

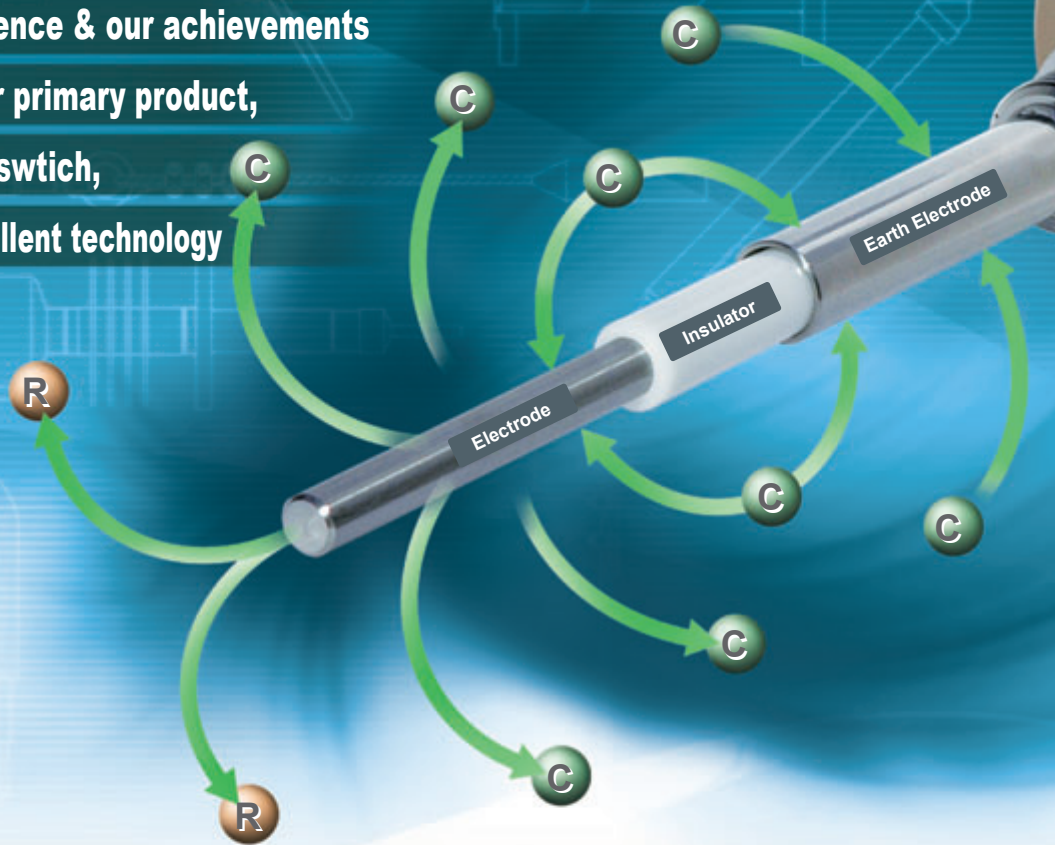
CAPACITANCE TYPE LEVEL SWITCH Model **ALN/SL**



