

**Power Xpert® DX**

Low Voltage Power Distribution and Motor Control Center

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Low Voltage Power Distribution  
and Motor Control Center



**EATON**

*Powering Business Worldwide*



Automotive



Aerospace



Truck



Hydraulics



Electrical

# Powering business worldwide

Eaton delivers the power inside hundreds of products that are answering the demands of today's fast changing world.

We help our customers worldwide manage the power they need for buildings, aircraft, trucks, cars, machinery and entire businesses. And we do it in a way that consumes fewer resources.

## Next generation transportation

Eaton is driving the development of new technologies – from hybrid drivetrains and emission control systems to advanced engine components – that reduce fuel consumption and emissions in trucks and cars.

## Higher expectations

We continue to expand our aerospace solutions and services to meet the needs of new aviation platforms, including the high-flying light jet and very light jet markets.

## Building on our strengths

Our hydraulics business combines localized service and support with an innovative portfolio of fluid power solutions to answer the needs of global infrastructure projects, including locks, canals and dams.

## Powering Greener Buildings and Businesses

Eaton's Electrical Group is a leading provider of power quality, distribution and control solutions that increase energy efficiency and improve power quality, safety and reliability. Our solutions offer a growing portfolio of "green" products and services, such as energy audits and real-time energy consumption monitoring. Eaton's Uninterruptible Power Supplies (UPS), variable-speed drives and lighting controls help conserve energy and increase efficiency.





# Switchgear Technology is in our DNA

Eaton's knowledge and understanding of industries, applications, technology, and products enables us to offer customers safe, reliable, and high performance solutions.

We have always been part of the creation of new Low and Medium Voltage Switchgear technology, and that experience is in each and every one of us.

## **Eaton's Low Voltage Systems can meet the needs of any installation**

Eaton Low Voltage Systems are designed to be as space and energy efficient as possible while maintaining easy access for installation, operation and maintenance. Low Voltage Systems from Eaton are highly standardized systems supported by quick configurations, quoting facilities, and fast deliveries.

Eaton's comprehensive low voltage system product portfolio has been specifically designed to meet the needs of all types of installations. The extensive portfolio includes: Power Supply and Control Assemblies, Package Substations, Main and Sub-Main Switchboards, Busbar Trunking, Motor Control Centres, Power Factor Correction, and Engineered Assemblies.

As might be expected from such a comprehensive portfolio, Eaton's low voltage power distribution and control systems have been used in applications, such as: Water industries, Pharmaceutical industries, Industrial facilities, Food & Beverage, Infrastructure projects, Mining & Steel industry and Commercial applications such as: Shops, Schools, Hospitals, Warehouses, Hotels, Prisons, Data centers, and Sport stadiums.

## **Reliable, safe and standardized design**

Eaton's range of low voltage systems not only provides you with optimum power distribution and motor control functionalities, they meet your most demanding requirements for safety and flexibility. When it comes to safety, Eaton's low voltage systems offer the highest level of protection.

It is Eaton's policy that all products are subjected to rigorous testing and verification programs by, or under the supervision of, internationally recognized and respected third party organizations including: KEMA, ASTA, LOVAG and UL (Underwriters Laboratories). In addition to third party performance and quality verification many Eaton low voltage systems hold specialist approvals from: DNV, Lloyds, UL and KEMA.



# Overview



The Power Xpert® DX is a low-voltage switchgear that meets the latest IEC/GB standard manufactured by Eaton's original factory, with a current range of up to 6300A. The system provides reliable motor control and power distribution functionality, and widely used in all industrial and commercial applications

Innovative design combined with Eaton's expertise in low-voltage applications provides a new platform that becomes the core of motor control and power distribution applications. It is a compact, ergonomic, and very flexible system.

The performance of this new system includes a preventive operation/intelocking mechanism. The drawer has independent positions. To ensure the safety, IP2X is standard when the drawer is in any position. At the same time, it has an independent limit test position, which is convenient for operation.

Scissor contacts bring undamaged to the distribution busbars which is fully segregated. Achieving

the true maintenance-free. Wear only occurs on the drawer side scissor insert, and can be quickly replaced.

DX assembly can provide protection by means of arc tested zone and arc ignition protected zone with complying IEC TR 61641. Internal arc testing up to 100kA/0.5s.

DX is manufactured in Eaton's own global production facility. Relying on local knowledge and the support of multinational companies' diversified industrial organizations and experience, we can provide comprehensive services tailored to customer requirements, including consulting, engineering services to project management.

## Wide range of applications and the most demanding environment

Power Xpert® DX can be easily customized to meet various market segments. Even in the harshest conditions, DX switchgears can provide excellent performance and uncompromising safety. Combining DX with Eaton's medium voltage switchgear, UPS, Busway, and distribution boards, as well as project management and service, it has become a complete solution for customers worldwide.



Data center & IT



Oil&Gas



Industry



Commercial & Institutional



Infrastructure



# Features and Benefits

## Reliable in Operation

- Complete product design to comply with GB/T 7251.1/12 and IEC EN 61439-1/2;
- Third party tested and certified (Verification and validation by testing);
  - Temperature raise limits
  - Short circuit validation
  - Dielectric properties
  - Clearances and creepage distances
  - Protection against electric shock and integrity of protective circuits
  - Mechanical operation
  - Seismic, Internal Arc, Salt spray test
  - Degree of protection of enclosures
- Quality assurance in accordance with ISO9000, 14000;
- The system uses a full range of high-quality Eaton core components to ensure reliable operation;
- The seismic protection meets the requirements of AG2/AG5 to comply with IEC60068-3-3;
- The external degree of protection is IP42/54;
- Full insulation/full isolation of the distribution busbar is optional, maintenance-free design;
- Silver-plated scissor clamps ensure that there is no welding to the vertical bus in the event of high starting or short circuit currents.

## Friendly Interface

- "Slide and Guide" design enables optimal compartment alignment and ease of insertion and withdrawal;
- Economical design of the switchboard provides easy and clear understanding of functionality;
- Intuitive withdrawal mechanics of the compartments allows for easy and safe compartment insertion and withdrawal;
- Simple operator interface with passive safety features allow for safe operation;
- Withdrawable units can be quickly and easily exchanged without having to disconnect any power or control cabling.

## Safe in Operation

- The rated current of the main busbar is up to 6300A, Icw=100kA/1s, 65kA/3s;
- Patented interlock mechanism of withdrawable unit for operation with a clear connection/testing/disconnection positions. IP2X is guaranteed even if the drawer is on test position;
- Arc flash reduction maintenance system function can be installed to provide a higher level of safety for operator and power system;
- Full internal separation of all functional units designed in accordance with Form 3b/4b;
- The internal ARC protection is up to 100kA/0.5s, DX has the more advanced Arc ignition protected zone/Arc tested zone design, and tested according to IEC/TR 61641 criteria 1~7 to avoid the occurrence of arcing failures.

## System Flexibility

- Modular design, easy assembly;
- Small footprint with fixed/withdrawable type units;
- Symmetrical double distribution busbars design with fully segregated as optional;
- Flexible exchangeability;
- Easy to upgrade and extend the panels;
- Variable widths for cable ways;
- Stack-ACBs allowing compact footprint and cost reduction.

## Total Cost of Ownership

- Up to 28 feeders (63 A frame MCCB or FCS) or 28 motor starters (18.5 kW DOL) can be installed in one single section to reduce footprint and achieve maximum density;
- The rated current of distribution busbar is up to 2000A (double) and 1000A (single), Icw=100kA/s, allows high density installation;
- Front/Rear access, and against the wall installation;
- Compartments or devices can be quickly and easily changed to ensure maximum uptime for the business processes;
- The use of high-grade materials and components, reduces maintenance to a minimum.



# Basic Design

The construction of the Power Xpert DX is modular in nature. It is built custom to application parameters and has a broad feature-set that can be tailored to meet your reliability and safety requirements.

The DX platform has three major sections:

**1. The busbar compartment**  
 Located at the top of the structure where the horizontal and vertical busbars are found.

