AHF (SVG) Installation Guide

All installation, assembly and power on must be performed by qualified personnel, or supervised by qualified personnel on-site.

1 4.3-inch LCD screen

1.1 Single module power wiring

Three CTs must be used in three-phase four-wire system, and are installed on phase A, B and C respectively.

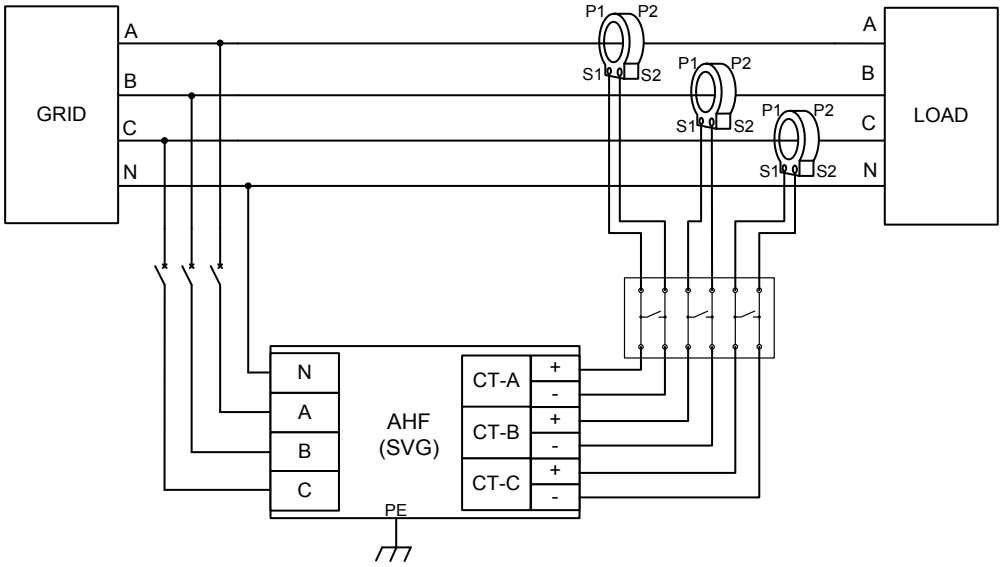


Fig. 1-1 Wiring single power module (3-phase and 4-wire system)

Only two CTs should be used in three-phase three-wire system, and are installed on phase A and C respectively.

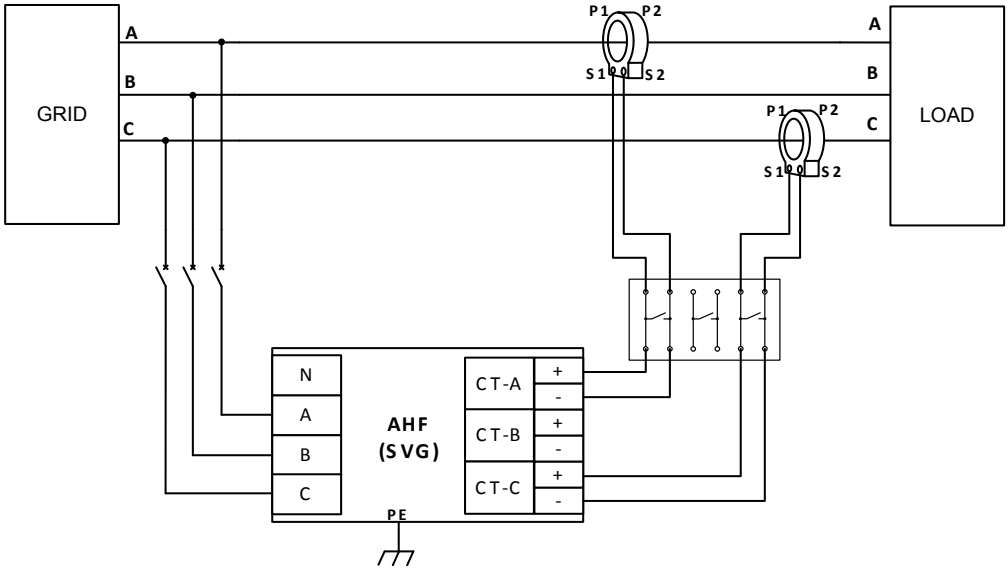


Fig. 1-2 Wiring single power module (3-phase and 3-wire system)

The AHF or SVG can adopt external CT ratio between150: 5~30000:5. Within this range, the setting of CT ratio can be adopted according to the actual use.

