



Regional Circuit Breaker

General Data			
Poles	1, 2, 3, 4, 1+N, 3+N		
Tripping characteristics	B, C, D		
Rated current (I_n)	0.5...63 A		
Rated frequency (f)	50/60 Hz		
Rated insulation voltage U_i per IEC/EN 60664-1	250 V AC (phase to ground), 440V AC (phase to phase)		
Overvoltage category	III		
Pollution degree	2		
Data per IEC/EN 60898-1			
Rated operational voltage (U_e)	1-pole	230/400V AC	
	1-pole +N	230V AC	
	2-, 3-, 4-pole 3-pole +N	400V AC	
Highest supply or utilization voltage (U_{max})	AC	1-pole	253/440V AC
		1-pole+N	253V AC
		2-, 3-, 4-, 3-pole+N	440V AC
	DC*	1-pole	48V DC
		2-pole	96V DC
Min. operating voltage	12V AC, 12V DC		
Rated short-circuit capacity (I_{cn})	188-J	10 kA	
	188-K	6 kA	
Energy limiting class (B, C up to 40 A)	3		
Rated impulse withstand voltage U_{imp} . (1.2/50 μ s)	4 kV (test voltage 6.2kV at sea level, 5kV at 2,000m)		
Dielectric test voltage	2 kV (50 / 60Hz, 1 min.)		
Reference temperature for tripping characteristics	B, C, D: 30 °C		
Electrical endurance	$I_n < 30A$: 20,000 ops (AC)		
1 cycle (2s - ON, 13s - OFF, $I_n \leq 32A$),	$I_n \geq 30A$: 10,000 ops. (AC);		
1 cycle (2s - ON, 28s - OFF, $I_n > 32A$)	1,000 ops. (DC);		

* IEC DC ratings self-declared.

Mechanical Data	
Housing	Insulation group II, RAL 7035
Indicator window	None
Protection degree per EN 60529	IP20– IP40 in enclosure with cover
Mechanical endurance	20,000 operations
Shock resistance per IEC/EN 60068-2-27	25 g - 2 shocks - 13 ms
Vibration resistance per IEC/EN 60068-2-6	5g - 20 cycles at 5...150...5 Hz with load 0.8In
Environmental	
Environmental conditions (damp heat) per IEC/EN 60068-2-30	28 cycles with 55°C/90-96% and 25°C/95-100%
Ambient temperature*	-25 ... +55°C
Storage temperature	-40 ... +70°C
Installation	
Terminal	Cage terminal
Cross-section of wire solid, stranded	0.75...25 mm ²
Cross-section of wire flexible	0.75...16 mm ²
Tightening torque	2.0 N•m
Screwdriver	No. 2 Pozidrive
Mounting	DIN Rail (EN 60715, 35mm) with fast clip
Mounting position	Any
Supply	Optional
Approximate Dimensions and Weight	
Pole dimensions (H x D x W)	85 x 69 x 17.5 mm
Pole weight	115 g (4.4 oz.)
Combination with aux. elements	
Auxiliary contact	Yes
Signal contact	Yes
Shunt trip	Yes

* Refer to the Ambient Temperature Derating tables.

Auxiliary Specifications

Cat. No.	EN/IEC Max. Current and Volt.	UL/CSA Max. Volt.	IEC Ratings
189-AST1	110...415V AC 110-250V DC	—	—
189-AST2	12...60V AC/DC	—	—
189-ASCR3	1A @ 480 VAC 2A @ 277 VAC 1.5A @ 125 VDC 2A @ 60 VDC 4A @ 24 VDC	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 1.5A @ 110 V (DC-12) 1A @ 220 V (DC-12) 4A @ 24 V (DC-13) 2A @ 60 V (DC-13)	—
189-AR3	1A @ 480 VAC 2A @ 277 VAC 1.5A @ 125 VDC 2A @ 60 VDC 4A @ 24 VDC	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 1.5A @ 110 V (DC-12) 1A @ 220 V (DC-12) 4A @ 24 V (DC-13) 2A @ 60 V (DC-13)	—
189-AR11	1A @ 400 VAC 2A @ 230 VAC 1A @ 50 VDC 2A @ 30V DC	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 2A @ 30V (DC-12) 1A @ 50 V (DC-12) 2A @ 30 V (DC-13) 1A @ 50 V (DC-13)	—
189-AR02	1A @ 400 VAC 2A @ 230 VAC 1A @ 50 VDC 2A @ 30 VDC	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 2A @ 30V (DC-12) 1A @ 50 V (DC-12) 2A @ 30 V (DC-13) 1A @ 50 V (DC-13)	—
189-AR20	1A @ 400 VAC 2A @ 230 VAC 1A @ 50 VDC 2A @ 30 VDC	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 2A @ 30V (DC-12) 1A @ 50 V (DC-12) 2A @ 30 V (DC-13) 1A @ 50 V (DC-13)	—
189-AB01	no	2A @ 230 VAC 2A @ 30 VDC	2A @ 230 V (AC-14) 2A @ 30V (DC-12) 1A @ 50 V (DC-12) 2A @ 30 V (DC-13) 1A @ 50 V (DC-13)
189-AB10	no	2A @ 230 VAC 2A @ 30 VDC	2A @ 230 V (AC-14) 2A @ 30V (DC-12) 1A @ 50 V (DC-12) 2A @ 30 V (DC-13) 1A @ 50 V (DC-13)
189-AL11	—	—	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 1, 5A @ 110 V (DC-12) 1A @ 220 V (DC-12) 4A @ 24 V (DC-13) 2A @ 60 V (DC-13)
189-AL02	—	—	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 1, 5A @ 110 V (DC-12) 1A @ 220 V (DC-12) 4A @ 24 V (DC-13) 2A @ 60 V (DC-13)
189-AL20	—	—	2A @ 230 V (AC-14) 1A @ 400 V (AC-14) 1, 5A @ 110 V (DC-12) 1A @ 220 V (DC-12) 4A @ 24 V (DC-13) 2A @ 60 V (DC-13)

Note: All 1489 accessories are rated by UL 489, CSA 22.2 No. 5, IEC, and CE.

Power Loss Due to Current

Rated Current [A]	Power Loss Per Pole [W]	Rated Current [A]	Power Loss Per Pole [W]
0.5	1.4	13	2.3
1	1.4	16	2.5
2	1.8	20	2.5
3	1.5	25	3.2
4	1.8	32	3.7
6	2.0	40	4.8
8	1.5	50	4.5
10	2.1	63	5.2

Ambient Temperature Derating

Note:Application below 0° C is for non-condensing atmosphere. Care should be taken for applications below 0 °C. These devices are not certified to operate correctly in the presence of ice.

