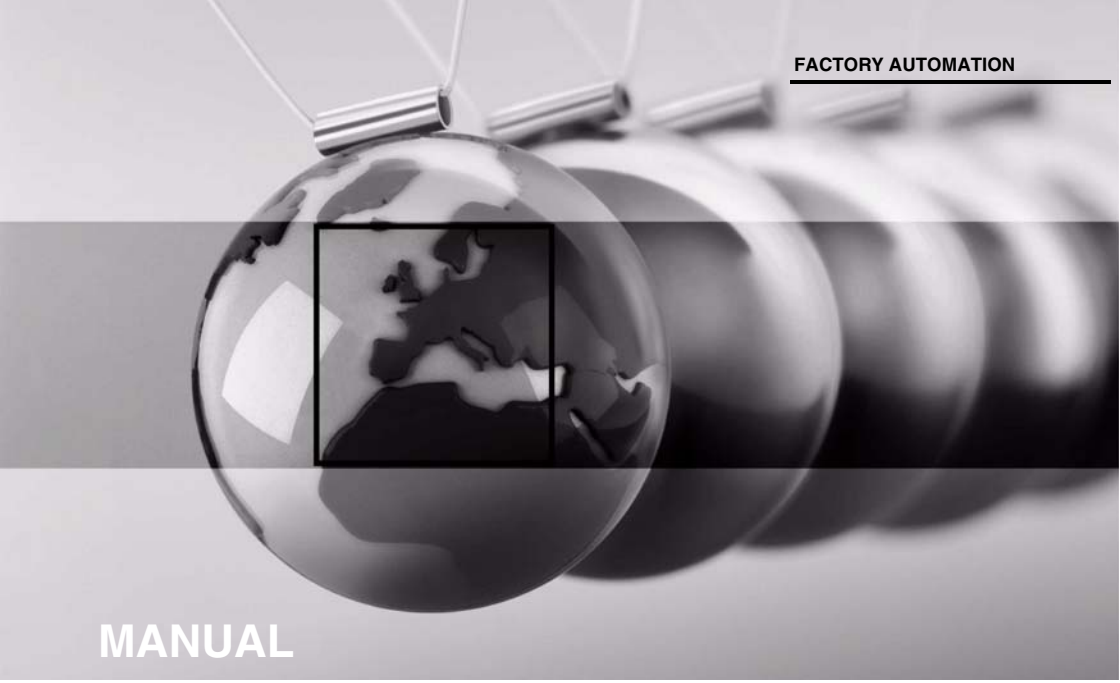
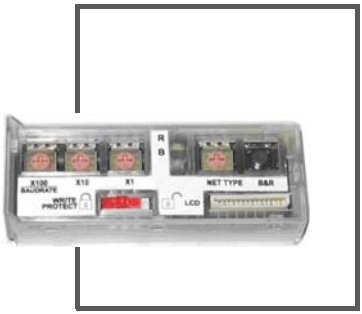


MANUAL

BM100
BACKUP MODULE



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With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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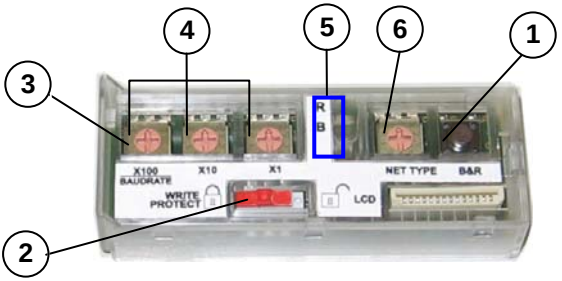

Figure 1 General View

1. Backup/Restore button
2. Write Protection Lock
3. ID-NET™ Baudrate Switch
4. Network Address Switches
5. Backup/Restore Indicator LEDs
6. Network Type Switch

1. Description

The BM100 Backup Module is an accessory for the CBX series connection boxes. It provides the following functions:

- Backup and Restore
  Complete Configuration and Environmental parameter storage for network and reading devices. Includes write protection.
- Network Address Selection
  Hardware Address selection for Fieldbus or ID-NET™ Slave devices (overrides software configuration).
- Network Type Selection
  Selection of Fieldbus or ID-NET™ Slave type networking depending on application and installed accessories.

