



**MITSUBISHI
ELECTRIC**

LOW VOLTAGE AIR CIRCUIT BREAKERS

USP&E
POWERING BUSINESS. EMPOWERING PEOPLE

Changes for the Better

World Super

WS

Series

**World
Super AE**

630AF~6300AF



06A



Mitsubishi Electric Corporation's Fukuyama Works, which produces these products, is certified as meeting the ISO 14001 environmental management system standard.

Mitsubishi Presents the WS Series, Satisfied with the High Demands of the 21st Century Global Market.

World Super **WS** Series

Best-Solution

Various line-up and
high flexibility

High-Performance

One-rank higher
breaking performance

High-Reliability

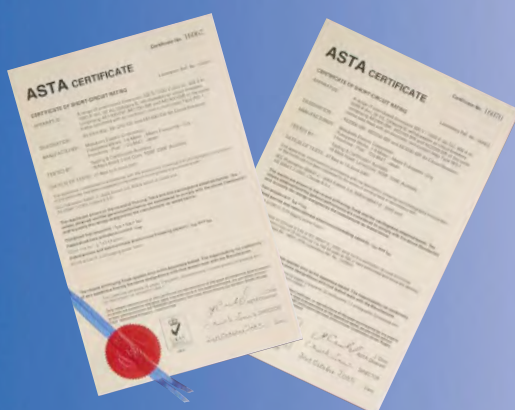
Safety and reliability provided

Customer Friendly

Easy handling and
retrofitted solution

Global...





Contents

■ Concept	1
■ Line up	2
■ Best Solution	3 - 4
■ High-Performance High-Reliability	5
■ Customer Friendly	6
■ External appearance and skeleton product structure	7 - 8
■ Product Specification	9 - 10
■ Connections	11
■ Charging	12
■ Accessories	
For breaker unit	13 - 16
For drawout type	17 - 18
■ Electronic trip relay	
Feature	19 - 20
For general use: WS	21 - 22
For generator protection use: WM	23 - 24
For special use: WB	25 - 26
Accessories	27 - 30
Additional functions	31 - 32
Network	33 - 34
Electronic trip relay circuit diagram	35
Setting procedure	36
■ Wiring diagram	37 - 38
■ Outline dimensions	
Drawout type	39 - 43
Fixed type	44 - 48
Panel-cut, Drawout handle, Terminal adapter	49
Neutral CT, External ZCT	50
ETR external units	51 - 52
■ Technical information	53 - 58
■ Ordering information	59 - 61
■ Service network	62

Line up (630 to 6300A)

Rated current (A)	630	1000	1250	1600	2000	2500	3200	4000	5000	6300
SW series	AE630-SW	AE1000-SW	AE1250-SW	AE1600-SW	AE2000-SWA	—				
	—				AE2000-SW	AE2500-SW	AE3200-SW	AE4000-SWA	—	
	—							AE4000-SW	AE5000-SW	AE6300-SW
SH series	AE630-SH	AE1000-SH	AE1250-SH	AE1600-SH	AE2000-SH	AE2500-SH	AE3200-SH	—		

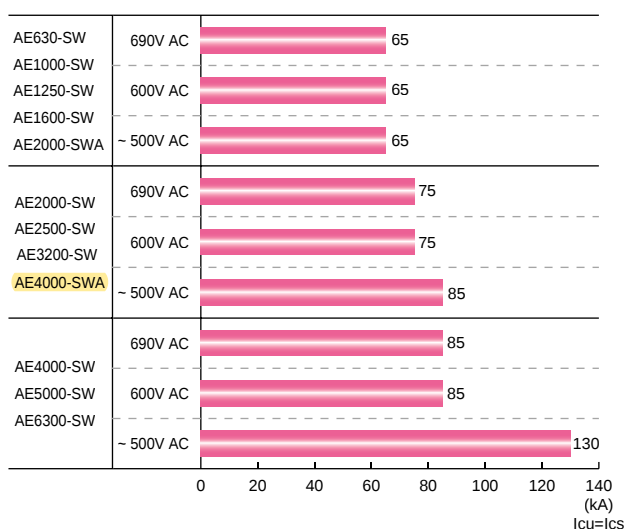
Note : Please contact us for the details of AE-SH series.

The safety of valuable circuits can be securely maintained.

Higher short circuit protection performance by improving breaking capacity

In case of 690V AC, $I_{cu} = I_{cs}$ improved
from 50 kA to 65 kA for AE630-SW~AE2000-SWA
from 50 kA to 75 kA for AE2000-SW~AE4000-SWA
from 50 kA to 85 kA for AE4000-SW~AE6300-SW

$I_{cu} = I_{cs}$ (Rated breaking capacity)



Wider choice coordination range by improving rated short-time withstand current

I_{cw} (1s) improved
from 65 kA to 75 kA for AE2000-SW~AE4000-SWA
from 85 kA to 100 kA for AE4000-SW~AE6300-SW

I_{cw} (1s) (Rated short-time withstand current)



Higher safety by improving insulation performance

Rated impulse withstand voltage (U_{imp}) for the main circuit is improved from 8 kV to 12 kV.

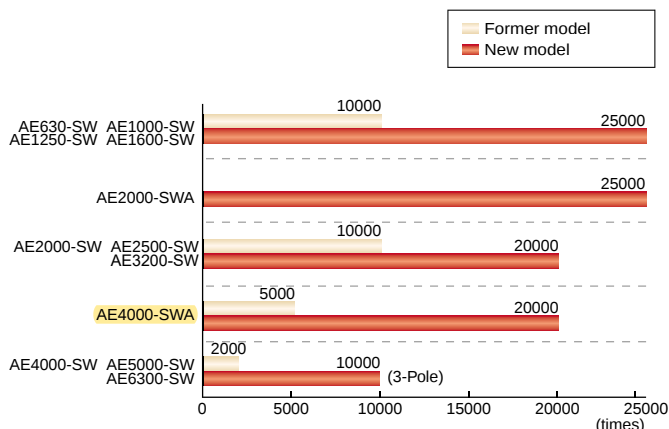
U_{imp} (Rated impulse withstand voltage)



Higher reliability by High operating durability

Mechanical

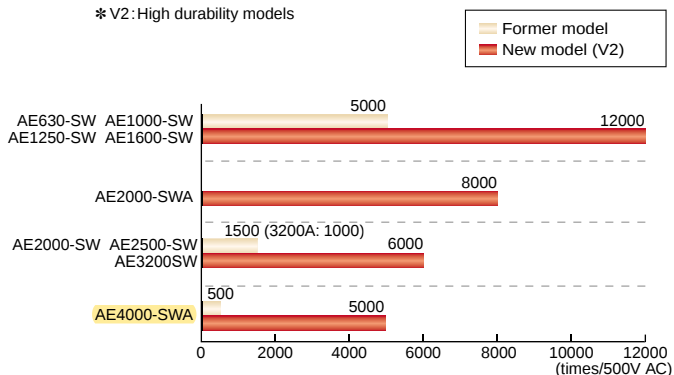
The new models are sharply improved in mechanical durability compared to the former model.



Electrical

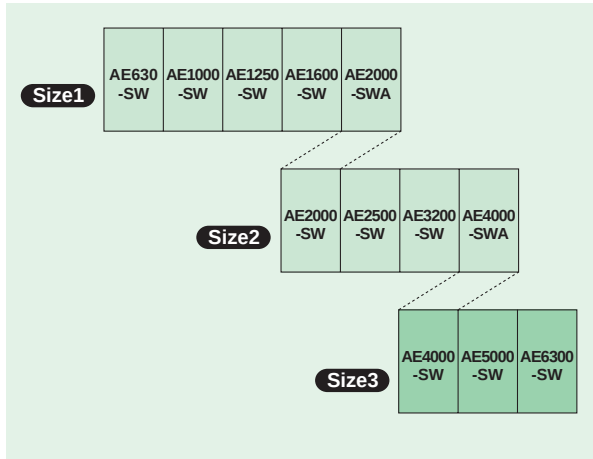
The new models (V2*) are sharply improved in electrical durability compared to the former model.

* V2: High durability models



For convenience

3 sizes



Compact size AE2000-SWA!

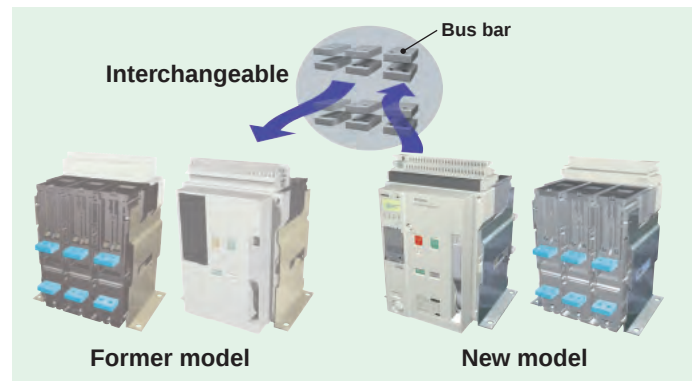
New model

- The compact AE2000-SWA can reduce the panel size.



