

### GENERAL

FB-9000 is a bellows type, mechanical direct action float level switch.

Liquids with ferrous powers/particles, which is not suitable for magnet coupling type float level switch, are measured and detected.

### STANDARD SPECIFICATION

Measuring object All types of liquids  
Minimum density ; 0.6g/cm<sup>3</sup>

Max. operating pressure Standard 0.2MPa  
Option 2MPa

Liquid temp. -19 + 150°C

#### Process connection

- 1) Tank side nozzle installation  
Standard 4" (100mm) flange
- 2) Tank side external chamber installation  
Standard 1" (25mm) flange or screw
- 3) Option Tank top installation  
Consult factory for details

#### Enclosure

- 1) Weather proof type (IP65 equivalent)
- 2) Flame proof (d2G4)
- 3) Intrinsically safe (i3aG5)  
Suitable safety relay to be provided in safe area

#### Material

Float 304SS, 316SS, 316LSS  
Bellows 316LSS  
Flange 304SS, 316SS, 316LSS  
External chamber Carbon steel, 304SS, 316SS, 316LSS

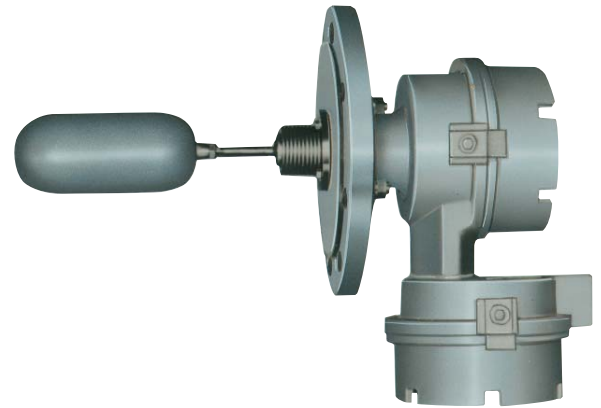
#### Available switch

- 1) SPDT microswitch  
Capacity 250 V AC, 5 A or 125 V DC, 0.4 A  
Minimum applicable load  
5 V DC, 160 mA
- 2) Air microswitch  
3 port type, 0 to 1 MPa (Max.)

Reset span Max. 20mm (Fixed)

Cable entry Standard 1 × G1/2  
(2 × Rc 1/4 for air microswitch version)

Cable termination M3.5 screw for general purpose  
M4 screw for flameproof



### MATERIAL CONSTRUCTION

#### ● Level switch

	Material class 3	Material class 4	Material class 5
Float	304SS	316SS	316LSS
Bellows	316LSS		
Flange	304SS	316SS	316LSS
Housing	AC2A		

#### ● External chamber

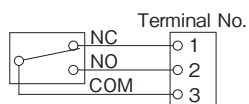
Carbon steel, 304SS, 316SS, 316LSS, Others

### NOTES

1. Bolts, nuts and gaskets to mount the level switch are customers' scope of supply.  
Prepare suitable materials.
2. This model is not suitable for freezing, adhesive or solidifying liquids.

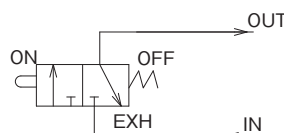
### TERMINAL ARRANGEMENT

#### ● Micro switch



M3.5 screw for general purpose  
M4 screw for flameproof

#### ● Air micro switch



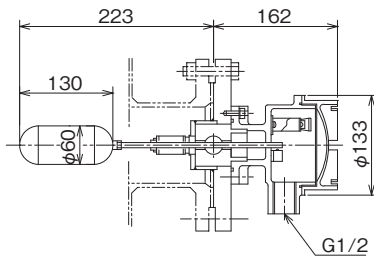
MODEL CODE

FB-909												Description
Level switch	Pressure rating	1										0.2MPa
		2										2.0MPa
	Construction	W										Weather proof
		WP										Weather proof with JISF15b glands*
		E										Plame proof (d2G4)
		EP										Plame proof (d2G4) with flame proof cable glands*
		S										Intrinsically safe (i3aG5,safety relay provided)
		SP										Intrinsically safe (i3aG5,safety relay provided) with JISF15b glands*
	Material class		—	3								Material class 3
			—	4								Material class 4
			—	5								Material class 5
			—	Z								Others
	Connection flange standard			1								Standard 4" (100mm)
				Z								Others (Min.100mm)
	Flange rating				1							JIS5K
					2							JIS10K
					3							JIS20K
					4							ANSI#150
					5							ANSI#300
					6							JPI#150
				7							JPI#300	
				Z							Others	
Type of switch				1							Standard SPDT microswith	
				2							Air microswitch (weather proof only)	
				Z							Others	
Alarm					H						High	
					L						Low	
Exterminal chamber	Chamber material			—	0						No external chamber provided	
				—	1						Carbon steel	
				—	2						304SS	
				—	3						316SS	
				—	Z						Others	
	Connection size and rating					0						No external chamber provided
						1						1"SW
						2						Rc1"
						3						1BJIS10KRF
						4						1BJIS20KRF
						5						1"ANSI#150
						6						1"ANSI#300
						7						1BJPI#150
						8						1BJPI#300
					Z						Others	
	Gaskets between level switch and external chamber					0						No external chamber provided (No gasket)
						2						PTFE (V#7020 or equ.)
						4						PTFE (V#7030 or equ.)
						5						METAL WOUND (V#8591 304SS or equ.)
						6						METAL WOUND (V#8591 316SS or equ.)
				Z						Others		
Bolts, nuts between level switch and external chamber					0						No external chamber provided	
					1						SS400 / SS400 (Unavailable for vortex gasket)	
					2						SNB7/S45C	
					3						304SS / 304SS (Unavailable for vortex gasket)	
					4						A193-B7/A194-2H	
				Z						Others		

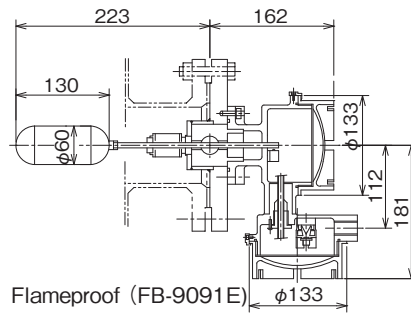
※ : Cable diameter to be specified for order

EXTERNAL DIMENSIONS

●Micro switch

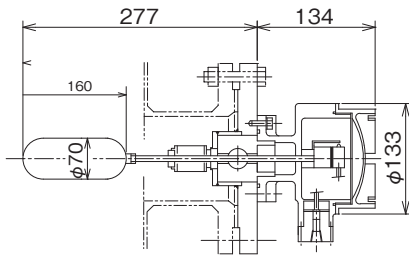


Weather proof (FB-9091W)

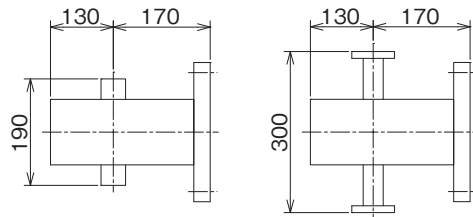


Flameproof (FB-9091E)

●Air micro switch



●External chamber



Screw connection type

Flange connection type

\* Specification is subject to change without notice.

**TOKYO KEISO CO., LTD.**

Head Office : Shiba Toho Building, 1-7-24 Shibakoen, Minato-ku, Tokyo 105-8558  
 Tel : +81-3-3431-1625 (KEY) ; Fax : +81-3-3433-4922  
 e-mail : overseas.sales@tokyokeiso.co.jp ; URL : <http://www.tokyokeiso.co.jp>