ACW

Molded-Case Circuit Breaker
UL 489 Listed

The WEG ACW Series of Molded Case Circuit Breakers are designed to provide overload and short-circuit protection for industrial electrical equipment. Available in four different compact frame sizes, the ACW is a top performing, safe, reliable solution for applications from 15 to 800Amps. Common field installable plug-in accessories simplify selection and minimize inventory variations.

Standard Features

- High short-circuit interrupting ratings – up to 65Ka@480V
- Adjustable Thermal trip settings- 128-800A
- Complete line of field installable accessories
- Suitable for reverse feed applications
- Compact frame

ACW Catalog Number Sequence

Trip unit	Code
Fixed thermal and fixed magnetic (only ACW125)	FTU
Adjustable thermal and fixed magnetic (only ACW250, 400 and 800)	FMU

Rated current In	Code
15A	15
20A	20
30A	30
40A	40
50A	50
60A	60
80A	80
100A	100
125A	125
160A	160
200A	200
250A	250
300A	300
400A	400
500A	500
600A	600
700A	700
800A	800

A	C	W	1	2	5	P	-	F	T	U		8	0	-	3

kA rating @ 460VAC	Code
35	P
65	W

Frame	Code
125	ACW125
250	ACW250
400	ACW400
800	ACW800

Number of poles	Code
3	3

Chart intended as reference only and not to create part numbers.

MCCB for power distribution - standard interrupting capacity

ACW125P - FTU trip unit – Fixed thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
15	400	35kA	10kA	ACW125P-FTU15-3	$665	Z10
20	400			ACW125P-FTU20-3	$665	
30	400			ACW125P-FTU30-3	$665	
40	400			ACW125P-FTU40-3	$665	
50	500			ACW125P-FTU50-3	$665	
60	600			ACW125P-FTU60-3	$665	
80	800			ACW125P-FTU80-3	$728	
100	1000			ACW125P-FTU100-3	$728	
125	1250			ACW125P-FTU125-3	$1,499	

Note: Wiring terminal (lugs) not included. Lugs are available as accessory at page 14.

ACW250P - FMU trip unit – Adjustable thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
128...160	1600	35kA	10kA	ACW250P-FMU160-3	$1,550	Z10
160...200	2000			ACW250P-FMU200-3	$1,550	
200...250	2500			ACW250P-FMU250-3	$1,550	

Note: Wiring terminal (lugs) not included. Lugs are available as accessory at page 14.

ACW400P - FMU trip unit – Adjustable thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
240...300	3000	35kA	14kA	ACW400P-FMU300-3	$2,505	Z10
320...400	4000			ACW400P-FMU400-3	$2,505	

Note: Lugs for ACW400 are factory mounted.

ACW800P - FMU trip unit – Adjustable thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
400...500	5000	35kA	18kA	ACW800P-FMU500-3	$4,757	Z10
480...600	6000			ACW800P-FMU600-3	$4,757	
640...800	8000			ACW800P-FMU800-3	$5,393	

Note: Lugs for ACW800 are factory mounted.

Note: WEG is committed to maintain stock for immediate delivery of the following trip units:
FTU – ACW125P and ACW125W
FMU – ACW250P, ACW250W, ACW400P, ACW400W, ACW800P, ACW800W
Please contact your WEG representative office for availability of other trip units.

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MCCB for power distribution - high interrupting capacity

ACW125W - FTU trip unit – Fixed thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
15	400	65kA	14kA	ACW125W-FTU15-3	$965	Z10
20	400			ACW125W-FTU20-3	$965	
30	400			ACW125W-FTU30-3	$965	
40	400			ACW125W-FTU40-3	$965	
50	500			ACW125W-FTU50-3	$965	
60	600			ACW125W-FTU60-3	$965	
80	800			ACW125W-FTU80-3	$1,055	
100	1000			ACW125W-FTU100-3	$1,055	
125	1250			ACW125W-FTU125-3	$2,101	

Note: Wiring terminal (lugs) not included. Lugs are available as accessory at page 14.

ACW250W - FMU trip unit – Adjustable thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
128...160	1600	65kA	18kA	ACW250W-FMU160-3	$2,826	Z10
160...200	2000			ACW250W-FMU200-3	$2,826	
200...250	2500			ACW250W-FMU250-3	$2,826	

Note: Wiring terminal (lugs) not included. Lugs are available as accessory at page 14.

ACW400W - FMU trip unit – Adjustable thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
240...300	3000	65kA	20kA	ACW400W-FMU300-3	$4,312	Z10
320...400	4000			ACW400W-FMU400-3	$4,312	

Note: Lugs for ACW400 are factory mounted.

ACW800W - FMU trip unit – Adjustable thermal and fixed magnetic

Thermal Setting [A]	Magnetic Setting [A]	Short-Circuit interrupting capacity 480VAC	Short-Circuit interrupting capacity 600VAC	Catalog Number	List Price	Multiplier
400...500	5000	65kA	25kA	ACW800W-FMU500-3	$6,392	Z10
480...600	6000			ACW800W-FMU600-3	$6,392	
640...800	8000			ACW800W-FMU800-3	$7,358	

Note: Lugs for ACW800 are factory mounted.

Note: WEG is committed to maintain stock for immediate delivery of the following trip units:
FTU – ACW125P and ACW125W
FMU – ACW250P, ACW250W, ACW400P, ACW400W, ACW800P, ACW800W
Please contact your WEG representative offce for availability of other trip units.

Internal accessories

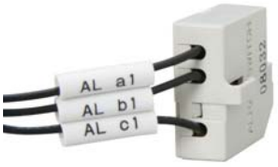
Auxiliary contact

The auxiliary contact block contains one set of form 'C' contacts. This contact indicates remote circuit-breaker status "ON" and "OFF".

ACW	ON		OFF	TRIP
Auxiliary contact	AXc1	AXa1	AXc1	AXa1
		AXb1		AXb1

Suitable for	Catalog Number	List Price	Multiplier
ACW125...800	AX ACW 125-800	$103	Z10

Alarm contact



Alarm contact offers provisions for audio and visual indication of a tripped breaker due to overload, short-circuit, shunt trip or under voltage release conditions. The contact opens when the circuit breaker is reset.

ACW	ON	OFF	TRIP
Alarm contact	ALc1	Ala1	ALc1 Ala1
		ALb1	ALb1

Suitable for	Catalog Number	List Price	Multiplier
ACW125...800	AL ACW 125-800	$103	Z10

Shunt release

The shunt release opens the breaker in response to an externally voltage signal.

Range of operational voltage: 0.7...1.1xUn
Frequency: 45...65Hz

Suitable for	Rated voltage	Catalog Number	List Price	Multiplier
ACW125...800	12VDC	SHT C02 ACW 125-800	$235	Z10
	24VAC/DC	SHT E26 ACW 125-800	$235	
	48VAC/DC	SHT E27 ACW 125-800	$235	
	110-130VAC/DC	SHT E10 ACW 125-800	$235	
	220-240VAC/250VDC	SHT E14 ACW 125-800	$235	
	380-500VAC	SHT E52 ACW 125-800	$235	

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Internal accessories

Under voltage release

The under voltage release automatically opens a circuit breaker when voltage drops to a value ranging between 35% to 70% of the line voltage. The operation is instantaneous, and after tripping, the circuit breaker cannot be reset until the voltage returns to 85% of line voltage.

Range of voltage trip: 0.35…0.7xUn
MCCB reset voltage: 0.85xUn (exceed)
Frequency: 45…65Hz

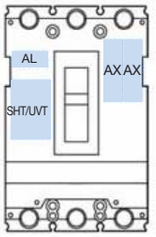
Suitable for	Rated voltage	Catalog Number	List Price	Multiplier
ACW125...800	24VAC/DC	UVT E26 ACW 125-800	$235	Z10
	48VAC/DC	UVT E27 ACW 125-800	$235	
	110-130VAC/DC	UVT E10 ACW 125-800	$235	
	220-240VAC/250VDC	UVT E14 ACW 125-800	$235	
	380-440VAC	UVT E53 ACW 125-800	$235	
	440-480VAC	UVT E54 ACW 125-800	$235	

Configuration of internal accessories

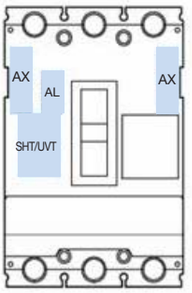
Phase (side)	Accessory	ACW125	ACW250	ACW400	ACW800
R (left)	AX	0	1	3	3
	AL	1	1	0	0
	SHT or UVT	1	1	1	1
T (right)	AX	2	1	0	0
	AL	0	0	1	2

Possible configuration of internal accessories

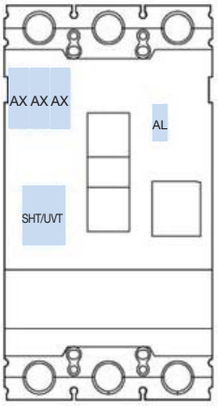
ACW125



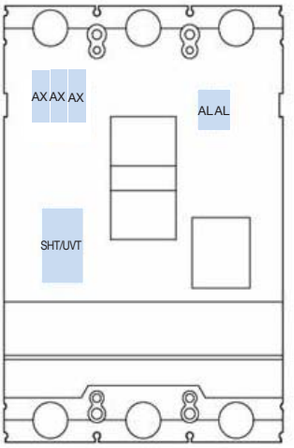
ACW250



ACW400



ACW800



External accessories

Rotary handle

The through-the-door rotary handle operating mechanism is available in UL Type and 4X versions. Units are offered either complete (rotary handle + operating mechanism + shaft 12") or as seperate components (different shaft sizes sold separately). Handle is Lockable in OFF or ON position & defeatable in ON position.

Rotary handle + mechanism + shaft 12" (UL Type 4X)

Suitable for	Catalog Number	List Price	Multiplier
ACW125	EHBX 12 ACW 125	$331	Z10
ACW250	EHBX 12 ACW 250	$352	
ACW400	EHBX 12 ACW 400	$422	
ACW800	EHBX 12 ACW 800	$586	

Rotary handle + mechanism (without shaft) (UL Type 4X)

Suitable for	Catalog Number	List Price	Multiplier
ACW125	EHBX ACW 125	$305	Z10
ACW250	EHBX ACW 250	$322	
ACW400	EHBX ACW 400	$398	
ACW800	EHBX ACW 800	$575	
16" shaft for rotary handle			
ACW125…800	ES 16 ACW 125-800	$53	
24" shaft for rotary handle			
ACW125…800	ES 24 ACW 125-800	$71	

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External accessories

Flange handle

The flange disconnect handle is available in UL Type and 4X versions. Flexible cables are available in four different sizes (36”, 48”, 60”, 72”) and are ordered separately. Handle is Lockable in OFF position & defeatable in ON position.

Flange handle + mechanism (without flexible cable) (UL Type 4X)

Suitable for	Catalog Number	List Price	Multiplier
ACW125	FHX ACW 125	$458	Z10
ACW250	FHX ACW 250	$526	
ACW400	FHX ACW 400	$594	
ACW800	FHX ACW 800	$656	

Flexible Cable

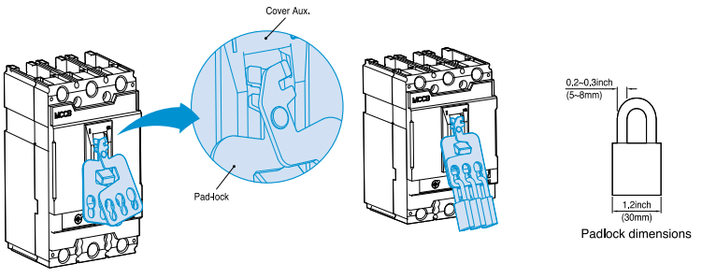
Suitable for	Catalog Number	List Price	Multiplier
Cable 36”			
ACW125…250	FC 36 ACW 125-250	$146	Z10
ACW400…800	FC 36 ACW 400-800	$155	
Cable 48”			
ACW125…250	FC 48 ACW 125-250	$169	
ACW400…800	FC 48 ACW 400-800	$179	
Cable 60”			
ACW125…250	FC 60 ACW 125-250	$188	
ACW400…800	FC 60 ACW 400-800	$198	
Cable 72”			
ACW125…250	FC 72 ACW 125-250	$208	
ACW400…800	FC 72 ACW 400-800	$227	

External accessories

Pad lock

The padlock allows the handle to be locked in the “OFF” position. Maximum three padlocks with shackle diameters ranging from 0.2 to 0.3in (5 to 8mm) may be used. (Padlocks are not supplied)

Locking in the “OFF” position guarantee isolation required per UL 489.



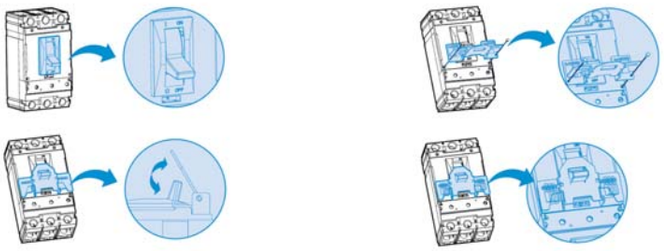
Suitable for	Catalog Number	List Price	Multiplier
ACW125	PL ACW 125	$68	Z10
ACW250	PL ACW 250	$75	
ACW400	PL ACW 400	$90	
ACW800	PL ACW 800	$100	

Handle lock

The handle lock allows the handle to be locked in the “ON” and “OFF” positions. Maximum three padlocks with shackle diameters ranging from 0.2 to 0.3inch (5 to 8mm) may be used. (Padlocks are not supplied)

Locking in the “OFF” position guarantee isolation required per UL 489.

