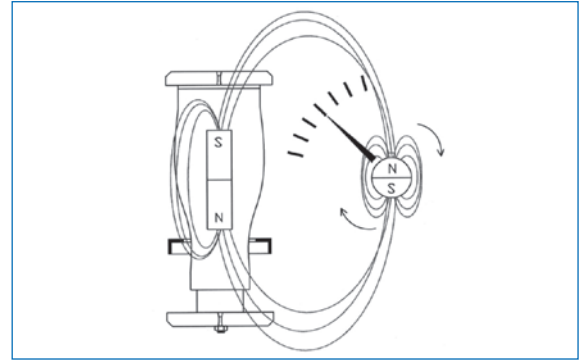


# METAL TUBE FLOW METER BF300



## Principle



### Approvals:

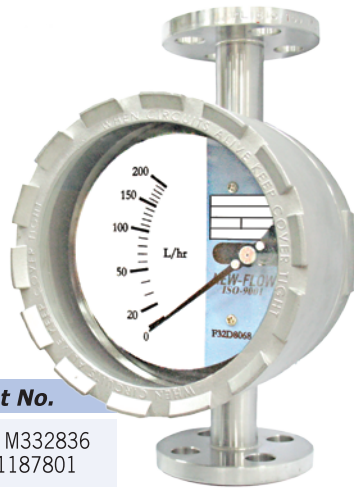


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(ITRI)2017第07-00302號

### Patent No.

Taiwan: M332836  
China: 1187801

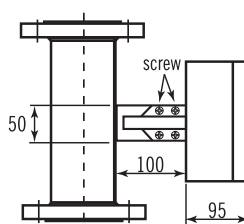
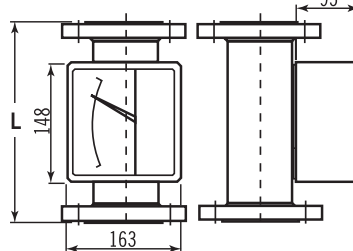


## Dimensions-mm

**IP66 Case Type:** (A-1) Rectangle Bolt Tight Type  
**Housing Material:** Aluminum alloy case with paint

1. Up to 200°C:

2. Up to 400°C c/w cooling element:



(A1)	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
L	250	250	250	250	250	250	250	250	250	300

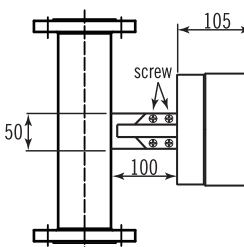
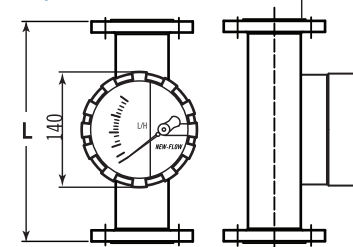
• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

**Case Type:** (A-2) & (B) Round Screw Tight Type

**Housing Material:** IP66 (A-2) Aluminum alloy, IP68 (B) SS316

1. Up to 200°C:

2. Up to 400°C c/w cooling element:



(A2 / B)	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
L	250	250	250	250	250	250	250	250	250	300

• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

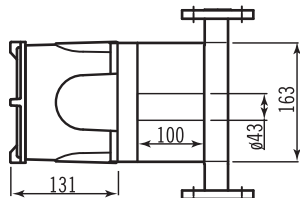
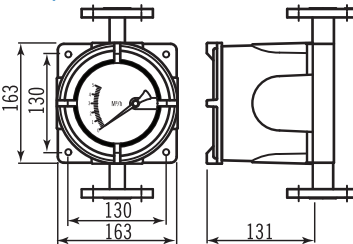
## Explosion Proof

**Case Type:** (C) Explosion Proof Certificate on Housing only  
(D) & (D1) Taiwan Explosion Proof Certification

**Housing Material:** (C) Aluminum alloy, (D) Aluminum alloy, (D1) SS316

1. Up to 200°C:

2. Up to 400°C c/w cooling element:



(C)	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
L	250	250	250	250	250	250	300	300	300	300

