CHD Series Power Meter
Instruction Manual

Thanks a lot for selecting Sanyou products!
Before operating this instrument, please carefully read this manual and fully understand its contents. If have problems, please contact our sales or distributors whom you buy from. This manual is subject to change without prior notice

■ Warning

Please do not turn on the power supply until all of the wiring is completed. Otherwise electrical shock, fire or malfunction may result.
Do not wire when the power is on. Do not connect the unused terminals. Do not turn on the power supply when cleaning this instrument. Do not disassemble, repair or modify the instrument. This may cause electrical shock, fire or malfunction
Use this instrument in the scope of its specifications. Otherwise fire or malfunction may result.
The use life of the output relay is quite different according to is capacity and conditions. If use out of its scope, fire or malfunction may result.

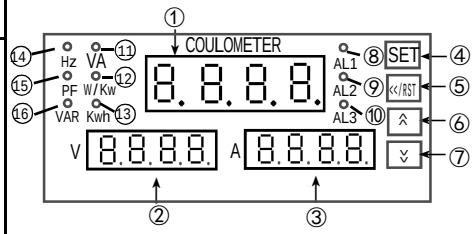
⚠ Caution

This instrument should be installed in a domestic environment. Otherwise electrical shock, fire or malfunction may result. The operating temperature environment should between 0 (32F) to 50 (122F).
To avoid using this instrument in environment full of dust or caustic gas.
To avoid using this instrument in environment of strong shock or concussion.
To avoid using this instrument in environment of overflow water or explosive oil.
The is no current protection power supply or fuse in this instrument. If reinforced is needed, the specifications of the fuse should be: 250VAC, 0.5A.
The power supply wire should not put together with large current wire to avoid electromagnetic radiation, If it must to put together, we suggest to use the individual pipe.
In case the instrument is use in environment of nuclear control, iatrical equipment, auto, train, airplane or security equipment that need protections, please contact the manufacturer for details.

★ Applications

The instrument is to measure any range of AC/DC voltage or current set by user. It can be available for data reserve or top value reserve function. To measure or display voltage/ampere/watt/power factor/frequency/energy consumption. Up to 3 alarm output. The instrument is widely applied to power system, factory power distribution, building automation etc. With RS485 for remote control.

■ Name of parts



CHD800

① Measured value converting indication for Hz/ VA/PF/KW/VAR/KWh/ ϕ

② Measure voltage value/parameter code display

③ Measure current value/parameter amend display value

④ Parameter select/confirm key

⑤ Shift key/Energy consumption value clear key

⑥ Down key

⑦ Up key

⑧ AL1 indication Lamp.On:Alarm Off:No alarm

⑨ AL2 indication Lamp.On:Alarm Off:No alarm

⑩ AL3 indication Lamp.On:Alarm Off:No alarm

⑪ Apparent power indication lamp

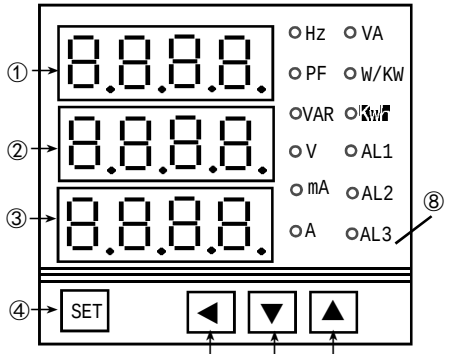
⑫ Watt indication lamp,flashing means the unit is W, On means the unit is KW

⑬ Energy consumption KWh or phase angle indication lamp

⑭ Frequency indication lamp

⑮ Power factor indication lamp

⑯ Reactive power indication lamp



CHD900

① Measured value converting indication for Hz/ VA/PF/KW/VAR/KWh/

② Voltage measured value/Parameter code

③ Current measured value/Parameter modification

④ Parameter select/confirm key

⑤ Shift/Energy consumption value clear key

⑥ Down key ⑦ Up key

⑧ V: Voltage indication lamp
mA/A: Current indication lamp
Hz: Frequency indication lamp
PF: Power factor indication lamp
VAR: Reactive power indication lamp
VA: Apparent power indication lamp
W/KW: Watt indication lamp. On means the unit is KW, flashing means the unit is W
Kwh: Energy consumption KWh or phase angle indication lamp