Bulletin 188-J, -K
 Temperature Derating, IEC
 Reference temperature = 30 °C

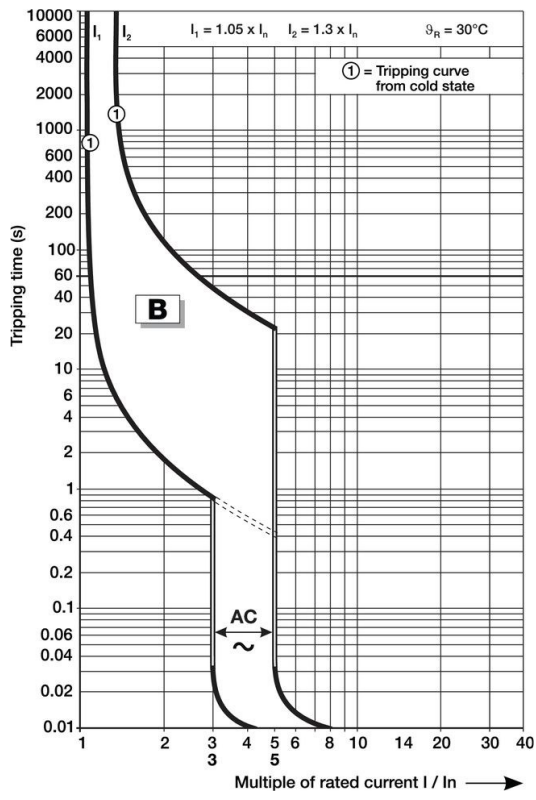
Current Rating (A)	Ambient temperature (°C)									
	-25	-20	-10	0	10	20	30	40	50	55
0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9
2	2.3	2.3	2.2	2.2	2.1	2.1	2.0	1.9	1.9	1.9
3	3.5	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.8
4	4.7	4.6	4.5	4.4	4.2	4.1	4.0	3.9	3.8	3.7
6	7.0	6.9	6.7	6.5	6.4	6.2	6.0	5.8	5.6	5.6
8	9.3	9.2	9.0	8.7	8.5	8.2	8.0	7.8	7.5	7.4
10	11.7	11.5	11.2	10.9	10.6	10.3	10	9.7	9.4	9.3
13	15.1	15.0	14.6	14.2	13.8	13.4	13	12.6	12.2	12.0
16	18.6	18.4	17.9	17.4	17.0	16.5	16	15.5	15.0	14.8
20	23.3	23.0	22.4	21.8	21.2	20.6	20	19.4	18.8	18.5
25	29.1	28.8	28.0	27.3	26.5	25.8	25	24.3	23.5	23.1
32	37.3	36.8	35.8	34.9	33.9	33.0	32	31.0	30.1	29.6
40	46.6	46.0	44.8	43.6	42.4	41.2	40	38.8	37.6	37.0
50	58.3	57.5	56.0	54.5	53.0	51.5	50	48.5	47.0	46.3
63	73.4	72.5	70.6	68.7	66.8	64.9	63	61.1	59.2	58.3

Bulletin 188-K
 Temperature Derating, IEC
 Reference temperature = 30 °C

Current Rating (A)	Ambient temperature (°C)									
	-25	-20	-10	0	10	20	30	40	50	55
0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
1	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9
2	2.3	2.3	2.2	2.2	2.1	2.1	2.0	1.9	1.9	1.9
3	3.5	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.8
4	4.7	4.6	4.5	4.4	4.2	4.1	4.0	3.9	3.8	3.7
6	7.0	6.9	6.7	6.5	6.4	6.2	6.0	5.8	5.6	5.6
8	9.3	9.2	9.0	8.7	8.5	8.2	8.0	7.8	7.5	7.4
10	11.7	11.5	11.2	10.9	10.6	10.3	10	9.7	9.4	9.3
13	15.1	15.0	14.6	14.2	13.8	13.4	13	12.6	12.2	12.0
16	18.6	18.4	17.9	17.4	17.0	16.5	16	15.5	15.0	14.8
20	23.3	23.0	22.4	21.8	21.2	20.6	20	19.4	18.8	18.5
25	29.1	28.8	28.0	27.3	26.5	25.8	25	24.3	23.5	23.1
32	37.3	36.8	35.8	34.9	33.9	33.0	32	31.0	30.1	29.6
40	46.6	46.0	44.8	43.6	42.4	41.2	40	38.8	37.6	37.0
50	58.3	57.5	56.0	54.5	53.0	51.5	50	48.5	47.0	46.3
63	73.4	72.5	70.6	68.7	66.8	64.9	63	61.1	59.2	58.3

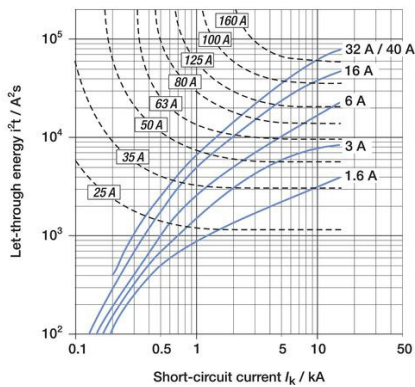
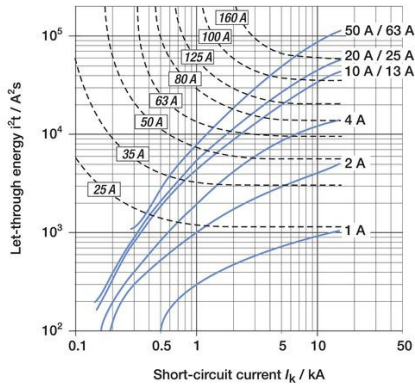
Tripping Characteristics