(D / D1)	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
L	250	250	250	250	250	250	250	250	250	300

• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

## Technical Data

**BF300 for high flows of gas, liquid, steam**

**Case Material:** Aluminum alloy case with paint; SS316 available

**Body Wetted Parts Material:** SS316, SS316+PTFE Lining (PVDF float), others on request, indication via magnetic coupling (no sealed)

**Lens Material:** Safety Glass

**Scales Calibrated:** in l/h, m<sup>3</sup>/h, kg/h, %, etc.

**Flow Rates For:**

SS316 Float:

– Water: 1 l/h up to 200,000 l/h (special ranges on request)

– Air: 0.03 Nm<sup>3</sup>/h up to 5,400 Nm<sup>3</sup>/h (special ranges on request)

PVDF Float:

– Water: 4 l/h up to 10,000 l/h (special ranges on request)

– Air: 0.13 Nm<sup>3</sup>/h up to 180 Nm<sup>3</sup>/h (special ranges on request)

**Connection Type:** Thread Type, Flange Type, Trip Clamp & Sanitary (others on request)

**Connection Size:** 1/4"~6"

**Mounting:** Vertical mounting only

**Mounting Length:** 250mm standard for size 1/4"~5", 300mm standard for size 6"; Special length is on request

**Protection Class:** Weather Proof IP66 / IP68 or Explosion proof available

**Accuracy:** ±2% F.S (±1.6% F.S option)

**Max. Pressure:** 40 kg/cm<sup>2</sup> (standard); Option: up to 100 kg/cm<sup>2</sup>

**Working Temperature:** -50°C to +200°C (standard); up to 400°C on request

**Option:** Switch available (Micro switch 5A/125VAC, 5A/250VAC, 2A/30VDC); Adjustable Reed alarm switch available (form A bistable type, N.O. type); Adjustable Inductive alarm switch available; 4~20mA (2-wires) analog output available

**LCD Display:**

– Totalizer 10 Digital (Top) / Flow Rate 8 Digital (Bottom)

– Analog Output Available: 4~20mA (2-wires)

– Power Supply: 24 VDC

\*HART® Communication: available

**Two Wire Transmitter with HART® Protocol:**

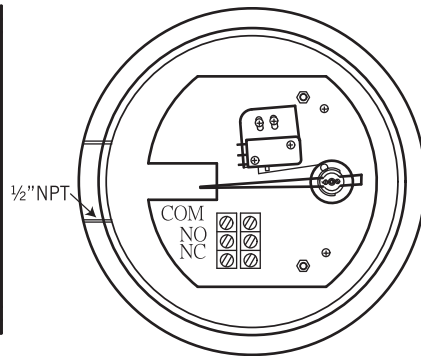
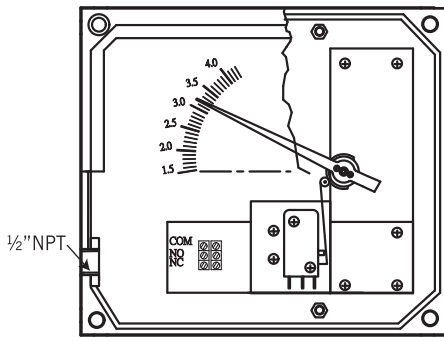


–Galvanic Isolation

–Suitable for application in SIL 2 installations

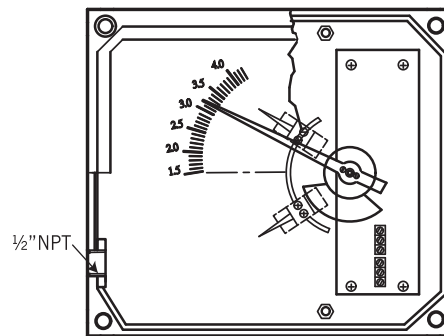
## Alarm / Analog Output

### BF-300 / GS-M (Micro Switch)



**Adjustable Micro Switch, Series BF300/GS-M**  
**1 adjustable alarm contact**  
**Load:** 5A/125VAC, 5A/250VAC, 2A/30VDC  
**Temperature:** -25°C ~ +70°C (AMB)  
**Hysteresis:** ±10% F.S (Dead Band)

