

## Description

Single, two, three and four pole magnetic and hydraulic-magnetic circuit breakers with trip-free-mechanism and toggle or rocker actuation. A choice of fast magnetic only or hydraulically delayed switching characteristics (S type MO or HM CBE to EN 60934) ensures suitability for a wide range of applications. Industry standard dimensions and panel mounting. Low temperature sensitivity at rated load. Approved to CBE standard EN 60934 (IEC 60934).

## Typical applications

Communications systems, process control and transportation.

## Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance ( $\Omega$ ) per pole
1	1.1
5	0.034
10	< 0.02
15	< 0.02
20	< 0.02
25	< 0.02
30	< 0.02
40	< 0.02
50	< 0.02
60	< 0.02
80	< 0.02
100	< 0.02



8350

## Technical data

Voltage rating	3 AC 415 V; AC 240 V 50/60 Hz DC 80 V	
Current rating range	0.1...70 A multi pole 0.1...100 A single and double pole	
Auxiliary circuit	6 A, AC 240 V / DC 28 V 1 A, DC 65 V 0.5 A, DC 80 V	
Typical life	10,000 operations at $I_N$	
Ambient temperature	-40...+85°C (-40...+185 °F)	
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 2.5 kV reinforced insulation in operating area	pollution degree 2
Dielectric strength	AC 3750 V	
Insulation resistance	> 100 M $\Omega$ (DC 500 V)	
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00	
Vibration	10 g (55-500 Hz) $\pm$ 0,76 mm (10-55Hz) to IEC 60068-2-6, test C 10 frequency cycles/axis per Method 204C, test Condition A. Instantaneous curves tested at 90 % of rated current.	
Shock	100 g (6 ms) to IEC 60068-2-27, test Ea per Method 213, Cond. I. Instantaneous curves tested at 90 % of rated current.	
Corrosion	96 hours at 5% salt mist, to IEC 600-9-2-11, test Ka Method 101, Condition A	
Humidity	24 hours at 55% RH, to IEC 60068-2-78, test Cab Method 106D	
Mass	approx. 65...100 g per pole (depending on version)	

## Ordering information

<b>Type No.</b>	
8350	circuit breaker
<b>Mounting</b>	
A	flange rectangular aperture (M3 or 6-32)
G	flange mounting flush, rocker (without rockerguard), max. 3 poles
N	flange mounting flush, rocker (with rockerguard), max. 3 poles
<b>Configuration</b>	
A	metric M3, no interphase barriers
B	metric M3, with interphase barriers
C	imperial 6-32, no interphase barriers
D	imperial 6-32, with interphase barriers
<b>Number of poles</b>	
1	1 pole (handle/rocker)
2	2 poles (handle/rocker)
3	3 poles (handle/rocker) up to 70 A
4	4 poles (handle) up to 70 A
<b>Colour of front face</b>	
B	black standard
<b>Terminal design</b>	
A	stud terminal M5, max. 50 A
A	stud terminal 10-32, max. 50 A
M	stud terminal M6, max. 100 A
M	stud terminal 1/4-20, max. 100 A
V	clip terminals 1/4, max. 50 A
W	push-in-stud
2	screw 10-32 with washer and saddle clamp, max. 50 A
7	0.25 Inch double quick connect, max. 25 A
8	clip terminals 7/16", max. 50 A
<b>Actuator configuration</b>	
A	1 handle standard, one per pole
B	reduced number of handles standard
E	dual color rocker, Indicate ON (legend vertical)
G	dual color rocker, Indicate OFF (legend vertical)
J	dual color rocker, push-to-reset, Indicate OFF (legend vertical)
T	single color rocker, (legend vertical)
V	single color rocker, push-to-reset (legend vertical)
1	Mid-trip, handle standard, one per pole
2	Mid-trip, handle standard and Alarm Switch, one handle per pole
<b>Characteristic curve</b>	
00	switch only
AS	long delay
BS	medium
CS	short
AD	long delay, AC/DC
BD	medium, AC/DC
CD	short, AC/DC
OP	instantaneous
<b>Actuator colour and marking details</b>	
A	green I-0 ON-OFF
K	white I-0 ON-OFF
L	black I-0 ON-OFF
V	blue I-0 ON-OFF
W	gray I-0 ON-OFF
X	yellow I-0 ON-OFF
Y	red I-0 ON-OFF
Z	orange I-0 ON-OFF
<b>Illumination voltage range</b>	
0	without illumination
<b>Auxiliary contacts</b>	
Auxiliary switch available on Series Trip and Switch only circuits. On multiple units, only one auxiliary switch is normally supplied mounted in extreme right pole.	
A	without auxiliary contacts
B	S.P.D.T., 0.110 QC Terminals
<b>Internal circuit</b>	
B	series trip, current
<b>Remote trip</b>	
0	without remote trip

