

CAPACITANCE TYPE LEVEL SWITCH **ALN/ST8**



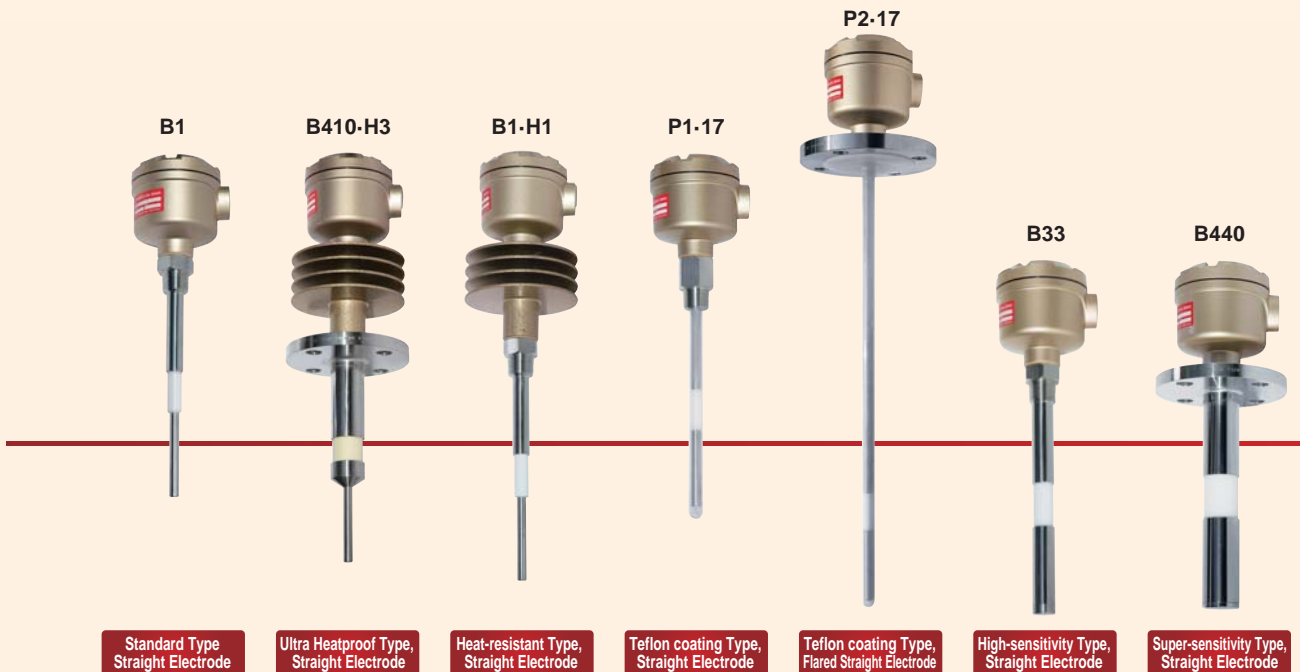
Our continuous product improvement has made highly stable & reliable detection come true. ALN/ST8 is a best-selling line that will keep evolving in the future.

ALN/ST8 CAPACITANCE TYPE LEVEL SWITCH

With abundant experience & our achievements in the market, our primary product, an all-purpose level switch, is based on our solid technology



More than 1,000 electrode shapes and special circuits are available for various applications





Detecting level of many products including powder, granules, lump, liquid, paste, and foam.

Features

- Operate reliably in face of fouling and build-up.
- Can be used for measuring highly conducting materials.
- Can easily detect highly corrosive substance.
- Highly sensitive and stable meter.
- This excels in mechanical intensity and durability.
- Can easily install and adjust.

Principle of Operation

This measures the impedance variation coming out between a main electrode and a tank-wall or between the main electrode and an earth electrode. As the level rises, the capacitance value goes up, and it provides a contact output when the level exceeds the set value.

W12



W8-B1



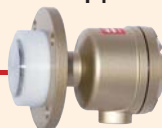
B1-IN



B1-IF



F1



F27



L1



IDF Mounting Type, Straight Electrode

Ferrule-mounting Type, Straight Electrode

Withstand load Type, Wire Electrode

Standard Type Wire Electrode

Standard Type Flat Electrode

Flat Electrode with Earthing Electrode

Standard Type Pipeline Electrode



ALN

Highly stable & reliable detection. Offers guaranteed solutions every application.

