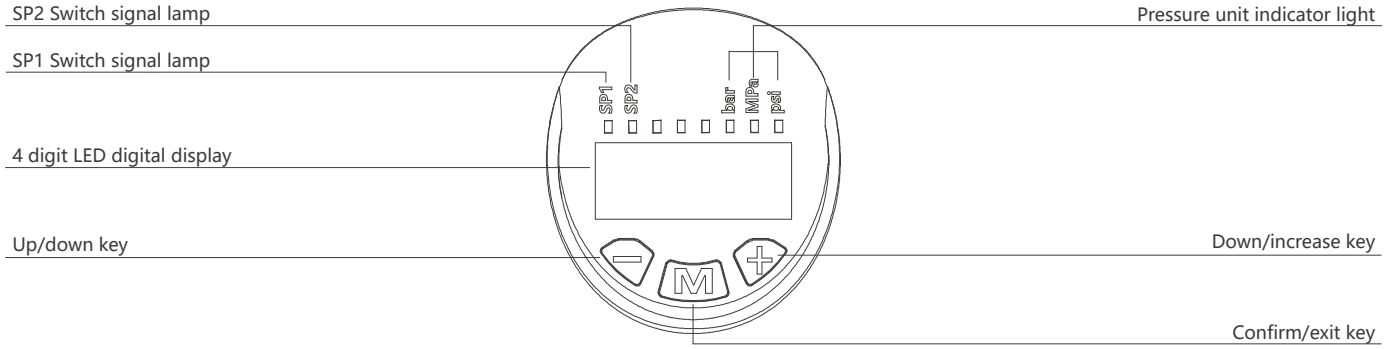
< 600bar



600bar



Panel diagram



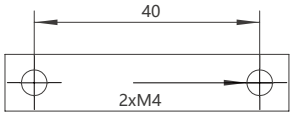
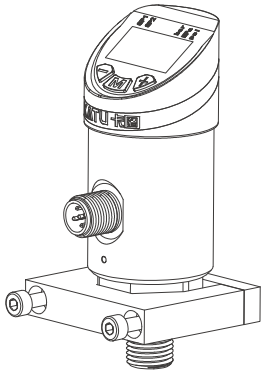
Parameter list

Pressure range	bar	100	160	250	400	600	1000	1500	2000
	psi	1500	2300	3600	6000	9000	14500	21800	29000
Max overload pressure		×2		×1.5		×1.3	×1.2		
Min damage pressure		×3		×2		×1.6	×1.5		

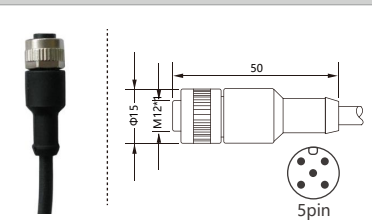
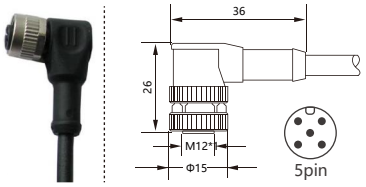
Selection table

PS560-	B	100	G14M	S2	expatiate
PS560-					PS560 Electronic digital display pressure sensor
	B				Gauge pressure
		100			Measuring range:0...100bar
		160			Measuring range:0...160bar
		250			Measuring range:0...250bar
		400			Measuring range:0...400bar
		600			Measuring range:0...600bar
			G14M		G1/4 external thread
			G12M		G1/2 external thread
			N14M		NPT1/4 external thread
			R14M		R1/4 external thread
			M20M		M20*1.5 external thread
				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)

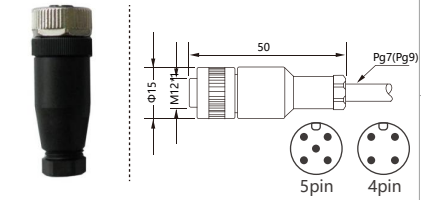
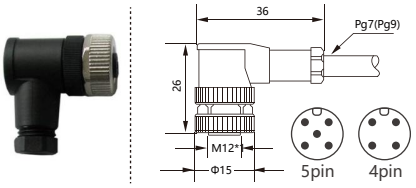
Optional accessories-FA027

Mounting accessories	Hole size（mm）	Installation effect drawing
		

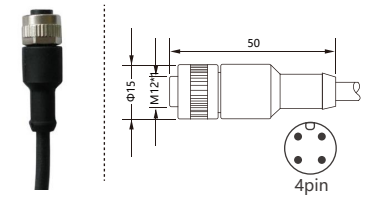
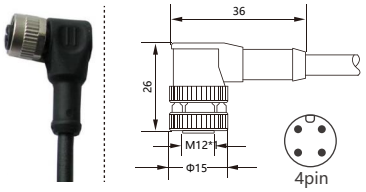
Optional accessories - electrical accessories