**2. The cabling section**  
 Located in a separate fully segregated cable chamber housing both control and power cable terminations.

**3. The equipment section**  
 At the front where the functional units are fitted.

The standard design is top mounting busbar, the system can be arranged for Front/Rear access, and also satisfy the installation to against wall. Cable can be connected from top/bottom. Arrangements for 'back to back' configurations are possible.



**Rear access**  
 Top/Bottom Cable entry



**Front access**  
 Top/Bottom cable entry

## Motor Control and Power Distribution Center

- 1. Communication cable duct
- 2. Meter compartment
- 3. Incomer/Feeder unit

- 4. Cable compartment
- 5. Main busbar compartment
- 6. Half-size drawer unit

- 7. Drawer unit
- 8. Rear access cable compartment
- 9. Head strip

- 10. Hinge
- 11. Lock
- 12. Front access cable compartment

# Main Busbar System

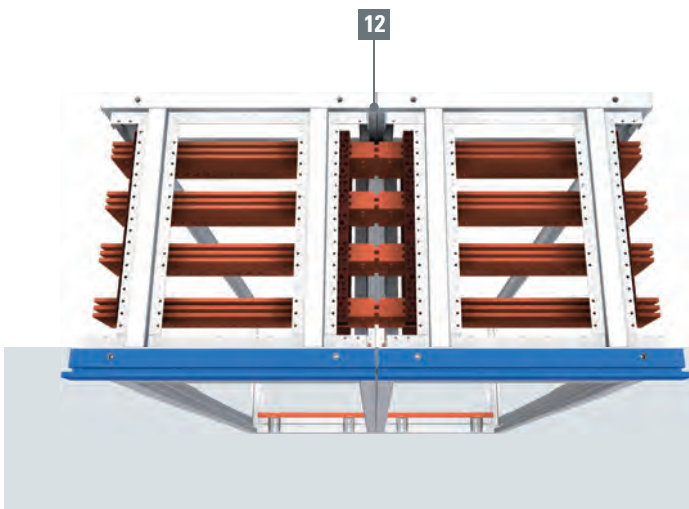
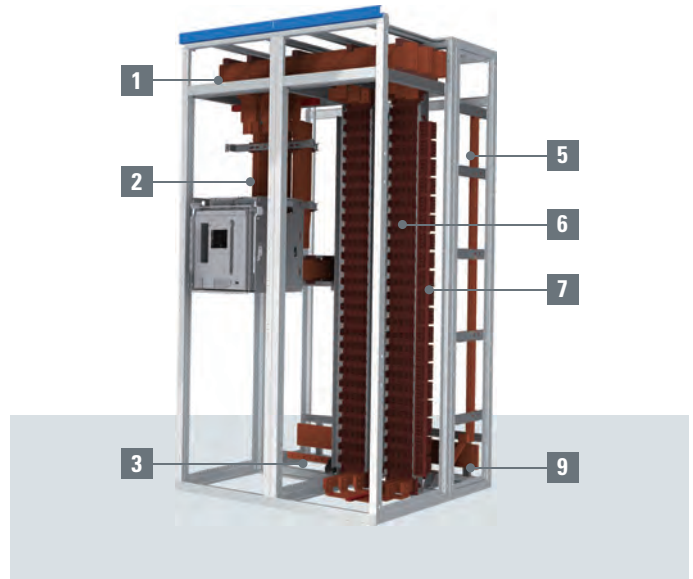
Power Xpert DX main busbars are arranged in a separate compartment to ensure the required form of separation and internal degree of protection.

The main busbar system is fully separated from function unit and cable compartment. The busbars are rated up to 6300A 100 kA /1s.

The busbar has two options: air insulation or composite insulation (Arc ignition protected zone as option)

On-site extension of the main busbar system can be easily and quickly accomplished with the appropriate busbar coupling no drilling is required.

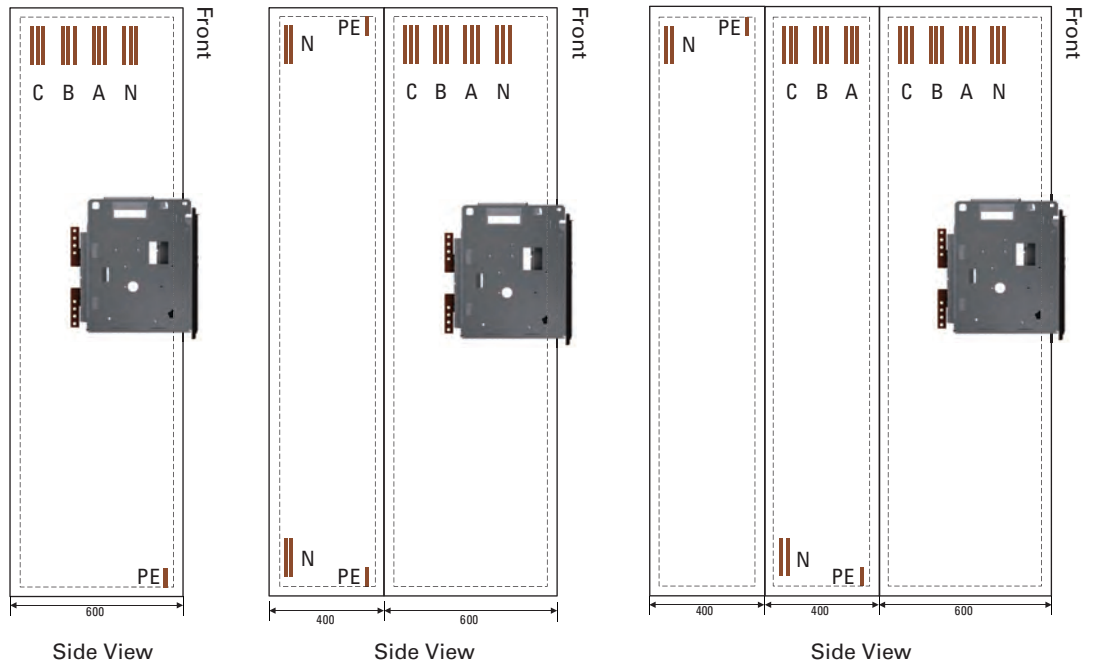
1. Main busbar
2. ACB branch busbar
3. Rear access PE
4. Front access N
5. Withdrawable panel rear access branch N, PE
6. Distribution busbar
7. Withdrawable panel cable connection terminals
8. Cable connection busbar
9. Rear access N
10. Withdrawable panel Front access branch N, PE
11. Front access PE
12. Coupling busbar



## Main busbar parameters:

Material	Insulation Type	Position	Main busbar Current	Short circuit capacity		
				I <sub>cw</sub> - 1s	I <sub>cw</sub> - 3s	I <sub>pk</sub>
Copper T2	Air Insulation or Composite Insulation	Front Top	630A	65 kA	30 kA	143 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	800A	65 kA	30 kA	143 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	1000A	65 kA	30 kA	143 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	1250A	65 kA	50 kA	143 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	1600A	65 kA	65 kA	143 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	2000A	80 kA	65 kA	176 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	2500A	80 kA	65 kA	176 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	3200A	80 kA	65 kA	176 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	3600A	80 kA	65 kA	176 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	4000A	100 kA	65 kA	220 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	5000A	100 kA	65 kA	220 kA
Copper T2	Air Insulation or Composite Insulation	Front Top	6300A	100 kA	65 kA	220 kA

# Main Busbar System



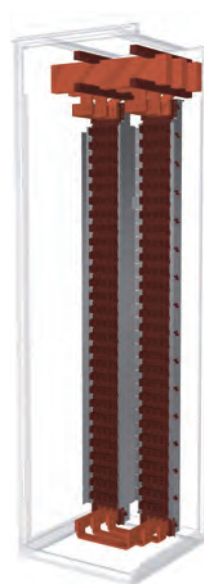
Main busbar position	Top	Top	Top
Neutral	Top/Bottom	Top/Bottom	Top/Bottom
PE	Bottom	Top/Bottom	Top/Bottom
Current Rating	Up to 3200A	Up to 5000A	6300A
Standard dimension(mm)			
Height	2200	2200	2200
Depth	600	1000/1200	1000/1400
Cable connection	Front access Bottom cable entry	Front/Rear access Bottom cable entry (1000mm depth) Top cable entry (1200mm depth)	Front/Rear access Bottom cable entry (1000mm depth) Top cable entry (1400mm depth)

# Distribution Busbar System

Fully enclosed symmetrical double bar structure with excellent materials. Maintenance free with scissor contactor technology. Up to 2000A with double / single structure. I<sub>cw</sub> up to 100kA/s. The maximum installation density is 28 half-size drawer units. Arc ignition protected zone as option.

