【CLAIMS】

1. A voltage sag protector for a three-phase servo driver comprising:

a first power cutoff switch (110) that is installed on any one of R, S, and T phase power lines connecting an external power supply from which three-phase alternating current (AC) power is input and the three-phase servo driver (10), is switched on before a momentary power failure occurs, and is switched off when the momentary power failure occurs so as to interrupt the electrical connection between the external power supply from which the three-phase AC power is input and the three-phase servo driver (10); and

a single-phase voltage sag protector (120) having:

a second power cutoff switch (121) that is installed either on the S phase power line when the first power cutoff switch (110) is installed on the R or T phase power line or on the R or T phase power line when the first power cutoff switch (110) is installed on the S phase power line, is switched on along with the first power cutoff switch (110) before the momentary power failure occurs, and is switched off along with the first power cutoff switch (110) when the momentary power failure occurs so as to interrupt the electrical connection between the external power supply from which the three-phase AC power is input and the three-phase servo driver (10);

a controller (122) that switches on the first and second power cutoff switches (110 and 121) together before the momentary power failure occurs, switches off the first and second power cutoff switches (110 and 121) together when the momentary power failure occurs, and simultaneously outputs a preliminary power supply drive control signal;

an inverter (124) that converts preliminary direct current (DC) power which a preliminary power supply (123) outputs into necessary single-phase AC power in order to compensate for the momentary power failure when the preliminary power supply drive control signal of the controller (122) is input; and

a transformer (125) that boosts or reduces the single-phase AC power which the inverter (124) outputs to necessary single-phase AC power, supplies the boosted or reduced single-phase AC power to the three-phase servo driver (10) via the power line on which the second power cutoff switch (121) is installed, and thereby causes the three-phase servo driver (10) to convert the input single-phase AC power into different three-phase AC power required on a load side and to output the converted three-phase AC power.

2. The voltage sag protector of claim 1, wherein, when the momentary power failure is resolved, the controller (122) of the single-phase voltage sag protector (120) interrupts the output of the preliminary power supply drive control signal, stops an operation of the inverter (124) to thereby interrupt the single-phase AC power supplied to the three-phase servo driver (10) via the transformer (125), switches on the first and second power cutoff switches (110 and 121) that have been switched off together again, supplies the three-phase AC power which is input from the external power supply to the three-phase servo driver (10) to thereby cause the three-phase servo driver (10) to convert the input three-phase AC power into the different three-phase AC power required on the load side and to output the converted three-phase AC power.

3. The voltage sag protector of claim 1, wherein the controller (122) of the single-phase voltage sag protector (120) simultaneously switches on or off the first and second power cutoff switches (110 and 121).

CLAIMS

1. A voltage sag protector for a three-phase servo driver comprising:

a first power cutoff switch (110) that is installed on anyone of R, S, and T phase power lines connecting an external power supply from which three-phase alternating current (AC) power is input and the three-phase servo driver (10), is switched on before a momentary power failure occurs, is switched off when the momentary power failure occurs so as to interrupt the electrical connection between the external power supply from which the three-phase AC power is input and the 10 three-phase servo driver (10), and is switched on or off together with a second power cutoff switch (121); and

a single-phase voltage sag protector (120) having:

a second power cutoff switch (121) that is installed either on the S phase power line when the first power cutoff switch (110) is installed on the R or T phase power line or on the R or T phase power line when the first power cutoff switch (110) is installed on the S phase power line, is switched on along with the first power cutoff switch (110) before the momentary power failure occurs, and is switched off along with the first power cutoff switch (110) when the momentary power failure occurs so as to interrupt the electrical connection between the external power supply from which the three-phase AC power is input and the three-phase servo driver (10);

a controller (122) that switches on the first and second power cutoff switches (110 and 121) together before the momentary power failure occurs, switches off the first and second power cutoff switches (110 and 121) together when the momentary power failure occurs, and simultaneously outputs a preliminary power supply drive control signal, wherein when the momentary power failure is resolved, the controller (122) of the single-phase voltage sag protector (120) interrupts the output of the preliminary power supply drive control signal, stops an operation of the inverter (124) to thereby interrupt the single-phase AC power supplied to the three-phase servo driver (10) via the

transformer (125), switches on the first and second power cutoff switches (110 and 121) that have been switched off together again, supplies the three-phase AC power which is input from the external power supply to the three-phase servo driver (I0) to thereby cause the three-phase servo driver (I0) to convert the input three-phase AC power into the different three phase AC power required on the load side and to output the converted three-phase AC power;

an inverter (124) that converts preliminary direct current (DC) power which a preliminary power supply (123) outputs into a first necessary single-phase AC power in order to compensate for the momentary power failure when the preliminary power supply drive control signal of the controller (122) is input; and

a transformer (125) that boosts or reduces the single-phase AC power which the inverter (124) outputs to a second necessary single-phase AC power, supplies the boosted or reduced single-phase AC power to the three-phase servo driver (10) via the power line on which the second power cutoff switch (121) is installed, and thereby causes the three-phase servo driver (10) to convert the input single-phase AC 10 power into different three-phase AC power required on a load side and to output the converted three-phase AC power, wherein when the single-phase AC power is supplied to the three-phase servo driver (10) via the power line on which the second power cutoff switch (121) of the voltage sag protector (120) is installed, a diode bridge rectifier included in the converter (11) of the three-phase servo driver (10) operates only a diode pair made up of two diodes connected to the same phase power line as the power line on which the second power cutoff switch (121) is installed, rectifies the input single-phase AC power into pulsating current power, the pulsating current power being converted by a smoothing capacitor installed on the output of the diode bridge rectifier into necessary direct current (DC) power to be applied to the inverter (12) of the three-phase servo driver (10), and the inverter (12) converting the input DC power into different three-phase AC power required on a load side.