B Curve

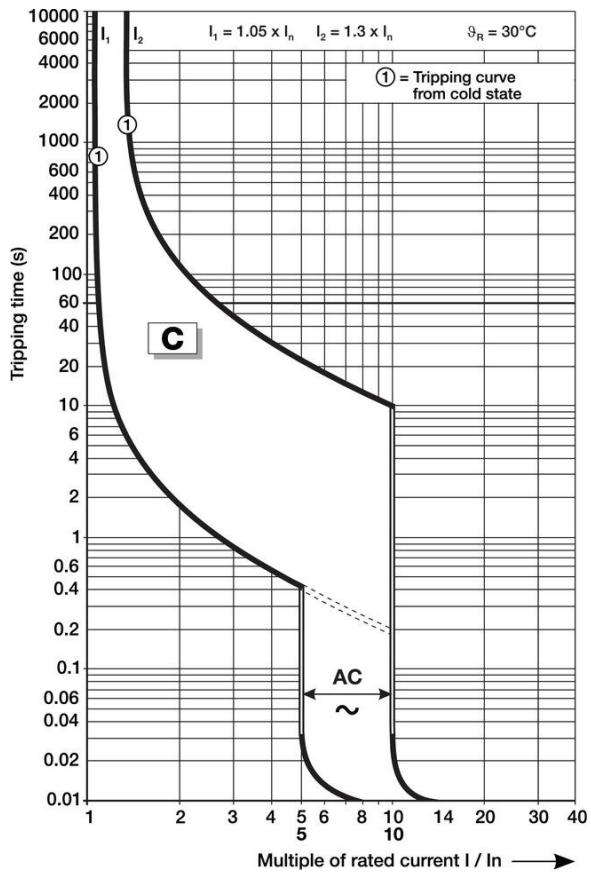


B and C Curve - 230/400V AC Let-through Energy

230/400V AC let-through energy

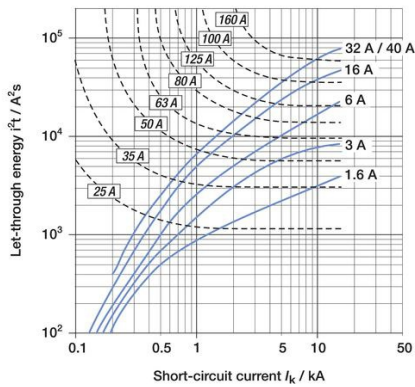
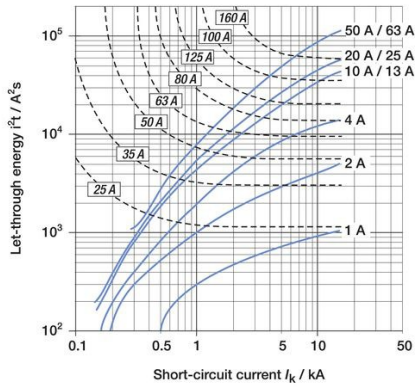


C Curve

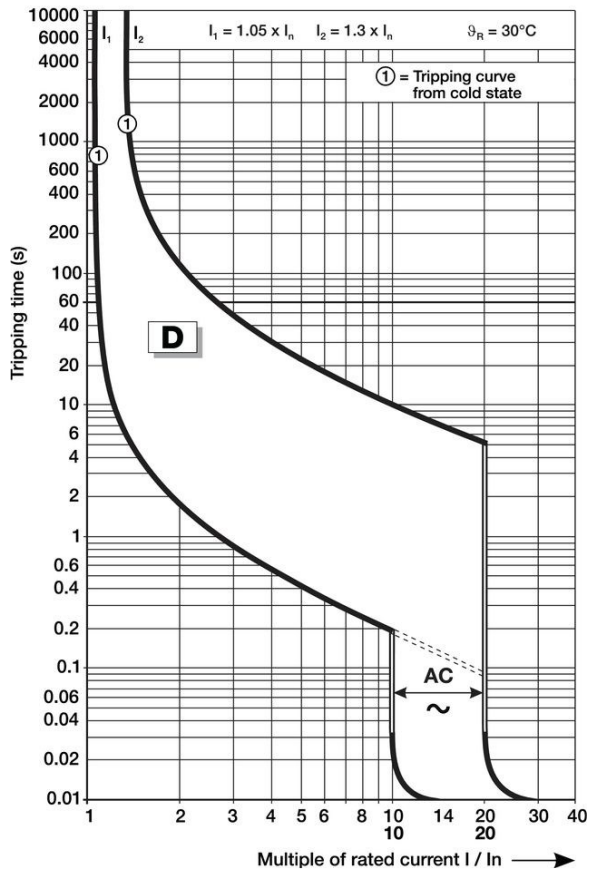


B and C Curve - 230/400V AC Let-through Energy

230/400V AC let-through energy

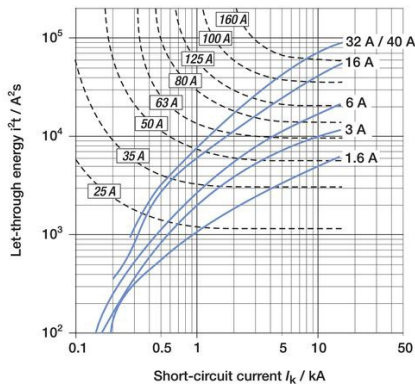
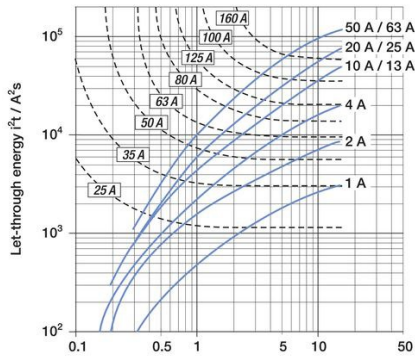


D Curve

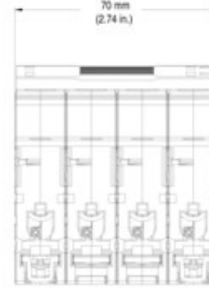
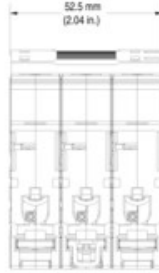
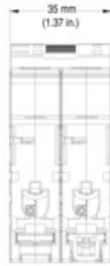
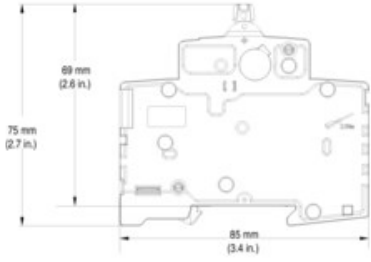
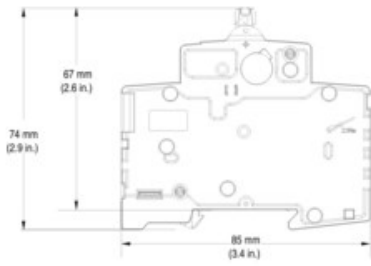


D Curve - 230/400V AC Let-through Energy

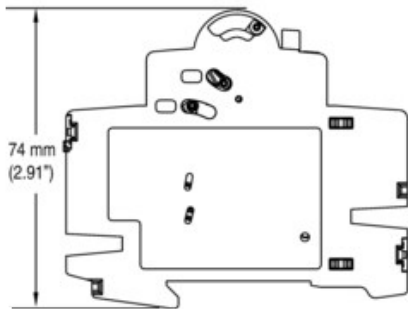
230/400V AC let-through energy



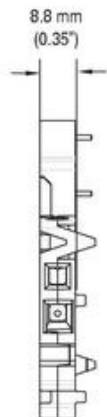
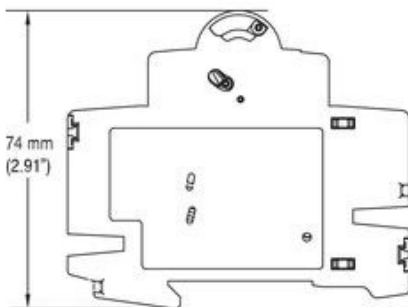
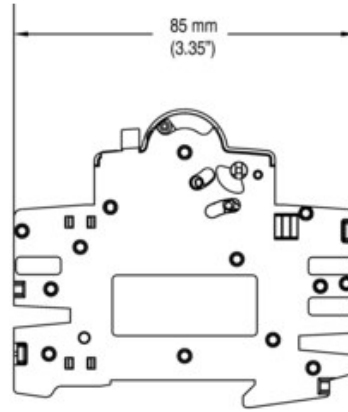
Approximate Dimensions