AL1: AL1 indication Lamp. On: Alarm Off: No alarm
AL2: AL2 indication Lamp. On: Alarm Off: No alarm
AL3: AL3 indication Lamp. On: Alarm Off: No alarm

■ Models

CHD □□ - □□□□□□□□

- IN2 input signals: AV, AA, DA, DV for option
- IN1 input signals: AV, AA, DA, DV for option
- Communication interface: Blank: No communication 2: RS232 4: RS485
- AL3: R:RELAY S: SSR/LOGIC T: SCR N: No alarm
- AL2: R:RELAY S: SSR/LOGIC T: SCR N: No alarm
- AL1: R:RELAY S: SSR/LOGIC T: SCR N: No alarm
- Analogue: Default: No analogue I: DC 0-10mA or DC 4-20mA
- Power: Default: AC 90-260V 50/60Hz E: DC 24V
- Size: 800:48H × 96W × 84L 900:96H × 96W × 84L
- Single phase power meter

★Input signal selection (To measure AC voltage/current please mention the range when order)

Input signals	Measured range	Input impedance	Factory setting
A(AA/DA)	AC 0～5A.0～2A	P/T free set by software	0～5A
mA	0～1mA.0～10mA.4～20mA	≤150Ω	
V(AV/DV)	0～5V.0～10V. 0～600V	≤200KΩ	0～600V
mV	0～10mV. 100mV	≤2MΩ	

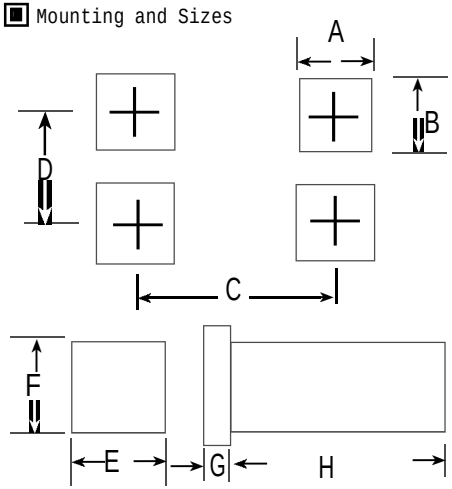
☆ Measure AC voltage more than 600V, please use the instrument with C/T. Measure AC current more than 5A, please use the instrument with P/T

■ Specifications

Power	90-260V AC 50/60Hz
Measured objects	True value, simple/three phases/voltage/current/Watt/Power factor/frequency/energy consumption/reactive power
Direct input range	Voltage: 0-600V Current: 0-5A or 0-10A
P/T, C/T setting	Free set by software
Measured frequency range	0-2.5KHz
Accuracy	Voltage: ± 0.5%FS ± 2digit
	Current: ± 0.3%FS ± 2digit
	Watt: ± 0.5%FS ± 2digit
	Power Factor: ± 0.5%FS ± 2digit
	Frequency: 0-250Hz ± 1Hz
Analogue	0-10V or 4-20mA selectable by software
Alarm	RELAY: NO AC 250V/3A or DC 30V/3A COSϕ=1
Communication	RS232 or RS485 with MODBUS TRU protocol

Note: D800 is available for simple phase.

■ Mounting and Sizes



Size / Mode	A	B	C	D	E	F	G	H
D800	46+0.5	91+0.5	65	115	96	48	6	84
D900	91+0.5	91+0.5	115	115	96	96	6	84

■ Parameter setting

1.In the measuring estate, press and hold SET key for more than 3 seconds, enter control parameters setting menu. Press <</RST key, LED flashes, press ∧/ key to modify,and then press SET key to confirm. Press SET key to read the following parameters one by one.
2.The instrument will return to the measuring estate without any operation for 25 seconds.

CHD800 flat style instruction

★Kwh clearance: When it is display VA/VAR, press <</RST key for more than 2 seconds can clear the totalized value

★The up and down LED displaying can be free set according to the DSH (up LED) and the DSL (down LED). Indication lamp on stands for the left unit, indication lamp flashing stands for the right unit.