## Rated current with cross-section

Rated current	I <sub>cw</sub>	Cross-section
630 A	Up to 50 kA/s	1 x 30 x 10 mm
800 A	Up to 65 kA/s	1 x 40 x 10 mm
1000 A	Up to 80 kA/s	1 x 50 x 10 mm
1200 A	Up to 80 kA/s	2 x 30 x 10 mm
1600 A	Up to 80 kA/s	2 x 40 x 10 mm
2000 A	Up to 100 kA/s	2 x 50 x 10 mm



Double full insulation distribution busbar



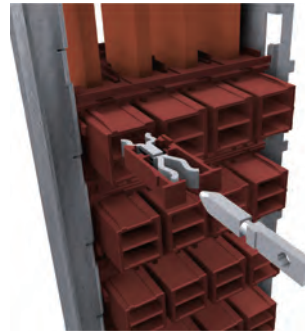
Single full insulation distribution busbar



# Motor Control and Power Distribution drawer unit

Drawer units satisfy DOL/FR/SD/Soft starter/VFD, the maximum installation is 28 half size drawer units. The internal separation is Form3b/4b.

Eaton's patented silver-plated scissor clamps, used for the connection of the outgoing units to the vertical busbar, eliminate contact wear on the bus itself. A special contact design ensures that there is no welding to the vertical bus in the event of high starting or short circuit currents. It also passed 1000 times mechanism endurance test, and the IP integrity IP2X is not compromised when the unit is in each position. The initiative test position is convenient for operation.



Silver-plated scissor clamps

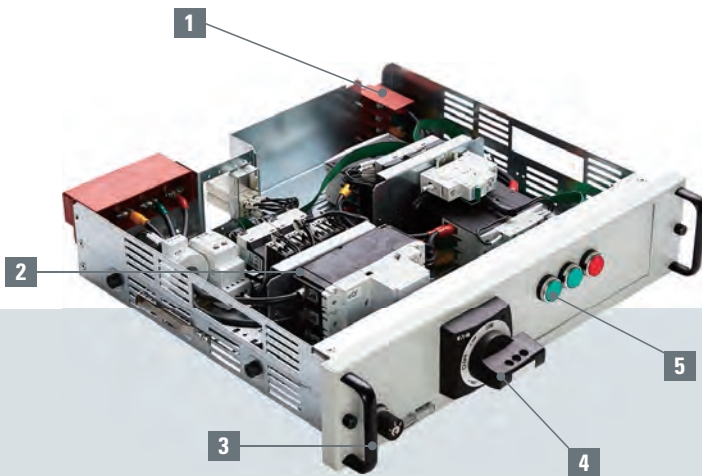


IP2X with draw out

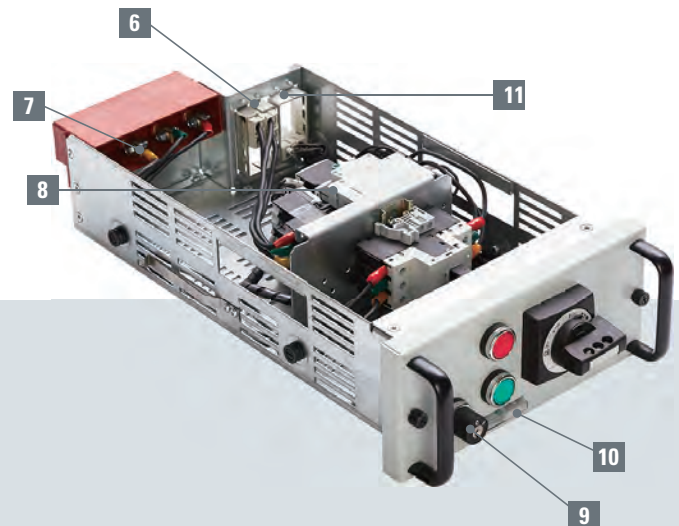
Unit Height	Unit Width	Motor starter	Feeder
125 mm -1/2	300 mm	15 kW	63 A
125 mm	600 mm	22 kW	125 A
187.5 mm -1/2	300 mm	15 kW	80 A
187.5 mm	600 mm	45 kW	160 A
250 mm	600 mm	75 kW	250 A
312.5 mm	600 mm	75 kW	400 A
375 mm	600 mm	110 kW	630 A
437.5 mm	600 mm	132 kW	630 A



Up to 28 units of half size drawers



Standard drawer unit  
Up to 22kW for motor starter



Half drawer unit  
Up to 15kW for motor starter

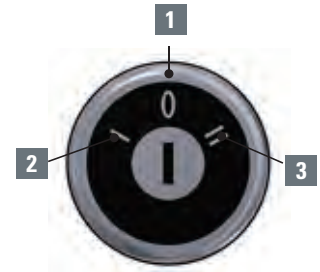
- 1. Load contacts
- 2. Main components installation area
- 3. Drawer handle
- 4. Circuit breaker handle

- 5. Control components installation area
- 6. Load contacts of half drawer
- 7. Line contacts
- 8. Auxiliary components installation area

- 9. Interlock button
- 10. Position indicator
- 11. Auxiliary contacts

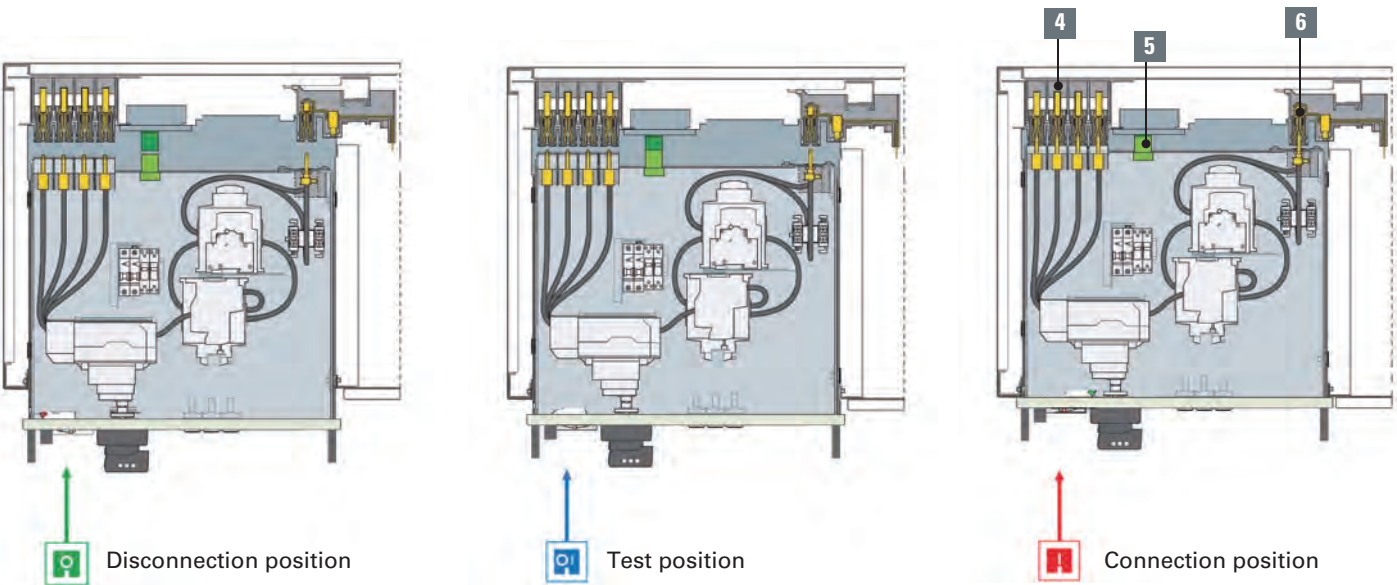
# Drawer Mechanism Interlock

Power Xpert™ DX drawer adopts mechanical position mechanism with special key. Ergonomically design of the switchboard provides easy and clear understanding of functionality. Withdrawable units can be quickly and easily exchanged without having to disconnect any power or control cabling.



