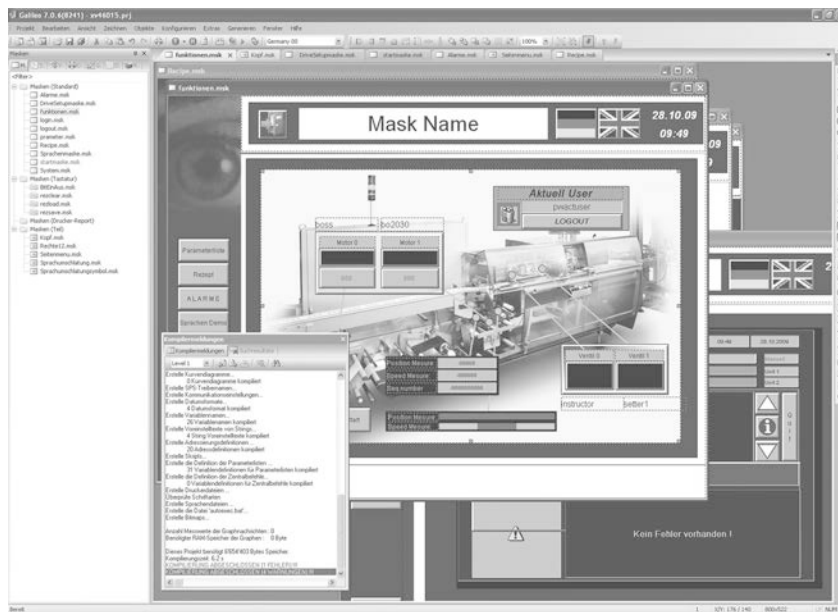


Communication Allen Bradley Logix



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Original instructions

The German version of this document is the original instructions.

Editor

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Subject to modifications.

Proper use

Hardware, software, operating systems and drivers must only be used for the applications specified and only in conjunction with the components recommended by Eaton Automation AG.

Warning!

No warranty claims will be recognized for faults arising from the improper handling of devices and modules.

The devices, even by means of communication, should not be used for the implementation of any safety functions relating to the protection of personnel and machinery.

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

All data specified in this document does not represent warranted properties in the legal sense.

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1 GENERAL

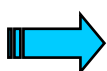
1.1 AIM AND PURPOSE OF THIS DOCUMENT

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 user manual 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] System description Networks in Brief	MN05010009Z
[2] System description Windows CE	MN05010007Z

(this list of documents is not final)

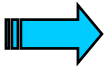
2 Operating principle

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.



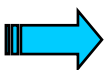
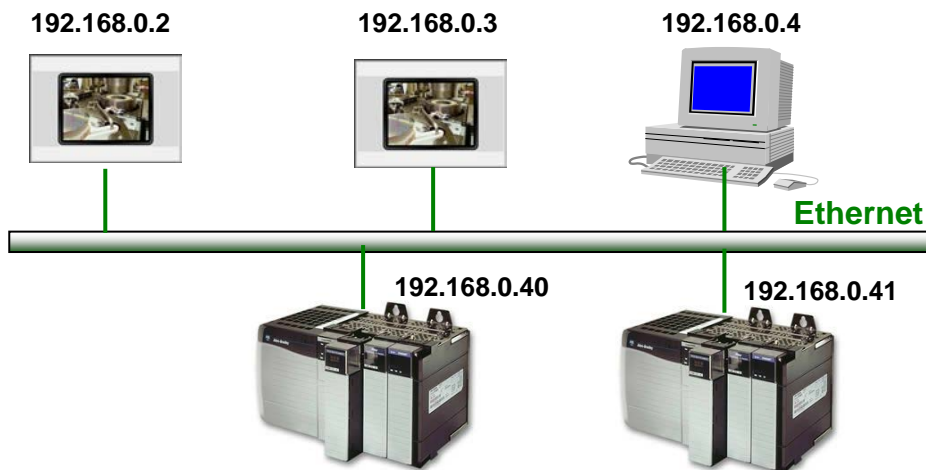
For further information on EtherNet/IP refer to <http://www.odva.org>.

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.

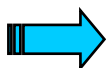


Station and IP addresses are given as examples. It is essential that every station has a unique station and/or IP address.

