

Description

The 3120-N...-...Q1-... switch serves for switching devices and machinery on or off. It is available in a range of design versions and meets the requirements of the relevant standard IEC/EN 61058 for switches for appliances. Type 3120-N is also available as a circuit breaker for equipment protection in accordance with IEC/EN 60934 (see data sheet 3120-N thermal circuit breaker).

Features:

- rocker or push button actuation
- single pole and double pole versions
- convenient snap-in mounting
- international approvals



Optional:

- illumination
- water splash protection
- push-in terminals
- with undervoltage release module

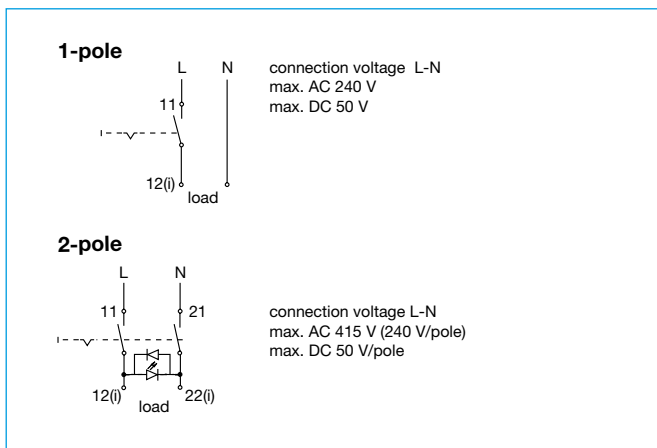
Typical applications

Medical and laboratory equipment, apparatus and machine construction, professional tools, household and garden appliances, offices machines, audio equipment, machine tools

Approvals

Approval authority	Standard	Voltage ratings	Current ratings	Approval logos
VDE	IEC/EN 61058	AC 240 V DC 50 V	16 (4) A 16 A	
CQC	GB 17701	AC 240 V DC 50 V	0.1 – 16 A	

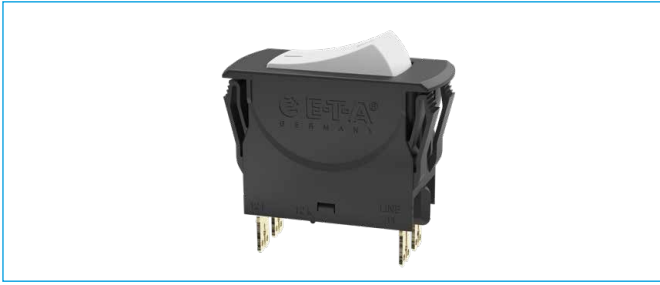
Schematic diagrams



Technical data

Voltage rating per pole	AC 240 V, DC 50 V	
Switching cycles:		
AC 240 V:	16 (4) A	25,000 switching cycles
DC 50 V:	16 A	50,000 switching cycles
Ambient temperature	0 ... 55 °C	
Insulation coordination (IEC 60664)	2.5 kV /2 reinforced insulation at operating area	
Dielectric strength		
Operating area pole to pole (2-pole)	test voltage AC 3,000 V test voltage AC 1,500 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Degree of protection (IEC 60529)		
Operating area	IP40 with water splash cover IP65	
Terminal area	IP00 with rear terminal shroud IP64	
Vibration	8 g (57-500 Hz), ± 0.61 mm (10-57 Hz) test to IEC 60068-2-6, test Fc 10 frequency cycles/axis	
Shock	30 g (11 ms) test to IEC 60068-2-27, test Ea	
Corrosion	96 hours at 5 % salt mist, Test to IEC 60068-2-11, test Ka	
Humidity	240 hrs in 95 % RH test to IEC 60068-2-78, test Cab	
Mass	approx. 33 g (2-pole) approx. 27 g (1-pole) approx. 42 g (2-pole with PT terminals)	

