

Chapter 1. General instruction

Digital voltmeter/ammeter are used in the real-time measurement and indication on AC/DC voltage/current in the electric circuit. And it can be added one channel of alarm output.

Chapter 2. Type and designation

Function & shape REF Number	Measure and display		Size Unit: mm	Alarm contact
	AC voltage	AC current		
79500	●		48X48	NO
79510	●		72X72	NO
79520	●		96X48	NO
79530	●		96X96	NO
79560		●	48X48	NO
79570		●	72X72	NO
79580		●	96X48	NO
79590		●	96X96	NO

Function & shape REF Number	Measure and display		Size Unit: mm	Alarm contact
	DC voltage	DC current		
79800	●		48X48	NO
79815	●		96X48	NO
89900		●	48X48	NO
89915		●	96X48	NO

Chapter 3. Technical parameters

3.1 Measuring range (can be overload 1.2 times, please ask us if you need other specifications)

3.1.1 AC voltmeter

direct measurement: AC 0 ~ 100V or AC 0 ~ 500V
need PT external: AC */100V

3.1.2 DC voltmeter

direct measurement: DC 0 ~ ± 500V

3.1.3 AC ammeter

direct measurement: AC 0 ~ 1A or AC 0 ~ 5A
need CT external: AC */1A or AC */5A

3.1.4 DC ammeter

direct measurement: DC 0 ~ ± 5A
need shunt external: DC */50mV or other specifications

3.2 Accuracy: 0.5

3.3 Frequency of AC input signal: 45 ~ 65Hz

3.4 Sampling rate: 1.5 times/s (can be 3 times/s also)

3.5 Input circle power consumption: < 0.5VA

3.6 Auxiliary power supply: 220V^{+10%}/_{-15%}, 50/60Hz, < 3VA (can customize 380V)

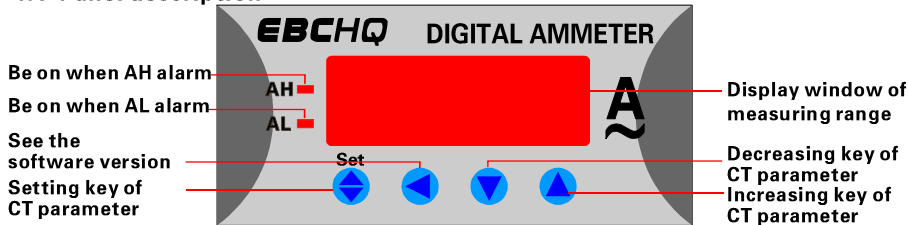
3.7 Overflow indication: plus overflow display _____, minus overflow display _____

3.8 Alarm output: the higher and lower limit alarm output from the same relay, contact capacity 1A/250VAC, 1A/30VDC, resistive load

3.9 Working environment: places which is free of gas corruption with temperature -10 ~ 50°C, humidity ≤ 85%RH

Chapter 4. Programming

4.1 Panel description



4.2 Key explanations

SET key: Under the measuring display mode, it can enter the programming mode by pressing SET key for 2s (enter directly only when codE=0 (default)), otherwise need to enter the right password to enter the programming code.)

Under the programming mode, pressing SET key once can switch to the next menu. Pressing this key for 2s can quit the programming mode.

SHIFT key: Under the measuring display mode, it can see the software version by pressing SHIFT key for 2s.

Under the programming mode, pressing SHIFT key once can move the cursor to the left one. Pressing this key for 2s can back to the previous menu.

DOWN key: Under the programming mode, pressing DOWN key for 2s will decrease the parameter values of menu.

UP key: Under the measuring display mode, if pressing UP key for 2s, it will prompt "rSt" and release the alarm lock (when the meter is with alarm and in locked status)

Under the programming mode, pressing UP key for 2s will increase the parameter value of menu.

Under the programming mode, it will automatically return to the measuring display mode if there is no key operation for more than 120s.

