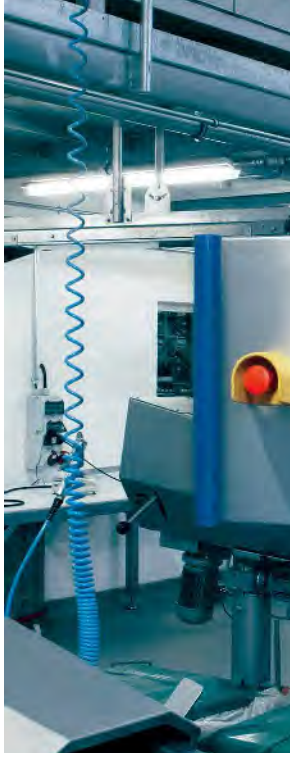
New Generation Air Circuit Breaker IZM9

Superior Solutions

To Meet and Exceed The Unique and Wide-ranging Requirements

Powering Business Worldwide



Powering electrical systems worldwide

Buildings

- Residential
- Healthcare
- Education
- Commercial offices
- Retail
- Public sector
- Airports

- Electrical distribution solutions for safe and efficient power delivery
- Power quality systems for uptime and reliability
- Power metering and monitoring to add intelligence and save costs
- Industrial control products for HVAC applications

Information Technology

- Data centers
- Telecommunication
- Networks
- Computer rooms

- World's most efficient line of UPSs to reduce footprint and save energy
- Reliable power systems with inherent redundancy to improve availability
- Power metering and monitoring to diagnose problems and lower costs
- Local service and support for quick response

Public and private sectors

Buildings, Information Technology, Industrial & Machinery, Energy & Utilities
We provide reliable, efficient and safe power management.

Industrial & Machinery

- Machine building:
  - Food and packaging machines
  - Woodworking and processing machines
- Agriculture
- Construction
- Mining and metals
- Paper industry
- Chemical and pharmaceutical industry
- Automotive industry
- Logistics centers

- Electrical distribution equipment to deliver power throughout the enterprise
- Control & automation and power quality equipment for process control
- Power metering and monitoring to manage energy costs and uptime
- Power and motion control products to optimize productivity, reliability, safety and operator comfort

Energy & Utilities

- Renewable energy:
  - Solar
  - Wind
  - Hydropower
- Traditional energy:
  - Oil
  - Gas
- Smart grid
- Water and waste water

- Electrical balance of system and turnkey services for residential, utility and commercial solar installations
- Power distribution equipment, control components and system installations services
- Network power grid technology for intelligent data, lower costs and crew / public safety

The next generation trip unit platform: Power Xpert Release (PXR)

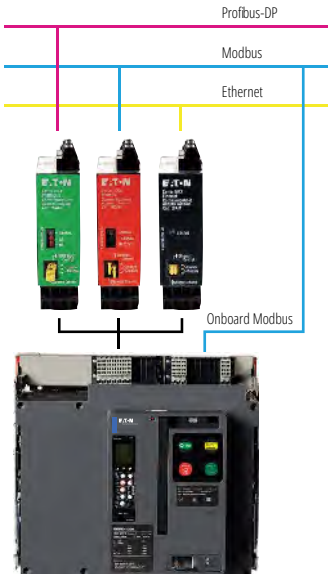
- LCD display with multilingual capability
- Current metering on PXR20 and power metering on PXR25
- Extended range for pickup value and delay timing setting
- "OFF" setting available for ground fault(G) and non-delayed instantaneous trip(I)
- Onboard Modbus communication(standard on PXR25 and optional on PXR20)
- MicroUSB for computer connection
- PXR Configuration and Test Tool to remotely configure and test the trip unit
  - Trip test
  - Waveform capture
  - Diagnostics
  - Long trip curve setting
  - ZSI/Thermal Memory on/off

PXR Trip Unit

Increased operating on communication

With the respective communication module - PCAM, MCAM or ECAM (Profibus-DP / Modbus/ Ethernet Communications Adapter Module) - every circuit breaker of the IZM series is equipped for modern communication and is fit for the future. The databus not only allows to transmit information, but also to receive commands/settings.

Onboard Modbus communication is standard on the PXR25 (U type) trip unit and optional on the PXR20(V type) trip unit upon order. Additional PCAM, MCAM or ECAM module can be installed externally for PXR25 to expand the communication capability. (No more than one external CAM module can be installed)



Arcflash Reduction Maintenance System™

Eaton's patented Arcflash Reduction Maintenance System technology provides maintenance staff improved safety of downstream maintenance locations using a simple and reliable method to reduce fault clearing times and energy in an arc flash event (radiation, sound, pressure, temperature).

Arcflash Reduction Maintenance System uses a separate analog trip circuit providing faster signal processing and interruption times than the standard (digital) "instantaneous" protection.

The Arcflash Reduction Maintenance System function is activated either directly on the circuit breaker through a local switch or remotely through communications or a contact input.

Arcflash Reduction Maintenance System is optional on both PXR20 and PXR25 trip units.

Software Power Xpert Protection Manager (PXPM) for interaction with PXR

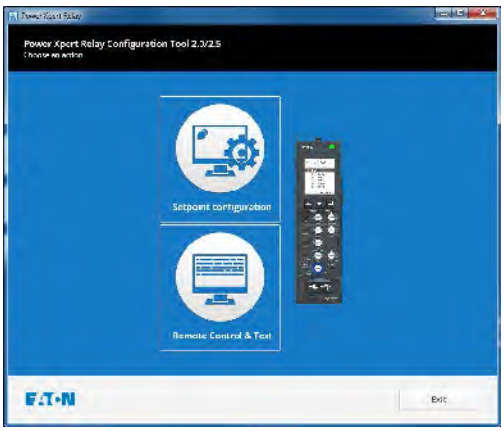
Using the software is easy and self explaining. The cursor above a select able function opens a window with its explanation. Depending on the selection next logical selection opens.

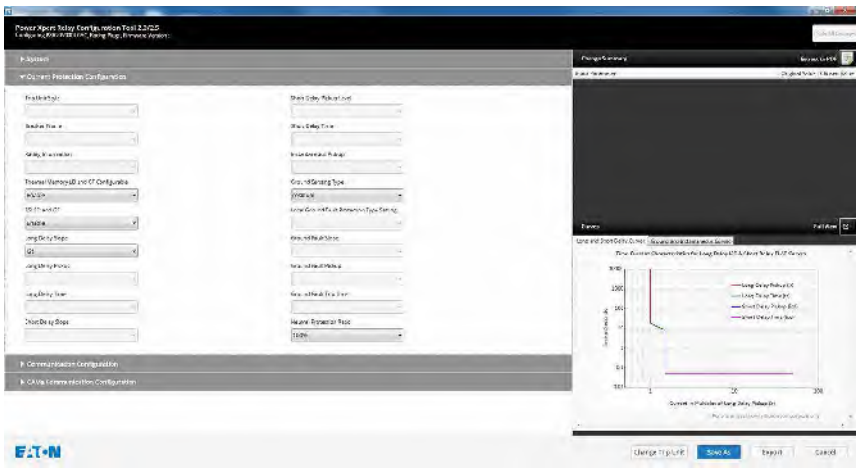
Testers no longer require specialized test tools thanks to the much better software solution in combination with the integrated secondary injection test hardware.

The Power Xpert Release trip unit platform enables engineers to confi gure and test circuit breakers from a PC via a USB port. As a result, it is easier for users to interact with the trip unit and store or print test data so they can improve their control and maintenance regimes.

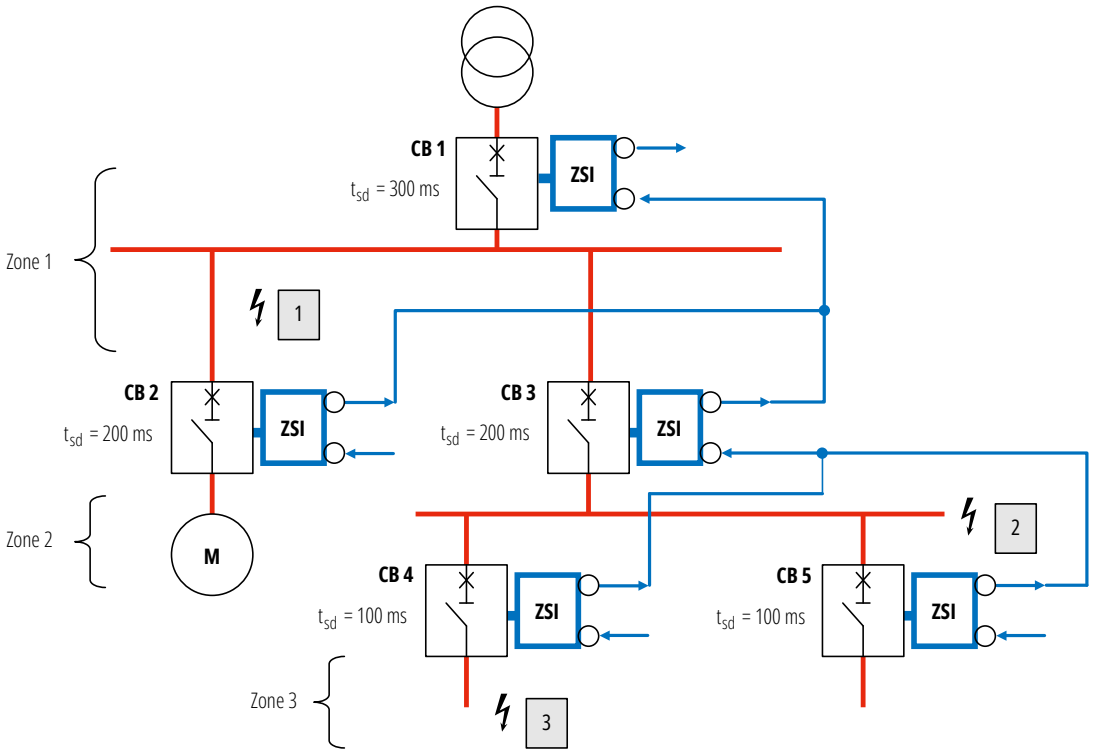
Load your settings and record them. If any values are changed a "fi nal setting adjustments" screen shows the original and revised settings, highlighting any that were modified. The sheet can be saved or printed.

- Dis-/enable functions
- Reading/Changing settings (not basic protection settings)
- Waveform capture
- Multiple test procedures with fi nal test protocol print including date/time stamp
- Print settings and curves





Zone Selectivity Interlocking



CB = Circuit Breaker
ZSI = Zone Selective Interlocking

Zone Selective Interlocking

- Circuit breakers are directly connected to a signal line, without any additional modules. So, in case of a malfunction, they ensure that only the circuit breaker immediately upstream the point of failure will break a short-circuit without delay.
- The advantage of the zone selectivity feature - compared to ordinary time selectivity - is the significantly reduced time until switch-off and the reduced amount of energy released in case of a short-circuit.
- For additional safety of maintenance staff we recommend combining ZSI functionality with Arcflash Reduction Maintenance System.

Zone Selective Interlocking Example

Example A – Short-circuit at position 3

- Circuit-breakers CB1, CB3, CB4 all see the short circuit current and register a short delay pick-up.
- Circuit breaker CB4 sends a ZSI out-put blocking signal to CB3 ZSI input. CB3 sends a ZSI output blocking sig-nal to CB1 ZSI input. CB1 sends a ZSI output signal that is not wired. This signal could be wired to a MV relay on the other side of the trans-former with a compatible ZSI cir-cuitry.
- CB1 registers the ZSI input signal and starts its timer for 300ms. CB3 registers the ZSI input signal and starts its timer for 200ms. CB4 gets no input from any lower zone circuit breaker. This breaker will then trip immediately without any time delay. CB4 interrupts the fault and CB1 and CB3 stop short delay timing because the fault current is gone.
- If for some reason CB4 does not open and interrupt the fault then at the end of the its short delay time CB3 will open and interrupt the fault.

Example B – Short-circuit at position 2

- Circuit-breakers CB1, CB3, see the short circuit current and register a short delay pick-up. CB4 and CB5 do not see the fault current and do not send a ZSI output.
- Circuit breaker CB3 sends a ZSI out-put blocking signal to CB1 ZSI input. CB1 sends a ZSI output signal. In this exam-ple that signal is not wired.
- CB1 registers the ZSI input signal and starts a timer for 300ms. CB3 gets no input from any lower zone circuit break-er. This breaker will then trip imme-diately without any time delay. CB3 interrupts the fault and CB1 stops short delay timing be-cause the fault current is gone. The clearance time is reduced by ap-proximately 150ms.

Example C – Short-circuit at position 1

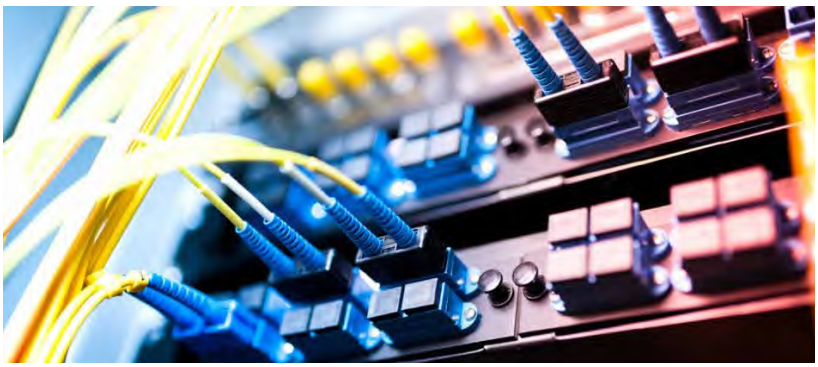
- Only Circuit breaker CB1sees the short circuit current and registers a short delay pick-up. CB2, CB3, CB4 and CB5 do not see the fault current and do not send ZSI outputs.
- CB1 sends a ZSI output signal. In this example that signal is not wired.
- CB1 gets no input from any lower zone circuit breaker. This breaker will then trip immediately without any time delay. CB1 interrupts the fault and the clearance time is re-duced by approxi-mately 250ms.

Breaker Health Feature and Programmable Alarms

Less Costly Downtime

By enabling you to perform predictive and preventive maintenance on your power distribution system prior to component failure, the breaker health feature and programmable alarms will help you avoid costly downtime.

- Communicates circuit breaker status at customer determined levels to prompt for breaker maintenance or inspection.
- Provides real-time evaluation of breaker condition by tracking and analyzing diagnostic details including breaker operations, short circuit fault levels, operational time, internal temperature and overloads.



General Purpose Relay Mapping

The PXR family supports 3 general purpose relay contacts. Any relay in the PXR can be configured to any one of the functions. The mapping is conveniently done using the Power Xpert Protection Manager software. Relays require auxiliary power to operate.

Function Name	**Description of Relay Operation: "The relay will close when ⋯ "**	**Description of Relay Operation: "The relay will open when ⋯ "**
Overload Trip	there was a Long or Over-temperature trip	RESET button is pressed or communications reset command received
Neutral Trip	there was a Neutral Current trip	RESET button is pressed or communications reset command received
Short Delay Trip	there was a Short Delay trip	RESET button is pressed or communications reset command received
Instantaneous Trip	there was an Instantaneous trip or MCR	RESET button is pressed or communications reset command received
Short Circuit Trip	there was a Short, Inst or Override trip	RESET button is pressed or communications reset command received
Ground Fault Trip	there was a Ground Fault trip	RESET button is pressed or communications reset command received
Maint. Mode Trip	there was a Maintenance Mode trip	RESET button is pressed or communications reset command received
All Trips	any of protective trip (Overload, Neutral, Short, Instantaneous, Ground, Maint. Mode)	RESET button is pressed or communications reset command received
High Load 1	current flow is greater than set point (adjustable from 50% to 120% of I_r)	current flow falls 5% below the set point
High Load 2	current flow is greater than set point (adjustable from 50% to 120% of I_r)	current flow falls 5% below the set point
High Temperature	temperature exceeds 5C below the level of the temperature trip setting	temperature falls 5C below the setting
Ground Fault Pre-Alarm	ground current is greater than the set point (adjustable from 50% to 100%)	ground current falls 5% below the set point
Thermal Memory	the Thermal Memory value is greater than set point (adjustable from 50% to 100%)	Thermal Memory falls 5% below the set point
Watchdog	auxiliary power is active and the trip unit is healthy and operating	there is an error in the trip unit from any of the self-diagnostics
Low Battery	the battery is below 1 bar (20%)	the battery value is 1 bar (20%) or higher
Internal (HW) Fault	there is an internal fault detected	RESET button is pressed or communications reset command received
Setpoint Mismatch	a setpoint in the trip unit does not match the CAM's copy	RESET button is pressed or if a reset command sent by any communication
Breaker Health Alarm	the health value is below 25%	the health value is at or above 25%
Communication Error	any external communications error occurs	RESET button is pressed or communications reset command received
All Faults	any of Internal Fault, Setpoint Mismatch, Breaker Health Alarm, or Communication Error faults	all of Internal Fault, Setpoint Mismatch, Breaker Health Alarm, or Communication Error are inactive
Aux Contact	breaker is closed	breaker is open
Bell Contact	breaker is tripped	breaker is not tripped (it is open or closed)
Maintenance Mode Active	the trip unit is in the Maintenance Mode	when the trip unit exits Maintenance Mode
ZSI Active	the ZSI function active	ZSI is not active
ZSI Input Received	a ZSI INPUT signal is received	RESET button is pressed or communications reset command received
ZSI Output Sent	a ZSI OUTPUT signal is sent	RESET button is pressed or communications reset command received
Open Breaker Pulse	an OPEN breaker command from any of the communications channels is received	2 seconds after the OPEN breaker command is received
Close Breaker Pulse	a CLOSE breaker command from any of the communications channels is received	2 seconds after the CLOSE breaker command is received
Output	an Output ON command for the relay specified was received on one of the communications channels	an Output OFF is received on any of the communications channels
Off	relay is disabled	relay is disabled

Air circuit breaker IZM9

New Generation Air Circuit Breaker IZM9

Key Features

Air Circuit Breaker IZM9 Series

Eaton's IZM9, circuit-breakers offer a proven and complete range of air circuit-breakers up to 6300 A. Four sizes enable the ideal circuit-breaker to be selected economically for any project.
The particularly rugged circuit-breakers are already in use 100,000 times in harsh industrial environments worldwide. Large material thicknesses and a high short-time withstand current are its characteristic features.

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

Switches with Closing Release

They are particularly suitable for synchronization tasks.

Coupler Switches

Beside the IZM91/IZM97/IZM99. circuit-breakers, IN91/IN97/IN9 switch-disconnectors are available. These are used, for example, as coupler switches between different power supplies.

Modular Design

Because components are installed from the front, retrofitting accessories is especially quick and easy. This allows flexible response to changing requirements within the system.

Communication Capability

The communication capability of the IZM91/IZM97/IZM99 type circuit-breakers opens new possibilities in power distribution system. It provides all important operational information and passes this on. This increases system transparency and shortens the response times to states such as overcurrent, phase asymmetry and overvoltage. A rapid intervention in a process can, for example, prevent downtimes and help to schedule maintenance activities and therefore boost plant availability.
In addition to Modbus interface, the Profibus interface is offered.

Standard Scope of Delivery as Usual for IZM9 Series

- With the IZM9, you select a basic device that is already fitted with an electronic trip unit (no horizontal or vertical wiring terminals equipped, to be supplied to your request)
- Horizontal mounting wiring is standard in the switching cabinet
- 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. After the fault is identified and rectified, the mechanical reclosing lockout is reset by pressing the red mechanical 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 re-tensioned. In these applications, compulsory fault analysis is intentionally avoided.
- The number of terminals on the terminal bars of the secondary control circuit depends on the accessories fitted.
- 4NOs and 4NCs are provided instead of 2NOs and 2NCs
- A coding mechanism between the basic device and the cassette prevents impermissible combinations (“Rejection Interlock”).

Expanded Standard Scope of Delivery for IZM9 Series

The following options are now already part of the standard scope of delivery:

- With withdrawable circuit breakers, the door escutcheon is supplied with the cassette option, with no separate ordering required
- 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 circuit breakers that are provided with protective trip unit function now feature a LCD display.
- On each circuit breaker, the electronic trip unit is factory fitted with a sealable protective cover.
- If a motor operator is ordered, the “Spring-operated stored energy tensioned” indicator auxiliary contact is automatically provided.

ARMS™ Offers Increased Safety for Maintenance Staff

When equipped with the latest patented ARMS (arcflash reduction maintenance system), the IZM91/IZM97/IZM99 circuit breakers can ensure immediate breaking in the case of arc flash fault. This is even faster than instantaneous short-circuit tripping. When maintenance staff enter a hazardous area, the ARMS function can be activated directly on the circuit breaker or through an external switch. In conjunction with IZM9, other components of the ARMS enable an expansion of arc fault protection.

Selection Criteria for IZM9 type

Fundamental criteria for the selection of circuit-breakers:

- Max short-circuit current $I_{k\,max}$ of the circuit-breaker' point of installation: this value determines the short-circuit breaking capacity or the short-circuit current carrying capacity of the circuit breaker. It is compared with the I_{cu}, I_{cs} and I_{cw} values of the switch and essentially determines its size (see Technical data)
- Rated operational current I_n which should flow through the respective branch circuit: this value must not be greater than the maximum rated operational current of the circuit breaker. The rated operational current can be adjusted down using additional rated operational current modules.
- Ambient temperature of the circuit breaker: this is generally the internal temperature in the control panel. Observe the derating values with increased ambient temperature (see Technical data).
- Circuit-breaker type: fixed mounted or withdrawable units, 3 or 4Ps.
- Minimum short-circuit current which flows through the switching device: the release must recognize this value as a short-circuit and may react with a trip.
- Protection functions of the circuit breaker is determined by the selection of the respective overcurrent release.

Other Benefits of the IZM9 type

- Some applications have demand on the trip unit to offer a power interface for connection to an external control voltage source (see below). A power supply of 240 VAC external control voltage can be equipped
- Based on different mounting positions, a switching operations counter can now be used independently of a motor operator.
- Withdrawable unit operation: The unit is actuated with a hand crank supplied. This is now possible also with a standard tool (square drive socket 3/8").
- Three frame sizes are available, enabling to provide best devices for different applications. The rated operational voltage cover 630A to 6300A.
- An IZM99 circuit breaker can be produced in a simplified manner by assembling 2 IZM97 circuit breakers together. Therefore, IZM99 breakers are equipped with 2 wiring terminals for each phase on the incoming and outgoing sides. This can facilitate heat dissipation of power distribution cabinets and simplify production in some distribution cabinets, and reduce the number of different bus adapter models.
- Phase sequence of IZM99: (NN) AABBCC
- 6300A IZM99 circuit breaker: horizontal wiring is supplied as standard, thus simplifying the busbar connection in the switchgear system

External Control Voltage Supply

- The standard protection functions of the IZM91/IZM97/IZM99 circuit breakers 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 trip unit can be fed with an external 28VDC / 48VDC or 240VAC supply if required so that the display function can also be used without a load. An external power supply is needed if communication functions are required.

Characteristic Curve Selection Options

The trip characteristics is selected to user settings and the relationship among circuit breakers. For more information, consult EATON’s Technical Support.

Greater Safety for Maintenance Personnel with ARMS™

Personnel safety is of paramount im-portance in today' s work environment. Of recent concern is the potential for serious injury due to exposure to electrical arcs. Eaton' s IZM Series trip units offer the patented ARMS system (Arcflash Reduction Maintenance
System™), which offers a non-delayed immediate disconnection in the event of an arc fault. This disconnection is even faster than that of a non-delayed short-circuit release. This function can be activated directly on the circuit-breaker or via an external switch, such as when maintenance personnel enter a hazardous area.

Major Benefits of ARMS:

- Increased personnel safety – by limiting the available arc flash energy
- Simple to operate
- Enabled with circuit breaker door closed by a door mounted lockable switch
- Enabled only for the time required to perform the desired maintenance work
- Preserves overcurrent coordination under normal conditions
- Reduction in incident energy levels may permit reduced levels of Personal Protective Equipment (PPE), therefore improving worker comfort and mobility

Communication Options for IZM Series

With the respective communication mod-ule - PCAM, MCAM or ECAM (Profibus-DP / Modbus/ Ethernet Communications Adapter Module) - every circuit breaker of the IZM series is equipped for modern communication and is fit for the future. The databus not only allows to transmit infor-mation, but also to receive commands/ settings.
Onboard Modbus communication is standard on the PXR25 (U type) trip unit and optional on the PXR20(V type) trip unit upon order. Additional PCAM, MCAM or ECAM module can be installed externally for PXR25 to expand the communication capability. (No more than one external CAM module can be installed)

PROFIBUS-DP Configuration

Dommunications module 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 standard-ized device master data file, which permits smooth integration of IZM in a DP line.

- On the PROFIBUS-DP side the module supports automatic baud rate detec-tion; the PROFIBUS-DP bus address is set through the trip unit's display. The maximum cable length is 2.4 km.
- To operate the PCAM, a supply voltage of 24-28 VDC is required.
- The data connection to the circuitbreak-er is implemented internally through a serial highspeed data connection.

Data access via PROFIBUS-DP
The data on PROFIBUS-DP are offered according to the profile for low-volt-age 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 Series NRX data into the control system.

Modbus Configuration

Communications module 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 maxi-mum cable length is 1.2 km.
- The Modbus must be terminated with a 120 Ω terminating resistor.
- To operate the MCAM, a supply voltage of 24-28 VDC is required.
- The data connection to the circuitbreak-er is implemented internally through a serial highspeed data connection.

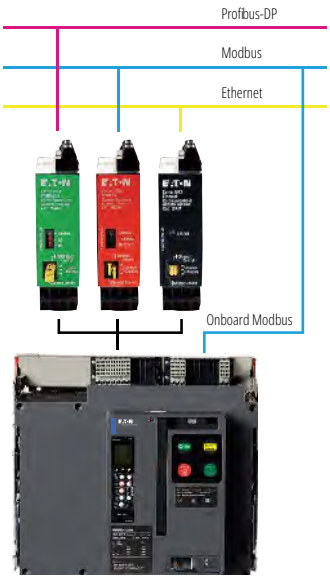
Data access via Modbus
The data is contained in comprehensive data tables. Each data point is available as floating-point (IEEE) or fixed-point value. This variance allows the integration of the IZM to be adapted to the Modbus archi-tecture. This enables a simple means of implementing a data filter,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

Ethernet Configuration

has standard RJ45 socket for connection to Ethernet. This module has a configured web server on board and supports Simple Network Mail Protocol (SNMP) for alarm or event notifications.

- IP address and related parameters are set through the trip unit's display.
- The data connection to the circuitbreak-er is implemented internally through a serial high speed data connection.
- To operate the ECAM, a supply voltage of 24-28 VDC is required.

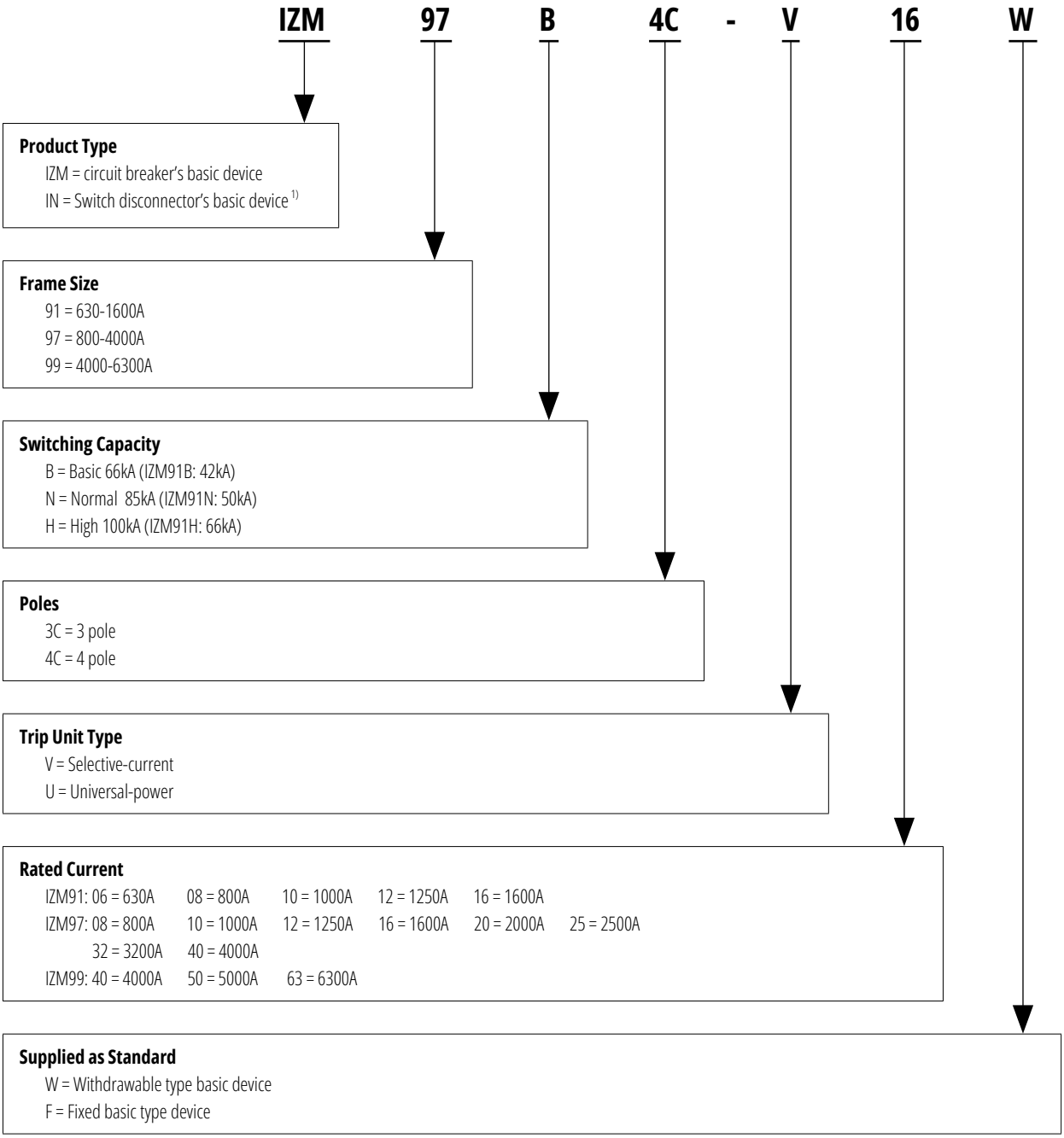
Data access via Ethernet
The data is contained in different web pages structured according to the top-ics „Data View", „Alarms", „Logs" and „Configuration". This variance allows the integration of the IZM to be adapted to all Ethernet networks supporting http protocol. An „around the world access" to the breaker becomes reality and using the SNMP protocol alarm messages can be transported everywhere.



New Generation Air Circuit Breaker IZM9

Breaker Catalog Number

IZM9 Series Air Circuit Breaker Catalog Number (IZM9-W or IZM9-F)



Fixed type

Standard IZM91,97,99 basic device includes: fixed circuit breaker's basic device, wiring terminal, auxiliary contact (4a4b), door escutcheon, 220VAC/DC power supply module

Withdrawable type

Standard IZM91,97,99 basic device includes: withdrawable circuit breaker's basic device, wiring terminal, auxiliary contact (4a4b), door escutcheon, 220VAC/DC power supply module

Notes: 1) The IN91/97/99 is an isolated circuit breaker that removes the IZM91/97/99 circuit breaker from the PXR series of trip unit in accordance with the requirements of Annex L of GB/T14048.2-2020/IEC 60947-2, and the remaining configurations are consistent with the standard circuit breakers.

2) IZM91-W/F does not contain wiring terminal and must be ordered separately; IZM97/99-W/F contains horizontal wiring terminal.

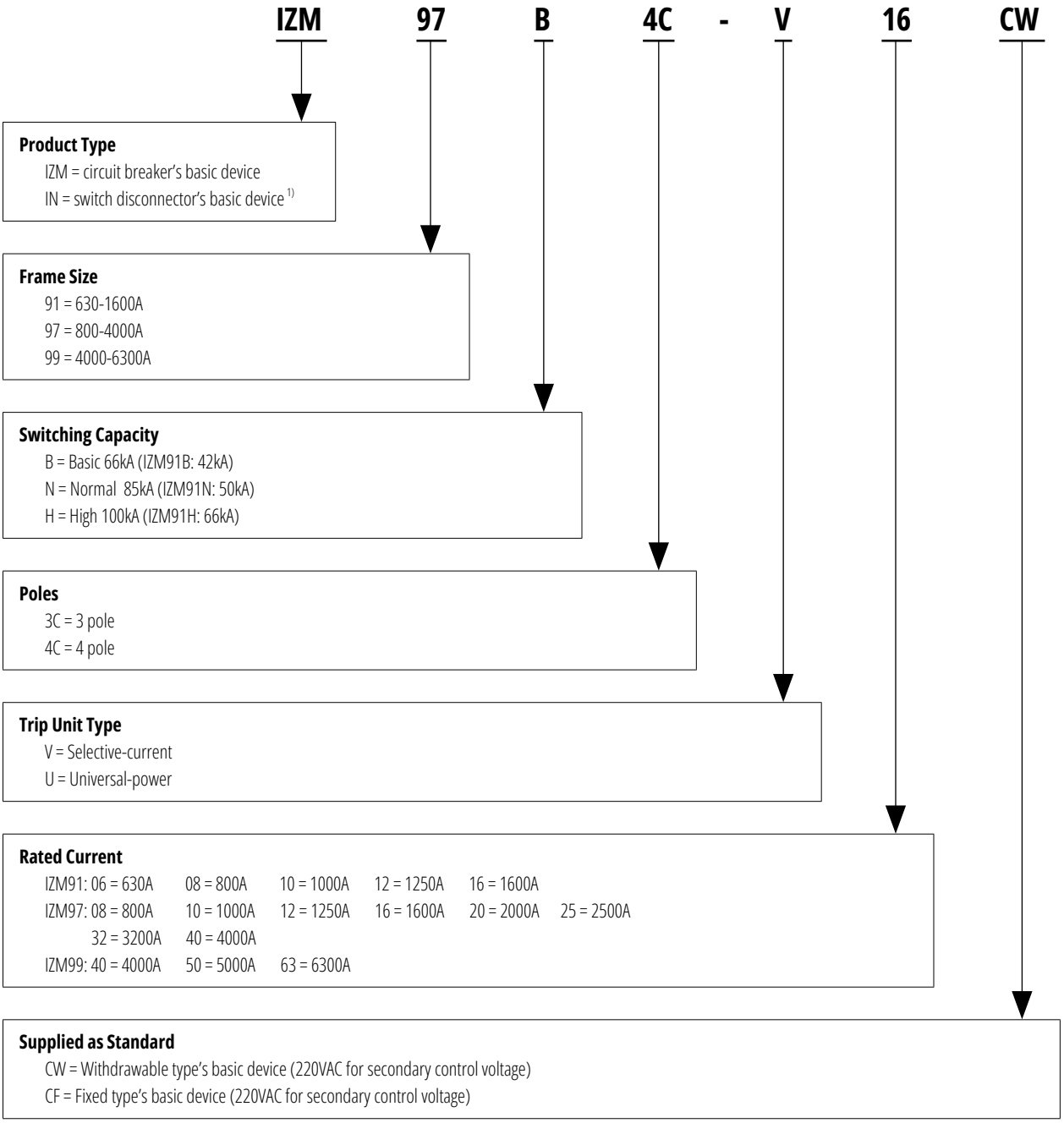
3) IZM91/97/99 F provides secondary control terminals configured according to requirements; IZM91/97/99 W does not provide secondary control terminals on breaker.

4) IZM91 with auxiliary contacts (2a2b) as standard.

5) EASY400-POW-CN instruction manual for details of power module input voltage.

6) The trip unit is not connected to the power supply does not affect the protection effect.

IZM9 Series Air Circuit Breaker Catalog Number (Supplied As standard) (IZM9-CW or IZM9-CF)



Fixed type
Standard fixed type basic device includes: fixed circuit breaker basic device, shunt release (220V AD), closing release (220V AD), motor operator (220V AC), auxiliary contact (4a4b), trip signal auxiliary contact OTS (2a2b), door escutcheon, wiring terminal, 220VAC/DC power supply module

Withdrawable type
Standard withdrawable type basic device includes: withdrawable circuit breaker basic device, shunt release (220V AD), closing release (220V AD), motor operator (220VAC), auxiliary contact (4a4b), trip signal auxiliary contact OTS (2a2b), door escutcheon, wiring terminal, 220VAC/DC power supply module, protection shutter, arc chamber cover, cassette, handle

Notes: 1) The IN91/97/99 is an isolated circuit breaker that removes the IZM91/97/99 circuit breaker from the PXR series of trip unit in accordance with the requirements of Annex L of GB/T14048.2-2020/IEC 60947-2, and the remaining configurations are consistent with the standard circuit breakers.
2) CW/CF is dedicated to 220VAC control voltage, one tailored type under W/F, so W/F is marked on the nametag of the circuit breaker's basic device, rather than CW/CF.
3) IZM91/97/99 CW/CF provides secondary control terminals configured according to requirements.
4) IZM91 with auxiliary contacts (2a2b) as standard.
5) EASY400-POW-CN instruction manual for details of power module input voltage.
6) The trip unit is not connected to the power supply does not affect the protection effect.

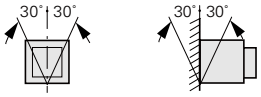
New Generation Air Circuit Breaker IZM9

Breaker Technical Data

IZM91/IN91[2)]

IZM97/IN97[2)]

IZM99/IN99[2)]

General										
Standards			IEC/EN 60947			IEC/EN 60947			IEC/EN 60947	
Ambient temperature	Storage	°C	-25 - 85			-25 - 85			-25 - 85	
	Operating (open)	°C	-25 - 85			-25 - 85			-25 - 85	
Mounting position										
Utilization category			B			B			B	
Protection type			IP20			IP20			IP20	
Environment humidity			Comply with GB / T2423.4 Alternating Humidity and Heat Test +55 °C, Relative Humidity 95%, Non-condensing (exceeding standards, cabinet needs to be protected)							
Direction of incoming supply			as required							
Switching capacity										
Rated Current (I_n)			630A, 800A, 1000A, 1250A, 1600A			800A, 1000A, 1250A, 1600A, 2000A, 2500A, 3200A, 4000A			4000A, 5000A, 6300A	
Type of circuit breaker			B	N	H	B	N	H	N	H
Rated impulse withstand voltage (U_{imp}, VAC)			12000	12000	12000	12000	12000	12000	12000	12000
Rated insulation voltage (U_i, VAC)			1000	1000	1000	1000	1000	1000	1000	1000
Rated operational voltage (U_e, VAC)			690	690	690	690	690	690	690	690
Ultimate breaking capacity (I_{cu}, kA)	440V 50/60Hz		42	50	66	66	85	100	85	100
	690V 50/60Hz		42	42	42	66	85	85	85	100
Rated service breaking capacity (I_{cs}, kA)	440V 50/60Hz		42	50	50	66	85	100	85	100
	690V 50/60Hz		42	42	42	66	85	85	85	100
Rated short-time withstand current (I_{cw}, kA)	1s		42/-	42/-	42/-	66	85	85	85	100
Rated short-circuit making capacity (I_{cm}, kA)	440V 50/60Hz		88	105	145	145	187	220	187	220
	690V 50/60Hz		88	88	88	145	187	187	187	220
Operating delays (ms)	Closing delay		30			35			35	
	Opening delay		25			30			30	
Maximum operating frequency (Operations/h)			60			60			60	

Durability and installation characteristics						
Lifespan		**630A-1600A**	**800-1600A**	**2000A**	**2500-4000A**	**4000-6300A**
	Mechanical, w/o maintenance	12500	12500	10000	10000	5000
	Mechanical, w/maintenance	25000	25000	20000	20000	10000
	Electrical, w/o maintenance	10000	10000	10000	8000[1)]	3000
Dimensions (H × W × D, mm)	Fixed 3P	338 × 210 × 184	461×431×372			461×907×372
	Fixed 4P	338 × 279 × 184	461×558×372			461×1161×372
	Withdrawable 3P	360 × 254 × 289	486×450×474			486×926 ×474
	Withdrawable 4P	360 × 324 × 289	486×577×474			486×1180×474
Weight (kg)	Fixed 3P/4P	15/20	68/86			125/163
	Withdrawable 3P/4P	39/47	86/112			157/200

Notes: 1) 5000 operations at 4000A.

2) The IN91/97/99 is an isolated circuit breaker that removes the IZM91/97/99 circuit breaker from the PXR series of trip unit in accordance with the requirements of Annex L of GB14048.2-2008/IEC 60947-2, and the remaining configurations are consistent with the standard circuit breakers. The IN91/97/99 is used in conjunction with an external protection relay (maximum delay of 400ms) to achieve a breaking capability (at U_e) to the I_{cw} (1 second).

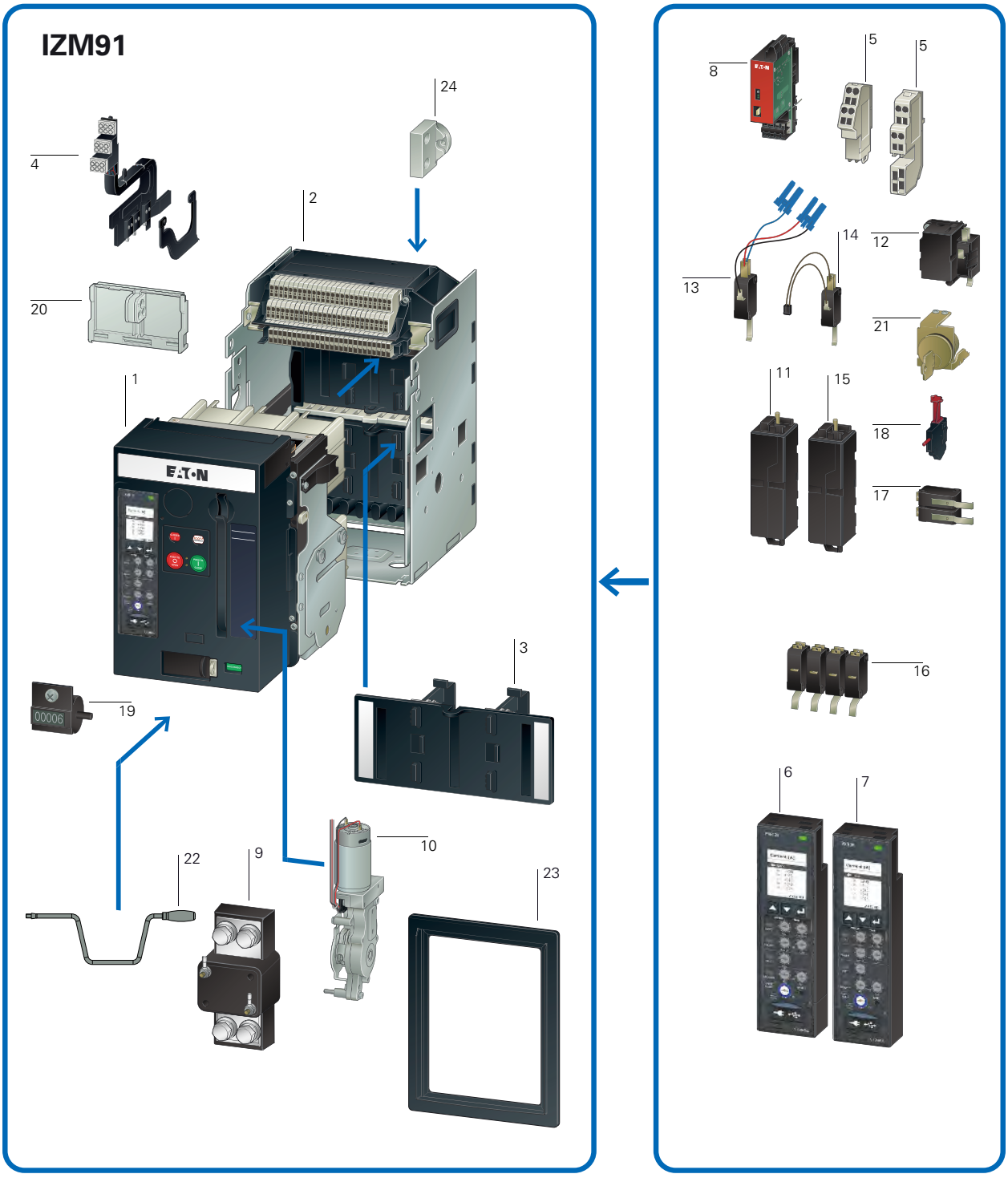
V Type (PXR20)
IZM-PXRV
IZM91/97/99···V

U Type (PXR25)
IZM-PXRU
IZM91/97/99···U

Protective options	LSI; LSIG/LSIA (Optional)	LSI; LSIG/LSIA (Optional)
Overload protection (L)		
Overload trip (I_r), × I_n	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 0.95, 0.98, 1.0	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 0.95, 0.98, 1.0
Long delay time t_r (6 × I_r)	0.5, 1, 2, 4, 7, 10, 12, 15, 20, 24 s	0.5, 1, 2, 4, 7, 10, 12, 15, 20, 24 s
Short-time delayed short-circuit protection (S)		
Short delayed pickup (I_{sd}), × I_r	1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 10	1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 10
Short delay time, flat characteristic curve (t_{sd})	0.0, 0.1, 0.2, 0.3, 0.4, 0.5 s[1)]	0.0, 0.1, 0.2, 0.3, 0.4, 0.5 s[1)]
Short delay time at 8 × I_r, I^2t curve (t_{sd})	0.1, 0.3, 0.4, 0.5 s	0.1, 0.3, 0.4, 0.5 s
Non-delayed short-circuit protection (I)		
Non-delayed pickup (I_i), × I_n	OFF, 2, 4, 5, 6, 7, 8, 10, 12, 15	OFF, 2, 4, 5, 6, 7, 8, 10, 12, 15
Optional ground fault protection (G)		
Ground/Earth fault alarm (A), × I_n	0.2, 0.4, 0.6, 1.0	0.2, 0.4, 0.6, 1.0
Ground/Earth pickup (I_g), × I_n	OFF, 0.2, 0.4, 0.6, 0.8, 1.0	OFF, 0.2, 0.4, 0.6, 0.8, 1.0
Short delay time, flat characteristic curve (t_g)	0.1, 0.2, 0.3, 0.4, 0.5 s	0.1, 0.2, 0.3, 0.4, 0.5 s
Short delay time at 0.625 x I_n, I^2t curve (t_g)	0.1, 0.2, 0.3, 0.4, 0.5 s	0.1, 0.2, 0.3, 0.4, 0.5 s
Over-temperature trip	●	●
Thermal memeory	●	●
Zone selectivity ZSI	●	●
Making current release (MCR)	●	●
Protective functions		
System diagnostic		
Status/Overload LED	●	●
Cause of trip LEDs	●	●
Current at trip point (display indication)	●	●
High load or ground fault alarm contact	●	●
System monitor		
LCD display	●[2)]	●[2)]
Current metering accuracy	±1% of Reading	±1% of Reading
Current THD	–	±10% of Reading[4)]
Voltage (%) L to L	–	±1% of Reading[3)]
Voltage THD	–	±10% of Reading[4)]
Power and energy (%)	–	±2% of Reading[3)]
Apparent power kVA and demand	–	●[3)]
Reactive power kVAR	–	●[3)]
Power factor	–	●[3)]
Communications		
Onboard (ModBus)	○	●
External (CAM Module)	○	○
Power supply requirement	+24 V DC, optional	+24 V DC, optional
Additional funtions		
Test Capability	Integral	Integral
Maintenance Mode ARMS (Arc Flash Reduction Maintenance System™)	○	○
Trip log	●	●
Electronic operations counter	●	●
Waveform capture	●	●
Breaker health monitor	●	●

Notes: 1) 0.1s: trip time is 0.06s to 0.1s; 0s: nominal clear time is 60ms with auxiliary power and 120ms without.
2) Requires external 28VDC control voltage supply when continuous current below 20% of I_n
3) Requires external PT module(IZMC2-PXR-PTM-2) for voltage sensing input to trip unit
4) Firmware version 02.02 and later
● Standard
○ Optional
– not available

IZM91 Circuit-breakers and Accessori



1 IZM91 air circuit breaker

2 Cassette

3 Safety Shutter

4 Position cell switches
Cell switch signals the position of the breaker inside of the cassette.
Connect, Test and Disconnect Position

5 Secondary circuit wiring terminal
8, 20, 30 secondary circuit wiring terminals can be ordered

6 Trip unit
PXR20, V-type, current metering
C - Onboard Modbus
G - Ground fault protection
M - Arcflash Reduction Maintenance System™

7 Trip unit
PXR25, U-type, power metering

8 Communication modules
Profibus DP, Ethernet and Modbus onboard

9 Current sensor for neutral conductor
Current sensor for sensing the neutral-conductor current

10 Motor operator
Automatic charging of the spring force storage for remote or local operations

11 Shunt releases
Opens the breaker by an electrical signal

12 Closing releases
Closes the breaker by an electrical signal

13 Latch check switch
For external application Usage

14 Latch check switch
For use with closing release.

15 Undervoltage releases
Opens the breaker by a voltage-drop in the control circuit.

16 Auxiliary contacts
Signaling switch ON-OFF
2a2b standard. 4a4b maximum for IZM91

17 Trip indicator switches
Overcurrent trip switch (OTS) signals a trip by the trip unit

18 Red-pop trip indicator
Red-pop trip indicator signals a trip by the trip unit
Included in breaker with trip unit

19 Switching operations counters
Counts the number of operations.

20 Locking facilities
Plastic or metal

21 Key locking
Locking of the breaker by a keylock.

22 Levering tool
Lev-in tool to move the breaker in and out of the cassette. Standard Omega shaped handle is included in D/O breaker. Optional collapsible handle can be ordered separately

23 Door escutcheon
Closes the gap between Breaker and Switchgear-door.
IP41 included in breaker
For IP55

24 Main terminal kits
Universal terminals, 3- and 4-pole horizontal/vertical

Model coding

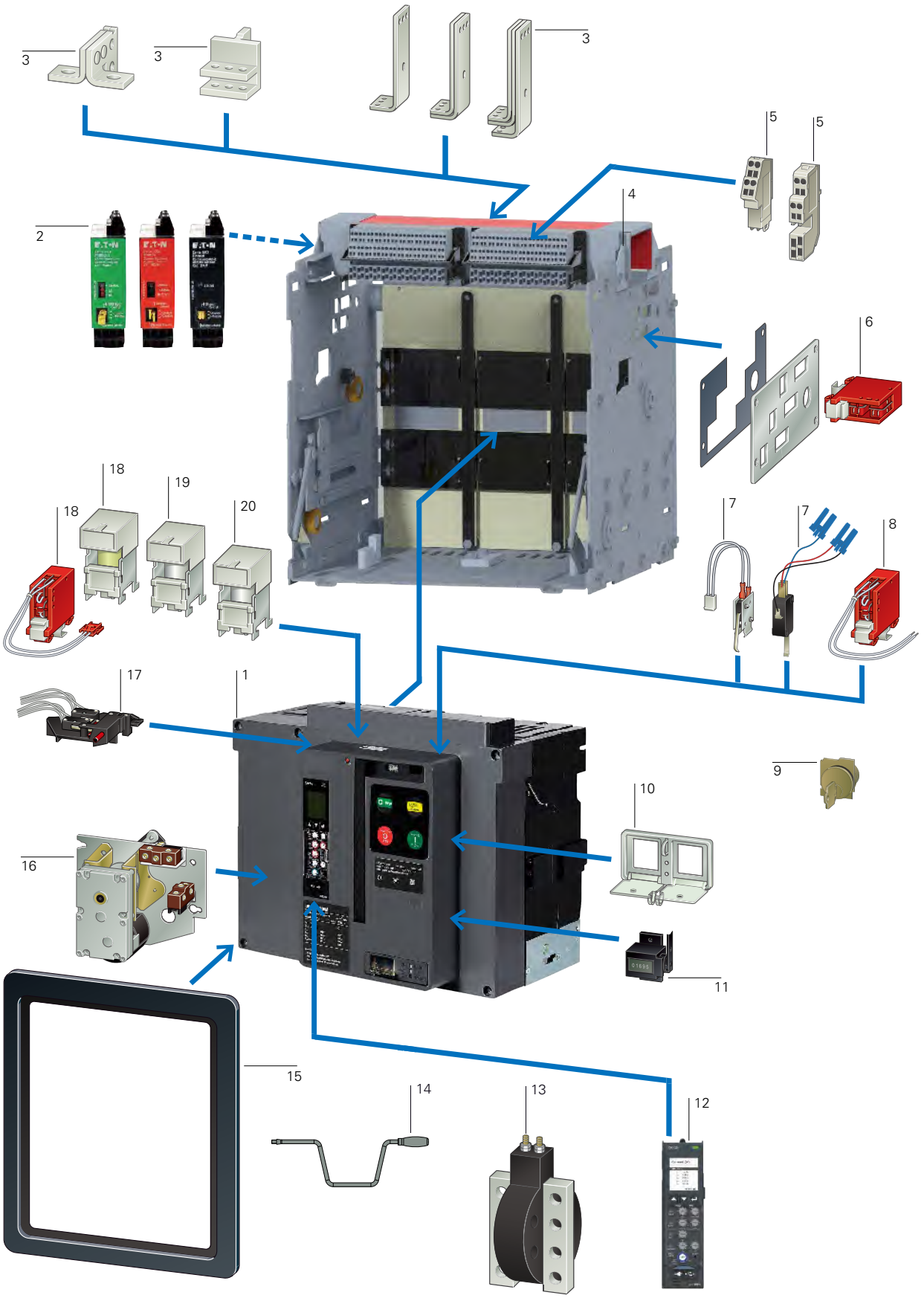
IZM	91	B	3	C	-	V	06	W
IN		N	4			U	08	F
		H					10	
							12	
							16	

IZM, IN = air circuit breaker, switch disconnector

Circuit breaker frame	Switching capacity	3 pole	Trip unit	Rated current	Circuit breaker type
91: 200-1600A	B = Basic	4 pole	V = Ammeter type	06: 630 A	W = Withdrawable
	N = Standard		U = Power meter type	08: 800 A	F = Fixed
	H = High			10: 1000 A	
				12: 1250 A	
				16: 1600 A	

Notes: 1) V and U basic configuration for LSI .
2) IN91 only offer IN91B type.
3) Please contact Eaton for IZM91 requirements below 630A.

