

BS series

Digital Voltmeter / Ammeter

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- Max display 1999
- Measure average value
- Bright and clear LED display

Specification

Model	BS1	BS3	BS6
Input signal	voltage, current, and instrumentation signal inputs (4 - 20 mA d.c. or 1 - 5 V d.c.)		
A/D conversionmethod	Double integration method		
Sampling cycle	400 ms		300 ms
Response time	approximately 3 seconds (maximum range)		approximately 2 seconds (maximum range)
External control	Hold function for indication values using contact input		
Maximum number of rows displayed	3½ digit ±1999		
Display unit	7-segment LED		
Polarity display	If the input signal is reversed Automatically displays " - " (for DC specs)		
Display of range underrun	-1□□□ (for DC specifications)		
Measurement and indication method	Indication of RMS values using full-wave rectification		
Precision	AC voltage : ±0.5 % of F.S. ±1 digit VDC : ±0.2 % of FS ±1 digit		
Power voltage	100-240 V a.c. 50/60 Hz Allowable voltage fluctuation range : 85 to 110%	110/220 V a.c. 50/60 Hz compatible 24 V d.c. 2.5 W	
Voltage fluctuation rate	15 to 10% of power voltage	±10% of power voltage	
Power consumption	4 VA or lower	2 VA or lower	
Insulation resistance	100 MΩ or higher (500 V d.c. in megaohms), between the external terminal and the casse		
Dielectric strength	2000 V a.c. or higher, 1 Min. between the external terminal and the case	1500 V a.c. for 1 minute, between the external terminal and the case	
Vibration resistance	Malfunction : 10 - 55 Hz, single amplitude of 0.5 mm, 1 hour in each direction X·Y·Z Durability : 10 - 55 Hz, single amplitude of 0.75 mm, 2 hours in each direction X·Y		
Shock resistance	Malfunction : 100 m/s2, 3 times in each direction X·Y·Z Durability : 300 m/s2, 3 times in each direction X·Y·Z		
Ambient temperature	-10 to 55 °C (however, there should be no icing)	0 to 50 °C (however, there should be no icing)	
Ambient humidity	relative humidity 35 to 85% R.H.		
Storage temperature	-20 to 65 °C (however, there should be no icing)	-10 to 70 °C (however, there should be no icing)	
Weight	150g	350g	250g

Suffix code

BS1

Model	Code				Content
BS1	☐	☐	☐	☐	Digital Panelmeter
Output	N				Display Only
Input type	A	10			AC Voltage input
		20			AC Current input
		10			DC Voltage input
	D	20			DC Current input
		11			DC Voltage input (1 - 5 V d.c.)
		21			DC Current input (4 - 20 mA d.c.)

Measurement range	1 - 11	Refer to Measuring Range
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■ BS3

Model	Code						Content
BS	☐	☐	☐	☐	☐	☐	Digital Panelmeter
외형	3						96 (W) X 48 (H) mm
Output		N					Only for indication
input type	A	10					AC voltmeter (AC)
							AC ammeter (AC)
	D	10					DC voltmeter (DC)
							DC ammeter (DC)
		11					DC voltmeter
							DC ammeter
Measurement range				1			Refer to Measuring Range.
Power supply voltage							- 110 / 220 V a.c.
							D 24 V d.c.

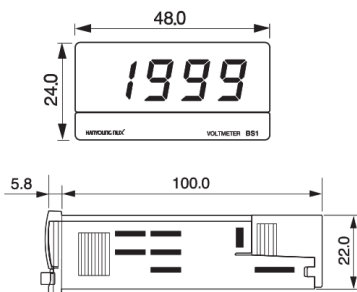
■ BS6

Model	Code						Content
BS6	☐	☐	☐	☐	☐	☐	Digital Panelmeter
Output		N					Display Only
Input type	A	10					AC Voltage input
							AC Current input
	D	10					DC Voltage input
							DC Current input
		11					DC Voltage input (1 - 5 V d.c.)
							DC Current input (4 - 20 mA d.c.)
Measurement range				1 - 11			Refer to Measuring Range.
Power supply voltage							No-mark 110/220 V a.c. 50/60 Hz
							D 24 V d.c.