The former model (AE-SS) can be retrofitted.

- It is same as the former model (AE-SS) in installation dimension and outline dimension, and the former model can be replaced with the new one.
- ACB main body with drawout frame can be replaced.
- It can be installed to the existing connection bus bar without any special connection kit.
(Except AE2000-SWA, AE4000-SWA)



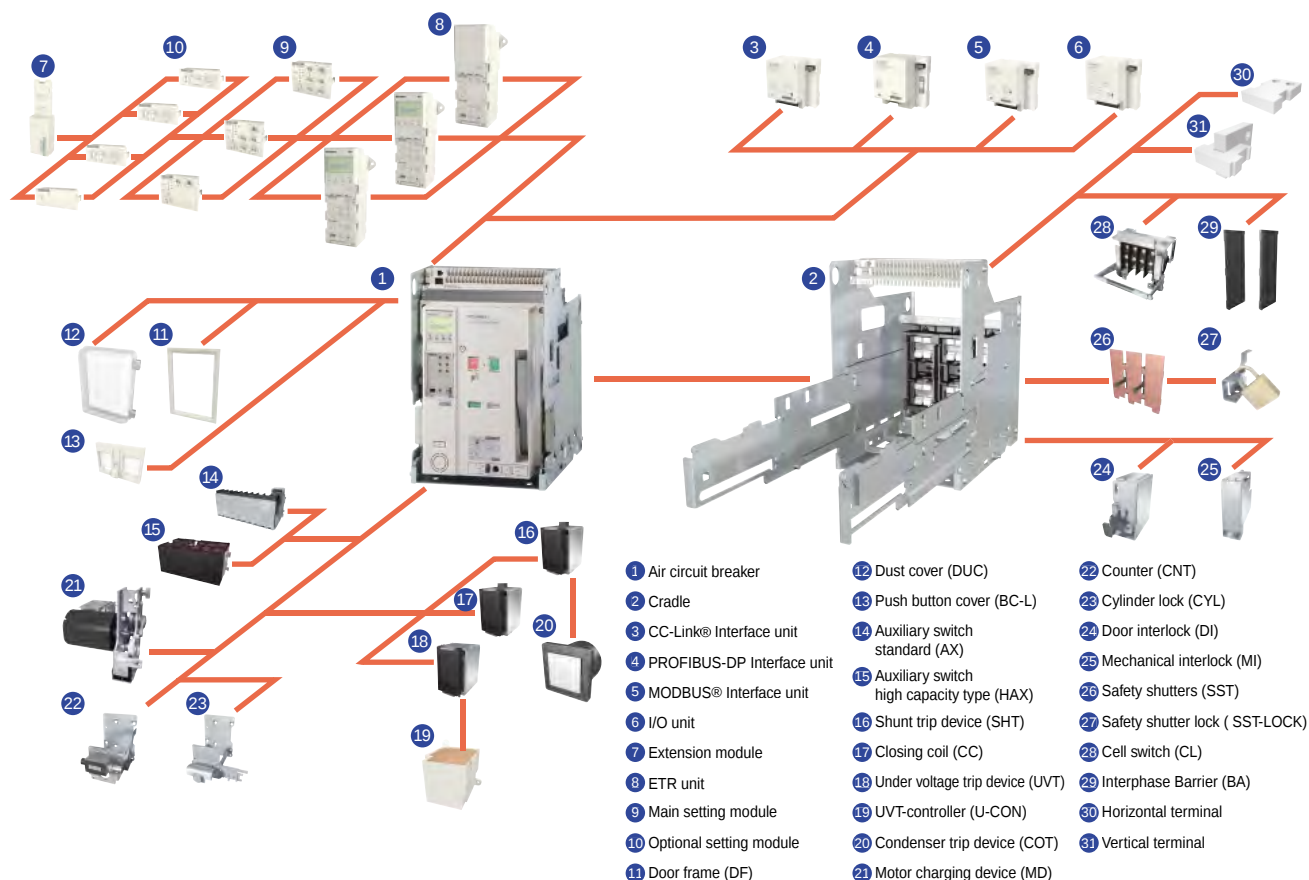
Zero arc space

Arc exhaust to the outside of the breaker is drastically reduced for safer operation. (AE630-SW~AE4000-SWA models $\leq$ 600V AC)

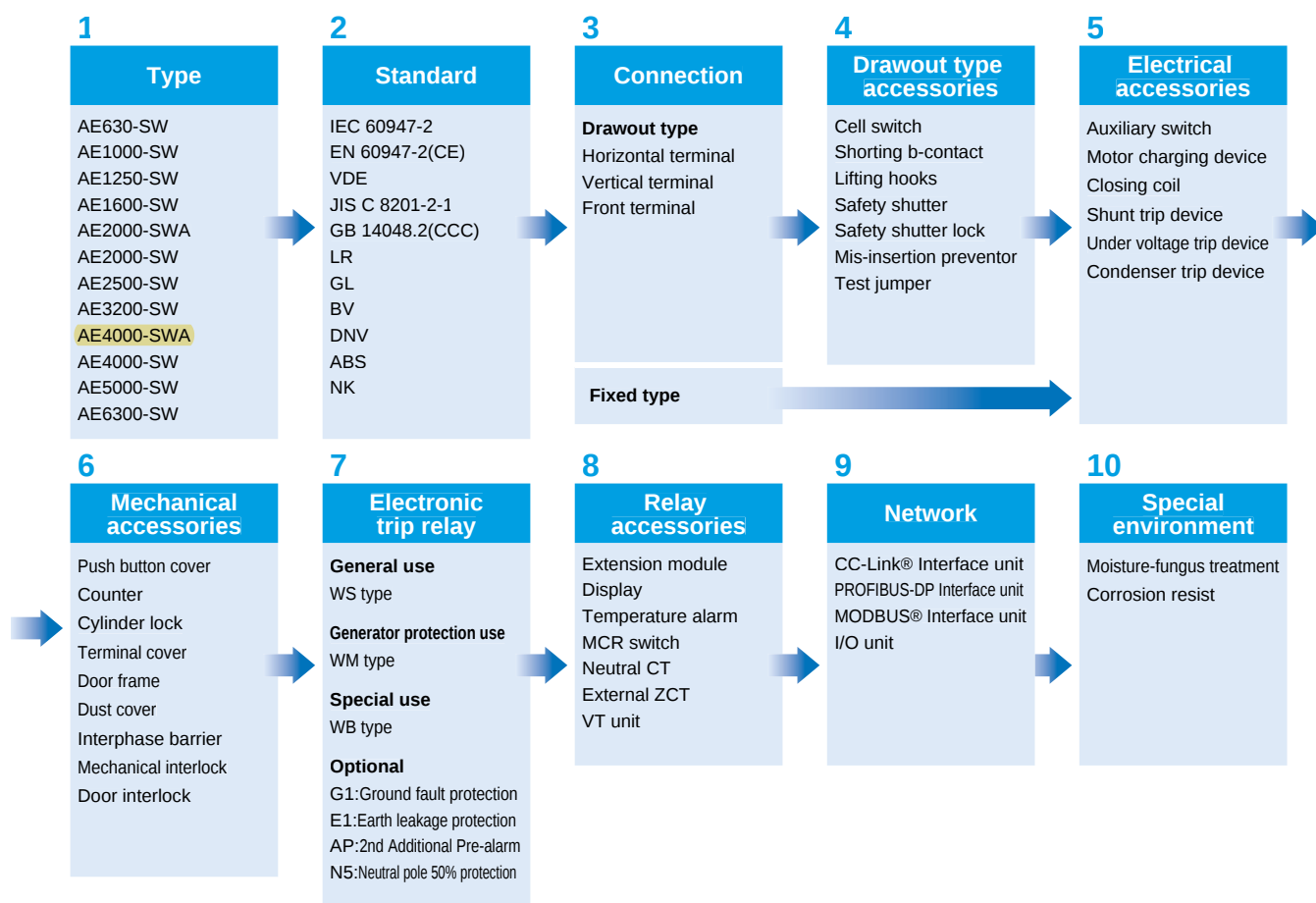
Reverse connection available

Line and Load is not defined on the Main circuit terminals. Therefore, reverse connection is available without any limitation.