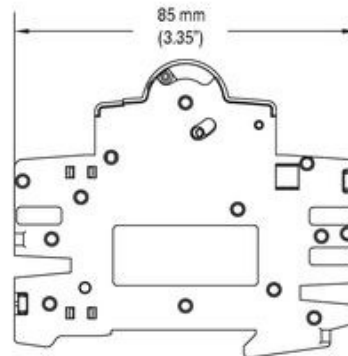
Accessory Approximate Dimensions

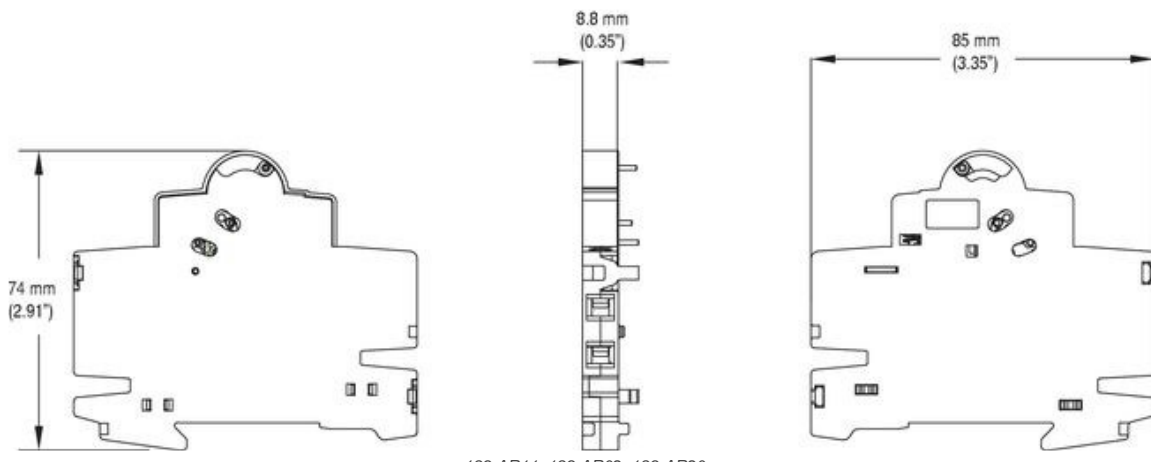


189-ASCR3

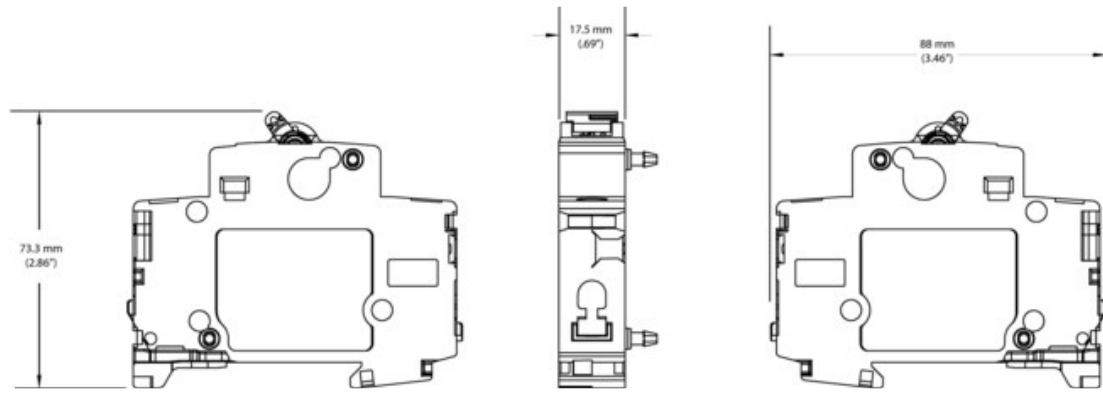


189-AR3

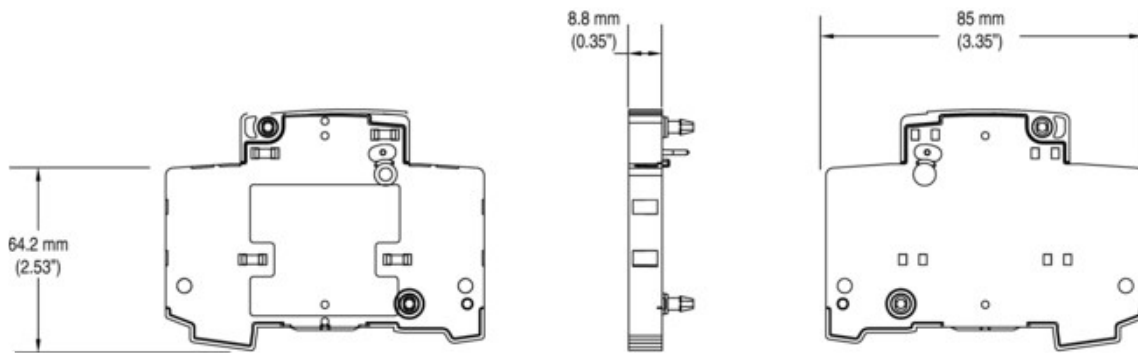




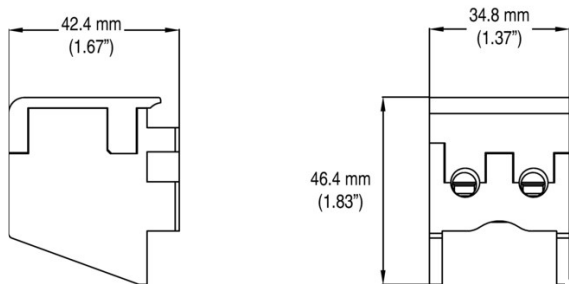
189-AR11, 189-AR02, 189-AR20



189-AST1 and 189-AST2



189-AL11, 189-AL02, and 189-AL20

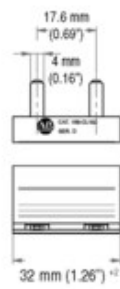
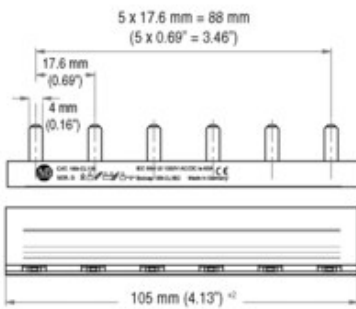
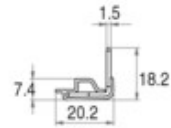
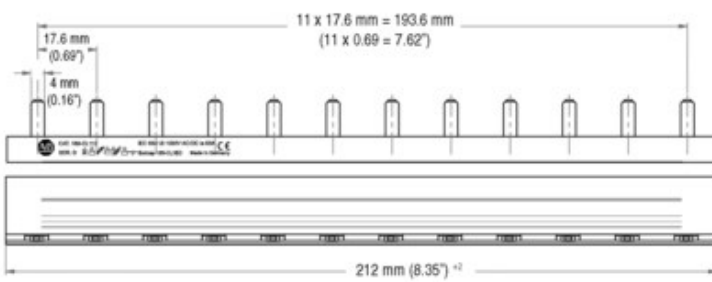
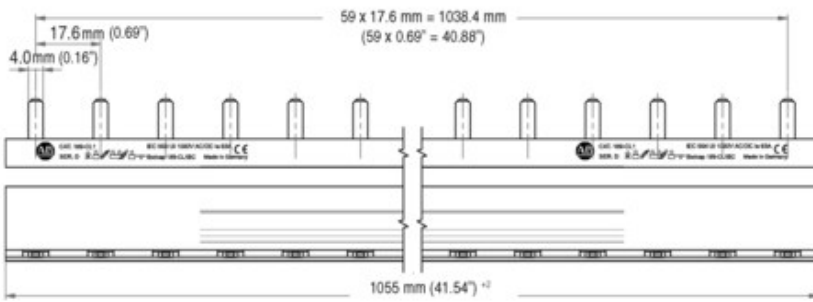