IZM97 Circuit-breakers and Accessori



1 **IZM97/IZM99 air circuit breaker**

2 **Communication modules**
Profibus DP, Ethernet and Modbus onboard

3 **Main circuit wiring terminal**
Vertical wiring terminal 3/4P
Front wiring terminal 3/4P

4 **Cassette**

5 **Secondary circuit wiring terminal**
8, 20, 30 secondary circuit wiring terminals can be ordered

6 **Position cell switches**
Cell switch signals the position of the breaker inside of the cassette.
Connect, Test and Disconnect Position

7 **Latch check switch**
For external application Usage
For use with closing release

8 **Standard auxiliary contact**
Signaling switch ON-OFF.
4 ONs and 4 OFFs standard. 12 ONs and 12 OFFs maximum

9 **Key locking**
Locking of the breaker by a keylock.

10 **Button cover**
Plastic or metal

11 **Switching operations counters**
Counts the number of operations

12 **Trip unit**
PXR20, V-type, current metering
PXR25, U-type, power metering
Cannot be ordered separately

13 **Current sensor for neutral conductor**
Current sensor for sensing the neutral-conductor current.

14 **Levering tool**
Lev-in tool to move the breaker in and out of the cassette. Standard Omega shaped handle is included in D/O breaker

15 **Door escutcheon**
Closes the gap between Breaker and Switchgear-door.
IP41 included in breaker
For IP55

16 **Motor operator**
To store energy for closing release

17 **Red-pop trip indicator**
Red-pop trip indicator signals a trip by the trip unit
Included in breaker with trip unit
Trip signal auxiliary contact
OTS, 2CO

18 **Shunt releases**
Opens the breaker by an electrical signal.

19 **Closing releases**
Closes the breaker by an electrical signal.

20 **Undervoltage releases**
Opens the breaker by a voltage-drop in the control circuit

Model coding

IZM	97	B	3	C	-	V	08	W
IN	99	N	4			U	10	F
		H					12	
							16	
							20	
							25	
							32	
							40	
							50	

IZM, IN = air circuit breaker, switch disconnector

Circuit breaker frame	Switching capacity		Trip unit	Rated current	Circuit breaker type
97: Standard frame 800-4000A	B = Basic	3 pole	V = Ammeter type	08: 800 A	W = Withdrawable
99: Double frame 4000-6300 A	N = Standard	4 pole	U = Power meter type	10: 1000 A	F = Fixed
	H = High			12: 1250 A	
				16: 1600 A	
				20: 2000 A	
				25: 2500 A	
				32: 3200 A	
				40: 4000 A	
				50: 5000 A	
				63: 6300 A	

Notes: 1) IZM99 busbar sequence: (NN)AABBCC IN97/99.
2) No IN97H and IN99H.

3P Circuit Breakers of Ammeter Type (Including Type V Trip Unit, 2ON/2OFF Auxiliary Contacts, Some Secondary Terminal Blocks, Power Module, Terminals are not Included and Need to be Ordered Separately)

Switching capacity	Rated operational current	**Setting range**			Fixed	Withdrawable
		Overload releases	Short-circuit releases			
			Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu} / I_{cs} kA	$I_n = I_u$ A	I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
						Cassette must be ordered separately.
42/42	630	252-630	1.5-10	2-15,OFF	**IZM91B3C-V06F** YC-303126	**IZM91B3C-V06W** YC-303006
42/42	800	320-800	1.5-10	2-15,OFF	**IZM91B3C-V08F** YC-303127	**IZM91B3C-V08W** YC-303007
42/42	1000	400-1000	1.5-10	2-15,OFF	**IZM91B3C-V10F** YC-303128	**IZM91B3C-V10W** YC-303008
42/42	1250	500-1250	1.5-10	2-15,OFF	**IZM91B3C-V12F** YC-303129	**IZM91B3C-V12W** YC-303009
42/42	1600	640-1600	1.5-10	2-15,OFF	**IZM91B3C-V16F** YC-303130	**IZM91B3C-V16W** YC-303010
50/50	630	252-630	1.5-10	2-15,OFF	**IZM91N3C-V06F** YC-303166	**IZM91N3C-V06W** YC-303046
50/50	800	320-800	1.5-10	2-15,OFF	**IZM91N3C-V08F** YC-303167	**IZM91N3C-V08W** YC-303047
50/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91N3C-V10F** YC-303168	**IZM91N3C-V10W** YC-303048
50/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91N3C-V12F** YC-303169	**IZM91N3C-V12W** YC-303049
50/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91N3C-V16F** YC-303170	**IZM91N3C-V16W** YC-303050
66/50	630	252-630	1.5-10	2-15,OFF	**IZM91H3C-V06F** YC-303206	**IZM91H3C-V06W** YC-303086
66/50	800	320-800	1.5-10	2-15,OFF	**IZM91H3C-V08F** YC-303207	**IZM91H3C-V08W** YC-303087
66/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91H3C-V10F** YC-303208	**IZM91H3C-V10W** YC-303088
66/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91H3C-V12F** YC-303209	**IZM91H3C-V12W** YC-303089
66/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91H3C-V16F** YC-303210	**IZM91H3C-V16W** YC-303090

3P Circuit Breaker of Power Meter Type (Including Type V Trip Unit, 2ON/2OFF Auxiliary Contacts, Some Secondary Terminal Blocks, Power Module, Terminals are not Included and Need to be Ordered Separately)

Switching capacity	Rated operational current	**Setting range**			Fixed	Withdrawable
		Overload releases	Short-circuit releases			
			Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu} /I_{cs} kA	$I_n = I_u$ A	I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
						Cassette must be ordered separately.
42/42	630	252-630	1.5-10	2-15,OFF	**IZM91B3C-U06F** YC-303131	**IZM91B3C-U06W** YC-303011
42/42	800	320-800	1.5-10	2-15,OFF	**IZM91B3C-U08F** YC-303132	**IZM91B3C-U08W** YC-303012
42/42	1000	400-1000	1.5-10	2-15,OFF	**IZM91B3C-U10F** YC-303133	**IZM91B3C-U10W** YC-303013
42/42	1250	500-1250	1.5-10	2-15,OFF	**IZM91B3C-U12F** YC-303134	**IZM91B3C-U12W** YC-303014
42/42	1600	640-1600	1.5-10	2-15,OFF	**IZM91B3C-U16F** YC-303135	**IZM91B3C-U16W** YC-303015
50/50	630	252-630	1.5-10	2-15,OFF	**IZM91N3C-U06F** YC-303171	**IZM91N3C-U06W** YC-303051
50/50	800	320-800	1.5-10	2-15,OFF	**IZM91N3C-U08F** YC-303172	**IZM91N3C-U08W** YC-303052
50/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91N3C-U10F** YC-303173	**IZM91N3C-U10W** YC-303053
50/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91N3C-U12F** YC-303174	**IZM91N3C-U12W** YC-303054
50/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91N3C-U16F** YC-303175	**IZM91N3C-U16W** YC-303055
66/50	630	252-630	1.5-10	2-15,OFF	**IZM91H3C-U06F** YC-303211	**IZM91H3C-U06W** YC-303091
66/50	800	320-800	1.5-10	2-15,OFF	**IZM91H3C-U08F** YC-303212	**IZM91H3C-U08W** YC-303092
66/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91H3C-U10F** YC-303213	**IZM91H3C-U10W** YC-303093
66/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91H3C-U12F** YC-303214	**IZM91H3C-U12W** YC-303094
66/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91H3C-U16F** YC-303215	**IZM91H3C-U16W** YC-303095

4P Circuit Breakers of Ammeter Type (Including Type V Trip Unit, 2ON/2OFF Auxiliary Contacts, Some Secondary Terminal Blocks, Power Module, Terminals are not Included and Need to be Ordered Separately)

Switching capacity	Rated operational current	**Setting range**			Fixed	Withdrawable
		Overload releases	Short-circuit releases			
			Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu} /I_{cs} kA	$I_n = I_u$ A	I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
						Cassette must be ordered separately.
42/42	630	252-630	1.5-10	2-15,OFF	**IZM91B4C-V06F** YC-303146	**IZM91B4C-V06W** YC-303026
42/42	800	320-800	1.5-10	2-15,OFF	**IZM91B4C-V08F** YC-303147	**IZM91B4C-V08W** YC-303027
42/42	1000	400-1000	1.5-10	2-15,OFF	**IZM91B4C-V10F** YC-303148	**IZM91B4C-V10W** YC-303028
42/42	1250	500-1250	1.5-10	2-15,OFF	**IZM91B4C-V12F** YC-303149	**IZM91B4C-V12W** YC-303029
42/42	1600	640-1600	1.5-10	2-15,OFF	**IZM91B4C-V16F** YC-303150	**IZM91B4C-V16W** YC-303030
50/50	630	252-630	1.5-10	2-15,OFF	**IZM91N4C-V06F** YC-303186	**IZM91N4C-V06W** YC-303066
50/50	800	320-800	1.5-10	2-15,OFF	**IZM91N4C-V08F** YC-303187	**IZM91N4C-V08W** YC-303067
50/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91N4C-V10F** YC-303188	**IZM91N4C-V10W** YC-303068
50/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91N4C-V12F** YC-303189	**IZM91N4C-V12W** YC-303069
50/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91N4C-V16F** YC-303190	**IZM91N4C-V16W** YC-303070
66/50	630	252-630	1.5-10	2-15,OFF	**IZM91H4C-V06F** YC-303226	**IZM91H4C-V06W** YC-303106
66/50	800	320-800	1.5-10	2-15,OFF	**IZM91H4C-V08F** YC-303227	**IZM91H4C-V08W** YC-303107
66/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91H4C-V10F** YC-303228	**IZM91H4C-V10W** YC-303108
66/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91H4C-V12F** YC-303229	**IZM91H4C-V12W** YC-303109
66/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91H4C-V16F** YC-303230	**IZM91H4C-V16W** YC-303110

4P Circuit Breaker of Power Meter Type (Including Type U Trip Unit, 2ON/2OFF Auxiliary Contacts, Some Secondary Terminal Blocks, Power Module, Terminals are not Included and Need to be Ordered Separately)

Switching capacity	Rated operational current	**Setting range**			Fixed	Withdrawable
		Overload releases	Short-circuit releases			
			Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu} /I_{cs} kA	$I_n = I_u$ A	I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
						Cassette must be ordered separately.
42/42	630	252-630	1.5-10	2-15,OFF	**IZM91B4C-U06F** YC-303151	**IZM91B4C-U06W** YC-303031
42/42	800	320-800	1.5-10	2-15,OFF	**IZM91B4C-U08F** YC-303152	**IZM91B4C-U08W** YC-303032
42/42	1000	400-1000	1.5-10	2-15,OFF	**IZM91B4C-U10F** YC-303153	**IZM91B4C-U10W** YC-303033
42/42	1250	500-1250	1.5-10	2-15,OFF	**IZM91B4C-U12F** YC-303154	**IZM91B4C-U12W** YC-303034
42/42	1600	640-1600	1.5-10	2-15,OFF	**IZM91B4C-U16F** YC-303155	**IZM91B4C-U16W** YC-303035
50/50	630	252-630	1.5-10	2-15,OFF	**IZM91N4C-U06F** YC-303191	**IZM91N4C-U06W** YC-303071
50/50	800	320-800	1.5-10	2-15,OFF	**IZM91N4C-U08F** YC-303192	**IZM91N4C-U08W** YC-303072
50/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91N4C-U10F** YC-303193	**IZM91N4C-U10W** YC-303073
50/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91N4C-U12F** YC-303194	**IZM91N4C-U12W** YC-303074
50/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91N4C-U16F** YC-303195	**IZM91N4C-U16W** YC-303075
66/50	630	252-630	1.5-10	2-15,OFF	**IZM91H4C-U06F** YC-303231	**IZM91H4C-U06W** YC-303111
66/50	800	320-800	1.5-10	2-15,OFF	**IZM91H4C-U08F** YC-303232	**IZM91H4C-U08W** YC-303112
66/50	1000	400-1000	1.5-10	2-15,OFF	**IZM91H4C-U10F** YC-303233	**IZM91H4C-U10W** YC-303113
66/50	1250	500-1250	1.5-10	2-15,OFF	**IZM91H4C-U12F** YC-303234	**IZM91H4C-U12W** YC-303114
66/50	1600	640-1600	1.5-10	2-15,OFF	**IZM91H4C-U16F** YC-303235	**IZM91H4C-U16W** YC-303115

New Generation Air Circuit Breaker IZM9

IN91 Switch Disconnector Basic Device

Switch Disconnector (Including 2ON/2OFF Auxiliary Contacts, Some Secondary Terminal Blocks, Terminals are not Included and Need to be Ordered Separately)

Rated short-circuit making capacity	Rated operational current	Circuit breaker type	Rated short-time withstand current	Fixed	Withdrawable
				Part no. Article no.	**Part no.** Article no.
I_{cm} kA	$I_n = I_u$ A		I_{cw} kA		Cassette must be ordered separately.
88	630	IN91	42	**IN91B3C-06F** YC-303271	**IN91B3C-06W** YC-303241
88	800	IN91	42	**IN91B3C-08F** YC-303272	**IN91B3C-08W** YC-303242
88	1000	IN91	42	**IN91B3C-10F** YC-303273	**IN91B3C-10W** YC-303243
88	1250	IN91	42	**IN91B3C-12F** YC-303274	**IN91B3C-12W** YC-303244
88	1600	IN91	42	**IN91B3C-16F** YC-303275	**IN91B3C-16W** YC-303245
88	630	IN91	42	**IN91B4C-06F** YC-303276	**IN91B4C-06W** YC-303246
88	800	IN91	42	**IN91B4C-08F** YC-303277	**IN91B4C-08W** YC-303247
88	1000	IN91	42	**IN91B4C-10F** YC-303278	**IN91B4C-10W** YC-303248
88	1250	IN91	42	**IN91B4C-12F** YC-303279	**IN91B4C-12W** YC-303249
88	1600	IN91	42	**IN91B4C-16F** YC-303280	**IN91B4C-16W** YC-303250

3P Circuit Breakers of Ammeter Type (Including Type V Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		**Setting range**			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rx}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
66	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97B3C-V08F** YC-301021	**IZM97B3C-V08W** YC-301105
66	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97B3C-V10F** YC-301022	**IZM97B3C-V10W** YC-301106
66	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97B3C-V12F** YC-301023	**IZM97B3C-V12W** YC-301107
66	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97B3C-V16F** YC-301024	**IZM97B3C-V16W** YC-301108
66	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97B3C-V20F** YC-301025	**IZM97B3C-V20W** YC-301109
66	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97B3C-V25F** YC-301026	**IZM97B3C-V25W** YC-301110
66	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97B3C-V32F** YC-301027	**IZM97B3C-V32W** YC-301111
66	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97B3C-V40W** YC-301112
85	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97N3C-V08F** YC-301028	**IZM97N3C-V08W** YC-301113
85	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97N3C-V10F** YC-301029	**IZM97N3C-V10W** YC-301114
85	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97N3C-V12F** YC-301030	**IZM97N3C-V12W** YC-301115
85	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97N3C-V16F** YC-301031	**IZM97N3C-V16W** YC-301116
85	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97N3C-V20F** YC-301032	**IZM97N3C-V20W** YC-301117
85	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97N3C-V25F** YC-301033	**IZM97N3C-V25W** YC-301118
85	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97N3C-V32F** YC-301034	**IZM97N3C-V32W** YC-301119
85	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97N3C-V40W** YC-301120
85	4000	IZM99	1600-4000	1.5-10	2-15,OFF	**IZM99N3C-V40F** YC-301354	**IZM99N3C-V40W** YC-301390
85	5000	IZM99	2000-5000	1.5-10	2-15,OFF	**IZM99N3C-V50F** YC-301355	**IZM99N3C-V50W** YC-301391
85	6300	IZM99	2520-6300	1.5-10	2-15,OFF	**IZM99N3C-V63F** YC-301356	**IZM99N3C-V63W** YC-301392

3P Circuit Breaker of ammeter Type (Including Type V Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		Setting range			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
100	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97H3C-V08F** YC-301035	**IZM97H3C-V08W** YC-301121
100	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97H3C-V10F** YC-301036	**IZM97H3C-V10W** YC-301122
100	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97H3C-V12F** YC-301037	**IZM97H3C-V12W** YC-301123
100	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97H3C-V16F** YC-301038	**IZM97H3C-V16W** YC-301124
100	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97H3C-V20F** YC-301039	**IZM97H3C-V20W** YC-301125
100	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97H3C-V25F** YC-301040	**IZM97H3C-V25W** YC-301126
100	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97H3C-V32F** YC-301041	**IZM97H3C-V32W** YC-301127
100	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97H3C-V40W** YC-301128
100	4000	IZM99	1600-4000	1.5-10	2-15,OFF	**IZM99H3C-V40F** YC-301357	**IZM99H3C-V40W** YC-301393
100	5000	IZM99	2000-5000	1.5-10	2-15,OFF	**IZM99H3C-V50F** YC-301358	**IZM99H3C-V50W** YC-301394
100	6300	IZM99	2520-6300	1.5-10	2-15,OFF	**IZM99H3C-V63F** YC-301359	**IZM99H3C-V63W** YC-301395

3P Circuit Breaker of Power Meter Type (Including Type U Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		Setting range			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
66	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97B3C-U08F** YC-301042	**IZM97B3C-U08W** YC-301129
66	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97B3C-U10F** YC-301043	**IZM97B3C-U10W** YC-301130
66	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97B3C-U12F** YC-301044	**IZM97B3C-U12W** YC-301131
66	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97B3C-U16F** YC-301045	**IZM97B3C-U16W** YC-301132
66	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97B3C-U20F** YC-301046	**IZM97B3C-U20W** YC-301133
66	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97B3C-U25F** YC-301047	**IZM97B3C-U25W** YC-301134
66	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97B3C-U32F** YC-301048	**IZM97B3C-U32W** YC-301135
66	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97B3C-U40W** YC-301136

3P Circuit Breaker of Power Meter Type (Including Type U Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		**Setting range**			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rx}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
85	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97N3C-U08F** YC-301049	**IZM97N3C-U08W** YC-301137
85	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97N3C-U10F** YC-301050	**IZM97N3C-U10W** YC-301138
85	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97N3C-U12F** YC-301051	**IZM97N3C-U12W** YC-301139
85	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97N3C-U16F** YC-301052	**IZM97N3C-U16W** YC-301140
85	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97N3C-U20F** YC-301053	**IZM97N3C-U20W** YC-301141
85	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97N3C-U25F** YC-301054	**IZM97N3C-U25W** YC-301142
85	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97N3C-U32F** YC-301055	**IZM97N3C-U32W** YC-301143
85	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97N3C-U40W** YC-301144
85	4000	IZM99	1600-4000	1.5-10	2-15,OFF	**IZM99N3C-U40F** YC-301360	**IZM99N3C-U40W** YC-301396
85	5000	IZM99	2000-5000	1.5-10	2-15,OFF	**IZM99N3C-U50F** YC-301361	**IZM99N3C-U50W** YC-301397
85	6300	IZM99	2520-6300	1.5-10	2-15,OFF	**IZM99N3C-U63F** YC-301362	**IZM99N3C-U63W** YC-301398
100	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97H3C-U08F** YC-301056	**IZM97H3C-U08W** YC-301145
100	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97H3C-U10F** YC-301057	**IZM97H3C-U10W** YC-301146
100	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97H3C-U12F** YC-301058	**IZM97H3C-U12W** YC-301147
100	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97H3C-U16F** YC-301059	**IZM97H3C-U16W** YC-301148
100	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97H3C-U20F** YC-301060	**IZM97H3C-U20W** YC-301149
100	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97H3C-U25F** YC-301061	**IZM97H3C-U25W** YC-301150
100	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97H3C-U32F** YC-301062	**IZM97H3C-U32W** YC-301151
100	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97H3C-U40W** YC-301152
100	4000	IZM99	1600-4000	1.5-10	2-15,OFF	**IZM99H3C-U40F** YC-301363	**IZM99H3C-U40W** YC-301399
100	5000	IZM99	2000-5000	1.5-10	2-15,OFF	**IZM99H3C-U50F** YC-301364	**IZM99H3C-U50W** YC-301400
100	6300	IZM99	2520-6300	1.5-10	2-15,OFF	**IZM99H3C-U63F** YC-301365	**IZM99H3C-U63W** YC-301401

New Generation Air Circuit Breaker IZM9

IZM97/99 Circuit Breaker Basic Device

4P Circuit Breaker of Ammeter Type (Including Type V Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		**Setting range**			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
66	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97B4C-V08F** YC-301198	**IZM97B4C-V08W** YC-301282
66	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97B4C-V10F** YC-301199	**IZM97B4C-V10W** YC-301283
66	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97B4C-V12F** YC-301200	**IZM97B4C-V12W** YC-301284
66	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97B4C-V16F** YC-301201	**IZM97B4C-V16W** YC-301285
66	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97B4C-V20F** YC-301202	**IZM97B4C-V20W** YC-301286
66	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97B4C-V25F** YC-301203	**IZM97B4C-V25W** YC-301287
66	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97B4C-V32F** YC-301204	**IZM97B4C-V32W** YC-301288
66	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97B4C-V40W** YC-301289
85	800	IZM97	320-800	1.5-10	2-15,OFF	**IZM97N4C-V08F** YC-301205	**IZM97N4C-V08W** YC-301290
85	1000	IZM97	400-1000	1.5-10	2-15,OFF	**IZM97N4C-V10F** YC-301206	**IZM97N4C-V10W** YC-301291
85	1250	IZM97	500-1250	1.5-10	2-15,OFF	**IZM97N4C-V12F** YC-301207	**IZM97N4C-V12W** YC-301292
85	1600	IZM97	640-1600	1.5-10	2-15,OFF	**IZM97N4C-V16F** YC-301208	**IZM97N4C-V16W** YC-301293
85	2000	IZM97	800-2000	1.5-10	2-15,OFF	**IZM97N4C-V20F** YC-301209	**IZM97N4C-V20W** YC-301294
85	2500	IZM97	1000-2500	1.5-10	2-15,OFF	**IZM97N4C-V25F** YC-301210	**IZM97N4C-V25W** YC-301295
85	3200	IZM97	1280-3200	1.5-10	2-15,OFF	**IZM97N4C-V32F** YC-301211	**IZM97N4C-V32W** YC-301296
85	4000	IZM97	1600-4000	1.5-10	2-15,OFF	-	**IZM97N4C-V40W** YC-301297
85	4000	IZM99	1600-4000	1.5-10	2-15,OFF	**IZM99N4C-V40F** YC-301372	**IZM99N4C-V40W** YC-301408
85	5000	IZM99	2000-5000	1.5-10	2-15,OFF	**IZM99N4C-V50F** YC-301373	**IZM99N4C-V50W** YC-301409
85	6300	IZM99	2520-6300	1.5-10	2-15,OFF	**IZM99N4C-V63F** YC-301374	**IZM99N4C-V63W** YC-301410

4P Circuit Breaker of Ammeter Type (Including Type V Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		**Setting range**			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rx}$...	$I_i = I_{nx}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
100	800	IZM97	320-800	1.5-10	2-10, OFF	**IZM97H4C-V08F** YC-301212	**IZM97H4C-V08W** YC-301298
100	1000	IZM97	400-1000	1.5-10	2-10, OFF	**IZM97H4C-V10F** YC-301213	**IZM97H4C-V10W** YC-301299
100	1250	IZM97	500-1250	1.5-10	2-10, OFF	**IZM97H4C-V12F** YC-301214	**IZM97H4C-V12W** YC-301300
100	1600	IZM97	640-1600	1.5-10	2-10, OFF	**IZM97H4C-V16F** YC-301215	**IZM97H4C-V16W** YC-301301
100	2000	IZM97	800-2000	1.5-10	2-10, OFF	**IZM97H4C-V20F** YC-301216	**IZM97H4C-V20W** YC-301302
100	2500	IZM97	1000-2500	1.5-10	2-10, OFF	**IZM97H4C-V25F** YC-301217	**IZM97H4C-V25W** YC-301303
100	3200	IZM97	1280-3200	1.5-10	2-10, OFF	**IZM97H4C-V32F** YC-301218	**IZM97H4C-V32W** YC-301304
100	4000	IZM97	1600-4000	1.5-10	2-10, OFF	-	**IZM97H4C-V40W** YC-301305
100	4000	IZM99	1600-4000	1.5-10	2-10, OFF	**IZM99H4C-V40F** YC-301375	**IZM99H4C-V40W** YC-301411
100	5000	IZM99	2000-5000	1.5-10	2-10, OFF	**IZM99H4C-V50F** YC-301376	**IZM99H4C-V50W** YC-301412
100	6300	IZM99	2520-6300	1.5-10	2-10, OFF	**IZM99H4C-V63F** YC-301377	**IZM99H4C-V63W** YC-301413

4P Circuit Breaker of Power Meter Type (Including Type U Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		**Setting range**			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rx}$...	$I_i = I_{nx}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
66	800	IZM97	320-800	1.5-10	2-10, OFF	**IZM97B4C-U08F** YC-301219	**IZM97B4C-U08W** YC-301306
66	1000	IZM97	400-1000	1.5-10	2-10, OFF	**IZM97B4C-U10F** YC-301220	**IZM97B4C-U10W** YC-301307
66	1250	IZM97	500-1250	1.5-10	2-10, OFF	**IZM97B4C-U12F** YC-301221	**IZM97B4C-U12W** YC-301308
66	1600	IZM97	640-1600	1.5-10	2-10, OFF	**IZM97B4C-U16F** YC-301222	**IZM97B4C-U16W** YC-301309
66	2000	IZM97	800-2000	1.5-10	2-10, OFF	**IZM97B4C-U20F** YC-301223	**IZM97B4C-U20W** YC-301310
66	2500	IZM97	1000-2500	1.5-10	2-10, OFF	**IZM97B4C-U25F** YC-301224	**IZM97B4C-U25W** YC-301311
66	3200	IZM97	1280-3200	1.5-10	2-10, OFF	**IZM97B4C-U32F** YC-301225	**IZM97B4C-U32W** YC-301312
66	4000	IZM97	1600-4000	1.5-10	2-10, OFF	-	**IZM97B4C-U40W** YC-301313

New Generation Air Circuit Breaker IZM9

IZM97/99 Circuit Breaker Basic Device

4P Circuit Breaker of Power Meter Type (Including Type U Trip Unit, 4ON/4OFF Auxiliary Contacts, Main Wiring Terminal, Some Secondary Terminal Blocks and Power Module)

Switching capacity	Rated operational current		**Setting range**			Fixed	Withdrawable
			Overload releases	Short-circuit releases			
				Delayed	Non-delayed	**Part no.**	**Part no.**
I_{cu}/I_{cs} kA	$I_n = I_u$ A		I_r A	$I_{sd} = I_{rX}$...	$I_i = I_{nX}$ ...	Article no.	Article no.
							Cassette must be ordered separately.
85	800	IZM97	320-800	1.5-10	2-10, OFF	**IZM97N4C-U08F** YC-301226	**IZM97N4C-U08W** YC-301314
85	1000	IZM97	400-1000	1.5-10	2-10, OFF	**IZM97N4C-U10F** YC-301227	**IZM97N4C-U10W** YC-301315
85	1250	IZM97	500-1250	1.5-10	2-10, OFF	**IZM97N4C-U12F** YC-301228	**IZM97N4C-U12W** YC-301316
85	1600	IZM97	640-1600	1.5-10	2-10, OFF	**IZM97N4C-U16F** YC-301229	**IZM97N4C-U16W** YC-301317
85	2000	IZM97	800-2000	1.5-10	2-10, OFF	**IZM97N4C-U20F** YC-301230	**IZM97N4C-U20W** YC-301318
85	2500	IZM97	1000-2500	1.5-10	2-10, OFF	**IZM97N4C-U25F** YC-301231	**IZM97N4C-U25W** YC-301319
85	3200	IZM97	1280-3200	1.5-10	2-10, OFF	**IZM97N4C-U32F** YC-301232	**IZM97N4C-U32W** YC-301320
85	4000	IZM97	1600-4000	1.5-10	2-10, OFF	-	**IZM97N4C-U40W** YC-301321
85	4000	IZM99	1600-4000	1.5-10	2-10, OFF	**IZM99N4C-U40F** YC-301378	**IZM99N4C-U40W** YC-301414
85	5000	IZM99	2000-5000	1.5-10	2-10, OFF	**IZM99N4C-U50F** YC-301379	**IZM99N4C-U50W** YC-301415
85	6300	IZM99	2520-6300	1.5-10	2-10, OFF	**IZM99N4C-U63F** YC-301380	**IZM99N4C-U63W** YC-301416
100	800	IZM97	320-800	1.5-10	2-10, OFF	**IZM97H4C-U08F** YC-301233	**IZM97H4C-U08W** YC-301322
100	1000	IZM97	400-1000	1.5-10	2-10, OFF	**IZM97H4C-U10F** YC-301234	**IZM97H4C-U10W** YC-301323
100	1250	IZM97	500-1250	1.5-10	2-10, OFF	**IZM97H4C-U12F** YC-301235	**IZM97H4C-U12W** YC-301324
100	1600	IZM97	640-1600	1.5-10	2-10, OFF	**IZM97H4C-U16F** YC-301236	**IZM97H4C-U16W** YC-301325
100	2000	IZM97	800-2000	1.5-10	2-10, OFF	**IZM97H4C-U20F** YC-301237	**IZM97H4C-U20W** YC-301326
100	2500	IZM97	1000-2500	1.5-10	2-10, OFF	**IZM97H4C-U25F** YC-301238	**IZM97H4C-U25W** YC-301327
100	3200	IZM97	1280-3200	1.5-10	2-10, OFF	**IZM97H4C-U32F** YC-301239	**IZM97H4C-U32W** YC-301328
100	4000	IZM97	1600-4000	1.5-10	2-10, OFF	-	**IZM97H4C-U40W** YC-301329
100	4000	IZM99	1600-4000	1.5-10	2-10, OFF	**IZM99H4C-U40F** YC-301381	**IZM99H4C-U40W** YC-301417
100	5000	IZM99	2000-5000	1.5-10	2-10, OFF	**IZM99H4C-U50F** YC-301382	**IZM99H4C-U50W** YC-301418
100	6300	IZM99	2520-6300	1.5-10	2-10, OFF	**IZM99H4C-U63F** YC-301383	**IZM99H4C-U63W** YC-301419

Switch Disconnector (Including 4ON/4OFF Auxiliary Contacts, Main Terminals and all Secondary Terminal Blocks Equipped)

Rated short-circuit making capacity	Rated operational current	Circuit breaker type	Rated short-time withstand current	Fixed	Withdrawable
				Part no. Article no.	**Part no.** Article no.
I_{cm} kA	$I_n = I_u$ A		I_{cw} kA		Cassette must be ordered separately.
145	800	IN97	66	**IN97B3C-08F** YC-302001	**IN97B3C-08W** YC-302029
145	1000	IN97	66	**IN97B3C-10F** YC-302002	**IN97B3C-10W** YC-302030
145	1250	IN97	66	**IN97B3C-12F** YC-302003	**IN97B3C-12W** YC-302031
145	1600	IN97	66	**IN97B3C-16F** YC-302004	**IN97B3C-16W** YC-302032
145	2000	IN97	66	**IN97B3C-20F** YC-302005	**IN97B3C-20W** YC-302033
145	2500	IN97	66	**IN97B3C-25F** YC-302006	**IN97B3C-25W** YC-302034
145	3200	IN97	66	**IN97B3C-32F** YC-302007	**IN97B3C-32W** YC-302035
145	4000	IN97	66	-	**IN97B3C-40W** YC-302036
187	800	IN97	85	**IN97N3C-08F** YC-302008	**IN97N3C-08W** YC-302037
187	1000	IN97	85	**IN97N3C-10F** YC-302009	**IN97N3C-10W** YC-302038
187	1250	IN97	85	**IN97N3C-12F** YC-302010	**IN97N3C-12W** YC-302039
187	1600	IN97	85	**IN97N3C-16F** YC-302011	**IN97N3C-16W** YC-302040
187	2000	IN97	85	**IN97N3C-20F** YC-302012	**IN97N3C-20W** YC-302041
187	2500	IN97	85	**IN97N3C-25F** YC-302013	**IN97N3C-25W** YC-302042
187	3200	IN97	85	**IN97N3C-32F** YC-302014	**IN97N3C-32W** YC-302043
187	4000	IN97	85	-	**IN97N3C-40W** YC-302044
187	4000	IN99	85	**IN99N3C-40F** YC-302061	**IN99N3C-40W** YC-302073
187	5000	IN99	85	**IN99N3C-50F** YC-302062	**IN99N3C-50W** YC-302074
187	6300	IN99	85	**IN99N3C-63F** YC-302063	**IN99N3C-63W** YC-302075
220	4000	IN99	100	**IN99H3C-40F** YC-302064	**IN99H3C-40W** YC-302076
220	5000	IN99	100	**IN99H3C-50F** YC-302065	**IN99H3C-50W** YC-302077
220	6300	IN99	100	**IN99H3C-63F** YC-302066	**IN99H3C-63W** YC-302078

New Generation Air Circuit Breaker IZM9

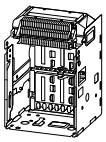
IN97/99 Switch Disconnector Basic Device

Switch Disconnector (Including 4ON/4OFF Auxiliary Contacts, Main Terminals and all Secondary Terminal Blocks Equipped)

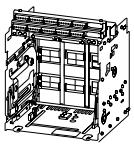
Rated short-circuit making capacity	Rated operational current	Circuit breaker type	Rated short-time withstand current	Fixed	Withdrawable
				Part no. Article no.	**Part no.** Article no.
I_{cm} kA	$I_n = I_u$ A		I_{cw} kA		Cassette must be ordered separately.
145	800	IN97	66	**IN97B4C-08F** YC-302015	**IN97B4C-08W** YC-302045
145	1000	IN97	66	**IN97B4C-10F** YC-302016	**IN97B4C-10W** YC-302046
145	1250	IN97	66	**IN97B4C-12F** YC-302017	**IN97B4C-12W** YC-302047
145	1600	IN97	66	**IN97B4C-16F** YC-302018	**IN97B4C-16W** YC-302048
145	2000	IN97	66	**IN97B4C-20F** YC-302019	**IN97B4C-20W** YC-302049
145	2500	IN97	66	**IN97B4C-25F** YC-302020	**IN97B4C-25W** YC-302050
145	3200	IN97	66	**IN97B4C-32F** YC-302021	**IN97B4C-32W** YC-302051
145	4000	IN97	66	-	**IN97B4C-40W** YC-302052
187	800	IN97	85	**IN97N4C-08F** YC-302022	**IN97N4C-08W** YC-302053
187	1000	IN97	85	**IN97N4C-10F** YC-302023	**IN97N4C-10W** YC-302054
187	1250	IN97	85	**IN97N4C-12F** YC-302024	**IN97N4C-12W** YC-302055
187	1600	IN97	85	**IN97N4C-16F** YC-302025	**IN97N4C-16W** YC-302056
187	2000	IN97	85	**IN97N4C-20F** YC-302026	**IN97N4C-20W** YC-302057
187	2500	IN97	85	**IN97N4C-25F** YC-302027	**IN97N4C-25W** YC-302058
187	3200	IN97	85	**IN97N4C-32F** YC-302028	**IN97N4C-32W** YC-302059
187	4000	IN97	85	-	**IN97N4C-40W** YC-302060
187	4000	IN99	85	**IN99N4C-40F** YC-302067	**IN99N4C-40W** YC-302079
187	5000	IN99	85	**IN99N4C-50F** YC-302068	**IN99N4C-50W** YC-302080
187	6300	IN99	85	**IN99N4C-63F** YC-302069	**IN99N4C-63W** YC-302081
220	4000	IN99	100	**IN99H4C-40F** YC-302070	**IN99H4C-40W** YC-302082
220	5000	IN99	100	**IN99H4C-50F** YC-302071	**IN99H4C-50W** YC-302083
220	6300	IN99	100	**IN99H4C-63F** YC-302072	**IN99H4C-63W** YC-302084

Cassette

Cassettes equipment supplied as standard: arc chamber cover, mismatch protection, door escutcheon, terminals are not included and secondary control terminal module, need to be ordered separately



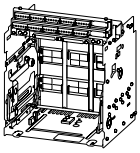
Cassettes ordered with basic device
Standard cassette equipment:
- Arc chamber cover
- Mismatch protection
- Main terminal for horizontal connection, except for IZM97... 4000A supplied with vertical terminal
- Door escutcheon
- No secondary control terminal module, to be ordered separately



Rated operational current I_n A	Pole	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
IZM91 cassettes equipment supplied as standard: arcing chamber cover, mismatch protection, door escutcheon, no main terminal for connection, no secondary control terminal module, to be ordered separately			
≤1600	3	IZM91...W IN91...W	**+IZMC1-CAS163-1600** YC-305031
≤1600	3	IZM91...W IN91...W	**IZMC1-CAS163-1600-SEC-2** YC-500164
≤1600	4	IZM91...W IN91...W	**+IZMC1-CAS164-1600** YC-305032
≤1600	4	IZM91...W IN91...W	**IZMC1-CAS164-1600-SEC-2** YC-500165
≤1600	3	IZM97...W IN97...	**+IZMC2-CAS323-1600** YC-300075
2000	3	IZM97...W IN97...W	**+IZMC2-CAS323-2000** YC-300076
2500	3	IZM97...W IN97...W	**+IZMC2-CAS323-2500** YC-300084
3200	3	IZM97...W IN97...W	**+IZMC2-CAS323-3200** YC-300077
4000	3	IZM97...W IN97...W	**+IZMC2-CAS-E403** YC-300078
4000	3	IZM99...W IN99..W	**+IZMC2-CAS633-4000** YC-300080
5000-6300	3	IZM99...W IN99..W	**+IZMC2-CAS633-6300** YC-300081
≤1600	4	IZM97...W IN97...	**+IZMC2-CAS324-1600** YC-300070
2000	4	IZM97...W IN97...W	**+IZMC2-CAS324-2000** YC-300062
2500	4	IZM97...W IN97...W	**+IZMC2-CAS324-2500** YC-300064
3200	4	IZM97...W IN97...W	**+IZMC2-CAS324-3200** YC-300063
4000	4	IZM97...W IN97...W	**+IZMC2-CAS-E404** YC-300065
4000	4	IZM99...W IN99..W	**+IZMC2-CAS634-4000** YC-300066
5000-6300	4	IZM99...W IN99..W	**+IZMC2-CAS634-6300** YC-300067

Cassette

Cassettes ordered with basic device
Standard cassette equipment:
- Arc chamber cover
- Mismatch protection
- Main terminal for horizontal connection, except for IZM97... 4000A supplied with vertical terminal
- Door escutcheon
- Safety Shutter

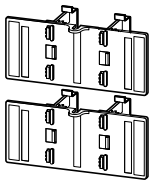


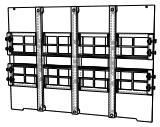
Rated operational current I_n A	Pole	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
≤1600	3	IZM97...W IN97...	**IZMC2-CAS323-1600** YC-500075
2000	3	IZM97...W IN97...W	**IZMC2-CAS323-2000** YC-500076
2500	3	IZM97...W IN97...W	**IZMC2-CAS323-2500** YC-500151
3200	3	IZM97...W IN97...W	**IZMC2-CAS323-3200** YC-500077
4000	3	IZM97...W IN97...W	**IZMC2-CAS-E403** YC-500078
4000	3	IZM99...W IN99..W	**IZMC2-CAS633-4000** YC-500080
5000-6300	3	IZM99...W IN99..W	**IZMC2-CAS633-6300** YC-500081
≤1600	4	IZM97...W IN97...W	**IZMC2-CAS324-1600** YC-500061
2000	4	IZM97...W IN97...W	**IZMC2-CAS324-2000** YC-500062
2500	4	IZM97...W IN97...W	**IZMC2-CAS324-2500** YC-500152
3200	4	IZM97...W IN97...W	**IZMC2-CAS324-3200** YC-500063
4000	4	IZM97...W IN97...W	**IZMC2-CAS-E404** YC-500065
4000	4	IZM99...W IN99...W	**IZMC2-CAS634-4000** YC-500066
5000-6300	4	IZM99...W IN99...W	**IZMC2-CAS634-6300** YC-500067

Secondary terminals upgrade kit

	Pole	Frame	**Part no.** Article no.
Replacement kit for old cassettes with Digitrip. Allows updating the cassette in order to receive new breaker with PXR trip unit.			
-	3	IZM97	**IZMC2-CAS-UPGRADE-KIT-403** YC-500277
-	4	IZM97	**IZMC2-CAS-UPGRADE-KIT-404** YC-500278

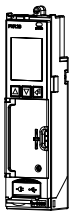
Cassette Safety Shutters

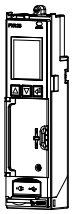




	Pole	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
When the breaker is withdrawn from its connected position, the shutters automatically cover the cassette's live main terminals.			
-	3	IZM91...W IN91...W	**+IZMC1-SH163** YC-305033
-	3	IZM97...W IN97...W	**+IZMC2-SH323** YC-300096
-	3	IZM99...W IN99...W	**+IZMC2-SH633** YC-300098
-	4	IZM91...W IN91...W	**+IZMC1-SH164** YC-305034
-	4	IZM97...W IN97...W	**+IZMC2-SH324** YC-300068
-	4	IZM99...W IN99...W	**+IZMC2-SH634** YC-300069

IZMC2-PXRV..., IZMC2-PXRU Trip Unit





	For use with	Ground Earth-Fault Protection (G)	ARMS (M)	Onboard ModBUS Communication (C)	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
Type V trip unit with current metering (with LSI protection function, current metering and zone selective protection function ZSI)					
	–	–	–	–	**IZMC2-PXRV**
Add-on functions for current metering Type V (PXR20)					
Add onboard Modbus, V type	IZM91/97/99	–	–	●	**+IZMC2-PXRV-C** YC-300058
Add ground fault protection, V type	IZM91/97/99	●	–	–	**+IZMC2-PXRV-G** YC-300057
Add ground fault protection and onboard Modbus, V type	IZM91/97/99	●	–	●	**+IZMC2-PXRV-GC** YC-300056
Add ground fault protection and ARMs, V type	IZM91/97/99	●	●	–	**+IZMC2-PXRV-GM** YC-300055
Add ground fault protection, onboard Modbus and ARMs, V type	IZM91/97/99	●	●	●	**+IZMC2-PXRV-GMC** YC-300054
Type U Trip Unit with Power Metering (with LSI protection function, zone selective protection function and onboard Modbus)					
Onboard ModBUS is standard on all PXR25 trip units	–	–	–	●	**IZMC2-PXRU**
Add-on functions for power metering Type U (PXR25)					
Add ground fault protection, U type	IZM91/97/99	●	–	●	**+IZMC2-PXRU-G** YC-300059
Add ARMs, U type	IZM91/97/99	–	●	●	**+IZMC2-PXRU-M** YC-300060
Add ground fault protection and ARMs, U type	IZM91/97/99	●	●	●	**+IZMC2-PXRU-GM** YC-300061

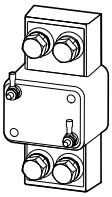
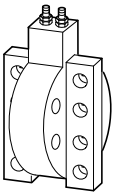
Rating Plug Kit

In (A)	Frame	Part no. Article no. Suffi x + for ordering with circuit breaker basic device
If a protection setting Ir below 0.4*In is required, In is redefined as a value lower than In, and this combination is required.		
200	IZM91... In≤630 A	**+IZMC1-RP16-200** YC-305046
250	IZM91... In≤630 A	**+IZMC1-RP16-250** YC-305047
300	IZM91... In≤630 A	**+IZMC1-RP16-300** YC-305048
400	IZM91... In≤630 A	**+IZMC1-RP16-400** YC-305049
500	IZM91... In≤630 A	**+IZMC1-RP16-500** YC-305050

Accessories for Electronic Releases

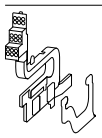
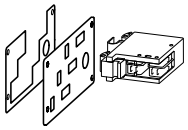
	For use with	Rated control voltage U_s V	Part no. Article no.	Notes
External trip unit power adapter				
External trip unit power adapter	IZM91... IZM97... IZM99...	85-264VAC,120-370VDC input 28VDC, 1.5A output	**EASY400-POW-CN** 90000019400525	DIN rail mount Order seperately
External voltage measurement module, for U type release unit		–	**IZMC2-PXR-PTM-2** YC-500160	
Communication modules				
Communication module Modbus	IZM91... IZM97... IZM99...	–	**IZMC2-MCAM-2** YC-500119	DIN rail mount Order seperately
Communication module Profibus DP		–	**IZMC2-PCAM-2** YC-500120	
Communication module Ethernet		–	**IZMC2-ECAM-2** YC-500121	

External Neutral Transformer

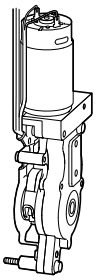
		Rated current I_n A	For use with	**Part no.** Article no.
	Current sensor for neutral conductor on 3-pole circuit-breakers			
	For IZM91 Externally mounted neutral sensor for residual ground.	–	IZM91...	**IZMC1-CT16-N-2** YC-500161
	For IZM97,99[1)] Externally mounted neutral sensor for residual ground.	–	IZM97... IZM99...	**IZMC2-CT40-N-2** YC-500102

Notes: [1)]IZM99 requires two orders.