Suitable for	Catalog Number	List Price	Multiplier
ACW125	HL ACW 125	$105	Z10
ACW250	HL ACW 250	$115	
ACW400	HL ACW 400	$180	
ACW800	HL ACW 800	$185	



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External accessories

Mechanical interlock

The mechanical interlock can be applied on the front of two breakers mounted side by side and prevents simultaneous closing of the two breakers. Interlock is assembled directly to the front cover of the breakers.

The interlocking plate allows installation of a padlock to maintain the position. The operator can lock out either one or both breakers in the “OFF” position. (Padlocks are not supplied)

Suitable for	Catalog Number	List Price	Multiplier
ACW125	MIT ACW 125	$338	Z10
ACW250	MIT ACW 250	$377	
ACW400	MIT ACW 400	$413	
ACW800	MIT ACW 800	$440	

Wiring terminal (Lugs)

Line and Load terminals provide the means for connecting the circuit breaker to the power source and the load. Each breaker accepts up to 6 lugs (a set of 3 units for the line terminals and another set of 3 units for the load terminals); Each lug is suitable for either line or load terminals.

Suitable for	Catalog Number	List Price	Multiplier
Set with 3 pieces			Z10
ACW125	LW1 3P ACW 125	$56	
ACW250	LW2 3P ACW 250	$95	
Set with 15 pieces			
ACW125	LW1 15P ACW 125	$168	
ACW250	LW2 15P ACW 250	$283	

Terminal size acceptability and terminal torque

Frame Type	Wire Range		
	"Conductor Cross-section”	"Number of Conductors”	Tightening Torque [lb.in.]
ACW125	14 - 8 AWG	1	60
	6 - 1/0 AWG	1	90
ACW250	1 AWG	1	150
	1/0 - 2/0 AWG	1	180
	3/0 - 4/0 AWG	1	250
	250 - 300 kcmil	1 Tightening Torque	325
ACW400	250 - 400 kcmil	1	325
	500 kcmil	1	375
	3/0 AWG	up to 2	250
ACW800 (500 and 600A)	250 - 500 kcmil	up to 2	375
ACW800 (800A)	250 - 400 kcmil	up to 3	375
	500 kcmil	up to 2	375

Technical Data

Models	Units	ACW125		ACW250	
Frame size		125		250	
Rated current – In @ 40ºC	A	15, 20, 30, 40, 50, 60, 80, 100, 125		150, 160, 175, 200, 225, 250	
No. of poles		3		3	
Rated operational voltage - Ue	VAC	600		600	
UL interrupting rating - Icu	kA	P	W	P	W
120VAC		50	100	-	-
240VAC		50	100	50	100
480VAC		35	65	35	65
600VAC		10	14	10	18
Reference standard		UL 489		UL 489	
Trip unit (Thermal-magnetic)					
Fixed thermal, fixed magnetic	FTU	Yes		No	
Adjustable thermal, fixed magnetic	FMU	No		Yes	
Accessories					
Auxiliary contact (AX)		Yes		Yes	
Alarm contact (AL)		Yes		Yes	
Shunt release (SHT)		Yes		Yes	
Under voltage (UVT)		Yes		Yes	
Rotary handle		Yes		Yes	
Flange handle		Yes		Yes	
Locking devices (pad and handle lock)		Yes		Yes	
Mechanical interlock block		Yes		Yes	
Wiring terminals		Yes		Yes	
Mechanical life	operations	4,000		4,000	
Electrical life @ 600VAC	operations	4,000		4,000	
Weight	Lbs/kg	2.65/1.2		2.65/1.2	
Dimensions (width x height x depth)	in/mm	3.54x6.46x3.39/90x164x86		4.13x7.01x3.39/105x178x86	

Circuit Protection

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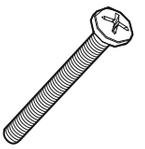
Models	Units	ACW400		ACW800	
Frame size		400		800	
Rated current – In @ 40ºC	A	300, 350, 400		500, 600, 700, 800	
No. of poles		3		3	
Rated operational voltage - Ue	VAC	600		600	
UL interrupting rating - Icu		P	W	P	W
120VAC		-	-	-	-
240VAC		50	100	50	100
480VAC		35	65	35	65
600VAC		14	20	18	25
Reference standard		UL 489		UL 489	
Trip unit (Thermal-magnetic)					
Fixed thermal, fixed magnetic	FTU	No		No	
Adjustable thermal, fixed magnetic	FMU	Yes		Yes	
Accessories					
Auxiliary contact (AX)		Yes		Yes	
Alarm contact (AL)		Yes		Yes	
Shunt release (SHT)		Yes		Yes	
Under voltage (UVT)		Yes		Yes	
Rotary handle		Yes		Yes	
Flange handle		Yes		Yes	
Locking devices (pad and handle lock)		Yes		Yes	
Mechanical interlock block		Yes		Yes	
Wiring terminals		Standard		Standard	
Mechanical life	operations	5,000		3,000	
Electrical life @ 600VAC	operations	1,000		500	
Weight	Lbs/kg	12.57/5.7		29.98/13.6	
Dimensions (width x height x depth)	in/mm	5.51x11.50x4.33/140x292x110		8.27x16.85x5.31/210x428x135	

Auxiliary Contact (AX) & Alarm Contact (AL)

Conventional thermal current (Ith)		5A	
	[V]	Resistive Load	Inductive Load
Rated operational current (Ie) 50/60Hz	120Vac	5	3
	240Vac	3	2
	480Vac	2	1.5
Terminal tigheting torque [lb.in (N/m)]	7 (0.8)		
Shunt Release			
Power consumption	[V]	Consumption [VA]	Consumption [mA]
	24Vac	0.58	24
	48Vac	1.22	25
	110-130Vac	1.36	10.5
	220-240Vac	1.8	7.5
	380-500Vac	1.15	2.3
Maximum opening time [msec]	50		
Terminal tigheting torque [lb.in (N/m)]	7 (0.8)		
Undervoltage Release			
Drop-out voltage [% of Vn]	0.35 - 0.7 x Vn		
Reset voltage [% of Vn]	0.85 x Vn		
Power consumption	[V]	Consumption [VA]	Consumption [mA]
	24Vac	0.64	27
	48Vac	1.09	23
	110-130Vac	0.73	5.8
	220-240Vac	1.21	5.4
	380-500Vac	1.68	3.5
Maximum opening time [msec]	50		
Terminal tigheting torque [lb.in (N/m)]	7 (0.8)		

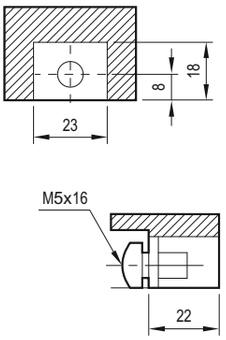
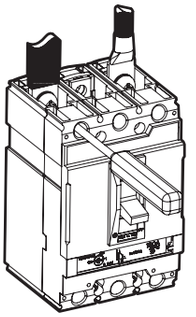
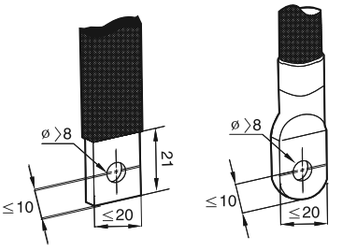
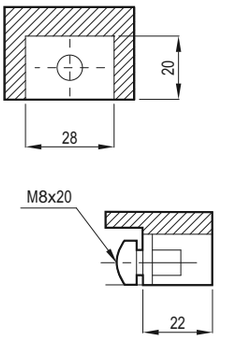
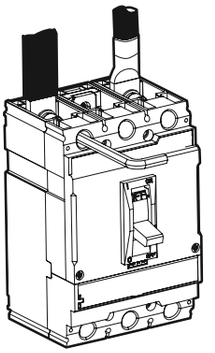
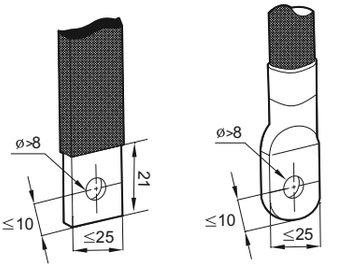
Screw and connection

Screw mounting

Models	ACW125	ACW250	ACW400	ACW800
Screw for mounting				
	4EA (NO.8-32 UNC-2A, L100)		4EA (NO.10-24 UNC-2A, L120)	4EA (1/4"-20 UNC2A, L140)
Screw for connection of terminals	 6EA(M5×L16)	 6EA(M8×L20)	N.A.	N.A.
	Torque: Max 78kgf·cm 67.7lbf·in	Torque: Max 197kgf·cm 170lbf·in	N.A.	N.A.

Note: ACW400 and ACW800 are supplied with non-removable lugs.

Connecting terminal and conductor

	Terminal (mm)		Conductor (mm)
ACW125		 Max 78kgf·cm	
ACW250		 Max 147kgf·cm	

Note: ACW400 and ACW800 are supplied with non-removable lugs.

Circuit Protection

ACW

Temperature derating

A derating of the rated operational current for ACW series is necessary if the ambient temperature is greater than 40°C (+104°F), because the overload-protection characteristics are slightly modified.

MCCB	Rating (A)	Fixed MCCB (thermal-magnetic trip unit)							
		50°F 10°C	68°F 20°C	86°F 30°C	104°F 40°C	122°F 50°C	140°F 60°C	158°F 70°C	176°F 80°C
ACW125	15	15	15	15	15	15	14	13	12
	20	20	20	20	20	19	19	18	16
	30	30	30	30	30	29	28	26	24
	40	40	40	40	40	39	38	35	33
	50	50	50	50	50	48	47	44	41
	60	60	60	60	60	58	56	53	49
	80	80	80	80	80	78	75	71	66
	100	100	100	100	100	97	94	88	82
	125	125	125	125	125	121	117	110	103
ACW250	150	150	150	150	150	145	140	131	121
	160	160	160	160	160	155	150	141	131
	175	175	175	175	175	170	165	156	145
	200	200	200	200	200	194	188	176	164
	225	225	225	225	225	219	213	201	189
	250	250	250	250	250	242	234	220	205
ACW400	300	300	300	300	300	291	281	264	246
	350	350	350	350	350	341	331	314	296
	400	400	400	400	400	388	375	353	328
ACW800	500	500	500	500	500	484	469	441	410
	600	600	600	600	600	580	571	525	487
	700	700	700	700	700	680	661	625	587
	800	800	800	800	800	775	750	705	656

UL interrupting rating (kA)

MCCB	ACW125		ACW250		ACW400		ACW800	
Type	P	W	P	W	P	W	P	W
@ 120V	50	100	-	-	-	-	-	-
@ 240V	50	100	50	100	50	100	50	100
@ 480V	35	65	35	65	35	65	35	65
@ 600V	10	14	10	18	14	20	18	25

Current ratings

Models	Rated Current In (A)
ACW125	15, 20, 30, 40, 50, 60, 80, 100, 125
ACW250	128-160, 160-200, 200-250
ACW400	240-300, 320-400
ACW800	400-500, 480-600, 640-800

Cascading protection

This is an economical approach to the use of circuit protective devices, whereby only the main (upstream) breaker has adequate interrupting capacity for the maximum available fault current. Downstream circuit breakers cannot handle this maximum fault current and rely on the opening of the upstream breaker for protection.

The advantage of this approach is that it facilitates the use of downstream low cost, low fault level breakers, thereby offering savings in both the cost and size of equipment. These ratings, however, are applicable only when the series-connected devices have been investigated by UL in combination with the end-use equipment and the equipment in which these devices are used is marked with the series-connected rating.