★For D801, press SET key can set the displaying parameters.

★Press ∧ / key for more than 3 seconds, can enter/quit from the display setting.

Press ∧/ key at the same time

dSH 0 — Up LED display setting

dSL 1 — Down LED display setting

0: W/KW 1: A/mA 2: V 3: PF 4: Kwh 5: Hz 6: VA 7: VAR

Measured parameter display setting

SET

KW / A — Watt / Current — According to Kw/A lamp

SET

V / PF — Voltage / Power factor — According to V/PF lamp

SET

Kwh / Hz — Kwh / Frequency — According to Kwh/Hz lamp

SET

VA / VAR — VA / VAR — According to VA/VAR lamp

■ Operation processes

Power ON

8.8.8.8 / 8.8.8.8 — Self-check / All LED on

AU 600.0 — Displays measured voltage range

AA 5.000 — Displays measured Current range

3.000 / 5.000 — Watt display / Current display — measuring estate

SET>3S

Enter parameter setting menu

Control parameter setting

SET>3S

LCU 000 — Password setting, range: 0-200, LCK=000 means the parameter can be modified, LCK=010 can be red only, but not can be modified

SET

Ct 1.000 — C/T rate setting, Range: 1.000-9999. If without C/T, the CT=1.000. If use with C/T, CT should be the rate to 5A.

SET

Pt 1.000 — P/T rate setting, Range: 1.000-9999. If without P/T, the PT=1.000. If use with P/T, PT should be the rate to 100V

SET

AdP 0.000 — Decimal point setting for current input. There are 0000, 0.000, 00.00, 000.0 for option

SET

UdP 0.000 — Decimal point setting for voltage input. There are 0000, 0.000, 00.00, 000.0 for option

SET

PSA 0.000 — Current input shift value. Display value=Measured value + PSA shift value Range:±50.00

SET

PSU 0.000 — Voltage input shift value. Display value=Measured value + PSV shift value Range:± 50.00

SET

AL1 90.0 — AL1 alarm value setting, range: -1999-9999,

SET

HY1 1.000 — AL1 deviation alarm setting, range: ±50.00

SET

AN1 2 — AL1 alarm mode setting, there are VL、VH、AL、AH、HzL、HzH、PFL、PFH、KwL、KwH、VArL、VArH、KwhL、KwhH for option

SET

AL2 10.0 — AL2 alarm value setting, range: -1999-9999,

SET

HY2 1.000 — AL2 deviation alarm setting, range: ±50.00

SET

AN2 3 — AL2 alarm mode setting, the same as AN1

SET

bSL U — Analogue output for the optional input signals: V, A, Hz, PF, Kw

SET

trL 0.00 — Analogue Low limit setting Range:1999～9999

SET

trH 100.0 — Analogue High limit setting Range:1999～9999

SET

diS 0 — DW9 up LED display parameter power on selection, 0:Hz 1:PF 2:VAR 3:VA 4:W/KW 5:Φ /Kwh

SET

bAd 0 — Bit rate setting. The factory setting is 9.6k bit/s, if need other value, please mention when order.

SET

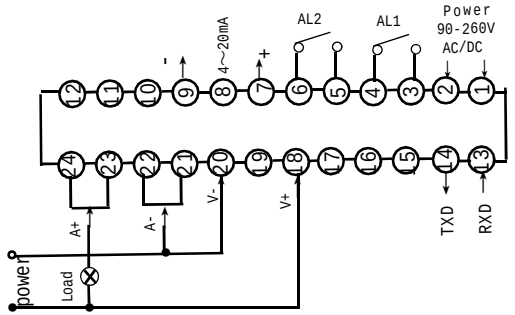
Add 000 — Communication address, setting range: 0-255

SET

Return LCK menu

☆When it not for analogue, it can be used as alarm output

■ Terminal configurations



CHD800/CHD900

★If any changed, please refer to the product showing

■ Malfunction estimate

*Check all the connection and wiring if it is correct. Specially pay attention to the power supply terminals and signal input terminals, please do not wrong connect. As well pay attention to do not short the output terminals by strong current.
If the measurement is incorrect, please check if the connection is contrary.