

DS200TCDA – Digital IO Board

The Digital IO Board (TCDA), located in the digital I/O cores <Q11>, <Q51> and <Q21> if present. TCDA processes digital contact input signals from the DTBA and DTBB terminal boards and contact output (relay/solenoid) signals from the two TCRA boards. The signals are transmitted over the IONET to the TCQC board in <R1>, <R2> if <Q21> is installed and the CTBA terminal board in <R5>.

TCDA Connectors

JP – Distributes power from the TCPS board in the <R1>, <R2> and <R5> cores to the <Q11>, <Q21> and <Q51> cores respectively.

JQ – Connects to the JQR socket on the DTBA board. Carries the contact input signals from the DTBA board to the TCDA board.

JR – Connects to the JRR socket on the DTBB board. Carries the contact input signals from the DTBB board to the TCDA board.

JO1 – Writes the contact output (relay/solenoid) signals to the TCRA board in location four. Not used in <Q11>, since the relays in location 4 are controlled directly by TCQE in <R1>.

JO2 – Writes the contact output (relay/solenoid) signals to the TCRA board in location five.

JX1 – Shielded twisted pair for the IONET signals. The TCDA board in the <Q11> core writes the signals to the JX2 connection on the TCEA board in location five of the <P1> core. The TCDA board in the <Q51> core writes the signals to the JX connection on the CTBA terminal board in the <R5> core.

JX2 – Used for the same function as JX1. Either JX1 or JX2 can be used.

The hardware document in Appendix B and the signal flow diagrams in Appendix D contain more information.

TCDA Configuration

Hardware. There are eight hardware jumpers on the TCDA board. J1 and J8 are for factory test. J2 and J3 are for IONET termination resistors. J4, J5, and J6 are used to set up the IONET ID for the board. J7 is the stall timer enable. Refer to Appendix A and the hardware jumper screen on the operator interface for information on the hardware jumper settings for this board.

Software. I/O configuration constants for the contact input inversions are entered in the I/O Configuration Editor located on the HMI as described below.

TCDA Contact Input Circuits

The TCDA board carries contact inputs from the DTBA and DTBB terminal boards via the JR and JQ connectors. The circuitry in the TCDA board conditions the signals, time tags any change of state, and carries the signals to the IONET via the JX1 (JX2) connector. The contact signal inversions are done through software using I/O configuration constants.

TCDA Contact Output (Relay/Solenoid) Circuits

The contact output signals are carried to the TCRA boards via the JO1 and JO2 connectors.

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