



AUTO/MANUAL MODE

- + Enter AUTO/MANUAL Mode · Selected **AUTO** or **MANUAL** flashes
- Alter Mode: Selected **AUTO** , **MANUAL** , **MANUAL** m , **MANUAL** $\uparrow$ flashes
- Alter Mode: Selected **AUTO** , **MANUAL** , **MANUAL** m , **MANUAL** $\uparrow$ flashes
- Confirm: The flash will stop

Auto/Manual Mode Legends

Auto Mode



Manual Switch-in Mode



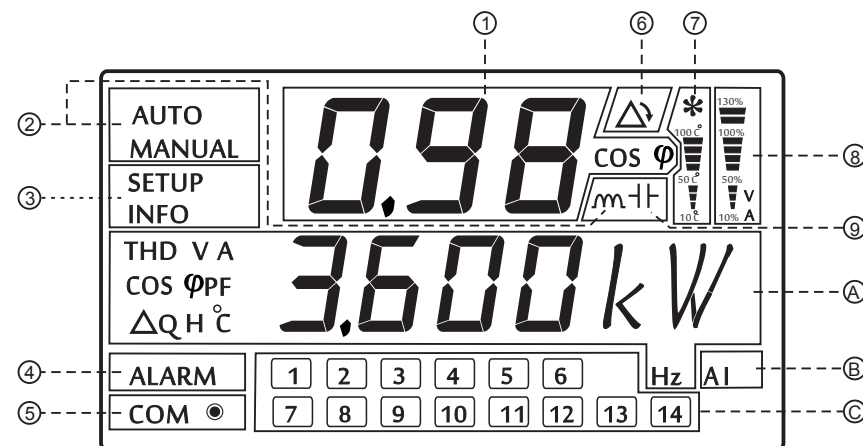
Manual Stop Mode



Manual Switch-out Mode



Front View



- ① Power Factor value
Lower than the set value in LS shows CS
- ② Auto/Manual indication is related to
the status of $m \uparrow$
- ③ Setup functions SETUP
Capacity check-up/ setup INFO
" Indications coordinate with the energized steps "
- ④ Fault Alarm
- ⑤ RS 485 communication
Black dot flashing is in communication
- ⑥ Fault phase sequence /correction indication
This legend keeps lighting up after correction
- ⑦ Temperature and fan energized indication
- ⑧ Voltage or current bargraph in %
- ⑨ Switch -in status m
Switch-out status $\uparrow$
- A Value and unit indication
Display examples :
380.0 V 060.0 A
3.600 kVA 3.600 kW
3.600 kW $\cos \Phi -0.99$
60.00 Hz $t 25.0 ^\circ C$
THD V 03.1 / THD A 02.6 /
- B Initialization detection in capacity
- C Switch-in steps