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

Factory standard:ZL05-PC02G

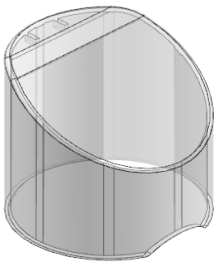
M12* 1-4pin /5Pin self-connector/size drawing（mm）	model
	GL04 (4Pin joint) GL05 (5Pin joint)
	WL04 (4Pin joint) WL05 (5Pin joint)

Optional accessories - Protective cover

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

Factory standard:ZL04-PC02G

500 Series(switch) Sensor protection cover



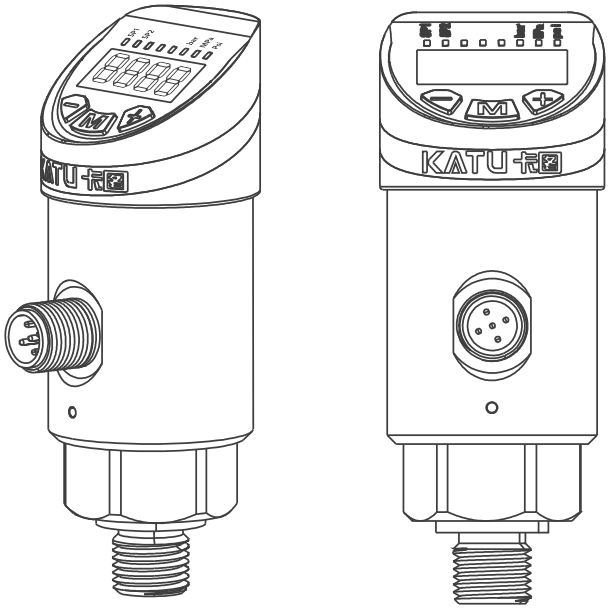
Order number: KTCS33662

Sensor and controller

■ Flow ■ pressure ■ temperature ■ level ■ position

KATU 卡图

Operation instruction
Electronic pressure sensor
500 series



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!

Product characteristics

The all-metal casing design, with a highlighted LED digital display, enables the product line to be used in a variety of industrial applications. The three-button design and menu make the product more convenient to use, and a variety of connection methods can fully meet various specific installation needs. The device, which can rotate at 330°, guarantees the best viewing Angle in different mounting modes.

Switching function

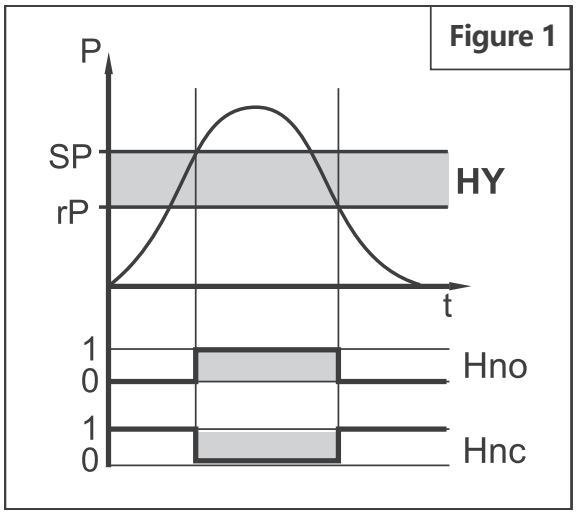
If the switch is higher or lower than the set switching limit (SP, rP), its switching state is changed. The following switch functions can be selected:

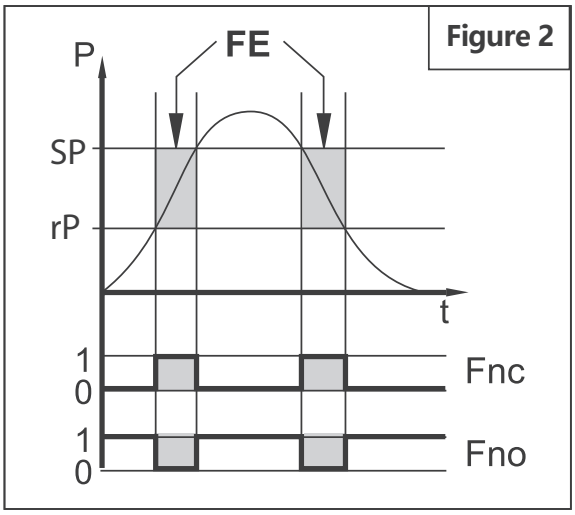
- Hysteresis function normally open: = [Hno] (→ Figure 1)
- Hysteresis function normally closed: = [Hnc] (→ Figure 1)

  First set the switch point: (SP), Then set the reset point: (rP)。
  If SP changes again, the hysteresis will change with it.

- Window function usually open: = [Fno] (→ Figure 2)
- Window function normally closed: = [Fnc] (→ Figure 2)

  The width of the window can be set by the difference between SP and rP.
  SP = Upper limit value, rP = Lower limit value.