Skeleton



Product introduction



Over view (AE630~1600-SW, AE2000~3200-SW)

Connections Type	Horizontal Standard	Vertical (VT)	Front (FT)	Vertical terminal adapter (VTA)	Front terminal adapter (FTA)
Fixed type (FIX)		—	—	 FIX-VTA	 FIX-FTA
Drawout type (DR)		 DR-VT	 DR-FT	 DR-VTA	 DR-FTA

Connection image : AE630~1600-SW, 3-pole type

Over view (AE2000-SWA, AE4000-SWA)

Connections Type	Vertical (VT) Standard
Fixed type (FIX)	 FIX-VT
Drawout type (DR)	 DR-VT

- Connection image : AE2000-SWA, 3-pole type
- For AE2000-SWA, AE4000-SWA, AE4000-SW, AE5000-SW and AE6300-SW models, vertical terminal only is available.

Available connections

Breakers		AE630-SW	AE1000-SW	AE1250-SW	AE1600-SW	AE2000-SWA	AE2000-SW	AE2500-SW	AE3200-SW	AE4000-SWA	AE4000-SW	AE5000-SW	AE6300-SW
Fixed type (FIX)	Horizontal	●	●	●	●	—	●	●	●	—	—	—	—
	FIX-VT	—	—	—	—	●	—	—	—	●	●	●	●
	FIX-VTA	○	○	○	○	—	○	○	○	—	—	—	—
	FIX-FTA	○	○	○	○	—	○	○	○	—	—	—	—
Drawout type (DR)	Horizontal	●	●	●	●	—	●	●	●	—	—	—	—
	DR-VT	○	○	○	○	●	○	○	○	●	●	●	●
	DR-FT	○	○	○	○	—	○	○	○	—	—	—	—
	DR-VTA	○	○	○	○	—	○	○	○	—	—	—	—
	DR-FTA	○	○	○	○	—	○	○	○	—	—	—	—

● Standard ○ Optional

Accessories

Ground fault protection(GFR)

Option



The ground fault protection (GFR) of several hundred amperes is possible. This function can be selected for trip and alarm (no trip). Power supply is necessary for this function, even if there is not power supply, it can function at $0.2 \times I_n$ or higher.

Setting item	Mark	Adjustable setting range	Accuracy	Setting for shipment
GFR pick-up current	Ig	0.1-0.2-0.3-0.4-0.5-0.6-0.7-0.8-0.9-1.0 $\times I_n$	$\pm 20\%$	1.0
GFR time	Tg	3-1.5-0.8-0.5-0.3-0.15-<0.1 TRIP <0.1-0.15-0.3-0.5-0.8-1.5-3s ALARM (at $1.5 \times I_g$)	$\pm 20\%$	3s (TRIP)

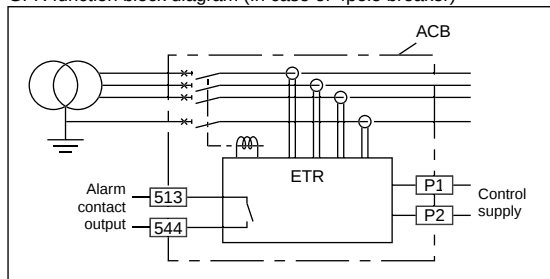
Neutral CT(NCT) ※Only use for AE-SW

Option

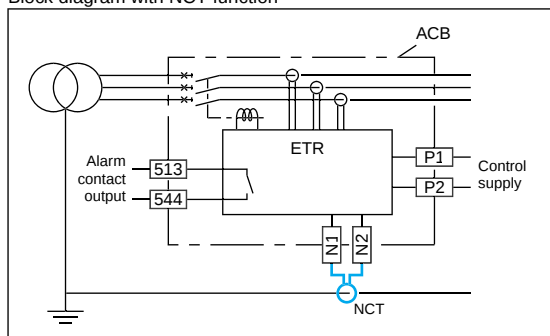


The Neutral CT is used for ground fault protection when the 3 pole breaker is used on a 3 phase 4 wires system and for over current protection on N phase. Please use this CT in combination with ground fault protection (GFR). As for outline dimensions, refer to page 48.

GFR function block diagram (In case of 4pole breaker)



Block diagram with NCT function

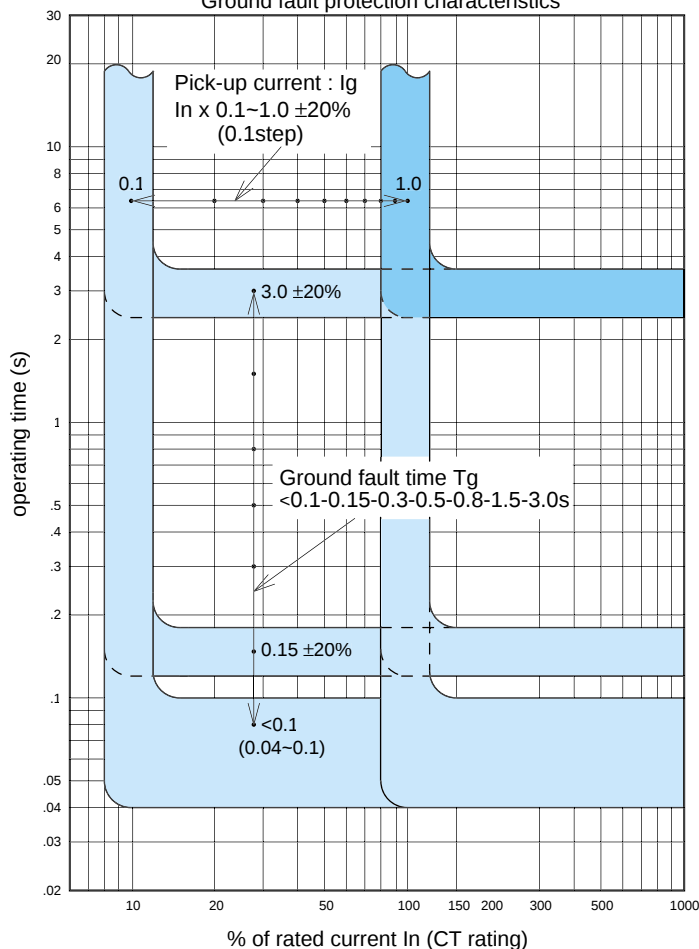


NCT type name

ACB type name / CT rating		Applicable NCT type name
AE630-SW 630A		NCT06
AE1000-SW 1000A		NCT10
AE1250-SW 1250A	AE2000-SW 1250A	NCT12
AE1600-SW 1600A	AE2000-SW 1600A	NCT16
AE2000-SWA 2000A	AE2000-SW 2000A	NCT20
	AE2500-SW 2500A	NCT25
	AE3200-SW 3200A	NCT32
	AE4000-SWA 4000A	NCT40

As for outline dimensional drawing, refer to page 48.

Ground fault protection characteristics

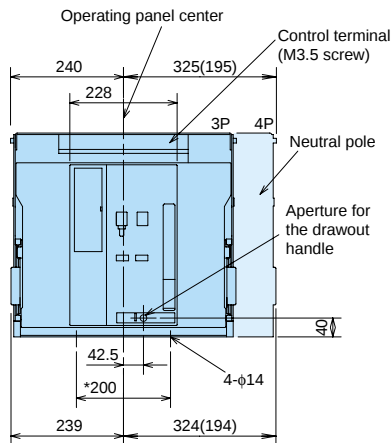


Outline dimensions

Drawout type AE2000-SW, AE2500-SW, AE3200-SW

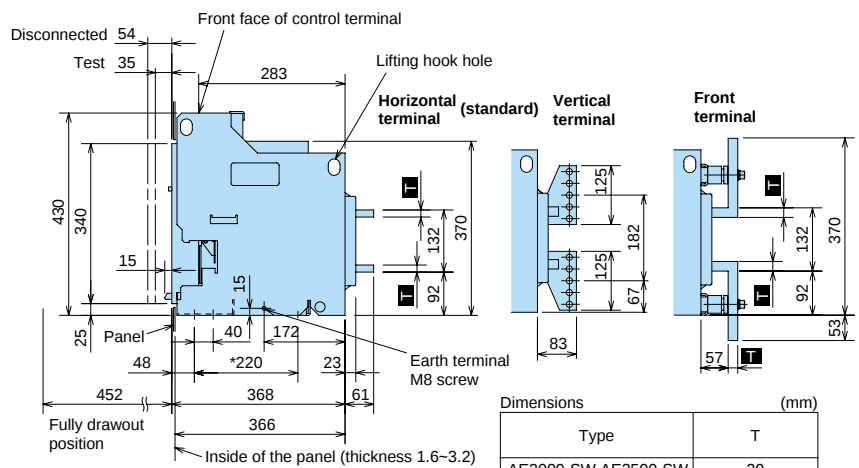
(mm)

