

# 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 400,000 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:** ¼"~8"

**Mounting:** Vertical and Horizontal available

**Mounting Length:** 250mm standard for size ¼"~4",

300mm standard for size 5~10"; Special length is on request

**Protection Class:** Weather Proof IP66 / IP68 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

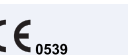
**Two Wire Transmitter with HART® Protocol:** 

–Galvanic Isolation

–Suitable for application in SIL 2 installations



### Approvals:



### Patent No.

Taiwan: M338981/M332936  
China: 1187801

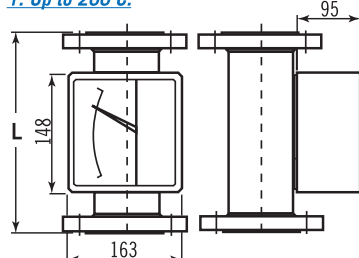


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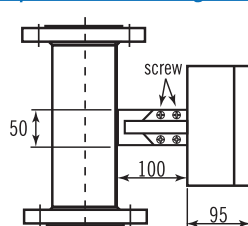
## Dimensions-mm

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

1. Up to 200°C:



2. Up to 400°C c/w cooling element:

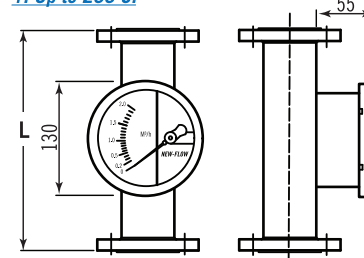


| (A1) | Body Size |     |     |     |     |     |     |     |     |     |
|------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|      | ½"        | ¾"  | 1"  | 1½" | 2"  | 2½" | 3"  | 4"  | 5"  | 6"  |
| L    | 250       | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 300 | 300 |

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

**IP68 Case Type:** (B-1) Round Bayonet Ring Type (only for indicating)  
**Housing Material:** SS316

1. Up to 200°C:

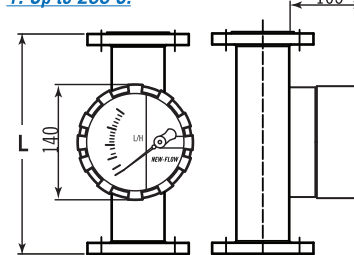


| (B1) | Body Size |     |     |     |     |     |     |     |     |     |
|------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|      | ½"        | ¾"  | 1"  | 1½" | 2"  | 2½" | 3"  | 4"  | 5"  | 6"  |
| L    | 250       | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 300 | 300 |

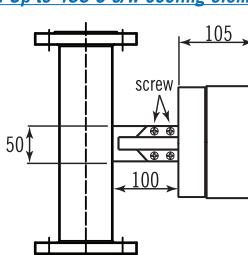
• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

**Case Type:** (A-2) & (B-2) Round Screw Tight Type  
**Housing Material:** IP66 (A-2) Aluminum alloy, IP68 (B-2) SS316

1. Up to 200°C:



2. Up to 400°C c/w cooling element:

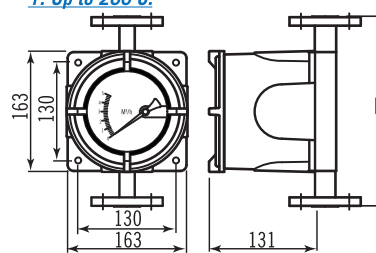


| (A2) | Body Size |     |     |     |     |     |     |     |     |     |
|------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|      | ½"        | ¾"  | 1"  | 1½" | 2"  | 2½" | 3"  | 4"  | 5"  | 6"  |
| L    | 250       | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 300 | 300 |

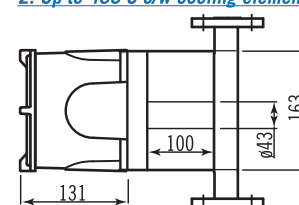
• Flange rating is ANSI 150LB; please consult with the manufacturer for others flange rating and customized L length is on request.