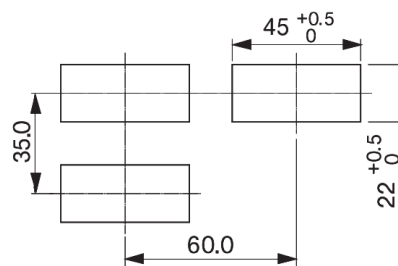
■ Dimension & Panel cutout

[Unit : mm]

■ BS1 Dimension

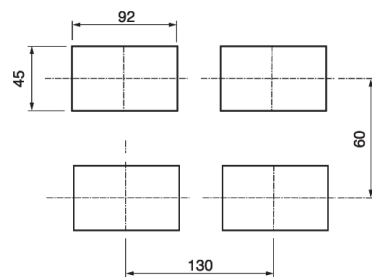
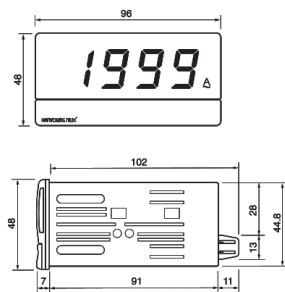


■ BS1 Panel cutout

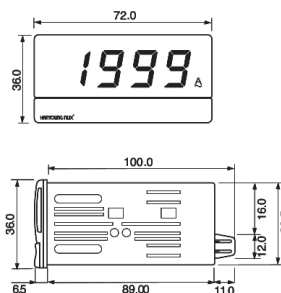


■ BS3 Dimension

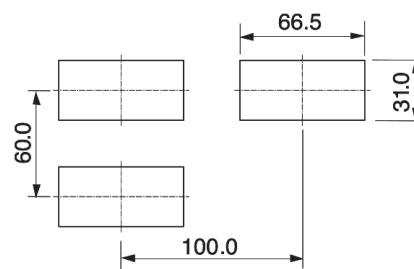
■ BS3 Panel cutout



■ BS6 Dimension



■ BS6 Panel cutout



■ Measuring Range

■ DC Current Measurement (Model : BS1)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Voltage
BS1-ND201	199.9 μ A	0.1 μ A	1 k Ω	50 mA
BS1-ND202	1.999 mA	1 μ A	100 Ω	150 mA
BS1-ND203	19.99 mA	10 μ A	10 Ω	300 mA
BS1-ND204	199.9 mA	100 μ A	1 Ω	3 A
BS1-ND205	1.999 A	1 mA	0.1 Ω	3 A
BS1-ND206	5.00 A	10 mA	0.01 Ω	5 A
BS1-ND207	19.99 A	10 mA	Use shunt (Secondary voltage 50 mV)	
BS1-ND208	199.9 A	100 mA		
BS1-ND209	1999 A	1 A		

■ DC Current Measurement (Model: BS3)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Current
BS3-ND201	1.999 mA	1 μ A	100 Ω	50 mA
BS3-ND202	19.99 mA	10 μ A	10 Ω	150 mA
BS3-ND203	199.9 mA	100 μ A	1 Ω	300 mA
BS3-ND204	1.999 A	1 mA	0.1 Ω	3 A
BS3-ND205	5.00 A	10 mA	0.01 Ω	5 A
BS3-ND206	19.99 A	10 mA	Use shunt (Secondary voltage 50 mV)	
BS3-ND207	199.9 A	100mA		
BS3-ND208	1999 A	1 A		

■ DC Current Measurement (Model: BS6)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Voltage
BS6-ND201	199.9 μ A	0.1 μ A	100 Ω	1 mA
BS6-ND202	1.999 mA	1 μ A	10 Ω	50 mA
BS6-ND203	19.99 mA	10 μ A	1 Ω	150 mA
BS6-ND204	199.9 mA	100 μ A	0.1 Ω	300 mA
BS6-ND205	5.00 A	10 mA	40 m Ω	5.1 A
BS6-ND206	19.99 A	10 mA	Use shunt (Secondary voltage 50 mV)	

BS6-ND207	199.9 A	100mA	
BS6-ND208	1999 A	1 A	

■ AC Current Measurement (Model : BS3, BS6, BS1)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Voltage
BS□-NA201	19.99 mA	10 μ A	10 Ω	50 mA
BS□-NA202	199.9 mA	100 μ A	1 Ω	300 mA
BS□-NA203	1.999 A	1 mA	0.1 Ω	3 A
BS1-NA204	5.00 A	10 mA	0.01 Ω	5 A
BS3-NA204			40 m Ω	5.1 A
BS6-NA204				
BS□-NA205	19.99 A	10 mA	Use a current transformer (Secondary current 5 A)	
BS□-NA206	30.0 A	100 mA		
BS□-NA207	100.0 A	100 mA		
BS□-NA208	150.0 A	100 mA		
BS□-NA209	199.9 A	100 mA		
BS□-NA2010	300 A	1 A		
BS□-NA2011	1999 A	1 A		