Technical Features	
Operating Temperature	0° to 50 °C (+32° to 122 °F)
Storage Temperature	-20° to 70 °C (-4° to 158 °F)
Humidity max.	90% non condensing

821001401 (Rev. A)

2. Installation

CAUTION	Power must be off during this operation.

The BM100 can easily be installed into the CBX100 or CBX500 connection box by aligning it over its corresponding connector and pushing down until correctly seated. When closed, the plastic support inside the CBX cover holds the module in place.

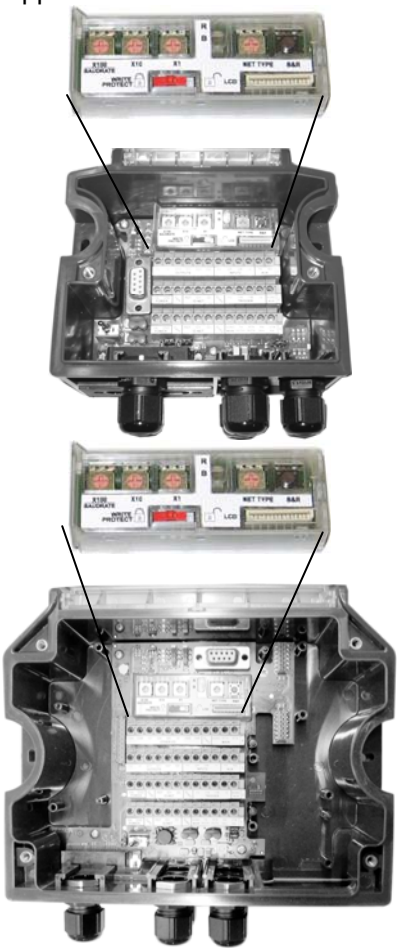

Figure 2 – BM100 Mounting

3. Backup and restore procedure

The backup and restore functions are valid for any application layout type (point-to-point, network, etc.) using either CBX100 or CBX500 connection boxes. They can be performed by:

- the BM100 button,
- the BM150 Menu,
- the Genius™ Device Menu commands.

If it ever becomes necessary to replace the reading device it can be quickly configured through the restore procedure.

BM100 always provides complete backup and restore functions (Configuration and Environmental parameters) and cannot be interrupted once started (LED quickly blinking).

- For network nodes, the backup module of the ID-NET™ (or Lonworks) Master saves the configuration of all the reading devices in the network, Master and all individual Slaves.
- For single reading device stations, Slaves, or for RS232 Master/Slave networks, the backup module saves the configuration only of the specific connected reading device.

These functions are cyclical every 3 seconds:

Backup
Restore
No Action

To perform ***Backup***:

1. Make sure the Write Protection switch is unlocked.
2. Press and hold the Backup & Restore button for approximately 3 seconds. The green Backup LED (B) lights up.
3. Release the button. The green Backup LED (B) blinks slowly.
4. Press the Backup & Restore button again while the LED is blinking. The green Backup LED (B) blinks quickly indicating the backup procedure is active. When the LED turns off the procedure is complete.
5. Set the Write Protection switch to locked.

To perform ***Restore***:

1. Press and hold the Backup & Restore button for approximately 6 seconds. The yellow Restore LED (R) lights up.
2. Release the button. The yellow Restore LED (R) blinks slowly.
3. Press the Backup & Restore button again while the LED is blinking. The yellow Restore LED (R) blinks quickly indicating the restore procedure is active. When the LED turns off the procedure is complete.

To exit without performing Backup or Restore procedures, release the button while both LEDs are off (***No Action***), or wait for about 3 seconds (timeout) after the slow blinking LED.

4. Network type selection

The network type depends on the application layout and installed accessories.

Net Type Switch
0 = None (no network present)
1 = Ethernet/IP
2 = Profibus
3 = DeviceNet
4 = CC-Link
5 = Profinet
6 = CANopen
7 =Software Configuration Controlled Fieldbus
8 = ID-NET™ Slave Synchronized
9 = ID-NET™ Slave Multidata

For all CBX series connection boxes the Net Type selector switch allows setting the ID-NET™ network:

- ID-NET™ Masters communicating with the Host through the main serial interface, and all other non network applications must be set to **None (0)**.
- If BM100s are used for ID-NET™ Slaves this switch must be set to **Slave Synchronized (8)** or **Slave Multidata (9)** depending on the ID-NET™ network Topology Role (same as Master).

