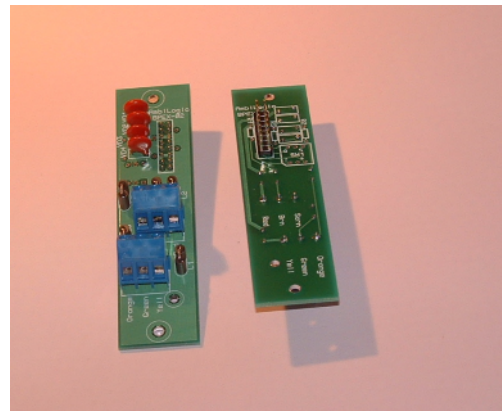


AmbiLogic Backplane Extenders BPEX-01x

Features:

- Enable Remote Connection of Modules or Backplanes - over Hundred metre Distances
- No Special Software or Functions Needed for Distributed Control Systems
- Connect via inexpensive 5-core screened cable
- Built-in Surge Arrestors and RF filters for EMC compliance



AmbiLogic Backplane Extenders bring the advantages and benefits of the AmbiLogic system to distributed control systems, remote data acquisition, and any system where control and monitoring functions need to be carried out over significant distances.

Examples of situations in which these Extenders are used include:-

- Marine engine-room telemetry and control
- Remote control panels for industrial machinery
- High visibility display panels linked to industrial processes

The Backplane Extenders are available in two forms: a male version BPEX-01M which plugs into a backplane, and a female version BPEX-01F which plugs into a single expansion module.

This means that an AmbiLogic PLC can support remote clusters of expansion modules plugged into their own remote backplanes, as well as individual expansion modules connected via BPEX-01F's.

Connections

Installers only need to ensure that the BPEX-01's in a system are wired pin-to-pin, and that every module in the system has a unique slot address.

Terminal	Wire Colour	Function
1	Yellow	Power 1. +14V semi-regulated. Supplies I/O circuits
2	Red	Power 2. +7.5V semi-regulated. Supplies processor cores and LEDs
3	Green	Return for power and communications
4	Blue	Comm+ RS-485 in-phase signal
5	White	Comm- RS-485 antiphase signal
6	Screen	Ground

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AmbiLogic Backplane Extenders BPEX-01x

Longer Cables

Where long cable runs are required, the voltage drop over a 0.2 mm² cable can be excessive, resulting in a below-specification 7.5V supply. One solution is to use an 8-core cable such as Tycab DMC8702 and parallel some of the cores. The connection scheme then becomes:-

Terminal	Wire Colour	Function
1	Yellow	Power 1. +14V semi-regulated. Supplies I/O circuits
2	Red + Mauve	Power 2. +7.5V semi-regulated. Supplies processor cores and LEDs
3	Green + Brown + Black	Return for power and communications
4	Blue	Comm+ RS-485 in-phase signal
5	White	Comm- RS-485 antiphase signal
6	Screen	Ground

This scheme will at least double the usable cable length.

Communications

Communications between the Control Module (usually a CPDA-01) and the remote modules is handled automatically just as if all the Expansion Modules were plugged into a local backplane. System inputs are brought into the control diagram via TERMIN functions with the appropriate Slot address. System outputs are driven by the control diagram via TERMOUT functions with the appropriate Slot address.

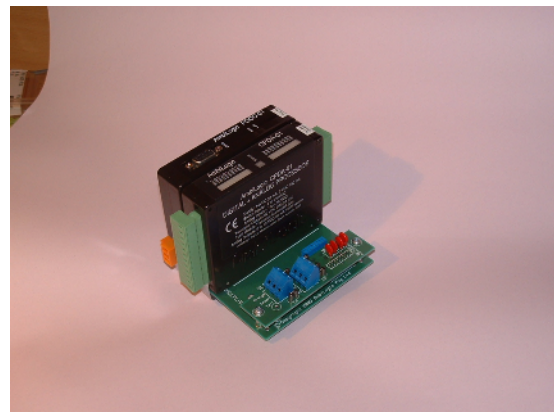
The AmbiLogic Register Transfer Protocol (ARTP) is used to transfer data packets across the backplane and its extensions. Details of this protocol are published in the AmbiLogic Advanced Programmers' Guide, available on request. The backplane transaction queue is handled completely automatically by the Control Module in response to the presence of TERMIN or TERMOUT functions with non-zero Slot addresses, and data packets to or from individual I/O registers are consolidated to minimise backplane traffic.

There is no significant time delay associated with operation of remote modules via BPEX-01's and long cables.

BPEX-01M Assembly - Control Backplane

The BPEX-01 is normally fitted in the last (i.e. highest numbered) slot in the backplane.

- ◆ No address-setting action is required.



AmbiLogic Backplane Extenders BPEX-01x

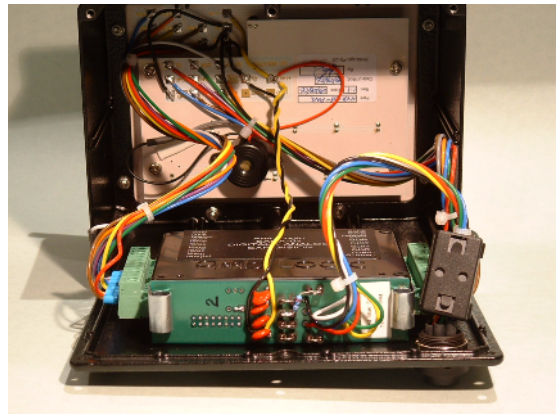
BPEX-01M Assembly - Slave Backplane

- ◆ Fit the BPEX-01M to the last slot in the backplane. The Processor slot must remain empty. You will need a POCO module in the Power+Comms slot to supply the slave modules in the remote backplane.
- ◆ Configure the Slot address. This will be the basic Slot address for all the modules in the slave backplane.



BPEX-01F Assembly - Single Slave Module

- ◆ Configure the Slot address. This will be the Slot address for the individual module into which the BPEX-01F is plugged.
- ◆ This photo shows the BPEX-01F connecting an EXDA-01 Expansion Module to create a remote control panel used for the hydraulic steering control in a superyacht. The EXDA drives all the indicators and the audible alarm, encodes all the pushbuttons. It also receives, digitises and transmits the electronic steering wheel position.



Specifications

1. Dimensions
Heights above mounting panel:
14 mm to top of BPEX-01 deck
22 mm to top of connectors

Width: 102 mm (BP-02)
 153 mm (BP-04)
2. Ambient temperature: -20 to +70 °C

AmbiLogic Backplane Extenders BPEX-01x

WARNING SAFETY-CRITICAL SYSTEMS

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

AmbiLogic products contain electronic and software content, both of which carry a remote but real possibility of failure. AMBILOGIC DOES NOT WARRANT OR REPRESENT THAT ITS PRODUCTS ARE INFALLIBLE.

It is the therefore responsibility of the designer of any safety-critical system which incorporates AmbiLogic products to ensure that:-

1. The system is designed so that any failure of an AmbiLogic 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 other industry-specific safety requirements are fully implemented.