The B465 Conettix Universal Dual Path Communicator converts the Public Switch Telephone Network (PSTN) digital dialer, or dry contact outputs from an intrusion/fire control panel to an IP signal for transmission over the Ethernet or cellular network. The B465 Conettix Universal Dual Path Communicator is UL 864 10th Edition approved per NFPA 72 version 2013. The module can use its built-in Ethernet connection, and/or an optional Conettix plug-in cellular module (B440/B441/B442/B443) to send reports to the central station receiver.

Automation programming for the supported control panel remains unchanged with the installation of the B465 module, thus simplifying the installation process. This allows for a smooth transition from the PSTN realm into IP. All messages generated internally by the B465 are shown in Contact ID format at the central station.

The module can be powered from a 16.5 VAC transformer or 24 VDC power supply.

System overview

The B465 simulates dial tone and line voltages when the digital dialer has a report to send. The module simulates a PSTN connection to the central station. The module decodes the control panel’s PSTN dialer report and sends the decoded reports by IP connection using Bosch’s Conettix Protocol to the Conettix D6600, D6100IPv6, or D6100i Communication Gateway/Receiver (referred to as the receiver). When the receiver acknowledges receipt of the message, it sends an acknowledgement report to the module which in turn sends an acknowledgement to the connected control panel. This process maintains true end-to-end security.

- Compatible with any control panel using Contact ID, SIA, Pulse 3/1 or Pulse 4/2 communication formats (auto detecting)
- No control panel reprogramming required to install
- Supports Ethernet directly and optional plug-in cellular communication technologies in single, or multi-path configurations
- Supports four configurable inputs and three configurable outputs
- Approved for Commercial Fire/Burglary applications as sole, primary, or secondary communication path
The module supports Domain Name System (DNS) for central station communication. DNS provides ease of use, eliminating the need to use static IP addresses as your reporting destination, and accommodates a simple solution for central station disaster recovery.

**Direct wire inputs**
The B465 provides four on-board inputs. Each input functions independently and does not interfere with the operation of the others. The module monitors the input loops for normal, shorted, or open conditions between an input terminal and any of the input common terminals. Inputs are disabled by default so no EOL resistors are required until activated. These four inputs on the B465 connect to dry contact outputs on the control panel and generate Contact ID reports instead of using a phone line connection/or in addition to using the control panel phone connection. The available functions are:

- Panel System Trouble
- Panel AC Fail
- Panel Battery Trouble
- Fire Alarm
- Fire Trouble
- Burg Alarm
- Burg Trouble
- Fire Supervisory

Each input allows the use of dry contacts or powered outputs up to 30 VDC if needed. The inputs use 2.2K EOLs to monitor the dry contact outputs when connected to dry contacts. The inputs recognize the following thresholds when using dry contacts: 2.0 to 3.0 VDC = Normal, 3.7 to 5.0 VDC = Open, 0.0 to 1.3 VDC = Short.

**Outputs**
Includes three programmable output relays rated at 30 VDC, 0.1 A. These outputs can be used to show the status of the B465 or they can be connected to the control panel zone inputs for reporting B465 system faults. The three outputs consist of RELAY 1, RELAY 2, and RELAY 3.

- RELAY 1 is active (energized) once the B465 is running. If the B465 detect a problem or loses power, RELAY 1 de-energizes, which can be used to indicate a system trouble on the local control panel's zone inputs, if required. Depending on the configuration required to create a system trouble on the control panel, the installer needs to use either the NO and COM or the NC and COM connections. Refer to the control panel manual for the required zone configuration to obtain the proper input response.
- RELAY 2 is a normally open (NO) relay with contacts that close when the desired function programmed is detected.
- RELAY 3 is a normally open (NO) relay with contacts that close when the desired function programmed is detected.

**Functions**

**PSTN inputs (2)**
When the control panel's PSTN dialer sends a message, the module simulates a PSTN connection to the central station. The module connects to the host control panel through either one or both of the Phone Line inputs. Both Panel Line 1 and Panel Line 2 of the module run 28 VDC and support Contact ID (4 and 10 digit account codes), Pulse 3/1, Pulse 4/2, and SIA communication formats. The B465 is setup to auto detect the communication format which eliminates programming steps.

