

1019 relay - Solid state flashing

Datasheet



Description

The 1019 is a solid state flashing relay to control filament light bulbs. The independent output channels configuration and flashing delay are factory set and depend on 1019 series.

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 conforming the 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 1019 solid state flashing relay is pluggable in the COR NJ socket.

Application

The 1019 solid state flashing relay is designed to control the train headlight warning mode.

Features

- Solid state outputs
- One or two independent output channels
- Flashing frequency varies according to series
- Plug-in design with secure locking feature for maximum ease of maintenance
- -40 °C...+70 °C operating temperature

Benefits

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

Railway compliancy

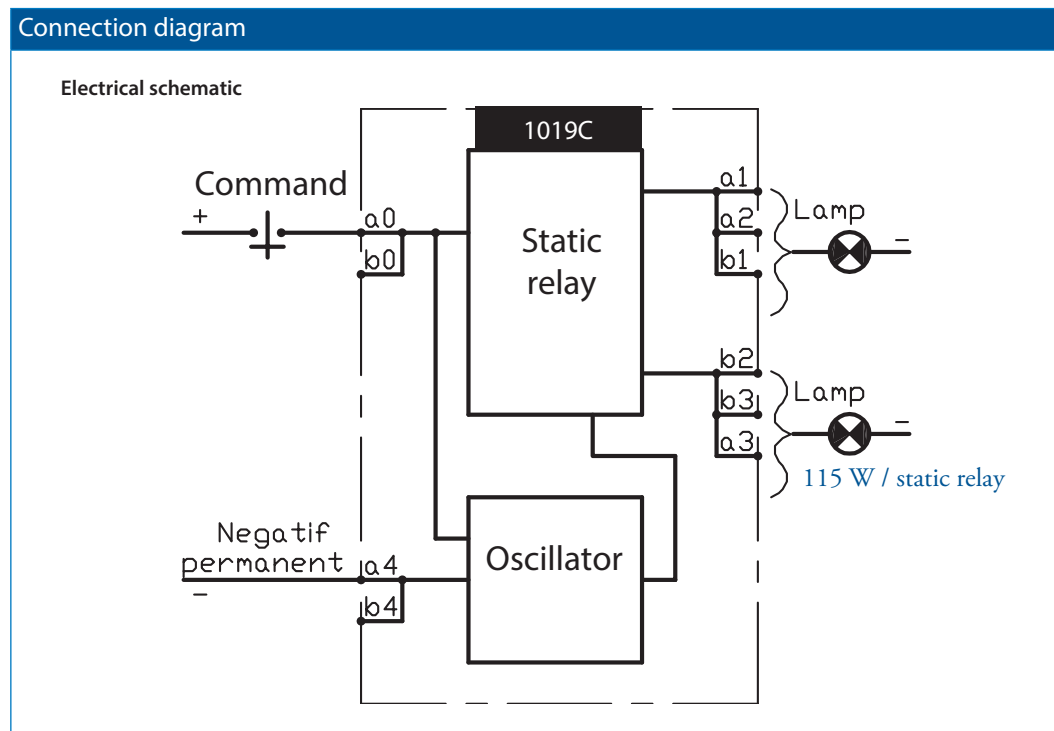
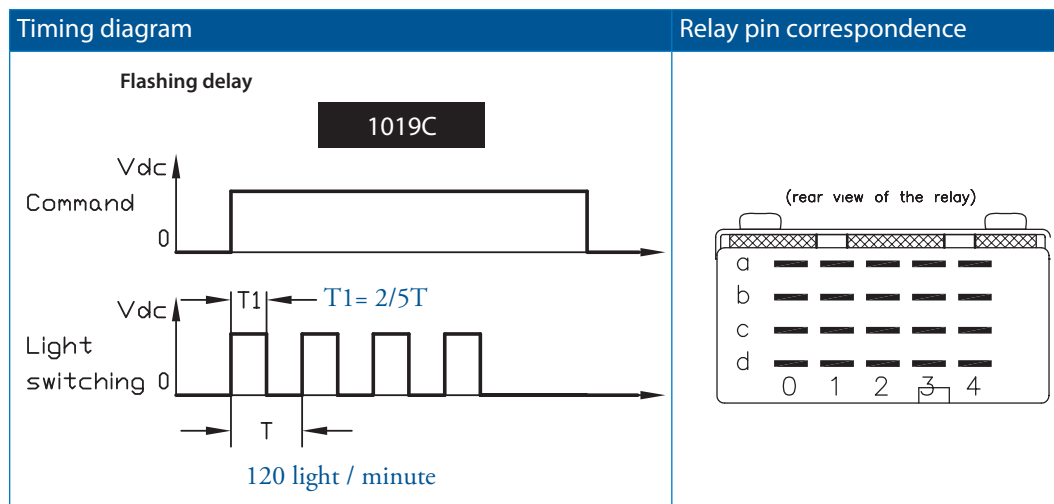
- NF F 62-002 Rolling stock - Instantaneous relays contacts and sockets
- NF F16-101/102 Fire behaviour - Railway rolling stock
- EN 50155 Railway application - Electronic equipment used on rolling stock
- IEC 61373 Railway application - Shock and vibration tests



1019 relay - C, 24 VDC

Technical specifications

Functional and connection diagrams



1019 relay - C, 24 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has one channel capable of flashing two light bulbs (55 W - 50 W) 24 VDC
- Operation position: may be mounted in any attitude
- Colour code: orange, white
- Relay socket keying: COR NJ 58

