Allen Bradley Logix in Galileo

micro innovation
Micro Innovation AG · Spinnereistrasse 8-14 · CH-9008 St. Gallen · Switzerland
Tel. +41 (0)71 243 24 24 · Fax +41 (0)71 243 24 90
www.microinnovation.com · info@microinnovation.com

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No liability is accepted for claims for damages arising from a failure or functional defect in the device.

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1 GENERAL

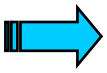
1.1 AIM AND PURPOSE OF THIS DOCUMENT

This documentation describes the connection of a MICRO PANEL via the RS232 or Ethernet interface to different Allen Bradley PLC systems of the Logix family.

Refer to your MICRO PANEL device description for further information on connecting, commissioning and operating the MICRO PANEL.

It is assumed that the following software is already installed and that you are familiar with its operation:

- Galileo HMI programming software
- RS Logix5000 programming tool



The dialogs shown from Galileo are from Version 5.3.11.

1.2 LIST OF DOCUMENTS

	Document	Doc. No.
[1]	Installation instructions, General wiring instructions	M000778
[2]	System description, Networks in Brief	M000138
[3]	System description, Windows CE Image Version x.xx	M000174

(this list of documents is not final)

2 OPERATING PRINCIPLE

2.1 OVERVIEW

This documentation describes the following possible communication methods:

- A. Bradley - Logix – EtherNet/IP
  via OnBoard Ethernet interface.
- A. Bradley - Logix – DF1
  via OnBoard RS232 interface.

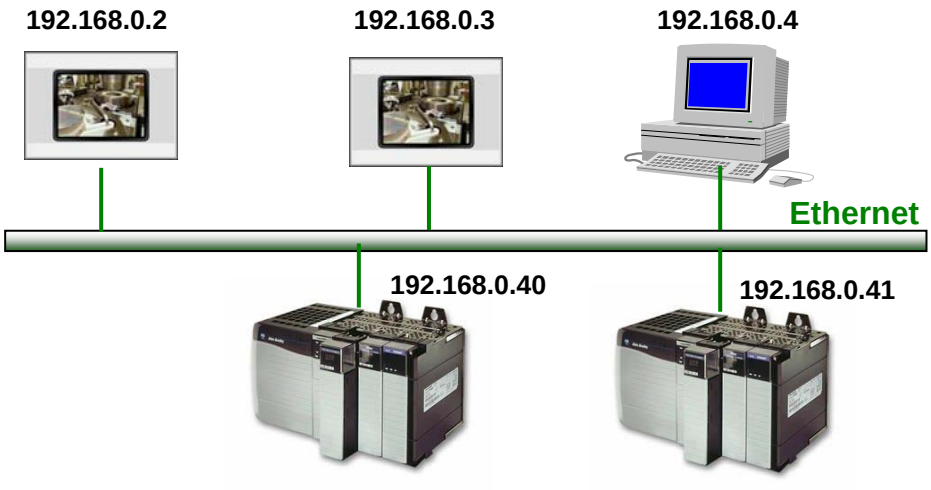
For further information on EtherNet/IP refer to http://www.odva.org .

2.2 MICRO PANEL IN ETHERNET

A direct connection to the A.Bradley - Logix is made at the Ethernet port of the CPU or the Ethernet communication interface.

No additional parameter settings or function blocks are required for this connection.

The MICRO PANEL can communicate with several stations (A.Bradley - Logix) at the same time.



Station and IP addresses are given as examples. It is essential that every station has a unique station and/or IP address.

2.3 DATA TYPES

The Galileo data types have the following mapping on the Logix:

Logix	Galileo
BOOL	BIT
BIT in Integer data types	BIT '/' Notation
SINT	Signed BYTE
	Unsigned BYTE
INT	Signed WORD
	Unsigned WORD
DINT	Signed DWORD
	Unsigned DWORD
REAL	FLOAT
SINT – ARRAY	Char Array 'C'
STRING	Char Array 'Pascal'
SINT – ARRAY	Char Array without termination

Only the predefined STRING data type of the Logix is supported with a length of 82 characters. In Galileo 83 bytes must be defined for one STRING (1 Byte length definition and 82 characters). In the Logix this corresponds to 86 bytes (4 bytes length definition and 82 characters).

