

Low Voltage Air Circuit Breakers



PSL Series

800A to 4000A



Powering Business Worldwide



Eaton's vision is to improve quality of life and the environment through the use of power management technologies and services.

- We are dedicated to developing our employees by helping them succeed not just at work, but in life as well.
- We delight our customers by understanding their challenge and proactively delivering real solutions.
- We deliver for our shareholders by doing what's right, so investors want to own more shares in our company.
- We support our communities by providing products and solutions that can improve quality of life and the environment; we also offer our time, talent and resources to satisfy social and economic needs where we work and live.

Eaton

Eaton is dedicated to improving quality of life and the environment using power management technologies and services. We provide a variety of sustainable solutions to help customers manage electrical, fluid and mechanical power more safely, efficiently and reliably.

With its headquarters located in Dublin, Ireland, Eaton is comprised of an Electrical Sector and an Industrial Sector. In 2021, Eaton's sales reached USD 19.6 billion. It had approximately 85,000 employees worldwide and products covering more than 170 countries. Eaton's businesses in utilities, infrastructure, data centers, machinery OEM's, oil and gas have all been growing steadily across the Asia-Pacific region.

Electrical Sector

- Electrical Products
- Electrical Systems and Services

2021 SALES
USD **12.8** BILLION

Industrial Sector

- Aerospace
- Hydraulics – Filtration
- Vehicle
- eMobility vehicle electrification

2021 SALES
USD **6.9** BILLION

SALES
USD **19.6** BILLION

NET INCOME
USD **2.1** BILLION

EARNING PER SHARE
USD **5.34** Per Share

Technical Datasheet

PSL Series ACB 800A to 4000A



PSL Series ACB

Range: 800A to 4000A
Breaking Capacity: 55kA

Trip Unit

Mic 1.0: Standard Type (Digital Display)
Mic 2.0: Multi-function type (LCD Display)
Mic 5.0: Intelligent controller with communication (LCD Display)

Key technical data of the circuit breakers

Frame size	2000	4000 *
Rated operating current In A	800, 1000, 1250, 1600 & 2000	2500, 3200 & 4000
Neutral Pole Rated Current In (%)	100%	
Rated insulation voltage Ui Vac	1000	
Rated impulse withstand voltage Uimp kV	12	
Rated operational voltage Ue Vac	415	415
Rated ultimate short-circuit breaking capacity Icu kA	55	55
Rated operating short-circuit breaking capacity Ics kA	55	55
Rated short-time withstand current Icw kA (1s)	55	55
Rated short-circuit making capacity Icm (kA)	121	121
Standard	IEC 60947-2	
Suitability for isolation (IEC 60947-2)	Yes	
Utilisation category	B	
Pollution degree	3	
Number of poles 3/4	3/4	
Breaking time (ms)	< 30	
Closing time (ms)	< 70	
Electrical Life	6000	*
Mechanical Life	20000	*
Protection	overload, short-circuit & ground fault	
Reference Ambient Temperature °C without correction factor	-5 to +40	
Maximum altitude for installation without correction factor (m)	2000	
Terminal Connection	Horizontal / Vertical *	

Dimensions H x W x D (mm)

Drawout

3-pole	436 x 405 x 458	*
4-pole	436 x 500 x 458	*

Fixed

3-pole	402 x 366 x 360	*
4-pole	402 x 461 x 360	*

Accessories

Auxiliary Switch	Yes	Yes
Fault trip indication contact	Yes	Yes
Closing Coil	Yes	Yes
Shunt Release	Yes	Yes
Under Voltage release	Yes	Yes
Key locks and padlocking	Yes	Yes
Motor mechanism	Yes	Yes
Mechanical interlock	Yes	Yes

