Compact circuit-breaker NZM up to 1600 A
Compact switch-disconnectors N, PN up to 1600 A

Safe energy control, switching and control in industrial settings, buildings and machinery construction: innovative protection concept coupled with diagnostic and communication functions make it possible.
The NZM circuit-breaker assortment offers an interface for the SmartWire-Darwin communication system. ➔ Page 17/140

Model series NZM1 – NZM4
Only four compact switches cover all applications. 3- and 4-pole Flexible mounting through modular functions groups. Complete nominal current up to 50 °C ambient temperature. Suitable for use worldwide ➔ Page 17/4

Door coupling rotary handles
Very wide range of variants for each application. All applications have identical drilling template. Automatic centering. Shaft support for years of operational safety. Sidewall installation for space-saving main switch installation ➔ Page 17/118

Standard auxiliary contacts, trip-indicator auxiliary contacts from the Eaton command device program.
Favorably priced identical parts from the Titan program reduce variety of types and stockkeeping. Installation from front to same position. Easy clo-in reduces assembling costs ➔ Page 17/106

Remote operators
Unified functions concept for all variants. Small closing delays from 60 – 100 ms. Can be locked and sealed to provide safety ➔ Page 17/134

Diagnostics software NZM-XPC-SOFT
Diagnoses in fault scenario. Error-free commissioning. Load analysis in operation ➔ Page 17/138
xEnergy is a freely combinable range of system products for energy distribution systems — specially designed for infrastructures in buildings and industrial applications up to 4000 A. The Moeller xEnergy system — consisting of switching and protective devices, the mounting system, the switchboard, as well as the planning and calculation tool — is optimally tailored for safe and reliable energy distribution.

The optimum mechanical adaption of the switchboard components to the Moeller switchgear keeps mounting times short and ensures a high level of flexibility. Type-testing of the complete switchgear—mounting system—switchboard assemblies to IEC EN 60 439 ensures a high level of safety.

Moeller Configurator

The software tool offers you the support you need for configuring the required xEnergy switchgear assembly simply and quickly. You can thus create your quotations and generate the exact parts list at the click of a mouse.
**xEnergy Product features**
- Enclosures for combination- and separate mounting
- Protection type IP 31 or 55
- Main busbars up to 4000 A
- 2 main busbar systems can be integrated in each section
- Clear separation into functional areas to Form 1 up to Form 4b for increased personal and system protection
- Widths: 425, 600, 800, 1000 and 1200 mm
- Height: 2000 mm
- Color: RAL 7035 (others possible)
- Mains system types: TN-C, TN-C-S, TN-S, TT, IT
- Type-tested switchgear assembly (TSKI) according to IEC/EN 60439-1
- Optimized for 3 and 4 pole switchgear from Moeller

**IZM and NZM circuit-breakers for xEnergy XPower sections**
- Clear and symmetrical design reduces the number of busbar connections and saves mounting time
- Simple installation with cable terminal system for drill-free connection in section width

**NZM and PKZ circuit-breakers for xEnergy XFixed sections**
- High packing density with up to 38 modules in one section thus optimum component utilization
- Flexible module mounting to Form 4 with individual swing front panels
- Simple module mounting to Form 2 on one mounting level
- Flexible combination of functional areas and busbars to IEC/EN 60439 and national installation practices

Prefabricated energy and control distributions
Our system partner operate prefabricated energy and control distributions worldwide.

www.moeller-systempartner-schaltanlagen.net
NZM

System overview
Circuit-breakers LZM1, 2, 3, 4 and switch-disconnectors LN1, 2, 3, 4 up to 1600 A

Reliably and safely controlling, switching and managing power, in industry, in buildings and in machine construction. Enabled by innovative protection concepts.

Standard/trip-indicating auxiliary contact from the Titan range
- reduced number of variants and stockholding requirement
- simple front installation at the same position
- simple clip-on feature saves mounting costs
- attractively priced identical parts from the control circuit device range

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Door coupling rotary handles
- identical drilling template for all variants
- innovative automatic centring
- axis support for long-term reliable operation
- side-wall operation ensuring space-saving main switch installation

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Remote operators
- common functional concept of all variants
- low closing delays 60 ms to 100 ms
- locking and sealing features provide security

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Circuit-breakers IZM up to 6300 A
Switch-disconnectors IN up to 6300 A

With the new IZM series, Eaton presents a complete offering of air circuit-breakers (ACB) up to 6300 A. Five construction sizes make it possible to select the most economical switch for each project.
The new star is the circuit-breaker IZMX16. This innovative concept allows economical construction of two circuit-breakers within a field width of 600 mm.
There is no greater performance within such small space.