189-AB01 and 189-AB10

Bus Bar Approximate Dimensions

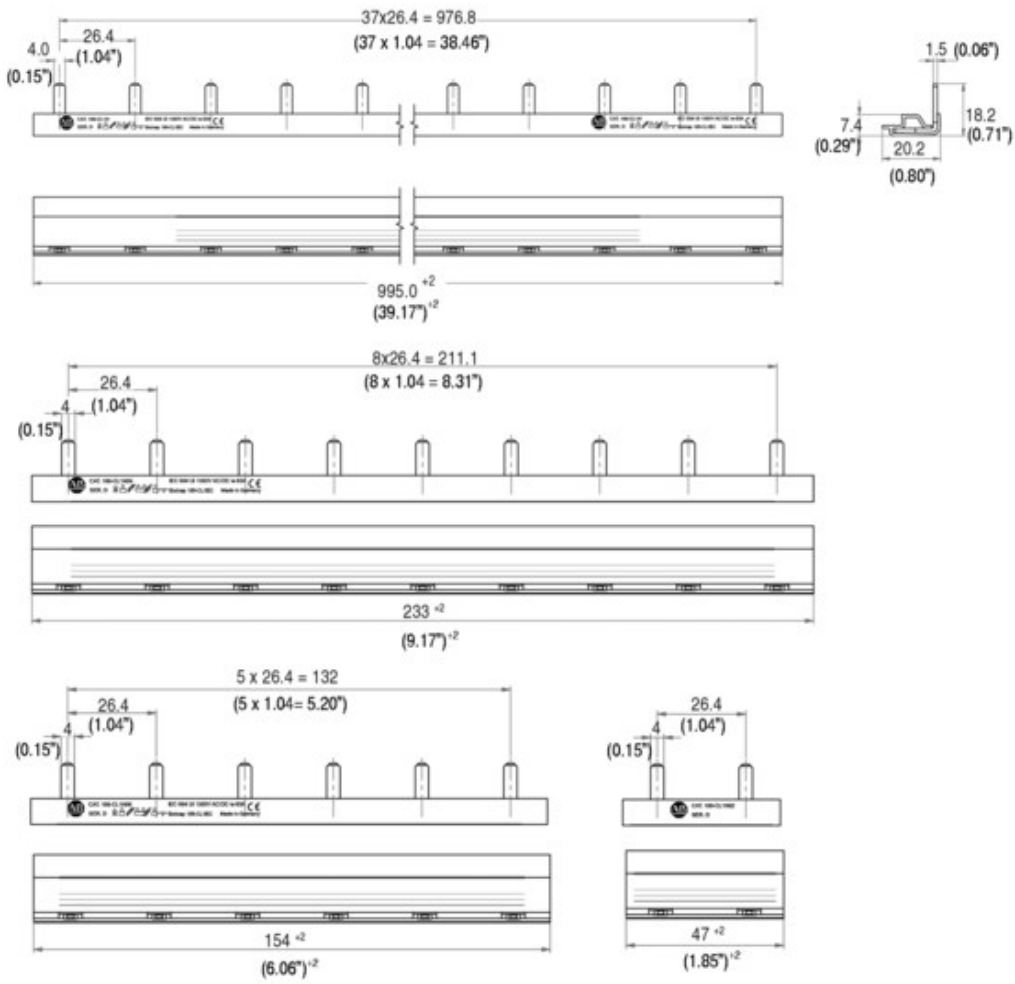
Note: Dimensions are shown in millimeters. Dimensions are not intended for manufacturing purposes.

1-Phase Bus Bars



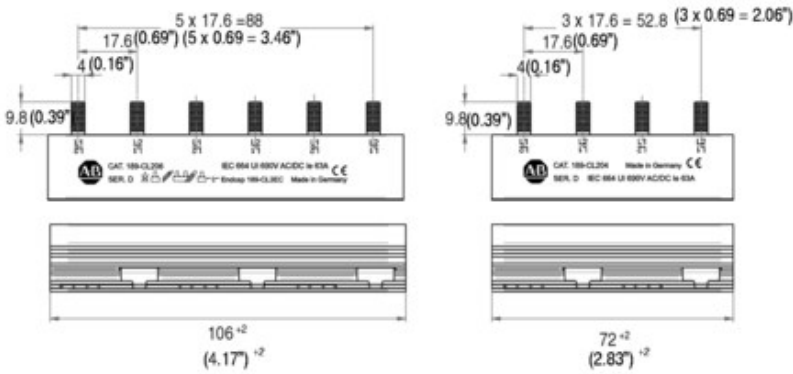
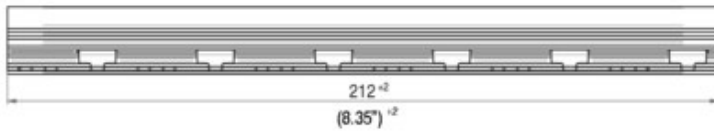
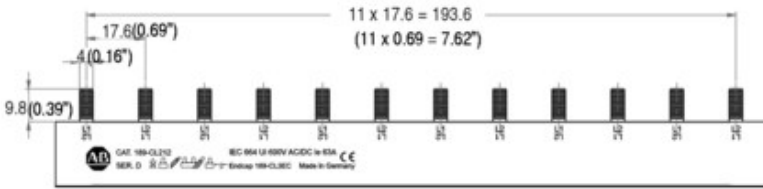
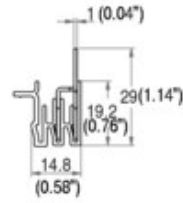
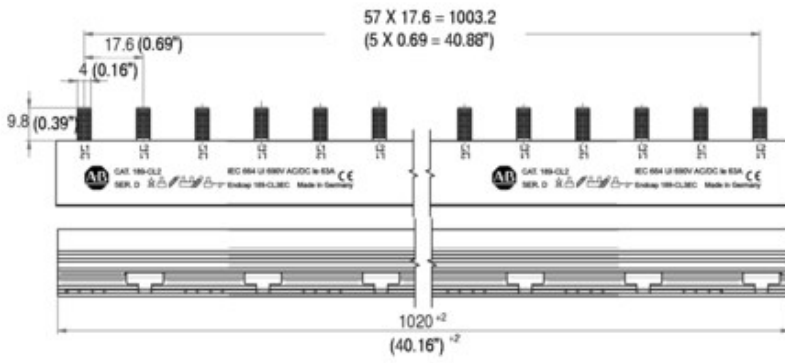
189-CL1
 189-CL112
 189-CL106
 189-CL102

