



# TECHNICAL DATA SHEET

31-211-11-S

Safety Controlled Bi-Relay 12 VDC

## General Description

The technical principle of this relay is a proved two coil device with a Pull-In and Drop-Out coil with permanent powerless magnetic holding. An impulse into the controlled coil switches the relay in to an On or Off position. The electronic function protects against incorrect actuation which therefore prevents overheating or damage to any component parts. When switching on the electronics this creates an impulse to the pull in coil which then closes the main relay contacts. Whilst switching OFF the electronics this creates an impulse to the drop-out coil which then opens the relays main contacts.

The minimum pick up impulse time is approximately 150 msec and continuous signals will not cause any damage, The electronic board integrates under voltage function that eliminates critical mechanic actuation, a suppression diode, coil, short circuit and polarity protection.

The geometric size and measurement are identical to those of a standard bi-stable 30 series relay which therefore offers the user an interchangeable solution.

## Features

- Sealed housing conforms to IP6K9K 1
- Robust design
- Variety of configuration options
- 6G shock and 4G vibration resistant

## Applications

- Commercial vehicles
- Bus
- Lift truck
- Ground support equipment
- Construction and agricultural vehicles

## Technical Data

### Environmental Characteristics

TEMPERATURE RANGE	-40°C to +85°C (-40°F to +185°F)
MAX. ALTITUDE RATING	50.000 ft
SEAL	IEC 529, 2 <sup>nd</sup> . Edition 1989-IP67 (6 ft/min) and IP6K9
SHOCK G-LEVEL	6G / 11 msec
VIBRATION	4G / 50-2000 Hz

### Electrical Characteristics

MIN. INSULATION RESISTANCE, INITIAL	100 M $\Omega$
LIVE OR ENVIRONMENTAL	50 M $\Omega$
DIELECTRIC WITHSTANDING VOLTAGE	1050 VAC / 1 min
MAX.CONTACT DROP, INITIAL	0,15 VDC
AFTER LIFE TEST	0,175 VDC
OVERLOAD	1600 A for 1 sec; 400 A for 20 sec
RUPTURE CURRENT	2000 A
DUTY RATING	200 A continuous
QUIESCENT CURRENT	Approx. 2mA

### Rated Contact Load

MOTOR LOAD	50 000 CYCLES
MECHANICAL LIFE	100 000 CYCLES

### Electronics and Operating Characteristics

VOLTAGE RANGE	9-16 VDC
NOMINAL VOLTAGE	12 VDC
PICK UP CURRENT AT 12 VDC	Approx. 5,7 A for 50 msec
DROP OUT CURRENT AT 12 VDC	Approx. 6,0 A for 50 msec



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### Circuit Time

PICK UP INCL. BOOUNCE AND RUNNING TIME MC	150 msec approx.
DROP OUT INCL. RUNNING TIME °C	150 msec approx.

### Weight

PICK UP INCL. BOOUNCE AND RUNNING TIME MC	0,55 kg = 1.21 POUND Max.
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### Wire Section (at nominal Load)

PICK UP INCL. BOOUNCE AND RUNNING TIME MC	Min. 95 mm <sup>2</sup> / 0.147 square inch / AWG 0000
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