Electrical characteristics

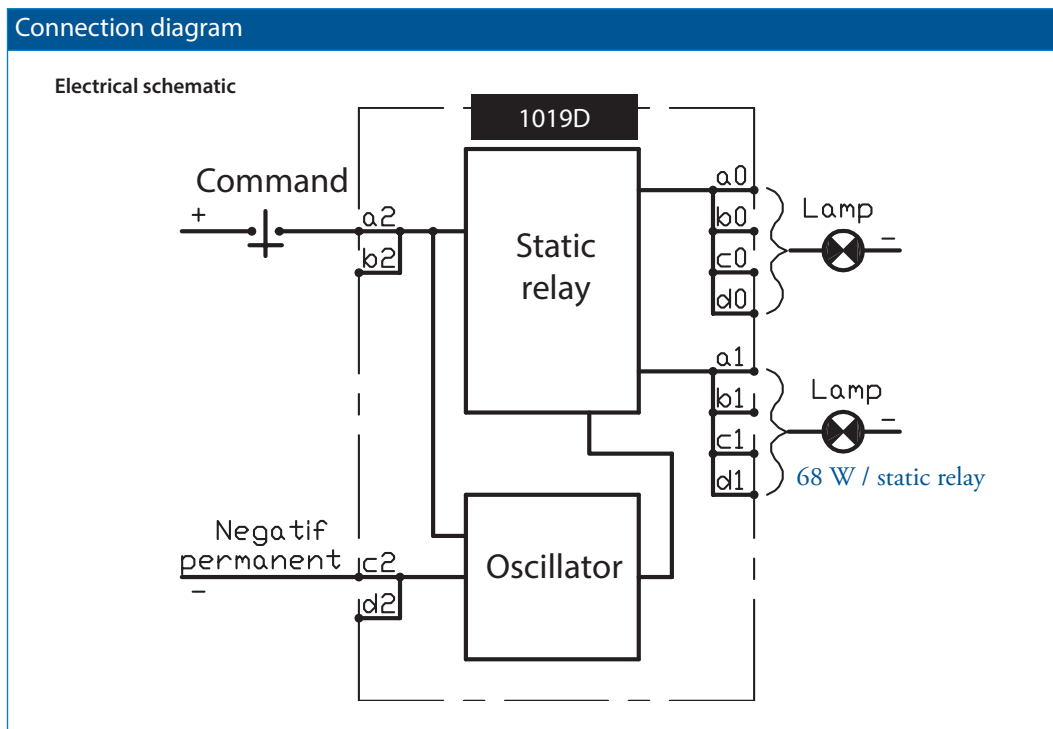
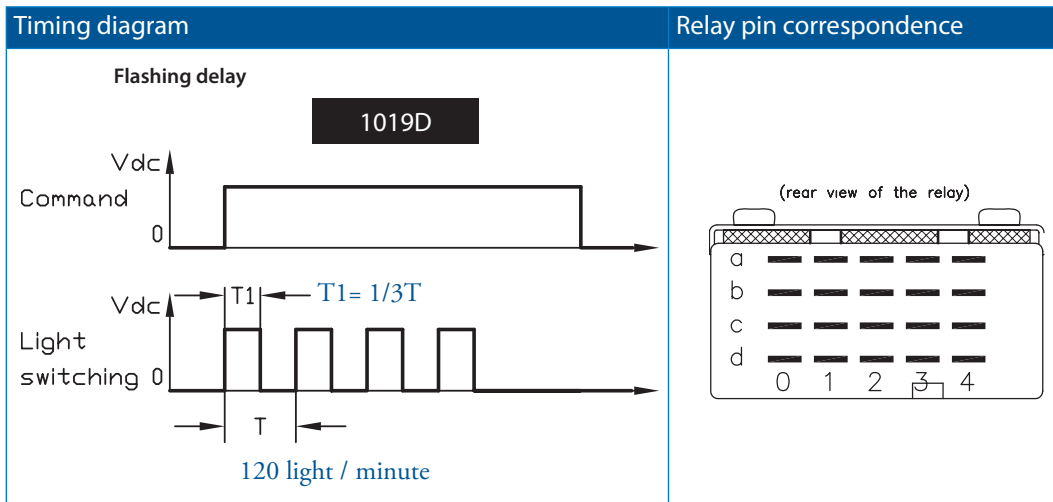
Operating voltage range	16 VDC...33 VDC, 24 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	2/5 of periodic value T
Variation limit at lamp switching on	T1 ± 16 %
Variation of flashing frequency	± 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	115 W
Breaking capacity	24 VDC - 115 W - Resistive load; 1 million ops. 24 VDC - 115 W - Inductive load: 30 ms; 1 million ops. 24 VDC - 115 W - Filament lamp; 1 million ops.



1019 relay - D, 72VDC

Technical specifications

Functional and connection diagrams



1019 relay - D, 72 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has one channel capable of flashing two light bulbs (55 W - 18 W) 85 VDC
- Operation position: may be mounted in any attitude
- Colour code: grey, orange
- Relay socket keying: COR NJ 34

Electrical characteristics

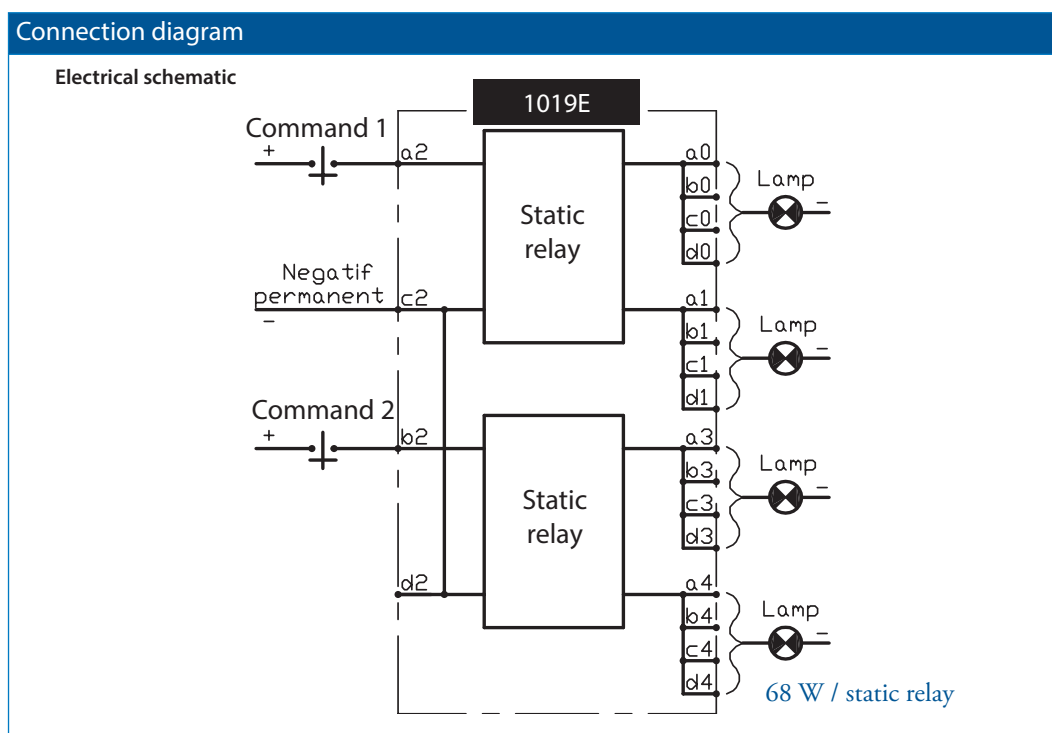
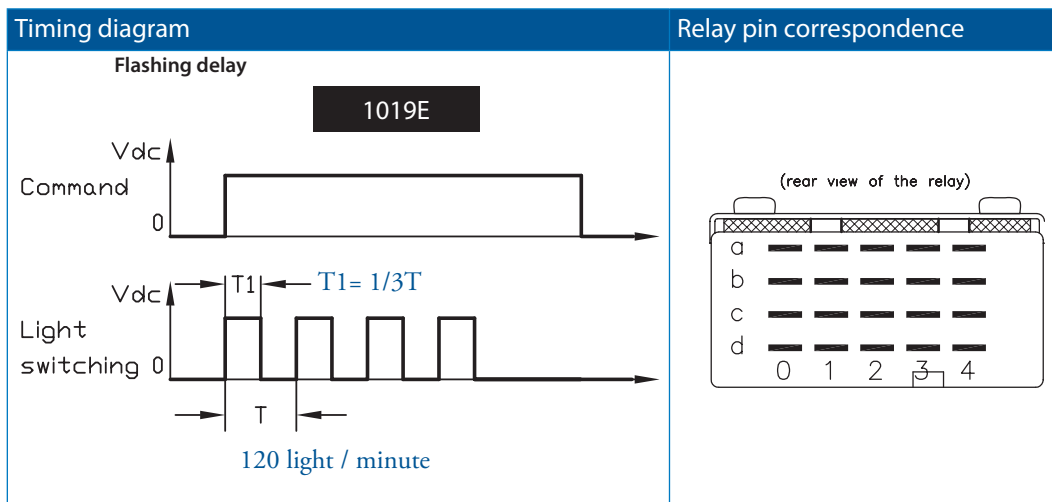
Operating voltage range	50 VDC...90 VDC, 72 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	1/3 of periodic value T
Variation limit at lamp switching on	$T1 \pm 16 \%$
Variation of flashing frequency	± 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	68 W
Breaking capacity	72 VDC - 68 W - Resistive load; 1 million ops. 72 VDC - 68 W - Inductive load: 30 ms; 1 million ops. 72 VDC - 68 W - Filament lamp; 1 million ops.