Measured parameters

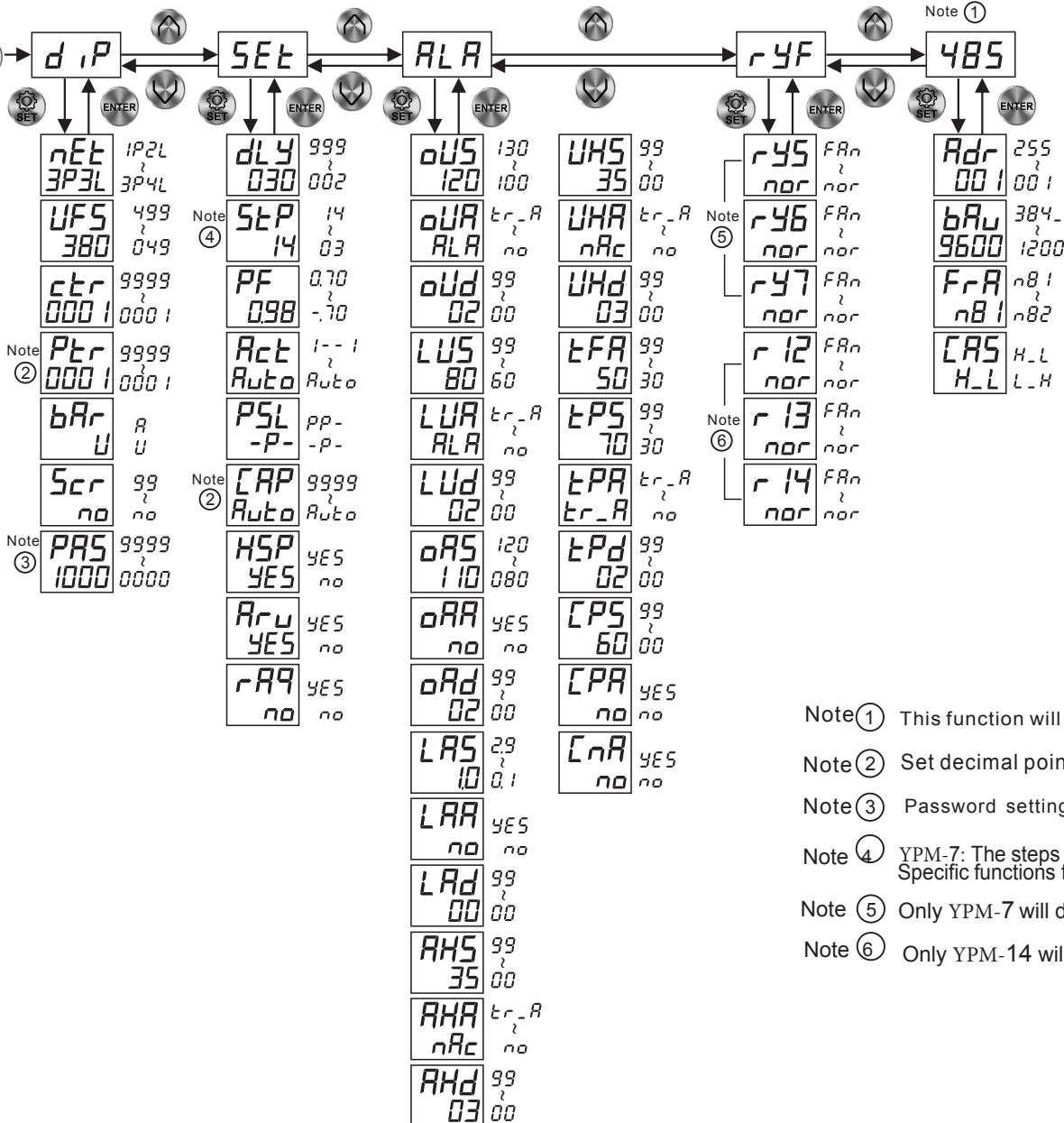
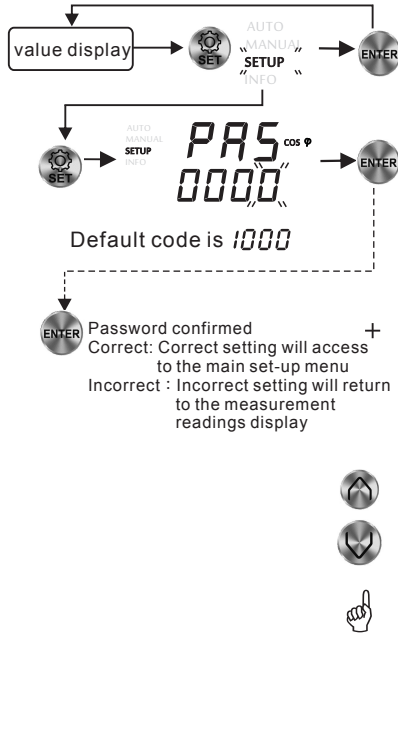
Display value as A

which shows subsequently : V 、 A 、 VA 、 W 、 Var 、 COS 、 Hz 、 °C 、 THDV 、 THDA

- Advance to next parameter The presence of THDV or THDA, press:
- Advance to previous parameter
- + Display individual harmonic content , and THDV/THDA flashes
- Next content
- Previous content display
- Back to THD

Set-up Menu Explanation :

• Flowchart of menus :



• Keypads Operation

Main Set-up Menus :

- Return to the measured readings display
- Advanced to the next menu
- Advanced to the previous menu
- Enter the Sub Set-up menus

Sub Set-up Menus :

- Advanced to the upward menu
- Advanced to the downward menu
- Return to the Main Set-up menu
- Enter the value set-up, the selected value will keep flashing

Value Set-up :

- Value increase
- Value decrease
- Vary digits position
- Confirm and return to the Sub Set-up menus

Note ① This function will be displayed if RS485 is ordered

Note ② Set decimal point position by pressing + in the values setup

Note ③ Password setting: Setting 0 is no need of password

Note ④ YPM-7: The steps energized between 3~7
Specific functions for the relay activation can be set in the menu of **r y F**

Note ⑤ Only YPM-7 will display

Note ⑥ Only YPM-14 will display

Description of Main Menus

d P

Menus

- nEt** : The network system setup shall be set based on the actual wiring connection, otherwise the measured parameters in VA, W, Var will certainly be inaccurate.
- 3P4L** : VA, W, Var value $\times 3$, R phase voltage, R phase current
- 3P3L** : VA, W, Var value $\times \sqrt{3}$, ST voltage, R phase current
- 1P3L** : VA, W, Var value $\times 2$, L1 voltage, L1 current
- 1P2L** : VA, W, Var value $\times 1$
- UFS** : 100% Actual input voltage, this value will affect the bargraph indication in % and the ALARM activation
- ctr** : CT ratio
- Ptcr** : VT ratio, it can be set for the decimal point position
- bAr** : Bargraph indication in % of the input current or voltage
- Scr** : LCD backlight shut-off time (minutes)
- PR5** : Password setting: Setting 0 is no need of password

