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Limited Warranty:

For a period of two (2) years from the date of original purchase, Baldor will repair or replace without charge controls and accessories that our examination proves to be defective in material or workmanship. This warranty is valid if the unit has not been tampered with by unauthorized persons, misused, abused, or improperly installed and has been used in accordance with the instructions and/or ratings supplied. This warranty is in lieu of any other warranty or guarantee expressed or implied. Baldor shall not be held responsible for any expense (including installation and removal), inconvenience, or consequential damage, including injury to any person or property caused by items of our manufacture or sale. (Some countries and U.S. states do not allow exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply.) In any event, Baldor's total liability, under all circumstances, shall not exceed the full purchase price of the control. Claims for purchase price refunds, repairs, or replacements must be referred to Baldor with all pertinent data as to the defect, the date purchased, the task performed by the control, and the problem encountered. No liability is assumed for expendable items such as fuses. Goods may be returned only with written notification including a Baldor Return Authorization Number and any return shipments must be prepaid.

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Product Notice

Only qualified personnel should attempt the start-up procedure or troubleshoot this equipment. This equipment may be connected to other machines that have rotating parts or parts that are controlled by this equipment. Improper use can cause serious or fatal injury.

Safety Notice

Intended use: Drives incorporating a feedback option are intended for use in stationary ground-based applications in industrial power installations according to the standards EN60204 and VDE0160. They are designed for machine applications that require variable speed controlled three-phase brushless AC motors. These drives are not intended for use in applications such as:

- Home appliances
- Medical instrumentation
- Mobile vehicles
- Ships
- Airplanes.

Unless otherwise specified, the drive is intended for installation in a suitable enclosure. The enclosure must protect the drive from exposure to excessive or corrosive moisture, dust and dirt or abnormal ambient temperatures. The installation, connection and control of drives is a skilled operation, disassembly or repair must not be attempted. In the event that a drive fails to operate correctly, contact the place of purchase for return instructions.

Precautions

- Do not touch any circuit board, power device or electrical connection before you first ensure that no high voltage is present at this equipment or other equipment to which it is connected. Electrical shock can cause serious or fatal injury. Only qualified personnel should attempt to start-up, program or troubleshoot this equipment.

- MEDICAL DEVICE / PACEMAKER DANGER: Magnetic and electromagnetic fields in the vicinity of current carrying conductors and industrial motors can result in a serious health hazard to persons with cardiac pacemakers, internal cardiac defibrillators, neurostimulators, metal implants, cochlear implants, hearing aids, and other medical devices. To avoid risk, stay away from the area surrounding a motor and its current carrying conductors.

- Electrical components can be damaged by static electricity. Use ESD (electrostatic discharge) procedures when handling this device.

- To prevent equipment damage, be certain that input and output signals are powered and referenced correctly.

- To ensure reliable performance of this equipment, be certain that all signals are shielded correctly.
2.1 Fieldbus option features

The fieldbus options are available as customer-fitted options for the MotiFlex e100 range of drives. Each of these options consists of a module which must be attached to the fieldbus gateway carrier card, OPT-MF-030. This two-part construction allows a different fieldbus module to be fitted at a later date without needing to replace the carrier card.

Each option adds slave support for one of the following fieldbuses:

- OPT-FB-001: DeviceNet (Anybus-CC AB6201)
- OPT-FB-002: PROFIBUS DP (Anybus-CC AB6200)
- OPT-FB-004: EtherNet/IP (Anybus-CC AB6214)
- OPT-FB-005: Modbus/TCP (Anybus-CC AB6213)
- OPT-FB-006: PROFINET IO (Anybus-CC AB6215)

Other fieldbus options may become available. Check www.baldormotion.com for the latest range.

The assembled option must only be inserted in the MotiFlex e100’s top slot (slot 1).
2.1.1 Assembly

Before touching the fieldbus module or carrier card, be sure to discharge static electricity from your body and clothing by touching a grounded metal surface. Alternatively, wear an earth strap while handling the items.

1. Slide the fieldbus module through the opening in the metal mounting bracket. Check that the leading edge of the module engages in the arms / rails of the connector on the carrier card, and that the fieldbus module is flat against the PCB.

![Figure 1: Slide in fieldbus module](image1)

2. Make sure that the pins of the connector on the carrier card line up with the socket on the rear of the fieldbus module. Push the module until the connector on the rear of the module has fully engaged with the connector on the carrier card.