1019 relay - E, 72 VDC

Technical specifications

Functional and connection diagrams



1019 relay - E, 72 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing two light bulbs (50 W - 18 W) 85 VDC
- Operation position: may be mounted in any attitude
- Colour code: yellow ochre, red
- Relay socket keying: COR NJ 11A

Electrical characteristics

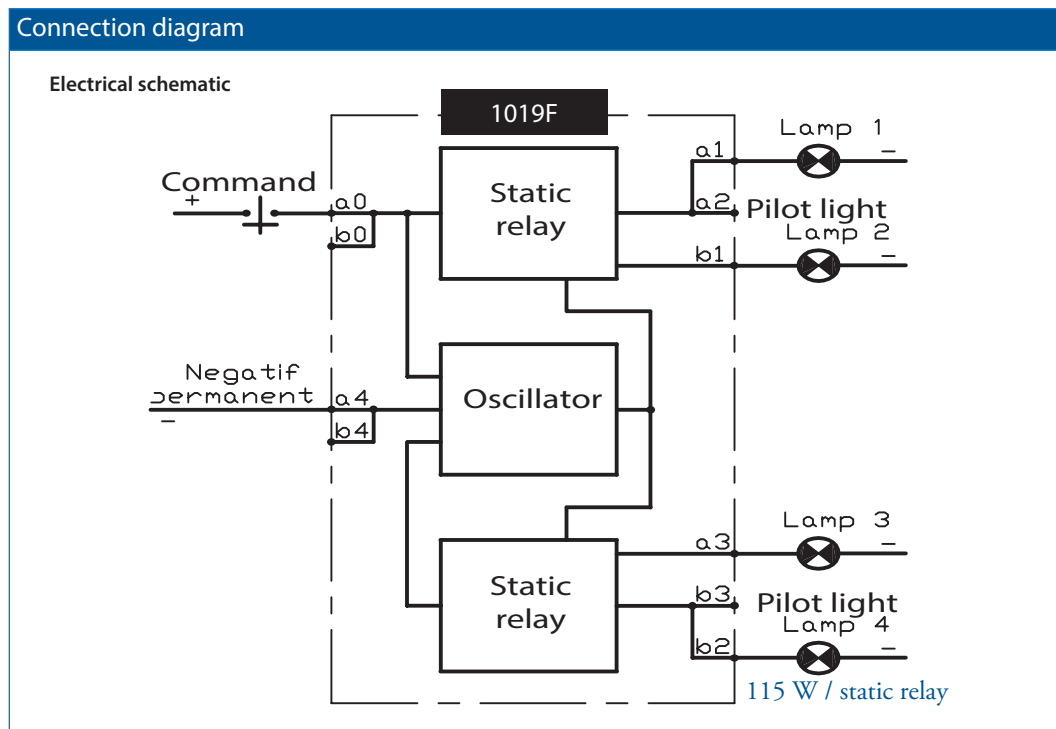
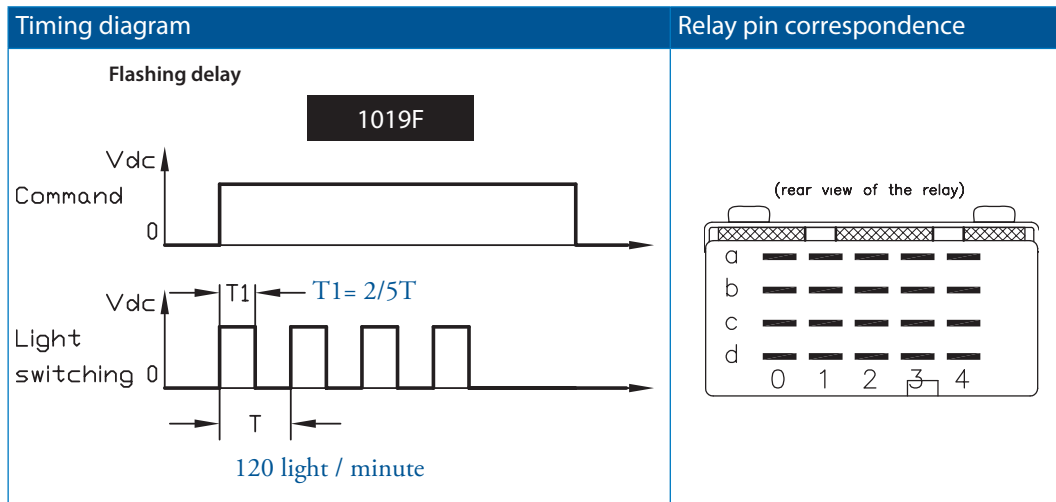
Operating voltage range	50 VDC...90 VDC, 72 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	1/3 of periodic value T
Variation limit at lamp switching on	T1 \pm 16 %
Variation of flashing frequency	\pm 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	68 W
Breaking capacity	72 VDC - 68 W - Resistive load; 1 million ops. 72 VDC - 68 W - Inductive load: 30 ms; 1 million ops. 72 VDC - 68 W - Filament lamp; 1 million ops.



1019 relay - F, 24 VDC

Technical specifications

Functional and connection diagrams



1019 relay - F, 24 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing four light bulbs (55 W - 50 W) 24 VDC
- Operation position: may be mounted in any attitude
- Colour code: orange, white
- Relay socket keying: COR NJ 158

Electrical characteristics

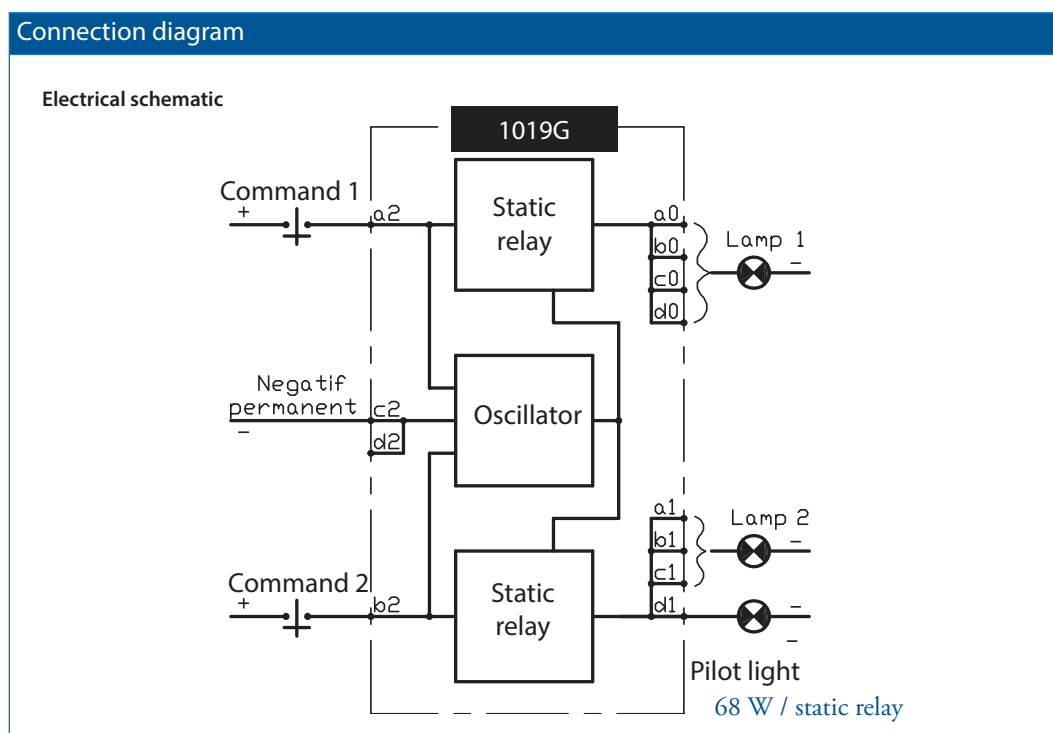
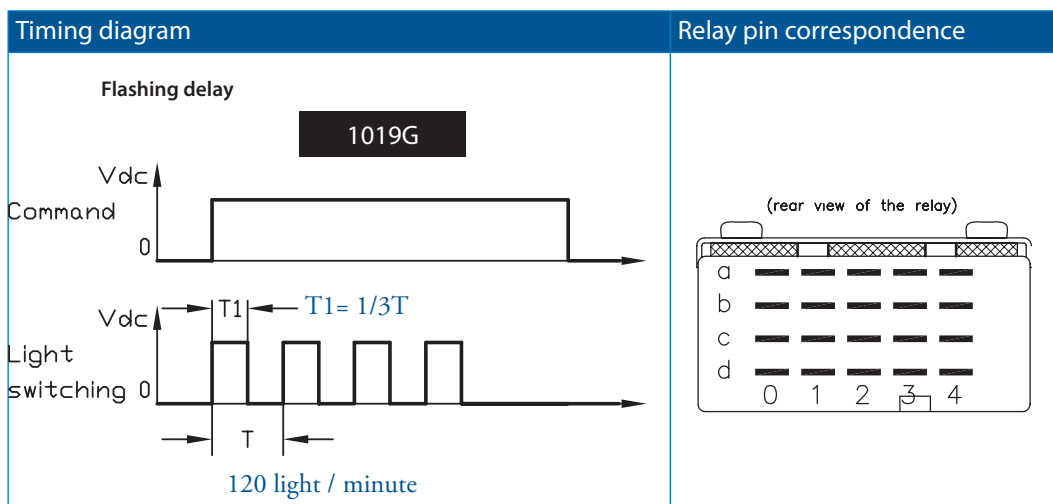
Operating voltage range	16 VDC...33 VDC, 24 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	2/5 of periodic value T
Variation limit at lamp switching on	T1 ± 16 %
Variation of flashing frequency	± 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	115 W
Breaking capacity	24 VDC - 115 W - Resistive load; 1 million ops. 24 VDC - 115 W - Inductive load: 30 ms; 1 million ops. 24 VDC - 115 W - Filament lamp; 1 million ops.