2.4 ADDRESSING

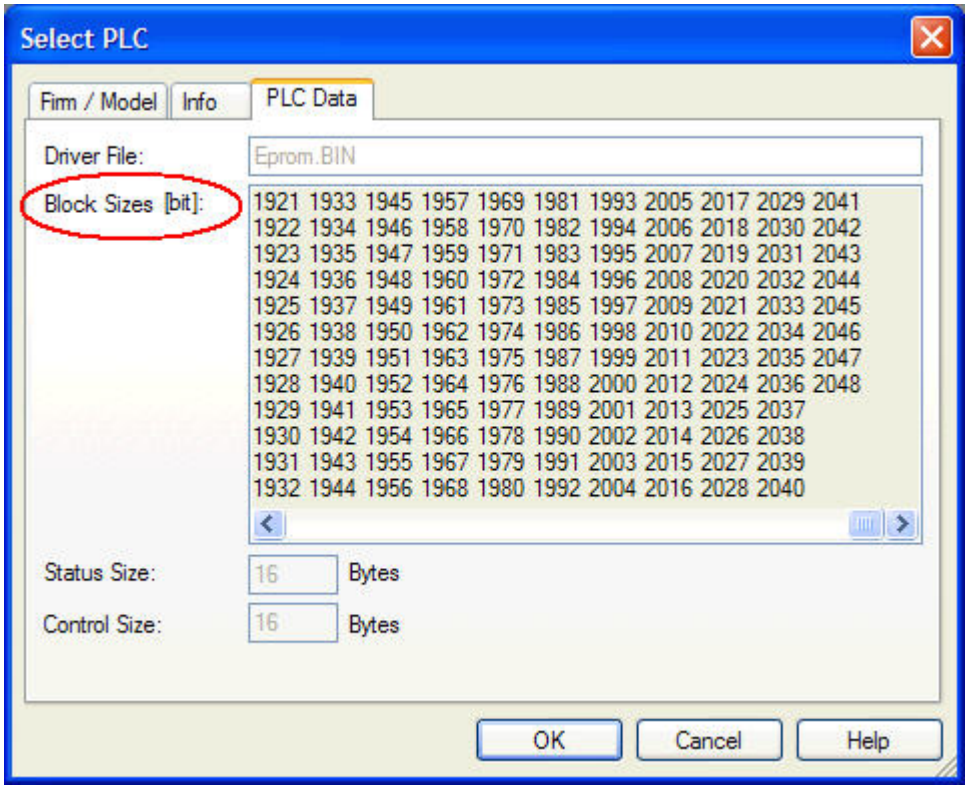
Data is addressed using the A.Bradley syntax.
Address types:

<tag>
<tag>.<arrayindex>[]
<struct>.<tag>
<struct>.<tag>.<arrayindex>[]
<prog>.<tag>
<prog>.<tag>.<arrayindex>[]
<prog>.<struct>.<tag>
<prog>.<struct>.<tag>.<arrayindex>[]
<struct>/<arrayindex> → Bit addressing in Integer data types
<prog>.<struct>/<arrayindex> → Bit addressing in Integer data types

2.5 DATA BLOCK SIZE

The smallest possible format is 1 bit, i.e. single bit communication is possible. The maximum size of a data block is restricted by Galileo to 256 bytes for EtherNet/IP and 128 bytes for DF1.

The PLC Data tab in the Select PLC... dialog shows all the data block sizes that are supported.



2.6 STATUS REFRESH

See Galileo Online Help.

2.7 STARTUP DELAY

See Galileo Online Help.

