zenitel

DATASHEET
PAVA
BDU01

- ✓ Synchronises PAVA Audio Broadcast with Visual Alerts
- ✓ 6 Fused Output Circuits 18-60 VDC Dependant On Input Supply Voltage
- ✓ End Of Line, Open / Short, Earth Leakage and Load monitoring per channel
- ✓ IP Enabled
- ✓ EN 54-16 certified part of Zenitel PAVA system

BDU01

PAVA Beacon **Driver Unit**

Zenitel's BDU01 is an innovative Voice Alarm Beacon Driver Unit designed to work seamlessly with Zenitel's VIPEDIA/ INTEGRA Audio Routers. Each unit features six individual controlled and fused circuits. By receiving signals from the Voice Alarm Audio Router, the BDU effectively activates and monitors these circuits driving flashing lights, beacons or other compatible devices. Multiple BDUs can be easily daisy-chained for quick and easy connectivity.

The primary purpose of the BDU is to enhance the effectiveness of Voice Alarm systems during emergencies or evacuation procedures by providing visual cues and alerts that complement audio announcements. This dual-sensory approach ensures clear information delivery, even in environments with high background noise. Additionally, the BDU can serve a secondary role by powering various other devices, adding versatility to its use case.

Synchronisation

For larger sites, or systems that require higher levels of availability, multiple BDU01 units can be deployed across separate PAVA nodes with interleaved A/B circuits. Equipped with state-of-the-art Active Sync technology, the BDU01 uses the site-wide NTP (Network Time Protocol) source as a clock to ensure precise circuit activation with a tolerance better than 15ms.

EN 54 Certified

Additionally, adhering to industry standards, the BDU01 solution is EN 54-16 certified as part of the Zenitel PAVA system when powering beacons. It provides comprehensive monitoring capabilities covering processors, power supplies, and circuits. Notably for un-energised DC circuits, the BDU01 includes end-of-line open, short, and earth leakage surveillance. When the circuits are energised, the system intelligently monitors the pre-configured load. Any detected faults are reported back to the host Audio Router and categorised in compliance with the requirements of the EN 54-16 standard.

Simple Diagnostics

For simple diagnostic, the BDU01 incorporates LEDs that indicate the status of each output zone and input power, enabling quick visual assessment and the identification of operational issues. Furthermore, for efficient troubleshooting and maintenance unit information and operation status can be viewed via the Web Interface.

Easy Installation

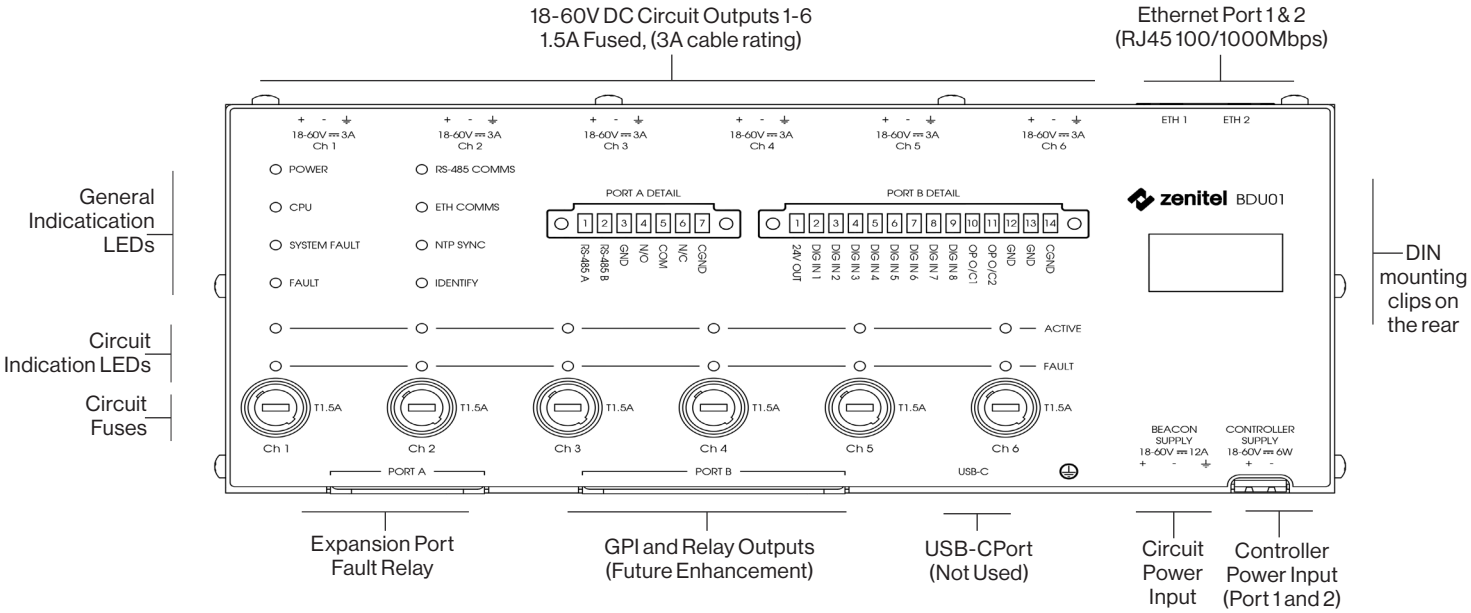
The BDU01 is housed in a DIN rail mount enclosure, allowing for easy installation and maintenance. The compact design allows for two units to be installed side by side on a typical DIN rail inside a typical 19" cabinet or Zenitel's wall mount INTEGRA enclosure.

