



## KISSLING BI-STABLE RELAYS WITH INTERNAL CONTROL ELECTRONICS

### Series 31 / SAFETY - from TE Connectivity (TE)

Our series 31 bi-stable power relay with internal control electronics is based on the Series 30 industrial relay and has all of the same quality mechanical and electrical switching characteristics - but also features additional electronic functions.

This relay is particularly well suited for battery management and power distribution applications on commercial vehicles, buses, construction & agricultural vehicles, ground support equipment and lift trucks.

The robust design of our bi-stable relays provides a sealing rate of IP67 and IP6K9K (steam pressure cleaning) in accordance with IEC 60529 and DIN 40050-9. The series 31 includes power relays in nominal voltages of 12 & 24 V and nominal continuous amperages of 300 Amps. Contact voltages up to 250VDC with magential blowout (>40VDC).

#### Elektronic Safety-Control

The technical principle of this relay is a reliability proven two coil device with a Pull In and Drop Out coil with a powerless permanent magnetic holding.

An impulse into the respective coil switches the relay into an "On" or "Off" position. The electronic function protects against incorrect actuation which therefore prevents overheating or damage to any component parts.

The minimum pick up impulse time is approximately 250ms and continuous signals will not cause any damage.

The electronic board integrates under voltage function that eliminates critical mechanic actuation, a suppression diodes, short circuit and polarity protection.

#### Features

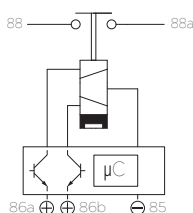
- Sealed housing conforms to IP6K9K
- Robust design
- Variety of configuration options
- 6G shock and 4G vibration resistant

#### Applications

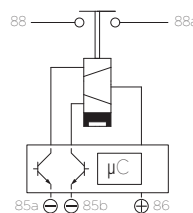
- Commercial vehicles
- Bus
- Lift truck
- Ground support equipment
- Construction and agricultural vehicles

#### Circuits

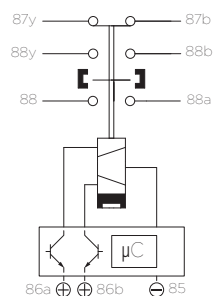
NO-Contact (S)  
Standard type



NO-Contact (S-P)  
Special type



NO-Contact  
Auxiliary contact /  
Magnetic blowout



## SERIES 31

### 300A - SAFETY

## Specification

### Technical Data

Temperature range	-40°C to +85°C
Protection	IEC 60529 / DIN 40050-9 / IP67 (0,2bar; 1min) and IP6K9K
Shock	6g / 11msec
Vibration	4g / 50 - 2000Hz
Thread sizes / Torque	M4 = 2.0 - 2.2Nm   M10 = 15 - 20Nm

### Electrical Characteristics

Min. Insulation resistance	100MΩ
After live or environment	50MΩ
Dielectric withstanding voltage	1050VAC / 1min at 50Hz
Max. Contact drop, initial	150mV
Contact drop after life test	175mV
Continuous current	300A
Overload	2400A - 1sec / 600A - 20sec
Quiescent current	approx. 2mA

<b>Rated contact load</b>	<b>12 and 24 / 28VDC</b>
Resistive load	50.000 cycles 300A
Mechanical life	100.000 cycles

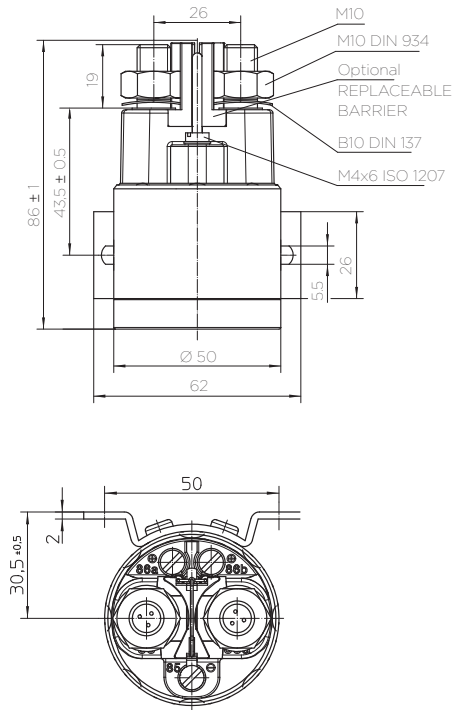
<b>Coil Data</b>	<b>12VDC</b>	<b>24 / 28VDC</b>
Voltage range	9-16VDC	18-32VDC
Nominal voltage	12VDC	28VDC
Pick up voltage	9VDC	18VDC
Pull in current	5.7A, 50ms	3.3A, 50ms
Drop out current	6.0A, 50ms	3.5A, 50ms