P = System pressure; HY = lag; FE = window

Install

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:

caution

Vibration and violent vibration must be avoided during transportation. Even if the sensor (switch) housing is not damaged,

Internal components can also break down and cause failure.

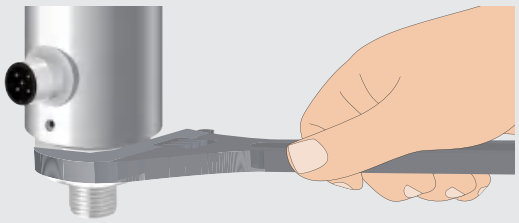
danger

Sensors (switches) should only be installed in systems that do not exceed the maximum pressure Pmax (see type label).

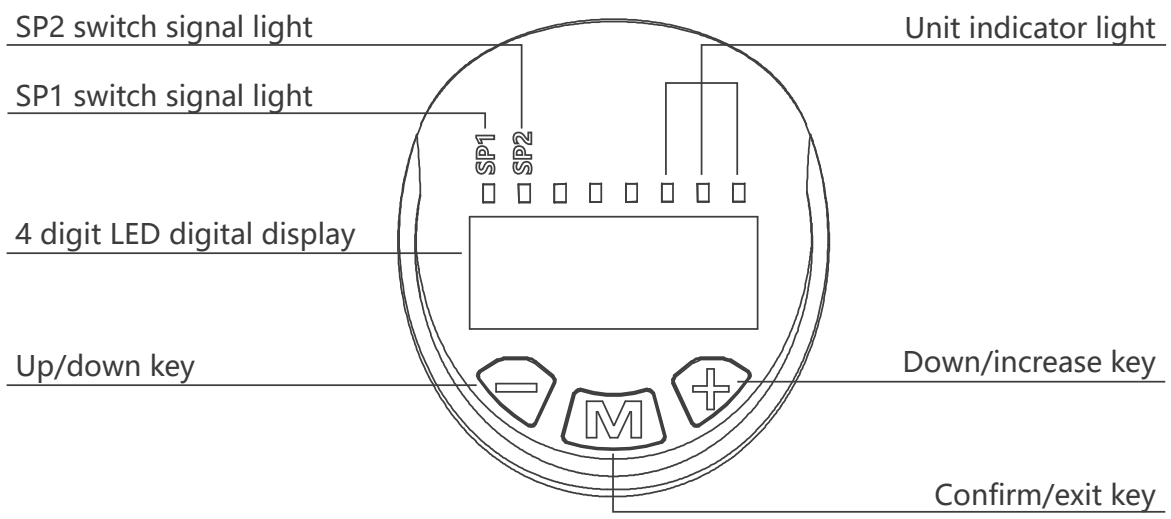
Install sensors (switches) only when power is off (electric, hydraulic/pneumatic).

! Ensure that the system is under any pressure before installing or removing the sensor.

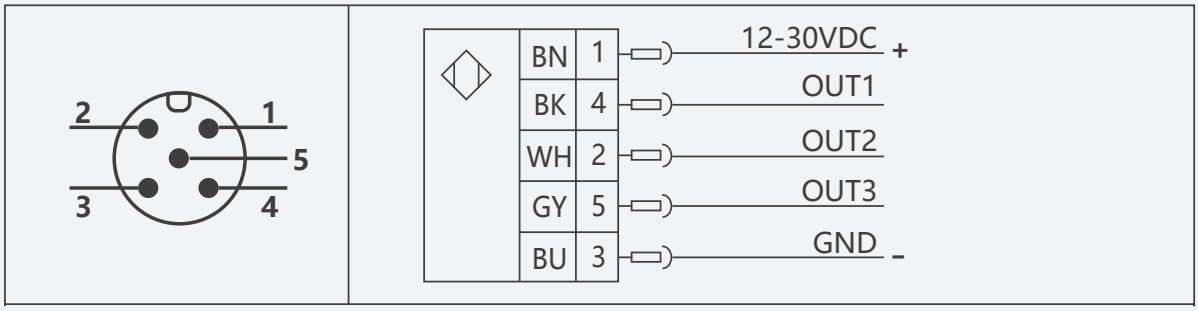
- Connect the sensor device to the selected process port
- Fully tighten, recommended tightening torque range: 25 to 35Nm
- In critical applications (such as violent vibrations or shocks), the pressure pipe joint can be mechanically decoupled via a miniature hose.