SEt

Menus

- dLY** : The switching delay time can be set from 02~999 seconds.
The setting of the switching delay time will be reset once a few conditions (Inductive/Capacitive/Normal Load) have been changed.
- StP** : The number of switching steps can be set from 03~07s(14) steps respectively.
This H.S.P (Fast switching-in Compensation) mode will be de-activated for proper operation if the setting of the number of switching steps is less than the switching step in circular sequence.
- PF** : The target power factor can be set in the range of -0.70 capacitive to 0.70 inductive. The target power factor has to be adjusted to reach a proper controlling program in accordance with the setting of the parameters in the P.S.L Mode.
- Act** : The type of switching program has to be set in compliance with the capacity of the installed capacitors on the network distribution.
- Auto** : Automatic detection; All the capacitors will be switched in successively for initialization detecting as the cap bank is just powered on
- 1111** : 1.1.1 (switching in circular sequence)
- 1222** : 1→2.2.(SICS)
- 1244** : 1→2→4.4. (SICS)
- 1248** : 1→2→4→8.8. (SICS)
- 11222** : 111 (Alternate Switching)→2.2. (SICS)
- 11244** : 11(AS)→2→4.4. (SICS)
- 11248** : 11(AS)→2→4→8.8 (SICS)
- 11224** : 11(AS)→22(AS)→4.4. (SICS)
- 1- - 1** : 1.1.1 (switching in sequential sequence)

Example of switching steps:

124 : 1→2→4.4. (SICS)

Step 6	44
Step 5	44444444...
Step 4	444444444444.....
Step 3	444444444444.....
Step 2	..22..22..222..2...22..2..
Step 1	.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
+++++++-----++	

1124 : 11(AS)→2→4.4. (SICS)

Step 6	444444444444.....
Step 5	444444444444.444444.
Step 4	444444.....444444444444
Step 3	..22..22..2..22..2..2.22..2
Step 2	...1...1...1...1...1...1...1..
Step 1	.1...1...1...1...1...1...1...1
+++++++-----	

PSL : The precise setting of the target PF mode for a variety of applications has to be set in compliance with the measuring threshold of the actual power factor value.

(Furthermore, the detecting band of the set C/K value is mainly derived from the actual load variations.)

-P- : The target power factor can be permitted to set in the range of capacitive power factor. Besides, this mode represents a fixed setting point.

PP- : This mode is the same as **-P-**, but the target PF can not be set to capacitive PF.

✖ It is only limited to set to the inductive PF value in the desired mode of **PP-** because it is not allowed to set to capacitive PF value (-0.97) in the **PP-** mode.

CAP : The smallest capacity/Kvar value setup in auto-detection mode

The smallest capacity/Kvar value setup shall be based on the first step of capacitor (smallest) if it is set to the manual mode.

✖ It shall not be adapted to auto-detection mode as the manual mode is set.

✖ It is available to set the decimal point position by pressing the buttons  +  simultaneously.

HSP : Fast switching-in compensation (Bigger Kvar compensated) **YES**: Start-up

1. The activation starts to be energized first based on the set SICS program if the activation mode is adapted to the SICS program. But, the rest shall follow up the set *Rct* mode for activation.
2. Follow up the above, it proceeds with the same activation again, the set delay time *dLY* will be decreased half for activation. The legend of $\cos\phi$ flashing represents that the delay time will be recovered if the same activation is not required again.

※ This mode is de-energized if the set steps of the installed capacitors is less than of the set SICS program.

※ This mode is de-energized in the manual mode.

Arru : Auto Reverse Correction **YES** : Start-up

The legend of Δ flashes around 3 secs for the phase angle in a reverse shift at 180 degree as the phase angle exceeds the normal requirements.

Being altered as normal status then indicated with Δ , it represents the phase sequence has been altered.

※ This mode is only limited to the input voltage in polarity and the input current in reverse flow direction(KL).

rrr : Clearing all the memorized values **YES**: Clear

- ※ The memorized parameters are inclusive of the Kvar capacity in %, Nos of times for switching-in and the relay activation running hour. After clearance, it starts to the initialization for re-detection.
- ※ If a clearance setup for the specific designated step of the capacitor, please refer to the functions under the menus of INFO Q , INFO Δ Q

ALARM Menus

ous : Setting of the over-voltage range: 100 ~ 130 %

The input voltage exceeds the ratio of the set over voltage in percentage, the alarm activation mode can be energized based on the functions of **ouA**.

ouA : Over-voltage activation setup

no : De-energized

nAc : Stop switching-in the capacitor as the inductive load still needs to be compensated.

trP : Switching-out all the energized capacitors

ALA : Being appeared with ALARM, the relay contact is energized.

nA_A : $nAc + ALA$

tr_A : $trP + ALA$

※ An indication of ALARM is appeared on the screen, to press + simultaneously for checking back the fault records, which it can refer to the ALARM menus.

※ It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons

Example: It turns to the legend of over-voltage reading if the over-voltage is detected.
It turns to the legend of temp. reading if the over-temp. is detected.

oud : Over-voltage delay time setup (sec.)

