



JQA-2894



JQA-EM0561
Nobeoka Office



BOTTOM LIQUID DETECTION SYSTEM

Apolarm™ B

CS-0305

Capacitance Sensor

AS-15

Signal Converter

ASAHI KASEI TECHNOSYSTEM CORPORATION

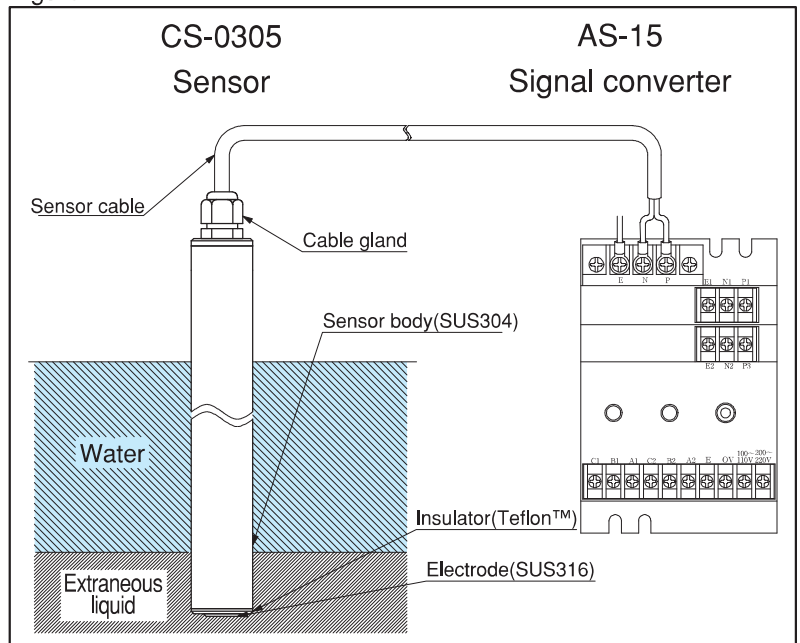
Apolarm™ B — for early liquid leak detection

The Apolarm™ B system is designed to detect the presence of a relatively heavy liquid layer below a lighter liquid layer – and thus to detect heavier-than-water liquid chemicals in water and conversely to detect water in oil and other light liquids.

The system comprises a hermetically-sealed capacitance sensor (CS-0305) and a signal converter (AS-15) for power supply, signal conversion, and alarm activation. The CS-0305 sensor circuit applies a high-frequency potential to a single electrode at the bottom of the sensor, and detects any significant change in capacitance between the electrode and ground.

If an extraneous liquid layer forms below the lighter liquid, the resulting change in capacitance is detected, amplified, and conveyed as a signal current from the sensor circuit via the sensor cable to the AS-15 signal converter, which then engages the liquid leak alarm circuit.

