

# METAL TUBE FLOW METER BR250S – SPRING TYPE

## Technical Data

BR250S for high flows of gas, liquid, steam and oil

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

**Body Wetted Parts Material:** SS316, 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:**

– Water: 30 l/h up to 120,000 l/h (special ranges on request)

– Air: 0.8 Nm<sup>3</sup>/h up to 1,200 Nm<sup>3</sup>/h (special ranges on request)

**Connection Type:** Thread Type, Flange Type or others available

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

**Mounting:** Vertical and Horizontal available

**Mounting Length:** 250mm standard for size 1/4"~5",

300mm standard for size 6"; Special length is on request

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

**Accuracy:** ±2.5% F.S (±2.0% 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

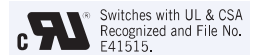
**Two Wire Transmitter with HART® Protocol:**  HART® COMMUNICATION PROTOCOL

– Galvanic Isolation

– Suitable for application in SIL 2 installations



## Approvals:



TD0400TJ  
工電(2015)第00151號  
(TTRI)2017第07-00302號

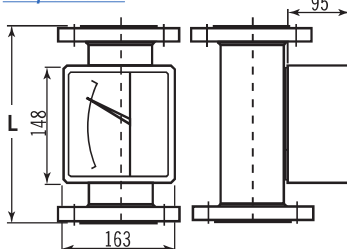
## Patent No.

Taiwan: M338981/M332936  
China: 1187801

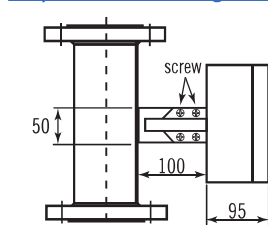
## Dimensions-mm

**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:

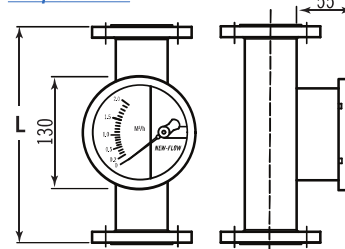


| (A1) | 1/2" | 3/4" | 1"  | 1 1/2" | 2"  | 2 1/2" | 3"  | 4"  | 5"  |
|------|------|------|-----|--------|-----|--------|-----|-----|-----|
| L    | 250  | 250  | 250 | 250    | 250 | 250    | 250 | 250 | 250 |

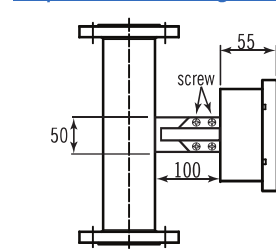
• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

**IP66 Case Type:** (B-1) Round Bayonet Ring Type (only for indicating)  
**Housing Material:** SS316

1. Up to 200°C:



2. Up to 400°C c/w cooling element:

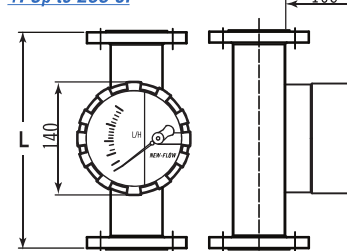


| (B1) | 1/2" | 3/4" | 1"  | 1 1/2" | 2"  | 2 1/2" | 3"  | 4"  | 5"  |
|------|------|------|-----|--------|-----|--------|-----|-----|-----|
| L    | 250  | 250  | 250 | 250    | 250 | 250    | 250 | 250 | 250 |

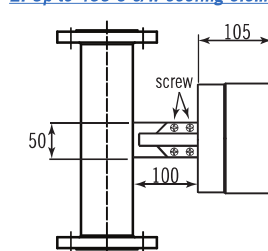
• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

**IP66 Case Type:** (A-2) & (B-2) Round Screw Tight Type  
**Housing Material:** (A-2) Aluminum alloy, (B-2) SS316

1. Up to 200°C:



2. Up to 400°C c/w cooling element:

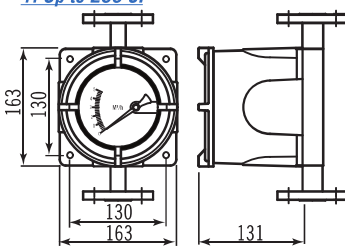


| (A2/B2) | 1/2" | 3/4" | 1"  | 1 1/2" | 2"  | 2 1/2" | 3"  | 4"  | 5"  |
|---------|------|------|-----|--------|-----|--------|-----|-----|-----|
| L       | 250  | 250  | 250 | 250    | 250 | 250    | 250 | 250 | 250 |

