RF-CAPACITANCE /ADMITTANCE LEVEL SWITCH

http: //www.fine-tek.com
e-mail: info@fine-tek.com
Tel: 886-2-22696789 Fax: 886-2-22686682

PRODUCT DESCRIPTION

RF-Capacitance /Admittance level switch is appropriate to be applied in liquid and solid mediums. It is designed to resist possible medium attachments. This product also offers DPDT output, high/low level failsafe, adjustable time delay, and sensitivity adjustment. Offer of various models is available for high temperature, or limited space environment.

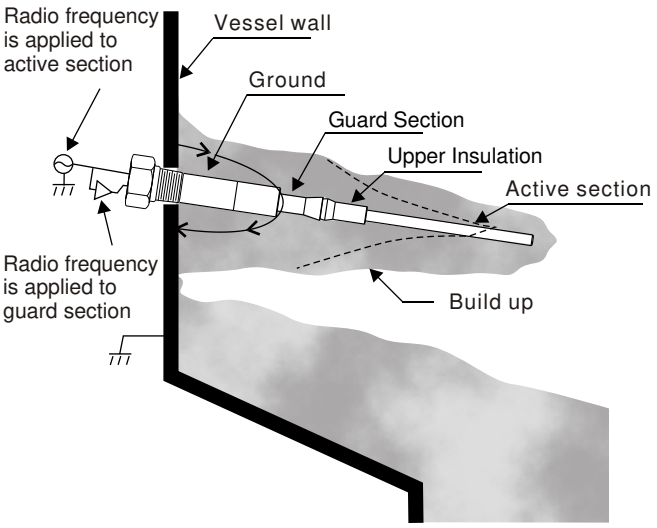
FEATURES

- Anti-Viscosity
- Easy Installation
- Stable; Not affected by temperature
- Time delay function from 0-30 seconds
- IP65 housing protection
- 5 Amp output DPDT
- Highest temperature tolerance of 550°C
- High/low failsafe
- Applicable in liquid, syrup, solid, powder, and interface detection
- Alarm testing

PRINCIPLE

RF-Capacitance /Admittance level switch consists of guard section, active section, grounding, and insulation. The guard section is designed to overcome possible medium attachment and to secure signal accuracy. The special structure is suitable for detecting in different medium without being affected by attachments.

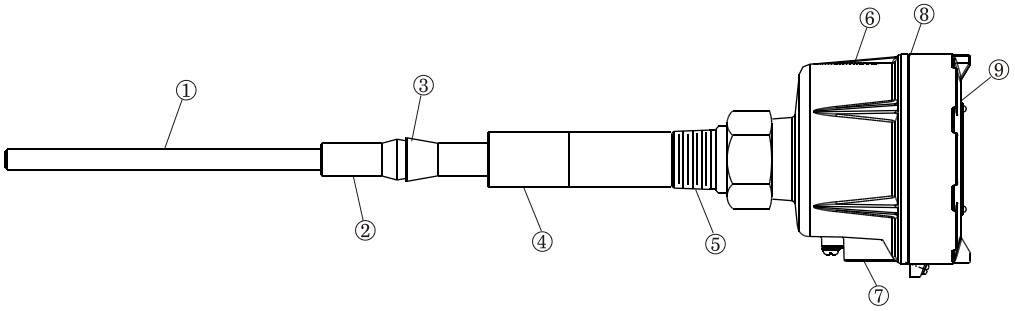
Active section probe, guard, and grounding are insulated with insulation. Level of medium can be detected by increase of admittance when medium reaches the active section probe. Ground and active section probe are insulated, thus detection would not be wrongfully occurred to cause false alarm when medium attaches to the probe.



CONSTRUCTION & APPLICATION

CONSTRUCTION

1. Active Section: Made of SUS304 or SUS316
2. Upper Insulation: Insulation of Active Section and Guard Section, having very low die-electric constant and is made of PTFE or PEEK
3. Guard Section: Conductive metal probe to dissipate any possible presence of false signal.
4. Lower Insulation: Active Section probe having very low die-electricconstant and is made of PTFE
5. Connection: 3/4"PT (Standard model)
6. Housing: Aluminum Alloy Spray Paint
7. Wiring Point: 1/2" NPT
8. Waterproof O-Ring: Rubber
9. Circuitry: FSH and FSL, Time Delay Adjustable Function
10. Housing Cover: Aluminum Alloy Spray Paint