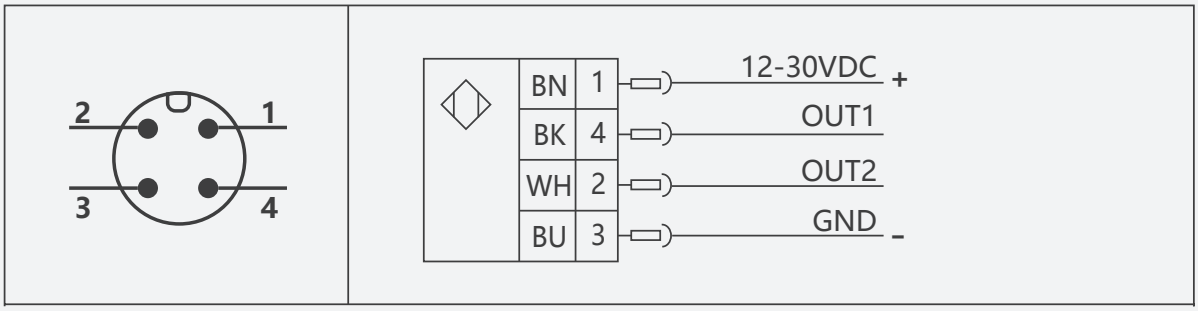
Panel description



Electrical connection (Standard type)



A3: Two-way switch + one-way analog		
color	**stitch**	**Instructions**
BN	1	power supply (+)
BU	3	power supply (-)
BK	4 (OUT1)	SP1 Switch PNP (factory default) SP1 Switch NPN
WH	2 (OUT2)	SP2 Switch PNP (factory default) SP2 Switch NPN
GY	5 (OUT3)	4-20mA (factory default) 1-5V 0-10V



S2: Two way switch/IO-Link		
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 + one analog		
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

Debugging/operation

Sensors can only be debugged and operated by authorized personnel.

caution

Do not put the switch into operation when the sensor itself or the connecting cable is damaged.
Do not use any sharp, hard objects to make entries. The key may be damaged by something sharp and hard.

warning

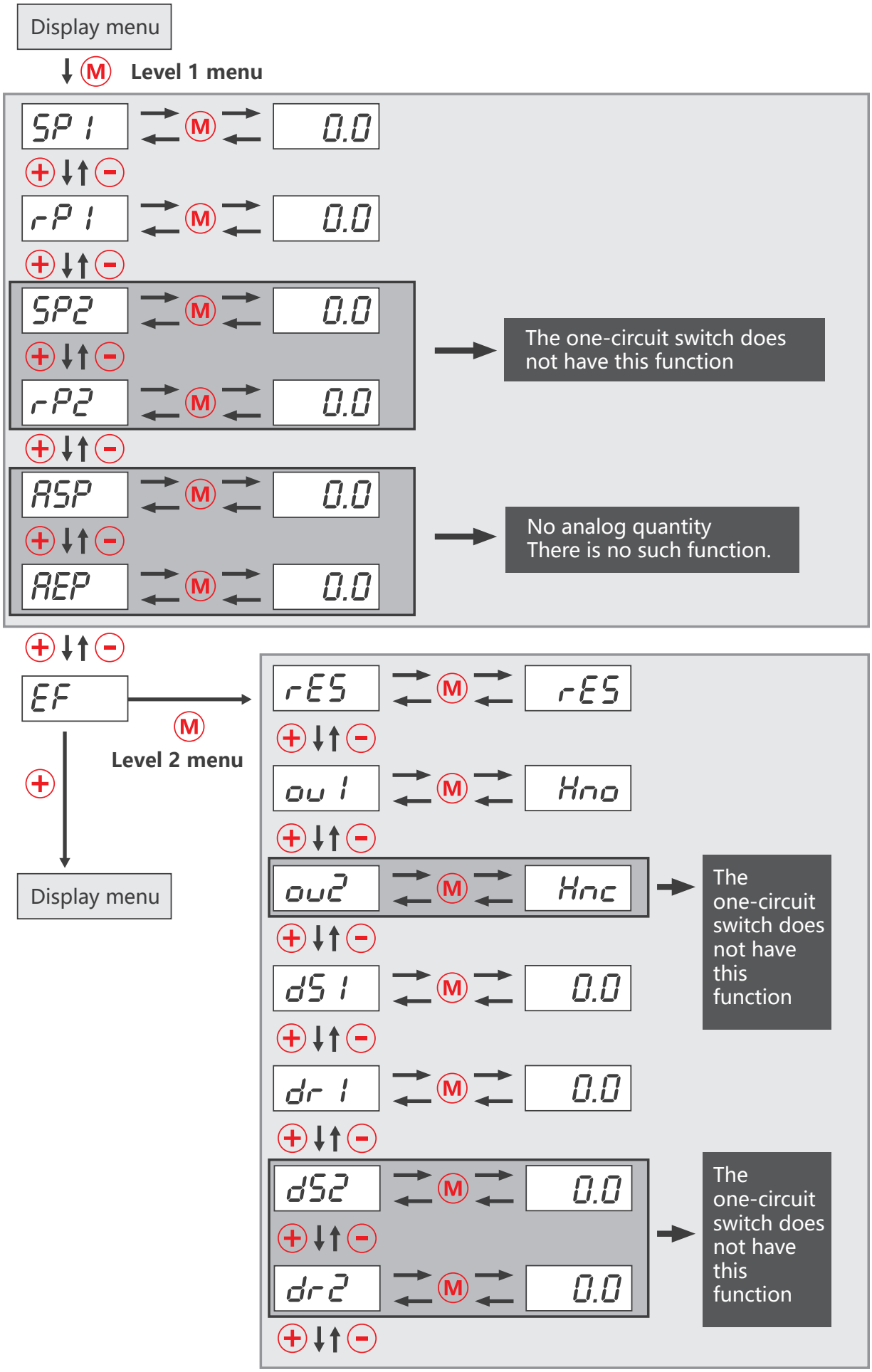
Note that the casing surface may become very hot if the operating temperature is high!