Position Indication Contact for Withdrawable Circuit Breaker

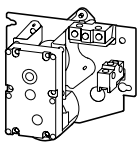
		For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
	One changeover contact for position Disconnected, Test, Connected.		
	Installation on left in the cassette	IZM91...W IN91...W	**IZMC1-CS16-1-2** YC-500192
	For remote indication of circuit breaker's position in the cassette. Maximum three sets of withdrawer position indication contacts (each set includes 4 indication contacts) can be installed. Each withdrawer only requires one mounting support.		
	4CO, 1 module with mounting	IZM97,99...W IN97,99...W	**IZMC2-CS4MB** YC-500122
	8CO, 2 module with mounting	IZM97,99...W IN97,99...W	**IZMC2-CS8MB** YC-500123
	12CO, 3 module with mounting	IZM97,99...W IN97,99...W	**IZMC2-CS12MB** YC-500124

Motor Operator



The motor automatically tensions the spring force storage mechanism for remote or local actuation.
A signaling switch for the "Spring force storage charged" message is included as standard

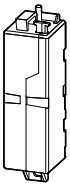
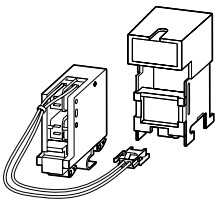
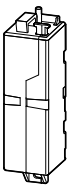
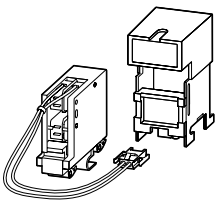
Rated control voltage U_S V	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device	**Instructions**
24 V DC	IZM91... IN91...	**IZMC1-M16-24DC-2** YC-500168	If ordered separately for upgrade, need to order 1 separate for the control secondary terminal block
24 V DC	IZM91... IN91...	**+IZMC1-M16-24DC** YC-305001	
48 V DC	IZM91... IN91...	**IZMC1-M16-48DC-2** YC-500169	
48 V DC	IZM91... IN91...	**+IZMC1-M16-48DC** YC-305002	
110 - 127 V AC 50/60 Hz 110 - 125 V DC	IZM91... IN91...	**IZMC1-M16-110AD-2** YC-500170	
110 - 127 V AC 50/60 Hz 110 - 125 V DC	IZM91... IN91...	**+IZMC1-M16-110AD** YC-305006	
208 - 240 V AC 50/60 Hz 220 - 250 V DC	IZM91... IN91...	**IZMC1-M16-230AD-2** YC-500171	
208 - 240 V AC 50/60 Hz 220 - 250 V DC	IZM91... IN91...	**+IZMC1-M16-230AD** YC-305007	



It can store energy by motor. When motor operator operates, it requires additionally a closing release and a shunt release. The "Spring energy store tensioned" status indication switch is also included.

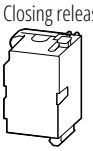
24VDC	IZM97,99 IN97,99...	**IZMC2-M24DC** YC-500027	If ordered separately for upgrade, need to order 1 separate for the control secondary terminal block
24VDC	IZM97,99 IN97,99...	**+IZMC2-M24DC** YC-300027	
48VDC	IZM97,99 IN97,99...	**IZMC2-M48DC** YC-500028	
48VDC	IZM97,99 IN97,99...	**+IZMC2-M48DC** YC-300028	
110-125VDC	IZM97,99 IN97,99...	**IZMC2-M110DC** YC-500029	
110-125VDC	IZM97,99 IN97,99...	**+IZMC2-M110DC** YC-300029	
220-250VDC	IZM97,99 IN97,99...	**IZMC2-M220DC** YC-500030	
220-250VDC	IZM97,99 IN97,99...	**+IZMC2-M220DC** YC-300030	
110-127VAC	IZM97,99 IN97,99...	**IZMC2-M110AC** YC-500031	
110-127VAC	IZM97,99 IN97,99...	**+IZMC2-M110AC** YC-300031	
208-240VAC	IZM97,99 IN97,99...	**IZMC2-M230AC** (for 220V DC) YC-500032	
208-240VAC	IZM97,99 IN97,99...	**+IZMC2-M230AC** (for 220V DC) YC-300032	

Shunt Release

	Rated control voltage U_S V	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device	**Instructions**
Shunt release 	Can be combined with an undervoltage release or a second shunt release.			
	24 V DC	IZM91... IN91...	**IZMC1-ST24DC-2** YC-500172	If ordered separately for upgrade, need to order 1 separate for the control secondary terminal block
	24 V DC	IZM91... IN91...	**+IZMC1-ST24DC** YC-305008	
	48 V DC	IZM91... IN91...	**IZMC1-ST48DC-2** YC-500173	
	48 V DC	IZM91... IN91...	**+IZMC1-ST48DC** YC-305009	
	110 - 125 V AC/DC	IZM91... IN91...	**IZMC1-ST110AD-2** YC-500174	
	110 - 125 V AC/DC	IZM91... IN91...	**+IZMC1-ST110AD** YC-305010	
	220 - 240 V AC/DC	IZM91... IN91...	**IZMC1-ST230AD-2** YC-500175	
	220 - 240 V AC/DC	IZM91... IN91...	**+IZMC1-ST230AD** YC-305011	
Shunt release 	24DC	IZM97,99... IN97,99...	**IZMC2-ST24DC** YC-500006	
	24DC	IZM97,99... IN97,99...	**+IZMC2-ST24DC** YC-300006	
	48DC	IZM97,99... IN97,99...	**IZMC2-ST48DC** YC-500007	
	48DC	IZM97,99... IN97,99...	**+IZMC2-ST48DC** YC-300007	
	110-125 DC 110-127 AC	IZM97,99... IN97,99...	**IZMC2-ST110AD** YC-500008	
	110-125 DC 110-127 AC	IZM97,99... IN97,99...	**+IZMC2-ST110AD** YC-300008	
	220-250 DC 208-240 AC	IZM97,99... IN97,99...	**IZMC2-ST230AD** YC-500009	
	220-250 DC 208-240 AC	IZM97,99... IN97,99...	**+IZMC2-ST230AD** YC-300009	
Second shunt release 	Cannot be combined with an undervoltage release.			
	24 V DC	ZM91... IN91...	**+IZMC1-STS24DC** YC-305012	
	48 V DC	ZM91... IN91...	**+IZMC1-STS48DC** YC-305013	
	110 - 125 V AC/DC	ZM91... IN91...	**+IZMC1-STS110AD** YC-305014	
	220 - 240 V AC/DC	ZM91... IN91...	**+IZMC1-STS230AD** YC-305015	
Second shunt release 	Cannot be combined with an undervoltage release.			
	24DC	IZM97,99... IN97,99...	**IZMC2-STS24DC** YC-500022	
	24DC	IZM97,99... IN97,99...	**+IZMC2-STS24DC** YC-300022	
	48DC	IZM97,99... IN97,99...	**IZMC2-STS48DC** YC-500023	
	48DC	IZM97,99... IN97,99...	**+IZMC2-STS48DC** YC-300023	
	110-125 DC 110-127 AC	IZM97,99... IN97,99...	**IZMC2-STS110AD** YC-500024	
	110-125 DC 110-127 AC	IZM97,99... IN97,99...	**+IZMC2-STS110AD** YC-300024	
	220-250 DC 208-240 AC	IZM97,99... IN97,99...	**IZMC2-STS230AD** YC-500025	
	220-250 DC 208-240 AC	IZM97,99... IN97,99...	**+IZMC2-STS230AD** YC-300025	

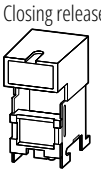
Closing Releases

Closing releases



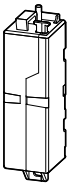
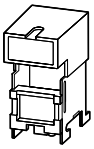
Rated control voltage U_S V	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device	**Instructions**
24 V DC	IZM91... IN91...	**IZMC1-SR24DC-2** YC-500176	If ordered separately for upgrade, need to order 1 separate for the control secondary terminal block
24 V DC	IZM91... IN91...	**+IZMC1-SR24DC** YC-305016	
48 V DC	IZM91... IN91...	**IZMC1-SR48DC-2** YC-500177	
48 V DC	IZM91... IN91...	**+IZMC1-SR48DC** YC-305017	
110 - 125 V AC/DC	IZM91... IN91...	**IZMC1-SR110AD-2** YC-500178	
110 - 125 V AC/DC	IZM91... IN91...	**+IZMC1-SR110AD** YC-305018	
220 - 240 V AC/DC	IZM91... IN91...	**IZMC1-SR230AD-2** YC-500179	
220 - 240 V AC/DC	IZM91... IN91...	**+IZMC1-SR230AD** YC-305019	

Closing releases



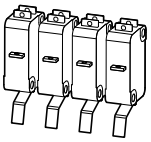
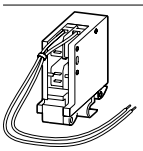
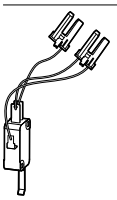
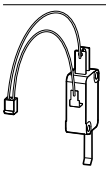
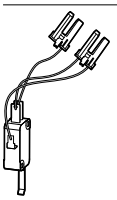
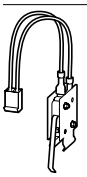
24DC	IZM97,99... IN97,99...	**IZMC2-SR24DC** YC-500001	
24DC	IZM97,99... IN97,99...	**+IZMC2-SR24DC** YC-300001	
48DC	IZM97,99... IN97,99...	**IZMC2-SR48DC** YC-500002	
48DC	IZM97,99... IN97,99...	**+IZMC2-SR48DC** YC-300002	
110-125 DC 110-127 AC	IZM97,99... IN97,99...	**IZMC2-SR110AD** YC-500003	
110-125 DC 110-127 AC	IZM97,99... IN97,99...	**+IZMC2-SR110AD** YC-300003	
220-250 DC 208-240 AC	IZM97,99... IN97,99...	**IZMC2-SR230AD** YC-500004	
220-250 DC 208-240 AC	IZM97,99... IN97,99...	**+IZMC2-SR230AD** YC-300004	

Undervoltage Release

	Rated control voltage U_s V	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device	**Instructions**
Undervoltage release Can not be used in combination With 2nd shunt release 	24 V DC	IZM91... IN91...	**IZMC1-UVR24DC-2** YC-500180	If ordered separately for upgrade, need to order 1 separate for the control secondary terminal block
	24 V DC	IZM91... IN91...	**+IZMC1-UVR24DC** YC-305020	
	48 V DC	IZM91... IN91...	**IZMC1-UVR48DC-2** YC-500181	
	48 V DC	IZM91... IN91...	**+IZMC1-UVR48DC** YC-305021	
	110 - 125 V AC/DC	IZM91... IN91...	**IZMC1-UVR110AD-2** YC-500182	
	110 - 125 V AC/DC	IZM91... IN91...	**+IZMC1-UVR110AD** YC-305022	
	220 - 240 V AC/DC	IZM91... IN91...	**IZMC1-UVR220AD-2** YC-500183	
	220 - 240 V AC/DC	IZM91... IN91...	**+IZMC1-UVR220AD** YC-305023	
	380-415V AC	IZM91... IN91...	**IZMC1-UVR400AC-2** YC-500184	
Undervoltage release Can not be used in combination With 2nd shunt release 	24 DC	IZM97,99... IN97,99...	**IZM-UVR24DC** YC-500011	
	24 DC	IZM97,99... IN97,99...	**+IZM-UVR24DC** YC-300011	
	48 DC	IZM97,99... IN97,99...	**IZMC2-UVR48DC** YC-500013	
	48 DC	IZM97,99... IN97,99...	**+IZMC2-UVR48DC** YC-300013	
	110-125 DC	IZM97,99... IN97,99...	**IZMC2-UVR110DC** YC-500014	
	110-125 DC	IZM97,99... IN97,99...	**+IZMC2-UVR110DC** YC-300014	
	220-250 DC	IZM97,99... IN97,99...	**IZMC2-UVR220DC** YC-500015	
	220-250 DC	IZM97,99... IN97,99...	**+IZMC2-UVR220DC** YC-300015	
	110-127 AC	IZM97,99... IN97,99...	**IZMC2-UVR110AC** YC-500016	
	110-127 AC	IZM97,99... IN97,99...	**+IZMC2-UVR110AC** YC-300016	
	208-240 AC	IZM97,99... IN97,99...	**IZMC2-UVR230AC** YC-500017	
	208-240 AC	IZM97,99... IN97,99...	**+IZMC2-UVR230AC** YC-300017	
	380-415 AC	IZM97,99... IN97,99...	**IZMC2-UVR400AC** YC-500018	
Time-delay module In use with undervoltage module. Time setting: 0.1s, 0.5s, 1.0s, 2.0s.	120 AC	IZM91... IN91...	**IZMC1-UVR-TD-120AC** YC-500205	
	230 AC	IZM91... IN91...	**IZMC1-UVR-TD-230AC** YC-500206	
	120 AC	IZM97,99... IN97,99...	**IZMC2-UVR-TD-120AC** YC-500100	
	230 AC	IZM97,99... IN97,99...	**IZMC2-UVR-TD-230AC** YC-500101	

Notes: Please indicate "factory install" when placing order, if the 380-415 VAC undervoltage release is to be installed by the factory.

Auxiliary Contacts

	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device	Notes
	Auxiliary contact 2 ONs and 2 OFFs are supplied as standard. IZM91: Two additional changeover contacts possible.		
Additionally 2 NO / NC contacts	IZM91... IN91...	**IZMC1-AS22-16-2** YC-500188	Same for changeover contacts of No.1&2 or No.3&4
	Auxiliary contact 4 ONs and 4 OFFs are supplied as standard IZM97 and IZM 99 a maximum of 8 ONs and 8 OFs available (with additional AS44-1, 2nd group), 12 ONs and 12 OFFs (with additional 2 AS44, 2nd and 3rd group)		
4CO	IZM97,99... IN97,99...	**IZMC2-AS44-2** YC-500034	2nd group auxiliary 4 ONs and 4 OFFs
4CO	IZM97,99... IN97,99...	**+IZMC2-AS44** YC-300034	Additional 2nd group auxiliary 4 ONs and 4 OFFs
4CO	IZM97,99... IN97,99...	**IZMC2-AS44-3** YC-500035	3rd group auxiliary 4 ONs and 4 OFFs
4CO	IZM97,99... IN97,99...	**+IZMC2-AS88** YC-300035	Additional 2nd and 3rd group auxiliary 8 ONs and 8 OFFs
	Latch check switch Latch check switch = latch check signal with 1 convertible contact (1CO)		
	–	IZM91... IN91... **IZMC1-LCS-2** YC-500186	For external signal
	–	IZM91... IN91... **+IZMC1-LCS** YC-305039	
	–	IZM91... IN91... **IZMC1-LCS-SR-2** YC-500187	For connection to closing release
	–	IZM91... IN91... **+IZMC1-LCS-SR** YC-305040	
	–	IZM97,99... IN97,99... **IZMC2-LCS** YC-500037	For external signal
	–	IZM97,99... IN97,99... **+IZMC2-LCS** YC-300037	
	–	IZM97,99... IN97,99... **IZMC2-LCS-SR** YC-500036	For connection to closing release
	–	IZM97,99... IN97,99... **+IZMC2-LCS-SR** YC-300036	

Notes: Accessories attached to the secondary terminals, if ordered separately for upgrade, need to order the corresponding number of separate secondary terminal blocks.

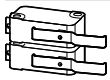
Collapsible Hand Lever

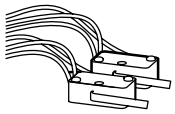
Standard Omega shaped handle is included in D/O breaker.

	For use with	Part no. Article no.	Notes
	–	IZM91... IN91... **IZMC1-LT16-2** YC-500204	Handle un-foldable
	–	IZM97,99... IN97,99... **IZMC2-LT** YC-500136	

Trip Signal Switch

Trip signal switch (OTS)
2CO switches

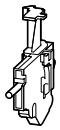


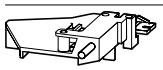


	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device	Notes
–	IZM91...	**IZMC1-OTS16-2** YC-500163	–
–	IZM91...	**+IZMC1-OTS** YC-305028	–
–	IZM97,99...	**IZMC2-OTS** YC-500038	–
–	IZM97,99...	**+IZMC2-OTS** YC-300038	–

Non-Interlocked Trip Indicators

Contains mechanical trip indicator (red pin)
After tripping, no interlocking mechanism is available to avoid switching to circuit breaker
Can be used in combination with OTS.

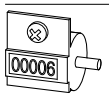


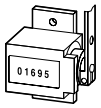


	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device	Notes
–	IZM91...	**IZMC1-RA16-2** YC-500162	Instead of standard delivery.
–	IZM91...	**+IZMC1-RA** YC-305029	
–	IZM97,99...	**IZMC2-RA** YC-500043	
–	IZM97,99...	**+IZMC2-RA** YC-300043	

Operation Counters

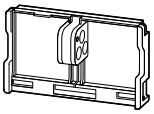
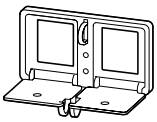
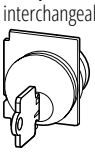
To record the number of ON-OFF operations. It can operate without a motor operator.





	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device
–	IZM91... IN91...	**IZMC1-OC16-2** YC-500185
–	IZM91... IN91...	**+IZMC1-OC16** YC-305035
–	IZM97,99 IN97,99...	**IZMC2-OC** YC-500039
–	IZM97,99 IN97,99...	**+IZMC2-OC** YC-300039

Interlocking Devices

		For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
Button cover (with optional padlock) Sealed button cover 	P = Insulated material	IZM91... IN91...	**IZMC1-PLPC16-P-2** YC-500190
		IZM91... IN91...	**+IZMC1-PLPC-P** YC-305043
	M = Metal	IZM91... IN91...	**IZMC1-PLPC16-M-2** YC-500191
		IZM91... IN91...	**+IZMC1-PLPC-M** YC-305041
Button cover (with optional padlock) Sealed button cover 	Plastic cover, ON and OFF position button lock	IZM97,99... IN97,99...	**IZMC2-PLPC-P** YC-500044
		IZM97,99... IN97,99...	**+IZMC2-PLPC-P** YC-300044
	Metal cover, ON and OFF position button lock	IZM97,99... IN97,99...	**IZMC2-PLPC-M** YC-500045
		IZM97,99... IN97,99...	**+IZMC2-PLPC-M** YC-300045
OFF position safety lock The cylinder lock of each part are not interchangeable 	Kirk installation kit with lock cylinder and key, A type	IZM91... IN91...	**IZMC1-1L1K** YC-500193
	Kirk installation kit with lock cylinder and key, B type	IZM91... IN91...	**IZMC1-1L1K-B** YC-500194
	Kirk installation kit with lock cylinder and key, C type	IZM91... IN91...	**IZMC1-1L1K-C** YC-500195
	Castell installation kit without lock cylinder and key	IZM91... IN91...	**IZMC1-KLP-SO-CASTELL-2** YC-500207
	CES installation kit without lock cylinder and key	IZM91... IN91...	**IZMC1-KLP-SO-CES-2** YC-500208
	Ronis installation kit without lock cylinder and key	IZM91... IN91...	**IZMC1-KLP-SO-RONIS-2** YC-500210
	Kirk installation kit with lock cylinder and key, A type	IZM97,99... IN97,99...	**IZMC2-1L1K** YC-500125
	Kirk installation kit with lock cylinder and key, B type	IZM97,99... IN97,99...	**IZMC2-1L1K-B** YC-500126
	Kirk installation kit with lock cylinder and key, C type	IZM97,99... IN97,99...	**IZMC2-1L1K-C** YC-500127
	Kirk installation kit with lock cylinder and key, D type	IZM97,99... IN97,99...	**IZMC2-1L1K-D** YC-500128
	Kirk installation kit with lock cylinder and key, E type	IZM97,99... IN97,99...	**IZMC2-1L1K-E** YC-500129
	Kirk installation kit with lock cylinder and key, F type	IZM97,99... IN97,99...	**IZMC2-1L1K-F** YC-500130
	Castell installation kit without lock cylinder and key	IZM97,99... IN97,99...	**IZMC2-KLP-SO-CASTELL** YC-9000050074
	Ronis installation kit without lock cylinder and key	IZM97,99... IN97,99...	**IZMC2-KLP-SO-RONIS** YC-9000050075
	Kirk installation kit without lock cylinder and key, A type	IZM97,99... IN97,99...	**+IZMC2-KLP-SO-KIRK** YC-300051
	Castell installation kit without lock cylinder and key	IZM97,99... IN97,99...	**+IZMC2-KLP-SO-CASTELL** YC-300052
	Ronis installation kit without lock cylinder and key	IZM97,99... IN97,99...	**+IZMC2-KLP-SO-RONIS** YC-300053

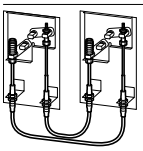
Interlocking Devices

	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device
3 key locks and 2 keys The cylinder lock and key of -B and -C are not interchangeable with IZM-3L2K	3 identical key locks, including 3 complete sets of lock frames, lock cylinders and keys	
	IZM97,99... IN97,99...	**IZMC2-3L2K** YC-500131
	IZM97,99... IN97,99...	**IZMC2-3L2K-B** YC-500132
	IZM97,99... IN97,99...	**IZMC2-3L2K-C** YC-500133

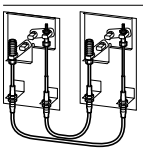
Notes: 1) Factory mounting to be recommended (free mounting), with indication in the order about which type of basic device to be mounted on. Additional charge is required for onsite mounting by Eaton. For more details, please consult with Eaton sales representatives prior to ordering.

IZM91 Interlocking Devices

Mechanical interlock allows interlocking between identical or different frame size 91, 97, 99.
Select one kit per frame



Type 2 requires 2 interlock mounting kits and 1 set of cables
Type 31 requires 3 interlock mounting kits and 2 sets of cables
Type 32 or 33 requires 3 interlock mounting kits and 3 sets of cables



Type 2 requires 2 interlock mounting kits and 1 set of cables
Type 31 requires 3 interlock mounting kits and 2 sets of cables
Type 32 or 33 requires 3 interlock mounting kits and 3 sets of cables

	For use with	Part no. Article no.
Mechanical interlock, drawout mounting		
Type 2, for 2 circuit-breakers: A normal power supply (A) and an emergency network supply (B).	IZM91...W IN91...W	**IZMC1-MIL2C-W16-2** YC-500199
Type 31, for 3 circuit-breakers: Two normal power supplies(A, C) and an emergency network supply (B). When B in Off, A and C can be switched on. B can be switched on only when A and C are in Off. or Type 33, for 3 circuit-breakers: Three incoming units (A, B, C), normal or emergency network. Only one of the three circuit breakers can be switched on at any one time.	IZM91...W IN91...W	**IZMC1-MIL3133C-W16-2** YC-500200
Type 32, for 3 circuit-breakers: Two normal incoming units (A, C) and one coupling (B). Any one or two circuitbreakers can be closed at the same time.	IZM91...W IN91...W	**IZMC1-MIL32C-W16-2** YC-500201
Mechanical interlock, fixed mounting		
Type 2, for 2 circuit-breakers: A normal power supply (A) and an emergency network supply (B).	IZM91...F IN91...F	**IZMC1-MIL2C-F16-2** YC-500196
Type 31, for 3 circuit-breakers: Two normal power supplies(A, C) and an emergency network supply (B). When B in Off, A and C can be switched on. B can be switched on only when A and C are in Off. or Type 33, for 3 circuit-breakers: Three incoming units (A, B, C), normal or emergency network. Only one of the three circuit breakers can be switched on at any one time. Three sets of cables are required in addition.	IZM91...F IN91...F	**IZMC1-MIL3133C-F16-2** YC-500197
Type 32, for 3 circuit-breakers: Two normal incoming units (A, C) and one coupling (B). Any one or two circuitbreakers can be closed at the same time.	IZM91...F IN91...F	**IZMC1-MIL32C-F16-2** YC-500198
Cable kits for mechanical interlock Depending on the type of interlock, a particular number of cable connectors is required. With the flexible cable connectors, various different switch arrangements can be implemented. One set contains two cables.		
1520 mm long	IZM91... IN91...	**IZMC1-MIL-CAB1520-2** YC-500222
1830 mm long	IZM91... IN91...	**IZMC1-MIL-CAB1830-2** YC-500223
2440 mm long	IZM91... IN91...	**IZMC1-MIL-CAB2440-2** YC-500224
3050 mm long	IZM91... IN91...	**IZMC1-MIL-CAB3050-2** YC-500225

IZM97/99 Interlocking Devices

Mechanical interlock allows interlocking between identical or different frame size 91, 97, 99.
Select one kit per frame

	For use with	Part no. Article no.
Mechanical interlocking of fixed circuit breaker		
2 circuit breakers interlocking: 1 for normal power supply (A), 1 for emergency supply (B).	IZM97,99...F IN97,99...F	**IZMC2-MIL2C-F-2** YC-500258
31 type, 3 circuit breakers interlocking: 2 for normal power supply (A &C), 1 for emergency supply (B). If B breaks, circuit breaker A&C can still turn off. B can turn off only when A&C breaks. or 33 type, circuit breakers interlocking: 3 for normal power supply (A&B &C), or in the case of emergency supply, only 1 circuit breaker can turn off.	IZM97,99...F IN97,99...F	**IZMC2-MIL3133C-F-2** YC-500259
32 type, circuit breakers interlocking: 2 for normal power supply (A &C), 1 for emergency supply (B). If B breaks, circuit breaker A&C can still turn off. Among the 3 circuit breakers, 1 or 2 breakers can turn off simultaneously.	IZM97,99...F IN97,99...F	**IZMC2-MIL32C-F-2** YC-500260
Mechanical interlocking of withdrawable circuit breaker		
2 circuit breakers interlocking: 1 for normal power supply (A), 1 for emergency supply (B).	IZM97,99...W IN97,99...W	**IZMC2-MIL2C-W-2** YC-500262
31 type, 3 circuit breakers interlocking: 2 for normal power supply (A &C), 1 for emergency supply (B). If B breaks, circuit breaker A&C can still turn off. B can turn off only when A&C breaks. or 33 type, circuit breakers interlocking: 3 for normal power supply (A&B &C), or in the case of emergency supply, only 1 circuit breaker can turn off.	IZM97,99...W IN97,99...W	**IZMC2-MIL3133C-W-2** YC-500263
32 type, circuit breakers interlocking: 2 for normal power supply (A &C), 1 for emergency supply (B). If B breaks, circuit breaker A&C can still turn off. Among the 3 circuit breakers, 1 or 2 breakers can turn off simultaneously.	IZM97,99...W IN97,99...W	**IZMC2-MIL32C-W-2** YC-500264
Cable kits for mechanical interlock Depending on the type of interlock, a particular number of cable connectors is required. With the flexible cable connectors, various different switch arrangements can be implemented. One set contains two cables.		
1520 mm long	IZM97,99... IN97,99...	**IZMC2-MIL-CAB1520-2** YC-500292
1830 mm long	IZM97,99... IN97,99...	**IZMC2-MIL-CAB1830-2** YC-500293
2440 mm long	IZM97,99... IN97,99...	**IZMC2-MIL-CAB2440-2** YC-500294
3050 mm long	IZM97,99... IN97,99...	**IZMC2-MIL-CAB3050-2** YC-500295

Type 2 requires 2 interlock mounting kits and 1 set of cables
Type 31 requires 3 interlock mounting kits and 2 sets of cables
Type 32 or 33 requires 3 interlock mounting kits and 3 sets of cables

Type 2 requires 2 interlock mounting kits and 1 set of cables
Type 31 requires 3 interlock mounting kits and 2 sets of cables
Type 32 or 33 requires 3 interlock mounting kits and 3 sets of cables

2-line interlocking logic

A	B
0	0
1	0
0	1

31 type interlocking logic

A	B	C
0	0	0
1	0	0
1	0	1
0	0	1
0	1	0

32 type interlocking logic

A	B	C
0	0	0
1	0	0
0	1	0
0	0	1
1	1	0
0	1	1
1	0	1

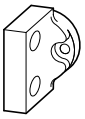
33 type interlocking logic

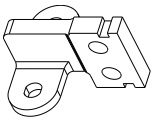
A	B	C
0	0	0
1	0	0
0	1	0
0	0	1

Example: A type 33 configuration including 1 IZM9 drawout, 1 IZM9 fixed, and 1 IZM91 drawout with 3050mm cables, order:

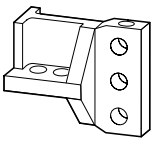
1. IZMC2-MIL33C-W-2, QTY: 1, for 1 IZM9 drawout
2. IZMC2-MIL33C-F-2, QTY: 1, for 1 IZM9 fixed
3. IZMC1-MIL3133C-W16-2, QTY: 1, for 1 IZM91 drawout
4. IZMC2-MIL-CAB3050-2, QTY:3, for type 33 configuration

Main terminal component adapter

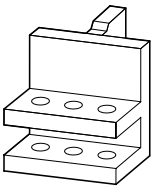




≤ 1600A



2000A, 4000A (For double wide)



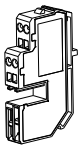
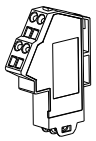
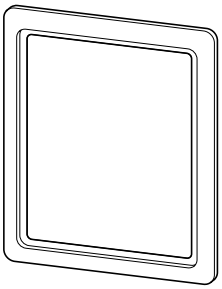
2500-3200A, 5000-6300A

Standard frame
6 pcs for 3P, 8 pcs for 4P

For double wide
12 pcs for 3P, 16 pcs for 4P

Connection	Rated Current I_n A	Rated ultimate switching capacity I_{cu} KA	Pole	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
Vertical connection by fixed or withdrawable circuit breaker					
Universal connection horizontal, vertical	630-1000	≤66	3	IZM91... IN91...	**IZMC1-THV103-2** YC-500290
Universal connection horizontal, vertical	630-1000	≤66	3	IZM91... IN91...	**+IZMC1-THV103-2** YC-305057
Universal connection horizontal, vertical	1250 - 1600	≤66	3	IZM91... IN91...	**IZMC1-THV163-2** YC-305051
Universal connection horizontal, vertical	1250 - 1600	≤66	3	IZM91... IN91...	**IZMC1-THV163-2** YC-500211
Universal connection horizontal, vertical	630-1000	≤66	4	IZM91... IN91...	**IZMC1-THV104-2** YC-500291
Universal connection horizontal, vertical	630-1000	≤66	4	IZM91... IN91...	**+IZMC1-THV104-2** YC-305058
Universal connection horizontal, vertical	1250 - 1600	≤66	4	IZM91... IN91...	**IZMC1-THV164-2** YC-305052
Universal connection horizontal, vertical	1250 - 1600	≤66	4	IZM91... IN91...	**IZMC1-THV164-2** YC-500212
Vertical Wiring Supplied as Standard on Vertical Main Wiring Terminal					
Connection vertical	≤1600	≤65	3	IZM97... IN97...	**IZMC2-TV323B-1600** YC-500109
Connection vertical	≤2000	≤100	3	IZM97B...20 IN97B...20 IZM97H...IN97H...	**IZMC2-TV323H-2000** YC-500110
Connection vertical	2500-3200	100	3	IZM97... IN97...	**IZMC2-TV323H-3200** YC-500111
Connection vertical	≤1600	≤65	4	IZM97... IN97...	**IZMC2-TV324B-1600** YC-500112
Connection vertical	≤2000	≤100	4	IZM97B...20 IN97B...20 IZM97H...IN97H...	**IZMC2-TV324H-2000** YC-500113
Connection vertical	2500-3200	100	4	IZM97... IN97...	**IZMC2-TV324H-3200** YC-500114
Connection vertical	4000	100	3	IZM99... IN99...	**IZMC2-TV633H-4000** YC-500115
Connection vertical	5000-6300	100	3	IZM99... IN99...	**IZMC2-TV633H-6300** YC-500116
Connection vertical	4000	100	4	IZM99... IN99...	**IZMC2-TV634H-4000** YC-500117
Connection vertical	5000-6300	100	4	IZM99... IN99...	**IZMC2-TV634H-6300** YC-500118

Other Accessories

		Rated control voltage U_s V	For use with	**Part no.** Article no.
Control circuit wiring terminal for withdrawable circuit breakers The number of secondary terminals to be purchased separately depends on the type of accessories to be mounted separately. For the exact number, please refer to wiring diagrams.				
	Secondary terminal, 8	–	IZM91 IN91...	**IZMC1-SEC-TB8-W-2** YC-500216
	Secondary terminal, 20	–	IZM91 IN91...	**IZMC1-SEC-TB20-W-2** YC-500217
	Secondary terminal, 30	–	IZM91 IN91...	**IZMC1-SEC-TB30-W-2** YC-500218
	Secondary terminal, 8	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB8-W-2** YC-500103
	Secondary terminal, 20	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB20-W-2** YC-500104
	Secondary terminal, 30	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB30-W-2** YC-500105
Control circuit wiring terminal for fixed circuit breakers The number of secondary terminals to be purchased separately depends on the type of accessories to be mounted separately. For the exact number, please refer to wiring diagrams.				
	Secondary terminal, 8	–	IZM91 IN91...	**IZMC1-SEC-TB8-F-2** YC-500219
	Secondary terminal, 20	–	IZM91 IN91...	**IZMC1-SEC-TB20-F-2** YC-500220
	Secondary terminal, 30	–	IZM91 IN91...	**IZMC1-SEC-TB30-F-2** YC-500221
	Secondary terminal, 8	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB8-F-2** YC-500106
	Secondary terminal, 20	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB20-F-2** YC-500107
	Secondary terminal, 30	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB30-F-2** YC-500108
IP41 door escutcheon Door escutcheon is supplied as standard with circuit breaker basic device / cassette.				
		–	IZM91 IN91...	**IZMC1-DEG16-W-2** YC-500203
		–	IZM97,99 IN97,99...	**IZMC2-DEG** YC-500137
IP55 protection cover		–	IZM91...F IN91...F	**IZMC1-DC91-F-2** YC-500213
		–	IZM91 IN91...	**IZMC1-DC91-W-2** YC-500214
		–	IZM97,99 IN97,99...	**IZMC2-DC** YC-500138

Technical Data

		IZMC2-PCAM-2	IZMC2-MCAM-2	IZMC2-ECAM-2
General				
Size (W × H × D)	mm	24 x 105 x 80	24 x 105 x 80	24 x 105 x 80
Mounting		35mm DIN rail (top hat rail)	35mm DIN rail (top hat rail)	35mm DIN rail (top hat rail)
Protection type		IP20	IP20	IP20
Power supply	V DC	24-28 V DC	24-28 V DC	24-28 V DC
LED indicator		Status	Status	Status
		SF	Transmit	
		BF	Receive	
Network				
Ethernet		–	–	RJ45 socket
PROFIBUS		SUB-D type 9 pole socket	–	–
Modbus		–	Plug type wiring terminal	–
Function		Submodule	Sub module	TCP/IP user
Interface		RS485	RS485	Ethernet
Protocol		PROFIBUS DP	Modbus-RTU	Modbus TCP, http(s), SMTP
Baut rate		Automatic search up to 12 MBit/s	1200/4800/9600/19200 baut/S, adjustable via trip units	100MBit/s self-adjustable
Bus end resistance		Plug into socket based on requirements	121Ω, switch on/off externally	
Bus address		1 - 127, adjustable via trip units	1 - 127, adjustable via trip units	IP, adjustable via trip units
Maximum distance		2.4 km	1.2 km	100 m
Supported functions		Periodic data transmission	Periodical data transmission 03=read register 04=read word variable 08=connection test 16=write register	Web server

Accessories of IZM91

			Signalling switch ON-OFF IZMC1-AS22...	Tripped signalling contact IZMC1-OTS...	Latch Check Switch IZMC1-LCS...(SR)	Cell switch IZMC1-CS...
Rated breaking capacity						
Inductive load						
250 V AC		A	10	10	10	10
125 V DC		A	0.5	0.5	0.5	0.5
250 V DC		A	0.25	0.25	0.25	0.25

Accessories of IZM91

			Shunt releases				Closing releases			
			IZMC1-ST(S)24DC	IZMC1-ST(S)48DC	IZMC1-ST(S)110AD	IZMC1-ST(S)230AD	IZMC1-SR24DC	IZMC1-SR48DC	IZMC1-SR110AD	IZMC1-SR230AD
Rated control voltage										
AC 50/60 Hz	U_S	V	–	–	110 - 127	208 - 240	–	–	110 - 127	208 - 240
DC	U_S	V	24	48	110 - 125	208 - 250	24	48	110 - 125	220 - 250
Power consumption										
AC		VA	–	–	5 (540 pick-up)	5 (500 pick-up)	–	–	(450 pick-up)	(450 pick-up)
DC		W	5 (500 pick-up)	5 (530 pick-up)	5 (540 pick-up)	5 (515 pick-up)	(400 pick-up)	(500 pick-up)	(450 pick-up)	(450 pick-up)
Circuit-breaker response time at U_S		ms	25	25	25	25	25	25	25	25
Operating range										
Drop-out voltage										
AC operated, 50/60 Hz, pick-up	Dropout	× U_C	–	–	–	–	–	–	–	–
Pick-up voltage	Pick-up	× U_C	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1

Accessories of IZM91

			Undervoltage releases				
			IZMC1-UVR24DC	IZMC1-UVR48DC	IZMC1-UVR110AD	IZMC1-UVR220AD	IZMC1-UVR400AC
Rated control voltage							
AC 50/60 Hz	U_S	V	–	–	110 - 127	208 - 240	–
DC	U_S	V	24	48	110 - 125	208 - 250	380 - 415
Power consumption							
AC		VA	–	–	5 (500 pick-up)	5 (500 pick-up)	5 (500 pick-up)
DC		W	5 (500 pick-up)	5 (500 pick-up)	5 (500 pick-up)	5 (500 pick-up)	–
Circuit-breaker response time at U_S		ms	50	50	50	50	50
Operating range							
Drop-out voltage							
AC operated, 50/60 Hz, pick-up	Dropout	× U_C	0.35 - 0.7	0.35 - 0.7	0.35 - 0.7	0.35 - 0.7	0.35 - 0.7
Pick-up voltage	pick-up	× U_C	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1

Accessories of IZM91

			Motor operator IZMC1-M16-24DC	IZMC1-M16-48DC	IZMC1-M16-110AD	IZMC1-M16-230AD
Rated control voltage	U_s	V	24 V DC	48 V DC	110 - 127 V AC 50/60 Hz 110 - 125 V DC	220 - 240 V AC 50/60 Hz 220 - 250 V DC
Energy storing time			4 s	3 s	3 s	4 s
Rated current	I_n	A	6 A	3 A	2 A AC 50/60 Hz 1 A DC	1 A AC 50/60 Hz 1 A DC
Starting current		A	20 A	15 A	6 A AC 50/60 Hz 5 A DC	10 A AC 50/60 Hz 10 A DC
Power consumption			160 W	150 W	280 VA AC 50/60 Hz 150 W DC	280 VA AC 50/60 Hz 280 W DC

Accessories of IZM97/IZM99

		Standard auxiliary contact IZMC2-AS...	Trip signal auxiliary contact IZMC2-OTS	Circuit breaker withdrawer position indication contact IZMC2-CS...
Rated switching capacity				
Inductive load				
250 V AC	A	10	10	10
125 V DC	A	0.5	0.5	0.5
250 V DC	A	0.25	0.25	0.25

Accessories of IZM97/IZM99

			Shunt release IZMC2-ST24DC IZMC2-STS24DC	IZMC2-ST48DC IZMC2-STS48DC	IZMC2-ST110AD IZMC2-STS110AD	IZMC2-ST230AD IZMC2-STS230AD
Rated control voltage						
AC 50/60 Hz	U_S	V	-	-	110-127	208-240
DC	U_S	V	24	48	110-125	220-250
Power consumption						
AC		VA	-	-	(pick-up 450)	(pick-up 450)
DC		W	(pick-up 250)	(pick-up 250)	(pick-up 450)	(pick-up 450)
Response time of circuit breaker		ms	35	35	35	35
Operating range						
Drop-out voltage		× U_C	–	–	–	–
Pick-up voltage		× U_C	0.7 - 1.1	0.7 - 1.1	0.7 - 1.1	0.7 - 1.1

Accessories of IZM97/IZM99

			Closing release IZMC2-SR24DC	IZMC2-SR48DC	IZMC2-SR110AD	IZMC2-SR230AD
Rated control voltage						
AC 50/60 Hz	U_S	V	-	-	110-127	208-240
DC	U_S	V	24	48	110-125	220-250
Power consumption						
AC		VA	-	-	(pick-up 450)	(pick-up 450)
DC		W	(pick-up 250)	(pick-up 250)	(pick-up 450)	(pick-up 450)
Response time of circuit breaker		ms	40	40	40	40
Operating range						
Drop-out voltage		× U_C	–	–	–	–
Pick-up voltage		× U_C	0.7 - 1.1	0.7 - 1.1	0.7 - 1.1	0.7 - 1.1

Accessories of IZM97/IZM99

			Undervoltage release IZMC2-UVR24DC	IZMC2-UVR48DC	IZMC2-UVR110AC	IZMC2-UVR110DC
Rated control voltage						
AC 50/60 Hz	U_s	V	-	-	110-127	-
DC	U_s	V	24	48	-	110-125
Power consumption						
AC		VA	-	-	10 (pick-up 450)	-
DC		W	18 (pick-up 250)	18 (pick-up 250)	-	10 (pick-up 450)
Response time of circuit breaker		ms	70	70	70	70
Operating range						
Drop-out voltage		× U_c	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6
Pick-up voltage		× U_c	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1

Accessories of IZM97/IZM99

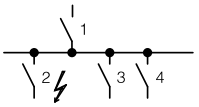
			Undervoltage release IZMC2-UVR220DC	IZMC2-UVR230AC	IZMC2-UVR400AC
Rated control voltage					
AC 50/60 Hz	U_s	V	-	208-240	380-415
DC	U_s	V	220-250	-	-
Power consumption					
AC		VA	-	10 (pick-up 400)	10 (pick-up 400)
DC		W	10 (pick-up 250)	-	-
Response time of circuit breaker		ms	70	70	70
Operating range					
Drop-out voltage		× U_c	0.3 - 0.6	0.3 - 0.6	0.3 - 0.6
Pick-up voltage		× U_c	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1

Accessories of IZM97/IZM99

			Motor operator IZMC2-M24DC	IZMC2-M48DC	IZMC2-M110DC	IZMC2-M220DC	IZMC2-M110AC	IZMC2-M230AC
Rated control voltage								
AC 50/60 Hz	U_s	V	-	-	-	-	110-127	208-240
DC	U_s	V	24	48	110-125	220-250	-	-
Energy storing time		s	5	5	5	5	5	5
Rated current	I_n	A	12	5	2	1	2	1
Starting current		A	3	5	6	6	6	6
Power consumption								
AC 50/60 Hz		VA	300	250	250	250	250	250
DC		W	300	250	250	250	250	250

New Generation Air Circuit Breaker IZM9

Selectivity



I_n Rated operational current
I_u Rated uninterrupted current
I_{cu} Rated short-circuit breaking capacity
I_i Set value non-delayed short-circuit releases

Selectivity 415 V AC

Between circuit-breakers enables the separate disconnection of faulty system sections. Selectivity exists between incoming circuitbreaker 1 and outgoing circuit-breaker 2 if, only outgoing breaker 2 trips at position 2 during a short-circuit. System sections 3 and 4 remain operational.

Selection:

Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$).
These details represent the limits of selectivity. Both circuit-breakers will switch off with higher short-circuit currents. On IZM circuit-breakers with V, U releases, the delay time t_{sd} must be at least 100 ms longer than the delay time of the next downstream levels (2, 3, 4).