3 A. BRADLEY - LOGIX – ETHERNET/IP

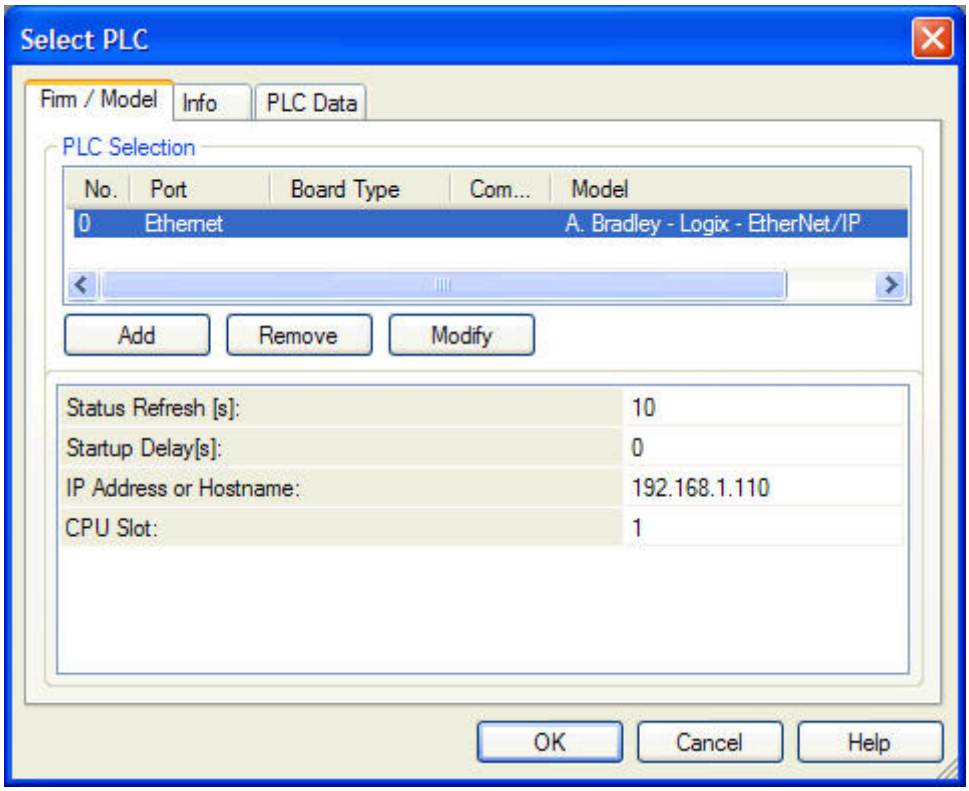
3.1 HARDWARE REQUIREMENTS

This communication method requires a MICRO PANEL with an Ethernet interface. Refer to Ethernet in the document “Installation instructions, General wiring instructions” for information on the communication cable [1].

At least 120 additional license points must be available on the device, regardless of the number of connections!

If you have any questions on license products, please contact your local MICRO PANEL sales distributor.

3.2 SELECT PLC



Galileo supports several connections for the Ethernet interface, i.e. several connections can therefore be configured on the same interface. This makes it possible to address the tags including the system structures on several PLCs.

In the “Select PLC...” dialog choose “A.Bradley – Logix – EtherNet/IP”. The dialog shown will then appear for setting the parameters required for this communication.

3.3 "IP ADDRESS OR NETWORK NAME"

The IP address setting must match the setting of the Ethernet module in the PLC rack.
The connection is established via TCP Port 44818 (0xAF12).

3.4 CPU SLOT

Enter here the slot of the CPU to be addressed in the rack. The Slot setting must match the setting of the CPU in the PLC rack.