![Figure 2: Engage with connector](image2)

3. Tighten the front fascia screws to 2.5 N·m (22 lb-in) using a Torx T8 screwdriver. Tightening the screws lowers retaining clips on the underside of the module, securing it to the metal mounting bracket.

![Figure 3: Tighten front screws](image3)
2.1.2 Installation

1. Remove all power sources from the MotiFlex e100.
   Pull off the drive’s top front panel cover. Remove the option slot cover’s retaining screw.

2. Insert a screwdriver under the edge of the option slot cover and gently lever out the cover.

3. Confirm that the correct option card is being installed. The description is printed on the mounting bracket.
   Insert the option card with the fieldbus module facing towards the center of the drive. The edges of the option card should locate behind retaining brackets inside the drive.
4. Push in the option card until it clicks into place. The option card’s external connector plate should finish approximately level with the 8 posts along the edge of the option slot.

5. Insert the retaining screw and tighten. If the screw will not locate in the threaded socket on the option card, then check the position of the option card.

The screw must be fitted since it provides mechanical support and an electrical chassis connection for the option card.

The recommended tightening torque is 0.7 N·m (6.2 lb-in).

6. Push on the drive’s front panel cover until it clicks into place.

2.1.3 Connection

The Baldor cables listed in the following table connect Ethernet based fieldbus option cards (Ethernet/IP, Modbus/TCP, PROFINET IO) to other network hardware such as PLCs. The cables are standard CAT5e shielded twisted pair (S/UTP) ‘crossover’ Ethernet cables:

<table>
<thead>
<tr>
<th>Cable assembly description</th>
<th>Baldor catalog number</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>m</td>
</tr>
<tr>
<td>CAT5e Ethernet cable</td>
<td>CBL002CM-EXS</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>CBL005CM-EXS</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>CBL010CM-EXS</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>CBL020CM-EXS</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>CBL050CM-EXS</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>CBL100CM-EXS</td>
<td>10.0</td>
</tr>
</tbody>
</table>
3.1 Introduction

All external connections to the fieldbus option card are made using the module’s front fascia connector. The required mating connector is supplied where necessary.

3.1.1 OPT-FB-001: DeviceNet

The DeviceNet option provides the MotiFlex e100 with slave support for the DeviceNet protocol.

![Connector pin assignments - DeviceNet](image)

**Figure 9: Connector pin assignments - DeviceNet**

3.1.1.1 LED states

<table>
<thead>
<tr>
<th>State</th>
<th>Network Status LED (NS)</th>
<th>Module Status LED (MS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No power</td>
<td>Not online / no power</td>
</tr>
<tr>
<td>Green</td>
<td>Online, connection(s) established</td>
<td>Normal operation</td>
</tr>
<tr>
<td>Flashing green (1 Hz)</td>
<td>Online; no connection</td>
<td>Missing or incomplete configuration; device needs commissioning.</td>
</tr>
<tr>
<td>Red</td>
<td>Critical link failure</td>
<td>Unrecoverable fault(s)</td>
</tr>
<tr>
<td>Flashing red (1 Hz)</td>
<td>Connection(s) timed out</td>
<td>Recoverable fault(s)</td>
</tr>
<tr>
<td>Alternate red/green</td>
<td>Self test</td>
<td>Self test</td>
</tr>
</tbody>
</table>

The module draws a maximum of 50 mA from the bus supply.
3.1.2 OPT-FB-002: PROFIBUS DP

The PROFIBUS DP option provides the MoFlax e100 with slave support for the PROFIBUS DP protocol, using the DP-V1 service level.

![Diagram of connector pin assignments - PROFIBUS DP](image)

Figure 10: Connector pin assignments - PROFIBUS DP

<table>
<thead>
<tr>
<th>State</th>
<th>Operating Mode LED (OP)</th>
<th>Status LED (ST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Not online / no power</td>
<td>No power / not initialized</td>
</tr>
<tr>
<td>Green</td>
<td>Online, data exchange</td>
<td>Initialized</td>
</tr>
<tr>
<td>Flashing green (1 Hz)</td>
<td>Online, clear</td>
<td>Initialized, diagnostic event(s) present</td>
</tr>
<tr>
<td>Red</td>
<td>Exception error</td>
<td>-</td>
</tr>
<tr>
<td>Flashing red (1 flash)</td>
<td>Parameterization error</td>
<td>-</td>
</tr>
<tr>
<td>Flashing red (2 flashes)</td>
<td>PROFIBUS configuration error</td>
<td>-</td>
</tr>
</tbody>
</table>

The connector housing is connected to the Anybus protective earth via cable shield filters, according to the PROFIBUS standard.