8350 - A	A	3	B -	A	A	BS -	3	0	A	B	0	A -	...	
													<b>Frequency</b>	
													A	AC 50/60 Hz
													D	DC
													M	AC + DC
													<b>Current rating</b>	
													0.1...100 A	
													<b>Approvals</b>	
													A	without
													E	UL1077, CSA, TÜV

8350 - A A 3 B - A A BS - 3 0 A B 0 A - 1A - .... ordering example

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8350 - A A 3 B - A A BS - 3 0 A B 0 . . - ...

## Interrupting capacity

Lists UL Recognized, CSA and TÜV Certified configurations and performance capabilities as a Component Supplementary Protector

Circ. Conf.	voltage			current rating		interrupting capacity (A)	
	max rating	frequency	phase	full load (A)	general purpose (A)	UL CSA	TÜV
Series	65	DC	-	-	71.0-100	5000	-
	80	DC	-	0.02-70.0	-	7500	-
	80	DC	-	0.10-70.0	-	7500	-
	125/250	50/60 Hz	1Ø	0.02-100	-	5000	-
	125/250	50/60 Hz	1Ø	0.02-50	-	3000	-
	250	50/60 Hz	1+3Ø	0.10-30.0	-	5000	3000
	250	50/60 Hz	1+3Ø	31.0-50.0	-	5000	2000
	250	50/60 Hz	1+3Ø	51.0-70.0	-	5000	1000
	250	50/60 Hz	1+3Ø	0.02-70.0	-	5000	-
	277	50/60 Hz	1Ø	0.02-50.0	-	5000	-
Shunt	400Y(5)	50/60 Hz	3Ø	0.10-50.0	-	-	2000
	415Y(5)	50/60 Hz	3Ø	0.10-30.0	-	-	2000
	480Y(4)	50/60 Hz	1+3Ø	0.02-30.0	31.0-50.0	5000	-
	80	DC	-	0.02-50.0	-	7500	-
	80	DC	-	0.10-50.0	-	7500	2500
	250	50/60 Hz	1+3Ø	0.10-30.0	-	5000	3000
	250	50/60 Hz	1+3Ø	31.0-50.0	-	5000	2000
	250	50/60 Hz	3Ø	0.02-50.0	-	5000	-
	277	50/60 Hz	1Ø	0.02-50.0	-	5000	-
	400Y(5)	50/60 Hz	3Ø	0.10-50.0	-	-	2000
415Y(5)	50/60 Hz	3Ø	0.10-30.0	-	-	2000	
480Y(4)	50/60 Hz	1+3Ø	0.02-30.0	31.0-50.0	5000	-	

Lists UL Recognized configurations and performance capabilities as a manual across the line starter

Circuit Configuration	voltage			current rating (A)	Horsepower ratings max.
	max rating	frequency	phase		
Series	277 (1)	50/60 Hz	1Ø	0.02-20.0	3 HP
Shunt Switch	480Y (2)		3 Ø	0.02-20.0	5 HP
Series	250 (1)	50/60 Hz	1Ø	0.02-20.0	3 HP
Shunt Switch			3 Ø	0.02-20.0	5 HP
Series	120 (1)	50/60 Hz	1Ø	0.02-50.0	3 HP
Shunt Switch			3 Ø	0.02-50.0	7 1/2 HP

Lists UL Listed (489), CSA Certified (C22.2No.5.1-M) configurations and performance capabilities as a Molded Case Circuit Breaker

Circuit Configuration	voltage			current rating (A)	Interrupt Capacity (A)
	max rating	frequency	phase		
Series	80	DC	-	0.10-100	10,000
	125	DC	-	0.10-50.0	5,000
	120	50/60 Hz	1Ø	0.10-70.0	10,000
	240	50/60 Hz	1Ø	0.10-20.0	5,000
	120/240	50/60 Hz	1Ø	0.10-50.0	5,000