	Disconnection	Testing	Connection
Line/Load contacts	Disconnected	Disconnected	Connected
Auxiliary contacts	Disconnected	Connected	Connected
Operation steps	1. Insert the key	4. Turn the key to "II" position	6. Turn the key to "0" position
Disconnection to connection	2. Turn the key to "I" position	5. Push drawer to connection position	7. Pull out the key
Operation steps	6. Turn the key to "0" position	4. Turn the key to "II" position	1. Insert the key
Connection to disconnection	7. Pull out the key	5. Pull drawer to disconnection position	2. Turn the key to "I" position
			3. Pull drawer to test position

1. Lock position
2. Move to "test" position
3. Move to "connection & disconnection" position
4. Line contacts
5. Auxiliary contacts
6. Load contacts



## Design philosophy of MCC Withdrawable units



### Type 2 Coordination

The International Electro-technical Commission (IEC) developed short circuit performance criteria for contactors and motor starters called Type 1 and Type 2 coordination. This standard defines motor controller protection levels following a short circuit fault.

#### Performance levels

Either Type 1 or Type 2 coordination are determined by the level of damage to components within a motor controller after a short circuit fault on the outgoing side

of the controller. The combination of a motor controller (contactor or starter) and short circuit protective device (manual motor protector, circuit breaker or fuse) must meet the following criteria as specified by IEC 60947-4-1.

Motor controllers with Type 1 coordination protection level are allowed to have significant damage after a short circuit and may not be suitable for further service without repair and replacement of parts.

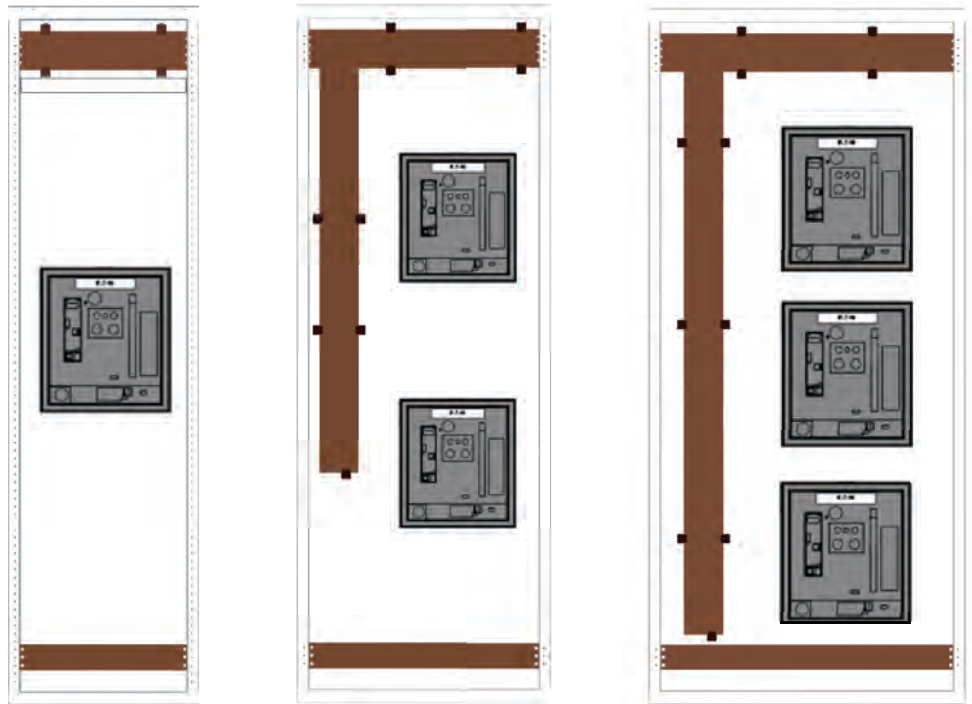
Type 2 coordination protection provides confidence that the motor control components will be operable following a short circuit fault. This reputability translates into huge savings due to reduced downtime and replacement costs.

DX motor control units are designed and tested to provide Type 2 protection in the entire system thus ensuring the highest uptime during its lifetime.



# ACB Function Unit

- Complete solutions: incomer, feeder and bus-coupler;
- Integrated Eaton IZM series circuit breaker
- The min. width of panel is 425mm with single ACB configuration. Multi-size as selection for stack ACBs
- The current rating of double ACBs panel is up to 2000A /1600A . The current rating of 3 ACBs solution is up to 1250A
- Flexible cable connection solution, top/bottom cable entry.



ACB section		1xACB	2xACBs	3xACBs
ACB type	Current rating			
IZM	Up to 1600A	✓	✓	✓
IZM	Up to 4000A	✓	✓	✓
IZM	Up to 6300A	✓		
Dimension				
Height		2200	2200	2200
Width		425/600/800/1000/1100/ 1200/1350	600/800/1000	600/800/1000
Depth		600/1000/1400	600/1000/1400	600/1000/1400

## Cable connection

Main incoming power connections can accommodate cables and or busbar trunking systems. These can be connected from the top, bottom and side. Front or rear access can be available for this system.

The withdrawable panel can also meet front access(600mm deep) and rear access ( $\geq$  1000mm deep) requirement. The standard cable compartment is 400 mm deep (whether front access of rear access), it can meet cable installation requirement for high density drawer installation configuration. According to the requirement from customer, DX can customize the connection terminals to be convenient for cable installation.



# Form of Internal Separation

GB/T 7251.1/12 & IEC61439-1/2 defines the various forms of internal separation. The form of internal separation determines how busbars, functional units and terminals are separated from each other. DX is designed to provide separation in both Form 3b and 4b solutions.

Form 3b and 4b are defined as: the separation of the busbars from each functional unit and the separation of each functional unit from each other.

The difference between Form 3b and Form 4b is based on how the terminals for outgoing conductors are separated from each other.

Form 3b solution is defined as: the separation of terminals for external conductors from the functional units, but not from those of other functional units, i.e. a common cable chamber where all outgoing terminals are grouped together.

Form 4b solution is defined as: the separation of the terminals for external conductors associated with a functional unit from those of any other functional unit and the busbars. i.e individual separation of each functional units outgoing terminals from each other.

DX panels are designed around three different areas base on these form separation: the busbar compartment, function compartment, cable compartment.

GB / IEC standard compliance

	Form 1	Form 2b	Form 3a	Form 3b	Form 4a	Form 4b
Busbars (main + distribution) are separated from functional units	✓	✓	✓	✓	✓	✓
Functional units are separated from other functional units			✓	✓	✓	✓
Terminals are external to functional units			✓	✓		✓
Terminations to functional units are separated from each other			✓		✓	✓
Terminals are separated from the busbars	✓			✓	✓	✓
<b>Power Xpert™ DX supported forms of separation</b>	✓			✓	✓	✓

# Degree of Protection

Power Xpert® DX has a degree of protection IP42/IP54 as standard.

The different parts / compartments comply with the following degrees of protection:

- Between main busbar compartment and any other compartments: IP2X.
- Between switchgear and controlgear compartments and cable-entry compartment: IP2X.
- Between mutual compartments of each functional unit within a cubicle: IP2X.
- Within opened compartments: IP2X.
- Within switchgear with removed drawout units: IP2X.