Figure 1



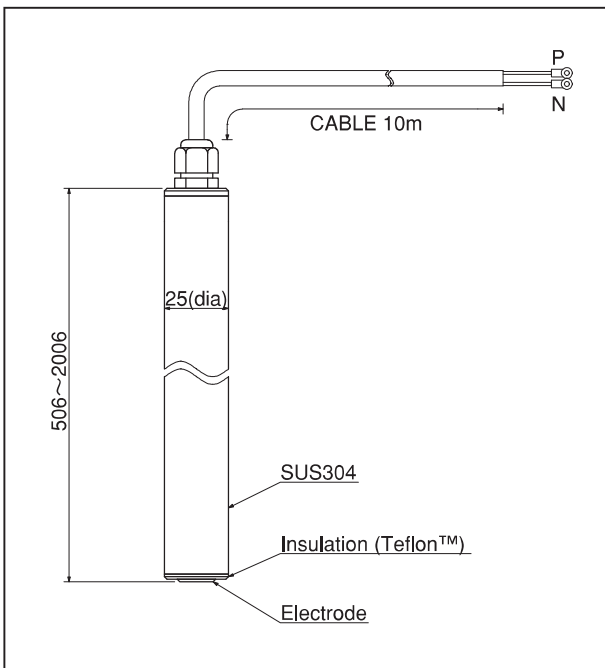
Salient features

- **Detection of extraneous liquids at the bottom of drain pits, channels, and tanks in production facilities and in utility conduits and tunnels.**
 - Heavier-than-water liquids at bottom of water.
 - Water at bottom of light liquids.
- **Inherent operational reliability**
 - Delay circuit in signal converter, to prevent false alarms due to transient fluctuation.
- **Strong, durable construction**
 - Stainless steel (SUS 304) sensor body.
 - Stainless steel (SUS 316) electrode.
 - Flex-, heat-, and oil-resistant sensor cable with PVC sheathing.
- **Fail-safe alert**
 - System alarm automatically initiated by relay circuit, in the event of power loss at signal converter, cable disconnection, or cable short-circuit.

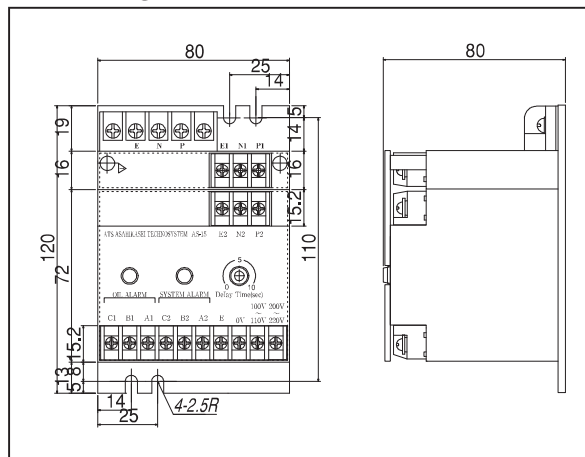
Specification

Detectable layer thickness	3 mm or more
Detected oils	Water-insoluble liquids of >1.0 S.G. and 5.0 permittivity Water
Housing structure	Watertight, IEC Class IP67 equivalent
Housing material	Stainless steel (SUS 304)
Electrode material	Stainless steel (SUS 316)
Electrode insulator	Teflon™
Weight (1m length)	Approx. 1.7 kg (excluding sensor cable)
Signal cable(included)	PVC sheathing, two 0.2 mm ² wires, 10 m length Highly flex-, heat-, and oil-resistant
Operating temperature	-10°C ~ +50°C (liquid layers must be free from freezing)
Dimensions	Diameter 25 mm, length 50~200 cm (increments of 50cm, inquire for longer than 200cm)

●CS-0305 sensor



●AS-15 signal converter

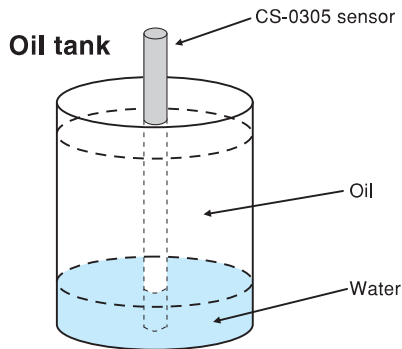


Apolarm™ B — for early liquid leak detection

Typical installations

●Water detection in oil tank

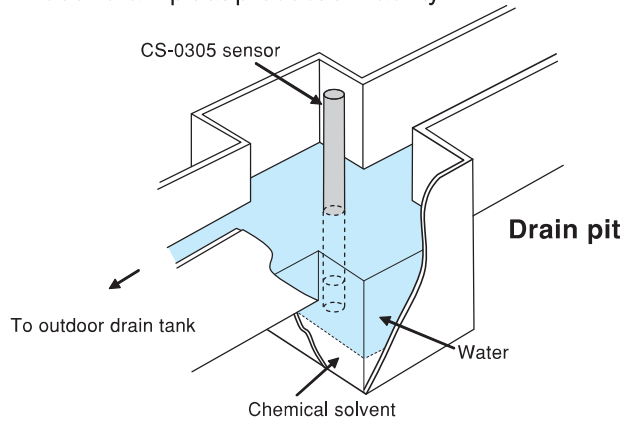
Detection of water at bottom of tank normally containing only oil.



Drawing not to scale.