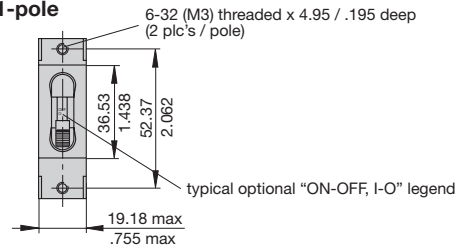
Lists UL Recognized, CSA Certified configurations and performance capabilities as Protectors, Supplementary for Marine Electrical and Fuel Systems. Ignition Protection per UL Standard 1500. UL Classified Small Craft Electrical Devices, Marine in accordance with ISO 8846 as Marine Supplementary Protectors

Circuit Configuration	voltage			current rating		Interrupt Capacity (A)
	max rating	frequency	phase	full load (A)	General purpose (A)	
Series	65	DC	-	-	71.0-100	1500 (1)
	80	DC	-	0.02-70.0	-	1500 (1)
	125/250	50/60 Hz	1Ø	0.02-100	-	1500 (1)
	250	50/60 Hz	1Ø	0.02-70.0	-	1500 (1)

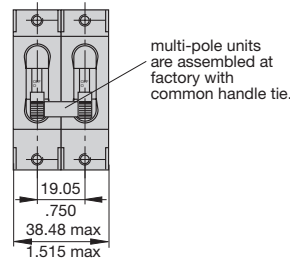
## Actuator configuration

### Configuration A

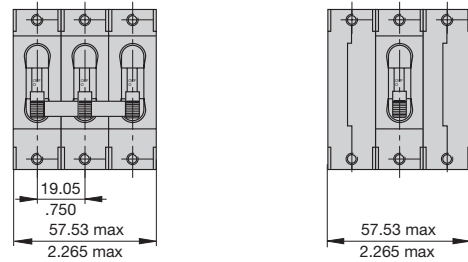
#### 1-pole



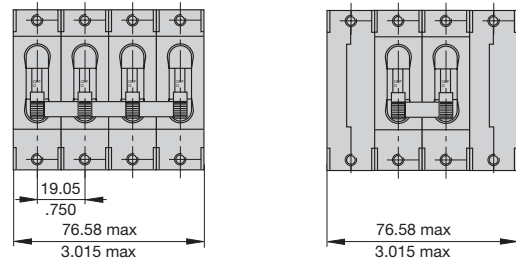
#### 2-pole



#### 3-pole



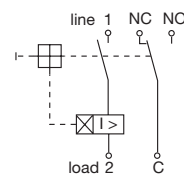
#### 4-pole



### Configuration B

## Internal connection diagrams

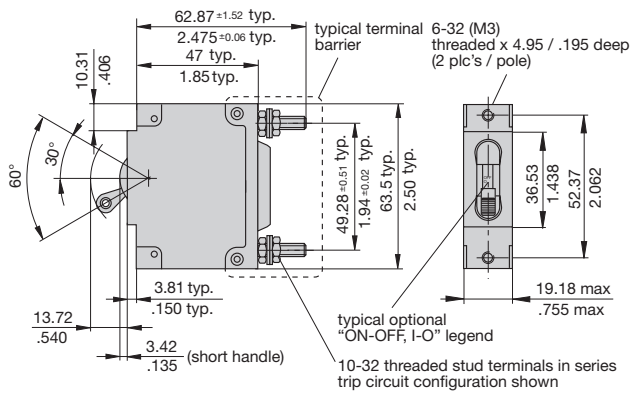
### B - Series trip with auxiliary contact



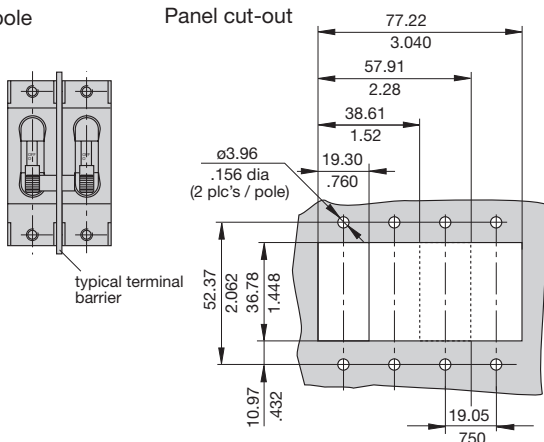
This is a metric design and millimeter dimensions take precedence (mm / inch)