Power supply 240V

Branch breaker	Main breaker	ACW125P	ACW125W	ACW250P	ACW250W
	Rated breaking capacity (kArms)	50	100	50	100
ACW125P	50	-	75	-	75
ACW125W	100	-	-	-	-
ACW250P	50	-	-	-	75
ACW250W	100	-	-	-	-
ACW400P	50	-	-	-	-
ACW400W	100	-	-	-	-
ACW800P	50	-	-	-	-
ACW800W	100	-	-	-	-

Branch breaker	Main breaker	ACW400P	ACW400W	ACW800P	ACW800W
	Rated breaking capacity (kArms)	50	100	50	100
ACW125P	50	-	75	-	75
ACW125W	100	-	-	-	-
ACW250P	50	-	75	-	75
ACW250W	100	-	-	-	-
ACW400P	50	-	75	-	75
ACW400W	100	-	-	-	-
ACW800P	50	-	-	-	75
ACW800W	100	-	-	-	-

Power supply 480V

Branch breaker	Main breaker	ACW125P	ACW125W	ACW250P	ACW250W
	Rated breaking capacity (kArms)	35	65	35	65
ACW125P	35	-	50	-	50
ACW125W	65	-	-	-	-
ACW250P	35	-	-	-	50
ACW250W	65	-	-	-	-
ACW400P	35	-	-	-	-
ACW400W	65	-	-	-	-
ACW800P	35	-	-	-	-
ACW800W	65	-	-	-	-

Branch breaker	Main breaker	ACW400P	ACW400W	ACW800P	ACW800W
	Rated breaking capacity (kArms)	35	65	35	65
ACW125P	35	-	50	-	50
ACW125W	65	-	-	-	-
ACW250P	35	-	50	-	50
ACW250W	65	-	-	-	-
ACW400P	35	-	50	-	50
ACW400W	65	-	-	-	-
ACW800P	35	-	-	-	50
ACW800W	65	-	-	-	-

Circuit Protection

ACW

Cascading protection

Power supply 600V

Branch breaker	Main breaker	ACW125P	ACW125W	ACW250P	ACW250W
	Rated breaking capacity (kArms)	10	14	10	18
ACW125P	10	-	12	-	14
ACW125W	14	-	-	-	16
ACW250P	10	-	-	-	14
ACW250W	18	-	-	-	-
ACW400P	14	-	-	-	-
ACW400W	20	-	-	-	-
ACW800P	18	-	-	-	-
ACW800W	25	-	-	-	-

Branch breaker	Main breaker	ACW400P	ACW400W	ACW800P	ACW800W
	Rated breaking capacity (kArms)	14	20	18	25
ACW125P	10	12	15	14	17
ACW125W	14	-	17	16	19
ACW250P	10	12	15	14	17
ACW250W	18	-	19	-	21
ACW400P	14	-	17	16	19
ACW400W	20	-	-	-	22
ACW800P	18	-	-	-	21
ACW800W	25	-	-	-	-

Selectivity (Coordination tables)

Definition of selectivity is given by the IEC 60947-1. "Trip selectivity is the coordination between the operating characteristics of two or more overcurrent protection devices, so that when an overcurrent within established limits occurs, the device intended to operate within those limits trips whereas the others do not trip".
The definitions of total selectivity and partial selectivity are, on the other hand, given in Part 2 of the same Standard IEC 60947-2 "Low voltage Equipment - Part 2: Circuit-breakers"

"Total selectivity"
Overcurrent selectivity where, in the presence of two protection devices against overcurrent in series, the load-side protection device carries out the protection without making the other device trip."

"Partial selectivity"
Overcurrent selectivity where, in the presence of two protection devices against overcurrent in series, the load-side protection device carries out the protection up to a given level of overcurrent, without making the other device trip."

Selection of proper protection system is fundamental to guarantee correct economical and functional service of the whole installation and to reduce the problems caused by abnormal service conditions or actual faults to a minimum.

Branch breaker		Main breaker Rating (A)		ACW125P/W Trip units – Thermal magnetic									ACW250P/W Trip units – Thermal magnetic				
				15	20	30	40	50	60	80	100	125	150	160	175	200	225
ACW	P	Trip units – thermal magnetic	15				0.5kA	0.5kA	0.5kA	0.63kA	0.8kA	2kA	2kA	2kA	T	T	T
			20					0.5kA	0.5kA	0.63kA	0.8kA	2kA	2kA	2kA	T	T	T
			30						0.5kA	0.63kA	0.8kA	2kA	2kA	2kA	T	T	T
			40							0.63kA	0.8kA	2kA	2kA	2kA	T	T	T
			50							0.63kA	0.8kA	2kA	2kA	2kA	T	T	T
			60								0.8kA	2kA	2kA	2kA	T	T	T
			80									1.25kA	2kA	2kA	T	T	T
			100										1.6kA	1.6kA	T	T	T
			125											1.25kA	1.25kA	4kA	4kA
	W		15				0.5kA	0.5kA	0.5kA	0.63kA	0.8kA	2kA	T	T	T	T	T
			20					0.5kA	0.5kA	0.63kA	0.8kA	2kA	T	T	T	T	T
			30						0.5kA	0.63kA	0.8kA	2kA	50kA	50kA	50kA	50kA	50kA
			40							0.63kA	0.8kA	2kA	50kA	50kA	50kA	50kA	50kA
			50							0.63kA	0.8kA	2kA	50kA	50kA	50kA	50kA	50kA
			60								0.8kA	2kA	50kA	50kA	50kA	50kA	50kA
			80										50kA	50kA	50kA	50kA	50kA
			100										50kA	50kA	50kA	50kA	50kA
			125										1.25kA	1.25kA	1.25kA	4kA	4kA
ACW	P	Trip units – thermal magnetic	150														
			160														
			175														
			200														
			225														
			250														
	W		150														1.25kA
			160														
			175														
			200														
			225														
			250														

Note: T means Total Selectivity.

Example
The following two circuit-breakers are considered:
- Main breaker ACW250W-175-3 (Icu = 65kA)
- Branch breaker ACW125W-20-3 (Icu = 65kA)

Extracting the data from the table above, it can be seen that there is total selectivity (T) between these circuit-breakers. In other words, there is selectivity up to 65kA (the lower of the two values).

Now the following two circuit-breakers are considered:
- Main breaker ACW250W-175-3 (Icu = 65kA)
- Branch breaker ACW125W-30-3 (Icu = 65kA)

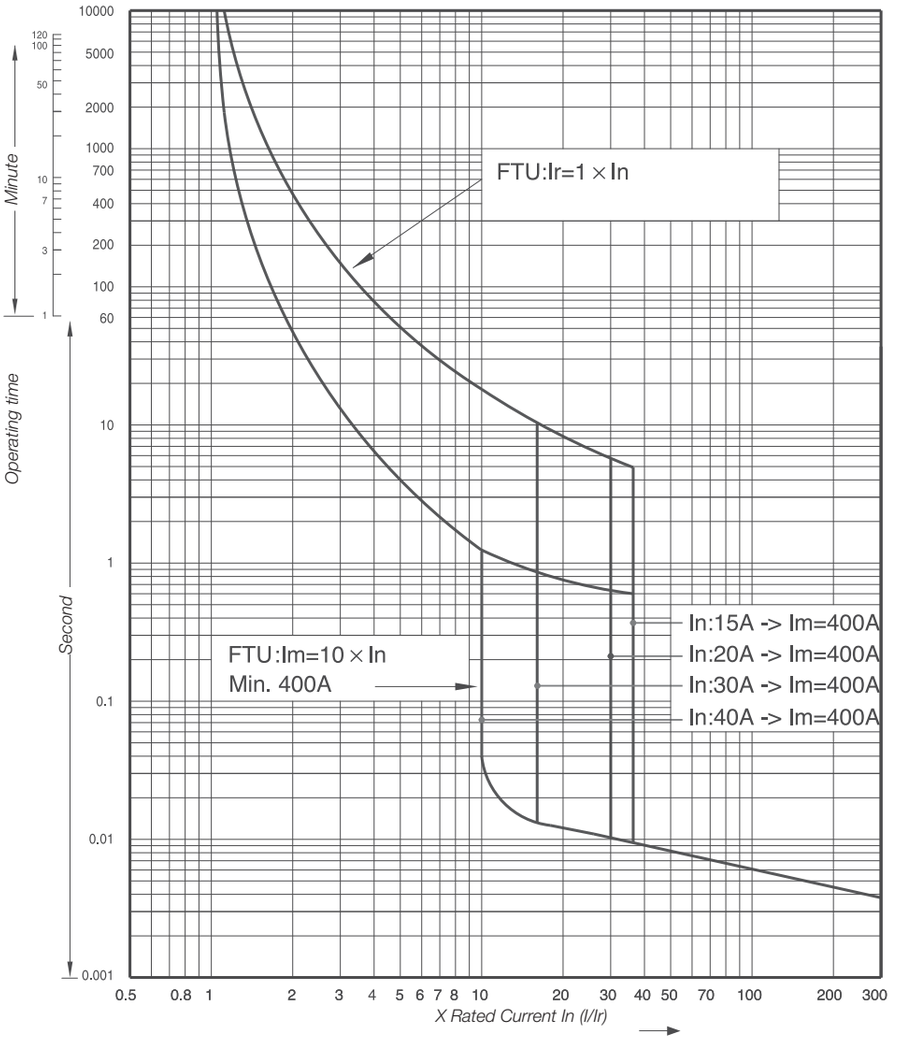
Extracting the data from the table above, it can be seen that the selectivity value is 50kA between the two circuit-breakers. This means that, if the maximum prospective short-circuit current on the load-side of the ACW125W-30-3 circuit-breaker is less than 50kA, there will be total selectivity, whereas if the short-circuit current has a higher value, there will be partial selectivity (non-tripping of the supply-side circuit-breaker is not guaranteed).

Circuit Protection

ACW

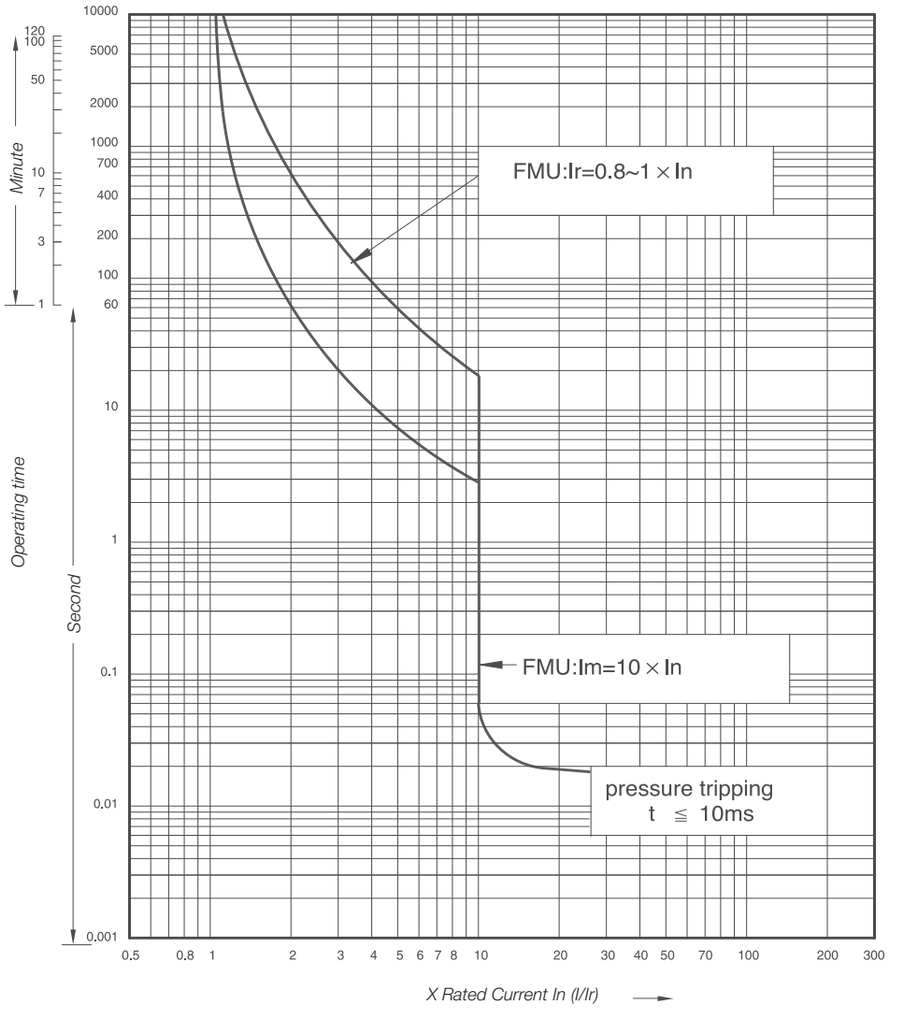
Trip curves

ACW125 – FTU (15...125A)



Trip curves

ACW250 – FMU (128…250A)