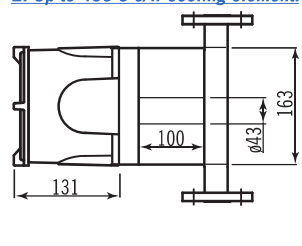
• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

**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:

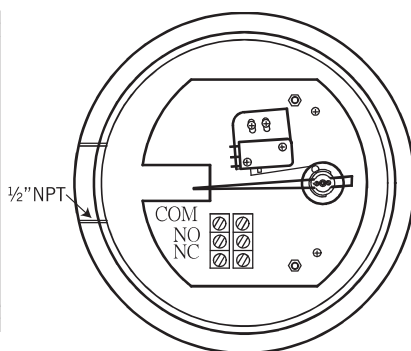
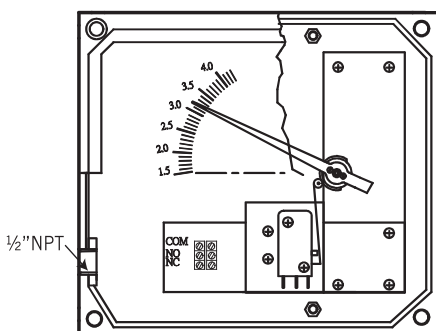


| (C)      | 1/2" | 3/4" | 1"  | 1 1/2" | 2"  | 2 1/2" | 3"  | 4"  | 5"  |
|----------|------|------|-----|--------|-----|--------|-----|-----|-----|
| L        | 250  | 250  | 250 | 250    | 250 | 250    | 300 | 300 | 300 |
| (D / D1) | 1/2" | 3/4" | 1"  | 1 1/2" | 2"  | 2 1/2" | 3"  | 4"  | 5"  |
| L        | 250  | 250  | 250 | 250    | 250 | 250    | 250 | 250 | 250 |

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

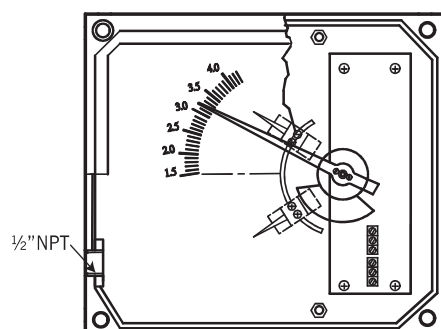
## Alarm / Analog Output

### BR-250S / GS-M (Micro Switch)



**Adjustable Micro Switch, Series BR250S/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)

### BR-250S / 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

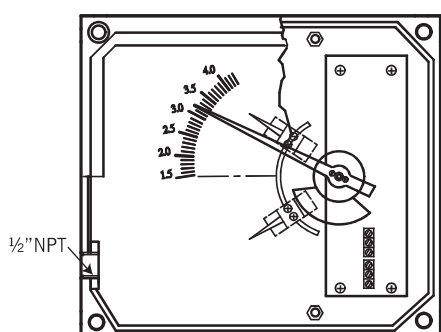
#### 1 adjustable alarm

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

### BR-250S / 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

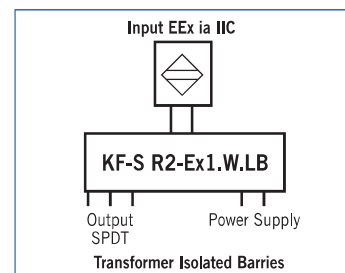
The second setting point should be a gap 65% from first setting point