* Contact nearest sales office for more details

Trip Unit Functions

PSL Series ACB
Range: 800A to 4000A
Breaking Capacity: 55kA



Parameters	Standard functions	Mic 1.0 Standard type Digital Display	Mic 2.0 Multi-function type LCD Display	Mic 5.0 Intelligent type LCD Display with communication
Basic Protection	Overload long delay protection	✓	✓	✓
	Short-circuit short delay protection	✓	✓	✓
	Short circuit instantaneous protection	✓	✓	✓
	Grounding protection (differential type)	✓	✓	✓
	Neutral line protection (4P, 3P+N)	-	-	✓
Current	Overload thermal memory	✓	✓	✓
	Current unbalance protection	-	✓	✓
	Load monitoring	-	✓	✓
	MCR PROTECTION	✓	Optional	✓
	Thermal capacity measurement	-	-	✓
	Current measurement (phase pole, N pole)	-	-	✓
	Phase protection	-	-	✓
	Phase sequence detection	-	-	✓
Power	Demand measurement (power)	-	-	✓
	Power measurement (active power, reactive power, apparent power)	-	-	✓
	Power factor measurement	-	-	✓
Energy	Energy measurement (active energy, reactive energy, apparent energy)	-	-	✓
Voltage	Under-voltage and over-voltage protection	-	-	✓
	Voltage unbalance protection	-	Optional	✓
Frequency	Under-frequency, over-frequency protection	-	-	✓
	Frequency measurement	-	-	✓
Harmonics	Harmonic measurement	-	-	✓
Measurement	LED FAULT STATUS INDICATION	✓	✓	✓
	Fault record and query	✓	✓	✓
	Historical current peak record	✓	✓	✓
	Alarm history record query	✓	✓	✓
	Fault trip signal output	✓	✓	✓
	Contact wear equivalent (alarm)% query	✓	✓	✓
	Number of operations query	-	✓	✓
	Clock function	-	✓	✓
	I/O setting function	-	✓	✓
Miscellaneous	Self-diagnosis function	✓	✓	✓
	Password setting function	-	✓	✓
	Simulation trip test function	-	-	✓
	USB interface function	✓	✓	✓
	Communication (MODBUS-RTU)	-	-	✓

Optional Functions

PSL ACB
Range: 800A to 4000A
Breaking Capacity: 55kA

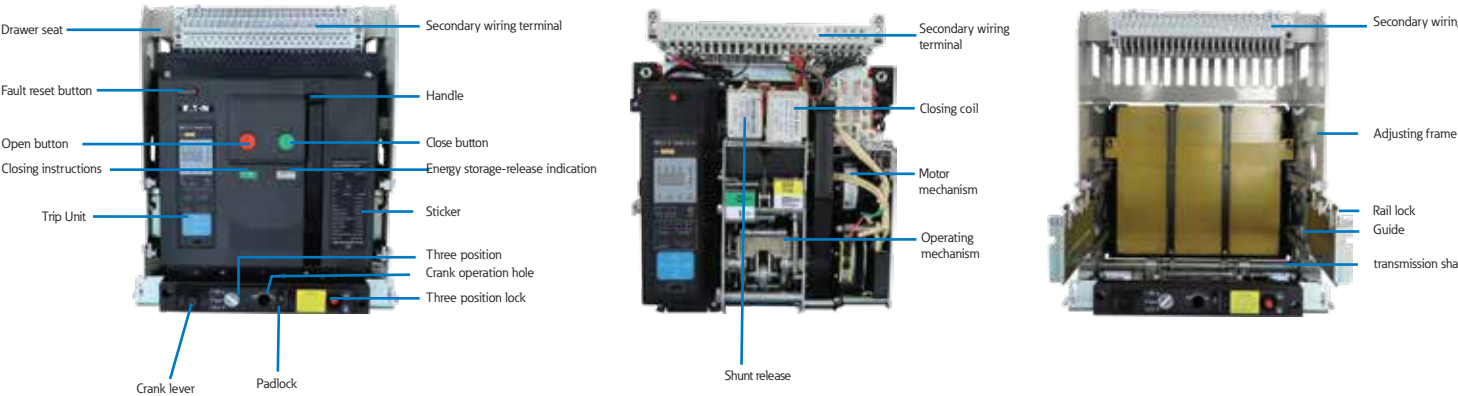
				
Parameters	Standard functions	Mic 1.0 Standard type Digital Display	Mic 2.0 Multi-function type LCD Display	Mic 5.0 Intelligent type LCD Display with communication
Optional Features	Overload pre-alarm	✓	✓	✓
	Grounding alarm	✓	✓	✓
	Over-temperature environment (-40℃ ~ +70℃)	✓	✓	✓
	Remote controller reset	✓	✓	✓
	Over temperature protection and alarm	-	✓	✓
	Zone selectivity interlocking	-	✓	✓
	Residual current protection	-	✓	✓
	Voltage (phase voltage, line voltage, voltage unbalance rate)	-	✓	✓
	Under voltage, over voltage protection	-	✓	-
	Phase sequence protection	-	✓	-
	Under frequency, over frequency protection	-	✓	-
	Reverse power protection	-	✓	-

