

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.

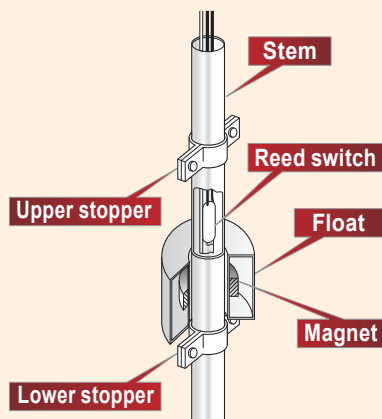
EASY TO USE

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

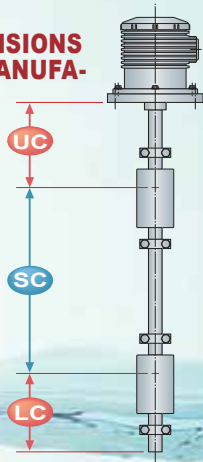
Dimensions/Materials of Float & Stem

	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

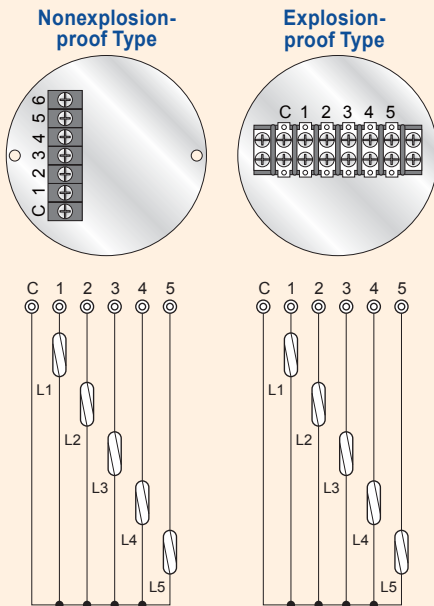
MINIMUM DIMENSIONS THAT CAN BE MANUFACTURED



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.

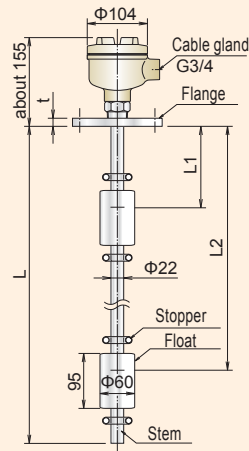
WIRING DIAGRAM FOR COMMON SPECIFICATION



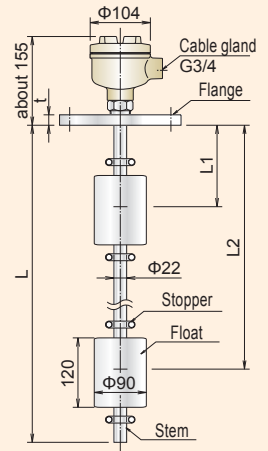
STANDARD SPECIFICATION & MODEL

SUS
Type

KF-302-□



KF-312-□



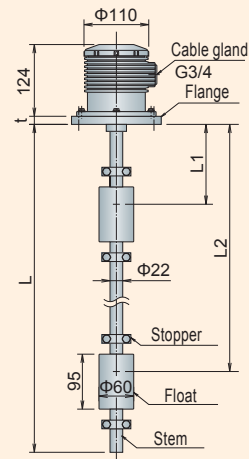
Specification	Model	KF-302-□	KF-312-□
Application		Water/Oil Gen. Liquid	High Viscous Low Density Liquid
Withstand Pressure		490kPa	490kPa
Heat-resistant		100°C	100°C
Mounting Flange		Over JIS5k65A	Over JIS5k100A
Specific Gravity of Liquid		Over 0.92	Over 0.63
Float Shape		Φ60 x 95L	Φ90 x 120L
Float 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.