**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:



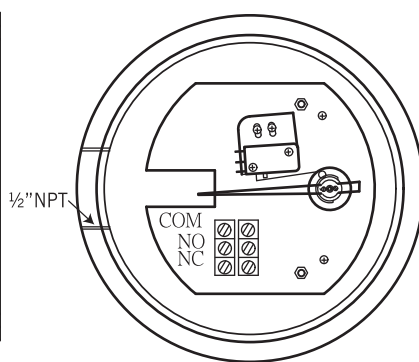
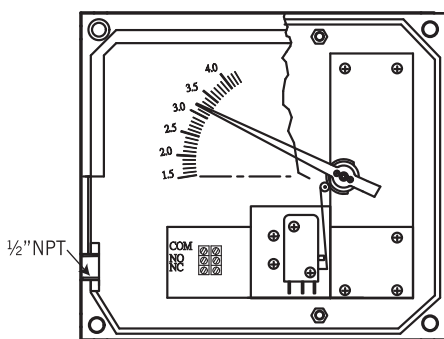
| (C) | Body Size |     |     |     |     |     |     |     |     |     |
|-----|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | ½"        | ¾"  | 1"  | 1½" | 2"  | 2½" | 3"  | 4"  | 5"  | 6"  |
| L   | 250       | 250 | 250 | 250 | 250 | 250 | 300 | 300 | 300 | 300 |

| (D) | Body Size |     |     |     |     |     |     |     |     |     |
|-----|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | ½"        | ¾"  | 1"  | 1½" | 2"  | 2½" | 3"  | 4"  | 5"  | 6"  |
| L   | 250       | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 300 | 300 |

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

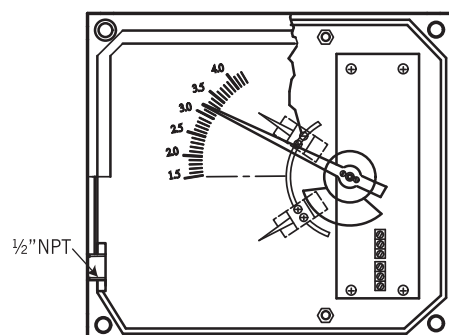
## Alarm / Analog Output

### 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)

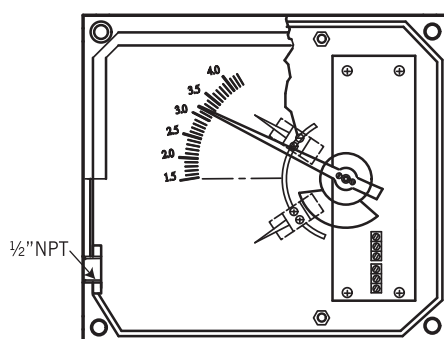


**Alarm Switch:** One or Two setting point, form A bistable type (N.O Type)  
**Hysteresis:** ±10% F.S (Dead Band)  
**Switch Rating:** AC 125V 0.5A / DC 100V 10W / Max. DC 250V < 40mA

**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)



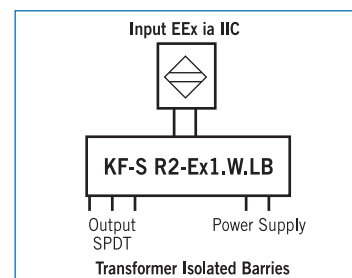
**Adjustable Inductive Alarm Switch**  
**Hysteresis:** ±1% F.S (Dead Band)  
**Inductive Sensors Slotted Type:** 3.5 mm Slot Switch

**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

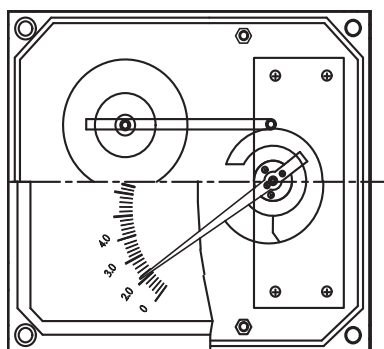
**Isolated barriers output relay for inductive sensor**  
 – Rail Mounting  
 – Control Circuit EEx ia IIC  
 – EMC acc to NAMUR NE21  
 – Contact Loading 250 VAC 2A SPDT 40 VDC 2A

**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

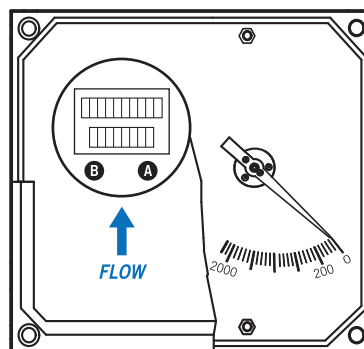


### BR-250S / GT (Analog Output) / GTA (Hall Sensor)



**Electric Transmitter BR-250S/GT/GTA**  
**Analog Output Available:** 4~20mA (2-wires)  
**No Alarm Switch Available**  
**Power Supply:** 24VDC  
**Temperature:** -25°C ~ +70°C (AMB)

