

Description

Miniaturised single pole press-to-reset cycling type trip-free circuit breaker designed for installation in the E-T-A socket type 12 or fuse blocks to ISO 8820-3.

The current ratings available correspond to those of blade fuses to facilitate interchangeability. For further convenience the same colour coding system is used thereby ensuring that circuit breakers and fuses of the same rating are identified by the same colour marking.

Breakers rated 7.5 A through 40 A have a fast characteristic curve and only hold 70 % of their rated current continuously.

Typical applications

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

Ordering information

Type No.

1616 single pole automotive circuit breaker

Version

21 DC 28 V without manual release facility

H2 DC 28 V with manual release facility

92 DC 12 V autoreset (type I to SAE J 553)

Current ratings

5 7,5 10 15 20 25 30 40 A

1616 - 21 - 10 A ordering example

Please be informed that we have minimum ordering quantities to be observed.

Current ratings, typical voltage drop values and colour coding

Current rating (A)	Voltage drop (mV)	Housing cap colour
5	< 150	light-brown
7.5	< 150	brown
10	< 150	red
15	< 150	blue
20	< 150	yellow
25	< 150	white
30	< 150	light-green
40	< 150	orange

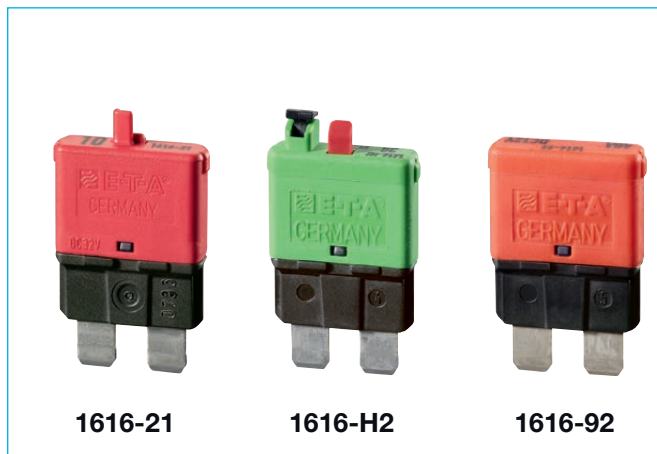
Note

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

Trip times at rated current

Trip times at ... x rated current		1,1 x I _N		1,35 x I _N		2,0 x I _N		3,5 x I _N		6,0 x I _N	
I (N)	colour	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
5	light brown	3600 s	3600 s	40 s	3600 s	3 s	20 s	0,8 s	2 s	0,2 s	0,5 s
7,5	brown	10 s	3600 s	5 s	120 s	1 s	10 s	0,3 s	2 s	0,2 s	0,5 s
10	red	10 s	3600 s	5 s	120 s	1 s	10 s	0,3 s	2 s	0,2 s	0,5 s
15	blue	10 s	3600 s	5 s	120 s	1 s	10 s	0,3 s	2 s	0,2 s	0,5 s
20	yellow	10 s	3600 s	5 s	120 s	1 s	10 s	0,3 s	2 s	0,2 s	0,5 s
25	white	10 s	3600 s	5 s	120 s	1 s	10 s	0,3 s	2 s	0,2 s	0,5 s
30	light green	25 s	3600 s	10 s	120 s	3 s	12 s	0,8 s	2,6 s	0,2 s	0,8 s
40	orange	25 s	3600 s	10 s	120 s	3 s	12 s	0,8 s	2,6 s	0,2 s	0,8 s

I_N = rated current / The trip times comply with ISO 10924-4.



Technical data

For further details please see: www.e-t-a.de/ti_e

Voltage rating 1616-92: DC 12 V
1616-21/1616-H2: DC 32 V

Current ratings 5 A (medium delay)
7.5...40 A (fast trip)

Service short-circuit breaking capacity 300 operations at ≤ 50 A

Ambient temperature -40...85 °C

Reset period for 1616-92 (at 23 °C) ≤ 15 s

Degree of protection (IEC 60529/DIN 40050) operating area IP30 (-21/-H2)
operating area IP54 (-92)
terminal area IP00

Ultimate short-circuit breaking capacity ≥ 3 break operations at 150 A, or
≥ 1 break operation at 2,000 A

Vibration (with mounting socket 12) 10 g (57-500 Hz) ± 0.38 mm (10-57 Hz)
to IEC 60068-2-6, test Fc
10 frequency cycles/axis

Shock (with mounting socket 12) 50 g (11 ms)
to IEC 60068-2-27, test Ea

Corrosion 96 hours at 5 % salt mist,
to IEC 60068-2-11, test Ka

Humidity 240 hours at 95 % RH,
to IEC 60068-2-3, test Ca

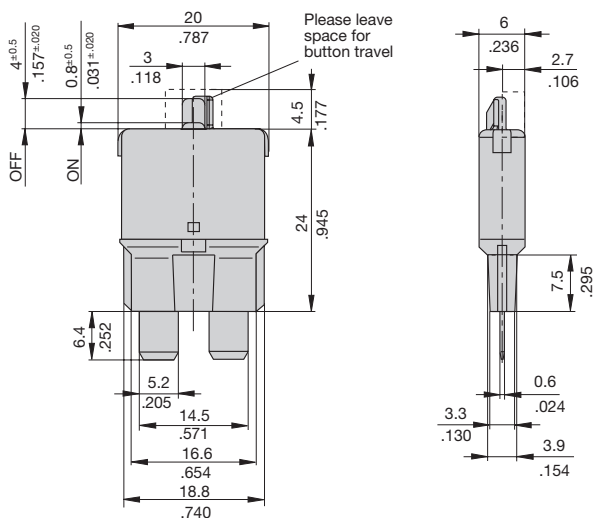
Mass approx. 5 g

Caution:

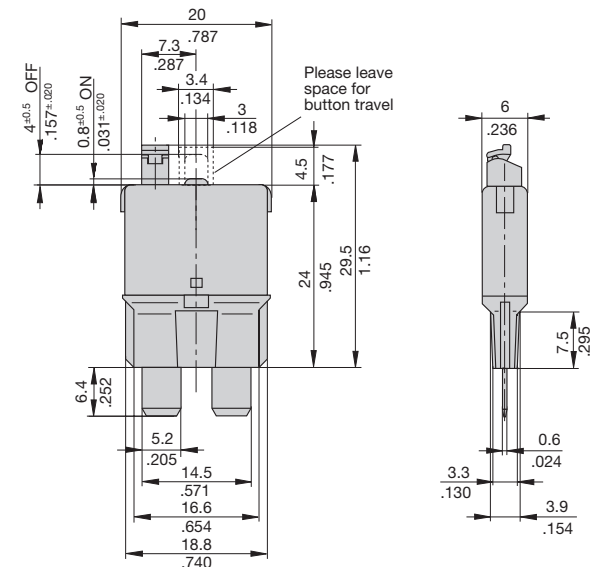
Free travel of the reset button must be ensured! Please ensure to push in the actuator smoothly and completely.

Dimensions

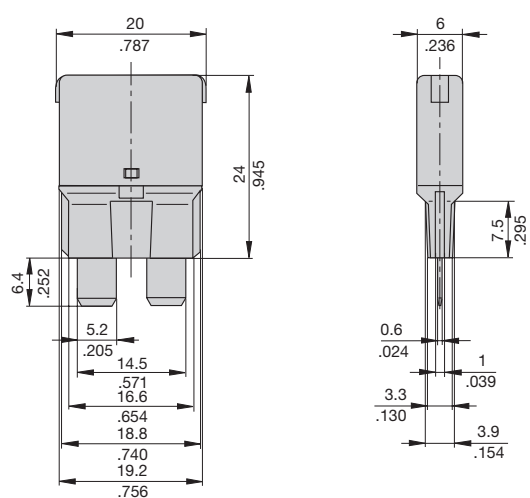
1616-21



1616-H2

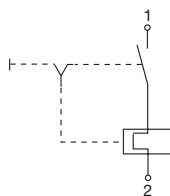


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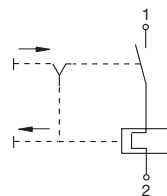