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1

Order numbering code

Type No.	
3120	switch with rocker actuation
Mounting method	
N3	snap-in, mounting cut-out 50.5 x 21.5 mm
N5	snap-in, mounting cut-out 44.5 x 22 mm
Number of poles	
0	2-pole
6	1-pole
Style	
1	standard
3	with actuator guard
4	with water splash protection (IP65)
A	with actuator guard and cross-hole for optional interlock
Terminal design	
PT	push-in terminals
N7	blade terminals 6.3 x 0.8
G7	as N7, terminals 11 and 21 with additional flat head screws M3.5
Version	
Q1	switch only
Actuator style	
W	rocker
Rocker colour and illumination	
01 .	black without illumination
02 .	white without illumination
04 .	red without illumination
12 . Y	white with illumination
14 . R	red with illumination
15 . Y	orange with illumination
16 . T	blue with illumination
19 . G	green with illumination
Marking of rocker actuator rocker style	
A	(not for mounting method 4)
D	
F	
K	
L	
X	
Illumination voltage range (= operating voltage)	
1	DC 12 V
2	DC 24 V
3	AC 115 V
4	AC 230 V
5	DC 48 V
6	AC 400 V (for 2-pole versions)
Current ratings	
16 A	
3120-N5 0 4 - N7 Q1-W 19D G4 - 16 A ordering example	