### LCD Display / Totalizer

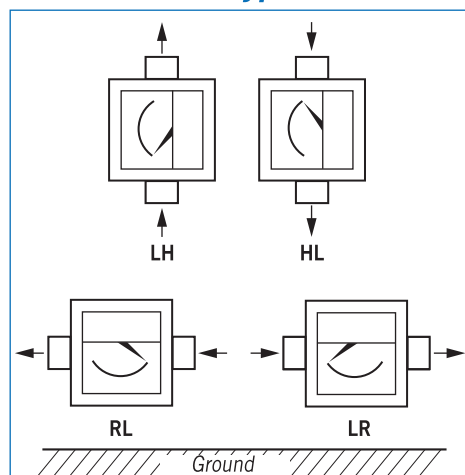


**LCD Display:** Totalizer 10 Digital (Top) / Flow Rate 8 Digital (Bottom)  
**Analog Output Available:** 4~20mA (2-wires)  
**Power Supply:** 24 VDC

#### 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.

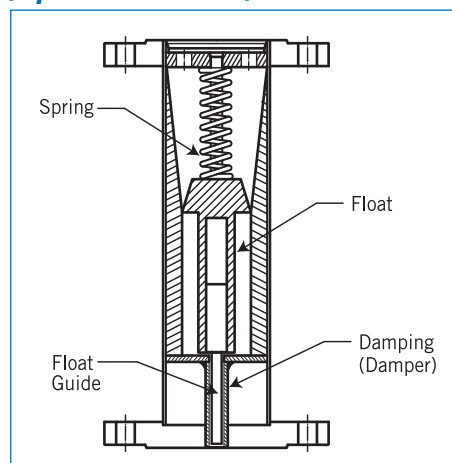
## Flow Direction Type



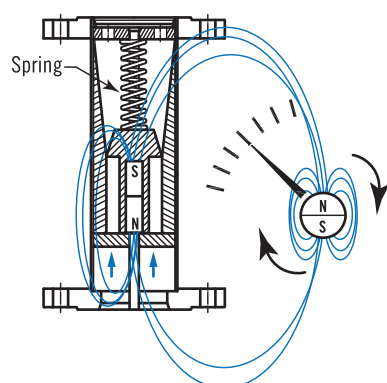
### SPECIAL NOTE.

1. No minimum length requirement for straight pipe.
2. For horizontal installation, "Do Not" place the scale panel face to sky or ground.

## Damping Mechanical (Option Function)



## Principle



## Standard Scales

| Tube       | L/H 20°C Water | NM <sup>3</sup> /H Air 0°C 1.013bar | Pressure Loss 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 |
| BR250S10-1 | 270 ~ 2700     | 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 |
| BR250S13-1 | 1000 ~ 10000   | 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 |
| BR250S17-1 | 1500 ~ 15000   | 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 |
| BR250S21-1 | 3000 ~ 30000   | 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 |
| BR250S23-1 | 3500 ~ 35000   | 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 |
| BR250S25-1 | 6000 ~ 60000   | 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 |
| BR250S27-1 | 10000~100000   | -----                               | ≤4.2               | 4"         | ±2.5% F.S |
| BR250S28   | 10000~100000   | -----                               | ≤3.8               | 5"         | ±2.5% F.S |
| BR250S28-1 | 12000~120000   | -----                               | ≤3.8               | 5"         | ±2.5% F.S |
| BR250S29   | 12000~120000   | -----                               | ≤4.3               | 5"         | ±2.5% F.S |
| BR250S29-1 | 14000~140000   | -----                               | ≤4.3               | 5"         | ±2.5% F.S |
| BR250S30   | 15000~150000   | -----                               | ≤4.5               | 6"         | ±2.5% F.S |
| BR250S31   | 20000~200000   | -----                               | ≤4.6               | 6"         | ±2.5% F.S |
| BR250S32   | 25000~250000   | -----                               | ≤4.7               | 6"         | ±2.5% F.S |
| BR250S33   | 20000~200000   | -----                               | ≤4.6               | 8"         | ±2.5% F.S |
| BR250S34   | 30000~300000   | -----                               | ≤4.7               | 8"         | ±2.5% F.S |
| BR250S35   | 35000~350000   | -----                               | ≤4.7               | 8"         | ±2.5% F.S |

### NOTE

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

**CE Mark Request :**  
If stamp the CE2810 mark is necessary,  
please consult with the manufacturer.