Front view



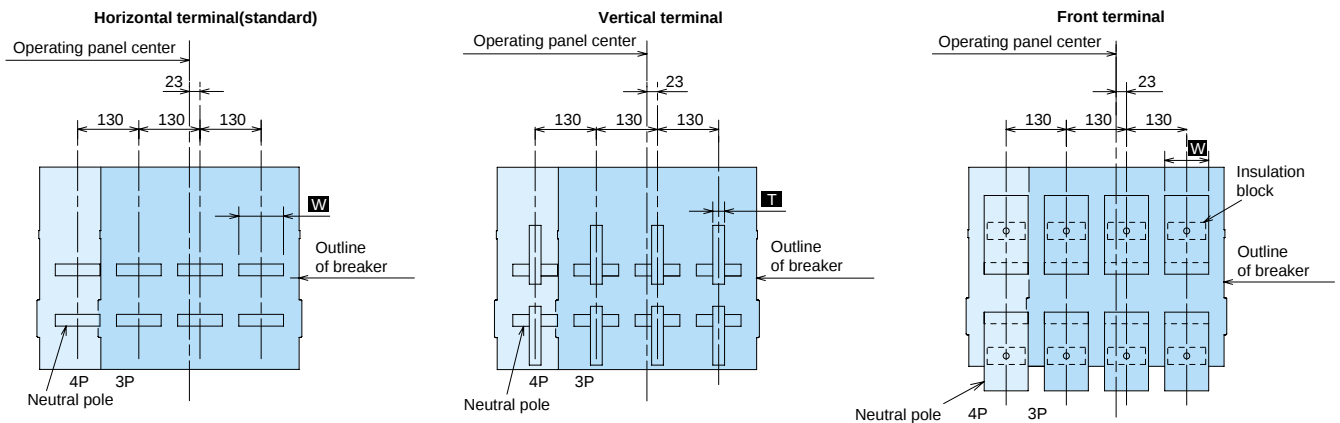
* : Mounting pitch
The numerals shown in parentheses are for 3 poles.

Side view

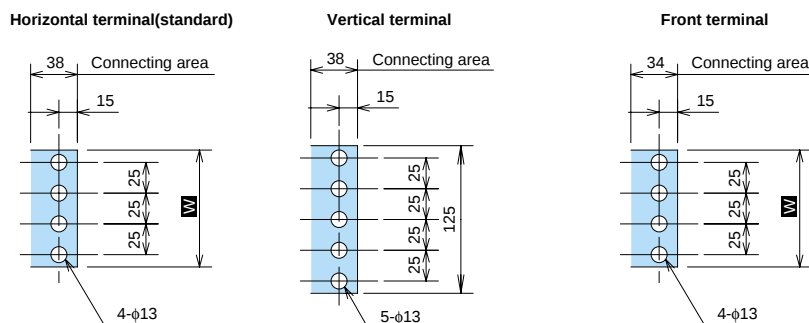


Dimensions (mm)	
Type	T
AE2000-SW AE2500-SW	20
AE3200-SW	25

Rear view



Main circuit terminal dimensions

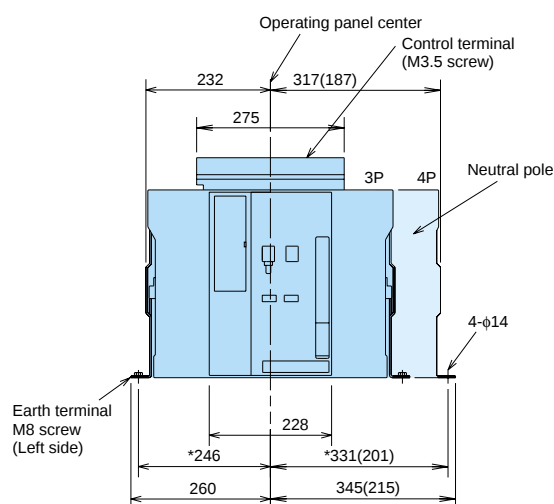


Dimensions (mm)	
Type	W
AE2000-SW AE2500-SW	95
AE3200-SW	103

Fixed type AE2000-SW, AE2500-SW, AE3200-SW

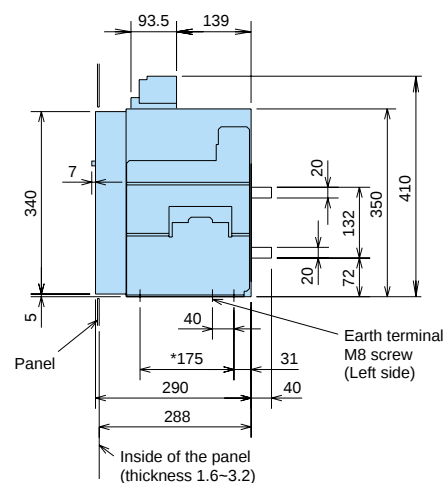
(mm)

Front view

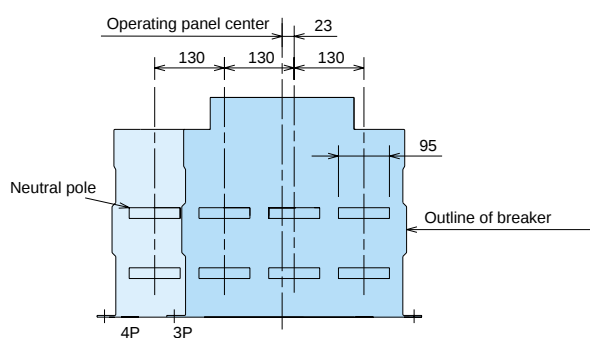


* : Mounting pitch
The numerals shown in parentheses are for 3 poles.

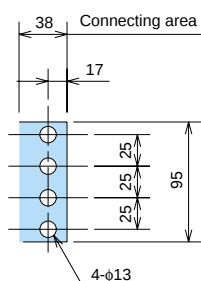
Side view



Rear view



Main circuit terminal dimension



Internal resistance, reactance and power consumption (per pole)

Type	Connection	Internal resistance (mΩ)	Reactance (mΩ)	Power consumption (W)
AE630-SW	Fixed type	0.028	0.059	11
	Drawout type	0.042	0.089	17
AE1000-SW	Fixed type	0.026	0.060	26
	Drawout type	0.040	0.091	40
AE1250-SW	Fixed type	0.024	0.060	38
	Drawout type	0.038	0.091	60
AE1600-SW	Fixed type	0.016	0.063	41
	Drawout type	0.030	0.095	77
AE2000-SWA	Fixed type	0.016	0.063	64
	Drawout type	0.032	0.095	128
AE2000-SW	Fixed type	0.010	0.047	40
	Drawout type	0.020	0.071	80
AE2500-SW	Fixed type	0.008	0.047	50
	Drawout type	0.018	0.071	113
AE3200-SW	Fixed type	0.007	0.048	72
	Drawout type	0.014	0.072	143
AE4000-SWA	Fixed type	0.009	0.048	144
	Drawout type	0.015	0.072	240
AE4000-SW	Fixed type	0.010	0.038	160
	Drawout type	0.013	0.062	210
AE5000-SW	Fixed type	0.009	0.038	225
	Drawout type	0.011	0.062	275
AE6300-SW	Fixed type	0.008	0.038	318
	Drawout type	0.0085	0.062	340

The above values are applicable for one pole. (at brandnew product)

Deratings by ambient temperature

(A)

Standard	IEC60947-2, BS, JIS C 8201-2-1 (Standard:40°C)				
Ambient Temperature	40°C	45°C	50°C	55°C	60°C
AE630-SW	630	630	630	630	630
AE1000-SW	1000	1000	1000	1000	1000
AE1250-SW	1250	1250	1250	1250	1200
AE1600-SW	1600	1600	1600	1550	1500
AE2000-SWA	2000	2000	1900	1800	1700
AE2000-SW	2000	2000	2000	2000	2000
AE2500-SW	2500	2500	2500	2450	2350
AE3200-SW	3200	3200	3200	3000	2900
AE4000-SWA	4000	4000	4000	3800	3600
AE4000-SW	4000	4000	4000	3900	3750
AE5000-SW	5000	5000	5000	5000	4750
AE6300-SW	6300	6300	5750	5500	5200

With Extension module, Display and Network

In case extension module (EX1), display (DP1) and network are attached, the following derating values shown in this table are applied.

(A)

Standard	IEC60947-2, BS, JIS C 8201-2-1 (Standard:40°C)		
Ambient Temperature	40°C	45°C	50°C
AE630-SW	630	630	630
AE1000-SW	1000	1000	1000
AE1250-SW	1250	1250	1250
AE1600-SW	1600	1600	1440
AE2000-SWA	2000	1900	1700
AE2000-SW	2000	2000	2000
AE2500-SW	2500	2500	2500
AE3200-SW	3200	3200	2880
AE4000-SWA	4000	3800	3600

The above table shows the maximum rated current per each ambient temperature for drawout type breaker with vertical connection (at brandnew product), when breaker and bus bar are installed in open air.