Incoming circuit breaker (1)			**Incoming circuit breaker IZM91...-V**											
		I_n [A]	630	630	630	800	800	800	1000	1000	1000	1250	1250	1250
		I_{cu} [KA]	42	50	65	42	50	65	42	50	65	42	50	65
		I_i [A]	7560	7560	7560	9600	9600	9600	12000	12000	12000	15000	15000	15000
Outgoing circuit breaker (2)	I_u [A]	$I_{cu2\ (415V)}$ [KA]	B	N	H	B	N	H	B	N	H	B	N	H
			Prospective short circuit current ($I_{cc\ rms}$ in kA)											
PDC1F(G)(K)(M)-TAA...	16	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	20	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-50	T	T	T	T	T	T	T	T	T	T	T	T
PDC9G(K)(M)-B(D)(E)(P))...	63	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	100	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2F(G)(K)(N)-TAA...	90	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2G(N)(K)-B(D)(E)(P))...	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3F(G)(K)(N)-TAA...	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	320	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	500	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3G(N)(K)-B(D)(E)(P)...	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-70	-	-	-	T	T	T	T	T	T	T	T	T
PDC4F(G)(K)(N)-TAA...	800	36-70	-	-	-	-	-	-	T	T	T	T	T	T
PDC4G(N)(K)-B(D)(E)(P)...	800	36-70	-	-	-	-	-	-	T	T	T	T	T	T

Notes B = Basic switching capacity, N = Normal switching capacity, H = High switching capacity, T = Total selectivity

			Incoming circuit breaker IZM91...-U														
1600	1600	1600	630	630	630	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1600
42	50	65	42	50	65	42	50	65	42	50	65	42	50	65	42	50	65
19200	19200	19200	7560	7560	7560	9600	9600	9600	12000	12000	12000	15000	15000	15000	19200	19200	19200
B	N	H	B	N	H	B	N	H	B	N	H	B	N	H	B	N	H
Prospective short circuit current ($I_{cc\ rms}$ in kA)																	
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
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T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
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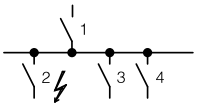
T	T	T	T	-	-	-	-	-	-	T	T	T	T	T	T	T	T
T	T	T	T	-	-	-	-	-	-	T	T	T	T	T	T	T	T

New Generation Air Circuit Breaker IZM9
Selectivity



I_n Rated operational current
I_u Rated uninterrupted current
I_{cu} Rated short-circuit breaking capacity
I_i Set value non-delayed short-circuit releases

Selectivity 415 V AC
Between circuit-breakers enables the separate disconnection of faulty system sections. Selectivity exists between incoming circuitbreaker 1 and outgoing circuit-breaker 2 if, only outgoing breaker 2 trips at position 2
during a short-circuit. System sections 3 and 4 remain operational.

Selection:

Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$).
These details represent the limits of selectivity. Both circuit-breakers will switch off with higher short-circuit currents. On IZM circuit-breakers with V, U releases, the delay time t_{sd} must be at least 100 ms longer than the delay time of the next downstream levels (2, 3, 4).

Incoming circuit breaker (1)			**Incoming circuit breaker IZM97...-V**											
		I_n [A]	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1600
		I_{cu} [KA]	66	85	100	66	85	100	66	85	100	66	85	100
		I_i [A]	11200	11200	11200	14000	14000	14000	17500	17500	17500	19200	19200	19200
Outgoing circuit breaker (2)	I_u [A]	$I_{cu2\ (415V)}$ [KA]	B	N	H	B	N	H	B	N	H	B	N	H
			Prospective short circuit current ($I_{cc\ rms}$ in kA)											
PDC1F(G)(K)(M) -TAA...	16	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	20	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-50	T	T	T	T	T	T	T	T	T	T	T	T
PDC9G(K)(M) -B(D)(E)(P))...	63	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	100	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2F(G)(K)(N) -TAA...	90	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2G(N)(K) -B(D)(E)(P))...	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3F(G)(K)(N) -TAA...	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	320	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	500	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3G(N)(K) -B(D)(E)(P))...	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC4F(G)(K)(N) -TAA...	800	36-70	-	-	-	T	T	T	T	T	T	T	T	T
PDC3G(N)(K)	800	36-70	-	-	-	T	T	T	T	T	T	T	T	T

Notes B = Basic switching capacity, N = Normal switching capacity, H = High switching capacity, T = Total selectivity

Incoming circuit breaker IZM97...-V								
2000	2000	2000	2500	2500	2500	3200	3200	3200
66	85	100	66	85	100	66	85	100
24000	24000	24000	30000	30000	30000	32000	32000	32000
B	N	H	B	N	H	B	N	H
Prospective short circuit current ($I_{cc\ rms}$ in kA)								
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
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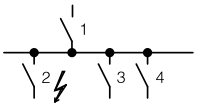
New Generation Air Circuit Breaker IZM9
Selectivity



I_n Rated operational current
I_u Rated uninterrupted current
I_{cu} Rated short-circuit breaking capacity
I_i Set value non-delayed short-circuit releases

Selectivity 415 V AC
Between circuit-breakers enables the separate disconnection of faulty system sections. Selectivity exists between incoming circuitbreaker 1 and outgoing circuit-breaker 2 if, only outgoing breaker 2 trips at position 2
during a short-circuit. System sections 3 and 4 remain operational.

Selection:

Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$).
These details represent the limits of selectivity. Both circuit-breakers will switch off with higher short-circuit currents. On IZM circuit-breakers with V, U releases, the delay time t_{sd} must be at least 100 ms longer than the delay time of the next downstream levels (2, 3, 4).

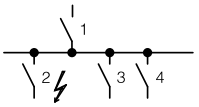
Incoming circuit breaker (1)			**Incoming circuit breaker IZM97...-U**											
		I_n [A]	800	800	800	1000	1000	1000	1250	1250	1250	1600	1600	1600
		I_{cu} [KA]	66	85	100	66	85	100	66	85	100	66	85	100
		I_i [A]	11200	11200	11200	14000	14000	14000	17500	17500	17500	19200	19200	19200
Outgoing circuit breaker (2)	I_u [A]	$I_{cu2\ (415V)}$ [KA]	B	N	H	B	N	H	B	N	H	B	N	H
			Prospective short circuit current ($I_{cc\ rms}$ in kA)											
PDC1F(G)(K)(M) -TAA...	16	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	20	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-50	T	T	T	T	T	T	T	T	T	T	T	T
PDC9G(K)(M) -B(D)(E)(P))...	63	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	100	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2F(G)(K)(N) -TAA...	90	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2G(N)(K) -B(D)(E)(P))...	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3F(G)(K)(N) -TAA...	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	320	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	500	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3G(N)(K) -B(D)(E)(P))...	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC4F(G)(K)(N) -TAA...	800	36-70	-	-	-	T	T	T	T	T	T	T	T	T
PDC3G(N)(K) -B(D)(E)(P))...	800	36-70	-	-	-	T	T	T	T	T	T	T	T	T

Notes B = Basic switching capacity, N = Normal switching capacity, H = High switching capacity, T = Total selectivity

Incoming circuit breaker IZM97...-U								
2000	2000	2000	2500	2500	2500	3200	3200	3200
66	85	100	66	85	100	66	85	100
24000	24000	24000	30000	30000	30000	32000	32000	32000
B	N	H	B	N	H	B	N	H
Prospective short circuit current ($I_{cc\ rms}$ in kA)								
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T

New Generation Air Circuit Breaker IZM9

Selectivity



I_n Rated operational current
I_u Rated uninterrupted current
I_{cu} Rated short-circuit breaking capacity
I_i Set value non-delayed short-circuit releases

Selectivity 415 V AC

Between circuit-breakers enables the separate disconnection of faulty system sections. Selectivity exists between incoming circuitbreaker 1 and outgoing circuit-breaker 2 if, only outgoing breaker 2 trips at position 2 during a short-circuit. System sections 3 and 4 remain operational.

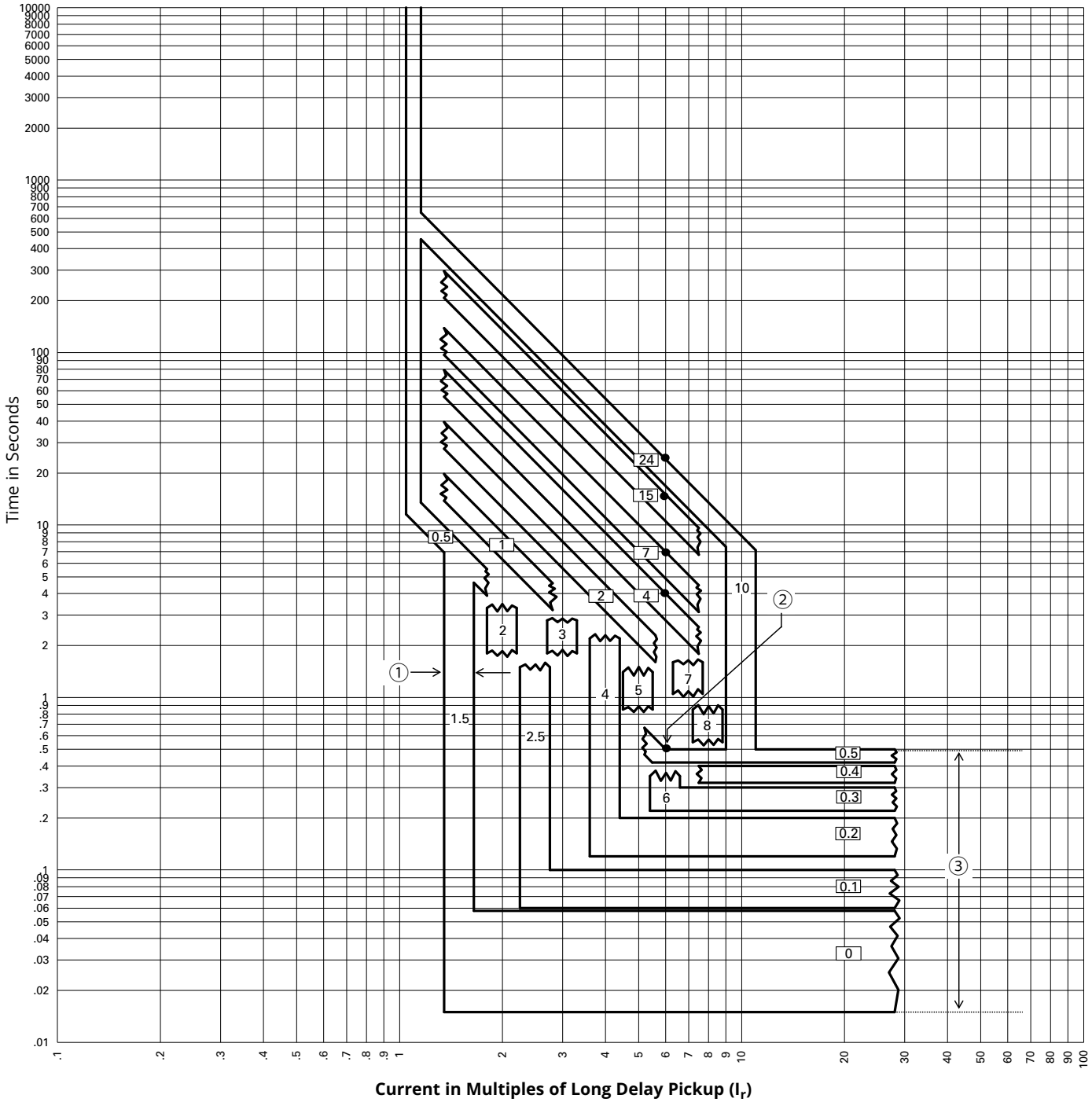
Selection:

Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$).
These details represent the limits of selectivity. Both circuit-breakers will switch off with higher short-circuit currents. On IZM circuit-breakers with V, U releases, the delay time t_{sd} must be at least 100 ms longer than the delay time of the next downstream levels (2, 3, 4).

Incoming circuit breaker (1)			**IZM99...-V**						**IZM99...-U**					
		I_n [A]	4000	4000	5000	5000	6300	6300	4000	4000	5000	5000	6300	6300
		I_{cu} [KA]	85	100	85	100	85	100	85	100	85	100	85	100
		I_i [A]	48000	48000	60000	60000	63000	63000	48000	48000	60000	60000	63000	63000
Outgoing circuit breaker (2)	I_u [A]	$I_{cu2\ (415V)}$ [KA]	N	H	N	H	N	H	N	H	N	H	N	H
			Prospective short circuit current ($I_{cc\ rms}$ in kA)											
PDC1F(G)(K)(M) -TAA...	16	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	20	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-50	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-50	T	T	T	T	T	T	T	T	T	T	T	T
PDC9G(K)(M) -B(D)(E)(P))...	63	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	100	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2F(G)(K)(N) -TAA...	90	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC2G(N)(K) -B(D)(E)(P))...	160	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	200	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3F(G)(K)(N) -TAA...	250	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	320	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	500	25-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	25-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3G(N)(K) -B(D)(E)(P))...	250	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-70	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC4F(G)(K)(N) -TAA...	800	36-70	T	T	T	T	T	T	T	T	T	T	T	T
PDC3G(N)(K) -B(D)(E)(P))...	800	36-70	T	T	T	T	T	T	T	T	T	T	T	T

Notes B = Basic switching capacity, N = Normal switching capacity, H = High switching capacity, T = Total selectivity

IZM91/97/99...V(U)...PXR20/25 Long Delay(L) and Short Delay(S) Curves
L-Protection: I^2t-Characteristic curve and S-Protection: Flat characteristic curve



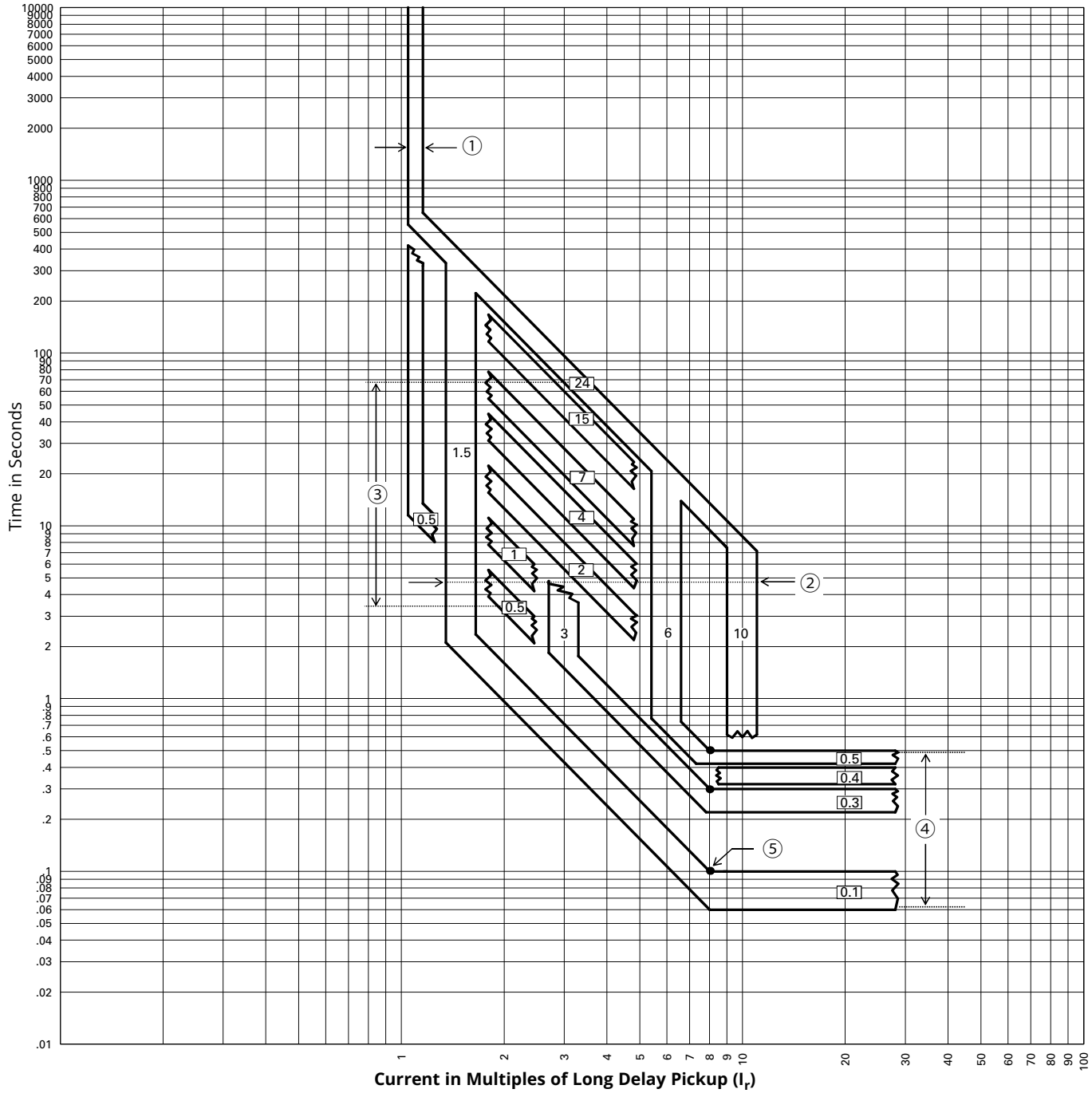
Notes:

1. Short slope: Flat, the actual pickup point has 100% ±10% tolerance.
2. Long delay I^2T slopes flattens out at 6x of I_r.
3. Short time delay from 0(50ms) to 0.5s, with +0 / -80ms tolerance except 0.1s and 0s setting;
   0.1s setting, trip time is 0.06s to 0.1s;
   0s settting, nominal clear time is 60ms with auxiliary power and 120ms without.
4. If long delay thermal memory is enabled, trip times may be shorter than indicated in this chart.
5. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
6. This curve is for 50Hz, 60Hz applications.
7. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current

New Generation Air Circuit Breaker IZM9

Tripping Curves

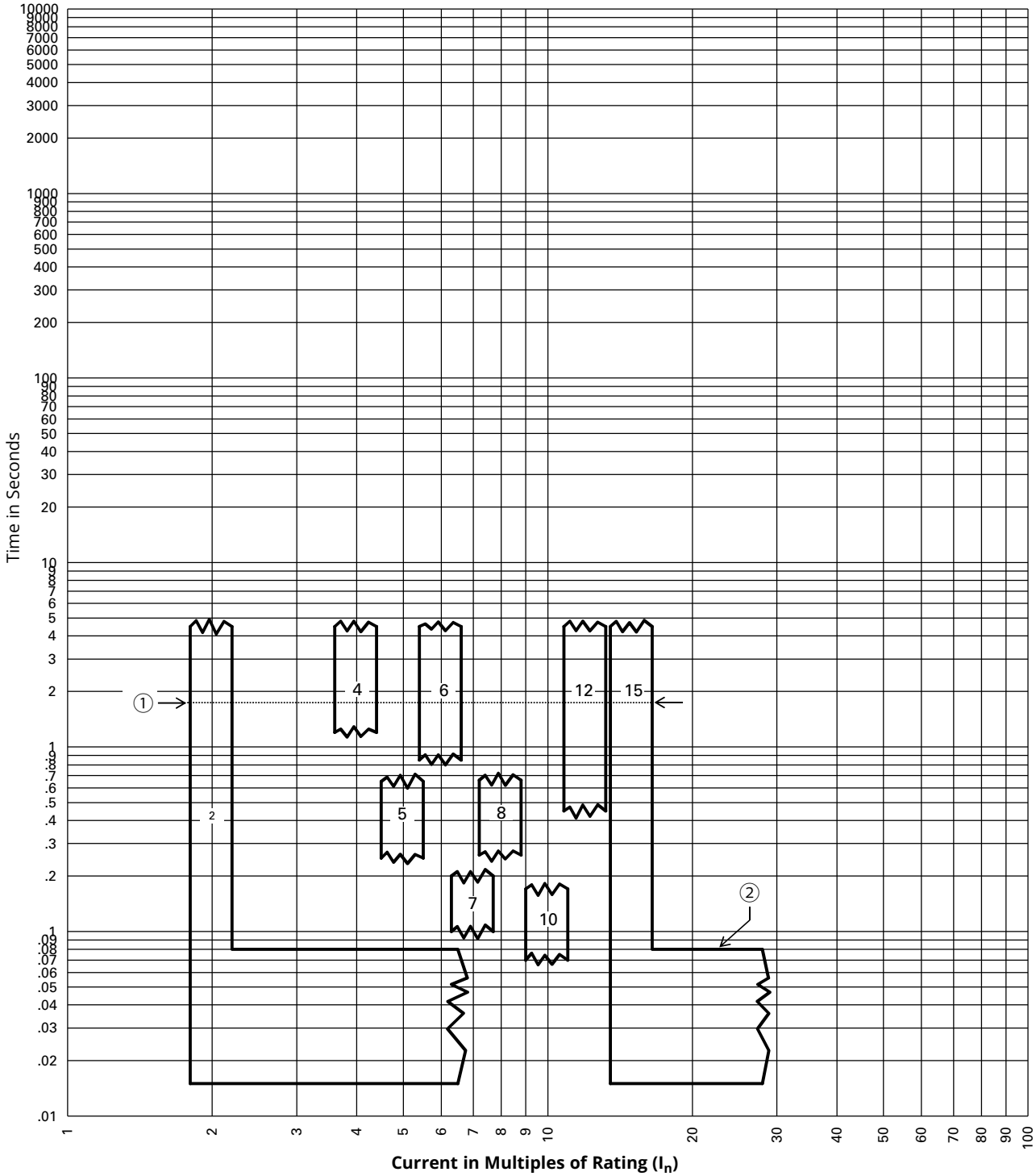
IZM91/97/99...V(U)...PXR20/25 Long Delay(L) and Short Delay(S) Curves
S-Protection with: I²t-Characteristic curve ON



Notes:

1. This curve shown as a multiple of the LONG PU setting(I_r). The actual pickup point occurs at 110% of the I_r with ±5% tolerance.
2. SDPU = 1.5x to 10x of I_r, have 100% ± 10% tolerance.
3. LD Time = 0.5s to 24s, have 100% +0 / -30% tolerance.
4. SD Slope = I^2T. The short pickup points have ±10% tolerance.
   time setting from 0.1s to 0.5s, with steps of 0.1s, except 0.2s.
   tolerance is 100% +0 / -30% except 0. 1s, has tolerance 100% +0 / -40%.
5. I^2T slopes flattens out at 8x of I_r for top of band with FLAT time minimum value prevailing for bottom of band. For all curves the lower flat response time value projected to I^2T line will determine the other break point and shape of the curve.
6. If long delay thermal memory is enabled, trip times may be shorter than indicated in this chart.
7. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
8. This curve is for 50Hz, 60Hz applications.
9. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions.

IZM91/97/99...V(U)...PXR20/25 Instantaneous(I) Curves
I-Protection: Adjustable



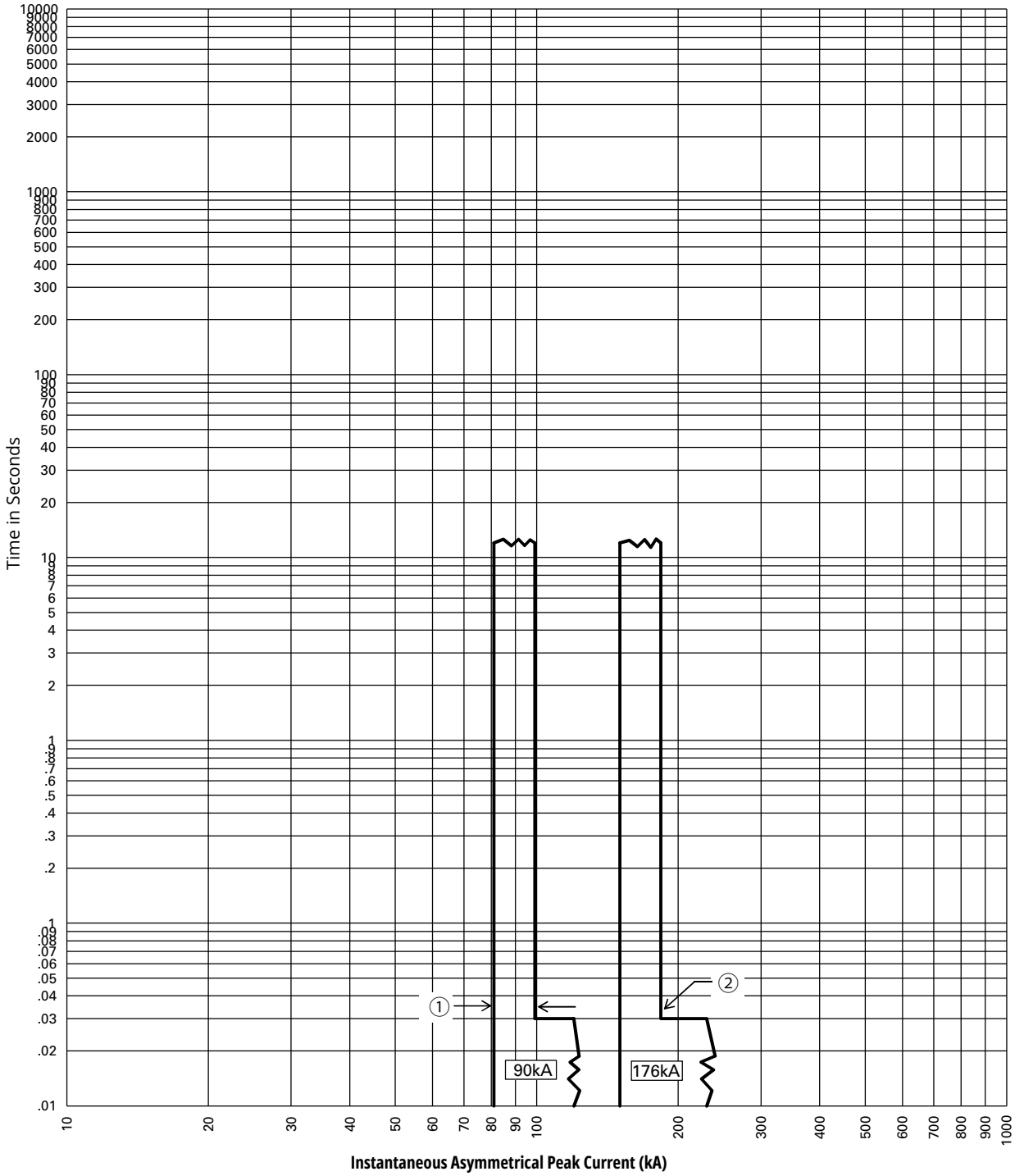
Notes:

1. The Instantaneous settings have conventional 100% ±10% as the pickup points.
2. The nominal Instantaneous trip time is 60ms with auxiliary power supply and 100ms without.
3. Instantaneous protection could be disabled by setting Instantaneous PU switch to OFF position.
4. The curve is shown as a multiple of the Current Rating (I_n).
5. The end of the curve is determined by the interrupting rating of the circuit breaker.
6. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
7. This curve is for 50Hz, 60Hz applications.
8. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions. The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

New Generation Air Circuit Breaker IZM9

Tripping Curves

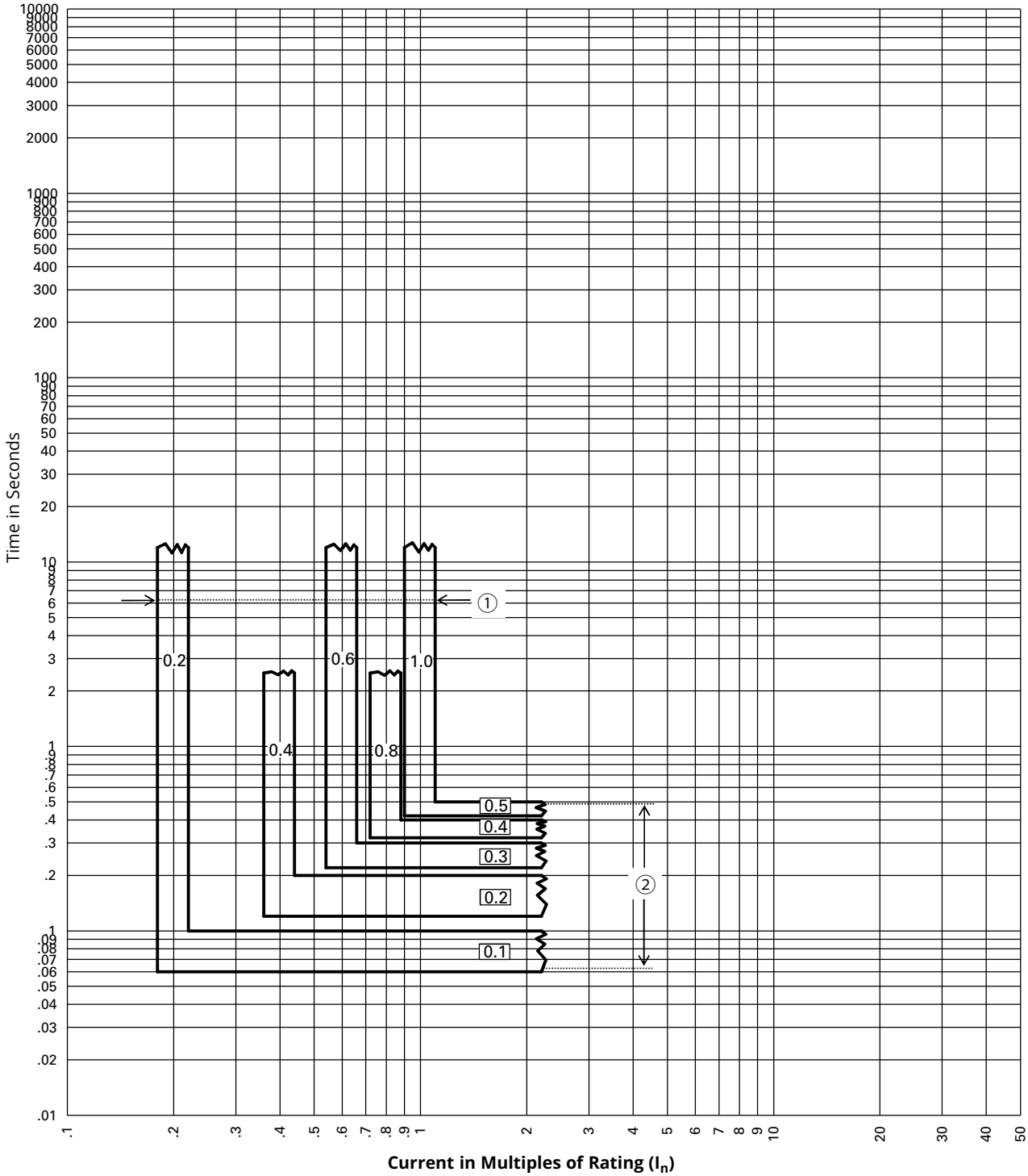
IZM91/97/99...V(U)...PXR20/25 Instantaneous(I) Curves
Instantaneous Trip at High Fault Currents



Notes:

1. Fixed High Instantaneous Trip function is provided in the circuit breaker for Series IZM97 set to pickup at 90kA.
   Instantaneous peak current level. The tolerance is 100% ±10% as the pickup points.
2. The peak current level setting for IZM99 is fixed at 176kA.
3. This protection is functional even when the Instantaneous is set to the OFF position.
4. The PXR will light the Instantaneous LED for a High Instantaneous trip.
5. The total Instantaneous clearing times shown are conservative and consider the maximum response times of the trip unit, the circuit breaker opening, and the interruption of the current under factors that contribute to worst case conditions, like:
   maximum rated voltages, single phase interruption, and minimum power factor. Faster clearing times are possible depending on the specific system conditions, the type of circuit breaker applied, and if any arc reduction settings are employed.

IZM91/97/99...V(U)...PXR20/25 Ground(G) Curves
G: Ground fault protection - Flat characteristic curve



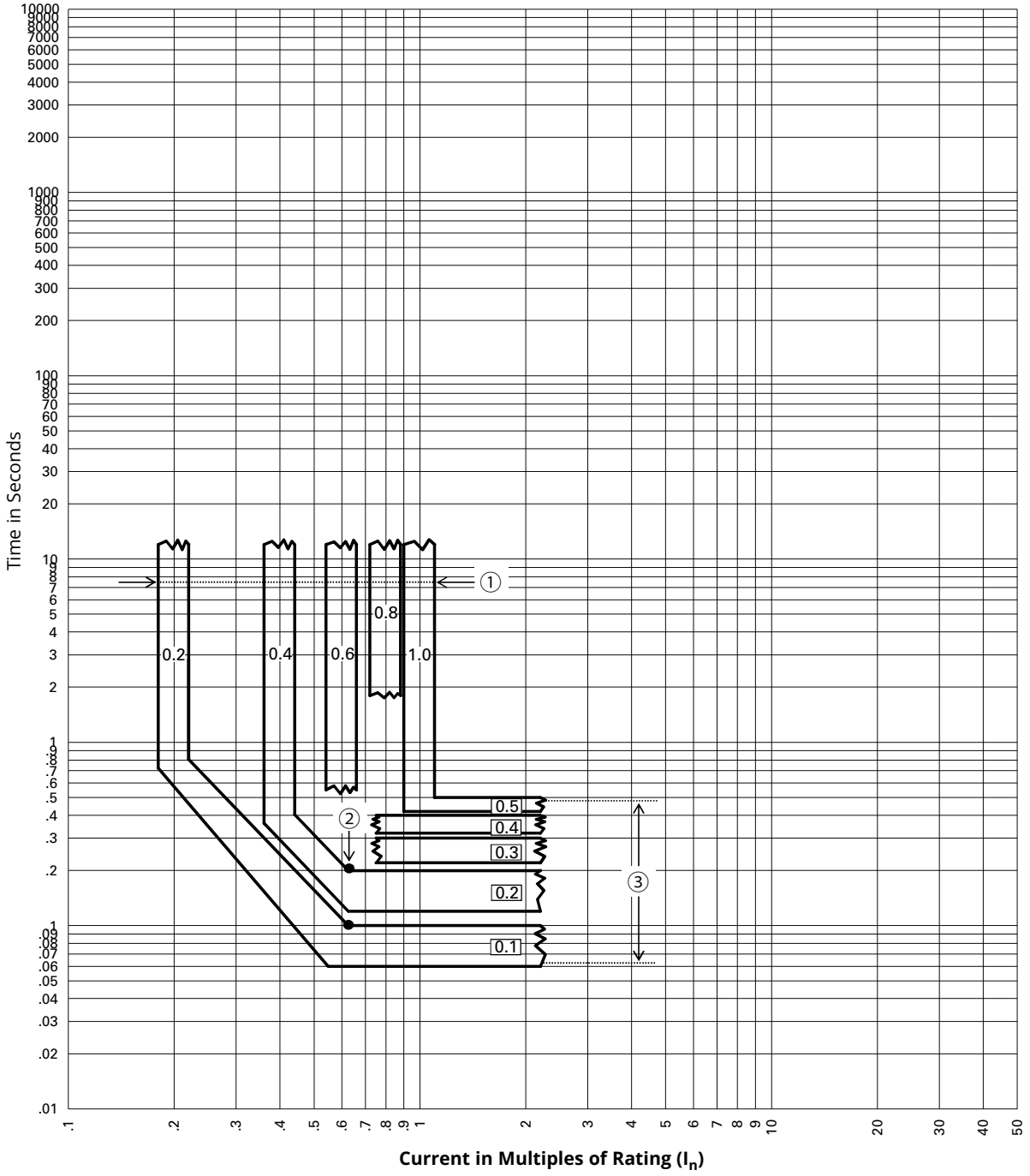
Notes:

1. Ground PU setting from 0.2 to 1.0 of I_n with steps of 0.2 , have tolerance of 100% ±10%.
2. Ground Flat time from 0.1s to 0.5s, with 0.1s increments.
3. 3. Ground slope: Flat, trip time tolerance is +0 / -80ms for all settings except 0.1s setting is 0.06s to 0.1s.
4. The curve is shown as a multiple of the Current Rating (I_n).
5. The end of the curve is determined by the interrupting rating of the circuit breaker.
6. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
7. This curve is for 50Hz, 60Hz applications.
8. These curves are comprehensive for series IZM91/97/99 breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

New Generation Air Circuit Breaker IZM9

Tripping Curves

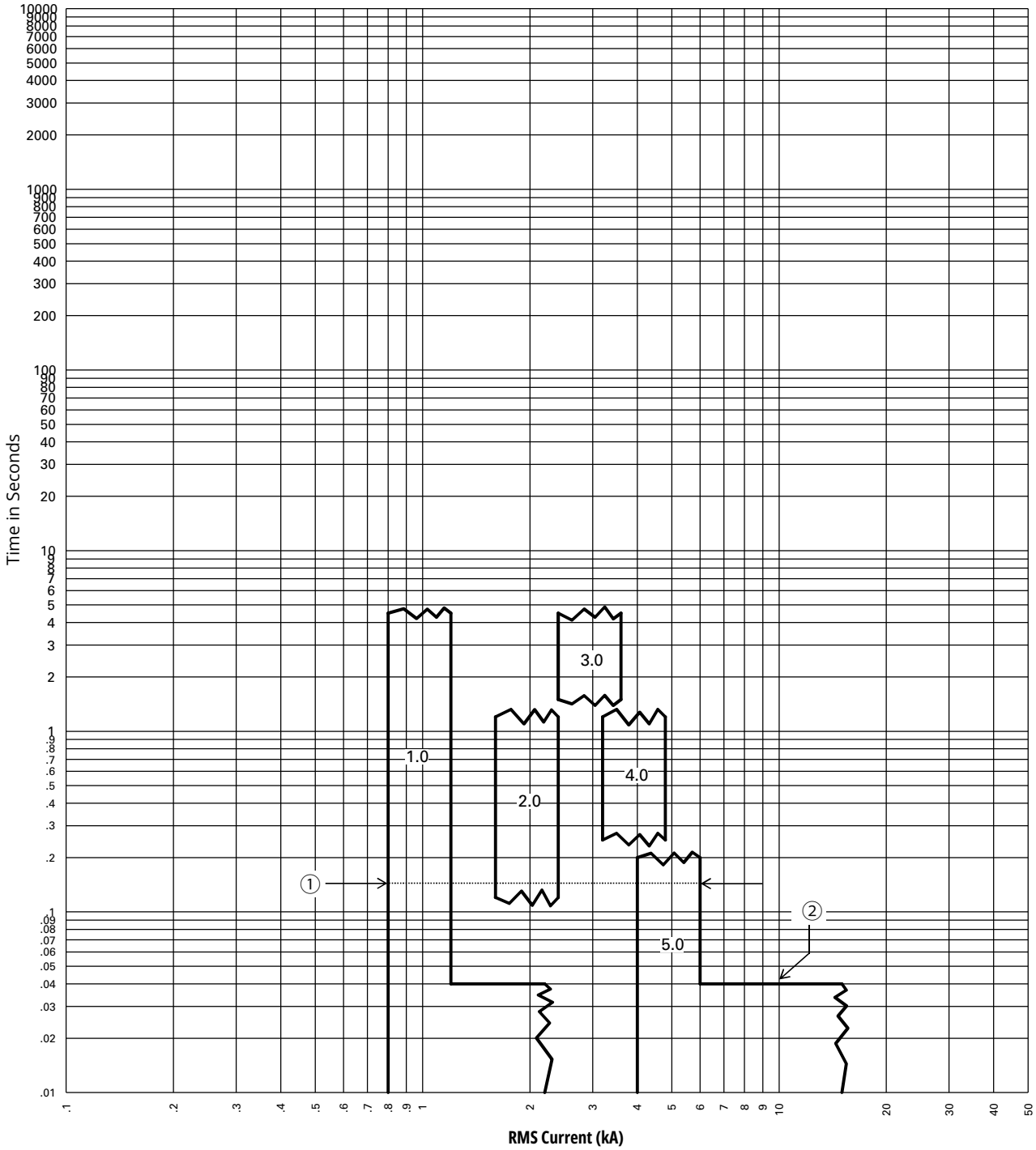
IZM91/97/99...V(U)...PXR20/25 Ground(G) Curves
G: Ground fault protection-I²t-Characteristic curve ON



Notes:

1. Ground PU setting from 0.2 to 1.0 of I_n with steps of 0.2 , have tolerance of 100%±10%.
2. Beak points at 0.625 x I_n to flat.
3. Ground I²T time from 0.1s to 0.5s, with 0.1s increments.
4. Ground slope: Flat, trip time tolerance is +0 / -80ms for all settings except 0.1s setting is 0.06s to 0.1s.
   Ground slope: I²T , tolerance is
   0.1s, 0.2s : +0 / -40%
   0.3s, 0.4s, 0.5s : +0 / -30%
5. The curve is shown as a multiple of the Current Rating (I_n).
6. The end of the curve is determined by the interrupting rating of the circuit breaker.
7. Curves applies from -20°C to +50°C ambient. Temperatures above +85 °C will cause over temperature trip.
8. This curve is for 50Hz ,60Hz applications.
9. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

IZM91...V(U)...PXR20/25 Maintenance Mode Curve
Arc-flash Reduction Maintenance Mode for IZM91



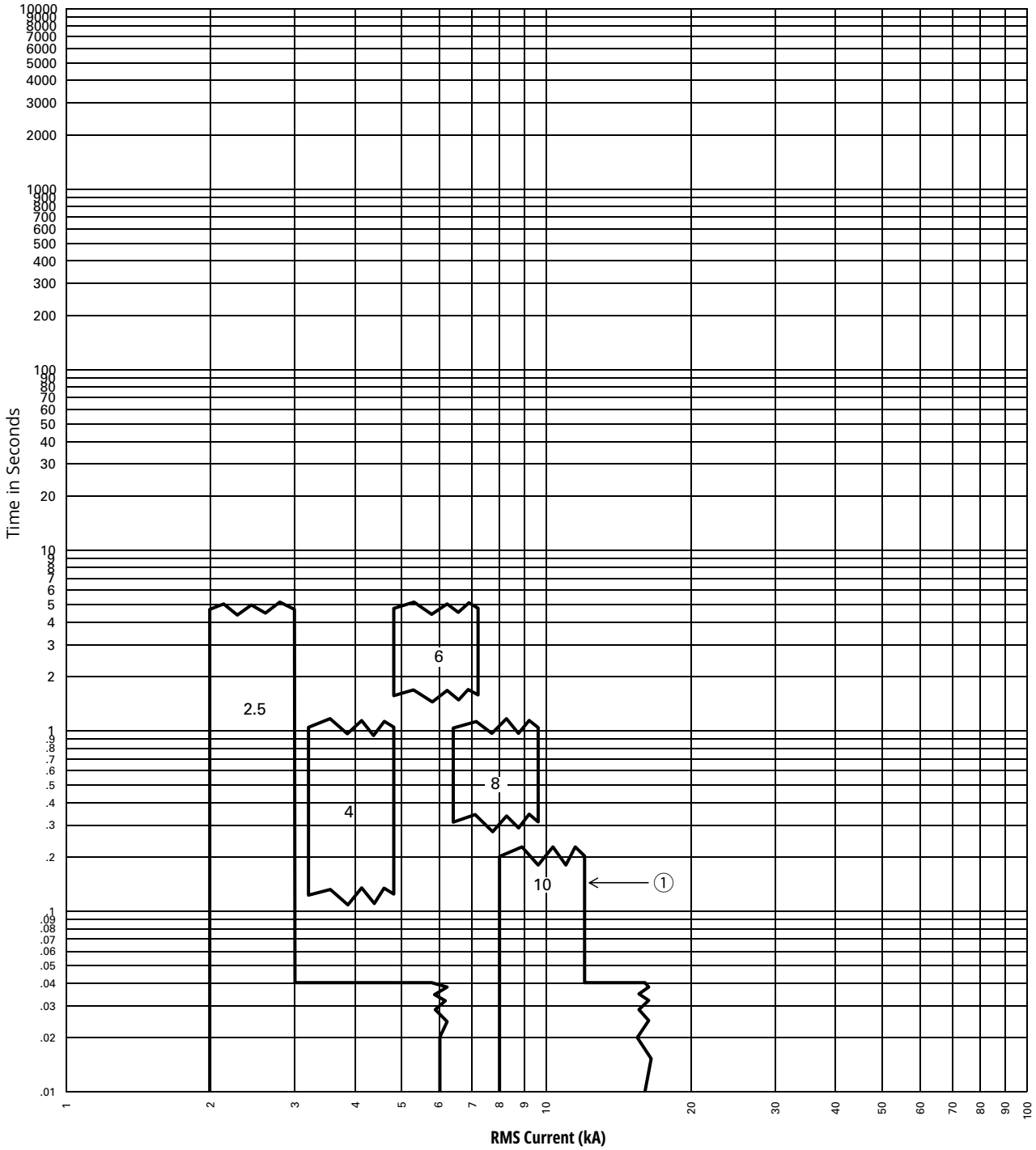
Notes:

1. Nominal reduction values have a tolerance of ±20%.
2. The nominal ARMs trip time is 40ms with auxiliary power supply.
3. The Maintenance Mode feature must be ENABLED via setting Maintenance Mode switch to ON position remote switch, or communications for these curves to apply.
   Maintenance Mode is in use being shown by blue LED.
4. The PXR will light the Instantaneous LED for a Maintenance Mode Trip.
5. The end of the curve is determined by the interrupting rating of the circuit breaker.
6. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
7. This curve is for 50Hz ,60Hz applications.
8. These curves are comprehensive for series IZM91 circuit breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

New Generation Air Circuit Breaker IZM9

Tripping Curves

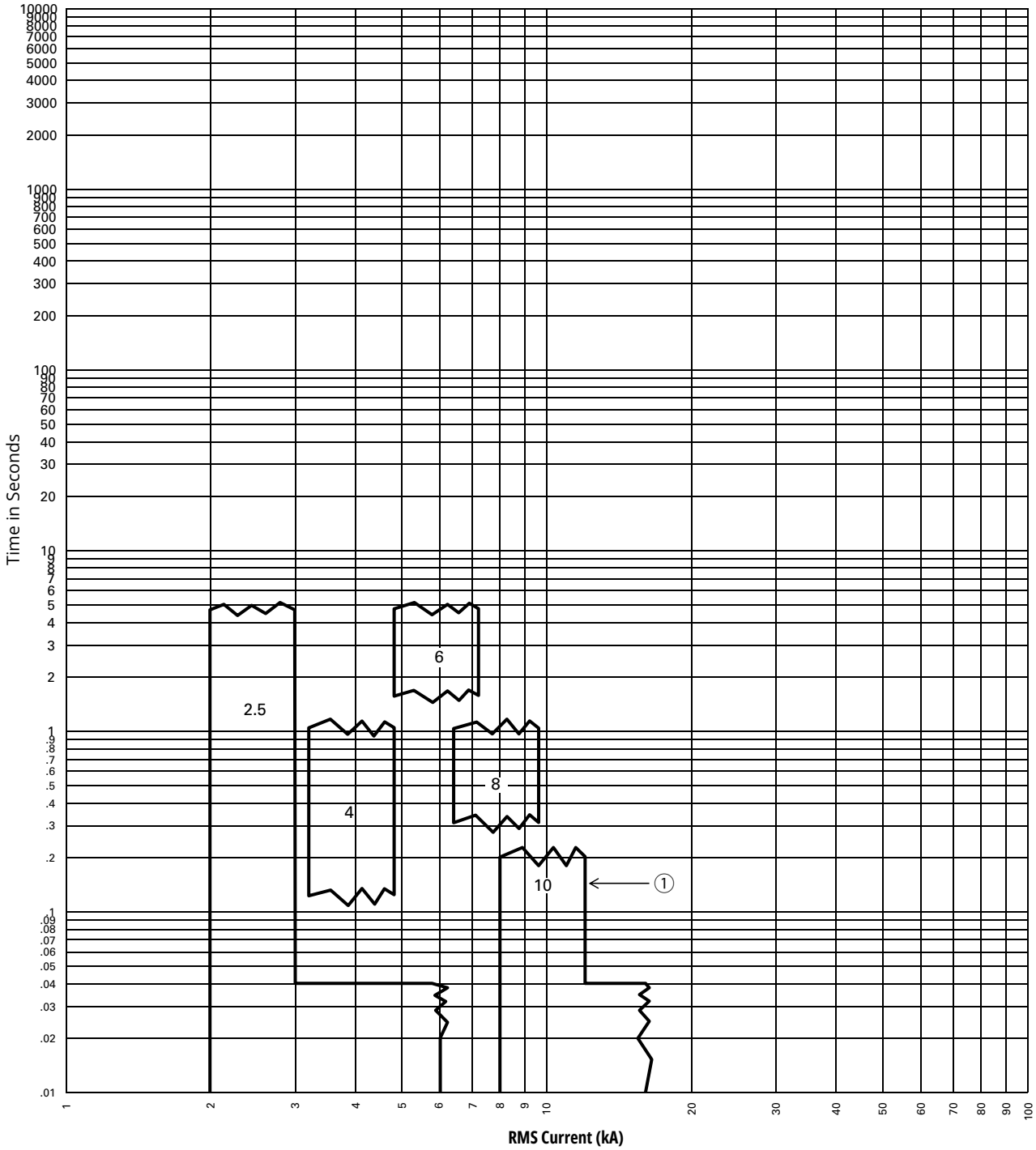
IZM97/99...V(U)...PXR20/25 Maintenance Mode Curve
Arc-flash Reduction Maintenance Mode for IZM97



