AUTOMOTIVE CIRCUIT PROTECTOR
1620 type 3

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Single pole, thermal circuit protector in miniature design, specifically suitable for automotive applications. The reversible circuit protector fits into fuse holders designed for blade fuse connections according to ISO 8820-3, type F.

Also available with automatic reset (only for DC 12 V) and automatic reset protection. It is ensured that the contacts remain open, preventing an automatic reset. The circuit breaker resets automatically after the supply voltage is switched off. Particularly suitable for installation in hardly accessible locations.

TYPICAL FEATURES

- Meets the requirements of SAE-J553
- Clear identification through colour coding
- Exchange option in the terminal area
- SAE J553 types 1 and 2 also available for DC 12 V on-board electrical systems
- Standard (1610, 1620) and fast (1616, 1626) trip curves available
- Reset button
- Trip-free mechanism

YOUR BENEFITS

- No replacement fuses required
- Reduced downtimes until re-start after tripping
- 1:1 interchangeable with automotive fuses
- Increased reliability in professional surroundings
- Reliable protection against damage caused by short circuit and overload

TYP. APPLICATIONS

Protection of on-board electrical systems and devices in cars, trucks, buses, boats and low voltage systems.

COMPLIANCE

REACH RoHS CE UK CA IMDS listed VDA

IATF 16949 ISO 14001 ISO 9001

SAE J553

WEB LINKS

Further information, International approvals, Technical basics, REACH, RoHS, Contact

GENERAL INFORMATION

DESCRIPTION

Single pole, thermal circuit protector in miniature design, specifically suitable for automotive applications. The reversible circuit protector fits into fuse holders designed for blade fuse connections according to ISO 8820-3, type F.

Also available with automatic reset (only for DC 12 V) and automatic reset protection. It is ensured that the contacts remain open, preventing an automatic reset. The circuit breaker resets automatically after the supply voltage is switched off. Particularly suitable for installation in hardly accessible locations.

The available rated currents correspond to those of the blade fuse series. Clear identification of the rated current is achieved by colour coding. Protection and circuit protector of the same colour therefore have the same rated current. They meet the criteria of SAE-J553 The available rated currents correspond to those of the blade fuse series. Clear identification of the rated current is achieved by colour coding. Protection and circuit protector of the same colour therefore have the same rated current.

They meet the criteria of SAE-J553.

SAFETY AND INSTALLATION INSTRUCTIONS

Caution:
The reset button must not be blocked. The manual release button may only be actuated when the power is switched off and actuation must be done quickly and completely.
Caution:
Depending on the terminal socket used, the 30 A device may reach terminal temperatures that exceed the SAE values under full load.

Note:
The circuit breaker labels indicate the rated current, the device type and the maximum voltage. No specific machine readability is guaranteed.

FURTHER INFORMATION

Further information
https://www.global.e-t-a.com/p1282

TECHNICAL DATA

ELECTRICAL DATA

Rated voltage U_n	DC 12 V, DC 24 V
Operating voltage U_b	DC 9...29 V
Rated current range	DC 12 V: 5...30 A (standard trip curve) DC 24 V: 5...25 A
Maximum voltage	DC 29 V (DC 14.5 V for 30 A)

RATED CURRENTS AND TYPICAL INTERNAL VOLTAGE DROP VALUES

Rated current I_n [A]	Voltage drop [mV]
5	< 150
7.5	< 150
10	< 150
15	< 150
20	< 150
25	< 150
30	< 150

ENDURANCE (ACCORDING TO ISO 10924-1)

Number of cycles	Multiple of rated current I_n
300	2

BREAKING CAPACITY (ACCORDING TO ISO 10924-1)

Disconnections	Rated current I_n [A]
≥ 3	150

ABSOLUTE BREAKING CAPACITY (ACCORDING TO ISO 10924-1)	
Disconnections	**Rated current I_n[A]**
≥ 1	2,000

MECHANICAL DATA	
Mass	Approx. 3.1 g
Flammability class acc. to UL 94	V-0
Actuation type according to ISO 10924 (SAE J553)	Type III (3)

AMBIENT CONDITIONS	
Ambient temperature	-40...+85 °C (designed for higher temperatures upon request)
Storage temperature	-40...+90 °C
Damp heat	**Test according to IEC 60068-2-78, test Cab** 240 hours at 95 % RH, temperature 38 °C SAE-J553, Test step 14, § 4.2.7.1.2
Vibration	**Test according to IEC 60068-2-6, test Fc** 10 g (57...500 Hz) ,± 0.38 mm (10...57 Hz), 10 frequency cycles/axis, SAE-J553, Test step 14, § 4.2.7.1.5
Shock	**Test according to IEC 60068-2-27, test Ea** 50 g / 11 ms, SAE-J553, Test step 14, § 4.2.7.1.6
Corrosion	**Test according to IEC 60068-2-11, test Ka** 48 hours at 5 % salt mist, SAE-J553, Test step 14, § 4.2.7.1.3
IP code standard	IEC 60529
Actuating area IP code (standard)	IP40
Terminal area IP code (standard)	IP00

ORDERING NUMBER CODE

1	6	2	0	-	3	-	1	0	A
1					2		3		

1 TYPE NUMBER	
1620	1-pole, thermal miniature circuit protector with standard trip curve

2 VERSION, ACCORDING TO SAE J553	
3	Type 3 , with reset button

3 RATED CURRENT RANGE
5A
7,5A
10A
15A
20A
25A
30A

Please observe our minimum order quantities and packaging units.

ADDITIONAL NOTES

COLOUR CODING

Rated current I_n [A]	Cap colour
5	Light brown
7,5	Brown
10	Red
15	Blue
20	Yellow
25	White
30	Light green

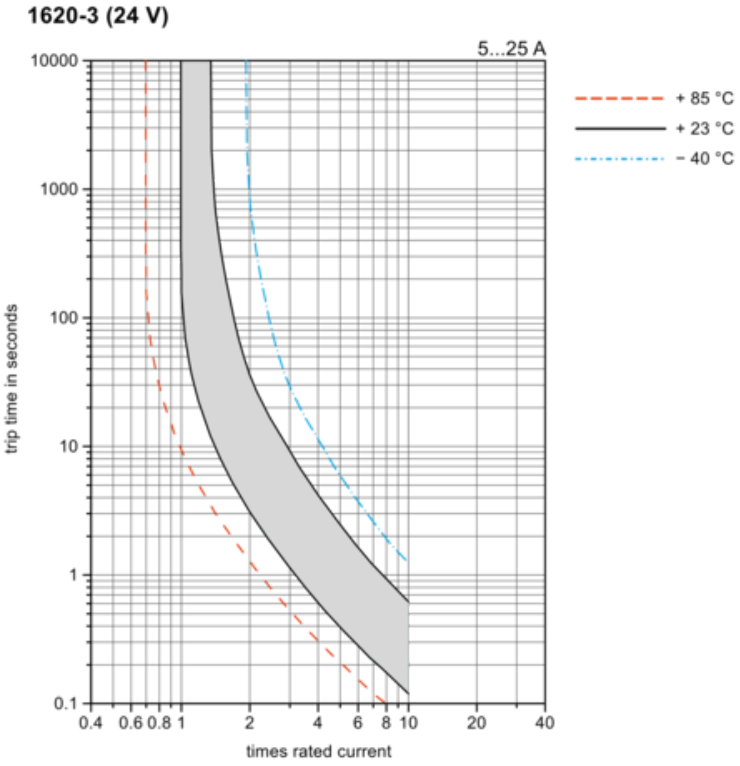
COMPLIANCE

VDA PSW Level 1, 2, 3

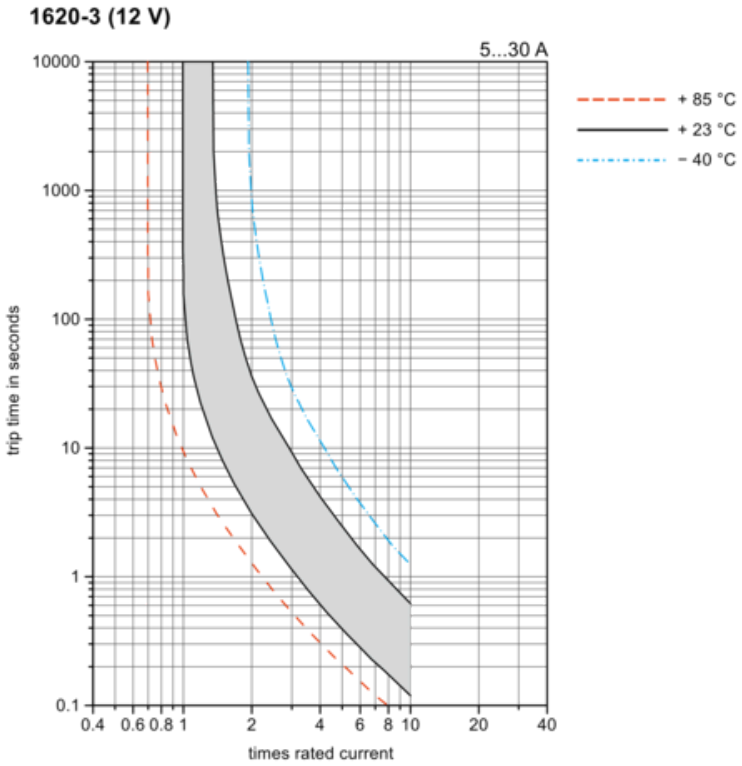
Compliance according to	EN 50581:2012 Technical documentation for the assessment of electrical and electronic equipment with regard to the restriction of hazardous substances

TIME-/CURRENT CHARACTERISTICS

TIME-/CURRENT CHARACTERISTIC - 24 V



TIME-/CURRENT CHARACTERISTIC - 12 V



AMBIENT TEMPERATURE-DEPENDENT TRIP CURVE

Ambient temperature [°C]	Temperature factor
-40	0.73
-30	0.78
-20	0.82
-10	0.86
0	0.91
10	0.95
23	1.00
40	1.09
50	1.16
60	1.25
70	1.33
85	1.43

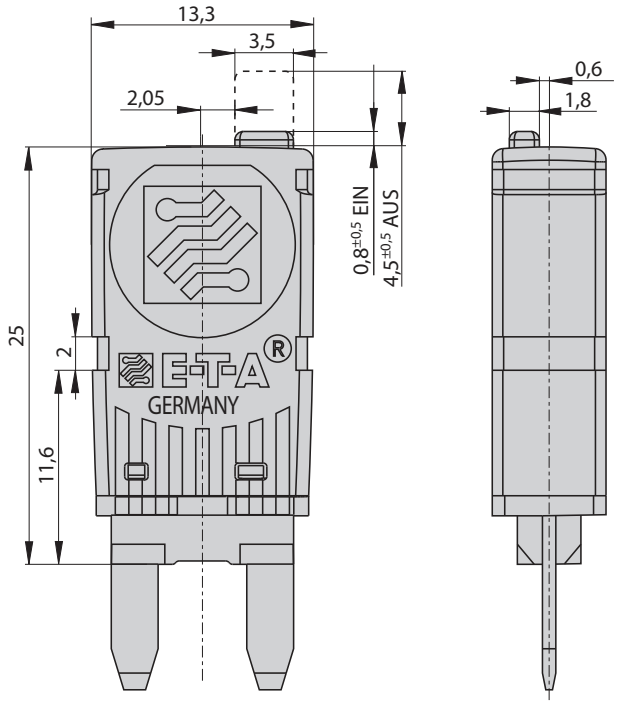
The time/current characteristics depend on the ambient temperatures. In order to eliminate early or late tripping, please multiply the rated current of the circuit breaker with a temperature factor (see Technical Information chapter).