Order numbering code

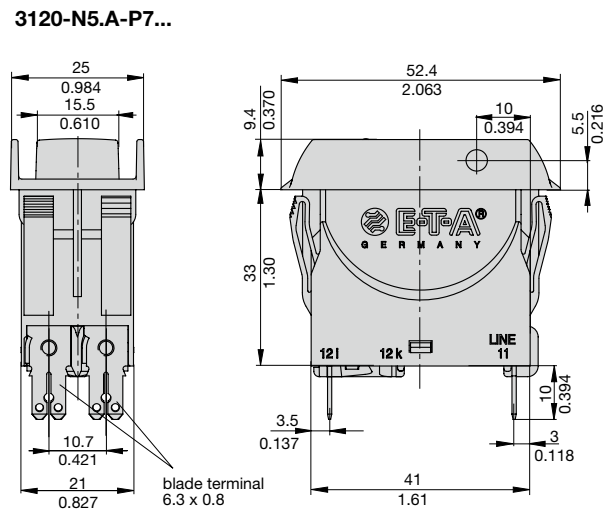
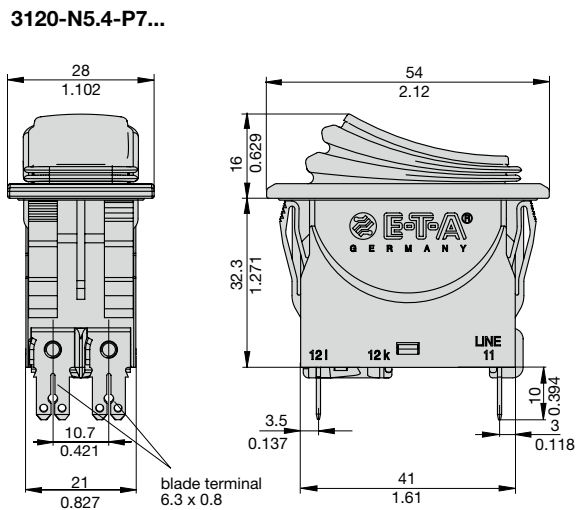
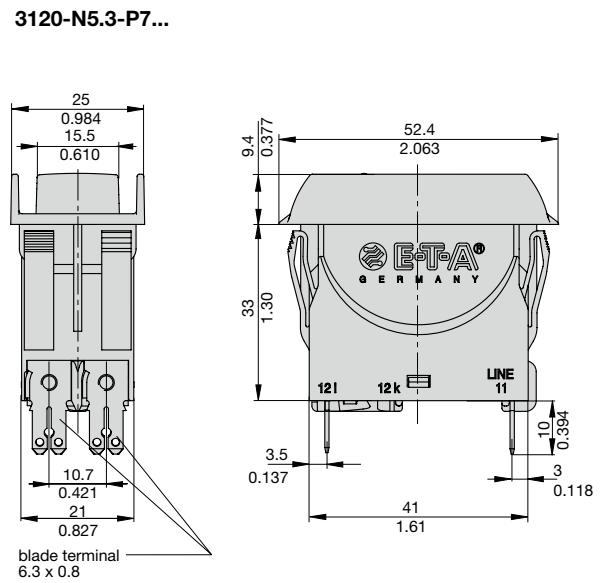
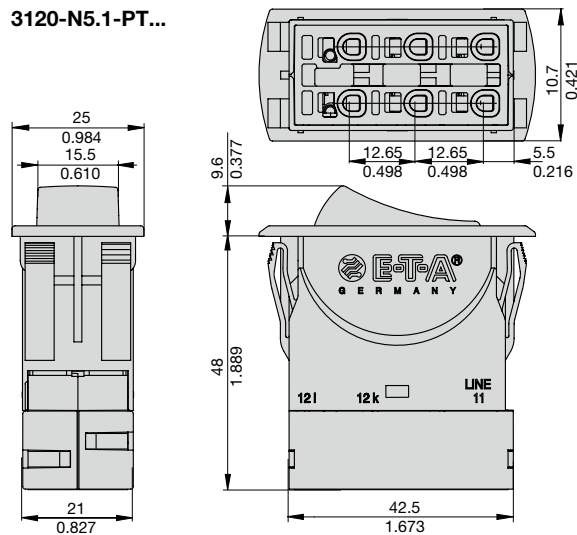
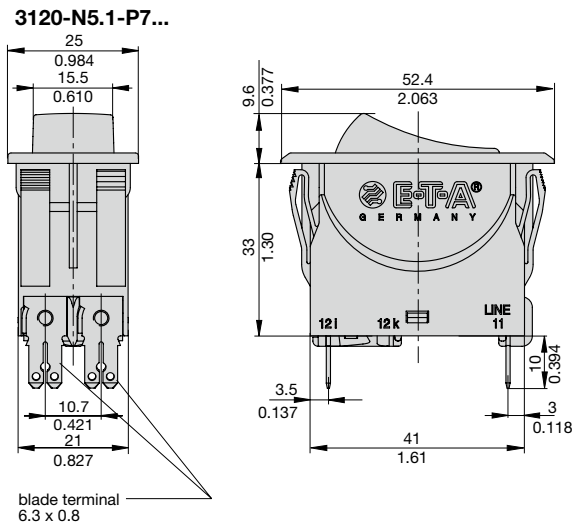
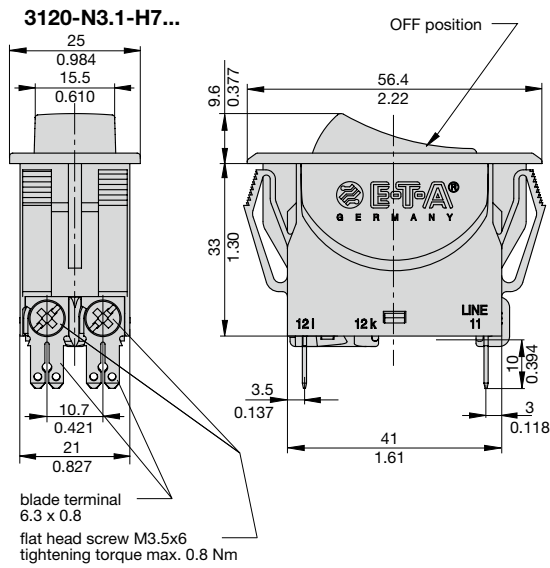
Type No.	
3120	switch with push button actuation
Mounting method	
N3	snap-in, mounting cut-out 50.5 x 21.5 mm
N5	snap-in, mounting cut-out 44.5 x 22 mm
Number of poles	
0	2-pole
6	1-pole
Style	
D	with actuator guard
E	with actuator guard and water splash cover
F	with power-on protection
V	with power-on protection and water splash cover
Terminal design	
PT	push-in terminals
N7	blade terminals 6.3 x 0.8
G7	as N7, terminals 11 and 21 with additional flat head screws M3.5
Version	
Q1	switch only
Actuator style	
S	two push buttons
Colour of push button/illumination (style D and F without water splash protection)	
GRD	green/red without illumination
GRDG	green with LED illumination/red without illumination
Colour of push button/illumination (style E and V with water splash protection)	
GRX	green/red without illumination
GRXG	green with LED illumination/red without illumination
Illumination voltage range (= operating voltage)	
1	DC 12 V
2	DC 24 V
3	AC 115 V
4	AC 230 V
5	DC 48 V
6	AC 400 V (for 2-pole versions)
Current ratings	
16 A	
3120-N3 0 V - N7 Q1-S GRXG - 16 A ordering example	

Please observe our minimum ordering quantities.