# Reliable and Safe in Operation

**Tested in accordance with IEC61641, the internal Arc protection is up to 100KA/0.5s.**

**Quality assurance in accordance with DIN EN 9001/ ISO9001 with routine tests carried out in ISO 9001 certified Eaton manufacturing locations.**

**Compartments for draw-out units can be modified without process interruption.**

**Interlocked mechanism to ensure safe operating /disconnected / test positions.**

**Safety due to use of Eaton standardized components which have a proven track record.**

**Eaton Air Circuit Breakers equipped with Arcflash Reduction Maintenance System™ (ARMS)**

An Eaton air circuit breaker equipped with ARMS can improve safety by providing a simple and reliable method to reduce fault clearing time. The ARMS is controlled by a lockable switch that can easily activate a separate analog circuit for faster tripping time at the work location and be incorporated into a Lock Out Tag Out (LOTO) procedure. Downstream of a circuit breaker equipped with an Arcflash Reduction Maintenance System can have a significantly lower incident energy level, thus protecting operators or maintenance personnel who are working on a downstream energized piece of equipment.

Benefits of Arcflash Reduction Maintenance System™ are:

- Increased personnel safety by limiting the available arc flash energy.
- Simple to operate.
- Enabled with the circuit breaker door closed by a door mounted lockable switch or through communication to the breakers trip unit
- Enabled only for the time required to perform the work.
- Preserves over-current coordination under normal conditions.



## Arc ignition protected zone & Arc tested zone\*

Eaton's philosophy is that the best way to mitigate the risks of internal arcing is to prevent the arc from happening in the first place.

**Arc ignition protected zone** - part of a circuit within the assembly where it is not possible to apply an ignition wire without destroying the insulation material on conductors

**Arc tested zone** - Part of a circuit where an ignition wire can be applied and fulfilling all relevant criteria for the assessment of the test

1. Arc Proof segregated cable connections - Optional
2. Arc Free insulated busbar connections - Optional
3. Arc Free insulated main busbars - Optional
4. Arc Free insulated and segregated distribution busbars
5. Arc Free main contacts (line side)
6. Arc Proof functional units (load side) - Optional

\*Please Consult to Eaton

# Electrical Components

The Power Xpert® DX uses the best full range of Eaton components. A system is only as strong as its weakest link, so the quality of the individual components determines the performance and quality of the system as a whole.

Eaton power control and protection components are among the best in the world. The DX is designed with the option of Eaton air or molded case circuit breakers or a fused combination switch.

complete system is essential to deliver a fully type-tested, reliable and efficient power distribution and motor control system. All the critical components used in the DX are proven technology – from the main incoming feeders to the pushbuttons and indicator lights.

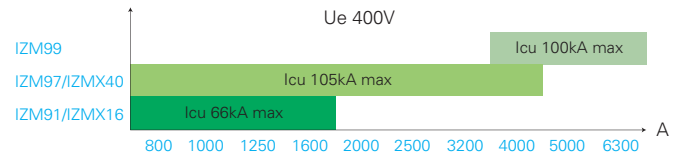
Understanding the interaction of each individual component and how they operate within a

## Air Circuit Breaker



### IZM series Air Circuit Breaker

- Rated current up to 6300A
- Compact size with less space
- Comprehensive and innovative electronic Digitrip™ trip unit range (LSIG)
- Fixed and Withdrawable type
- Complete range of auxiliaries
- Arcflash Reduction Maintenance System™



## MCCB, MCP and Contactor



NZM

Power Defense

### Molded Case Circuit Breaker NZM & PDC

- Only 4 frame sizes cover up to 1600 A - 150 kA
- Intelligent communication Modbus/USB read setting and remote control
- PXR series electronic trip unit - LSIG
- Arcflash Reduction Maintenance System™ makes your circuit breaker trip faster than instantaneous trip
- Integration of Power Xpert® Protection Manager



### PKZ/PKE Motor Protection Circuit Breaker DILM Contactor

- Only 2 variants for PKZ to cover the entire range from 0.1 to 65 A.
- PKE enables a wide range of electronically-controlled settings
- No need for additional current limiters
- Complete motor starter series, including DOL, FR and DS types
- Motor starter with type 2 coordination, Combined with PKZ and NZM / PDC circuit breakers

## Low Voltage Power Factor Compensation



### Capacitive Reactance and Active Power Filter

- The capacitor is from 10~120kvar, the voltage is up to 900V, and the metalized polypropylene film is used as dielectric with low loss, long life, self-healing function, with over-pressure isolator, over-current protection, high safety, etc.
- The reactor voltage is up to 690V, the impedance rate is 6%/7%/12%/14%, the iron core copper or aluminum wire winding structure is used, and the vacuum casting polyester resin process is used to ensure that each reactor has a good Electrical and mechanical properties
- The power factor controller can effectively measure and monitor the reactive power in the power distribution system, and automatically control the switching of the multi-segment capacitor equipment according to the setting, which can realize the automatic control of the reactive power compensation device in the medium and low voltage power grid



## Soft starter and Variable Frequency



### S811+ Soft starter

- Designed to control the acceleration and deceleration of three phase motors
- Intelligent pump algorithm to eliminate water hammer effect
- Compact footprint to replace wye-delta starters
- Comprehensive protections and diagnostic capabilities to ensure the highest reliability
- Rated up to 560 kW



### PowerXL™ variable frequency drives

- DC1 compact drive for fans, pumps and conveyor systems (ratings from 0.37 to 11 kW)
- DG1 general purpose drive for commercial and industrial systems (ratings from 0.75 to 160 kW)
- DA1 advanced machinery drive (ratings from 0.75 to 250 kW)
- Compliant with IE2, IE3, and future IE4 energy efficiency

## C400 series Motor Protection Relay



### C440 Motor Protection Relay

- 0.3-1500 A, up to 690 Vac (50/60 Hz)
- Selectable trip class (10 A, 10, 20, 30), earth fault and phase imbalance protections
- Flexible communication options for both monitoring and control
- PROFIBUS, Modbus RTU, Modbus TCP, EtherNet/IP, and DeviceNet



### C445 Motor Protection Relay

- 0.3-820A, up to 690Vac (20-80HZ)
- Full line, load and motor system coverage cover, including advanced monitoring and protection algorithms
- A variety of predefined operation modes and corresponding new control station options reduce complexity
- Communication protocol: Modbus RTU, PROFIBUS, Modbus TCP, and
- EtherNet/IP, USB

## Multi-functional Meters



### APM series Meters

- The compact meter combines single-phase or three-phase power monitoring and measurement with data recording, power quality analysis, alarm and I/O functions
- Use Total Harmonic Distortion (THD) measurement technology to achieve real-time measurement and analysis of electrical parameters, and to monitor power quality
- Up to 4 different rates can be allocated for different time periods in a day according to billing requirements
- Modbus® RTU communication
- High resolution black backlit LCD or LED display



### PXM4000/6000/8000 Power Quality and Energy Meters

- Automatic analysis and trigger settings of power quality, and provide ITIC performance curve: detect and capture dips, swells, transient pulses, harmonics and flicker
- Through the extremely high sampling rate, accurate detection of fast transient pulses, comprehensive power, energy and demand measurement up to millisecond time synchronization and event recording capabilities
- Support remote alarm notification via email (with waveform)
- Use industry standard communication protocol, support many configurations and third-party software
- Supported by Power Xpert® software and PowerXpert® Architecture



## Intelligent low-voltage System

Failure will cause system downtime, increase maintenance costs and reduce system safety. Therefore, how to monitor system status in real time and feedback system operation status is particularly important. Among them, intelligent Low-voltage system are the key factor. Eaton has integrated its comprehensive hardware and software resources by relying on its hundred years of low-voltage system design and manufacturing experience to create complete and reliable intelligent low-voltage system solutions for customers.

Power Xpert® DX equipped with a full range of Eaton brand intelligent monitoring equipment, such as intelligent integrated protection device, motor control relay, multi-function meters and power quality monitoring equipment, together with digital air circuit breaker and molded case circuit breaker, all data Information including operation, failure, power quality and other information are monitored. At the same time, it can also be equipped with HMI human-computer interaction interface, all data and control can be completed on HMI, which is convenient for operators to maintain and collect information on site.