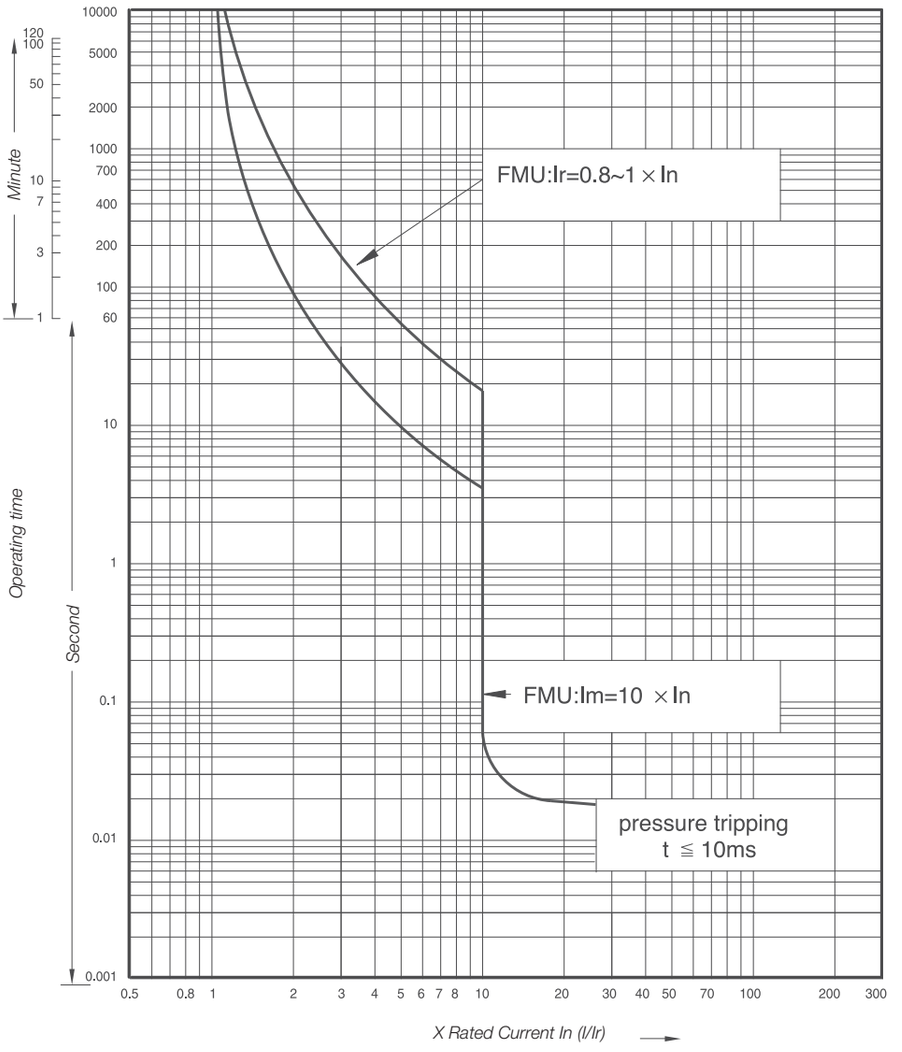


Circuit Protection

ACW

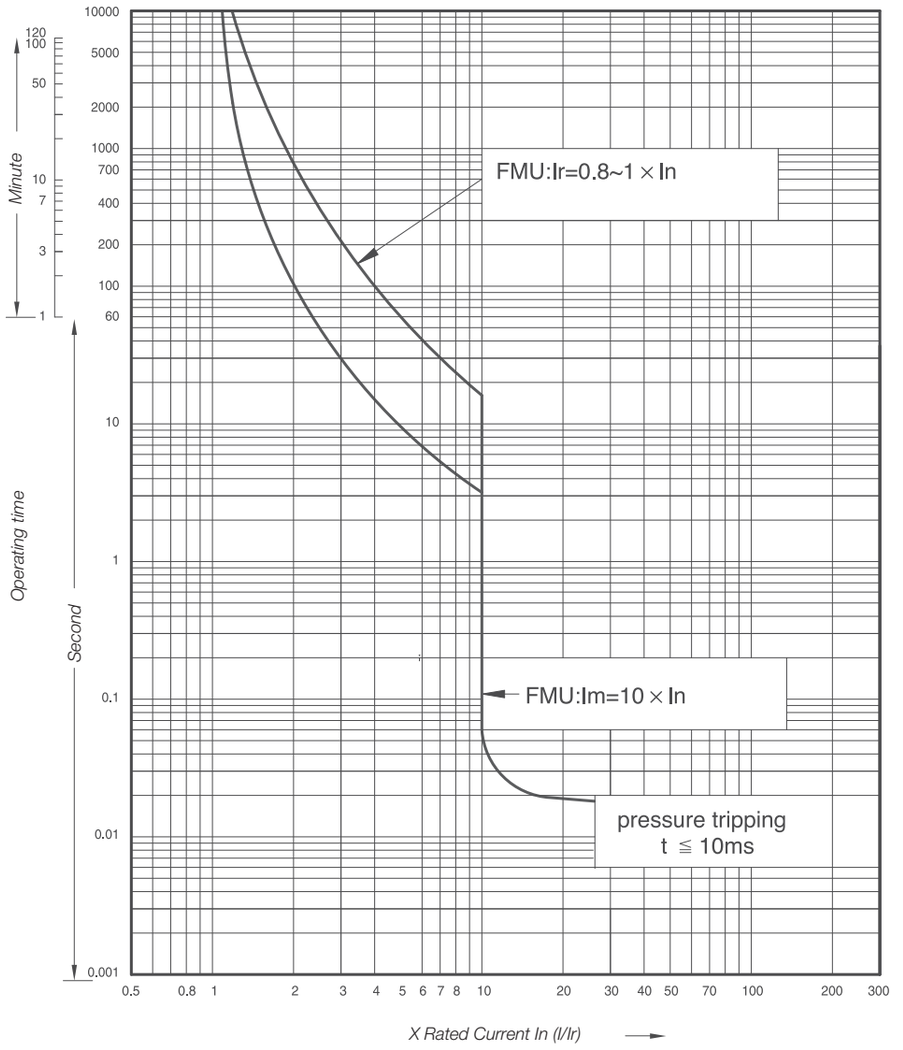
Trip curves

ACW400 –FMU (240...400A)



Trip curves

ACW800 – FMU 400...800A)



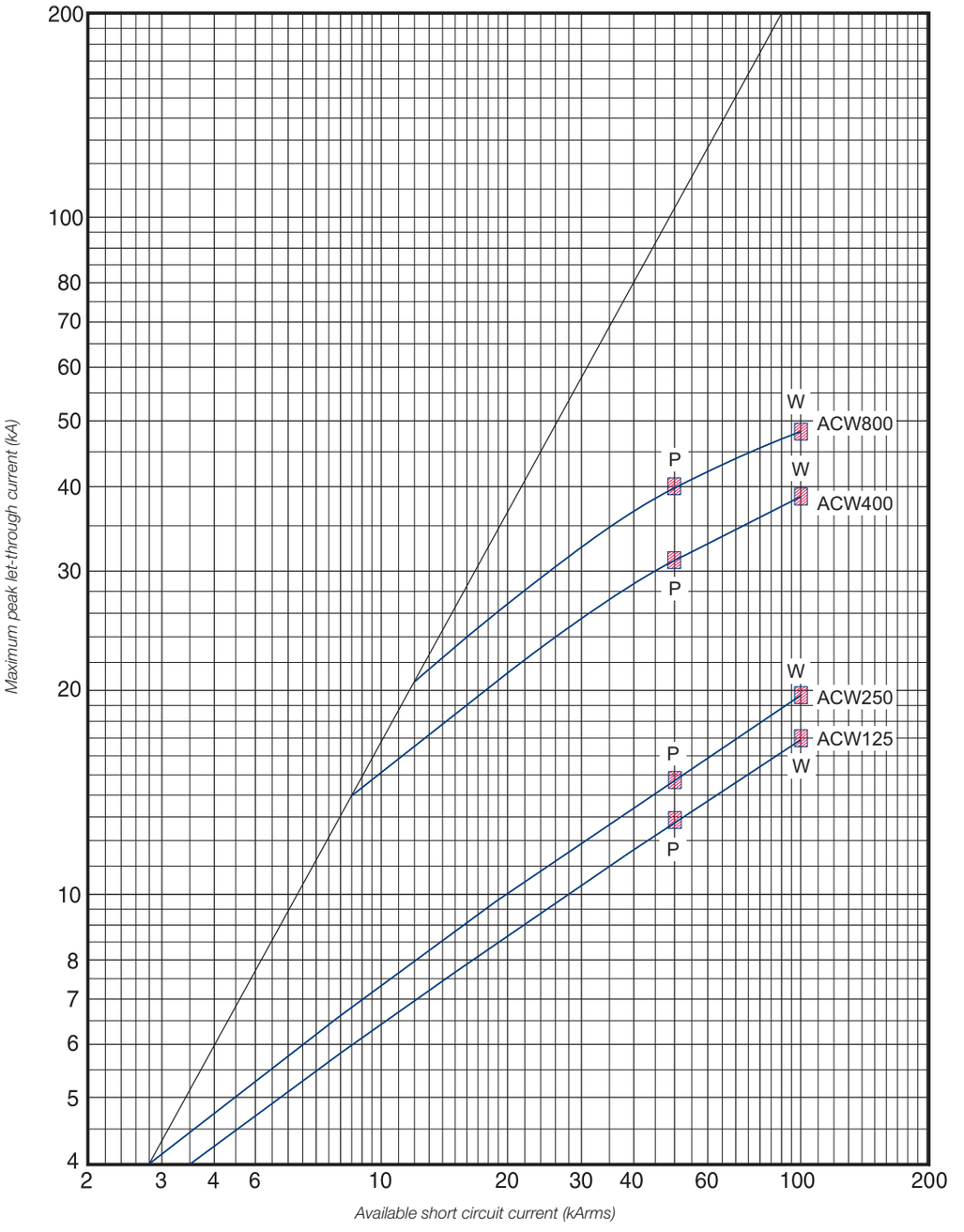
Circuit Protection

ACW

Characteristics curves - Current limiting

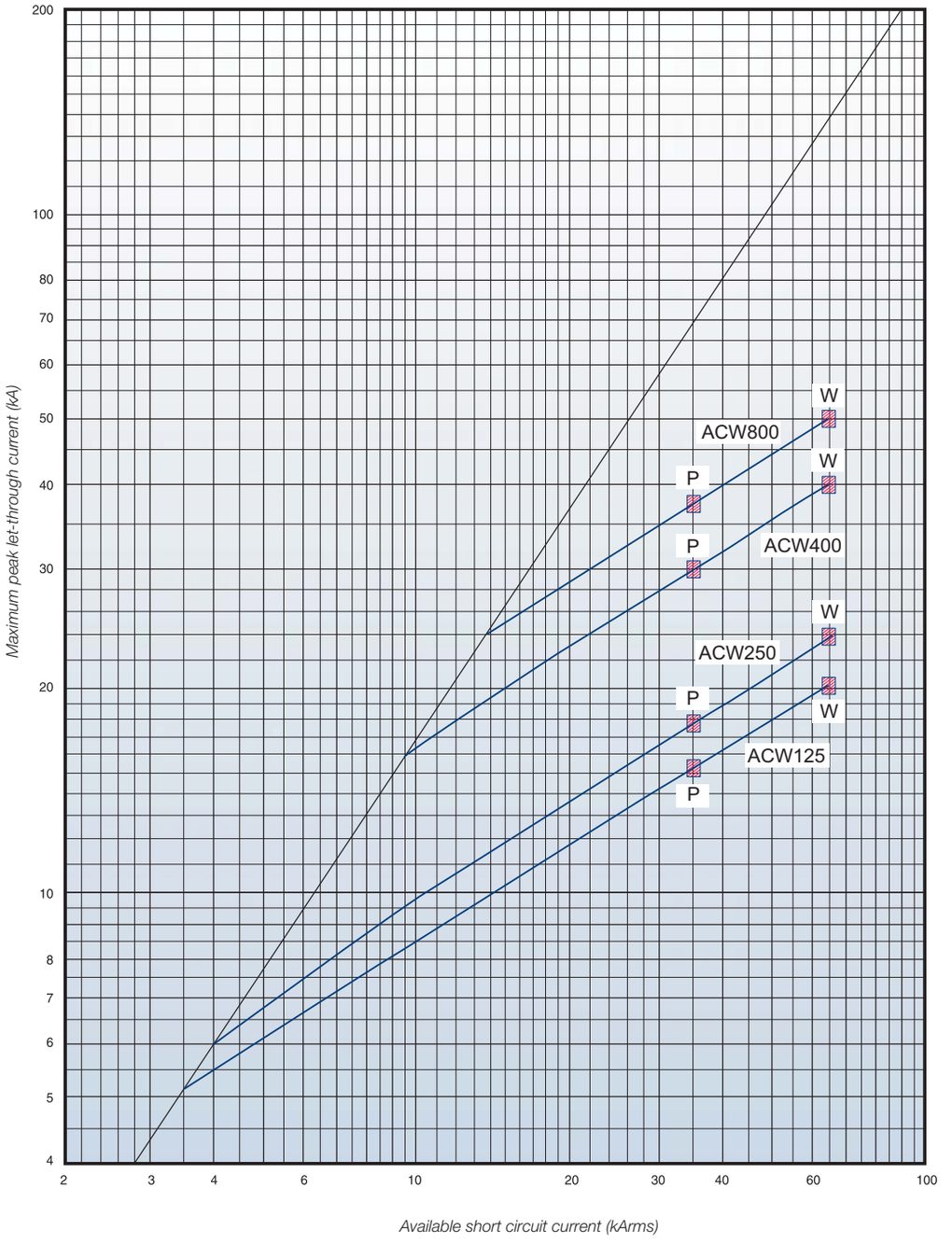
The following curves show circuit breaker current-limiting characteristics. The rms of the prospective symmetrical short-circuit current is indicated on the abscissa of the diagram, whereas the peak short-circuit current value is indicated on the ordinates. The current-limiting effect can be visualized by comparing, at the same symmetrical short-circuit current value, the corresponding peak value at the prospective short-circuit current with the limited peak value. In correspondence to a short-circuit of 40kA@480V, the ACW125W circuit breaker would limit the peak value to approximately 16kA@480V.