Pin 6 can supply up to 60 mA at 22 °C (72 °F), which is sufficient to power master simulators etc. For normal operating conditions (higher temperatures) the maximum is 10 mA.
3.1.3 OPT-FB-004: EtherNet/IP

The EtherNet/IP option provides the MotiFlex e100 with slave support for the EtherNet/IP protocol.

![Connector pin assignments - EtherNet/IP](image)

### LED states

<table>
<thead>
<tr>
<th>State</th>
<th>Network Status LED (NS)</th>
<th>Module Status LED (MS)</th>
<th>Link / Activity LED (LINK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No power / no IP address</td>
<td>No power</td>
<td>No link / no activity</td>
</tr>
<tr>
<td>Green</td>
<td>Online, one or more connections established (CIP Class 1 or 3)</td>
<td>Controlled by a scanner in run state</td>
<td>Link established</td>
</tr>
<tr>
<td>Flashing green (1 Hz)</td>
<td>Online, no connections established</td>
<td>Not configured or scanner in idle state</td>
<td>-</td>
</tr>
<tr>
<td>Flickering green (10 Hz)</td>
<td>-</td>
<td>-</td>
<td>Activity</td>
</tr>
<tr>
<td>Red</td>
<td>Duplicate IP address, FATAL error</td>
<td>Major fault (EXCEPTION state, FATAL error etc.)</td>
<td>-</td>
</tr>
<tr>
<td>Flashing red (1 flash)</td>
<td>One or more connections timed out (CIP Class 1 or 3)</td>
<td>Recoverable fault(s)</td>
<td>-</td>
</tr>
</tbody>
</table>

The Ethernet interface supports 10/100 Mbits, full or half duplex operation.
3.1.4 OPT-FB-005: Modbus/TCP

The Modbus/TCP option provides the MotiFlex e100 with slave support for the Modbus/TCP protocol.

The Ethernet interface supports 10/100 Mbit/s, full or half duplex operation.

<table>
<thead>
<tr>
<th>State</th>
<th>Network Status LED (NS)</th>
<th>Module Status LED (MS)</th>
<th>Link / Activity LED (LINK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No power / no IP address</td>
<td>No power</td>
<td>No link / no activity</td>
</tr>
<tr>
<td>Green</td>
<td>In Process Active or idle state</td>
<td>Normal operation</td>
<td>Link established</td>
</tr>
<tr>
<td>flashing green (1 Hz)</td>
<td>Waiting for connections</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Flickering green (10 Hz)</td>
<td>-</td>
<td>-</td>
<td>Activity</td>
</tr>
<tr>
<td>Red</td>
<td>Duplicate IP address or FATAL event</td>
<td>Major fault</td>
<td>EXCEPTION state, FATAL event etc.</td>
</tr>
<tr>
<td>Flashing red (1 flash)</td>
<td>Process Active time-out</td>
<td>Minor fault, or the present IP settings differ from the settings in net.cfg.ob.</td>
<td>-</td>
</tr>
</tbody>
</table>

The Ethernet interface supports 10/100 Mbit/s, full or half duplex operation.
3.1.5 OPT-FB-006: PROFINET IO

The PROFINET IO option provides the MotiFlex e100 with slave support for the PROFINET IO protocol.

![Figure 13: Connector pin assignments - PROFINET IO](image)

<table>
<thead>
<tr>
<th>State</th>
<th>Network Status LED (NS)</th>
<th>Module Status LED (MS)</th>
<th>Link / Activity LED (LINK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Offline</td>
<td>Not initialized</td>
<td>No link / no activity</td>
</tr>
<tr>
<td>Green</td>
<td>Online (RUN)</td>
<td>Normal operation</td>
<td>Link established</td>
</tr>
<tr>
<td>Flashing green (1 Hz)</td>
<td>Online (STOP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flashing red: 1 flash</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 flashes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flickering green (10 Hz)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td></td>
<td></td>
<td>Exception error</td>
</tr>
<tr>
<td>1 flash</td>
<td></td>
<td></td>
<td>Configuration error</td>
</tr>
<tr>
<td>2 flashes</td>
<td></td>
<td></td>
<td>IP address error</td>
</tr>
<tr>
<td>3 flashes</td>
<td></td>
<td></td>
<td>Station name error</td>
</tr>
<tr>
<td>4 flashes</td>
<td></td>
<td></td>
<td>Internal error</td>
</tr>
</tbody>
</table>

Note that a test sequence is performed on the MS and NS LEDs at startup. The Ethernet interface supports 10/100 Mbit/s, full or half duplex operation.
4.1 Introduction

Configuration and diagnostic tools for the fieldbus option cards are provided in the free Mint WorkBench application, available from www.baldormotion.com/supportme.