Notes:

1. Nominal reduction values have a tolerance of ±20%.
2. The nominal ARMs trip time is 40ms with auxiliary power supply.
3. The Maintenance Mode feature must be ENABLED via setting Maintenance Mode switch to ON position remote switch, or communications for these curves to apply.
   Maintenance Mode is in use being shown by blue LED.
4. The PXR will light the Instantaneous LED for a Maintenance Mode Trip.
5. The end of the curve is determined by the interrupting rating of the circuit breaker.
6. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
7. This curve is for 50Hz ,60Hz applications.
8. These curves are comprehensive for series IZM97/99 circuit breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

IZM97/99...V(U)...PXR20/25 Maintenance Mode Curve
Arc-flash Reduction Maintenance Mode for IZM99



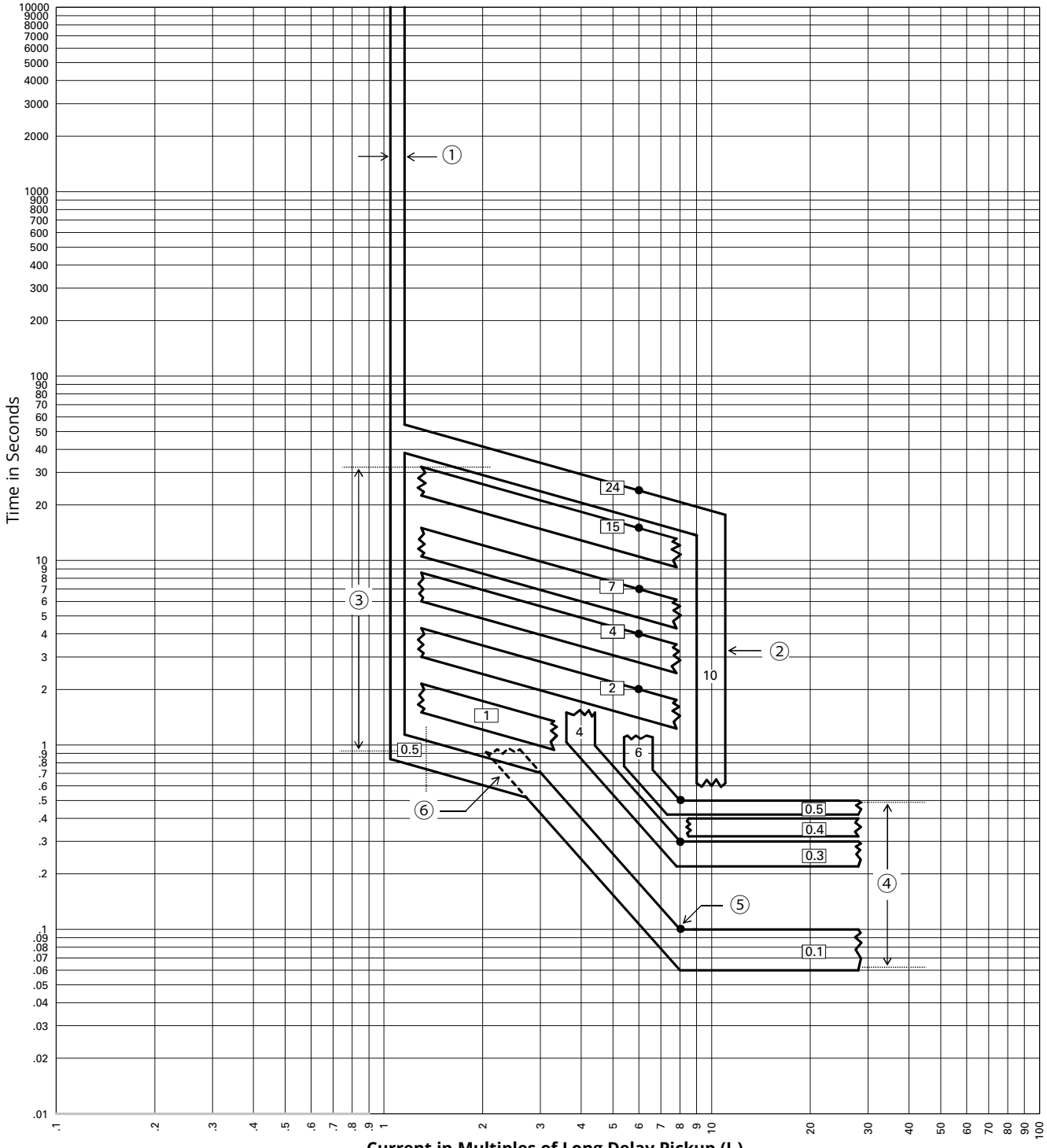
Notes:

1. Nominal reduction values have a tolerance of ±20%.
2. The nominal ARMs trip time is 40ms with auxiliary power supply.
3. The Maintenance Mode feature must be ENABLED via setting Maintenance Mode switch to ON position remote switch, or communications for these curves to apply.
   Maintenance Mode is in use being shown by blue LED.
4. The PXR will light the Instantaneous LED for a Maintenance Mode Trip.
5. The end of the curve is determined by the interrupting rating of the circuit breaker.
6. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
7. This curve is for 50Hz ,60Hz applications.
8. These curves are comprehensive for series IZM97/99 circuit breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

New Generation Air Circuit Breaker IZM9

Tripping Curves

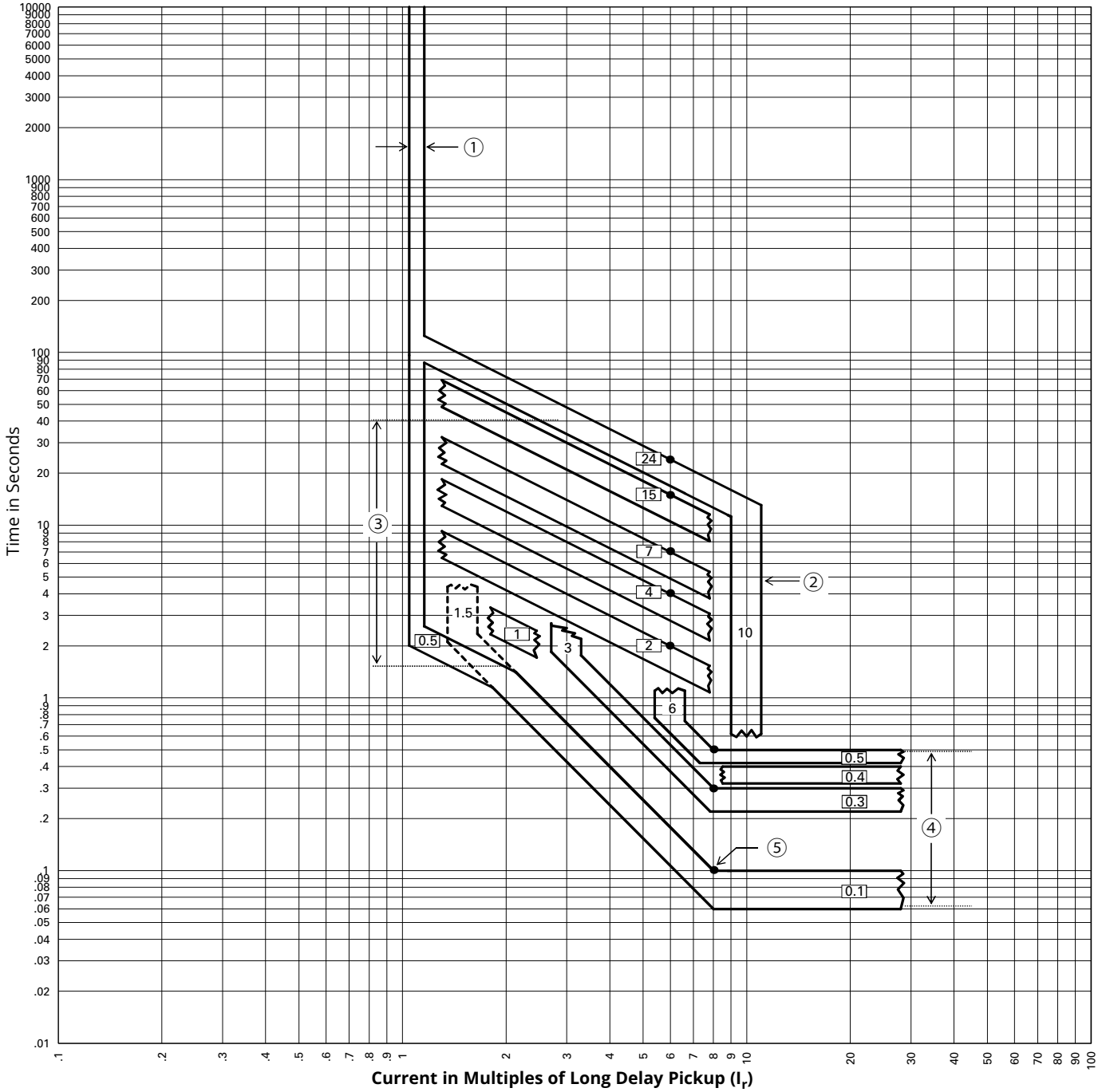
IZM91/97/99...V(U)...PXR20/25 Long Delay(L) Curves
L-Protection: $I^{0.5}t$-Characteristic curve



Notes:

1. This curve shown as a multiple of the LONG PU setting (I_r). The actual pickup point occurs at 110% of the I_r with ±5% tolerance.
2. SDPU = 1.5x to 10x of I_r have 100% ± 10% tolerance.
3. LD Time = 0.5s to 24s, have 100% +0 / -30% tolerance.
4. SD Slope = I^2T. The short pickup points have ±10% tolerance. time setting from 0.1s to 0.5s, with steps of 0.1s, except 0.2s.
   tolerance is 100% +0 / -30% except 0.1s, has tolerance 100% +0 / -40%.
5. I^2T slopes flattens out at 8x of I_r for top of band with FLAT time minimum value prevailing for bottom of band. For all curves the lower flat response
   time value projected to I^2T line will determine the other break point and shape of the curve.
6. If the short delay time is longer than long delay time, the short delay trip time will follow the long time setting.
7. If long delay thermal memory is enabled, trip times may be shorter than indicated in this chart.
8. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
9. This curve is for 50Hz, 60Hz applications.
10. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions.
    The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

IZM91/97/99...V(U)...PXR20/25 Long Delay(L) Curves
L-Protection: I^1t-Characteristic curve



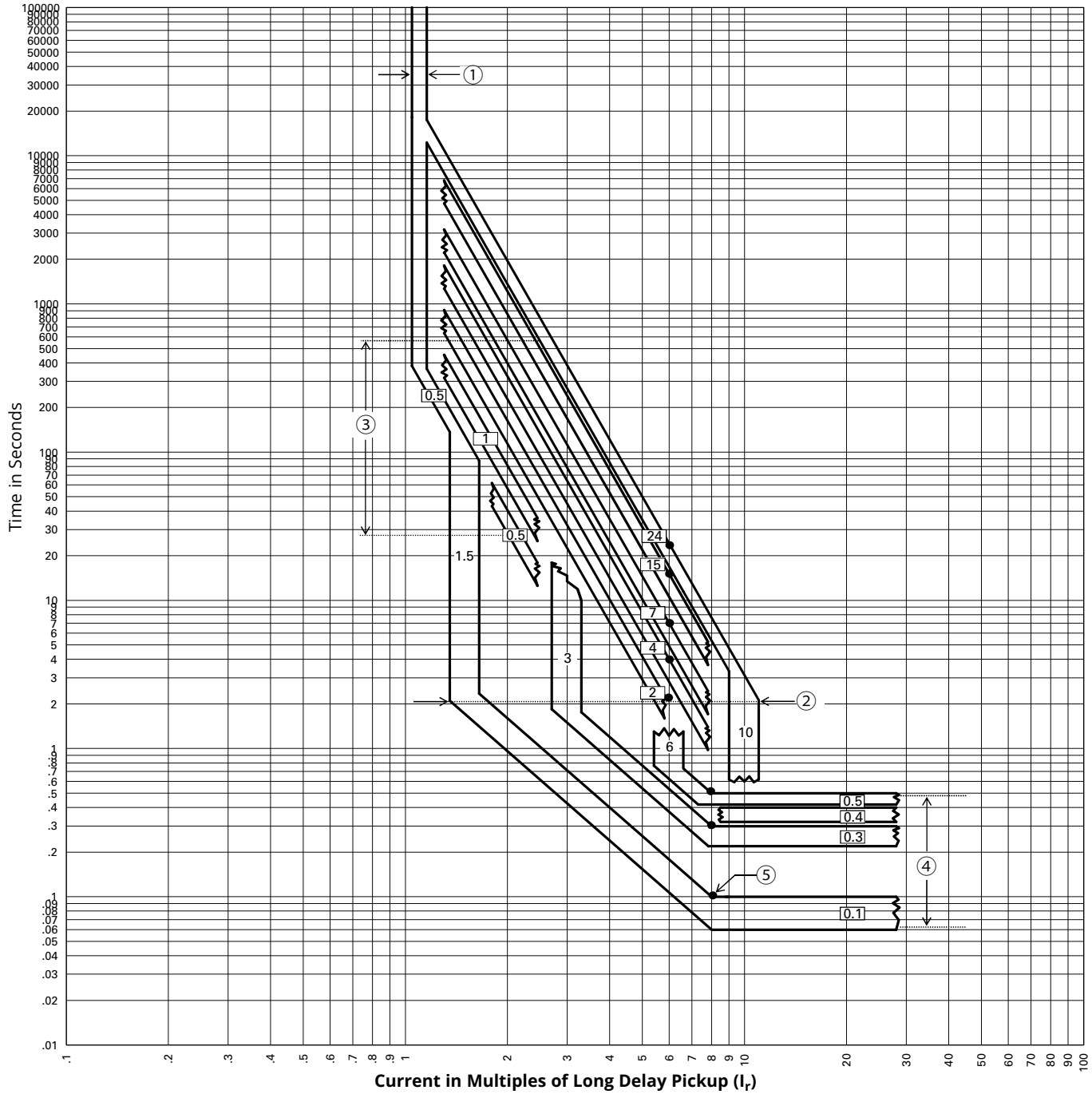
Notes:

1. This curve shown as a multiple of the LONG PU setting(I_r). The actual pickup point occurs at 110% of the I_r with ±5% tolerance.
2. SDPU = 1.5x to 10x of I_r, have 100% ± 10% tolerance.
3. LD Time = 0.5s to 24s, have 100% +0 / -30% tolerance.
4. SD Slope = I^2T. The short pickup points have ±10% tolerance.
   time setting from 0.1s to 0.5s, with steps of 0.1s, except 0.2s.
   tolerance is 100% +0 / -30% except 0. 1s, has tolerance 100% +0 / -40%.
5. I^2T slopes flattens out at 8x of I_r for top of band with FLAT time minimum value prevailing for bottom of band. For all curves the lower flat response time value projected to I^2T line will determine the other break point and shape of the curve.
6. If long delay thermal memory is enabled, trip times may be shorter than indicated in this chart.
7. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
8. This curve is for 50Hz, 60Hz applications.
9. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions.

New Generation Air Circuit Breaker IZM9

Tripping Curves

IZM91/97/99...V(U)...PXR20/25 Long Delay(L) Curves
L-Protection: I⁴t-Characteristic curve



Notes:

1. This curve shown as a multiple of the LONG PU setting(I_r). The actual pickup point occurs at 110% of the I_r with ±5% tolerance.
2. SDPU = 1.5x to 10x of I_r, have 100% ± 10% tolerance.
3. LD Time = 0.5s to 24s, have 100% +0 / -30% tolerance.
4. SD Slope = I^2T. The short pickup points have ±10% tolerance.
   time setting from 0.1s to 0.5s, with steps of 0.1s, except 0.2s.
   tolerance is 100% +0 / -30% except 0. 1s, has tolerance 100% +0 / -40%.
5. I^2T slopes flattens out at 8x of I_r for top of band with FLAT time minimum value prevailing for bottom of band. For all curves the lower flat response time value projected to I^2T line will determine the other break point and shape of the curve.
6. If long delay thermal memory is enabled, trip times may be shorter than indicated in this chart.
7. Curves applies from -20°C to +50°C ambient. Temperatures above +85°C will cause over temperature trip.
8. This curve is for 50Hz, 60Hz applications.
9. These curves are comprehensive for series IZM91/97/99 circuit breakers including all frame sizes, ratings, and constructions.
   The total clearing times shown include the response time for trip unit, the breaker opening and the interruption of the current.

Temperature Derating

	Rated Current	630A	800A	1000A	1250A	1600A
IZM91	40°C [A]	630	800	1000	1250	1600
	50°C [A]	630	800	1000	1250	1500
	60°C [A]	630	800	1000	1250	1400
	70°C [A]	630	800	1000	1250	1350

	Rated Current	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
IZM97	40°C [A]	800	1000	1250	1600	2000	2500	3200	4000
	50°C [A]	800	1000	1250	1600	2000	2500	3100	4000
	60°C [A]	800	1000	1250	1600	2000	2500	2800	3650
	70°C [A]	800	1000	1250	1600	2000	2500	2550	3500

	Rated Current	4000A	5000A	63000A
IZM99	40°C [A]	4000	5000	6300
	50°C [A]	4000	5000	6200
	60°C [A]	4000	5000	5600
	70°C [A]	4000	5000	5100

Altitude Derating Factors

Altitude [m]	Voltage Correction	Current Correction
2000	1.000	1.000
2150	0.989	0.998
2300	0.976	0.995
2450	0.963	0.993
2600	0.950	0.990
2750	0.933	0.987
2900	0.917	0.983
3050	0.900	0.980
3200	0.883	0.977
3350	0.867	0.973
3500	0.850	0.970
3650	0.833	0.967
3800	0.817	0.963
3950	0.800	0.960
5000	0.700	0.940

Notes
IZM9 series circuit breakers can be applied at their full voltage and current ratings up to a maximum altitude of 2000 meters above sea level. When installed at higher altitudes, the ratings are subject to correction factors. Short circuit current is not affected as long as the voltage is rated in accordance with the table.

New Generation Air Circuit Breaker IZM9

Terminal Assignment of Control Circuit Terminals

IZM91 Control Circuit Terminal Assignment

1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55
+ ST1	+ UV1	OT1C	OT1B	ACCY2	N1	ALMC	ALM2	G1	+28V	ZIN	ZCOM	CMM1	CMM3	PTVA	PTVC	MODBA	MODBG	ACCY5	ACCY7	EO1	SR1	C1	B1	C2	C3	B3	C4
- ST2	- UV2	OT1M	ACCY1	ACCY3	N2	ALM1	ALM3	G2	AGND	ARMSIN	ZOUT	CMM2	CMM4	PTVB	PTVN	MODBB	ACCY4	ACCY6	SC	EO2	SR2	A1	B2	A2	A3	B4	A4
2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56

1,2 - Shunt trip
3,4 - UVR/2nd shunt trip
5~7 - Overload trip switch 1 (OTS) (5-COM, 6-N.O, 7-N.C.)
8~10 - Overload trip switch 2 (OTS) (8-N.C., 9-COM, 10-N.O.)
11,12 - External netural sensor
13~16 - Alarm
17,18 - Ground fault source sensor
19,20 - Control voltage supply 28VDC
21,23,24 - Zone selectivity ZSI
20,22 - ARMs
25-28 - External CAM module
29~32 - PT module
33~35 - Onboard ModBus
36 - ACCY4 (Reserved)
37~39 - Latch check switch (37-COM, 38-N.O, 39-N.C.)
40 - Message :Spring energy store tensioned
41,42 - Motor operator
43,44 - Spring closing release
45~56 - Auxiliary contact On/off, C-COM, A-N.O., B-N.C.

IZM97/99 Control Circuit Terminal Assignment

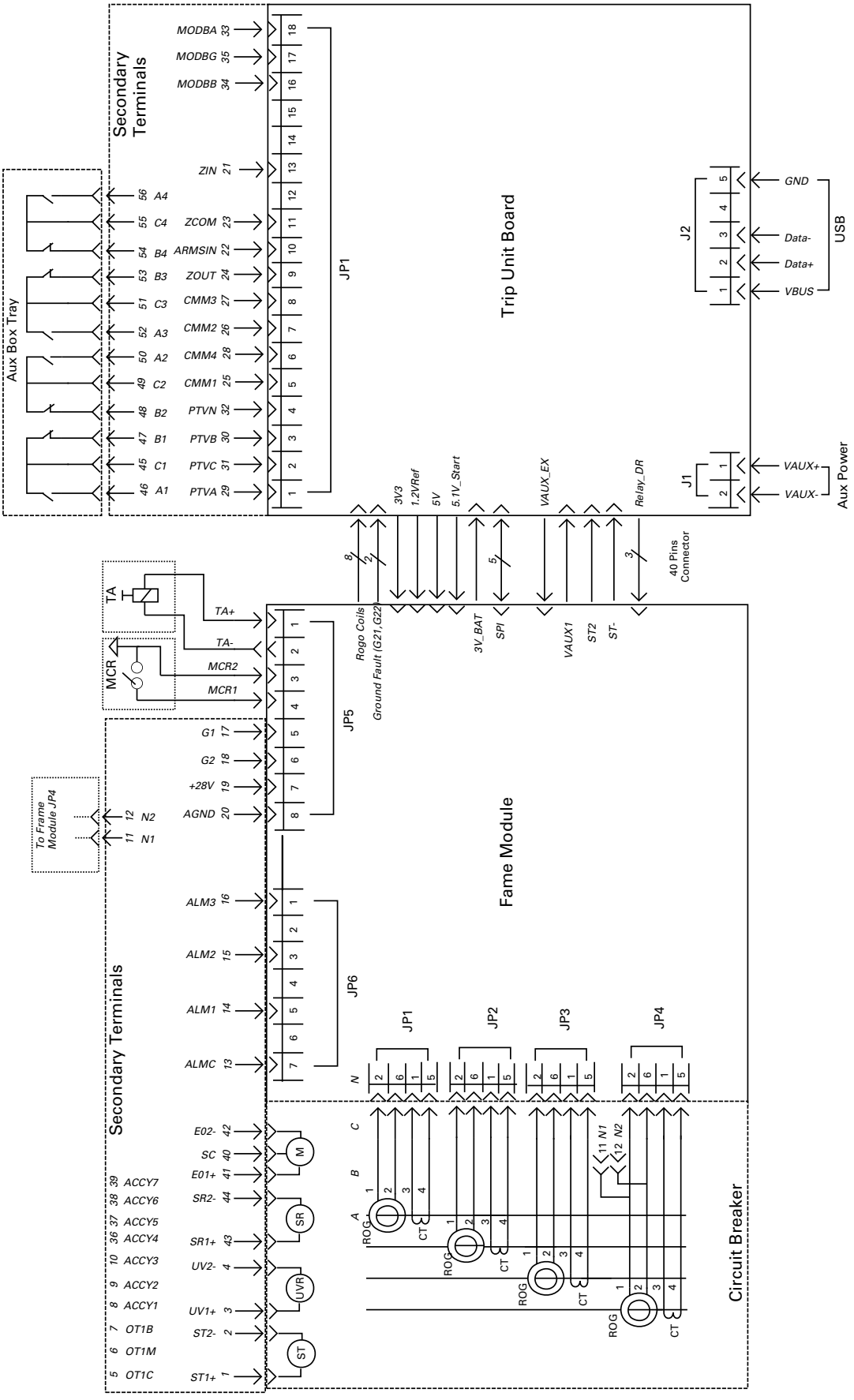
1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47
EO1 +		OT1C	OT1B	OT2C	N1	ALMC	ALM2	G1	+ 28V	ZIN	ZCOM	CMM1	CMM3	PTVA	PTVC	MODB	MODG	2CMM	2CMM	ARCO			
EO2 -	SC	OT1M	OT2B	OT2M	N2	ALM1	ALM3	G2	AGND	ARMS	ZOUT	CMM2	CMM4	PTVB	PTVN	MODB	2CMM	2CMM	ARCO	ARCO			
2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48

1,2 - Motor operator
4 - Message :Spring energy store tensioned
5~7 - Overload trip switch 1 (OTS) (5-COM, 6-N.O, 7-N.C.)
8~10 - Overload trip switch 2 (OTS)/ (8-NC, 9-COM,10-NO)
11,12 - External netural sensor
13~16 - Alarm
17,18 - Ground fault source sensor
19,20 - Control voltage supply 28VDC
21,23,24 - Zone selectivity ZSI
20,22 - ARMs
25-28 - External CAM module
29~32 - PT module
33~35 - Onboard ModBus
36~39 - External CAM module (reserved)
40~42 - ARCON(reserved)
3, 88, 95, 96, 43~48 – reserved

49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87	89	91	93	95
C1	B1	C2	C3	B3	C4	C5	B5	C6	C7	B7	C8	C9	B9	C10	C11	B11	C12	LCC	LCB	ST1	SR1	UV1+	
A1	B2	A2	A3	B4	A4	A5	B6	A6	A7	B8	A8	A9	B10	A10	A11	B12	A12	LCM		ST2	SR2 -	UV2 -	
50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96

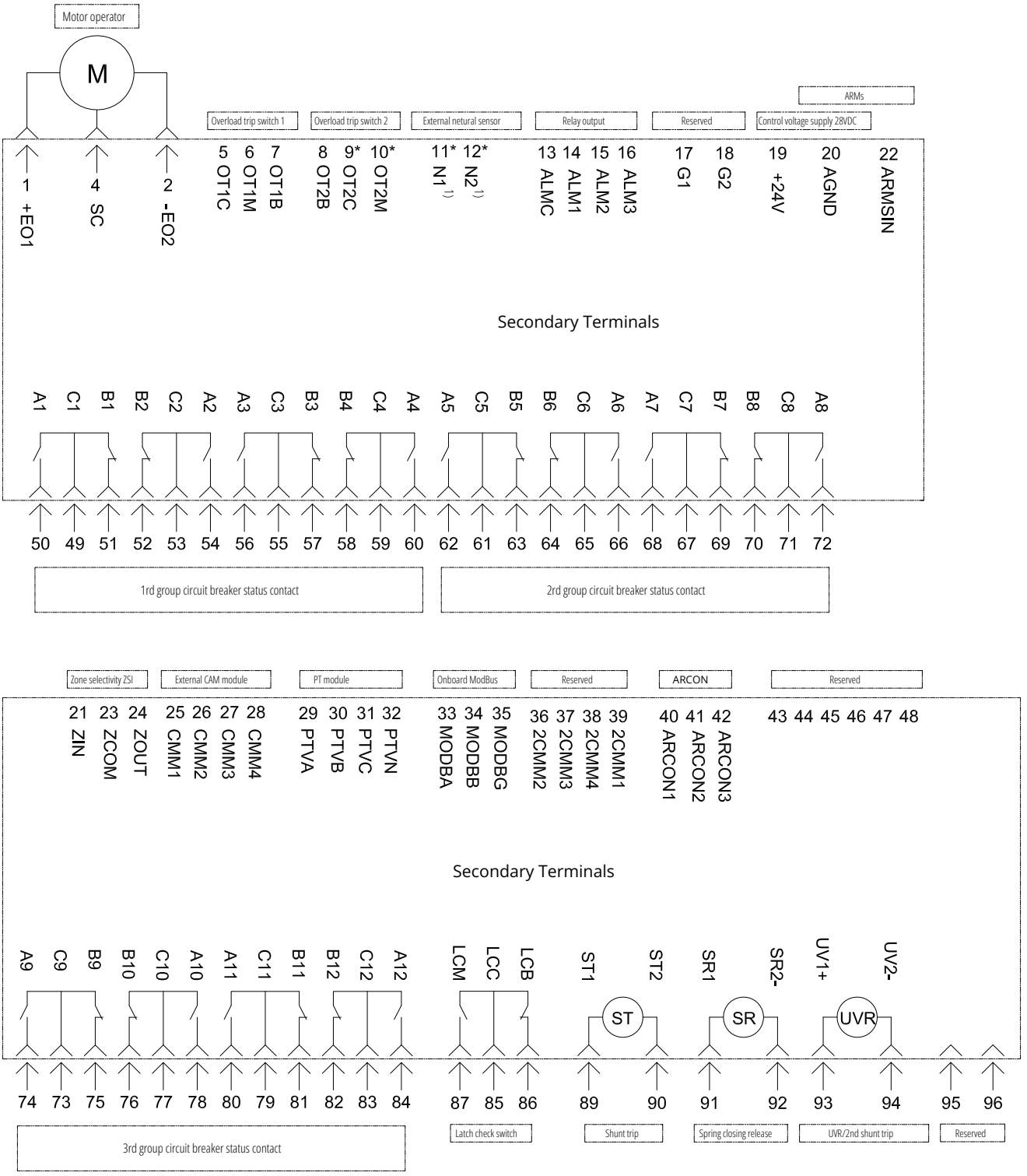
49~84 - Auxiliary contact (C-COM, A- NO, B-NC)
85~87 - Latch check switch (85-COM, 86-NC, 87-NO)
89,90 - Shunt trip
91,92- Spring closing release
93,94 - UVR/2nd shunt trip

IZM91 control circuit internal wiring diagram



IZM97/99 control circuit internal wiring diagram

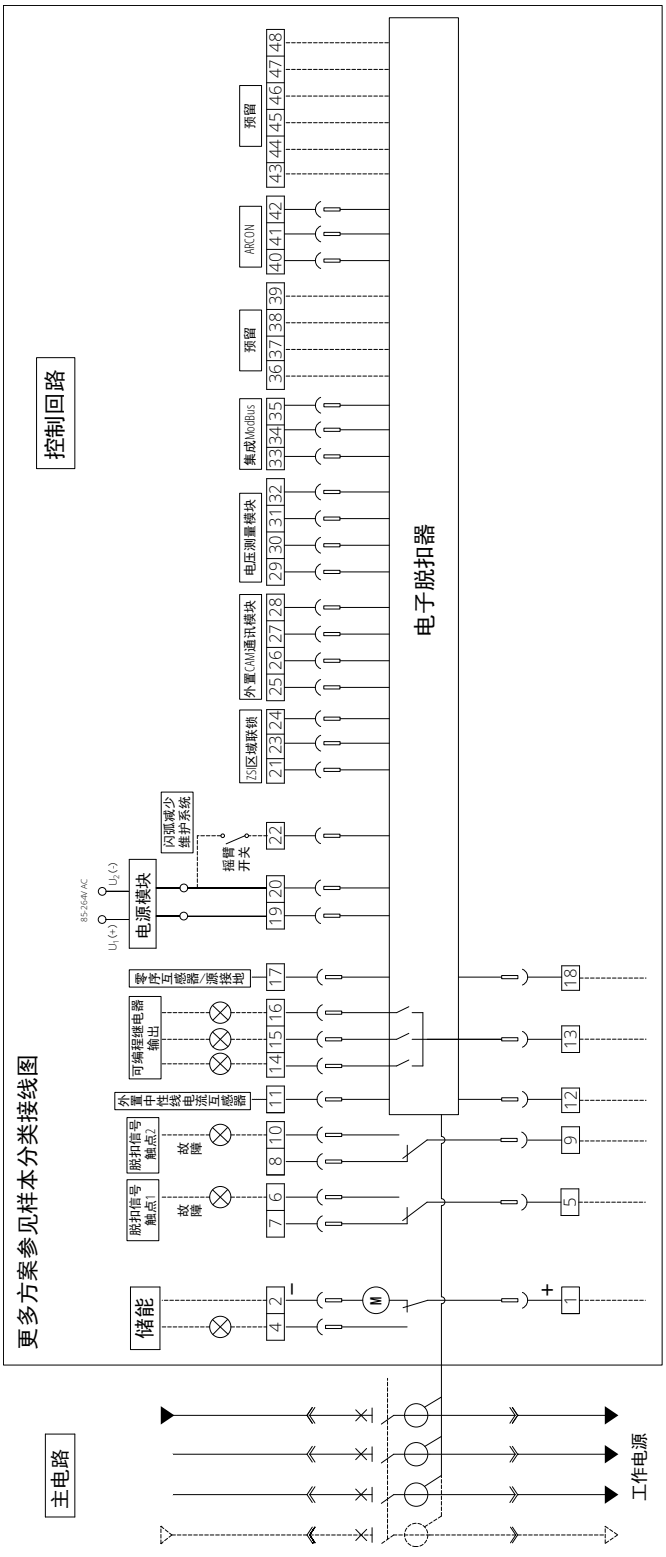
PXR20&25 wiring diagrams

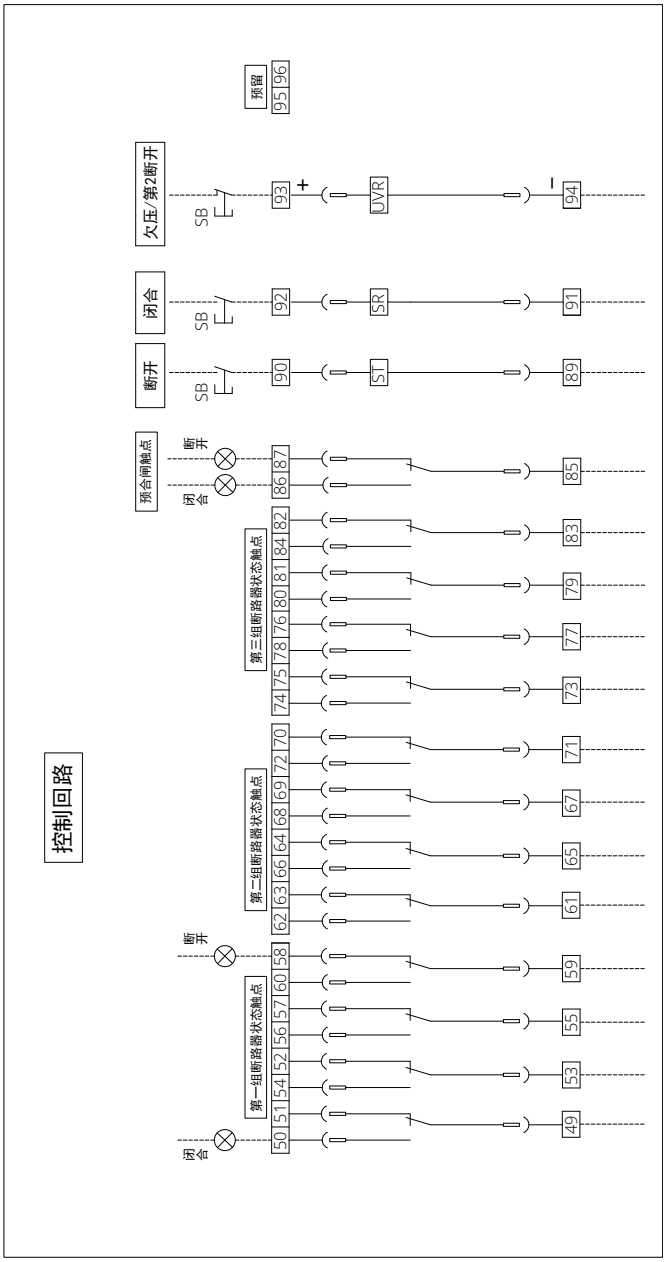


Notes:

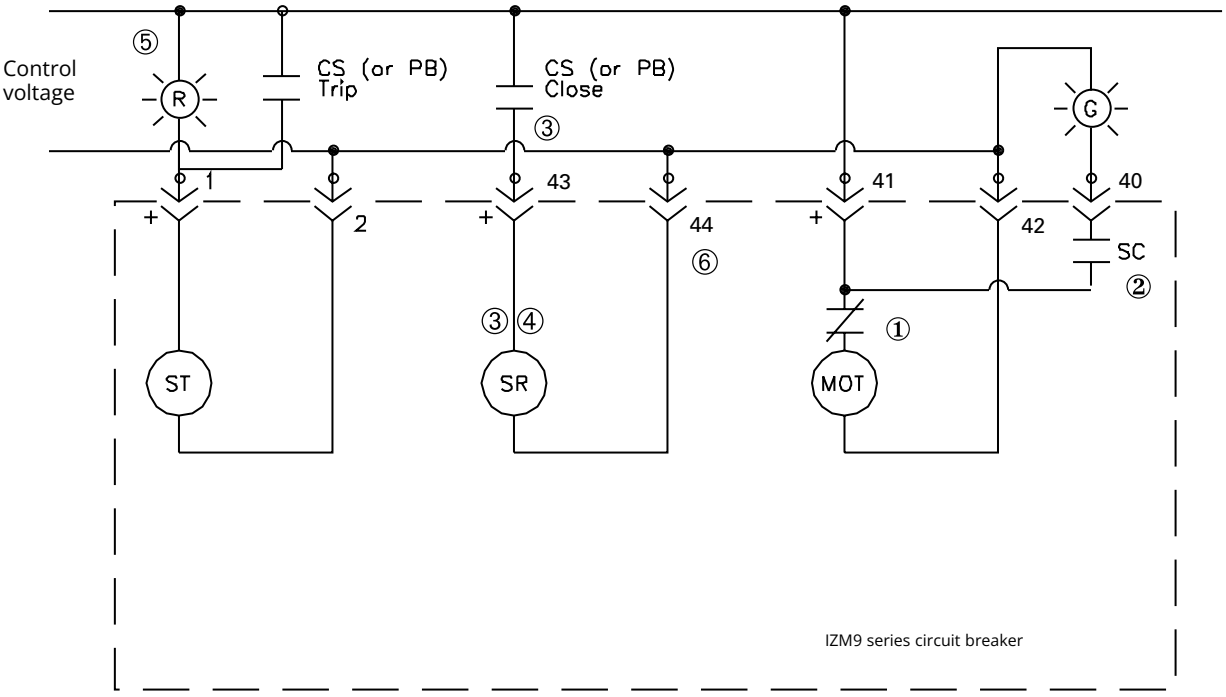
1) On a 4P circuit breaker, the neutral current sensor has the same style and wiring method as the phase sensor, located within the circuit breaker frame, no need to connect the secondary terminals 11N1, 12N2

IZM97/99电气接线图





Electrical control diagram of IZM91 circuit breakers – Open/Close and motor



Legend:

MOT – Motor Operator for Charging Closing Spring

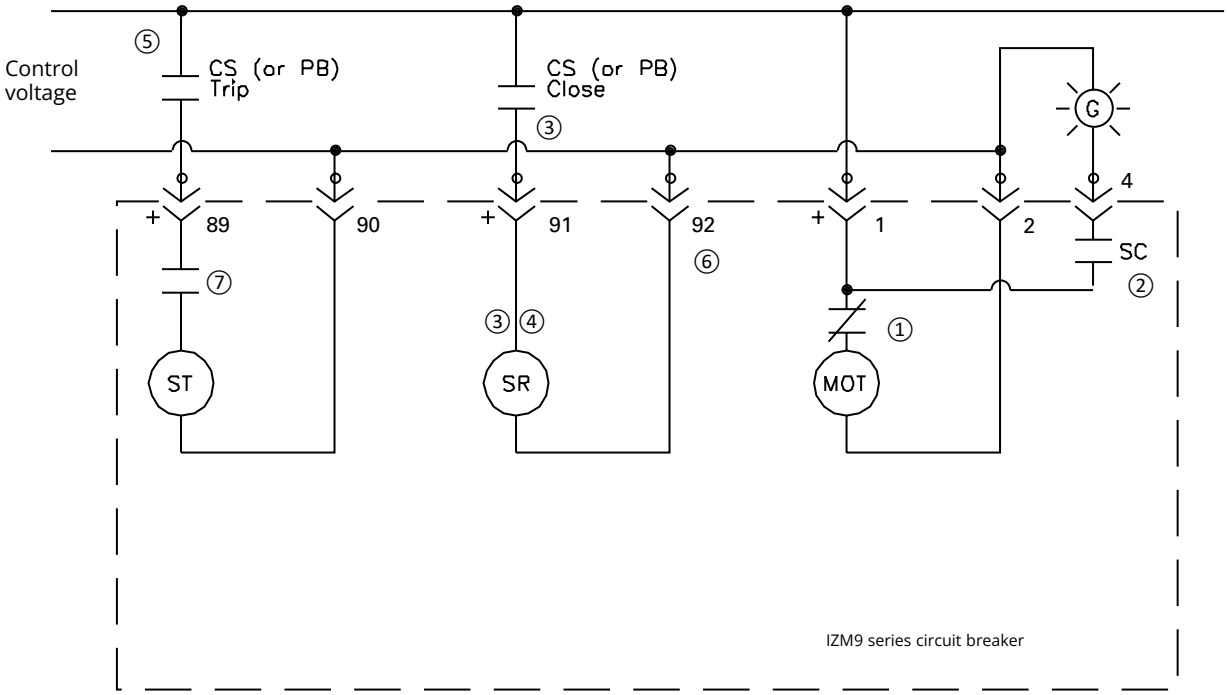
ST – Shunt Trip

SR – Spring Release

Description of Operation:

1. The motor is energized and runs, charges closing spring, and is cut off by switch.
2. When the spring is charged, the SC closes and the green indicating light will illuminate (if applicable).
3. Closing the CS-C contact energizes the Spring Release Coil and closes the circuit breaker. The Spring Release internal electronics pulse the SR coil and then provides a high impedance circuit. This provides anti-pumping.
4. When the spring discharges its energy, the motor switch will re-energize the charging motor until the spring is charged again.
5. To detect the presence of voltage (Health Light), use Omron Red indicator LED Port # C22-L-R-120 for 120 Vac application. For 230 Vac application, use C22-L-R-230. For 24 Vdc application, use C22-L- R-24. Remove the white (22 mm [0.89 in.]) diameter pilot light) Light Diffuser from the assembly to give better indication of voltage present. Activate the push-button to trip the circuit breaker. See Eaton for other voltages.
6. For secondary contacts, odd numbers should be treated as positive for any accessory. This will not apply to AC ratings.
7. Reference Page 67 for internal circuit breaker wiring.

Electrical control diagram of IZM97/IZM 99 circuit breakers – Open/Close and motor



Legend:

MOT – Motor Operator for Charging Closing Spring

ST – Shunt Trip

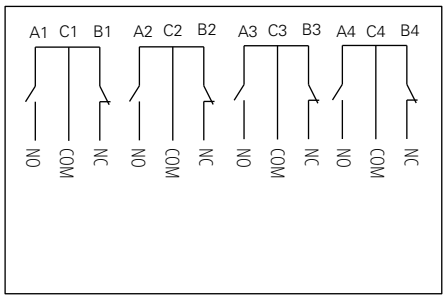
SR – Spring Release

Description of Operation:

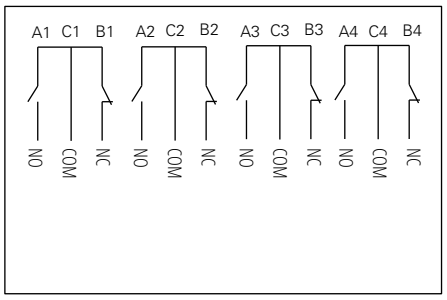
1. The motor is energized and runs, charges closing spring, and is cut off by switch.
2. When the spring is charged, the SC closes and the green indicating light will illuminate (if applicable).
3. Closing the CS-C contact energizes the Spring Release Coil and closes the circuit breaker. The Spring Release internal electronics pulse the SR coil and then provides a high impedance circuit. This provides anti-pumping.
4. When the spring discharges its energy, the motor switch will re-energize the charging motor until the spring is charged again.
5. When the circuit breaker closes, contact ⑦ closes, then energize the Shunt release, the circuit breaker disconnects, and contact ⑦ then breaks.
6. For secondary contacts, odd numbers should be treated as positive for any accessory. This will not apply to AC ratings.
7. ReferencePage 68 for internal circuit breaker wiring.

IZM97/99 Terminal Assignment of Cell Switch

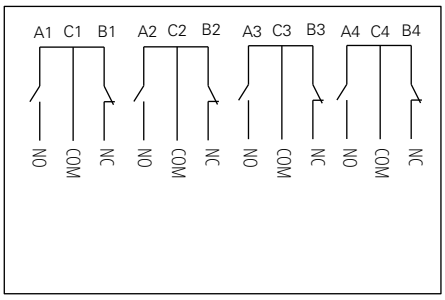
DISCONNECTED Position



TEST Position



CONNECTED Position



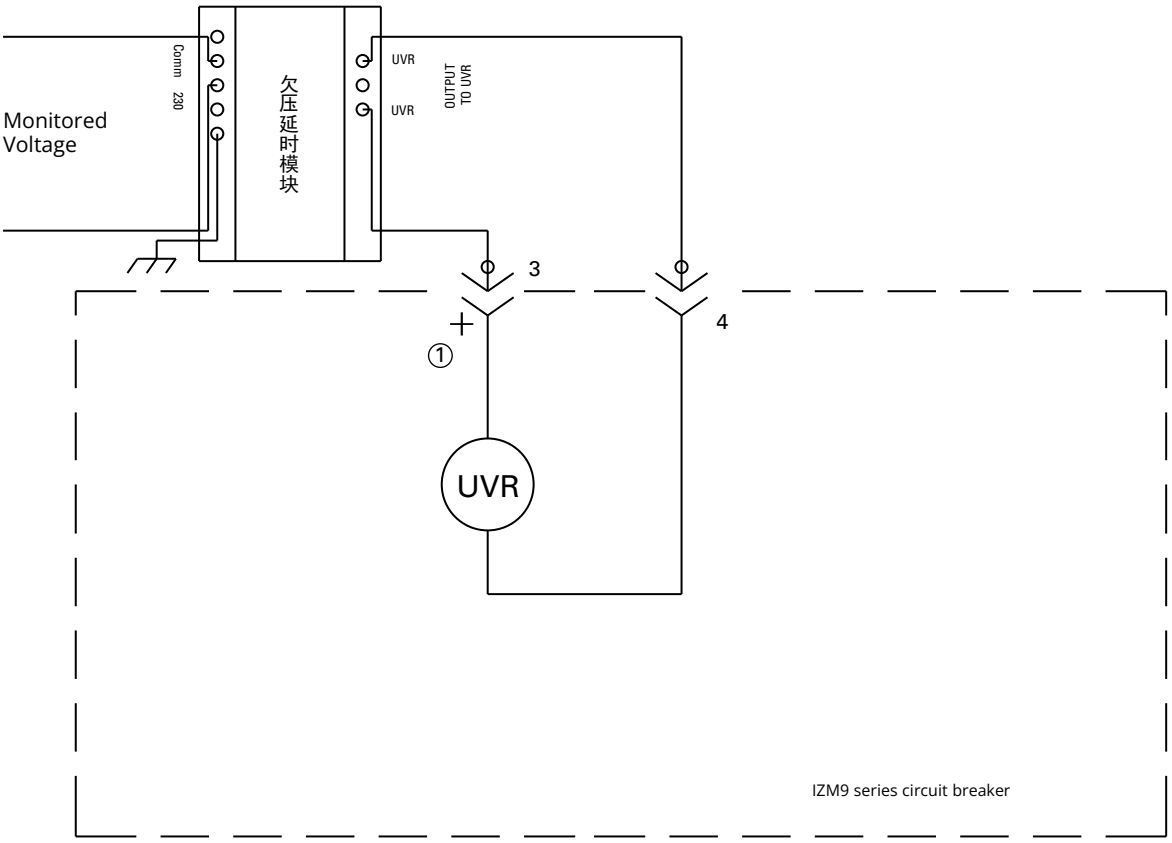
Notes:

1. Installs one or more of these locations (disconnect/test/connect), depending on the actual needs.
2. Each position switch provides 4A4B auxiliary contact, see figure above.
3. Each line head has a detailed line marker.