For

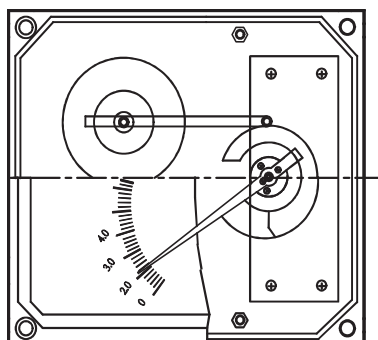
24VDC : KFD2-SR2-Ex2.W

115VAC: KFA5-SR2-Ex2.W

230VAC: KFA6-SR2-Ex2.W



### BR-250S / GT (Analog Output)



#### Electric Transmitter BR-250S/GT

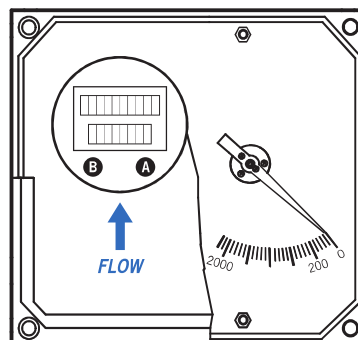
**Analog Output Available:** 4~20mA (2-wires)

**No Alarm Switch Available**

**Power Supply:** 24VDC

**Temperature:** -25°C ~ +70°C (AMB)

### LCD Display / Totalizer



#### NOTE.

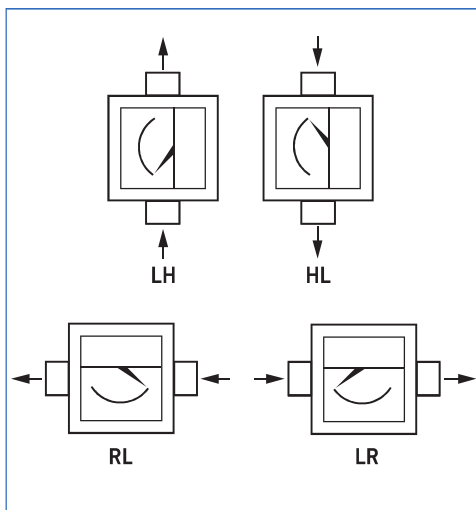
1. This is for the case type (A-1) only.
2. Please refer to the catalogue of D-1000 for the explosion proof type.

**LCD Display:** Totalizer 10 Digital (Top) / Flow Rate 8 Digital (Bottom)

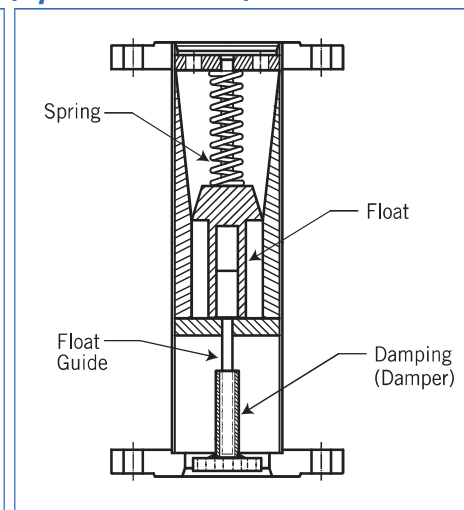
**Analog Output Available:** 4~20mA (2-wires)