The Model ALN is the versatile Capacitance Type Level Switch that can detect the level of sediments in liquid, interface between two different liquids as well as the level of high-insulating powders/granules, conductive liquids/viscous liquids and others. It is one of the highly efficient detectors which KANSAI Automation Co., Ltd. has developed to ensure a correct level detection under such conditions requiring the high technology as varied measuring materials, complex/harsh products and so on. Through our long-term experiences and achievements, use of quality materials and strict quality control, we have here provided you with more stable and more reliable products.

■ Amplifier specifications

- Instrument Power Source :** 105 / 210VAC ±10% 50/60Hz
- Power Consumption :** 4.5VA
- Output Contact :** SPDT 250VAC 5A 30VDC 5A (Resistance load)
- Ambient Temperature Allowance :** -25°C to +60°C
- Stable Detection Range :**
 1. High Sensitivity 0.5–20pF
 2. Standard Sensitivity 2 – 50pF
 3. Low Sensitivity 20 – 1,000pF
 4. Ultra Low Sensitivity 5 – 35Ω
- ON Delay Time Setting :** Max.10 seconds, variable
- Vibration :** 2mm 600 – 3,600 /min in all direction for three hours
- Enclosure Rating :** IP67 equivalent
- Painting Color :** Gold

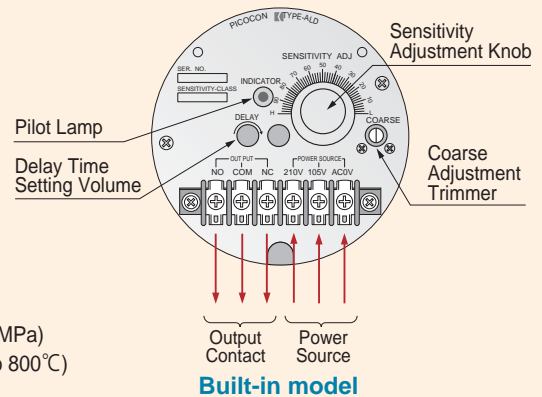
As for ALN Type, a product with 24VDC can be ordered.

■ Electrode specifications (Standard)

- Withstand Load at Electrode :** Top End Load (ℓ= 250) 1kN (100kg)
- Withstand Pressure at Electrode :** 0.98MPa (Pressure-resistant type up to 3MPa)
- Allowable Temperature at Electrode :** -25°C to +80°C (Heat-resistant type up to 800°C)
- Impact :** 9.8kGa (10G) at electrode

■ Delay Time Setting

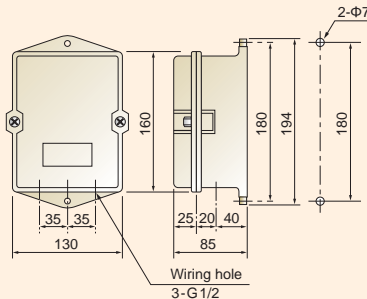
The output relay motion can be delayed continuously and variably by up to ten seconds from the time of detection. (the pilot lamp lights) Set the delay time by the setting Volume as required. When the wetted time is shorter than the set delay time, however, the output relay does not operate.



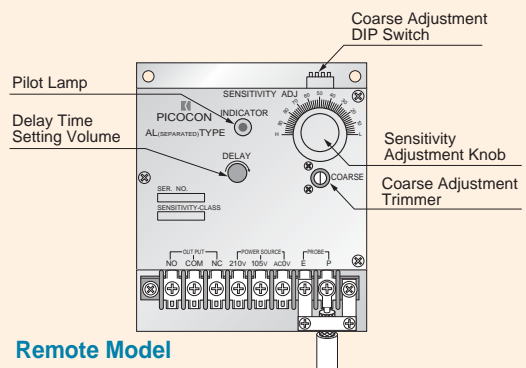
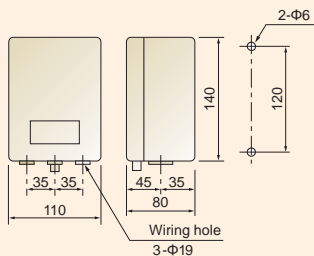
Remote Amplifier Model