It is recommended to install the CT at load side, but for single module the supply side also be allowed with one set CT.

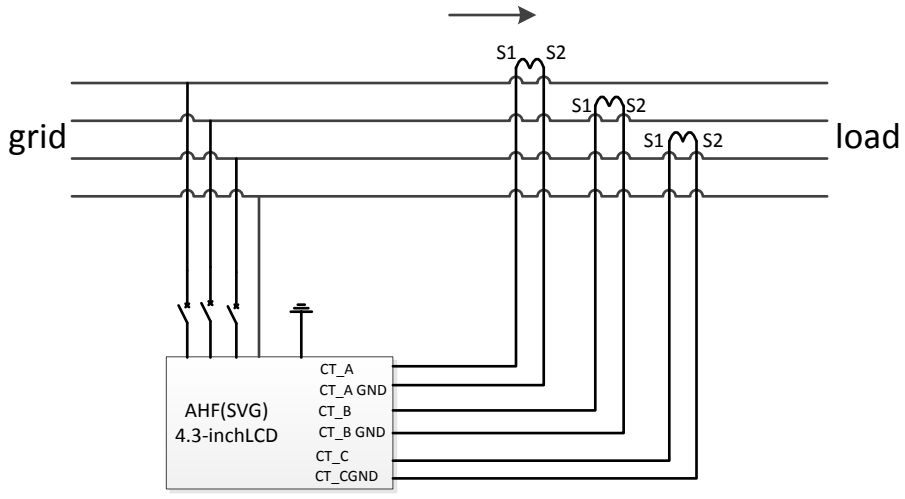


Fig.1 -3 Single 4.3-inch LCD module wiring of CT installed at load side

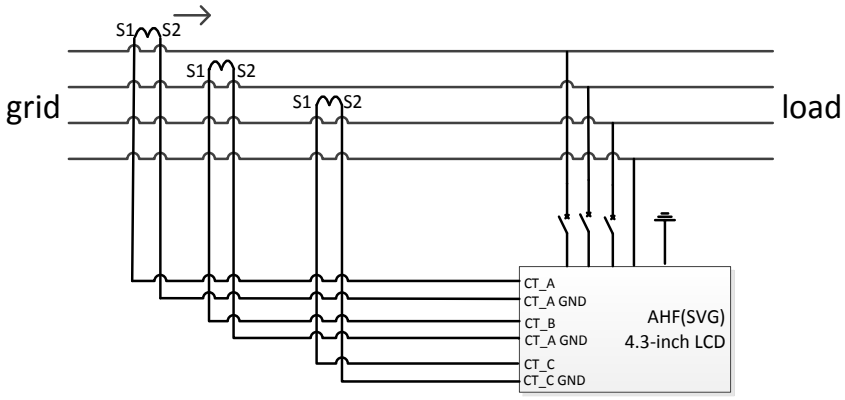


Fig.1 -4 Single 4.3-inch LCD module wiring of CT installed at grid side

1.2 Several modules power wiring

The connection of CT secondary polarity and module is series wiring.

When CT is installed at source side, user at least needs to use two groups of CTs (6CTs, in 3-phase 4-wire system). Two groups of CTs are installed on phase cable at source side and power cable at AHF (SVG) side and are connected in parallel. Even just show one phase CT location in the next several modules pictures, but please don't forget to connect other phases CT.

The signal wiring method is for rack-mounted LED parallel operation. And don't modify the commissioned dial codes.

