

B Frame - Series Circuit Breakers



The B Frame is a very compact yet robust circuit breaker. Used in various applications where space is constrained, the B Frame is available in a variety of configurations, with different types of handles such as standard, rocker, protected rocker, push-pull, and push-to-reset handle types. The B Frame is suitable for various applications in telecom, lighting, railway signalling and solar applications. The B Frame is also available as a 300 V DC double pole switch.

B Frame Profile

The B Frame is available in single pole and double pole configurations. This miniaturised precision breaker is available for both AC and DC applications, with a choice of time delay characteristics and auxiliary switch options. The B Frame provides the solution when space constraints exist.

Approvals

The B Frame circuit breaker carries various approvals such as VDE, cURus, CSA, EAC, CCC and is CE certified. It is also recognised to UL 1077, UL 1500, UL 508 and listed to UL 489A.



Features

- AC and DC circuit breaker
- Hydraulic-magnetic technology
- 100% rating capability independent of ambient temperature
- Up to two poles
- VDE, EAC and CCC approved, CE certified
- UL compliant (recognised / listed)
- Ratings 0.1 to 30 A (specific certifications)
- Precision tripping characteristics
- Wide range of circuits, mountings, terminations and time delays
- Optional auxiliary switch
- Optional illuminated rocker handle
- 300 V DC switch

Applications

- Lighting equipment
- Office equipment
- Power supplies
- Telecom power distribution
- Small generators and motors
- Railway signalling systems
- Entertainment systems
- Marine power systems
- Vending machines
- Power distribution units (PDU)
- Suitable for motor starting
- Solar and renewable power

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Technical Data

Product Type	B Frame
Operating Temperature Range	-40 °C to +85 °C
Endurance	10000 operations - 1500 electrical at rated current and voltage (IEC 60934) 6000 electrical operations (UL 1077)
Dielectric Strength	1000 - 2000 V, 50 Hz for one minute after testing (IEC 60934)
Weight	30 g single pole, 60 g double pole (unpacked)
Humidity	35 to 85% relative humidity
Altitude	Certification tests done at altitude ≈ 2000 metres. Will operate at higher altitudes.
Shock	50 G to MIL-STD-202G-213B-A
Vibration	10 G to MIL-STD-202G-204D-A
Flammability	I3 - Ignition does not persist at 850 °C after glow wire is withdrawn with an oxygen index of ≥ 28
Toxicity	F1 - Smoke index of ≤ 20 which determines the fume class
Pollution Degree	PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.
Accessories	Mounting Accessories, Legend Plate

Product Type	Circuit Breaker	Circuit Breaker	Switch
Approvals	UL 1077 / CSA, UL 1500, IEC / EN 60934, CCC, CE, EAC	UL 489A, IEC / EN 60934	UL 508
Number of Poles	1, 2	1	2
Maximum Voltages	240 V AC, 65 V DC	80 V DC	300 V DC
Current Ratings	0.1 - 30 A (AC), 0.1 - 25 A (DC)	0.1 - 30 A	15 A
Interrupting Capacity	1 kA @ 240 V AC 0.5 kA @ 65 V DC	0.6 kA @ 80 V DC 1 kA @ 65 V DC	-
DC Polarity	-	Polarity Sensitive	Polarity Sensitive

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Ordering Information

Group 1: Frame, Colour and Handle Type	Code	Description	Code	Description
	BA	Black body, square handle	BP	Grey body, square handle
	BB	Black body, paddle handle	BQ	Grey body, paddle handle
	BC	Black body, baton handle	BR	Grey body, baton handle
	BD	Black body, rocker handle	BS	Grey body, rocker handle
	BE	Black body, illuminated rocker handle	BT	Grey body, illuminated rocker handle
	BF	Black body, push-to-reset handle	BV	Grey body, push-to-reset handle
	BG	Black body, push-pull handle	BW	Grey body, push-pull handle
	BH	Black front plate, feed through pole	BZ	Black body, cut-off handle
Group 2: Mounting	Code	Description	Comments	
	A	Centre lock (thread neck) metric (M12)	Thread neck. Rocker handle is not an option.	
	C	Centre lock (thread neck) imperial (1/2" – 32)	Thread neck. Rocker handle is not an option.	
	G	Snap-in vertical mounting without rocker guard	Rocker & illuminated rocker handle only	
	H	Snap-in vertical mounting with rocker guard	Rocker & illuminated rocker handle only	
	M	Snap-in horizontal mounting without rocker guard	Rocker & illuminated rocker handle only	
	N	Snap-in horizontal mounting with rocker guard	Rocker & illuminated rocker handle only	
	P	PCB mounting - centre lock (thread neck) mount only	M12 thread neck only, 1 pole only	
	Q	Centre lock (thread neck) - imperial (3/8" – 32)	Thread neck. Only option for double pole push-to-reset and push-pull handles. Rocker handle is not an option.	
Group 3: Number of Poles and Termination	Code	Description	Code	Description
	1	Single pole, quick connect	A	Single pole, bent terminal 90° outward
	2	Double pole, quick connect	B	Double pole, bent terminal 90° outward
	3	Single pole unit, screw terminal 45° bent	C	Single pole, screw terminal (M4 / 8-32)
	4	Double pole unit, screw terminal 45° bent	D	Double pole, screw terminal (M4 / 8-32)
	5	Single pole, clamp terminal	Z	Special - specify
	6	Double pole, clamp terminal		
Group 4: Rated Voltage - Main Circuit	Code	Description	Comments	
	D	50V DC	Choose D in Group 5	
	E	65V DC	Choose D in Group 5	
	F	80V DC - polarity sensitive	Choose D in Group 5	
	M	65V DC / 240V AC	Choose M in Group 5	
	P	240V	Choose A in Group 5	
	T	300V DC - polarity sensitive	Choose D in Group 5	
Group 5: Frequency	Code	Description	Comments	
	A	AC 50 / 60Hz	Group 4 option P only	
	D	DC	Group 4 options E, F only	
	M	AC / DC	Group 4 option M only	
Group 6: Circuit Configuration (Circuit Breaker's Internal Construction)	Code	Description	Comments	
	A	Switch	May be used with auxiliary	
	B	Series trip (circuit breaker, current coil in series)	May be used with auxiliary	
	C	Relay Trip (current sensing) 4 terminal (auxiliary not available)	Auxiliary not an option	
	D	Relay Trip (voltage sensing) 4 terminal	Auxiliary not an option	
	E	Shunt Trip 3 terminal (current sensing)	Auxiliary not an option	
	F	Shunt Trip 3 terminal (voltage sensing)	Auxiliary not an option	
Group 7: Auxiliary Switch(es)	Code	Description	Comments	
	0	No auxiliary switch	Only option with rear flush screw terminal	
	1	1 X change-over (3 A - 125V AC, 24V DC)	Silver contacts	
	3	1 X change-over (0.1 A - 125V AC, 30V DC)	Gold contacts	
Group 8: Handle, Indicator Colour and Marking (Specify Current Rating on Front or Handle if Required)	Code	Description	Code	Description
	X	Not Applicable	L	Black (I-O & ON-OFF)
	2	White (no marking)	W	Black (I-O & ON-OFF)
	3	Black (no marking)	Y	Red (I-O & ON-OFF)
	A	Green (I-O & ON-OFF)	Z	Special - specify
	K	White (I-O & ON-OFF)		
Group 9: Voltages for Illuminated Rocker Units (Illuminated only)	Code	Description	Code	Description
	1	100 – 110V AC lead connectors	B	200 – 240V AC terminal connectors
	2	200 – 240V AC lead connectors	C	4 - 8V DC terminal connectors (please specify)
	3	4 - 8V DC lead connectors (please specify)	D	16 – 24V DC terminal connectors
	4	16 – 24V DC lead connectors	E	24 – 32V DC terminal connectors (external resistor required)
	5	24 – 32V DC lead connectors (external resistor required)	G	8 – 16V DC terminal connectors
	7	8 – 16V DC lead connectors	X	Not applicable
	A	100 – 110V AC terminals connectors		

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Ordering Information

Group 10: Time Delay Characteristics, Pulse Tolerance at 10 ms	Code	Description	System	Pulse Tolerance (X I _n)	Code	Description	System	Pulse Tolerance (X I _n)
	AD	Long time delay - AS & dual rated	AC and DC	6 - 8	CS	Short delay	AC or DC	6 - 8
	BD	Medium time delay - BS & dual rated	AC and DC	6 - 8	AW	Long time delay - AD & inertia delay	AC and DC	11 - 12
	CD	Short time delay - CS & dual rated	AC and DC	6 - 8	BW	Medium time delay - BD & inertia delay	AC and DC	11 - 12
	AI	Long time delay - AS & inertia delay	AC or DC	11 - 12	CW	Short time delay - CD & inertia delay	AC and DC	12
	BI	Medium time delay - BS & inertia delay	AC or DC	11 - 12	OX	Switch	DC	-
	CI	Short time delay - CS & inertia delay	AC or DC	11 - 12	OP	Instantaneous trip	DC	None
	AS	Long delay	AC or DC	6 - 8	ZZ	Special - specify		
	BS	Medium delay	AC or DC	6 - 8				
Group 11: Rated Current (Main Circuit)	Code	Description	Comments					
	XXXX	No rating	Examples only - Specific A ratings possible from 0.02 - 30A					
	050M	50 mA						
	0500	5 A						
	1000	10 A						
	1250	12.5 A						
	3000	30 A						
Group 12: Voltage and Current Ratings for Shunt and Relay Trip Construction	Code	Description	Code	Description				
	X	Not applicable	D024	24 V DC voltage coil				
	A024	24 V AC / DC voltage coil	M100	100 mA current coil				
	A065	65 V AC voltage coil	M020	20 mA current coil				
	A100	100 V AC voltage coil	K005	5 A current coil				
	A110	110 - 125 V AC voltage coil	K015	15 A current coil				
	A220	220 - 240 V AC voltage coil	K025	25 A current coil				
	D012	12 V DC voltage coil	Z	Special - specify				
Group 13: Approvals / Marks	Code	Description	Comments					
	1	CUR, UL recognised, UL 1077, CSA, IEC / EN 60934,VDE, CE						
	2	No third approvals						
	3	CUL, UL listed, UL 489A, IEC / EN 60934,VDE, CE						
Group 14: Safety Marks	Code	Description	Comments					
	1	CCC / CRCC	For products exported to Peoples Republic of China					
	2	Not applicable						

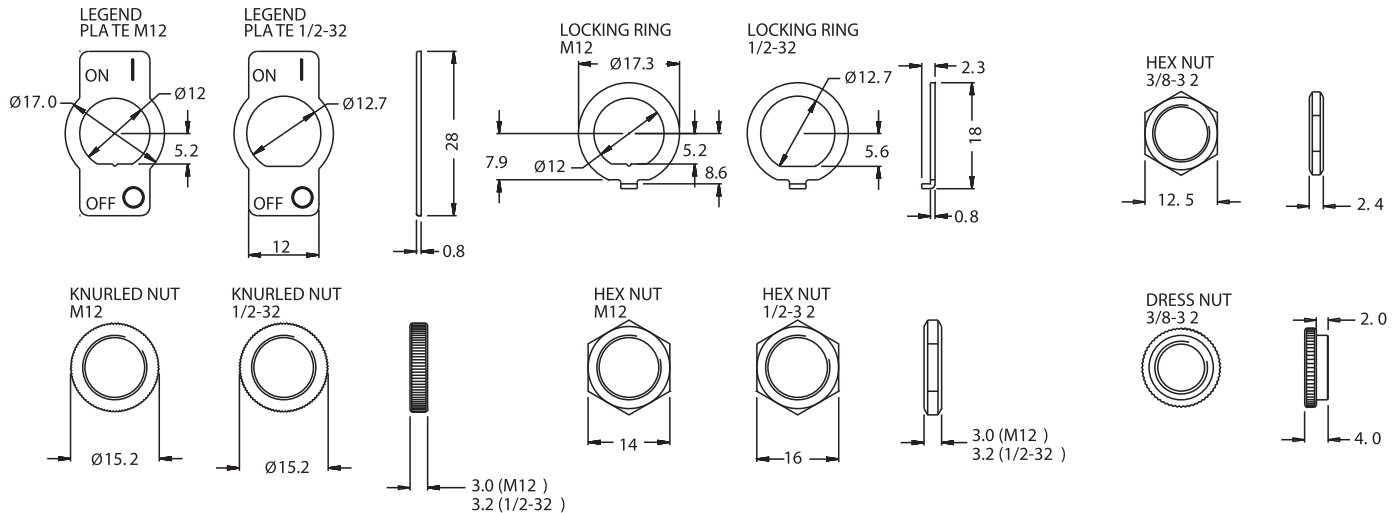
For options not listed, please contact CBI



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Mounting Accessories

Mounting hardware must be ordered separately. Legend plates available for M12 and 1.2" only.