Internal connection diagrams

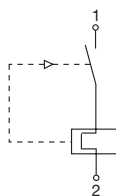
1616-21



1616-H2

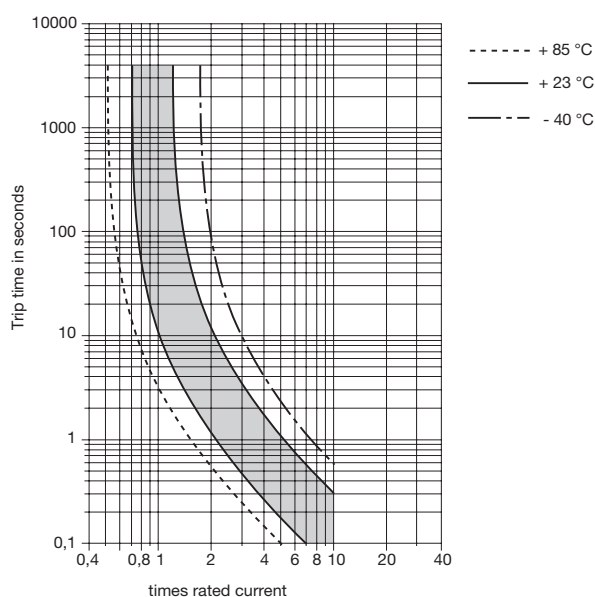


1616-92



Typical time/current characteristic curve

7.5...40 A

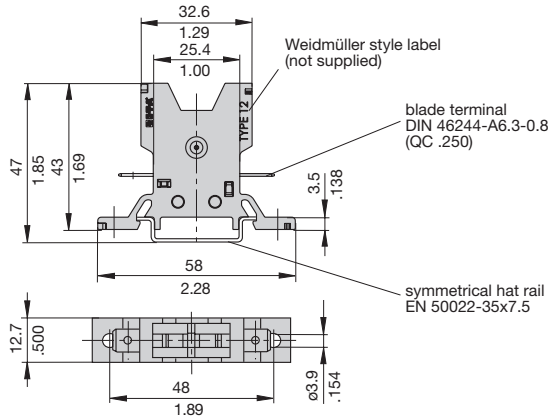


The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

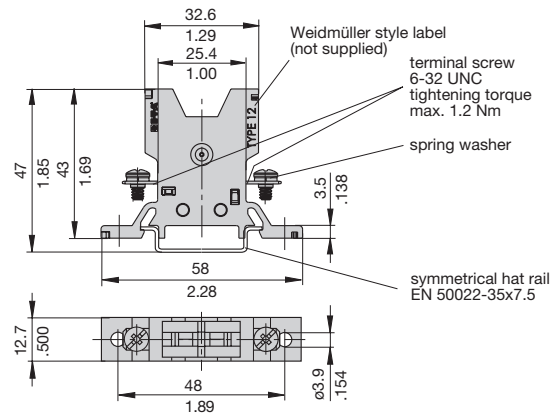
Ambient temperature	°F	-40	-22	-4	+14	+32	+50
	°C	-40	-30	-20	-10	0	10
Derating factor		0,73	0,78	0,82	0,86	0,91	0,95
Ambient temperature	°F	+73.4	+104	+122	+140	+158	+185
	°C	23	40	50	60	70	85
Derating factor		1	1,09	1,16	1,25	1,33	1,43

Accessories

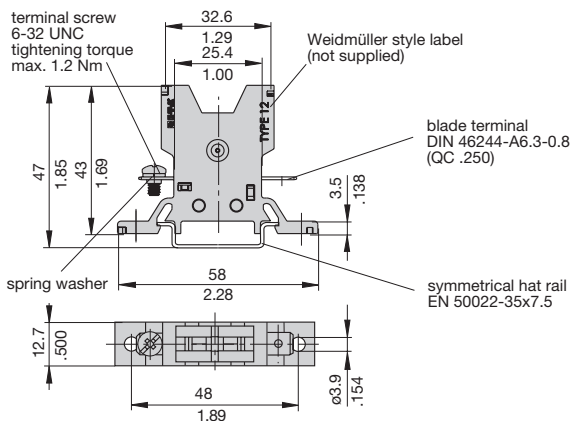
Socket 12-P10



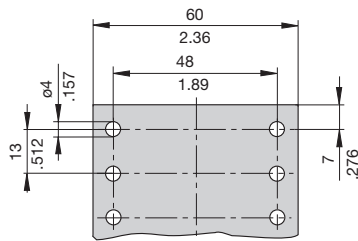
Socket 12-J20



Socket 12-A10



Dimensions for surface mounting



Other sockets available to special order

Labels: Weidmüller, D-33102 Paderborn

Ordering information Mounting socket 12

Type No.

12 Mounting socket

Terminal design

P10 blade terminals A 6.3-0.8 (QC .250)

J20 screw terminals 6-32 UNC

A10 1 blade terminal A6.3-0.8 (QC .250) / 1 screw terminal 6-32 UNC

Version

(blank) single socket

20 two-way

30 three-way

40 four-way

60 six-way

12 - P10 - 20 ordering example

Labels: Weidmüller, D-33102 Paderborn

Accessories for mounting socket 12

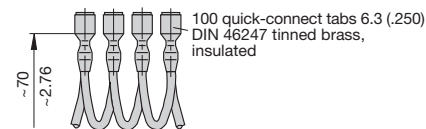
Connector bus links -P10

X 210 588 01/ 1.5 mm² (AWG 16), brown (up to 13 A max. load)

X 210 588 02/ 2.5 mm² (AWG 14), black (up to 20 A max. load)

X 210 588 03/ 2.5 mm² (AWG 14), red (up to 20 A max. load)

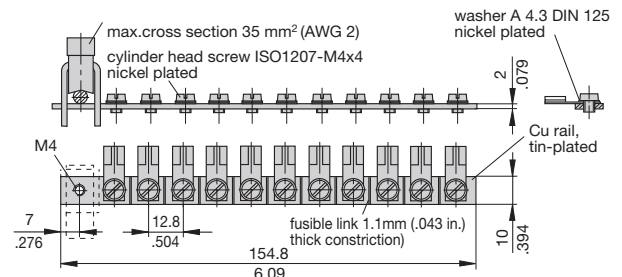
X 210 588 04/ 2.5 mm² (AWG 14), blue (up to 20 A max. load)



Bus bar (supplied as a complete package)
(up to 100 A max. load)

X 211 157 01 with terminal

X 211 157 02 without terminal



This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.