Leading Conversion Technology for Power Resilience

Manual By-Pass (MBP)

Quick Reference Guide

MBP Operating procedure with implementing phase shift cancellation.

Contents

1. Introduction

1.1. Disclaimer

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1.2. Applicable Hardware and Software

Hardware	Minimum software version
Inview Slot, S or X	Any
Modules (Sierra, Bravo, Hercules,...)	Any

1.3. Revision History

Version	Date	Change Records	Author
1.0	06/02/2021	First release of the document	
1.1	12/01/2024	Removed Sierra module LED indications	
2.0	29/01/2025	Modified the template and added MBP racks table	SAD
2.1	05/02/2026	Updated Inview screenshots Removed MBP type - 3 individual switches Removed MBP racks table	SAD

2. Manual By-pass

2.1. Safety instructions

- Manual ByPass must be operated by the trained personnel only, and it should be manually.
- When the system is in manual bypass, the load is subjected to mains voltage.
- The Manual ByPass can be integrated into the CE+T cabinet if requested at the time of order. A Manual bypass purchased separately must comply with the instructions in the section "2.4. MBP Auxiliary Connection" on page 4.

2.2. Pre-requisites

- Commercial AC power must be present, and the converter must be synchronized before operating MBP. The upstream commercial breaker must be correctly sized to accept the overload, and if a genset supplies the AC power, the minimal required power will be twice the nominal power of the converter.
- The converter may be overloaded during the MBP procedure, depending on the voltage network and output. Converter voltage setting: To reduce the impact of an overload, the converter power and current will be reduced from 150% to the nominal value.
- The ByPass switch disconnects all AC voltage on the shelves but has no effect on the DC feeding the converter and the remote alarm terminal.

Warning:

To limit the inrush current during Manual Bypass, CE+T recommends limiting the delta voltage between AC input / AC output to 5 Vac. To limit further, connect the push button in parallel to Digital input. Once the push button is pressed, engage the manual bypass within ten seconds to minimise the phase shift cancellation. For the Push button (PB1) connection, refer to the schematic in page 4.

2.3. Manual Bypass Operation

Manual Bypass operation is used to transfer the load without interruption. It is the "**Make before Break**" concept.

When **MBP** is engaged, converter modules are switched off and can be removed without impacting the load. The battery supply is not physically disconnected. After disconnecting the battery supply (by opening the battery breakers), the shelf section is safe for maintenance.

The **MBP** has several auxiliary contacts to:

- Tell the system its state
- Control the Remote OFF for safety reasons

The manual bypass consists of a single rotary switch and it has three positions - Normal, Interim and Bypass.

2.3.1. Normal to Bypass

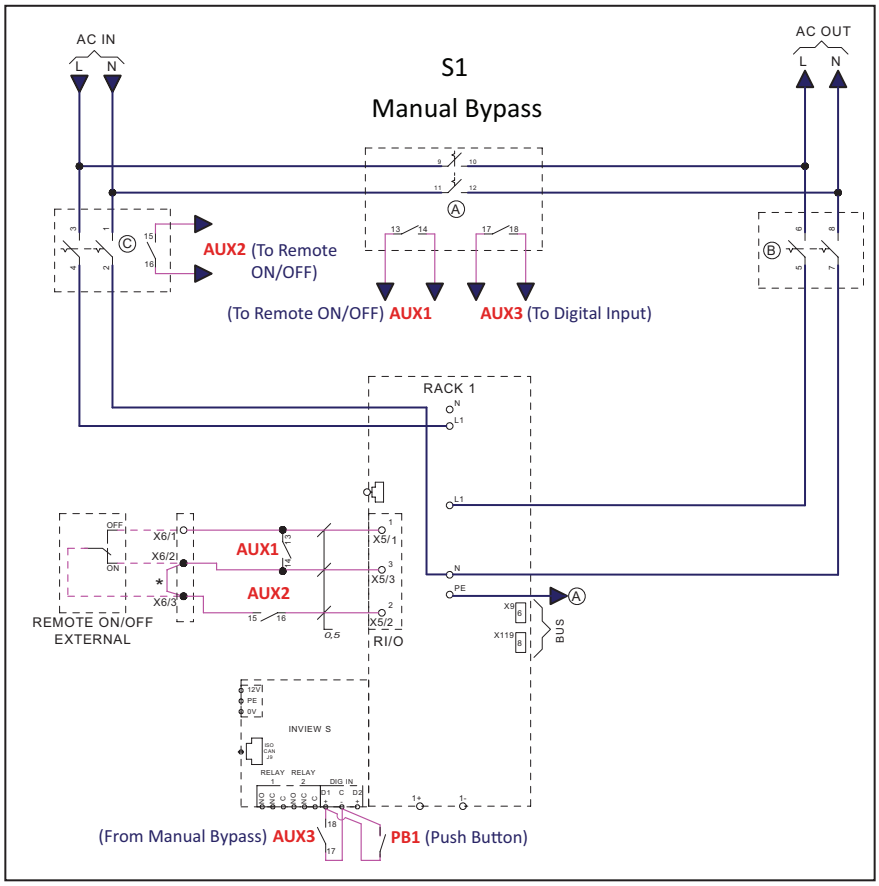
1. Make sure the AC input is present (all module LED's are green).
2. Press the **PB1** (Push button)
   (***Necessary***: *once the push button is pressed, immediately perform the next step within ten seconds.)*
3. Rotate the MBP Switch (S1) from **NORMAL** to **BYPASS** *(Important: Do not stop at INTERIM position.)*
4. Switch OFF the DC power and/or disconnect batteries