Connection bus bar is according to IEC60947-1. For AE3200-SW, AE4000-SWA, AE4000-SW, AE5000-SW and AE6300-SW, it is required to follow the manufacturer recommended size shown in Page 53.

As for ambient temperature exceeding 60°C, please inquire us.

Discrimination table

AE-SW Series air circuit breakers provide easy selective co-ordination with branch circuit breakers.
For selective co-ordinations, refer to the following table.

AC230V sym kA

Main circuit breaker Unit breaking capacity		AE-SW											
		AE630-SW	AE1000-SW	AE1250-SW	AE1600-SW	AE2000-SWA	AE2000-SW	AE2500-SW	AE3200-SW	AE4000-SWA	AE4000-SW	AE5000-SW	AE6300-SW
Branch circuit breaker		65	65	65	65	65	85	85	85	85	130	130	130
NF S · H · MB · NV S · H	NF32-SW MB30-SW MB50-CW	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	NV32-SW	10	9(10)	10	10	10	10	10	10	10	10	10	10
	NF63-SW MB50-SW NV63-SW	15	9(10)	10	10	10	10	10	10	10	10	10	10
	NF63-HW NV63-HW	25	9(25)	25	25	25	25	25	25	25	25	25	25
	NF125-SW MB100-SW NV125-SW	50	9(50)	45(50)	50	50	50	50	50	50	50	50	50
	NF125-HW NV125-HW	100	9(65)	50(65)	65	65	65	85	85	85	100	100	100
	NF250-SW MB225-SW NV250-SW NV250-SEW	50	9(50)	20(50)	22(50)	42(50)	42(50)	50	50	50	50	50	50
	NF250-HW NV250-HW	100	9(65)	25(65)	40(65)	65	65	85	85	85	100	100	100
	NF400-SW NV400-SW	85	-	-	20(65)	27(65)	27(65)	42(75)	70(75)	85	85	85	85
	NF400-SEW NV400-SEW	85	9(65)	15(65)	20(65)	27(65)	27(65)	42(75)	70(75)	85	85	85	85
	NF400-HEW NV400-HEW	100	9(65)	15(65)	20(65)	27(65)	27(65)	42(75)	70(75)	85	100	100	100
	NF400-REW NV400-REW	150	9(65)	15(65)	20(65)	27(65)	27(65)	42(75)	70(75)	85	130	130	130
	NF630-SW NV630-SW	85	-	-	-	24(65)	24(65)	30(75)	40(75)	60(75)	85	85	85
	NF630-SEW NV630-SEW	85	-	15(65)	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	85	85	85
	NF630-HEW NV630-HEW	100	-	15(65)	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	85(100)	85(100)	85(100)
	NF630-REW NV630-REW	150	-	15(65)	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	85(100)	85(100)	85(100)
	NF800-SEW NV800-SEW	85	-	-	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	85	85	85
	NF800-HEW NV800-HEW	100	-	-	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	85(100)	85(100)	85(100)
	NF800-REW NV800-REW	150	-	-	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	85(100)	85(100)	85(100)
NF C · NV C	NF63-CW NV63-CW	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	NF125-CW NV125-CW	30	9(30)	15(30)	18(30)	24(30)	24(30)	30	30	30	30	30	30
	NF250-CW NV250-CW	35	9(35)	15(35)	18(35)	24(35)	24(35)	35	35	35	35	35	35
	NF400-CW NV400-CW	50	-	15(50)	18(50)	24(50)	24(50)	30(50)	37(50)	48(50)	50	50	50
	NF630-CW NV630-CW	50	-	-	-	24(50)	24(50)	30(50)	37(50)	48(50)	50	50	50
	NF800-CEW	50	-	-	-	24(50)	24(50)	30(50)	37(50)	48(50)	50	50	50
NF U	NF125-RGW	125	65	65	65	65	65	85	85	85	125	125	125
	NF125-UGW	200	65	65	65	65	65	85	85	85	130	130	130
	NF250-RGW	125	9(65)	65	65	65	65	85	85	85	125	125	125
	NF250-UGW	200	9(65)	65	65	65	65	85	85	85	130	130	130
	NF400-UEW	200	9(65)	15(65)	18(65)	29(65)	29(65)	48(75)	85	85	130	130	130
	NF800-UEW	200	-	-	18(65)	24(65)	24(65)	30(75)	37(75)	68(75)	85(100)	85(100)	85(100)

- The values in the table represent the max.rated current for both Series AE-SW air circuit breakers and branch breakers, and the selective co-ordination applies when the AE-SW series air circuit breakers instantaneous pick up is set to maximum.
- The numerals shown in parentheses are for AE-SW with MCR.(When set MCR).

AC440V sym kA

Main circuit breaker Unit breaking capacity Branch circuit breaker		AE-SW											
		AE630-SW	AE1000-SW	AE1250-SW	AE1600-SW	AE2000-SWA	AE2000-SW	AE2500-SW	AE3200-SW	AE4000-SWA	AE4000-SW	AE5000-SW	AE6300-SW
		65	65	65	65	65	85	85	85	85	130	130	130
NF S · H · MB · NV S · H	NF32-SW	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	MB30-SW												
	MB50-CW												
	NV32-SW	5	5	5	5	5	5	5	5	5	5	5	5
	NF63-SW	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	MB50-SW												
	NV63-SW												
	NF63-HW	10	9(10)	10	10	10	10	10	10	10	10	10	10
	NV63-HW												
	NF125-SW	25	7(25)	20(25)	25	25	25	25	25	25	25	25	25
	MB100-SW												
	NV125-SW												
	NF125-HW	50	9(50)	30(50)	50	50	50	50	50	50	50	50	50
	NV125-HW												
	NF250-SW	25	7(25)	14(25)	19(25)	25	25	25	25	25	25	25	25
	MB225-SW												
	NV250-SW												
	NV250-SEW												
	NF250-HW	50	7(50)	15(50)	25(50)	42(50)	42(50)	50	50	50	50	50	50
	NV250-HW												
	NF400-SW	42	-	-	18(42)	24(42)	24(42)	33(42)	42	42	42	42	42
	NV400-SW												
	NF400-SEW	42	9(42)	15(42)	18(42)	24(42)	24(42)	33(42)	42	42	42	42	42
	NV400-SEW												
	NF400-HEW	65	9(65)	15(65)	18(65)	24(65)	24(65)	33(65)	45(65)	65	65	65	65
	NV400-HEW												
	NF400-REW	125	9(65)	15(65)	18(65)	24(65)	24(65)	33(75)	45(75)	80	80	100	100
	NV400-REW												
	NF630-SW	42	-	-	-	24(42)	24(42)	33(42)	42	42	42	42	42
	NV630-SW												
	NF630-SEW	42	-	15(42)	18(42)	24(42)	24(42)	30(42)	40(42)	42	42	42	42
	NV630-SEW												
	NF630-HEW	65	-	15(65)	18(65)	24(65)	24(65)	30(65)	40(65)	60(65)	60(65)	65	65
	NV630-HEW												
	NF630-REW	125	-	15(65)	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	60(75)	75(100)	75(100)
	NV630-REW												
	NF800-SW	42	-	-	18(42)	24(42)	24(42)	30(42)	40(42)	42	42	42	42
	NV800-SW												
	NF800-HEW	65	-	-	18(65)	24(65)	24(65)	30(65)	40(65)	60(65)	60(65)	65	65
	NV800-HEW												
	NF800-REW	125	-	-	18(65)	24(65)	24(65)	30(75)	40(75)	60(75)	60(75)	75(100)	75(100)
	NV800-REW												
NF C · NV C	NF63-CW	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	NV63-CW												
	NF125-CW	10	9(10)	10	10	10	10	10	10	10	10	10	10
	NV125-CW												
	NF250-CW	15	9(15)	15	15	15	15	15	15	15	15	15	15
	NV250-CW												
	NF400-CW	25	-	15(25)	18(25)	24(25)	24(25)	25	25	25	25	25	25
	NV400-CW												
	NF630-CW	36	-	-	-	24(36)	24(36)	30(36)	36	36	36	36	36
	NV630-CW												
NF U	NF800-CEW	36	-	-	-	24(36)	24(36)	30(36)	36	36	36	36	36
	NF125-RGW	125	35(65)	65	65	65	65	85	85	85	85	125	125
	NF125-UGW	200	50(65)	65	65	65	65	85	85	85	85	130	130
	NF250-RGW	125	9(65)	50(65)	65	65	65	85	85	85	85	125	125
	NF250-UGW	200	9(65)	65	65	65	65	85	85	85	85	130	130
	NF400-UEW	200	9(65)	15(65)	18(65)	29(65)	29(65)	48(75)	85	85	85	130	130
	NV400-UEW												
	NF800-UEW	200	-	-	18(65)	24(65)	24(65)	30(75)	37(75)	68(75)	68(75)	85(100)	85(100)

- The values in the table represent the max. rated current for both Series AE-SW air circuit breakers and branch breakers, and the selective co-ordination applies when the AE-SW series air circuit breakers instantaneous pick up is set to maximum.
- The numerals shown in parentheses are for AE-SW with MCR. (When set MCR).