Mounting Kit Ordering Information

Reference	A	B	C	D	E	F	G	H	I	J	K
Mounting Kit Description	2 x Hex Nuts	2 x Hex Nuts 1 x Vertical Legend Plate	2 x Hex Nuts 1 x Horizontal Legend Plate	2 x Hex Nuts 1 x Vertical Legend Plate 1 x Locking Ring	2 x Hex Nuts 1 x Horizontal Legend Plate 1 x Locking Ring	1 x Hex Nut 1 x Knurled Nut 1 x Vertical Legend Plate	1 x Hex Nut 1 x Knurled Nut 1 x Horizontal Legend Plate	1 x Hex Nut 1 x Knurled Nut 1 x Vertical Legend Plate 1 x Locking Ring	1 x Hex Nut 1 x Knurled Nut 1 x Horizontal Legend Plate 1 x Locking Ring	1 x Hex Nut 1 x Dress Nut	1 x Hex Nut 1 x Knurled Nut

Reference	M12 Order Number	1/2" - 32 Order Number	3/8" - 32 Order Number
A	3670031	3670041	3670129
B	3670032	3670042	-
C	3670033	3670043	-
D	3670034	3670044	-
E	3670035	3670045	-
F	3670036	3670046	-
G	3670037	3670047	-
H	3670038	3670048	-
I	3670039	3670049	-
J	-	-	3670130
K	3670338	3670337	-

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B Frame 65 V DC Circuit Breaker - cURus, UL 1077, UL 1500, CSA

B Frame				
Poles		1 Pole		2 Pole
cURus UL 1077 CSA UL 1500	65 V	DC		
	Front Mount Thread Neck	Paddle Handle	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
		Square Handle	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
		Baton Handle	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
		Push-Pull	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
		Push-to-Reset	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
	Snap-in	Rocker	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
		Rocker Illuminated	0.1 - 25 A; 0.5 kA	1 - 25 A; 0.5 kA
	Series Trip		X	X
	Relay Trip (V and A Sensing)		X	X
	Shunt Trip (V and A Sensing)		X	X
	Time Delay		AS,BS,CS,AI, BI, CI,AD, BD, CD,AW, BW, CE, OP	
	Terminals	Screw	X	X
		Clamp	X	X
		Quick Connect	X	X
	Aux Switch	Silver	X	X
	Aux Switch	Gold	X	X
		Hex Nut	X	X
		Knurled Nut	X	X
		Legend Plate	X	X
		Lock Ring	X	X
		Dress Nut (3/8")	X	X

B Frame 65 V DC Circuit Breaker - IEC / EN 60934, CE, CCC, EAC

Poles		1 Pole		2 Pole
IEC / EN 60934 CE CCC EAC	65 V	DC		
	Front Mount Thread Neck	Paddle Handle	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
		Square Handle	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
		Baton Handle	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
		Push-Pull	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
		Push-to-Reset	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
	Snap-in	Rocker	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
		Rocker Illuminated	0.1 - 25 A; 1 kA	1 - 25 A; 1 kA
	Series Trip		X	X
	Relay Trip (V and A Sensing)		X	X
	Shunt Trip (V and A Sensing)		X	X
	Time Delay		AS,BS,CS,AI, BI, CI,AD, BD, CD,AW, BW, CE, OP	
	Terminals	Screw	X	X
		Clamp	X	X
		Quick Connect	X	X
	Aux Switch	Silver	X	X
	Aux Switch	Gold	X	X
		Hex Nut	X	X
		Knurled Nut	X	X
		Legend Plate	X	X
		Lock Ring	X	X
		Dress Nut (3/8")	X	X

B Frame - Series Circuit Breakers

B Frame 80 V DC Circuit Breaker - UL 489A Polarity Sensitive

B Frame		
Poles		1 Pole
80 V	DC	X
Front Mount Thread Neck	Paddle Handle	0.1 - 30 A ; 0.6 kA
	Square Handle	0.1 - 30 A ; 0.6 kA
	Baton Handle	0.1 - 30 A ; 0.6 kA
	Push-Pull	0.1 - 30 A ; 0.6 kA
	Push-to-Reset	0.1 - 30 A ; 0.6 kA
Snap-in	Rocker	0.1 - 30 A ; 0.6 kA
	Rocker Illuminated	0.1 - 30 A ; 0.6 kA
UL 489A	Series Trip	X
	Polarity Sensitive	Yes
	Time Delay	AS,BS,CS,AI, BI, CI,AW, BW, CE, OP
	Terminals	Screw
		Clamp
		Quick Connect
	Aux Switch	Silver
	Aux Switch	Gold
		Hex Nut
		Knurled Nut
		Legend Plate
		Lock Ring
		Dress Nut (3/8")

B Frame 80 V DC Circuit Breaker - IEC / EN 60934,VDE, CE, CCC, EAC Polarity Sensitive

Poles		1 Pole
80 V	DC	X
Front Mount Thread Neck	Paddle Handle	0.1 - 30 A ; 0.6 kA
	Square Handle	0.1 - 30 A ; 0.6 kA
	Baton Handle	0.1 - 30 A ; 0.6 kA
	Push-Pull	0.1 - 30 A ; 0.6 kA
	Push-to-Reset	0.1 - 30 A ; 0.6 kA
Snap-in	Rocker	0.1 - 30 A ; 0.6 kA
	Rocker illuminated	0.1 - 30 A ; 0.6 kA
IEC / EN 60934 VDE CE CCC EAC	Series Trip	X
	Polarity Sensitive	X
	Time Delay	AS,BS,CS,AI, BI, CI,AW, BW, CE, OP
	Terminals	Screw
		Clamp
		Quick Connect
	Aux Switch	Silver
	Aux Switch	Gold
		Hex Nut
		Knurled Nut
		Legend Plate
		Lock Ring
		Dress Nut (3/8")

B Frame - Series Circuit Breakers

B Frame 120 V AC, 120 / 240 V AC Motor Start - UL 1077, CSA

Poles		1 Pole	2 Pole
UL 1077, CSA	120 V 120 / 240 V	AC	
	Front Mount Thread Neck	Paddle Handle	1 - 30 A; 1 kA
		Square Handle	1 - 30 A; 1 kA
		Baton Handle	1 - 30 A; 1 kA
		Push-Pull	1 - 30 A; 1 kA
		Push-to-Reset	1 - 30 A; 1 kA
	Snap-in	Rocker	1 - 30 A; 1 kA
		Rocker Illuminated	1 - 30 A; 1 kA
	Series Trip		X
	Relay Trip (V and A Sensing)		X
	Shunt Trip (V and A Sensing)		X
	Time Delay		AS,BS,CS,AI, BI, CI,AD, BD, CD,AW, BW, CE, OP
	Terminals	Screw	X
		Clamp	X
		Quick Connect	0.1 - 30 A; 1 kA
	Aux Switch	Silver	X
	Aux Switch	Gold	X
		Hex Nut	X
		Knurled Nut	X
		Legend Plate	X
		Lock Ring	X
		Dress Nut (3/8")	X
	Notes	1 - 15 A @ 240 V AI, Motor Start 400 Hz	

B Frame 240 V AC Circuit Breaker - IEC / EN 60934, CE, CCC, EAC

Poles		1 Pole	2 Pole
IEC / EN 60934 CE CCC EAC	240 V	AC	
	Front Mount Thread Neck	Paddle Handle	0.1 - 30 A; 1 kA
		Square Handle	0.1 - 30 A; 1 kA
		Baton Handle	0.1 - 30 A; 1 kA
		Push-Pull	0.1 - 30 A; 1 kA
		Push-to-Reset	0.1 - 30 A; 1 kA
	Snap-in	Rocker	0.1 - 30 A; 1 kA
		Rocker illuminated	0.1 - 30 A; 1 kA
	Series Trip		X
	Relay Trip (V and A sensing)		X
	Shunt Trip (V and A sensing)		X
	Time Delay		AS,BS,CS,AI, BI, CI,AD, BD, CD,AW, BW, CE, OP
		Screw	X
		Clamp	X
		Quick Connect	X
	Aux Switch	Silver	X
	Aux Switch	Gold	X
		Hex Nut	X
		Knurled Nut	X
		Legend Plate	X
		Lock Ring	X
		Dress Nut (3/8")	X

B Frame - Series Circuit Breakers

B Frame 240 V AC Circuit Breaker - cURus, UL 1077, UL 1500, CSA

Poles		1 Pole	2 Pole
cURus UL 1077 CSA UL 1500	240 V	AC	
	Front Mount Thread Neck	Paddle Handle	0.1 - 30 A; 1 kA
		Square Handle	0.1 - 30 A; 1 kA
		Baton Handle	0.1 - 30 A; 1 kA
		Push-Pull	0.1 - 30 A; 1 kA
		Push-to-Reset	0.1 - 30 A; 1 kA
	Snap-in	Rocker	0.1 - 30 A; 1 kA
		Rocker illuminated	0.1 - 30 A; 1 kA
	Series Trip		X
	Relay Trip (V and A sensing)		X
	Shunt Trip (V and A sensing)		X
	Time Delay		AS,BS,CS,AI, BI, CI,AD, BD, CD,AW,BW, CE, OP
	Terminals	Screw	X
		Clamp	X
		Quick Connect	0.1 - 30 A; 1 kA
	Aux Switch	Silver	X
		Gold	X
	Aux Switch	Hex Nut	X
		Knurled Nut	X
		Legend Plate	X
		Lock Ring	X
		Dress Nut (3/8")	X
	Notes		1 - 15 A @ 240 V AI, Motor Start

B Frame 300 V DC Switch - UL 508 Polarity Sensitive

Poles		2 Poles in Series
UL 508	300 V	DC
	Front Mount Thread Neck	Paddle Handle
		Square Handle
		Baton Handle
		Push-Pull
		Push-to-Reset
	Snap-in	Rocker
	Series Trip	
	Switch	
	Switch with Remote Trip	
	Polarity Sensitive	
	Time Delay	
	Terminals	Screw
		Clamp
		Quick Connect
	Aux Switch	Silver
		Gold
	Auxiliary Switch	Hex Nut
		Knurled Nut
		Legend Plate
		Lock Ring
		Dress Nut (3/8")

B Frame - Series Circuit Breakers

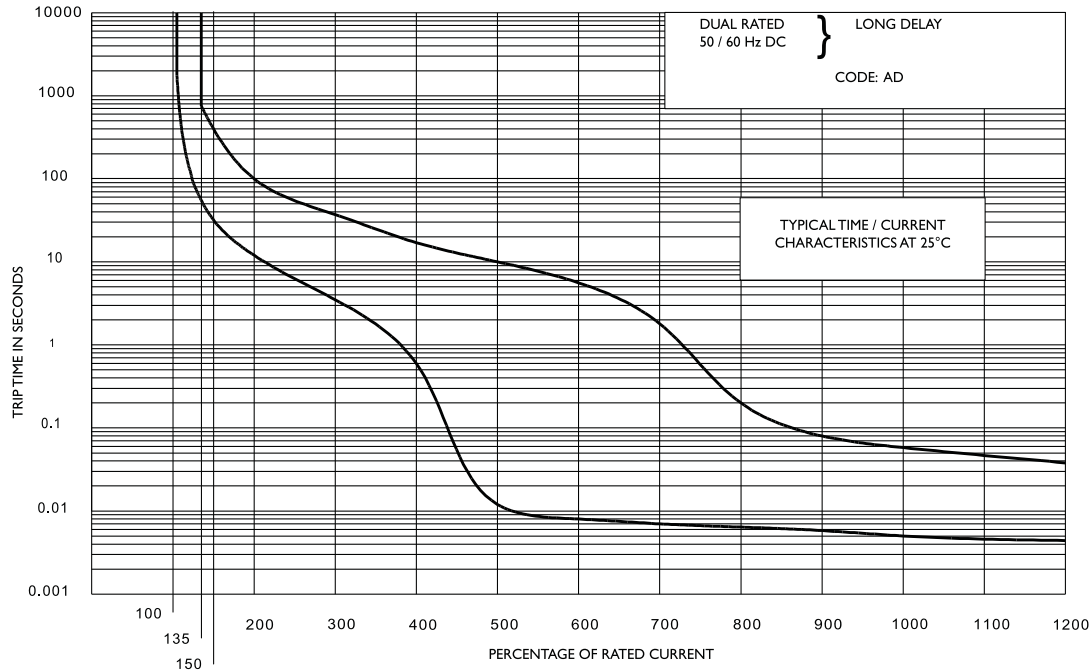
Notes

1. Shunt and Relay Trip available in centre and offset terminal configuration, quick connect only.
2. Terminals may be bent 90 deg or 45 deg. Inward bent screw terminal has no micro switch.
3. Illuminated rocker powered by leads from the base in series trip. It is powered by leads under the snap in plate for shunt and Relay Trip.
4. Shunt and Relay Trip coils voltage and current range: Relay Trip offset terminal 5 A max.
5. Centre terminal 2 A max. Shunt Trip 25 A max combined load.
6. Voltage coil ratings 5 - 65 V DC, 110 - 240 V AC.
7. Thread necks are 1/2" or M12 for square, baton, paddle handle, push-pull, and push-to-reset.
8. 1 pole. 1/2", M12, 3/8", 2 pole only 3/8".
9. For 3/8" thread neck only hex nut and dress nut available.
10. All 2 poles are reduced handle by definition.