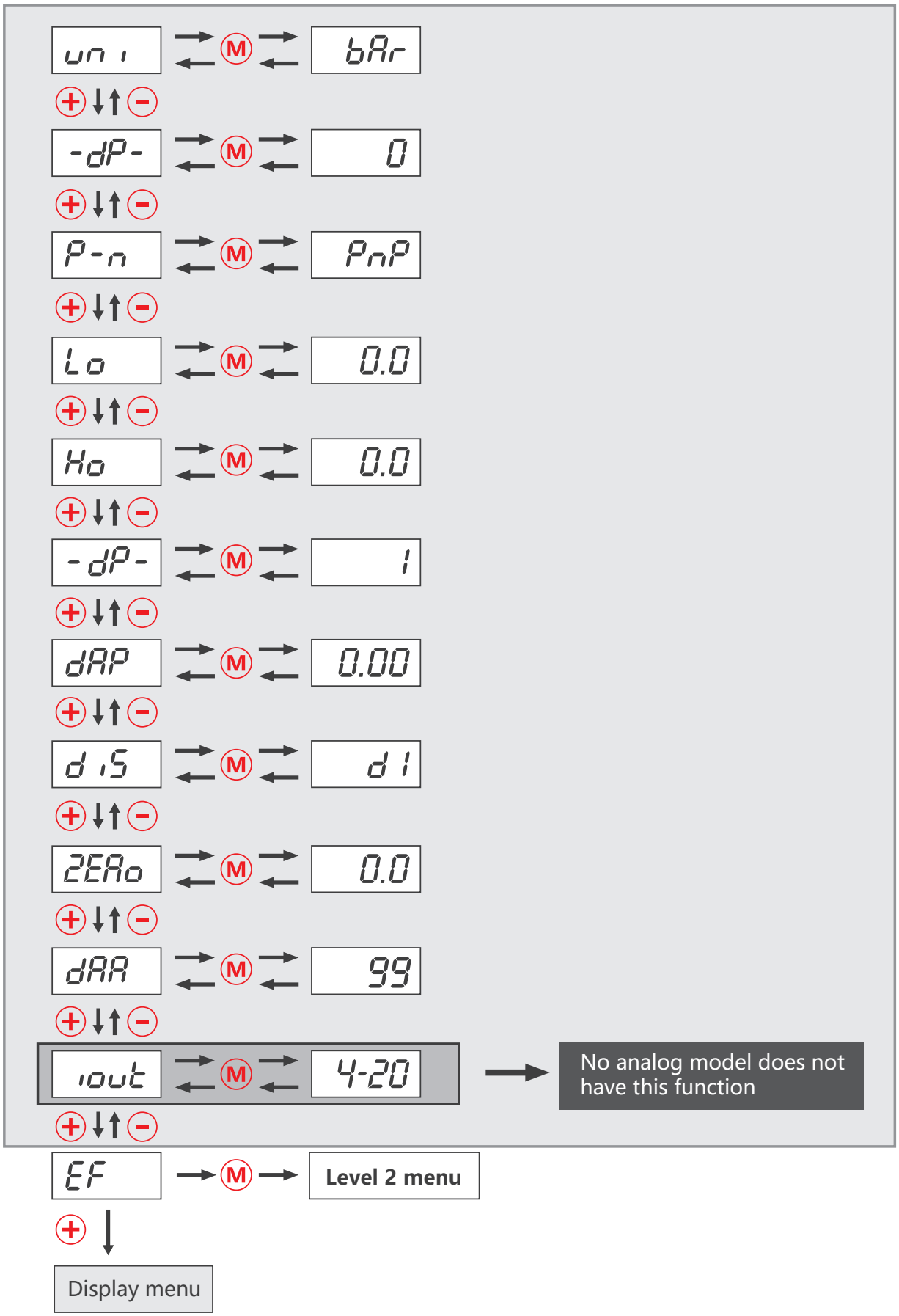
Level 1 menu		
sp1	Alarm value of Switch 1 (Factory default value is 0.2 of the range) Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	
rp1	Switch 1 Reset value (factory default is SP1-0.5) Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	
sp2	Switch 2 alarm value (factory default value is 0.8 of the range) Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep	One switch None of this.
rp2	Switch 2 Reset value (Factory default value is SP2-0.5) Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep	
asp	Lower range limit (factory default is lower range limit) Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	factory data reset Range reference value
aep	Range upper limit (Factory default is range upper limit) Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	
EF	Expand functionality/Open the Level 2 menu Press the [M] key to enter the Extended 2 level menu Press [+] to exit.	