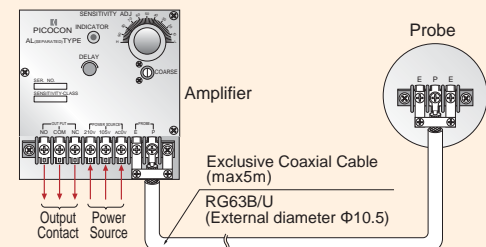
Separate box for outdoor use



Separate box for indoor use



Remote Model



Wiring Diagram



ST8

Certified as intrinsic safety explosion-proof construction, can be applied to every shape of electrode.

Intrinsically safe explosion - proof construction		Electrode part	
Barrier PS8	[PS81] ia3nG5 Approval No.T70180	[ST81] ia3nG1	Approval No.T71406 (Built-in type)
	[PS82] ia3nG5 Approval No.T69718		Approval No.T71407 (Remote type)
		[ST85] ia3nG5	Approval No.T70188
		[ST82] ia3nG2	Approval No.T70434 (Built-in type)
			Approval No.T70389 (Remote type)

This type is one of the safest explosion-proof instruments to be applied in hazardous areas where Water Gas, Hydrogen, Carbon Disulfide and others exist. You can use it safely in such ambient atmospheres as all kinds of combustible gases and flammable liquids.

Barrier PS8 (Standard Specifications)

Instrument Power Source : PS81:AC105V ±10% 50/60Hz
PS82:AC210V ±10% 50/60Hz

Power Consumption : 7VA

Output Contact : SPDTx1

PS81 : AC105V 5A

PS82 : AC210V 5A

Ambient Allowable Temperature : -20°C~+60°C

Electrode ST8 (Standard Specifications)

Withstand Load at Electrode: Top End Load (ℓ=250) 1kN (100kg)

Withstand Pressure at Electrode: 0.98MPa

Ambient Allowable Temperature: ST81:-20°C~+340°C(depends on electrode)

ST82:-20°C~+220°C(depends on electrode)

ST85:-20°C~+60°C

Impact : 98m/S² (10G) at electrode

Stable Detection Range: 1.High Sensitivity 0.5-20pF

2.Standard Sensitivity 2-50pF

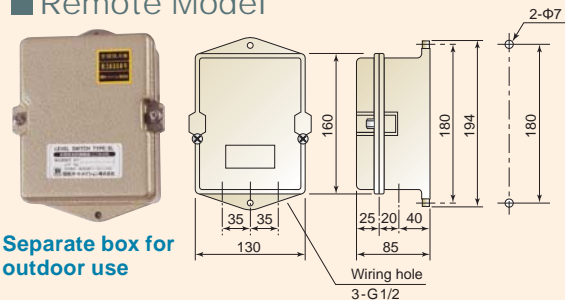
3.Low sensitivity 20-1000pF

4.Ultra Low Sensitivity 5-35Ω

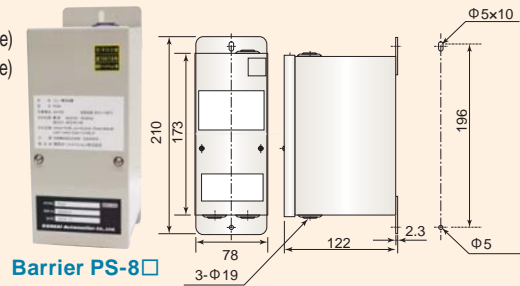
Vibration : 2mm 600-3600/min in all direction for 3 hours

