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Approvals:  CSE        ENG        PPL

Products: SAC-S Series Servodrives

Title: Incorrect Operation and/or Drive Failure Due To Improper Installation

Purpose:

To advise customers of an installation wiring error that causes improper operation of SAC-S series servodrives and may cause catastrophic failure.

Description:

The logic power supply connections to SAC-S series servodrives are connected to terminals "r" and "t". For proper operation, these must be connected to the same lines of the incoming 3 phase power supply as the main drive power connections on terminals "R" and "T". "R", "r" and L1 (on the Generation III controller) must be connected to one incoming line. Likewise, "T", "t" and L2 must be connected to a second incoming line. The third incoming line is connected to "S" only. This wiring arrangement is shown in the Generation III controller manual (GN3-40e appendix B1) and the SAC-S Series Servodrive manual (SAC-S01d appendix A1).

Failure to comply with the above can prevent the drive from enabling, make the motor unable to run at maximum speed and may cause permanent damage to the drive.

In addition to the above, delta connected three phase distribution systems have an additional requirement. On many delta connected power systems, a center tap on one of the phases is connected to ground. This results in a line-to-ground voltage of 120VAC on two of the lines and 212VAC on the third. This 212VAC line, sometimes referred to as a "stinger", must be connected to terminal S on the drive only.

Connection of the stinger to R, T, r, t, L1 or L2 may cause catastrophic drive failure.

Refer to the drawings on page two of this bulletin for proper power wiring.

Warranty Considerations:

Damage to drives that results from improper power wiring is not covered under warranty.
Y CONNECTED

R, r and L1 must all be connected to the same phase.
T, t and L2 must all be connected to the same phase.

NOTE: Circuit breakers, fuses, contactors, etc. are omitted for clarity. Refer to the Generation III manual GN3-040e Appendix B1 or the S-Series Servoprive manual SAC-5014 Appendix A1 for detailed wiring diagrams.

DELTA CONNECTED

R, r and L1 must all be connected to the same phase.
T, t and L2 must all be connected to the same phase.
The ground must be in the center of the phase connected to L1 & L2.

NOTE: Circuit breakers, fuses, contactors, etc. are omitted for clarity. Refer to the Generation III manual GN3-040e Appendix B1 or the S-Series Servoprive manual SAC-5014 Appendix A1 for detailed wiring diagrams.