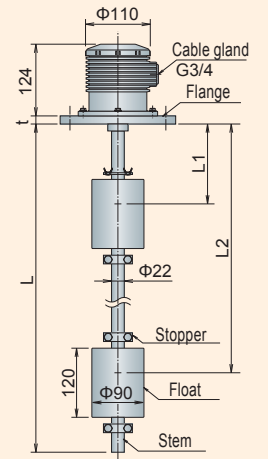
STANDARD SPECIFICATION & MODEL

Resin
Type

KF-332N-□

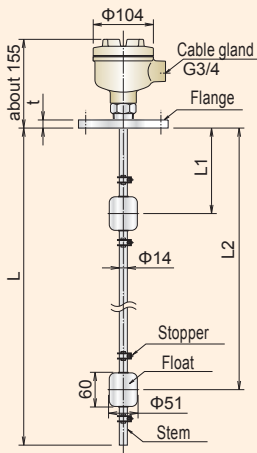


KF-342N-□

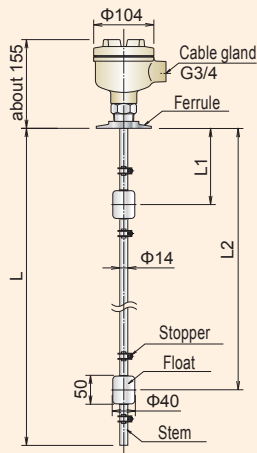


Specification	Model	KF-332N-□	KF-342-□
Application		Corrosive Liquid Gen. Liquid	Corrosive Liquid Gen. Liquid
Withstand Pressure		196kPa	196kPa
Heat-resistant		50°C	50°C
Mounting Flange		JIS5K65A or over	JIS5K100A or over
Specific Gravity of Liquid		Over 0.75	Over 0.55
Float Shape		Φ60 x 95L	Φ90 x 120L
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

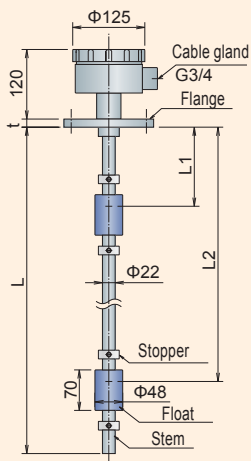
Detector : Up to 1.5m long
 Mounting : R(G)2 screw or over, or JIS5K50A over
 Material of mounting portion : SS400/SUS304/SUS316/SUS316
 Material of wetted portion: SUS304/SUS316/SUS316L

KF-382-1/2

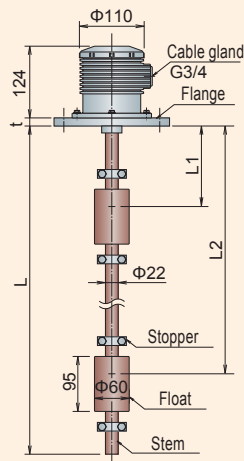
KF-385-1/2

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

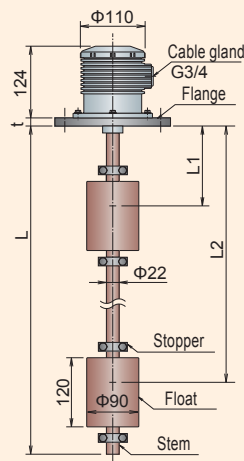
KF-352-□



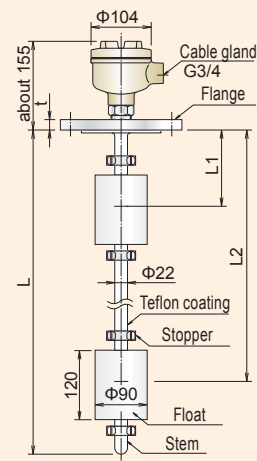
KF-362N-□



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]

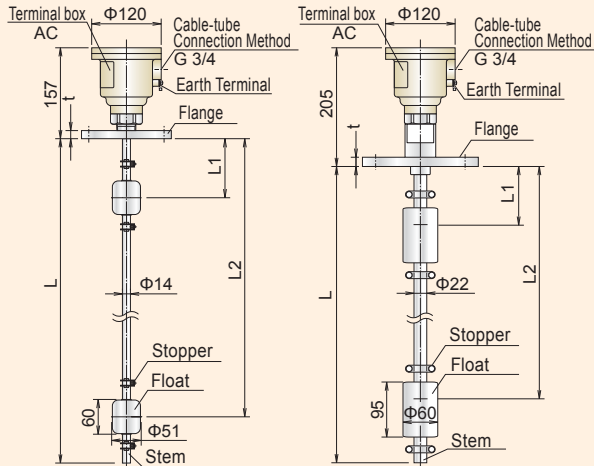
Cable-gland Specification
 0 Cable-tube Connection Method G3/4
 * In accordance with Explosion-proof regulations, be sure to use CSFX-22B(Exd II B) manufactured by Shimada Electric Co., Ltd. when it comes to using the cable gland.
 1 G 3/4 Cable gland [Optional order] (Specify the cable outer diameter.)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

