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Intelligent Level Sensor

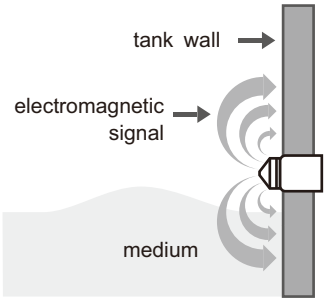
FineTek

Innovation · Quality · Sharing

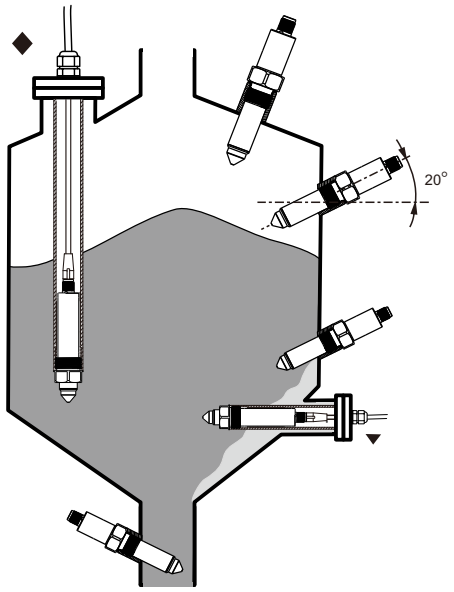
PRODUCT INTRODUCTION

PRINCIPLE

The sensor's working principle by sending "scan-frequency", different material emits different frequency, therefore, the sensor will send the switch sigual while it's powered by material.



INSTALLATION DIAGRAM



Tank Diagram

Top diagram shows the sensors installed in the tank for level detection or dry running protection.

Note!

1. Mounting the probe at a 20° incline will can avoid material bridges from forming. It also won't be damaged by the inflowing material.
2. For top-mounted installation, the rear-mounted type with the extension of the auxiliary rod can be installed at a lower position (◆: the auxiliary rod is not included in the order).
3. The rear-mounted auxiliary rod extends through the sediment can prevent from severe bridging. (▼: auxiliary rod is not included in the order).

FEATURE

- Easy installation by standard connection with IP67 as protection grade.
- Compact design, easy carry; can be installed in narrow space or stringent operation condition.
- Probe material PEEK surface roughness Ra <0.8 is with good wear resistance.
- With magnetic test function to examine wiring and operation condition in real time.
- Durable stainless housing.
- Real time site-control by LED indicators.
- Overcurrent protection detects over current and shut down the output immediately.
- Workable in CIP cleaning environment.
- Suitable for dry running protection and single-point level detection of powder or granular medium in containers or pipelines.
- It provides 2 output signals NPN or PNP.

APPLICATION

With high/low level of material in the process tank or pipeline, alarm of empty material or switch output is particularly suitable for application in the following industries:

- Food manufacturing
- Beverage manufacturing
- Pharmaceutical manufacturing.

STANDARD SPECIFICATIONS

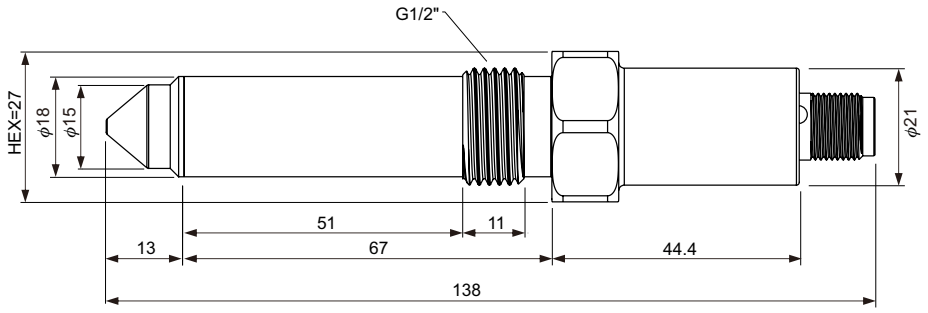
	Standard type	Rear install type
Scope	Powder media	
Ambient temperature	-40~80℃(-40~176℉)	
Process temperature	-40~100℃(-40~212℉)	-40~80℃(-40~176℉)
Rated voltage	12VDC~30VDC	
Power consumption	Max. 50mA	
Over voltage protection	overvoltage category II	
Reversal protection	YES	
Switch output	2 switches: 1st NO mode and 2nd NC mode.	
Output mode	(DC)PNP/NPN(optional)	
Switch delay function	<1 second	
Output load current	Max. 50 mA	
Voltage drop	Max. 2.5V	
Short-circuit protection	Yes, short-time pulse	
Overload protection	YES	
Electric connection	M12 4PIN connector	
Wetted material (optional)	SUS304、SUS316、SUS316L	
Process pressure	-1~40 bar	
Contact specification	1/2"G	3/4"G
Probe material/ Surface roughness	PEEK/Ra<0.8	
Housing protection (optional)	IP67	
LED Indicator	Yellow LED for starting, Green LED for resetting	
Simulation output test	Magnetic test (lean a magnet close to the + sing for 3 seconds, there will be switching output)	