Customer-specific solutions

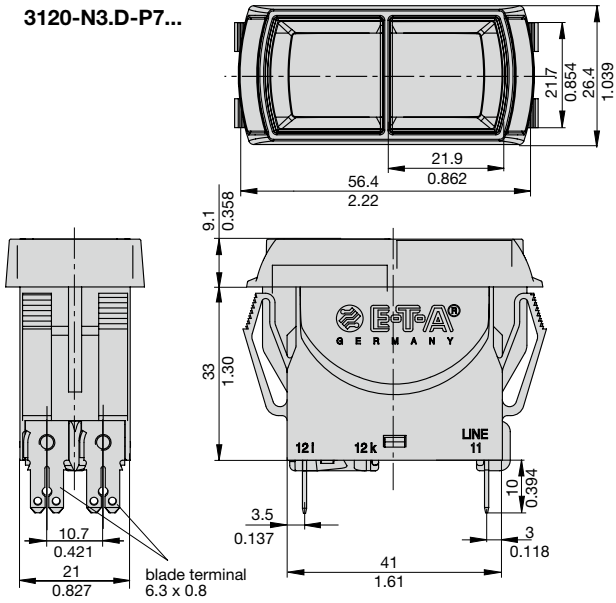
Looking for a version you cannot find in our order numbering code? Please get in touch.

Dimensions

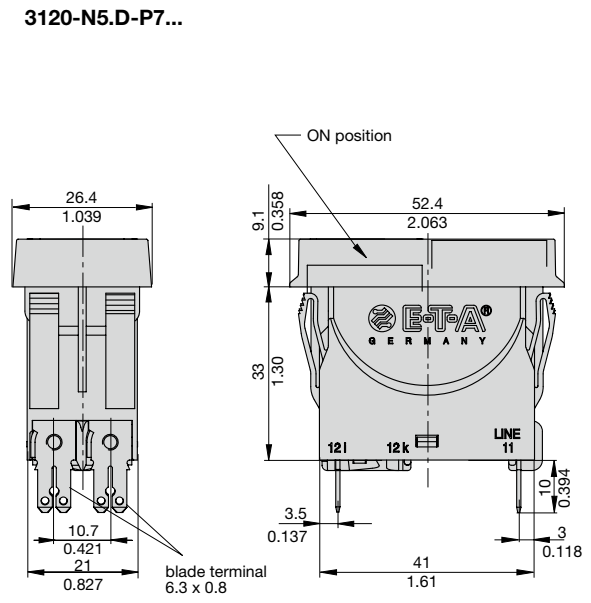


Dimensions

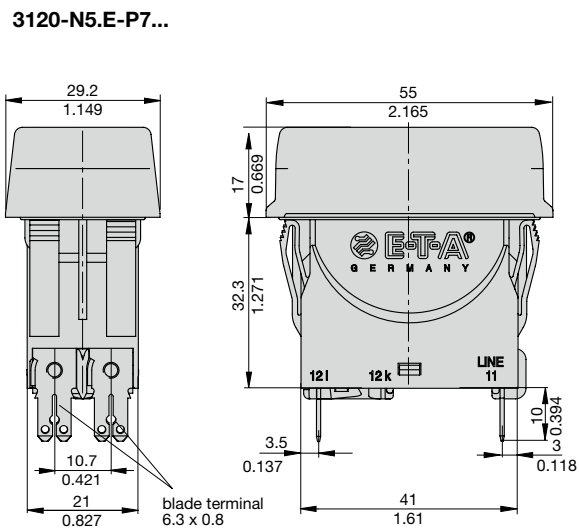
3120-N3.D-P7...



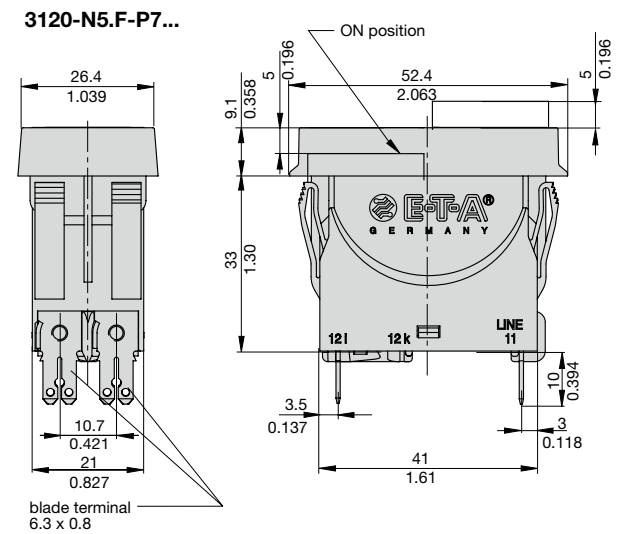
3120-N5.D-P7...