## Dimensions

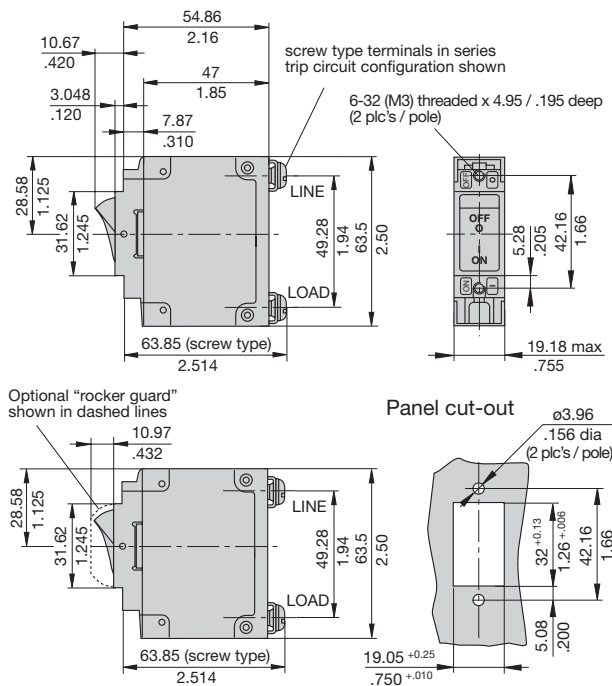
### Mounting -A



### 2-pole



### Mounting -G, -N

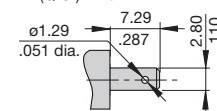


## Terminal design / Dimensions

		Terminal
Description	Code	Dimensional detail
10-32 STUD	A	
M5 STUD	A	
1/4-20 STUD	M	
M6 STUD	M	
10-32 SCREW	2	
M5 SCREW	2	
.250 DOUBLE Q.C.	7	
1/4" CLIP TERMINALS	V	
7/16" CLIP TERMINALS	8	
PUSH-IN STUD	W	

### Auxiliary / Alarm switch terminal detail

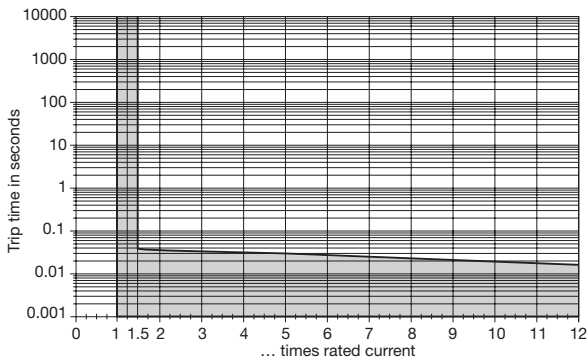
TAB (Q.C.) .110



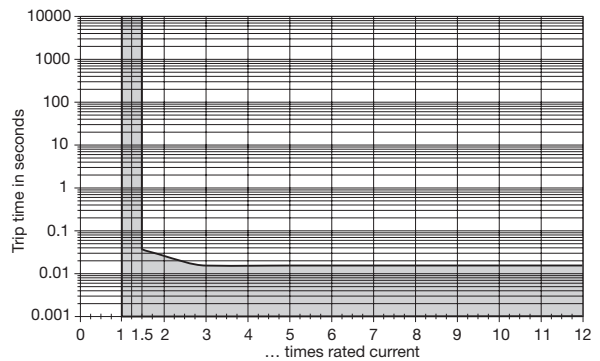
This is a metric design and millimeter dimensions take precedence (mm / inch)

## Typical time/current characteristics

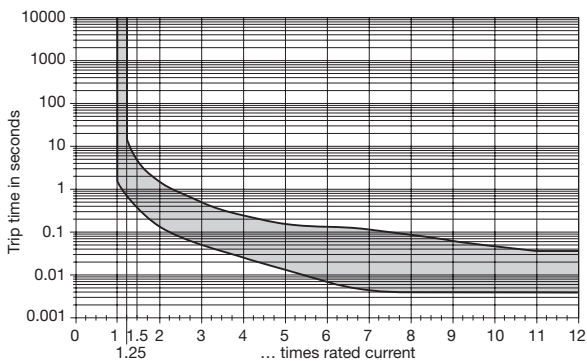
**Curve OP (instantaneous) for AC 50/60 Hz**