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

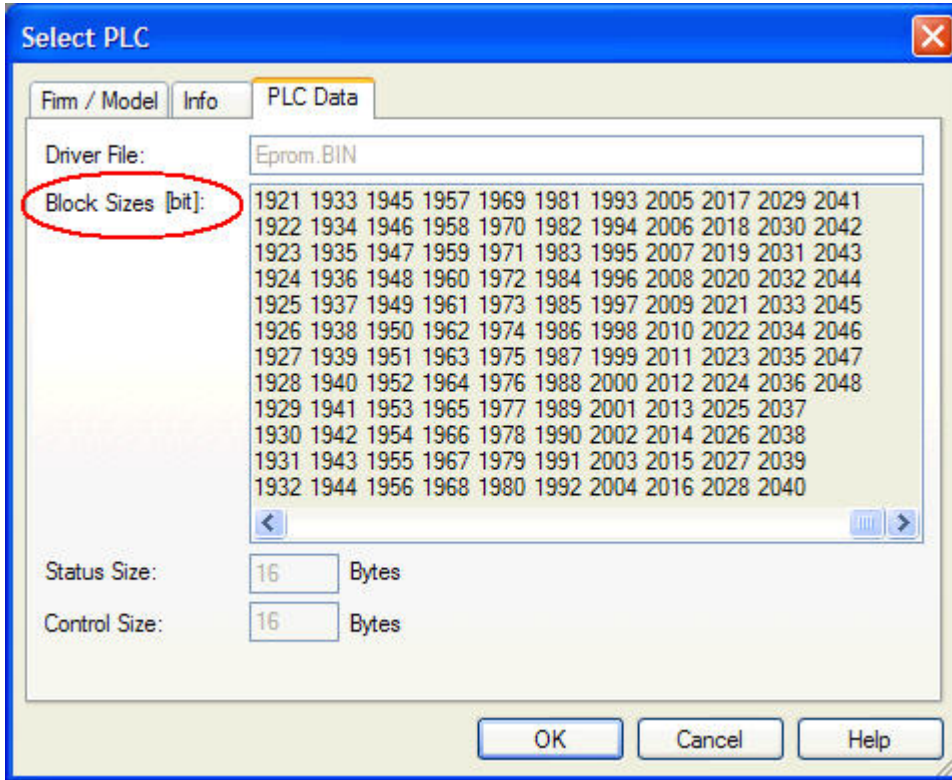
```

2 Operating principle

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

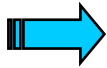
See Galileo Online Help.

3 A. BRADLEY - LOGIX – ETHERNET/IP

3.1 HARDWARE REQUIREMENTS

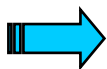
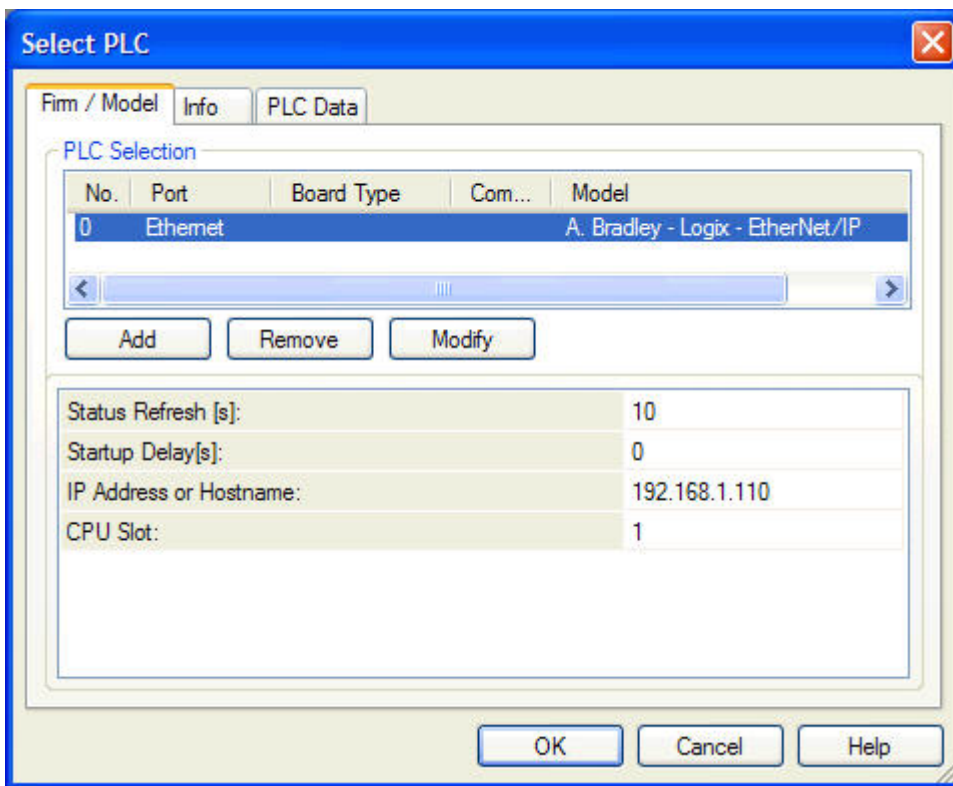
This communication method requires a MICRO PANEL with an Ethernet interface. Refer to Ethernet in the document “Installation instructions, General wiring instructions” for information on the communication cable [\[1\]](#).