ACB Nomenclature

PSL5083SDMXXA

123	4 : Breaking Capacity	5 & 6 : Rated current	7 : Pole	8 : Trip Unit	9 : Mounting Form	10 : Motor Mech	11 : Shunt	12 : Closing Coil	13 : UV Coil	14: Aux Contact Block
PSL	5: 55 KA	08: 800A	3: 3P	S: Standard Mic 1.0	D: (Drawout Breaker with Horizontal Terminal)	A: 230V AC	A: 230V AC	A: 230V AC	A: 230V AC	A: 4No+4NC
		10: 1000A	4: 4P	M: Multi-function Mic 2.0	F: (Fixed Breaker with Horizontal Terminal)	B: 400V AC	B: 400V AC	B: 400V AC	B: 400V AC	B: 6NO+6NC
		12: 1250A		I: Intelligent Mic 5.0		C: 220V DC	C: 220V DC	C: 220V DC	X: No UV Coil	
		16: 1600A				D: 110V DC	D: 110V DC	D: 110V DC		
		20: 2000A				E: 24V DC	E: 24V DC	E: 24V DC		
		25: 2500A				M : Manual Breaker	X: No Shunt	X: No Closing Coil		
		32: 3200A								
		40: 4000A								

Structure



Accessory functions and characteristics

Closing Coil



When the circuit breaker has completed the energy storage operation and is in the normal opening state, the closing coil can be used to remotely control the circuit breaker to quickly close the circuit breaker.

Operating Voltage U_s	AC 230V	AC 400V	DC 24V	DC 220V	DC 110V
Part Code	ETN-0020701003	ETN-0020701049	ETN-0020701046	ETN-0020701048	ETN-0020701047
Operating Voltage Range	(85 ~ 110)% U_s				
Starting Current	1.3A	0.7A	*	1.3A	2.5A
Circuit breaker response time	$\leq 60\text{ms}$				

Shunt Release



When the circuit breaker is in the closed state, the shunt release can be remotely controlled to make the circuit breaker open quickly.

Operating Voltage U_s	AC 230V	AC 400V	DC 24V	DC 220V	DC 110V
Part Code	ETN-0020701004	ETN-0020701045	ETN-0020701042	ETN-0020701044	ETN-0020701043
Operating Voltage Range	(70 ~ 110)% U_s				
Starting Current	1.3A	0.7A	*	1.3A	2.5A
Circuit breaker response time	$\leq 60\text{ms}$				

Undervoltage Release



When the under-voltage release is not powered, the circuit breaker cannot be closed; the under-voltage release of 2000A frame and above has two types: with delay and without delay.

Working Voltage U_e	AC 230V	AC 400V
Part Code	ETN-0020701007	ETN-0020701053
Opening Voltage Range	(35 ~ 70)% U_e	
Reliable Voltage range	(85 ~ 110)% U_e	
Can not close the Voltage range	$\leq 35\%$ U_e	
Power Consumption	20VA	

Phase Barrier



Vertically installed between the busbars of each phase of the circuit breaker to enhance the insulation capacity of the circuit breaker between phases.

Phase	3P	4P
Part Code	ETN-0020701062	ETN-0020701063

Auxiliary Switch



Default configuration: 4NO + 4NC

Other Types: 6NO + 6NC

Configuration	4NO+4NC	6NO+6NC
Part Code	ETN-0020701000	ETN-0020701054

Rated working Voltage	AC 230V	AC 400V	DC 110V	DC 220V
Thermal current (A)	6A			
Rated control capacity	300VA		60W	



Motor mechanism will restore the spring energy automatically after the circuit breaker is closed and keeps the breaker ready for next operation.

Operating Voltage Us	AC 230V	AC 400V	DC 24V	DC 110V	DC 220V
Part Code	ETN-0020701002	ETN-0020701041	ETN-0020701039	ETN-0020701040	ETN-0020701070
Operating Voltage Range	(85 ~ 110)% Us				
Energy storage time	≤7s(Cycle period: ≤1 time/min)				
PSL-2000 Power consumption	85VA		85W		
PSL-4000 Power consumption	110VA		110W		

Key lock



Circuit breaker unlocking operation:

When the gap on the key corresponds to the red dot position of the lock, the key can be inserted into the lock. Turn the key clockwise to the rightmost position to handle the unlocked state. At this time, the key cannot be pulled out directly, and the circuit breaker can be closed.

