

KF-300/KFE-3000

VERTICAL FLOAT SWITCH



**BEST SELLING LINE IN TERMS OF
LIQUID LEVEL CONTROL**

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KF-300

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GOOD AND RELIABLE COST PERFORMANCE

These products lined up with a wide variety of sizes and made of various materials can be applied to all and every process.

FEATURES

DURABILITY A reed switch being used, it can securely be good for the use of 10 million times.

CORROSION RESISTANCE Wetted parts being made of SUS304(316) and corrosion-resisting resin, it can be used for various liquids.

HIGH UTILIZATION You can detect multi-points by increasing the number of reed switches as well as select many motions.

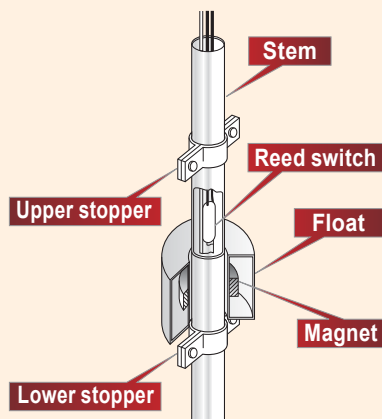
SAFETY A reed switch being used, it can work in the environment of moisture, gas and dust with no problem.

EASY TO USE The simple structure makes it easier to use.



PRINCIPLE OF OPERATION

The float switch under KF300 series housing a magnet inside a float as well as a reed switch inside a stem, it is designed to have the reed switch turn on or off with the built-in magnet which is subject to the rise and fall of liquid level. Stoppers fixed on the upper and lower parts limit the moving range of the float, thus holding contact operations of the reed switch.



DESIGNATION OF MODEL

KF-3 □ □ □

Number of detecting points

- 1 One point
- 5 Five points

Contact Capacity

- 2 60 VA
- 5 100 VA
- 6 Other special

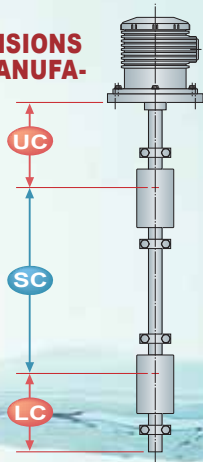
Dimensions/Materials of Float & Stem

| | Float dimension | Float material | Stem dimension | Specific Gravity of Liquid | Heatproof C |
|---|-----------------|----------------|----------------|----------------------------|-------------|
| 0 | Φ60× 95 L | SUS | Φ22 | 0.92 | 100 |
| 1 | Φ90×120 L | SUS | Φ22 | 0.63 | 100 |
| 2 | Φ51× 60 L | SUS | Φ14 | 0.63 | 100 |
| 3 | Φ60× 95 L | PVC | Φ22 | 0.75 | 50 |
| 4 | Φ90×120 L | PVC | Φ22 | 0.55 | 50 |
| 5 | Φ48× 70 L | P. P | Φ22 | 0.89 | 50 |
| 6 | Φ60× 95 L | HT, PVC | Φ22 | 0.75 | 80 |
| 7 | Φ90×120 L | HT, PVC | Φ22 | 0.55 | 80 |
| 8 | Other special | e.g. teflon | | | |