### BF-300 / GS-R (Reed Switch)

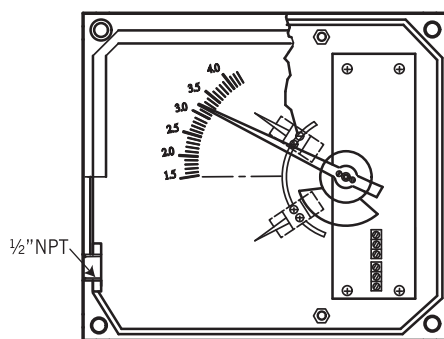


**Alarm Switch:** One or Two setting point, form A bistable type (N.O Type)  
**Hysteresis:** ±10% F.S (Dead Band)  
**Switch Rating:** AC 125V 0.5A / DC 100V 10W / Max. DC 250V < 40mA

**1 adjustable alarm**  
 Contact setting point should be within 10% to 100% of F.S

**2 adjustable alarm**  
 The second setting point should be a gap 40% from first setting point

### BF-300 / GS-C (Inductive Switch)



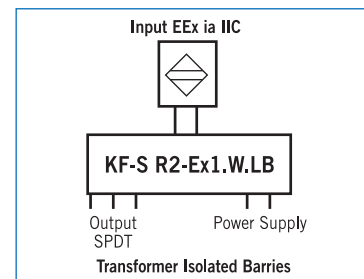
**Adjustable Inductive Alarm Switch**  
**Hysteresis:** ±1% F.S (Dead Band)  
**Inductive Sensors Slotted Type:** 3.5 mm Slot Switch

**DC, voltage 2 wire's to DIN19234 (NAMUR) for use in hazardous areas**  
 – Power Supply: 8 VDC (Ri.approx. 1kΩ)  
 – Current Consumption: Active face uncovered 3mA; Active face covered 1mA  
 – Ambient Temp.: -25°C ~ +70°C

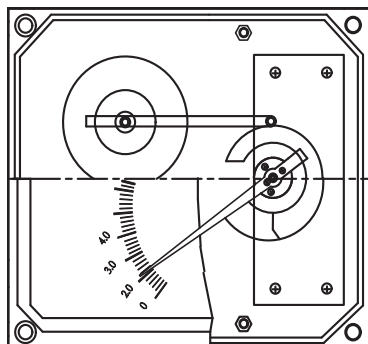
**Isolated barriers output relay for inductive sensor**  
 – Rail Mounting  
 – Control Circuit EEx ia IIC  
 – EMC acc to NAMUR NE21  
 – Contact Loading 250 VAC 2A SPDT 40 VDC 2A

**1 adjustable alarm**  
 Contact setting point should be within 10% to 100% of F.S  
 For  
 24VDC : KFD2-SR2-Ex1.W  
 115VAC: KFA5-SR2-Ex1.W  
 230VAC: KFA6-SR2-Ex1.W

**2 adjustable alarm**  
 The second setting point should be a gap 65% from first setting point  
 For  
 24VDC : KFD2-SR2-Ex2.W  
 115VAC: KFA5-SR2-Ex2.W  
 230VAC: KFA6-SR2-Ex2.W

