MANUAL

CBX500
HOST INTERFACE MODULES

$C \epsilon$

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SENSING YOUR NEEDS
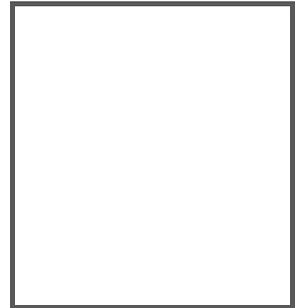
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Profibus	DeviceNet	Ethernet/IP Modbus TCP

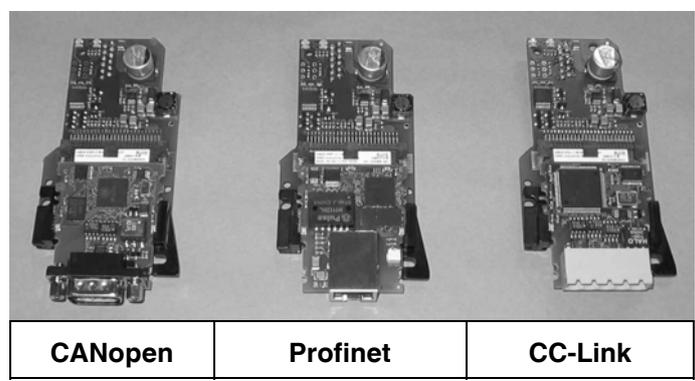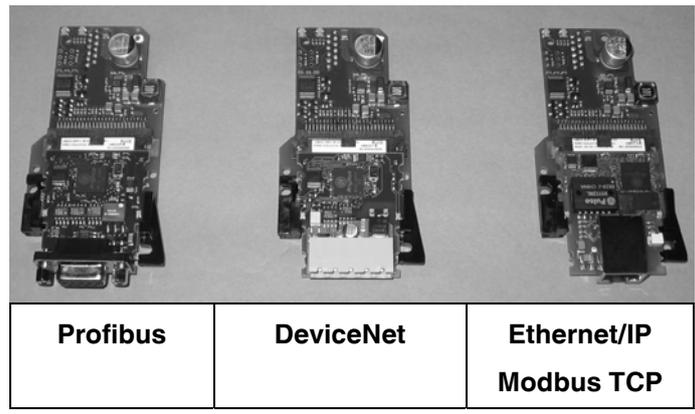| CANopen	Profinet	CC-Link

Figure 1 – General View

821001422 (Rev. C)

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1. Description

The Host Interface Modules are accessories for the CBX500 connection boxes. They provide Stand Alone or Master Scanner connection to a Fieldbus network.

The following types are available:

BM300	Profibus Module
BM310	Profibus IP65 Module
BM400	DeviceNet IP65 Module
BM500	Ethernet/IP Module
BM510	Ethernet/IP IP65 Module
BM520	Ethernet/IP IP54 Module
BM600	CANopen Module
BM700	Profinet Module
BM1100	CC-Link Module
BM1200	Modbus TCP Module
BM1210	Modbus TCP IP65 Module

> These accessories are managed by the reading device application software. See the Accessories paragraph in your reading device Reference Manual for the list of supported CBX Series accessories.
>
> **NOTE**

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

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2. Installation

> ⚠️ **CAUTION**
>
> Power must be off before starting this procedure.
>
> Communication between the PLC and node must be shut down until the scanner/reader parameter modifications are completely saved in permanent memory.

1. Install the BM100 Backup Module into the CBX according to the BM100 Installation Instructions.

2. Install the Fieldbus Module into the CBX as follows:

   a. Place the Fieldbus module over the locator pins to correctly align it over the connector.

   b. Press down on the module until the connector is correctly seated.

   c. Mount the three module fixing screws.

   d. Mount the Front Panel using the two fixing screws.

