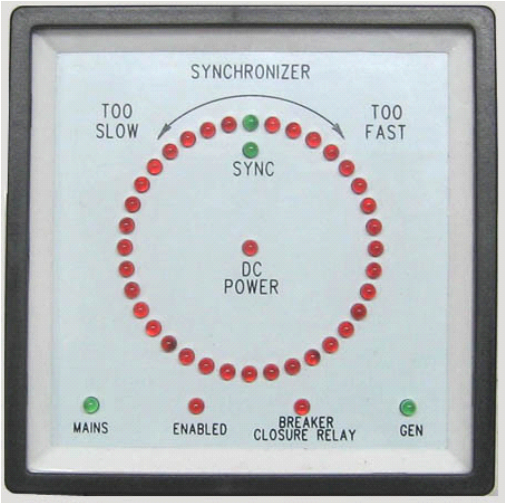
SYNCHROSCOPE 6714+

Function description

6714+ synchroscope is a high-tech designed product, there is no need to install synchronous controllers when using synchroscope so the cost of generators and machine control cabinet is reduced and the line is simplified. And what's the most important, it improves the stability of generators and machine control cabinet

The phase difference can easily be displayed by LED light. There is 36 LED in a circle for this model

Besides, it contains the functions of SYC6714 synchroniser and synchroscope meter

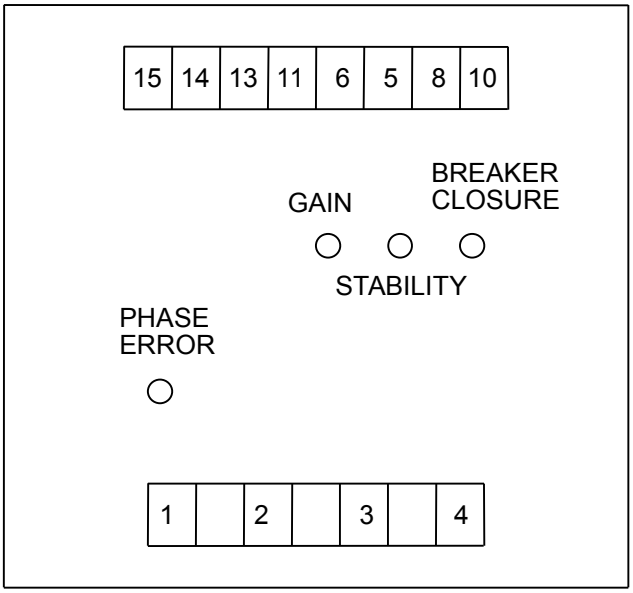


The functions of LED

Indicator Light	Function
36PCS LED Indicator	When it is synchronous, the phase difference is near 0°, the top green LED shall be lit. When fgen> f bb, the phase difference is in timing angle, LED shall be lit in the direction of "TO FAST", A phase difference of 10° will be decreased when a more LED is lit in that direction. When fgen< f bb, the phase difference is in inverted angle, LED shall be lit in the direction of "TO SLOW". A phase difference of 10° shall be decreased when a more LED is lit in that direction. If the frequency of the generator set is on the high side or on the low side, the LED shall be lit in timing direction or inverted direction accordingly.
SYNC	The LED shall be lit when the phase difference is lower the presetting difference.
DC POWER	The LED shall be lit when the power is normal
MAINS	The LED shall be lit when the mains is normal
ENABLED	The LED shall be lit when electric network or Bus-bar

	is normal
BREAKER CLOSURE RELAY	The switching signal shall be showed synchronously if the phase difference is lower than presetting difference and meanwhile the LED is lit when the synchronization is been accepted.
GEN	The LED shall be lit when generator is supplied

Connection speceification



wire connecting terminal	Wire connecting instruction
1、2	Connect generator with A、C phase (Voltage range:AC110V~400V 50/60Hz）
3、4	Connect Mains with A、C phase (Voltage range:AC110V~400V 50/60Hz）
10	Connect to negative pole of battery
8	Connect to positive pole of DC 24V battery
5	ENGBLE input; Be able to control synchronously when it is connected to the positive pole of DC 24V battery
6	Synchronously signal output, Connect GAC speed control unit with N terminal
14	Control the public terminal of output relay

13	Control normally open terminal of output relay
15	Control normally closed terminal of output relay

Adjustment

Before debug the system, Generator speed control unit correctly makes the system operates steadily.

1. Before debugging , please disconnect terminal 13、14 and 15. It can test the system without real parallel running.
2. The LED of MAINS, GEN and DC POWER shall be lit when reset generator speed. We can make frequency difference within 0.1Hz as far as possible .Close the synchronous enable switch (ON/OFF) between speed controller and 6714+, and the auxiliary contact close. A positive 24V voltage add to terminal 5, the red ENABLED shall be lit. The 6714+ will sync the generator to Mains. Then green SYNC shall be lit.
3. Rotate the GAIN potentiometer CW until instability develops. Gradually move the adjustment CCW until stability returns. Move the adjustment one division further CCW to insure stable performance.
4. Optimize the setting of GAIN.
   Select one of the method below to quit synchronous system.:

   1. Close the ON/OFF switch of 6714+.

   2. Disconnect terminal 3 and 4 in the Bus-bar power.
   3. Push the engine gun lightly on purpose.
   After quit synchronous system, then adjust GAIN again. Repeat this step several times can make the system come to stable and synchronous condition in shortest time.

5.STABLITY Adjustment

If necessary, regulation of the STABLITY CW could achieve stability performance quickly. Regulation of the STABLITY CCW could achieve reaction slowly but rather smooth-going.

6.PHASE ERROR Adjustment

After system achieves synchronous, it is actual minor difference exist. Adjustment of PHASE ERROR to eliminate the small synchronous error. We also could use a adjusted Synchronoscope that bridge join terminal 1,2,3 and 4 to check synchronous difference.

7. BREAKER CLOSURE Adjustment

When system operate normally and synchronously, rotate the BREAKER CLOSURE adjustment CW until limiting position and then move gradually the adjustment CCW until BREAKER CLOSURE RELAY light. Move the adjustment further CCW again.

8. BREAKER CLOSURE USING

Reset the step 1, connect with terminal 13,14 and 15 and then the synchronoscope begin to start.

9. The final check

Start engine and let the system synchronization and machine, we can also make some regulation to the best place and let system smooth-going quickly.