■ AC Voltage Measurement (Model : BS3)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Voltage
BS3-NA101	1.999 V	1 mV	100 k Ω	10 V
BS3-NA102	19.99 V	10 mV	1 M Ω	50 V
BS3-NA103	199.9 V	100 mV	10 M Ω	300 V
BS3-NA104	400 V	1 V	10 M Ω	500 V

■ AC Voltage Measurement (Model : BS6, BS1)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Voltage
BS □-NA101	199.9 mV	0.1 mV	10 k Ω	10 V
BS □-NA102	1.999 V	1 mV	100 k Ω	10 V
BS □-NA103	19.99 V	10 mV	1 M Ω	50 V
BS □-NA104	199.9 V	100 mV	10 M Ω	300 V
BS1-NA105	500 V	1 V	10 M Ω	500 V
BS6-NA105	400 V			

■ DC Current Input scale Display (Model : BS3, BS6, BS1)

Model	Input Range	Display Range	Input Impedance	Max Permissible Input Voltage
BS □-ND211	4 - 20 mA DC	50.0	25 Ω	150 mA
BS □-ND212		100.0	50 Ω	150 mA
BS □-ND213		199.9	100 Ω	150 mA

■ DC Voltage Input scale Display (Model : BS3, BS6, BS1)

Model	Input Range	Display Range	Input Impedance	Max Permissible Input Voltage
BS □-ND111	1 - 5 V d.c.	50.0	500 k Ω	100 V
BS □-ND112		100.0	500 k Ω	100 V
BS □-ND113		199.9	500 k Ω	100 V

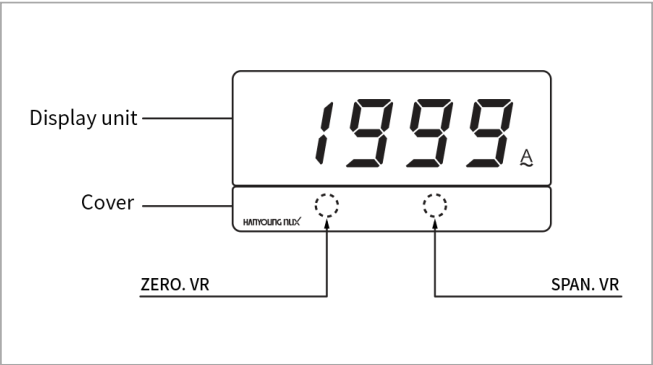
■ DC Voltage Measurement (Model : BS3, BS6, BS1)

Model	Measuring Range	Resolution	Input Impedance	Max Permissible Input Voltage
BS□-ND101	199.9 mV	0.1 mV	10 k Ω	70 V
BS□-ND102	1.999 V	1 mV	100 k Ω	100 V
BS□-ND103	19.99 V	10 mV	1 M Ω	200 V
BS□-ND104	199.9 V	100 mV	10 M Ω	300 V

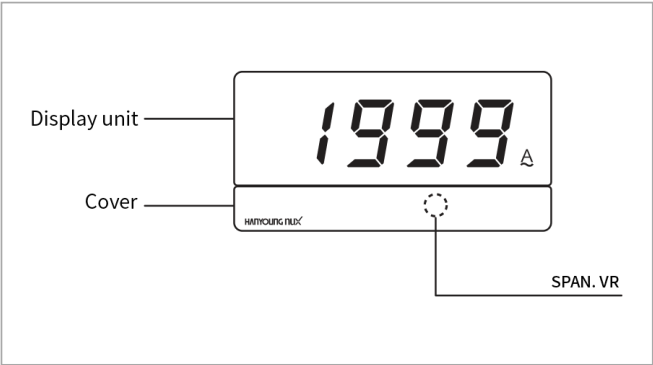
BS1-ND105	500 V	1 V	10 MΩ	400 V
BS3-ND105				600 V
BS6-ND105				