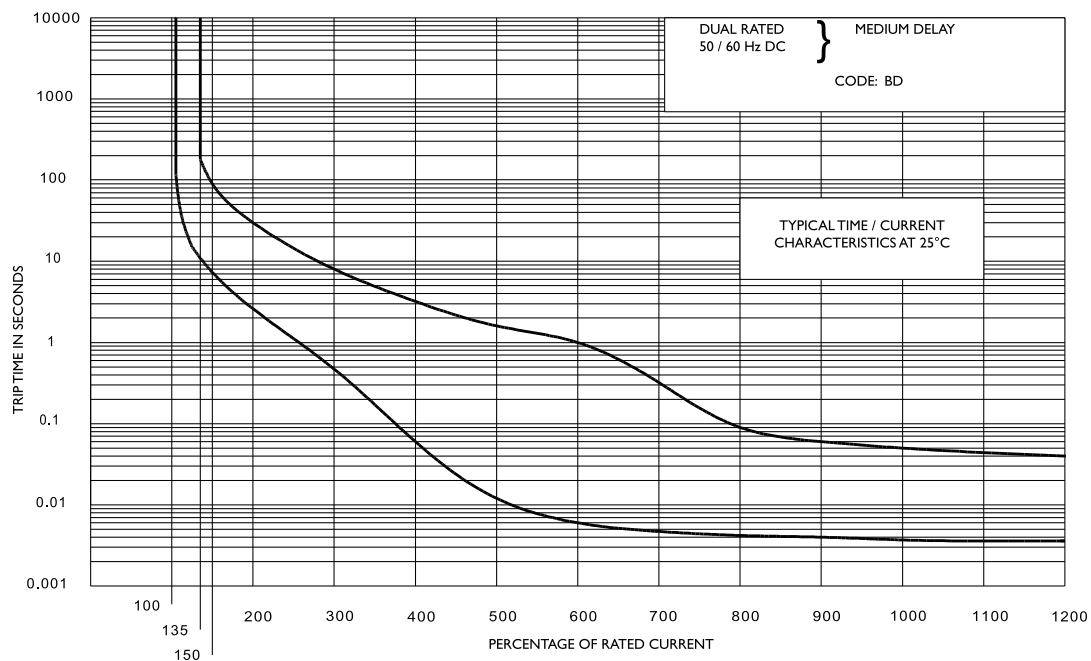


B Frame - Series Circuit Breakers

B Frame Time Delay Curves



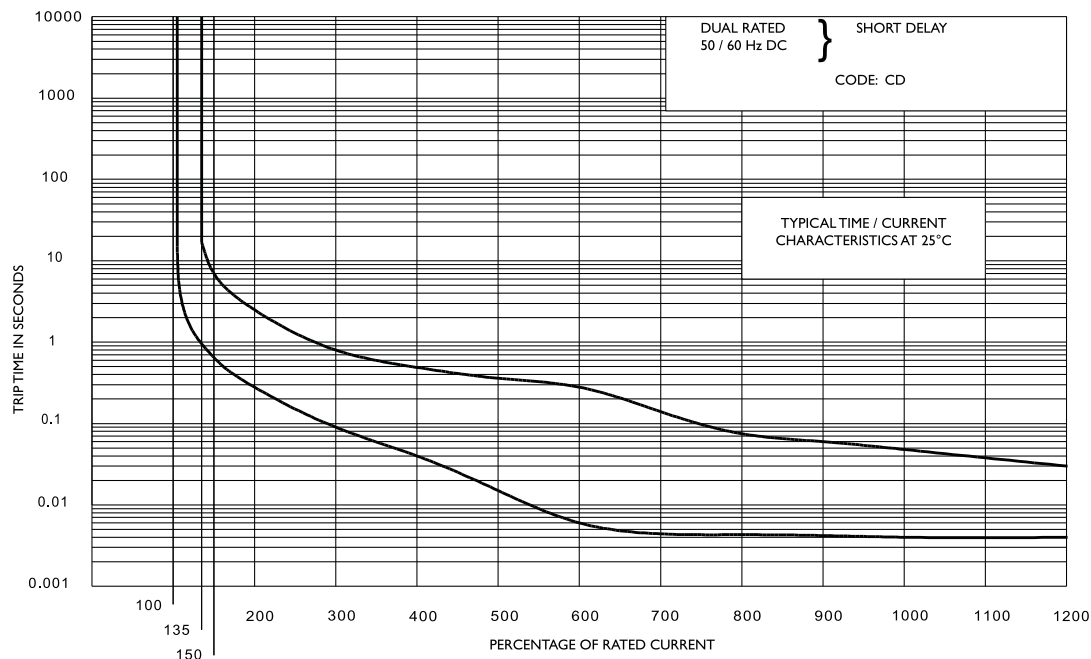
PERCENTAGE OF RATED CURRENT	100%	135%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	55	32	12	3.5	0.6	0.012	0.008	0.007	0.0064	0.0058	0.005	0.0045	0.0044
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	750	400	100	37	17	10	5.6	1.8	0.2	0.08	0.058	0.045	0.038



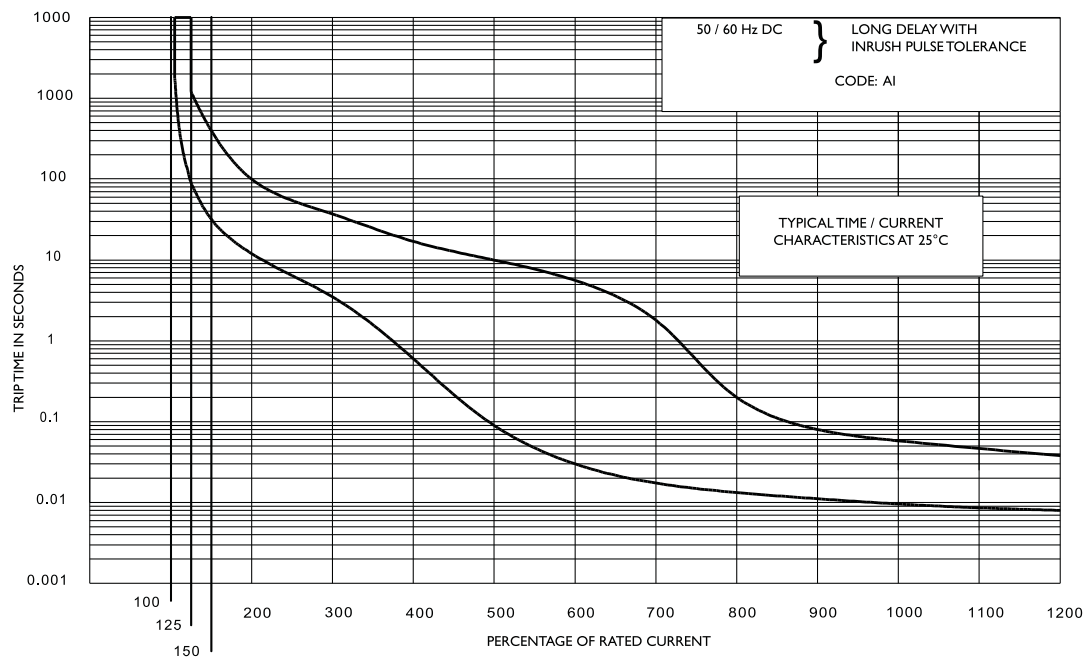
PERCENTAGE OF RATED CURRENT	100%	135%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	11	7.3	2.6	0.47	0.06	0.012	0.006	0.0047	0.0042	0.004	0.0037	0.0037	0.0036
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	180	90	30	8	3.2	1.6	1.0	0.32	0.09	0.06	0.05	0.044	0.04

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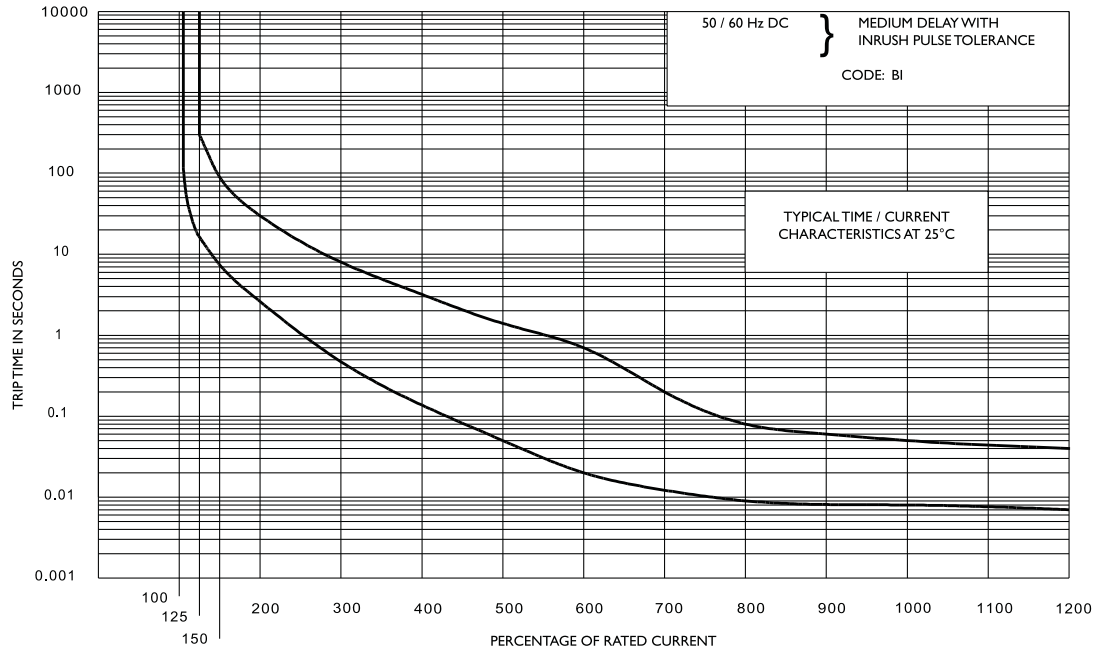
PERCENTAGE OF RATED CURRENT	100%	135%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	1	0.65	0.28	0.09	0.04	0.015	0.006	0.0044	0.0043	0.0042	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	17	7	2.5	0.8	0.49	0.36	0.28	0.14	0.075	0.06	0.048	0.039	0.03



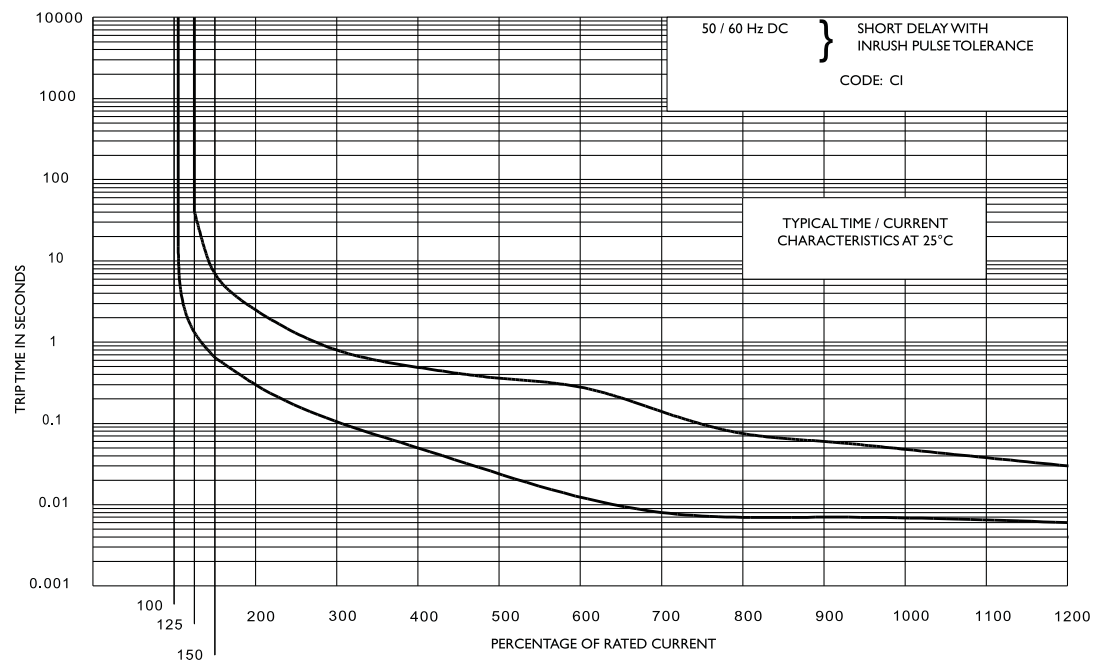
PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	90	32	12	3.5	0.6	0.09	0.03	0.018	0.014	0.012	0.0095	0.0085	0.008
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	1200	400	100	37	17	10	5.6	1.8	0.2	0.08	0.058	0.045	0.038

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B Frame Time Delay Curves



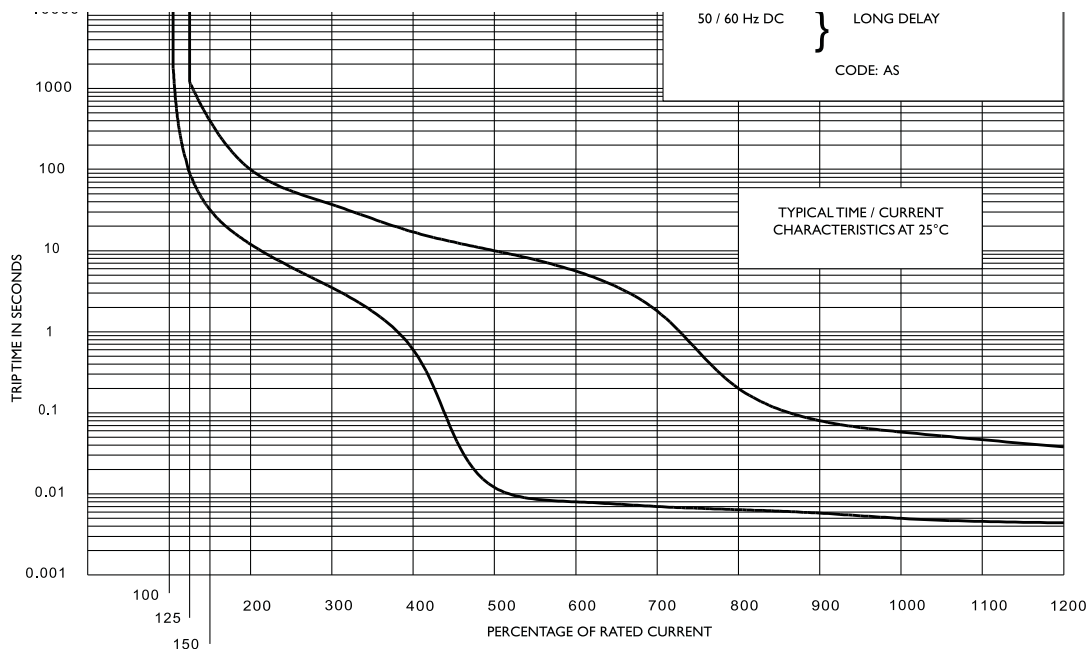
PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	15	7.3	2.6	0.47	0.13	0.05	0.02	0.012	0.0091	0.008	0.008	0.0075	0.007
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	300	90	30	8	3.2	1.4	0.7	0.2	0.08	0.06	0.05	0.044	0.04



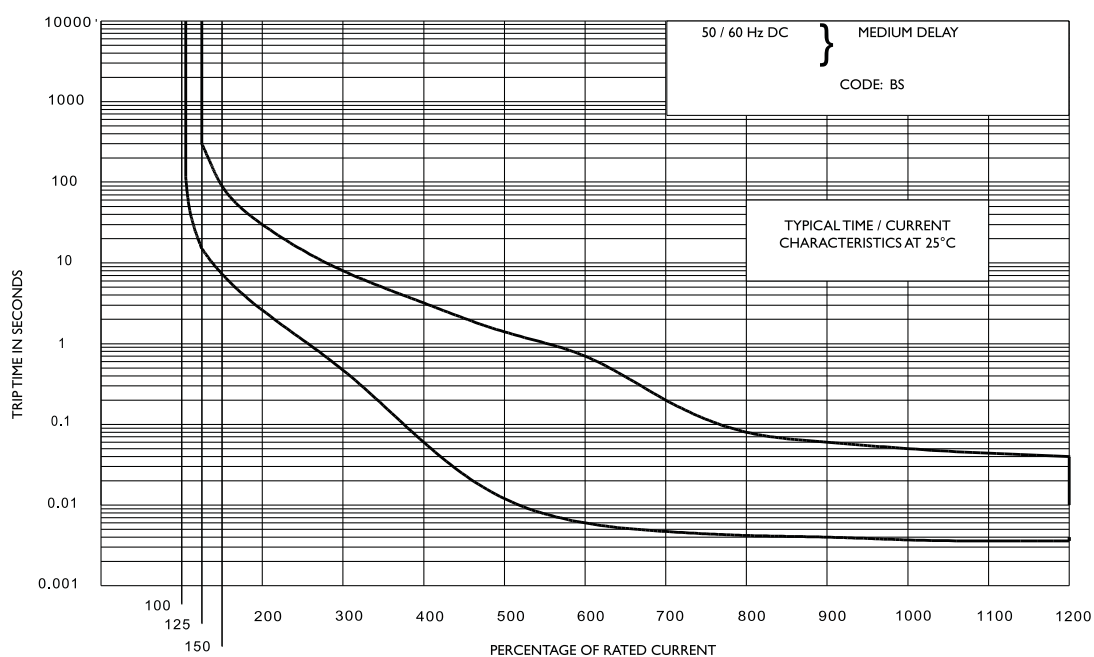
PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	1.3	0.65	0.3	0.11	0.05	0.023	0.012	0.008	0.007	0.007	0.007	0.0065	0.006
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	40	7	2.5	0.8	0.49	0.36	0.28	0.14	0.075	0.06	0.048	0.039	0.03