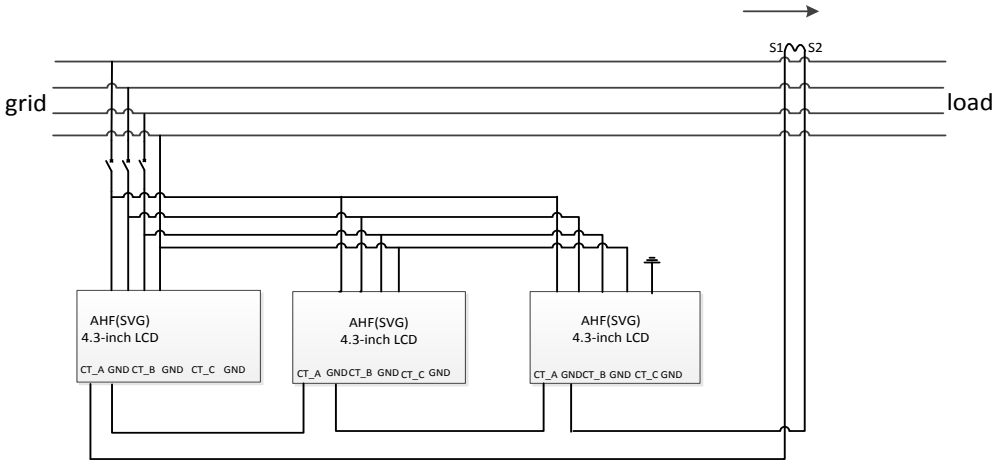


Fig.1 -5 Several 4.3-inch LCD modules wiring of CT installed at load side

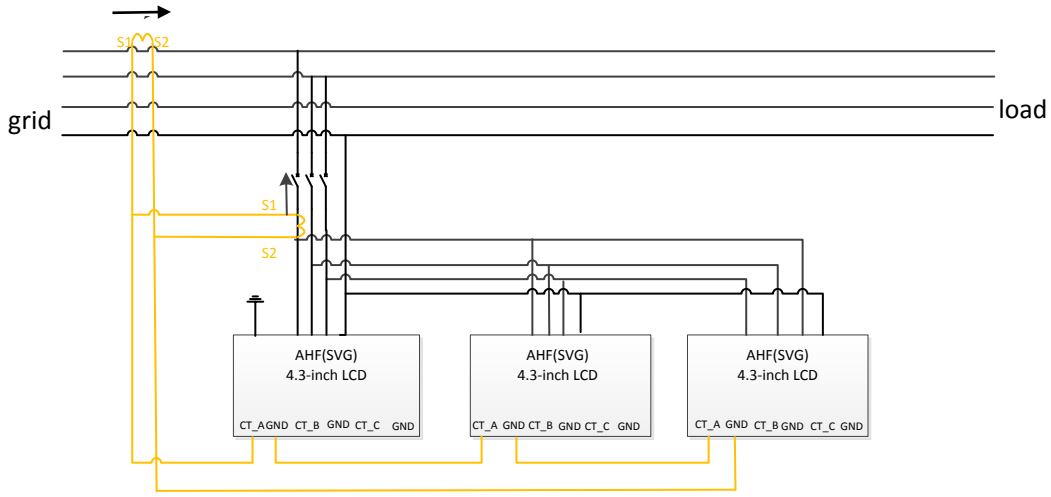
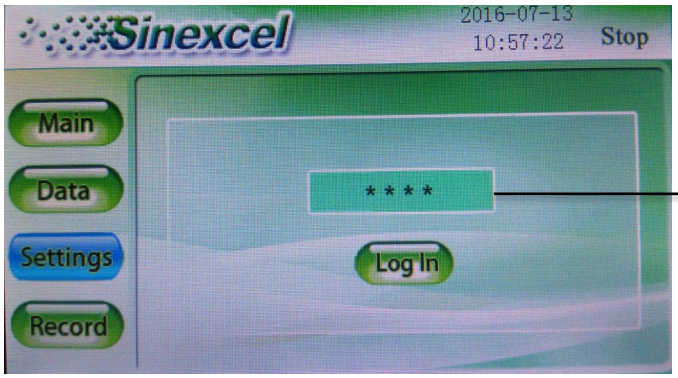


Fig.1 -6 Several 4.3-inch LCD modules wiring of CT installed at grid side

1.3 Several modules communication wiring

There is no need to connect 485+, 485-, EPO_A and GND_ISO of these several modules to each other, the dial switch doesn't have to be adjusted also. Series connection is adopted among CT signal interfaces, and parallel connection is adopted among module power interfaces.