4.1.1 System Config Wizard

The System Configuration Wizard provides a simple, structured way to set up the MotiFlex e100, including the fieldbus option card.

1. Start Mint WorkBench and connect to the MotiFlex e100.

   In the Toolbox on the left of the screen, click the System Configuration icon.

2. Proceed past the standard Configure Process Data - ETHERNET Powerlink screen until the Configure Process Data - <Fieldbus> screen is displayed. The title of this screen changes according to the installed fieldbus option card:

3. Press F1 to display the Mint Help file. This contains detailed information about using the screen to configure process data items.
4.1.2 Connectivity Wizard
The Connectivity Wizard allows you to select the node ID (address), IP address and baud rate, if applicable for the installed fieldbus option card.

4.1.3 Spy window
The Spy window, which appears on the right of the Mint WorkBench interface, has several 'tabs' at the bottom, one of which is the Network tab.

Click the Edit & Debug icon to ensure the Spy window is displayed, then click the Network tab to display live information about the fieldbus option card.

4.1.4 Device characterization
To simplify configuration of a network, electronic files (e.g. EDS, GSD etc.) that characterize the different fieldbus options are available on www.baldormotion.com/supportme. These files define the behavior and default settings of the fieldbus option card and can be used by configuration tools when setting up a network.

4.1.5 Application Notes
A wide range of Application Notes are available on www.baldormotion.com/supportme. These describe the step-by-step integration and configuration of various fieldbus option cards in conjunction with typical fieldbus master devices.
5.1 Introduction

The following section lists frequently asked questions (FAQ) when using the fieldbus option cards.

Does the MotiFlex e100 I'm using support the fieldbus option card?
MotiFlex e100 hardware ‘revision A’ units with serial numbers of U080312xxx and greater support the fieldbus option card. All MotiFlex e100 hardware ‘revision B’ units support the fieldbus option card. If you have a unit with a serial number outside this range, please contact your local Baldor office. The revision is indicated by the final letter of the part number shown on the product label. Revision A models have no letter, but revision B models and greater show an additional letter, e.g. MFE460A006B.

Does the version of Mint WorkBench I'm using support the fieldbus option card?
The Mint option card is supported in Mint WorkBench build 5600a onwards. There are enhancements in later releases, but all functionality is supported in this release. It is highly recommended to use the latest release to benefit from all the latest features. Go to www.baldormotion.com/supportme.

Does the MotiFlex e100 firmware I'm using support the fieldbus option card?
Firmware builds from build 5610 onwards support the fieldbus option card. As with the Mint WorkBench, it is highly recommended to use the latest release to benefit from all the latest features. Go to www.baldormotion.com/supportme.

Does the Baldor fieldbus option carrier card work with all HMS Anybus CompactCom module types?
Currently only the DeviceNet, PROFIBUS, EtherNet/IP, Modbus/TCP and PROFINET IO Anybus module types are supported. Support for other module types will be added in the future.

Can I use all of the features that the Anybus CompactCom modules support?
Not all of the Anybus features are supported. For example, the e-mailing functionality of the Ethernet based module types (EtherNet/IP, Modbus/TCP and PROFINET IO) is not currently supported. Please refer to the documentation in the Mint WorkBench help file for details of the supported functionality.

Why does the node ID change when I change the IP address of an Ethernet based fieldbus option?
The node ID is directly linked to the last octet of the IP address, i.e. 192.168.100.XXX, where XXX is the last octet and also the node ID. So if you change the IP address the node ID will also change (and vice versa).

When I change the node ID, IP address or baud rate of the fieldbus option, why do the new settings not take effect until after a power-cycle?
This is because the fieldbus option is only configured by the firmware on power-up. So settings such as node ID, baud rate and IP address are taken from non-volatile memory on the MotiFlex e100, along with process data mappings and update rates which are taken from

MN1954 FAQ 5-1
When I change the node ID of the fieldbus option, why do I lose all of the process data mappings in the System Configuration Wizard?