It will be energized as the desired set time exceeds the threshold.

LUS : Setting of the under-voltage range: 50 ~ 99 %

The input voltage is under the ratio of the set under voltage in percentage, the alarm activation mode can be energized based on the functions of **LUA**.

LUA : Under-voltage activation setup

no : De-energized

nAc : Stop switching-in the capacitor as the inductive load still needs to be compensated.

trP : Switching-out all the energized capacitors

ALA : Being appeared with ALARM, the relay contact is energized.

nA_A : $nAc + ALA$

tr_A : $trP + ALA$

※ An indication of ALARM is appeared on the screen, to press + simultaneously for checking back the fault records, which it can refer to the ALARM menus.

※ It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons.

Example: It turns to the legend of under-voltage reading if the under-voltage is detected.
It turns to the legend of temp. reading if the over-temp. is detected.

Lud : Under-voltage delay time setup (sec.)

It will be energized as the input voltage is under the set threshold value, and meanwhile the signal status exceeds the set delay time.

oAS : Over-current ratio setup: 80 ~ 120 %

The input current exceeds the set ratio, the alarm activation mode can be energized based on the functions of **oAA**.

oAA : Over-current activation setup

no : De-energized

YES : Being appeared with ALARM, the relay contact is energized.

※ An indication of ALARM is appeared on the screen, to press + simultaneously for checking back the fault records, which it can refer to the ALARM menus.

※ It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons.

oAd : Over-current ratio setup (sec.)

It will be energized as the desired set time delay exceeds the threshold.

LAS : Under-current activation setup 0.1 ~ 2.9 %

The input current is under the ratio of the set under current in percentage, the alarm activation mode can be energized based on based on the functions of **LAA**.

LAA : Under-current activation setup

no : De-energized

YES : Being appeared with ALARM, the relay contact is energized.

※ An indication of ALARM is appeared on the screen, to press + simultaneously for checking back the fault records, which it can refer to the ALARM functions.

※ It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons.

※ The input current is under the set value, the legend of **C 3** will be indicated on screen.

LAd : Under-current delay time setup (sec.)

It will be energized as the desired set time delay exceeds the threshold.

***AHS* : THD A ratio setup 00 ~ 99 %**

The input THD A exceeds the set ratio, the alarm activation mode can be energized based on the functions of *AHA* .

***AHA* : Activation setup/THD A exceeds the set ratio.**

no : De-energized

nAc : Stop switching-in the capacitor as the inductive load still needs to be compensated.

trP : Switching-out all the energized capacitors

ALA : Being appeared with ALARM , the relay contact is energized.

nA_A : *nAc* + *ALA*

tr_A : *trP* + *ALA*

※An indication of ALARM is appeared on the screen, to press  +  simultaneously for checking back the fault records, which it can refer to the ALARM functions.

※It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons.

***AHd* : THD A delay time setup (sec.)**

It will be energized as the desired set THD ratio/time delay exceeds the thresholds simultaneously.

***UHS* : THD V ratio setup 00 ~ 99 %**

The input THD V exceeds the set ratio, the alarm activation mode can be energized based on the functions of *UHA* .

***UHA* : Activation setup/THD V exceeds the set ratio**

no : De-energized

nAc : Stop switching-in the capacitor as the inductive load still needs to be compensated.

trP : Switching-out all the energized capacitors

ALA : Being appeared with ALARM, the relay contact is energized.

nA_A : *nAc* + *ALA*

tr_A : *trP* + *ALA*

※ An indication of ALARM is appeared on the screen, to press  +  simultaneously for checking back the fault records, which it can refer to the ALARM functions.

※ It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons.

***U Hd* : THD V delay time setup (sec.)**

It will be energized as the desired set THD ratio/time delay exceeds the thresholds simultaneously.

***EPF* : Temperature threshold set for FAN energized**

※The activation mode set to *FAn* in the functions of *rYF* can be energized as the set temperature exceeds the threshold.

※The legend of * will be indicated on screen as the *FAn* activation is energized.

※The relay activation will be recovered as the temperature decreases around 5 °C below the set threshold in the energized status.

***EPS* : Over temperature range setup**

The temperature exceeds the set range, the alarm activation mode can be energized based on the functions of *EPF* .

***EPF* : Activation setup/Over temperature**

no : De-energized

nAc : Stop switching-in the capacitor as the inductive load still needs to be compensated.

trP : Switching-out all the energized capacitors

ALA : Being appeared with ALARM, the relay contact is energized.

nA_A : *nAc* + *ALA*

tr_A : *trP* + *ALA*

※An indication of ALARM is appeared on the screen, to press  +  simultaneously for checking back the fault records, which it can refer to the ALARM functions.

※It will automatically be returned to the designated legend if a presence of ALARM is still stayed for 20 seconds without pressing the buttons.