Current-limiting curves @ 240V



Characteristics curves - Current limiting

Current-limiting curves @ 480V

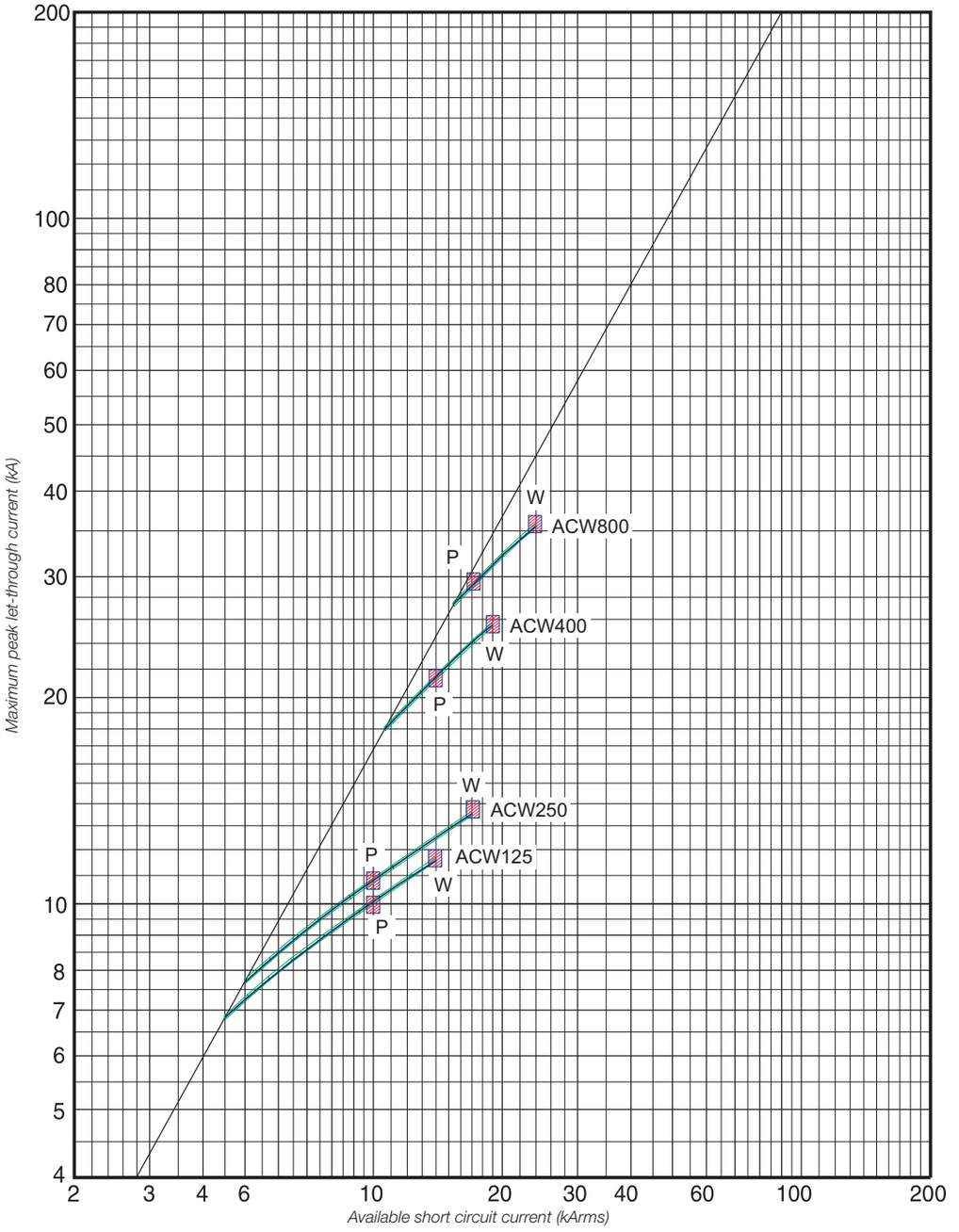


Circuit Protection

ACW

Characteristics curves - Current limiting

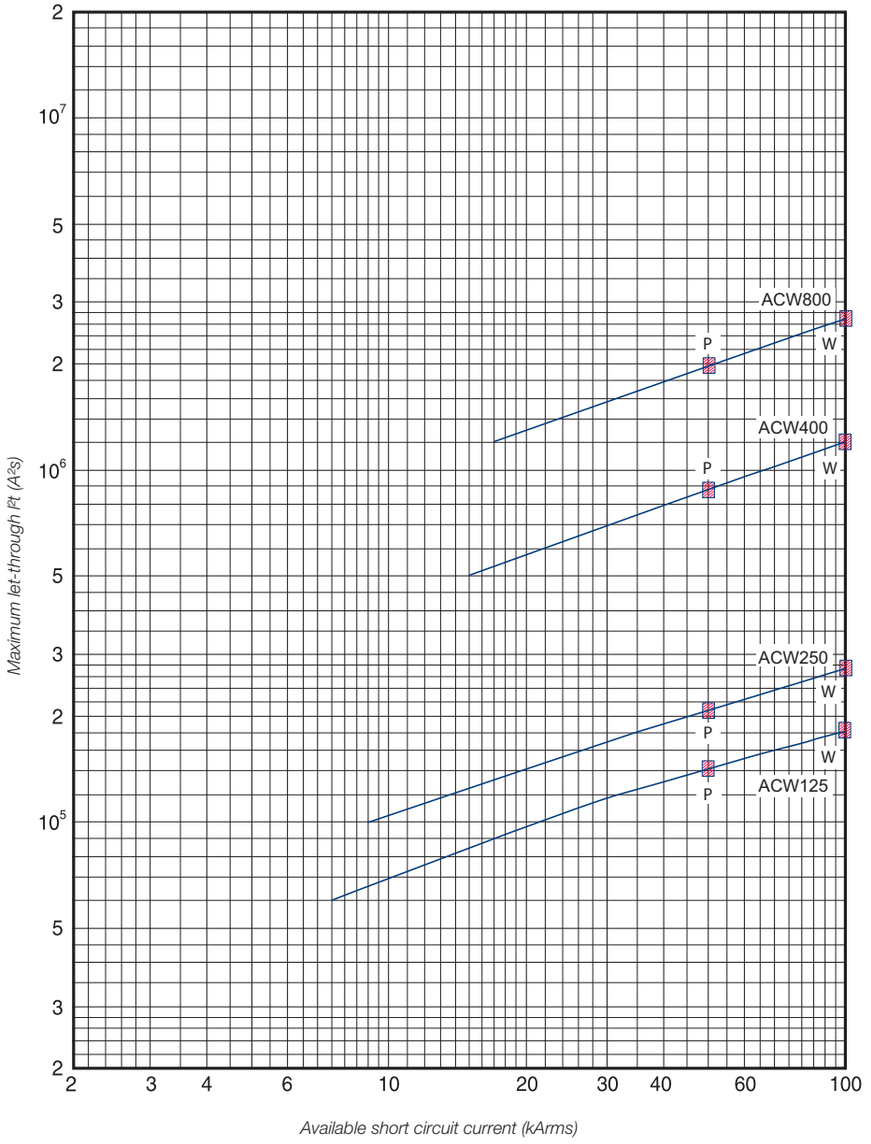
Current-limiting curves @ 600V



Characteristics curves - Let-through energy

The prospective symmetrical short-circuit current is indicated on the abscissa of the diagram, whereas the ordinates show the specific let through energy values expressed in A^2s. In correspondence to a short-circuit of 65kA@480V, the ACW125W circuit breaker lets through a value of I^2t approximately to $400kA^2s$.

Let-through energy curves @ 240V

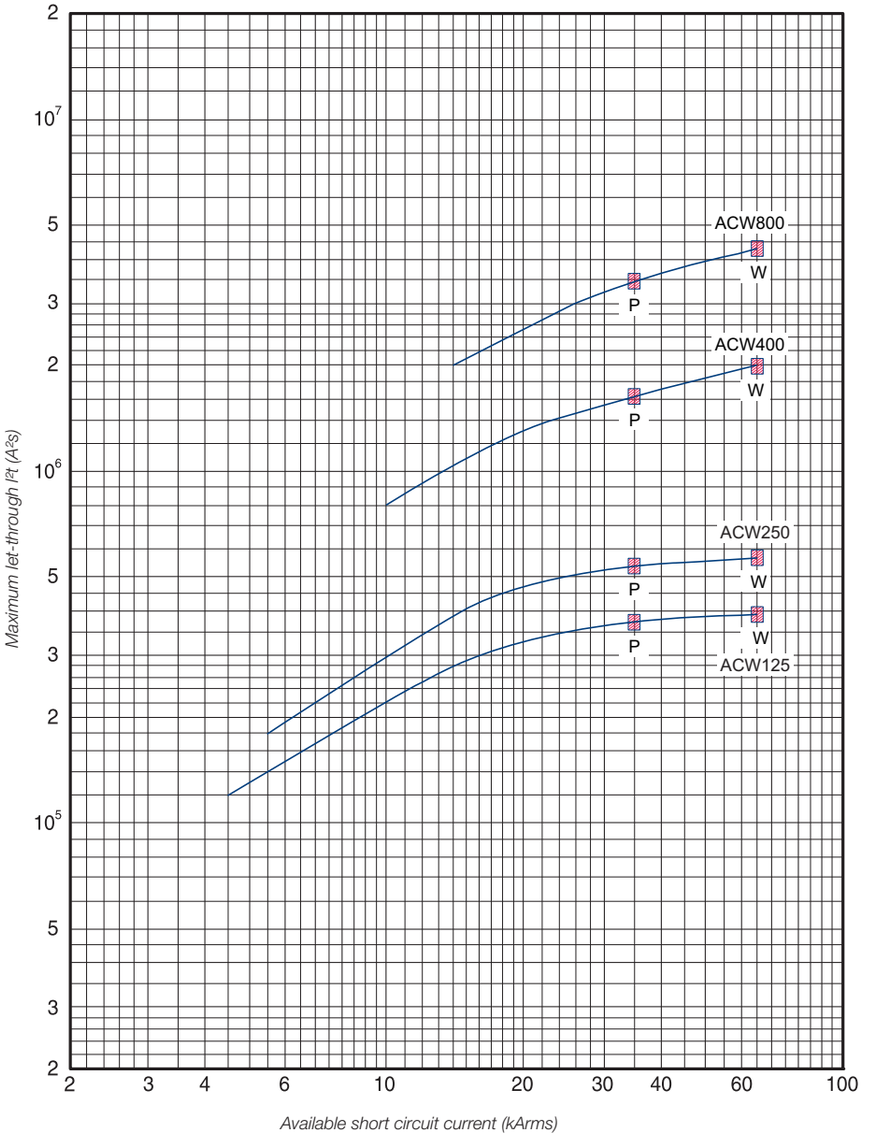


Circuit Protection

ACW

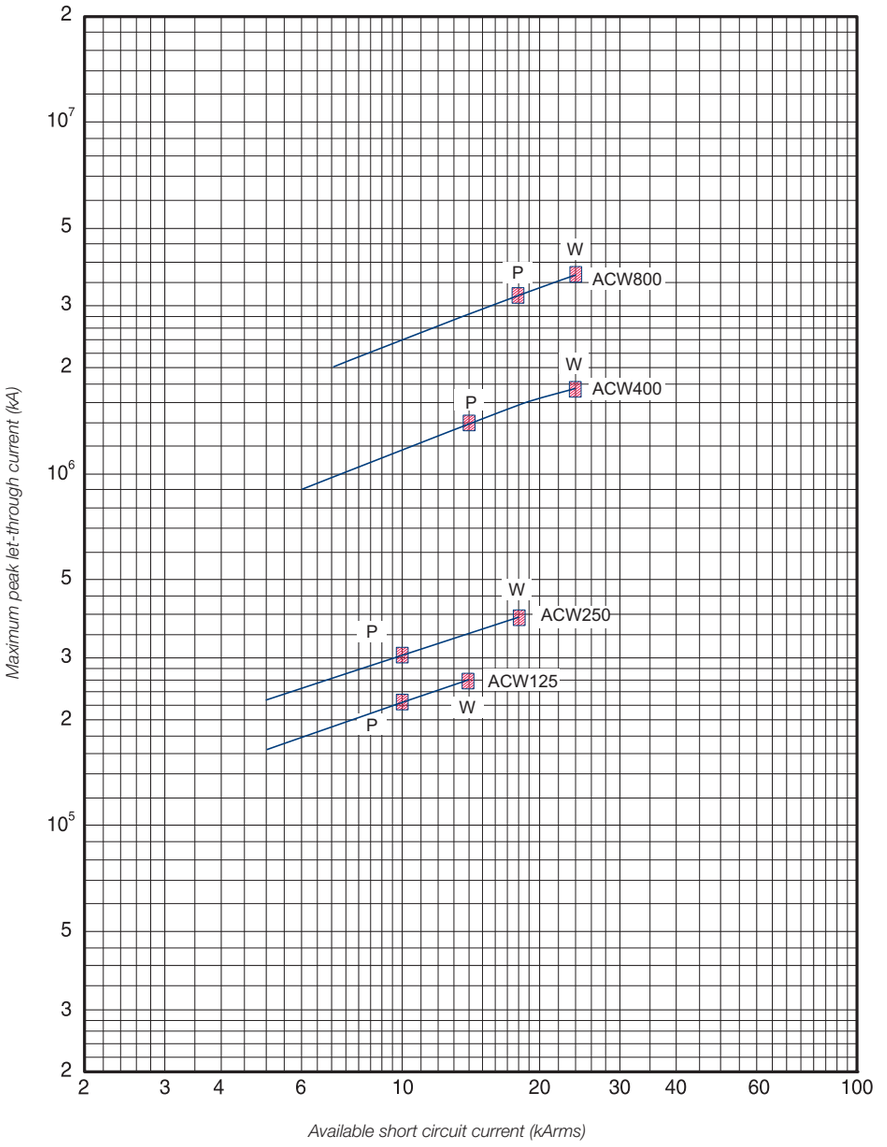
Characteristics curves - Let-through energy