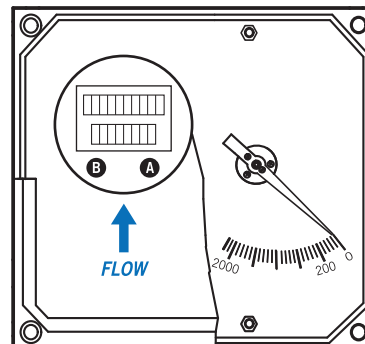


### BF-300 / GT (Analog Output)



**Electric Transmitter BF-300/GT**  
**Analog Output Available:** 4~20mA (2-wires)  
**No Alarm Switch Available**  
**Power Supply:** 24VDC  
**Temperature:** -25°C ~ +70°C (AMB)

### LCD Display / Totalizer



**LCD Display:** Totalizer 10 Digital (Top) / Flow Rate 8 Digital (Bottom)  
**Analog Output Available:** 4~20mA (2-wires)  
**Power Supply:** 24 VDC

**NOTE.**

1. This is for the case type (A-1) only.
2. Please refer to the catalogue of D-1000 for the explosion proof type.

## Standard Scales

### A. Float Material: SS316, SS316L available

Tube	L/H 20°C Water	NM <sup>3</sup> /H Air 0°C 1.013bar	PmmWater	Connection	Accuracy (NOTE 1.)
BF300a	1 ~ 10	0.03 ~ 0.3	≤750	½"	±5% F.S
BF300b	1.8 ~ 18	0.06 ~ 0.6	≤750	½"	±5% F.S
BF3001	2.5 ~ 25	0.075 ~ 0.75	≤750	½"	±5% F.S
BF3002	4 ~ 40	0.13 ~ 1.3	≤750	½"	±5% F.S
BF3003	5.5 ~ 55	0.17 ~ 1.7	≤750	½"	±5% F.S
BF3004	8 ~ 80	0.2 ~ 2	≤750	½"	±2% F.S
BF3005	16 ~ 160	0.5 ~ 5	≤750	½"	±2% F.S
BF3006	18 ~ 180	0.6 ~ 6	≤750	½"	±2% F.S
BF3007	30 ~ 300	1 ~ 10	≤750	½"	±2% F.S
BF3008	50 ~ 500	1.5 ~ 15	≤750	½"	±2% F.S
BF3009	60 ~ 600	1.8 ~ 18	≤750	½"	±2% F.S
BF3010	70 ~ 700	2 ~ 20	≤750	½"	±2% F.S
BF3010-1	100 ~ 1000	2 ~ 20	≤750	½"	±2% F.S
BF3011	100 ~ 1000	3 ~ 30	≤750	¾"	±2% F.S
BF3011-1	200 ~ 2000	3 ~ 30	≤750	¾"	±2% F.S
BF3012	120 ~ 1200	4 ~ 40	≤750	1"	±2% F.S
BF3013	160 ~ 1600	5 ~ 50	≤700	1"	±2% F.S
BF3014	200 ~ 2000	6 ~ 60	≤700	1"	±2% F.S
BF3015	240 ~ 2400	7 ~ 70	≤700	1"	±2% F.S
BF3016	280 ~ 2800	8.5 ~ 85	≤700	1"	±2% F.S