DIMENSIONS

Standard type

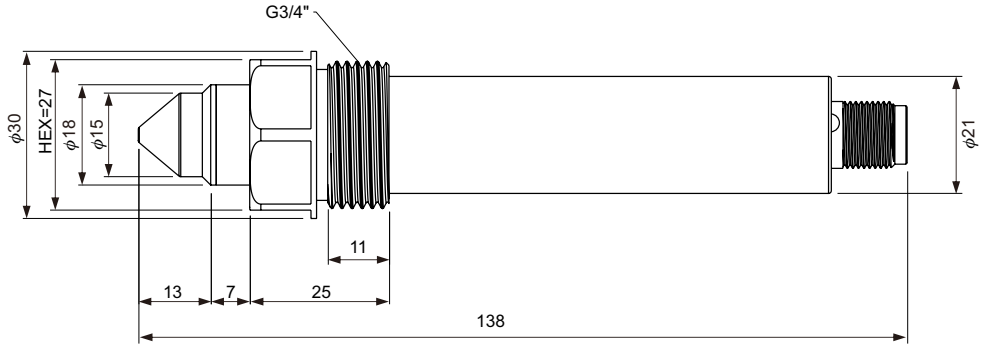
(Unit: mm)

Applied for general medium



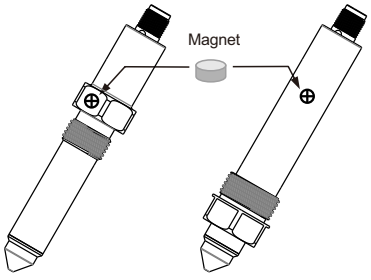
Rear install type

Suitable for no hole on the side or installation extension to prevent from severe bridging.



FUNCTIONS

Transistor output	Alarm	Detected level	Output	Output signal	LED indicator
PNP	MAX		OUT1	<100μA	Green
			OUT2	IL	
			OUT1	IL	Yellow
			OUT2	<100μA	
	MIN		OUT1	IL	Yellow
			OUT2	<100μA	
			OUT1	<100μA	Green
			OUT2	IL	
NPN	MAX		OUT1	<100μA	Green
			OUT2	IL	
			OUT1	IL	Yellow
			OUT2	<100μA	
	MIN		OUT1	IL	Yellow
			OUT2	<100μA	
			OUT1	<100μA	Green
			OUT2	IL	



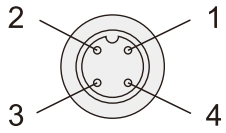
- Correspondence output table: OUT 1 sets as NO; OUT 2 sets as NC.
- IL indicates load enabled.

SIMULATION OUTPUT TEST

1. Finished the installation and supply the sensor with 12~30Vdc.
2. Lean a magnet close to the + sing for 3 seconds or more, there will be switching output with corresponding LED light display.
3. Remove the magnet from the + sign, the switching output and corresponding LED light display will return to normal status.

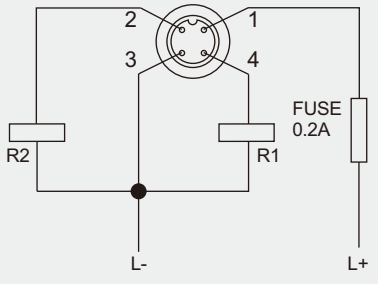
WIRING DIAGRAM

M12 Connector

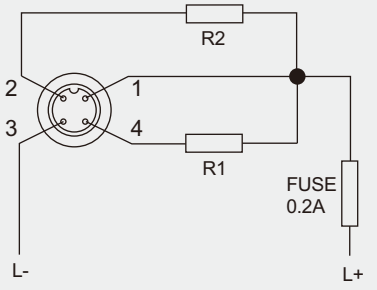


PIN	Connection	wire color
1	Power supply+	Brown
2	OUT2	White
3	Power supply-	Blue
4	OUT1	Black

PNP Wiring



NPN Wiring



- R1 and R2 indicate the load of OUT1 and OUT2.
- To protect the sensor from abnormal condition, we strongly recommend to adopt FUSE 0.2A on the power supply circuit.
- This wire color only represents the property. The actual wire color depends on the connector purchased.