B Frame - Series Circuit Breakers

B Frame Time Delay Curves



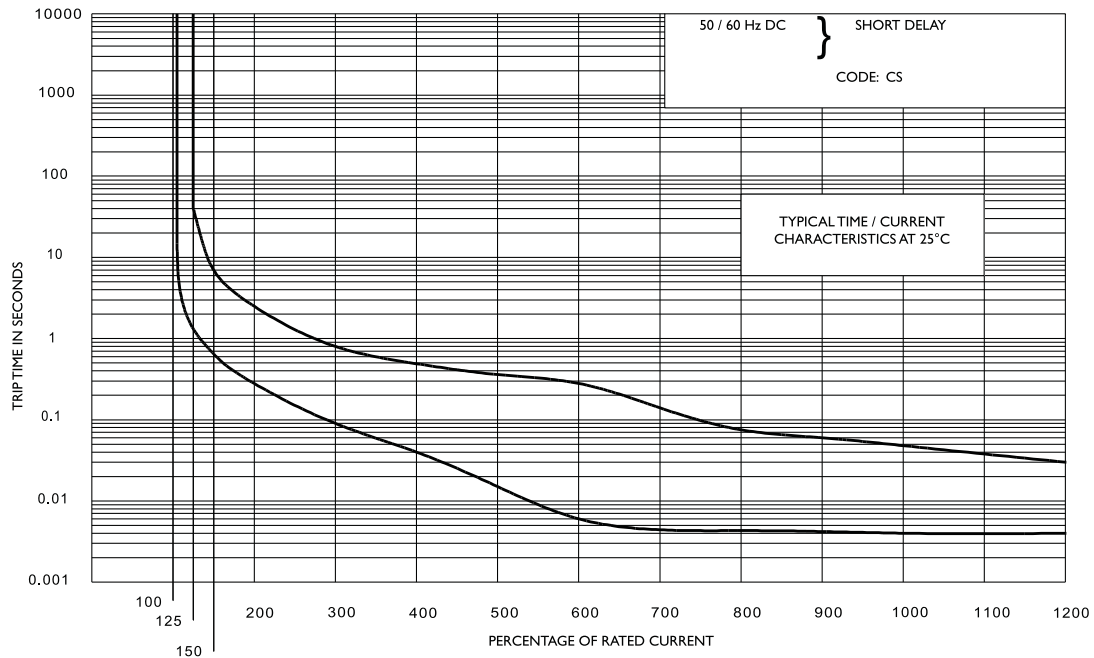
PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	90	32	12	3.5	0.6	0.012	0.008	0.007	0.0064	0.0058	0.005	0.0045	0.0044
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	1200	400	100	37	17	10	5.6	1.8	0.2	0.08	0.058	0.045	0.038



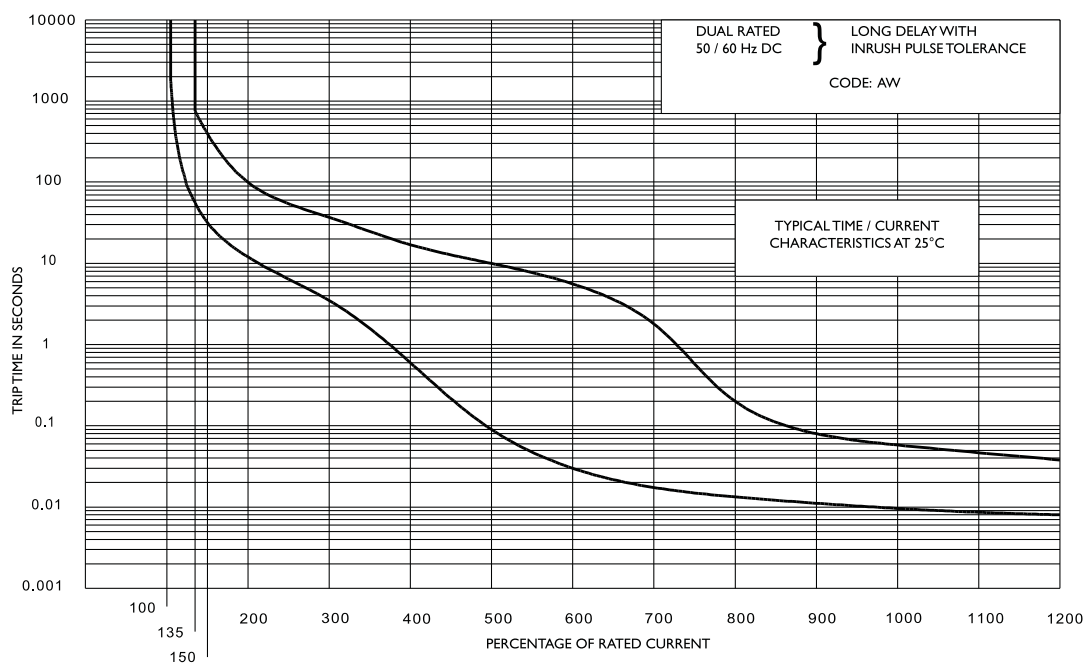
PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	15	7.3	2.6	0.47	0.06	0.012	0.006	0.0047	0.0042	0.004	0.0037	0.0037	0.0036
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	300	90	30	8	3.2	1.4	0.7	0.2	0.08	0.06	0.05	0.044	0.04

B Frame - Series Circuit Breakers

B Frame Time Delay Curves



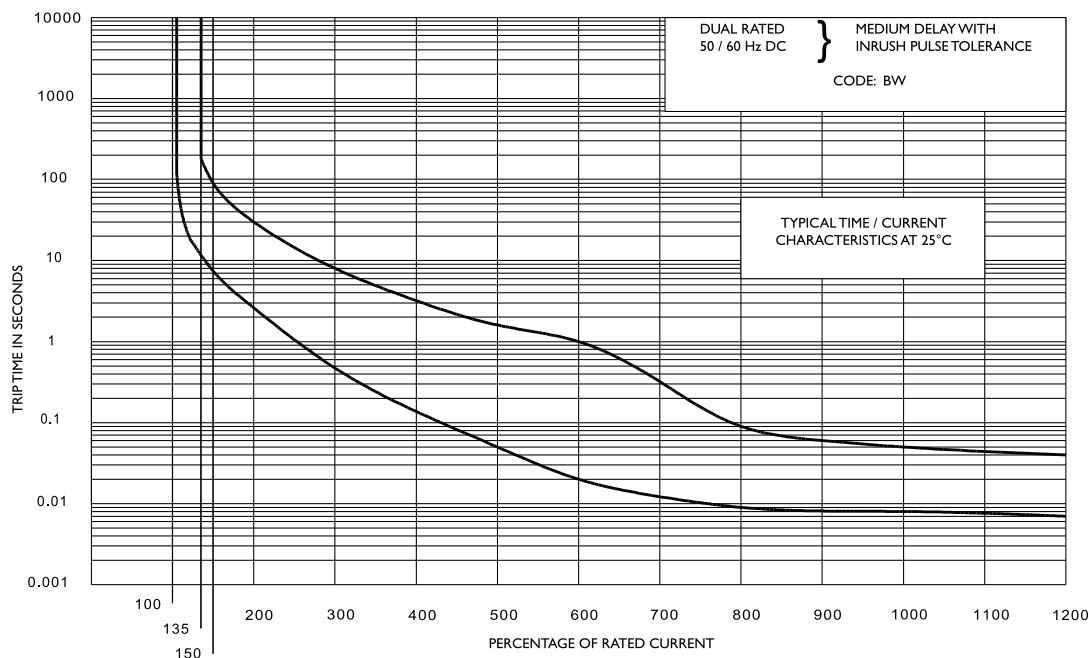
PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	1.3	0.65	0.28	0.09	0.04	0.015	0.006	0.0044	0.0043	0.0042	0.004	0.004	0.004
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	40	7	2.5	0.8	0.49	0.36	0.28	0.14	0.075	0.06	0.048	0.039	0.03



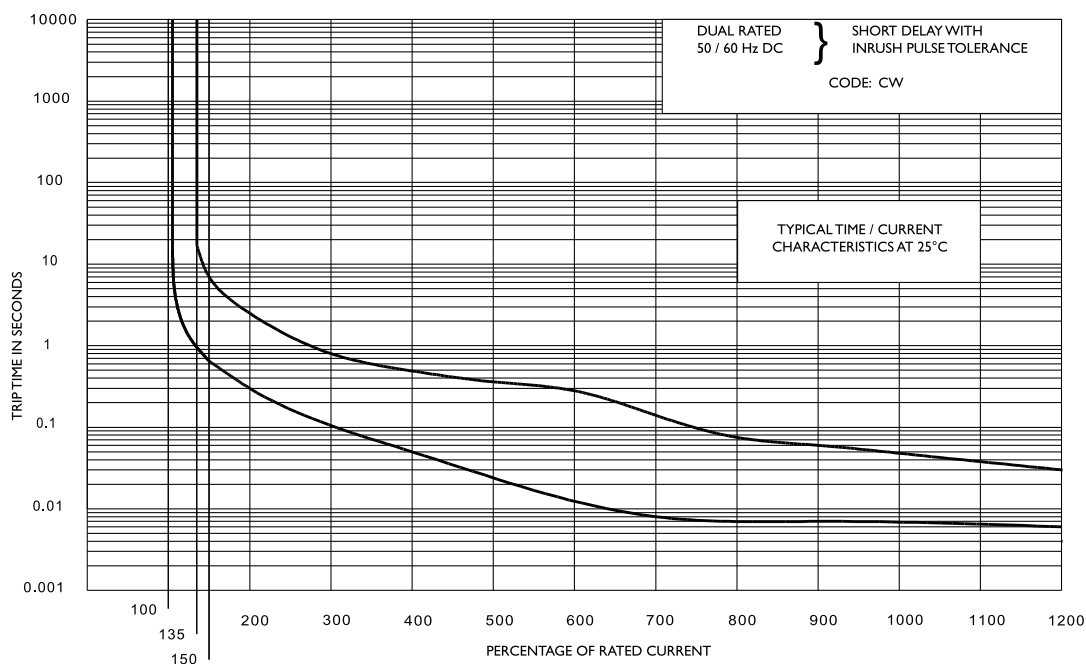
PERCENTAGE OF RATED CURRENT	100%	135%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	55	32	12	3.5	0.6	0.09	0.03	0.018	0.014	0.012	0.0095	0.0085	0.008
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	750	400	100	37	17	10	5.6	1.8	0.2	0.08	0.058	0.045	0.038

B Frame - Series Circuit Breakers

B Frame Time Delay Curves



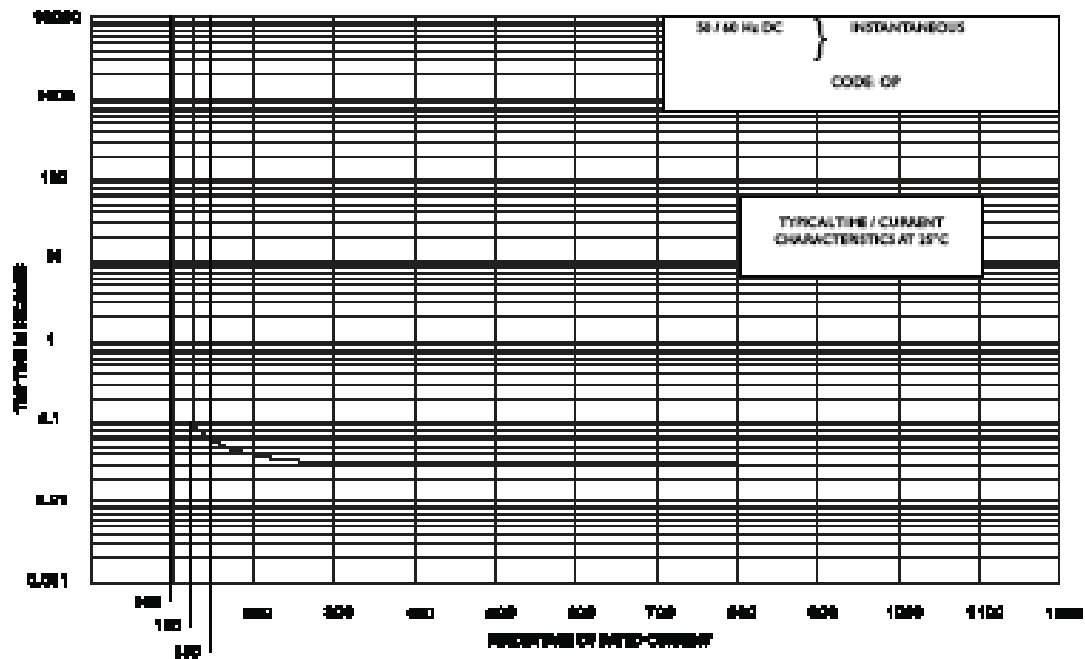
PERCENTAGE OF RATED CURRENT	100%	135%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	11	7.3	2.6	0.47	0.13	0.05	0.02	0.012	0.0091	0.008	0.008	0.0075	0.007
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	180	90	30	8	3.2	1.6	1.0	0.32	0.09	0.06	0.05	0.044	0.04