1.3 Basic Commissioning Settings For Plain English 4.3” Touch Screen



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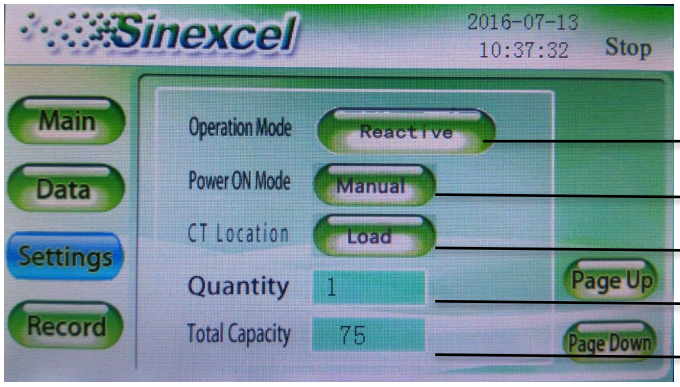


Reactive mode (SVG)

Harmonic mode (AHF)

Automatic

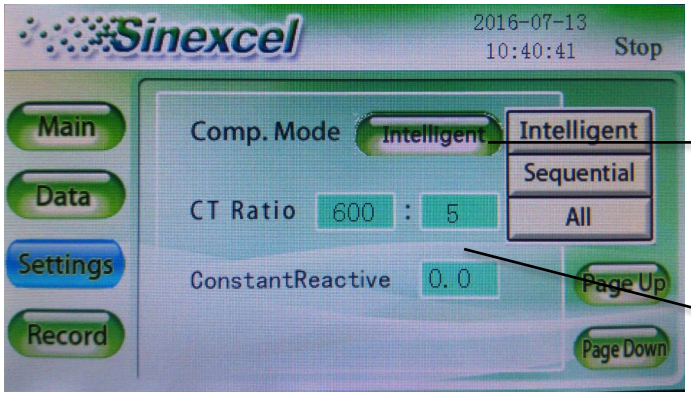
Load side (Single module support supply side)

Modules quantity (Always 1)

Unit (A)

400v 150A AHF capacity is 150A

400v 100kvar SVG capacity is 150A



AHF

Intelligent is suitable for complicated condition

(High orders harmonic)

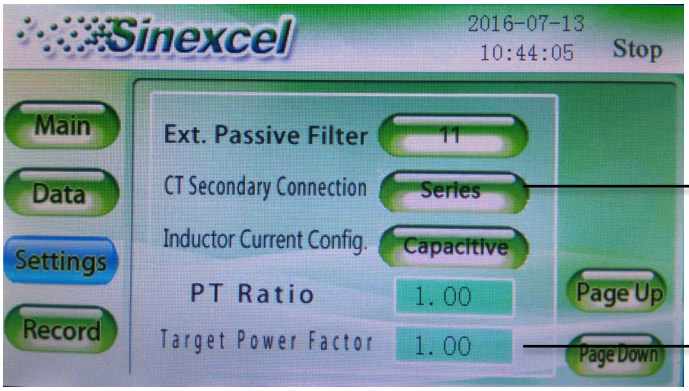
Sequential and All modes are quick and suitable

or simple condition，low orders harmonic，

SVG Choose Intelligent

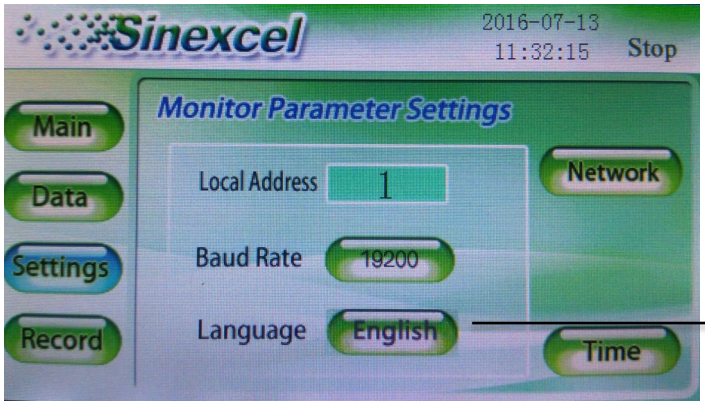
150~30,000

For 400V 500A (5*100A) 4.3-inch LCD AHF system, the total capacity is 500A and the slave quantity is 1not 5, and please don’t change the dial switch. Others please reference recommendation.