### Benefits:

- Less downtime
- Lower investment cost (use less DCS I/O, relays and wires)
- Reduced operation and maintenance costs (engineering, testing, debugging, fault discovery)
- Integrated touch screen HMI with PLC programmable function
- Upload each device data
- Control all devices through HMI
- Upgradable recipe database allows new designs
- Real-time active load analysis
- Monitor power quality distribution and power consumption analysis
- Fault alarm, information upload and fault analysis
- Protocols such as Ethernet IP and Modbus TCP/IP
- Pre-defined mapping table for all slaves
- Temperature monitoring (optional)
- Video surveillance (optional)

## Power Xpert DX Intelligent System

- Internal communication connection
- Connection with PMS
- Redundant connection within PMS

A variety of communication protocols can be used internally to achieve high-reliability connections and rapid response.

Configure HMI to realize equipment-side data collection, storage, monitoring, and power quality analysis functions. Finally, it is connected to the PMS through HMI or PLC communication.

## Compatible with multiple communication modes:

- Modbus/Modbus TCP/IP
- Profibus/Profinet
- Ethernet TCP/IP
- .....



EATON Intelligent monitoring and analysis platform

EATON full range of digital intelligent components



# System Flexibility

## Modular design and small Footprint

Any number of withdrawable compartment arrangements can be made. Motor Control and Distribution functionality is integrated within the one panel. A withdrawable motor starter or MCCB feeder unit can be placed in the same structure. DX is a compact system where up to 28, 125 mm half drawers can be installed in one column to reduce footprint and have maximum density.

## Variable widths for cable Compartments

Generous sized cable ways are available for top and bottom cable entry. For the withdrawable units the cabling compartments are 400 or 600 mm wide, 600mm deep (front access), 400mm deep, 600mm.

## Easy to upgrade and extend

The switchgear can be extended to both sides whenever this is required. So when the demands for the switchgear change it can be upgraded and panels can be added with minimal process interruptions.

## Suitable for cable and busbar connections

DX is designed for flexible customer connection methods: whether cables or busbar trunking systems.



# Total cost of ownership



## High density stacking

The rated current of the vertical distribution busbar of the withdrawable panel is up to 2000 A with max. 100kA/s, allowing high-density drawer installation and reducing the total space needed. Up to 28 withdrawable units with 15kW half-size drawer can be populated per panel.

## Compartments can be quickly and easily modified if necessary

Processes change and so does the need for motor control and power distribution. The DX is designed to be flexible when the units need to be upgraded or modified. This can all be done quickly and with minimum modifications to maximize up-time for your business process. The cable connection to drawout units can be carried out under live conditions without interruption.

## Reliable system design

The use of high-grade materials and components reduces maintenance to a minimum. Due to the systematic use of maintenance free joints, factory tightened to optimum torques, inspections or re-tightening of the electrical main connections is not required. Robust design with a minimum number of parts. In addition, the complete platform is certified to the highest degree and every system is routine tested in our factories.

# User Friendly

## Slide and Guide design for optimal compartment guidance

The DX is equipped with the slide and guide design for the withdrawable units to allow for reliable moving in and out of the compartments. For the operator this means that all the units connect to the vertical busbars as intended.

## Economical and intuitive design of the system

All compartments of the DX are designed in such a way that the system is safe and easy to operate. The use of an economical, smooth and smart design prevents operators in the area of the switchgear to be injured (from moving parts or parts that stick out of the unit) or by wrong operation. The front panel is included with all the important functions that an operator needs for safe and efficient operation of a system.

## Withdrawable units can be easily exchanged without having to disconnect any power or control cabling

If the withdrawable units are for the same function they can easily be exchanged with each other without major process interruptions because of (dis)connecting any cables. This capability potentially reduces the inventory of spare units for a system.



# Eaton - A global company with local presence

Customers of Eaton benefit from a worldwide network of excellence. Eaton is one of the leading technology corporations for over a century. Today Eaton serves customers in electrical, hydraulics, aerospace, truck and automotive markets

What customers expect now is to improve the quality and practicality of the service. Eaton is customer-oriented leading company, as a global organization with more than 70,000 employees and sales and distribution channels in more than 180 countries around the world, promises to support local sales and service. Moreover, Eaton has completed most of its localization operations. This strong position is partly due to the integration of the local sales force of the acquired company and the massive expansion of the partner network. "The combination of localization and global brand resources allows us to provide partners and end customers with all the local support they need."

Capitole, Modan, and xEnergy are all household names in the electrical industry. Based on the large-scale installation base around the world, as well as the

corresponding professional knowledge and experience, Eaton has developed a new low-voltage motor control and power distribution product: Power Xpert® DX.

DX is a new generation of advanced system, which is in full compliance with standards, with environmental thinking, ergonomics and user interface requirements.

Despite automated logistics and global cooperation, interpersonal communication still plays an important and intuitive role. This kind of communication with customers and understanding their needs and the challenges to be met is indispensable.

Therefore, Eaton provides localized and efficient services at home and abroad.

DX is suitable for a variety of areas. Whether it is an industrial area, or



an uninhabited desert area; whether it is a main line switch, a contactor or a button, each product comes from the same company: Eaton. This allows DX to meet high requirements in term of product technology and provide localized services and support.

## Customers of Eaton benefit from a worldwide network of excellence



# Electrical Data

System	Power Xpert DX
Standard	GB/T7251.1/12/IEC 61439-1/2, IEC 61641 IEC60068-3-3
Rated operation voltage (Ue)	400/415V, 690VAC
Frequency	50/60Hz
Internal Arc protection	up to 100kA/0.5s
Seismic	AG2-AG5
<b>Main Busbar</b>	
Rated insulated voltage (Ui)	1000V
Rated impulse withstand voltage (Uimp)	12kV
Rated current	6300A
Rated short-time withstand current (Icw)	100kA-1s
Rated peak withstand current (Ipk)	220kA
<b>Distribution busbar</b>	
Rated insulated voltage (Ui)	1000V
Rated impulse withstand voltage (Uimp)	12kV
Application	Fixed/Plug-in/Withdrawable
Rated current	up to 2500A (MCC distribution bar up to 2000A)
Rated short-time withstand current (Icw)	100kA-1s
Rated peak current (Ipk)	220kA
Enclosure	
<b>Degree of protection</b>	IP42/54
Form of separation	Form2b/3b/4b
Cable entry	Top/Bottom
Access	Front/Rear
Color	RAL7035

## Dimensions (mm)





# Typical Single Line Diagram

## Bottom entry/Bus-coupler (Front access)

	Rated Voltage (Ue)	Rated frequency (F)	Type (ACB)	Rated current In(A)	Breaking capacity (Icu)	Poles (P)	Dimension mm (WxDxH)
<b>Incomer/Feeder Front access</b> 	415V	50/60Hz	IZMX16	600-1600A	66kA	3P	425x600x2200
	415V	50/60Hz	IZMX16	600-1600A	66kA	4P	600x600x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	3P	600x600x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	4P	800x600x2200
	415V	50/60Hz	IZMX40	4000A	105kA	3P	800x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	4P	1000x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	3P	1100x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	4P	1350x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	3P	1100x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	4P	1350x1000x2200
<b>Bus-coupler Front access</b> 	415V	50/60Hz	IZMX16	600-1600A	66kA	3P	600x600x2200
	415V	50/60Hz	IZMX16	600-1600A	66kA	4P	800x600x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	3P	800x600x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	4P	1000x600x2200
	415V	50/60Hz	IZMX40	4000A	105kA	3P	1000x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	4P	1200x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	3P	1500x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	4P	1750x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	3P	1500x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	4P	1750x1000x2200

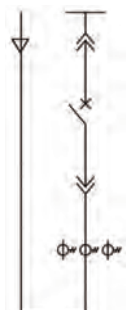
## Bottom entry/Bus-coupler (Rear access)