Ordering information for Mitsubishi AE-SW series air circuit breaker(General use....WS Type, Special use....WB Type)

Customer(name)		Order No.		Number of units		units
Type	P9-10 AE <u>1600</u> -SW	AE _____ -SWA				
Number of poles	☒ 3P ☐ 4P AE630-SW~AE4000-SWA	☐ 3P ☐ 4P HN ☐ 4P FN AE4000-SW~AE6300-SW	Note15			
Current setting Ir	<u>1600</u> A	CT rating	_____ A	Note1 P9,P20		
Applicable standard	☒ IEC 60947-2	☐ CCC				
Ambient temperature	☒ 40°C(Standard)	☐ Others _____ °C Note2				
Reset type	☒ Automatic Reset (Standard) ☐ Manual Reset (MRE)					
Connection	☐ Fixed type Note3 ☒ Drawout type Note3					
Main circuit terminal	☐ Horizontal terminal(FIX) (AE630-1600-SW / AE2000-3200-SW) ☐ Vertical terminal(FIX-VT) (AE2000-SWA / AE4000-SWA / AE4000-6300-SW) ☒ Horizontal terminals(DR)(standard) ☐ Vertical terminals(DR-VT) ☐ Front terminals(DR-FT) Note4					

Drawout type accessories

P17-18

- ☒ Cell switch(CL- 4: 1 or 2 or 3 or 4) Note5
- ☐ Shorting b-contact(SBC- ☐: 1 or 2 or 3 or 4 or 5)
- ☐ Lifting hooks(HP)
- ☒ Safety shutter(SST)
- ☒ Shutter lock(SST-LOCK)
- ☐ Mis-insertion preventor(MIP)
- ☐ Test jumper(TJ)

- ☐ Vertical terminal adapter(VTA) Can be connected to the Horizontal terminals.
- ☐ Front terminal adapter(FTA)

Electronic trip relay(ETR)

☒ With ETR

Type

WS1

G1

P1

Main setting module

WS1, WB1	AE630-1600-SW, AE2000-3200-SW, AE4000-SW
WS2, WB2	AE2000-SWA, AE4000-SWA, AE5000-SW
WS3, WB3	AE6300-SW

WS: General use
WB: INST/MCR only

Optional setting module

G1: Ground fault protection
N5: Neutral pole 50% protection
E1: Earth leakage protection
AP: 2nd Additional Pre-alarm
NA: Without optional setting

Power supply

P1: AC-DC100-240V
P2: DC24-60V
P3: AC100-240V / DC100-125V with output contact
P4: DC24-60V with output contact
P5: DC100-240V with output contact (SSR)

☐ Neutral CT(NCT) Note8
☐ External ZCT Note9
P28: ZCT ☐ B
ZT ☐ B
ZTA ☐

Additional function

P32

- ☒ Extension module(EX1)
- ☒ Display(DP1)
- ☒ Display onto panel board(DP2)
- ☒ VT unit(VT)
- ☐ Temperature alarm(TAL)
- ☐ MCR switch(MCR-SW)

Network

- ☐ BIF-CC
- ☐ BIF-PR
- ☐ BIF-MD
- ☐ BIF-CON
- ☐ BIF-CL

Wire system (when EX1 is specified)

- ☒ 3φ3W
- ☐ 3φ4W
- ☒ Normal connection : Note13
- ☐ Inverse connection : Note14

☐ BARE(ETR not required)

Electrical accessories	☒ Auxiliary switch	A and B contacts in the same quantity are used. Max. quantity: 5 each for A and B contacts.	
	☐ Standard(AX <u>6</u> : 2 or 4 or 6 or 8 or 10)		
	☐ High capacity(HAX ☐ : 2 or 4 or 6 or 8 or 10)		
	☒ Motor charging(MD)	☒ AC · DC100-125V	
		☐ AC · DC200-250V	
		☐ DC24V	Note10
		☐ DC48V	
☒ Closing coil(CC)	☒ AC · DC100-250V		
	☐ DC24-48V		
☒ Shunt trip device (SHT)	☒ AC · DC100-250V		
	☐ AC380-500V		
	☐ DC24-48V		
☒ Under voltage trip device(UVT)	☒ AC100-120V		
	☐ AC200-240V		
	☐ AC380-460V		
	☐ DC24V		
	☐ DC48V		
	☐ DC100-110V		
	☐ DC120-125V		
		Time delay	
		☒ Inst(INST)	
		☐ 0.5s(05)	
		☐ 3.0s(30)	

Note: In case of 380-460V AC, the external transformer is attached

Mechanical accessories	☒ Push button cover(BC-L)
	☒ Counter(CNT)
	☐ Cylinder lock(CYL)
	☐ Door interlock(DI) Note11
	☐ Terminal cover(TTC)
	☒ Door frame(DF)
	☐ Dust cover(DUC)
	☒ Interphase barrier(BA) Note12
	☐ for 2units(MI2)
	☐ for 3units(MI3) Note11

Special environments	☐ Moisture-fungus treatment	☐ Corrosion resist
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☒ Condenser trip device (COT)	☒ AC100-110V	☐ AC200-220V
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Note1: In case of AE630-SW and AE2000-SW Low rating type, please specify CT rating. Refer to Page 9 and Page 20.

Note2: There is a case to be derated by ambient temperature. Refer to Page 54.

Note3: As for the terminal for AE2000-SWA, AE4000-SWA and AE4000-SW~AE6300-SW, Vertical terminal type only is available. (FIX-VT or DR-VT)

Note4: Refer to Page 11 and Page 39-46.

Note5: This setting is available for change by customer later. A preliminary setting of CL at factory shipment is as follows.

CL1: 1C CL2: 1C1D CL3: 1C1T1D CL4: 2C1T1D

Note6: Not available for AE630-SW with CT rating : 250A or 315A or 500A.

Note7: Not available for WB1, WB2 and WB3 Main setting module.

N5 optional setting module is used for 3phase 4wires system.(4Pole breaker or 3pole breaker with Neutral CT)

Note8: Neutral CT is required for Ground fault or Neutral pole protection, when 3 Pole breaker is used for 3 phase 4 wires system.

Note9: In case of Earth leakage protection, it is required External ZCT.

Note10: DC24V and DC48V are not available for AE4000-SWA 4P and AE4000-SW~AE6300-SW.

Note11: The combined installation of DI and MI3 is not available.

Note12: Some module types are not provided BA. Refer to Page15.

Note13: Supply connect to the top terminals.

Note14: Supply connect to the bottom terminals.

Note15: Current capacity of the neutral poles

HN: 50% of the rated current

FN: 100% of the rated current (See page 43, 48 for the outline and dimensions.)

Remark

Order Issuer

Ordering information for Mitsubishi AE-SW series air circuit breaker(General use....WS Type, Special use....WB Type)