Fieldbus Module IPxx Connector

Fieldbus Module Standard Connector

Module Locator Pins
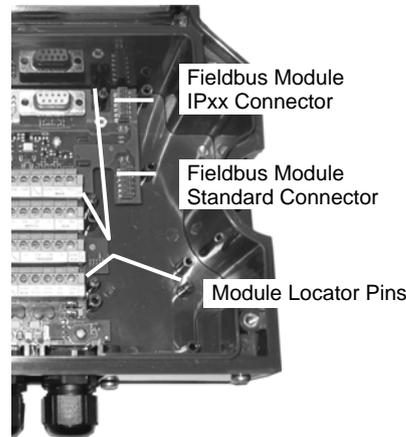
Figure 2 – CBX500 Fieldbus Module Mounting References

3. Set the BM100 Backup Module rotary switch settings according to the Fieldbus network type. For details, see the BM100 Instruction Manual.

4. Power up the system.

5. Connect the configuration PC to the reader through the CBX (9-pin) Aux port connector and launch the configuration program (Genius™).

6. Get the reader configuration and configure the Fieldbus network parameters according to your application. For details, see the reader Help On-Line parameter guide.

7. Save the configuration to permanent scanner/reader memory.

8. Get the scanner configuration to verify the new values.

9. Configure the new node on the PLC network.

10. Connect the Fieldbus network cable to the CBX.

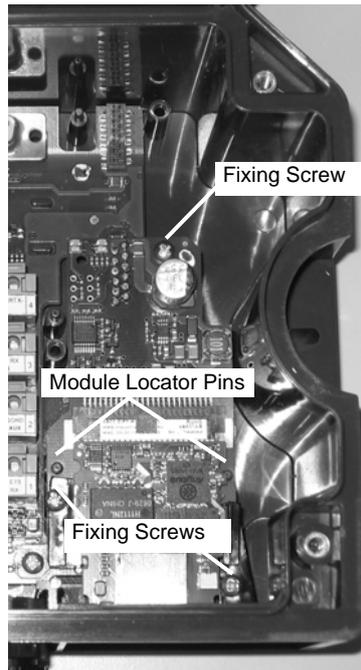11. Start network communication.

> ☞ **NOTE**
>
> To change a node address on an existing network, it is not necessary to unplug the cable, however you must shut down communication between the PLC and node. Follow the procedure above starting from step 3.

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STANDARD MOUNTING POSITION

Fixing Screw

Module Locator Pins

Fixing Screws

Standard Model Front Panels

5......1 9...6 	1 = - 2 = - 3 = B Line (+) 4 = RTS 5 = GND Bus 6 = +5V Bus 7 = - 8 = A Line (-) 9 = Shield

Profibus

1....8 	1 = TX + 2 = TX - 3 = RX + 4 = - 5 = - 6 = RX - 7 = - 8 = -

Ethernet/IP – Profinet - /Modbus TCP

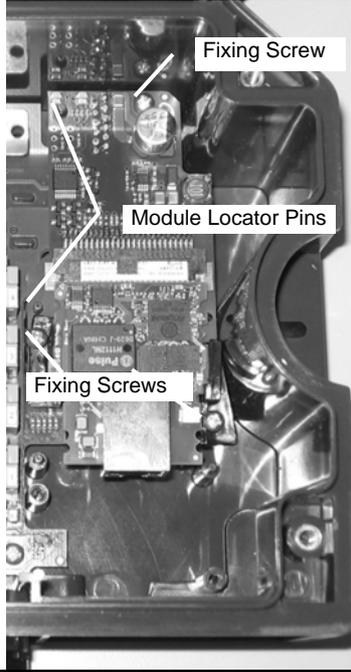|	
1......5 6...9 	1 = - 2 = CAN_L 3 = CAN_GND 4 = - 5 = CAN_SHLD 6 = - 7 = CAN_H 8 = - 9 = - Housing = CAN_SHIELD

CANopen

1....5 	1 = DA + 2 = DB - 3 = DG Gnd 4 = SLD Shield 5 = FG Earth

CC-Link

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IP MOUNTING POSITION

Fixing Screw

Module Locator Pins

Fixing Screws

IP Model Front Panels

Profibus IP65

1 = +5V Bus

2 = A Line (-)