Enclosure Rating : IP67 equivalent

Remote Model

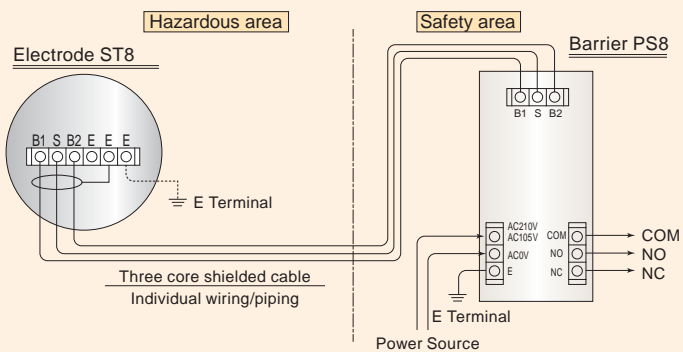
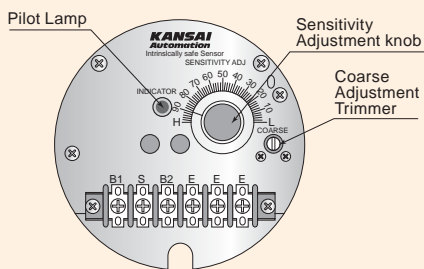


Separate box for outdoor use

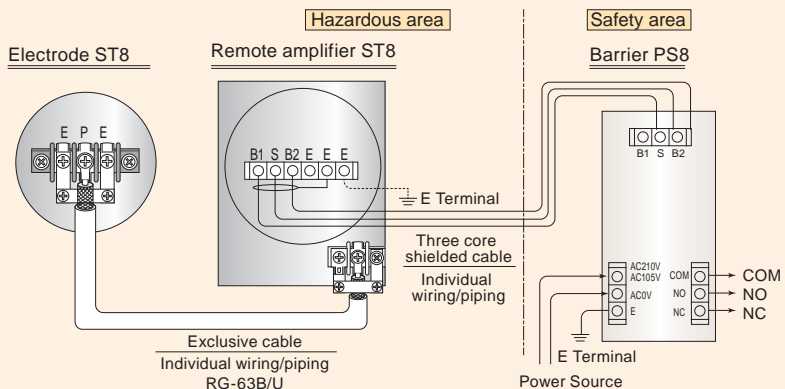
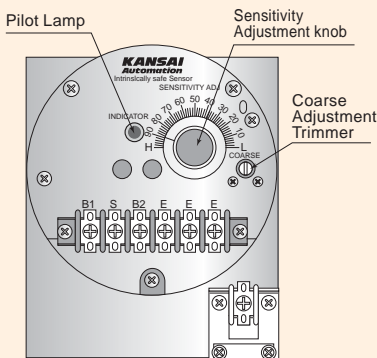


