

# UB 003 relay - 3 Level load shedding

## Datasheet



### Description

The voltage monitoring relay UB 003 opens auxiliary loads circuits when battery voltage becomes too low and puts them back in service when battery voltage recovers. A time delay of 20 seconds engages before opening a load circuit and a time delay of 2 seconds before putting back in service a load.

The plug-in design offers secure locking feature for maximum ease of maintenance (no wires need to be disconnected or other hardware removed for relay inspection or replacement). The resistance to impact and vibration is conform to standards in force for Railway Transported Equipment.

Positive mechanical keying of relay to socket is built into relay and socket during manufacture and terminal identifications are clearly marked on identification plate that is permanently attached to the relay..

The UB 003 relay is pluggable in the following sockets: EA 102 B, EA 102 BF, EA 103 BF, EA 104 B, EA 104 BF, EA 105 BF, EA 112 BF.

### Application

The UB 003 relay is designed for voltage level sensing and used for example to monitor the battery load shedding.

#### Features

- Load shedding relay – 3 voltage levels
- 3 N/O solid state contacts
- Plug-in design with secure locking feature for maximum ease of maintenance
- -40 °C...+85 °C operating temperature

#### Benefits

- Proven reliable
- Long life cycle
- Easy to maintain and replace
- Low life cycle cost
- No maintenance

#### Railway compliancy

- NF F 62-002 Rolling stock - Instantaneous relays contacts and sockets
- NF F 16-101/102 Fire behaviour - Railway rolling stock
- EN 50155 Railway application - Electronic equipment used on rolling stock
- IEC 61373 Railway application - shock and vibration tests

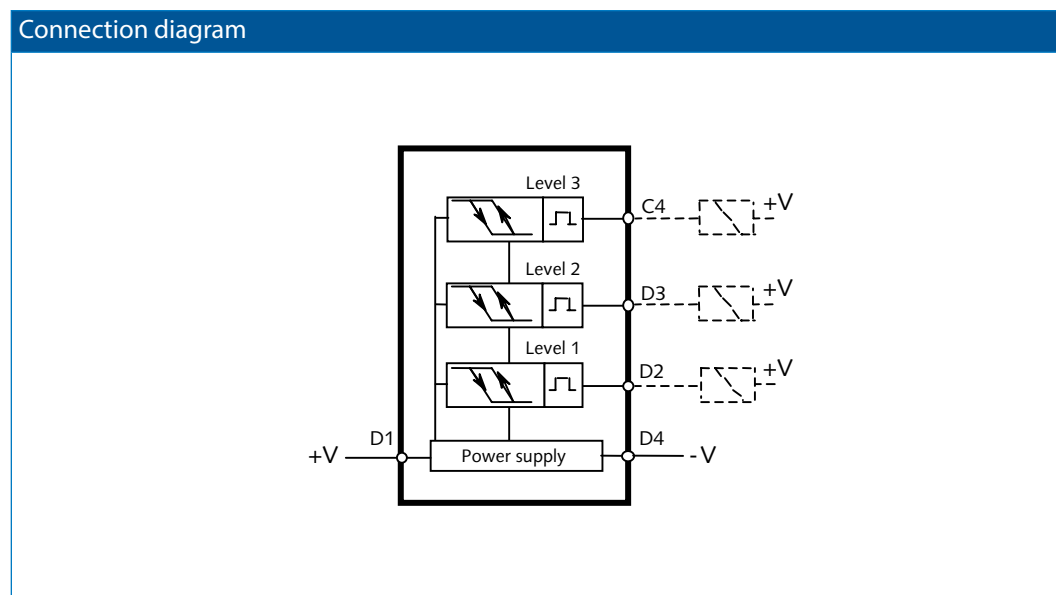
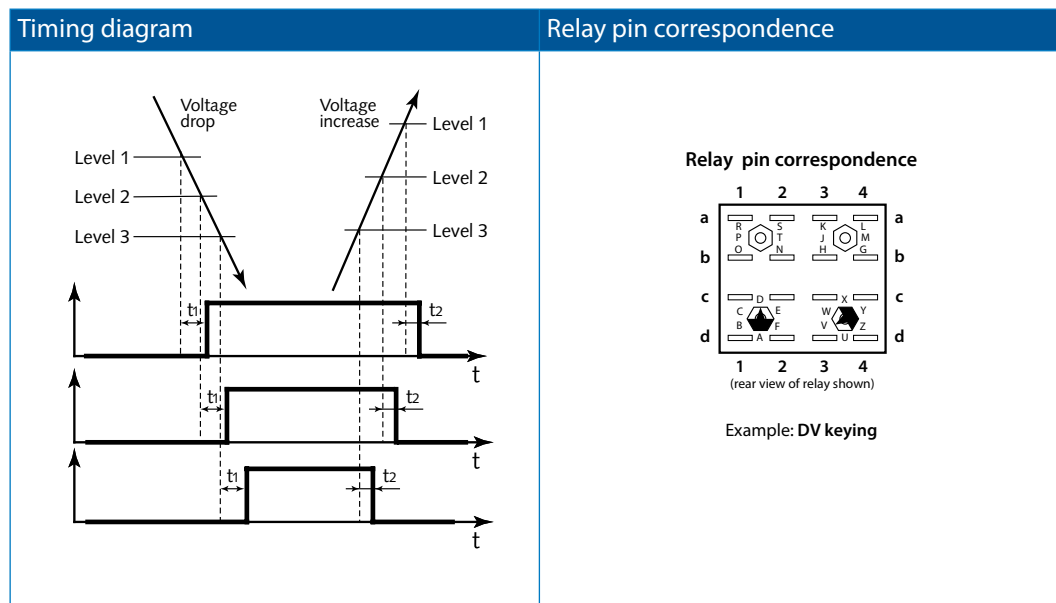


# UB 003 relay

## Technical specifications



### Functional and connection diagrams



# UB 003 relay

## Technical specifications

### Input data

Keying	U <sub>nom</sub> (VDC)	U <sub>operating</sub> (VDC)	Level 1 (drop/increase) VDC	Level 2 (drop/increase) VDC	Level 3 (drop/increase) VDC
TBD <sup>(1)</sup>	24	15 / 30	23 / 25	22 / 25	20 / 22
TBD <sup>(1)</sup>	36	25 / 48	TBD <sup>(1)</sup>	TBD <sup>(1)</sup>	TBD <sup>(1)</sup>
TBD <sup>(1)</sup>	48	30 / 64	TBD <sup>(1)</sup>	TBD <sup>(1)</sup>	TBD <sup>(1)</sup>
DV	72	46 / 96	65 / 70	63 / 68	61 / 66
TBD <sup>(1)</sup>	110	70 / 140	87 / 95	85 / 95	82 / 92

(1) to be defined

### Electrical characteristics

Operating voltage	24 VDC...110 VDC
Operating current	< 10 mA
Output configuration	3 N/O solid state contacts
Maximum load current	0.25 A
Contact life	72 VDC, 0.25 A, L/R = 0 mA      10 <sup>6</sup> operations 72 VDC, 0.25 A, L/R = 30 ms      10 <sup>6</sup> operations
Dielectric strength	1500 VAC, 1 min

### Time delay characteristics

Time delay on voltage increase	0...20 s (t1) to be defined
Time delay on voltage drop	0...20 s (t2) to be defined

### Accuracy repeatability

Voltage level tolerance	± 1 V
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# UB 003 relay

## Technical specifications

### Mechanical and environmental specifications

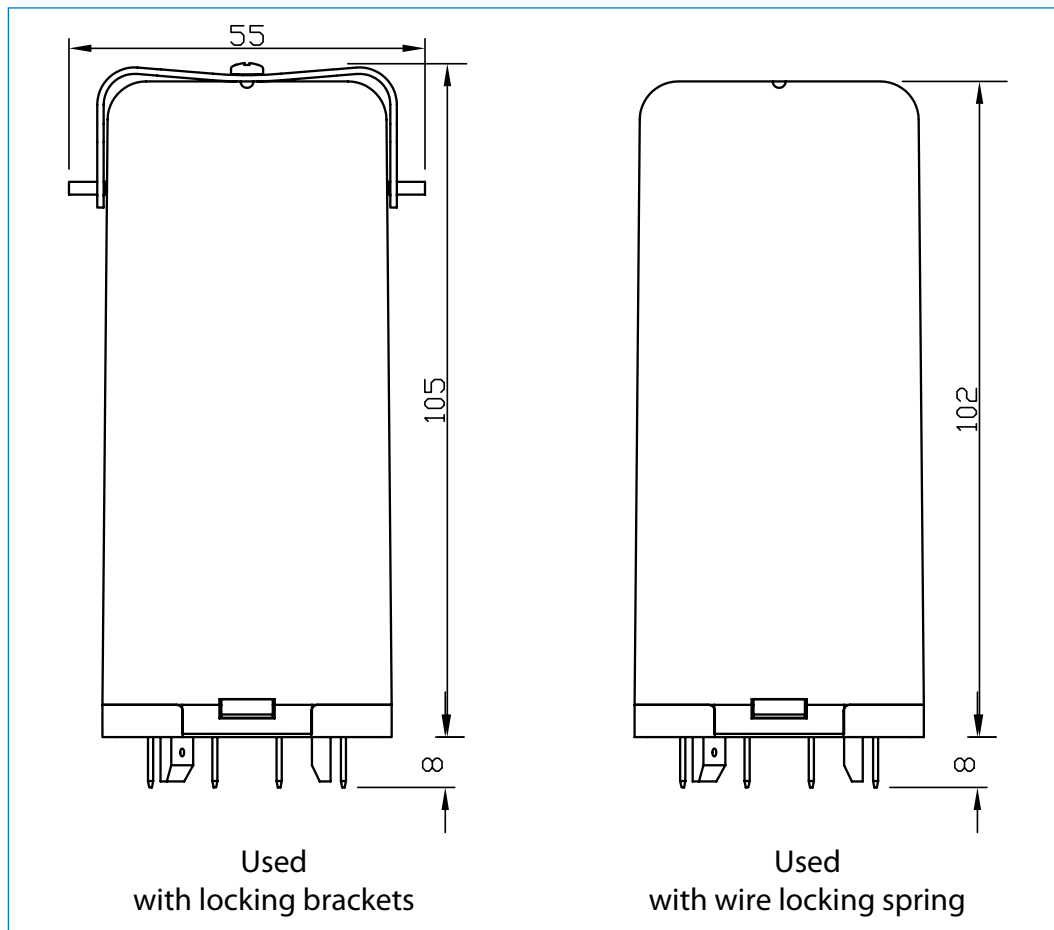
Operating temperature	-40 °C...+85 °C, IP50 (relay on socket)
Vibrations 3 axis	2 g / 10...150 Hz
Shocks	30 g / 11 ms
Operating position	Any attitude
Environment	NF F 20-600
Weight	150 g
Material	Polycarbonat (cover) / Polyester Melamine (base)
Fire and smoke	NF F 16-101/102



# UB 003 relay

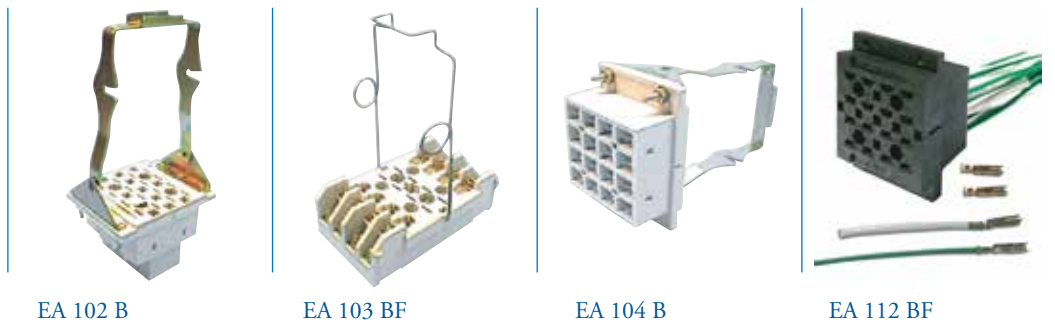
## Technical specifications

### Dimensions (mm)



# UB 003 relay

## Mounting possibilities / sockets



### Panel/flush mounting

EA 102 B	Locking bracket (905843), rear connection, double Faston 5 mm
EA 102 BF	Wire locking spring (926853), rear connection, single Faston 5 mm
EA 104 B	Locking bracket (905843), rear connection, single Faston 5 x 0.8 mm
EA 104 BF	Wire locking spring (926853), rear connection, single Faston 5 x 0.8mm
EA 112 BF	Wire locking spring (926853), rear connection, crimp contact

### Surface/wall mounting

EA 103 BF*	Wire locking spring (926853), front connection, M3 screw 6.5 mm ring terminals (2,5 mm <sup>2</sup> )
EA 105 BF*	Wire locking spring (926853), front connection, single Faston 5 mm

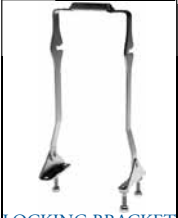

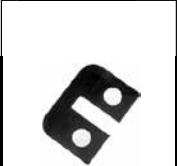

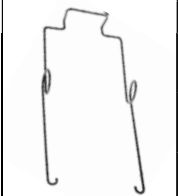



\* Mounting possibility on 35 mm rail EN 50022 by adding suffix D to the part number (see socket datasheet)

Note: Keying of relay to socket can be specified by adding the keying letters in the part number.  
See all details in the related socket datasheet.

# UB 003 relay

## Spare parts

### Spare parts - order part numbers

<p>(1)</p>  <p>LOCKING BRACKET</p> <p>905846</p>	<p>(1)</p>  <p>SCREW FOR BRACKET</p> <p>C927210</p>	<p>(1)</p>  <p>METAL STRAP (2)</p> <p>P928060</p>	<p>(1)</p>  <p>METAL STRAP (4)</p> <p>P928061</p>
<p>(1)</p>  <p>WIRE LOCKING SPRING</p> <p>431906654</p>	<p>(1)</p>  <p>ROUND PLASTIC PLUGS</p> <p>414928005</p>	<p>(2)</p>  <p>HEX. PLASTIC KEYS</p> <p>414905678</p>	<p>(3)</p>  <p>LOCK PINS ASSY 2 SCREWS</p> <p>906364 212903020</p>

(1) Parts only for socket  
 (2) Parts for relay and socket  
 (3) Parts only for relay



# UB 003 relay

## Instructions

### Installation

Install socket and connect wiring correctly according identification to terminals. Plug relay into socket. Reverse installation into socket not possible due to mechanical blocking by snap-lock.

Don't reverse polarity of coil connection. Relays can be mounted (tightly) next to each other and in any attitude.

**Warning!** Never use silicon near by relays

### Operation

Before operating always apply voltage to coil to check correct operation.

Long term storage may corrode the silver on the relay pins. Just by plugging the relay into the socket, the female bifurcated receivers will automatically clean the corrosion on the pins and guarantee a good connection.

Do not use the relay in places with flammable gas as the arc generated from switching could ignite gasses.

### Maintenance

Correct operation of relay can easily be checked as transparent cover gives good visibility on the moving contacts. When the relay doesn't seem to operate correct, please check presence of coil voltage. Use a multimeter. If LED is used, coil presence should be indicated. If coil voltage is present, but the relay doesn't work, a short circuit of suppression diode is possible (The coil connection was reversed). If relay doesn't work after inspection, please replace relay unit by a similar model. Send defective relay back to manufacturer. Normal wear and tear excluded.





# UB 003 relay

## Ordering scheme

Configuration:



1. Relay model      2. No. of contacts      3. Nominal voltage      4. Keying      5. Cover type      6. Language (test report)

This example represents a **UB 003 72 DV F 1**.

**Description:** UB 003 relay,  $U_{nom}$ : 72 VDC, keying DV, relay cover for wire locking spring, test report in English

### 1. Relay model

**UB**

### 2. Number of contacts

**003**      3 contacts (3 levels)

### 3 & 4. Nominal voltage and keying

<b>24 XX</b>	24 VDC
<b>36 XX</b>	36 VDC
<b>48 XX</b>	48 VDC
<b>72 DV</b>	72 VDC
<b>110 XX</b>	110 VDC

XX = to be defined

### 5. Relay cover type

–	Relay cover with lock pins
<b>F</b>	Relay cover for wire locking spring

### 6. Language on test report

–	French
<b>1</b>	English
<b>2</b>	Spanish





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