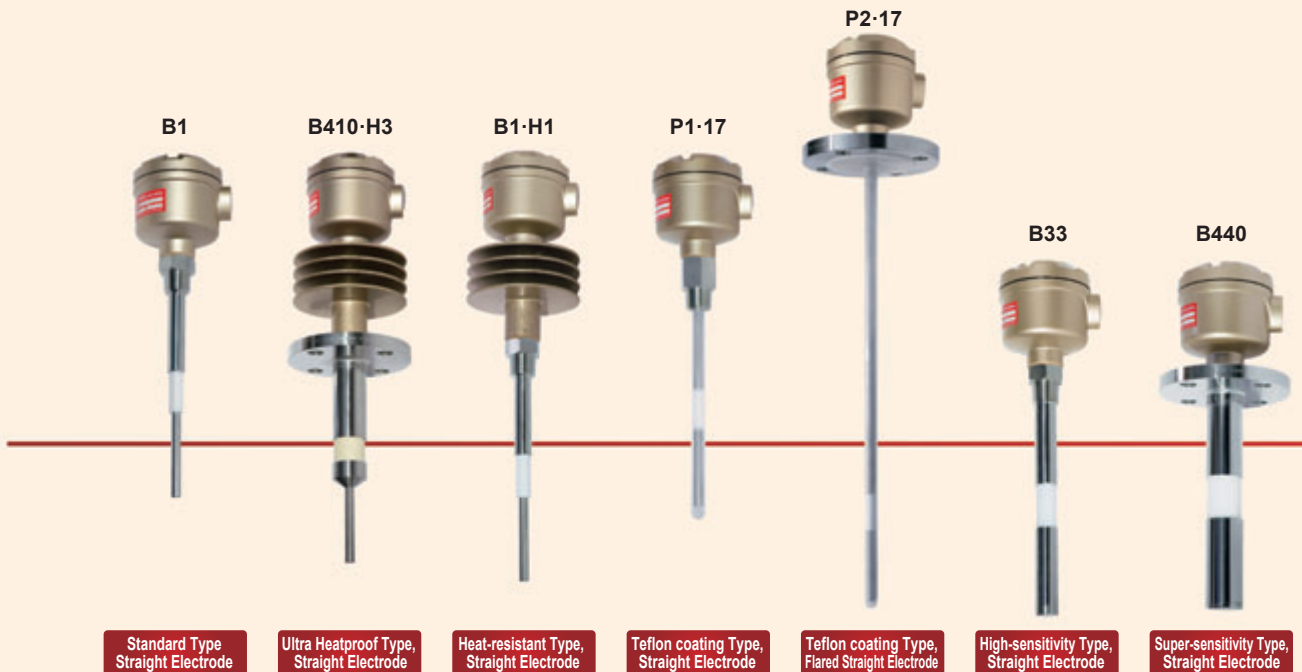
Our continuous product improvement has got highly stable & reliable detection come true. ALN/SL can be the best selling line with some possible improvements added in the years to come.

ALN/SL CAPACITANCE TYPE LEVEL SWITCH

Abundant experience & our achievements
in the market our primary product,
all-purpose level switch,
based on our excellent technology



In accordance with various applications, we can provide with various electrodes that fall into 1000 categories and with special circuit.





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.

Standard Specification

- Instrument Power Source : 105 / 210VAC ±10% 50/60Hz
- Power Consumption : 4.5VA
- Output Contact : SPDT, 250VAC 10A, 30VDC 10A
Resistive 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
- Delay Time Setting : Max.10 seconds, variable
- Vibration : 2mm 600 – 3,600 /min
in all direction for three hours
- Enclosure Rating : IP66 equivalent
- Painting Color : Gold

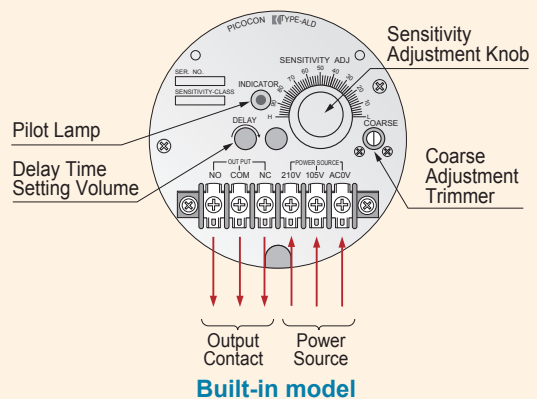
As for ALN Type, a product with 24VDC can be ordered.

Specification-probe (Standard)

- Withstand Load at Electrode : Top End Load (ℓ= 250) 1kN (100kg)
- Withstand Pressure at Electrode : 980kPa
- Allowable Temperature at Electrode : -25°C to +80°C
- Impact : 9.8kGa (10G) at electrode

Delay Time Setting

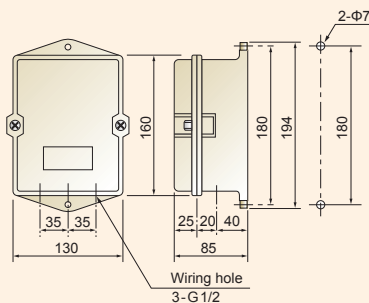
The output relay motion can be delayed continuously and variably by up to ten seconds from the time of detection. (the pilot lamp lights) Set the delay time by the setting Volume as required. When the wetted time is shorter than the set delay time, however, the output relay does not operate.