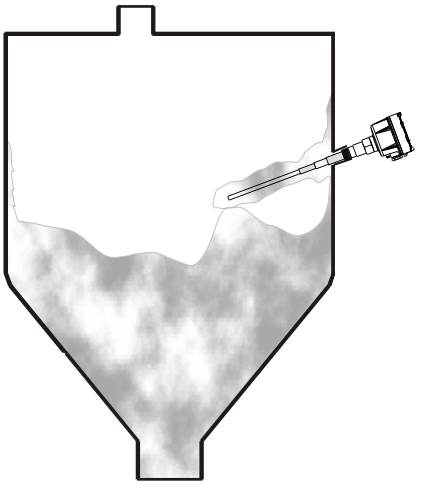


APPLICATION

Settlement Tank, Well, Reservoir, Medical Tank, Acidic Tank and various liquid, powder, pellet for precise level detection and control.

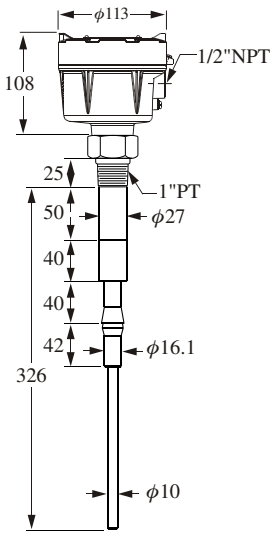
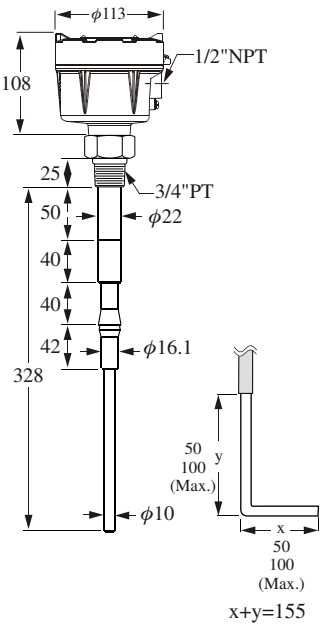
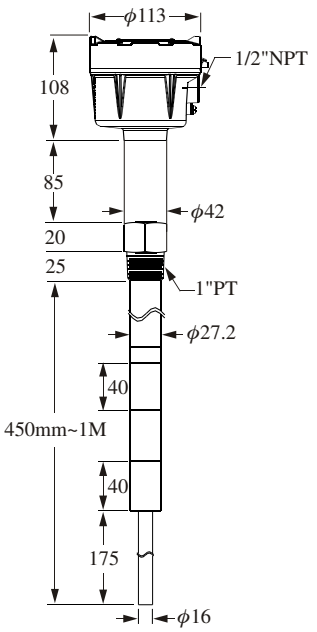
- ■ Brewery Plant
- ■ Paint Manufacturing Plant
- ■ Cement Plant
- ■ Coal Plant
- ■ Food Processing Plant
- ■ Flour Mill
- ■ Glass Industry
- ■ Plastic Plant
- ■ Mining Plant
- ■ Paper Manufacturing Plant
- ■ Medical Plant
- ■ Power Plant
- ■ Water and Waste Water Treatment Plant
- ■ Tar Factory
- ■ Beverage Plant

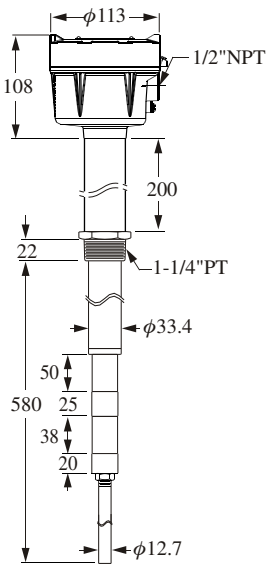
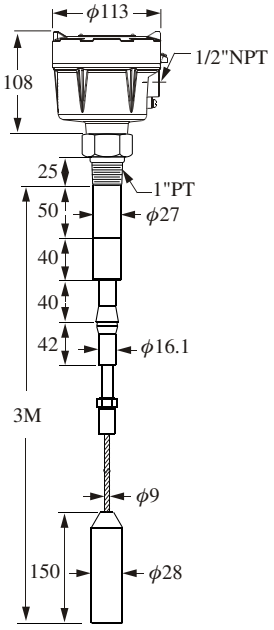
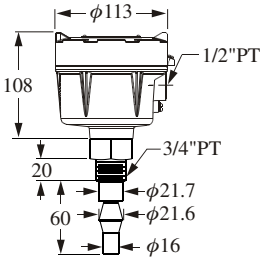
EXAMPLE



2100/2110: Standard Model ----- Applicable to normal environment.
2200: Hi-Temp Model ----- Applicable to high temperature environment.
2280: Super Hi-Temp Model ----- Applicable to super high temperature environment.
2500: Cable Model ----- Applicable to big tank and top installation environment.
2600: Mini Model ----- Applicable to space constraint and small tank.

