



US Panorama

New SACE Emax 2 UL 1066 From Circuit Breaker to Power Manager

Power and productivity
for a better world™



Circuit breakers switch power SACE Emax 2 manages it

Emax 2 is the new benchmark of power circuit breakers that not only monitors power, but has evolved into a true power manager. While meeting or exceeding all the standard performances and functions that the market has come to expect from a circuit breaker, Emax 2 also contains several leading-edge features that enable it to decisively stand apart from the competition. With Emax 2, ABB has created the perfect blend of control, connectivity, safety and performance that not only meets today's needs of efficiency, but anticipates the needs of tomorrow.



Control

SACE Emax 2 power circuit breakers for UL 1066 up to 6000A have been designed to increase efficiency in all installations: from industrial and naval applications to traditional and renewable power generation installations, buildings, data centers and shopping centers. Reliable protection and systems managed with confidence.

Connectivity

SACE Emax 2 series circuit breakers have been designed to be integrated directly into all types of switchgear and automation and energy management systems to improve productivity and energy consumption. Complete integration into smart grids, in buildings and industrial plants is possible.



Ease of use

Simplified installation and maintenance. SACE Emax 2 circuit breakers are equipped with protection trip units containing a large color touch screen display for maximum ease of use. Productivity is increased while all stages, from design to daily operations, are simplified.

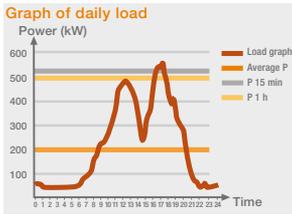
Performance

SACE Emax 2 power circuit breakers offer tailored performance to meet the demands of today's installations. Four sizes are available for creating switchgear of compact dimensions and high performance, with busbars of optimized length and cross-sections.

Control

Load Management

The Ekip Power Controller uses a patented algorithm to determine the average energy absorbed over a period of time. It then controls a load list to help maintain a maximum power consumption limit set by the user, helping to reduce energy costs.



Generator Protection

Ekip G offers true generator protection in a one box solution. It is designed around the IEEE & ANSI standards required by today's industry and eliminates the installation, wiring, and external accessories traditional solutions necessitate.

Performance

Optimization

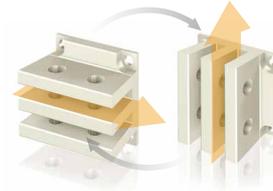
With efficiency at the forefront of the strategy, the entire line of Emax 2 has been optimized to fit the market performance requirements in 4 simple sizes.



Connectivity

Communication

Emax 2 offers 7 of the most popular protocols in communication and automation in a simple, single cartridge design. Today's electrical industry demands more interoperability. IEC61850 is an emerging global communication solution which is helping to standardize communications integration between a growing number of industry systems and architectures.



Power Terminals

The rear terminals of Emax 2 can be rotated in the field from horizontal to vertical. They are specifically designed to fit the most common bus configurations for easy connection and installation with less bus bar stock required.

Ease of Use

Navigation

Emax 2 is the first circuit breaker to offer a large color touch screen trip unit display that provides clear and easy navigation. It can even be programmed and consulted from a tablet, smart phone or PC via the Ekip Connect application.



Control Wiring

New push in terminal box technology makes wiring easy, tool free, and safe.

Safety

Emax 2 cradles introduce dedicated guide rails that extend forward so that the breaker can be easily and securely positioned and inserted. New locking lifting plates and racking position locks add to the new and innovative safety design.



Trip Units

The trip units are field interchangeable, creating the flexibility and potential for easy and rapid upgrades without the added cost of a service technician.

Rating (508V)	Version	800 or lower	1200	1600	2000	2500	3200	4000	5000	6000
200	X-A									
125-150	L-A								E6.2	
100	V-A						E4.2			
85	H-A									
65	S-A			E2.2						
50	N-A	E1.2								
42	B-A									



Protection trip units	Ekip Dip	Ekip Touch	Ekip Hi-Touch	Ekip G Touch	Ekip G Hi-Touch
Application					
Distribution	Protection	Protection and Measurement	Protection, Measurement and Network Analyzer	—	—
Power control	—	Protection and Measurement	Protection, Measurement and Network Analyzer	Protection and Measurement	Protection, Measurement and Network Analyzer
Generators	—	—	—	Protection and Measurement	Protection, Measurement and Network Analyzer

SACE Emax

Electrical characteristics.