1-Phase Bus Bars, with Auxiliary Contact

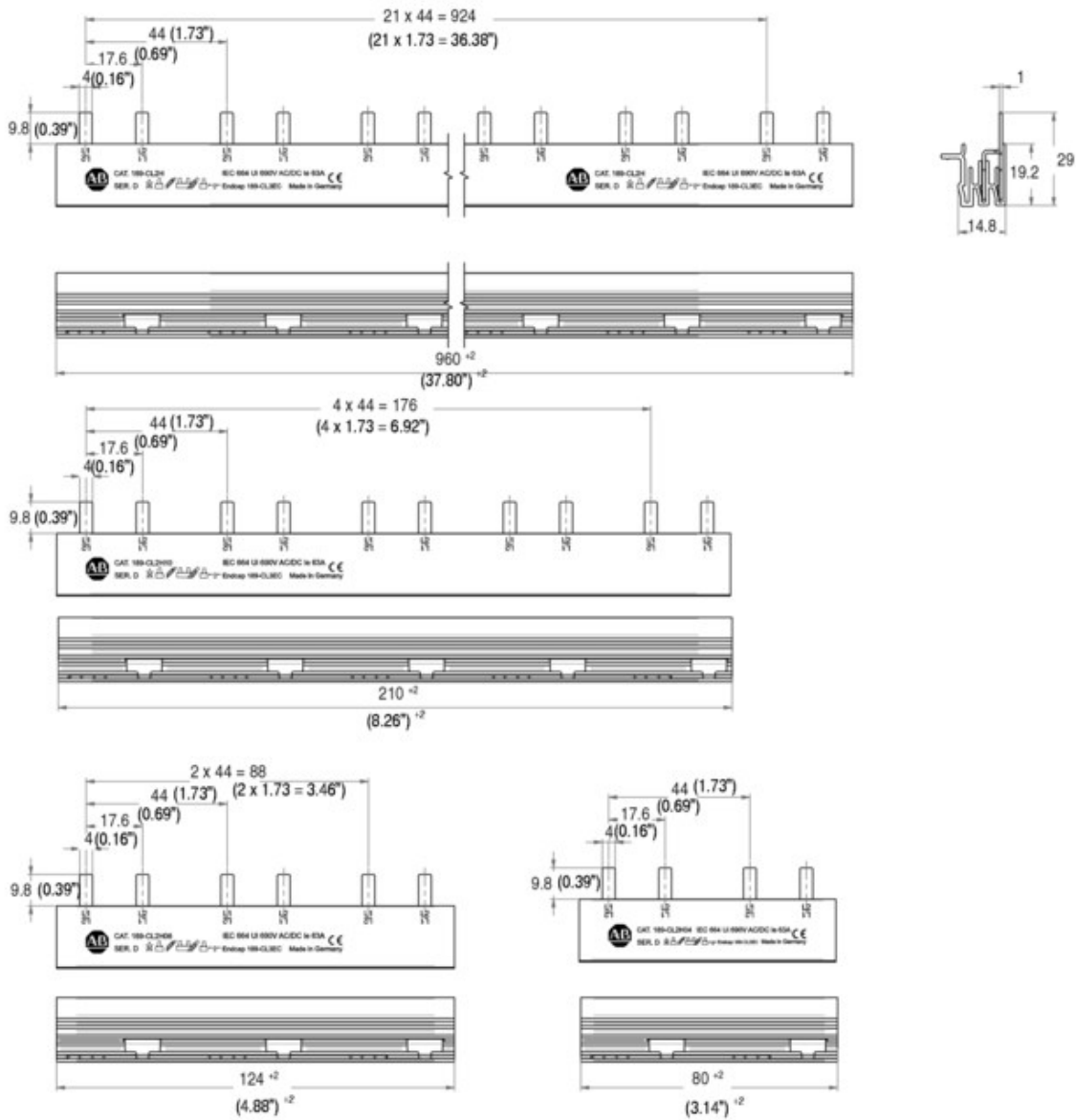


189-CL1H
 189-CL1H09
 189-CL1H06
 189-CL1H02

2-Phase Bus Bars

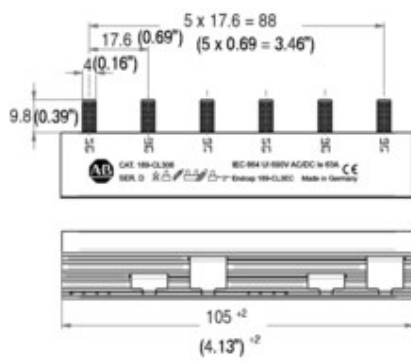
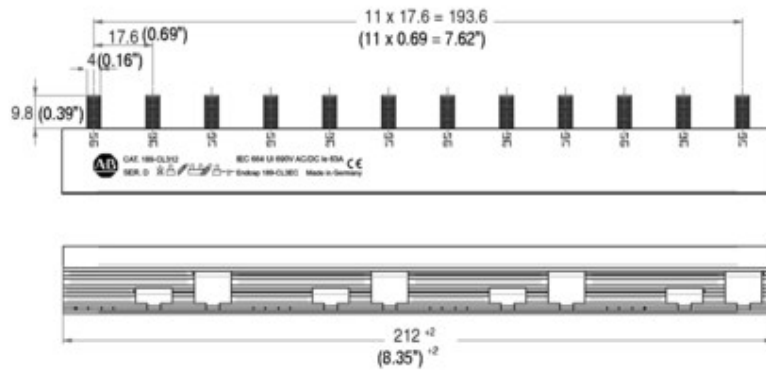
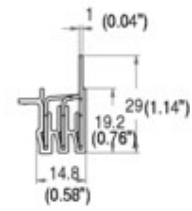
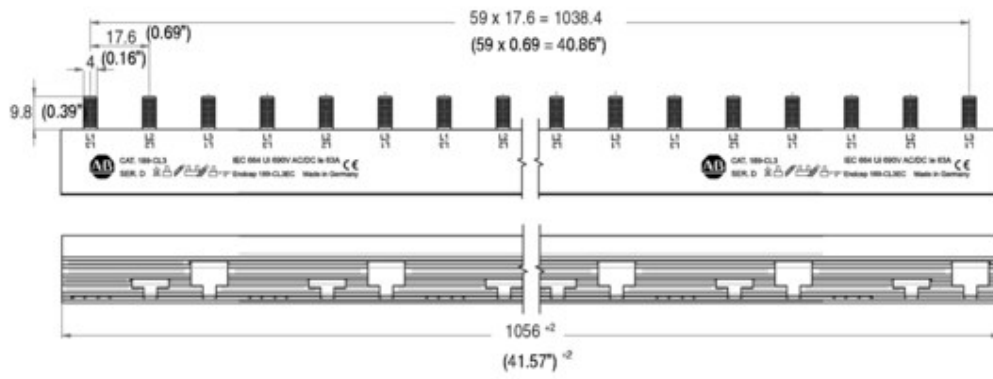