Applications

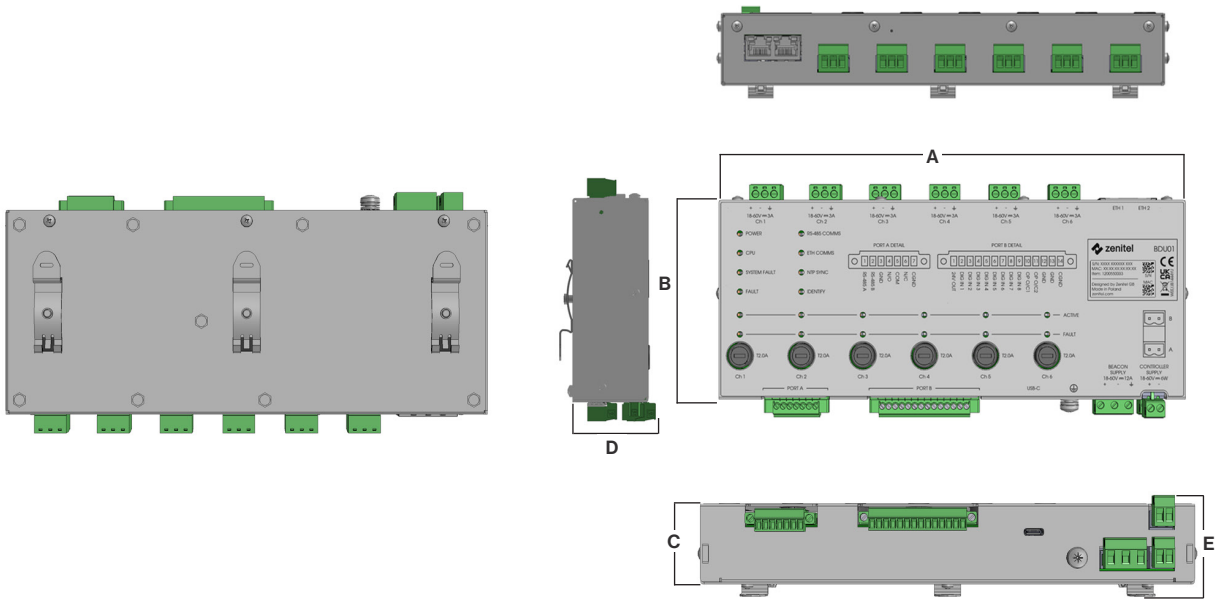
Typically used in environments with high levels of background noise or where additional visual indication is essential, such as tunnels, stations, manufacturing facilities, offshore platforms, and or large depots.

MECHANICAL

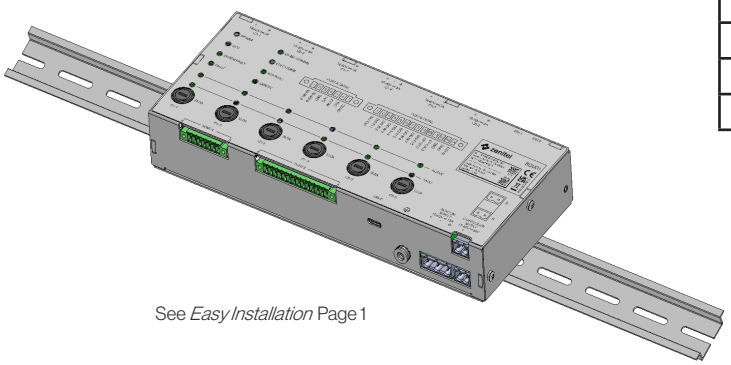
Front Panel



Views & Dimensions



Mounting (DIN Rail)