***EPd* : Over temperature delay time setup (sec.)**

It will be energized as the desired set temperature range/time delay exceeds the thresholds.

***CP5* : Capacitor's capacity decrease-ratio setup 00 ~ 99 %**

The capacity is under the set ratio, the alarm activation mode can be energized based on the functions of *CPF* .

***CPF* : Activation setup/Capacity decrease exceeds the set ratio**

no : De-energized

YES : Being appeared with ALARM, the relay contact is energized

※Checking back the legends of INFO_{INFO ΔQ} / INFO_Q which include the details in the memorized records.

***CnA* : Activation setup/Short of capacity after switching in the capacitor**

no : De-energized

YES : Being appeared with ALARM, the relay contact is energized.

***rYF* Menus (YPM-7 is designed as *rY5 rY6 rY7*) (YPM-14 is designed as *r12 r13 r14*)**

r12

r13

r14

: Specific functions for relay contact activation

nor : Not assigned to other functions

on : Switch-in the capacitor forever (Energized after the delay time)

ALA : Alarm contact (Extra alarm contact)

FAn : Fan energized

※ The added relay contact activation with specific functions doesn't relate with the *STEP* steps of relays for switching operation.

※Example of 14 steps

Relay 12 is assigned to on. Relay 14 is assigned to FAn. Relay 13 is assigned to nor (only for switching-in/out the capacitor)

CAS : Hi-Lo WORD sequence setting *L_H* *H_L*

Fast switch-in

If it conforms to the fast switch-in mode, $\cos \varphi$ will flash

Auto switch-out

✱The input current is under the set I_{RS} (under-current activation setup), it automatically starts the Auto Switch-out mode.

Disabled switch-in/out

The switch-in activation is disabled as it turns to the inductive and capacitive load, and the legends of m $\pm$ flash.

The digital display shows two readings: 0.98 and 380.0. The top reading is 0.98 with a COS ϕ symbol and a small icon of a person with a lightning bolt. The bottom reading is 380.0 with a V symbol. To the right of the readings is a battery level indicator with four bars, the first three of which are filled. Below the display is a 4x2 grid of buttons labeled 1 through 14. The top row contains buttons 1, 2, 3, 4, 5, 6. The bottom row contains buttons 7, 8, 9, 10, 11, 12, 13, 14. To the right of the bottom row of buttons are the labels Hz and AI.

✖ It doesn't have any faulty events happened without having the legend of ALARM shown on screen. In such a condition, the both buttons pressed is disabled.

Buttons function: Press + simultaneously for checking back the fault records

-  Return to the measured values display
-  Next faulty record
-  Previous faulty record

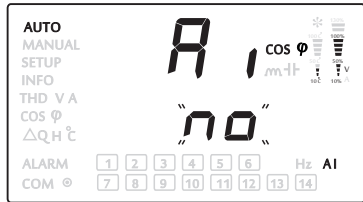
✱ The activation setup assigned to the *RLR* mode will indicates with the faulty records and related settings as the ALARM starts to be energized. And relatively, it indicates nothing without having the ALARM faults.

ALARM faults check-up

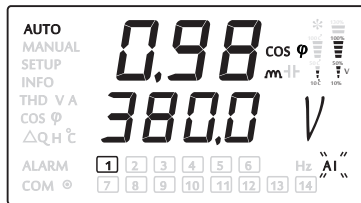
E_{LA}	Under-current	E_{OA}	Over-current
E_{LU}	Under-voltage	E_{OU}	Over-voltage
$E_{A\theta}$	THD A ratio	$E_{U\theta}$	THD V ratio
E_{tP}	Over-temperature	E_{Cn}	Short of capacity after switching in
E_{CP}	Capacitor's capacity decrease		

AI Operations/Functions (CT&VT ratio shall be set correctly) _____

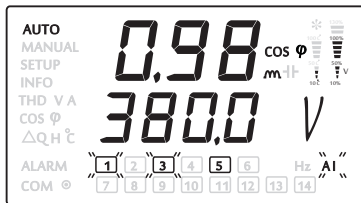
Startup AI for detection/initialization of each capacity of the installed capacitors, exclusive of the specific functions of rYF .



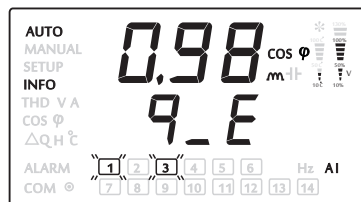
AI startup legends



Example of capacity detection



Abnormal capacity check-up



Startup AI only in the AUTO mode

1. Press KEY + ENTER simultaneously for AI startup, and meanwhile the displayed legends flash.
2. Press either UP or DOWN to alter SE , then press ENTER for startup.
3. Memorize each capacity after the delay time for switching-in as the AI startup is energized.
4. By pressing ENTER can stop initialization during the AI startup.

✱It will automatically stop the AI mode as the system is in a status of either the switch-in/out activation disabled or auto switch-out.