2-Phase Bus Bars, with Auxiliary Contact

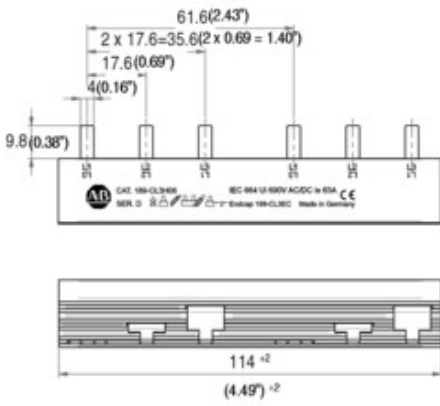
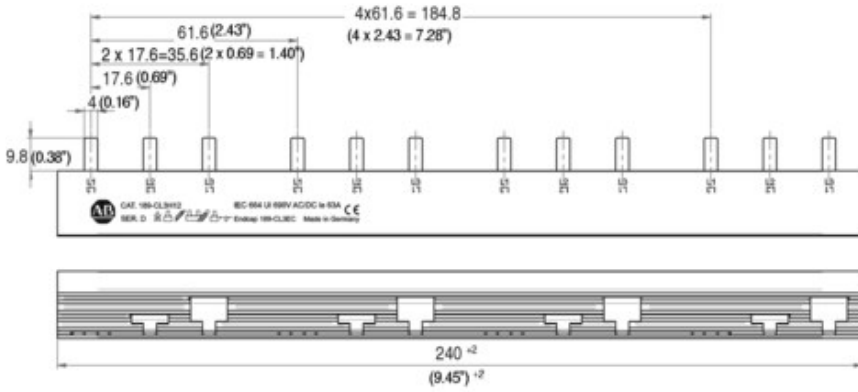
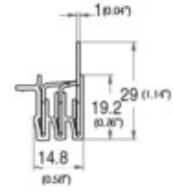
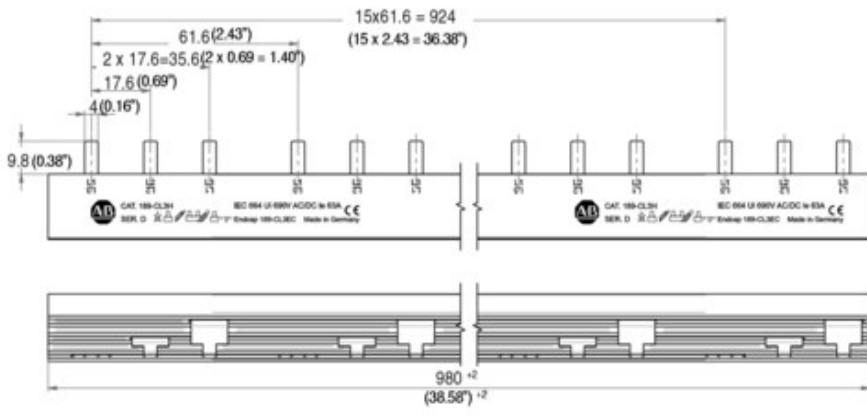


189-CL2H
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 189-CL2H06
 189-CL2H04

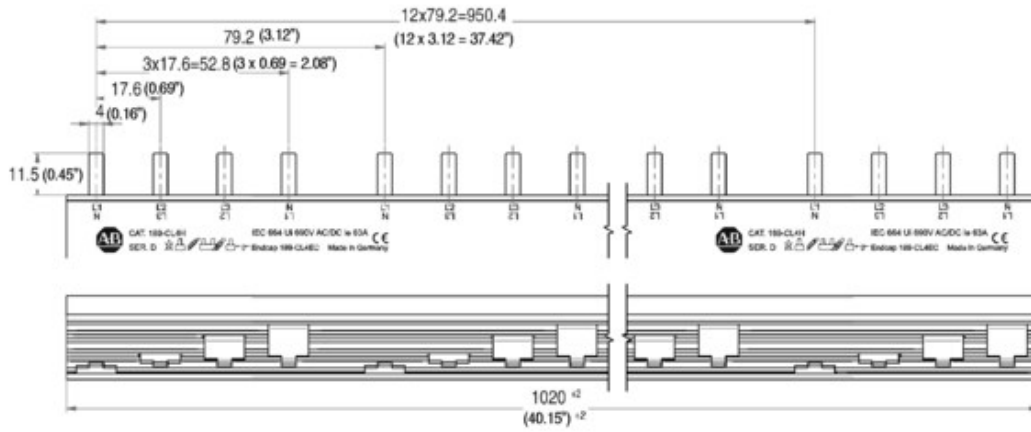
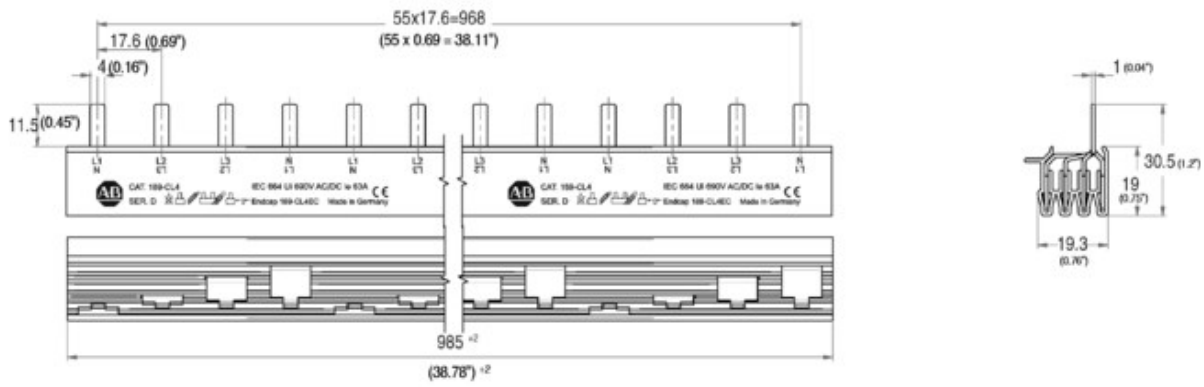
3-Phase Bus Bars