**Power Supply:** 24 VDC

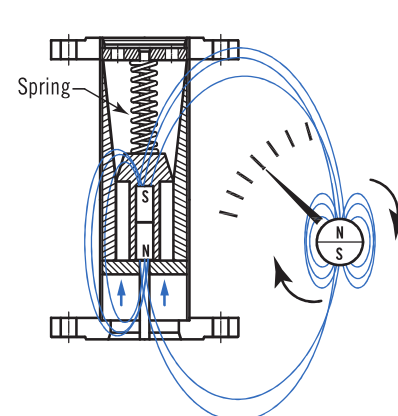
## Flow Direction Type



## Damping Mechanical (Option Function)



## Principle



## Standard Scales

| Tube     | L/H 20°C Water | NM <sup>3</sup> /H<br>Air 0°C 1.013bar | Pressure Loss<br>psig | Connection | Accuracy  |
|----------|----------------|----------------------------------------|-----------------------|------------|-----------|
| BR250S01 | 30 ~ 300       | 0.8 ~ 8                                | ≤3.5                  | 1/2"       | ±2.5% F.S |
| BR250S02 | 40 ~ 400       | 1 ~ 10                                 | ≤3.8                  | 1/2"       | ±2.5% F.S |
| BR250S03 | 50 ~ 500       | 1.2 ~ 12                               | ≤3.7                  | 1/2"       | ±2.5% F.S |
| BR250S04 | 70 ~ 700       | 1.7 ~ 17                               | ≤3.6                  | 1/2"       | ±2.5% F.S |
| BR250S05 | 80 ~ 800       | 2 ~ 20                                 | ≤3.8                  | 1/2"       | ±2.5% F.S |
| BR250S06 | 100 ~ 1000     | 2.7 ~ 27                               | ≤4.0                  | 1/2"       | ±2.5% F.S |
| BR250S07 | 150 ~ 1500     | 4 ~ 40                                 | ≤4.2                  | 1/2"       | ±2.5% F.S |
| BR250S08 | 180 ~ 1800     | 5 ~ 50                                 | ≤4.5                  | 1/2"       | ±2.5% F.S |
| BR250S09 | 150 ~ 1500     | 4 ~ 40                                 | ≤3.8                  | 3/4"       | ±2.5% F.S |
| BR250S10 | 200 ~ 2000     | 6 ~ 60                                 | ≤4.0                  | 3/4"       | ±2.5% F.S |
| BR250S11 | 300 ~ 3000     | 9 ~ 90                                 | ≤3.4                  | 1"         | ±2.5% F.S |
| BR250S12 | 400 ~ 4000     | 12 ~ 120                               | ≤3.6                  | 1"         | ±2.5% F.S |
| BR250S13 | 600 ~ 6000     | 15 ~ 150                               | ≤3.9                  | 1"         | ±2.5% F.S |
| BR250S14 | 600 ~ 6000     | 15 ~ 150                               | ≤3.6                  | 1½"        | ±2.5% F.S |
| BR250S15 | 800 ~ 8000     | 24 ~ 240                               | ≤3.8                  | 1½"        | ±2.5% F.S |
| BR250S16 | 1000 ~ 10000   | 30 ~ 300                               | ≤3.9                  | 1½"        | ±2.5% F.S |
| BR250S17 | 1200 ~ 12000   | 35 ~ 350                               | ≤4.3                  | 1½"        | ±2.5% F.S |
| BR250S18 | 1200 ~ 12000   | 35 ~ 350                               | ≤3.2                  | 2"         | ±2.5% F.S |
| BR250S19 | 1600 ~ 16000   | 50 ~ 500                               | ≤3.4                  | 2"         | ±2.5% F.S |
| BR250S20 | 2000 ~ 20000   | 60 ~ 600                               | ≤3.8                  | 2"         | ±2.5% F.S |
| BR250S21 | 2500 ~ 25000   | 70 ~ 700                               | ≤4.1                  | 2"         | ±2.5% F.S |
| BR250S22 | 2000 ~ 20000   | 70 ~ 700                               | ≤3.0                  | 2½"        | ±2.5% F.S |
| BR250S23 | 3000 ~ 30000   | 80 ~ 800                               | ≤3.2                  | 2½"        | ±2.5% F.S |
| BR250S24 | 3000 ~ 30000   | 90 ~ 900                               | ≤3.4                  | 3"         | ±2.5% F.S |
| BR250S25 | 4000 ~ 40000   | 120 ~ 1200                             | ≤3.7                  | 3"         | ±2.5% F.S |
| BR250S26 | 5000 ~ 50000   | -----                                  | ≤3.6                  | 4"         | ±2.5% F.S |
| BR250S27 | 6000 ~ 60000   | -----                                  | ≤4.2                  | 4"         | ±2.5% F.S |
| BR250S28 | 10000~100000   | -----                                  | ≤3.8                  | 5"         | ±2.5% F.S |
| BR250S29 | 12000~120000   | -----                                  | ≤4.3                  | 5"         | ±2.5% F.S |

### NOTE

Performance Technical Data are effective with date of issue and are subject to change without prior notice.

### Ordering Information

[illegible]

**NOTE:**

1. Custom-made flow range and flange size upon request.
2. Please fill in the ordering information and service condition

## Special Instruction, if any:

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## Service Condition:

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

**NOTE.1** LCD Display:

### Assemble with D-1000 Series

