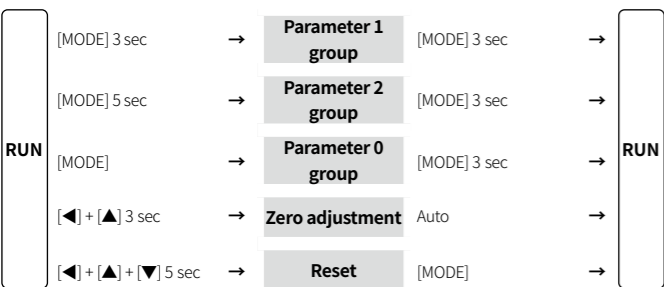


Mode Setting



Parameter Setting

- Some parameters are activated / deactivated depending on the model or setting of other parameters. Refer to the description of each parameter.
- If any key is not entered for 60 sec in each parameter, it returns to RUN mode.
- After returning to RUN mode, press the [MODE] key within 2 sec, it returns to previous parameter.
- [MODE] key: Saves current setting value and moves to the next parameter.
- [◀] key: Checks fixed value / Changes setting digits.
- [▲], [▼] key: Changes setting values.

Parameter 1 group

Parameter	Mark	Defaults	Setting range	Display condition
1-1 Input range	<i>I n r</i>	5000	[DC voltage model], [AC voltage model] • Refer to Input Range and Display Range	-
1-2 Display method	<i>d i S P</i>	5 t n d	STND: standard, SCAL: scale, FREQ: frequency ⁽⁰¹⁾	-
1-3 Measurement method	<i>I n t</i>	t r n s	[AC voltage model], [AC current model] T.RMS: True RMS, A.RMS: Average RMS, AVG • True RMS = $\sqrt{\frac{A_1^2 + A_2^2 + \dots + A_n^2}{n}}$ • Average RMS = $\frac{A_1 + A_2 + \dots + A_n}{n}$ × Waveform rate (n = number of display values per cycle, A = display value)	1-2 Display method: STND, SCAL
1-4 Decimal point position	<i>d o t</i>	0000	[DC voltage model], [AC voltage model] 0, 0.0, 0.00, 0.000	1-2 Display method: SCAL
1-5 High-limit scale ⁽⁰²⁾	<i>H - S C</i>	-	-1999 to 9999 • Display value against max. measurement input	1-2 Display method: SCAL
1-6 Low-limit scale ⁽⁰²⁾	<i>L - S C</i>	-	-1999 to 9999 • Display value against min. measurement input	1-2 Display method: SCAL
1-7 High-limit display value gradient correction	<i>I n b H</i>	10000	0.100 to 5.000 %	1-2 Display method: STND, SCAL
1-8 Low-limit display value deviation correction ⁽⁰³⁾	<i>I n b L</i>	00	-99 to 99	1-2 Display method: STND, SCAL
1-9 Exponent of INB	<i>I n b E</i>	10-0	10-0: 10 ⁰ , 10-1: 10 ¹ , 10-2: 10 ² , 10-3: 10 ³	1-2 Display method: FREQ

01) Displays at AC voltage or AC current model only.

02) Scale display range and frequency measurement range are variable according to decimal point position.

Dot	Scale display range	Frequency measurement range
0	-1999 to 9999	1 to 9999 Hz
0.0	-199.9 to 999.9	0.1 to 999.9 Hz
0.00	-19.99 to 99.99	0.10 to 99.99 Hz
0.000	-1.999 to 9.999	0.100 to 9.999 Hz

03) Low-limit display value deviation correction range is within -99 to 99 for D⁰, D¹ digit regardless of decimal point position.