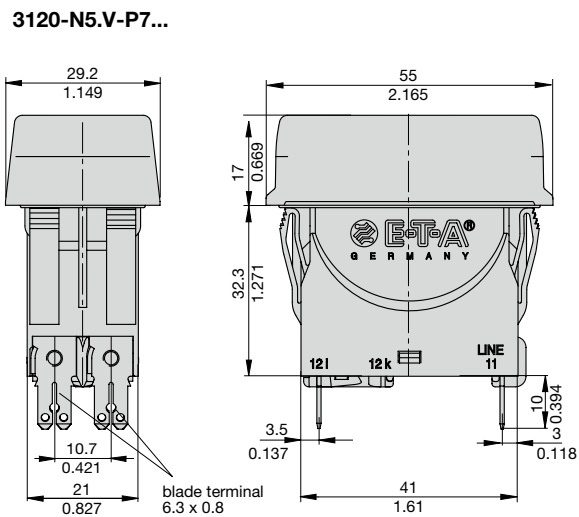
3120-N5.E-P7...



3120-N5.F-P7...



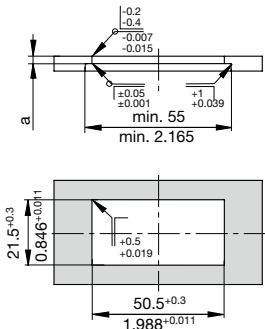
3120-N5.V-P7...



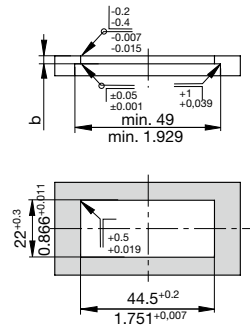
Mounting method

Mounting style

Cut-out for mounting style -N3



Cut-out for mounting style -N5

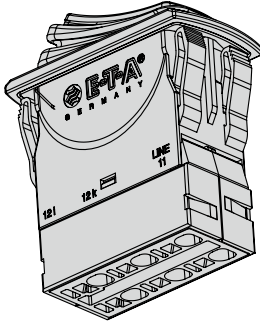


panel thickness	without water splash protection	with water splash protection
a	1 – 6.35 mm	1 – 5.5 mm
b	1 – 4 mm	1 – 3.5 mm

