
DF1 via RS485 to Micrologix

Application Note

This document describes how to convert Allen-Bradley DF1 protocol from a Red Lion HMI using RS485 into RS232 for the Micrologix.

Introduction

DF1 responds too quickly to use the two-wire RS485 connection of the Net AIC Module (also known as AIC+). Therefore, to convert from RS485 to RS232 it is necessary to use the four wire RS422 connection of an ICM5. The ICM5 does provide isolation between the PLC and the HMI, so circuit function is not compromised.

Communications Mode

ICM5 switch settings:

Topmost Bank of switches:

Baud setting (1-5) - as appropriate.

PULL DOWN (6) off.

PULL UP (7) off.

4 Wire (8 and 9) off.

120 Ohm Termination (10) on.

Lowermost Bank of switches:

422 (1 and 2) off.

If using an AB cable with the 9 way female to 8 way Mini-DIN, then:

DCE (4 and 5) off.

DTE (6 and 7) on.

Other connections may require the opposite settings for 4/5 and 6/7.

Wiring Connection

Connect from the ICM5 to the Micrologix using an appropriate cable, preferably an AB cable with a 9 way female D shell to the 8 way Mini-DIN.

Connect from the HMI to the ICM5 by wiring:

TxA to RxB

TxB to RxA

RxA to TxB

RxB to TxA

Connect the Common terminals if desired.

Connect the Shield to the HMI earth ground.

In Paradigm series HMI's, a 1K Ohm resistor is recommended to be placed between terminals 9 and 10 of the HMI.