3 = GND Bus

4 = B Line (+)

5 = Shield

Male = In

Female = Out

DeviceNet IP65

1 = Shield

2 = V + Bus

3 = V - Bus

4 = CAN_H

5 = CAN_L

Ethernet/IP IP54

1....8

1 = TX +

2 = TX -

3 = RX +
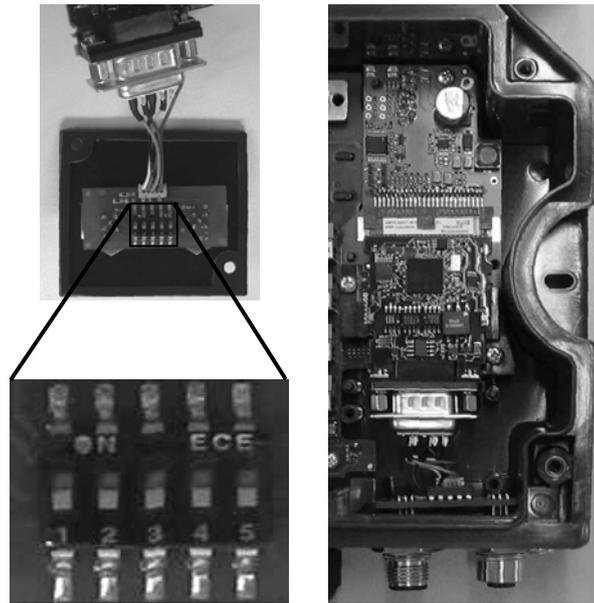
4 = -

5 = -

6 = RX -

7 = -

8 = -

Ethernet/IP IP65 - Modbus TCP IP65

1 = TX +

2 = RX +

3 = TX -

4 = RX -

IP ratings are valid only when cables with mating connectors or connector plugs are correctly installed.

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2.1. Profibus IP65 Installation

Figure 3 –
Bus Termination Switches
Profibus Module IP65 Mounting

Bus termination switches are located on the back of the connector panel for the Profibus IP65 connection.

<u>ONLY the last slave node on the Profibus network must be terminated</u> and this can be done in one of two ways:

- Connect a standard Profibus terminator onto the M12 Female connector, (i.e. Lumberg "SAC-5P-M12MS PB TR" terminator).
  In this case ALL the bus termination switches must be OFF.

- If no standard Profibus terminator is used, set ALL the bus termination switches to ON. In this case install a connector plug onto the M12 Female connector to maintain the IP rating.
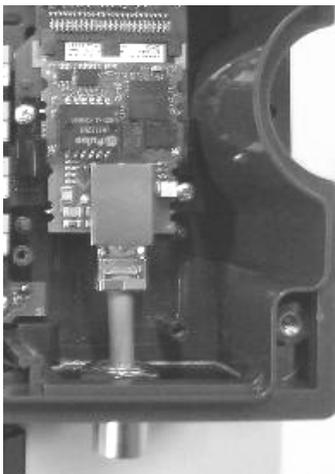
ALL Profibus slave nodes other than the last one, must have ALL the switches set to OFF.

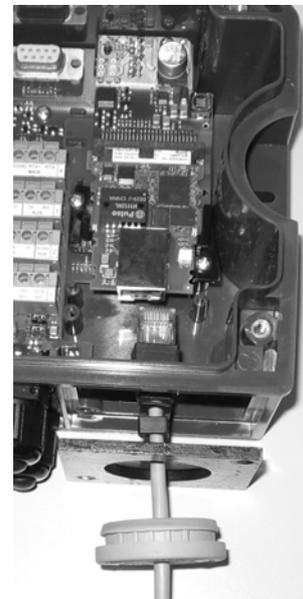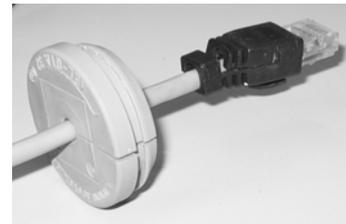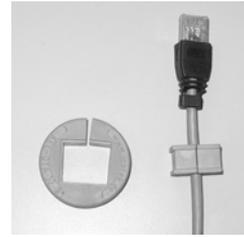**PEPPERL+FUCHS**