Terminal types

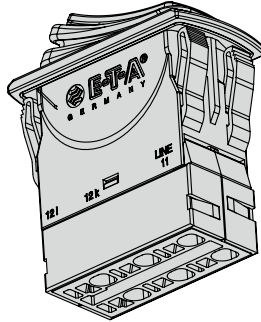
1-pole version

3120-N564-PT

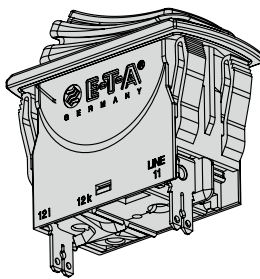


2-pole version

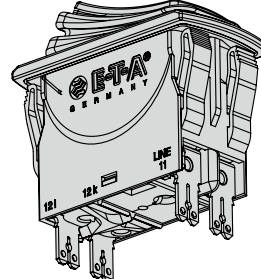
3120-N504-PT



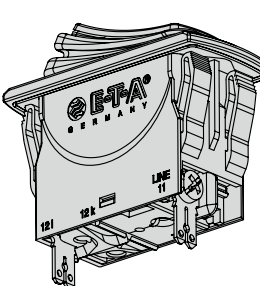
3120-N564-N7Q1



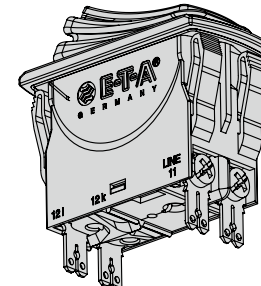
3120-N504-N7Q1



3120-N564-G7Q1

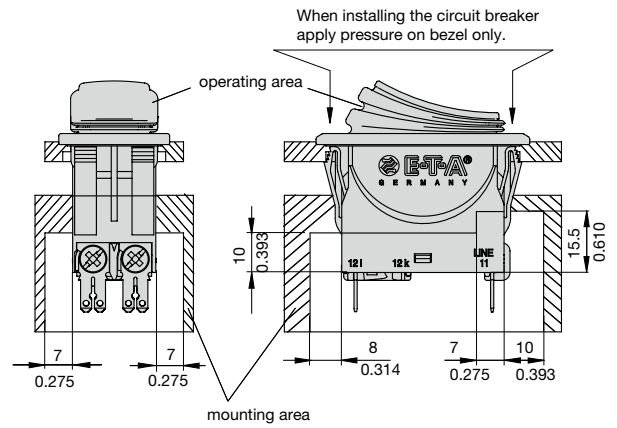


3120-N504-G7Q1

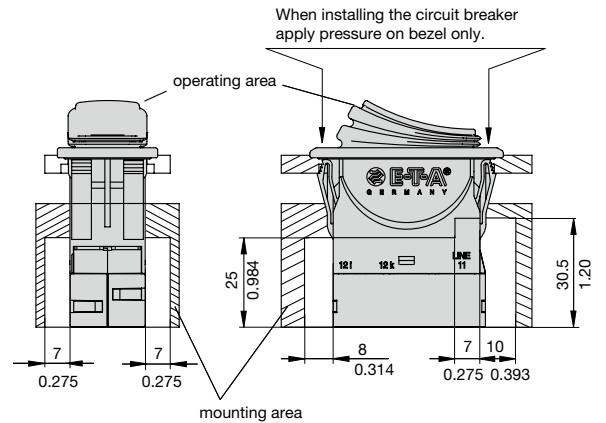


Installation drawing

3120 with blade terminals



3120 with push-in terminals

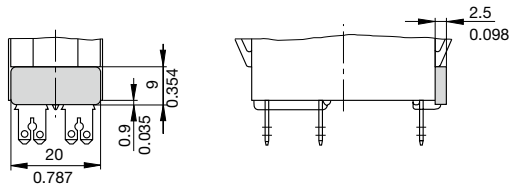


Cable cross sections PT terminals

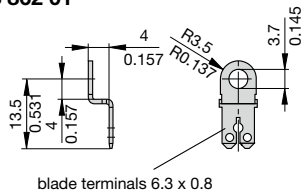
Cable	cross section with direct push-in wiring
Rigid	1 ... 4 mm ² (stripping length: 10 mm)
Flexible with wire end ferrule (with or without plastic sleeve)	0.5 ... 2.5 mm ²
Cable	cross section when opening the push-in terminals
Rigid	0.5 ... 4 mm ² (stripping length: 10 mm)
Flexible without wire end ferrule	0.5 ... 2.5 mm ²

Accessories

Insulated cover
Y 303 068 01

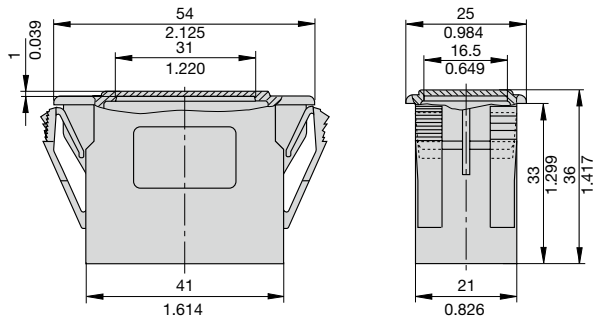


Terminal adapter
Y 303 862 01

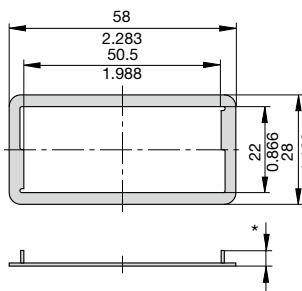


blade terminals 6.3 x 0.8

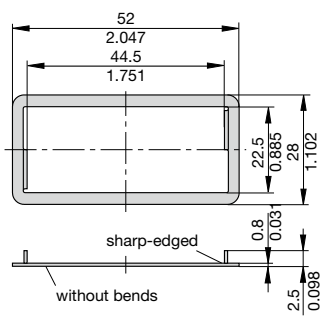
Blanking piece in -N3 frame
Y 303 885 31