Circuit breaker lock operation:

first press the breaker opening button, and then turn the key counter clockwise to the leftmost position to remove the key. At this time, the circuit breaker cannot be closed.

Method 1: One power supply and one load

Circuit diagram Possible modes of operation



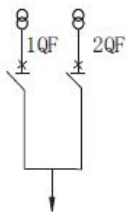
QF
0
1

Note 1: QF means PSL circuit breaker; 0 means circuit breaker is open; 1 means circuit breaker is closed.

One lock and one key:
A circuit breaker is equipped with a lock and a key, and the circuit breaker is not allowed to close in the locked state.

Method 2: Two power sources and one load interlock

Circuit diagram Possible modes of operation

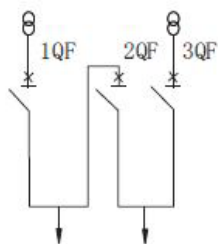


1QF	2QF
0	0
1	0
0	1

Two locks and one key:
Two circuit breakers are equipped with two identical locks and one key; only one circuit breaker is allowed to close

Method 3: Two-way power supply and two-way load interlocking

Circuit diagram Possible modes of operation

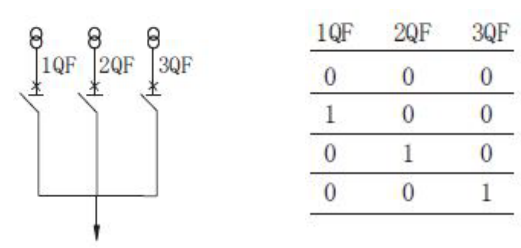


1QF	2QF	3QF
0	0	0
1	0	0
0	0	1
1	1	0
1	0	1
0	1	1

Three locks and two keys:
Three circuit breakers are equipped with three identical locks and two keys; only two circuit breakers are allowed to close at most.

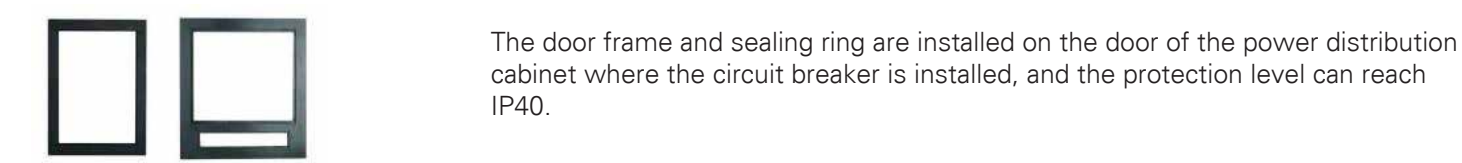
Method 4: Three power supplies and one load interlocking

Circuit diagram Possible modes of operation

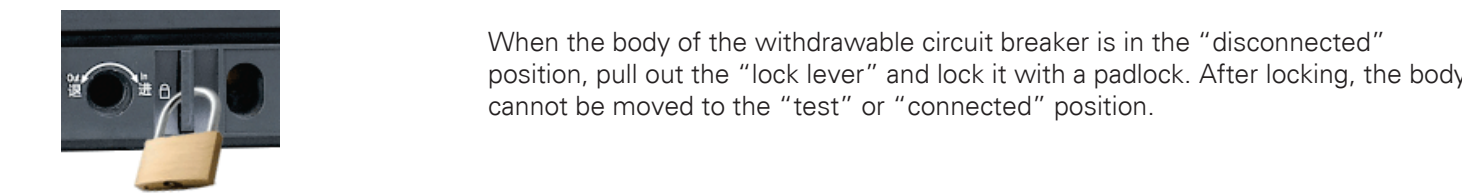


Three locks and one key:
Three circuit breakers are equipped with three identical locks and one key; only one circuit breaker is allowed to close.