BF3017	320 ~ 3200	9 ~ 90	≤700	1"	±2% F.S
BF3018	350 ~ 3500	10 ~ 100	≤700	1"	±2% F.S
BF3018-1	500 ~ 5000	10 ~ 100	≤700	1"	±2% F.S
BF3019	500 ~ 5000	14 ~ 140	≤650	1½"	±2% F.S
BF3020	600 ~ 6000	15 ~ 150	≤650	1½"	±2% F.S
BF3021	700 ~ 7000	20 ~ 200	≤650	1½"	±2% F.S
BF3022	800 ~ 8000	24 ~ 240	≤650	1½"	±2% F.S
BF3022-1	1100 ~ 11000	24 ~ 240	≤650	1½"	±2% F.S
BF3023	1000 ~ 10000	30 ~ 300	≤650	2"	±2% F.S
BF3024	1200 ~ 12000	35 ~ 350	≤650	2"	±2% F.S
BF3025	1400 ~ 14000	40 ~ 400	≤650	2"	±2% F.S
BF3026	1500 ~ 15000	45 ~ 450	≤1000	2"	±2% F.S
BF3026-1	1800 ~ 18000	45 ~ 450	≤1000	2"	±2% F.S
BF3027	1800 ~ 18000	60 ~ 600	≤800	2½"	±2% F.S
BF3028	2000 ~ 20000	75 ~ 750	≤800	2½"	±2% F.S
BF3028-1	3000 ~ 30000	75 ~ 750	≤800	2½"	±2% F.S
BF3029	2300 ~ 23000	90 ~ 900	≤850	3"	±2% F.S
BF3030	2500 ~ 25000	120 ~ 1200	≤1000	3"	±2% F.S
BF3031	2800 ~ 28000	-----	≤1100	3"	±2% F.S
BF3032	3000 ~ 30000	-----	≤1200	3"	±2% F.S
BF300c	4000 ~ 40000	120 ~ 1200	≤2000	3"	±2% F.S
BF300d	6000 ~ 60000	180 ~ 1800	≤2200	3"	±2% F.S
BF3033	3500 ~ 35000	-----	≤1000	4"	±2% F.S
BF3034	4000 ~ 40000	-----	≤1000	4"	±2% F.S
BF3035	5000 ~ 50000	-----	≤1200	4"	±2% F.S
BF3036	6000 ~ 60000	-----	≤1500	4"	±2% F.S
BF300e	8500 ~ 85000	260 ~ 2600	≤2000	4"	±2% F.S
BF300f	10000 ~ 90000	300 ~ 2900	≤2200	4"	±2% F.S
BF300g	8000 ~ 80000	240 ~ 2400	≤2000	5"	±2% F.S
BF3037	10000 ~ 100000	300 ~ 3000	≤2000	5"	±2% F.S
BF300h	12000 ~ 120000	360 ~ 3600	≤2000	5"	±2% F.S
BF300i	15000 ~ 150000	450 ~ 4500	≤2500	6"	±2% F.S
BF300j	20000 ~ 200000	500 ~ 5400	≤2500	6"	±2% F.S