New Generation Air Circuit Breaker IZM9

Circuit breaker wiring diagram

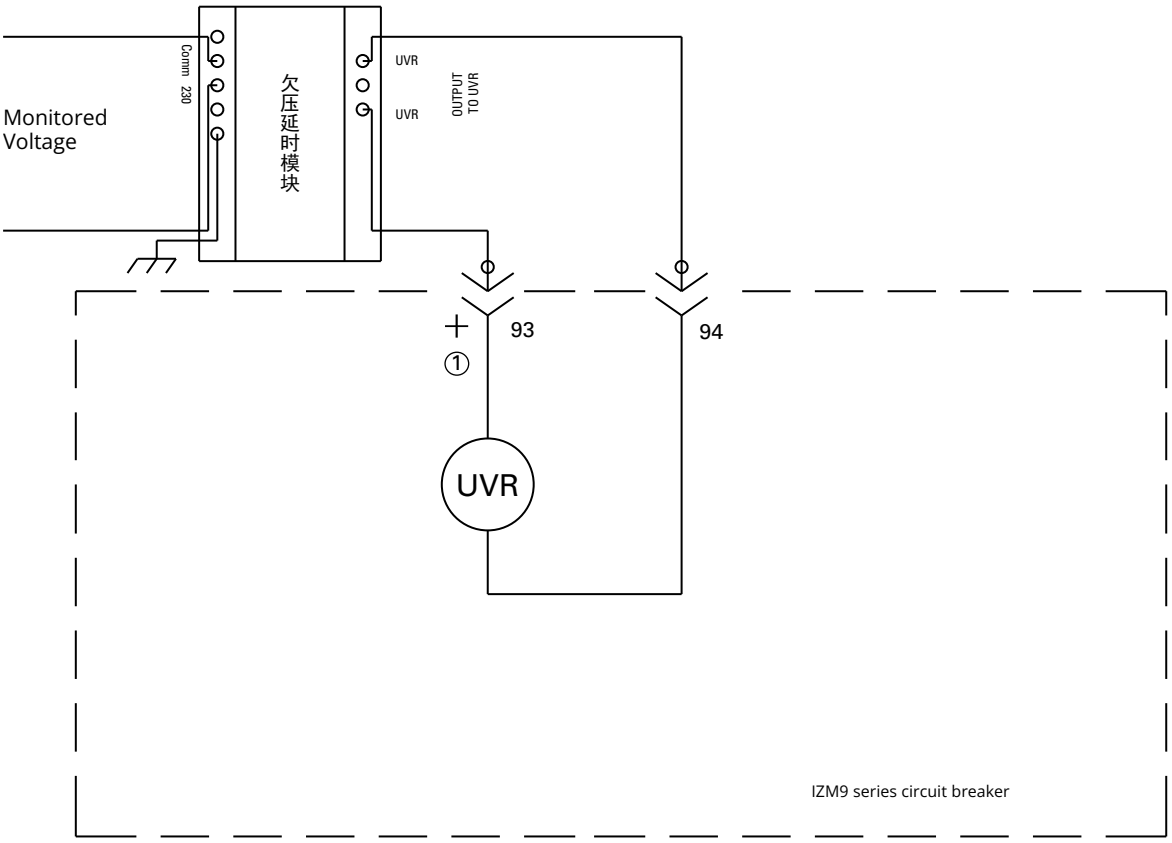
IZM91 Under Voltage Release



Notes:

① Treated as the positive voltage for DC ratings.

IZM97/99 Under Voltage Release



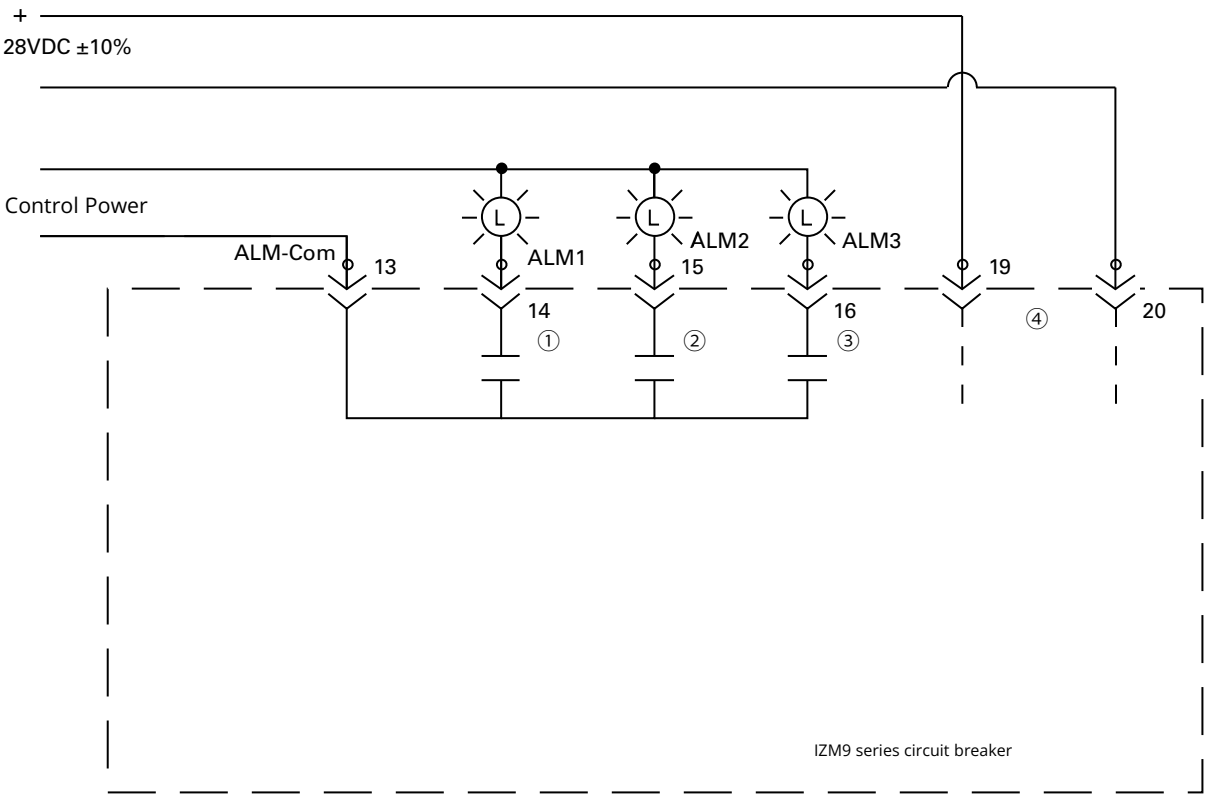
Notes:

① Treated as the positive voltage for DC ratings.

New Generation Air Circuit Breaker IZM9

Circuit breaker wiring diagram

PXR Alarm Wiring



Notes:

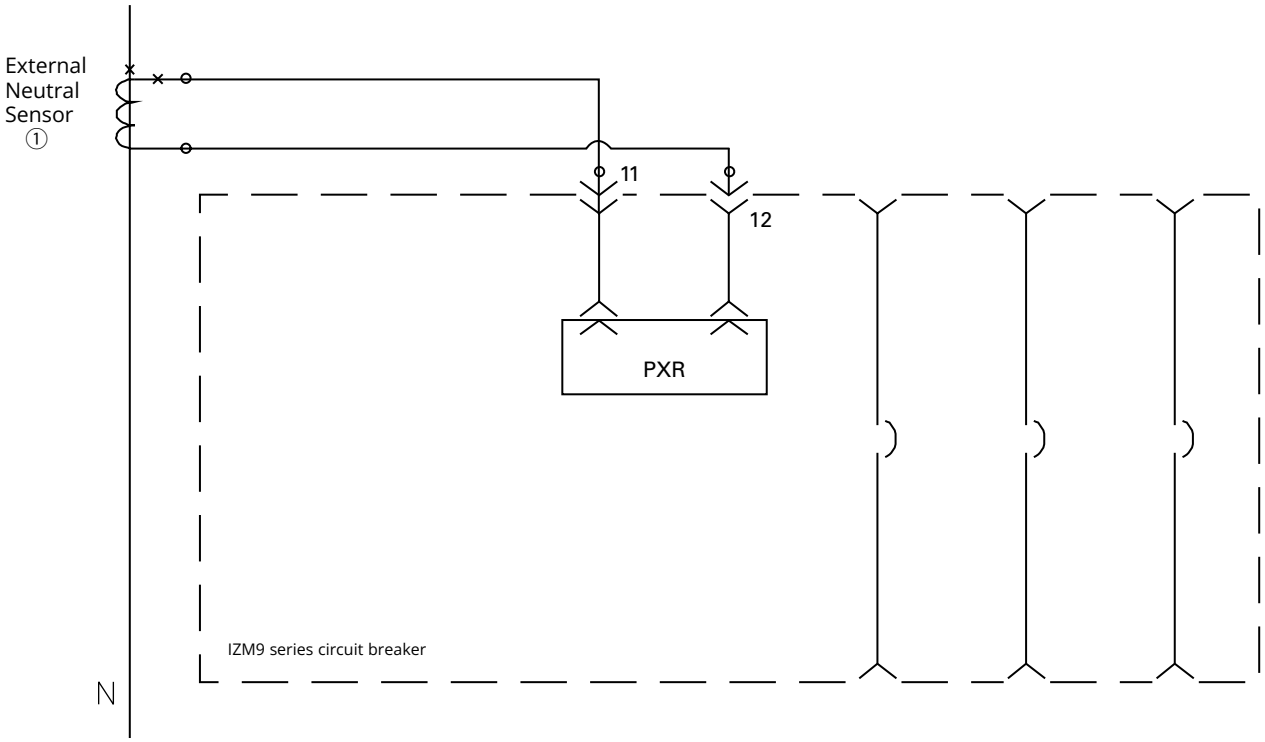
① For the PXR20/25, the Alarm 1 is for Remote Indication/ Maintenance Mode indication. Contact rating 1 A @ 120 Vac, 1 A @ 24 Vdc, and 0.5 A @ 230 Vac.

② For the PXR20/25, the Alarm 2 is for High Load alarm/Ground Fault alarm. Contact rating 1 A @ 120 Vac, 1 A @ 24 Vdc, and 0.5 A @ 230 Vac.

③ For the PXR20/25, the Alarm 3 is for Trip N.O. contact. Contact rating 1 A @ 120 Vac, 1 A @ 24 Vdc, and 0.5 A @ 230 Vac.

④ If the control voltage is +24 Vdc, the trip unit should be fed from a separate, galvanically isolated + 28 V voltage dc supply.

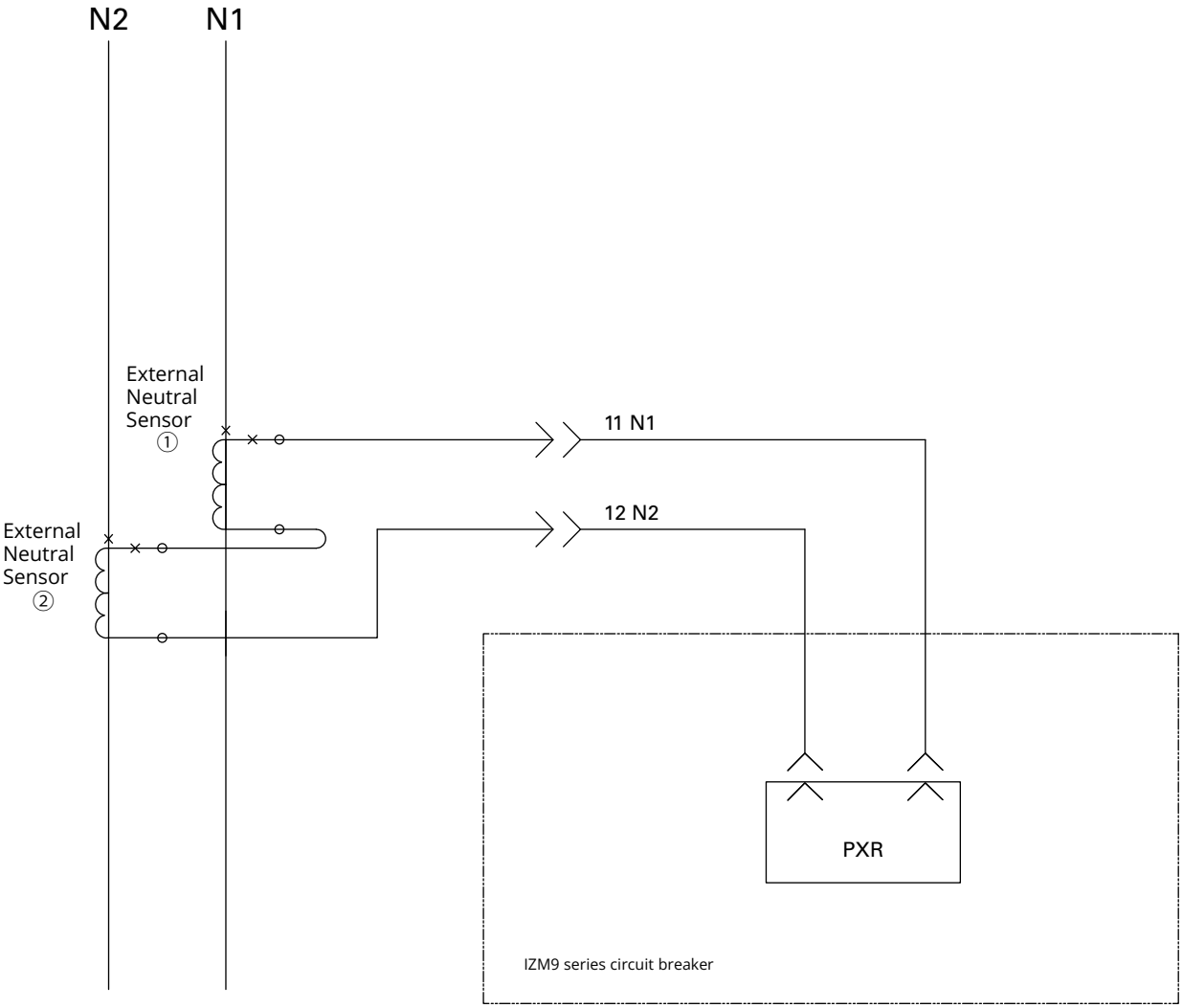
Ground Fault Residual, 3 pole, 4 pole (IZM91 630-1600A/IZM97 800-4000A)



Notes:

① Sensor is customer wired to sense neutral currents. This is required for 3 pole ,4 pole ACB no need to buy the external sensor.

Ground Fault Residual, 3 pole, 4 pole (IZM99 4000-6300A)

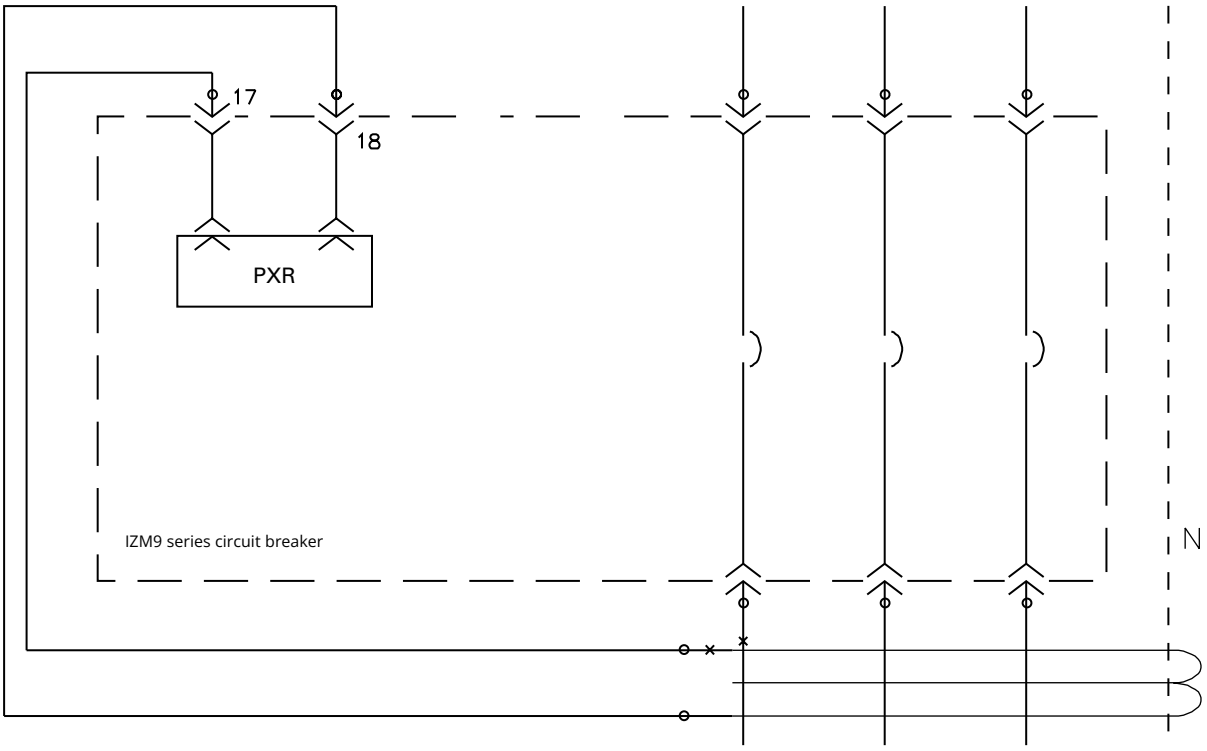


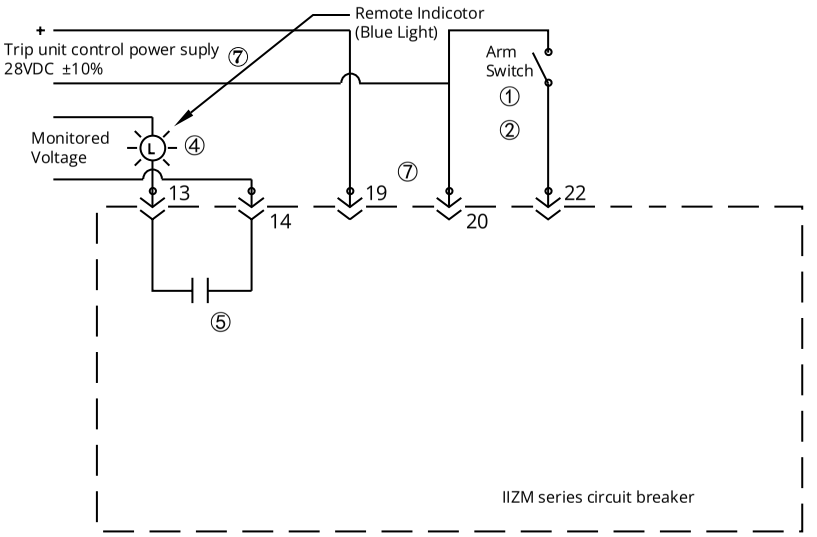
Note:

① Sensor is customer wired to sense neutral currents. This is required for 3 pole ,4 pole ACB no need to buy the external sensor.

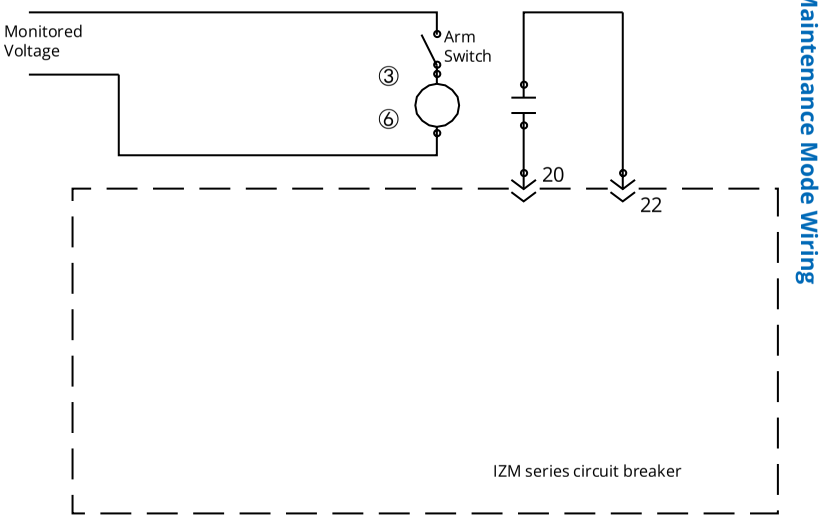
② Two external neutral transformers must be purchased for the two N-bars of the IZM99 circuit breakers, with serial connection to 11&12

Zero Sequence Ground Fault Sensing





Maintenance Mode Wiring



Alternate Customer Wiring (partial)

Notes:

① PXR20/25 can locally be placed in Maintenance Mode via a two position switch located on the trip unit. The function can be armed via a remote switch as shown. In addition, the function can be activated via communication modules. A blue LED on the PXR verifies the PXR release in Maintenance Mode.

② The recommended selector switch for this low voltage application is Eaton part number 10250T133-2E which includes a contact block rated for logic level and corrosive use.

③ The maximum length of this wiring to remotely arm the switch (or alternate relay contact) is 9.78 feet (3 m). Use #20 AWG wire or larger.

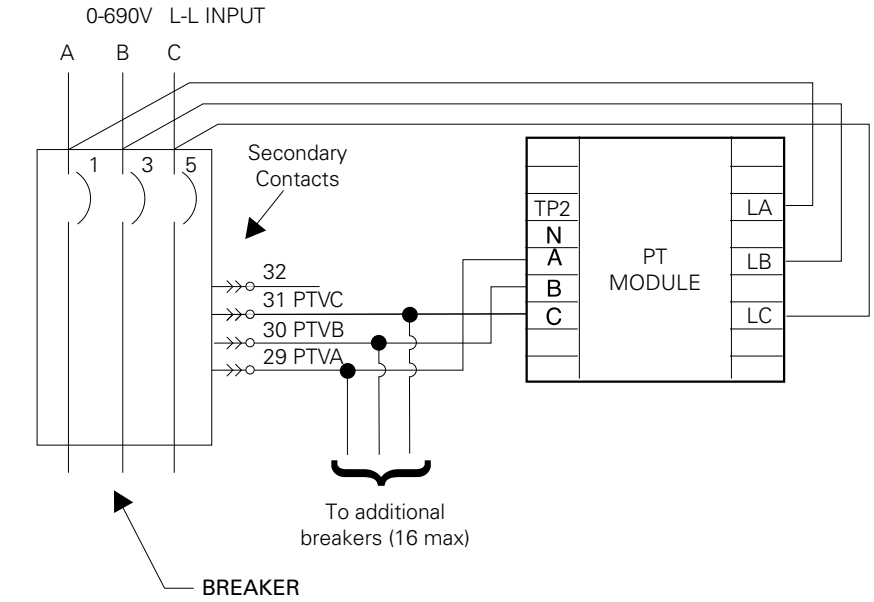
④ A remote Stack Light Annunciator panel or other remote indication device can be connected to verify that PXR is in the Maintenance Mode.

⑤ The relay in the PXR release makes when in Maintenance Mode. Contact is rated 1 A @ 120 Vac, 1 A @ 24 Vdc, and 0.5 A @ 230 Vac.

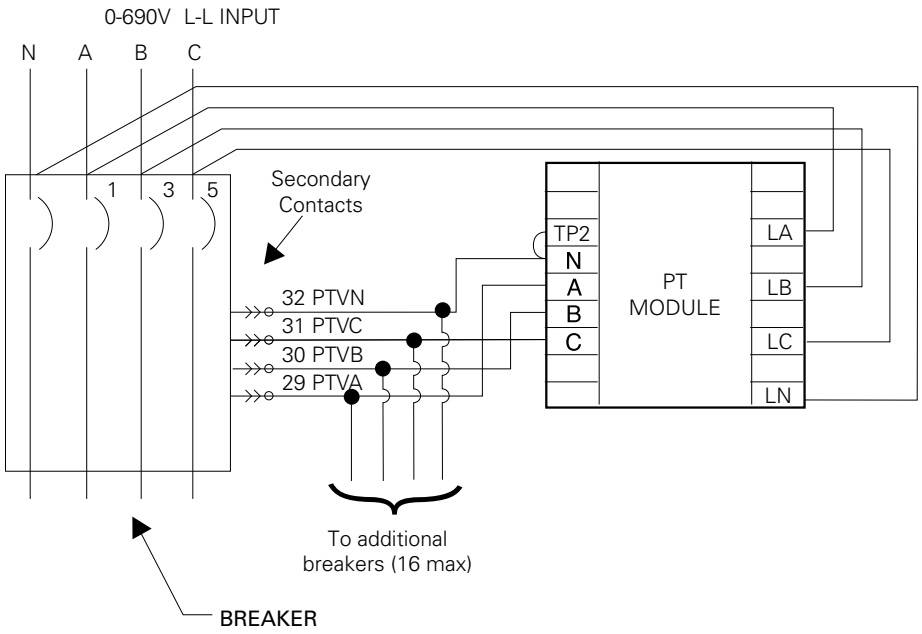
⑥ The PXR release can also be placed remotely in its Maintenance Mode via a general purpose relay (ice cube type with logic level contacts) and activated by a remote control switch. A recommended type is IDEC Relay RY22. Choose the voltage as desired.

⑦ If a Communication Module is used, The Communication Module will require 24 Vdc power and will provide isolated power to the PXR release in the circuit breaker. If a Communication Module is not used, the PXR release that requires auxiliary voltage for alarms which should be fed from a galvanically isolated, 24 Vdc supply.

External PT Module for PXR25 U type trip unit

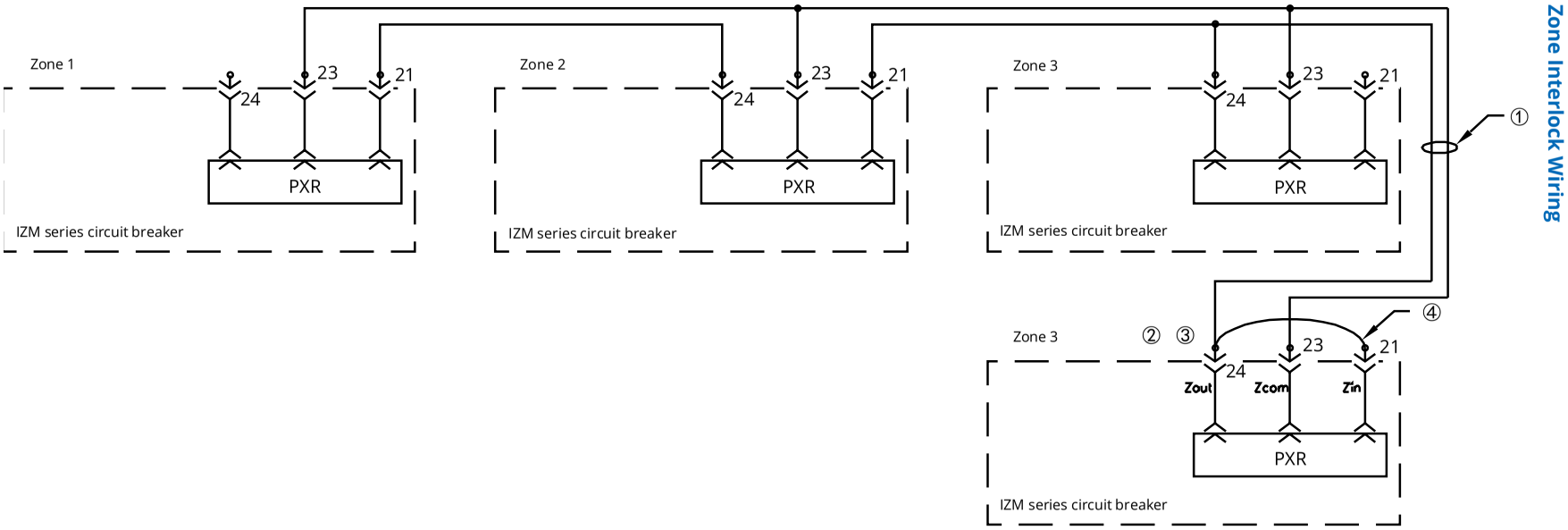


IZM circuit breaker - 3 pole - 3 wire



IZM circuit breaker - 3 pole or 4 pole - 4 wire

Zone Interlock Wiring



Notes:

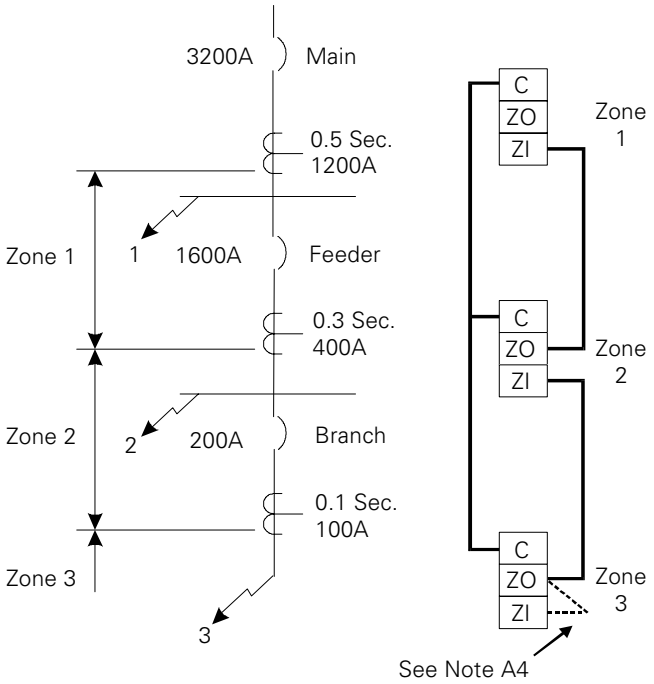
① Twisted together AWG #14 to #20 copper wire. Route the Zone Interlock wiring separate from power conductors. DO NOT GROUND any Zone Interlock wiring.

② The maximum distance between two farthest breakers on different zones (from the Z_{out} downstream to the Z_{in} upstream terminals) is 250 feet (75 m).

③ A maximum of 20 breakers may be contained in parallel in one zone.

④ Provide a self interlocking jumper (on Zone 3), if coordination is desired with other downstream breakers not providing the Zone Interlock feature.

Typical Zone Interlocking



Notes:

A1: Wiring to be twisted pair of AWG #14 to #20. Route zone interlocking wiring separate from power conductors. DO NOT GROUND any zone interlocking wiring.

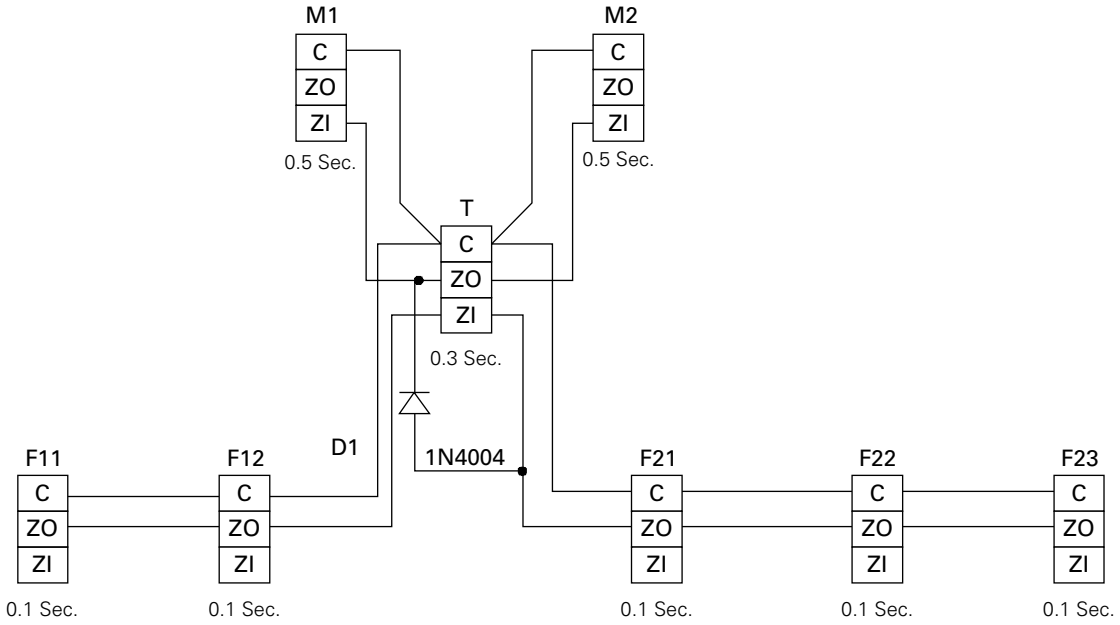
A2: The maximum distance between two farthest breakers on different zones (from the ZO downstream to ZI upstream terminals is 250 feet (76m).

A3: A maximum of 20 breakers may be contained in parallel in one zone.

A4: Provide a self-interlocking jumper (on Zone 3) if coordination is desired with other downstream circuit breakers not providing the zone interlock feature.

C	= Common (ungrounded) – B7—Contact
ZO	= Zone Out output signal to higher level zone – B9—Contact
ZI	= Zone In input signal from lower level zone – B8—Contact
2	= Fault at location 2

Typical Zone Interlocking Connections with Two Main Breakers (M1, M2) and a Tie Breaker (T)

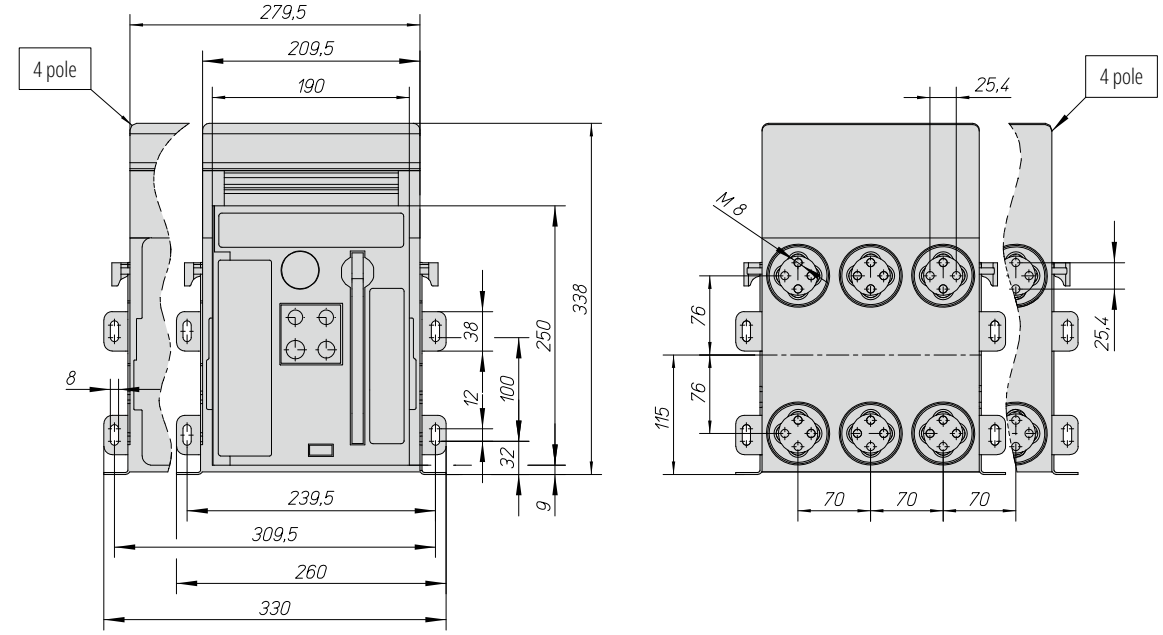


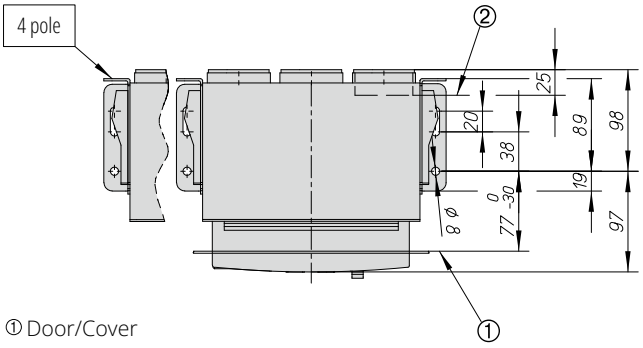
New Generation Air Circuit Breaker IZM9

Basic Device Dimensions

IZM91 Fixed Type

IZM91...F, IN91...F





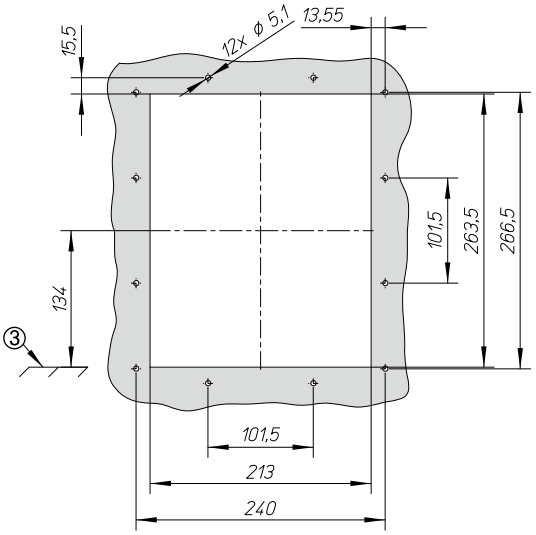
① Door/Cover

② Contact surface

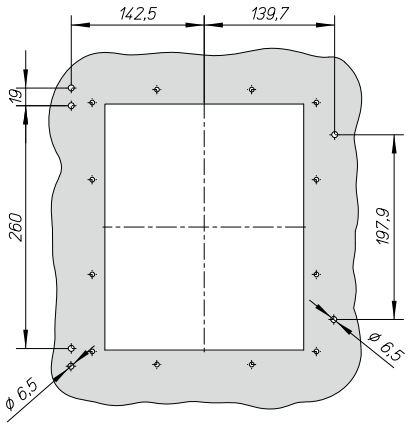
IZM91 Fixed Type

Door cut-out IZM91

IZMC1-DEG16-F-2



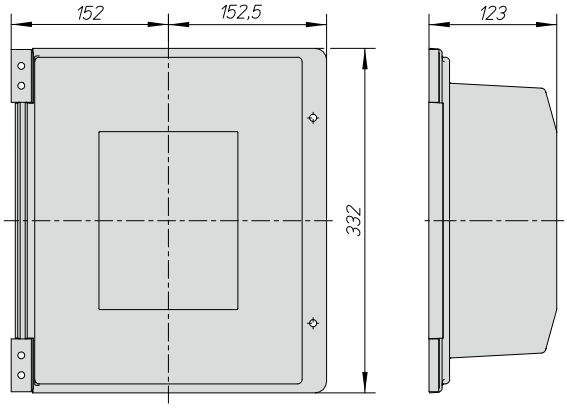
IZMC1-DC91-F



③ Top edge of mounting plate

Door cover

IZMC1-DC91-F



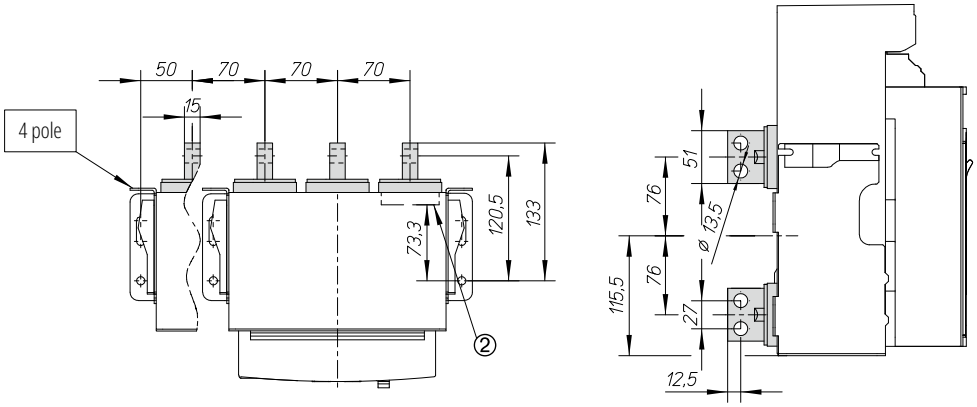
New Generation Air Circuit Breaker IZM9

Basic Device Dimensions

IZM91 Fixed Type

Terminal adapter horizontal/vertical - vertical mounted

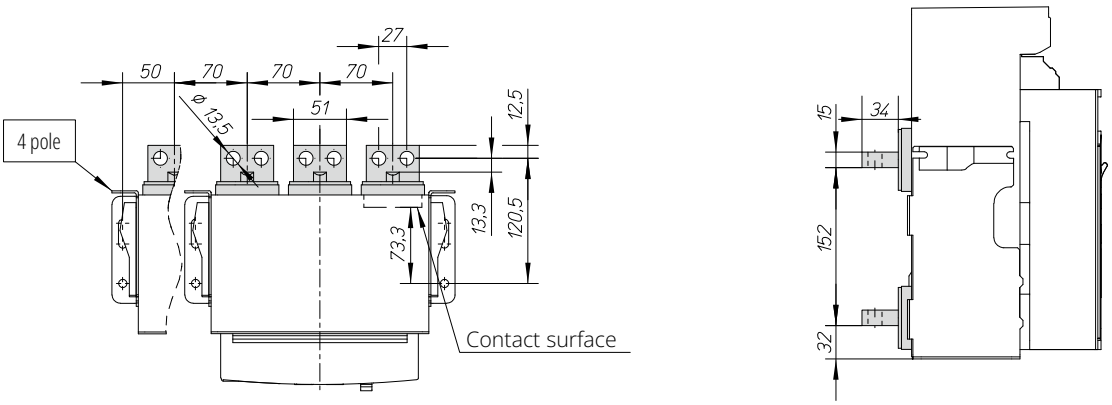
IZMC1-THV16...



② Contact surface

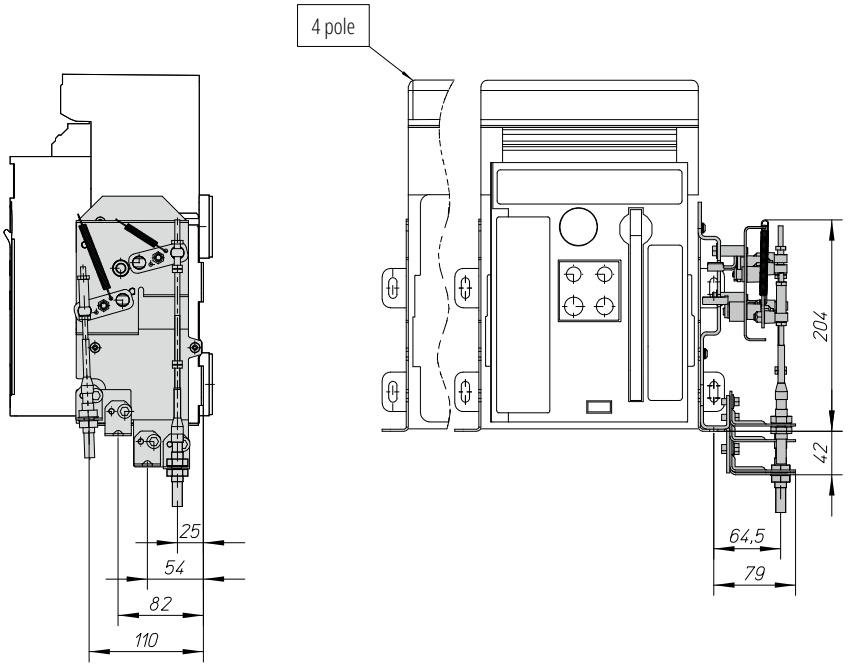
Terminal adapter horizontal/vertical - horizontal mounted

IZMC1-THV16...