Barrier PS-8□

Built-in Model



Remote Model

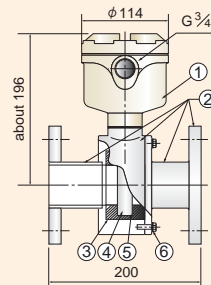


Outline Drawing

<p>B1</p>	<p>Standard Type, Straight Electrode</p> <p>The length of electrode can arbitrarily be selectable to suit your application.</p>		<p>(B1)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Screw</td> <td>SUS304</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>SUS304</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>SUS304</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Screw	SUS304	3	Earth electrode	SUS304	4	Insulator	Polyacetal	5	Electrode	SUS304			
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Screw	SUS304																						
3	Earth electrode	SUS304																						
4	Insulator	Polyacetal																						
5	Electrode	SUS304																						
<p>B33</p>	<p>High-sensitivity Type, Straight Electrode</p> <p>The shape can be selectable depending on the loading condition.</p>		<p>(B33)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Screw</td> <td>SUS304</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>SUS304</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>SUS304</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Screw	SUS304	3	Earth electrode	SUS304	4	Insulator	Polyacetal	5	Electrode	SUS304			
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Screw	SUS304																						
3	Earth electrode	SUS304																						
4	Insulator	Polyacetal																						
5	Electrode	SUS304																						
<p>B440</p>	<p>Super-sensitivity Type, Straight Electrode</p> <p>It is effective in detecting low-dielectric-constant products.</p>		<p>(B440)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Flange</td> <td>SUS304</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>SUS304</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>SUS304</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	SUS304	3	Earth electrode	SUS304	4	Insulator	Polyacetal	5	Electrode	SUS304			
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Flange	SUS304																						
3	Earth electrode	SUS304																						
4	Insulator	Polyacetal																						
5	Electrode	SUS304																						
<p>B1-H1</p>	<p>Heat-resistant Type, Straight Electrode</p> <p>Materials of insulator and gasket may be changed subject to temperature and products to be measured.</p>		<p>(B1-H1)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Screw</td> <td>SUS304</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>SUS304</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Teflon</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>SUS304</td> </tr> <tr> <td>6</td> <td>Fin</td> <td>AC</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Screw	SUS304	3	Earth electrode	SUS304	4	Insulator	Teflon	5	Electrode	SUS304	6	Fin	AC
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Screw	SUS304																						
3	Earth electrode	SUS304																						
4	Insulator	Teflon																						
5	Electrode	SUS304																						
6	Fin	AC																						
<p>B410-H3</p>	<p>Ultra Heat-resistant Type, Straight Electrode</p> <p>The electrode can work with no problem in face of its metal elasticity due to temperature change.</p>		<p>(B410-H3)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Flange</td> <td>SUS304</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>SUS304</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Ceramic</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>SUS304</td> </tr> <tr> <td>6</td> <td>Fin</td> <td>AC</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	SUS304	3	Earth electrode	SUS304	4	Insulator	Ceramic	5	Electrode	SUS304	6	Fin	AC
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Flange	SUS304																						
3	Earth electrode	SUS304																						
4	Insulator	Ceramic																						
5	Electrode	SUS304																						
6	Fin	AC																						
<p>F1</p>	<p>Standard Type, Flat Electrode</p> <p>Suitable for an agitation tank because it has no protruberance jut in a tank.</p>		<p>(F1)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Flange</td> <td>304AC</td> </tr> <tr> <td>3</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>4</td> <td>Electrode</td> <td>SUS304</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	304AC	3	Insulator	Polyacetal	4	Electrode	SUS304						
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Flange	304AC																						
3	Insulator	Polyacetal																						
4	Electrode	SUS304																						
<p>F27</p>	<p>Flat Electrode with Earthing Electrode</p> <p>The advanced flat electrode comes up with Withstand load and Ultra sensitivity.</p>		<p>(F27)</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Parts Name</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Housing</td> <td>ADC</td> </tr> <tr> <td>2</td> <td>Flange</td> <td>SUS304</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>SUS304</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>SUS304</td> </tr> <tr> <td>6</td> <td>O-ring</td> <td>Silicon</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	SUS304	3	Earth electrode	SUS304	4	Insulator	Polyacetal	5	Electrode	SUS304	6	O-ring	Silicon
No.	Parts Name	Material																						
1	Housing	ADC																						
2	Flange	SUS304																						
3	Earth electrode	SUS304																						
4	Insulator	Polyacetal																						
5	Electrode	SUS304																						
6	O-ring	Silicon																						



Standard Type, Pipeline Electrode



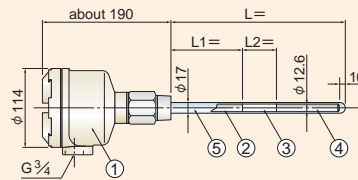
Manufacture as per order.
From teflon-coating to
high sensitivity type.

(L1)

No.	Parts Name	Material
1	Housing	ADC
2	Earth electrode with flange	SUS304
3	Insulator	Polyacetal
4	Electrode	SUS304
5	O-ring	Silicon
6	Hexagon bolt	SUS304

Teflon coating Type, Straight Electrode

Suitable for viscous materials.
Will not be affected by attached
material.

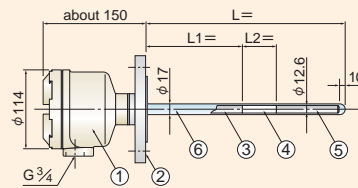


(P1-17)

No.	Parts Name	Material
1	Housing	ADC
2	Earth electrode	SUS304
3	Insulator	Polyacetal
4	Electrode	SUS304
5	Tube	Teflon

Teflon coating Type, Flared Straight Electrode

Complete Teflon-coating
up to flange face.
It is effective in detecting
corrosive substance.