This is because the fieldbus option's process data mappings are stored in the device configuration file (DCF) in a section that specifies the bus number and node ID. If the node ID is changed and the DCF reloaded, the System Configuration Wizard will not find the previous mappings. Mint WorkBench might give the user the option to inherit the mappings from other sections in the DCF (i.e. other node IDs for the same bus) if it detects them.

What is process data?

Process data is exchanged through a dedicated data channel in the Anybus-CompactCom host protocol, and is normally associated with fast cyclical network I/O. Exactly how this is represented on the network is highly network specific; for example on PROFIBUS, process data correlates to I/O data.

How do I map MotiFlex e100 data into the process data?

The only way of mapping MotiFlex e100 data into the fieldbus option's process data is by using the System Configuration Wizard in Mint WorkBench. The end product of this wizard is a Device Configuration File (DCF) which is downloaded to the MotiFlex e100 and then executed on power-up.

What MotiFlex e100 data can I map into process data?

There is a fixed list of data that can be mapped into the fieldbus option's process data. These are listed in the ‘Add Process Data Object’ dialog in the Mint WorkBench System Configuration Wizard. When using the fieldbus option as a gateway the parameters that are most likely to be mapped are ‘Comms Location’ and ‘Net data’, both of which are arrays of generic user variables.

How much data can I map into the process data?

There are several limits to take into consideration. Up to 64 data items can be mapped into the write/transmit process data (transmitted by the drive) and the same into the read/receive process data (received by the drive). There are also limits to the number of bytes of process data that can be mapped, as shown in the following table:

<table>
<thead>
<tr>
<th>Fieldbus option</th>
<th>Maximum write/tx process data (transmitted by drive)</th>
<th>Maximum read/rx process data (received by drive)</th>
<th>Maximum total process data (tx &amp; rx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeviceNet</td>
<td>243 bytes</td>
<td>243 bytes</td>
<td>486 bytes</td>
</tr>
<tr>
<td>PROFIBUS</td>
<td>152 bytes</td>
<td>152 bytes</td>
<td>152 bytes</td>
</tr>
<tr>
<td>EtherNet/IP</td>
<td>243 bytes</td>
<td>243 bytes</td>
<td>486 bytes</td>
</tr>
<tr>
<td>PROFINET IO</td>
<td>243 bytes</td>
<td>243 bytes</td>
<td>486 bytes</td>
</tr>
<tr>
<td>Modbus/TCP</td>
<td>243 bytes</td>
<td>243 bytes</td>
<td>486 bytes</td>
</tr>
</tbody>
</table>

The number of bytes is affected by the size of each of the data items that has been mapped.

How can I trigger an event on a NextMove e100 EPL manager node when I transmit new data from my fieldbus host (e.g. a PROFIBUS PLC) to the fieldbus option card?

With firmware build 5615 or greater, NetData and Comms elements can generate events on a change of state when mapped into Ethernet Powerlink. The first 32 NetData elements (0 to
31) will generate NetData events, and the first 10 Comms array elements (1 to 10) will generate Commsx events. With previous versions of firmware it would be necessary to poll the data on the NextMove e100 in order to detect changes.

How do I get data from my fieldbus host/master to devices on the Ethernet Powerlink (EPL) network?
With Mint WorkBench connected to the MotiFlex e100 (with the fieldbus option), the System Configuration Wizard is used to setup the process data mappings so that the required data from the fieldbus host is mapped to a unique NetData element or Comms element on the MotiFlex e100. Then, with Mint WorkBench connected to the EPL manager node (e.g. NextMove e100), the System Configuration Wizard is used to map the chosen NetData element or Comms element into the MotiFlex e100’s EPL transmit process data. This configuration is stored in the manager node’s network device configuration file (DCF).

Can my fieldbus master access all of the MotiFlex e100’s parameters through the fieldbus option?
Yes, but only in an acyclic manner. The MotiFlex e100 has been designed so that all of its parameters are represented as Ethernet Powerlink objects in the object dictionary. The fieldbus option support in the firmware has been designed to allow access to the object dictionary through something called the Application Data Object (ADO), which effectively exists in the fieldbus option. Each Ethernet Powerlink object is represented by an instance of the Application Data Object, which is called an Application Data Instance (ADI). These ADIs can be directly accessed by the fieldbus host/master using an acyclic request. The form of the acyclic request will depend on the fieldbus in question:
- Over DeviceNet and EtherNet/IP the ADIs are accessed using explicit messaging through the ADI CIP object (A2h).
- Over Modbus/TCP the ADIs are accessed via the holding registers (210h upwards) in the pre-defined register map.
- Over PROFINET DP the ADIs are accessed using DP-V1 read and write services and by specifying a slot and index value.
- Over PROFINET IO the ADIs are accessed using record data read and write services to API 0 (para).

