Communication Connections

Introduction

This chapter describes how to communicate to your control system. The method you use and cabling required to connect your controller depends on what type of system you are employing. This chapter also describes how the controller establishes communication with the appropriate network. Topics include:

- supported communication protocols
- default communication configurations
- using communications toggle push button
- connecting to RS-232 port
- connecting to DH-485 network
- connecting to AIC+

MicroLogix 1200 controllers with the additional communications port (1762-L24AWAR, 1762-L24BWAR, 1762-L24BXBR, 1762-L40AWAR, 1762-L40BWAR, 1762-L40BXBR) offer advanced communications options, providing a clean, cost effective solution for applications requiring a network connection and HMI.

The additional communications port (Programmer/HMI Port) enables two communication devices to be connected to the controller simultaneously. For example, it provides local connectivity of an operator interface or programming terminal such as DF1 PanelView HMI, IBM-compatible personal computer using RSLogix 500 programming software, or 1747-PSD program storage device, and also allows the primary port (Channel 0) to be connected to either a network, a modem, or an ASCII device such as a barcode reader or weigh scale.

Supported Communication Protocols

MicroLogix 1200 controllers support the following communication protocols from the primary RS-232 communication channel, Channel 0:

- DH-485
- DF1 Full-duplex
- DF1 Half-duplex
- DF1 Radio Modem
- Modbus Master and Slave
- ASCII

The 1762-L24AWAR, 1762-L24BWAR, 1762-L24BXBR, 1762-L40AWAR, 1762-L40BWAR, and 1762-L40BXBR controllers are equipped with an

additional RS-232 communication channel called the Programmer/HMI Port, which supports DH Full-duplex only. The controller cannot initiate messages through this port. It can only respond to messages sent to it. All communication parameters are fixed and cannot be changed by a user.

See Default Communication Configuration on page 4-2 for the configuration settings.

For more information on MicroLogix 1200 communications, refer to the MicroLogix 1200 and MicroLogix 1500 Programmable Controllers Instruction Set Reference Manual, publication number 1762-RM001.

Default Communication Configuration

The MicroLogix 1200 has the following default communication configuration. The same default configuration is applied for both Channel 0 and the Programmer/HMI Port (for 1762-LxxxxxR only). The configurations for the Programmer/HMI Port are fixed and you cannot change them.

TIP

For Channel 0, the default configuration is present when:

- The controller is powered-up for the first time.
- The communications toggle push button specifies default communications (the DCOMM LED is on).
- An OS upgrade is completed.

See Appendix E for more information about communicating.

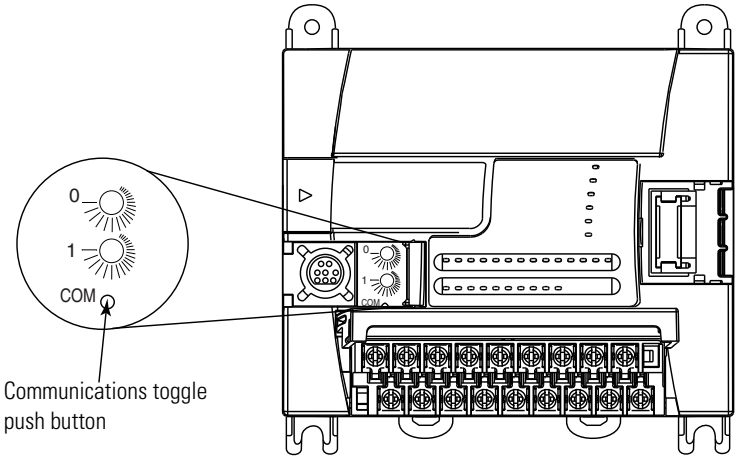
Table 4.1 DF1 Full-duplex Default Configuration Parameters

Parameter	Default
Baud Rate	19.2K
Parity	none
Source ID (Node Address)	1
Control Line	no handshaking
Stop Bits	1

Use the Communications Toggle Push Button

The Communications toggle push button is located on the processor under the processor door (if installed), as shown below.

Use the Communications toggle push button to change from the user-defined communication configuration to the default communications mode and back on Channel 0. The parameters of the Programmer/HMI Port are fixed at the default communications configuration. The Default Communications (DCOMM) LED operates to show when the controller is in the default communications mode (settings shown on page 4-2).



TIP

The Communications toggle push button must be pressed and held for one second to activate.

The Communications toggle push button only affects the communication configuration of Channel 0.

Connect to the RS-232 Port

There are two ways to connect the MicroLogix 1200 programmable controller to your personal computer using the DF1 protocol: using a point-to-point connection, or using a modem. Descriptions of these methods follow.

ATTENTION

All devices connected to the RS-232 channel must be referenced to controller ground, or be floating (not referenced to a potential other than ground). Failure to follow this procedure may result in property damage or personal injury.

- For 1762-L24BWA, 1762-L40BWA, 1762-L24BWAR and 1762-L40BWAR controllers:
  The COM of the sensor supply is also connected to chassis ground internally. The 24V dc sensor power source should not be used to power output circuits. It should only be used to power input devices.

- For 1762-L24BXB, 1762-L40BXB, 1762-L24BXBR and 1762-L40BXBR controllers:
  The VDC NEUT or common terminal of the power supply is also connected to chassis ground internally.

Table 4.2 Available Communication Cables

Communication Cables	Length
1761-CBL-PM02 series C or later	2 m (6.5 ft)
1761-CBL-HM02 series C or later	2 m (6.5 ft)
1761-CBL-AM00 series C or later	45 cm (17.7 in)
1761-CBL-AP00 series C or later	45 cm (17.7 in)
1761-CBL-PH02 series A or later	2 m (6.5 ft)
1761-CBL-AH02 series A or later	2 m (6.5 ft)
2707-NC8 series A or later	2 m (6.5 ft)
2707-NC9 series B or later	15 m (49.2 ft)
2707-NC10 series B or later	2 m (6.5 ft)
2707-NC11 series B or later	2 m (6.5 ft)