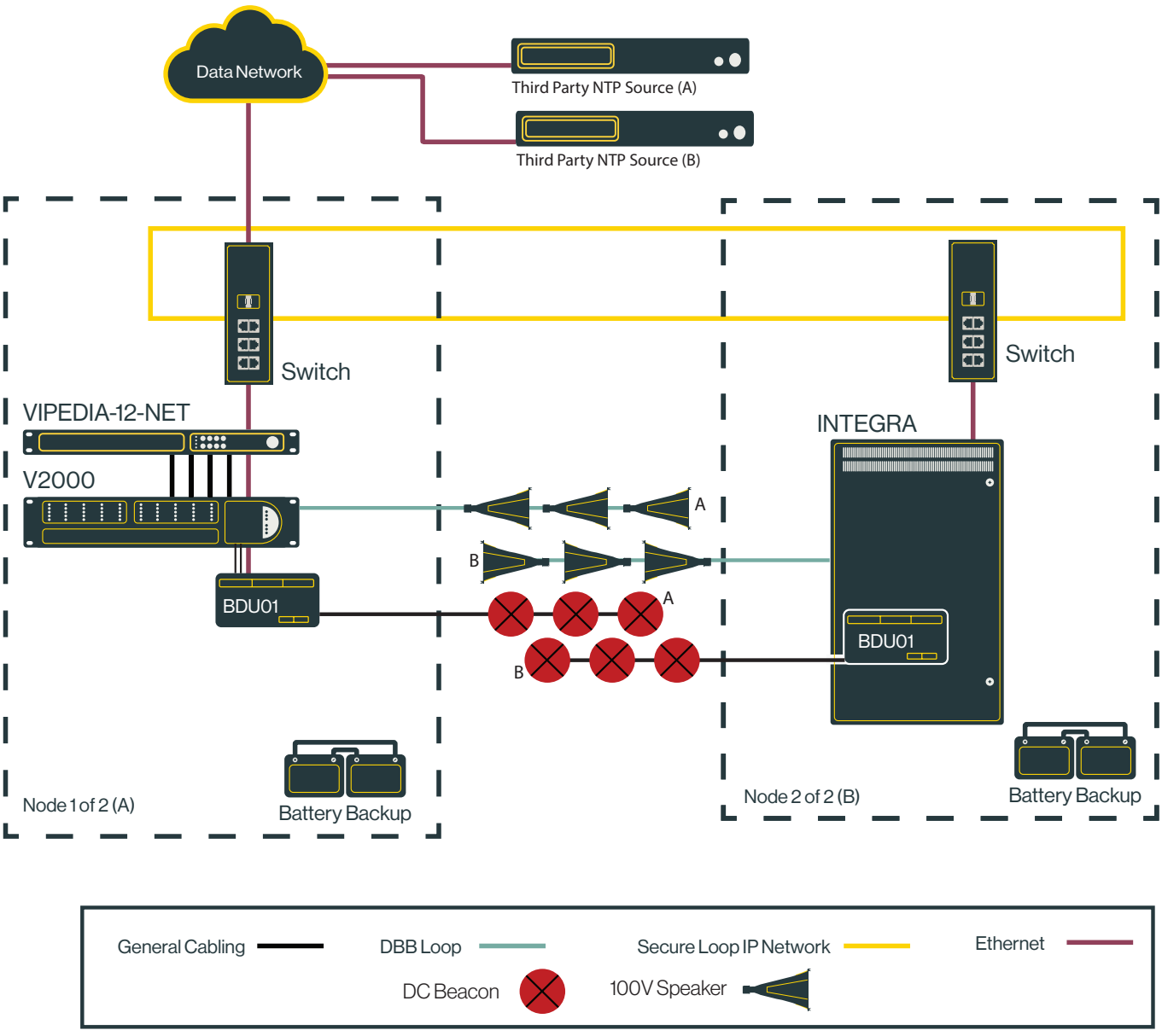
See *Easy Installation* Page 1

Letter:	Dimension	Description
A	251 mm	Width
B	102 mm	Depth
C	40 mm	Height
D	44.2 mm	Height of DIN Rail
E	45 mm	

TYPICAL ARCHITECURE

The illustration below depicts a standard deployment scenario featuring two BDU01 units situated in distinct PAVA cabinets / nodes. Both BDU01's are linked to the same physical zone, employing interleaved A/B circuits to enhance system availability. To achieve synchronization between BDU circuit activations, the solution requires a site-wide NTP source. In the example below, a secondary NTP source is also specified to provide additional resilience.