1. The legend of m and AI lights up/flashes individually after the delay time for switching in, and sequentially the legend of step 1 will be lit up like 1 .
2. It will turn to the next step for detection as the values detected are normal. Consequently it lasts for the set maximum step (SE), exclusive of the specific functions of rYF .
3. The value detected is abnormal, then the legend of the assigned step flashes like 1 .
4. The detecting procedure is finalized or interrupted, then it will return to the measured values display after the legend of $F mH$ is lit up.

Steps 1 3 flashing represents for abnormal status.

Steps 2 4 aren't lit up that represents for normal status.

It is currently on detecting step 5 .

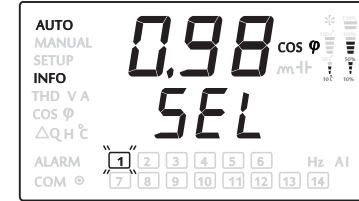
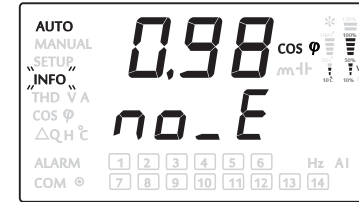
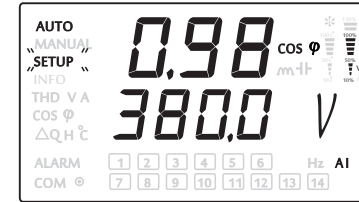
✱Detection is normal, then the capacity will be memorized in INFO Q.

1. Press KEY + UP simultaneously to check up the abnormal steps as your stay at the measured values display. Refer to the left legends shown for INFO, AI, 9_E (Abnormal capacity). Abnormal steps 1 3 flash.

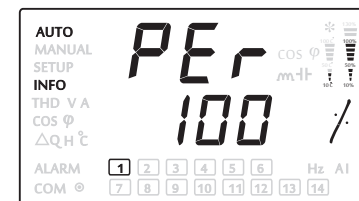
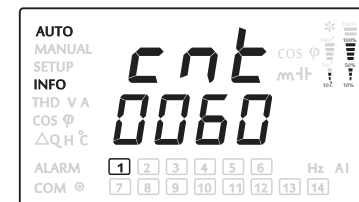
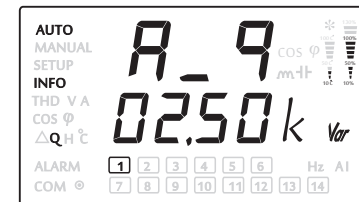
2. Press ENTER to return to the measured values display.

Capacity check-up/setup (CT&VT ratio shall be set correctly)

INFO Q : Capacity initialization detecting



INFO Legends



INFO ΔQ : Detect current capacity

1. Press KEY to select SETUP for access, and meanwhile SETUP flashes. Press again KEY to access the setup functions, and then the flashing varies with the selected the functions in INFO by pressing UP or DOWN .

2. Press UP to select the functions in INFO, and meanwhile INFO flashes.

✱Being appeared with no_E represents for the capacity is normal, and it needs to access the abnormal capacity check-up if the abnormal status happens.

3. Press KEY to select the number of step. Set example of 1 flashing. Bargraph indication in % represents for the capacity decrease corresponding to the no. of step.

4. Press UP or DOWN to select the number of steps, and meanwhile the step flashes.

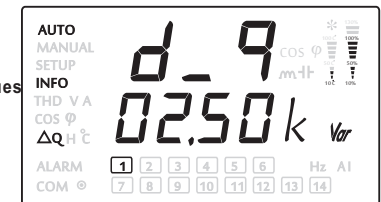
5. Press KEY to access the related legends of the selected step.

6. Press UP or DOWN to display the related legends as follows.

7. Leave INFO

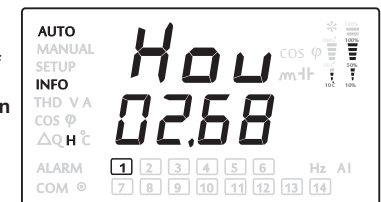
Press ENTER to return to the previous display toward the measured values display.

INFO Q
Measured values



INFO ΔQ
Measured values

Numbers of
times for
switching-in

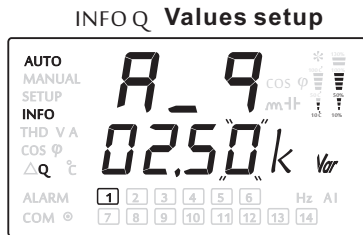


Relay activation
running hour

✱The unit/decimal point position will automatically vary with the measured values.