**IP Communication options**
The module uses the on-board Ethernet connector, and/or optional B440 Conettix Plug-in Communicator, Cellular (3G), B441 Conettix Plug-in CDMA Cellular Communicator, B442 Conettix Plug-in GPRS Cellular Communicator, or B443 Conettix Plug-in HSPA+ Cellular Communicator to communicate with a Conettix D6600, Conettix D6100i or a Conettix D6100IPv6 Communications Receiver/Gateway. Using Conettix IP communication protocol offers a secure path that includes anti-replay/anti-substitution features and provides enhanced security with up to AES 256-bit encryption.

The Callout — Description:

- 1 — Intrusion/fire control panel
- 2 — Control panel phone line connections
- 3 — B465 Conettix Universal Dual Path Communicator
- 4 — B44x plug-in cellular communicator
- 5 — Ethernet connection (LAN/WAN)
- 6 — Internet
- 7 — Cellular communication to cellular carrier
- 8 — Cellular carrier network
- 9 — Conettix receiver/gateway
- 10 — Conettix receiver/gateway
- 11 — Monitoring center automation
Input power supply
The B465 uses a 16.5 VAC transformer or 24 VDC voltage for its primary power source. The approved transformers are the D1640 plug-in transformer, D1640-CA plug-in transformer, or D1640-120WI transformer. The B465 can optionally be powered from 24 VDC power source applied to the AC terminals.

B465 modular connections
The B465 module has three modular connections.
- **Cellular plug-in connector.** Connects to a cellular communication module.
- **Tamper connector.** Connects the ICP-EZTS Dual Tamper Switch for monitoring the enclosure cover.
- **External Annunciator connector.** Connects to the optional B46 module.

On-board LED Indicators
The B465 has a total of ten on-board LEDs that indicate the module’s status (SYSTEM TROUBLE, TX, RX, POWER, BATTERY, HEARTBEAT, Panel Line 1 (ACT), Panel Line 2 (ACT), 100BASE-T and ETHERNET LINK).

B46 External Annunciator (Optional)
The B46 is an optional module that provides external module LED and sounder status when installed in a supported enclosure. The module has 3 LEDs (System Trouble, Power, and Battery) which illuminate through the B46 LED cover. The LED cover snaps into a knockout in the enclosure door. The B46 is compatible with the B10, B10R, B11, B11R, and D8103 enclosures.

Certifications and approvals

<table>
<thead>
<tr>
<th>Region</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>UL 365 - Police Station Connected Burglar Alarm Units and Systems</td>
</tr>
<tr>
<td></td>
<td>UL 609 - Local Burglar Alarm Units and Systems</td>
</tr>
<tr>
<td></td>
<td>UL 636 - Holdup Alarm Units and Systems</td>
</tr>
<tr>
<td></td>
<td>UL 864 - Control Units and Accessories for Fire Alarm Systems (Commercial Fire)</td>
</tr>
<tr>
<td></td>
<td>UL 985 - Household Fire Warning System Units</td>
</tr>
<tr>
<td></td>
<td>UL 1023 - Household Burglar Alarm System Units</td>
</tr>
<tr>
<td></td>
<td>UL 1076 - Proprietary Burglar Alarm Units and Systems</td>
</tr>
<tr>
<td></td>
<td>UL 1610 - Central Station Burglar Alarm Units</td>
</tr>
<tr>
<td></td>
<td>NIST FIPS 197 AES Certification (IP Communications)</td>
</tr>
<tr>
<td></td>
<td>CSFM approved</td>
</tr>
<tr>
<td></td>
<td>FCC Part 15 Class B</td>
</tr>
<tr>
<td>Canada</td>
<td>CAN/ULC S303 - Local Burglar Alarm Units and Systems</td>
</tr>
<tr>
<td></td>
<td>CAN/ULC S304 - Signal Receiving Centre and Premise</td>
</tr>
<tr>
<td></td>
<td>CAN/ULC S545 - Residential Fire Warning System Control</td>
</tr>
</tbody>
</table>

Parts included

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B465 Conettix Universal Dual Path Communicator</td>
</tr>
<tr>
<td>1</td>
<td>Hardware pack</td>
</tr>
<tr>
<td>1</td>
<td>Quick Start Guide (hardcopy)</td>
</tr>
<tr>
<td>1</td>
<td>Wiring label (hardcopy)</td>
</tr>
<tr>
<td>1</td>
<td>Literature (mini-CD)</td>
</tr>
</tbody>
</table>