Let-through energy curves @ 480V



Characteristics curves - Let-through energy

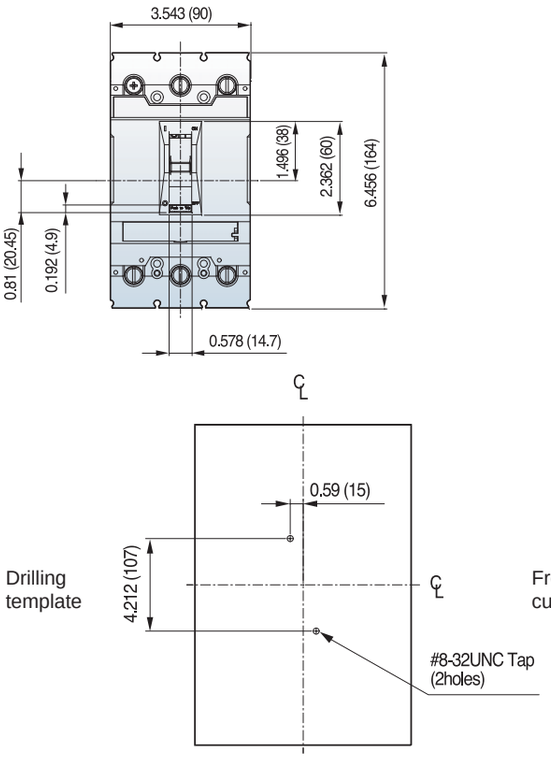
Let-through energy curves @ 600V



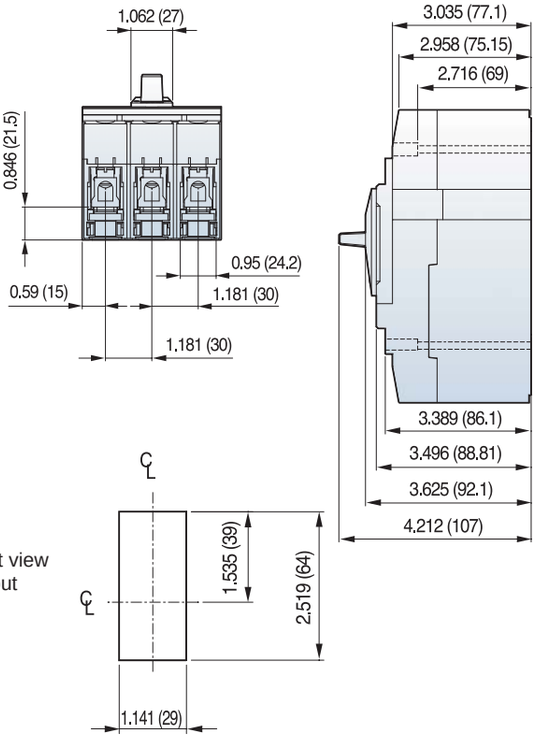
ACW

Dimensions - inch (mm)

ACW125

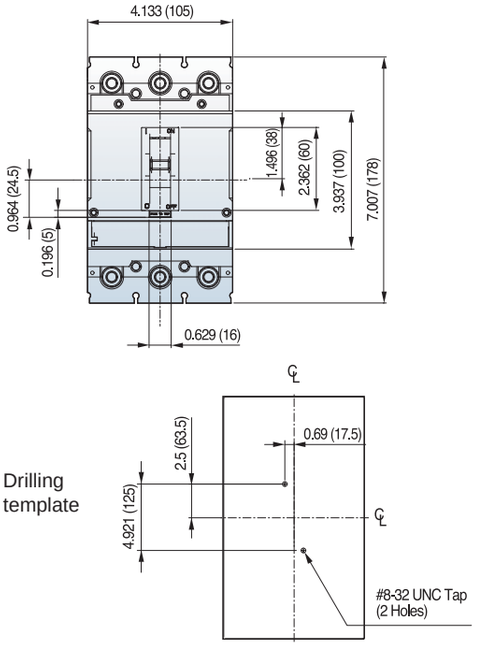


Drilling template

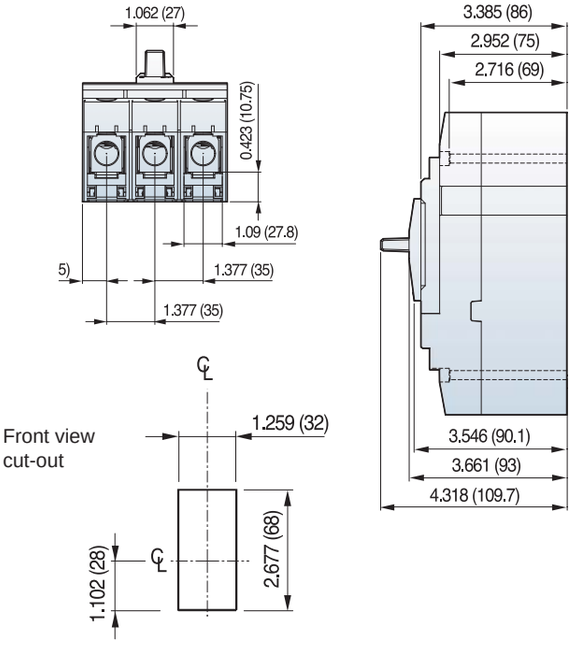


Front view cut-out

ACW250



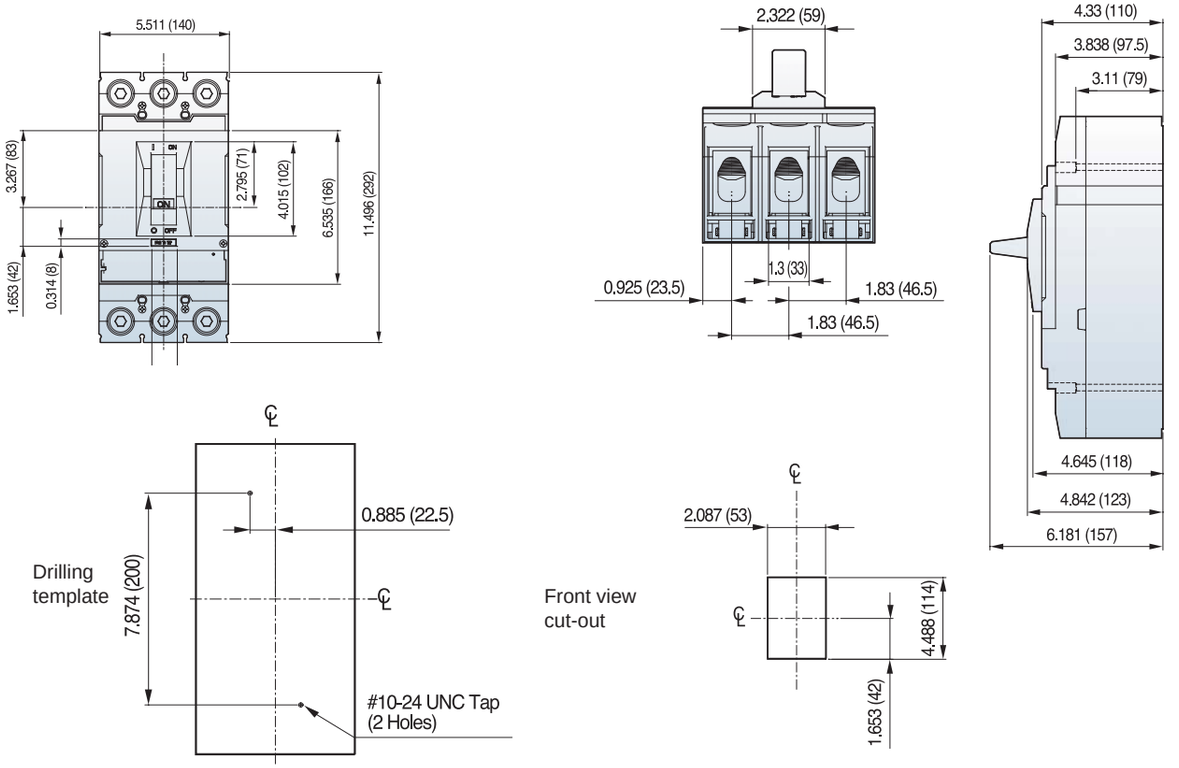
Drilling template



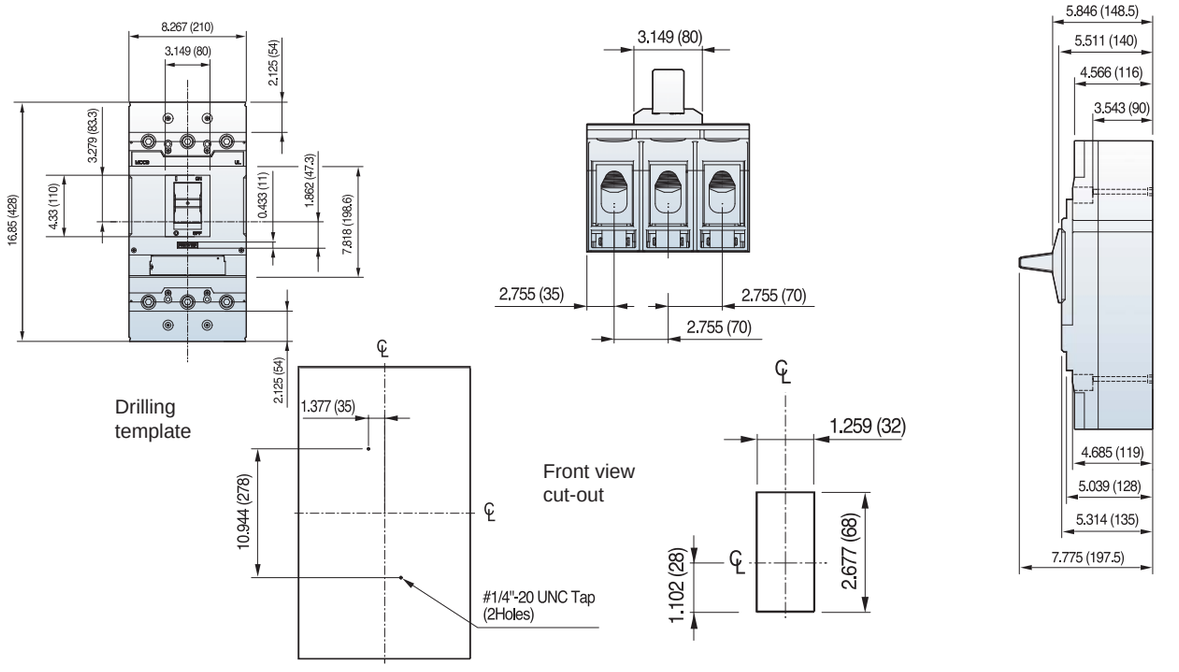
Front view cut-out

Dimensions - inch (mm)

ACW400



ACW800

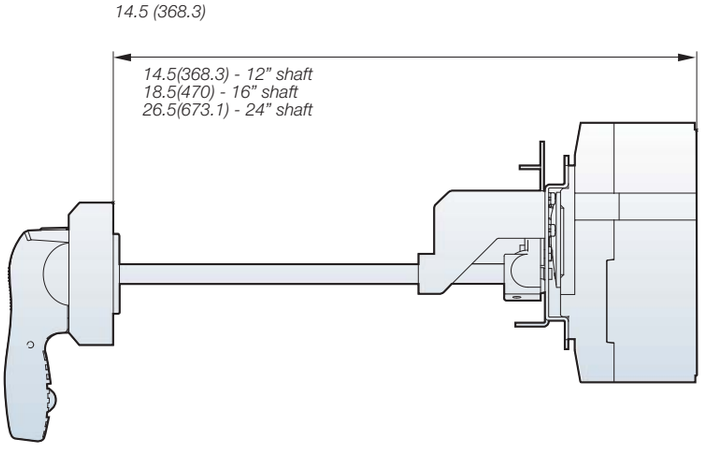


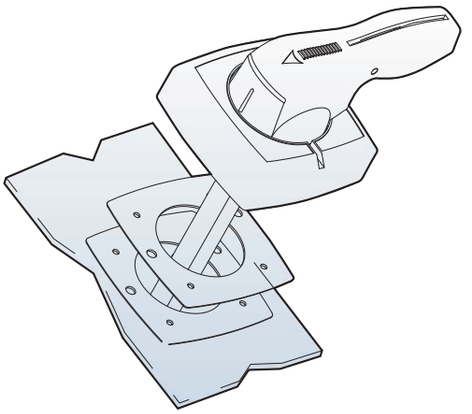
Circuit Protection

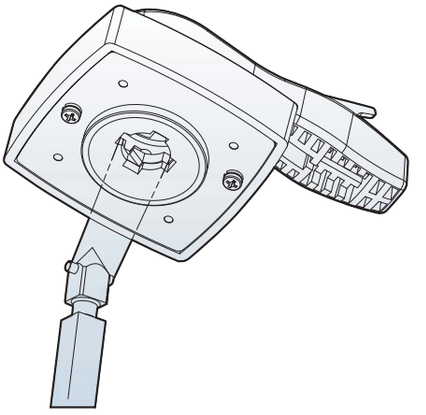
ACW

Dimensions - inch (mm)