At each node, the BDU01's DC power both controller and circuits are sourced from a V2000/INTEGRA frame. The controller aspect draws power from the standard V2000 AUX DC Output, while the beacon circuits are powered by a separate DC supply, in the example below by the V2000- POK01 (V2000 Power Output Kit) which is supplied seperatley.



SPECIFICATION

General	
Number of Units supported in a Cluster	64
Number of Units hosted on a VIPEDIA	4
Circuits Activation Synchronisation	<15ms
NTP	Required for synchronisation across two nodes
Typical Number of Beacons per Circuit	37 (Based on a 40mA Beacon)
Input Power Supplies	
Control Unit Power Supply Inputs	2 (Connectors in Parallel)
Control Unit Supply Voltage	18-60 V DC
Control Unit Maximum Current	234 mA @24 V DC
Control Unit Quiescent Current	90.5 mA @24 V DC
Beacon Power Supply Inputs	1
Beacon Power Supply Voltage	18-60 V DC
Beacon Power Maximum Current	12 A @ 24 V DC
Output Circuits	
Number of Individual Circuits	6
Circuit Fuse	T2A per Circuit
Circuit Monitoring Techniques	EOL Resistor & Loop Return
Circuit Monitoring (Unenergized)	Open, Short, Earth and EOL
Circuit Monitoring (Energised)	Voltage and Current
LED Indicators	
Power on Circuit	Green
Fault on Circuit	Yellow
General	
Power	Green
Comms / Processor	Green
Fault	Yellow
System Fault	Yellow
RS485	Green
Ethernet	Green
NTP Sync	Green
Identification	Blue
General Connectivity	
General Purpose Contacts	10 Inputs (Contact Closure to 0 V)
General Purpose Fault Relay	1 A @ 30 V DC
IO Expansion Options	Connect up to 9x BMB01
IP Connectivity	
IP Protocols	TCP/UDP IP / Layer 2 / Unicast / NTP

Cyber Security	
Control Data Encryption	Yes
Authentication	Yes
Control Interfaces	
Ethernet Ports 10/100Mbps	2
General Fault Relay (COM, N/O and N/C)	1
Serial Port	RS485
Software, Tools and Management	
Configuration Tools	IP based Windows application
Web Server	Read only interface for monitoring
Software Package	≥ V5
Heat	
Quiescent	7.5 BTU/h / 2.2 W
Operating (All Circuits and LEDs Driven)	19.1 BTU/h / 5.6 W
Mechanical	
Dimensions (not including connectors)	50 mm (h) x 250mm (w) x 100 mm (d)
Weight	1.065 kg
Ingress Protection	IPx0
Mounting Options	Din Rail Clips
Mounting inside an INTEGRA	≤2 Depending on Peripherals
Connectors	Connectors supplied in the box
Environmental	
Temperature (Operational)	-10 °C to +55 °C
Temperature (Storage)	-20 °C to +55 °C
Humidity (Operational & Storage)	0% to 95% non-condensing
Reliabilty	
MTBF (MIL-HDBK-217F)	Tbd
Approval and Standard Compliance	
Railway	EN 50121-4
Fire Detection and Fire Alarm Systems	EN 54-16
Environmental Directive (Safety)	EN / IEC / UL 62368-1
Environmental Directive (Immunity)	EN 55103-1 / EN50130-4
Environmental Directive (Emissions)	EN 55032 / EN 6100-6-2 / EN 6100-6-3 / EN 6100-6-4 / FCC-47 part 15B Class A
Environmental	RoHS / REACH
Conformity Europe	CE / CPR / UKCA
Part Code	
BDU01	Beacon Driver Unit—Six Channels
Compatible Products	
V2000-POK01	V2000 Power Output Card Kit 24VDC
EOL10K-PACK End of Line	End-Of-Line Terminator Resistor Pack
INTEGRA-xx / INTEGRA-xx-PRO Range	2000W Public Address / Voice Alarm System / Batteries not included
VIPEDIA-12-NET / VIPEDIA-12-PRO	DSP Audio Controller / Router
Compatible 3rd Party Hardware (Other Optional Available)	
LEDSPC-02-03	MOFLASH: Ceiling Mount Beacon Red Body, Blue Flash
ESD-5007	KLAXON: Ceiling Mount Beacon Red Body, Red Flash

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