Level 2 menu		
res	factory data reset	
	Hold down [+] to restore factory Settings	
ou1	Switch 1 signal: (Factory default is HNO) Hysteresis function: HNO (normally open) /HNC (normally closed) Window function: FNO (normally open) /FNC (normally closed) IO-Link： (Only S2/SA signal output)	
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed:At the press of a button, the value increases; Hold the button down and the value will keep changing.	
ou2	Switch 2 signal: (Factory default HNC) Hysteresis function: HNO (normally open) /HNC (normally closed) Window function: FNO (normally open) /FNC (normally closed)	One switch None of this.
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed:At the press of a button, the value increases; Hold the button down and the value will keep changing.	
ds1	The opening delay of OUT1. (The factory default is 0s)	
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed:At the press of a button, the value increases; Hold the button down and the value will keep changing.	
dr1	OUT1 shutdown delay. (The factory default is 0s)	
	Hold + or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	
ds2	OUT2's opening delay. (The factory default is 0s)	One switch None of this.
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed:At the press of a button, the value increases; Hold the button down and the value will keep changing.	
dr2	OUT2 shutdown delay. (The factory default is 0s)	
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed:At the press of a button, the value increases; Hold the button down and the value will keep changing.	

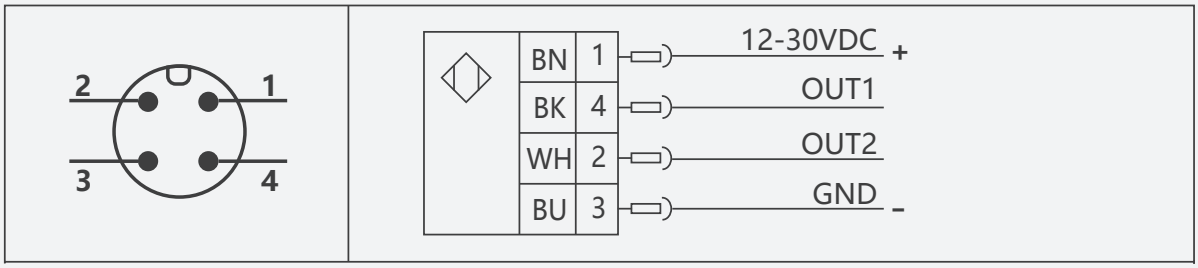
uni	System standard unit of measurement (display)
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.
-dp-	Modify the number of decimal points
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.
p-n	PNP/NPN switch (Factory default is PNP)
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.
L0	System measurement history minimum.
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.
H0	The maximum value of system measurement history
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.
dap	Switch point damping/process data flow (IO-Link communication) and display. (Factory default: 0.06)
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.
dis	Update rate and direction of the display (d1 by default)
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; If you hold the button down, the value will keep changing. [d1] : The measured value is updated every 10ms [d2] : The measurement is updated every 100ms [d3] : Update measurement every 600ms

zeao	Zero excision value (full scale %) (factory default is 0.5)	
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	
daa	Display refresh time: analog 0.1s (factory default is 0.01)	
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Hold the button down and the value will keep changing.	
iout	Output analog switch: Current type: 4-20：（4-20mA） 0-20：（0-20mA） 20-4：（20-4mA） 20-0：（20-0mA） 5V voltage type: 1-5F：（1-5V） 0-5F：（0-5V） 10V voltage type: 210F：（2-10V） 110F：（1-10V） 010F：（0-10V）	No analog quantity None of this.
	Hold down [+] or [-] for at least 1s. After 1 second: The setting value can be changed:At the press of a button, the value increases; Hold the button down and the value will keep changing.	
EF	Expand functionality/Open the Level 2 menu	
	Press the [M] key to enter the Extended 2 level menu Press [+] to exit.	