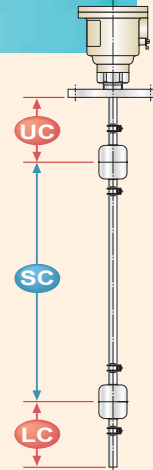
KFE-3400-6
KFE-3L00-6

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



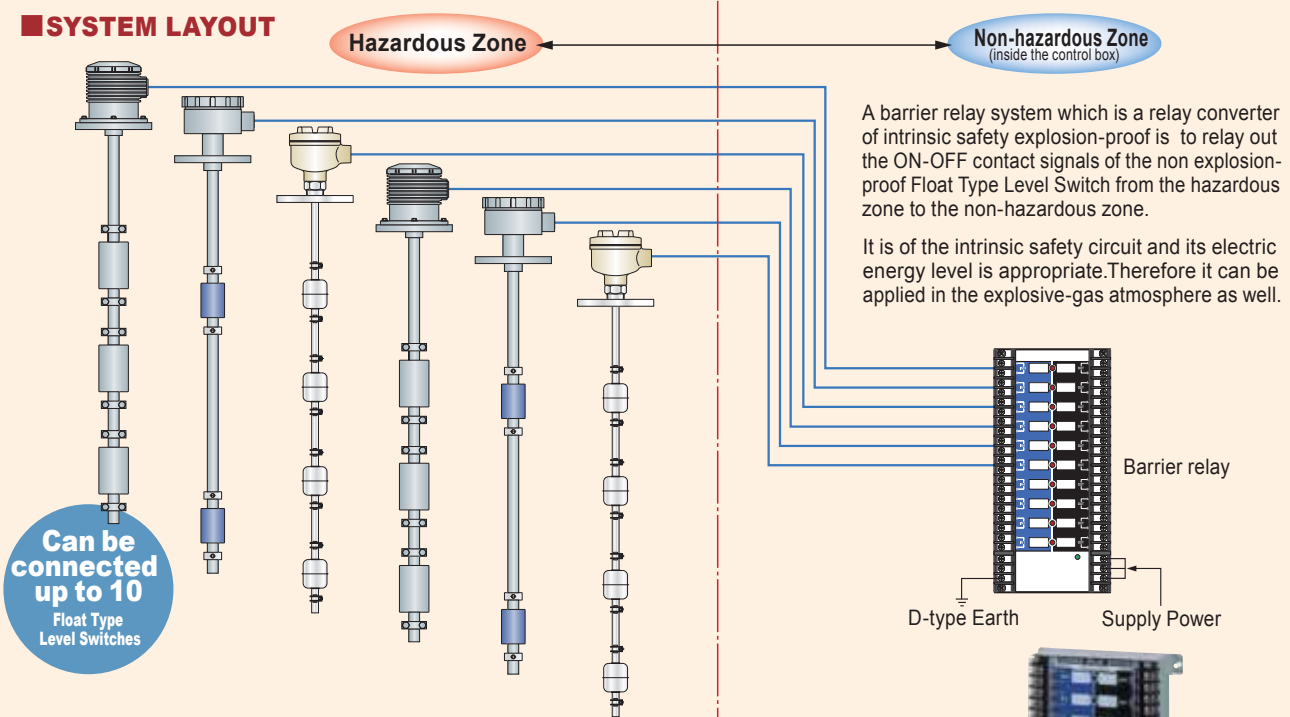
Standard Specification and Model Withstand-pressure Explosion-proof Construction Exd II BT4)

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



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

*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.

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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
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Business Hours: Monday - Friday 8.30am - 6.15pm