3-Phase Bus Bars, with Auxiliary Contact

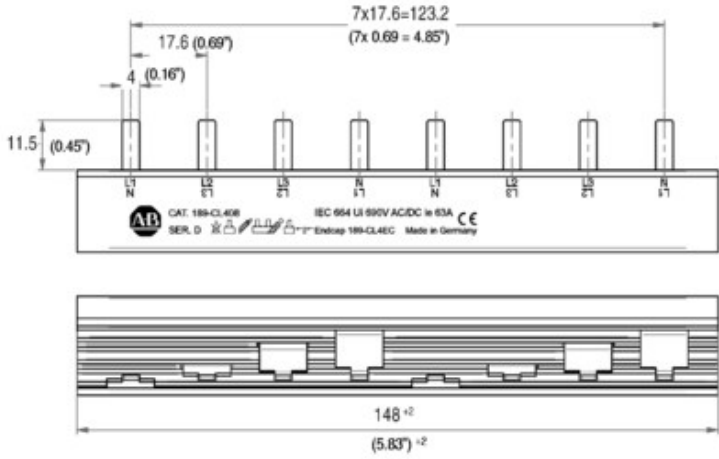
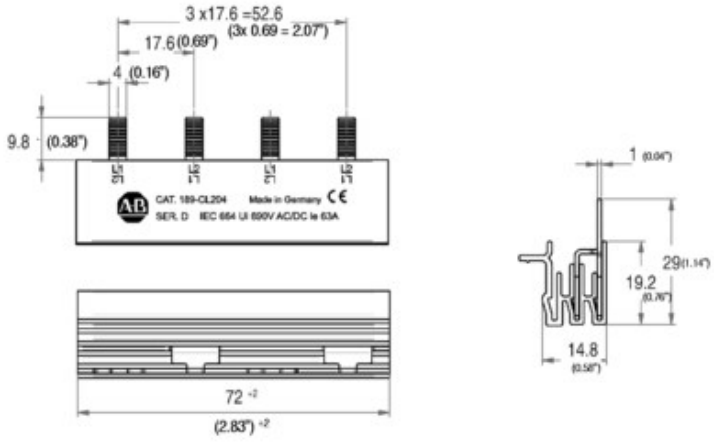


4-Phase Bus Bars



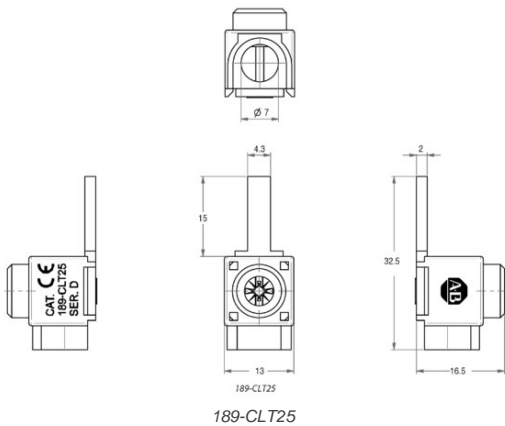
189-CL4

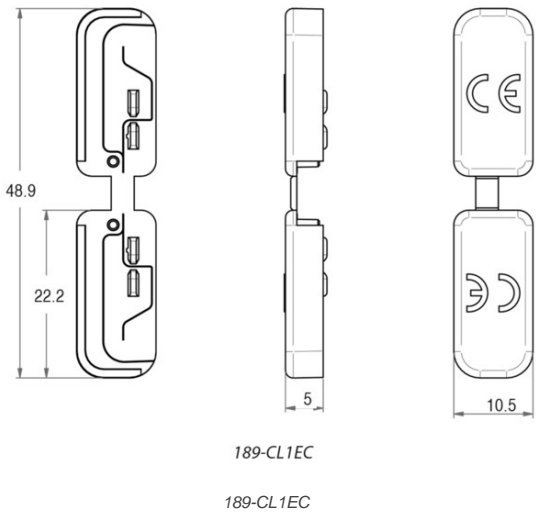
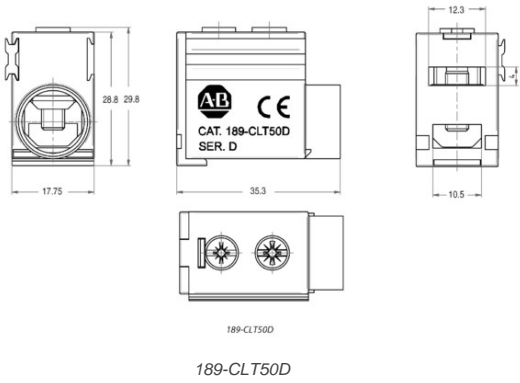
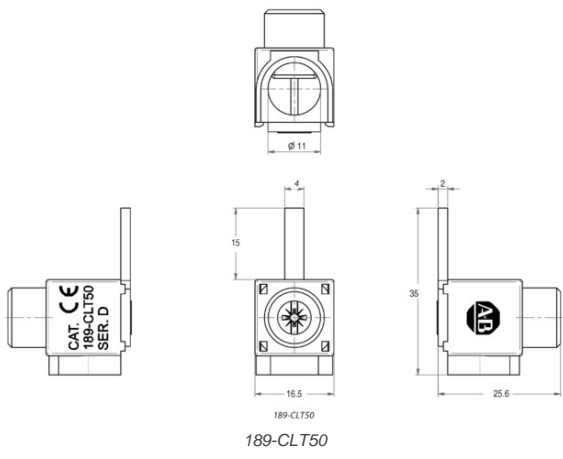
2- and 4-Phase Bus Bars for connection to 1492-RCD

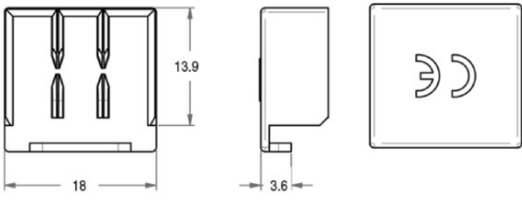
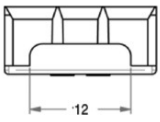


Bus Bar Accessory Approximate Dimensions

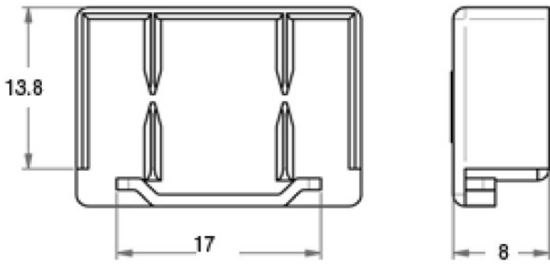
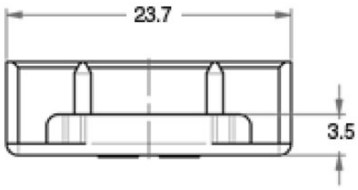
Note: Dimensions are shown in millimeters (inches). Dimensions are not intended for manufacturing purposes.



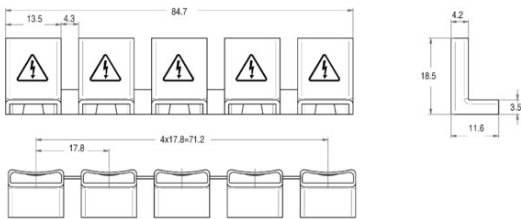




189-CL3EC



189-CL4EC



189-CLPS