Note on series mounting	When mounted side-by-side, the devices can only carry up to 80 % of their rated current or a higher rating must be selected (see Technical Information: https://www.e-t-a.de/ti_e).
Reset time	at 23 °C: ≤ 15 s

DIMENSIONS

DIMENSIONAL DRAWING

1620-3



SCHEMATIC DIAGRAMS

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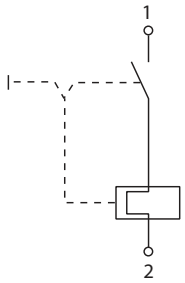
1620-3



FURTHER PRODUCTS

RELATED PRODUCTS

1620 type 1	Single pole, thermal circuit protector in miniature design, specifically suitable for automotive applications. The reversible circuit protector fits into fuse holders designed for blade fuse connections according to ISO 8820-3, type F. Also available with automatic reset (only for DC 12 V) and automatic reset protection. It is ensured that the contacts remain open, preventing an automatic reset. The circuit breaker resets automatically after the supply voltage is switched off. Particularly suitable for installation in hardly accessible locations.	

1620 type 2	Single pole, thermal circuit protector in miniature design, specifically suitable for automotive applications. The reversible circuit protector fits into fuse holders designed for blade fuse connections according to ISO 8820-3, type F. Also available with automatic reset (only for DC 12 V) and automatic reset protection. It is ensured that the contacts remain open, preventing an automatic reset. The circuit breaker resets automatically after the supply voltage is switched off. Particularly suitable for installation in hardly accessible locations.	
1626 type 3	Single-pole thermal circuit protector in miniature design, specifically adapted to automotive applications. The reversible circuit protector fits into fuse holders designed for blade fuse connections according to ISO 8820-3, type F. The available rated currents correspond to those of the blade fuse series. The rated current is clearly identifiable thanks to colour coding.	
1610-92	Single-pole, thermal automotive circuit protector in a very slim design. Also available with reset button and manual release for 24 V. Interchangeable in the connection area with blade fuse inserts in accordance with DIN 72581 Part 3, ISO 8820-3 Type C or ISO 10924 Form CB15.	
1610-21	Single-pole, thermal automotive circuit breaker in a very slim design with coloured housing cap and coloured manual release. Also available with automatic reset for 12 V. Interchangeable in the connection area with blade fuse-links in accordance with DIN 72581 Part 3, ISO 8820-3 Type C or ISO 10924-4 Form CB15.	
1610-H2	Single pole, thermal automotive circuit protector with reset button and colour coded manual release in a very slim design. Also available with automatic reset for 12 V. Interchangeable in the connection area with blade fuse inserts in accordance with DIN 72581 Part 3, ISO 8820-3 Type C or ISO 10924 Form CB15.	
1616-21	Single-pole, thermal automotive circuit protector in an ultra-slim design, featuring a coloured housing cap and a coloured manual release button. Also available with automatic reset for 12 V. Interchangeable in the terminal area with blade fuse inserts according to DIN 72581 Part 3, ISO 8820-3 Type C or ISO 10924-4 Form CB15. Devices with current ratings from 7.5 to 30 A have a fast characteristic curve that can sustain only 70 % of the rated current as a continuous load.	
1616-H2	Single-pole, thermal automotive circuit protector in an ultra-slim design, featuring a coloured housing cap and a coloured manual release button. Also available with automatic reset for 12 V. Interchangeable in the terminal area with blade fuse inserts according to DIN 72581 Part 3, ISO 8820-3 Type C or ISO 10924-4 Form CB15. Devices with current ratings from 7.5 to 40 A have a fast characteristic curve that can sustain only 70 % of the rated current as a continuous load.	
1616-92	Single pole, thermal circuit protector in miniature design, specifically suitable for automotive applications. Design according to ISO 10924-4. The reversible circuit protector fits into fuse holders designed for blade fuse inserts according to ISO 8820-3. The available rated currents correspond to those of the blade fuse series. Clear identification of the rated current is achieved by colour coding. Fuses and circuit protectors of the same colour have the same rated current. Devices with current ratings from 7.5 to 30 A have a fast characteristic curve that can sustain only 70 % of the rated current as a continuous load.	
1160	Thermal automotive circuit breaker In the event of an overload,one contact opens and limits the overcurrent to protect the load. A voltage actuated holding coil ensures that the contacts remain open, preventing an automatic reset. The circuit breaker automatically resets when the supply voltage is switched off for a short time. Particularly suitable for installation in hardly accessible locations.	

All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of technical improvement. Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. All dimensions, data, pictures and descriptions are for information only and are not binding. Amendments, errors and omissions excepted. Ordering part numbers may differ from the device marking.