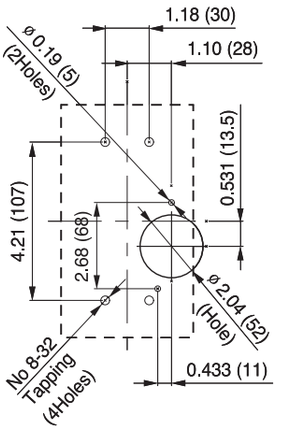
Extended rotary handle - ACW125



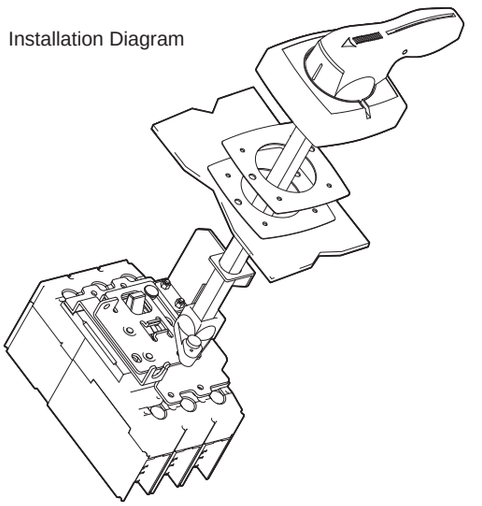




Panel drilling

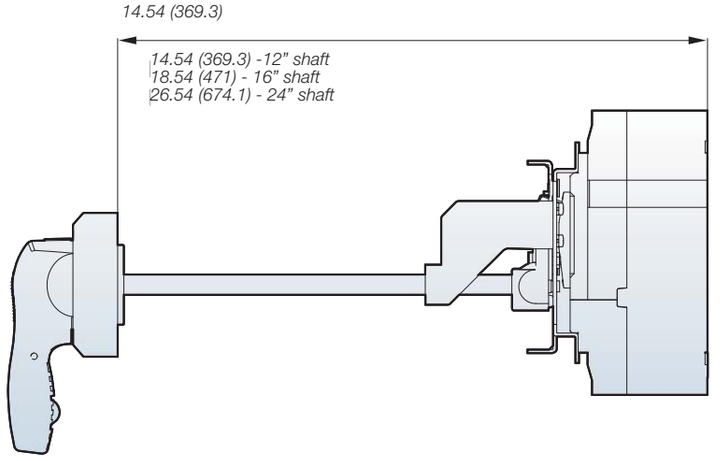


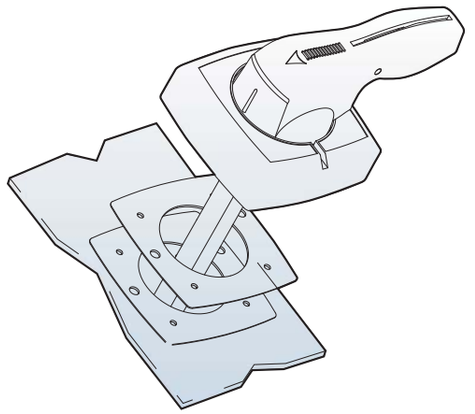
Installation Diagram

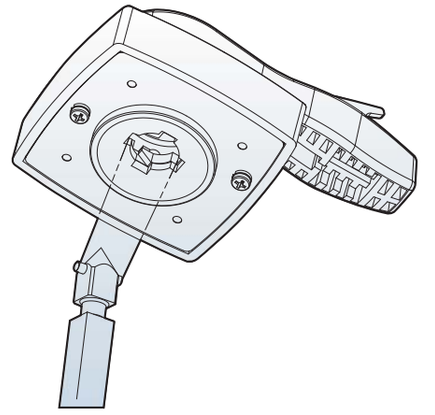


Dimensions - inch (mm)

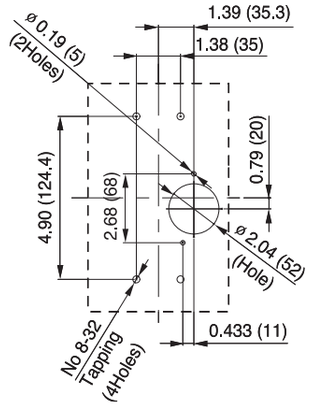
Extended rotary handle - ACW250



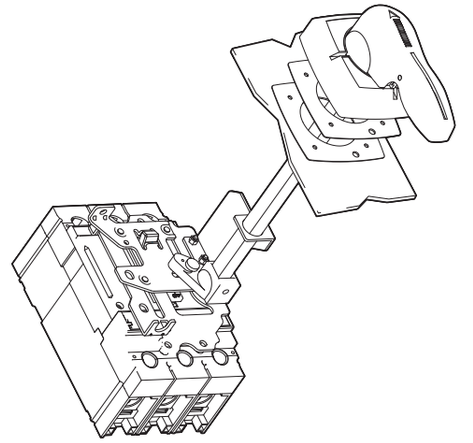




Panel drilling



Installation Diagram

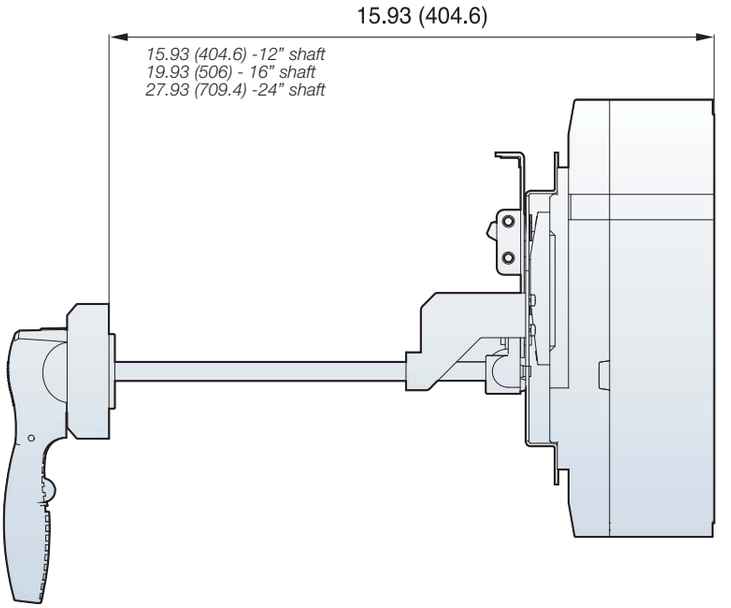


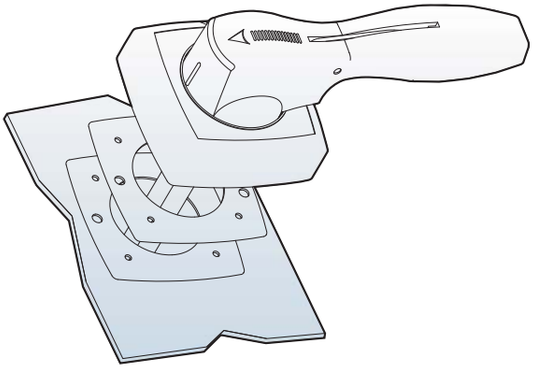
Circuit Protection

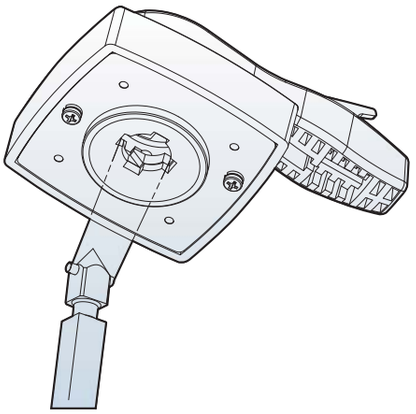
ACW

Dimensions - inch (mm)

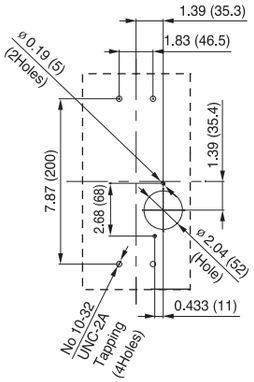
Extended rotary handle - ACW400



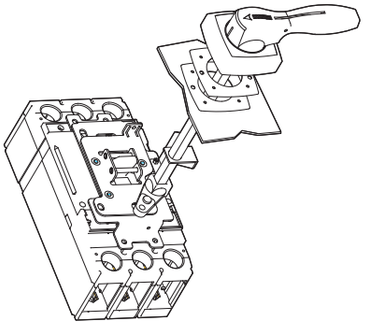




Panel drilling

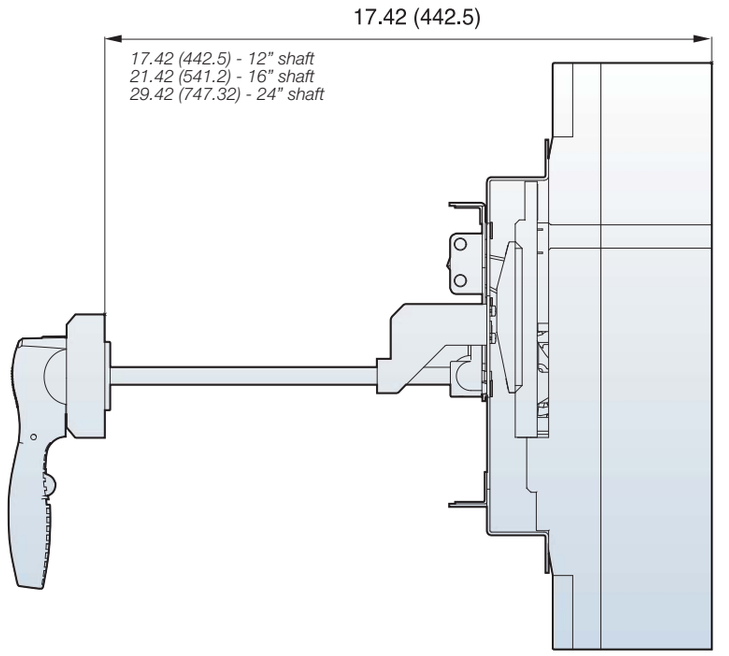


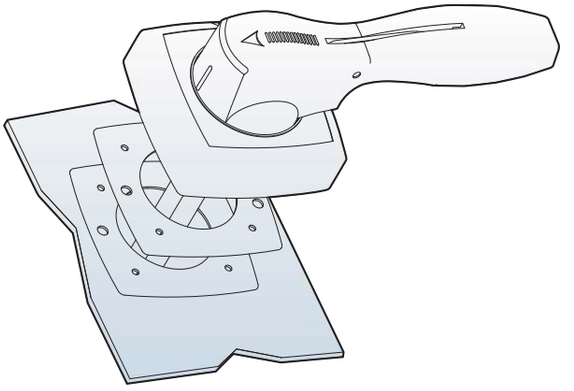
Installation Diagram



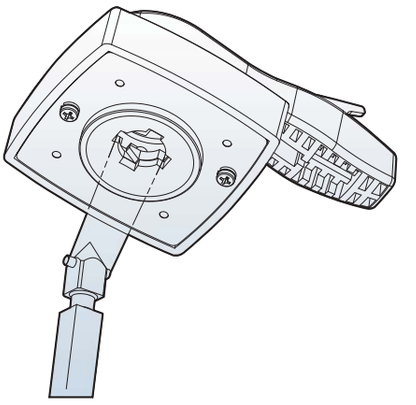
Dimensions - inch (mm)

