

TTBCA 200 relay - Delay-on pull-in, Datasheet **instantaneous**



Description

This time delay relay has 2 change-over simple break contacts with 1 instantaneous contacts and 1 delayed contacts on pull-in fully programmable (with dipswitch) from 0.5 seconds to 4 seconds. The access to dip switch is available by removing time delay cover. This feature prohibits frivolous field time delay setting.

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 TTBCA 200 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 TTBCA 200 timing relay is designed for applications with a programmable timing function used for example in HVAC and lighting.

Features

- Delay-on pull-in and instantaneous functions
- Delay range from 0.5 s up to 4 s (up to 60 s on request)
- Time delay fully programmable by dip switch
- Status LED indicator
- Plug-in design with secure locking feature for maximum ease of maintenance
- 2 simple break C/O contacts (form C), 6 A with 1 instantaneous C/O and 1 C/O delayed contacts on pull-in
- Weld no transfer contacts
- Contact life (mechanical) of 10 million cycles

Benefits

- Proven reliable
- Long life cycle
- Accurate timing selection finger safe
- 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
- EN50155 Railway application - electronic equipment used on rolling stock
- IEC 61373 Railway application - shock



TTBCA 200 relay

Technical specifications



Functional and connection diagrams

Timing diagram	Relay pin correspondence
	<p>Relay pin correspondence</p> <p>Example: KP keying</p>

Connection diagram	Dip switch setting										
	<p>Dip switch setting</p> <ul style="list-style-type: none"> - Set DS 1 to in ON or OFF position - The time setting can only be the value of one dipswitch ON. Timing cannot be the sum of each dipswitch ON <table border="1"> <thead> <tr> <th>DS no</th> <th>Delay time</th> </tr> </thead> <tbody> <tr> <td>DS 1</td> <td>OFF 0.5 s</td> </tr> <tr> <td>DS 2</td> <td>OFF 1 s</td> </tr> <tr> <td>DS 3</td> <td>OFF 2 s</td> </tr> <tr> <td>DS 4</td> <td>ON 4 s</td> </tr> </tbody> </table> <p>Example: The sample dip switch above is set to 4 s</p>	DS no	Delay time	DS 1	OFF 0.5 s	DS 2	OFF 1 s	DS 3	OFF 2 s	DS 4	ON 4 s
DS no	Delay time										
DS 1	OFF 0.5 s										
DS 2	OFF 1 s										
DS 3	OFF 2 s										
DS 4	ON 4 s										



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Time characteristics

Time function	Delay-on pull-in and instantaneous
Total time delay range	0.5 s...4 s
Time delay adjustment	Fixed after setting the dip switch (access available by removing relay cover)
Adjustment / repeatability accuracy	< 2% (td > 5 s), < 10% (td = 0.25 s...5 s), 0.1% (td = time delay)

Coil data

Keying	U _{nom}	U _{operating}	P _{nom}	R coil (Ω) ⁽¹⁾	L/R ⁽²⁾
AO	24 VDC	16 / 33 VDC	2 W	1555	6 ms
TBD ⁽³⁾	36 VDC	25 / 45 VDC	2 W	3300	6 ms
TBD ⁽³⁾	48 VDC	33 / 60 VDC	2 W	6100	6 ms
AG	72 VDC	48 / 90 VDC	2 W	12400	6 ms
TBD ⁽³⁾	96 VDC	65 / 120 VDC	2 W	22200	6 ms
TBD ⁽³⁾	110 VDC	75 / 138 VDC	2 W	22200	6 ms

(1) Coil resistance tol.: ± 8% at 20 °C

(2) Valid for closed relay

(3) To be defined

Contact data - standard version (Ag contacts)