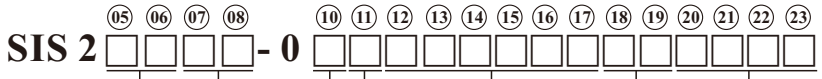
Note: The accuracy and efficiency can not be guaranteed if using NON-FineTek connector.

APPLICABLE MEDIUM FORM

Following form, please kindly choose the medium and corresponded default setting. Always ensure the correct setting and corresponded medium.
Attention!! It may cause failure result or unstable operation condition if the application NOT follow the operation range. ● means you can measure the medium based on FineTek default setting.

	Item	Scope
1	Flour	●
2	Starch	●
3	Cocoa Powder	●
4	Coffee Powder	●
5	Hazelnut Powder(40°C)	●
6	Pepper(Ground)	●
7	Mashed Potatoes	●
8	Creamer(Powder)	●
9	Salt	●
10	Caster Sugar	●
11	Crystal Sugar(Ground)	●

ORDER INFORMATION



⑤⑥ Rod type

00：Standard type
B2：Rear install type

⑦⑧ Certification

00：N/A

⑩ Dielectric constant

P：e>2
L：e>15

⑪ Output

P：PNP
N：NPN

Connection

⑫⑬

AA： JIS

⑭⑮

A5： 1/2"(Standard type)
A7： 3/4"(Rear install type)

⑯⑰

17： Male G

⑱⑲ Wetted material

MA： SUS304
MB： SUS316
MC： SUS316L

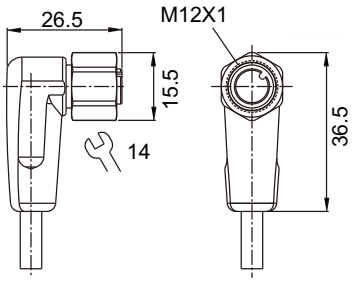
⑳㉑㉒㉓ Rod length

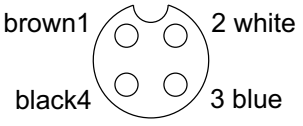
Code	Length
0080	80mm(Standard type)
0020	20mm(Rear install type)

ACCESSORIES-ELECTRICAL CABLE CONNECTOR (OPTIONAL)