	Rated Voltage (Ue)	Rated frequency (F)	Type (ACB)	Rated current In(A)	Breaking capacity (Icu)	Poles (P)	Dimension mm (WxDxH)
<b>Incomer/Feeder (Rear access)</b> 	415V	50/60Hz	IZMX16	600-1600A	66kA	3P	425x1000x2200
	415V	50/60Hz	IZMX16	600-1600A	66kA	4P	600x1000x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	3P	600x1000x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	4P	800x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	3P	800x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	4P	1000x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	3P	1100x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	4P	1350x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	3P	1100x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	4P	1350x1000x2200
<b>Bus-coupler (Rear access)</b> 	415V	50/60Hz	IZMX16	600-1600A	66kA	3P	600x1000x2200
	415V	50/60Hz	IZMX16	600-1600A	66kA	4P	800x1000x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	3P	800x1000x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	4P	1000x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	3P	1000x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	4P	1200x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	3P	1500x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	4P	1750x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	3P	1500x1000x2200
	415V	50/60Hz	IZM99	6300A	100kA	4P	1750x1000x2200

\*Consultant for 690v system

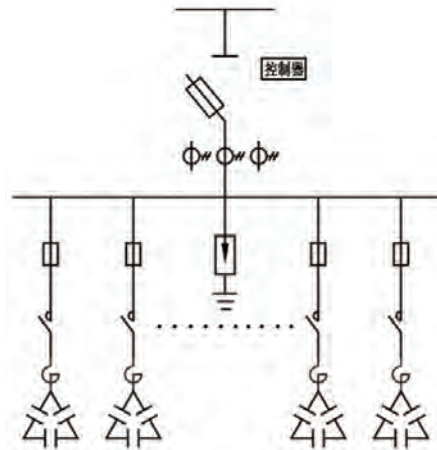


## Top entry/Bus-coupler (Rear access)

	Rated Voltage (Ue)	Rated frequency (F)	Type (ACB)	Rated current In(A)	Breaking capacity (Icu)	Poles (P)	Dimension mm (WxDxH)
<b>Incomer/Feeder Rear access</b> 	415V	50/60Hz	IZMX16	600-1600A	66kA	3P	425x1000x2200
	415V	50/60Hz	IZMX16	600-1600A	66kA	4P	600x1000x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	3P	600x1000x2200
	415V	50/60Hz	IZMX40	800-3200A	105kA	4P	800x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	3P	800x1000x2200
	415V	50/60Hz	IZMX40	4000A	105kA	4P	1000x1000x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	3P	1100x1200x2200
	415V	50/60Hz	IZM99	4000-5000A	100kA	4P	1350x1200x2200
	415V	50/60Hz	IZM99	6300A	100kA	3P	1100x1400x2200
	415V	50/60Hz	IZM99	6300A	100kA	4P	1350x1400x2200

\*Consultant for 690v system

## Capacitor Bank

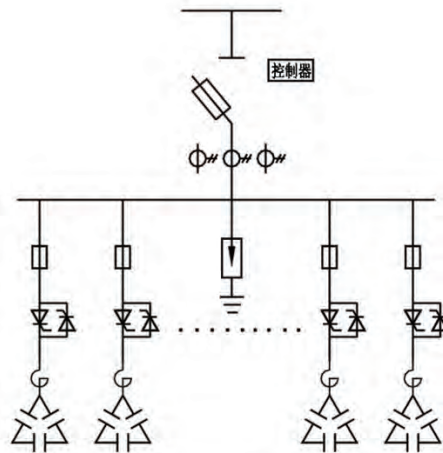


Capacity	Fuse-switch	Fuse	Contactors	Capacitor	Reactor	Controller	Dimension mm (WxDxH)
150kvar	QSA-400A	2*NRT16-00-M1/3P 63A	2*DILK25-11	2*CELCR480-33.5-R	2*CELR25/400-7	CELP-12	600x1000x2200
	NT2-400A	2*NRT16-00-M1/3P 125A	2*DILK50-10	2*CELCR480-33.5-R*2	2*CELR50/400-7		
200kvar	QSA-630A	2*NRT16-00-M1/3P 63A	2*DILK25-11	2*CELCR480-33.5-R	2*CELR25/400-7	CELP-12	600x1000x2200
	NT3-500A	3*NRT16-00-M1/3P 125A	3*DILK50-10	3*CELCR480-33.5-R*2	3*CELR50/400-7		
250kvar	QSA-630A	2*NRT16-00-M1/3P 63A	2*DILK25-11	2*CELCR480-33.5-R	2*CELR25/400-7	CELP-12	800x1000x2200
	NT3-630A	4*NRT16-00-M1/3P 125A	4*DILK50-10	4*CELCR480-33.5-R*2	4*CELR50/400-7		
300kvar	QSA-800A	2*NRT16-00-M1/3P 63A	2*DILK25-11	2*CELCR480-33.5-R	2*CELR25/400-7	CELP-12	800x1000x2200
	NT3-800A	5*NRT16-00-M1/3P 125A	5*DILK50-10	5*CELCR480-33.5-R*2	5*CELR50/400-7		
350kvar	QSA-800A	2*NRT16-00-M1/3P 63A	2*DILK25-11	2*CELCR480-33.5-R	2*CELR25/400-7	CELP-12	1000x1000x2200
	NT3-800A	6*NRT16-00-M1/3P 125A	6*DILK50-10	6*CELCR480-33.5-R*2	6*CELR50/400-7		
400kvar	QSA-1000A	2*NRT16-00-M1/3P 63A	2*DILK25-11	2*CELCR480-33.5-R	2*CELR25/400-7	CELP-12	1000x1000x2200
	NT4-1000A	7*NRT16-00-M1/3P 125A	7*DILK50-10	7*CELCR480-33.5-R*2	7*CELR50/400-7		

\* Reactor: 7%

\* Total compensation; consultant Eaton for separated compensation

## Capacitor bank - Thyristor



Capacity	Fuse-switch	Fuse	Contactor	Capacitor	Reactor	Controller	Dimension mm (WxDxH)
150kvar	QSA-400A	2*NRT16-00-M1/3P 63A	2*TSI-40-400	2*CELCR480-33.5-R	2*CELR25/400-7	CELPT-12	600x1000x2200
	NT2-400A	2*NRT16-00-M1/3P 125A	2*TSI-60-400	2*CELCR480-33.5-R*2	2*CELR50/400-7		
200kvar	QSA-630A	2*NRT16-00-M1/3P 63A	2*TSI-40-400	2*CELCR480-33.5-R	2*CELR25/400-7	CELPT-12	600x1000x2200
	NT3-500A	3*NRT16-00-M1/3P 125A	3*TSI-60-400	3*CELCR480-33.5-R*2	3*CELR50/400-7		
250kvar	QSA-630A	2*NRT16-00-M1/3P 63A	2*TSI-40-400	2*CELCR480-33.5-R	2*CELR25/400-7	CELPT-12	800x1000x2200
	NT3-630A	4*NRT16-00-M1/3P 125A	4*TSI-60-400	4*CELCR480-33.5-R*2	4*CELR50/400-7		
300kvar	QSA-800A	2*NRT16-00-M1/3P 63A	2*TSI-40-400	2*CELCR480-33.5-R	2*CELR25/400-7	CELPT-12	800x1000x2200
	NT3-800A	5*NRT16-00-M1/3P 125A	5*TSI-60-400	5*CELCR480-33.5-R*2	5*CELR50/400-7		
350kvar	QSA-800A	2*NRT16-00-M1/3P 63A	2*TSI-40-400	2*CELCR480-33.5-R	2*CELR25/400-7	CELPT-12	1000x1000x2200
	NT3-800A	6*NRT16-00-M1/3P 125A	6*TSI-60-400	6*CELCR480-33.5-R*2	6*CELR50/400-7		
400kvar	QSA-1000A	2*NRT16-00-M1/3P 63A	2*TSI-40-400	2*CELCR480-33.5-R	2*CELR25/400-7	CELPT-12	1000x1000x2200
	NT4-1000A	7*NRT16-00-M1/3P 125A	7*TSI-60-400	7*CELCR480-33.5-R*2	7*CELR50/400-7		