PERCENTAGE OF RATED CURRENT	100%	135%	150%	200%	300%	400%	500%	600%	700%	800%	900%	1000%	1100%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	1	0.65	0.3	0.11	0.05	0.023	0.012	0.008	0.007	0.007	0.007	0.0065	0.006
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	17	7	2.5	0.8	0.49	0.36	0.28	0.14	0.075	0.06	0.048	0.039	0.03

B Frame - Series Circuit Breakers

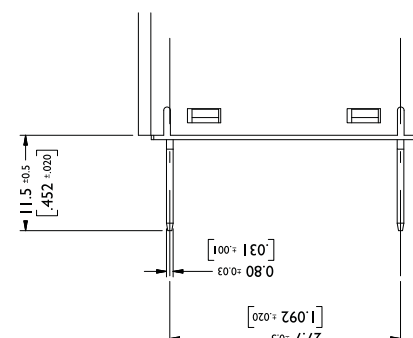
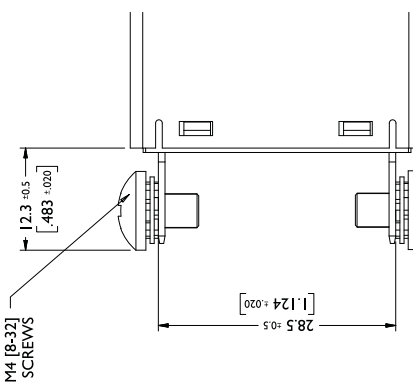
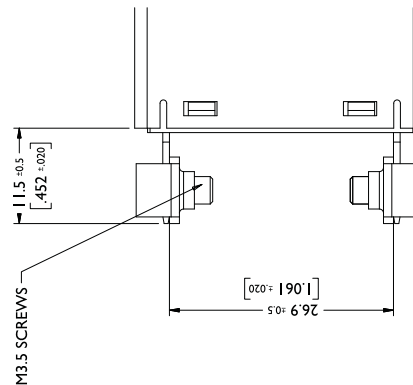
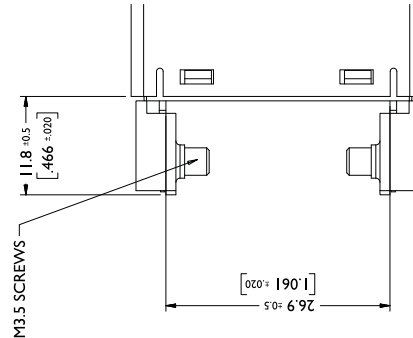
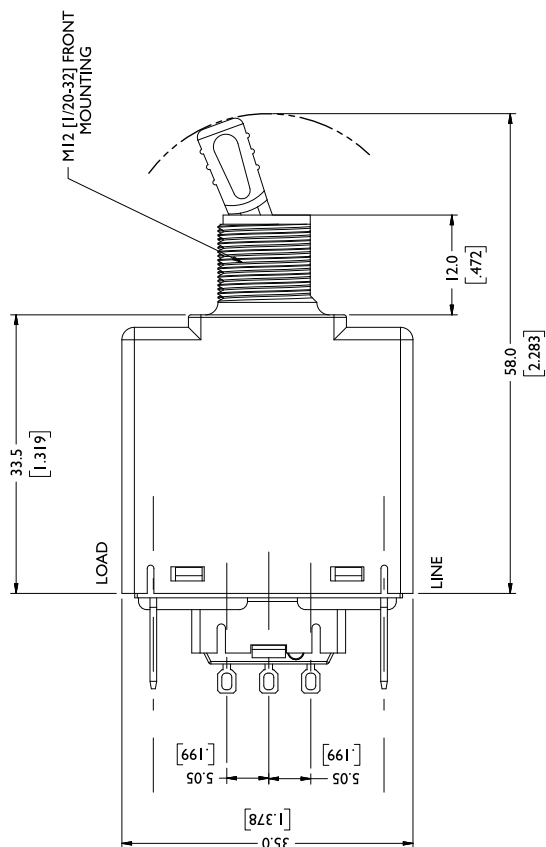
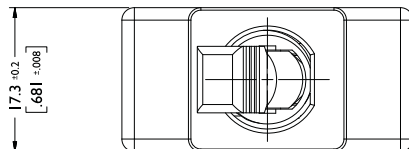
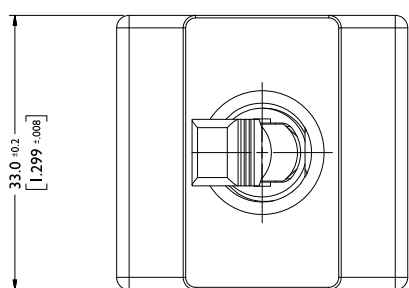
B Frame Time Delay Curve



PERCENTAGE OF RATED CURRENT	100%	125%	150%	200%	250%	300%	400%	500%	700%	800%	1000%	1100%	1200%
TRIP TIME (ms)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

B Frame - Series Circuit Breakers

B Frame Square Handle Outline Dimensions



CLAMP TERMINAL (LONG)

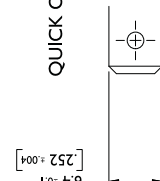
CLAMP TERMINAL

SCREW TERMINAL

QUICK CONNECT TERMINAL

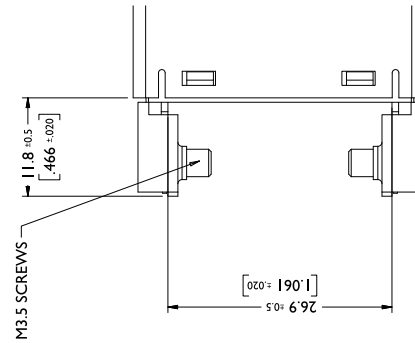
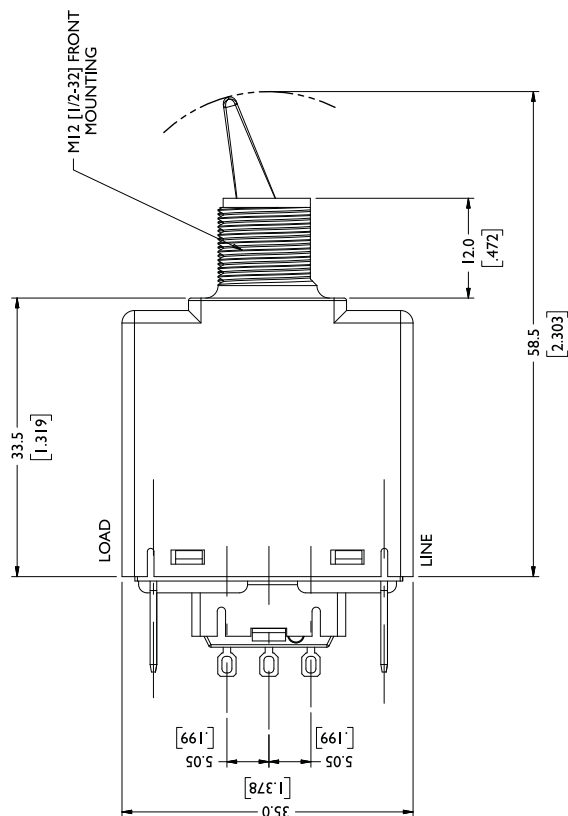
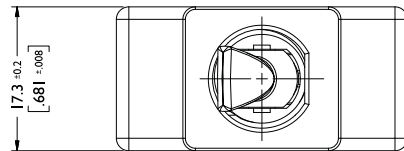
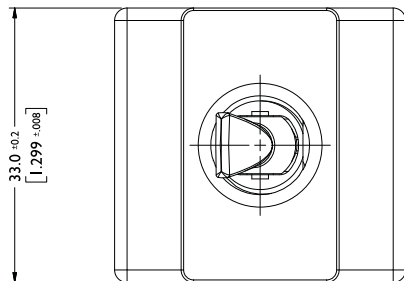
MICRO SWITCH AVAILABLE ONLY WITH QUICK CONNECT TERMINALS

TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

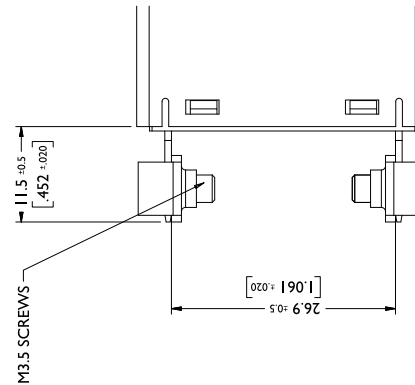


B Frame - Series Circuit Breakers

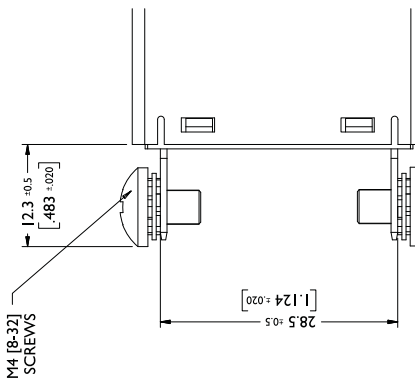
B Frame Paddle Handle Outline Dimensions



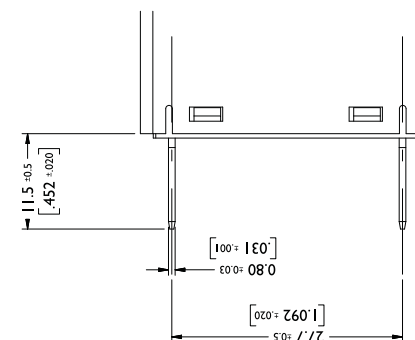
CLAMP TERMINAL (LONG)