Nominal current	6 A resistive		
Nominal breaking capacity and life	1 A at 72 VDC	L/R : 0 ms	Electrical life: 1 x 10 ⁶ op.
	0.550 A at 72 VDC	L/R: 15 ms	Electrical life: 0.5 x 10 ⁶ op.
	Lamp filament circuit: 120 W at 72 VDC		Electrical life: 0.2 x 10 ⁶ op.
Number of contacts	2 simple break contacts (form C) (1 instantaneous + 1 time delay)		
Contact material	Ag + 0.2 μm AU		
Contact resistance	15 mΩ max		



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Electrical characteristics

Dielectric strength	2000 VAC, 1 min between contacts 2600 VAC, 1 min between contacts, coil and frame
Insulation resistance	≥ 1000 MΩ at 500 VDC

Mechanical & environmental characteristics

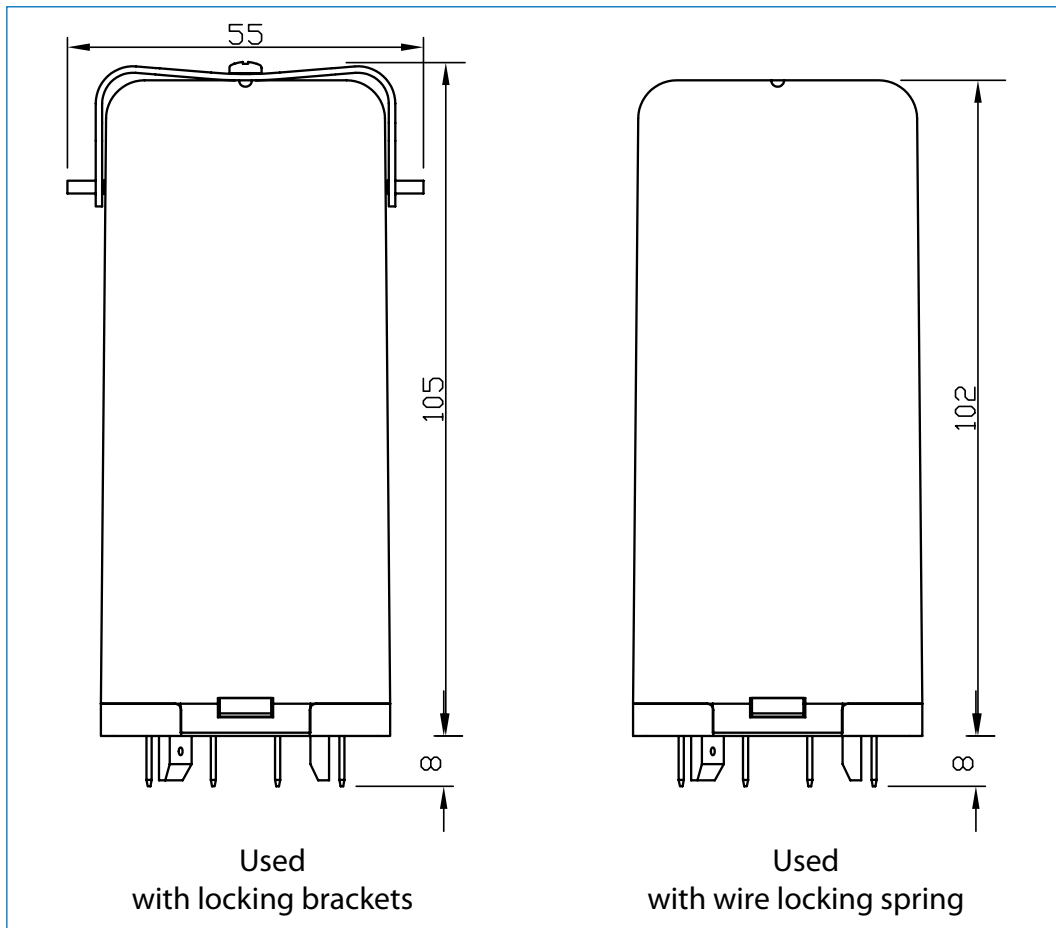
Vibration	NFF62 002 The tests are conducted in the X, Y , Z planes at frequency between 10 & 150 cycles (sinusoidal) at 2 g
Shock	NFF62 002 Tests are applied in both directions in the X, Y & Z planes. Then successive shocks are administered consisting of the positive component of sinusoidal with a value of 15 g, 11 ms Other vibration and shock tests can be performed on request
Mechanical life	10 x 10 ⁶ operations
Weight	200 g
Temperature	-40 °C...+85 °C
Humidity	93% RH, 40° C for 4 days
Salt mist	5% NaCl, 35° C for 4 days
Protection	IP40 (timing relay on socket)
Fire & smoke	Materials: Polycarbonate (cover) / polyester melamine (base) Note: These materials have been tested for fire propagation and smoke emission according standards NFF 16101, NFF 16102.