\*Reactor: 7%

\*Total compensation; consultant Eaton for separated compensation

## Feeders - Fixed type Fixed/plug-in type, XF panel



Type MCCB	Mounting type MCCB	Rated current In(A)	Poles (P)	Breaking capacity (Icu)	Height (H)	Width (W)
NZM1	Fix/Plug-in	20-160A	3P	100kA	150mm	600mm
NZM1	Fix/Plug-in	20-160A	4P	100kA	200mm	600mm
NZM2	Fix/Plug-in	20-250A	3P	150kA	150mm	600mm
NZM2	Fix/Plug-in	20-250A	4P	150kA	200mm	600mm
NZM3	Fix/Plug-in	250-630A	3P	150kA	300mm	600mm
NZM3	Fix/Plug-in	250-630A	4P	150kA	300mm	600mm

## Feeder - Withdrawable (XW type)

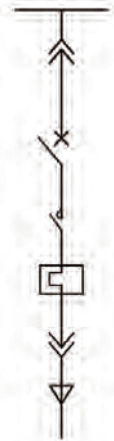


Type MCCB	Mounting type MCCB	Rated current In(A)	Poles (P)	Height (H)	Width (W)
NZM1	Withdrawable	20-63A	3P	125mm	300mm
NZM1	Withdrawable	80A	3P	187.5mm	300mm
NZM1	Withdrawable	100A	3P	125mm	600mm
NZM1	Withdrawable	125A	3P	125mm	600mm
NZM2	Withdrawable	160A	3P	187.5mm	600mm
NZM2	Withdrawable	250A	3P	250mm	600mm
NZM3	Withdrawable	320A	3P	312.5mm	600mm
NZM3	Withdrawable	400A	3P	312.5mm	600mm
NZM3	Withdrawable	630A	3P	375mm	600mm
NZM1	Withdrawable	20-80A	4P	187.5mm	300mm
NZM1	Withdrawable	100A	4P	187.5mm	600mm
NZM1	Withdrawable	125A	4P	187.5mm	600mm
NZM2	Withdrawable	160A	4P	187.5mm	600mm
NZM2	Withdrawable	250A	4P	250mm	600mm
NZM3	Withdrawable	320A	4P	375mm	600mm
NZM3	Withdrawable	400A	4P	375mm	600mm
NZM3	Withdrawable	630A	4P	375mm	600mm

\*Consultant for 690V



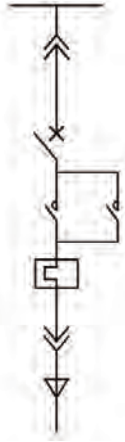
## DOL motor start - Withdrawable/Fixed type MCC (XW type)



Mounting Type MCCB	Power P(kW)	Rated continuous current Iu(A)	Breaker Type	Contactor	Motor protection relay	Height (H)	Width (W)
Withdrawable	0.06	0.22	PKZMC-0.25	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	0.09	0.31	PKZMC-0.4	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	0.12	0.42	PKZMC-0.63	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	0.25	0.84	PKZMC-1	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	0.55	1.5	PKZMC-1.6	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	0.75	2	PKZMC-2.5	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	1.5	3.5	PKZMC-4	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	2.2	5	PKZMC-6.3	DILM7	ZB12C/C445	125mm	300mm
Withdrawable	4	8.5	PKZMC-10	DILM9	ZB12C/C445	125mm	300mm
Withdrawable	7.5	15.2	PKZMC-16	DILM17	ZB32C/C445	125mm	300mm
Withdrawable	9	18.3	PKZMC-20	DILM25	ZB32C/C445	125mm	300mm
Withdrawable	12.5	25	PKZMC-25	DILM32	ZB32C/C445	125mm	300mm
Withdrawable	15	30	PKZMC-32	DILM32	ZB32C/C445	125mm	300mm
Withdrawable	18.5	37	NZM1-40	DILM40	ZB65C/C445	125mm	600mm
Withdrawable	22	42	NZM1-50	DILM50	ZB65C/C445	125mm	600mm
Withdrawable	30	56	NZM1-63	DILM65	ZB65C/C445	187.5mm	600mm
Withdrawable	37	68	NZM1-80	DILM80	ZB150C/C445	187.5mm	600mm
Withdrawable	45	81	NZM1-100	DILM95	ZB150C/C445	187.5mm	600mm
Withdrawable	55	99	NZM2-125	DILM115	ZB150C/C445	250mm	600mm
Withdrawable	75	135	NZM2-160	DILM150	ZB150C/C445	250mm	600mm
Withdrawable	90	161	NZM2-200	DILM170	ZB150C/C445	375mm	600mm
Withdrawable	110	198	NZM2-220	DILM225	ZEB32-5/KK/C445	375mm	600mm
Withdrawable/Fixed	132	231	NZM3-350	DILM250	ZEB32-5/KK/C445	437.5mm	600mm
Withdrawable/Fixed	160	280	NZM3-350	DILM300	ZEB32-5/KK/C445	500mm	600mm
Withdrawable/Fixed	200	350	NZM3-450	DILM400	ZEB32-5/KK/C445	625mm	600mm
	250	437	NZM3-550	DILM500	ZEB32-5/KK/C445	625mm	600mm

\*Consultant Eaton for >75kW with additional CT, and 690v system

## FR motor starter - Withdrawable/Fixed type MCC (XW type)



Mounting Type MCCB	Power P(kW)	Rated continuous current Iu(A)	Breaker Type	Contactor	Motor protection relay	Height (H)	Width (W)
Withdrawable	0.06	0.22	PKZMC-0.25	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	0.09	0.31	PKZMC-0.4	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	0.12	0.42	PKZMC-0.63	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	0.25	0.84	PKZMC-1	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	0.55	1.5	PKZMC-1.6	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	0.75	2	PKZMC-2.5	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	1.5	3.5	PKZMC-4	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	2.2	5	PKZMC-6.3	DILM7	ZB12C/C445	125mm	600mm
Withdrawable	4	8.5	PKZMC-10	DILM9	ZB12C/C445	125mm	600mm
Withdrawable	7.5	15.2	PKZMC-16	DILM15	ZB32C/C445	125mm	600mm
Withdrawable	9	18.3	PKZMC-20	DILM25	ZB32C/C445	125mm	600mm
Withdrawable	12.5	25	PKZMC-25	DILM32	ZB32C/C445	125mm	600mm
Withdrawable	15	30	PKZMC-32	DILM32	ZB32C/C445	125mm	600mm
Withdrawable	18.5	37	NZM1-40	DILM40	ZB65C/C445	125mm	600mm
Withdrawable	22	42	NZM1-50	DILM50	ZB65C/C445	125mm	600mm
Withdrawable	30	56	NZM1-63	DILM65	ZB65C/C445	187.5mm	600mm
Withdrawable	37	68	NZM1-80	DILM72	ZB65C/C445	187.5mm	600mm
Withdrawable	45	81	NZM1-100	DILM95	ZB150C/C445	250mm	600mm
Withdrawable	55	99	NZM2-125	DILM115	ZB150C/C445	250mm	600mm
Withdrawable	75	135	NZM2-160	DILM150	ZB150C/C445	250mm	600mm
Withdrawable	90	161	NZM2-200	DILM170	ZB150C/C445	375mm	600mm
Withdrawable	110	198	NZM2-220	DILM225	ZEB32-5/KK/C445	375mm	600mm
Withdrawable	132	231	NZM3-350	DILM250	ZEB32-5/KK/C445	437.5mm	600mm
Withdrawable/Fixed	160	280	NZM3-350	DILM300	ZEB32-5/KK/C445	500mm	600mm
Withdrawable/Fixed	200	350	NZM3-450	DILM400	ZEB32-5/KK/C445	625mm	600mm
Withdrawable/Fixed	250	437	NZM3-550	DILM500	ZEB32-5/KK/C445	625mm	600mm

\*Consultant Eaton for >75kW with additional CT, and 690v system

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Eaton began operation in China more than 20 years ago. Since entering the Chinese market in 1993, Eaton's presence has grown significantly in the country. In 2004, Eaton moved its Asia Pacific headquarters from Hong Kong to Shanghai.

In the Greater China region, Eaton has nearly 8,000 employees, 19 manufacturing bases and 5 R&D centers. Today, we make most products for all of Eaton's distinct business here.

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