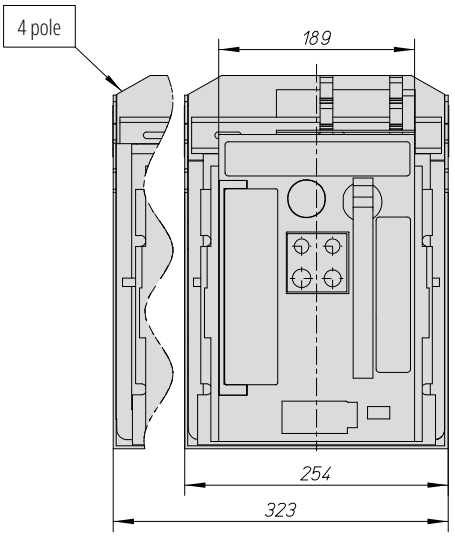
IZM91 mechanical interlock for fixed mounting units

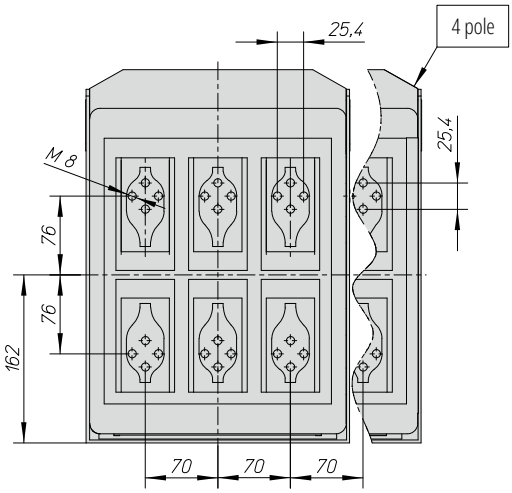
IZMC1-MIL...F16

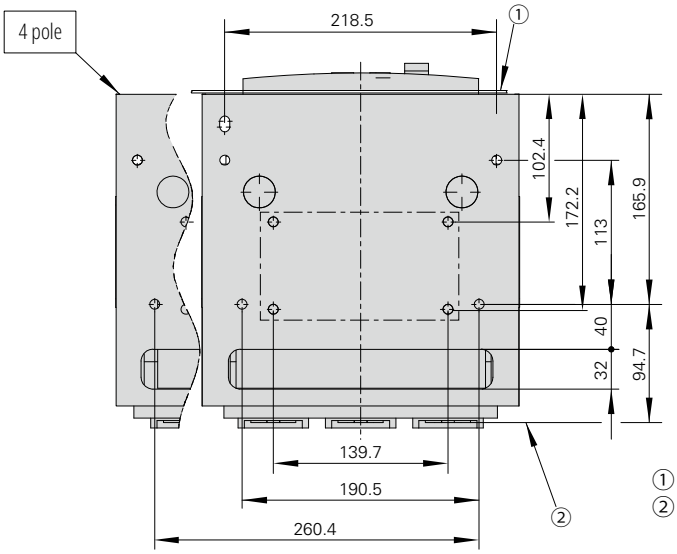


IZM91 Withdrawable Type

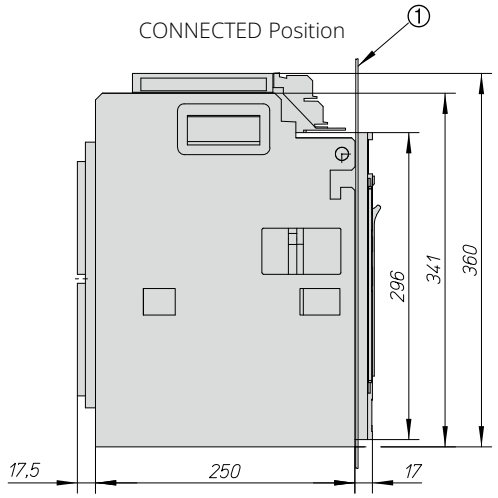
IZM91...W, IN91...W



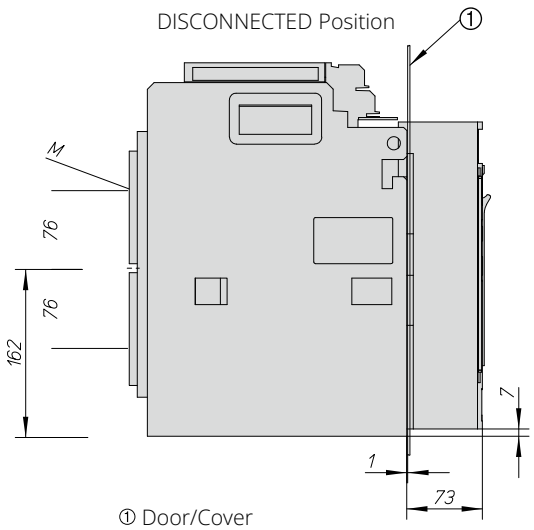




① Door/Cover
② Contact surface



① Door/Cover

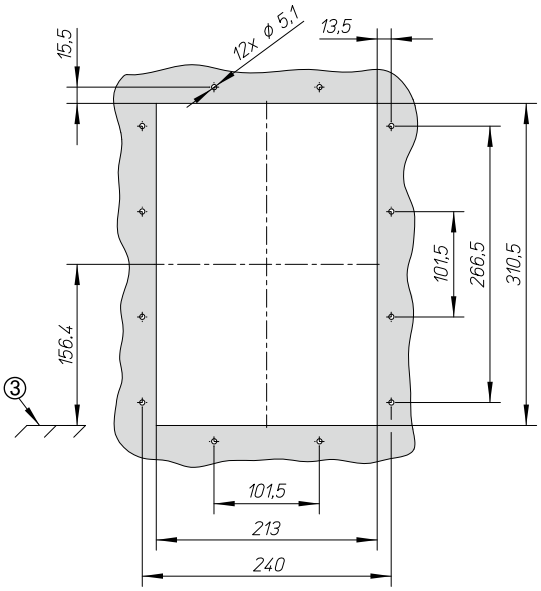


① Door/Cover

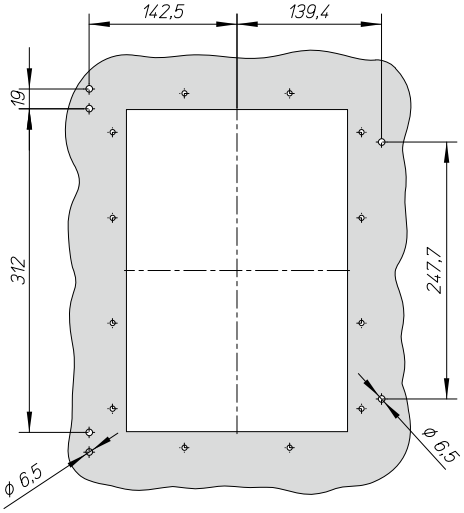
IZM91 Withdrawable Type

Door cut-out IZM91

IZMC1-DEG91-W



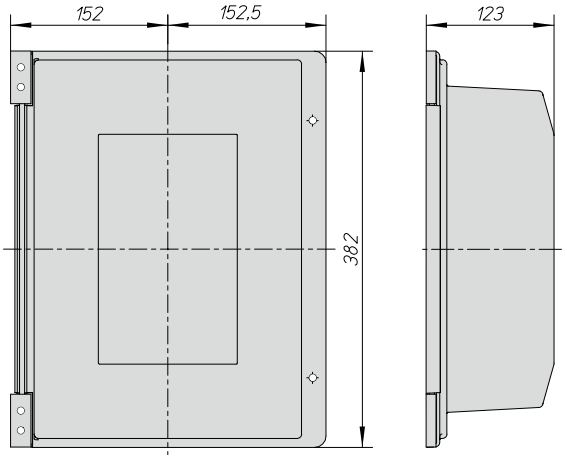
IZMC1-DC91-W



③ Top edge of mounting plate

Door cover

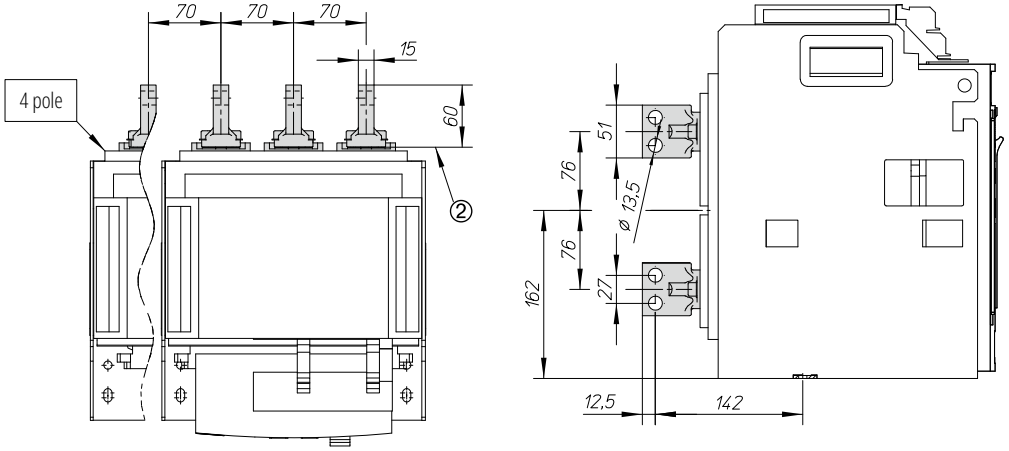
IZMC1-DC91-W



IZM91 Withdrawable Type

Terminal adapter horizontal/vertical - vertical mounted

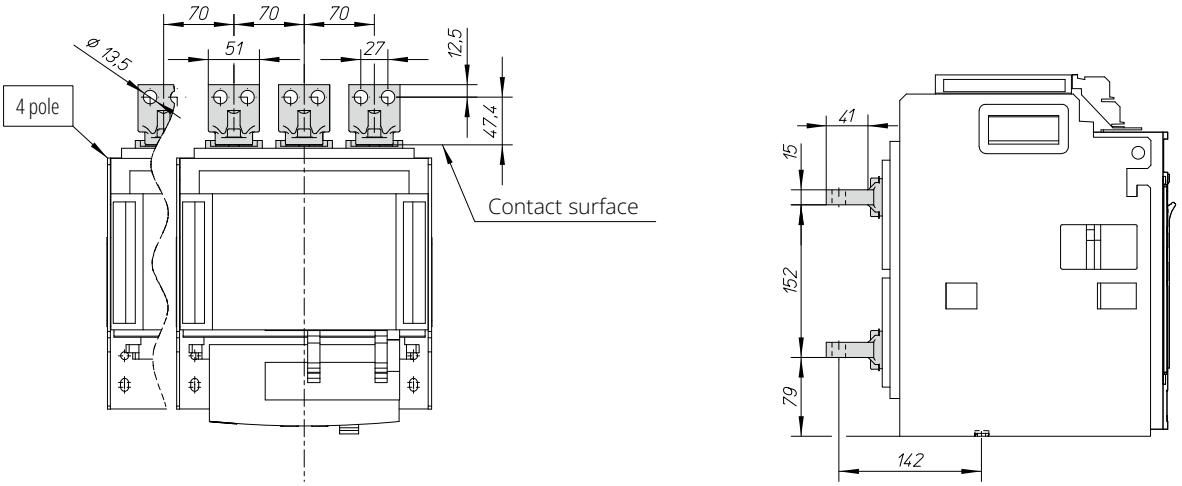
IZMC1-THV16...



② Contact surface

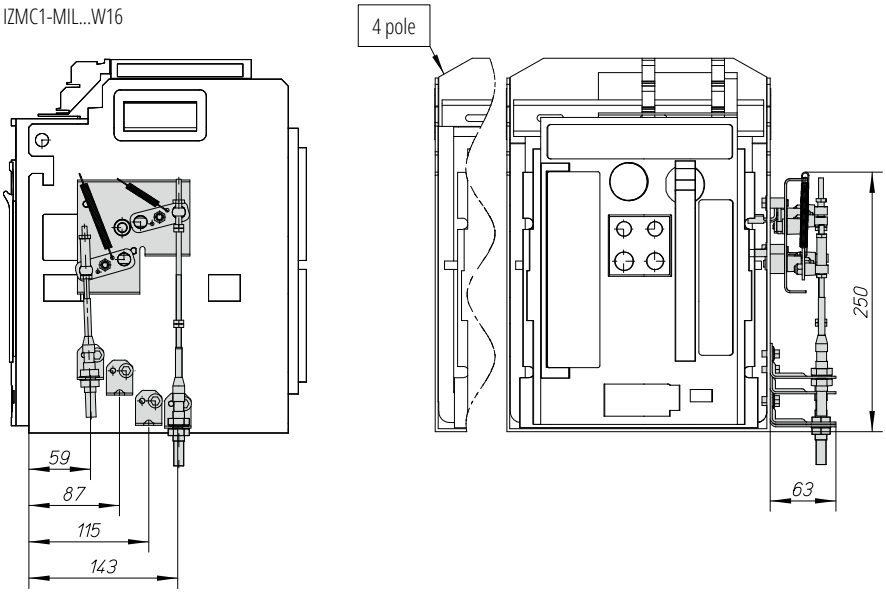
Terminal adapter horizontal/vertical - horizontal mounted

IZMC1-THV16...

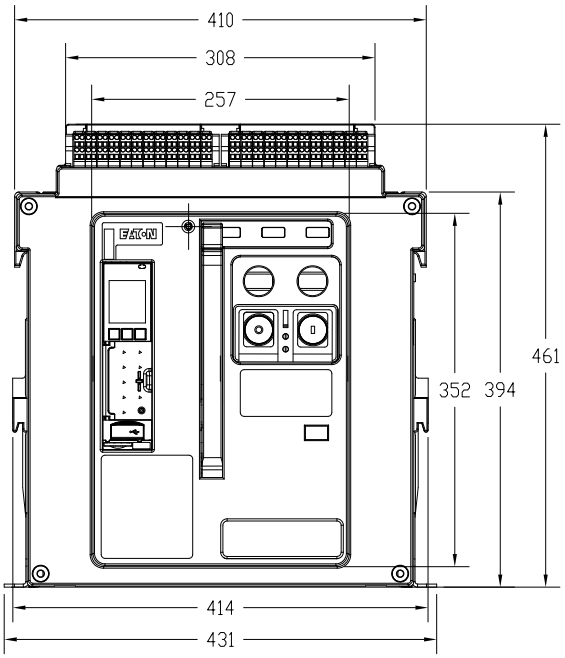


IZM91 mechanical interlock for withdrawable units

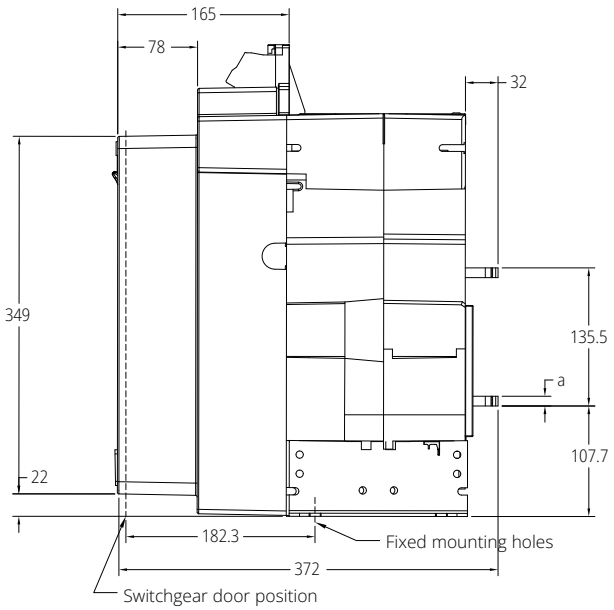
IZMC1-MIL...W16



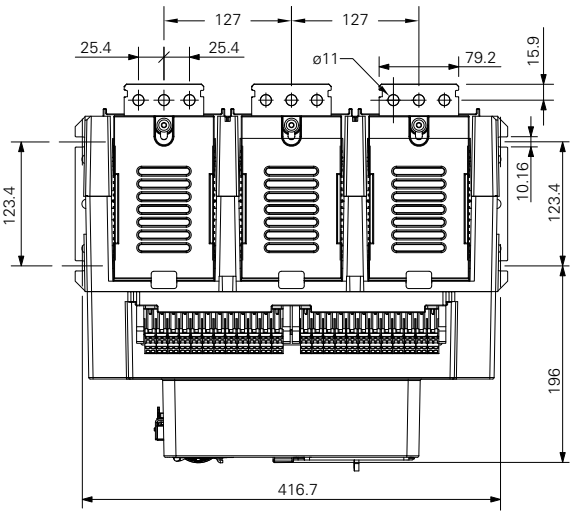
IZM97 Fixed Type Dimensions and Horizontal Board Dimensions (3P, 800~3200A)



Front view



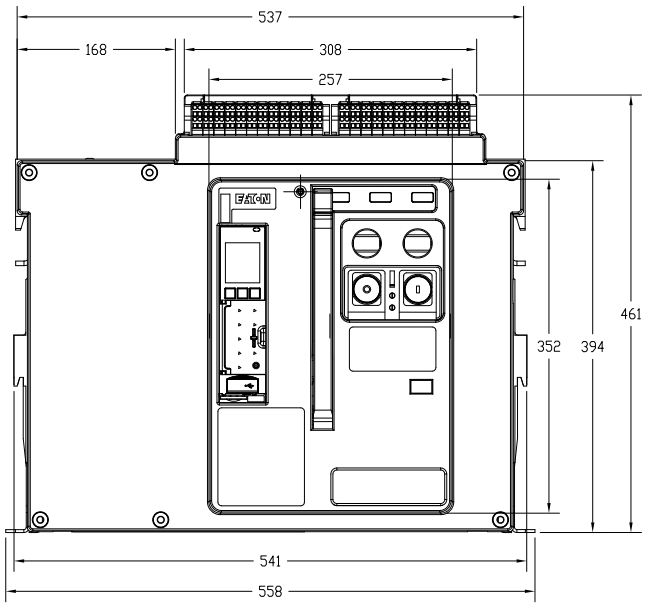
Right view



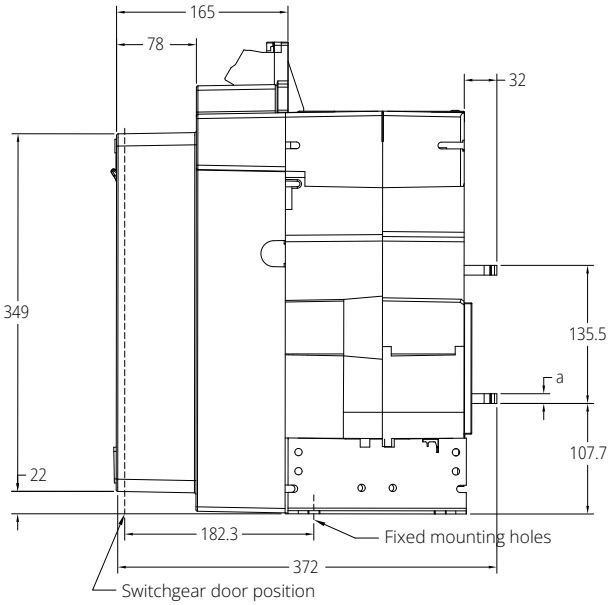
Top view

In(A)	800~2000	2500~3200
a(mm)	9.5	25.4

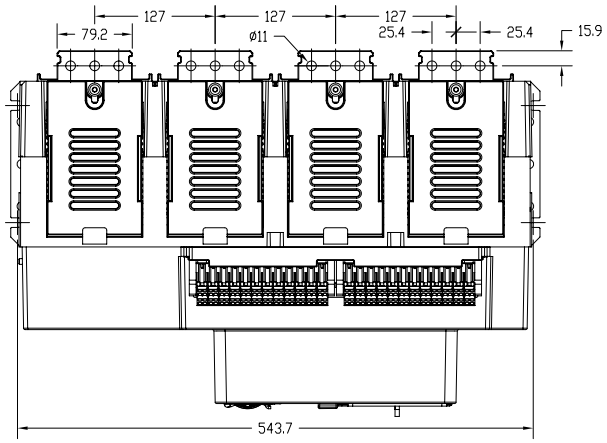
IZM97 Fixed Type Dimensions and Horizontal Board Dimensions (4P, 800~3200A)



Front view



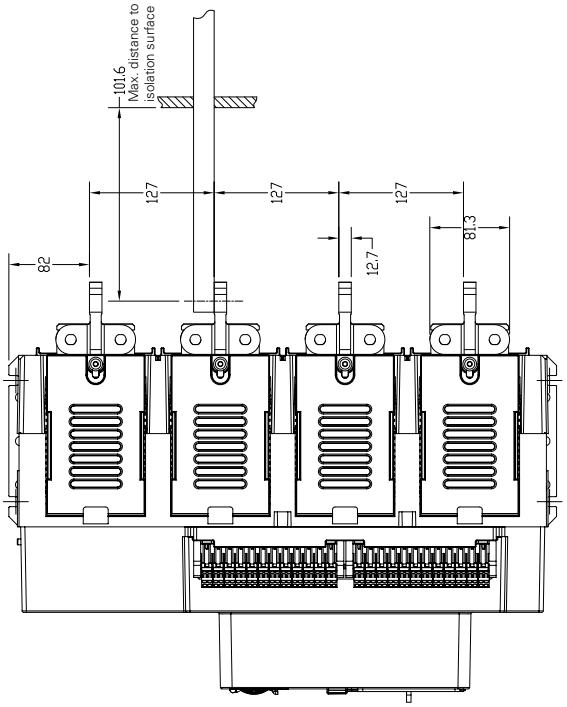
Right view

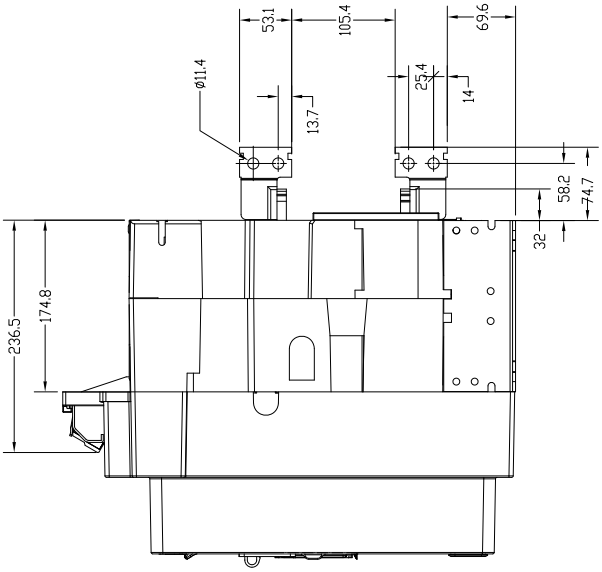


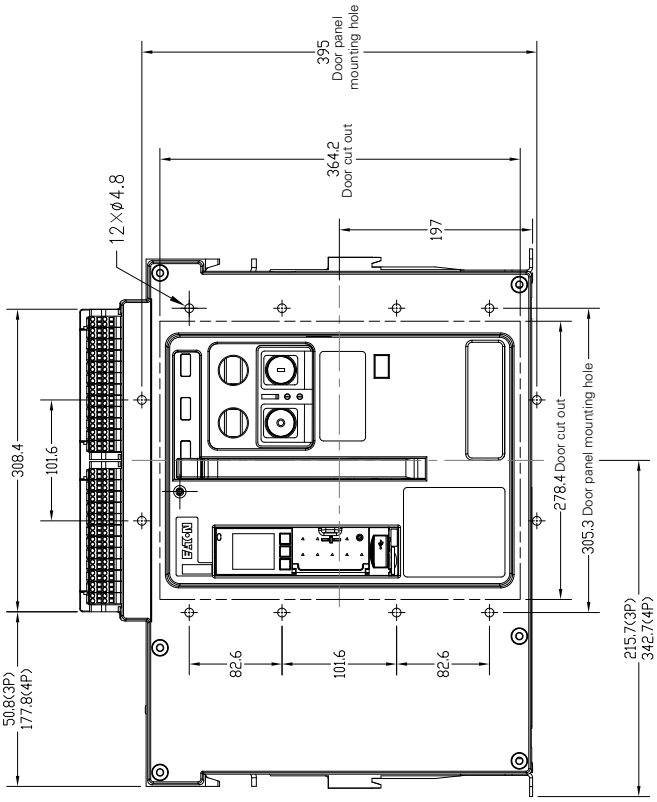
Top view

In(A)	800~2000	2500~3200
a(mm)	9.5	25.4

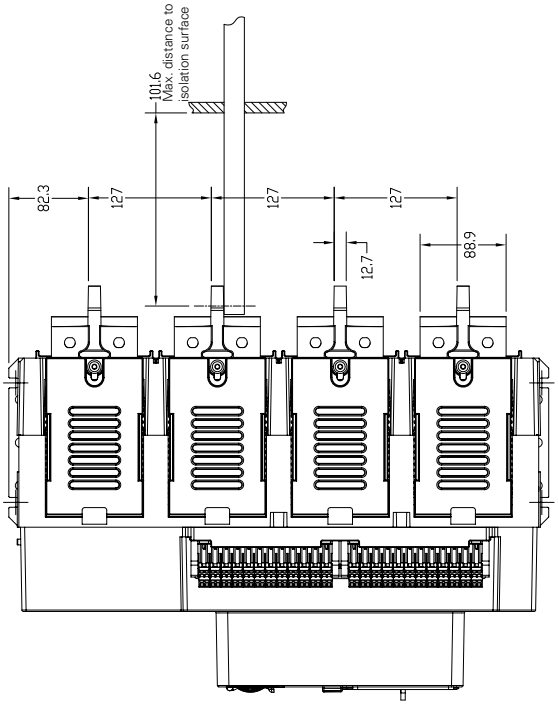
IZM97 Fixed Type Panel Cutout and External Vertical Board Dimensions (3P and 4P, 800~1600A)

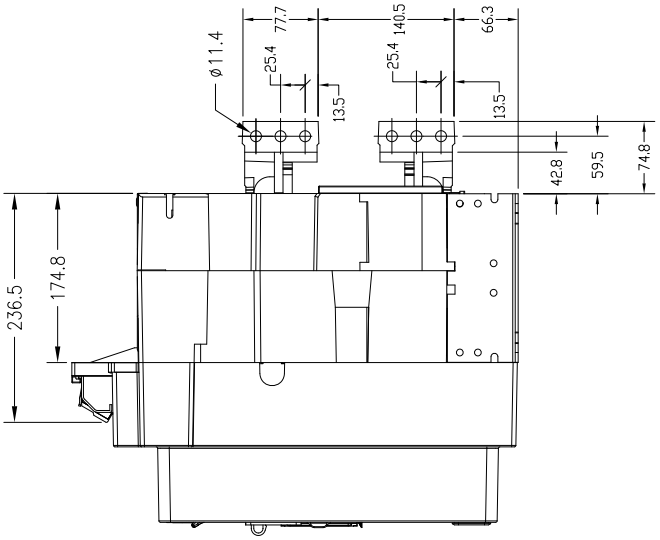


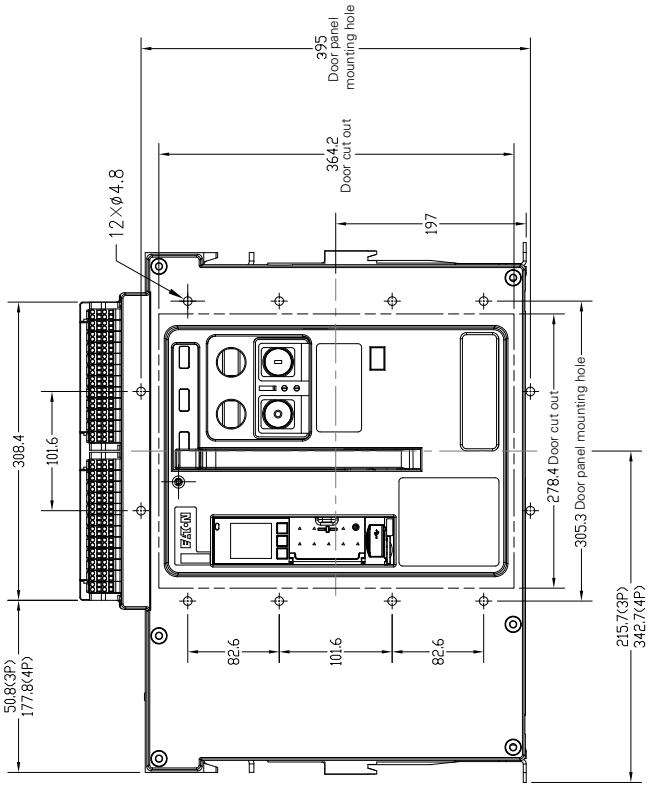




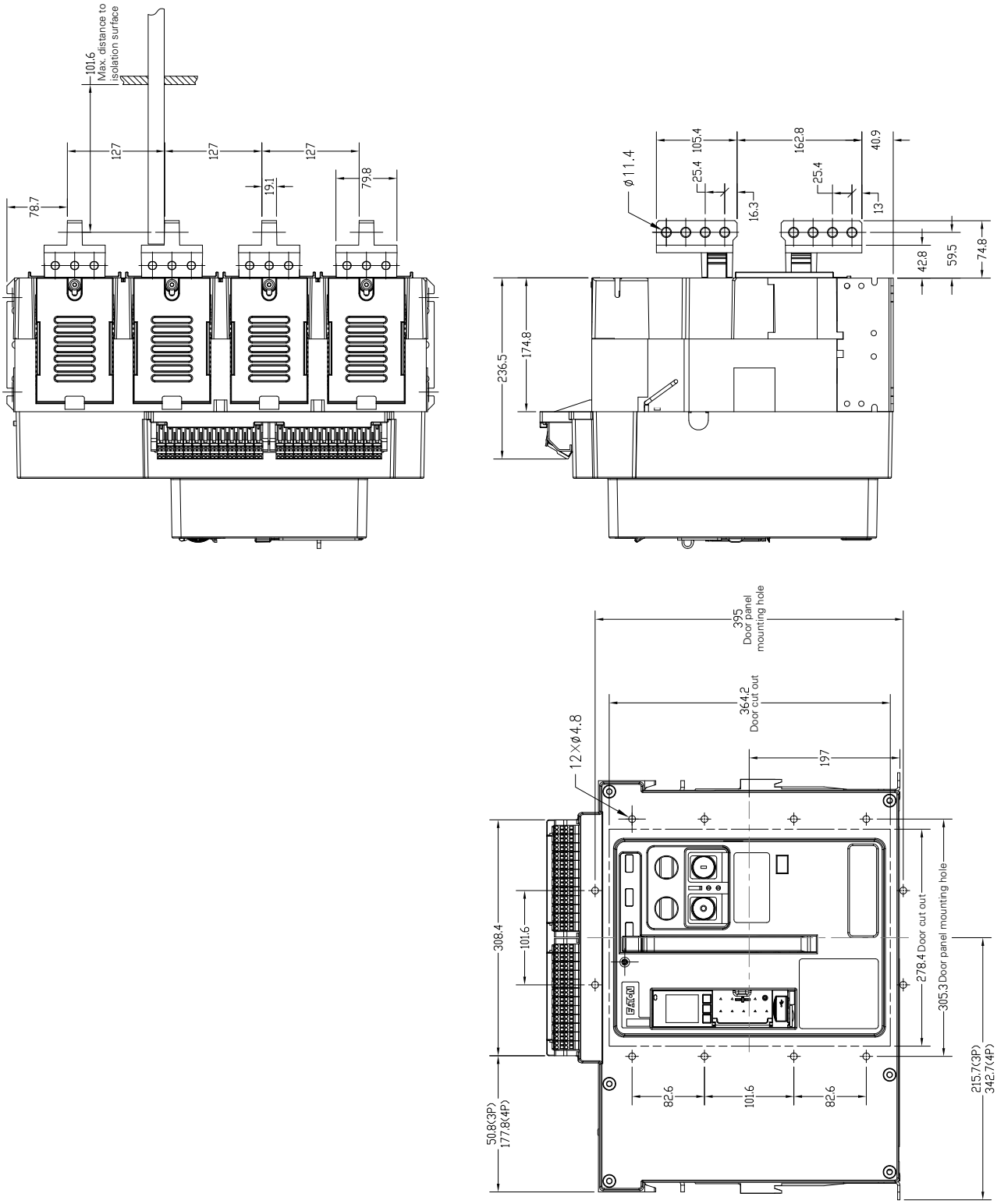
IZM97 Fixed Type External Vertical Board Dimensions (3P and 4P, 2000A)



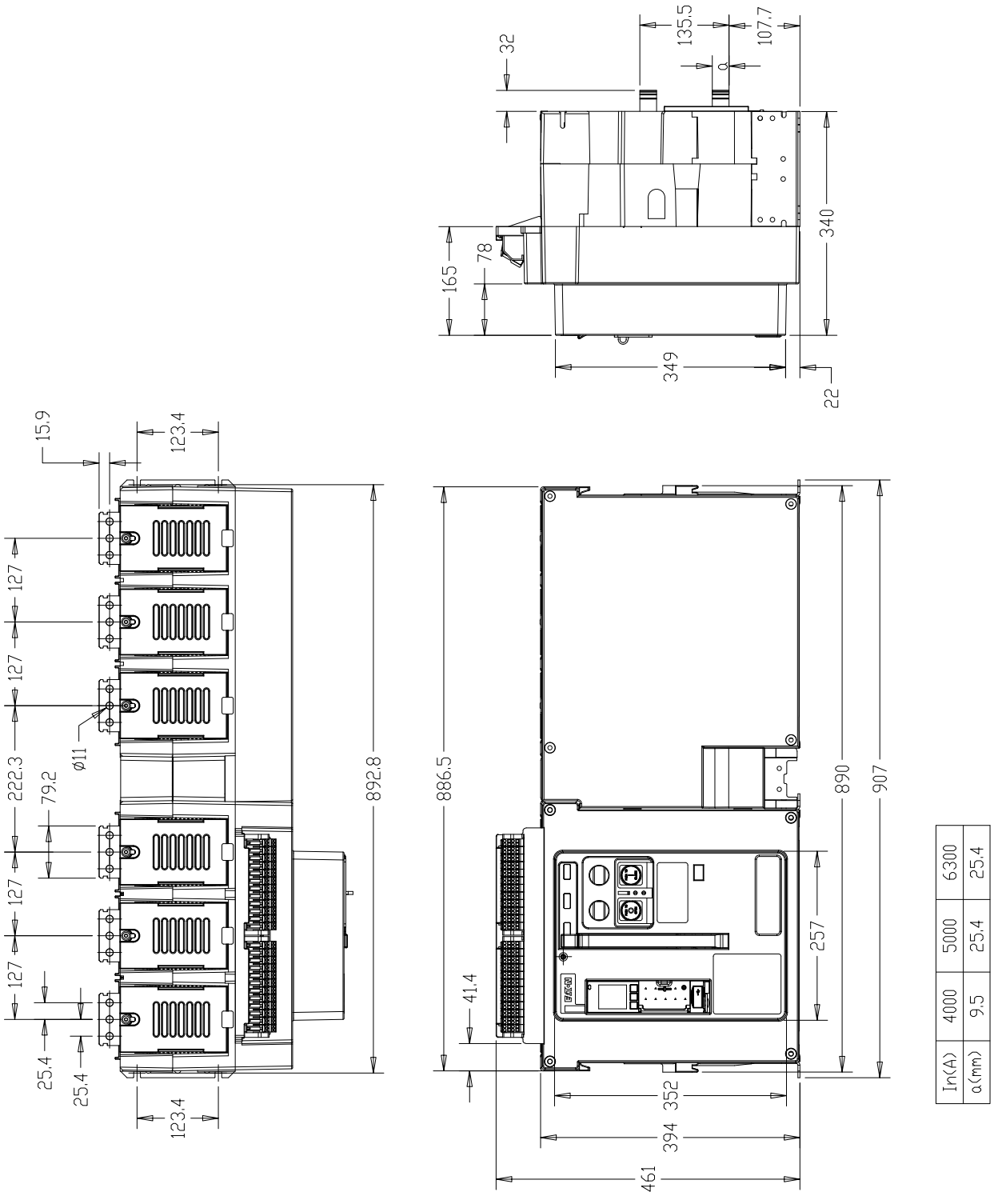




IZM97 Fixed Type External Vertical Board Dimensions (3P and 4P, 2500~3200A)



IZM99 Fixed Type Dimensions and Horizontal Board Dimensions (3P, 4000~6300A)

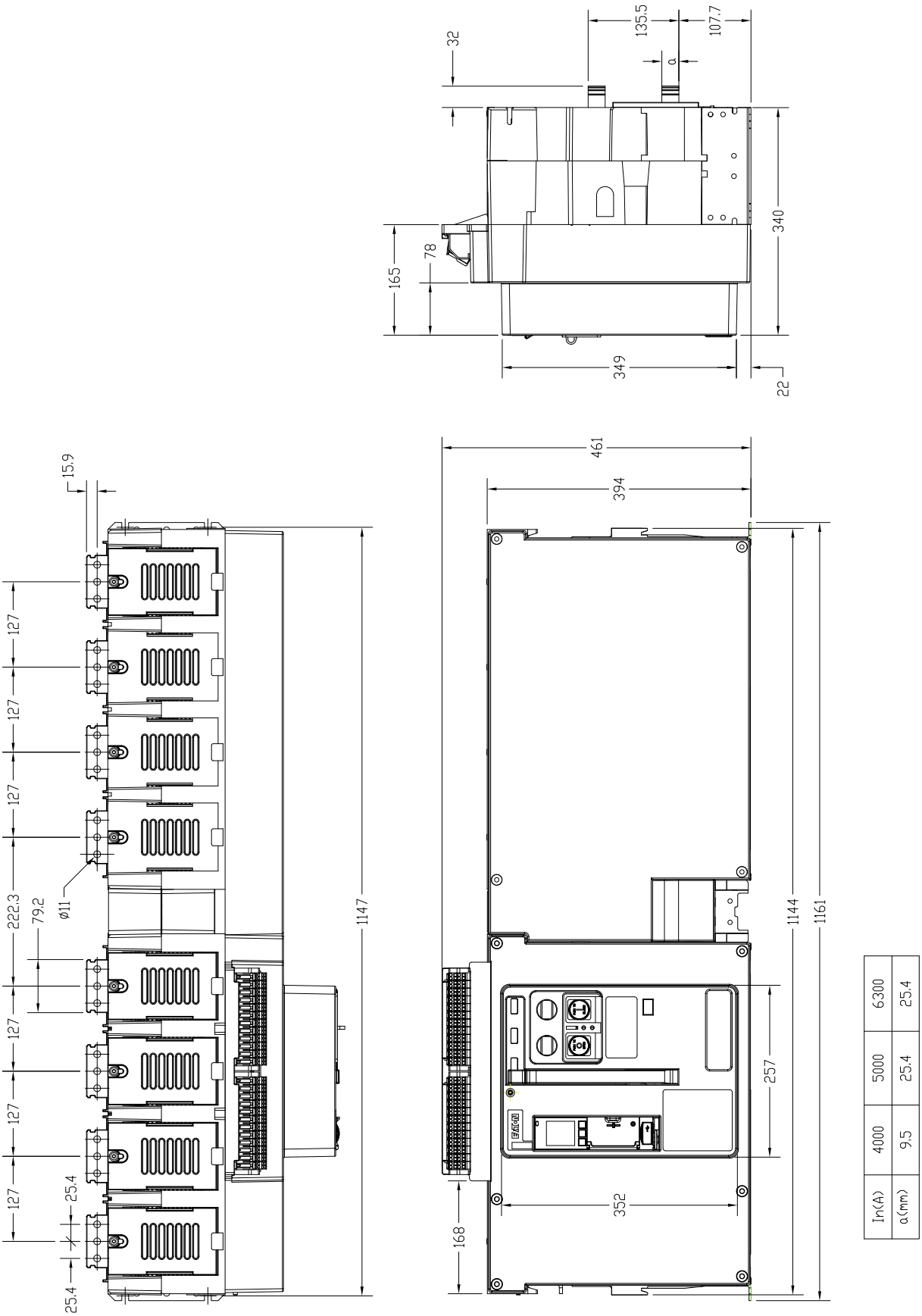


In(A)	4000	5000	6300
α(mm)	9.5	25.4	25.4

New Generation Air Circuit Breaker IZM9

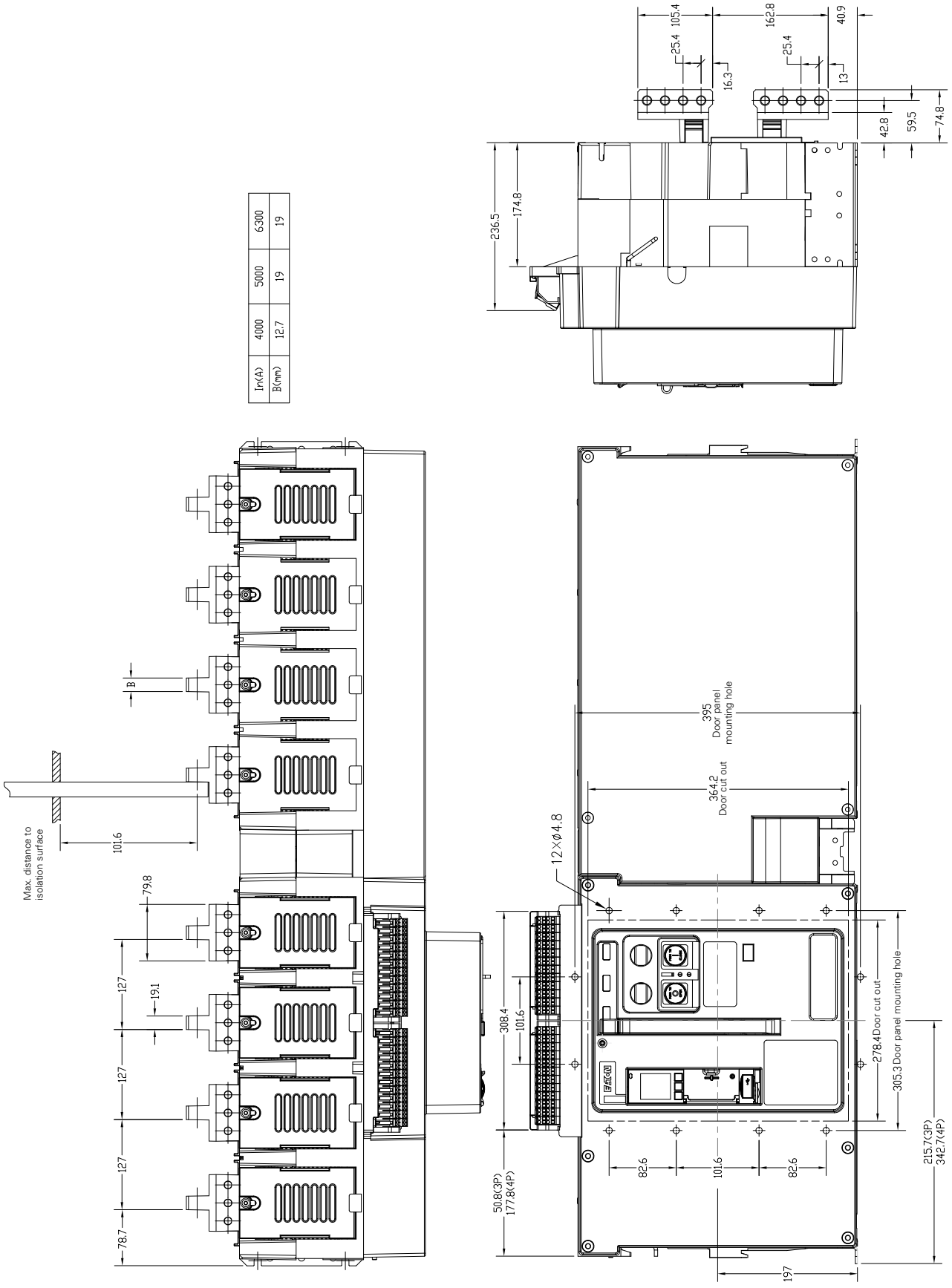
Basic Device Dimensions

IZM99 Fixed Type Dimensions and Horizontal Board Dimensions (4P, 4000~6300A)

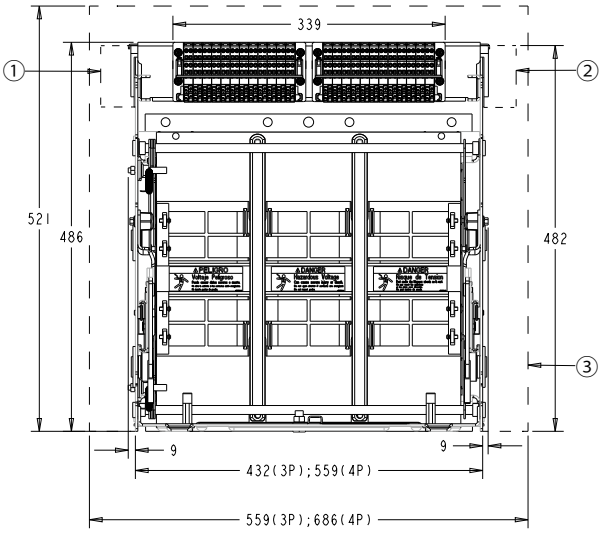


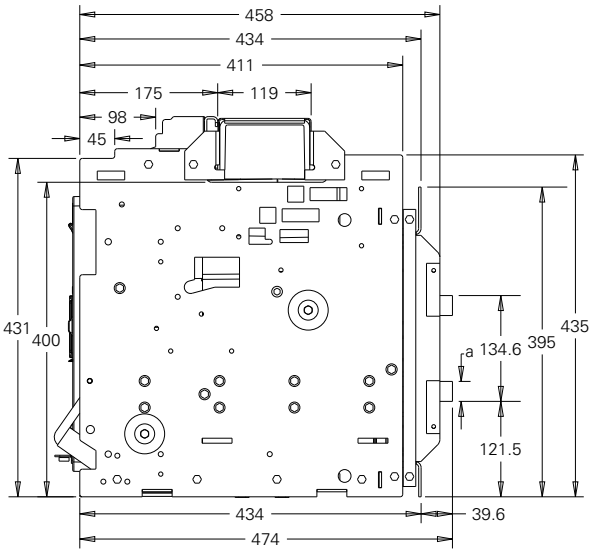
In(A)	4000	5000	6300
a(mm)	9.5	25.4	25.4

IZM99 Fixed Type Panel Cutout and External Vertical Board Dimensions (3P and 4P, 4000~6300A)



IZM97 Withdrawable Type Dimensions (3P and 4P, 800~3200A)

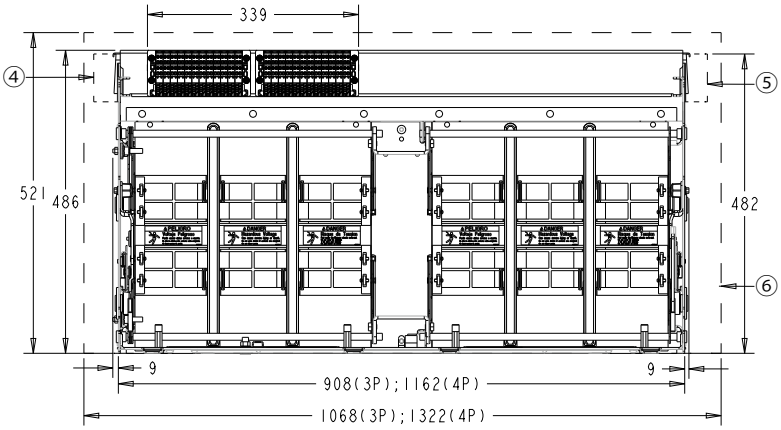


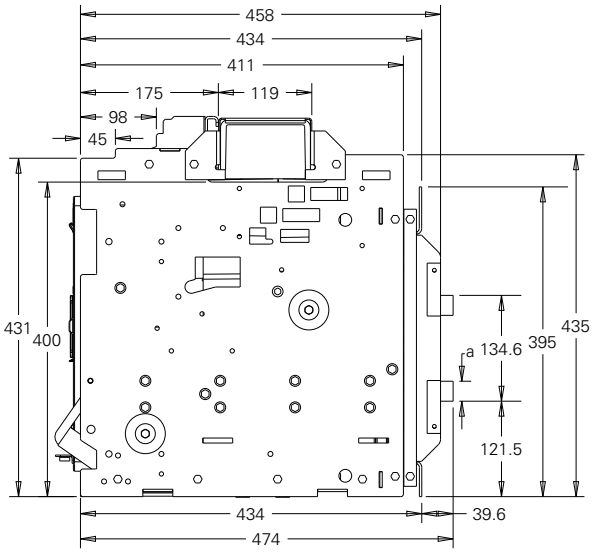


I_n (A)	800~2000	2500~3200
a (mm)	9.5	25.4

Notes: ① ②Drawer switch position ③ Recommended minimum mounting space

IZM99 Withdrawable Type Dimensions (3P and 4P,4000~6300A)



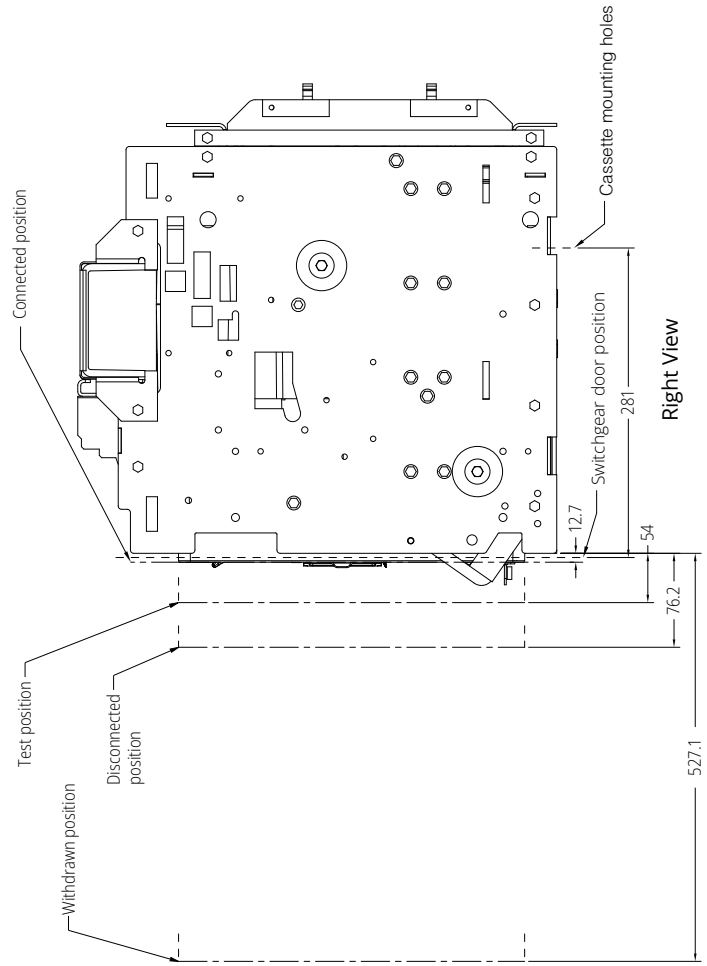


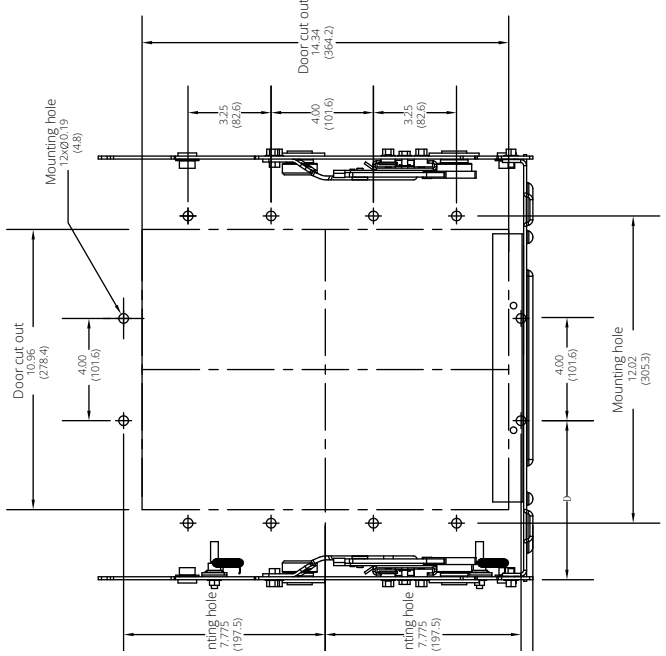
I_n (A)	4000	5000	6300
a (mm)	9.5	25.4	25.4