Basic devices IZM
Switching capacity 440 V AC, \(I_{\text{s}} = 1\), from 42 – 100 kA
+++ 3 or 4 pole +++ electronic releases for system protection, selective and universal protection, universal protection with power measurement +++ rated operational current from 630 – 6300 A
+++ rated operating voltage \(U_{\text{n}}:
1100 \text{ V for IZM132...3200-1100V}

High availability
Withdrawable units +IZM-CAS... +++ Main terminal kits IZM-T... +++ mechanical interlocks IZM-MIL...

Comprehensive fixed mounted accessories
Motor operator IZM...M... +++ Shunt release IZM...ST... +++ Closing release IZM...-SR... +++ Undervoltage release IZM...-UV... +++ Auxiliary contact IZM...-AS... +++
Latch check switch IZM...-LCS... +++ Trip indicator auxiliary switch IZM...-OTS +++ Mechanical interlocks

Worldwide novelty ARMS™ – greater safety for maintenance personnel
If there is an accidental arc, the ARMS™ system (Arcflash Reduction Maintenance System) shuts down faster than a short circuit trip device. In connection with IZM, additional components from the accidental arc protection system ARCON provide incremental protection against accidental arcing.
System overview
IZMX16

The innovative concept of the IZMX16 makes it possible to install two withdrawable circuit-breakers in a 600 mm wide section. This enables more economical section design and also saves operating space. This additional performance in a minimum of space goes far beyond the standard available worldwide.

Applications

The circuit-breakers can be used in four main application areas depending on the type of equipment to be protected:
• System protection,
• Motor protection,
• Transformer protection,
• Generator protection.

These key applications make different demands on the switches, which are met with a range of control units.

Switches with closing release

They are particularly suitable for synchronization tasks.

Coupler switches

Beside the IZMX16 circuit-breakers, INX16 switch-disconnectors are available. These are used, for example, as coupler switches between different power supplies.

Modular design

The retrofitting of accessories is made considerably easy thanks to the efficient "plug & work" technology. Accessory drawers and snap-fit mechanisms make it possible to fit the latest accessories with virtually no tools. This allows you to respond flexibly to changing requirements within your system.

Standard scope of delivery as usual

• With the new IZMX16, you select a basic device that is already fitted with an electronic release.
• The standard mounting is on a horizontal mounting plate or on horizontal traverses in the switching cabinet. The IZMX16 can also be fastened to vertical mounting plates.
• With four-pole devices, the neutral conductor is arranged on the left (front view).
• The neutral conductor can be loaded 100% like the phase conductors.
• The circuit-breakers are provided with a standard mechanical reclosing lockout. After an overload trip, the fault is usually examined first of all. After the fault is identified and rectified, the mechanical reclosing lockout is reset by pressing the red mechanism trip indicator on the front of the circuit-breaker.
• An "Automatic Reset" can be ordered as an option. This enables the circuit-breaker to be restored to operation immediately at any time after the spring-operated stored energy mechanism is tensioned. In these applications compulsory fault analysis is intentionally avoided.
• The number of control cable terminals depends on the accessories fitted.
• If a cassette is ordered without the basic device, this can be already fitted with the maximum number of control cable terminals. For greater economy in large plants, the cassette is also offered without control circuit terminals so that fitting can be carried out later at the installation or when the required accessories are determined at a later time.
• 2 changeover contacts are provided as standard for ON/OFF status indication.
• A coding mechanism between the basic device and the cassette prevents impermissible combinations ("Rejection Interlock").

Expanded standard scope of delivery for IZMX16

Some order types from the past can no longer be found since the following options are now already part of the standard scope of delivery:
• The door escutcheon is now always included in the scope of delivery. With withdrawable designs this is supplied with the cassette (withdrawable unit).
• On withdrawable units the circuit-breaker can be pulled out to inspect the arc chutes. With fixed units, it is recommended that sufficient space is provided above the circuit-breaker to enable inspection.
• An additional cover is not required.
• All basic devices that are provided with universal protection (with Digitrip 520M…), now feature a digital display.
• On each circuit-breaker the integrated Digitrip electronic release is factory fitted with a sealable protective cover.
• If a motor operator is ordered, the “Spring-operated stored energy mechanism tensioned” indicator switch is automatically provided.

