

AS215A Auto-sync Detect Controller

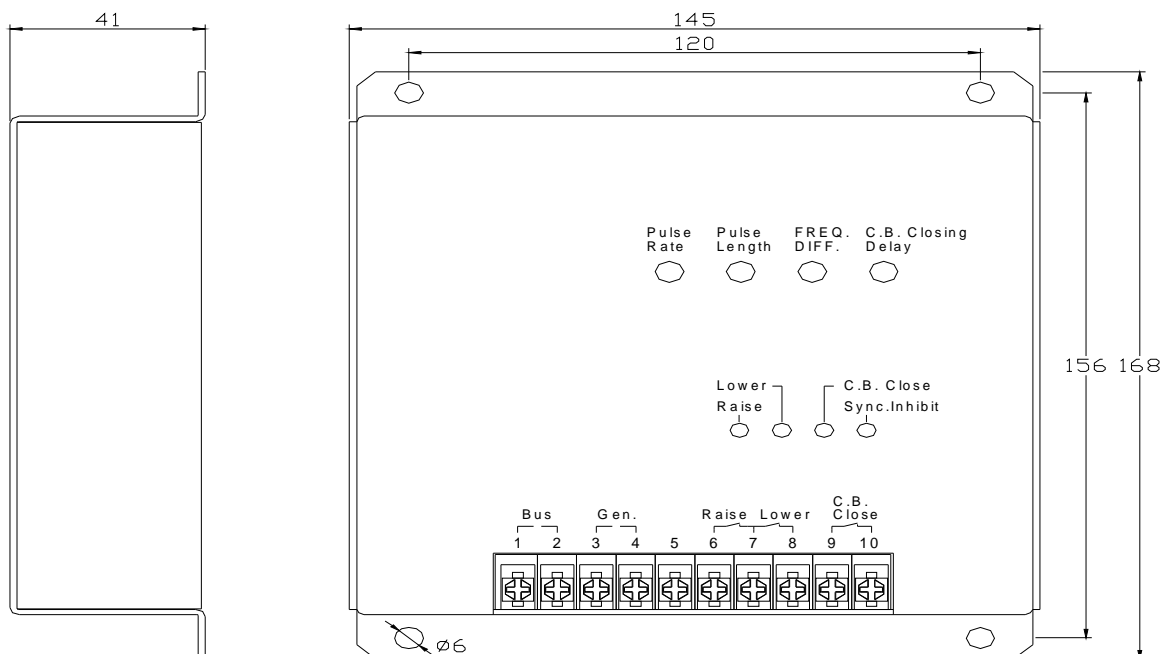
Primary functions:

- Raise/lower speed low output relay
- Adjustable governing output pulse frequency and pulse length
- Adjustable error range of sync-frequency
- Auto-sync relay
- Circuit breaker close time compensation
- Raise/lower speed/sync constraint/sync output run status indication

Product description:

AS215A Auto-sync Detect Controller is used to accomplish auto-sync of generate set output power supply and common power supply. Controller integrates voltage comparer 、 voltage range limit、 frequency comparer 、 in-phase detector and speed control output together. It can use to single phase or three phase system. The controller can adjust Circuit breaker close time compensation. It is suitable to control different type and close time of Circuit breaker。 If Circuit breaker closes in the sync optimal point, then current impact will reduce to the least; the life of Circuit breaker prolong. Controller has auto control speed function. Controller detects common power supply and generator output power supply frequency. When generator powers supply frequency higher than common power supply frequency, controller sends lower speed signal; when generator power supply frequency lower than common power supply frequency, controller sends raise speed signal. Pulse speed and pulse length adjust close time and relay output frequency. As raise/lower speed relay runs, relative raise/lower indicator light illuminates. When generator output power supply and common power supply frequency different、 voltage different、 voltage value、 phase angle are within the pre-set parameters(namely two sources synchronize), and generator frequency slight higher than common power supply frequency, sync-relay output closes. According to sync conditions, controller stops outputting governing signal.