4 A. BRADLEY - LOGIX – DF1

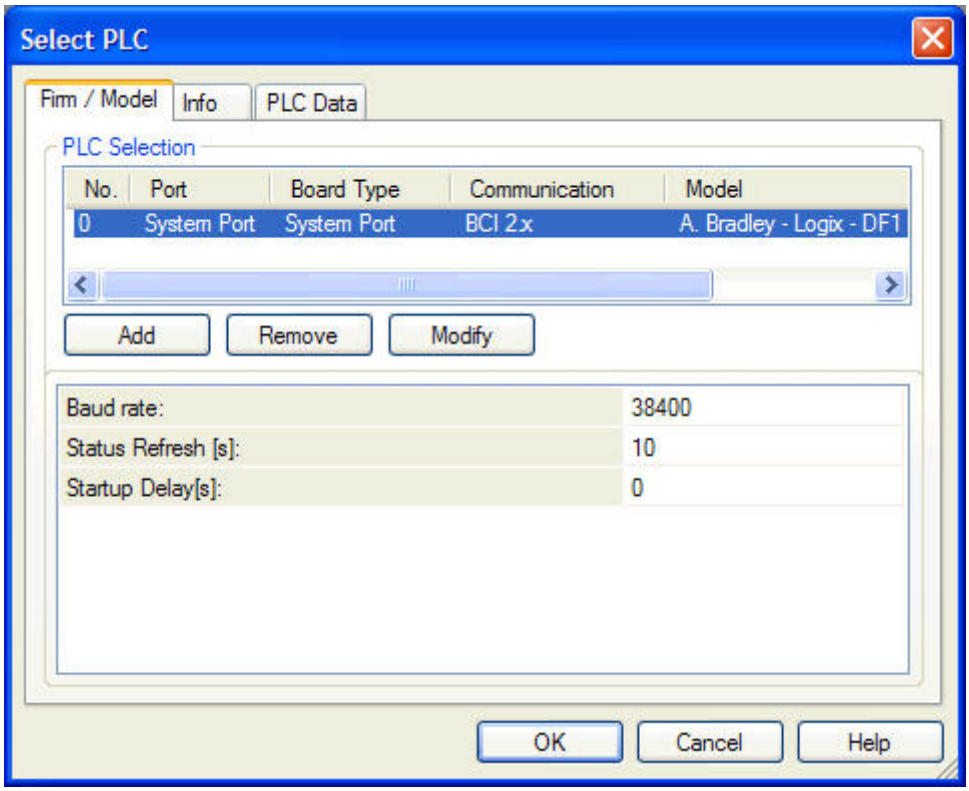
4.1 HARDWARE REQUIREMENTS

This communication requires a MICRO PANEL with an OnBoard RS232 interface. Refer to System Port RS232 in the document “Installation instructions, General wiring instructions” for information on the communication cable [1].

At least 120 additional license points must be available on the device, regardless of the number of connections!

If you have any questions on license products, please contact your local MICRO PANEL sales distributor.

4.2 SELECT PLC

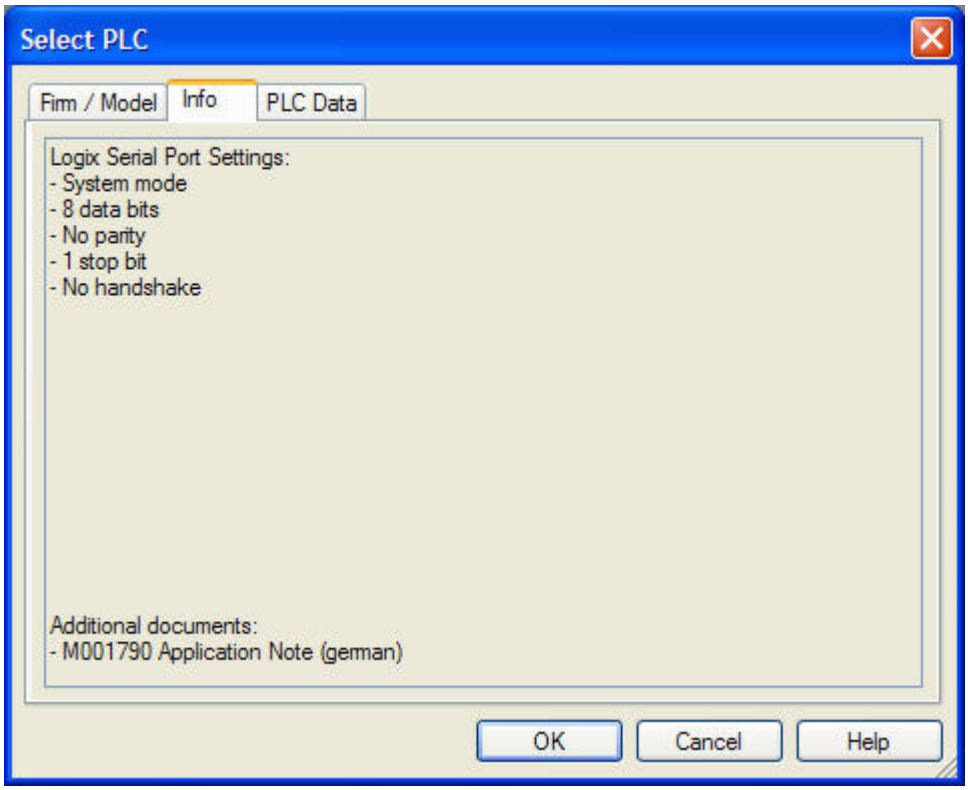


Galileo supports exactly one connection for the OnBoard RS232 interface, i.e. exactly one connection can be configured on the same interface.