Top Flange Reed-switch Type

Generic Term of Liquid-level Meter

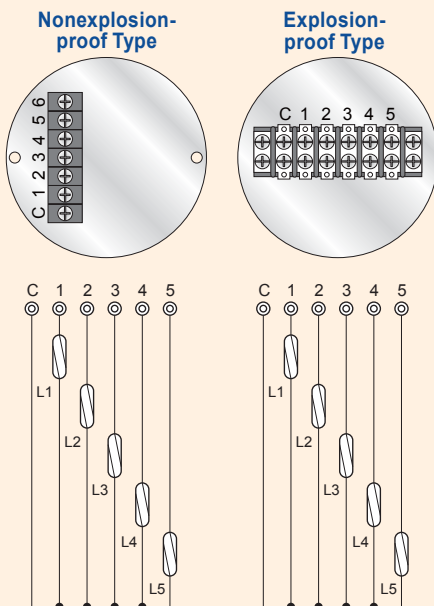
MINIMUM DIMENSIONS THAT CAN BE MANUFACTURED



| Float | UC, LC | SC |
|----------------------------------|----------|------------|
| Φ60×95L SUS PVC HT,PVC | min100mm | min130mm |
| Φ90×120L SUS PVC HT,PVC | min100mm | min150mm |
| Φ51×60L SUS | min50mm | min90mm |
| Φ48×70L P.P | min80mm | * min100mm |
| Φ40×50L SUS | min50mm | min80mm |

*It is impossible to make the contact clearance 100mm in a row when you set more than 3 alarm-settings. The minimum should be 105mm.
 (Note) When clearance between two contacts is the minimum dimension (SC), the number of stopper between floats should be made one.

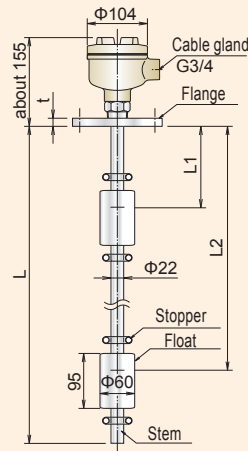
WIRING DIAGRAM FOR COMMON SPECIFICATION



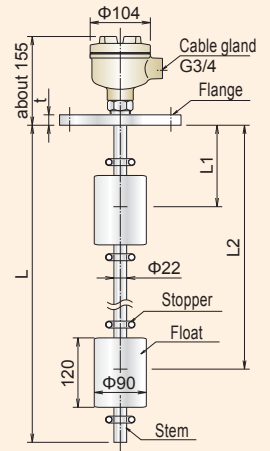
STANDARD SPECIFICATION & MODEL

SUS
Type

KF-302-□



KF-312-□



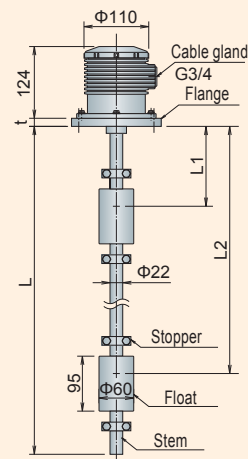
| Specification | Model | KF-302-□ | KF-312-□ |
|----------------------------|-------|-----------------------|---------------------------------|
| Application | | Water/Oil Gen. Liquid | High Viscous Low Density Liquid |
| Withstand Pressure | | 490kPa | 490kPa |
| Heat-resistant | | 100°C | 100°C |
| Mounting Flange | | Over JIS5k65A | Over JIS5k100A |
| Specific Gravity of Liquid | | Over 0.92 | Over 0.63 |
| Float Shape | | Φ60 x 95L | Φ90 x 120L |
| Float Material | | SUS304 or 316 | SUS304 or 316 |
| Stem Material | | SUS304 or 316 | SUS304 or 316 |
| Flange Material | | SS, SUS | SS, SUS |
| Material of Terminal box | | AC | AC |
| Cable Gland | | G 3/4 | G 3/4 |

* As for the flange, ANSI and JPI are also available. * Only a model, KF-322 can be made of SUS316L.
 * KF-382 has the flange mounting as its standard. Flanges of JISK40A or over, & screw-in type, G2B or R2 can also be available.

