



Argus Technologies

Analog to Digital Shunt Multiplexer Conversion

Summary

This is a general procedure on how to replace an Analog Shunt Multiplexer with a Digital Shunt Multiplexer.

Part Numbers

- 018-552-20 Digital Shunt Multiplexer
- 877-176-XX CAN Bus Communication Cable (XX changes depending on length)

Tools/Reference Documents Required

- Various hand tools, **including insulated tools**
- Insulating matting and non-conductive clamps
- Tie wraps
- Digital multimeter
- Electrical insulating tape
- Laptop and cross-over Ethernet cable or null modem cable
- Personal safety equipment
- Reference schematic diagrams
- Shunt Multiplexer Manuals

Procedure

Note: CXC controller must be installed in the system before the shunt multiplexer upgrade is attempted.

See **SM02 to Cordex Controller Replacement Procedure** for upgrade details.

Note: Before proceeding, all metal jewelries including rings and watches must be removed.

1. Insulate the metal work with insulating matting around the analog shunt multiplexer module where necessary. Identify and tag all wires terminating to the analog shunt multiplexer to ensure wires are reinstalled in the correct positions. Prepare or cut strips of electrical insulating tape.
2. Cut the tie wraps to release the wire bundle.
3. Pull right most terminal block to de-energize analog shunt multiplexer.



De-energized shunt multiplexer.

4. Remove remainder of the wired terminal blocks. Secure the terminal blocks in a safe location to prevent a short.

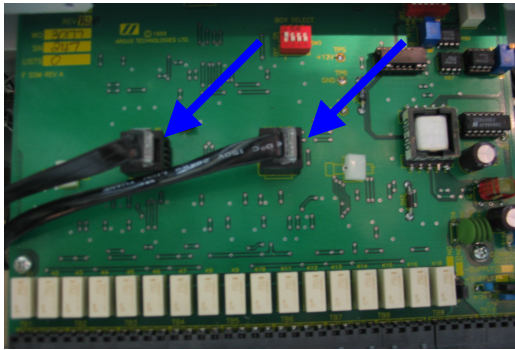
Note: Whenever possible live leads should be removed at the source before removal at the PCB for increased safety.

5. Disconnect input power wire terminations and insulate exposed leads as you remove them. Only the shunt leads and power leads will be reused on the Digital Shunt Multiplexer.
6. Remove mounting screws and dismount analog shunt multiplexer from the shelf.



Location of two mounting screws.

7. Disconnect Auxiliary RS485 communication cables. The auxiliary RS485 cables will be replaced by CAN bus communication cables.



Remove communication cables from PCB.

8. Verify the jumper settings on the digital shunt multiplexer. Most positive ground systems will have shunts in the negative lead and most negative ground systems will have shunts in the positive lead. Check your system schematic to confirm the location of the shunts in your system. If other CAN bus devices are to be connected through the Digital Shunt Multiplexer, the CAN bus termination should be set to IN.

JUMPER SETTING FOR P5 - CAN BUS TERMINATION



 JUMPER SETTING FOR P2 - SHUNT POLARITY

FOR SHUNTS IN THE POSITIVE LEAD:



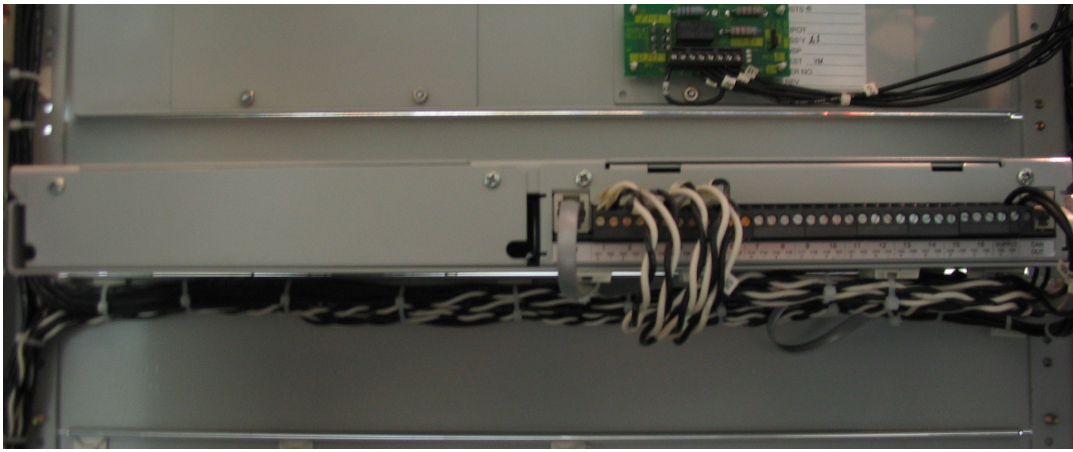
FOR SHUNTS IN THE NEGATIVE LEAD:



 NOTE: ALL SHUNTS CONNECTED TO A SINGLE SHUNT MULTIPLEXER MUST BE IN THE SAME LEAD.

Jumper settings for the Digital Shunt Multiplexer.

9. Mount the digital shunt multiplexer into the shelf and reinstall mounting screws. Reconnect the terminal blocks in the reverse order from which they were removed. Plug the CAN communication cables into their proper positions. Review and verify all wire terminations.
10. Install power leads into power input connections on the terminal blocks.
11. Remove excess wires, communication cables and secure the wire bundle with tie wraps.



Complete hardware installation.

12. Login to the controller (via web interface) and review the digital shunt multiplexer settings. Refer to Section 8 of the CXC controller software manual for setting up the local connection between the controller and laptop/PC. See Ethernet Crossover Connect XP or Front Craft Port XP procedures for more details on manually connecting. For an automated connection, a CXC Connection Wizard can be downloaded from WWW.ARGUS.CA for computers with Windows XP/2000.
13. Check the digital shunt multiplexer functionality through the Cordex controller. Verify all settings within the power system configuration parameters.
14. Check and calibrate (if necessary) the current inputs.
15. After all parameters and operation on the system have been verified remove insulating canvasses and reinstall distribution bay rear cover panels.

Thank you for choosing Argus Technologies