Electrics for rolling stock

JA222, JA224B, JA226B

Electronic buzzers for automatic train control systems

Catalogue F210.en
Electronic buzzers, JA222, JA224B, JA226B Series

Electronic buzzers for automatic train protection systems

JA222 Series: Electronic buzzers in the driver's cabin of railway vehicles are an integral part of the intermittent automatic train-running control and the driver's safety device (DSD) respectively. This includes the proven JA222. The rugged device boasts of a dynamic loudspeaker and 4 levels for setting the volume and two levels for adjusting the sound frequencies.

Features:
- Electroacoustic transducer for intermittent automatic train-running control and DSD
- Wide range of supply voltage levels from 16.8 to 150 V DC
- 4 adjustable volume levels
- 2 frequency settings

JA224B / JA226B Series: With this electronic buzzer Schaltbau integrates up to nine different warning tones for country-specific automatic train protection systems in one device. For this reason the buzzer is especially suitable for multisystem railway vehicles in cross-border traffic throughout Europe.

Features:
- JA224B Transducer for up to 9 different tones, SSAS2 approved, Test input (all warning tones reduced in volume)
- JA222B Transducer for up to 10 different tones
- 2 modes of operation:
  - Prioritized: tones prioritized
  - Prioritized/mixed: tones 1 ... 3 prioritized, all others of minor priority (4 ... 10) mixed
- 16 different volume settings
- Customized tones from memory card
- All inputs optically isolated against each other as well as against the supply voltage

Ordering code

<table>
<thead>
<tr>
<th>JA222 Series, Electronic buzzer with dynamic speaker</th>
<th>JA224B Series, Electronic transducer for up to 9 different tones / voice</th>
<th>JA226B Series, Electronic transducer for up to 10 different tones / voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>JA222D: Selectable frequencies, 340 / 550 Hz</td>
<td>JA224B-24: SSAS2 compliant, Un 24 V DC *1</td>
<td>JA226B-24: Standard design, Un 24 V DC *1</td>
</tr>
<tr>
<td>JA222F: Selectable frequencies, 400 / 900 Hz</td>
<td>JA224B-36: SSAS2 compliant, Un 36 V DC *1</td>
<td>JA224B-24-MW: Same as JA224B-24, with mounting brackets</td>
</tr>
<tr>
<td>JA222I: Frequency 3,000 Hz, default</td>
<td>JA224B-24-MW: Same as JA224B-24, with mounting brackets</td>
<td>JA226B-24: Same as JA226B-24, with mounting brackets</td>
</tr>
<tr>
<td></td>
<td>JA224B-24-MW: Same as JA224B-24, with mounting brackets</td>
<td>JA226B-24-MW: Same as JA226B-24, with mounting brackets</td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th></th>
<th>JA222</th>
<th>JA224B</th>
<th>JA226B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage U_n</td>
<td>24 ... 110 V DC</td>
<td>24 V DC, 36 V DC (110 V DC upon request)</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Tolerance</td>
<td>-30% / +40%</td>
<td>-30% / +25%</td>
<td>-30% / +25%</td>
</tr>
<tr>
<td>Inputs Number of Voltage U_i</td>
<td>---</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Rated operating current I_e</td>
<td>250 mA max. at U_n = 24 V DC</td>
<td>500 mA at U_n = 24 V DC</td>
<td>500 mA at U_n = 24 V DC</td>
</tr>
<tr>
<td>Sound level (1 m distance, U_n, max) Tolerance</td>
<td>100 mA max. at U_n = 110 V DC</td>
<td>500 mA at U_n = 24 V DC</td>
<td>500 mA at U_n = 24 V DC</td>
</tr>
<tr>
<td>Frequency</td>
<td>340 / 550 Hz – 400 / 900 Hz – 3,000 Hz</td>
<td>9 selectable tones, also voice *2</td>
<td>10 selectable tones, also voice *2</td>
</tr>
<tr>
<td>Tolerance Test input</td>
<td>± 15%</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Speaker internal/ Output external</td>
<td>• / ---</td>
<td>• / 8 Ω, 10 Watt *2</td>
<td>---</td>
</tr>
<tr>
<td>Housing Dimensions (Ø x T / x H x T)</td>
<td>Ø 125 x 80</td>
<td>181 x 131 x 53</td>
<td>---</td>
</tr>
<tr>
<td>Sound outlet Weight Material Colour</td>
<td>Ø 80 1 kg PBT, fibre glass reinforced, black</td>
<td>Ø 80 1.15 kg Stainless steel, silver</td>
<td>---</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Sound outlet preferably facing front</td>
<td>Any, for indoor use only *2</td>
<td>---</td>
</tr>
<tr>
<td>Vibration / Shock</td>
<td>EN 61373</td>
<td>EN 61373</td>
<td>---</td>
</tr>
<tr>
<td>IP rating (IEC 60529 IP code)</td>
<td>IP20</td>
<td>IP20</td>
<td>---</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-25 °C up to +70 °C</td>
<td>-25 °C up to +70 °C</td>
<td>---</td>
</tr>
<tr>
<td>Applicable standards</td>
<td>EN 50155, EN 50121-3-2</td>
<td>EN 50128 SSAS-2, EN 50155, EN50121-3-2</td>
<td>EN 50155, EN 50121-3-2</td>
</tr>
</tbody>
</table>

