

# Thermal Automotive Circuit Breaker

## Description

Miniaturised single pole press-to-reset cycling trip free thermal circuit breaker designed for automotive fuse block installation. Extends the benefits of circuit breaker performance and convenience to applications which are cost critical. Colour-coded housing caps or manual release buttons available.

Version 1616 is available especially for the automotive industry (current ratings correspond to those of blade fuses).

## Typical applications

Extra low voltage wiring systems on all types of vehicles and marine craft.

## Preferred types

| Preferred types | Standard current ratings (A) |   |   |    |    |    |    |    |
|-----------------|------------------------------|---|---|----|----|----|----|----|
|                 | 5                            | 6 | 8 | 10 | 15 | 20 | 25 | 30 |
| 2035...         | x                            | x | x | x  | x  | x  | x  | x  |

## Current ratings, typical voltage drop values and colour coding

| Current rating (A) | Voltage drop (mV) | Actuator colour manual release (20357...) or housing cap colour (20356...) |
|--------------------|-------------------|----------------------------------------------------------------------------|
| 5                  | < 150             | light-brown                                                                |
| 6                  | < 150             | green                                                                      |
| 8                  | < 150             | golden yellow                                                              |
| 10                 | < 150             | red                                                                        |
| 15                 | < 150             | blue                                                                       |
| 20                 | < 150             | yellow                                                                     |
| 25                 | < 150             | pearl                                                                      |
| 30                 | < 150             | light-green                                                                |

## Note

The circuit breakers are marked with current rating, type and maximum voltage. Special machine readability is not guaranteed.



20356...



20357...



20355...

## Technical data

|                                            |                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------|
| Voltage rating                             | 20355...: DC 12 V<br>20356.../20357... DC 12 V / DC 24 V                                       |
| Max. voltage rating                        | 20355... DC 14,5 V<br>20356.../20357... DC 32                                                  |
| Current ratings                            | 5...30 A                                                                                       |
| Service short-circuit breaking capacity    | 300 operations at ≤ 50 A                                                                       |
| Reset period for 1610-92 (at 23 °C)        | ≤ 15 s                                                                                         |
| Ambient temperature                        | -40...+85 °C (-40...+185 °F)                                                                   |
| Degree of protection (IEC 60529/DIN 40050) | operating area IP30 (-21/-H2)<br>operating area IP54 (-92)<br>terminal area IP00               |
| Ultimate short-circuit breaking capacity   | ≥ 3 break operations at 150 A, or<br>≥ 1 break operation at 2,000 A                            |
| Vibration (with mounting socket 12)        | 10 g (57-500 Hz) ± 0.38 mm (10-57 Hz)<br>to IEC 60068-2-6, test Fc<br>10 frequency cycles/axis |
| Shock (with mounting socket 12)            | 50 g (11 ms)<br>to IEC 60068-2-27, test Ea                                                     |
| Corrosion                                  | 96 hours at 5 % salt mist,<br>to IEC 60068-2-11, test Ka                                       |
| Humidity                                   | 240 hours at 95 % RH,<br>to IEC 60068-2-78, test Cab                                           |
| Mass                                       | approx. 5 g                                                                                    |

### Caution:

It is good practice to switch off the vehicle's ignition system before re-setting the circuit breaker.

Free travel of the reset button must be ensured! Please ensure to push in the actuator smoothly and completely.

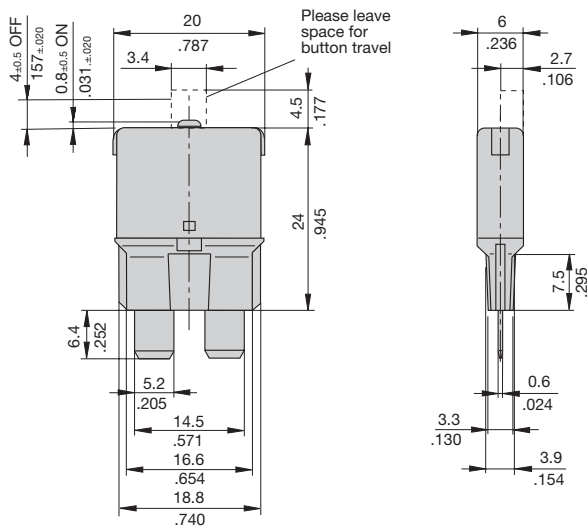
## Approvals

| Authority | Standard                      | Rated voltage | Current ratings |
|-----------|-------------------------------|---------------|-----------------|
| UL        | UL 1500<br>Ignition Protected | DC 24 V       | 5 A...30 A      |