2.2. DeviceNet IP65 Installation

Figure 4 –
DeviceNet Module
IP65 Mounting

2.3. Ethernet/IP IP65 -
Modbus TCP IP65 Installation

Figure 5 –
Ethernet/IP Module –
Modbus TCP Module
IP65 Mounting

2.4. Ethernet/IP IP54 Installation

Figure 6 –
Ethernet/IP Module
IP54 Mounting

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3. LED Indicators

Profibus

1 = Operation Mode LED

Off	Not on-line, No power
Green	On-line, data exchange
Flashing Green	On-line, clear
Flashing Red (1 flash)	Parameterization error
Flashing Red (2 flashes)	Profibus configuration error

2 = Status LED

Off	No power or not initialized
Green	Initialized
Flashing Green	Initialized, diagnostic event(s) present
Red	Exception error

DeviceNet

1 = Network Status LED

Off	Not on-line, No power
Green	On-line, one or more connections established
Flashing Green (1 Hz)	On-line, no connections established
Red	Critical link failure

Flashing Red (1 Hz)	One or more connections timed-out
Alternating Red/Green	Self test

2 = Module Status LED

Off	No power
Green	Operating in normal condition
Flashing Green (1 Hz)	Missing or incomplete configuration, device needs commissioning
Red	Unrecoverable fault(s)
Flashing Red (1 Hz)	Recoverable fault(s)
Alternating Red/Green	Self test

Ethernet/IP

1 = Network Status LED

Off	No power or no IP address
Green	On-line, one or more connections established (CIP Class 1 or 3)
Flashing Green	On-line, no connections established
Red	Duplicate IP address, Fatal error
Flashing Red	One or more connections timed-out (CIP Class 1 or 3)

2 = Module Status LED

Off	No power
Green	Controlled by a Fieldbus Master in Run state
Flashing Green	Not configured or Fieldbus Master in Idle state
Red	Major fault (Exception state, Fatal error, etc.)
Flashing Red	Recoverable fault(s)

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CANopen

1 = Run LED	
Off	No power
Green	In Operational state
Blinking Green	In Pre-operational state
Flashing Green (1 flash)	In Stopped state
Flickering Green	Autobaud
Red	In Exception state, Fatal event

2 = Error LED	
Off	No power
Flashing Red (1 flash)	Bus error counter warning limit reached
Flickering Red	LSS services are in progress
Flashing Red (2 flashes)	Error control event
Red	Bus off, Fatal event

Profinet

1 = Network Status LED	
Off	No power, No connection with IO controller
Green	Connection with IO controller established, IO controller in Run state
Red	Connection with IO controller established, IO controller in Stop state

2 = Module Status LED	
Off	No power or Not Initialized
Green	Normal operation
Flashing Green (1 flash)	Diagnostic event(s)
Flashing Green (2 flashes)	Blink (node identification)
Red	Exception error
Flashing Red (1 flash)	Configuration error
Flashing Red (2 flashes)	IP address not set

Flashing Red (3 flashes)	Station Name not set
Flashing Red (4 flashes)	Internal error

CC-Link

1 = Run LED	
Off	No power, No network participation, Timeout status
Green	Participating, normal operation
Red	Major fault, Fatal error

2 = Error LED	
Off	No power or no error detected
Red	Major fault, (Exception or Fatal event)
Flickering Red	CRC error (temporary flickering)
Flashing Red	Station Number or Baud rate has changed since startup

Modbus TCP

1 = Network Status LED	
Off	No power or no IP address
Green	Module is in Process Active or Idle state
Flashing Green	Waiting for connections
Red	Duplicate IP address, or Fatal event
Flashing Red	Process Active Timeout

2 = Module Status LED	
Off	No power
Green	Normal operation
Red	Major fault (Exception state, Fatal error, etc.)
Flashing Red	Minor fault

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