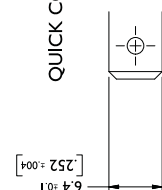
CLAMP TERMINAL



SCREW TERMINAL



QUICK CONNECT TERMINAL



TOLERANCE ±0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

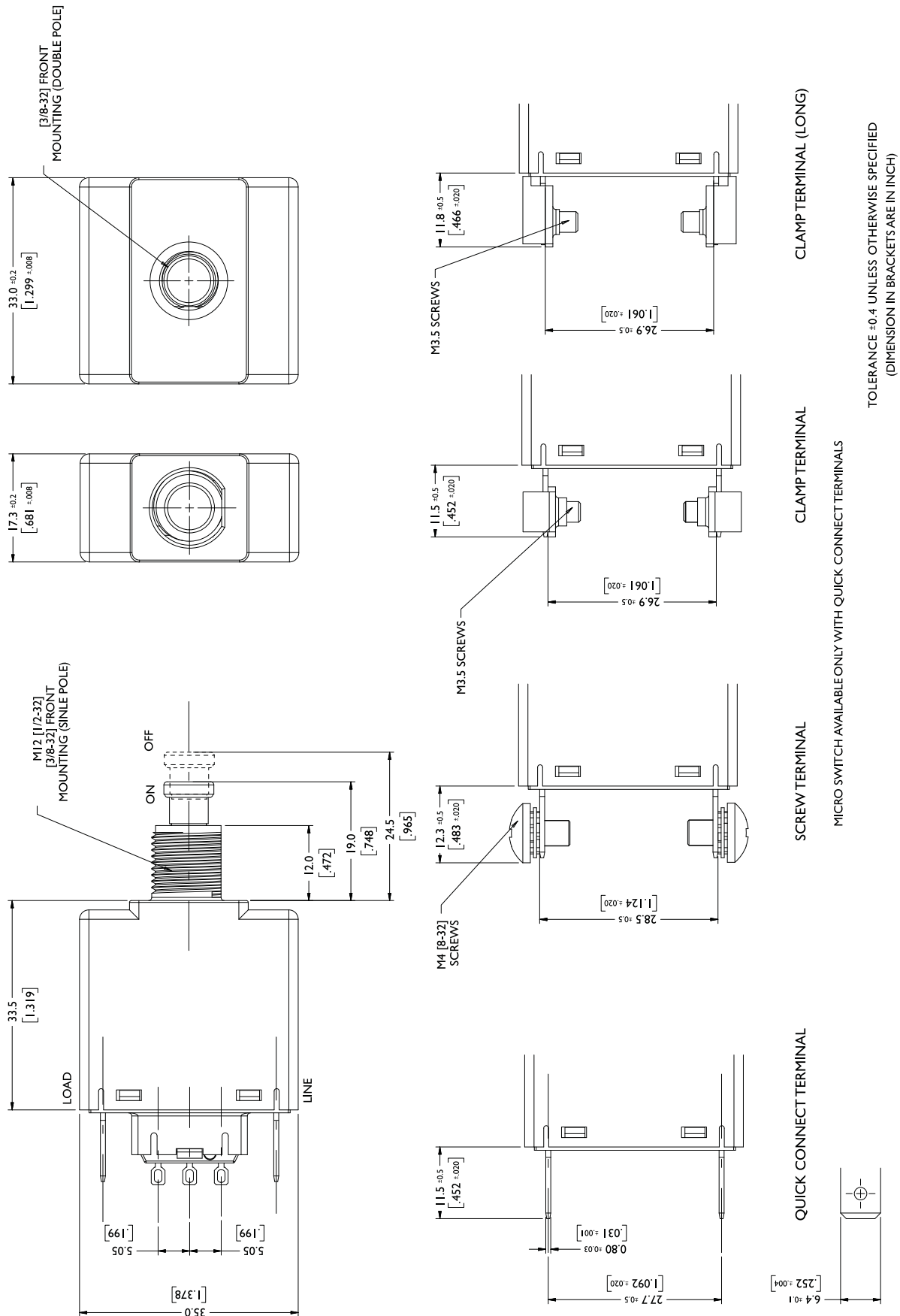
MICRO SWITCH AVAILABLE ONLY WITH QUICK CONNECT TERMINALS

B Frame Baton Handle Outline Dimensions



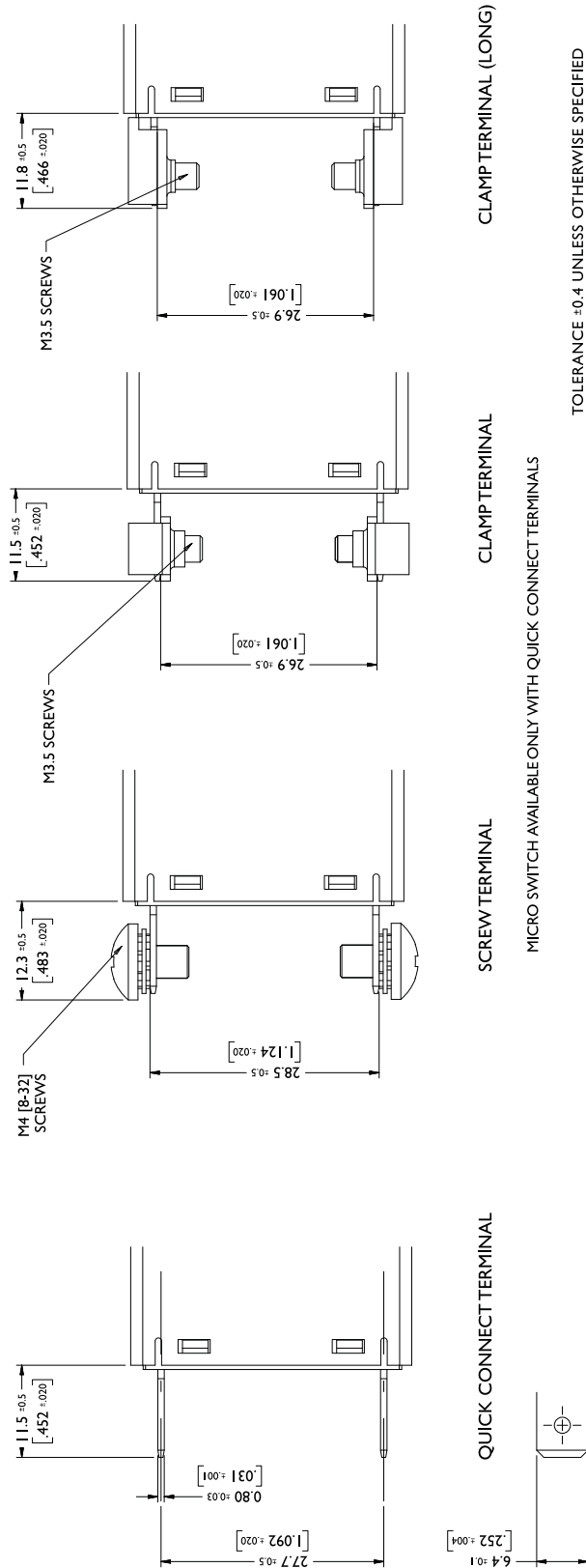
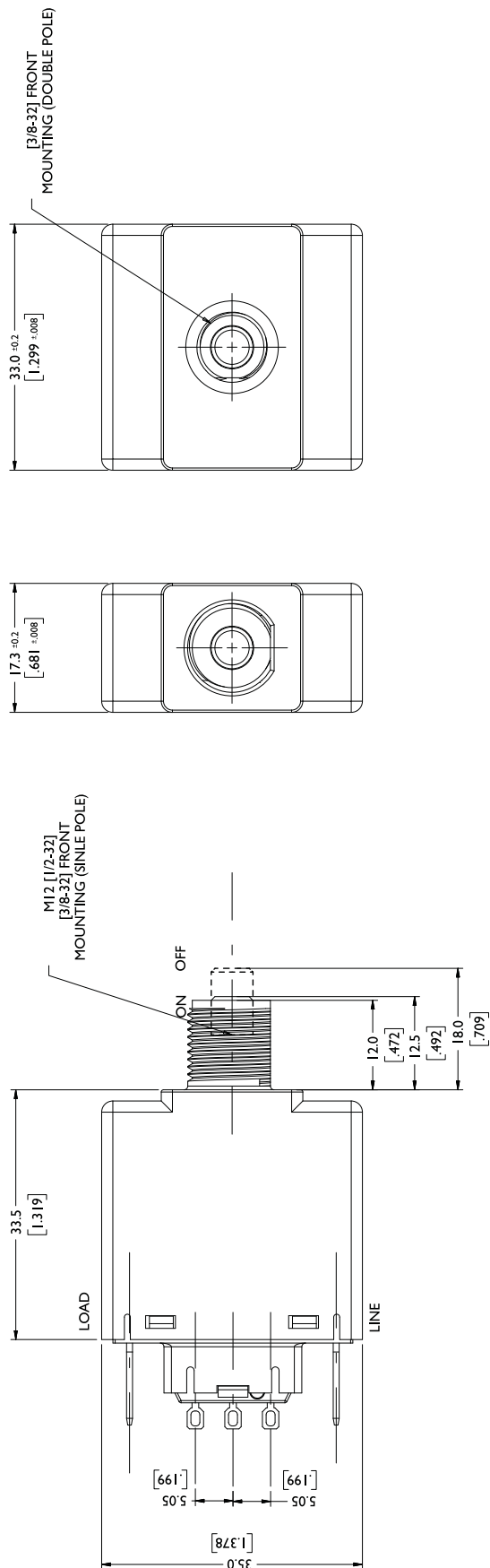
B Frame - Series Circuit Breakers

B Frame Push-Pull Handle Outline Dimensions



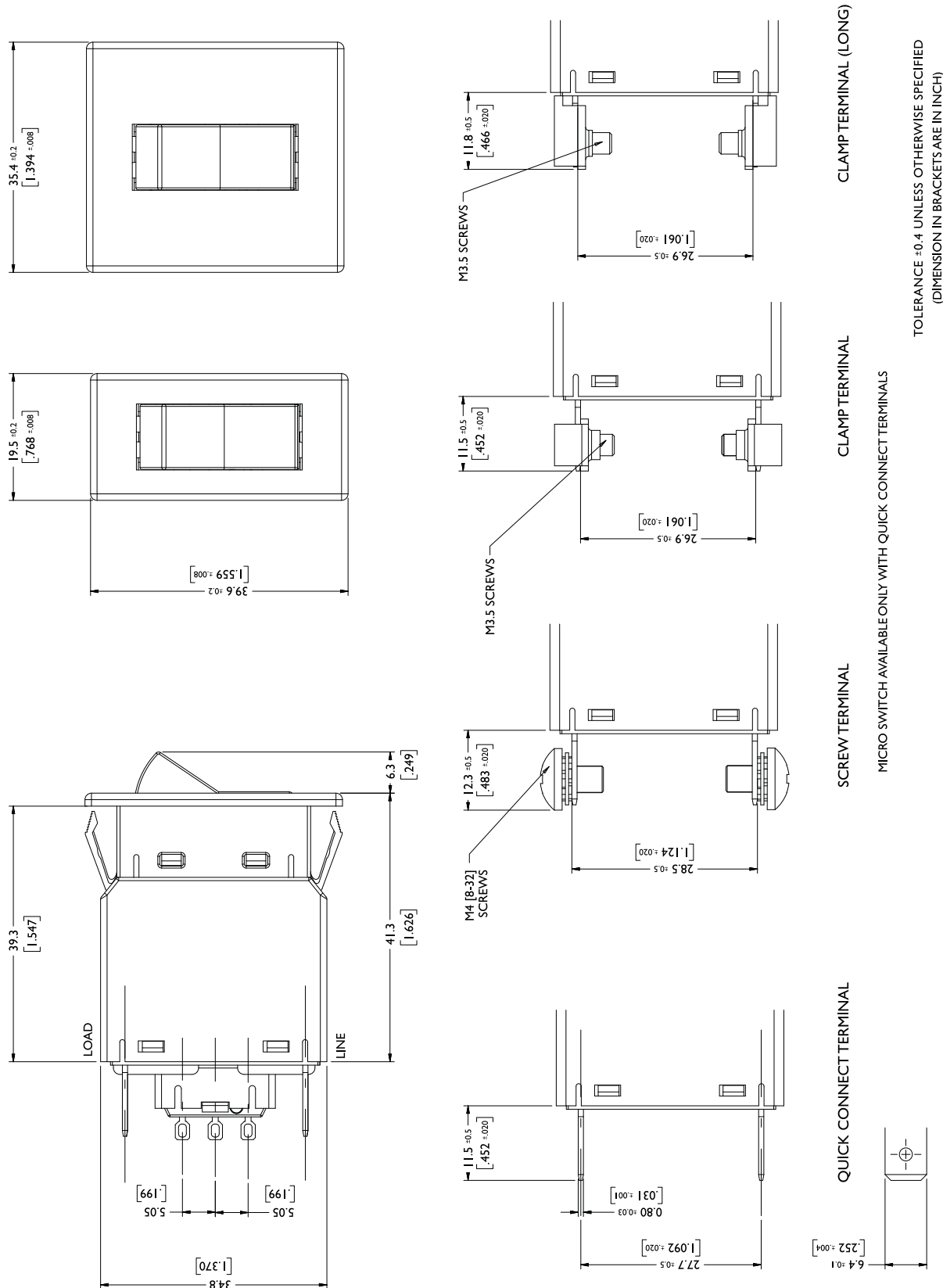
B Frame - Series Circuit Breakers

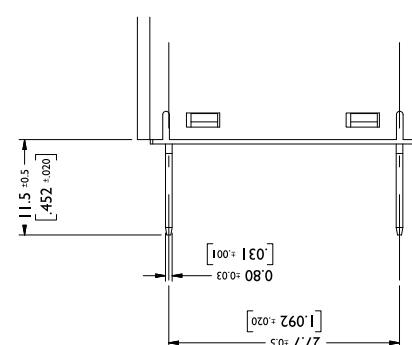
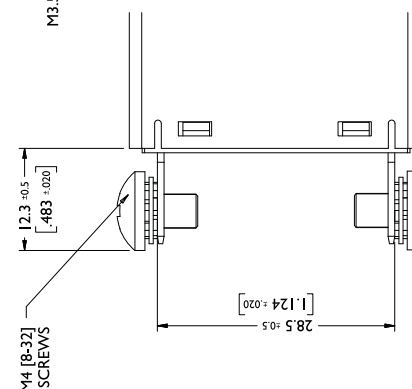
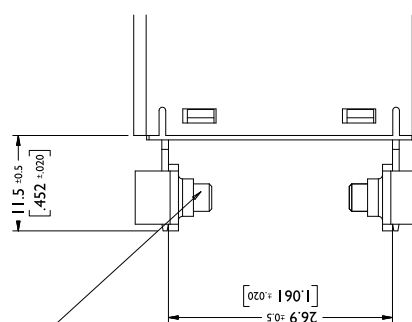
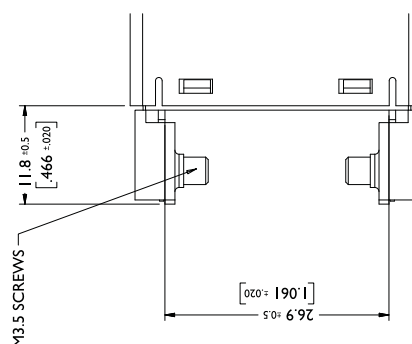
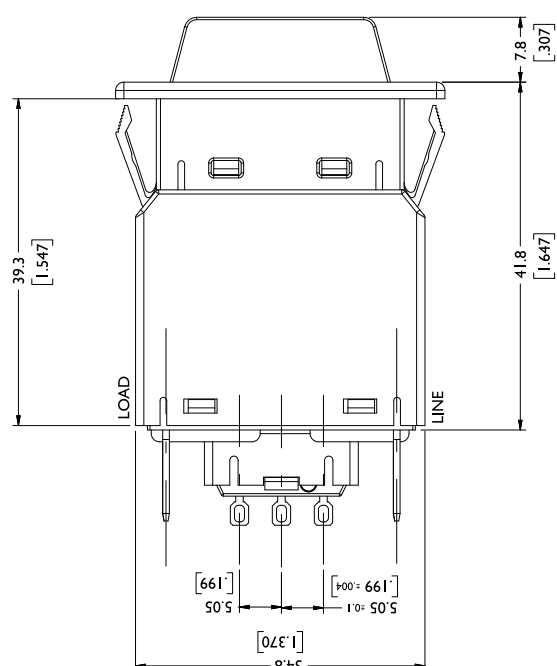
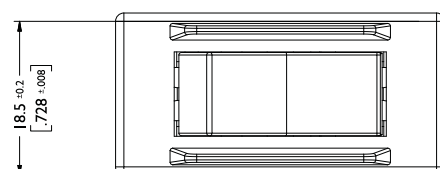
B Frame Push-to-Reset Handle Outline Dimensions



B Frame - Series Circuit Breakers

B Frame Rocker Handle Outline Dimensions





CLAMP TERMINAL (LONG)

CLAMP TERMINAL

SCREW TERMINAL

QUICK CONNECT TERMINAL



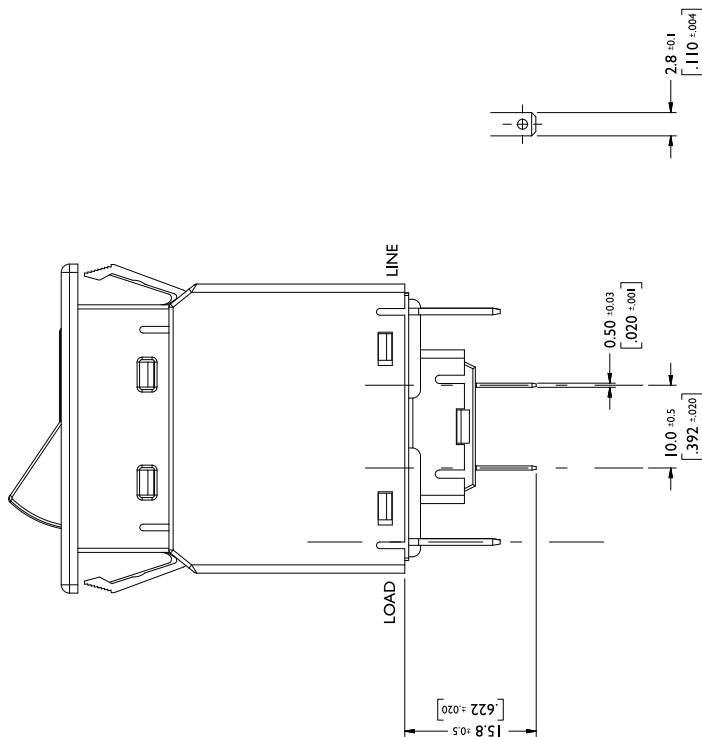
MICRO SWITCH AVAILABLE ONLY WITH QUICK CONNECT TERMINALS

TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

B Frame - Series Circuit Breakers

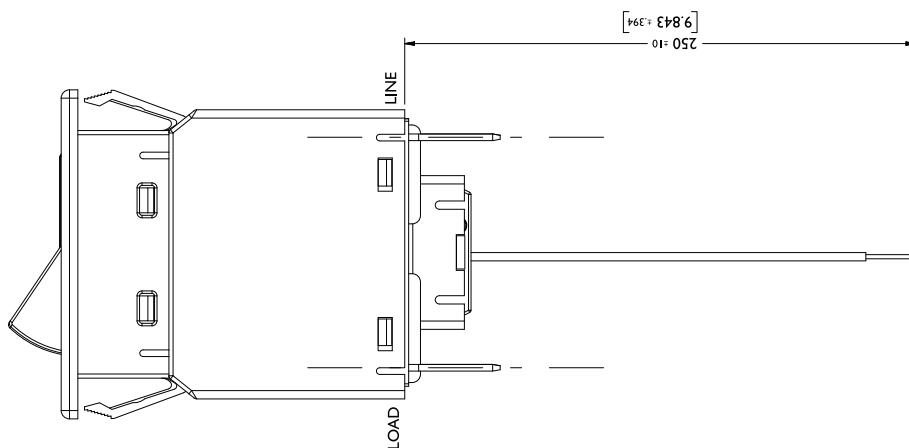
B Frame Illuminated Rocker Handle Outline Dimensions

QUICK CONNECT TERMINALS



NOTE: THAT ALL SPECIFIED DETAILS ARE ONLY RELEVANT
THE ILLUMINATED ROCKER HANDLE.