View and install sizes:



Controller indicator light and adjustable potentiometer function instruction:

“Pulse Rate”:

Controller detects that two power supply frequency different larger than pre-set value, and governing relay controls output. Run speed is proportion to two-power supply frequency different. So the larger error, the faster relay runs. If adjusting “Pulse Rate”, you can change run speed of governing relay. Adjust range of “Pulse Rate”: 12~50r/m.

“Pulse Length”:

Pulse length: as governing relay runs, relay holds close time. Once setting parameters, it won't change with other data change. Adjust range of “Pulse Length”: 80~1600 ms.

“FREQ. DIFF.”:

The potentiometer is used to adjust frequency different of two-sync sources. Adjust range of “FREQ. DIFF.”: 0~2HZ.

“C.B. Closing Delay” :

C.B. Closing Delay is the duration of from Circuit breaker receives close command to close. Different brand and type of Circuit breaker closing delay are diversity. Depend on version offers parameters; customer can adjust Circuit breaker closing delay. . Adjust range of “C.B. Closing Delay”: 0~100 ms.

“Raise speed indicator light”:

As raise speed relay closes output, raise speed indicator illuminates.

“Lower speed indicator light”:

As lower speed relay closes output, lower speed indicator illuminates

“C.B. Close Indicator Light”:

As synchronize, Circuit breaker closes relay and close indicator light illuminates.

“Sync. Inhibit Indicator Light”:

As one of two sources is dead, or input voltage lower than internal pre-set value, or two power supply voltage larger than pre-set value, or voltage frequency different of two power supply larger than the setting value, indicator light illuminates.

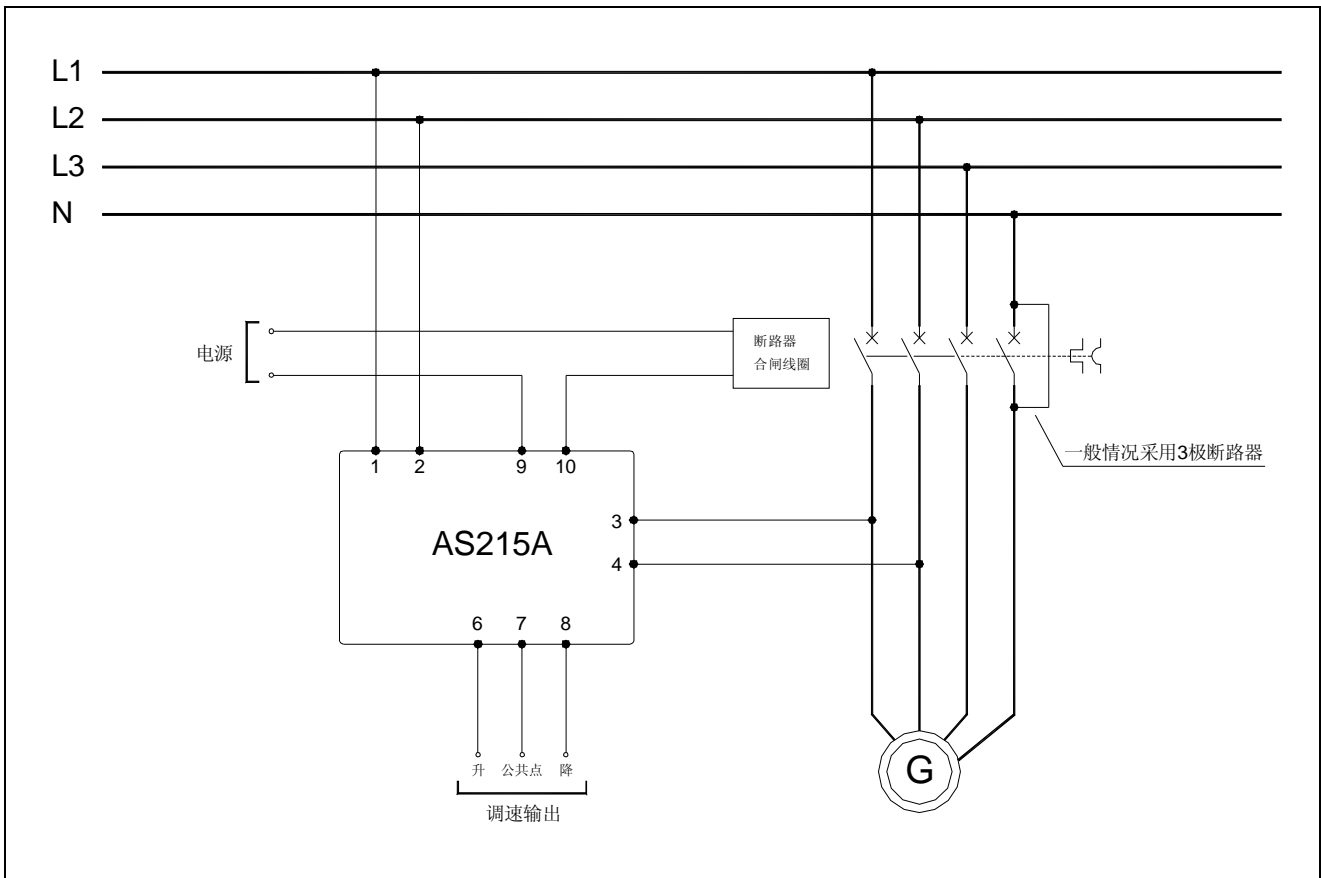
Installation guide:

1. First you should fix controller. Then depend on typical wiring diagram and actual demand of customer, connecting control wiring. Note the terms as below:
 - I Input AC voltage can't over normal working voltage. If not, you should use transducer.
 - I Don't connect input port of two sources wrong. Make sure 1#和 2# terminals connect to common power supply, 3#和 4# terminals connect to generate power supply.
 - I Make sure two couple sources in-phase.
2. Depend on Circuit breaker manufacturer offers technical parameters, setting Circuit breaker delay.
3. Depend on actual demand, setting max frequency different. If frequency different of two-power supply is within the setting frequency different, and standby parallel operation of generator frequency is slight larger than common power supply frequency, then Circuit breaker will send close signal. For example: Setting frequency 1HZ in the 50HZ system, then parallel operation will occur between50HZ-51HZ.
(Note: Because manufacture error, as about 0.1Hz or lower common power supply frequency, parallel operation maybe occur.)
4. Depend on generate set run characteristics, setting speed of raise/lower speed output pulse and pulse length, then it will make parallel operation system into the optimum system respond status. Normally if system respond fast and sensitively high, then the faster output pulse speed, the longer pulse length; on the contrary,

the slower output pulse speed, the shorter pulse length; if you want to adjust exactly, then output pulse length should short. Pulse output speed is proportion to two sources frequency different. As the larger error, the faster relay runs, so only when frequency different larger, it will occur max frequency. Pulse frequencies lower with frequency different reduce. Usually raise/lower speed occurs in the middle of frequency band. For example: If sync frequency band is 50HZ~51HZ, namely max frequency is 1HZ, then at 50.5HZ, raise/lower speed output converts. Pulse frequency and pulse length shouldn't set max value simultaneous. This is because when two sources frequency error larger, output pulse will couple (namely governing relay will energize continuous), then effecting synchronizes.

- To prolong the life of controller, in the application circuit design, after circuit breaker closes, generate supply of controller open (namely controller stops).

Typical wiring diagram:



Specification:

System voltage: Rated voltage AC380V
Voltage range: $\pm 10\%$
Frequency: 45~65HZ
Working temperature: $-20^{\circ}\text{C} \sim 50^{\circ}\text{C}$
Output relay: