

Midspan Bridge

The **Midspan Bridge** enables the integration of access controlled doors and alarm points via a TCP/IP network connection to a central management system and database.

The **Midspan Bridge** can support up to eight complete door sets consisting of In and Out readers, two magnetic lock and door alarm/strobe. These can be reliably powered without the need for local mains power supply and power outlet at each door. Each of the 8 channels can deliver 13.5 Watts of power over a distance of 300m over CAT5e / 6 cable.

The **Midspan Bridge** acts as a link between the user's Local Area Network (LAN) and the Controller Area Network (CAN), the network that hosts door controllers, alarm input and output panels, etc. This allows organisations to use their existing structured cable infrastructure to support security and access control applications.

The **Midspan Bridge** has control of the power delivery mechanism providing each circuit with a current limited output and short/open circuit protection. Sophisticated power status reporting assists in the remote diagnosis of equipment faults and their swift rectification.

This significantly reduces the need for remedial maintenance visits and engineering time on site. For instance, from a workstation the administrator can issue a command to the **Midspan Bridge** requesting a power reset of a particular device, which is often all that is required to resolve a problem.

Benefits

- **Eliminates the cost of installing bespoke data cabling** by making use of existing network connections
- **Reduces the number of power supplies, batteries and power outlets** deployed by employing central supervised power management and delivery
- **Reduces energy consumption** using advanced 48V power deliver and management technology
- **Reduces the amount of equipment deployed** and the number of IP addresses assigned compared to alternative solutions
- Facilitates **faster installation** time and reduces system maintenance.



Part Number: 04-134

Features:

- **Delivers power and data over CAT5e/6 cable** directly to door access location
- **Remote fault diagnostics** and maintenance including the means to remotely power reset devices
- **Optimisation of LAN traffic** by grouping non-priority messages for transmission via TCP/IP thereby reducing network traffic
- **Real Time Calendar Clock** to maintain time/date integrity following a mains power restart or loss of network
- **Four supervised inputs** for monitoring mains power supply/standby battery status
- **Secure LAN connection**, the Midspan Bridge provides a private network permitting only registered devices to connect to it. This eliminates the opportunity to hack into the LAN via any of the CAT5 cables connected to the Midspan Bridge
- **Safe power delivery**, the power delivery down CAT5 cable is current limited with over/under voltage protection. This protects the CAT5 cables against excessive power demands which may cause them to overheat

Technical Data

Installation	Borer Midspan Bridge devices are housed in DIN rail mounted enclosures for ease of installation and maintenance
Enclosure Colour / Dimensions	Ivory / 165 x 89 x 64mm (214g)
Power Supply	48 Volts DC, 50mA @ 48 Volts DC quiescent
Environmental Humidity Range Operating Temperature	Interior / 10% to 80% non-condensing 0 – 60C (30 to 140F)
Ethernet Network Network Connection Transmission Protocol	Ethernet with RJ45 Connection Protocol TCP / IP + Static IP Address CSMA – CD (Carrier Sense Multiple Access with Collision Detection)
Data Rate / Cable Type Diagnostic Indicators	Autosensing : 10/100 Base-T / CAT5e / 6 Link, 10 base, 100 base, Collision Detected, Connection Made
CAN Network / Network Connection	8 channels CAN, ISO 11898 standard for serial data communications
Transmission Network Data Rate	CSMA-CA (Carrier Sense Multiple Access with Collision Avoidance) 125kbps
Cable Type Power / Data Delivery	Star Topology: - power over CAT5e / 6 cable 13.5 Watts, 48 Volts per channel, max. 400m cable length per channel
Diagnostic Indicators	CAN TX, CAN RX, CAN Fault, Power Delivery status
Serial Interface	1 RS232, 9600bps, 8 data, no parity, 1 stop

How it works

Device Detection	First the Borer Midspan Bridge probes the cable to see if an IEEE 802.3af compliant device is connected. Probing is undertaken with two current limited voltages of between 2.7 V and 10 V. The Bridge looks for a "signature impedance" of 25k ohms. The Midspan Bridge will only apply full power to the cable if the signature for an IEEE 802.3af compliant device is detected.
Device Identification	Following signature detection the Borer Midspan Bridge puts a classification voltage on the cable. The Power Adaptor connected to the other end of the CAT5 cable will identify itself by drawing a specific current, which when detected by the bridge will allow it to deliver power down the cable.
Device Disconnection	A Borer Midspan Bridge will disconnect power from the cable when a device is unplugged or when the current limit for the circuit is exceeded as follows: <ul style="list-style-type: none"> the current sourced falls below 10 mA for more than 300 mSec; the impedance of the line rises above 26.25 k ohms; the supply voltage rises above 54 Volts DC or falls below 38 Volts DC. It will only re-connect power once the detection and identification phases have been successfully repeated.