1019 relay - G, 72 VDC

Technical specifications

Functional and connection diagrams



1019 relay - G, 72 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing two light bulbs (50 W - 18 W) 85 VDC and a pilot light
- Operation position: may be mounted in any attitude
- Colour code: opal green, white
- Relay socket keying: COR NJ 311

Electrical characteristics

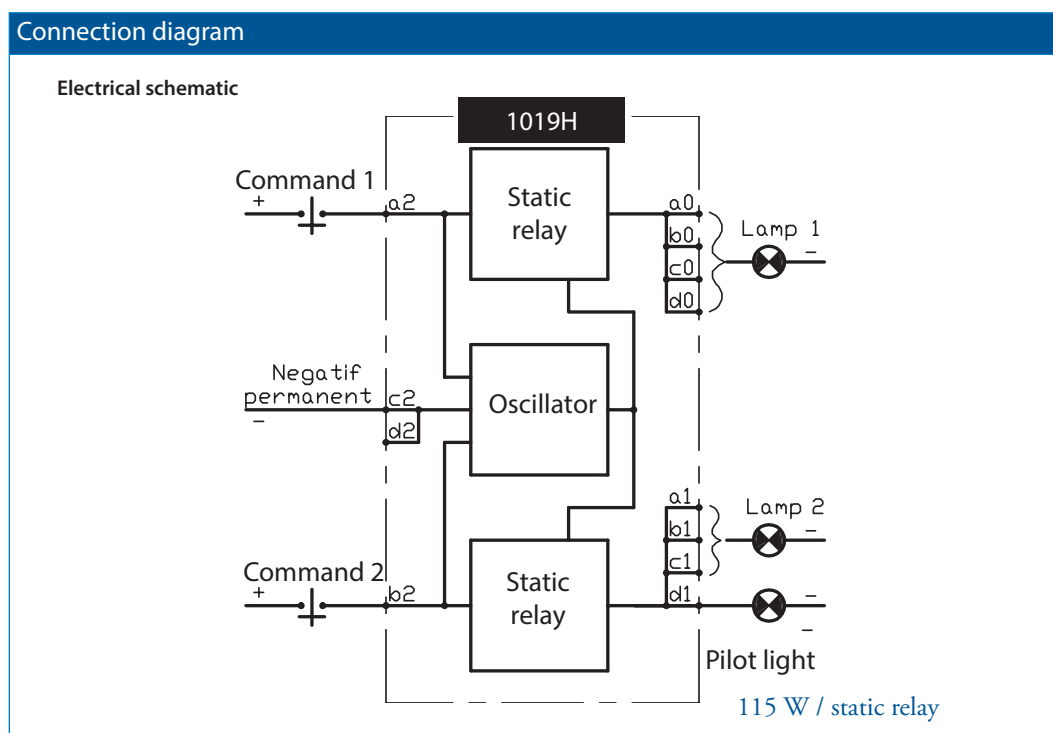
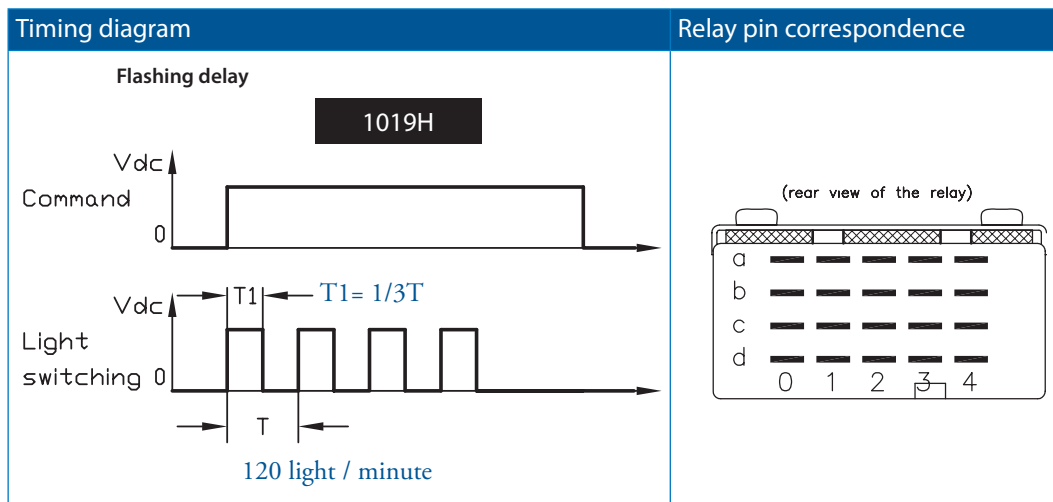
Operating voltage range	50 VDC...90 VDC, 72 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	1/3 of periodic value T
Variation limit at lamp switching on	$T1 \pm 16 \%$
Variation of flashing frequency	± 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	68 W
Breaking capacity	72 VDC - 68 W - Resistive load; 1 million ops. 72 VDC - 68 W - Inductive load: 30 ms; 1 million ops. 72 VDC - 68 W - Filament lamp; 1 million ops.