TTBCA 200 relay

Technical specifications

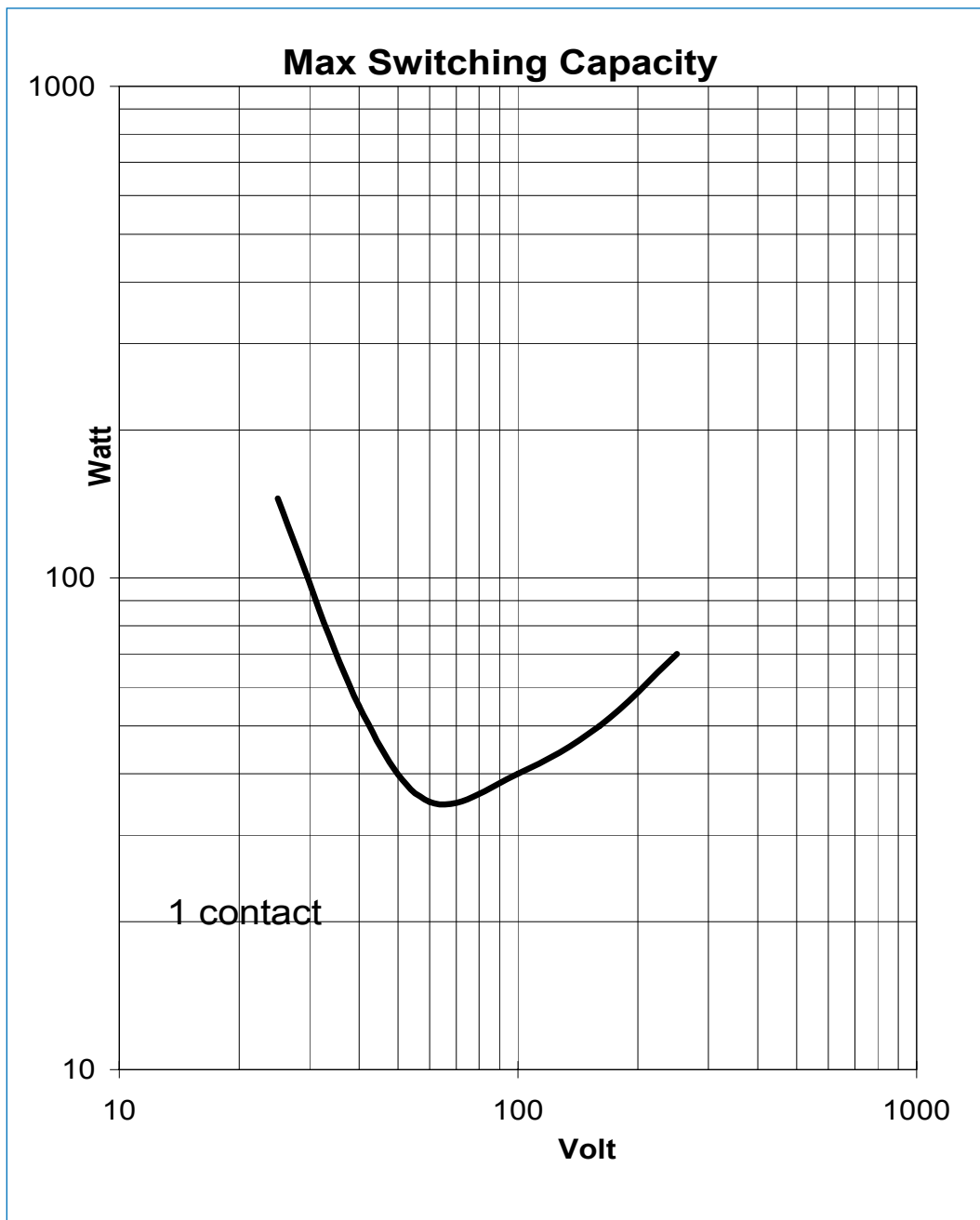
Dimensions (mm)