Always series

For reactive power compensation



Language setting

2 7-inch centralized HMI with LED modules (the module don’t have screen)

2.1 Power distribution for parallel operation

CT and signal interface are shown in Fig. 2-1. Refer to Tabl.2-1 and Tabl.2-2 for description of CT and communication signal. CT cable with series connection way, 485 communication and EPO should with parallel connection.

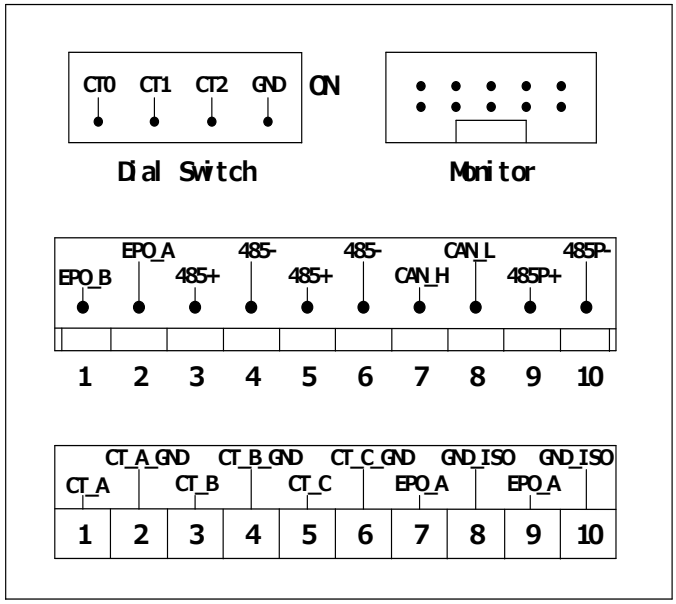


Fig.2-1 CT and signal interface

Table 2-3Description of CT and communication signal

Mark	Description
CT_A	Connect S1 terminal of A-phase CT
CT_A_GND	Connect S2 terminal of A-phase CT
CT_B	Connect S1 terminal of B-phase CT
CT_B_GND	Connect S2 terminal of B-phase CT
CT_C	Connect S1 terminal of C-phase CT
CT_C_GND	Connect S2 terminal of C-phase CT
EPO_A	Externally connect ON end of EPO button, polarity-free
EPO_B	Externally connect ON end of EPO button, polarity-free
485+	RS-485 signal (A) for centralized monitoring
485-	RS-485 signal (B) for centralized monitoring
485P+	RS-485 signal (A) for background monitoring

485P-	RS-485 signal (B) for background monitoring
CAN_H	Reservation function
CAN_L	

Table 2-4Description of dial switch and machine number

CT0	CT1	CT2	Machine No.
OFF	OFF	OFF	1
ON	OFF	OFF	2
OFF	ON	OFF	3
ON	ON	OFF	4
OFF	OFF	ON	5
ON	OFF	ON	6
OFF	ON	ON	7
ON	ON	ON	8

