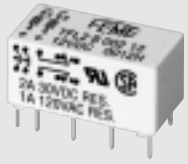
# Subminiature Relays
# Type TFL 2
# Bistable



TFL 2

- **Subminiature relay**
- **Dual-in-Line terminals**
- **Switching capacity 2 A**
- **DC coils 5 to 24 VDC**
- **2 change over contacts**
- **General purpose, telecom, industrial electronics**
- **Sealed as standard**
- **Low profile and light weight**
- **High reliability**

## Product Description

Miniature relay with low power consumption, Bistable with two coils, polarized, with two change over bifurcated contacts. It is sealed, particularly designed for telecommunication, telephone applications, and low load level switching. Conforming to FCC standard of USA.

## Ordering Key

**TFL 2 B 002 12**

**Type**
**Version**
**Contact code**
**Coil rated voltage**

**Version**
A = Sensitive
B = High Sensitive

## Type Selection

| Contact configuration | | Contact rating | Contact code |
|---|---|---|---|
| 2 change over contacts | (DPDT {2-form C}) | 2 A | **002** |

## Coil Characteristics, DC (20°C)

| 'A' sensitive version | | | | 'B' high sensitive version | | | |
|---|---|---|---|---|---|---|---|
| | | Operating range | | | | Operating range | |
| **Rated voltage VDC** | Winding Resistance Ω ±10% | Set reset VDC | Max. VDC | **Rated voltage VDC** | Winding Resistance Ω ±10% | Set reset VDC | Max. VDC |
| 5 | 125 | 3.75 | | 5 | 167 | 4.0 | |
| 6 | 180 | 4.50 | 110% of | 6 | 240 | 4.8 | 110% of |
| 9 | 405 | 6.75 | rated voltage | 9 | 540 | 7.2 | rated voltage |
| 12 | 720 | 9.00 | for 100 ms | 12 | 960 | 9.6 | for 100 ms |
| 15 | 1125 | 11.25 | | 15 | 1500 | 12.0 | |
| 24 | 2040 | 18.00 | | 24 | 3840 | 19.2 | |

## Contact Characteristics

| | |
|---|---|
| **Rating** | **2 A** |
| **Material** (standard version) | **Silver alloy gold clad** |
| **Current** | |
| Rated current | **2 A 30 VDC**<br>**1 A 125 VAC** |
| Min. switching current | **100 µA** |
| Max. switching current with resistive load | **2 A** |
| Max carrying currenty with resistive load | **5A** |
| Max. switching power with resistive load | **60 W / 1250 VA** |

| | |
|---|---|
| **Voltage** | |
| Rated voltage | **30 VDC / 125 VAC** |
| Max. switching voltage with resistive load | **220 VDC / 250 VAC** |
| Min. switching voltage | **10 mV** |
| Min. switching power | **1 mW** |
| **Life** | |
| Electrical life | |
| 1A/30VDC | **5 x $10^5$ cycles** |
| 2A/30VDC | **1 x $10^5$ cycles** |
| Mechanical life | **1 x $10^8$ cycles** |
| Max. switching frequency | **40 Hz** |

CARLO GAVAZZI

## Insulation

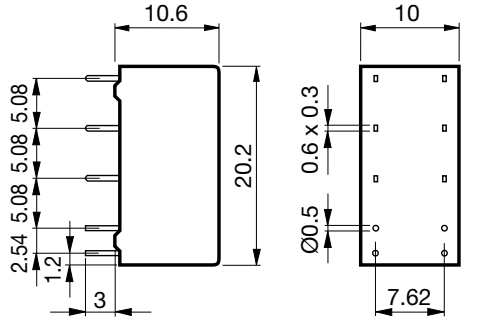
| | |
|---|---|
| **Test voltage** (1 min.)<br>Open contact<br>Contacts/coil | **1000 VAC (standard)**<br>**1500 VAC** |
| **Insulation resistance**<br>at 500 VDC | **> 1000 MΩ** |

## General Data

| | |
|---|---|
| **Minimum pulse width** | **10 ms** |
| **Maximum pulse width** | **100 ms** |
| **Max. Operating time**<br>at rated voltage (excl. bounces) | **≤ 6 ms** |
| **Max. Release time**<br>(excl. bounces) | **≤ 3 ms** |
| **Vibration resistance** | **196 m/s² (20g)**<br>**10 to 55 Hz** |
| **Ambient temperature** | **-40 °C to +85 °C** |
| **Shock resistance**<br>functional<br>destructive | <br>**490 m/s² (50 g)**<br>**980 m/s² (100 g)** |
| **Weight** | **~ 3.7 g** |
| **Working class / type of serv.** | **C / continuous** |

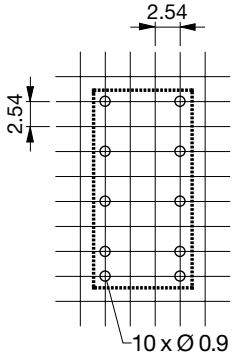
## Dimensions

**TFL2 . 002**



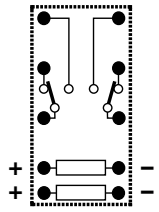

## Pin View

**TFL2 . 002**



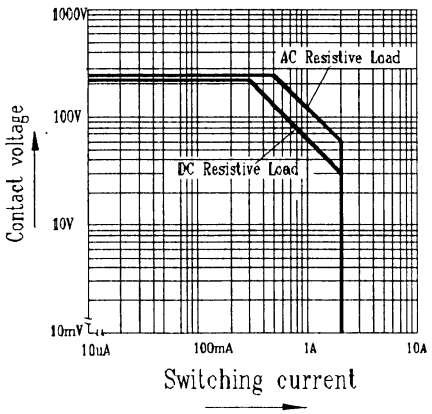

## Wiring Diagram

**TFL2 . 002**

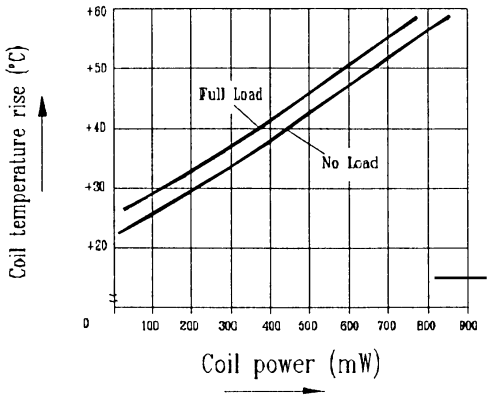



## Diagrams

**1 Maximum Switching Power**




**2 Coil temperature rise**




## Approvals

**U.S.A.** **CANADA**

The approvals stated are not generally applicable to all relay versions of a particular type.

For further information please apply for relevant data sheets ref. **3.84.00.10.X**