4.3 Menu explanations

Serial code	Parameter code	Parameter name	Setting range	Explanations
1	dP	Position of decimal point dP	0 ~ 9999	Ones digit of DP is used to define the position of the decimal point. InPH defines the display value corresponding to the higher limit of input, inPL defines the display value corresponding to the lower limit of input. Ones place of dP is 0, no decimal point, display format is XXXX (if the ones place of dP is non 0 ~ 3, treat it as 0) Ones digit of dP is 1, decimal points in tens place, display format is xxx.x Ones digit of dP is 2, decimal points in hundreds place, display format is xx.xx Ones digit of dP is 3, decimal points in thousands place, display format is x.xxx The display value setting examples are as follows: (other and so on): 1. Input specification is AC/DC 500V (Set: dP=1, inPH=500.0, inPL=0.0) 2. Input specification is AC/DC 5A (Set: dP=3, inPH=5.000, inPL=0.000) 3. Input specification is AC 110kV/100V (Set: dP=1, inPH=110.0, inPL=0.0) 4. Input specification is AC 200A/5A (Set: dP=1, inPH=200.0, inPL=0.0) 5. Input specification is DC 1000A/75mV (Set: dP=0, inPH=1000, inPL=0) 6. Input specification is DC 4~20mA, display-1.000~1.000, (Set: dP=3, inPH=1.000, inPL=-1.000) 7. Input specification is DC 0~10V, display 0.00~50.00 (Set: dP=2, inPH=50.00, inPL=0.00) In short, just need to make sure the display values corresponding the higher and lower limit of measuring range and add the decimal point setting.
2	inPH	Higher limit of input display value inPH	-1999 ~ 9999 (the position of decimal point is up to the unit of DP)	Thousands place of dP is used for setting different menu display 1~8 (default 0): Thousands place of dP is 5, only display dP, inPH and codE Thousands place of dP is 6, only display dP and inPH Thousands place of dP is not 5 or 6, all menus will be displayed
3	inPL	Lower limit of input display value inPL	-1999 ~ 9999 (the position of decimal point is up to the unit of DP)	BiAS make the shift correction to the display value. Display value (after correction) = Display value (before correction) + biAS If there is no standard equipment for inspection, please do not set it at random. The factory default is 0
4	biAS	Input shift correction biAS	-1000 ~ 1000 (the position of decimal point is up to the unit of DP)	Gain make the gain correction to the display value. Display value (after correction) = Display value (before correction) - inPL × (1 + gAin) If there is no standard equipment for inspection, please do not set it at random. The factory default is 0
5	gAin	Input gain correction gAin	-0.100 ~ 0.100	Due to temperature drift, environmental interference, components aging and other reasons, the instrument may display a non inPL value in the absence of input signals. Set the "Scr" can shield it. That is: when (display value - inPL) < (inPH - inPL) × Scr / 100, it will fixed display inPL.
6	Scr	Input zero shield Scr	0.1 ~ 10.0%	Hundreds place of inE is 1: the sampling switching rate is 3 times/s Tens place of inE is 1: when the display value < 0, it fixed display 0. Ones place of inE is 1, it will switch the input specification from DC 0~5V to DC 1~5V or switch the input specification from DC 0~20mA to DC 4~20mA. Ones place of inE is 2, it will switch the input specification from DC */75mV to DC */60mV
7	inE	Input expansion settings inE	0 ~ 9999	

Chapter 5 Installation and Connection

5.1 Shape and hole cutout dimension(unit: mm)

Instrument shape	Panel dimension		Case dimension			Hole cutout dimension	
	W	H	W	H	D	W	H
160 x 80	160	80	150	75	100	152	76
120 x 120	120	120	110	110	80	112	112
80 x 80	80	80	75	75	80	76	76
120 x 60	120	60	115	55	80	116	56
96 x 48	96	48	90	44	80	92	45
72 x 72	72	72	67	67	80	68	68
48 x 48	48	48	44	44	70	45	45
96 x 96	96	96	91	91	80	92	92

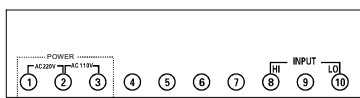
5.2 Method of installation

Choose the corresponding hole cutout dimension according to the meter's dimension from the table above, make a hole in the installation screen, insert the meter into the hole, place the two clamping pieces into the clamping holder, push and tighten them by hand.

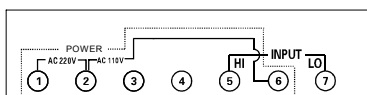
5.3 Description of Wiring and terminal

POWER: Auxiliary power input port, default 220V/110V^{+10%}_{-15%}, 50/60Hz, if you need other specification, please tell us when ordering

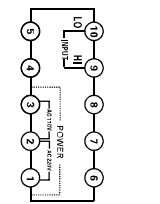
INPUT: Input port of measuring signal (when DC input, HI is +, LO is -).



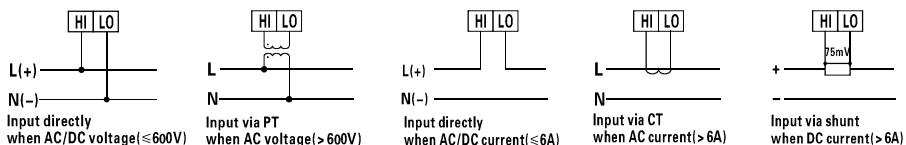
Pic. 1: 96 x 96, 96 x 48, 160 x 80, 120 x 120
Terminal arrangement



Pic. 2: 80 x 80, 120 x 60, 72 x 72
Terminal arrangement



Pic. 3: 48 x 48
Terminal arrangement



Chapter 6. Cautions

- Please confirm if the power supply, input signal and each terminal wiring of the meter are correct and reliable before applying the power.
- The instrument must be preheated for 15 minutes to guarantee the precision of measurement.
- The instrument should not be rapped, knocked and vibrate excessively and its using environment should meet the technical requirements.
- The meter has been calibrated according to the measuring range required by the customer upon order. The user should check again if the measuring range of the meter is fit with the specifications of the transformer or shunt and set the measuring range again if not.

Chapter 7. Packing and Storage

The instrument and accessories with packing should keep storage conditions cool and dry and free of wet and gas corruption with temperature not more than 70°C and not less than -40°C, and relative humidity ≤85%