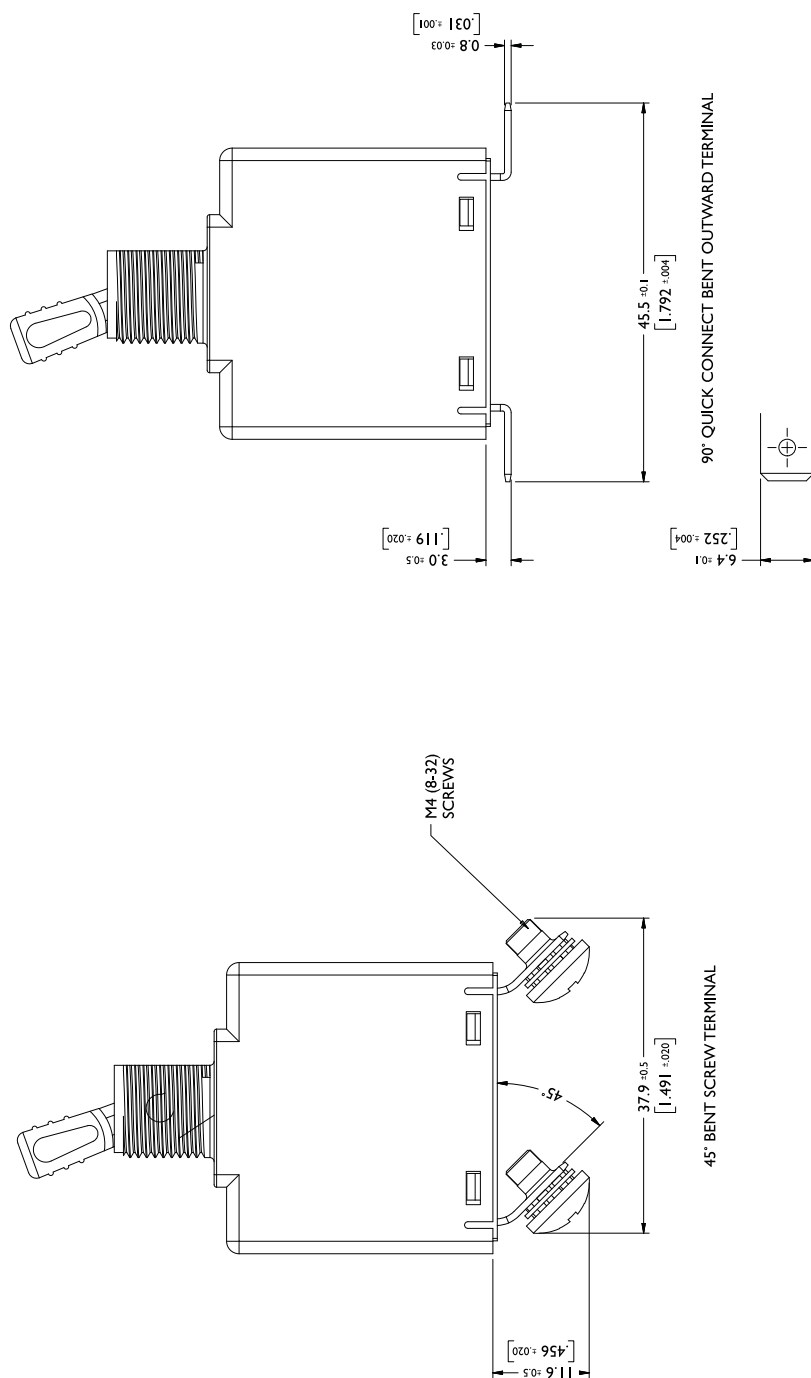
FLYING LEADS



TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

B Frame - Series Circuit Breakers

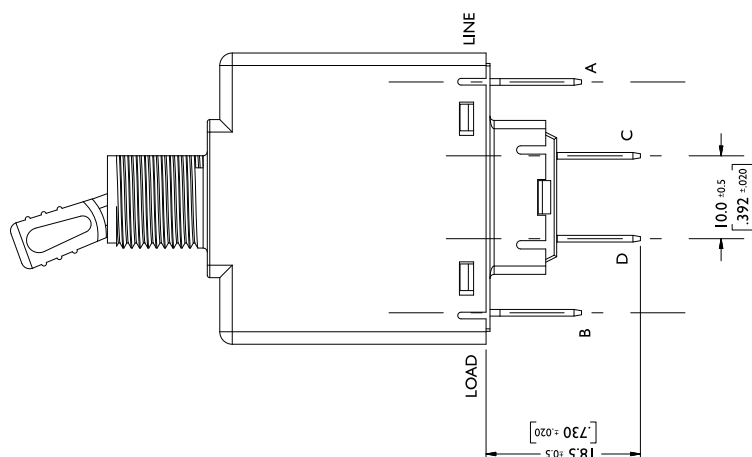
B Frame Various Special Main Terminal Configurations Outline Dimensions



TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

B Frame - Series Circuit Breakers

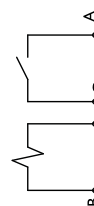
RELAY TRIP
(FOUR TERMINAL DEVICE)



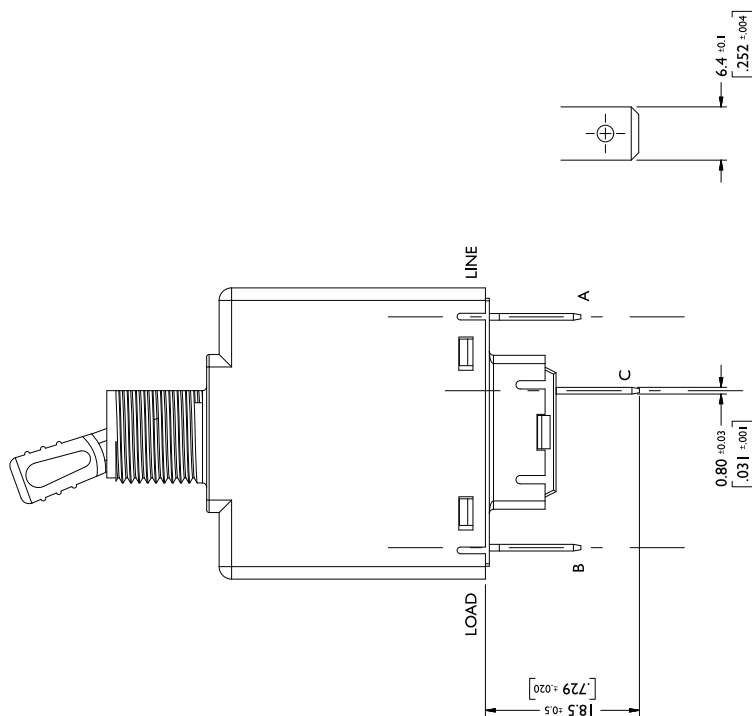
- RELAY TRIP VOLTAGE OR CURRENT SENSING
CENTER TERMINALS CONSTRUCTION



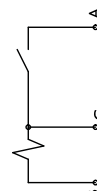
- RELAY TRIP VOLTAGE OR CURRENT SENSING
OFFSET TERMINALS CONSTRUCTION



SHUNT TRIP
(THREE TERMINAL DEVICE)



- SHUNT TRIP CURRENT OR VOLTAGE SENSING



NOTE: THAT ALL SPECIFIED DETAILS ARE RELEVANT ONLY
TO THE RELAY AND SHUNT TRIP UNITS.

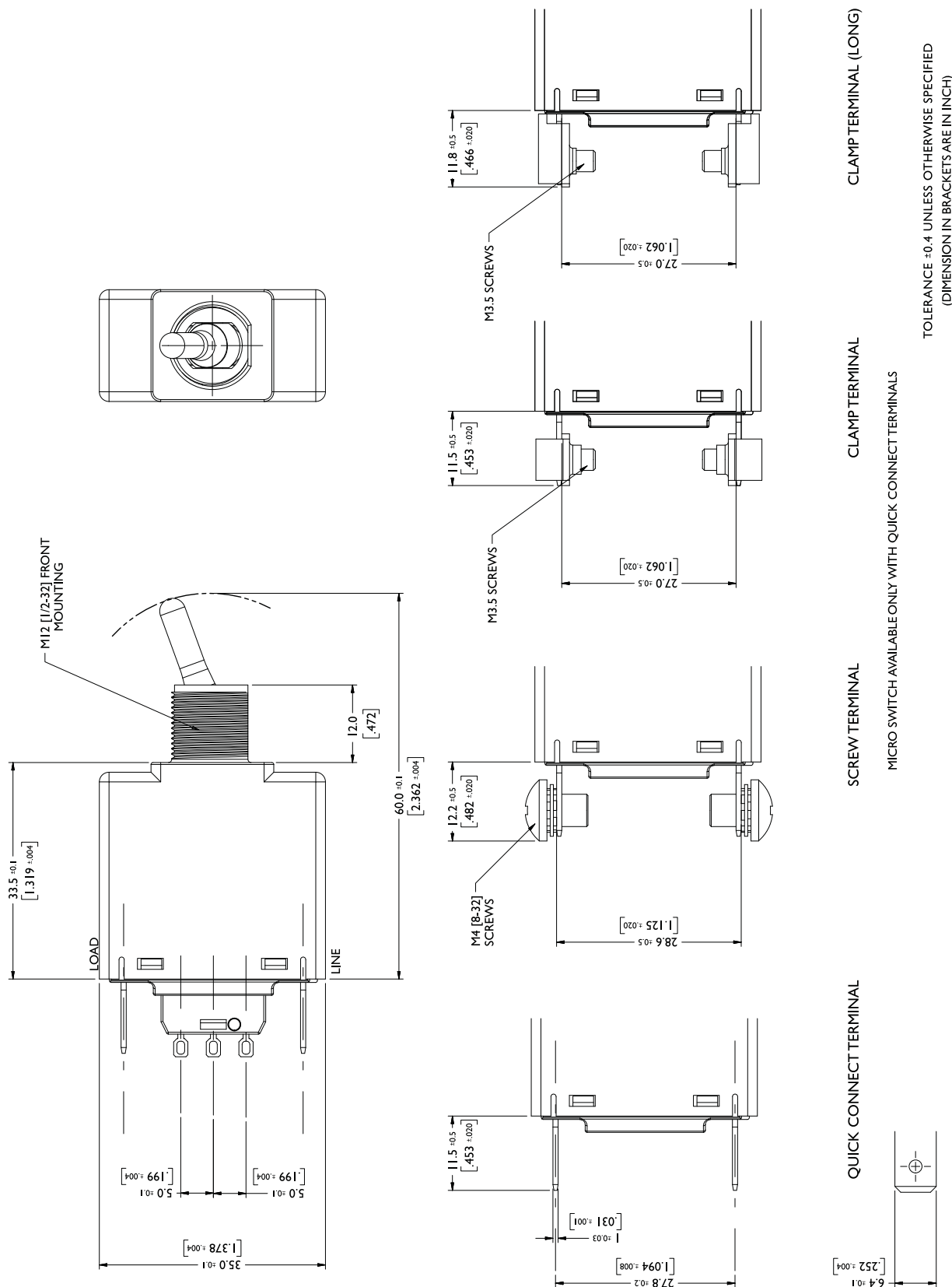
TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

[illegible]

[illegible]

B Frame - Series Circuit Breakers

B Frame MKI Baton Handle - 80 V DC UL 489A Polarity Sensitive Outline Dimensions



Technical drawing of the M12 [1/2-32] front mounting micro switch. The drawing includes front, side, and top views with the following dimensions:

- Front View:**
 - Overall width: 35.0 [1.378]
 - Distance between mounting holes: 5.05 [0.199]
 - Distance between terminal holes: 5.05 [0.199]
 - Overall height: 33.5 [1.319]
 - Mounting hole diameter: M12 [1/2-32]
 - Terminal block height: 12.0 [0.472]
 - Terminal block width: 19.0 [0.748]
 - Terminal block depth: 24.5 [0.965]
- Side View:**
 - Overall height: 27.8 ±0.2 [1.094 ±0.008]
 - Distance between mounting holes: 11.5 ±0.5 [0.453 ±0.020]
 - Distance between terminal holes: 27.8 ±0.2 [1.094 ±0.008]
 - Terminal block height: 11.5 ±0.5 [0.453 ±0.020]
 - Terminal block width: 12.2 ±0.5 [0.482 ±0.020]
 - Terminal block depth: 28.6 ±0.5 [1.125 ±0.020]
- Top View:**
 - Overall width: 17.3 ±0.2 [0.681 ±0.008]
 - Distance between mounting holes: 11.8 ±0.5 [0.466 ±0.020]
 - Distance between terminal holes: 27.0 ±0.5 [1.062 ±0.020]
 - Terminal block height: 11.8 ±0.5 [0.466 ±0.020]
 - Terminal block width: 11.5 ±0.5 [0.453 ±0.020]
 - Terminal block depth: 27.0 ±0.5 [1.062 ±0.020]