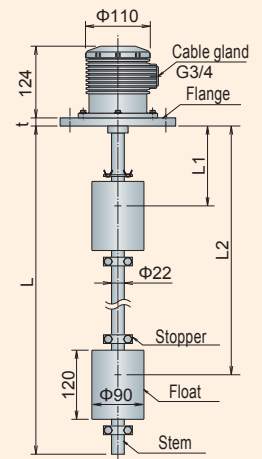
STANDARD SPECIFICATION & MODEL

Resin
Type

KF-332N-□

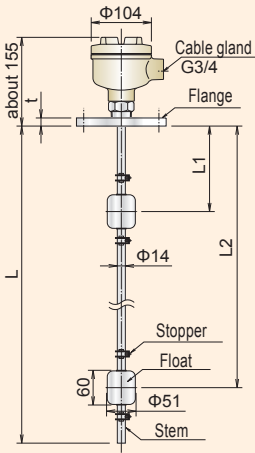


KF-342N-□

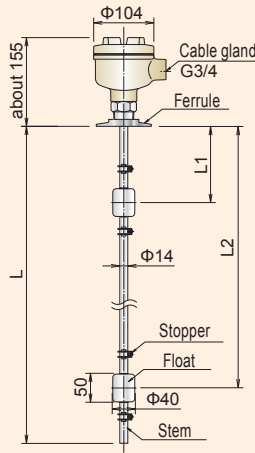


| Specification | Model | KF-332N-□ | KF-342-□ |
|----------------------------|-------|------------------------------|------------------------------|
| Application | | Corrosive Liquid Gen. Liquid | Corrosive Liquid Gen. Liquid |
| Withstand Pressure | | 196kPa | 196kPa |
| Heat-resistant | | 50°C | 50°C |
| Mounting Flange | | JIS5K65A or over | JIS5K100A or over |
| Specific Gravity of Liquid | | Over 0.75 | Over 0.55 |
| Float Shape | | Φ60 x 95L | Φ90 x 120L |
| Float Material | | PVC | PVC |
| Stem Material | | PVC | PVC |
| Flange Material | | PVC | PVC |
| Material of Terminal box | | PVC | PVC |
| Cable Gland | | G 3/4 | G 3/4 |

KF-322-□



KF-382-□ Sanitary Specification



| KF-322-□ | KF-382-□ |
|----------------------------------|----------------------------------|
| Small-caliber Low Density Liquid | Small-caliber Low Density Liquid |
| 490kPa | 490kPa |
| 100°C | 100°C |
| Over JIS5k50A | Over IDF2S |
| Over 0.63 | Over 0.63 |
| Φ51 x 60L | Φ40 x 50L |
| SUS316L | SUS304 or 316 |
| SUS304 or 316, 316L | SUS304 or 316 |
| SS, SUS | SUS |
| AC | AC |
| G 3/4 | G 3/4 |

Class NK Products are also available.

KF-302-1/2

KF-305-1/2

Detector : Up to 2m long
 Mounting : JIS5K65A or over
 Material of mounting portion : SS400/SUS304/SUS316
 Material of wetted portion: SUS304 or SUS316

KF-322-1/2

KF-325-1/2

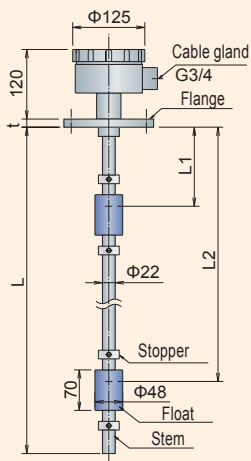
Detector : Up to 1.5m long
 Mounting : R(G)2 screw or over, or JIS5K50A over
 Material of mounting portion : SS400/SUS304/SUS316/SUS316
 Material of wetted portion: SUS304/SUS316/SUS316L

KF-382-1/2

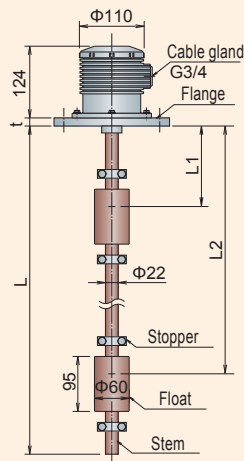
KF-385-1/2

Detector : Up to 1.5m long
 Mounting : R (G)1 · 1/2 screw or over, or JIS5K40A over
 Material of mounting portion : SS400/SUS304/SUS316
 Material of wetted portion: SUS304 or SUS316