Notes: ④ ⑤ Drawer switch position ⑥ Recommended minimum mounting space

IZM97 Withdrawable Type Panel Cutout Dimensions (3P and 4P, 800~4000A)

ITEM	D
3 POLE	6.50 [165.10]
4 POLE	11.50 [292.10]





Panel cutout size and circuit breaker position

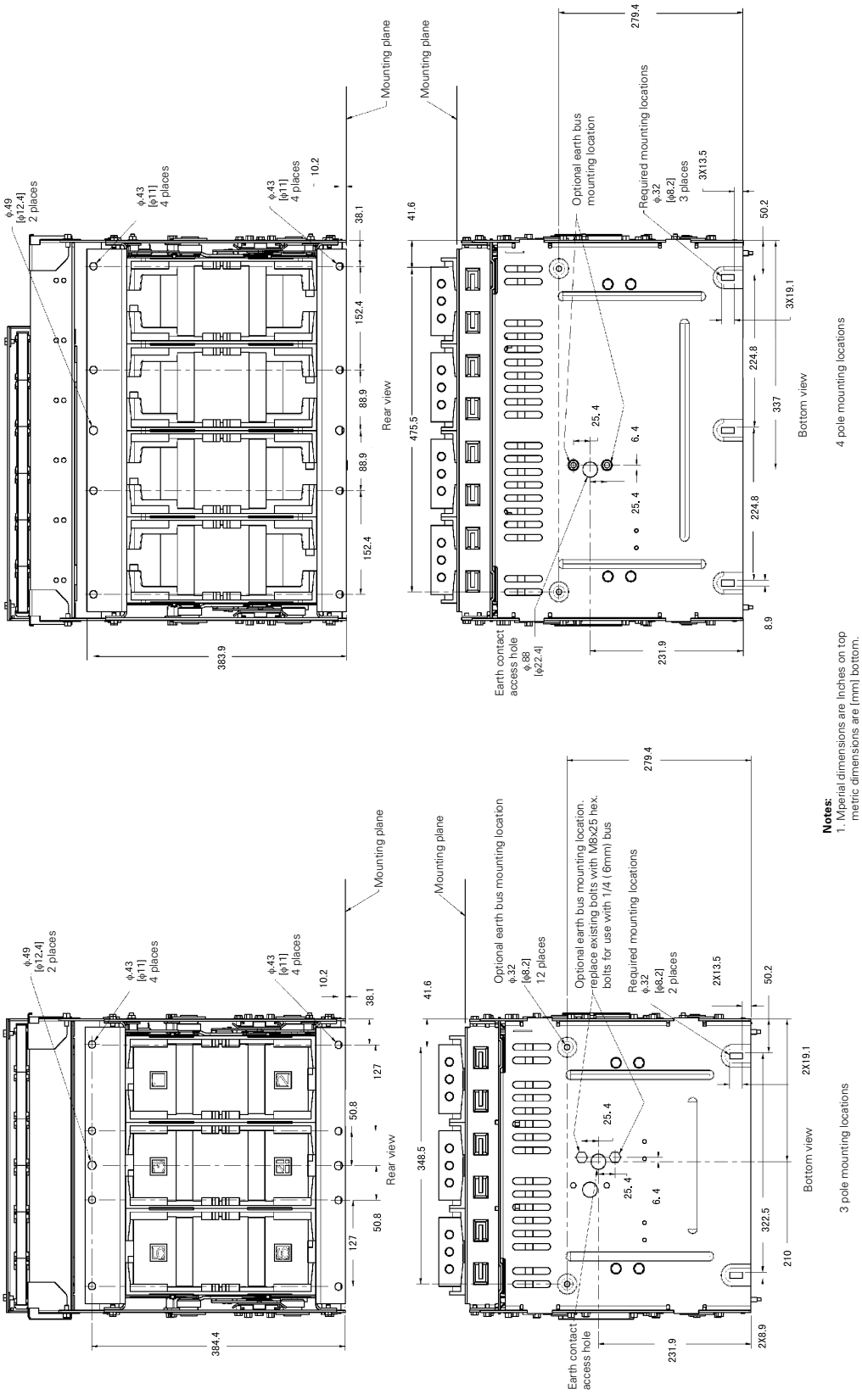
Note:
1. Mperial dimensions are Inches on top metric dimensions are [mm] bottom.
2. All dimensions are reference only
3. Tolerance range is shown as follow:

0~5mm	±0.1mm
0~10mm	±0.2mm
0~50mm	±0.5mm
0~200mm	±3.0mm

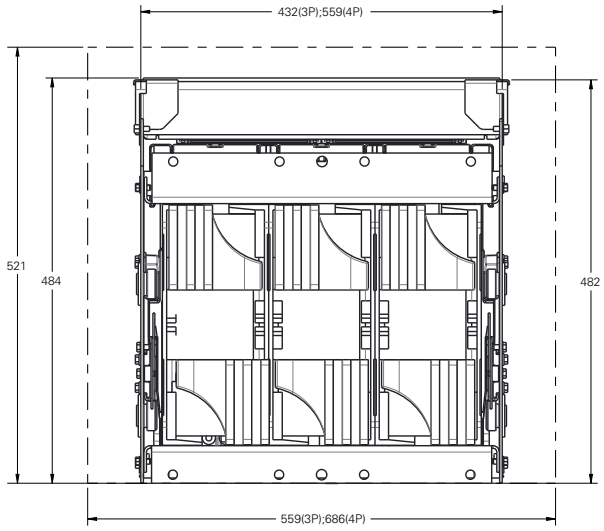
New Generation Air Circuit Breaker IZM9

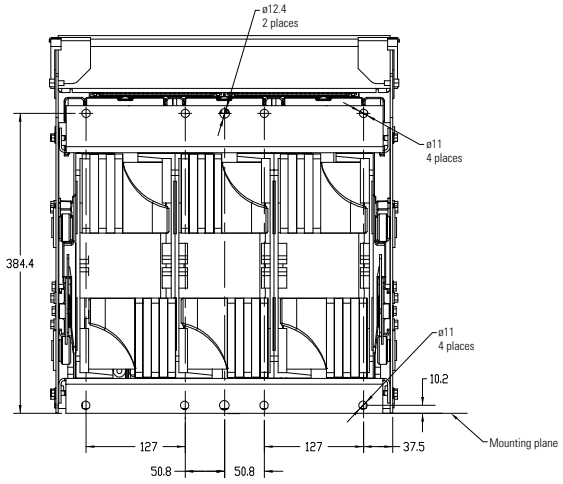
Basic Device Dimensions

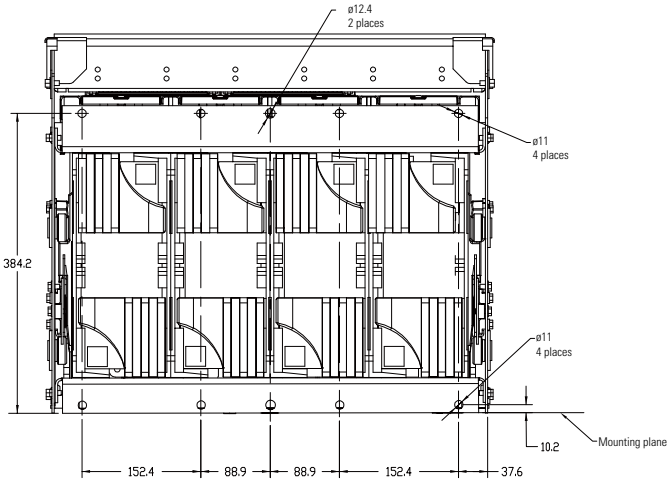
IZM97 Withdrawable Type Cassette Dimensions and Mounting Dimensions (3P and 4P, 800~3200A)

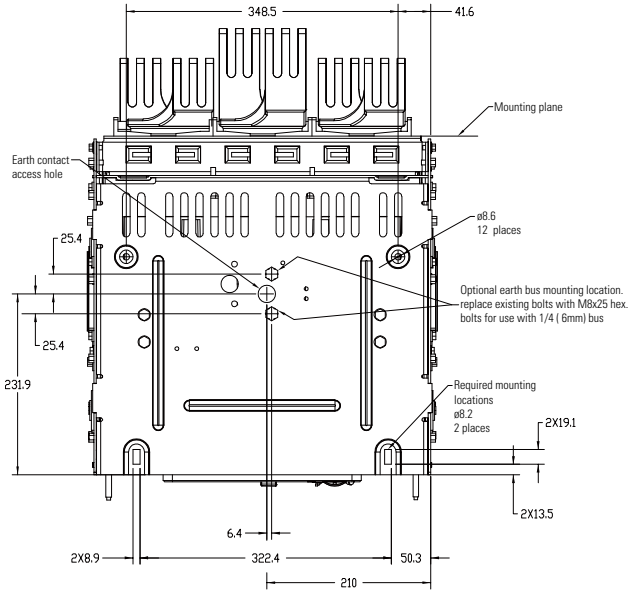


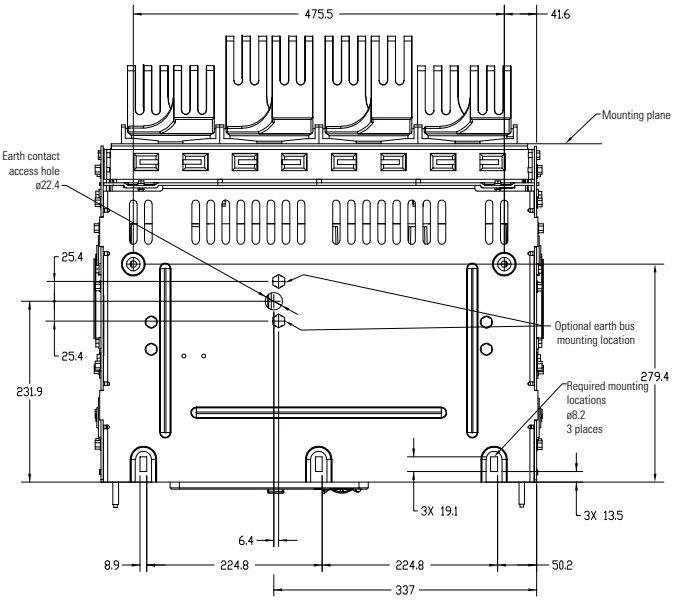
IZM97 Withdrawable Type Cassette Dimensions and Mounting Dimensions (3P and 4P, 4000A)



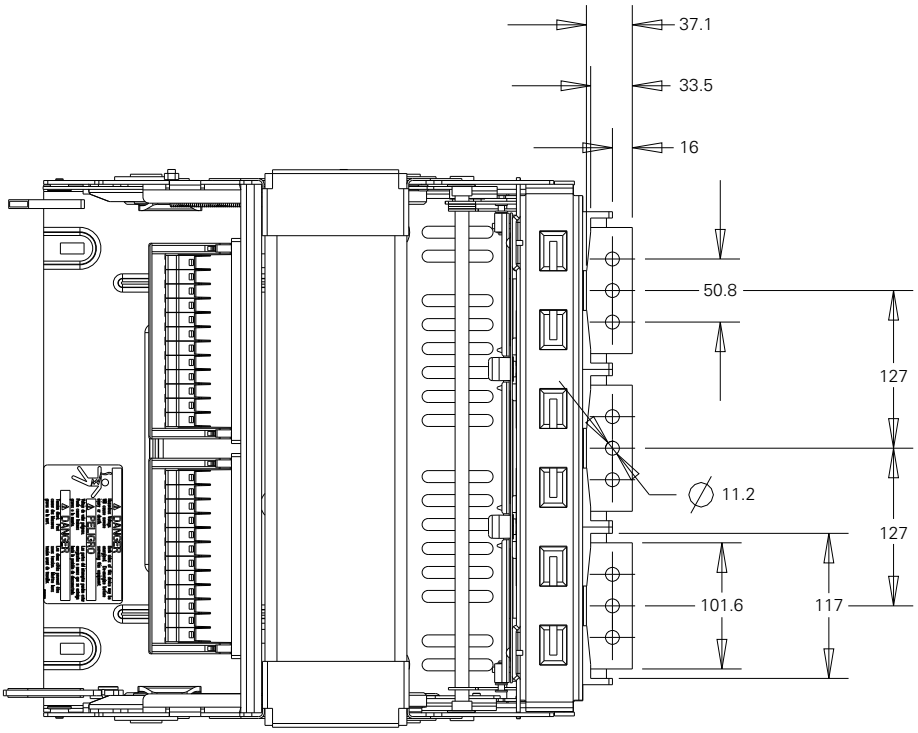


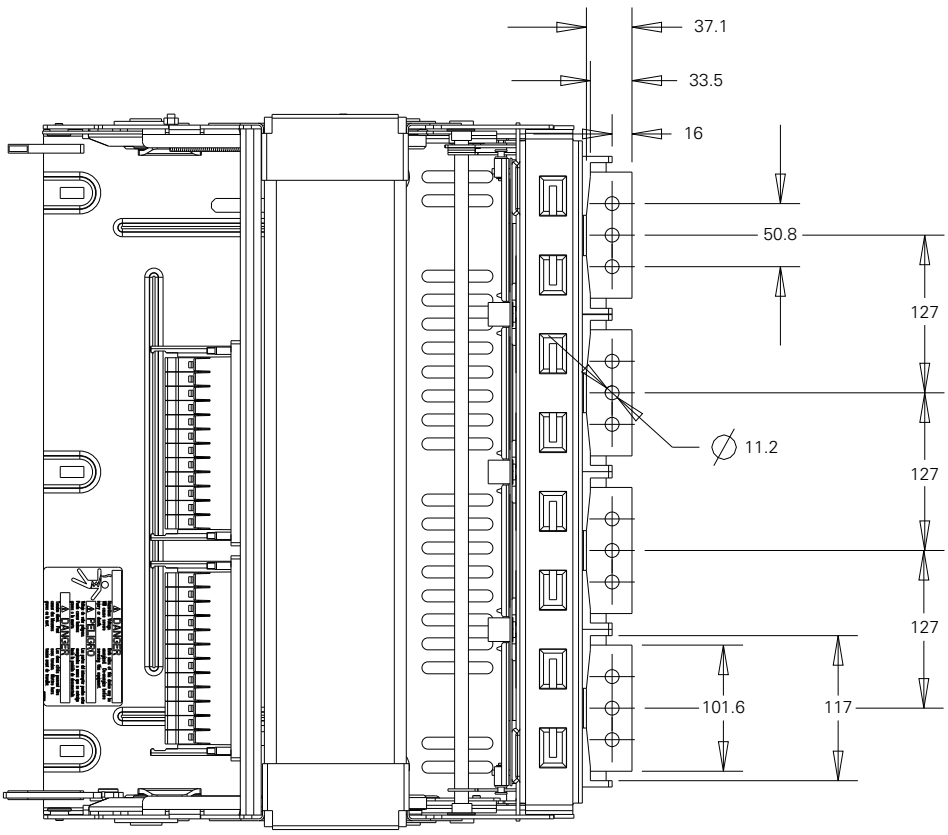




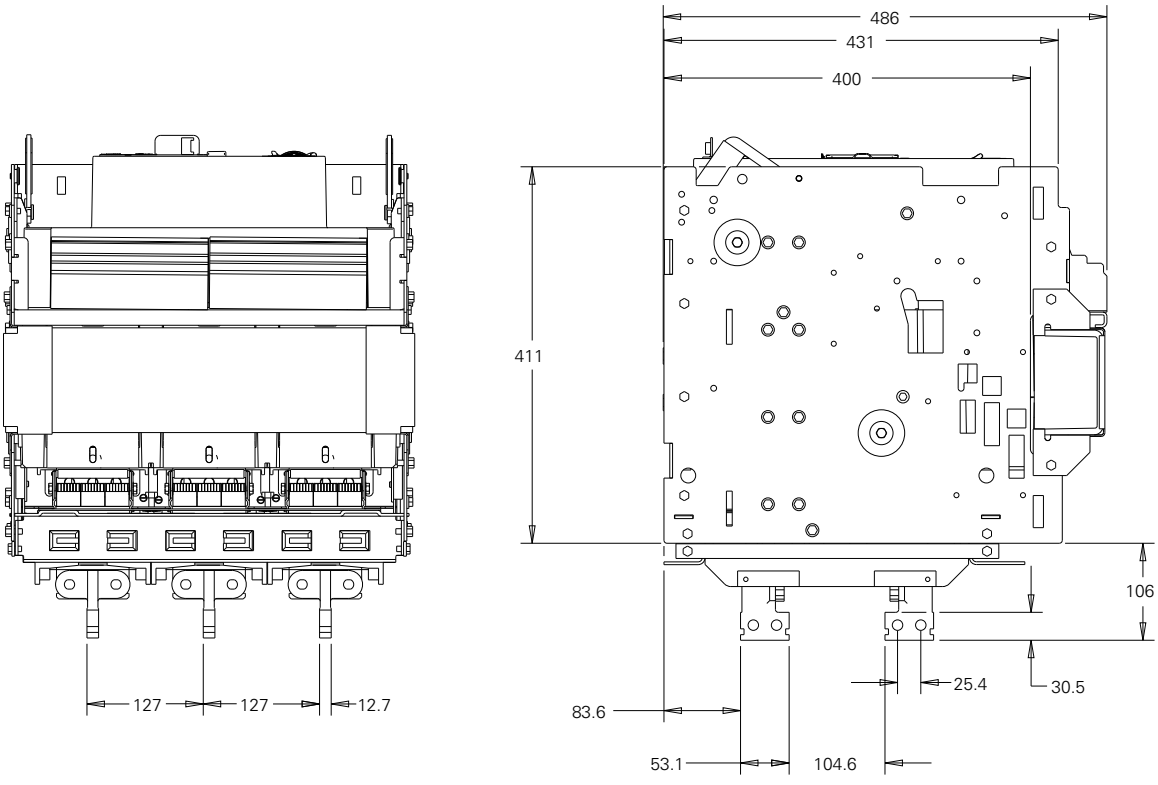


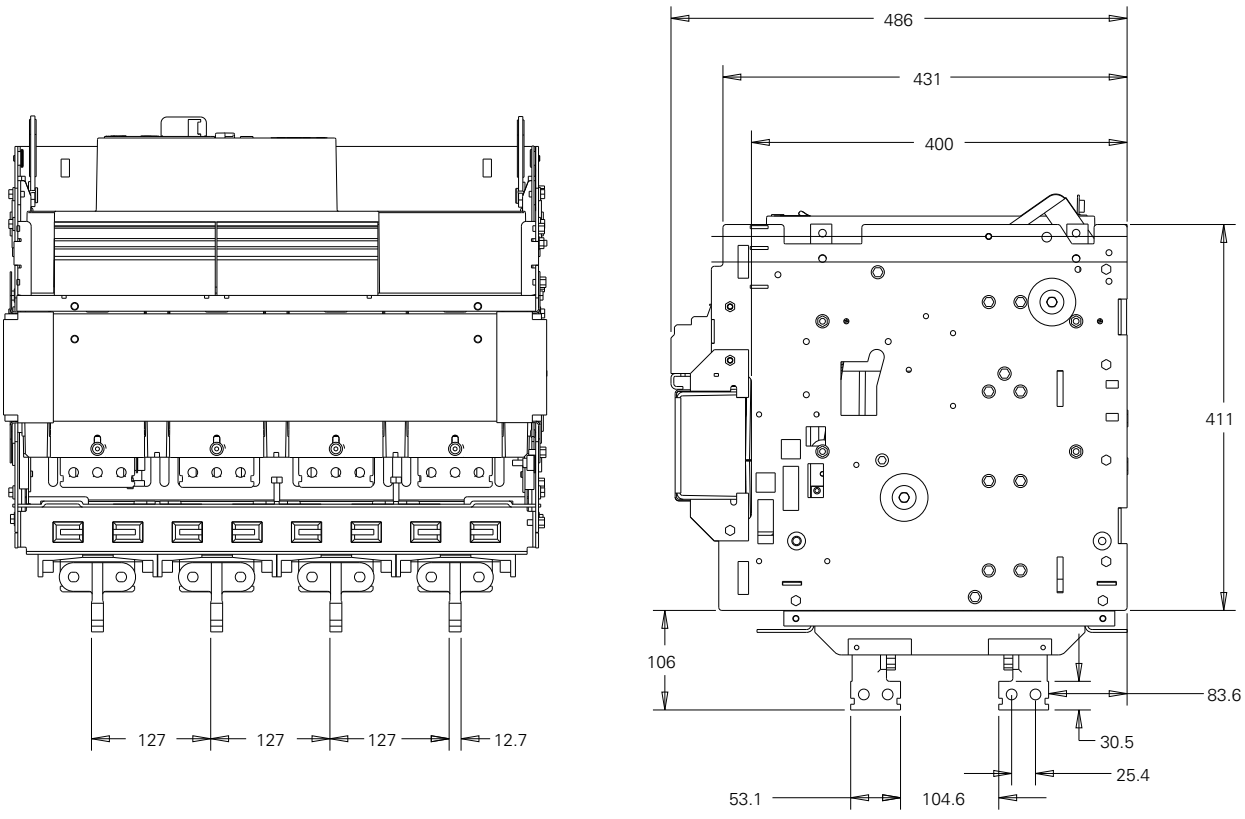
IZM97 Withdrawable Type Cassette Horizontal Board Wiring Dimensions (3P and 4P, 800~3200A)



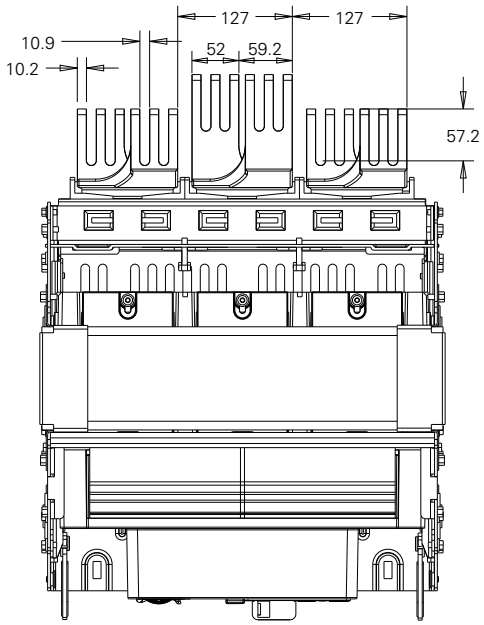


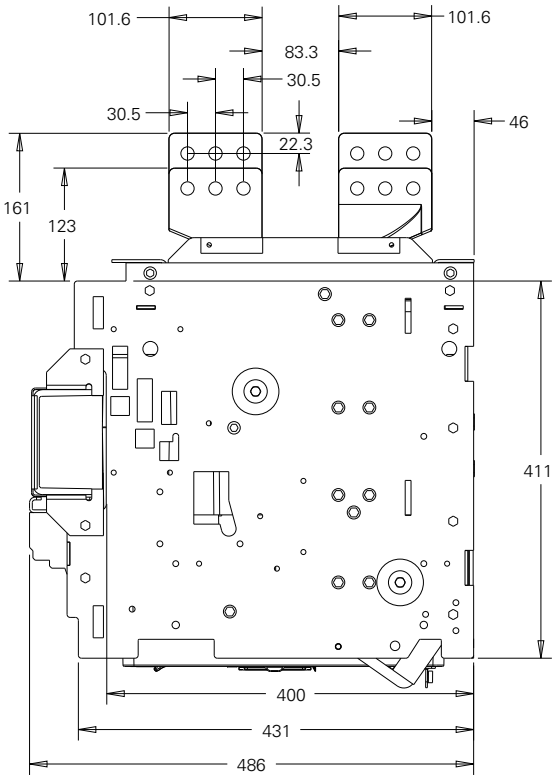
IZM97 Withdrawable Type Cassette Vertical Board Wiring Dimensions (3P and 4P, 800~3200A)

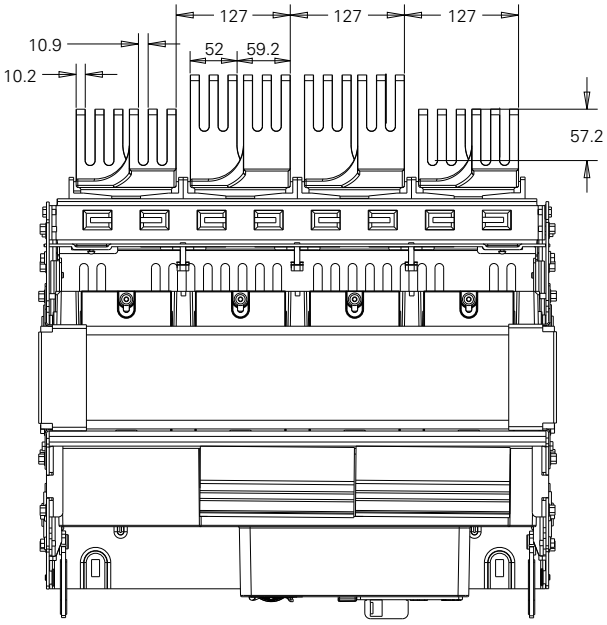


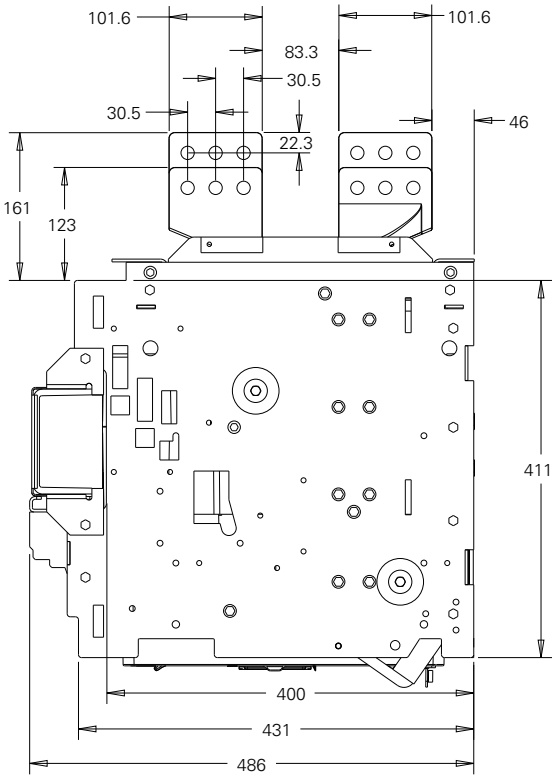


IZM97 Withdrawable Type Cassette Vertical Board Wiring Dimensions (3P and 4P, 4000A)



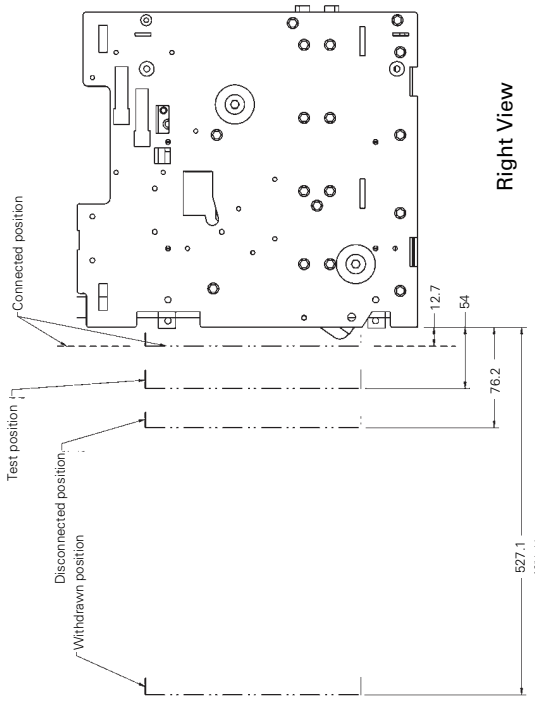


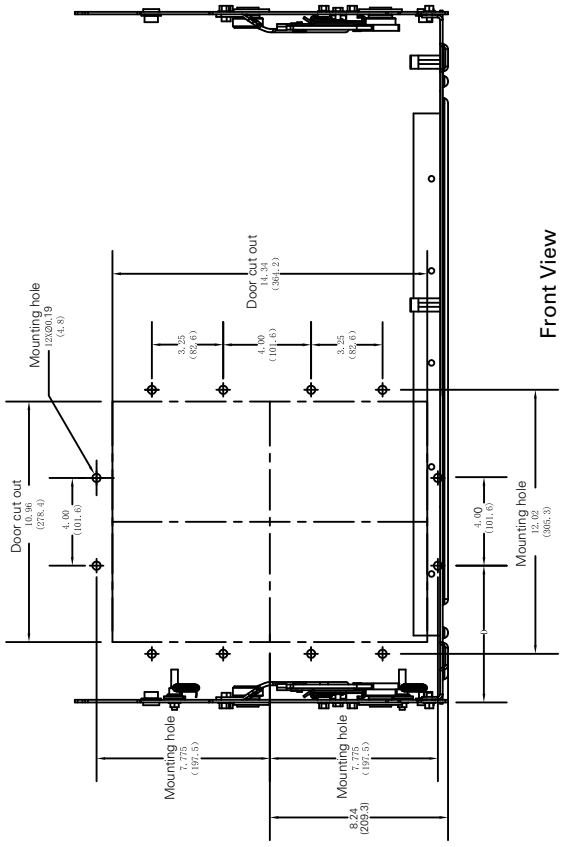




IZM99 Withdrawable Type Panel Cutout Dimensions (3P and 4P, 4000~6300A)

ITEM	D
3 POLE	6.50 [165.10]
4 POLE	11.50 [292.10]



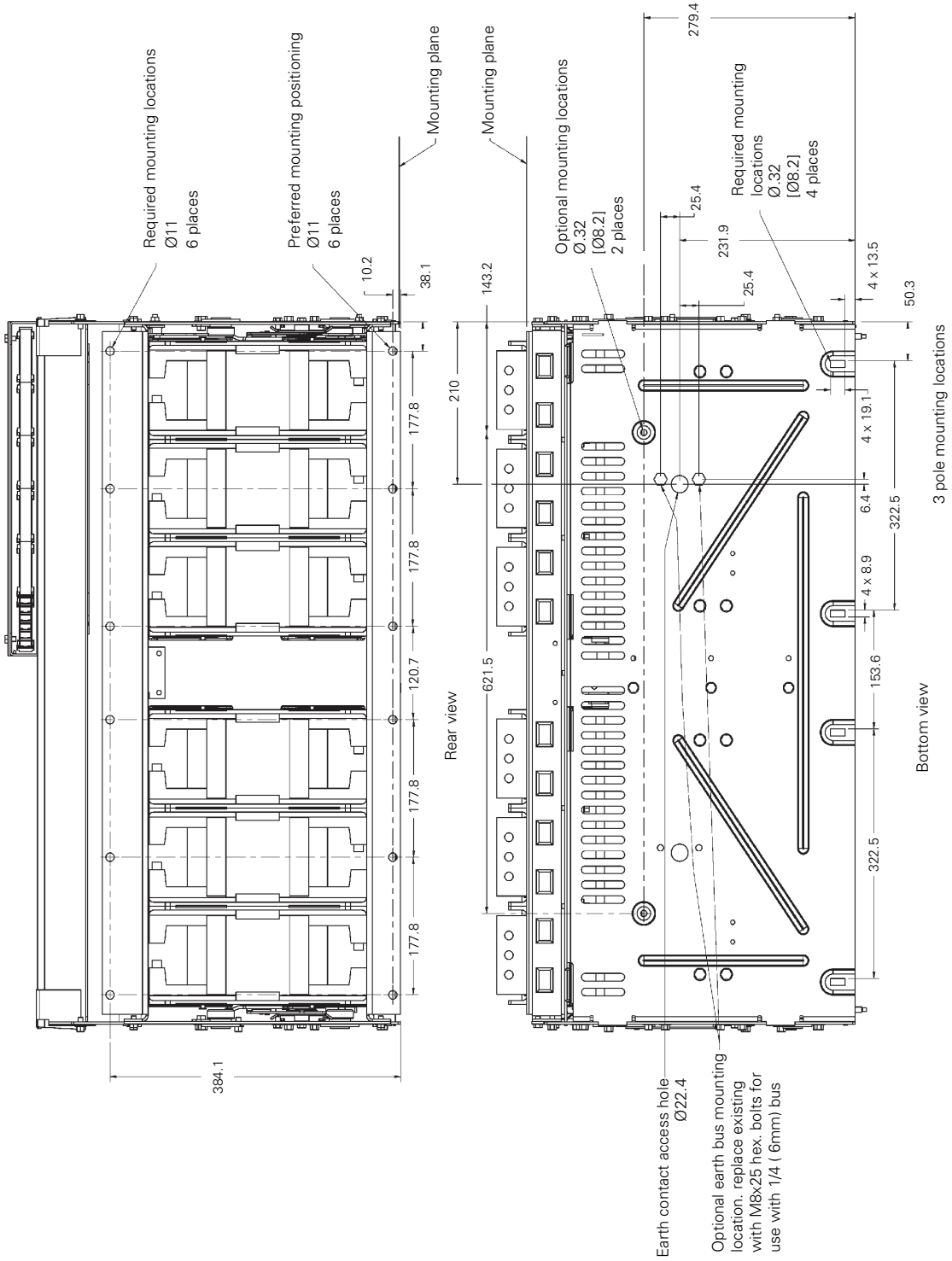


Panel cutout size and circuit breaker position

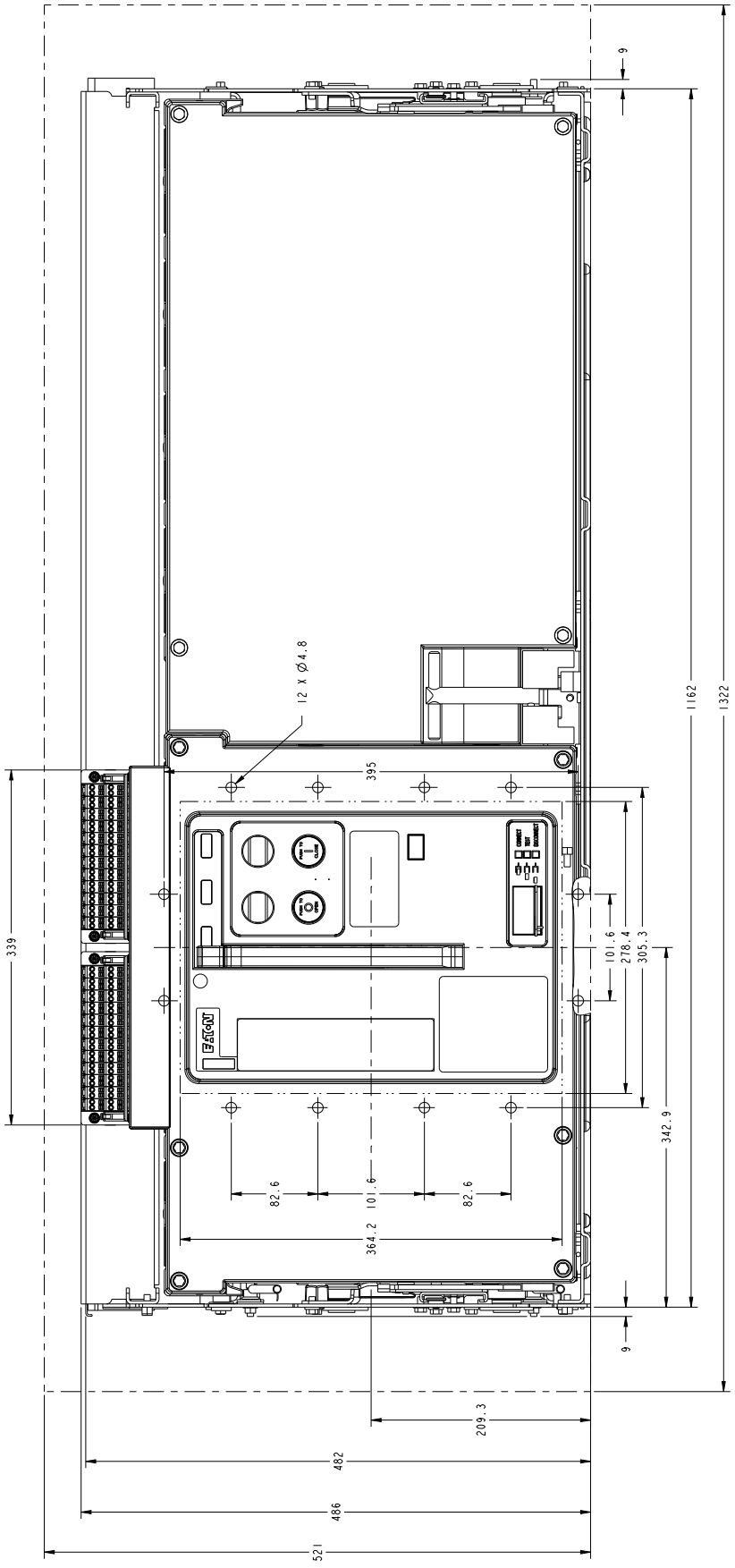
Note:
1. Mperial dimensions are Inches on top metric dimensions are [mm] bottom.
2. All dimensions are reference only
3. Tolerance range is shown as follow:

0~5mm	±0.1mm
5~10mm	±0.2mm
10~50mm	±0.5mm
50~200mm	±3.0mm

IZM99 Withdrawable Type Cassette Dimensions and Mounting Dimensions (3P, 4000~6300A)



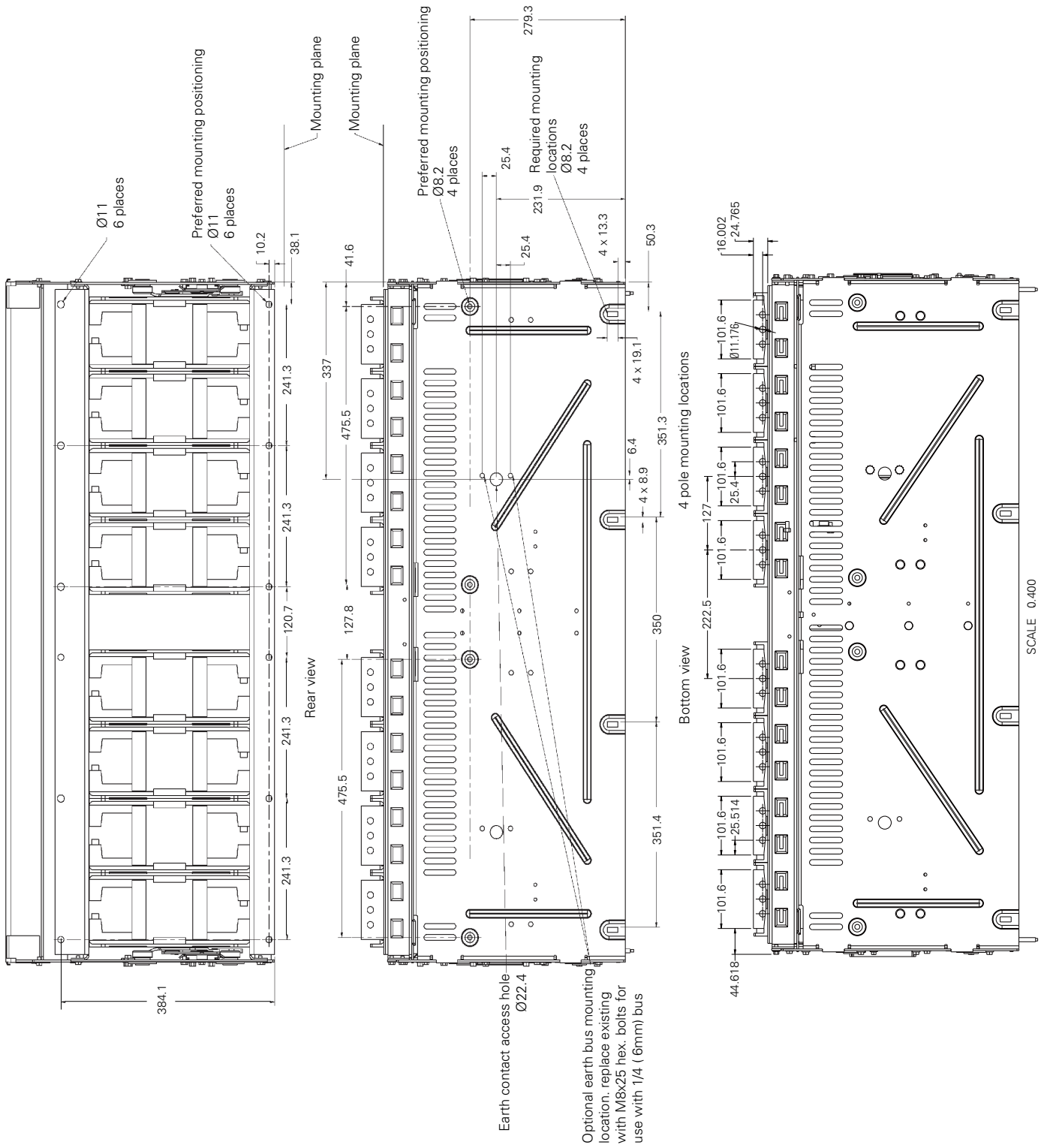
IZM99 Withdrawable Type Cassette Dimensions and Mounting Dimensions (4P, 4000~6300A)



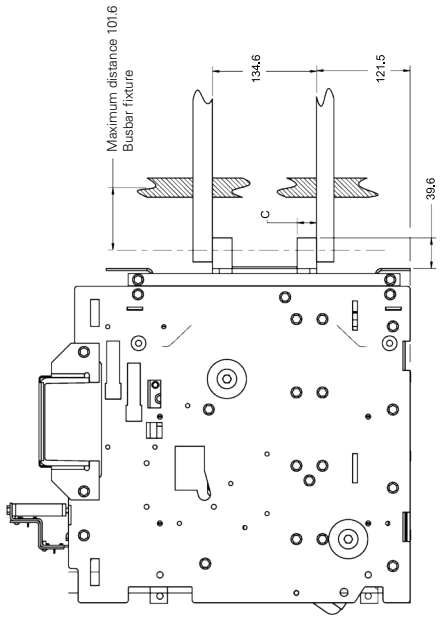
New Generation Air Circuit Breaker IZM9

Basic Device Dimensions

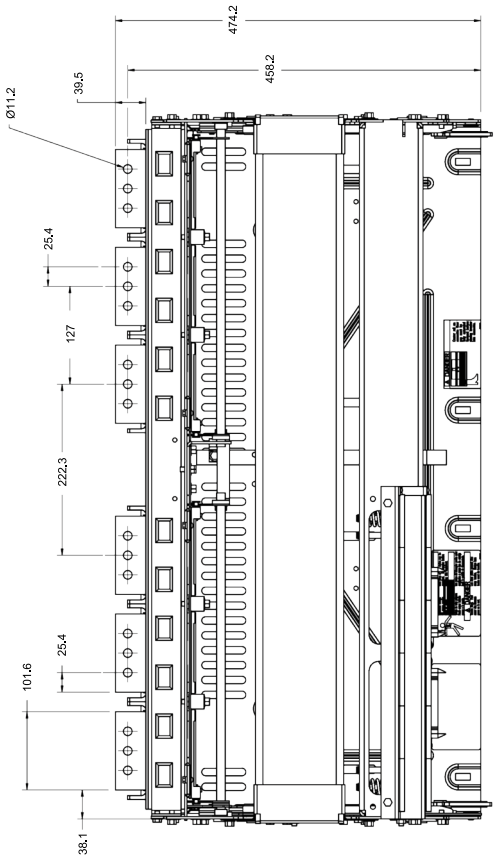
IZM99 Withdrawable Type Cassette Dimensions and Mounting Dimensions (4P, 4000~6300A)



IZM99 Withdrawable Type Cassette Horizontal Board Wiring Dimensions (3P - 4000~6300A)



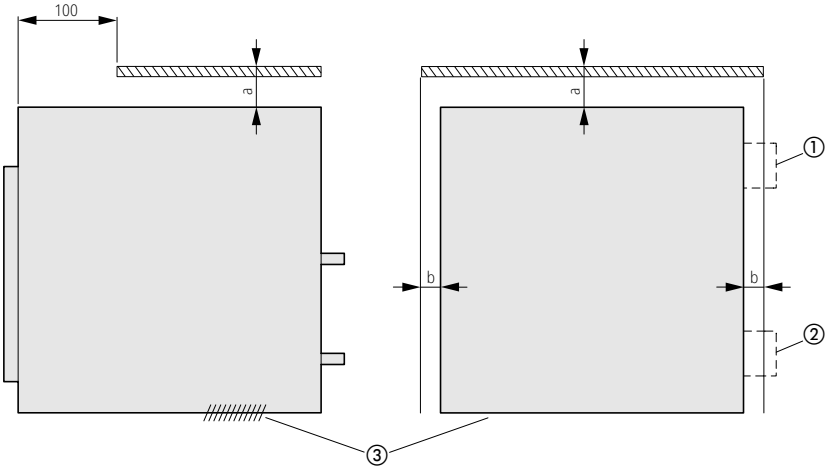
Item	C
4000 AMP	9.7
5000, 6300 AMP	25.4



3P

New Generation Air Circuit Breaker IZM9
Minimum Clearances

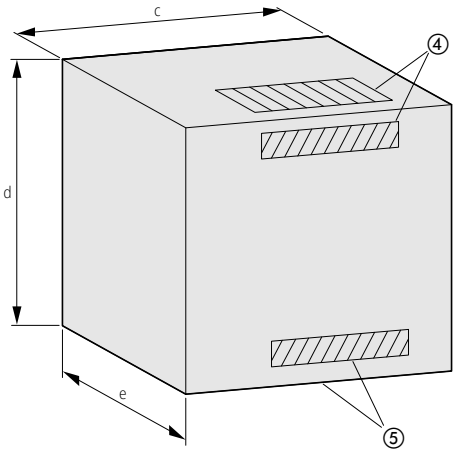
Recommended safety clearances
The following information about safety distances is intended to provide a guideline for the installation of circuit-breakers in an enclosure.



① Cell switch (optional)
② Locking facilities (optional)
③ Ventilation openings (do not cover!)

	Enclosure clearance	To insulated surface mm	To grounded metal surface mm	With cell switch or locking facilities mm
Withdrawable	a	0	0	0
	b	25	25	25/75
Fixed	a	150	250	–
	b	30	70	–

Recommended enclosure clearance and ventilation
The illustration shows a typical enclosure.
The table below lists the associated minimum distances between enclosures and ventilation openings.
This information is intended as a guideline for constructing a suitable circuit-breaker enclosure. Ensure the integration complies with IEC 61439.



c	Width of cassette + 75 mm	
d	550 mm	
e	450 mm (front control panel bay)	
Ventilation holes	160 cm² (800 - 3200 A) 320 cm² (4000 A)	} Top and bottom

④ Top or rear vent
⑤ Rear or lower vent

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Eaton Corporation
Asia Pacific Headquarter
No.3, Lane 280, Linhong Road,
Changning District,
Shanghai 200335
Tel: 86-21-52000099
Fax: 86-21-52000200

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