Through the CBX500, several types of accessory Fieldbus Interface Modules are available to connect a reader, (including Masters with an ID-NET™ sub-network), to a Fieldbus Network as a Fieldbus Slave node. **Note: ID-NET™ Slaves (positions 8 and 9) exclude Fieldbus configuration.**

The Net Type switch settings **(1 – 6)** assign the Fieldbus Type through the hardware switch; the Node Address is assigned by the Network Address Selection switches. These settings override the software configuration and therefore when used, **must** match the actual Fieldbus Module.

The Net Type switch setting **Software Configuration Controlled Fieldbus (7)** allows the Fieldbus Type and Node Address to be set through the software configuration program; the hardware switches are ignored. This position is valid for all the Fieldbus types including Module types that have no hardware switch position (i.e. Modbus TCP).

5. Network address selection

Figure 3 – Address Selection Switches

BM100 provides hardware network address selection for rapid installation of ID-NET™ networks and for some of the Fieldbus Interface modules. These switch settings are read at each power-up or reset and override software configuration settings except where specified otherwise. Valid address selection depends on the network type:

Ethernet/IP and Profinet

The Ethernet IP or Profinet address refers to the last three digits of the IP address (i.e. 172.16.1.xxx). The valid selection range is from 000 to 255. Address selections outside of this range are not accepted by the network.

IP Addressing

There are a few special switch settings that allow the software to determine the IP address for Ethernet IP and Profinet interfaces. These settings correspond to the *IP Addressing* parameter in Genius™.

777 = Remote Assignment through the IPConfig application available on the reader CD-ROM.
888 = Static Assignment – set manually through Genius™
999 = set through a DHCP server

Profibus

The valid selection range for the Profibus address is from 000 to 126. Address selections outside of this range are not accepted. Address 126 is a special address which allows the Fieldbus Master, through software, to set the node address in the range from 000 to 125.

DeviceNet

The valid selection range for the DeviceNet address is from 00 to 64. Address selections outside of this range are not accepted. The x100 switch is ignored. Address 64 is a special address which allows the Fieldbus Master, through software, to set the node address in the range from 00 to 63.

CC-Link
The valid selection range for the CC-Link address is from 01 to 64. Address selections outside of this range are not accepted. The x100 switch is ignored. See the reader Help On-Line *Node Address* parameter for address restrictions.

CANopen
The valid selection range for the CANopen address is from 001 to 128. Address selections outside of this range are not accepted. Address 128 is a special address which allows the Fieldbus Master, through software, to set address and baud rate.

ID-NET™
The valid selection range for the ID-NET™ Slave addresses is from 01 to 31. Address selections outside of this range are not accepted by the ID-NET™ network. The x100 switch in this case refers to the ID-NET™ baudrate.

6. Baudrate selection

The Fieldbus baudrate cannot be set through the BM100 switches.

When the BM100 is used for ID-NET™ network Slaves, the ID-NET™ baudrate is selected through the baudrate switch and must match the Master ID-NET™ baudrate. The settings are:

ID-NET™ Baudrate Switch		
	0 = 19200 Baud	5 = 500 kBaud
	1 = 38400 Baud	6 = 1 MBaud
	2 = 57600 Baud	7 = Reserved
	3 = 125 kBaud	8 = Reserved
	4 = 250 kBaud	9 = Reserved

7. Search for CBX BM100 at Device Startup

This reader configuration parameter is enabled by default, so that at startup, the reader sends a message to recognize the presence of, and communicate with, the Backup Module. If using the Backup Module, this parameter must be enabled.

8. Write protection lock

Figure 4 – Write Protection

A write protection switch is provided to protect configuration data from being inadvertently overwritten. When this switch is in the lock position, the Backup function is not available (data cannot be written to the backup memory) and a diagnostic warning message can be sent. The Restore function is available.

9. S/N LABEL

A duplicate Serial Number label is included in the BM100 package. This label can be applied onto the outside of the CBX for quick reference.

FACTORY AUTOMATION – SENSING YOUR NEEDS

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