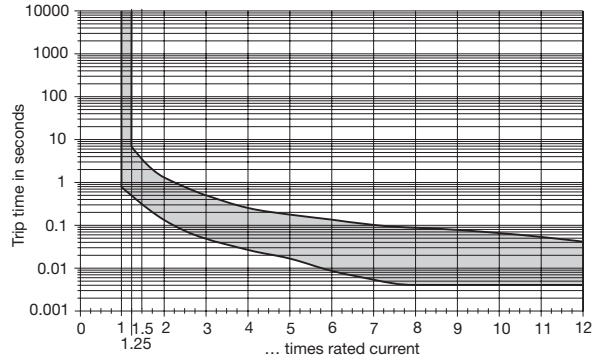
**Curve OP (instantaneous) for DC**



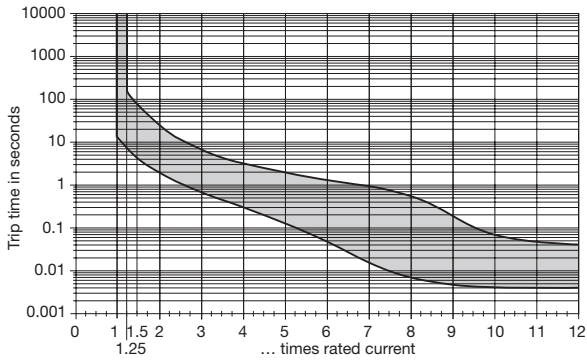
**Curve CS (short delay) for AC 50/60 Hz**



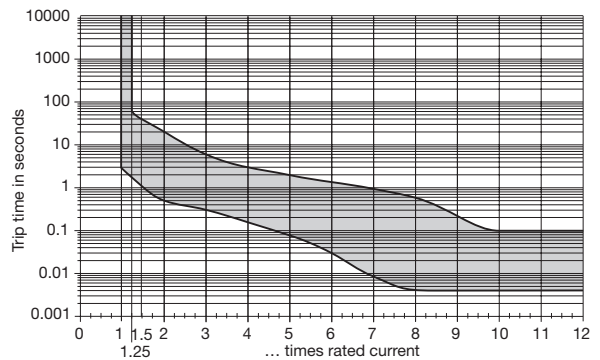
**Curve CS (short delay) for DC**



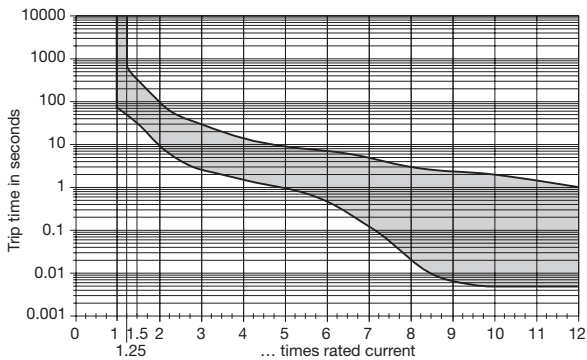
**Curve BS (medium delay) for AC 50/60 Hz**



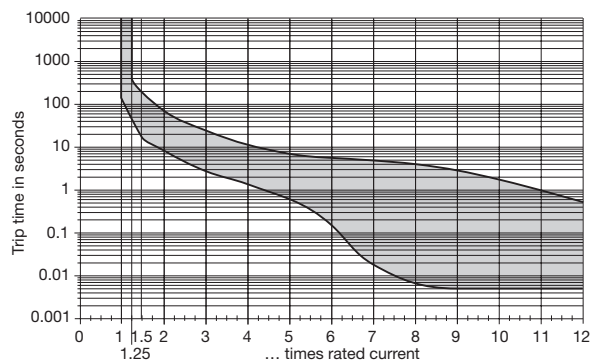
**Curve BS (medium delay) for DC**



**Curve AS (long delay) for AC 50/60 Hz**



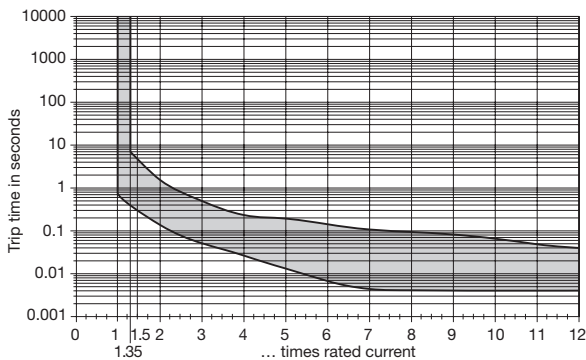
**Curve AS (long delay) for DC**



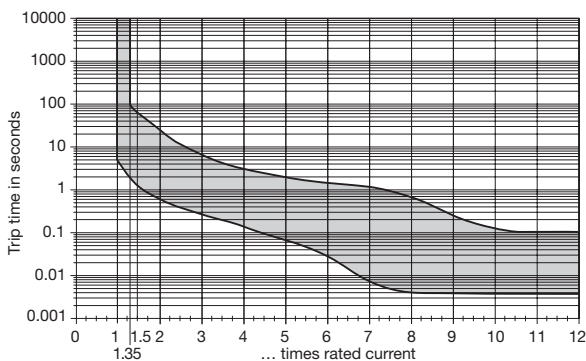
**N.B.** All curves will only be maintained if the escutcheon is mounted on a vertical surface.  
**Other characteristic curves to special order (e. g. with impulse delay for inrush peaks).**