### Operating times

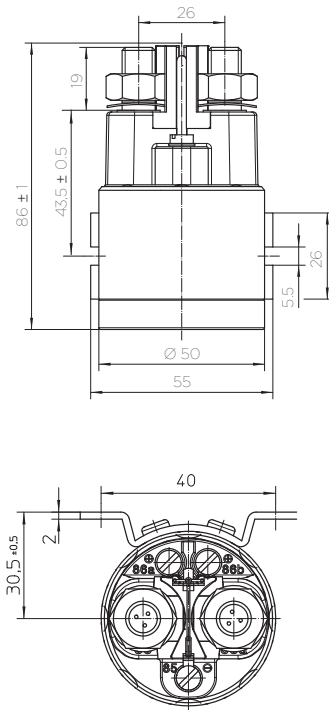
Pick up incl. bounce and running time $\mu$ C	approx. 250msec
Drop out incl. running time $\mu$ C	approx. 250msec
Wire Section	min. 95mm <sup>2</sup> / 0.147 sq.inch / AWG 4-0
Mounting position	optional

**Technical drawings**

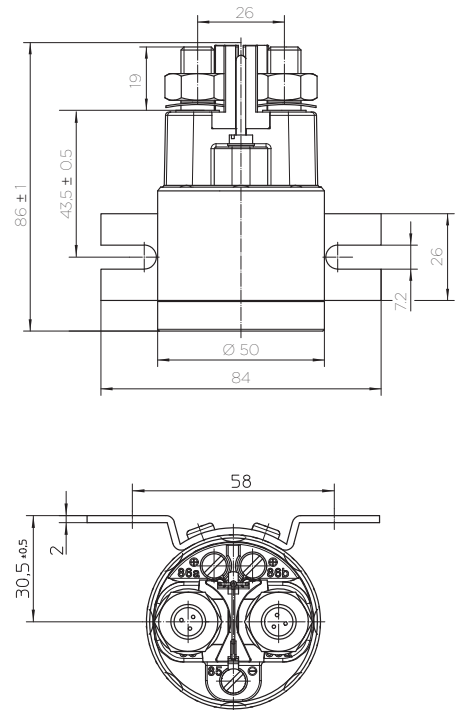
**Standard side mounting**



**Short form side mounting**



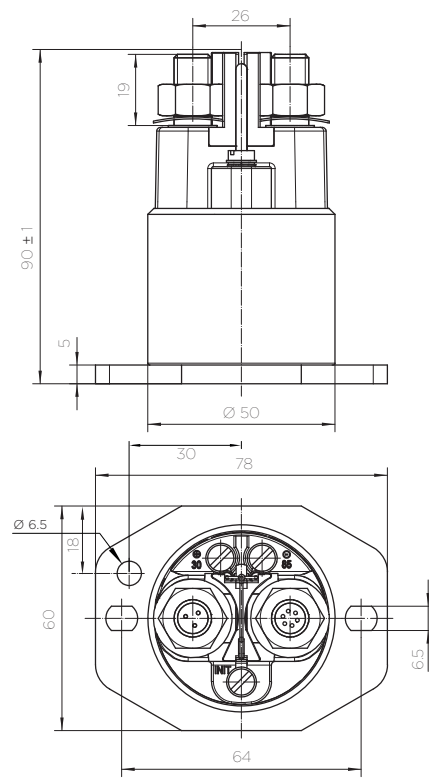
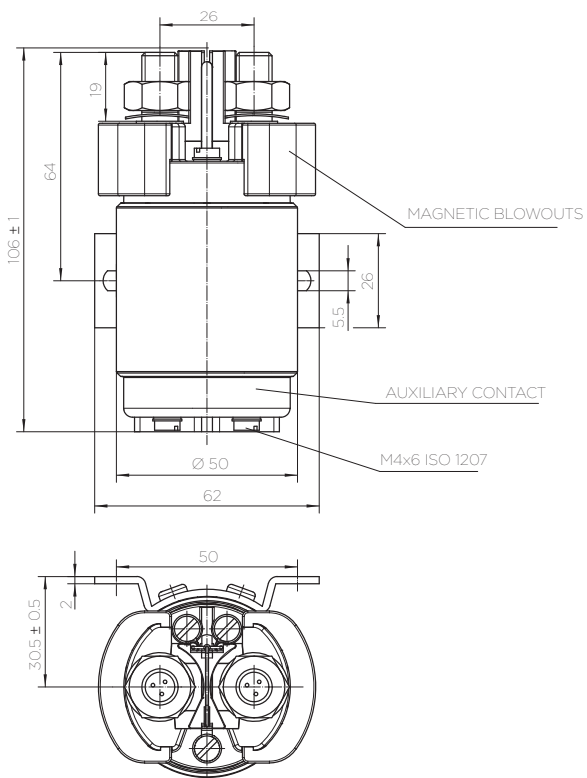
**Long form side mounting**