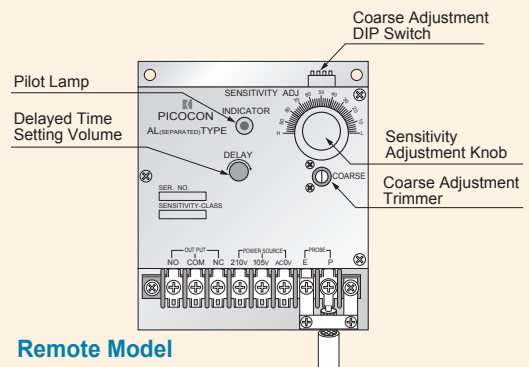
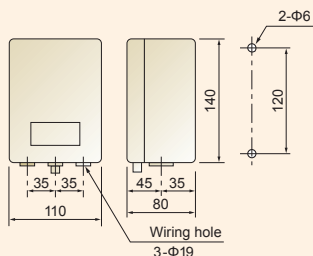
Remote Amplifier Model



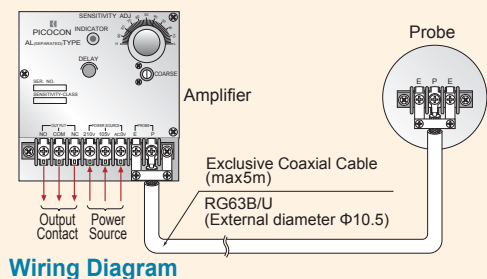
Separate box for outdoor use



Separate box for indoor use



Remote Model



Wiring Diagram



SL

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

**INTRINSIC SAFETY
EXPLOSION-PROOF
CONSTRUCTION
(i) 3nG5
LABOR INSPECTION
No.26358**

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.

Certified according to Chinese Government as Explosion-proof.



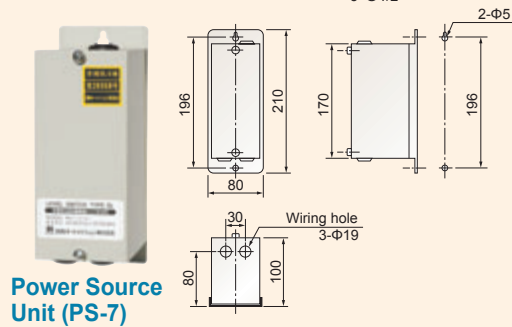
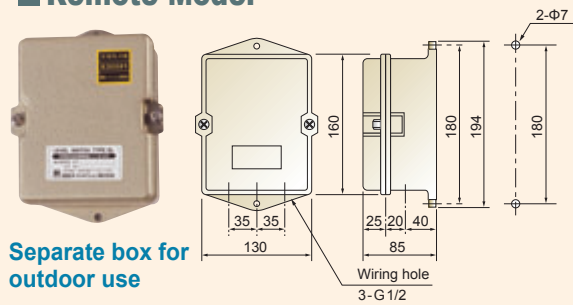
Standard Specification

- Instrument Power Source : 105V / 210 VAC $\pm 10\%$ 50/ 60Hz
- Power Consumption : 4 VA
- Output Contact : SPDT 100VA (200VAC Max, 2A Max)
- Stable Detection Range : 1. High Sensitivity 0.5 – 20pF
2. Standard Sensitivity 2 – 50pF
3. Low Sensitivity 20 – 1,000pF
- Vibration : 2mm 600 – 3,600 / min in all direction for three hours
- Enclosure Rating : IP66 equivalent
- Painting Color : Gold

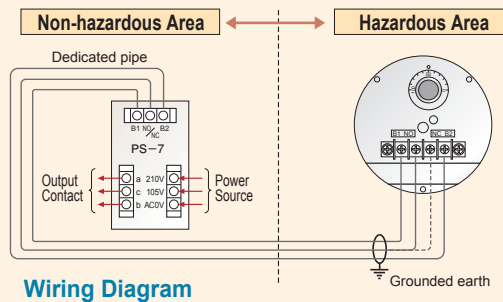
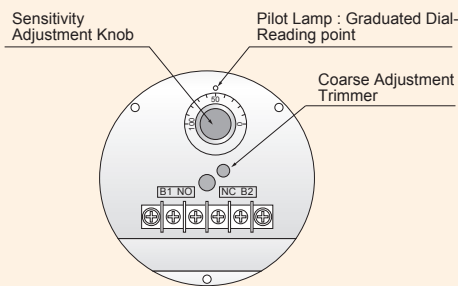
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- Withstand Load at Electrode : Top End Load ($t=250$) 1kN (100kg)
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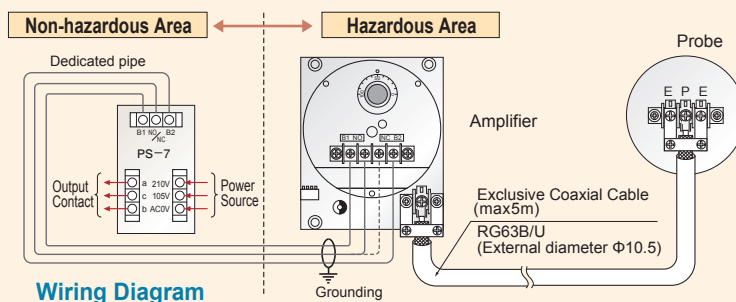
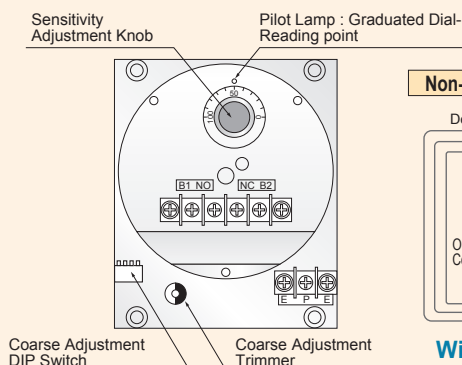
Remote Model