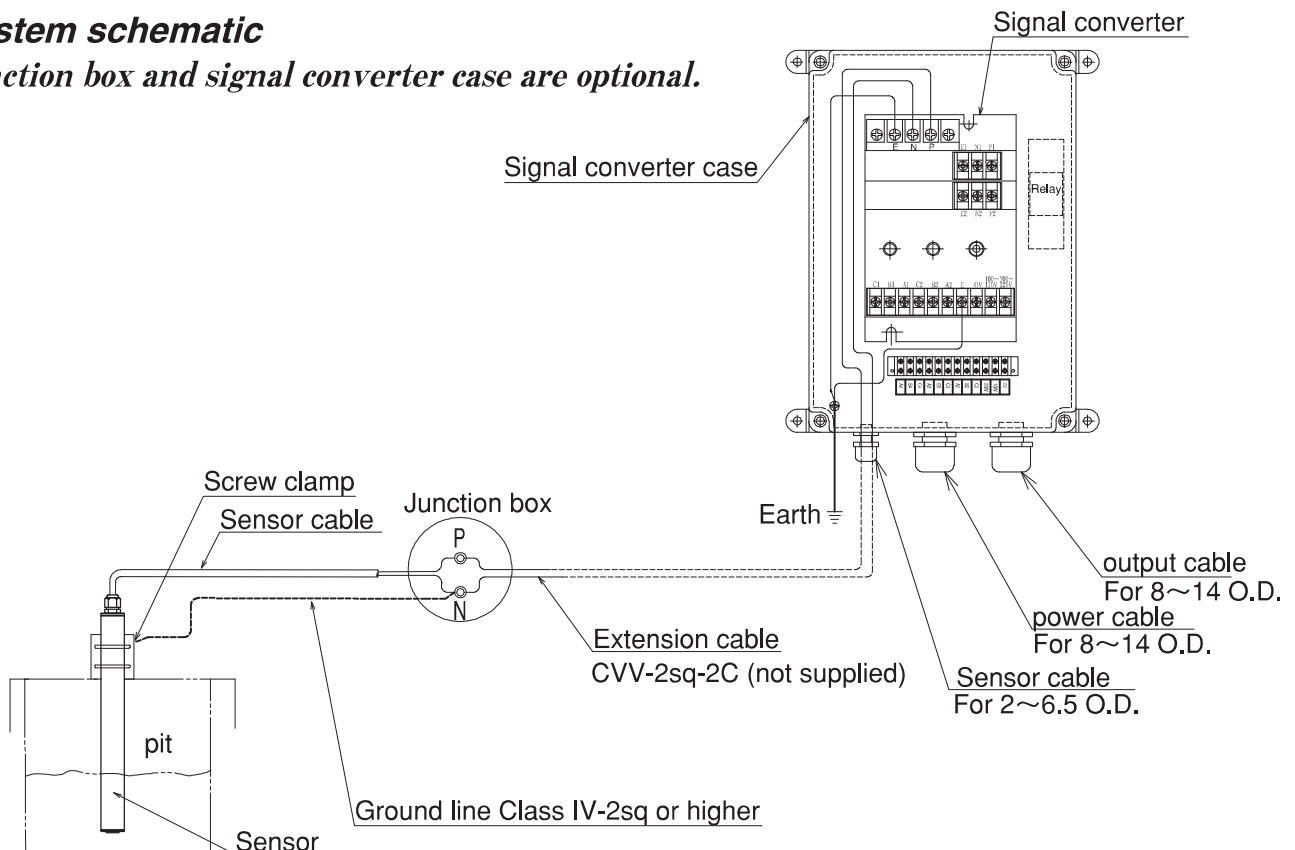
●Chemical solvent detection in water drain pit

Detection of chemical solvent (S.G. greater than 1.0) in indoor drain pit at production facility



System schematic

Junction box and signal converter case are optional.



Important notes and precautions

- Product must be handled and used in conformity with Owner's Manual.
- Product specifications and all other descriptions contained herein are subject to change without notice.
- Actual product color may differ from that of photographs, due to color printing limitations.

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