# BS Series

## Exclusive digital voltmeter/Ammeter

- Bright and clear LED indication
- Economical price
- Max display 1999
- Average value measurement



## Suffix code

| Model | Code | | | | | | Information |
|---|---|---|---|---|---|---|---|
| BS | □ | □ | □ | □ | □ | | Digital panel meter |
| Dimension | 6 | | | | | | 72 X 36 ㎜ |
| | 3 | | | | | | 96 X 48 ㎜ |
| | 1 | | | | | | 48 X 24 ㎜ |
| Output | | N | | | | | Only for indication |
| Input type | | | A | 10 | | | AC voltmeter (a.c) |
| | | | | 20 | | | AC ammeter (a.c) |
| | | | D | 10 | | | DC voltmeter (d.c) |
| | | | | 20 | | | DC ammeter (d.c) |
| | | | | 11 | | | DC voltmeter |
| | | | | 21 | | | DC ammeter |
| Measurement range | | | | | | 1 | Refer to the measurement range code : BS3-NA101 (1.999 V) |

※ Mode: range code of BS6 and BS3 are different

## Specification

### Input

| | |
|---|---|
| Input signal | Voltage, current and Analog signal input (4 – 20 ㎃ DC or 1 – 5 V DC) |
| A/D conversion type | Duplex integral method |
| Sampling time | 300 ㎳ |
| Response speed | Approx. 2 sec (max range) |
| External control | Hold function of the indicated value by the contact input |
| max displayable digit | ± 1999 |
| Displaying part | 7 segments LED |
| Measuring and indicating method | RMS indicating method by the electric wave rectification. |

## Performance

| | |
|---|---|
| Accuracy | AC : ±0.5 % of FS ±1 Digit<br>DC : ±0.2 % of FS ±1 Digit |
| Insulation resistance | 100 MΩ min (500 V DC) |
| Dielectric strength | 1500 V AC for 1min (power terminal – input terminal) |

## Standard specification

| Model | BS6 | BS3 | BS1 |
|---|---|---|---|
| Power supply voltage | 110 V / 220 V AC 50/60 Hz(Dual usage) | | 100 – 240 V AC 50/60 Hz(Dual usage) |
| Voltage fluctuation | ±10 % of the power supply voltage | | -15 ~ 10 % of the power supply voltage |
| Power consumption | 2 VA max | 2 VA max | 4 VA max |
| Weight(g) | 250 | 350 | 150 |
| Ambient temperature | 0 ~ 50 ℃ | | |
| Ambient humidity | 35 ~ 85 % RH | | |
| Storage temperature | -10 ~ 70 ℃ | | |
| Vibration resistance | 10 – 55 Hz Peak amplitude for 2 hour each in X, Y and Z each direction | | |
| Shock resistance | 300 m/s², 3 times each in X, Y and Z 6 direction | | |

## Measurement range

● AC voltage (model: BS3)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS3-NA101 | 1.999 V | 1 ㎷ | 100 KΩ | 10 V |
| BS3-NA102 | 19.99 V | 10 ㎷ | 1 MΩ | 50 V |
| BS3-NA103 | 199.9 V | 100 ㎷ | 10 MΩ | 300 V |
| BS3-NA104 | 400 V | 1 V | 10 MΩ | 500 V |

● AC voltage (model: BS6, BS1)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS□-NA101 | 199.9 ㎷ | 0.1 ㎷ | 10 KΩ | 10 V |
| BS□-NA102 | 1.999 V | 1 ㎷ | 100 KΩ | 10 V |
| BS□-NA103 | 19.99 V | 10 ㎷ | 1 MΩ | 50 V |
| BS□-NA104 | 199.9 V | 100 ㎷ | 10 MΩ | 300 V |
| BS6-NA105 | 400 V | 1 V | 10 MΩ | 500 V |
| BS1-NA105 | 500 V | | | |

