Electrics for Rolling Stock

PAD10, PAD20, PAD30, PAD40

Passenger alarm devices for rail vehicles

Catalogue F105.en

More information
schaltbau.com
Passenger alarm devices for rail vehicles  PAD10, PAD20*, PAD30, PAD40 series

Safety first: Schaltbau passenger alarm devices ensure trouble-free operation

Schaltbau electric emergency brake handles can be found in rail vehicles all over the world. Their design and conspicuous outward appearance is a quick reference point for the passenger even in a stress situation. High-quality switching elements characterised by positive opening operation, wiping, self-cleaning contacts, and high shock and vibration resistance guarantee years of uninterrupted operation.

Also available are options for a manual reset of the device: With one turn of the key the pulled handle will automatically move back to its original position. Schaltbau passenger alarm devices meet the design requirements of DIN EN 16334 and fully comply with the provisions for installation of braking equipment and emergency brake operations in vehicles used for the carriage of persons.

Features

- Ergonomical design, conspicuous outward appearance
- PAD10, PAD30, PAD40: aluminium die cast handle, rugged, durable
- Finish: semi-gloss varnish, resistant to acids and chemicals
- All handles can be lead sealed
- All switching elements featuring positive opening operation, gold or silver contacts
- PAD20*, PAD40: optional manual reset (lock and key)
- Special designs upon request

Applications

With their conspicuous, rugged design, these Passenger alarm devices are not only suitable for rail vehicles running in commuter and main-line rail service, but also for industrial applications like escalators and passenger conveyors.

PAD10: Designed for lintel mounting, e.g. under the lintel of a carriage door and in passenger spaces

PAD20*: Designed for wall mounting, e.g. in vestibules, passenger spaces and train manager’s compartments

PAD30: Designed for wall mounting, e.g. in vestibules, passenger spaces and train manager’s compartments

PAD40: Designed for wall mounting, e.g. in vestibules, passenger spaces and train manager’s compartments

Features  Applications

PAD series

Ergonomical design, conspicuous outward appearance
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Finish: semi-gloss varnish, resistant to acids and chemicals
All handles can be lead sealed
All switching elements featuring positive opening operation, gold or silver contacts
PAD20*, PAD40: optional manual reset (lock and key)
Special designs upon request

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PAD30: Designed for wall mounting, e.g. in vestibules, passenger spaces and train manager’s compartments

PAD40: Designed for wall mounting, e.g. in vestibules, passenger spaces and train manager’s compartments

PAD20: Only for spare parts requirements / no new projects

Standards

- DIN EN 61373:2011-04 Railway applications – Rolling stock equipment – Shock and vibration tests
### Specifications

#### Series Standard PAD10 PAD20** PAD30 PAD40

<table>
<thead>
<tr>
<th>Mechanical data</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Design life</td>
<td>&gt; 1,000 operations</td>
<td>&gt; 1,000 operations</td>
<td>&gt; 1,000 operations</td>
<td>&gt; 1,000 operations</td>
</tr>
<tr>
<td>Actuation stroke</td>
<td>approx. 15 mm downwards</td>
<td>approx. 35° clockwise</td>
<td>approx. 15 mm downwards</td>
<td>16 mm downwards</td>
</tr>
<tr>
<td>Actuation force (not lead sealed)</td>
<td>DIN EN 16334</td>
<td>65 ... 120 N</td>
<td>60 ... 90 N**</td>
<td>65 ... 120 N</td>
</tr>
<tr>
<td>Lead sealed</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Reset element</td>
<td>DB square key</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Triangular wrench key USA</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Triangular wrench key 6.5 CNOMO Type 1</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Spring reset</td>
<td>• (optional)</td>
<td>• (optional)</td>
<td>• (optional)</td>
<td>• (optional)</td>
</tr>
<tr>
<td>Remote reset, optional</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>electromagnetic</td>
</tr>
<tr>
<td>Momentary switch</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