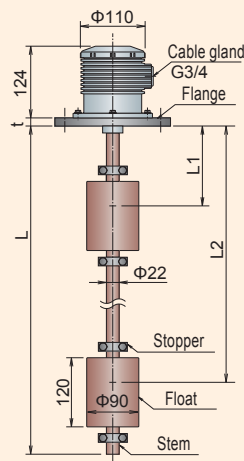
KF-352-□



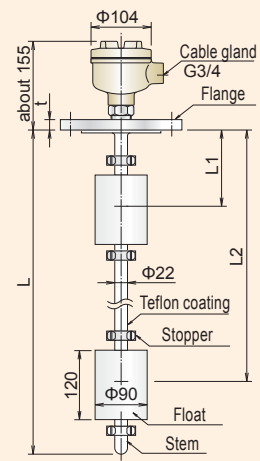
KF-362N-□



KF-372N-□



KF-382-□ 接液部テフロン仕様



| KF-352-□ | KF-362N-□ | KF-372-□ | KF-382-□ |
|-------------------------------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Corrosive Liquid Small-caliber Type | Corrosive Liquid Heat resistant | Corrosive Liquid. Heat resistant | Corrosive Liquid. Heat resistant |
| 196kPa | 196kPa | 196kPa | Normal pressure |
| 50°C (80°C when wetted part made of P.P.) | 80°C | 80°C | 100°C |
| JIS5K50A or over | JIS5K65A or over | JIS5K100A or over | JIS5K100A or over |
| Over 0.89 | Over 0.75 | Over 0.55 | Over 1.0 |
| Φ48 x 70L | Φ60 x 95L | Φ90 x 120L | Φ90 x 120L |
| P.P.(can be made of PVC, liquid density be over 1.0.) | HT.PVC | HT.PVC | Teflon |
| PVC | HT.PVC | HT.PVC | Teflon |
| PVC | HT.PVC | HT.PVC | Wetted part/ teflon |
| PVC | PVC | PVC | AC |
| G 3/4 | G 3/4 | G 3/4 | G 3/4 |



KFE-3000

Withstand-pressure
 Explosion-Proof
 Exd II BT4

IEC Certified Explosion-proof (in conformity with the Technical Standard)

DESIGNATION OF MODEL

KFE-3 - -

Float Material
 4 SUS304
 6 SUS316
 L SUS316L

Float Outer-diameter
 4 Φ40
 5 Φ51
 6 Φ60
 9 Φ90

Contact accuracy 0 ±10mm (Standard)
 A ± 5mm

Number of Detecting points (1~5)

Contact capacity 6 AC60VA Standard
 1 AC100VA [Optional order]

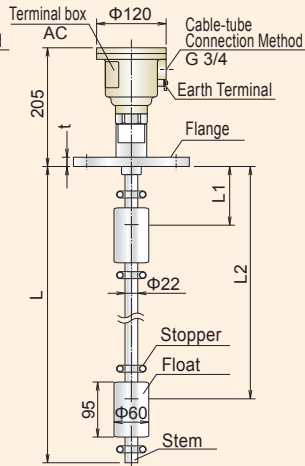
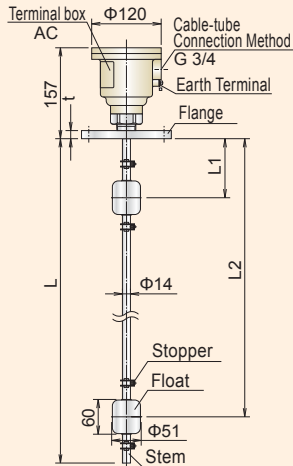
Cable-gland Specification
 0 Cable-tube Connection Method G3/4
 * In accordance with Explosion-proof regulations, be sure to use CSFX-22B(Exd II B) manufactured by Shimada Electric Co., Ltd. when it comes to using the cable gland.
 1 G 3/4 Cable gland [Optional order] (Specify the cable outer diameter.)
 2 G 1/2 Cable gland [Optional order] (Specify the cable outer diameter.)

Stem Specification (Stem diameter/material)
 340 Φ14 SUS304 344 Φ22 SUS304
 3L0 Φ14 SUS316L 346 Φ22 SUS316

**Vertical Float Type Level Switch
 Withstand-pressure Explosion-proof
 Construction Exd II BT4**

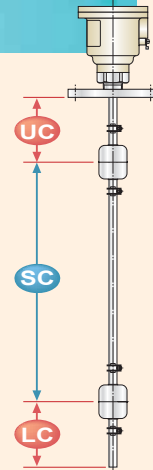
KFE-3400-6
KFE-3L00-6

KFE-3440-6
KFE-3460-6



Minimum Dimensions that can be made

| Float | UC | SC | LC |
|------------------------------|--------------|--------------|--------------|
| Φ40×50L SUS304 | min 50mm | min 80mm | min 50mm |
| Φ51×60L SUS316L | min 50mm | min 90mm | min 50mm |
| Φ60×95L SUS304 SUS316 | min 100mm | min 130mm | min 130mm |
| Φ90×120L SUS304 SUS316 | min 100mm | min 150mm | min 130mm |



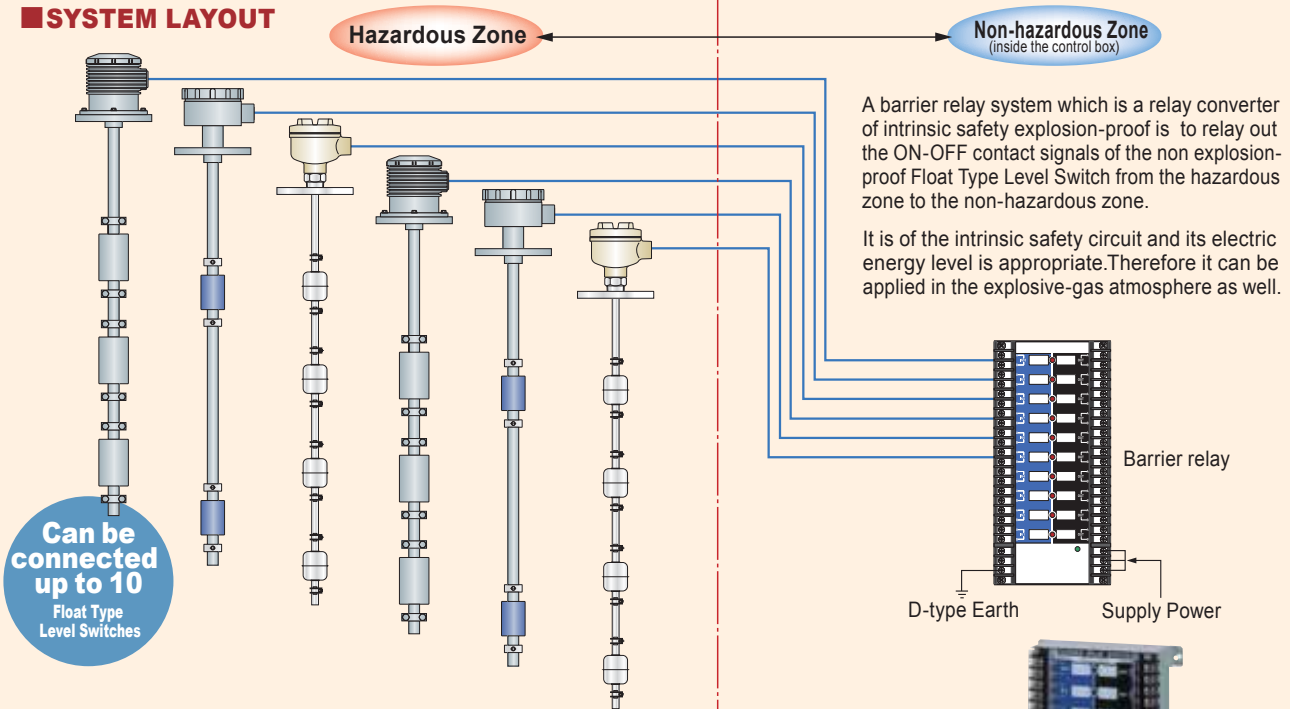
Standard Specification and Model Withstand-pressure Explosion-proof Construction Exd II BT4)