In the “Select PLC...” dialog choose “A.Bradley – Logix – DF1”. The dialog shown will then appear for setting the parameters required for this communication.

4.3 BAUD RATE

The setting of the baud rate must match the setting of the PLC. The other settings of the serial interface of the A. Bradley are displayed on the Info tab of the Select PLC ... dialog.



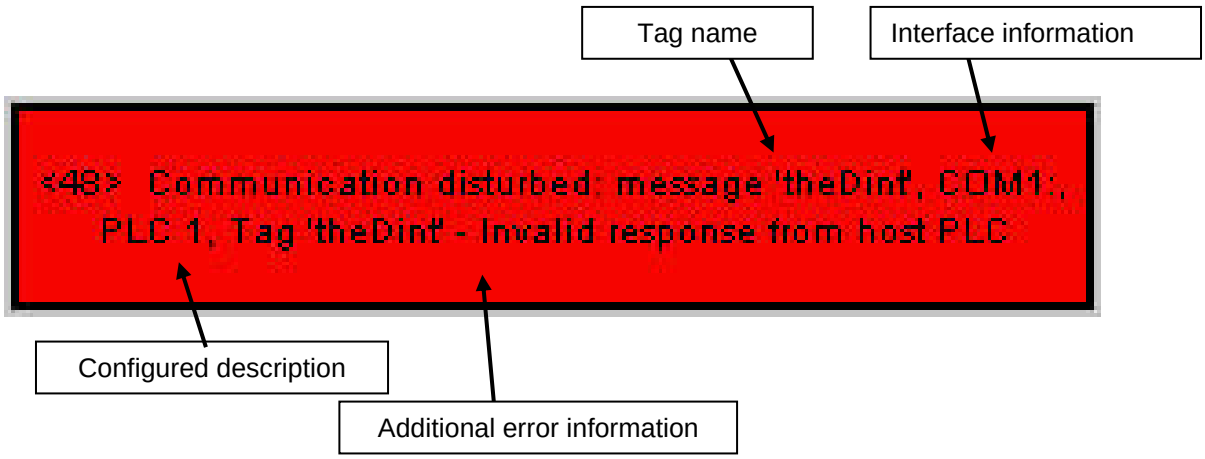
In the Logix PLC the system protocol must be set to "DF1 Point to Point". The Error Detection can be set to BCC or CRC.

5 COMMUNICATION ERRORS

5.1 ERROR MESSAGES

Different system error messages are generated in response to any communication errors that occur. These system error messages provide different information:

- The tag name indicates the tag in which a problem was found.
- The interface information indicates the MICRO PANEL or PLC interface on which the problem was found.
- The IP address of the affected PLC is displayed if necessary.
- The additional information may indicate the possible cause of an error in plain text. This information can, however, also be generated from lower software layers. Its content cannot therefore always be interpreted without an in-depth knowledge of the system. The troubleshooting procedure is nevertheless the same in all cases.



5.2 RECTIFICATION

Checking the following points is recommended:

- Check the cabling and the connections on the MICRO PANEL and the PLC.
- Check all other parameters in the Select PLC... dialog.
- Is the address of the tag indicated in the system error message present in the corresponding station?
- Is the communication overloaded?
- Observe the data traffic with an analyser.

If the problem cannot be rectified, contact our Customer Support at support@microinnovation.com.

6 CHANGE LIST

Index	Date / Signed	Modifications
01	22.02.2007 / As	Initial version

Micro Innovation AG
Spinnereistr 8-14
CH-9008 St. Gallen
Switzerland

Tel : ++41- 71 243 24 24
Fax : ++41- 71 243 24 90
email : info@microinnovation.com
homepage : http://www.microinnovation.com