Control systems
▶ **Fieldbus modules GEL 8912x**
for MotionCard LD 100

MOTIONLINE

◇ LENORD+BAUER

Technical information   *version 02.05*

The fieldbus modules GEL 8912x are intended to enlarge the Lenord+Bauer product range and to permit open and flexible communication between the company's control systems and with products from other manufacturers.

The fieldbus modules GEL 8912x are available for all current fieldbus systems (DeviceNet, PROFIBUS DP, InterBus-S, Ethernet). They permit networking of various devices and can be used, for instance, in the visualization of process data.

The simple installation by plugging in the modules makes it easy to retrofit or replace fieldbus systems. Independent of the module used, the library of PLC functions always offers the same interface to your program. Designing, retrofitting and modifying fieldbus systems can therefore be performed in a fast and most comfortable way.

The user simply connects the fieldbus to the fieldbus module from Lenord+Bauer and then has full access to cam-plate functions, multi-axes control, visualization and supplementary digital and analog inputs and outputs with integrated PLC functions.

The present technical information does not describe details of different fieldbus systems. These can be found in numerous technical reference books and also in the Internet.

Utilization

When a fieldbus module is used in combination with MotionCard LD 100, this card must be at least hardware version 2. The fieldbus module is addressed and used by PLC programming instructions for the MotionCard. The operating software BB2100K moreover permits setting of the respective data format (fieldbus register in the system parameters).

The scope of supply of each fieldbus module comprises
- 3 stand-off bolts M3
- 3 nuts M3 with toothed washer
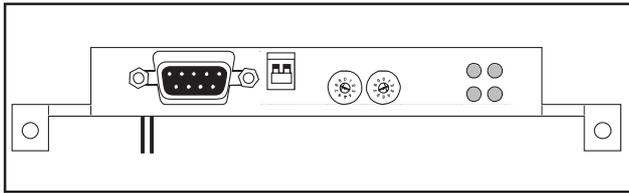- 3 Phillips screws M3
- 1 mounting insert

PROFIBUS DP (GEL 89120),
InterBus-S (GEL 89121)

Profibus DP (GEL 89120)
General data
The PROFIBUS DP module is a passive slave node which can be accessed by a PROFIBUS DP master with read and write operations. The transmission of data is cyclical. Each device in the PROFIBUS DP network has a specific configuration file: the GSD file. This file is required by the network configuration program.

The GSD file for MotionCard LD 100 (ld100.gsd) can be found on the CD, but can also be downloaded from the Internet under www.lenord.de.

InterBus-S (GEL 89121)
General data
The InterBus-S module is a passive slave node which can be accessed by an InterBus-S master with read and write operations. The I/O data (process data) are transmitted cyclically and with very high speed. The maximum size of the input and output data is 20 bytes each.

Fieldbus connection is by means of one 9-pole D-Sub connector each for the bus input (male connector) and the bus outpout (female connector). The bus cable must consist of 2 twisted-pair lines and a GND line.

Pin assignment

Pin	Assignment	Function
Housing	screen	connected to PE
1	n. c.	_
2	n. c.	_
3	line B	RxD/TxD+ (acc. to RS 485)
4	RTS	request to send [1]
5	GND bus	GND, electrically isolated from RS 485 [1]
6	+ 5 V bus	+ 5 V, electrically isolated from RS 485 [1]
7	n.c.	_
8	line A	RxD/TxD (acc. to RS 485)
9	n. c.	_

Pin assignment

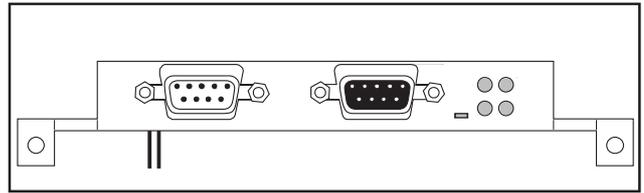| Pin	Assignment	Function
Housing	PE	screen
1	DO1	output data
2	DI1	input data
3	GND	ground
4	n. c.	_
5	n. c.	_
6	/DO1	inverted output data
7	/DI1	inverted input data
8	n. c.	_
9	n. c.	_

[1] Only used for special applications (e. g. in connection with fibre optics)

DeviceNet (GEL 89122)

General data

The DeviceNet module corresponds to ODVA1 specifications for communication parameters (profile no. 12). It works as a 'group two only server'. The following connections are supported:
-1 explicite
-1 polled I/O
-1 bit-strobed I/O
-1 change-of-state/cyclical I/O
The baud rate and the Mac ID are set with a dip-switch. The maximum size for the input and output data is 512 bytes (0... 512). Fieldbus connection is by means of a 5-terminal connecting strip (assignment of terminals see below).
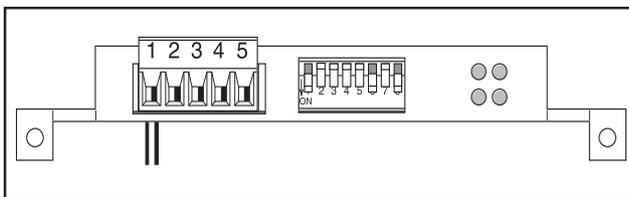
Terminal assignment

Terminal	Assignment	Function
1	V-	-bus voltage (GND)
2	CAN_L	data-
3	shield / bare	screen
4	CAN_H	data+
5	V+	+bus voltage

Ethernet (GEL 89123)

General data

The module is a complete Ethernet/IP adapter and Modbus/-TCP slave. The corresponding protocols can be used simultaneously. The module supports transmission rates of 10 and 100 MBit/s.
For the Modbus protocol, functions for reading and writing of registers are supported. The maximum input and output data size is 512 bytes each.
The field bus connection is made via a standardised RJ45 connector.
The IP address may be adjusted either through a central DHCP or ARP server, or via the front-side DIP switch (the last 8 bits) or using a Web browser.
Additionally, the module contains a web server with 1.4 Mbytes Flash und 1 Mbytes RAM disk as well as a Telnet and FTP server.
For accessing the file system of the module by the controlling (basic) device via PLC programming several function blocks are supplied by the associated library, enabling you to read a directory in the module or to read/write/delete files.
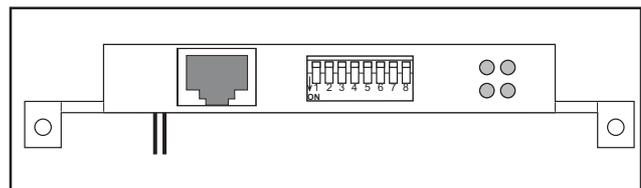
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