Door frame + sealing ring



Drawer operation padlock



Temperature Derating Factor

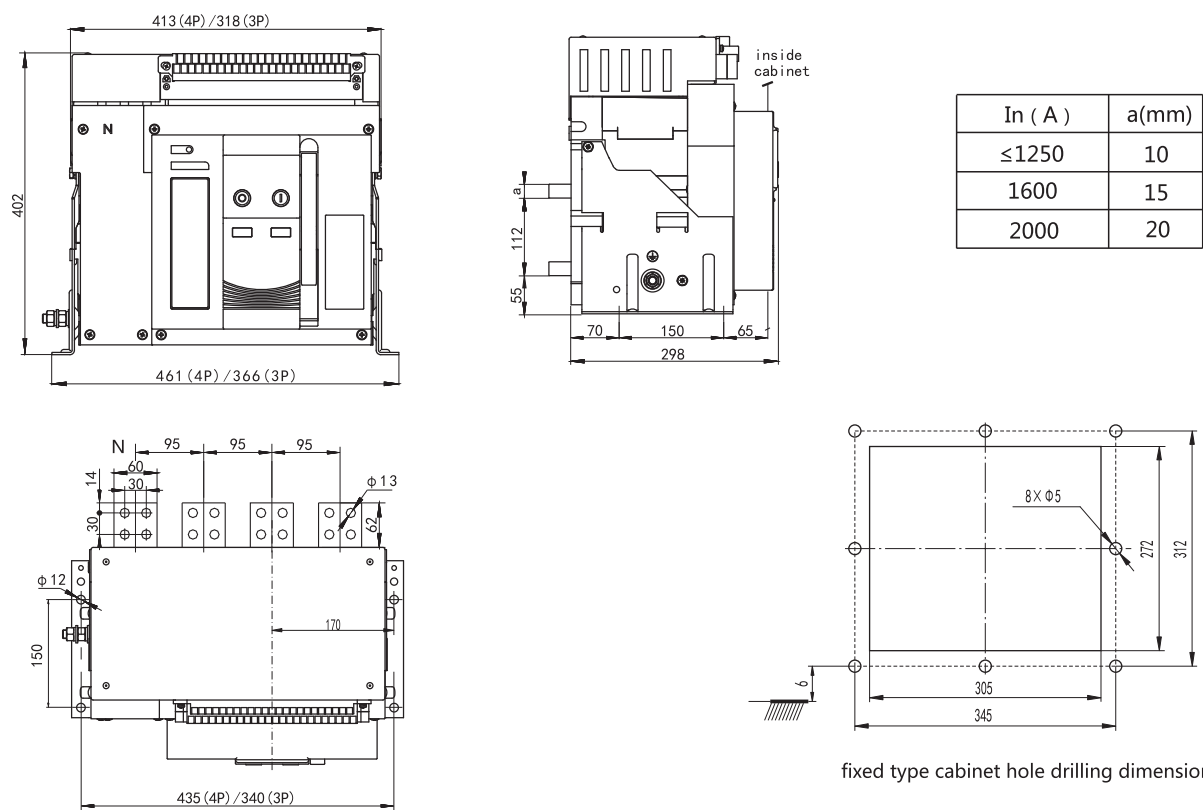
Inquiry table for derating operating current with changes in ambient temperature

Frame grade (A)	Rated current (A)	Working current after derating (A)			
		40 degree C	50 Degree C	60 degree C	70 degree C
2000	800	800	800	800	800
	1000	1000	1000	1000	1000
	1250	1250	1250	1250	1250
	1600	1600	1600	1600	1600
	2000	2000	1700	1700	1600
4000	2500	2500	2400	2300	2200
	3200	3200	3000	3000	2900
	4000	4000	3400	3400	3200