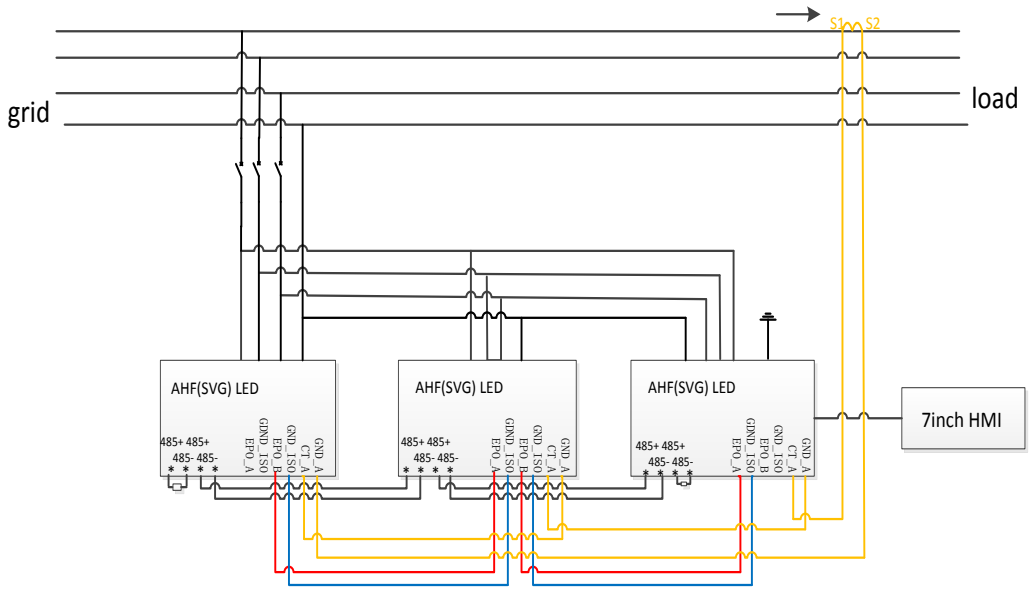


Fig. 2-2 Several LED modules wiring of CT installed at load side

When CT is installed at source side, user at least needs to use two groups of CTs (6CTs, in 3-phase 4-wire system). Two groups of CTs are installed on phase cable at source side and power cable at AHF (SVG) side and are connected in parallel.

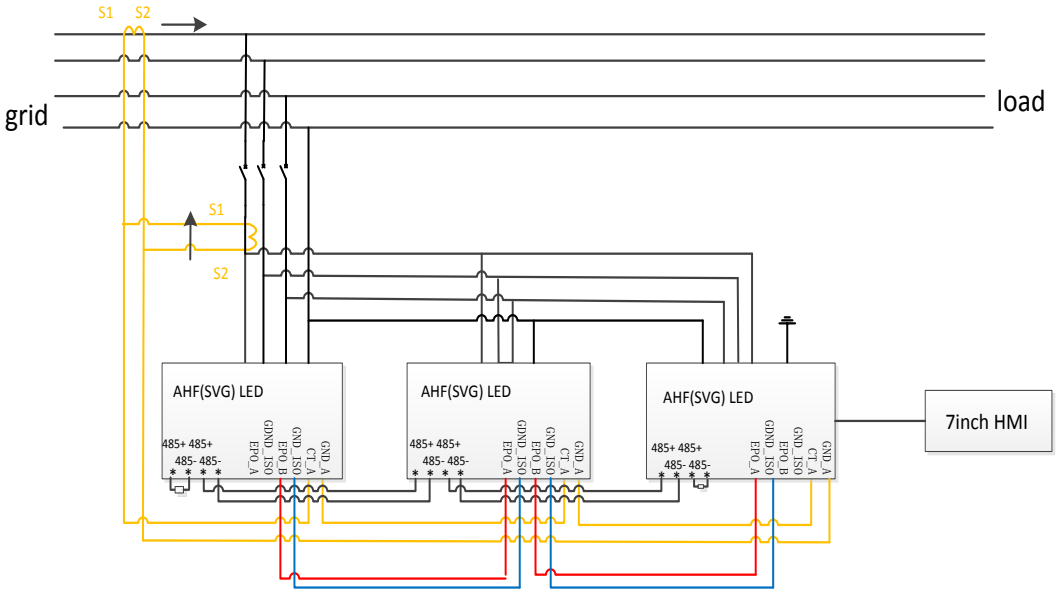
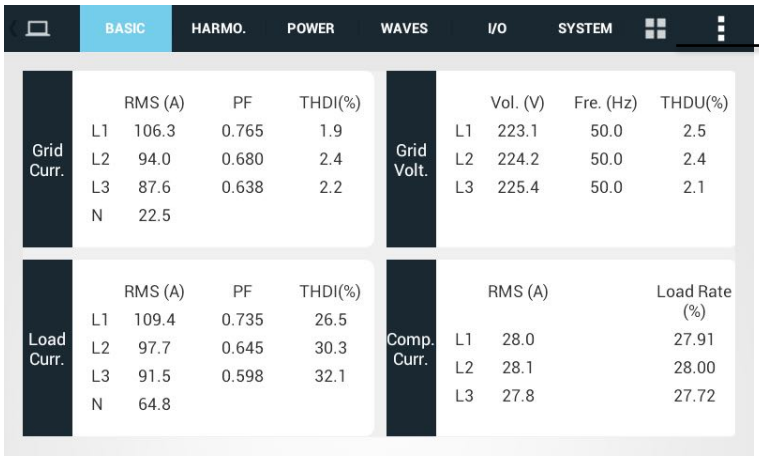