| Model | Specification | Stem diameter | Material of Stem-wetted-portion | Float | | Liquid specific gravity of the unit usable | Allowable temperature | Allowable pressure | Mounting method (※) |
|----------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------------------------|----------------------|----------|--------------------------------------------|-----------------------|--------------------|----------------------------------|
| | | | | Dimension | Material | | | | |
| KFE-3400- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | Φ14 | SUS304 | Φ40×50L | SUS304 | Over 0.63 | 100°C | 490KPa | JIS5K Over40A |
| KFE-3L00- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | SUS316L | Φ51×60L | SUS316L | Over 0.63 | | | JIS5K Over50A |
| KFE-3440- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | Φ22 | SUS304 | Φ60×95L/ Φ90×120L | SUS304 | Over 0.92/ Over 0.63 | | | JIS5K Over65A/ JIS5K Over100A |
| KFE-3460- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | | | SUS316 | Φ60×95L/ Φ90×120L | SUS316 | Over 0.92/ Over 0.63 | | | JIS5K Over65A/ JIS5K Over100A |

*Screwing-in or ferrule-fitting may be possible. *Only available shape of SUS316L is Φ51 x 60L.

APPLYING EXPLOSION-PROOF ABILITY WITH BARRIER RELAY SYSTEM

SYSTEM LAYOUT



Can be connected up to 10 Float Type Level Switches

FEATURES

- No complicated wiring for withstand-pressure explosion-proof is required. In particular, you can save expenses concerning wiring works when you connect a number of Float Type Level Switches.
- If you have some channels to spare, you can have them used for the contact ON/OFF parts including a limit switch other than Float Type Level Switch.
- Also available is a barrier relay system which can apply 3nG5 usable for all kinds of gases (3000-3R series).

SPECIFICATION LIST

| Model | Specification | Target gas | Number of channels | Power consumption | Common connection |
|---------|---------------|------------|--------------------|-------------------|-------------------------------------------------------------------------------------|
| 3001-1R | | 2G4 | 1 | 2.8VA | Can be connected to COMMON up to 10 channels. Connection to COMMON is negative (-). |
| 3002-1R | | | 2 | 3.2VA | |
| 3003-1R | | | 3 | 3.5VA | |
| 3005-1R | | | 5 | 4.0VA | |
| 3010-1R | | | 10 | 5.0VA | |
| 3001-2R | | 3aG4 | 1 | 2.8VA | Can be connected to COMMON up to 5 channels. Connection to COMMON is negative (-). |
| 3002-2R | | | 2 | 3.2VA | |
| 3003-2R | | | 3 | 3.5VA | |
| 3005-2R | | | 5 | 4.0VA | |
| 3010-2R | | | 10 | 5.4VA | |

COMMON SPECIFICATION

| | |
|----------------------------------------------|--------------------------------------------------------------------------------------------|
| Explosion-proof Construction | Intrinsic Safety Explosion-proof |
| Circuit located at the Intrinsic-safety-side | 15 VDC 15mA |
| Output Contact | 200 VDC / 24VDC 3A |
| Supply Voltage | 100VAC, 110V / 200V, 220V ±10% 50/60Hz |
| Time | Response time /5ms Operation round-trip time/10ms |
| Indication Light | Power Indicating- light (Green LED) Operation Indicating-light (Red LED) x each channel |
| Connection | Terminal block, screw: M3mm |
| Material | Case: SPC Panel: Acrylic |

Available are 3000-3R series. * Independent COMMON contact only. 3000-3R, being designed for 3nG5 as target gases, can be applicable to all kinds of gases.

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

Nuclear Power Generation to Rice Milling
 All-round Manufacturer of Level Controllers for Powder, Granules and Liquid

KANSAI Automation Co., Ltd.



Design, development, and manufacture of level measuring sensors

*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.