Display menu
M
Level 1 menu
SP1
0.0
rP1
0.0
SP2
0.0
rP2
0.0
The one-circuit switch does not have this function
ASP
0.0
AEP
0.0
No analog quantity There is no such function.
EF
M
Level 2 menu
Display menu
rES
rES
ou1
Hno
ou2
Hnc
The one-circuit switch does not have this function
dS1
0.0
dr1
0.0
dS2
0.0
dr2
0.0
The one-circuit switch does not have this function


uni
M
bAr
-dP-
M
0
P-n
M
PnP
Lo
M
0.0
Ho
M
0.0
-dP-
M
1
dAP
M
0.00
diS
M
d1
ZERo
M
0.0
dAA
M
99
iout
M
4-20
No analog model does not have this function
EF
M
Level 2 menu
Display menu

Electrical connection (RS485 communication)



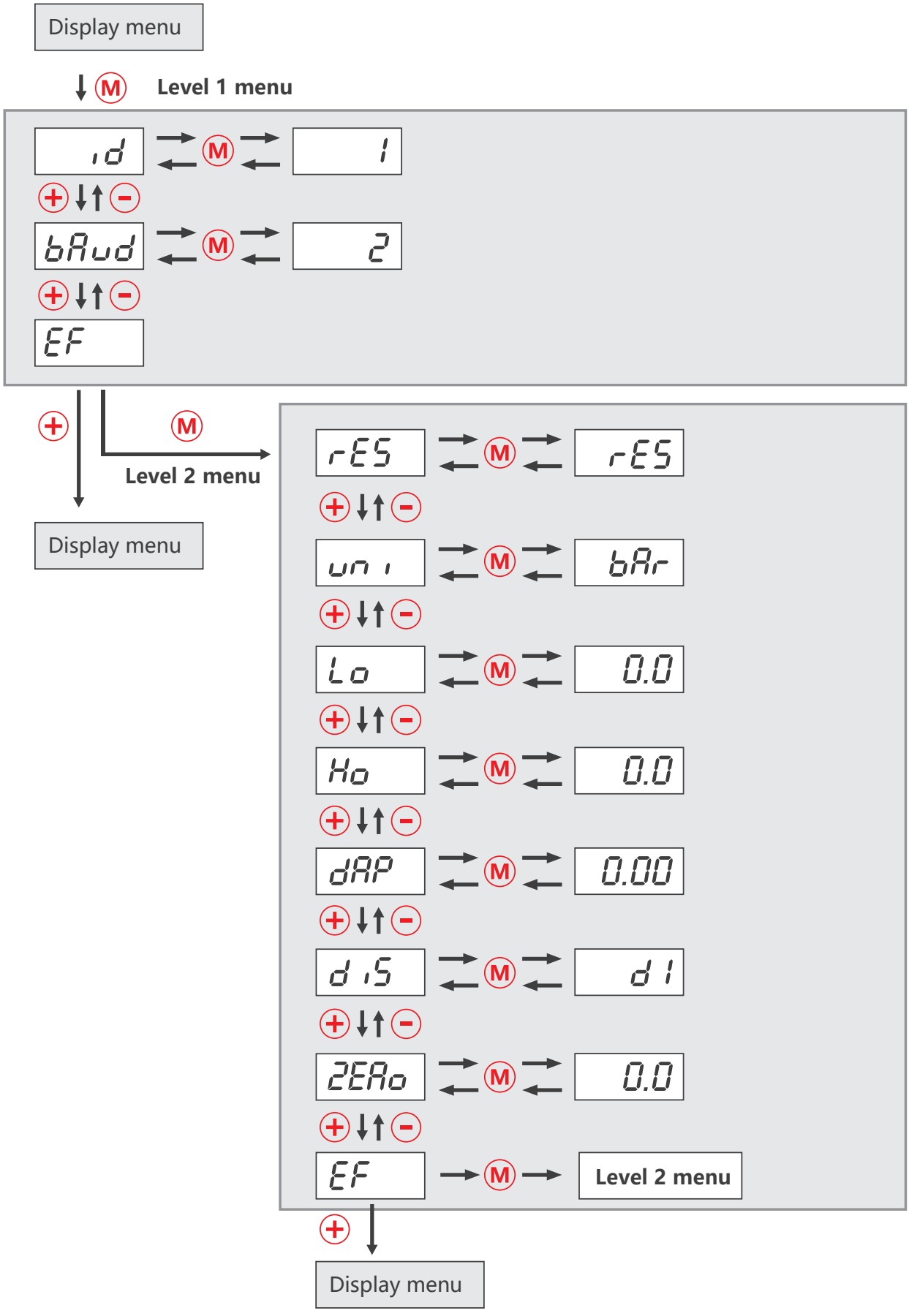
RS485		
color	**stitch**	**Instructions**
BN	1	power supply (+)
BU	3	power supply (-)
BK	4 (OUT1)	RS485(B)
WH	2 (OUT2)	RS485(A)

Debugging/operation

Level 1 menu	
id	Address (system default is 1)
	Press and hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.
baud	Baud rate setting (System default is 2)
	Press and hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.
EF	Expand functionality/Open the Level 2 menu
	Press the [M] key to enter the Extended level 2 menu Press the [+] key to exit