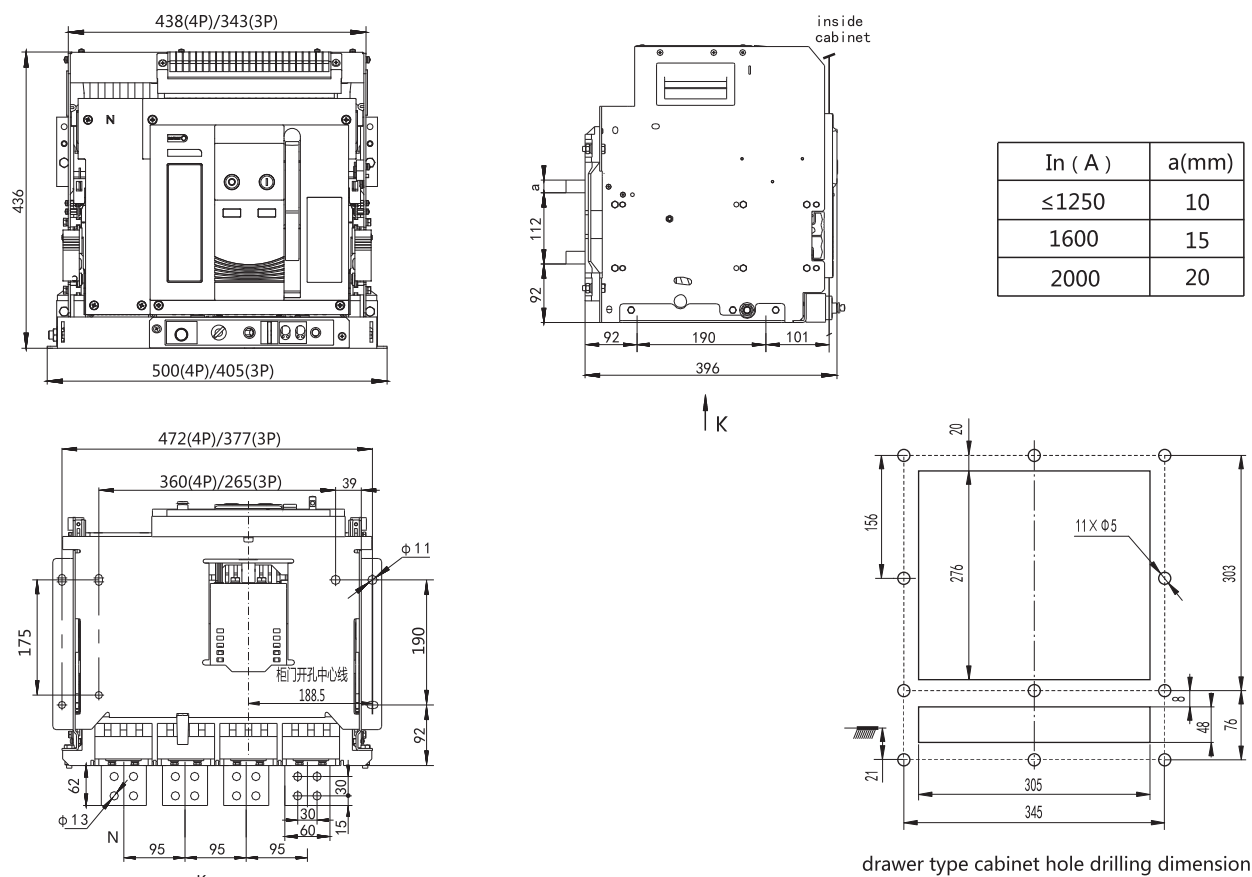
Altitude Derating Factor

Altitude (M)		2000	3000	4000	5000
Related items Derating factor	Working current Ie	1	0.93	0.88	0.82
	Short circuit breaking capacity Tcu, Ics	1	0.83	0.71	0.63
	Short circuit withstand capability Icw	1	0.83	0.71	0.63
	Rated impulse withstand voltage Uimp	1	0.9	0.71	0.63
	Power frequency withstand	1	0.9	0.71	0.63
	Rated insulation voltage Ui	1	0.85	0.85	0.8

• PSL - 2000 Fixed type and installation dimension



• PSL - 2000 Draw-out type and installation dimension



NOTES

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About EAT•N

Eaton's mission is to improve the quality of life and the environment through the use of power management technologies and services. Eaton provides sustainable solutions that help its customers effectively manage electrical and mechanical power – more safely, more efficiently, and more reliably. Eaton's 2021 revenues were \$19.6 billion, and the company sells products to customers in more than 175 countries. Eaton has approximately 85,000 employees. Eaton firstly established a presence in the Asia Pacific region during the 1970s. Since then, the company's presence has grown significantly with a fast-growing network of sales and marketing offices, manufacturing plants, service centers and research facilities in the region.

Today, we have nearly 17,000 employees, 6 R&D centers and manufacture in 34 manufacturing facilities in countries and regions including China, India, Japan, South Korea, Singapore, Indonesia, Thailand, Philippines and Australia for all of Eaton's distinct business.

Eaton Power Quality Private Limited, India is a 100% subsidiary and a part of electrical sector of Eaton Corporation. We are catering to every industrial segment with versatile solutions which includes Switchgear: LV & MV Solutions, Fusegear: LV & MV solutions, UPSs and software solutions

Operating in
175
countries

85,000+
employees

100+
years of
experience

\$19.6
Billion in
sales 2021

18,000+
patents

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1979 - 1994

POWERWARE

2004



2008



2013



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Integration with industry leaders save you time and money



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