

PLC Backplanes BPxx

A Much Better Idea : Logical : Unique

AmbiLogique
Electronic Controllers

Features:-

Attach to TS35 DIN Rail
Complete Inter-module Connection
Provide for 2 or 4 expansion Modules
No Active Components

AmbiLogique backplanes provide both mechanical and electrical connection of AmbiLogique controller modules.

The backplanes are available in 2-slot (BP-02) and 4-slot (BP-04) versions. The number of slots refers to the number of expansion slots.

A 2-slot backplane has 4 module positions in total: the Power/Comms module, the Processor module and the 2 expansion modules. A 4-slot backplane has 6 module positions in total.

Using a CPDA-01 processor with EXDA-01 expansion modules, fully-loaded backplanes offer:-

BP-02:

- ◆ . 24 switch or NPN non-isolated transistor digital inputs
 - ◆ . 6 0 to 1V non-isolated analogue inputs
 - ◆ . 24 NPN transistor non-isolated digital outputs (these can drive relays)
 - ◆ . 6 0 to 10 V non-isolated analogue outputs.
- 60 inputs and outputs in total.

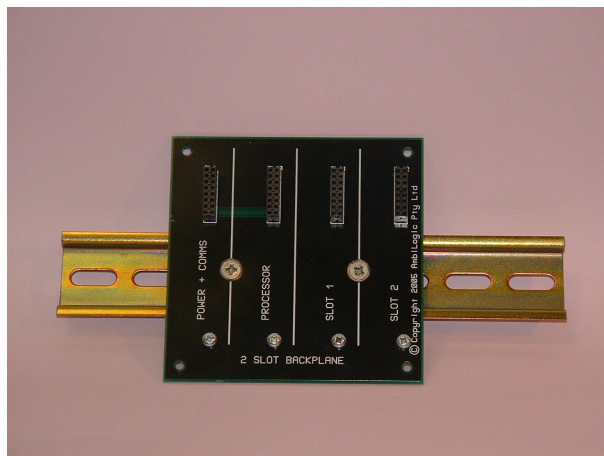
BP-04:

- ◆ . 40 switch or NPN non-isolated transistor digital inputs
 - ◆ . 10 0 to 1V non-isolated analogue inputs
 - ◆ . 40 NPN transistor non-isolated digital outputs (these can drive relays)
 - ◆ . 10 0 to 10 V non-isolated analogue outputs.
- 100 inputs and outputs in total.

Connections

Most of the connections are bus connections which link all the connectors pin-to-pin. The Power/Comms and Processor slots have special connections between them which handle the serial communications interface, which is why these slots are specific to purpose.

Please Note: Some AmbiLogique products or components may carry the “AmbiLogic” trade mark from our former Australian company.



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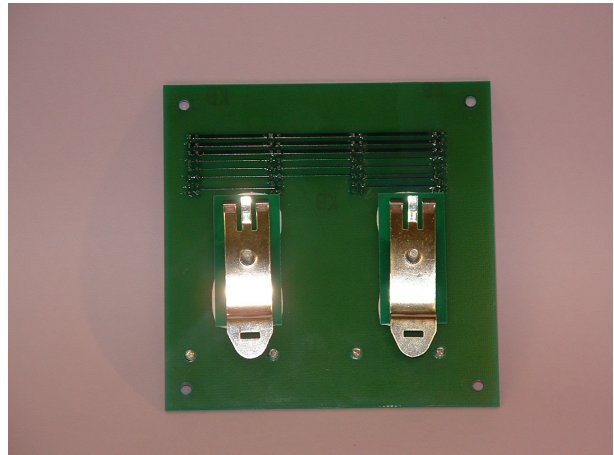
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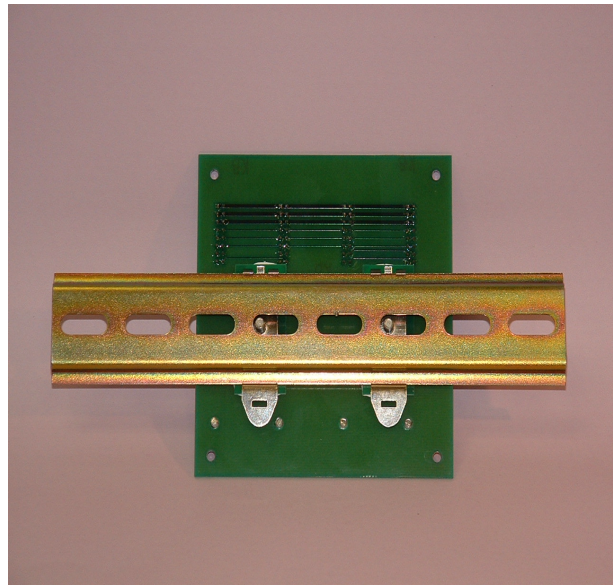
Assembly:

The backplane is supplied as a complete assembly with two clips and two tensioning screws. It must be assembled to the DIN rail before fitting any modules to it.