Bargraph indication
in % for the capacity
decrease

Capacity setup (CT&VT ratio shall be set correctly)

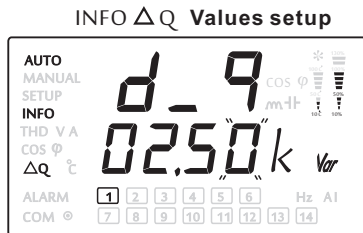


Buttons function

- Access to setup, and meanwhile the unit digit flashes
- Increase value
- Decrease value
- Alter the digit position
- Confirm then return to the measured values display

Enter the numeric setting, when the value flashes

- + Display Finh after long press, copy the last capacitance.
- + Alter the decimal point position



Buttons function

- Access to setup, and meanwhile the unit digit flashes
- Increase value
- Decrease value
- Alter the digit position
- Confirm then return to the measured values display

Enter the numeric setting, when the value flashes

- + Display Finh after long press, copy the last capacitance.
- + Alter the decimal point position

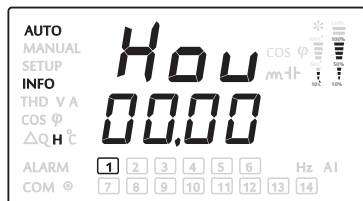
Number of the times for switching-in



Buttons function

- + Hold both buttons longer for indicating CLR, and the value is reset to 0 after clearance

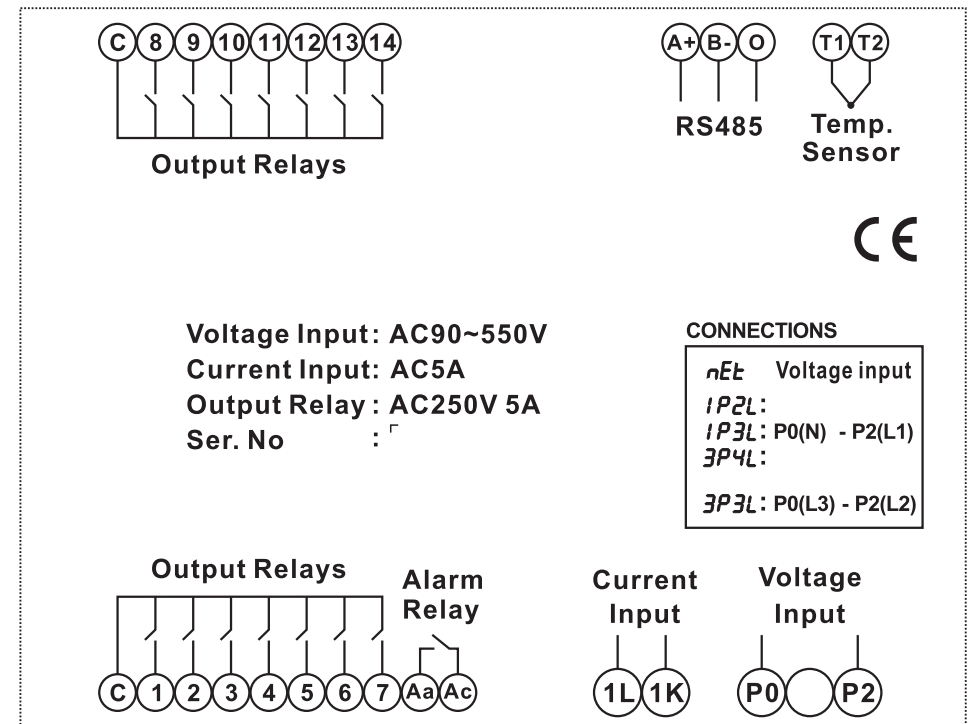
Relay activation running hour



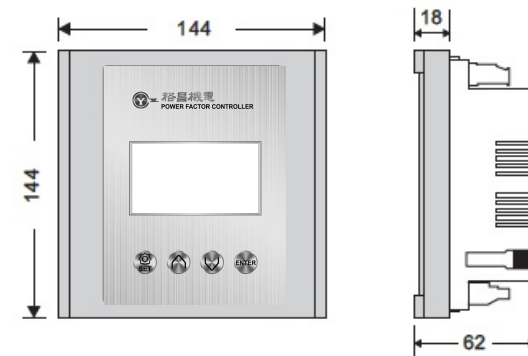
Buttons function

- + Hold both buttons longer for indicating CLR, and the value is reset to 0 after clearance