1019 relay - H, 24 VDC

Technical specifications

Functional and connection diagrams



1019 relay - H, 24 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing two light bulbs (55 W) 24 VDC and a pilot light
- Operation position: may be mounted in any attitude
- Colour code: silver, blue flag, canary yellow
- Relay socket keying: COR NJ 5F

Electrical characteristics

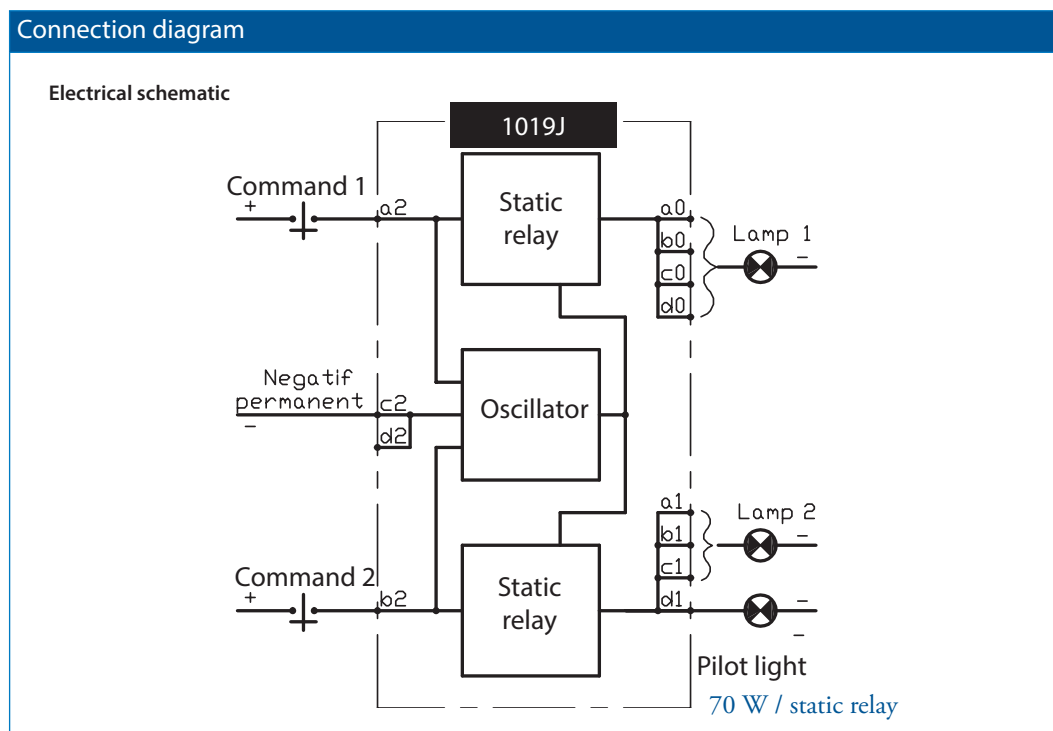
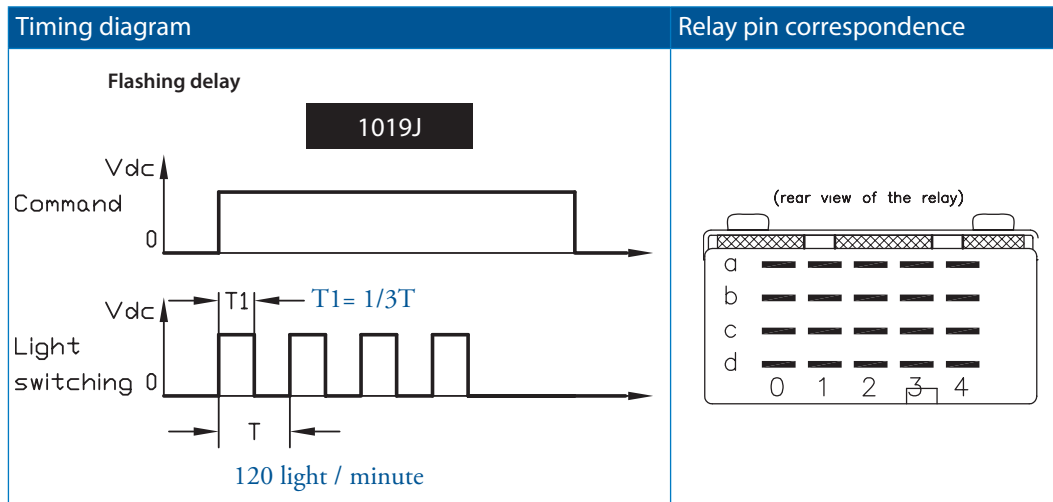
Operating voltage range	16 VDC...33 VDC, 24 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	1/3 of periodic value T
Variation limit at lamp switching on	T1 \pm 16 %
Variation of flashing frequency	\pm 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	115 W
Breaking capacity	24 VDC - 115 W - Resistive load; 1 million ops. 24 VDC - 115 W - Inductive load: 30 ms; 1 million ops. 24 VDC - 115 W - Filament lamp; 1 million ops.



1019 relay - J, 12 VDC

Technical specifications

Functional and connection diagrams



1019 relay - J, 12 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing one light bulb (55 W)
- Operation position: may be mounted in any attitude
- Colour code: tbd
- Relay socket keying: tdb

Electrical characteristics

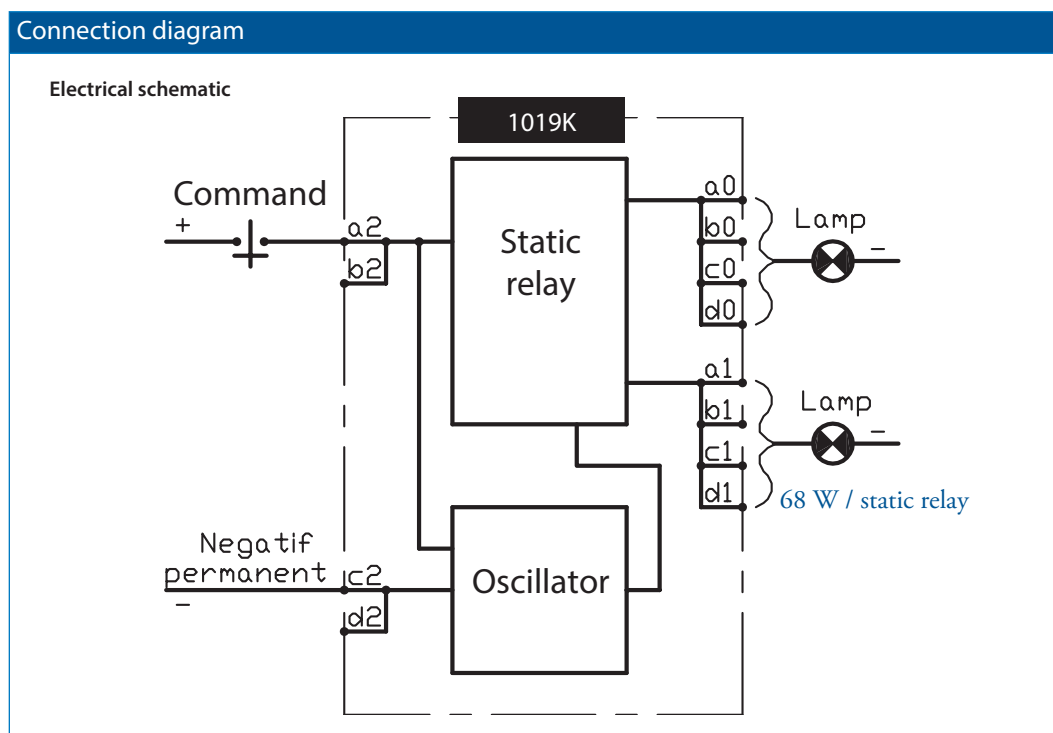
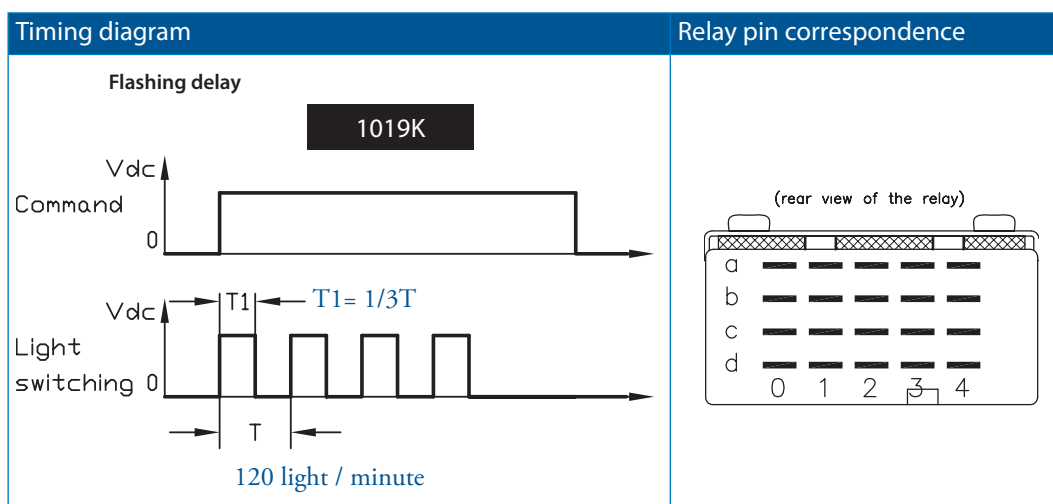
Operating voltage range	8 VDC...16 VDC, 12 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	1/3 of periodic value T
Variation limit at lamp switching on	T1 ± 16 %
Variation of flashing frequency	± 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	70 W
Breaking capacity	12 VDC - 70 W - Resistive load; 1 million ops. 12 VDC - 70 W - Inductive load: 30 ms; 1 million ops. 12 VDC - 70 W - Filament lamp; 1 million ops.