**Options:**

Auxiliary contacts, magnetic blowouts

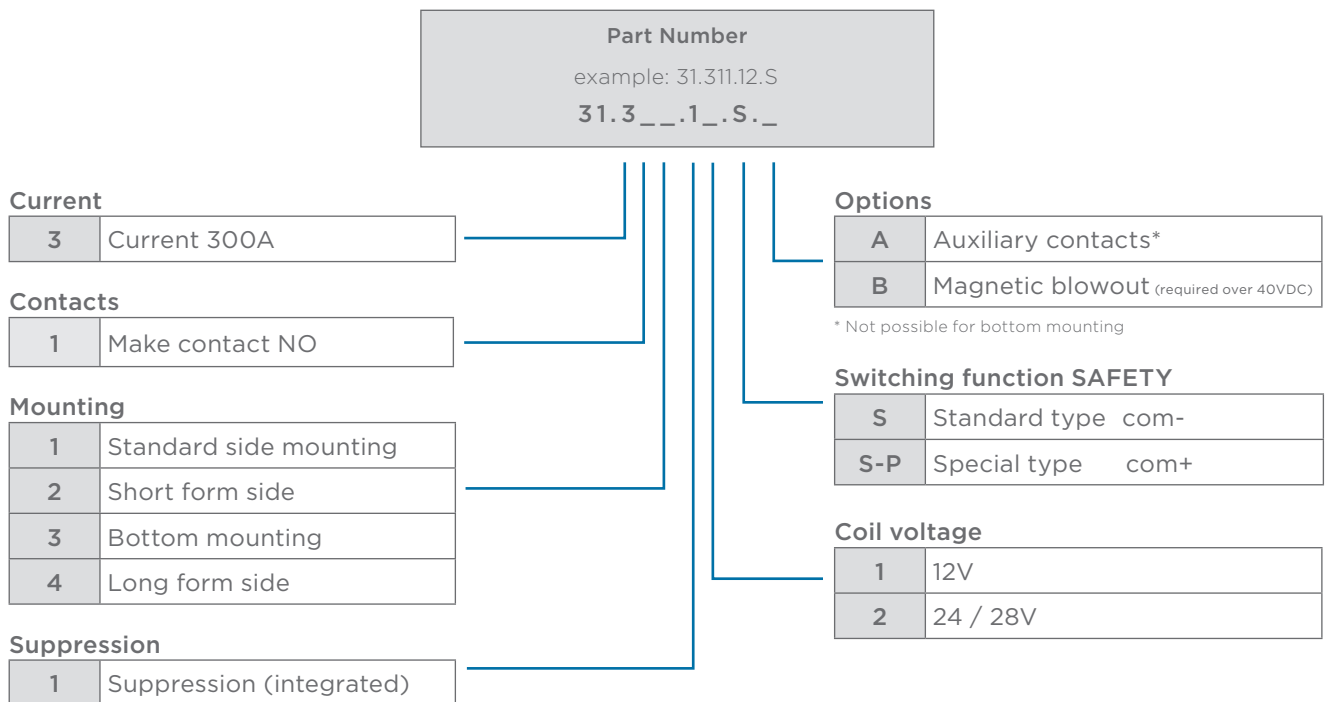
**Bottom mounting**



## SERIES 31

### 300A - SAFETY

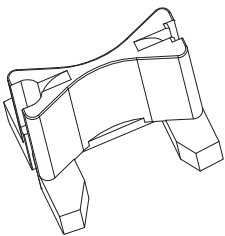
## Ordering Information



## Accessories

### Replaceable barrier

29-200-55



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K1166721 | Version 08/2020