Part name

BS3

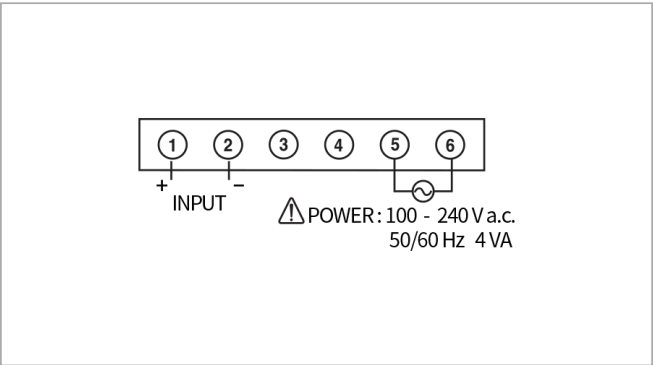


BS6



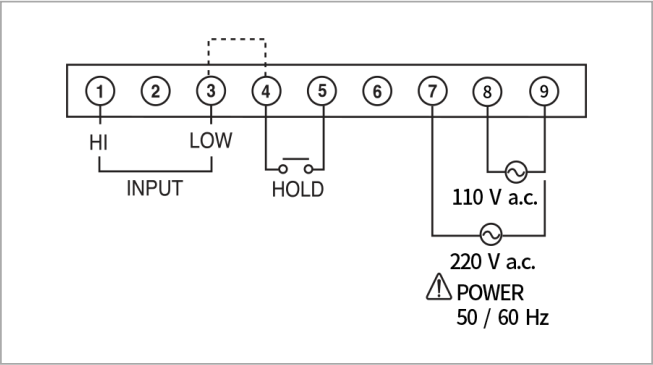
Connection diagram

BS1

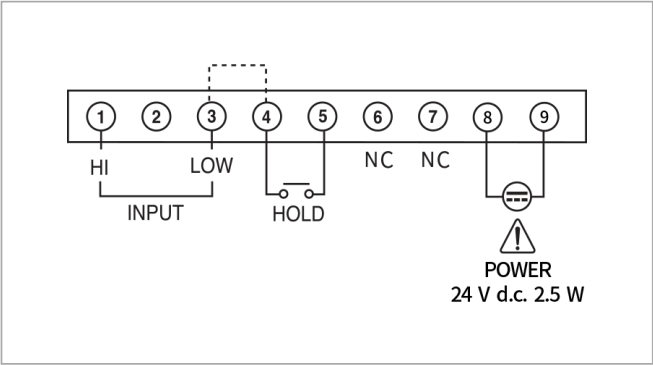


BS3

AC (110/220 V a.c.)



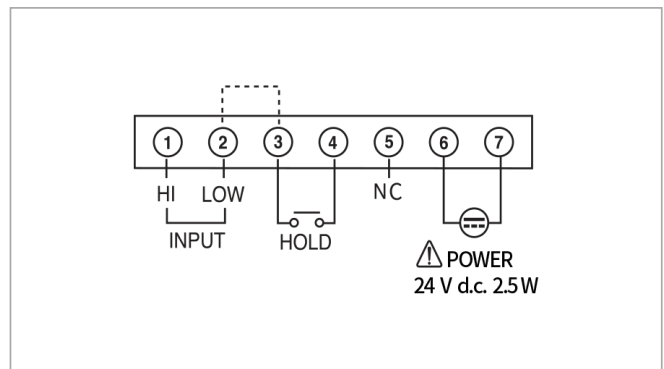
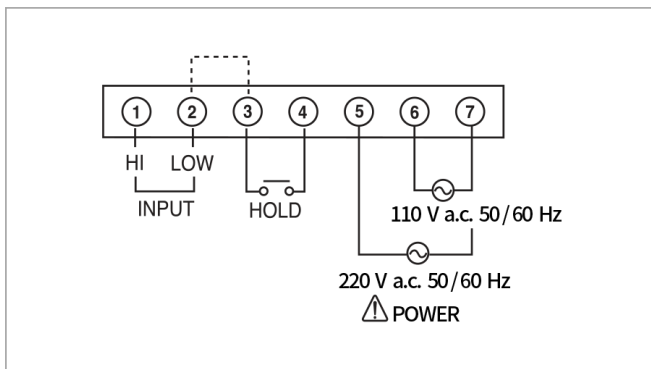
DC (24 V d.c.)



BS6

AC (110/220 V a.c.)

DC (24 V d.c.)



✳ CAUTION

- Please use a single contact when using hold function of AC voltage/current type.
- Terminal 2 and 3 are internally shorted so that parallel connection can be a cause of its malfunction.

Measuring Method of AC

■ BS3 & BS6

For measuring AC voltage and current, effective values or average values are used
Average values are generally used, but effective values are used when input is not followed a sine wave or is lots of distorted waves.
(Most analog meters uses average values for measuring.)

✳ Hanyoung Nux digital panel meter uses average values measuring.