※ BS1-NA105 range : 500 V

## ● AC current (model: BS3, BS6, BS1)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS□-NA201 | 19.99 ㎃ | 10 ㎂ | 10 Ω | 50 ㎃ |
| BS□-NA202 | 199.9 ㎃ | 100 ㎂ | 1 Ω | 300 ㎃ |
| BS□-NA203 | 1.999 A | 1 ㎃ | 0.1 Ω | 3 A |
| BS□-NA204 | 5.00 A | 10 ㎃ | 40 mΩ | 5.1 A |
| BS□-NA205 | 19.99 A | 10 ㎃ | Use current transformer (secondary current 5A) | |
| BS□-NA206 | 30.0 A | 100 ㎃ | | |
| BS□-NA207 | 100.0 A | 100 ㎃ | | |
| BS□-NA208 | 150.0 A | 100 ㎃ | | |
| BS□-NA209 | 199.9 A | 100 ㎃ | | |
| BS□-NA2010 | 300 A | 1 A | | |
| BS-□NA2011 | 1999 A | 1 A | | |

## ● DC current (model: BS3, BS6, BS1)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS□-ND101 | 199.9 ㎷ | 0.1 ㎷ | 10 KΩ | 70 V |
| BS□-ND102 | 1.999 V | 1 ㎷ | 100 KΩ | 100 V |
| BS□-ND103 | 19.99 V | 10 ㎷ | 1 MΩ | 200 V |
| BS□-ND104 | 199.9 V | 100 ㎷ | 10 MΩ | 300 V |
| BS□-ND105 | 500 V | 1 V | 10 MΩ | 600 V |

## ● DC ammeter current(model: BS3)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS3-ND201 | 1.999 ㎃ | 1 ㎂ | 100 Ω | 50 ㎃ |
| BS3-ND202 | 19.99 ㎃ | 10 ㎂ | 10 Ω | 150 ㎃ |
| BS3-ND203 | 199.9 ㎃ | 100 ㎂ | 1 Ω | 300 ㎃ |
| BS3-ND204 | 1.999 A | 1 ㎃ | 0.1 Ω | 3 A |
| BS3-ND205 | 5.00 A | 10 ㎃ | 40 mΩ | 5.1 A |
| BS3-ND206 | 19.99 A | 10 ㎃ | Use shunt (secondary voltage 50 ㎷) | |
| BS3-ND207 | 199.9 A | 100 ㎃ | | |
| BS3-ND208 | 1999 A | 1 A | | |

## ● DC current (model : BS6)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS6-ND201 | 199.9 ㎂ | 0.1 ㎂ | 100 Ω | 1 ㎃ |
| BS6-ND202 | 1.999 ㎃ | 1 ㎂ | 10 Ω | 50 ㎃ |
| BS6-ND203 | 19.99 ㎃ | 10 ㎂ | 1 Ω | 150 ㎃ |
| BS6-ND204 | 199.9 ㎃ | 100 ㎂ | 0.1 Ω | 300 ㎃ |
| BS6-ND205 | 5.00 A | 10 ㎃ | 40 mΩ | 5.1 A |
| BS6-ND206 | 19.99 A | 10 ㎃ | Use shunt (secondary voltage 50 ㎷) | |
| BS6-ND207 | 199.9 A | 100 ㎃ | | |
| BS6-ND208 | 1999 A | 1 A | | |

## ● DC current (model : BS1)

| Model | Measurement range | Resolving power | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS1-ND201 | 199.9 ㎂ | 0.1 ㎂ | 1 KΩ | 50 ㎃ |
| BS1-ND202 | 1.999 ㎃ | 1 ㎂ | 100 Ω | 150 ㎃ |
| BS1-ND203 | 19.99 ㎃ | 10 ㎂ | 10 Ω | 300 ㎃ |
| BS1-ND204 | 199.9 ㎃ | 100 ㎂ | 1 Ω | 3 A |
| BS1-ND205 | 1.999 A | 1 ㎃ | 0.1 Ω | 3 A |
| BS1-ND206 | 5.00 A | 10 ㎃ | 0.01 Ω | 5 A |
| BS1-ND207 | 19.99 A | 10 ㎃ | Use shunt (secondary voltage 50 ㎷) | |
| BS1-ND208 | 199.9 A | 100 ㎃ | | |
| BS1-ND209 | 1999 A | 1 A | | |

## ● DC voltmeter (model : BS3, BS6, BS1)

| Model | Input | Display range | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS□-ND111 | 1 – 5 V DC | 50.0 | 500 KΩ | 100 V |
| BS□-ND112 | | 100.0 | 500 KΩ | 100 V |
| BS□-ND113 | | 199.9 | 500 KΩ | 100 V |
| Input measurement range 0 – 10V DC (optional) | | | | |