- ◆ Looking at the DIN rail running horizontally, hold the backplane with the connectors at the top.
- ◆ Align the clips on the back of the backplane so that the slotted tabs are downwards.



- ◆ Engage the top hooks of the clips over the top lip of the rail.



- ◆ Push the centre of the backplane towards the rail so that the bottom of the clips snaps over the bottom lip of the rail.
- ◆ Gently tighten the tensioning screws so that the clip is just closed up to the reinforcing pad on the back of the backplane.
- ◆ Modules can now be added:
- ◆ Swing the retainer clips on the module out, so that they will be clear of the backplane.
- ◆ Offer the module up to its slot, and plug it into its connector. The head of the alignment screw should enter the corresponding hole in the module body. Ensure that the module is lined up with the guide lines printed on the backplane.
- ◆ Swing the module retainer clips back so that they clip over the edges of the backplane, and press them inwards so that they are fully engaged. The module is now connected and secured.

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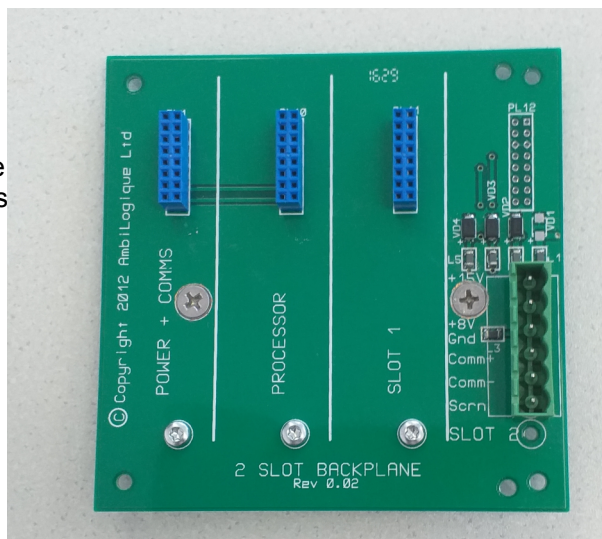
BP-02X Backplane with Bus Extender Connector

This variant of the BP-02 Backplane provides a plug-in-screw terminal connector for the extension of the backplane over substantial distances.

Slot 2 is assigned to the connector and the surge arrester and RF filter components needed for this functionality.

The connections are:-

1. (bottom) Ground for cable screen;
2. Comm- : -ve RS-485 communications;
3. Comm+ : +ve RS-485 communications;
4. Gnd : Signal and Power return;
5. +8V : Semi-regulated DC power;
6. +15V : Semi-regulated DC power.



This connector enables remote expansion modules to be connected to the PLC mainframe. This backplane is supplied with the mating connector (not shown in the photo).

In some cases the expansion modules are connected directly, alternatively they can be connected via a second similar backplane. Remote operation over up to 100 metres of cable is completely reliable.



Specifications

1. Dimensions (when mounted on TS35 DIN rail):

Heights above mounting panel:

14 mm to top of backplane deck

22 mm to top of connectors

Width: 102 mm (BP-02)

153 mm (BP-04)

Depths: 102 mm

2. Ambient temperature: -20 to +70 °C

WARNING SAFETY-CRITICAL SYSTEMS

A Safety-Critical system is a system whose failure or malfunction could cause death, significant injury or loss of property.

AmbiLogique products incorporate electronic hardware and software, both of which carry a remote but real possibility of failure. AMBIOLOGIQUE DOES NOT WARRANT, CLAIM OR REPRESENT THAT ITS PRODUCTS ARE INFALLIBLE.

It is therefore THE RESPONSIBILITY OF THE DESIGNER of any safety-critical system which incorporates AmbiLogique products to ensure that:-

1. The system is designed so that any failure of an AmbiLogique component will not cause death, injury or loss of property.
2. The system incorporates independent monitoring means which detect the failure of any of the electronic control elements.
3. The system has alternative and independent means of control which enable it to be controlled and shut down in an orderly manner.
4. Any and all other industry-specific safety requirements are fully implemented.

Revision History:

R 0.0	2005-01-17	Initial issue.
R 0.1	2009-01-05	Safety notice added.
R 1.0	2010-01-31	Editorial
R 2.0	2012-01-25	Open Document format, Name change.
R 2.1	2021-02-03	Contact Details changed; BP-02X added.