Level 2 menu	
res	factory data reset
	Press and hold [+] to restore factory Settings
uni	Standard unit of measurement for system pressure (display) : [bar]/[MPa]/[psi]
	Hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.
L0	Historical minimum system pressure.
	Hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.
H0	Historical maximum system pressure
	Hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.
dap	Switch point damping/process data flow (IO-Link communication) and display.
	Hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.

dis	Update rate and direction of the display. (Factory default is d1)
	Hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change. [d1] : The measurement value is updated every 10ms [d2] : The measurement is updated every 100ms [d3] : Update the measurement every 600ms
zeao	Zero excision value (full scale %) (factory default is 0.5)
	Hold [+] or [-] for at least 1s. After 1 second: The setting value can be changed: At the press of a button, the value increases; Press and hold the button while the value continues to change.
EF	Expand functionality/Open the Level 2 menu
	Press the [M] key to enter the Extended Level 2 menu Press the [+] key to exit.


Display menu
M
Level 1 menu
id
1
M
bAud
2
M
EF
M
Level 2 menu
Display menu
rES
rES
M
uni
bAr
M
Lo
0.0
M
Ho
0.0
M
dAP
0.00
M
diS
d1
M
2EAo
0.0
M
EF
M
Level 2 menu
Display menu

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!

PS500-RS485
communication protocol (MODBUS-RTU)

1.RTU Data format explanation

1.1 communication mode

This instrument uses MODBUS RTU format. The protocol is used for master-slave query mode data communication.

1.2 data format

In RTU mode, the format of each byte (10 bits) is as follows: The encoding system uses 8-bit binary. Each byte consists of 1 start bit, 8 data bits (transmitting the least significant bit first), and 1 stop bit. The baud rate options are: 2400, 4800, 9600, 19200, and 115200.

Modbus message

Start	address	function code	data	CRC check	End
≥3.5 Character	8 bit	8 bit	n*8 bit	16 bit	≥3.5 Character

Note:

1) In RTU mode, idle intervals of at least 3.5 character times separate message frames.
2) (2) The entire message frame must be sent as a continuous stream of characters.
3) (3) The idle interval between two characters should not exceed 1.5 character times.

1.3 address

The agreement specifies that the instrument's address is '0-255', where the '0' address is used for broadcasting. This protocol does not support broadcasting, and the remaining addresses are reserved.

2 . Configuration instructions

500 series pressure sensor, no parity check, 8 data bits, 1 stop bit

500 series pressure sensor		
parity check	/	Fixed and unchangeable
bit	8	Fixed and unchangeable
stop bit	1	Fixed and unchangeable

display code	Parameter definition	Scope	explain
id	Sensor address code (default 1)	1-250	Sensor address cannot conflict with other sensor addresses.
baud	Sensor baud rate (default 2)	0-5	0: Baud rate is 2400 bps 1: Baud rate is 4800 bps 2: Baud rate is 9600 bps 3: Baud rate is 19200 bps 4: Baud rate is 115200 bps

3. instruction explanation

03H (Read the instructions)

send data：01 03 00 00 00 03 05 CB （16 Octal)

Instruction	01	03	00	00	00	03	05	CB
explain	sensor address	Read the instructions	The high-order starting address of the register	The lower part of the starting address of the register	Read high-order quantity	Read the lower digit of the quantity	CRCL	CRCH
Explain: Send a read command to the 01 sensor, start reading from register 0000, and read 0003 registers.								

Return data: 01 03 06 00 00 01 23 00 01 10 83 (16 Octal)

Instruction	01	03	06	00	00	01	23	00	01	10	83
explain	sensor address	Read the instructions	Return six data points.	Register 1 high bit	Register 1 low bit	Register 2 high bit	Register 2 low bit	Register 3 high bit	Register 3 low bit	CRCL	CRCH
Explanation: 01 sensor responds to the read command, returning 6 data points 00 00: 0000H, which is decimal 0, indicating that the pressure sign is 0, i.e., it is positive pressure; 01 23: 0123H, which is decimal 291, indicating that the pressure value is 291; 00 01: 0001H, which is decimal 1, indicating that the pressure has one decimal place; The pressure value is 29.1.											

4.Address (register) and its meaning

Decimal, hexadecimal, and Modbus registers represent the same parameter but in different formats. Different upper-level machine software may use different formats; if one format is not recognized, you can try the other two.

decimal address	Hexadecimal address	MODBUS Register	Parameter definition	Explanation
0	0	40001	Positive or negative pressure	Positive and negative (0 is positive, 1 is negative)
1	1	40002	Pressure value	Read the value (units displayed on the same screen)
2	2	40003	Decimal places of the pressure value	1 is one decimal point (the number is displayed on the same screen)

Katu Electronic （Kunshan）Co.,Ltd.

telephone：400-150-8815

Website: www.katusensor.com

Factory: Building 27B, Jingdong Intelligent Industrial Park,
No.9 Jinjie Road, Huaqiao Economic Development Zone,
Kunshan City, Suzhou