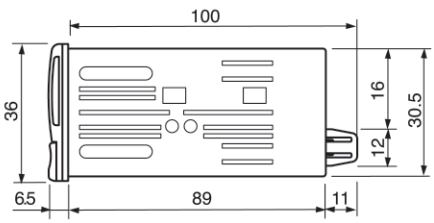
## ● DC ammeter (model : BS3, BS6, BS1)

| Model | Input | Display range | Input impedance | Allowable max input voltage |
|---|---|---|---|---|
| BS□-ND211 | 4 – 20 ㎃ DC | 50.0 | 25 Ω | 150 ㎃ |
| BS□-ND212 | | 100.0 | 50 Ω | 150 ㎃ |
| BS□-ND213 | | 199.9 | 100 Ω | 150 ㎃ |

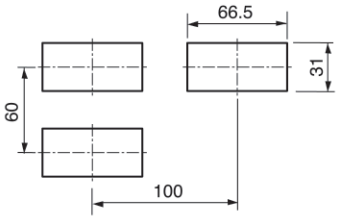
## Dimension and panel cutout (unit : ㎜)

### BS6

- Dimension

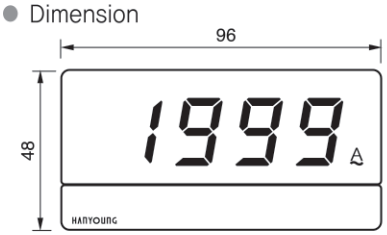



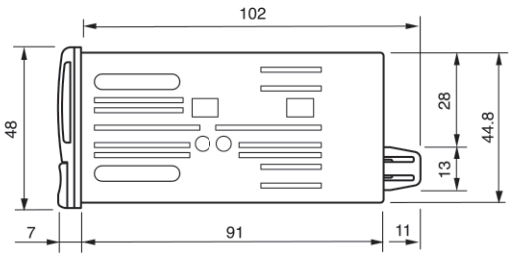

- panel cutout



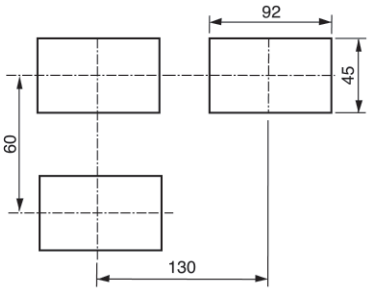

### BS3

- Dimension



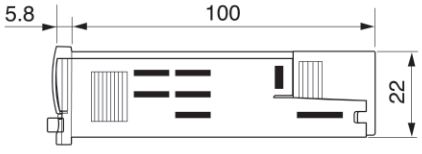




- Panel cutout

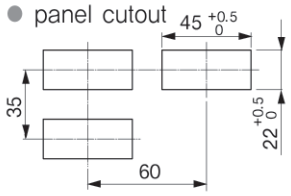



### BS1

- Dimension

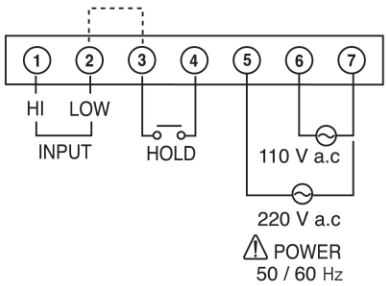




- panel cutout

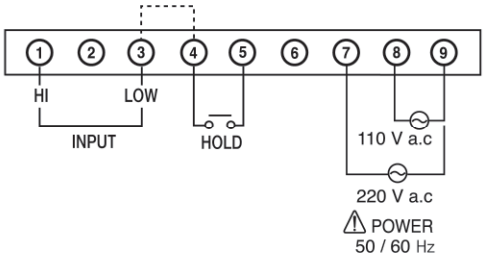


## Connection diagram

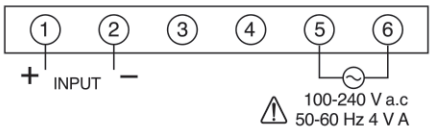
BS6




BS3




BS1

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Panelmeter