Technical specifications

Properties

| Dimensions | 4.40 in x 6.90 in x 1.50 in (111 mm x 175 mm x 38 mm) |

Environmental considerations

| Relative humidity | 5% to 93% at +32°C (+90°F) |
| Temperature (operating) | 0°C to +49°C (+32°F to +120°F) |
| Operational use | Indoor use only |

Power requirements

| Standby battery current | Battery input: B465: Idle 150 mA; Alarm 230 mA |
| 24 VDC input current | 24 VDC input: B465: Idle 120 mA; Alarm 160 mA |

Wiring

| Terminal wire size | 12 AWG to 22 AWG (2.0 mm to 0.65 mm) |
| Transformer secondary wiring length | 15 m (50 ft) maximum unshielded wire |
| Control panel phone line wiring | 100 Ω loop resistance, maximum unshielded wire |
### Input loop wiring
100 Ω loop resistance, maximum unshielded wire

### Ethernet wiring
100 m (328 ft) maximum using Cat 5 wire or better

### Compatibility
**Compatible PSTN input formats**
- Ademco Contact ID (SIA DC-05) +10 digit account codes
- Pulse 3/1, 3/1 Checksum (2300 Hz ACK Tone)
- Pulse 3/1, 3/1 Checksum (1400 Hz ACK Tone)
- Pulse 4/2 (2300 Hz ACK Tone)
- Pulse 4/2 (1400 Hz ACK Tone)
- SIA (SIA8, SIA20) – 110 and 300 baud

### Receivers
- D6600
- D6100
- D6100IPv6

### Cellular
- B440 Conettix Plug-in Communicator, Cellular (3G)
- B441 Conettix Plug-in CDMA Cellular Communicator
- B442 Conettix Plug-in GPRS Cellular Communicator
- B443 Conettix Plug-in HSPA+ Cellular Communicator

### Modules
- B46 External Annunciator

### Enclosures
- **B10 Medium Control Panel Enclosure**
  - White, steel enclosure. Accepts an optional lock and tamper switch. Measures 35.6 cm x 31.8 cm x 7.6 cm (14 in x 12.5 in x 3 in).
  - Order number B10

- **B10R Medium Control Panel Enclosure (Red)**
  - Red, steel enclosure. Accepts an optional lock and tamper switch.
  - Order number B10R

- **B11 Small Control Panel Enclosure**
  - White, steel enclosure. Accepts an optional lock and tamper switch. Measures 27.8 cm x 25.9 cm x 8.32 cm (10.9 in x 10.2 in x 3.3 in).
  - Order number B11

- **B11R Small Control Panel Enclosure (Red)**
  - Red, steel enclosure. Accepts an optional lock and tamper switch. Measures 27.8 cm x 25.9 cm x 8.32 cm (10.9 in x 10.2 in x 3.3 in).
  - Order number B11R

- **D8103 Enclosure**
  - Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.).
  - Order number D8103

- **D8108A Attack Resistant Enclosure**
  - Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.). UL Listed. Includes lock and key set. B520, B4512, and B5512 require the B12 mounting plate.
  - Order number D8108A

- **B12 Mounting Plate for D8103 Enclosure**
  - Required for mounting select control panels and other devices in D8103, D8108A, D8109, or BATB Battery Box enclosures.
  - Order number B12

- **D101 Lock and Key Set**
  - Short-body lock set with one key supplied. Uses the D102 (#1358) replacement key.
  - Order number D101

- **ICP-EZTS Dual Tamper Switch**
  - Combination tamper switch with a wire loop for additional tamper outputs.
  - Order number ICP-EZTS

- **D1640 Transformer**
  - System transformer rated at 16.5 VAC, 40 VA.
  - Order number D1640

- **D1640-CA Transformer**
  - For use in Canada. System transformer rated at 16.5 VAC, 40 VA.
  - Order number D1640-CA
B440 Conettix Plug-in Cellular Communicator
Dual technology 3G EVDO/CDMA cellular communicator for secure two-way IP communication on the Verizon Wireless network.
Order number B440

B441 Conettix Plug-in Cellular Communicator
Multi-function CDMA cellular communicator for secure two-way IP communication on the Verizon Wireless network.
Order number B441

B442 Conettix Plug-in GPRS Cellular Communicator
Multi-function cellular communicator that provides IP communication over a (GPRS) cellular network.
Order number B442

B443 Conettix Plug-in HSPA+ Cellular Communicator
Multi-function 3G/4G cellular communicator providing IP communication over a GPRS/EDGE/UMTS/HSPA+ cellular network.
Order number B443