Parameter 2 group

Parameter	Mark	Defaults	Setting range	Display condition
2-1 Output operation mode	<i>o U t t</i>	o F F	[Except indicator model] OFF, L.ST, H.ST, LH.ST, HH.ST, LL.ST, LD.ST • Refer to Output Operation Mode	-
2-2 Hysteresis	<i>H y S</i>	001	[Except indicator model] Within 10 % of max. display range, digit	2-1 Output operation mode: except OFF
2-3 Startup compensation time	<i>S t R t</i>	000	[Except indicator model] 0.0 to 99.9 sec	-
2-4 Peak monitoring delay time	<i>P E P t</i>	005	00 to 30 sec	-
2-5 Display cycle	<i>d i S t</i>	025	0.1 to 5.0 sec	-
2-6 Keys for zero adjustment	<i>Z E r o</i>	n o	NO, YES • YES: Press the [◀] + [▲] keys for 3 sec to adjust zero.	-
2-7 External input terminal	<i>E u i n</i>	H o l d	[Except indicator model] HOLD, ZERO • If the external input terminal is short-circuited for 50 ms or more, it operates with the set function.	-
2-8 High-limit value of transmission output	<i>F S - H</i>	5000	[DC voltage & Transmission (DC 4 - 20 mA) output model], [AC voltage & Transmission (DC 4 - 20 mA) output model] Max. value of display range	-
2-9 Low-limit value of transmission output	<i>F S - L</i>	0000	[DC current & Transmission (DC 4 - 20 mA) output model], [AC current & Transmission (DC 4 - 20 mA) output model] Min. value of display range	-
2-10 Comm. Address	<i>R d r S</i>	01	[RS485 Comm. output model] 01 to 99	-
2-11 Comm. speed	<i>b P S</i>	9600	[RS485 Comm. output model] 38.4k, 19.2k, 9600, 4800, 2400, 1200 bps	-
2-12 Parity bit	<i>P r t y</i>	n o n E	[RS485 Comm. output model] NONE, EVEN, ODD	-
2-13 Stop bit	<i>S t P</i>	2	[RS485 Comm. output model] 2, 1 bit	-
2-14 Response waiting time	<i>r S w t</i>	5	[RS485 Comm. output model] 5 to 99 sec	-
2-15 Lock	<i>L o C</i>	o F F	OFF: unlock, LOC1: lock parameter 1, LOC2: lock parameter 1, 2, LOC3: lock parameter 0, 1 and 2	-

Parameter 0 group

Parameter	Mark	Defaults	Setting range	Display condition
0-1 Output high-limit output setting value	<i>H S E t</i>	5000	[DC voltage & Preset setting model] -5 to 110 % of display range [AC voltage & Preset setting model] 0 to 110 % of display range	2-1 Output operation mode: except OFF
0-2 Output low-limit output setting value	<i>L S E t</i>	0000	[DC current & Preset setting model] -5 to 110 % of display range [AC current & Preset setting model] 0 to 110 % of display range	2-1 Output operation mode: except OFF
0-3 Display max. peak value ⁽⁰¹⁾	<i>H P E t</i>	00	[DC voltage], [AC voltage] Max. peak value in run mode	2-1 Output operation mode: except OFF & 2-4 Peak monitoring delay time: except 00
0-4 Display min. peak value ⁽⁰¹⁾	<i>L P E t</i>	0000	[DC voltage], [AC voltage] Min. peak value in run mode	2-1 Output operation mode: except OFF & 2-4 Peak monitoring delay time: except 00

01) Reset: Press any one of [◀], [▼], [▲] keys.

Input Range and Display Range

When the max. input value is over the 100 %, it may result in input terminal damage.

DC voltage model

Input range	Display range		Input impedance
	Diaplay method: STND (fixed)	Diaplay method: SCAL ⁽⁰¹⁾	
0 - 500 VDC=	0.0 to 500.0	5 0 0 u	4.33348 MΩ
0 - 100 VDC=	0.0 to 100.0	1 0 0 u	4.33348 MΩ
0 - 50 VDC=	0.00 to 50.00	5 0 u	433.48 kΩ
0 - 10 VDC=	0.00 to 10.00	1 0 u	433.48 kΩ
0 - 5 VDC=	0.000 to 5.000	5 u	43.48 kΩ
0 - 1 VDC=	0.000 to 1.000	1 u	43.48 kΩ
0 - 250 mVDC=	0.0 to 250.0	0 2 5 u	2.28 kΩ
0 - 50 mVDC=	0.00 to 50.00	5 0 n u	2.28 kΩ

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.