Spacer for 3120-N3...
Y 303 675 01/02

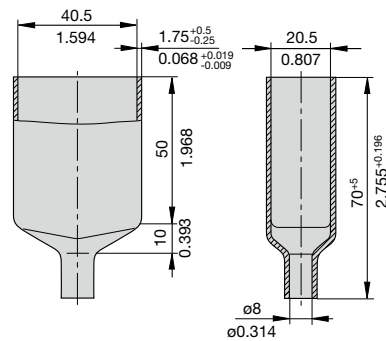


Spacer for 3120-N5...
Y 303 676 01



* Y 303 675 01 suitable for panel thickness < 2 mm
* Y 303 675 02 suitable for panel thickness < 4 mm

Rear terminal shroud, black (IP64)
Y 304 275 01



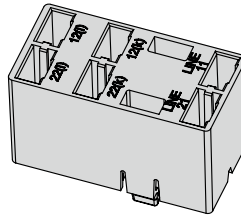
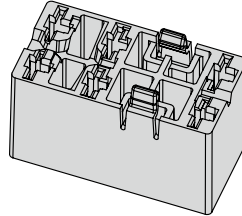
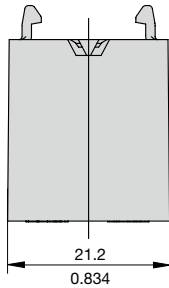
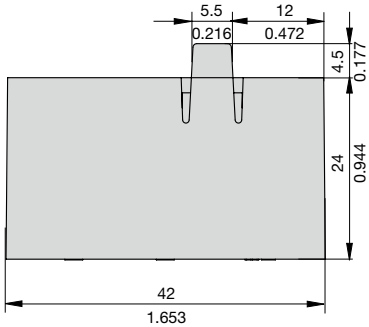
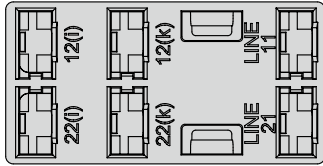
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Accessories

Plug-in connector

Y 31214001

Connecting cables can be pre-wired. Two retaining clips ensure a tight fit.



Benefits:

- Reduced installation time and costs for final assembly
- Quick replacement of devices

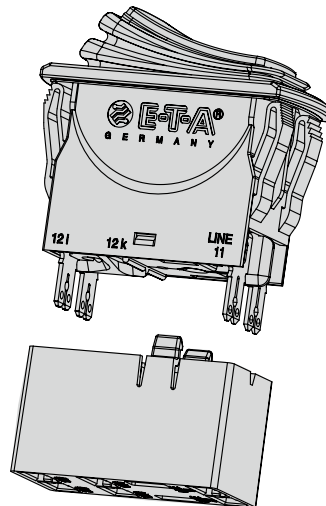
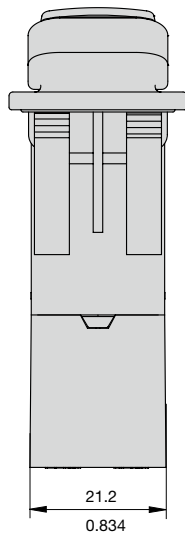
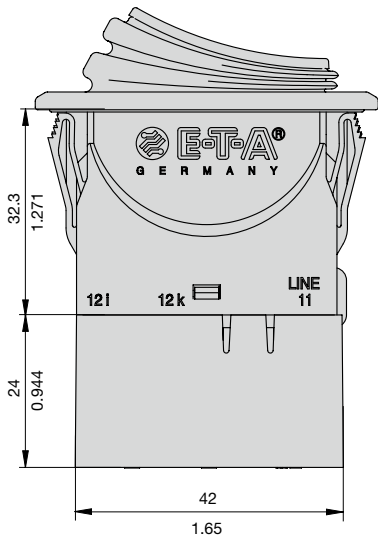
Note:

Delivery without receptacles.

Dimensions of receptacles (width 6.3 mm) are in accordance with DIN 46340 part 3, shape A.

Examples of suitable receptacles: Stocko RSB 7916 F6,3-1 / Klauke type 2730 / Vogt type 3832d.67 / TE FASTON Terminals 250 Series / Delphi Packard 58 Series

Plug-in connector mounted on circuit breaker:



Description X3120-U undervoltage release module

The undervoltage release module reliably excludes personal injury through automatic re-start after voltage dip or power failure.