## Typical time/current characteristics

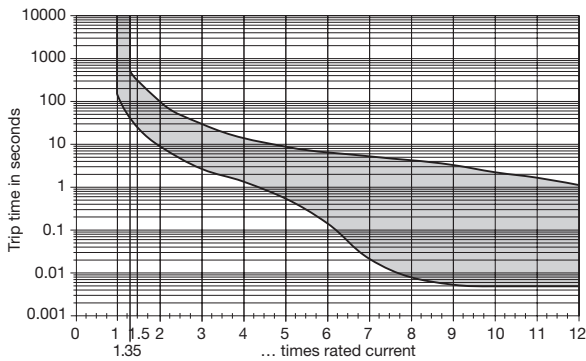
Curve CD (short delay) for AC 50/60 Hz, DC



Curve BD (medium delay) for AC 50/60 Hz, DC



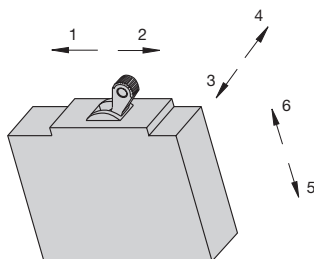
Curve AD (long delay) for AC 50/60 Hz, DC



**N.B.** All curves will only be maintained if the escutcheon is mounted on a vertical surface.

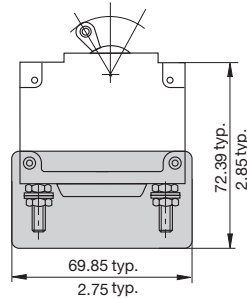
**Other characteristic curves to special order (e. g. with impulse delay for inrush peaks).**

## Shock directions

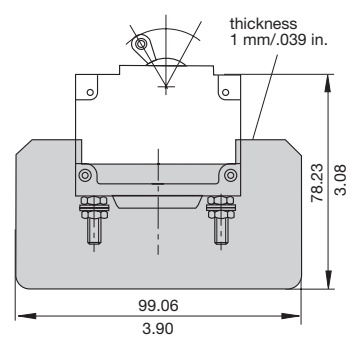


## Interphase barriers / Dimensions

Typical terminal barrier



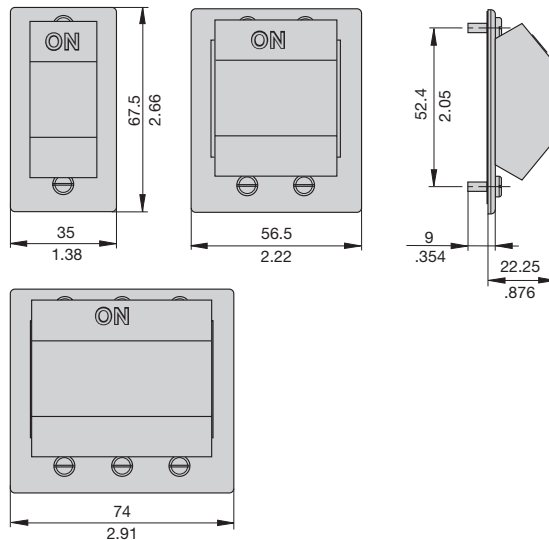
Special terminal barrier



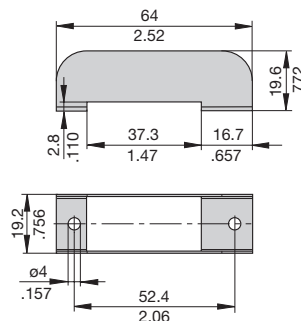
## Accessories

**Splash cover (IP65) for 1, 2, 3 pole (only for configuration C/D)**

- X 222 444 01 1 pole
- X 222 444 11 2 pole
- X 222 444 21 3 pole



**Toggle guard for 8350-A...**  
Y 307 381 01



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.