Common data

Rated maximum voltage	[V]	635
Rated voltage	[V]	600
Test voltage (1min. 50/60 Hz)	[kV]	2.2
Frequency	[Hz]	50 - 60
Number of poles		3- 4
Version		Fixed (F) - Drawout (W)



SACE Emax 2 for UL1066

Performance levels			E1.2			E2.2				E4.2				E6.2					
			B-A	N-A	S-A	B-A	N-A	S-A	H-A	V-A	S-A	H-A	V-A	L-A	X-A	H-A	V-A	L-A	X-A
Current		[A]	800	800	250	1600	1600	800	800	250	2500	2500	800	800	1600	4000	4000	4000	4000
		[A]	1200	1200	400		2000	1200	1200	400	3200	3200	1600	1600	2000	5000	5000	5000	5000
		[A]			800			1600	1600	800			2000	2000	2500	6000	6000	6000	6000
		[A]			1200			2000	2000	1200			2500	2500	3200				
		[A]								1600			3200	3200					
Neutral pole current-carrying capacity for 4 pole CBs										100	100	100	100	100	100	50-100	50-100	50-100	50-100
Interrupting rating at rated maximum voltage	254 V	[kA]	42	50	65	42	50	65	85	100	65	85	100	125	200	85	100	150	200
	508 V	[kA]	42	50	65	42	50	65	85	100	65	85	100	125	200	85	100	150	200
	635 V	[kA]	42	42	42	42	50	65	85	85	65	85	100	100	200	85	100	100	200
Rated short time current		[kA]	42	50	50	42	50	65	85	85	65	85	100	100	50	85	100	100	100
Trip times	Break time with fault current < rated short time current	[ms]	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	Break time with fault current > rated short time current	[ms]	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Overall dimensions	H - Fixed	[in/mm]	11.65 / 296			14.61/371				14.61/371				14.61/371					
	D - Fixed	[in/mm]	7.20 / 183			10.63/270				10.63/270				10.63/270					
	W - Fixed 3p	[in/mm]	8.27 / 210			10.87/276				15.12/384				30.00/762					
	W - Fixed 4p/4p full size	[in/mm]	11.02 / 280			14.41/366				20.08/510				34.96/888 - 39.92/1014					
	H - Draw out	[in/mm]	14.33 / 363.5			16.73/425				16.73/425				16.73/425					
	D - Draw out	[in/mm]	11.06 / 281			15.47/393				15.47/393				15.47/393					
	W - Draw out 3p	[in/mm]	10.94 / 278			12.48/317				16.73/425				31.61/803					
W - Draw out 4p/4p full size		[in/mm]	13.70 / 348			407/16.02				21.69/551				36.57/929 - 42.09/1069					
Weights	Fixed 3p / 4p / 4p full size	[lbs/Kg]	30.9/35.3 lbs - 14/16 kg			115/148 lbs - 52/67 Kg				Up to 2500A: 161/203 lbs - 73/92 kg 3200A: 201/256 lbs - 91/116 kg				314/360/406 lbs 142/163/184 kg					
	Draw out 3p / 4p / 4p full size	[lbs/Kg]	90.4/102.5 lbs - 41/46.5 kg			up to 1600A: 128/150 lbs - 58/68 Kg 2000A: 135/239lbs - 61/108kg				Up to 2500A: 261/325 lbs - 118/147 kg 3200A: 300/377 lbs - 136/171 kg				486/554/620 lbs 220/251/281 kg					

SACE Emax 2 for UL1066

Mechanical life with regular ordinary maintenance prescribed by the manufacturer			E1.2			E2.2				E4.2				E6.2			
			< 800	800	1200	< 1600	1600	2000	< 2500	2500	3200	4000	5000	6000			
		[A]	< 800	800	1200	< 1600	1600	2000	< 2500	2500	3200	4000	5000	6000			
		[No. cycles x 1000]	20	20	20	25	25	25	20	20	20	12	12	12			
	Frequency	[Cycles/Hour]	60	60	60	60	60	60	60	60	60	60	60	60			
Electrical life with regular ordinary maintenance prescribed by the manufacturer	508 V	[No. cycles x 1000]	8	8	8	15	12	10	10	8	7	4	3	2			
	635 V	[No. cycles x 1000]	8	8	6.5	15	10	8	10	8	7	4	2	2			
	Frequency	[Cycles/Hour]	30	30	30	30	30	30	20	20	20	10	10	10			



Today's Evolving Industry demands: Performance, Precision & Reliability
ABB's response is: Emax 2

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