SPECIFICATION

Dimension (Unit:mm)			
Order No.	**SB2100 [Standard Model]**	**SB2110 [Standard Model] SB2120 [Standard L Type]**	**SB2200 [Hi-Temp Model]**
Operating Temp.	-40°C~150°C	-40°C~150°C	-40°C~232°C
Ambient Temp.	-40°C~70°C	-40°C~70°C	-40°C~70°C
Housing	Aluminum (IP65)	Aluminum (IP65)	Aluminum (IP65)
Probe Material	SUS304 or 316	SUS304 or 316	SUS304 or 316
Insulated Material	PTFE	PTFE	PTFE or PEEK
Connection	1" PT	3/4" PT	1" PT
Sensitivity	0.3PF	0.3PF	0.3PF
Supply Voltage	A: 110/220Vac, 50/60Hz B: 24 Vdc ± 20%	A: 110/220Vac, 50/60Hz B: 24 Vdc ± 20%	A: 110/220Vac, 50/60Hz B: 24 Vdc ± 20%
Power Consumption	Max.2W	Max.2W	Max.2W
Contact Rating	5A/250Vac, DPDT	5A/250Vac, DPDT	5A/250Vac, DPDT
Delay Time	0~30 sec	0~30 sec	0~30 sec
Fail safe mode	High / low Fail safe mode	High / low Fail safe mode	High / low Fail safe mode
Conduit	1/2" NPT x2 hole	1/2" NPT x2 hole	1/2" NPT x2 hole
Operation Pressure	20kg/cm^2	20kg/cm^2	20kg/cm^2

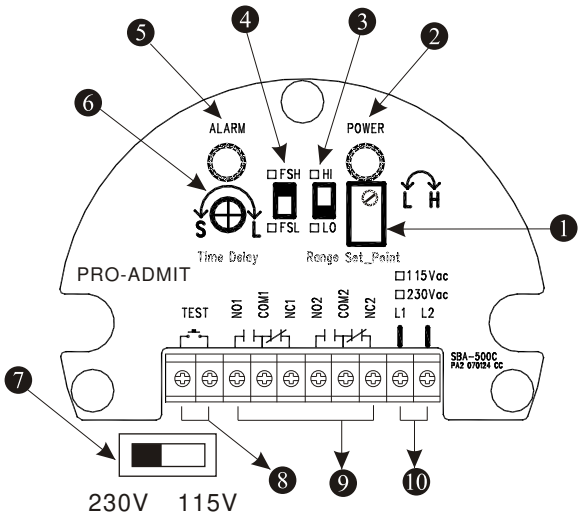
Dimension (Unit:mm)			
Order No.	**SB2280 [Super Hi-Temp Model]**	**SB2500 [Cable Model]**	**SB2600 [Mini Model]**
Operating Temp.	-40°C~550°C	-40°C~150°C	-40°C~150°C
Ambient Temp.	-40°C~70°C	-40°C~70°C	-40°C~70°C
Housing	Aluminum (IP65)	Aluminum (IP65)	Aluminum (IP65)
Probe Material	SUS304 or 316	SUS304 or 316	SUS304 or 316
Insulated Material	Ceramic	PTFE	PTFE
Connection	1-1/4" PT	1" PT	3/4" PT
Sensitivity	0.3PF	0.3PF	0.3PF
Supply Voltage	A: 110/220Vac, 50/60Hz B: 24 Vdc ± 20%	A: 110/220Vac, 50/60Hz B: 24 Vdc ± 20%	A: 110/220Vac, 50/60Hz B: 24 Vdc ± 20%
Power Consumption	Max.2W	Max.2W	Max.2W
Contact Rating	5A/250Vac, DPDT	5A/250Vac, DPDT	5A/250Vac, DPDT
Delay Time	0~30 sec	0~30 sec	0~30 sec
Fail safe mode	High / low Fail safe mode	High / low Fail safe mode	High / low Fail safe mode
Conduit	1/2" NPT x2 hole	1/2" NPT x2 hole	1/2" NPT x2 hole
Operation Pressure	ATM	20kg/cm^2	20kg/cm^2

WIRING DIAGRAM

DESCRIPTION OF PANEL FUNCTION

❶ Set Point: Clockwise, capacitance increases.
❷ Red LED: Power indicator.
❸ Range: Alarm setting- HI/LOW
❹ FSH/FSL switch (High/Low level failsafe)
❺ Green LED: Alarm indicator for FSH and FSL.
Green LED turns off when alarm goes off.
❻ Time Delay: Alarm time delay setting up to 30 seconds.
❼ Power switch.
❽ Alarm simulation testing.
❾ Relay output.
❿ Power.