At least 40 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 A. Bradley - Logix – EtherNet/IP

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

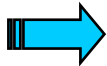
Enter here the slot of the CPU to be addressed in the rack. The Slot setting must match the setting of the CPU in the PLC rack.

4 A. BRADLEY - LOGIX – DF1

4.1 HARDWARE REQUIREMENTS

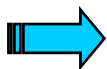
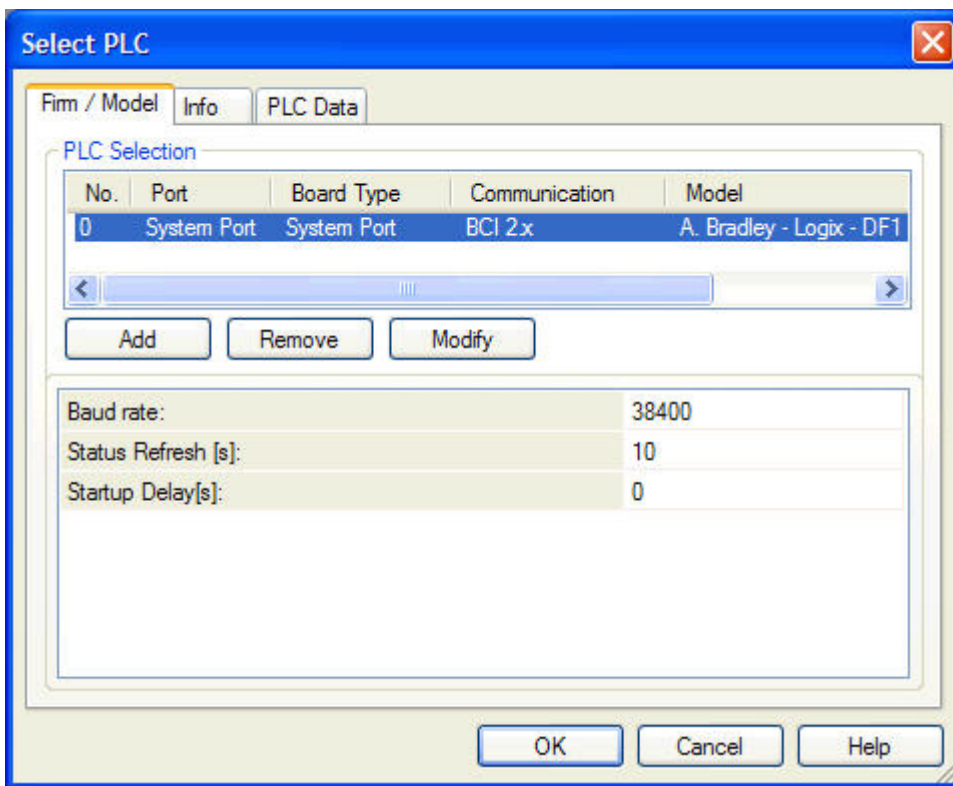
This communication requires a MICRO PANEL with an OnBoard RS232 interface. Refer to System Port RS232 in the document “Installation instructions, General wiring instructions” for information on the communication cable [\[1\]](#).