1019 relay - K, 24 VDC

Technical specifications

Functional and connection diagrams



1019 relay - K, 24 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing two light bulbs (55 W + 18 W) 24 VDC
- Operation position: may be mounted in any attitude
- Colour code: yellow ochre, orange, brown
- Relay socket keying: COR NJ 48B

Electrical characteristics

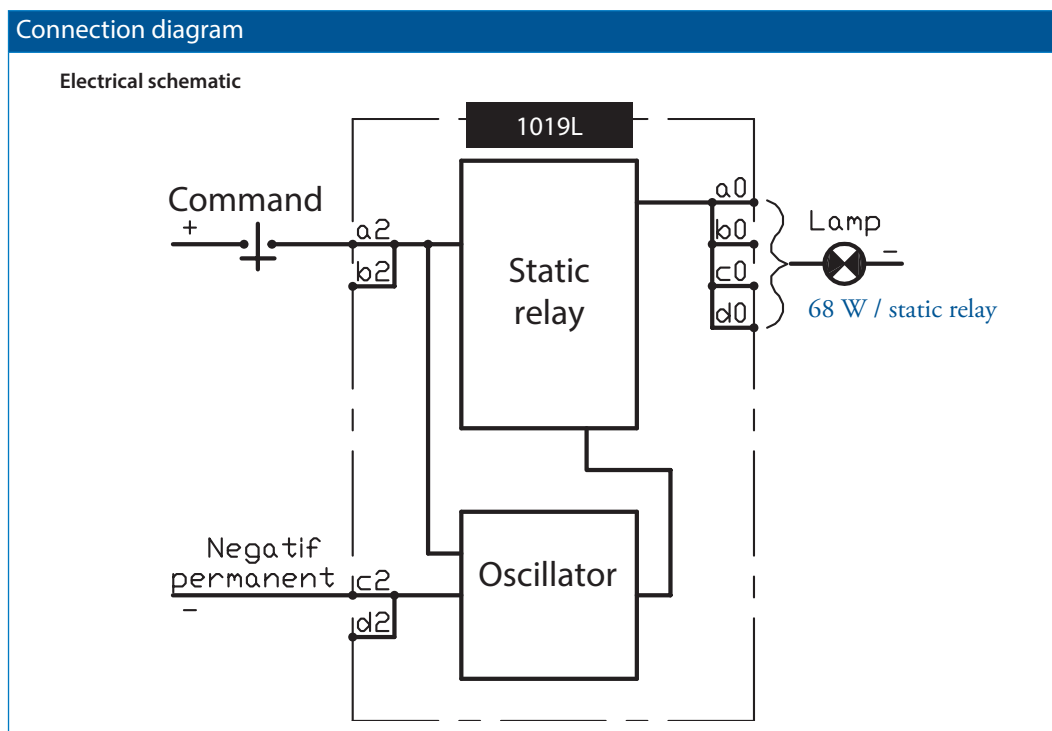
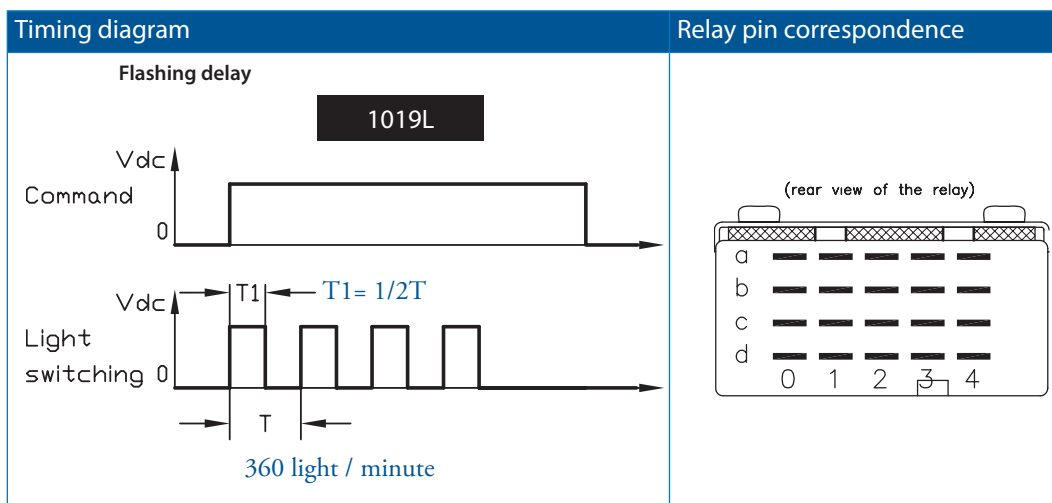
Operating voltage range	16 VDC...33 VDC, 24 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	120 light on per minute
Switching on timing T1	1/3 of periodic value T
Variation limit at lamp switching on	T1 ± 16 %
Variation of flashing frequency	± 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	68 W
Breaking capacity	24 VDC - 68 W - Resistive load; 1 million ops. 24 VDC - 68 W - Inductive load: 30 ms; 1 million ops. 24 VDC - 68 W - Filament lamp; 1 million ops.