DESCRIPTION OF PANEL DISPLAY



FAILSAFE ALARM

FSH high level failsafe alarm:
PRO-ADMIT switch is installed in high level and FSH mode is on. Green LED lights up and relay output/NC is opened when medium is in normal level(Medium does not reach the probe). When medium level reaches high level(Medium touches the probe) or blackout, Green LED shuts off and relay output/NC is closed. When relay output/NC is closed, it implies FSH alarm is activated.

FSL low level failsafe alarm:
PRO-ADMIT switch is installed in low level and FSL mode is on. Green LED lights up and relay output/NC is opened when medium is in normal level(Medium touches the probe). When medium level drops below low level(Medium does not reach the probe) or blackout, Green LED shuts off and relay output/NC is closed. When relay output/NC is closed, it implies FSL alarm is activated.

CALIBRATION

Setting for High Level Alarm
1.Switch the FSH/FSL Knob to FSH
2.Switch the Range Knob to LO.
3.Switch the Time Delay Knob to S (Minimum).
4.Decreasing the level of the medium to below the measuring probe.
5.Spinning the Set Point Knob till the Alarm LED (green light) lights up.
6.Firstly, increasing the level of the medium till it covers half of he measuring probe and the Alarm LED (green light) shut off. Secondly, spinning the Set Point Knob clockwise till Alarm LED (green light) lights up. If the Alarm LED (green light) still not lights up after spinning it till the end, please adjust the Range Switch to HI and repeat procedure 5. Thirdly, recording the numbers of turns and its angle, then switching the knob counterclockwise back for 1/2 circle and angle.
7.Adjusting the delay time for alarm (0~3 seconds): If turning the Time Delay Knob clockwise, the delay time is postponed, while turning the Time delay Knob counterclockwise, the delay time is

Setting for Low Level Alarm
1.Switch the FSH/FSL Knob to FSL.
2.Switch the Range Knob to LO.
3.Switch the Time Delay Knob to S (Minimum).
4.Increasing the level of the medium to cover half of the measuring probe.
5.Spinning the Set Point Knob counterclockwise till the Alarm LED lights up. If the LED doesn't light up after spinning it to the end, please adjust the Range Knob to HI and repeat procedure 5.
6.Firstly, decreasing the level of the medium till it is below the measuring probe and the Alarm LED shut off. Secondly, spinning the Set Point Knob counterclockwise till Alarm LED (green light) lights up. Thirdly, recording the numbers of turns and its angle, then switching the knob clockwise back for 1/2 circle and angle.
7.Adjusting the delay time for alarm (0~30 seconds): If turning the Time Delay Knob clockwise, the delay time is postponed, while turning the Time delay Knob counterclockwise, the delay time is shorten.

ORDER INFORMATION

SB 2□□ □ □ □□ □□□□

Order No.

SB10: Standard Model(1"PT)
SB11/12: Standard Model(3/4"PT)
SB20: Hi-Temp Model(232°C)
SB28: Super Hi-Temp Model(550°C)
SB50: Cable Model
SB60: Mini Model

MATERIAL

0: SUS304 **6**: SUS316 **L**: SUS316L

POWER

A: 115/230Vac, 50/60HZ
B: 24Vdc ±20%

Connection

C---3/4"(20A)
D---1"(25A)
E---1-1/2"(40A)
F---2"(50A)
G---2-1/2"(65A)
H---3"(80A)
I---4"(100A)
J---5"(125A)
K---6"(150A)
S---Others

M---5kg/cm^2
N---10kg/cm^2
O---150 Lbs
P---300 Lbs
W---PN 10
X---PN 16
Y---PN 25
Z---PN 40

Q---PT
R---PF
T---BSP
U---NPT
V---GAS
S---Others

※3/4" connection is only available for SB2100, 2110, 2120, 2600.

Probe Length (unit: mm)

0500: 01~50cm
1000: 51~100cm
1500: 101~150cm ※ 50cm per Unit

∗Tolerance of the total product length is ±5mm.
∗Characteristics, specifications and dimensions are subject to change without notice.
∗Please contact your nearest distributing office for further informations.