When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

DC current model

Input range	Display range		Input impedance
	Diaplay method: STND (fixed)	Diaplay method: SCAL ⁽⁰¹⁾	
0 - 5 A	0.000 to 5.000	5 A	0.022 Ω
0 - 2 A	0.000 to 2.000	2 A	0.022 Ω
0 - 500 mA	0.0 to 500.0	0 5 A	0.222 Ω
0 - 200 mA	0.0 to 200.0	0 2 A	0.222 Ω
0 - 50 mA	0.00 to 50.00	5 0 m A	2.222 Ω
4 - 20 mA	4.00 to 20.00	4 - 2 0	2.222 Ω
0 - 5 mA	0.000 to 5.000	5 m A	22.222 Ω
0 - 2 mA	0.000 to 2.000	2 m A	22.222 Ω

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.

When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

AC voltage model

Input range	Display range		Input impedance
	Diaplay method: STND (fixed)	Diaplay method: SCAL ⁽⁰¹⁾	
0 - 500 VAC~	0.0 to 500.0	5 0 0 u	5.01092 MΩ
0 - 250 VAC~	0.0 to 250.0	2 5 0 u	5.01092 MΩ
0 - 110 VAC~ ⁽⁰²⁾	0.0 to 440.0	1 1 0 P	1.11092 MΩ
0 - 50 VAC~	0.00 to 50.00	5 0 u	1.11092 MΩ
0 - 20 VAC~	0.00 to 20.00	2 0 u	200.92 kΩ
0 - 10 VAC~	0.00 to 10.00	1 0 u	200.92 kΩ
0 - 2 VAC~	0.000 to 2.000	2 u	20.92 kΩ
0 - 1 VAC~	0.000 to 1.000	1 u	20.92 kΩ

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.

When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

02) In case of 0 to 110 VAC~ of AC voltage range and using PT (potential transformer) for 440 VAC~ / 110 VAC~, if 110 VAC~ is input, and the unit displays 440 VAC~ automatically by preset scale value for PT user's convenient.

AC current model

Input range	Display range		Input impedance
	Diaplay method: STND (fixed)	Diaplay method: SCAL ⁽⁰¹⁾	
0 - 5 A	0.000 to 5.000	5 A	0.02 Ω
0 - 2.5 A	0.000 to 2.500	2.5 A	0.02 Ω
0 - 1 A	0.000 to 1.000	1 A	0.102 Ω
0 - 500 mA	0.0 to 500.0	0 5 A	0.202 Ω
0 - 250 mA	0.0 to 250.0	0 2 5 A	0.202 Ω
0 - 100 mA	0.0 to 100.0	0 1 A	1.022 Ω
0 - 50 mA	0.00 to 50.00	5 0 m A	1.022 Ω

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.

When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

Output Operation Mode

- H.SET or L.SET is displayed according to the output operation mode setting. In case of output operation mode as OFF, H.SET and L.SET are not displayed.
- When changing output operation mode, high-limit / low-limit output setting value, hysteresis are reset.

MODE	Output operation	Preset output		
		LO ON	HI ON	GO ON
		ON OFF	ON OFF	ON OFF
o F F		No output		
L 5 t		L.SET ≥ Display value	-	L.SET < Display value
H 5 t		-	H.SET ≤ Display value	H.SET > Display value
L H 5 t		L.SET ≥ Display value	H.SET ≤ Display value	L.SET < Display value < H.SET
H H 5 t		L.SET ≤ Display value	H.SET ≤ Display value	L.SET > Display value
L L 5 t		L.SET ≥ Display value	H.SET ≥ Display value	H.SET < Display value
L d 5 t		Second L.SET ≥ Display value	-	L.SET < Display value

Reset

- Press the [◀] + [▲] + [▼] keys for over 5 sec. in run mode, INIT turns ON.
- Change the setting value as YES by pressing the direction keys.
- Press the [MODE] key to reset all parameter values as default and to return to run mode.

Error

Error display is released automatically when it is in the measured and display range.

Display	Description	Troubleshooting
HHHH	Flashes when measurement input is exceeded the max. allowable input (110 %)	Disconnect power supply and check the cables.
LLLL ⁽⁰¹⁾	Flashes when measurement input is exceeded the min. allowable input (-10 %)	
d - HH	Turns ON when display input is exceeded high-limit scale setting value or max. display range (9999)	Reset within the display range.
d - LL	Turns ON when display input is exceeded low-limit scale setting value or min. display range (-1999)	
F - HH	Turns ON when input frequency is exceeded the max. display value of measured range	-
o o E r	Flashes twice when it exceeds zero range (±99) and returns to run mode	Reset within the zero range.

01) Displays at DC input model only.