1019 relay - L, 72 VDC

Technical specifications

Functional and connection diagrams



1019 relay - L, 72 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has one channel of flashing one light bulb (2 W) 72 VDC
- Operation position: may be mounted in any attitude
- Colour code: yellow ochre, orange, opal green
- Relay socket keying: COR NJ 48C

Electrical characteristics

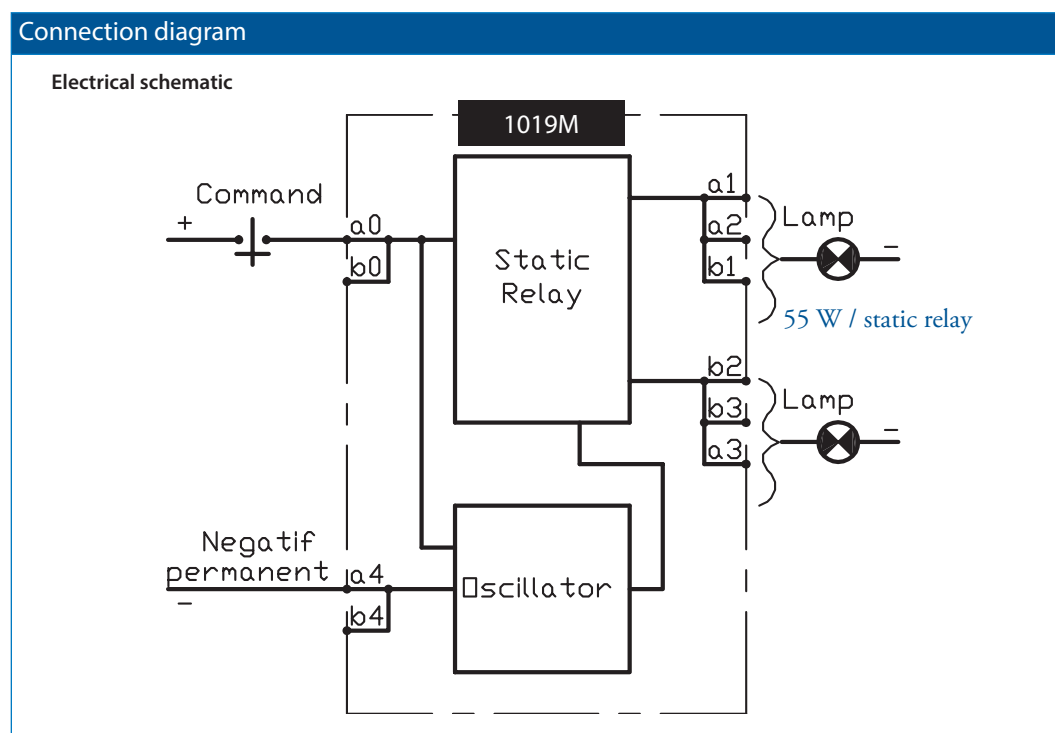
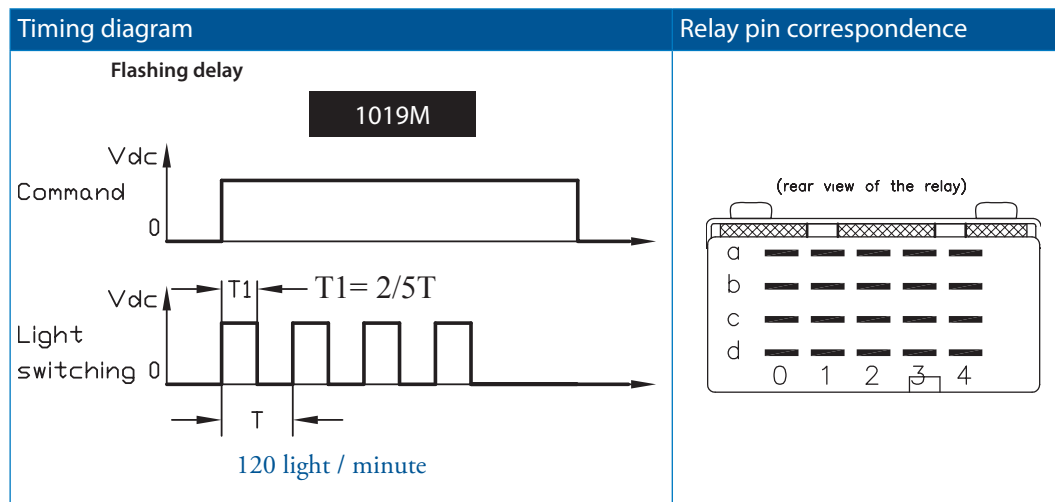
Operating voltage range	50 VDC...90 VDC, 72 VDC nominal voltage
Power consumption without load	0.1 W
Flashing rate	360 light on per minute
Switching on timing T1	1/2 of periodic value T
Variation limit at lamp switching on	T1 \pm 50 %
Variation of flashing frequency	\pm 40 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	68 W
Breaking capacity	72 VDC - 68 W - Resistive load; 1 million ops.



1019 relay - M, 100 VDC

Technical specifications

Functional and connection diagrams



1019 relay - M, 100 VDC

Technical specifications

Features

- Solid state flashing relay designed to control the train headlight warning mode
- Relay has two independent channels, each capable of flashing one light bulb (55 W) 100 VDC
- Operation position: may be mounted in any attitude
- Colour code: canary yellow, orange, white
- Relay socket keying: COR NJ 49E

Electrical characteristics

Operating voltage range	70 VDC...138 VDC, 100 VDC nominal voltage
Power consumption without load	<1 W
Flashing rate	120 light on per minute
Switching on timing T1	2/5 of periodic value T
Variation limit at lamp switching on	T1 \pm 16 %
Variation of flashing frequency	\pm 20 light on at 20 °C
Dielectric strength	1500 VAC, 1 min between the pins and the case
Maximum power	55 W
Breaking capacity	100 VDC - 55 W - Resistive load; 1 million ops. 100 VDC - 55 W - Inductive load: 30 ms; 1 million ops. 100 VDC - 55 W - Filament lamp; 1 million ops.