2.3.2. Bypass to Normal

1. Switch ON the DC power and/or connect batteries
2. Rotate the MBP Switch (S1) from **BYPASS** to **INTERIM**
   ***Important**: wait until the modules turn ON and synchronized, approximately 30 – 60 seconds (Module AC out LED - green blinking).*
3. Rotate the MBP Switch (S1) from **INTERIM** to **NORMAL**

2.4. MBP Auxiliary Connection

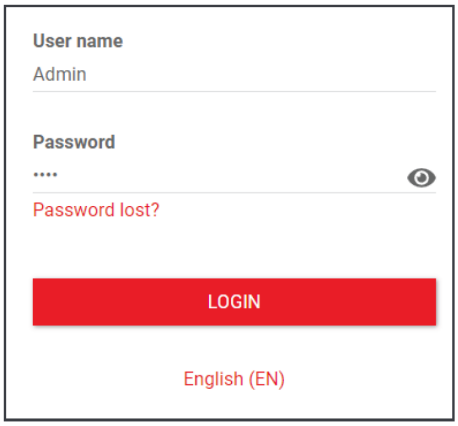
Note: The below wiring diagram is a system with an Inview controller. So, the auxiliary (Aux) number varies depending upon the type of MBP switch. So, it is recommended to refer to the particular system schematic, especially for three-phased systems.



If a manual bypass is installed in the system, then its auxiliary should be wired as per the following:

1. Connect MBP **Aux** to Controller **Digital Input 01**. So that the controller gets information when MBP is engaged.
2. Connect **AC Input Aux** and **MBP Aux** to Remote ON/OFF terminal in the shelf where controller is installed.
3. Connect **PB1** (Push Button) to controller **Digital Input 01**.

2.5. MBP Configuration via Inview



Open the web browser and type the default IP address 10.250.250.1/site, (or inview.local if ETH Front is used on Inview X) in the address field and press enter.

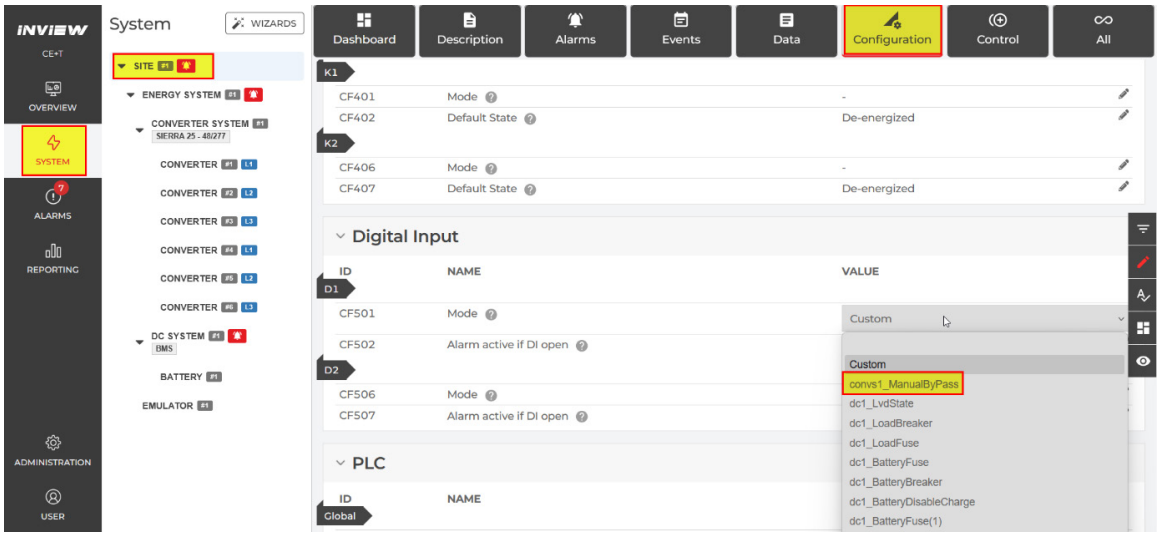
Inview has three login – Basic, Expert and Admin. All three logins are password protected.

The default password for all three logins is "1234". It can be modified, refer to Inview user manual in the following link for more details.

https://datasheet.cet-power.com/CET - Monitoring - Datasheet - Inview - EN.pdf

Go to *System > Site > Configuration* and scroll down to the **Digital Input** section.
In the **ID CF501,** select the *"convs1_ManualByPass"* from the drop down list.

Other digital inputs (e.g., D2 or the MBB's digital inputs) can also be used to provide the same functionality.



Note: For more information about MBP auxiliary connection with remote ON/OFF, refer to the system user manual.