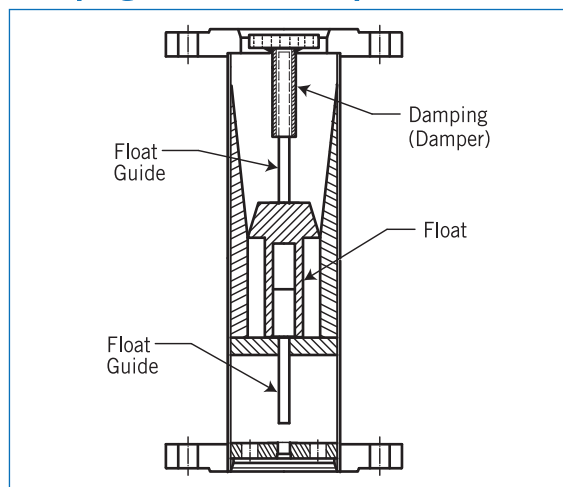
### B. Float Material: PVDF (only SS316+PTFE lining wetted parts available)

Tube	L/H 20°C Water	NM <sup>3</sup> /H Air 0°C 1.013bar	PmmWater	Connection	Accuracy (NOTE 1.)
BF3001P	4 ~ 40	0.13 ~ 1.3	≤750	½"	±5% F.S
BF3002P	5.5 ~ 55	0.17 ~ 1.7	≤750	½"	±5% F.S
BF3003P	8 ~ 80	0.2 ~ 2	≤750	½"	±2% F.S
BF3004P	16 ~ 160	0.5 ~ 5	≤750	½"	±2% F.S
BF3005P	28 ~ 280	0.9 ~ 9	≤750	¾"	±2% F.S
BF3006P	35 ~ 350	1.1 ~ 11	≤750	¾"	±2% F.S
BF3007P	40 ~ 400	1.3 ~ 13	≤750	¾"	±2% F.S
BF3008P	50 ~ 500	1.5 ~ 15	≤750	1"	±2% F.S
BF3009P	70 ~ 700	2 ~ 20	≤700	1"	±2% F.S
BF3010P	90 ~ 900	2.5 ~ 25	≤700	1"	±2% F.S
BF3011P	100 ~ 1000	3 ~ 30	≤700	1"	±2% F.S
BF3012P	120 ~ 1200	4 ~ 40	≤700	1"	±2% F.S
BF3013P	160 ~ 1600	5 ~ 50	≤700	1"	±2% F.S
BF3014P	200 ~ 2000	6 ~ 60	≤700	1"	±2% F.S
BF3015P	250 ~ 2500	7 ~ 70	≤650	1"	±2% F.S
BF3016P	300 ~ 3000	9 ~ 90	≤650	1½"	±2% F.S
BF3017P	350 ~ 3500	10 ~ 100	≤650	1½"	±2% F.S
BF3018P	450 ~ 4500	12 ~ 120	≤650	1½"	±2% F.S
BF3019P	450 ~ 4500	13 ~ 130	≤650	1½"	±2% F.S
BF3020P	500 ~ 5000	14 ~ 140	≤650	1½"	±2% F.S
BF3021P	650 ~ 6500	18 ~ 180	≤650	2"	±2% F.S
BF3022P	700 ~ 7000	-----	≤650	2"	±2% F.S
BF3023P	800 ~ 8000	-----	≤650	2"	±2% F.S
BF3024P	900 ~ 9000	-----	≤650	2½"	±2% F.S
BF3025P	1000 ~ 10000	-----	≤650	2½"	±2% F.S

#### NOTE.

- The accuracy ±5% F.S for tube BF300a/b and BF3001(P)-BF3003(P).  
The accuracy ±2% F.S for tube BF3004-BF3037 and BF3004P-BF3025P;  
option ±1.6% F.S on request.
- Performance Technical Data are effective with date of issue and are subject to change without prior notice.