At least 40 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



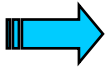
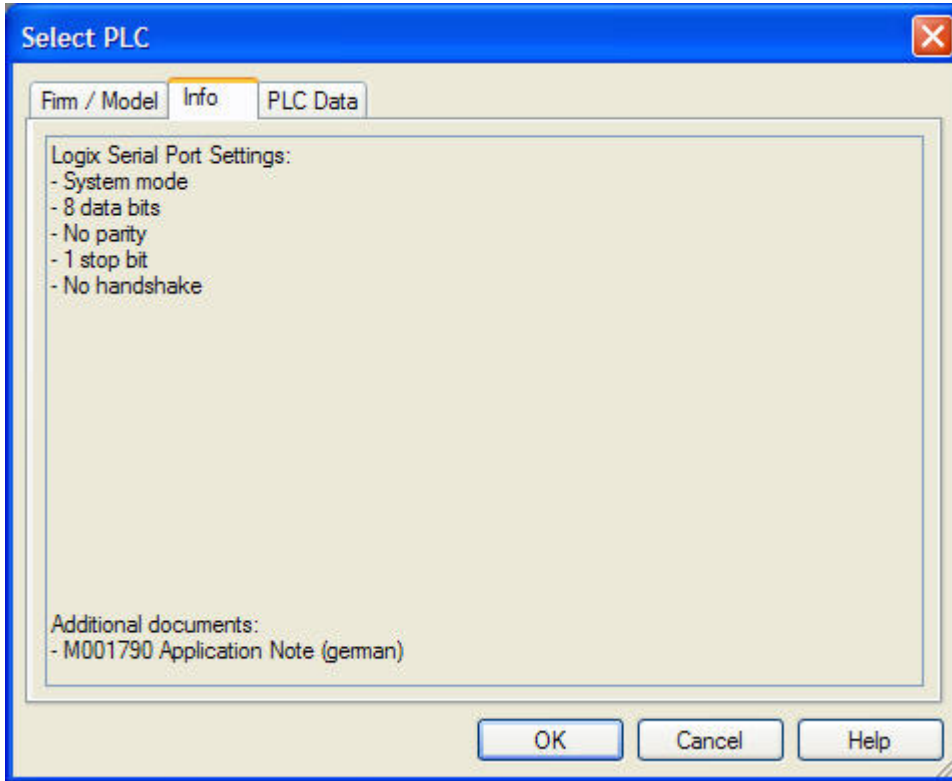
Galileo supports exactly one connection for the OnBoard RS232 interface, i.e. exactly one connection can be configured on the same interface.

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 A. Bradley - Logix – DF1

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.



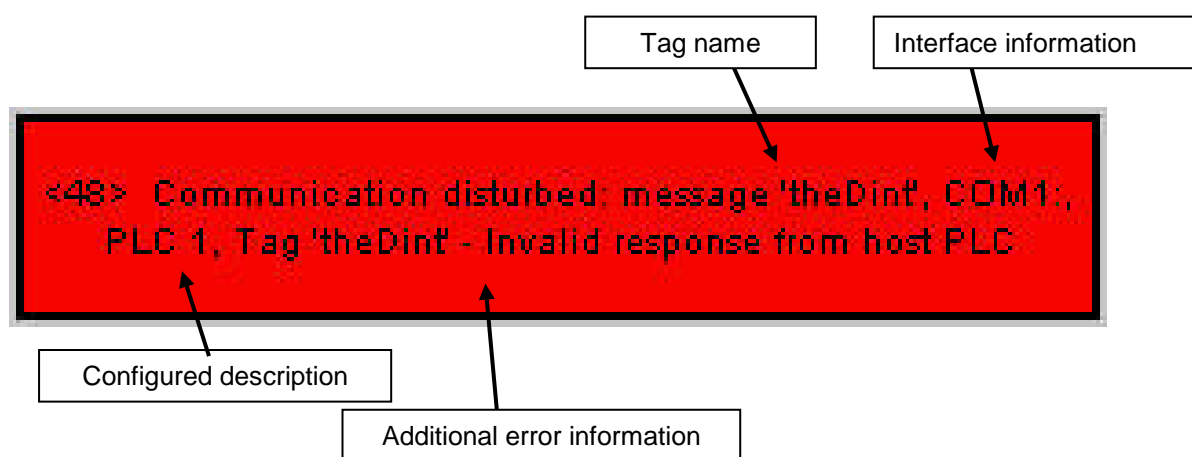
In the Logix PLC the system protocol must be set to "DF1 Point to Point". The Error Detection can be set to BCC or CRC.

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 automation@eaton.com.