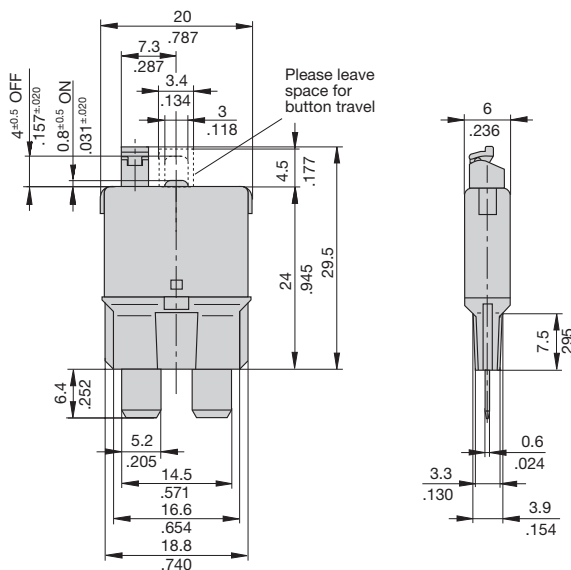
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## Dimensions

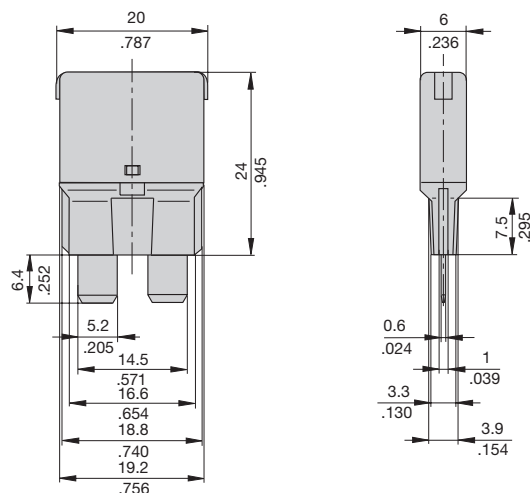
### 20356...



### 20357...

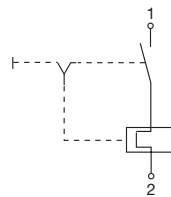


### 20355...

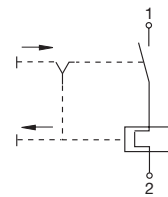


## Internal connection diagrams

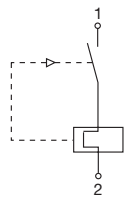
### 20356...



### 20357...

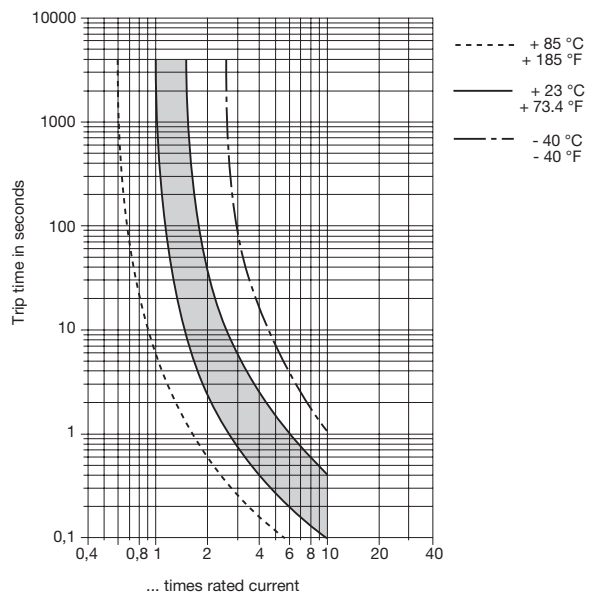


### 20355...



## Typical time/current characteristic curve

### 5...30 A



The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

|                        |       |      |      |      |      |      |
|------------------------|-------|------|------|------|------|------|
| Ambient temperature °F | -40   | -22  | -4   | +14  | +32  | +50  |
| Ambient temperature °C | -40   | -30  | -20  | -10  | 0    | +10  |
| Derating factor        | 0.73  | 0.78 | 0.82 | 0.86 | 0.91 | 0.95 |
| Ambient temperature °F | +73.4 | +104 | +122 | +140 | +158 | +185 |
| Ambient temperature °C | +23   | +40  | +50  | +60  | +70  | +85  |
| Derating factor        | 1     | 1.09 | 1.16 | 1.25 | 1.33 | 1.43 |

**SERTRONIC**

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This is a metric design and millimeter dimensions take precedence (mm)  
inch