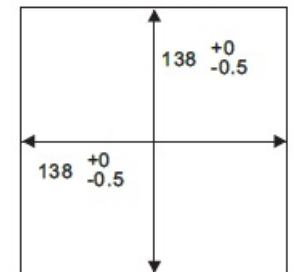
Terminal configuration diagram



DIMENSIONS : mm

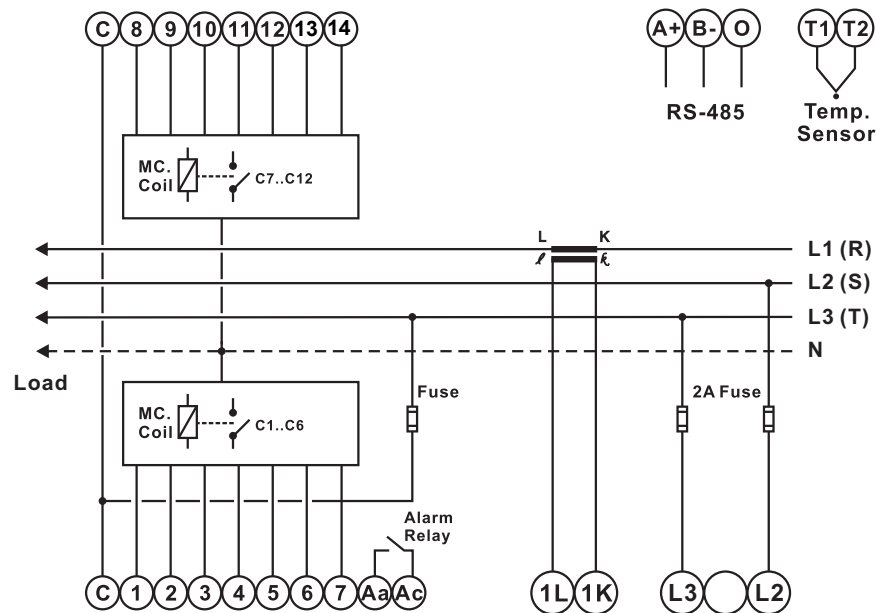


PANEL CUT-OUT

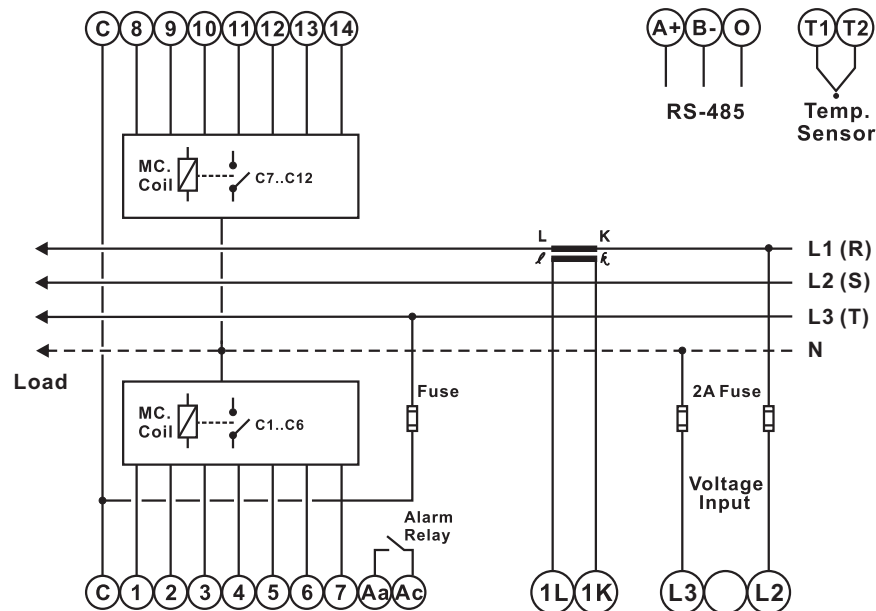


■ CONNECTION DIAGRAM

$nEt = 3P3L$ Connection Diagram



$nEt = 3P4L, 1P2L$ Connection Diagram, Voltage connection VRN



■ Specifications

Voltage range	: AC 90~550 $\pm 10\%$
Power consumption	: $\leq 7VA$ (YPM-07), $\leq 10VA$ (YPM-14)
Current range	: AC 0.05 ~ 5A
Power consumption	: $\leq 0.5VA$
LCD screen	: Backlit LCD, PF 3 digits, electrical parameters 4 digits
Power factor setting range:	Cap.0.70~ Ind.0.70 PF. 0.97 set by factory's default value
Accuracy	: V,A : $\pm 0.2\%$ F.S. , VA,W,Var : $\pm 0.5\%$ F.S. , PF : ± 0.02
Power factor setting mode:	Setting value to 1.00 PF. or setting point mode
Switching delay time	: 2 ~ 999 sec. delay time 30 sec. be set by factory's default value
Number of steps	: 3 ~ 7 steps for YPM-07 3 ~ 14 steps for YPM-14
Over voltage setting	: 110 ~ 130%, 120% be set on delivery from factory
Relay contact capacity	: typical AC 220V 5A
Operating temperature	: 0 ~ 60 $^{\circ}C$
Storage temperature	: -10 ~ 70 $^{\circ}C$
Dielectric strength	: AC 2KV, 60Hz, 1 minute, INPUT/OUTPUT/CASE
Surge immunity	: IEC 1000-4-5
Electrical fast transient/burst	: IEC 1000-4-4
Electrostatic discharge	: IEC 1000-4-2
Short interruptions and voltage variations:	: IEC 1000-4-11
Connection	: Plug-in terminal block
Weight	: About 0.25kg.
IP Level of protection	: IP 52 (Panel)

Points for attention :

1. Installation, please pay attention to waterproof and dustproof.
2. Make sure to fasten the screw terminal block to prevent Jiechubuliang cause burning



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