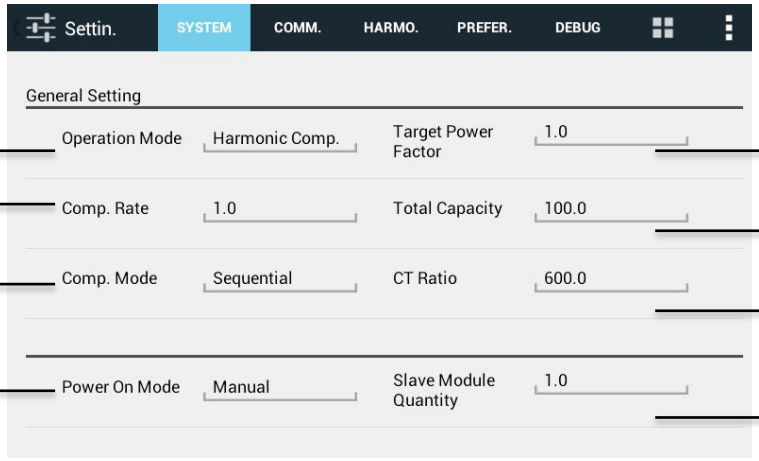
Fig. 2-3 Several LED modules wiring of CT installed at grid side

2.2 Basic Commissioning Settings For Plain English 7” Touch Screen



Click setting and the passwo

is 080808



Reactive mode (SVG)
Harmonic mode (AHF)

Compensation rate 1

AHF

elligent is for complicated condition
equential and All modes are quick and
for simple condition

Choose Intelligent **SVG**

Automatic

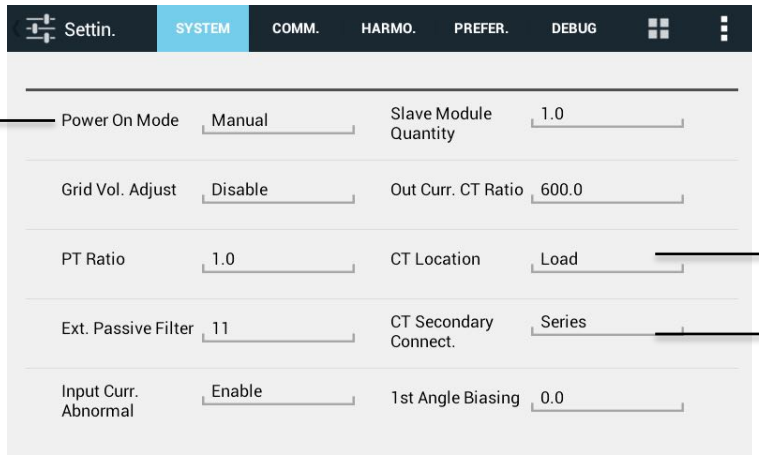
For reactive power compensation

Unit (A)

400v 150A AHF capacity is 150A
400v 100kvar SVG capacity is 150

150～30，000

Modules quantity



Automatic

Load side
(Single module support supply side)

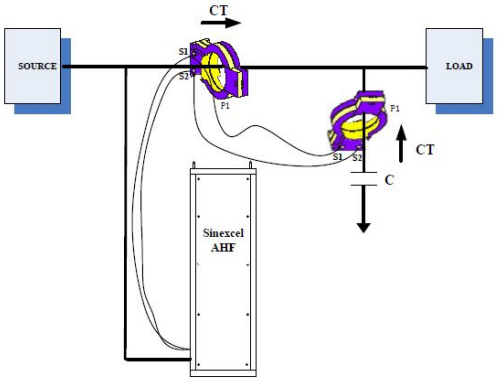
Always series

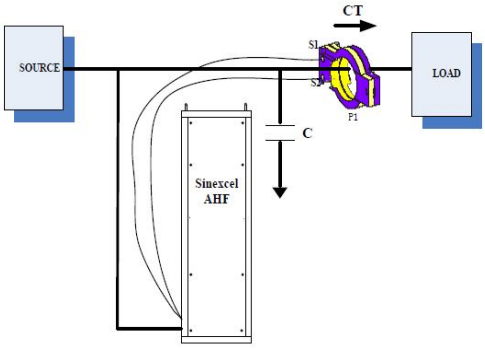
For 400V 500kvar (5*100kvar) 7-inch LCD SVG system, the total capacity is 750A and quantity is 5, please remember to adjust the Dial switch reference Table 2-5.