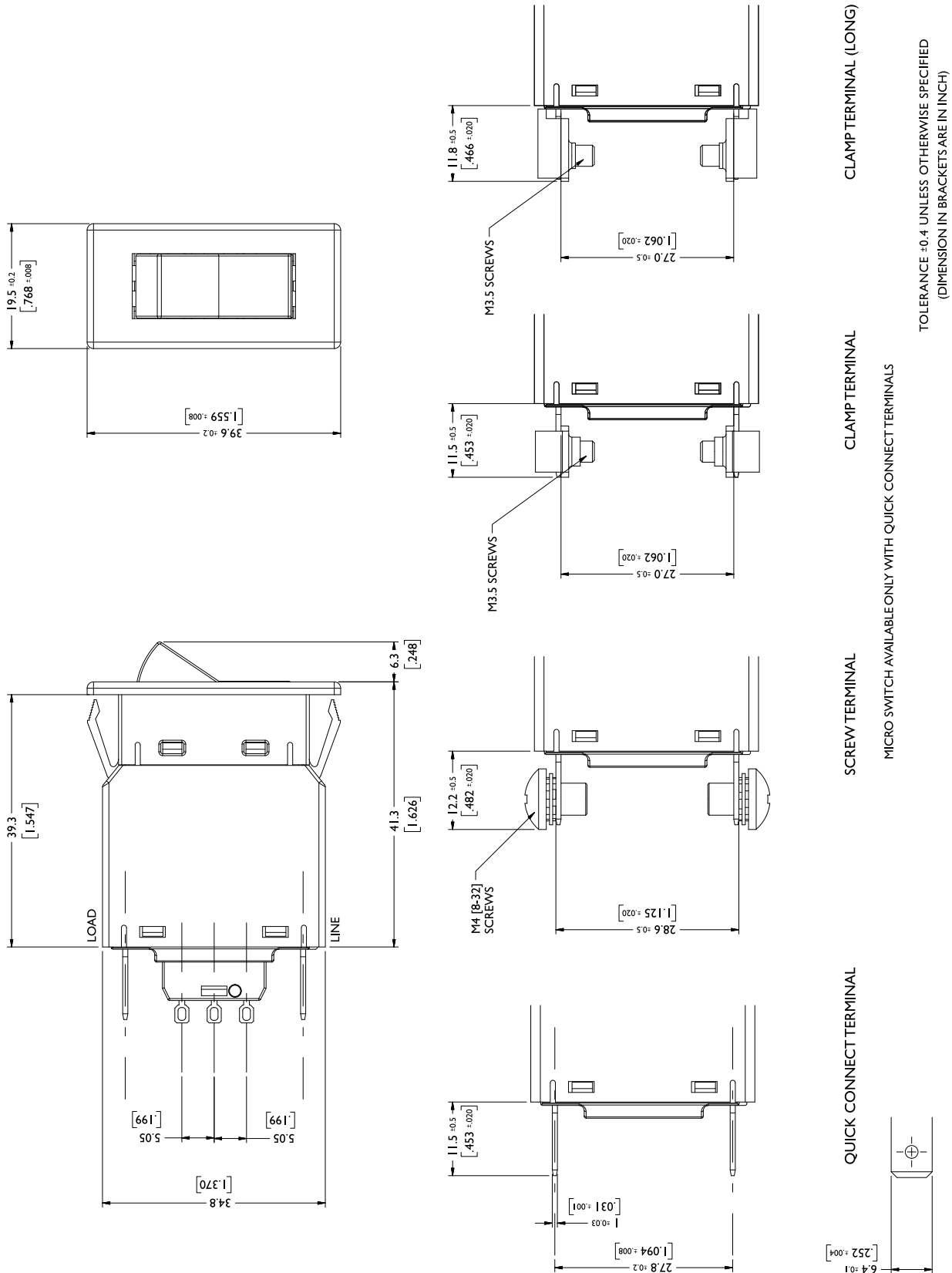
Labels: LOAD, LINE, ON, OFF, M12 [1/2-32] FRONT MOUNTING, M3.5 SCREWS, M4 [8-32] SCREWS.

B Frame MKI Pus-to-Reset Handle - 80 V DC UL 489A Polarity Sensitive Outline Dimensions



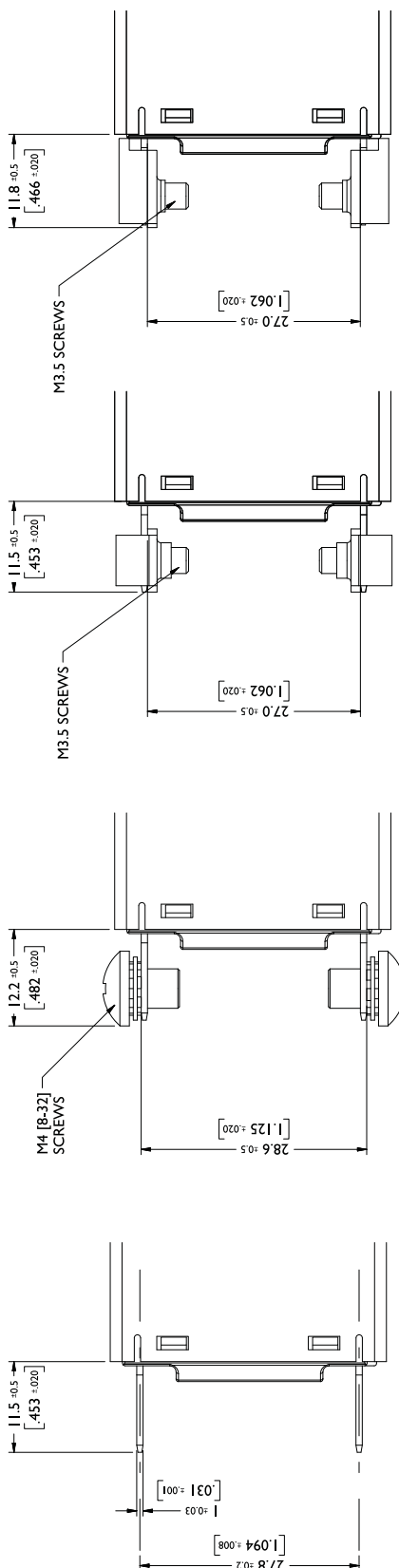
B Frame - Series Circuit Breakers

B Frame MKI Rocker Handle - 80 V DC UL 489A Polarity Sensitive Outline Dimensions

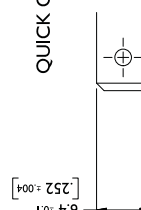


The technical drawing consists of two parts:

- Top View (Left):** A rectangle with overall dimensions of 39.4 [1.551] by 7.8 [0.307]. It shows internal structural details.
- Front View (Right):** A detailed elevation showing the profile of the object. Key dimensions include:
 - Total height: 41.3 [1.626]
 - Base width: 34.8 [1.370]
 - Internal horizontal segments: 5.05 [0.199], 5.05 [0.199], and 5.05 [0.199]
 - Labels "LOAD" and "LINE" are positioned near the base corners.



QUICK CONNECT TERMINAL



CLAMP TERMINAL

MICRO SWITCH AVAILABLE ONLY WITH QUICK CONNECT TERMINALS

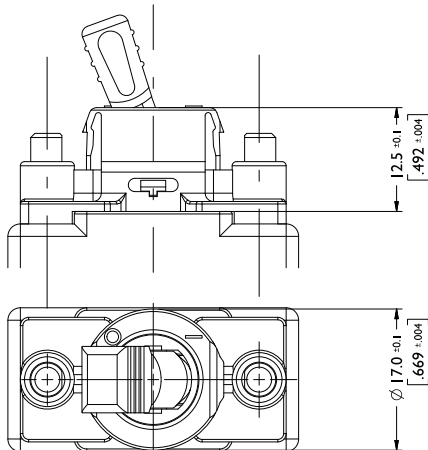
CLAMP TERMINAL (LONG)

TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

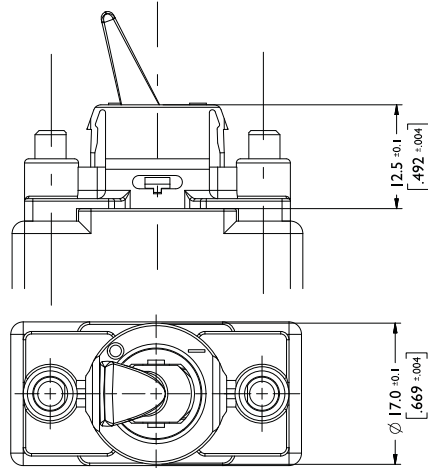
B Frame - Series Circuit Breakers

B Frame MK1 Front Clip-on - 80 V DC UL 489A Polarity Sensitive Outline Dimensions

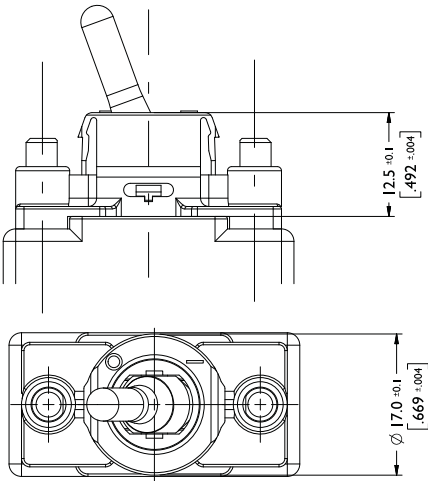
SQUARE HANDLE



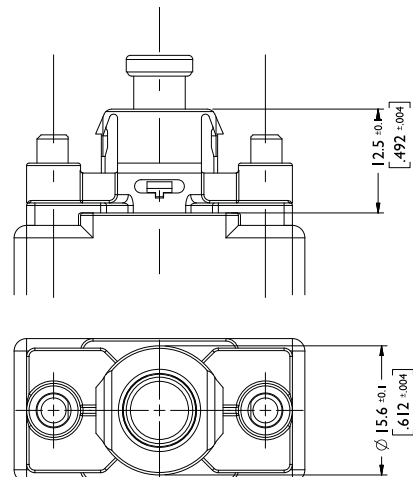
PADDLE HANDLE



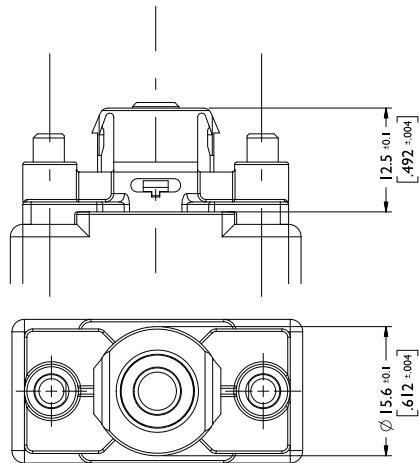
BATON HANDLE



PUSH-PULL HANDLE



PUSH-TO-RESET HANDLE

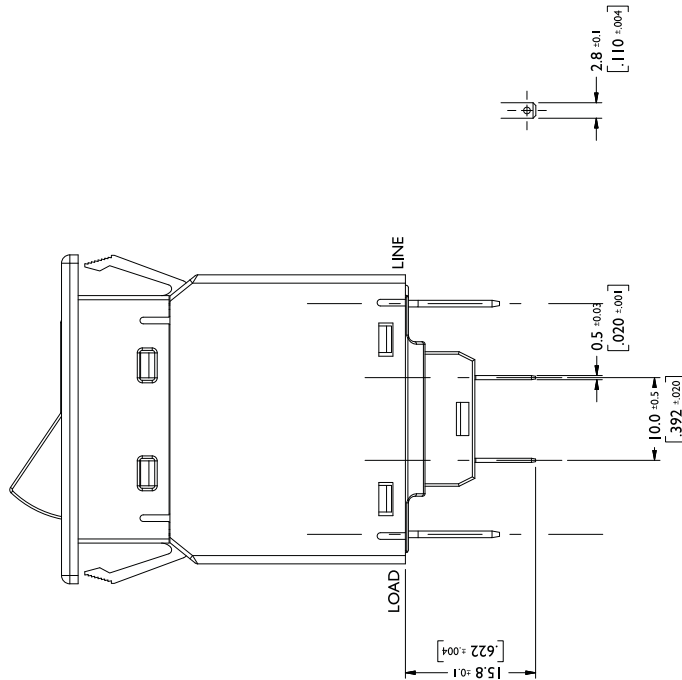


TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

B Frame - Series Circuit Breakers

B Frame MKI Illuminated Rocker Handle - 80V DC UL 489A Polarity Sensitive Outline Dimensions

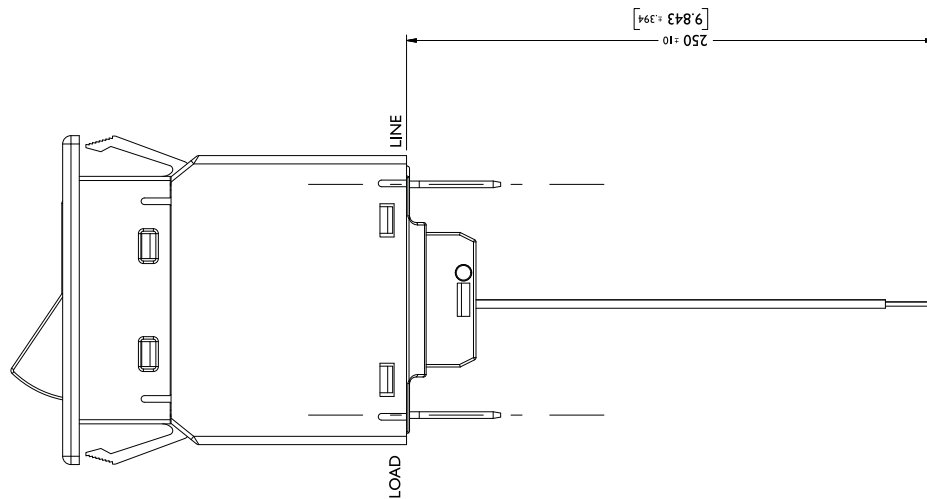
QUICK CONNECT TERMINALS



NOTE: THAT ALL SPECIFIED DETAILS ARE ONLY RELEVANT
THE ILLUMINATED ROCKER HANDLE.

TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

FLYING LEADS



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