

2. Module Racks

2.1 BP15x

2.1.1 General Information

Backplane modules are installed on the mounting rail. They are used for installing controller components (CPU, I/O modules, power supply modules, system modules etc.). The I/O bus, system bus and the supply lines are provided on the backplanes. Backplanes are available with 6, 9, 12 or 15 slots for the B&R 2005.

It is recommended that the smallest possible backplane should be used to ensure that as few slots as possible remain free. Dummy modules must be installed in all free slots.

The backplane modules 3BP15x.41 are equipped with a lithium battery. The battery is used for central data buffering on the 2005 PLC (e.g. data and real-time clock for the XP152).

The **module address** is determined by the slot (slot coding). Module addressing begins with slot 3, which has address 1. For PLC systems with an operating system older than version 1.10, module addressing for system modules begins with address 0 (numbers are different for system modules and I/O modules).

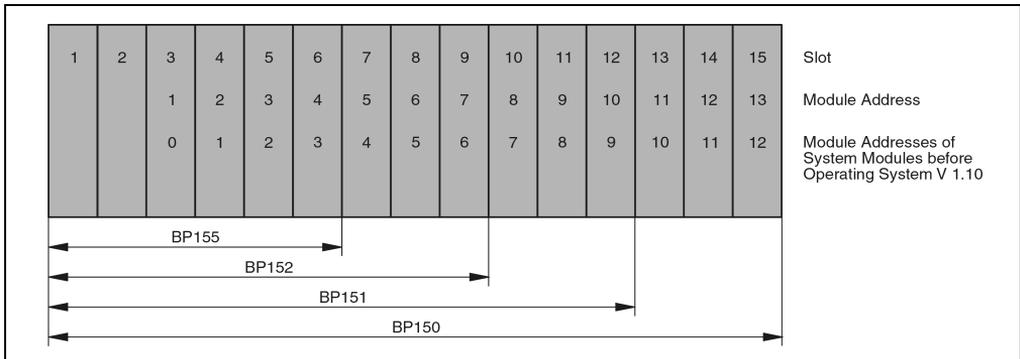


Figure 44: BP15x module address

The following modules can be used depending on whether the backplane is used as a main backplane or an expansion backplane:

Slot	Main Backplane	Expansion Backplane
1	Power supply with expansion slot or	Power Supply: With expansion slot
2	Any other power supply	With expansion slave
3	System or I/O module	I/O module
4		I/O module
5	System or I/O module	I/O module
6	System or I/O module	I/O module
:	:	:
:	:	:
15	System or I/O module	I/O module

Table 26: BP15x insert modules depending on backplane

2.1.2 Order Data

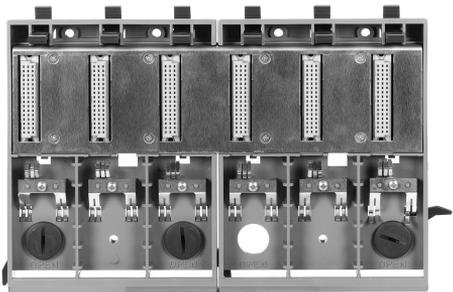
Model Number	Short Description	Image
	Module Rack	
3BP150.4	2005 backplane, 15 slots	
3BP151.4	2005 backplane, 12 slots	
3BP152.4	2005 backplane, 9 slots	
3BP155.4	2005 backplane, 6 slots	
3BP150.41	2005 backplane, 15 slots, with backup battery	
3BP151.41	2005 backplane, 12 slots, with backup battery	
3BP152.41	2005 backplane, 9 slots, with backup battery	
3BP155.41	2005 backplane, 6 slots, with backup battery	
	Accessories	
0AC201.9	Lithium batteries, 5 pcs., 3 V / 950 mAh, button cell	
Backup battery is included in the delivery.		