### Damping Mechanical (Option Function)



## Ordering Information

BF300	Code	Type	Code	Connection Size			
<b>SIL2 Certified</b>	<b>G</b>	Indicating Only	<b>4B</b>	¼" BSP (Female)	<b>4N</b>	¼" NPT (Female)	
	<b>GS</b>	Indicating + Switch	<b>2B</b>	½" BSP (Female)	<b>2N</b>	½" NPT (Female)	
	<b>GT</b>	Indicating + 4~20mA (no alarm switch available)	<b>6B</b>	¾" BSP (Female)	<b>6N</b>	¾" NPT (Female)	
	<b>GTA</b>	<b>Hall Sensor Type</b> / Indicating + 4~20mA (no alarm switch available)	<b>10B</b>	1" BSP (Female)	<b>10N</b>	1" NPT (Female)	
	<b>GTH</b>	<b>HART Type</b> / Indicating + HART (no alarm switch available)	<b>2F</b>	¼" Flange			
		<b>Code</b>	<b>Alarm</b>	<b>4F</b>	½" Flange		
		<b>O</b>	Without Alarm Switch	<b>6F</b>	¾" Flange		
		<b>C1</b>	One Inductive Alarm Switch	<b>C2</b>	Two Inductive Alarm Switches		
		<b>M1</b>	One Micro Switch	<b>10F</b>	1" Flange		
		<b>M1</b>	One Micro Switch	<b>12F</b>	1½" Flange		
		<b>R1</b>	One Reed Switch	<b>R2</b>	Two Reed Switches		
		<b>14F</b>	1¼" Flange				
		<b>20F</b>	2" Flange				
		<b>A1</b>	IP66 / Rectangle Bolt Tight Type / Aluminum alloy			<b>22F</b>	2½" Flange
		<b>A2</b>	IP66 / Round Screw Tight Type / Aluminum alloy			<b>30F</b>	3" Flange
		<b>B1</b>	IP68 / Round Bayonet Ring Type / SS316(indicating only)			<b>40F</b>	4" Flange
		<b>B2</b>	IP68 / Round Screw Tight Type / SS316			<b>50F</b>	5" Flange
	<b>C</b>	(Ex. Certificate on Housing only) / Aluminum alloy Class I, Groups B, C & D; Class II, Groups E, F & G; NEMA 4, 7, 9			<b>60F</b>	6" Flange	
	<b>D</b>	(Taiwan Explosion Proof Certification) / Aluminum alloy Ex d IIB + H2 T6 Gb					
	<b>D1</b>	(Taiwan Explosion Proof Certification) / SS316 Ex d IIB + H2 T6 Gb					
	<b>X</b>	(Europe Union ATEX Certification) / Aluminum alloy II 2 G Ex db IIB + H2 T6 Gb Ta -20°C to +60°C					
	<b>G</b>	(China Explosion Proof Certification) / Aluminum alloy Ex d IIB + H2 T6 Gb					
		<b>Code</b>	<b>Housing Protection / Case Type / Material</b>				
		<b>A</b>	SS316, Standard			<b>B</b>	SS316L
		<b>C</b>	SS316+PTFE Lining (only PVDF float available)				
		<b>O</b>	Option				
		<b>Code</b>	<b>Body &amp; Wetted Parts Material</b>				
		<b>A</b>	SS316, Standard			<b>B</b>	SS316L
		<b>C</b>	SS316+PTFE Lining (only PVDF float available)				
		<b>O</b>	Option				
		<b>Code</b>	<b>Float Material</b>				
		<b>(A)</b>	SS316			<b>(B)</b>	SS316L
		<b>(C)</b>	PVDF			<b>(O)</b>	Option
		<b>Code</b>	<b>Connection Rating</b>				
		<b>0</b>	Thread Connection				
		<b>5</b>	JIS 5K				
		<b>10</b>	JIS 10K				
		<b>20</b>	JIS 20K				
		<b>15</b>	ANSI 150#				
		<b>30</b>	ANSI 300#				
		<b>60</b>	ANSI 600#				
		<b>90</b>	ANSI 900#				
		<b>T</b>	Other: _____				
				<b>Code</b>	<b>Transmitter Type, 4~20mA</b>		
				<b>G</b>	General Type		
				<b>O</b>	Without Transmitter		
				<b>Code</b>	<b>Fluid</b>		
					(G) Gas (O) Oil (L) Liquid (S) Steam		
				<b>Code</b>	<b>Range</b>		
				<b>S</b>	Standard Range		
					Please direct fill out the flow range in the order code.		
				<b>Code</b>	<b>LCD Display</b>		
				<b>D0</b>	With LCD Display IP66, for A1 case only		
				<b>D</b>	With LCD Display Explosion Proof, (assemble with D-1000) <b>NOTE.1</b>		
				<b>N</b>	Without		
				<b>Code</b>	<b>Damper</b>		
				<b>D</b>	With		
				<b>N</b>	Without		
				<b>Code</b>	<b>Conduit</b>		
				<b>N</b>	Without		
				<b>1</b>	½" NPT(F)		
				<b>2</b>	¾" NPT(F)		
<b>BF300</b>							

**NOTE:**  
 1. Custom-made flow range and flange size upon request.  
 2. Please fill in the ordering information and service condition, and fax this sheet along with your inquiry to 886-7-8225588.

**Special Instruction, if any:**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Service Condition:**  
 Fluid name: \_\_\_\_\_  
 Sp. Gr. (Density): \_\_\_\_\_  
 Viscosity: \_\_\_\_\_  
 Press.: \_\_\_\_\_  
 Temp.: \_\_\_\_\_  
 Full Scale: \_\_\_\_\_

**NOTE.1 LCD Display:**  
 Assemble with D-1000 Series



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