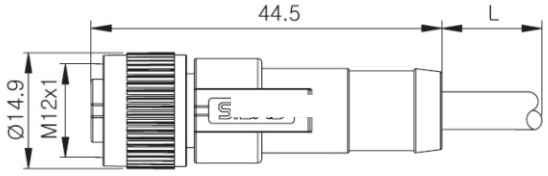
M12 ELECTRICAL CABLE CONNECTOR

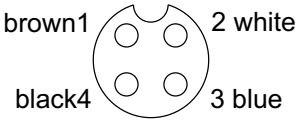
Order Code：PC312-1231415M01



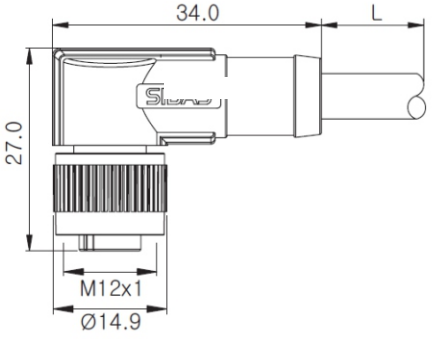


Order Code：PC312-2221410501

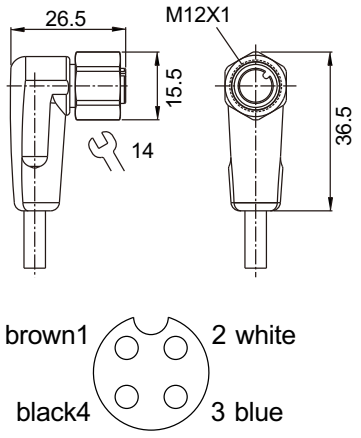




Order Code：PC312-1221415M01



Oder Code：PC312-1232410501



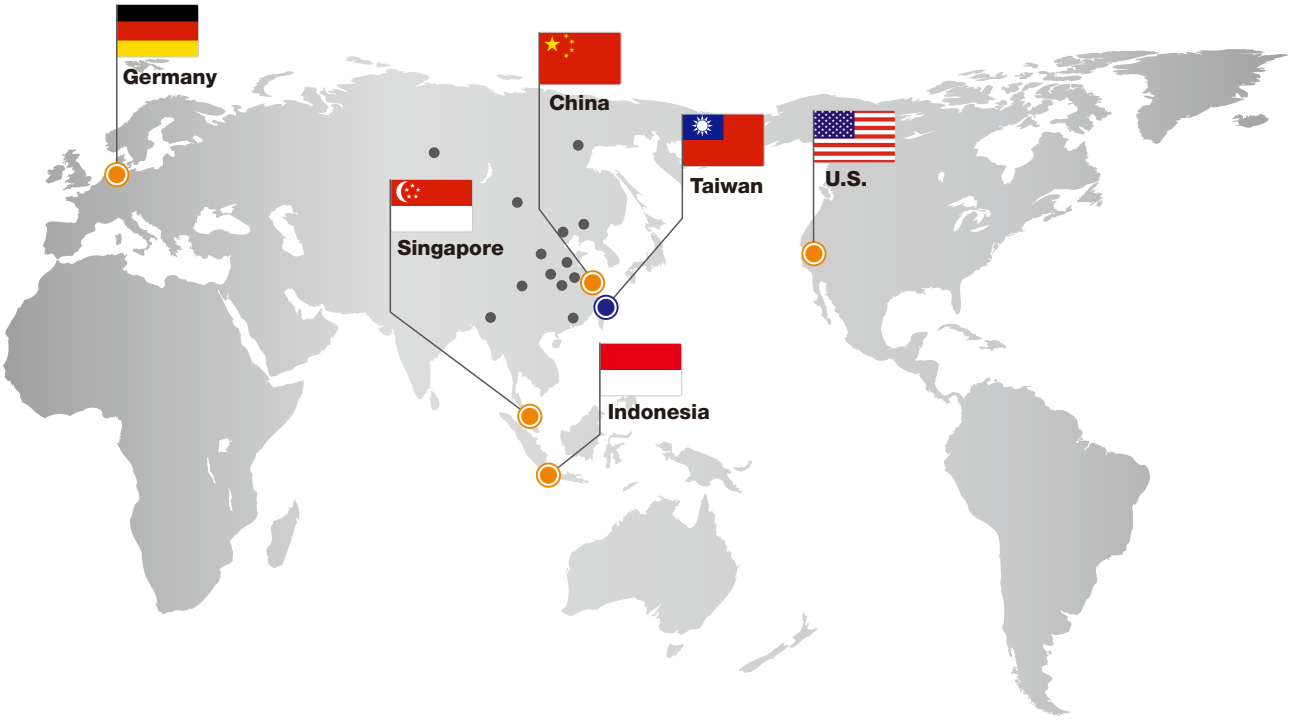
M12 CONNECTOR SPECIFICATIONS

Order Code	Connector type	Cable length	Voltage rating	Current rating	Working temp.	Protection grade	Coating color	LED indicator
PC312-1231415M01	Elbow 90°	5m	250Vac/300Vdc	Max.4A	-25°C~100°C	IP67 IP68 IP69K	Orange	NO
PC312-2221410501	Straight 180°	5m	250Vac	Max.4A	-25°C~80°C	IP67	Blue	NO
PC312-1221415M01	Elbow 90°	5m	250Vac	Max.4A	-25°C~80°C	IP67	Blue	NO
PC312-1272415M01	Elbow 90°	5m	10~30Vdc	Max.4A	-30°C~80°C	IP67	Black	YES
PC312-1232410501	Elbow 90°	5m	10~36Vdc	Max.4A	-25°C~100°C	IP67 IP68 IP69K	Orange	YES

NEW/OLD MODEL NO. COMPARISON TABLE

Old Model NO.	Order Code
26-0522-5M	PC312-1231415M01
26-0523-5M	PC312-2221410501
26-0524-5M	PC312-1221415M01
26-0525-5M	PC312-1272415M01
SCA-3371	PC312-1232410501

Global Network



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