

Reed Switch 201

Customer-specific bistable reed switch

Electrical Properties (25 °C)

| | | |
|-----------------------------------|--------|-----------------|
| Contact form | | E |
| Contact material | | Ru |
| Contact rating max. | W / VA | 5 |
| Switching voltage max. | VDC | 140 |
| | VAC | 100 |
| Switching current max. | A | 0.5 |
| Continuous current max. | A | 0.7 |
| Dielectric strength min. | VDC | 200 |
| Contact resistance max. (initial) | mΩ | 150 |
| Insulation resistance min. | Ω | 10 ⁹ |

Operating Data (25 °C)

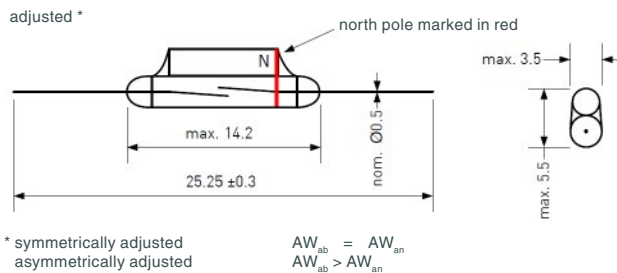
| | | |
|------------------------------------|----|------|
| Switching frequency max. | Hz | 500 |
| Resonant frequency typ. | Hz | 4000 |
| Switching time max. (incl. bounce) | ms | 1 |
| Release time max. | ms | 0.4 |

Environmental Conditions

| | | |
|-----------------------------------|----|-------------|
| Operating temperature | °C | -40 to +125 |
| Vibration stability (20–20000 Hz) | g | 10 |
| Shock stability (½ sin 11 ms) | g | 50 |



Dimensional Data



“AW”

AW means “Ampere turns” and describes the magnetic “sensitivity” of the reed switch.

The AW value is measured in a standard coil into which the reed switch is centred.

By applying a voltage to the coil, a current flows and a magnetic field is created.

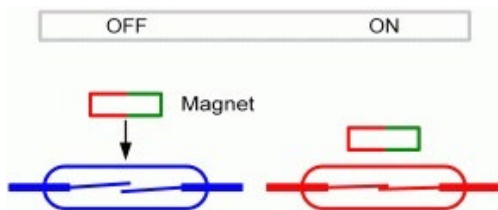
When increasing the current until the reed switch closes, the operate (pull in) value AW_{an} is obtained. When reducing the current until the switch reopens, the release (drop out) value AW_{ab} is obtained.

Operating Principle

The reed switch consists of two ferromagnetic contact tongues, which are hermetically sealed within a glass tube under an inert atmosphere.

The contact tongues overlap within this glass body and form a small gap in the contact area. The contact areas of both tongues are coated with a contact material (e.g. ruthenium).

When a sufficiently strong magnetic field is present, both contact tongues attain opposite magnetic polarity and thus close the contact.



A permanent magnet (contact form E), shrunk behind the glass tube, ensures as bistable version that the switching state remains unchanged even if the actuating magnet is removed.

Service Life

The service life depends on the load conditions.

Switching signal loads only, several hundred million switching cycles can be achieved, for higher loads 10,000 up to > 1 million switching cycles.

Usually, the service life of the reed switch by far exceeds the service life of the device in which the reed switch is incorporated.

Ohmic Load

| Voltage | Current | Switching cycles |
|---------|---------|---------------------|
| 12 VDC | 0.05 A | 1 x 10 ⁸ |
| 24 VDC | 0.4 A | 1 x 10 ⁷ |