Customer(name)	Order No.	Number of units	units							
Type P.9-10 AE _____ -SW AE _____ -SWA										
Number of poles ☐ 3P ☐ 4P AE4000-SW~AE6300-SW ☐ 3P ☐ 4P HN Note15 ☐ 4P FN Note15										
Current setting Ir _____ A CT rating _____ A Note1 P.9,P.20										
Applicable standard ☐ IEC 60947-2 ☐ CCC										
Ambient temperature ☐ 40°C(Standard) ☐ Others _____ °C Note2										
Reset type ☐ Automatic Reset (Standard) ☐ Manual Reset (MRE)										
Connection ☐ Fixed type Note3 ☐ Drawout type Note3										
Main circuit terminal P.11 ☐ Horizontal terminal(FIX) (AE630-1600-SW / AE2000-3200-SW) ☐ Vertical terminal(FIX-VT) (AE2000-SWA / AE4000-SWA / AE4000-6300-SW) ☐ Horizontal terminals(DR)(standard) ☐ Vertical terminals(DR-VT) AE2000-SWA / AE4000-SWA / AE4000-6300-SW ☐ Front terminals(DR-FT) Note4										
Drawout type accessories P.17~18 ☐ Cell switch(CL- ☐ : 1 or 2 or 3 or 4) Note5 ☐ Shorting b-contact(SBC- ☐ : 1 or 2 or 3 or 4 or 5) ☐ Lifting hooks(HP) ☐ Safety shutter(SST) ☐ Shutter lock(SST-LOCK) ☐ Mis-insertion preventor(MIP) ☐ Test jumper(TJ) ☐ Vertical terminal adapter(VTA) Can be connected to the Horizontal terminals. ☐ Front terminal adapter(FTA)										
Electronic trip relay(ETR) ☐ With ETR Type ☐ ☐ - ☐ Main setting module <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>WS1, WB1</td> <td>AE630-1600-SW, AE2000-3200-SW, AE4000-SW</td> </tr> <tr> <td>WS2, WB2</td> <td>AE2000-SWA, AE4000-SWA, AE5000-SW</td> </tr> <tr> <td>WS3, WB3</td> <td>AE6300-SW</td> </tr> </table> WS : General use WB : INST/MCR only Optional setting module G1: Ground fault protection Note6 N5: Neutral pole 50% protection Note7 E1: Earth leakage protection AP: 2nd Additional Pre-alarm NA: Without optional setting Power supply P1: AC-DC100-240V P2: DC24-60V P3: AC100-240V / DC100-125V with output contact P4: DC24-60V with output contact P5: DC100-240V with output contact (SSR) ☐ Neutral CT(NCT) Note8 ☐ External ZCT Note9 ZCT ☐ ZT ☐ B ZTA ☐ Additional function P.32 ☐ Extension module(EX1) Network P.33 ☐ Display(DP1) ☐ Display onto panel board(DP2) ☐ VT unit(VT) ☐ Temperature alarm(TAL) ☐ MCR switch(MCR-SW) ☐ BIF-CC ☐ BIF-PR ☐ BIF-MD ☐ BIF-CON ☐ BIF-CL Wire system (when EX1 is specified) EX1 ☐ 3φ3W ☐ 3φ4W ☐ Normal connection : Note13 ☐ Inverse connection : Note14					WS1, WB1	AE630-1600-SW, AE2000-3200-SW, AE4000-SW	WS2, WB2	AE2000-SWA, AE4000-SWA, AE5000-SW	WS3, WB3	AE6300-SW
WS1, WB1	AE630-1600-SW, AE2000-3200-SW, AE4000-SW									
WS2, WB2	AE2000-SWA, AE4000-SWA, AE5000-SW									
WS3, WB3	AE6300-SW									
☐ BARE(ETR not required)										
Electrical accessories P.12-14 ☐ Auxiliary switch A and B contacts in the same quantity are used. Max. quantity: 5 each for A and B contacts. ☐ Standard(AX ☐ : 2 or 4 or 6 or 8 or 10) ☐ High capacity(HAX ☐ : 2 or 4 or 6 or 8 or 10) ☐ Motor charging(MD) ☐ AC • DC100-125V ☐ AC • DC200-250V ☐ DC24V Note10 ☐ DC48V ☐ Closing coil(CC) ☐ AC • DC100-250V ☐ DC24-48V ☐ Shunt trip device (SHT) ☐ AC • DC100-250V ☐ AC380-500V ☐ DC24-48V ☐ Under voltage trip device(UVT) ☐ AC100-120V ☐ AC200-240V ☐ AC380-460V ☐ DC24V ☐ DC48V ☐ DC100-110V ☐ DC120-125V Time delay ☐ Inst(INST) ☐ 0.5s(05) ☐ 3.0s(30) Note: In case of 380-460V AC, the external transformer is attached										
Mechanical accessories P.15-16 ☐ Push button cover(BC-L) ☐ Counter(CNT) ☐ Cylinder lock(CYL) ☐ Door interlock(DI) Note11 ☐ Terminal cover(TTC) ☐ Door frame(DF) ☐ Dust cover(DUC) ☐ Interphase barrier(BA) Note12 ☐ for 2units(MI2) ☐ Mechanical interlock(MI) ☐ for 3units(MI3) Note11										
Special environments P.52 ☐ Moisture-fungus treatment ☐ Corrosion resist										
Condenser trip device (COT) P.16 ☐ AC100-110V ☐ AC200-220V Note1: In case of AE630-SW and AE2000-SW Low rating type, please specify CT rating. Refer to Page 9 and Page 20. Note2: There is a case to be derated by ambient temperature. Refer to Page 54. Note3: As for the terminal for AE2000-SWA, AE4000-SWA and AE4000-SW-AE6300-SW, Vertical terminal type only is available. (FIX-VT or DR-VT) Note4: Refer to Page 11 and Page 39-46. Note5: This setting is available for change by customer later. A preliminary setting of CL at factory shipment is as follows. CL1: 1C CL2: 1C1D CL3: 1C1T1D CL4: 2C1T1D Note6: Not available for AE630-SW with CT rating : 250A or 315A or 500A. Note7: Not available for WB1, WB2 and WB3 Main setting module. Note8: N5 optional setting module is used for 3phase 4wires system.(4Pole breaker or 3pole breaker with Neutral CT) Note9: Neutral CT is required for Ground fault or Neutral pole protection, when 3 Pole breaker is used for 3 phase 4 wires system. Note10: DC24V and DC48V are not available for AE4000-SWA 4P and AE4000-SW-AE6300-SW. Note11: The combined installation of DI and MI3 is not available. Note12: Some module types are not provided BA. Refer to Page15. Note13: Supply connect to the top terminals. Note14: Supply connect to the bottom terminals. Note15: Current capacity of the neutral poles HN: 50% of the rated current FN: 100% of the rated current (See page 43, 48 for the outline and dimensions.)										
Remark 										
Order Issuer <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 25%; height: 30px;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>										