Table 27: BP15x order data

2.1.3 Technical Data

Product ID	BP150	BP151	BP152	BP155
C-UL-US Listed	Yes	Yes	Yes	Yes
Number of Slots	15	12	9	6
Number of Modules that can be Inserted				
On the Main Backplane 1 Power Supply + ...	13 system and I/O modules	10 system and I/O modules	7 system and I/O modules	4 system and I/O modules
On Expansion Backplane 1 Power Supply + ...	13 I/O modules	10 I/O modules	7 I/O modules	4 I/O modules
Dimensions (H, W, D) [mm] ¹⁾	165, 600, 23	165, 480, 23	165, 360, 23	165, 240, 23
Backup Battery	Only backplane modules with order number 3BP15x.41 Lithium Battery - 3 V / 950 mAh 0AC201.9 - 5 lithium batteries Max. 3 years at 30° C			
Type				
Model Number				
Storage Time (not installed)	Max. 3 years at 30° C			
Storage Temperature				
Backplane Module without Battery	-20 to +70° C			
Backplane Module with Battery	-20 to +60° C			
Battery (not installed)	-20 to +60° C			

Table 28: BP15x technical data

1) When installing the backplane, it is important to allow for 20 mm space on both sides of the backplane for the fastening lever.

2.1.4 Backup Battery

The backplane modules 3BP15x.41 are equipped with a lithium battery. The battery is used for central data buffering on the B&R SYSTEM 2005 (e.g. data and real-time clock for the XP152).

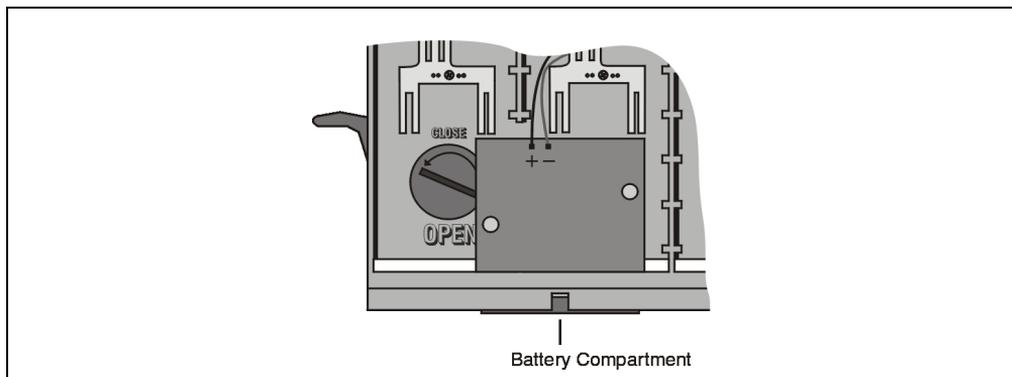


Figure 45: 3BP15x.41 backup battery

Buffer Battery Data

Lithium Battery	3 V / 950 mAh
Model Number	0AC201.9
Short Description	Lithium batteries, 5 pcs., 3 V / 950 mAh, button cell
Storage Temperature	-20 to +60° C
Storage Time	Max. 3 years at 30° C
Relative humidity	0 to 95% (non-condensing)

Table 29: 3BP15x.41 buffer battery data

Battery Change Interval

Batteries installed in the B&R 2005 backplane module should be changed according to the following change interval:

Change Interval: Every 4 years¹⁾

Buffer Time

Buffer time is reduced when more processors e.g. IP161, XP152 or IF260 are operated from the same backplane module and when the rechargeable battery is already empty.

Reduction factor = Number of all processor modules on the backplane

2.1.5 Changing the Lithium Battery

The product design allows the battery to be changed with the PLC switched either on or off. In some countries, safety regulations do not allow batteries to be changed while the module is switched on. Therefore, B&R recommends the battery is switched when the power supply is switched off.



Data is lost when modules do not have their own buffer.