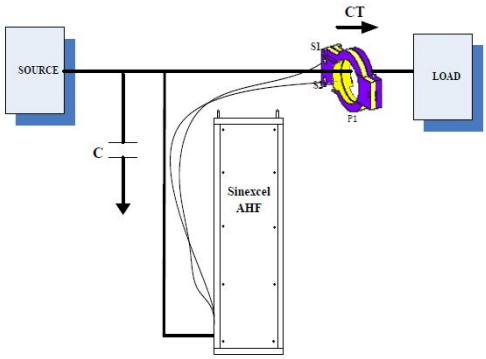
For 400V 300kvar (3*100kvar) 7-inch LCD SVG system, the total capacity is 450A (because the unit is A, so the I=Q/1.732U)

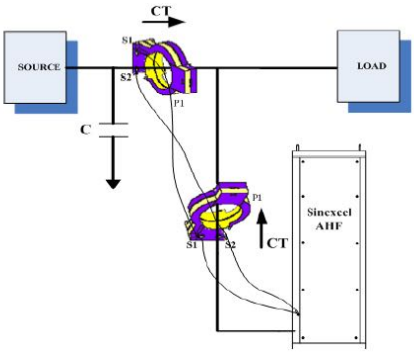
3 AHF installation avoid capacitor

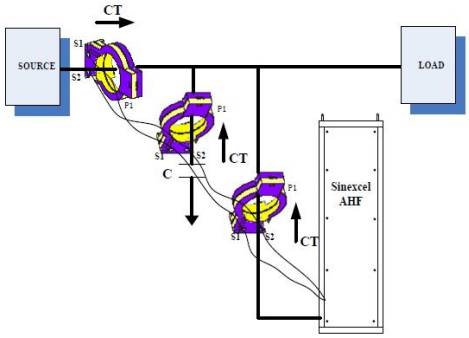
There is an extra group of CTs at the terminal of capacitance. The final purpose is to collect load current more exactly, means AHF just compensate loads current. It will cause resonance and influence compensation performance if AHF and capacitor work together. Special instructions should be made to users, even there just have AHF cabinet's CT wiring diagram, single AHF module is also need to notice the capacitor position.

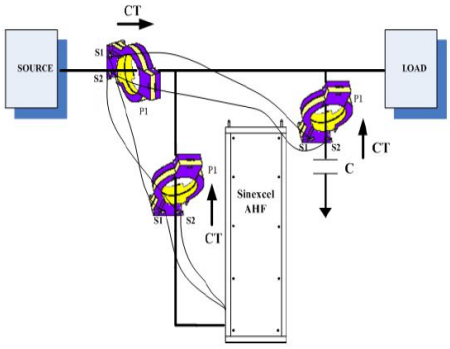












4 AHF （SVG）Troubleshooting Guide

Failures or alarms	Possible reasons	Solutions
Communication failure	Communication failure between the monitoring module and the AHF	Check if the communication cable is securely connected
Over-temperature	1. Ambient temperature is too high; 2. Air duct is blocked; 3. Fan failure	Check the reason one by one
Input voltage is abnormal	1. The power cable system is set incorrectly (3-phase 3-wire or 3-phase 4-wire); 2. Input overvoltage or under-voltage,	Check if the model is connected in corresponding wire system, if the power cable is reliably connected, and if the input phase voltage is in the standard range.
Input frequency is abnormal	The input frequency exceeds the limit	Check if the frequency of AC input is in the range of 40.5-62.5Hz
DC bus overvoltage	Converter is turned off or can’t be turned on due to the high DC bus voltage	Please contact Sinexcel product engineers
Auxiliary power failure	Auxiliary power failure	Please contact Sinexcel product engineers
No compensation current	1. The AHF is not turned on; 2. CT wiring has problem; 3. The compensation rate is set too small	Check if the AHF is turned on, check the setting of compensation rate, check the installation position of CT and wiring method, and if CT cable is securely connected
Controller parameter setting error	Read controller parameters do not match the set controller parameters	Please contact product engineers of Sinexcel
Inverter overload failure	Compensation current of the AHF exceeds the rated current	Check if the capacity of active harmonic filter matches the load
CT ratio setting error	External CT ratio setting error	Check if the installation direction of CT and cable phase sequence are correct