Customer(name)	Order No.	Number of units	units														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">Type</td> <td style="width: 15%;">P.9-10 AE</td> <td style="width: 15%;">-SW</td> <td style="width: 15%;">AE</td> <td style="width: 15%;">-SWA</td> </tr> </table>				Type	P.9-10 AE	-SW	AE	-SWA									
Type	P.9-10 AE	-SW	AE	-SWA													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Number of poles</td> <td style="width: 10%;"> ☐ 3P AE630-SW- AE4000-SWA </td> <td style="width: 10%;"> ☐ 4P </td> <td style="width: 10%;"> ☐ 3P AE4000-SW- AE6300-SW </td> <td style="width: 10%;"> ☐ 4P HN Note15 ☐ 4P FN Note15 </td> </tr> </table>				Number of poles	☐ 3P AE630-SW- AE4000-SWA	☐ 4P	☐ 3P AE4000-SW- AE6300-SW	☐ 4P HN Note15 ☐ 4P FN Note15									
Number of poles	☐ 3P AE630-SW- AE4000-SWA	☐ 4P	☐ 3P AE4000-SW- AE6300-SW	☐ 4P HN Note15 ☐ 4P FN Note15													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Current setting Ir</td> <td>A</td> </tr> </table>				Current setting Ir	A												
Current setting Ir	A																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Applicable standard</td> <td> ☐ LR ☐ GL ☐ BV ☐ DNV ☐ ABS ☐ NK ☐ IEC 60947-2 </td> </tr> </table>				Applicable standard	☐ LR ☐ GL ☐ BV ☐ DNV ☐ ABS ☐ NK ☐ IEC 60947-2												
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Ambient temperature</td> <td> ☐ 40°C(Standard) ☐ Others °C Note2 </td> </tr> </table>				Ambient temperature	☐ 40°C(Standard) ☐ Others °C Note2												
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Reset type</td> <td> ☐ Automatic Reset (Standard) ☐ Manual Reset (MRE) </td> </tr> </table>				Reset type	☐ Automatic Reset (Standard) ☐ Manual Reset (MRE)												
Reset type	☐ Automatic Reset (Standard) ☐ Manual Reset (MRE)																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Connection</td> <td> ☐ Fixed type Note3 ☐ Drawout type Note3 </td> </tr> </table>				Connection	☐ Fixed type Note3 ☐ Drawout type Note3												
Connection	☐ Fixed type Note3 ☐ Drawout type Note3																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Main circuit terminal P.11</td> <td style="width: 25%;"> Horizontal terminal(FIX) (AE630-1600-SW / AE2000-3200-SW) Vertical terminal(FIX-VT) (AE2000-SWA / AE4000-SWA) (AE4000-6300-SW) </td> <td style="width: 25%;"> ☐ Horizontal terminals(DR)(standard) ☐ Vertical terminals(DR-VT) AE2000-SWA / AE4000-SWA AE4000-6300-SW ☐ Front terminals(DR-FT) Note4 </td> <td style="width: 25%;"></td> </tr> </table>				Main circuit terminal P.11	Horizontal terminal(FIX) (AE630-1600-SW / AE2000-3200-SW) Vertical terminal(FIX-VT) (AE2000-SWA / AE4000-SWA) (AE4000-6300-SW)	☐ Horizontal terminals(DR)(standard) ☐ Vertical terminals(DR-VT) AE2000-SWA / AE4000-SWA AE4000-6300-SW ☐ Front terminals(DR-FT) Note4											
Main circuit terminal P.11	Horizontal terminal(FIX) (AE630-1600-SW / AE2000-3200-SW) Vertical terminal(FIX-VT) (AE2000-SWA / AE4000-SWA) (AE4000-6300-SW)	☐ Horizontal terminals(DR)(standard) ☐ Vertical terminals(DR-VT) AE2000-SWA / AE4000-SWA AE4000-6300-SW ☐ Front terminals(DR-FT) Note4															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"> Electronic trip relay(ETR) ☐ With ETR Type - </td> <td colspan="2"> Additional function P.32 ☐ Extension module(EX1) ☐ Display(DP1) ☐ Display onto panel board(DP2) ☐ VT unit(VT) ☐ Temperature alarm(TAL) ☐ MCR switch(MCR-SW) </td> </tr> <tr> <td style="width: 25%;"> Main setting module <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">WM1</td> <td>AE630-1600-SW, AE2000-3200-SW, AE4000-SW</td> </tr> <tr> <td>WM2</td> <td>AE2000-SWA, AE4000-SWA, AE5000-SW</td> </tr> <tr> <td>WM3</td> <td>AE6300-SW</td> </tr> </table> WM: Generator protection use Specify a setting value,if required. P.23,24,27-29 LTD pick-up current : IL LTD time: TL STD pick-up current : Isd STD time: Tsd INST pick-up current:li Pre-alarm current:lp Others () </td> <td style="width: 25%;"> Optional setting module G1: Ground fault protection Note6 N5: Neutral pole 50% protection Note7 E1: Earth leakage protection AP: 2nd Additional Pre-alarm NA: Without optional setting </td> <td style="width: 25%;"> Power supply P1: AC-DC100-240V P2: DC24-60V P3: AC100-240V / DC100-125V with output contact P4: DC24-60V with output contact P5: DC100-240V with output contact (SSR) ☐ Neutral CT(NCT) Note8 ☐ External ZCT Note9 P.28 ZCT ZT B ZTA </td> <td style="width: 25%;"> Network P.33 ☐ BIF-CC ☐ BIF-PR ☐ BIF-MD ☐ BIF-CON ☐ BIF-CL Wire system (when EX1 is specified) EX1 ☐ 3φ3W ☐ 3φ4W ☐ Normal connection : Note13 ☐ Inverse connection : Note14 </td> </tr> </table>				Electronic trip relay(ETR) ☐ With ETR Type - 		Additional function P.32 ☐ Extension module(EX1) ☐ Display(DP1) ☐ Display onto panel board(DP2) ☐ VT unit(VT) ☐ Temperature alarm(TAL) ☐ MCR switch(MCR-SW)		Main setting module <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">WM1</td> <td>AE630-1600-SW, AE2000-3200-SW, AE4000-SW</td> </tr> <tr> <td>WM2</td> <td>AE2000-SWA, AE4000-SWA, AE5000-SW</td> </tr> <tr> <td>WM3</td> <td>AE6300-SW</td> </tr> </table> WM: Generator protection use Specify a setting value,if required. P.23,24,27-29 LTD pick-up current : IL LTD time: TL STD pick-up current : Isd STD time: Tsd INST pick-up current:li Pre-alarm current:lp Others ()	WM1	AE630-1600-SW, AE2000-3200-SW, AE4000-SW	WM2	AE2000-SWA, AE4000-SWA, AE5000-SW	WM3	AE6300-SW	Optional setting module G1: Ground fault protection Note6 N5: Neutral pole 50% protection Note7 E1: Earth leakage protection AP: 2nd Additional Pre-alarm NA: Without optional setting	Power supply P1: AC-DC100-240V P2: DC24-60V P3: AC100-240V / DC100-125V with output contact P4: DC24-60V with output contact P5: DC100-240V with output contact (SSR) ☐ Neutral CT(NCT) Note8 ☐ External ZCT Note9 P.28 ZCT ZT B ZTA	Network P.33 ☐ BIF-CC ☐ BIF-PR ☐ BIF-MD ☐ BIF-CON ☐ BIF-CL Wire system (when EX1 is specified) EX1 ☐ 3φ3W ☐ 3φ4W ☐ Normal connection : Note13 ☐ Inverse connection : Note14
Electronic trip relay(ETR) ☐ With ETR Type - 		Additional function P.32 ☐ Extension module(EX1) ☐ Display(DP1) ☐ Display onto panel board(DP2) ☐ VT unit(VT) ☐ Temperature alarm(TAL) ☐ MCR switch(MCR-SW)															
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WM1	AE630-1600-SW, AE2000-3200-SW, AE4000-SW																
WM2	AE2000-SWA, AE4000-SWA, AE5000-SW																
WM3	AE6300-SW																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;"> Electrical accessories P.12-14 ☐ Auxiliary switch A and B contacts in the same quantity are used. Max. quantity: 5 each for A and B contacts ☐ Standard (AX) : 2 or 4 or 6 or 8 or 10 ☐ High capacity(HAX) : 2 or 4 or 6 or 8 or 10 ☐ Motor charging(MD) ☐ AC・DC100-125V ☐ AC・DC200-250V ☐ DC24V ☐ DC48V Note10 ☐ Closing coil(CC) ☐ AC・DC100-250V ☐ DC24-48V ☐ Shunt trip device (SHT) ☐ AC・DC100-250V ☐ AC380-500V ☐ DC24-48V ☐ Under voltage trip device(UVT) ☐ AC100-120V ☐ AC200-240V ☐ AC380-460V ☐ DC24V ☐ DC48V ☐ DC100-110V ☐ DC120-125V Time delay ☐ Inst(INST) ☐ 0.5s(05) ☐ 3.0s(30) Note:In case of 380-460V AC, the external transformer is attached </td> <td style="width: 60%;"> Mechanical accessories P.15-16 ☐ Push button cover(BC-L) ☐ Counter(CNT) ☐ Cylinder lock(CYL) ☐ Door interlock(DI) Note11 ☐ Terminal cover(TTC) ☐ Door frame(DF) ☐ Dust cover(DUC) ☐ Interphase barrier(BA) Note12 ☐ for 2units(MI2) ☐ Mechanical interlock(MI) ☐ for 3units(MI3) Note11 </td> </tr> </table>				Electrical accessories P.12-14 ☐ Auxiliary switch A and B contacts in the same quantity are used. Max. quantity: 5 each for A and B contacts ☐ Standard (AX) : 2 or 4 or 6 or 8 or 10 ☐ High capacity(HAX) : 2 or 4 or 6 or 8 or 10 ☐ Motor charging(MD) ☐ AC・DC100-125V ☐ AC・DC200-250V ☐ DC24V ☐ DC48V Note10 ☐ Closing coil(CC) ☐ AC・DC100-250V ☐ DC24-48V ☐ Shunt trip device (SHT) ☐ AC・DC100-250V ☐ AC380-500V ☐ DC24-48V ☐ Under voltage trip device(UVT) ☐ AC100-120V ☐ AC200-240V ☐ AC380-460V ☐ DC24V ☐ DC48V ☐ DC100-110V ☐ DC120-125V Time delay ☐ Inst(INST) ☐ 0.5s(05) ☐ 3.0s(30) Note:In case of 380-460V AC, the external transformer is attached	Mechanical accessories P.15-16 ☐ Push button cover(BC-L) ☐ Counter(CNT) ☐ Cylinder lock(CYL) ☐ Door interlock(DI) Note11 ☐ Terminal cover(TTC) ☐ Door frame(DF) ☐ Dust cover(DUC) ☐ Interphase barrier(BA) Note12 ☐ for 2units(MI2) ☐ Mechanical interlock(MI) ☐ for 3units(MI3) Note11												
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Country / Region	Company	Address	Telephone
Australia	Mitsubishi Electric Australia Pty. Ltd	348 Victoria Road, Rydalmere, N.S.W. 2116, Australia	+61-2-9684-7586
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Denmark	Louis Poulsen CO. A/S	Geminivej 32, DK-2670 Greve, Denmark.	+45-(0)43-95-95-95
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Myanmar	PEACE MYANMAR ELECTRIC CO., LTD.	NO. 137/139 Botataung Pagoda Road, Botataung Town Ship 11161, Yangon, Myanmar.	+95-(0)1-202589, 202449, 202590
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Vietnam	SA GIANG TECHNO CO., LTD.	47-49 Hoang Sa St., Da Kao Ward, D.1, HCMC	+84-8-910 4763 / 4758 / 4759

Safety Tips : Be sure to read the instruction manual fully before using this product.