Procedure for Changing the Battery

- 1) Disconnect the power supply.
- 2) Touch the mounting rail or ground connection (not the power supply!) in order to discharge any electrostatic charge from your body.
- 3) Open the battery compartment using a screwdriver. The screwdriver should be placed in the slot and by levering it upwards, the compartment can be opened.

1) The change intervals refers to the average life span and operating conditions and are recommended by B&R. They do not correspond to the maximum buffer duration.

- 4) Remove the battery from the holder by pulling the battery compartment cover.
- 5) Remove the lithium battery (do not use insulated tools because of risk of short circuiting). The battery should not be held by its edges. **Insulated** tweezers may also be used for removing the battery.

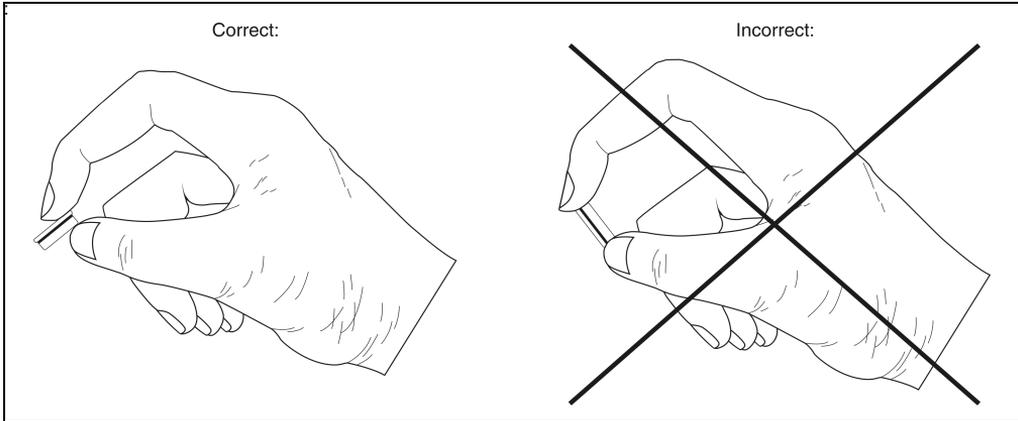


Figure 46: Holding the 3BP15x.41 battery correctly

- 6) Insert the new battery with correct polarity. The removal strip must be located underneath the battery as otherwise the battery can not be removed.

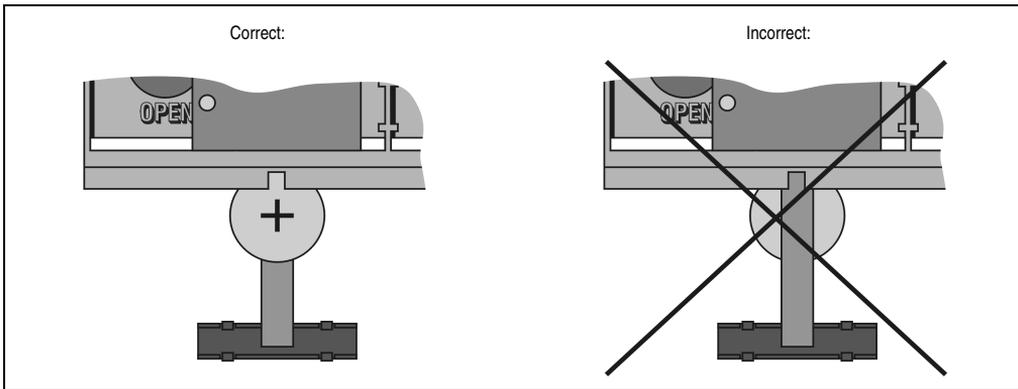


Figure 47: The removal strip must be located underneath the 3BP15x.41 battery

- 7) Close the cover for the lithium battery.
- 8) Connect the lines to the power supply.



Lithium batteries are considered hazardous waste! Used batteries should be disposed of accordingly.