Other benefits of the IZMX16

• The design of the main terminal offers maximum flexibility. The horizontal terminal can be rotated simply at the installation so that it can also be used as a vertical connection. With withdrawable units, additional terminal pieces can even be dispensed with.
• The cassette of the IZMX16 offers an integrated flange terminal to which the system busbars can be connected directly. For this reason, the main terminal pieces for IZMX16 are not part of the standard scope of delivery. Don’t forget to order additionally required terminal pieces if needed.
• Thanks to the separate mounting position, a switching operations counter can now be used also independently of a motor operator.
• Withdrawable unit operation:
  The unit is actuated with a hand crank supplied as a standard feature and has a secure position in the basic device. This is now possible also with a standard tool (square drive socket 1/4”).

External 24 V supply

• The standard protection functions of the IZMX16 operate generally independently of an external control voltage supply. The power supply of the electronics unit, for example for overload and short-circuit protection, is implemented via the current transformers integrated in the circuit-breaker.
• The universal release unit with display can be fed with a 24 V DC supply if required so that the display function can also be used without a load. An external 24 V DC power supply is needed if communication functions are required.
For the IZMX16, PROFIBUS-DP or Modbus RTU are optionally available as fieldbus connections. Communication modules IZMX-PCAM and IZMX-MCAM are compact units for direct mounting in the auxiliary terminal strip. On retrofitting, four modular terminals are replaced with one communication module. This is possible for both for fixed and withdrawable units. The terminals provide all data available in the trip block to the fieldbus, including switching state, current, voltage, power, energy, and diagnostic information such as overcurrent, phase asymmetry and overvoltage. Through the bus the motor operator can also be remotely controlled.

### Components for IZMX16 communication

For the IZMX16, PROFIBUS-DP or Modbus RTU are optionally available as fieldbus connections. Communication modules IZMX-PCAM and IZMX-MCAM are compact units for direct mounting in the auxiliary terminal strip. On retrofitting, four modular terminals are replaced with one communication module. This is possible for both for fixed and withdrawable units. The terminals provide all data available in the trip block to the fieldbus, including switching state, current, voltage, power, energy, and diagnostic information such as overcurrent, phase asymmetry and overvoltage. Through the bus the motor operator can also be remotely controlled.

### Requirements

The communications modules can be used in combination with IZMX16 circuit-breakers …-U or IZMX16…-P… (in preparation) circuit-breakers.

### Configuration

![Diagram of IZMX16 configuration](image)

**PROFIBUS-DP configuration**

Communications module IZMX-PCAM has a 9-pin D-Sub socket for connection to PROFIBUS. The module works as a slave on PROFIBUS-DP; the data is defined through a standardized device master data file, which permits smooth integration of IZMX in a DP line.

- On the PROFIBUS-DP side the module supports automatic baud rate detection; the PROFIBUS-DP bus address is set through the trip unit’s display. The maximum cable length is 2.4 km.
- To operate the IZMX-PCAM, a supply voltage of 24 V DC is required.
- The data connection to the circuit-breaker is implemented internally through a serial high-speed data connection.

**Data access via PROFIBUS-DP**

The data on PROFIBUS-DP are offered according to the profile for low-voltage switchgear (LVSG) of PROFIBUS International (PROFIBUS and PROFINET User Group). Five different data structures with varying numbers of parameters are available through the device master data file. This allows a data filter to be easily implemented, which simplifies integration of the IZM data into the control system.

### Modbus configuration

Communications module IZMX-MCAM has a plug-in screw terminal for connection to Modbus. The module operates as a Modbus slave.

- Baud rate, data format and address (max. 247) for Modbus are set with the input keys of the trip unit. The maximum cable length is 1.2 km.
- The Modbus must be terminated with a 120Ω terminating resistor.
- To operate the IZMX-PCAM, a supply voltage of 24 V DC is required.
- The data connection to the circuit-breaker is implemented internally through a serial high-speed data connection.

### Data access via Modbus

The data is contained in comprehensive data tables. Each data point is available as floating-point (IEEE) or fixed-point value. This variance allows the integration of the IZM to be adapted to the Modbus architecture. This enables a simple means of implementing a data filter, which facilitates the integration of IZM data in the control system.

### Documentation

**Operator manual**

For device series IZM26:
- AWB1230-1621de (deutsch)
- AWB1230-1621en (english)
- AWB1230-1622de (deutsch)
- AWB1230-1622en (english)

For device series IZMX16:
- AWB1230-1623de (deutsch)
- AWB1230-1623en (english)
- AWB1230-1624de (deutsch)
- AWB1230-1624en (english)