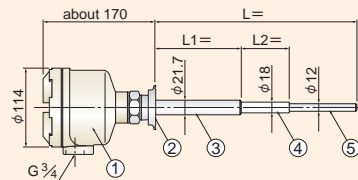


(P2-17)

No.	Parts Name	Material
1	Housing	ADC
2	Flange	SUS304
3	Earth electrode	SUS304
4	Insulator	Polyacetal
5	Electrode	SUS304
6	Tube	Teflon

Ferrule-mounting Type, Straight Electrode

Fixing by the ferrule.
Teflon-coating one can also
be manufactured.

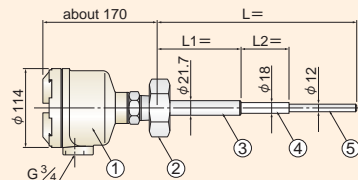


(B1-IF)

No.	Parts Name	Material
1	Housing	ADC
2	Ferrule	SUS304
3	Earth electrode	SUS304
4	Insulator	Teflon
5	Electrode	SUS304

IDF Mounting Type, Straight Electrode

Fixing by the IDF nut.
Various shapes of electrode
can be available.

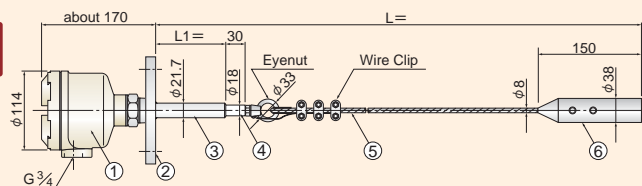


(B1-IN)

No.	Parts Name	Material
1	Housing	ADC
2	Union nut	SUS304
3	Earth electrode	SUS304
4	Insulator	Teflon
5	Electrode	SUS304

Standard Type, Wire Electrode

Typical wire-type.
The wire length is
adjustable in the field.

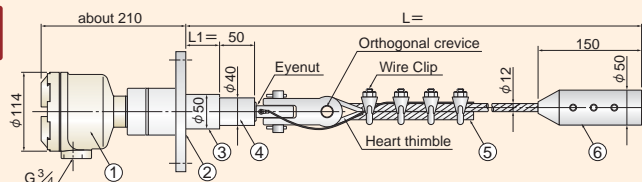


(W8-B1)

No.	Parts Name	Material
1	Housing	ADC
2	Flange	SUS304
3	Earth electrode	SUS304
4	Insulator	Polyacetal
5	Electrode wire	SUS304
6	Weight	SUS304

Withstand load Type, Wire Electrode

Well designed to stand for
a heavy load at the bottom
of a big silo.



(W12)

No.	Parts Name	Material
1	Housing	ADC
2	Flange	SUS304
3	Earth electrode	SUS304
4	Insulator	Polyacetal
5	Electrode wire	SUS304
6	Weight	SUS304

Type Designation

ALN-□□□-□□□

H. Heat-resisting Specification

Blank. Standard
H. Heat-resistant

Vibration proof

Blank. Standard
M. Amplifier, molding

Class of Sensitivity

1. High Sensitivity
2. Standard Sensitivity
3. Low Sensitivity
4. Ultra Low Sensitivity

Length of Detection Electrode

1. Up to 250mm
2. 251 – 500mm
3. 501 – 1000mm
4. 1001 – 2000mm
5. Others

Electrode type

1. Uncovered rod shape
2. Coating Rod Shape
3. Flat
4. Wire
5. Others

Instrument construction

1. Electrode-Amplifier Built-in Type
2. Remote Type (Amplifier for Indoor use)
3. Remote Type (Amplifier for Outdoor use)

ST8□-□□□-□□□

H. Heat-resisting Specification

Blank. Standard
H. Heat-resistant

Sensitivity class

1. High sensitivity
2. Standard sensitivity
3. Low sensitivity
4. Ultralow sensitivity

Length of the detecting electrode

1. Up to 250mm
2. 251 ~ 500mm
3. 501 ~ 1000mm
4. 1001 ~ 2000mm
5. 2001 ~ 4000mm (20000mm)
() Is for wire electrode only

Electrode type

1. Bare Rod Shape
2. Coating Rod Shape
3. Flat
4. Wire
5. Pipeline
6. Coating Pipeline

Instrument construction

1. Electrode-Amplifier Built-in Type
2. Remote Type
3. Remote Type (small sensor head)
4. Remote Type (cable straight out)