#### Switching elements

<table>
<thead>
<tr>
<th>Snap-action switch: Number of max., type</th>
<th>Contact material: Silver / Gold</th>
<th>Other data</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x S870</td>
<td>/ /</td>
<td>Material:</td>
</tr>
<tr>
<td>2x S870</td>
<td>/ /</td>
<td>Housing:</td>
</tr>
<tr>
<td>2x S870</td>
<td>/ /</td>
<td>Handle:</td>
</tr>
<tr>
<td>3x S870</td>
<td>/ /</td>
<td>IP rating:</td>
</tr>
<tr>
<td>2x S826</td>
<td>/ /</td>
<td>Front panel, not operated:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EN 60529</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rear panel:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP00</td>
</tr>
<tr>
<td>Shock, Vibration</td>
<td>Category 1, Class B</td>
<td>Shock, Vibration DIN EN 61373:</td>
</tr>
<tr>
<td></td>
<td>Category 1, Class B</td>
<td>EN 61373</td>
</tr>
<tr>
<td></td>
<td>Category 1, Class B</td>
<td>IP42</td>
</tr>
<tr>
<td></td>
<td>Category 1, Class B</td>
<td>IP42</td>
</tr>
<tr>
<td></td>
<td>Category 1, Class B</td>
<td>IP00</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Lintel mount: Handle pointing downwards</td>
<td>Mounting orientation:</td>
</tr>
<tr>
<td></td>
<td>Wall mount: Handle pointing to the right</td>
<td>Lintel mount:</td>
</tr>
<tr>
<td></td>
<td>Wall mount: Handle pointing downwards</td>
<td>Wall mount:</td>
</tr>
<tr>
<td></td>
<td>Wall mount: Handle pointing downwards</td>
<td>Wall mount:</td>
</tr>
</tbody>
</table>

#### Other data

<table>
<thead>
<tr>
<th>Ambient conditions</th>
<th>Ambient temperature range T_a</th>
<th>Storage temperature range T_L</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>–40° C ... +70° C</td>
<td>–40° C ... +70° C</td>
</tr>
</tbody>
</table>

| Weight | 2 kg | 0.3 kg | 1.4 kg | 0.65 kg |

** PAD20: Only for spare parts requirements / no new projects  
** Force measured at lever end, not conform to DIN EN 16334

### Switching elements with positive opening operation

Schaltbau snap-action switches with positive opening operation are designed for applications requiring the highest standards of safety and reliability. The switches are capable of switching both load and control circuits with the highest accuracy and safety.

#### Snap-action switches

<table>
<thead>
<tr>
<th>S826</th>
<th>S870</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact configuration</td>
<td>Form Zb SPDT</td>
</tr>
<tr>
<td>Circuit diagram</td>
<td></td>
</tr>
<tr>
<td>Positive opening operation</td>
<td></td>
</tr>
<tr>
<td>Wiping contacts</td>
<td></td>
</tr>
<tr>
<td>Contact material</td>
<td>Silver (Ag90Ni10) Gold (AuNi3Ag26)</td>
</tr>
</tbody>
</table>

#### Electrical specifications

| Nominal voltage U_n | 150 V | 150 V |
| Rated insulation voltage U, | 250 V | 250 V |
| Conventional thermal current I_n*** at T_a = 85° C | 10 A | 3 A |
| Utilization category | AC-15 230 V / 1 A DC-13 110 V / 0.5 A | AC-15 230 V / 1.5 A DC-13 60 V / 0.5 A |
| IP rating (IEC 60529 IP code) Contacts Terminals | IP40 / IP00 | IP40 / IP67 IP00 / IP67 |

*** Data for gold contacts on request

Subject to change
**PAD10 Lintel mount passenger alarm devices**

The PAD10 is a lintel device designed for use e.g. under the lintel of a carriage door and in passenger spaces.

- Ergonomic lintel mount design
- Aluminium die cast handle, rugged, durable
- Finish: semi-gloss varnish, resistant to acids and chemicals
- Handle can be lead sealed
- Manual reset, optional
- 2 switching elements featuring positive opening operation and gold or silver contacts

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**Ordering code**

Example: **PAD10 M3 R1 S5 B0**

<table>
<thead>
<tr>
<th>Series</th>
<th>PAD10 Lintel mount passenger alarm devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>M3 Studs</td>
</tr>
</tbody>
</table>

**Reset elements**

- R1: Square key
- R2: Triangular wrench key, USA
- R3: Triangular wrench key 6.5, CNOMO Type 1

**Switching element**

- S5: 2x snap-action switch S870 gold contacts, flat tabs
- S7: 2x snap-action switch S870 silver contacts, flat tabs

**Special design**

- Manual reset: SR

**Lettering / Colour**

- No lettering / handle red, RAL3020 (standard) B0

**Note:**

This catalogue shows only stock items. For some variants minimum quantities apply. Please ask for the conditions.

**Special variant:**

If you need a special variant of the device, please do not hesitate to contact us. Maybe the type of passenger alarm devices you are looking for is among our many special designs. If not, we can also supply customized designs. In this case minimum quantities apply.

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**Specifications**

**Dimension diagram**

**Circuit diagram**

- **Identification**
  - WAGO terminal strip, 8 pole
    - A1: Switch  1
    - A2: Switch  2
    - A3: Switch  4
    - A4: Switch  1
    - A5: Switch  2
    - A6: Switch  4
    - A7: ---
    - Alt: PE

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Dimensions in mm / Subject to change
The PAD20 is a wall mount device especially designed for use in light rail vehicles (LRVs).

- Wall mount device
- For use in light rail vehicles, not conform to DIN EN 16334
- Front plate aluminium, handle polyamide
- Finish: semi-gloss varnish, resistant to acids and chemicals
- Handle can be lead sealed
- Manual reset
- 2 switching elements featuring positive opening operation and gold or silver contacts

**Ordering code**

Example: **PAD20 M2 R1 S5 B0**

- **Series**
  - PAD20: Wall mount emergency bray handle
- **Mounting**
  - M2: Studs
- **Reset elements**
  - R1: Square key
  - R2: Triangular wrench key, USA
  - R3: Triangular wrench key 6.5, CNOMO Type 1
- **Switching elements**
  - S5: 2x snap-action switch S870, gold contacts, flat tabs
  - S7: 2x snap-action switch S870, silver contacts, flat tabs

**Note:**
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**Special variant:**
If you need a special variant of the device, please do not hesitate to contact us. Maybe the type of passenger alarm devices you are looking for is among our many special designs. If not, we can also supply customized designs. In this case minimum quantities apply.

**Specifications**

- **Dimension diagram**
- **Circuit diagram**
**PAD30** Wall mount passenger alarm devices

The PAD30 is a wall mount device designed for use e.g. in vestibules, passenger spaces and train manager’s compartments.

- Ergonomic wall mount design
- Aluminium die cast handle, rugged, durable
- Finish: semi-gloss varnish, resistant to acids and chemicals
- Handle can be lead sealed
- Manual reset, optional
- 2 switching elements featuring positive opening operation and gold or silver contacts

### Ordering code

**Series**
- PAD30 Wall mount passenger alarm devices

**Mounting**
- M3 Studs

**Reset elements**
- R1 Square key
- R2 Triangular wrench key, USA
- R3 Triangular wrench key 6.5, CNOMO Type 1

**Switching elements**
- S5 2x snap-action switch S870 gold contacts, flat tabs
- S7 2x snap-action switch S870 silver contacts, flat tabs

**Special design**
- None
- Manual reset SR

**Colour handle / housing**
- Handle red, RAL3020 / housing light brown
- Handle red, RAL3020 / housing grey aluminium RAL9007
- Handle red, RAL3020 / housing cool white NCS S1005-R80B
- Handle red, RAL3020 / housing light grey NCS S1000-N

**Example:** PAD30 M3 R1 S5 B0

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**Special variant:**

If you need a special variant of the device, please do not hesitate to contact us. Maybe the type of passenger alarm devices you are looking for is among our many special designs. If not, we can also supply customized designs. In this case minimum quantities apply.

### Specifications

- **Dimension diagram**
- **Circuit diagram**
- **Identification**
  - WAGO terminal strip, 8 pole
  - A1: Switch 1
  - A2: Switch 2
  - A3: Switch 3
  - A4: Switch 4
  - A5: Switch 1
  - A6: Switch 2
  - A7: PE

%Dimensions in mm / Subject to change%
**PAD40 Wall mount passenger alarm devices**

The PAD40 is a wall mount device designed for use e.g. in vestibules, passenger spaces and train manager’s compartments.

- Rugged wall mount device, ergonomic design, housing made of aluminium die cast, device can be sealed with a lead tab
- Supplied with or without lettering
- Available as rear-mounted versions without visible fasteners or front-mounted versions with 4 visible M5 screws
- Manual reset, optional
- Remote reset for driverless or automatic train operation: remote reset of pulled handle, optional LED status display (green/red)
- Fitted with 3 switching elements max. (S826 or S870) with gold or silver contacts

**Ordering code**

<table>
<thead>
<tr>
<th>Series</th>
<th>Wall mount passenger alarm devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>Rear mounting</td>
</tr>
<tr>
<td>M2</td>
<td>Front mounting</td>
</tr>
<tr>
<td>Reset elements</td>
<td></td>
</tr>
<tr>
<td>R0</td>
<td>Momentary version, no reset element</td>
</tr>
<tr>
<td>R1</td>
<td>Square key</td>
</tr>
<tr>
<td>R2</td>
<td>Triangular wrench key, USA</td>
</tr>
<tr>
<td>R3</td>
<td>Triangular wrench key 6.5, CNOMO Type 1</td>
</tr>
<tr>
<td>Switching elements (snap switches)</td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td>2x S826: gold contacts, M3 screws with spring washer</td>
</tr>
<tr>
<td>S2</td>
<td>2x S826: silver contacts, M3 screws with spring washer</td>
</tr>
<tr>
<td>S3</td>
<td>2x S826: gold contacts, M3 screws with saddle clamp</td>
</tr>
<tr>
<td>S5</td>
<td>2x S870: gold contacts, flat tabs 6.3 x 0.8</td>
</tr>
<tr>
<td>S7</td>
<td>2x S870: silver contacts, flat tabs 6.3 x 0.8</td>
</tr>
<tr>
<td>S8</td>
<td>3x S870: silver contacts, flat tabs 6.3 x 0.8</td>
</tr>
<tr>
<td>S9</td>
<td>3x S870: gold contacts, flat tabs 6.3 x 0.8</td>
</tr>
</tbody>
</table>

**Specifications**

- **Dimension diagram**

  - Stroke: 40 approx. 28
  - RAL.3020: 100 80
  - Flat tab: 6.3 x 0.8

- **Circuit diagram**

  - Switch 1
  - Switch 2
  - Earthing terminal M4
  - Terminal identification
  - Outline rear view

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**Lettering / Colour**

<table>
<thead>
<tr>
<th>Lettering / Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>No lettering / handle red, RAL3020 (standard)</td>
</tr>
<tr>
<td>German / handle red, RAL3020</td>
</tr>
<tr>
<td>Turkish / handle red, RAL3020</td>
</tr>
<tr>
<td>Hungarian / handle red, RAL3020</td>
</tr>
<tr>
<td>Polish / handle red, RAL3020</td>
</tr>
</tbody>
</table>

**Ordering code example:**

*PAD40 M1 R1 S5 B0*
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
- Snap-action switch made of robust polyetherimide (PEI)
- Snap-action switch with two galvanically isolated contact bridges
- 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

The production facilities of Schaltbau GmbH have been IRIS certified since 2008. Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.
Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.