TTBCA 200 relay

Technical specifications

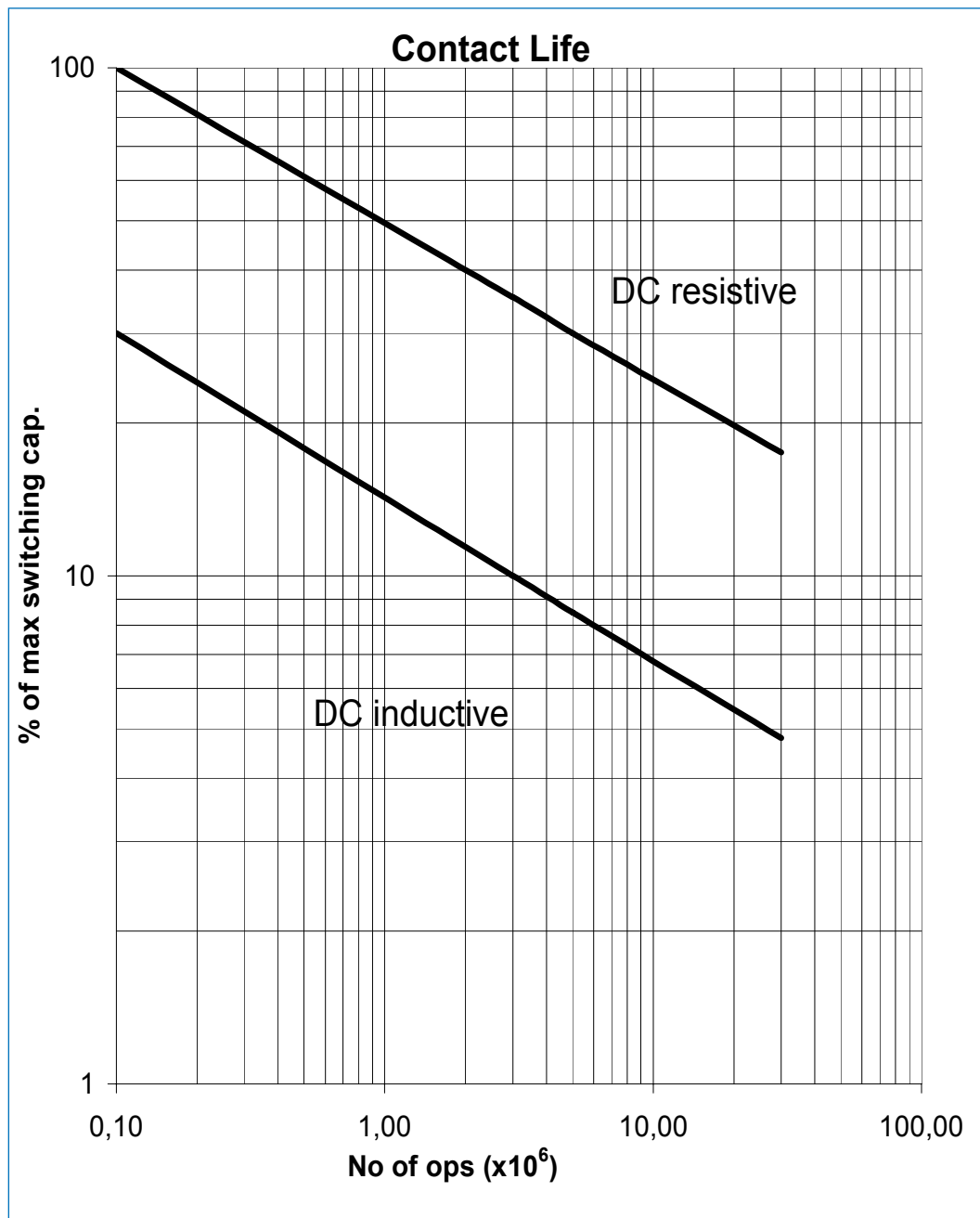
Dynamic relay selection curve No 1



TTBCA 200 relay

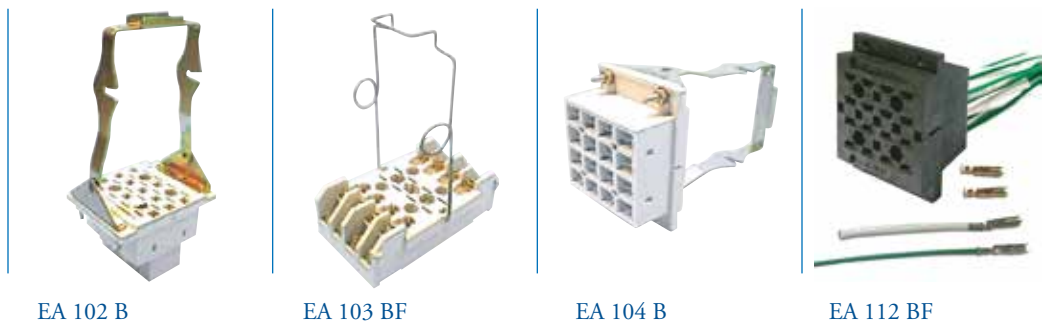
Technical specifications

Dynamic relay selection curve No 2



TTBCA 200 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 0.8 mm
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 ²)
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)





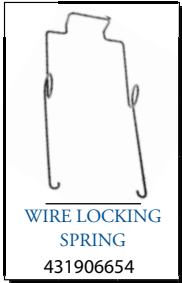


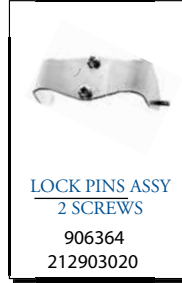
Note: Keying of relay to socket can be specified by adding the keying letters in the part number. See all details in the related socket datasheet.



TTBCA 200 relay

Spare parts

Spare parts - order part numbers

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

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



TTBCA 200 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.



TTBCA 200 relay

Ordering scheme

Configuration:

TTBCA 200	72	AG		F	1
1. Relay model	2. Nominal voltage	3. Keying	4. Weld no transfer	5. Cover type	6. Language (test report)

This example represents a **TTBCA 200 72 AG F 1**.

Description: TTBCA series relay, Unom: 72 VDC, Keying AG, relay cover for wire locking spring, test report in English

1. Relay model

TTBCA 200

2 & 3. Nominal voltage and keying

24 **AO** 24 VDC
36 **TBD** 36 VDC
48 **TBD** 48 VDC
72 **AG** 72 VDC
96 **TBD** 96 VDC
110 **TBD** 110 VDC
TBD: to be defined

4. Weld no transfer option

Weld no transfer available (standard)

5. Relay cover type

– Relay cover with lock pins
F Relay cover for wire locking spring

6. Language on test report

– French
1 English
2 Spanish





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