Model code

ST81 (ia3nG1)
ST82 (ia3nG2)
ST85 (ia3nG5)

Sensitivity

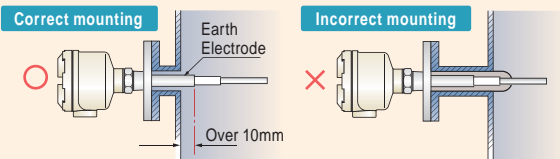
Model	Class	Dielectric Constant
ALN ST8□-□□□-1□	High sensitivity (0.5 – 20PF)	1.5 – 7
ALN ST8□-□□□-2□	Standard sensitivity (2 – 50PF)	7 – 80
ALN ST8□-□□□-3□	Low sensitivity (20 – 1,000PF)	Over 70
ALN ST8□-□□□-4□	Ultra low sensitivity (5 – 35Ω)	Resistance value 5 – 35Ω

Please provide us with the following information when inquiring and ordering

1. Name of material to be measured []
2. Dielectric constant, conductivity []
3. Material [Liquid • Powder (Granularity) • Slurry (cp)]
4. Tendency to buildup [Yes • No]
5. Corrosive [Yes • No]
6. Tank Materials []
7. Agitator etc. [Yes • No]
8. Service Temperature [] °C
9. Service Pressure [] Pa
10. Detection Point [Upper • Lower • etc]
11. Mounting [Vertical • Horizontal • Tilt • etc]
12. Process Connection [Flange • Screwed • etc]
13. Height of Standpipe [] mm
14. Electrode Length [] mm

Instruction On mounting

Earth electrode must be protruded at least 10mm, inside the tank if the buildup is heavy then more than 50mm.



Line of business

- Rotary Paddle Type Level Switch
- Vibration Type Level Switch
- Swing Type Level Switch
- Acoustic Level Switch
- Capacitance Type Level Switch
- Capacitive Proximity Sensor
- Capacitance Type Level Indicator
- Diaphragm Type Level Switch
- Tilt Switch
- Leak Type Level Switch
- Microwave Switch
- Sounding Bob Type Level Indicator
- Flow Switch
- Conductance Type Level Switch
- Float Switch
- Float Type Level Indicator
- Ultrasonic Type Level Indicator
- Equipments For Conveyor Lines
- Dust Monitor System
- Zirconia Oxygen Analyzer
- Laser Type Level Indicator
- RADAR Type Level Indicator
- Ultrasonic Flow meter

General Manufacturer of Level Controllers for Powder, Granules, and Liquid

KANSAI Automation Co., Ltd.

Headquarters:
2-14, Togano-cho, Kita-ku, Osaka 530-0056, Japan
TEL. 81-6-6312-2071 FAX. 81-6-6314-0848
e-mail: info@kansai-automation.co.jp

<http://www.kansai-automation.co.jp>

Tokyo Branch: 1-29-6, Hamamatsu-cho, Minato-ku, Tokyo 105-0013, Japan
TEL. 81-3-5777-6931 FAX. 81-3-5777-6933

Nagoya Office: 3-10-17, Uchiyama, Chigusa-ku, Nagoya 464-0075, Japan
TEL. 81-52-741-2432 FAX. 81-52-741-1588

Hiroshima Office: 13-11, Noborimachi, Naka-ku, Hiroshima 730-0016, Japan
TEL. 81-82-222-1555 FAX. 81-82-222-1556

Kyushu Office: 1-1-21, Komemachi, Kokura Kita-ku, Kitakyushu 802-0003, Japan
TEL. 81-93-511-4741 FAX. 81-93-511-4580



*Please be sure to read USER'S GUIDE, Installation & Operation Instructions before using the instrument.

*The specifications herein may be subject to change without advance notice.

Agent