Extended rotary handle - ACW800

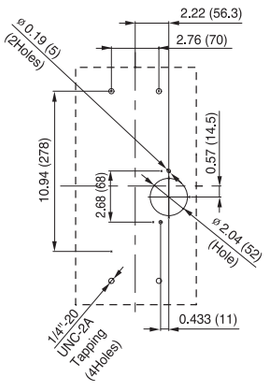


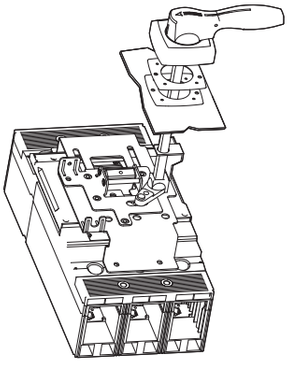


Panel drilling



Installation Diagram



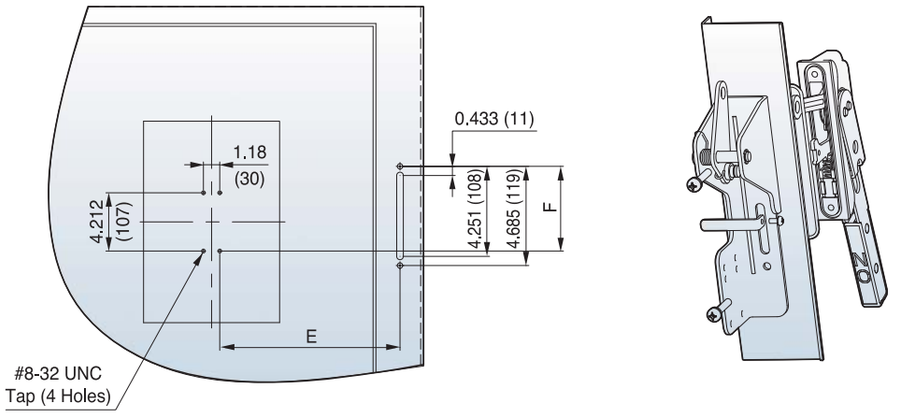


Circuit Protection

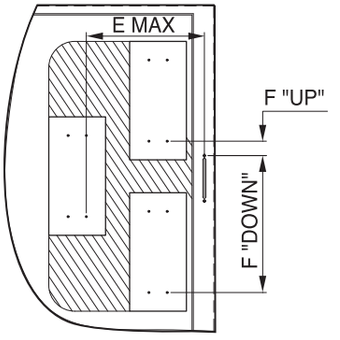
ACW

Dimensions - inch (mm)

Flange Handle ACW125



Panel drilling



Way of installation

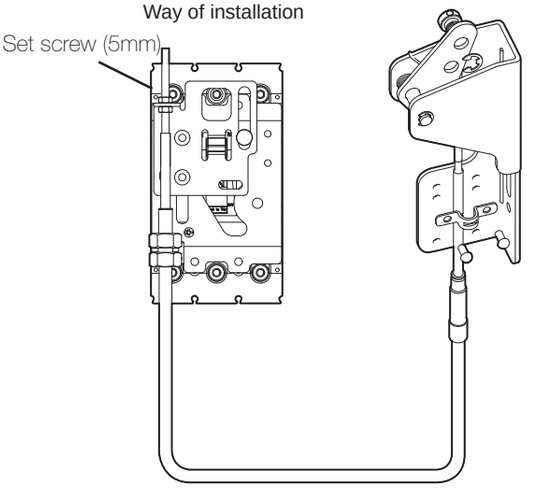
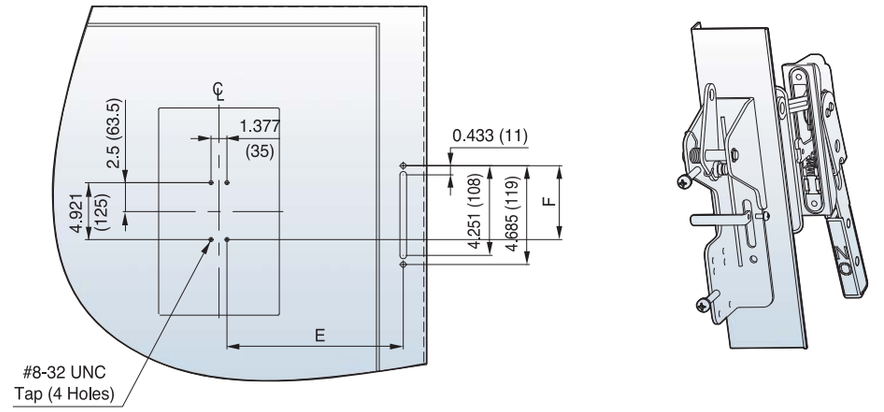


Table 1	Maximum "E" Dimension	
Enclosure Depth	60” cable	72” cable
10	25	30
12	24	29
16	23	28
18	22	27
20	21	26
24	20	25
30	19	24
36	18	23

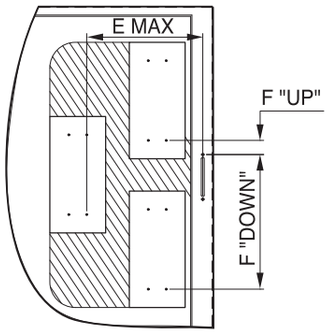
Table 2	Maximum "F" Dimension			
Enclosure Depth	60” cable		72” cable	
	Up	Down	Up	Down
10	17	31	20	34
12	17	31	19	33
16	17	28	19	30
18	17	28	19	30
20	16	26	18	28
24	14	26	16	28
30	11	24	13	26
36	6	21	8	22

Dimensions - inch (mm)

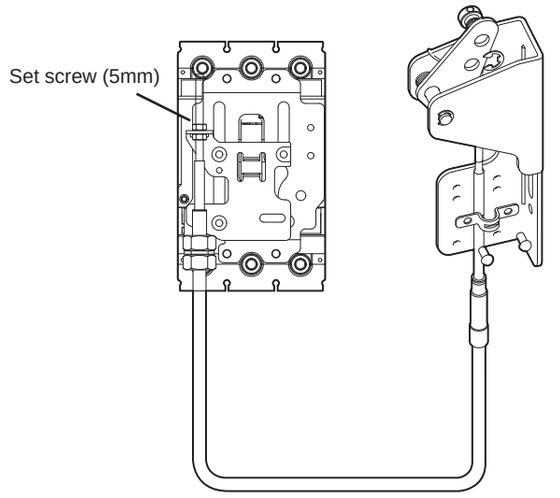
Flange Handle ACW250



Panel drilling



Installation Diagram



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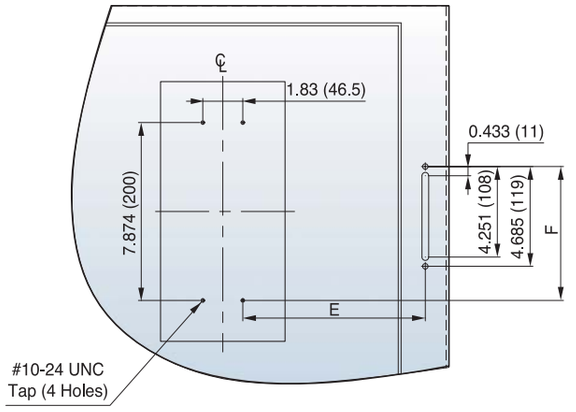
18	17	28	19	30
20	16	26	18	28
24	14	26	16	28
30	11	24	13	26
36	6	21	8	22

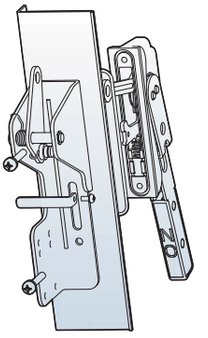
Circuit Protection

ACW

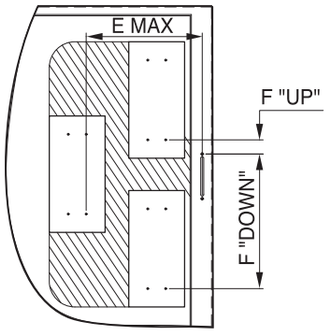
Dimensions - inch (mm)

Flange Handle ACW400

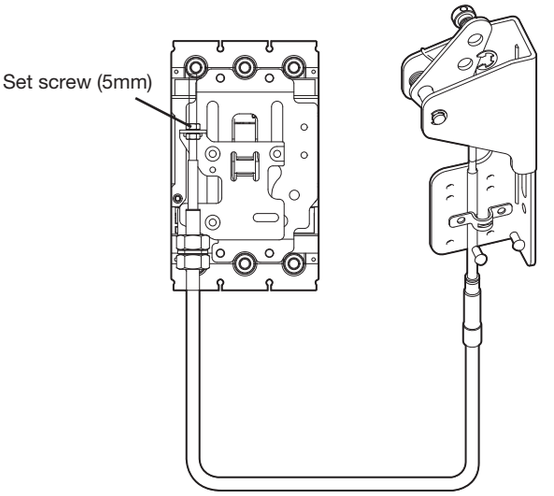




Panel drilling



Installation Diagram



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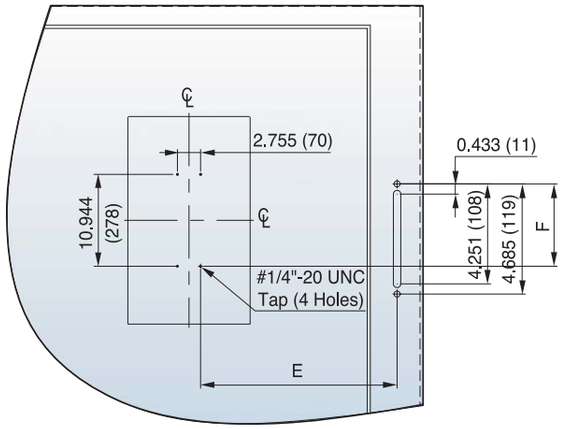
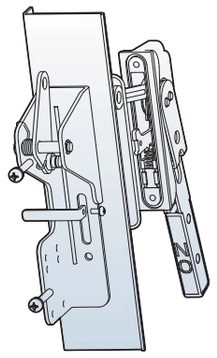
24	14	26	16	28
30	11	24	13	26
36	6	21	8	22

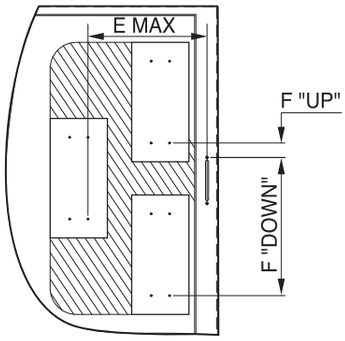
Dimensions - inch (mm)

Flange Handle ACW800

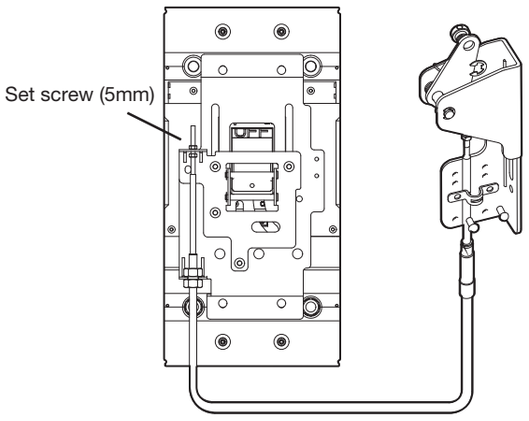




Panel drilling



Installation diagram



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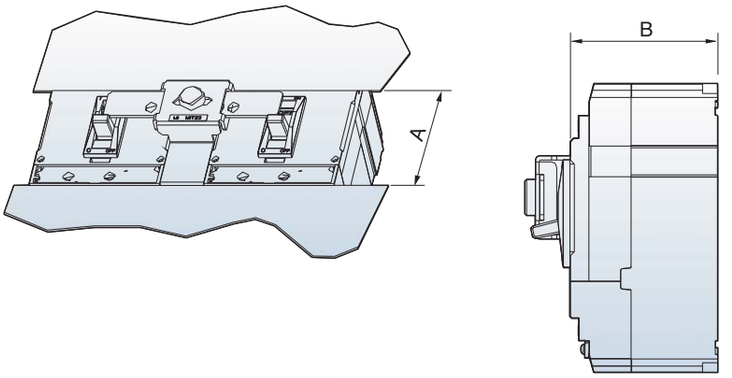
20	16	26	18	28
24	14	26	16	28
30	11	24	13	26
36	6	21	8	22

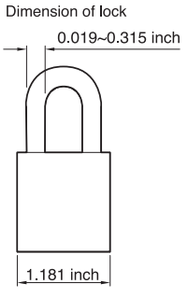
ACW

Dimensions - inch (mm)

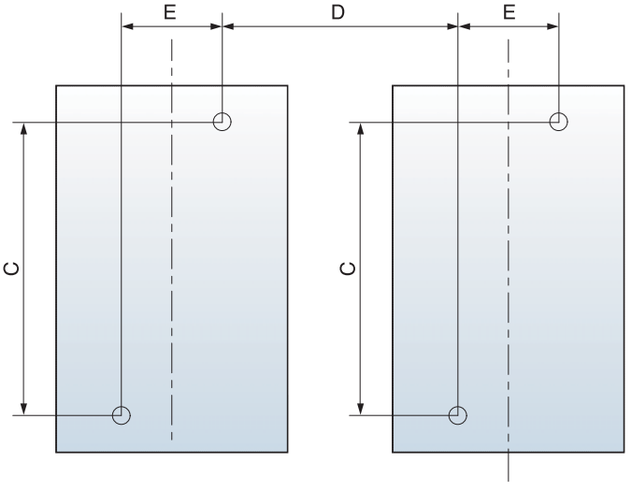
Mechanical interlocking device - MIT



	A (inch)	B (inch)
ACW125	3.267	3.385
ACW250	4.015	3.385
ACW400	6.614	4.330
ACW800	7.193	5.314



Mechanical interlocking device - Mounting dimension for MIT



3 Pole MCCB	C(inch)	D(inch)	E(inch)
ACW125	4.212	3.543	1.181
ACW250	4.921	4.133	1.377
ACW400	7.874	5.490	1.830
ACW800	10.944	8.267	2.755