Built-in Model



Remote Model

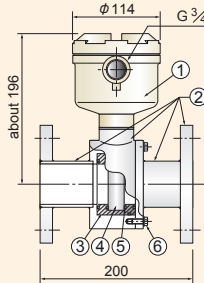


Outline Drawing

<p>B1</p>	<p>Standard Type, Straight Electrode</p>	<p>The length of electrode can arbitrarily be selectable to suit your application.</p>		<p align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>304SS</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>304SS</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Screw	304SS	3	Earth electrode	304SS	4	Insulator	Polyacetal	5	Electrode	304SS			
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<p>B33</p>	<p>High-sensitivity Type, Straight Electrode</p>	<p>The shape can be selectable depending on the loading condition.</p>		<p align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>304SS</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>304SS</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Screw	304SS	3	Earth electrode	304SS	4	Insulator	Polyacetal	5	Electrode	304SS			
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<p>B440</p>	<p>Super-sensitivity Type, Straight Electrode</p>	<p>It is effective in detecting low-dielectric-constant products.</p>		<p align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>304SS</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>304SS</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	304SS	3	Earth electrode	304SS	4	Insulator	Polyacetal	5	Electrode	304SS			
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<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 align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>304SS</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Teflon</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>304SS</td> </tr> <tr> <td>6</td> <td>Fin</td> <td>AC</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Screw	304SS	3	Earth electrode	304SS	4	Insulator	Teflon	5	Electrode	304SS	6	Fin	AC
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<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 align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>304SS</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Ceramic</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>304SS</td> </tr> <tr> <td>6</td> <td>Fin</td> <td>AC</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	304SS	3	Earth electrode	304SS	4	Insulator	Ceramic	5	Electrode	304SS	6	Fin	AC
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<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 align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>4</td> <td>Electrode</td> <td>304SS</td> </tr> </tbody> </table>	No.	Parts Name	Material	1	Housing	ADC	2	Flange	304SS	3	Insulator	Polyacetal	4	Electrode	304SS						
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<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 align="right">(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>304SS</td> </tr> <tr> <td>3</td> <td>Earth electrode</td> <td>304SS</td> </tr> <tr> <td>4</td> <td>Insulator</td> <td>Polyacetal</td> </tr> <tr> <td>5</td> <td>Electrode</td> <td>304SS</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	304SS	3	Earth electrode	304SS	4	Insulator	Polyacetal	5	Electrode	304SS	6	O-ring	Silicon
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6	O-ring	Silicon																							



Standard Type, Pipeline Electrode



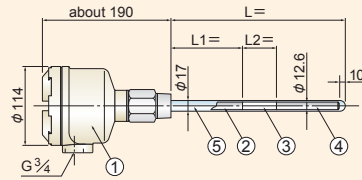
Manufacture as per order.
From teflon-coating to high sensitivity type.

(L1)

No.	Parts Name	Material
1	Housing	ADC
2	Earth electrode with flange	304SS
3	Insulator	Polyacetal
4	Electrode	304SS
5	O-ring	Silicon
6	Hexagon nut	304SS

Teflon coating Type, Straight Electrode

Suitable for viscous materials.
It may not be affected by fouling.