Note: Basic unit 3120-N...-G7 requires screw terminals. Not possible in combination with PT terminals.

Please observe the following in combination with design version 4: In the event of voltage dip or power failure, the undervoltage release module trips the switch.

The rocker actuator will go into centre position. Reset is effected in two steps:

- Step 1: Switch rocker into OFF position.
- Step 2: Reset switch.

Typical applications

All machines that could cause personal injury upon automatic re-start, e.g. drilling machines, electric saws, meat cutting machines etc.

The X3120-U02 version allows set up of a cost-effective safety circuit via the physically isolated undervoltage release module, which enables implementation for example of a remote disconnection with emergency stop.

Order numbering code

Type No.

X3120 module for type 3120-N

Module

U undervoltage release module

Design

00 standard (without separate connections)

01 1 blade terminals 2.8x0.8

02 2 blade terminals 2.8x0.8

Voltage ratings

00 AC 230/240 V 50/60 Hz

01 AC 120 V 50/60 Hz

02 AC 100 V 50/60 Hz

03 DC 24 V

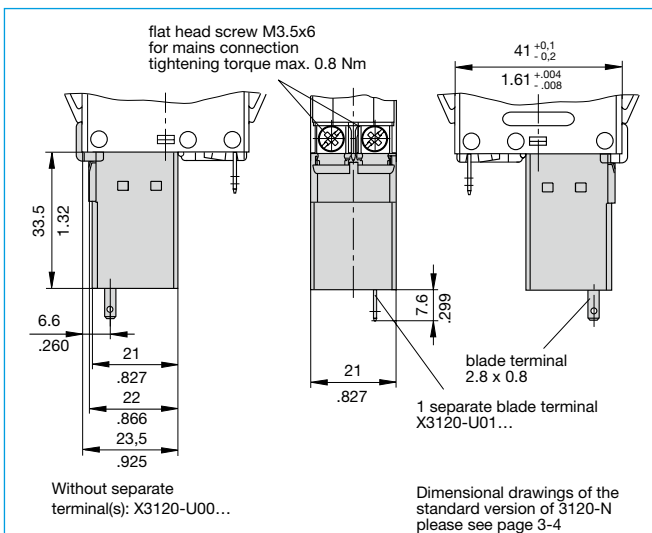
04 AC 400 V 50/60 Hz

Supply status

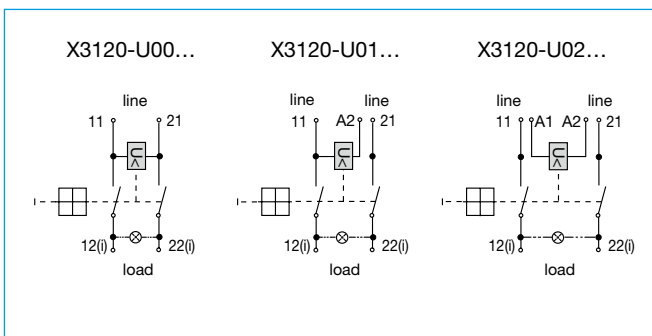
M module mounted to circuit breaker 3120-N

X3120-U 00 00 M ordering example

Dimensions – undervoltage release module



Schematic diagrams



Technical data

Voltage ratings	AC 100 V; AC 120 V; AC 230/240 V; AC 400 V (50/60 Hz) DC 24 V
Voltage tolerances	+ 10 %/- 15 %
Typical life	20,000 cycles
Current consumption	approx. 2.5 mA
Release values	$0.2 \times U_N < U < 0.7 \times U_N$ (at a rated voltage of AC 100 V the device can trip at 70 V and must trip at 20 V)
Trip time	< 20 ms
Latch-in values	$\geq 85 \% U_N$
Ambient temperature	-30 ... 60 °C
Vibration	8 g (57-500 Hz), ± 0.61 mm (10-57 Hz) test to IEC 60068-2-6, test Fc 10 frequency cycles/axis
Shock	30 g (11 ms) test to IEC 60068-2-27, test Ea
Corrosion	48 hours at 5 % salt mist, test to IEC 60068-2-11, test Ka
Humidity	240 hrs in 95 % RH test to IEC 60068-2-78, test Cab
Mass	approx. 56 g (including base unit)

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