Can I access all of the MotiFlex e100’s parameters through the fieldbus option in another way?
Yes, but only on the Ethernet based fieldbus options. All of the MotiFlex e100’s parameters are available through the built-in web server on the EtherNet/IP, Modbus/TCP and PROFINET IO fieldbus option types. A simple interface is provided to allow the user access to network configuration and statistics, and all of the fieldbus option’s ADIs (i.e. all of the MotiFlex e100’s parameters). The web server can be accessed using a standard web browser on your PC, e.g. Internet Explorer or Mozilla Firefox, simply by connecting the PC to the fieldbus option and then entering the IP address in the address field. Note that you may need to configure the IP address of your PC so that it resides on the same subnet as the fieldbus option, or vice versa.
Can I control motion on the MotiFlex e100 through the fieldbus option?

Yes, there are three different methods that can be used to achieve this:

1. For a MotiFlex e100 that is not mapped as an axis on EPL (i.e. not being controlled over EPL) the easiest solution to allow control of the MotiFlex e100 through the fieldbus option is to use the MotiFlex e100’s NetData elements. If enough NetData elements are mapped into the receive and transmit process data, a command type interface can be created between the MotiFlex e100 and the fieldbus host. This interface can then be exercised on the MotiFlex e100 using the on-board Mint programming language (only available in firmware builds 5616 onwards). A Baldor application note is available which explains this in further detail; AN00188 PLC control of MotiFlex e100 via Ethernet IP Fieldbus Option Card, available from www.baldormotion.com/supportme.

2. For a MotiFlex e100 that is not mapped as an axis on EPL (i.e. not being controlled over EPL) an alternative, but more complicated, solution would be for the fieldbus host to control the MotiFlex e100 directly through the DS402 device profile. The MotiFlex e100 has been designed around the DS402 profile for Drives and Motion Controllers, and is used in both Ethernet Powerlink and CANopen. Therefore DS402 is integral to the MotiFlex e100’s operation, even though it may not be intrinsic to the type of fieldbus being used on the option card. The fieldbus host would need to monitor and control the DS402 state machine, read and write to the relevant MotiFlex e100 objects in mapped process data and possibly also asynchronously (e.g. via explicit messaging or SDO). Please contact Baldor technical support if you wish to discuss this functionality.

3. For a MotiFlex e100 that is mapped as an axis on EPL, the easiest solution to allow control of the MotiFlex e100 through the fieldbus option is to map generic MotiFlex e100 NetData elements into both the fieldbus option process data and into the Ethernet Powerlink process data to and from the manager node. This will then form a portal through which the fieldbus host/master can exchange commands and data with the Ethernet Powerlink manager node, which would need to be programmed to encode and decode these commands in order to assert the necessary control over the MotiFlex e100 (with the fieldbus option fitted).

Is the update of the fieldbus option’s process data always at the specified update rate, or can it be suspended under certain circumstances?

The update of process data is normally at the rate specified in the System Configuration Wizard, but it can be suspended for short periods under the following circumstances:

- When a FACTORYDEFAULTS command is issued by the user on the MotiFlex e100.
- When the CONTROLRATE is updated. This occurs when using the CONTROLRATE API, or by using the DRIVESETTINGSD keyword or API. It also occurs when running a new device configuration file (DCF), which happens when powering up the MotiFlex e100 or when the EPL manager node configures the drive over EPL.
- When the PARAMETERTABLEMODE API is called using the value 2 (_pmAPPLY).
- When the DRIVESETTINGSD keyword or API is called using the value 20 (_dtpTRIGGER_INDUCTANCE_MEASUREMENT). This is automatically called as part of the autotuning process.

The reason for suspension of process data updates is because the internal high speed interface from the MotiFlex e100 to the fieldbus option card has to be suspended. In fact, all scheduled code in the firmware has to be suspended in the above circumstances because fundamental drive parameters that affect the core of the firmware’s functionality may be updated. This suspension may affect the data connection to a fieldbus host/master.
If you have any suggestions for improvements to this manual, please let us know. Write your comments in the space provided below, remove this page from the manual and mail it to:

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Thank you for taking the time to help us.