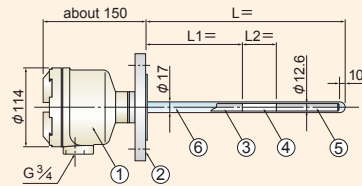


(P1-17)

No.	Parts Name	Material
1	Housing	ADC
2	Earth electrode	304SS
3	Insulator	Polyacetal
4	Electrode	304SS
5	Tube	Teflon

Teflon coating Type, Flared Straight Electrode

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

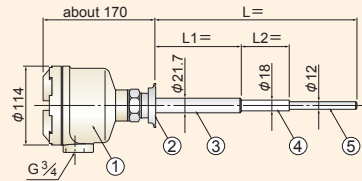


(P2-17)

No.	Parts Name	Material
1	Housing	ADC
2	Flange	304SS
3	Earth electrode	304SS
4	Insulator	Polyacetal
5	Electrode	304SS
6	Tube	Teflon

Ferrule-mounting Type, Straight Electrode

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

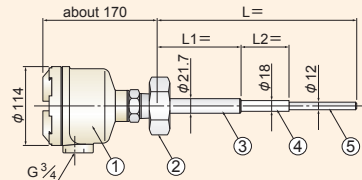


(B1-IF)

No.	Parts Name	Material
1	Housing	ADC
2	Ferrule	304SS
3	Earth electrode	304SS
4	Insulator	Teflon
5	Electrode	304SS

IDF Mounting Type, Straight Electrode

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

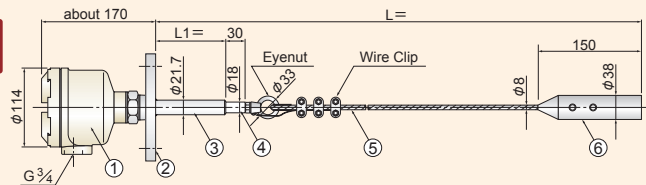


(B1-IN)

No.	Parts Name	Material
1	Housing	ADC
2	Union nut	304SS
3	Earth electrode	304SS
4	Insulator	Teflon
5	Electrode	304SS

Standard Type, Wire Electrode

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

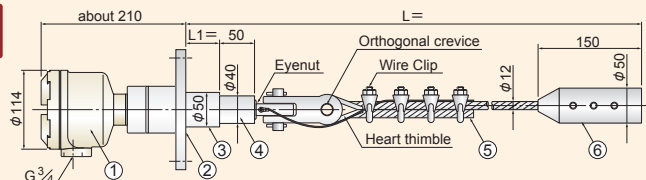


(W8-B1)

No.	Parts Name	Material
1	Housing	ADC
2	Flange	304SS
3	Earth electrode	304SS
4	Insulator	Polyacetal
5	Electrode wire	304SS
6	Weight	304SS

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	SS400
3	Earth electrode	SS400
4	Insulator	Polyacetal
5	Electrode wire	304SS
6	Weight	SS400

Type Designation

ALN-□□□-□□

H. Heat-resisting Specification

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

Shape of Detection Electrode

1. Bare Rod Shape
2. Covered Rod Shape
3. Flat
4. Wire
5. Others

Configuration

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

SL-□□□-□□

H. Heat-resisting Specification

Class of Sensitivity

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

Length of Detection Electrode

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

Shape of Detection Electrode

1. Bare Rod Shape
2. Covered Rod Shape
3. Flat
4. Wire
5. Others

Configuration

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

Please provide us with the following information when inquiring and ordering

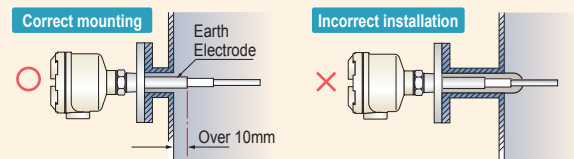
1. Name of material to be measured	[]
2. Dielectric constant, conductivity	[]
3. Material	Liquid • Powder (Granularity) • Slurry (cp) []
4. Tendency to buildup	[Yes • No]
5. Corrosive	[Yes • No]
6. Tank Materials	[]
7. Agitator etc.	[Yes • No]
8. Service Temperature	[°C]
9. Service Pressure	[Pa]
10. 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]

Sensitivity

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

■ Instruction On Setting

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 Type 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
- On-line Sensors for Accurate Liquid Analysis
- Ultrasonic Flow meter

*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.

Nuclear Power Generation to Rice Milling
All-round 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 : 3-31-27, Uchiyama, Chigusa-ku, Nagoya 464-0075, Japan
TEL. 81-52-741-2432 FAX. 81-52-741-1588

Kyushu Office : 1-2-39, Asano, Kokura Kita-ku, Kitakyushu 802-0001, Japan
TEL. 81-93-511-4741 FAX. 81-93-511-4580



Agent