1019 relay

Technical specifications

Mechanical & environmental characteristics

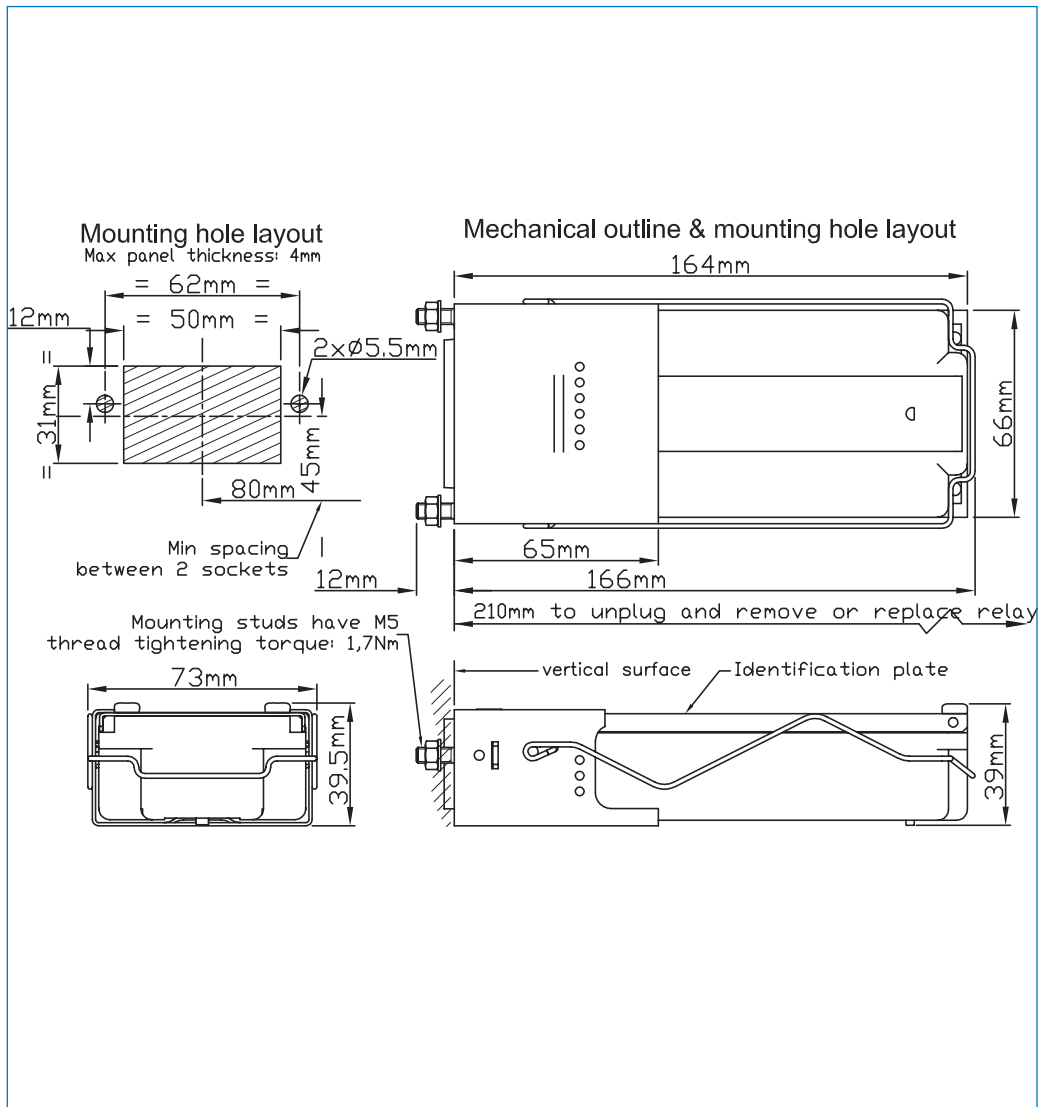
Vibration	NF F 62-002 The tests are conducted in the X, Y , Z planes at frequency between 10 & 150 cycles (sinusoidal) at 2 g
Shock	NF F 62-002 Tests are applied in both directions in the X, Y & Z planes. Then successive shocks are administered consisting of the positive component of sinusoidal with a value of 30 g, 11 ms Other vibration and shock tests can be performed on request.
Weight	300 g
Temperature	-40 °C...+70 °C
Humidity	93% RH, 40° C for 4 days
Salt mist	5% NaCl, 35° C for 4 days
Protection	IP50 (timing relay on socket)
Fire & smoke	Materials: Polycarbonate resin (cover) / polyester (base) Note: These materials have been tested for fire propagation and smoke emission according standards NF F 16-101, NF F 16-102.



1019 relay

Technical specifications

Dimensions



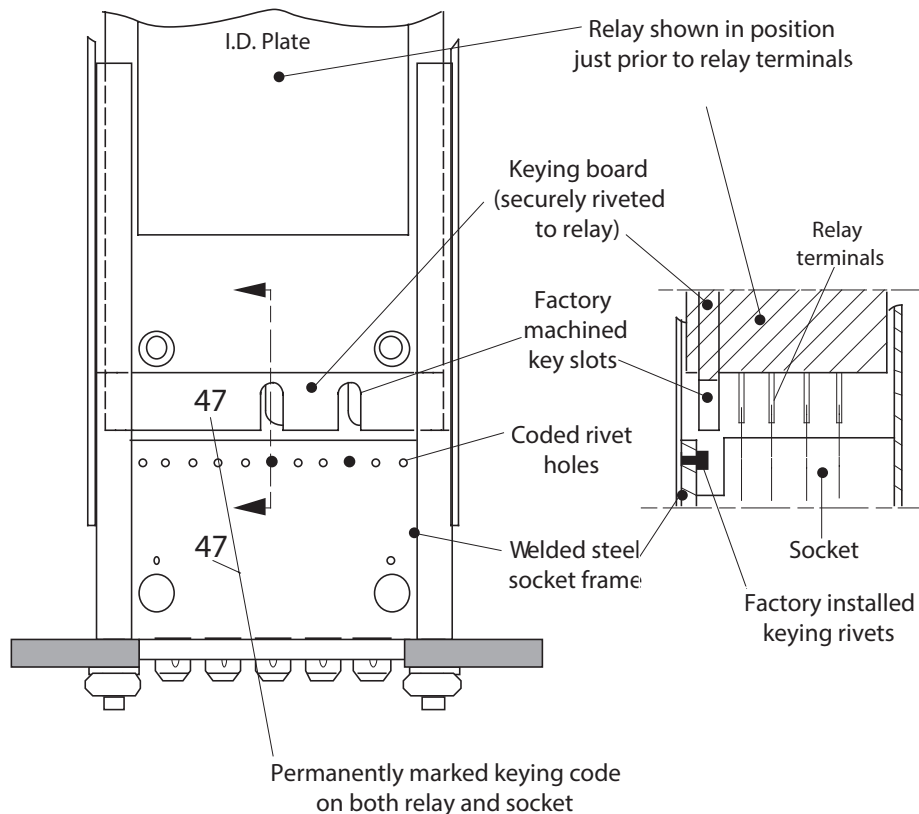
1019 relay

Technical specifications

Mechanical keying

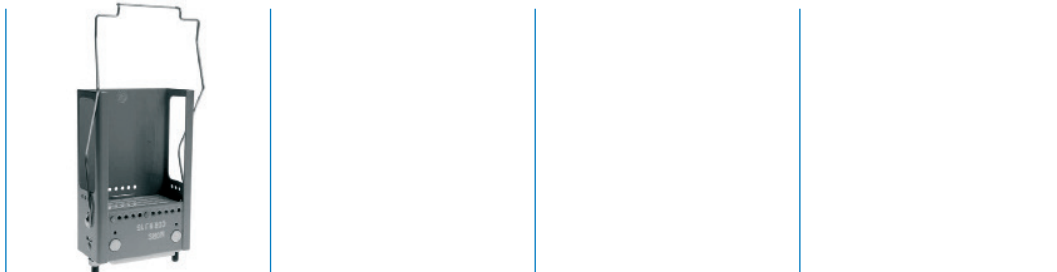
- Mechanical keying of the relay to the socket is accomplished during manufacturing
- Keying slots are located by their keying code numbers on the relay board. Keying rivets are located in the steel socket frame in the correct (and corresponding) coded rivet holes to mate with the relay
- Once keying has been completed during manufacture, it is permanent and cannot be changed. This is intentional in the design to insure that only the correct relay can be plugged into the socket
- The keying is completed by a color code on the top of the relay cover and on the side of the socket for better identification on the train

They keying details are illustrated below.



1019 relay

Mounting possibilities / sockets



COR NJ

Panel mounting

153879	COR NJ X*	Socket (Alkyde compound) with locking spring, weight: 200 g
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* X indicates keying code from relay table



1019 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.

Maintenance

When the relay doesn't seem to operate correct, please check presence of coil voltage. Use a multimeter.

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.



1019 relay

Ordering scheme

Configuration:

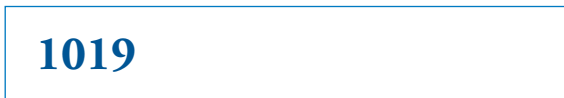


1. Relay model 2. Series

This example represents a **1019 D relay**

Description: 1019 D relay, Unom 72 VDC and keying 34

1. Relay model



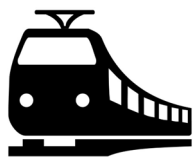
2. Series, nominal voltage & keying

C	24 VDC, keying 58
D	72 VDC, keying 34
E	72 VDC, keying 11A
F	24 VDC, keying 158
G	72 VDC, keying 311
H	24 VDC, keying 5F
J	12 VDC, keying tbd
K	24 VDC, keying 48B
L	72 VDC, keying 48C
M	100 VDC, keying 49E





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