*1 customised tones and fixed mode of operation supplied by Schaltbau
*2 Optional: Weather-proof horn speaker for outdoor use
**JA222 Dimensions, Mounting, Configuration**

**Mounting:**

- 2x Flat tab 6.3 x 0.8
- 2x Mounting 1x M8

**Frequency settings:** By means of switch on the rear right side

<table>
<thead>
<tr>
<th>Series</th>
<th>Country</th>
<th>Frequency 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>JA222D</td>
<td>Germany</td>
<td>fATC = 340Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>fDSD = 550Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JA222F</td>
<td>France</td>
<td>fATC = 400Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>fDSD = 900Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JA222I</td>
<td>Italy</td>
<td>fDSD = 3kHz</td>
<td></td>
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</tr>
</tbody>
</table>

ATC for automatic train control DSD for driver’s safety device

- Switch ON
- Switch OFF
- Factory default

**Sound outlet**

- Earthing bolt M4

- Subject to technical alterations / Dimensions in mm

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**JA224B, JA226B Dimensions, Mounting, Operation, Configuration**

**Dimension diagram:**

- Version with mounting bracket
- Version without mounting brackets

**Mounting:**

- 4x Borings with mounting bracket
- 4x Mounting borings in bottom of housing

**Mode of operation:**

A control circuit connected with the buzzer allows the user to select an audio signal and then the selected tone is emitted from the SD card where it is stored. There are 16 levels for setting the volume to adjust it to the particular installation.

- **JA224B modes of operation:**
  - Prioritized: A tone of minor priority is superseded by one of higher priority. The highest priority is assigned to input 1 and the lowest to input 9.
  - Prioritized/Mixed: Inputs 1 ... 3 are prioritized. Selected tones at inputs 4 ... 9 are mixed internally and being of minor priority are superseded by the ones at inputs 1 ... 3.

- **JA226B modes of operation:**
  - Software based according to customer specifications, no limits of configuration

**Female connectors X1 and X2:**

Two female connectors are included in the delivery for electrical connection:

- **X1** 8 pole: Power supply, diagnosis, external speaker
- **X2** 20 pole: Control inputs of tones

**Connector pin assignment:**

<table>
<thead>
<tr>
<th>X1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>GND</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X2</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

- Memory card with customized tones and fixed mode of operation supplied by Schaltbau. Data storage medium is a flash card (SD card).

- Subject to technical alterations / Dimensions in mm

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Note: The female connectors are fitted with cage clamps for wire gauges up to 1.0 mm² (16 AWG, 1974 Mils) max.
Electrical Components and Systems for Railway Engineering and Industrial Applications

Connectors
- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

Snap-action switches
- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Enabling switches
- Special switches to suit customer requirements

Contactors
- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

Electrics for rolling stock
- Equipment for driver’s cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements