New Generation Air Circuit Breaker IZM

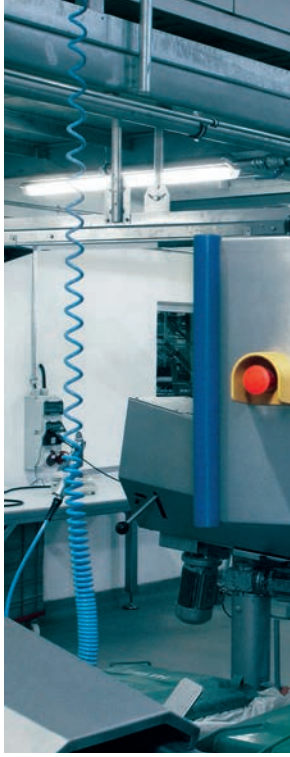
Superior Solutions

To Meet and Exceed The Unique and Wide-ranging Requirements

Powering Business Worldwide

Ebda'a Al-wakeel
Electrical and lighting materials trading

MOELLER
An Eaton Brand



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

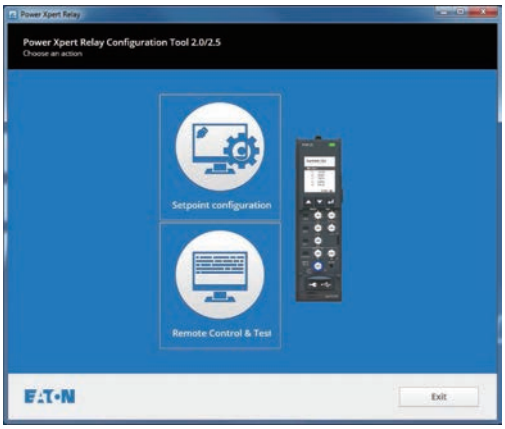
Energy & Utilities

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

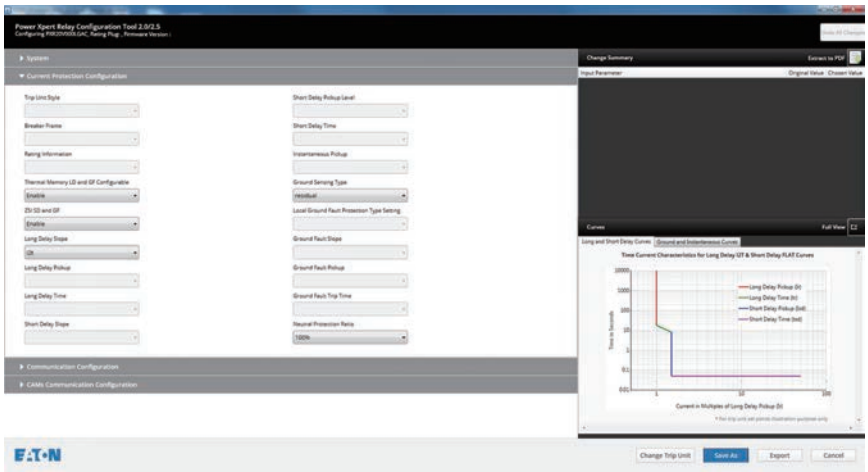
- Electrical balance of system and turnkey services for residential, utility and commercial solar installations
- Power distribution equipment, control components and system installations services
- Network power grid technology for intelligent data, lower costs and crew / public safety

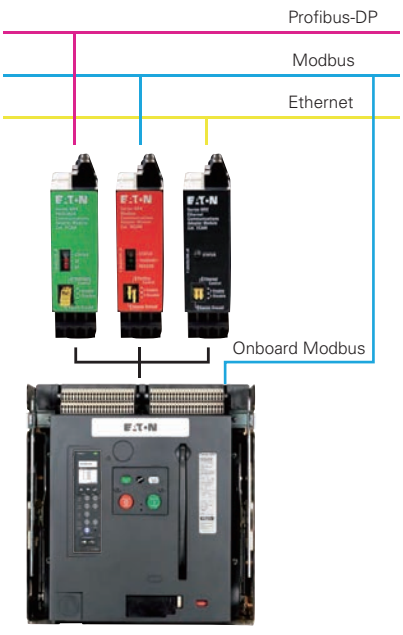
The next generation trip unit platform: Power Xpert Release (PXR)

- 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 safety and flexibility based 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)

Important functions and characteristics

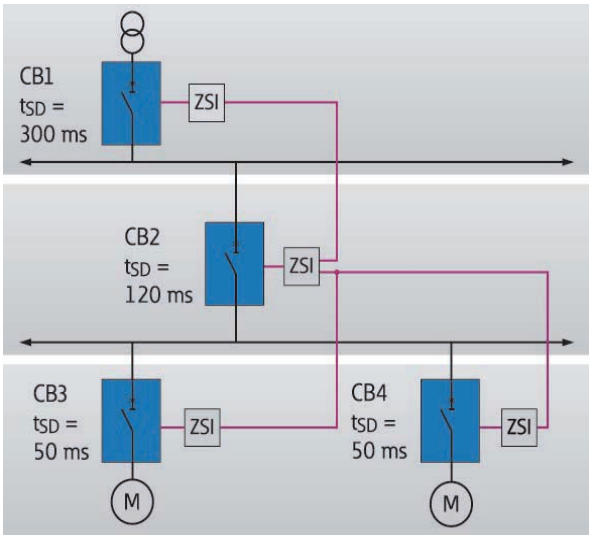
Arcflash Reduction Maintenance System™

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.



Zone selectivity ZSI

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.

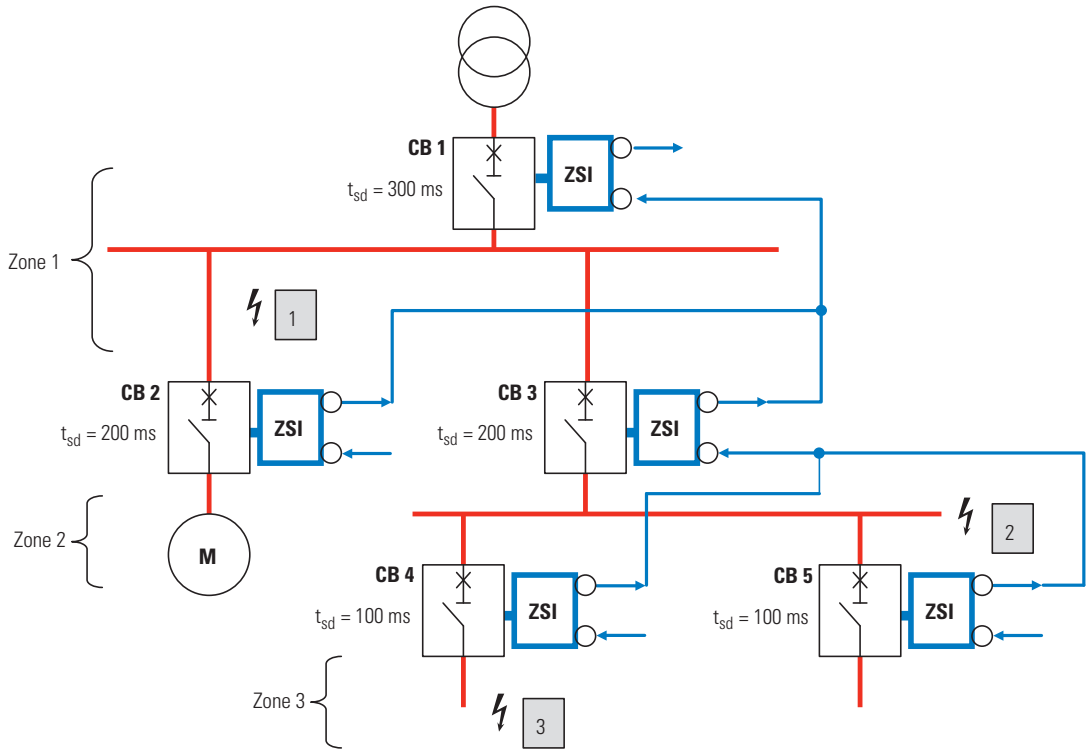
Breaker rear side (Drawout parent breaker)

Easy maintenance and service

Maintenance and service can be conveniently performed on the draw-out breaker as the primary finger clusters (blue) and levering mechanism are part of the breaker instead of the cassette.

Eaton also offers many field installable accessories and parts, extending the life of the breaker.

Zone Selectivity Interlocking



CB = Circuit Breaker
ZSI = Zone Selective Interlocking

Zone Selective Interlocking

- Zone Selective Interlocking (ZSI) is described in the soon to be pub-lished standard IEC 61912-2 Low voltage switchgear and controlgear.
- The term zone selective interlocking is used to describe a method of con-trolling circuit breakers to provide selectivity with very short interrup-tion times for the breaker closest to the fault.
- There are different levels (zones) of protection that isolate the fault in the distribution system.
- ZSI may be applied for faults be-tween phases or earth-faults or both.
- ZSI is applied to the short time faults where time selectivity can be achieved with the breakers be-tween the zones.
- Because ZSI does not require auxil-iary power or additional modules to operate set up time is minimal and application is easy.

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 example 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 breaker. This breaker will then trip immediately 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 approximately 250ms.

New Generation Air Circuit Breaker IZM

Contents

Air circuit breaker IZM

Technical Overview
- Key Features . . . 2
- System Features . . . 3
- Breaker Catalog Number . . . 4
- Breaker Technical Data . . . 6
- Trip Unit Technical Data . . . 7

System Overview
- IZM97 Circuit-breakers and Accessori . . . 8

Circuit Breaker Basic Device
- Air Circuit Breaker IZM97,99 . . . 10
- Switch Disconnector IN97,99 . . . 16

Circuit Breaker Accessories
- Cassette . . . 18
- Cassette Safety Shutters . . . 19
- IZMC2-PXRV..., IZMC2-PXRU Trip Unit . . . 19
- Accessories for Electronic Releases . . . 20
- External Neutral Transformer . . . 20
- Position Indication Contact for Withdrawable Circuit Breaker . . . 21
- Motor Operator . . . 21
- Operation Counters . . . 21
- Voltage Release . . . 22
- Auxiliary Contacts . . . 24
- Trip Signal Switch . . . 24
- Automatic Reset . . . 24
- Collapsible Hand Lever . . . 24
- Interlocking Devices . . . 25
- Vertical Wiring Supplied as Standard on Vertical Main Wiring Terminal . . . 27
- Other Accessories . . . 28

Accessories Electrical Data
- Communication Modules . . . 29
- Accessories of IZM97/IZM99 . . . 30

Selectivity
- IZM97,99 Selectivity . . . 32

Tripping Curves of Circuit Breakers
- Tripping Curves of IZM97,99 . . . 37

Temperature and Altitude Derating Factors
- Temperature Derating . . . 48
- Altitude Derating Factors . . . 48

Terminal Assignment of Control Circuit Terminals
- IZM97/99 Terminal Assignment of Control Circuit Terminals . . . 49

Wiring Diagram
- IZM97/99 Master Connection Diagram . . . 50
- Electrical Control Diagram of IZM97/IZM99 Circuit Breakers – ON/OFF and Motor . . . 51
- Undervoltage Releases . . . 52
- PXR Alarm Wiring . . . 53
- Ground Fault Residual 3-phase, 4-phase IZM97 800-4000A . . . 54
- Ground Fault Residual 3-phase, 4-phase IZM99 4000-6300A . . . 55
- Maintenance mode wiring . . . 56
- External PT Module for PXR25 U Type Trip Unit . . . 57
- Zone Interlock Wiring . . . 58

Basic Device Dimensions
- IZM97,99 Fixed Dimensions . . . 59
- IZM97,99 Drawout Dimensions . . . 67
- Minimum Clearances . . . 76

New Generation Air Circuit Breaker IZM

Key Features

Air Circuit Breaker IZM97,99

Eaton's IZM97,99, 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. In this way, only the module width increases with the required rated operational current, enabling the most compact and economical size to be selected.
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 IZM97,99. circuit-breakers, IN97,99 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 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 IZM97/IZM99

- With the IZM917/IZM99, 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 IZM97/99

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 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 IZM97/IZM99, other components of the ARMS enable an expansion of arc fault protection.

Selection Criteria for IZM97/IZM97 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 IZM97/IZM99 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").
- Two frame sizes are available, enabling to provide best devices for different applications. The rated operational voltage cover 800A 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 IZM97/IZM97 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 24VDC /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

Selection Criteria For Circuit-Breakers

Fundamental criteria for the selection of circuit-breakers:

- **Max short-circuit current I_k** max at 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 Icu, Ics and Icw 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 switch 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 in-creased ambient temperature (see Technical data).
- Circuit-breaker type: fixed mounted or withdrawable units, 3 or 4 pole.
- 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: This is determined by the selection of the respective overcurrent release.

Communication Options for IZM Series

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)

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 standardized 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 detection; the PROFIBUS-DP bus address is set through the trip unit's display. The maximum cable length is 2.4 km.
- To operate the PCAM, a supply voltage of 24 V DC is required.
- The data connection to the circuit-breaker 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-voltage switchgear (LVSG) of PROFIBUS International (PROFIBUS and PROFINET User Group). Five different data structures with varying numbers of parameters are available through the device master data file. This allows a data filter to be easily implemented, which simplifies integration of the 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 maximum 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 V DC is required.
- The data connection to the circuit-breaker is implemented internally through a serial highspeed data connection.

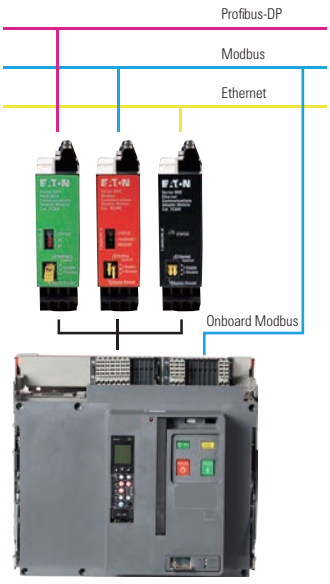
Data access via Modbus
The data is contained in comprehensive data tables. Each data point is available as floating-point (IEEE) or fixed-point value. This variance allows the integration of the IZM to be adapted to the Modbus architecture. This enables a simple means of implementing a data filter, which 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 circuit-breaker is implemented internally through a serial high speed data connection.
- To operate the ECAM, a supply voltage of 24 V DC is required.

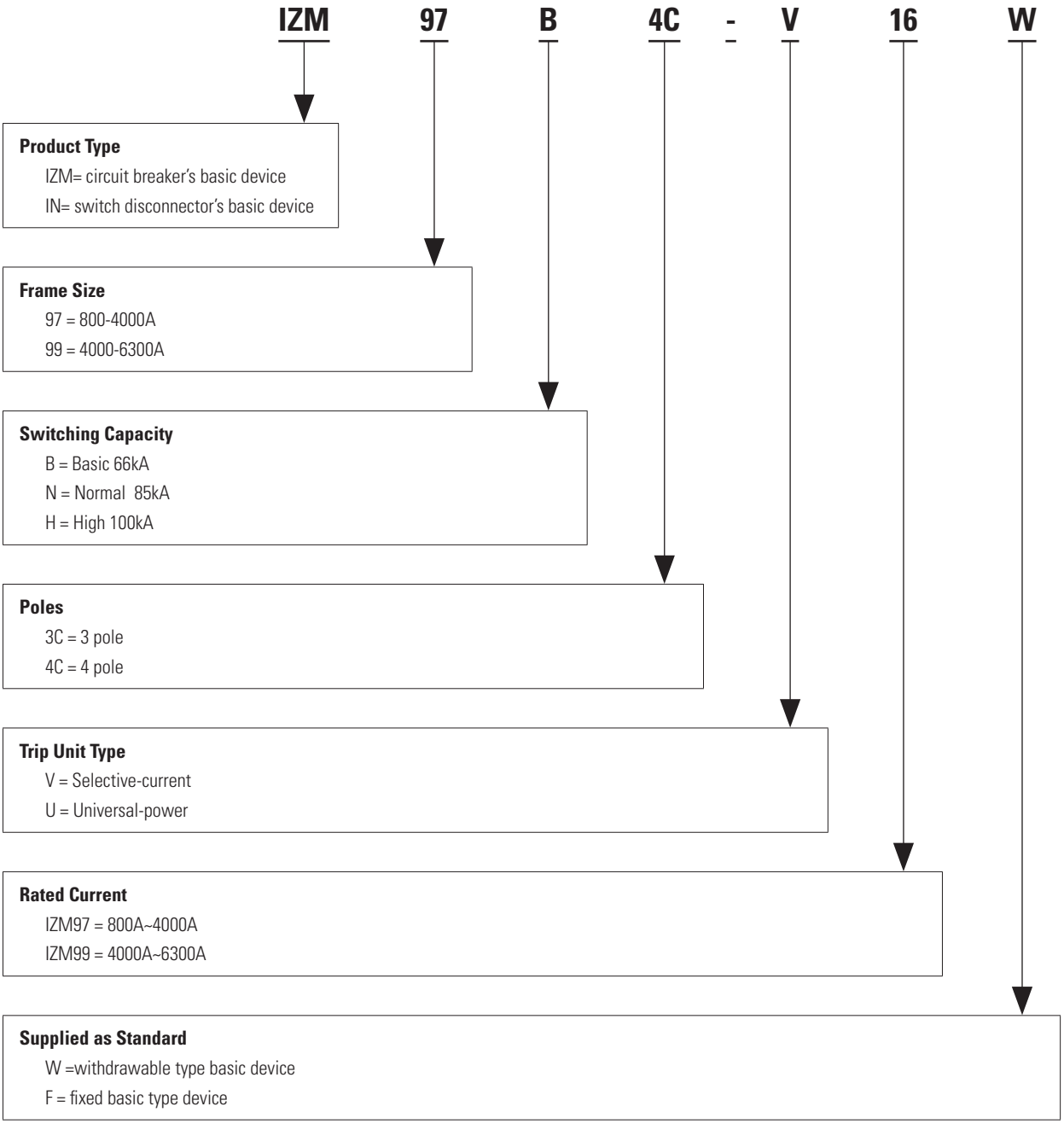
Data access via Ethernet
The data is contained in different web pages structured according to the topics „Data View", „Alarms", „Logs" and „Configuration". This variance allows the integration of the IZM to be adapted to all Ethernet networks supporting http protocol. An „around the world access" to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



New Generation Air Circuit Breaker IZM

Breaker Catalog Number

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



Fixed type

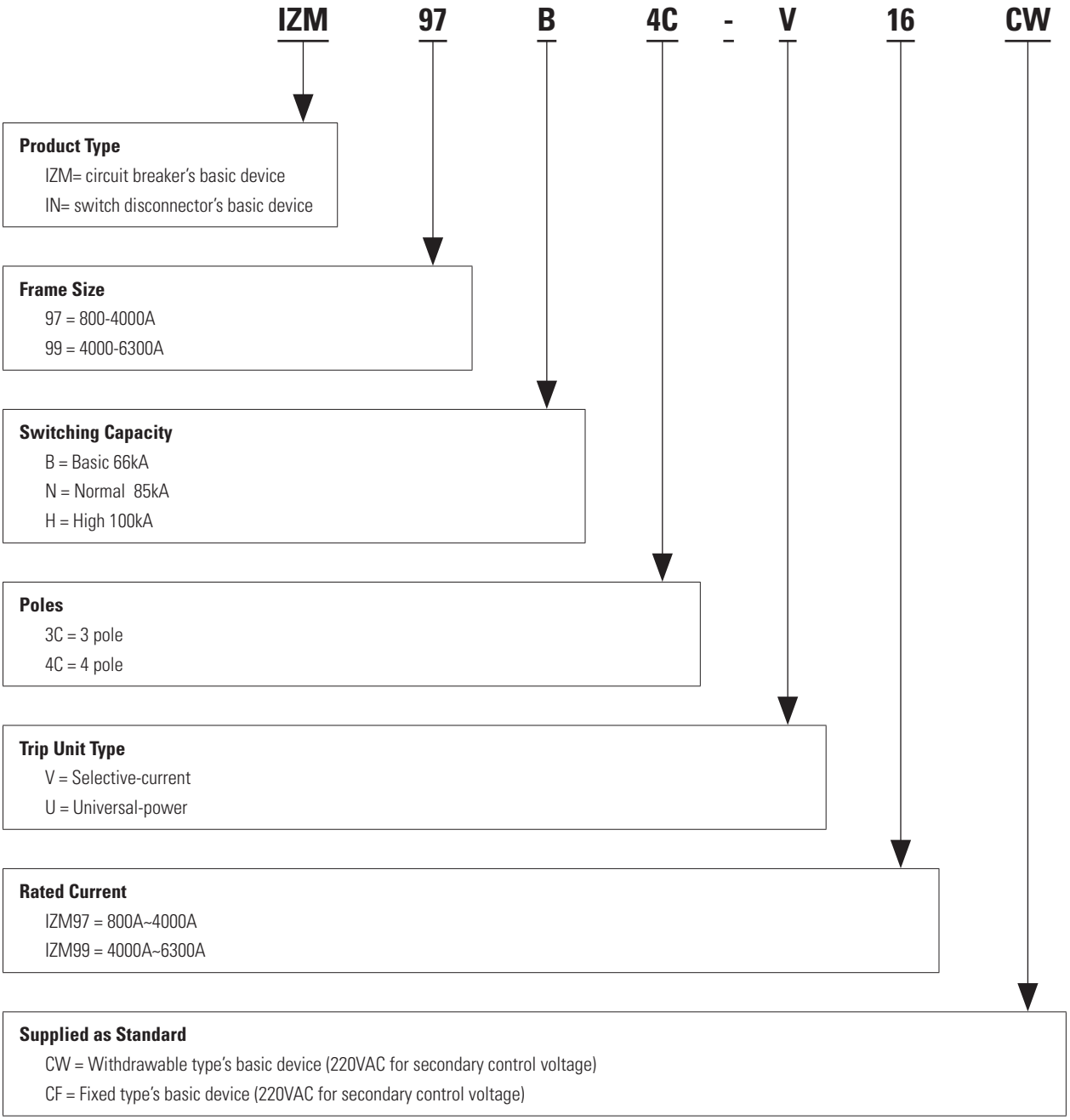
Standard IZM97/IZM99 basic device includes: fixed circuit breaker's basic device, wiring terminal, auxiliary contact(4CO), door escutcheon

Withdrawable type

Standard IZM97/IZM99 basic device includes: withdrawable circuit breaker's basic device, wiring terminal, auxiliary contact(4CO), door escutcheon

Note: IZM97/99-W/F includes horizontal main terminals
IZM97/99-W/F only provide the necessory control terminals as required

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(4CO), door escutcheon, wiring terminal, 220V AC power supply module

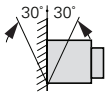
Withdrawable type

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 (4CO), door escutcheon, wiring terminal, 220VAC power supply module, protection shutter, arc chamber cover, cassette, handle

Note: 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
IZM97/99-CW/CF includes horizontal main terminals
IZM97/99-CW/CF only provide the necessory control terminals as required

New Generation Air Circuit Breaker IZM

Breaker Technical Data

			IZM97			IZM99	
General							
Standards			IEC/EN 60947			IEC/EN 60947	
Ambient temperature	Storage	°C	-25 - 85			-25 - 85	
	Operating (open)	°C	-25 - 85			-25 - 85	
Mounting position							
Utilization category			B			B	
Protection type			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			as required	
Switching capacity							
Rated Current (I_n)			800A, 1000A, 1250A, 1600A, 2000A, 2500A, 3200A, 4000A			4000A, 5000A, 6300A	
Type of circuit breaker			B	N	H	N	H
Rated impulse withstand voltage (U_{imp} , VAC)			12000	12000	12000	12000	12000
Rated insulation voltage (U_i , VAC)			1000	1000	1000	1000	1000
Rated operational voltage (U_e , VAC)			690	690	690	690	690
Ultimate breaking capacity (I_{cu} , kA)	440V 50/60Hz		66	85	100	85	100
	690V 50/60Hz		66	85	85	85	100
Rated service breaking capacity (I_{cs} , kA)	440V 50/60Hz		66	85	100	85	100
	690V 50/60Hz		66	85	85	85	100
Rated short-time withstand current (I_{cw} , kA)	1s		66	85	85	85	100
Rated short-circuit making capacity (I_{cm} , kA)	440V 50/60Hz		145	187	220	187	220
	690V 50/60Hz		145	187	187	187	220
Operating delays (ms)	Closing delay		35			35	
	Opening delay		30			30	
Maximum operating frequency (Operations/h)			60			60	
Durability and installation characteristics							
Lifespan			**800-1600A**	**2000**	**2500-4000A**	**4000-6300A**	
	Mechanical, w/o maintenance		12500	10000	10000	5000	
	Mechanical, w/maintenance		25000	20000	20000	10000	
	Electrical, w/o maintenance		10000	10000	8000[1)]	3000	
Dimensions (H × W × D, mm)	Fixed 3P		461×431×372			461×907×372	
	Fixed 4P		461×558×372			461×1161×372	
	Withdrawable 3P		486×450×474			486×926 ×474	
	Withdrawable 4P		486×577×474			486×1180×474	
Weight (kg)	Fixed 3P/4P		68/86			125/163	
	Withdrawable 3P/4P		86/112			157/200	

Notes: [1)] 5000 operations at 4000A

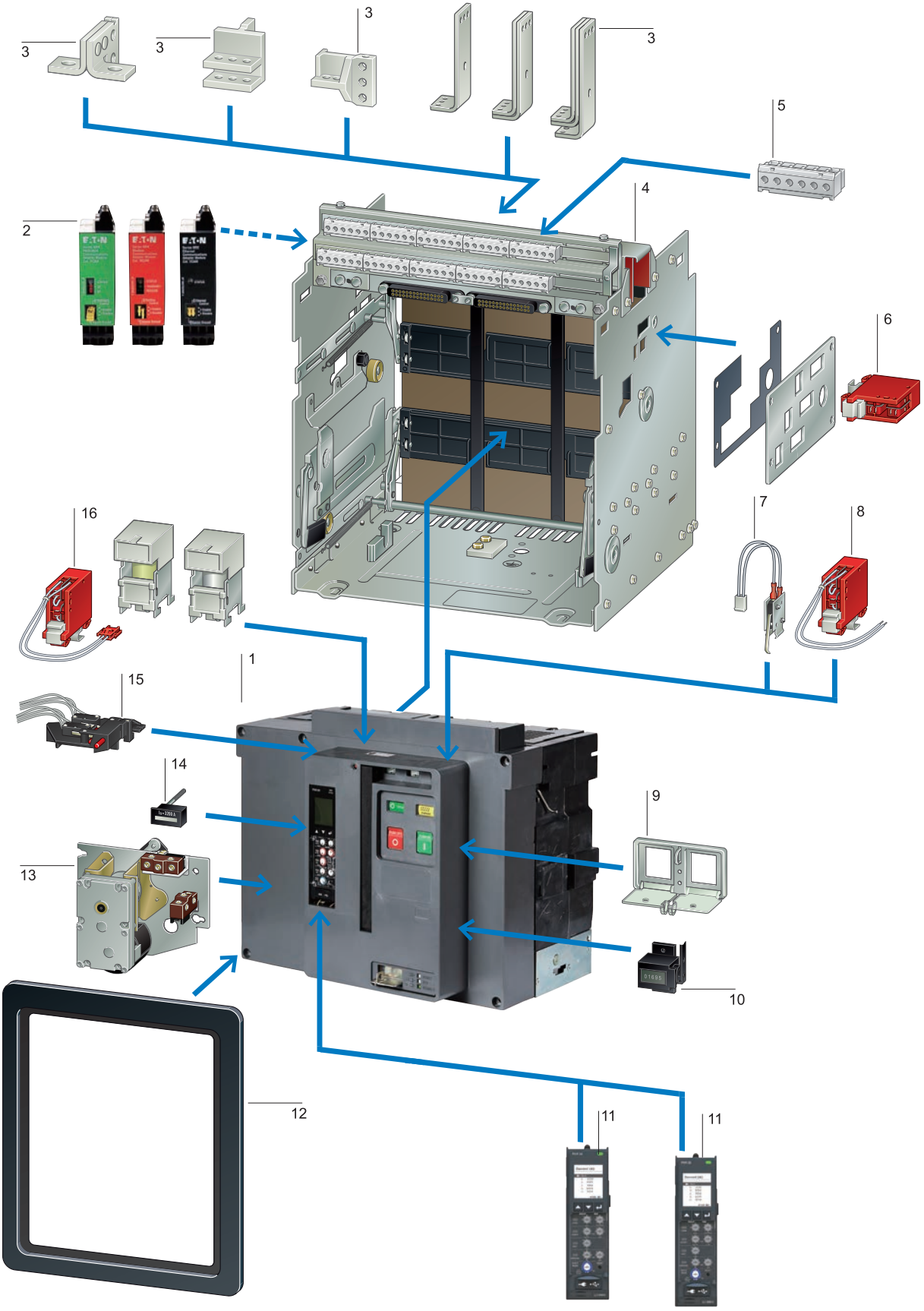
	V Type (PXR20) IZM-PXRV IZM97/99…V	**U Type (PXR25) IZM-PXRU IZM97/99…U**
Protective options	LSI; LSIG/LSIA (Optional)	LSI; LSIG/LSIA (Optional)
Overload protection (L)		
Overload trip (I_r), × I_n	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 0.95, 0.98, 1.0	0.4, 0.5, 0.6, 0.7, 0.75, 0.8, 0.9, 0.95, 0.98, 1.0
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
Voltage (%) L to L	–	±1% of Reading[3)]
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 SystemTM)	○	○
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 24VDC 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
● Standard ○ Optional – not available

New Generation Air Circuit Breaker IZM

System Overview

IZM97 Circuit-breakers and Accessori



IZM97/IZM99 air circuit breaker	1	Latch check switch	7	Motor operator	13
				To store energy for closing release	
Communication modular converter:	2				
MODBUS/PROFIBUS		Standard auxiliary contact	8		
		Normally closed / Normally opened		Rated current plug	14
Main circuit wiring terminal	3			Trip signal auxiliary contact	15
Vertical wiring terminal 3/4P		Button cover (padlockable)	9	OTS, 2CO	
Front wiring terminal 3/4P					
		Counter	10	Shunt release	16
Cassette	4				
		Trip unit	11	Closing release	16
Secondary circuit wiring terminal	5	Cannot be ordered separately			
2 or 15 secondary circuit wiring terminals can be ordered					
		Door escutcheon	12	Undervoltage release	16
Withdrawable circuit breaker position indicator contacts	6				

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

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

New Generation Air Circuit Breaker IZM

Circuit Breaker Basic Device

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

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 and Adapting Secondary Terminal Blocks)

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 and Adapting Secondary Terminal Blocks)

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

New Generation Air Circuit Breaker IZM

Circuit Breaker Basic Device

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

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

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

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 and Some Secondary Terminal Blocks)

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 and Adapting Secondary Terminal Blocks)

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

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

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 Main Terminals and all Secondary Terminal Blocks Equipped)

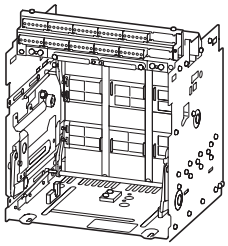
Rated short-circuit making capacity	Rated operational current	Circuit breaker type	Rated short-time withstand current	Fixed	Withdrawable
				Part no. Article no.	**Part no.** Article no.
I_{cm} kA	$I_n = I_u$ A		I_{cw} kA		Cassette must be ordered separately.
145	800	IN97	66	**IN97B3C-08F** YC-302001	**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

Switch Disconnector (Including 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

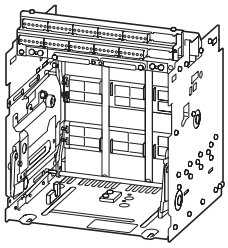
Cassette

Cassettes 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
≤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
≤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

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

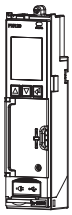


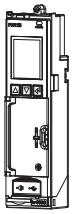
Rated operational current I_n A	Pole	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
≤2000	3	IZM97...W IN97...W	**IZMC2-CAS323-2000** YC-500076
2500	3	IZM97...W IN97...W	**IZMC2-CAS323-2500** YC-500151
3200	3	IZM97...W IN97...W	**IZMC2-CAS323-3200** YC-500077
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
≤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

Cassette Safety Shutters

	Pole	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
When withdrawable circuit breaker is moved from "connection" position, protection shutter will close automatically to block main contact.			
-	3	IZM97...W IN97...W	**IZMC2-SH323** YC-500096
-	3	IZM97...W IN97...W	**+IZMC2-SH323** YC-300096
-	3	IZM99...W IN99...W	**IZMC2-SH633** YC-500098
-	3	IZM99...W IN99...W	**+IZMC2-SH633** YC-300098
-	4	IZM97...W IN97...W	**IZMC2-SH324** YC-500068
-	4	IZM97...W IN97...W	**+IZMC2-SH324** YC-300068
-	4	IZM99...W IN99...W	**IZMC2-SH634** YC-500069
-	4	IZM99...W IN99...W	**+IZMC2-SH634** YC-300069

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

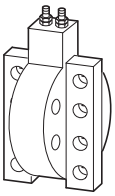




	For use with	Ground Earth-Fault Protection (G)	ARMS (M)	Onboard ModBUS Communication (C)	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
Type V trip unit with current metering (PXR20)					
	–	–	–	–	**IZMC2-PXRV**
Add-on functions for current metering Type V (PXR20)					
Add onboard Modbus, V type	IZM97/99	–	–	●	**+IZMC2-PXRV-C** YC-300058
Add ground fault protection, V type	IZM97/99	●	–	–	**+IZMC2-PXRV-G** YC-300057
Add ground fault protection and onboard Modbus, V type	IZM97/99	●	–	●	**+IZMC2-PXRV-GC** YC-300056
Add ground fault protection and ARMs, V type	IZM97/99	●	●	–	**+IZMC2-PXRV-GM** YC-300055
Add ground fault protection, onboard Modbus and ARMs, V type	IZM97/99	●	●	●	**+IZMC2-PXRV-GMC** YC-300054
Type U Trip Unit with Power Metering (PXR25)					
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	IZM97/99	●	–	●	**+IZMC2-PXRU-G** YC-300059
Add ARMs, U type	IZM97/99	–	●	●	**+IZMC2-PXRU-M** YC-300060
Add ground fault protection and ARMs, U type	IZM97/99	●	●	●	**+IZMC2-PXRU-GM** YC-300061

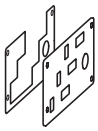
Accessories for Electronic Releases

	For use with	Rated control voltage U_s V	**Part no.** Article no.	**Notes**
External trip unit power adapter				
External trip unit power adapter	IZM97… IZM99…	115/230VAC input 24VDC, 12.5A output	**EASY400-POW-CN** 90000019400525	DIN rail mount Order seperately
External voltage measurement module, for U type release unit	IZM97… IZM99…	–	**IZMC2-PXR-PTM-2** YC-500160	DIN rail mount Order seperately
Communication modules				
Communication module Modbus	– IZM99…	–	**IZMC2-MCAM-2** YC-500119	DIN rail mount Order seperately
Communication module Profibus DP	– IZM99…	–	**IZMC2-PCAM-2** YC-500120	DIN rail mount Order seperately
Communication module Ethernet	– IZM99…	–	**IZMC2-ECAM-2** YC-500121	DIN rail mount Order seperately



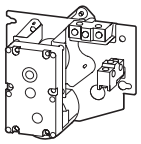
External Neutral Transformer

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



Position Indication Contact for Withdrawable Circuit Breaker

	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
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

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.

	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
-	IZM97,99 IN97,99...	**IZMC2-M24DC** YC-500027
-	IZM97,99 IN97,99...	**+IZMC2-M24DC** YC-300027
-	IZM97,99 IN97,99...	**IZMC2-M48DC** YC-500028
-	IZM97,99 IN97,99...	**+IZMC2-M48DC** YC-300028
-	IZM97,99 IN97,99...	**IZMC2-M110DC** YC-500029
-	IZM97,99 IN97,99...	**+IZMC2-M110DC** YC-300029
-	IZM97,99 IN97,99...	**IZMC2-M220DC** YC-500030
-	IZM97,99 IN97,99...	**+IZMC2-M220DC** YC-300030
-	IZM97,99 IN97,99...	**IZMC2-M110AC** YC-500031
-	IZM97,99 IN97,99...	**+IZMC2-M110AC** YC-300031
-	IZM97,99 IN97,99...	**IZMC2-M230AC** (for 220V DC) YC-500032
-	IZM97,99 IN97,99...	**+IZMC2-M230AC** (for 220V DC) YC-300032

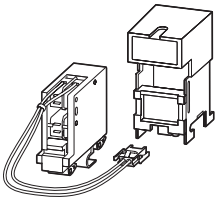
Operation Counters

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

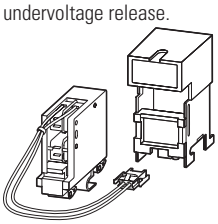
	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
-	IZM97,99 IN97,99...	**IZMC2-OC** YC-500039
-	IZM97,99 IN97,99...	**+IZMC2-OC** YC-300039

Voltage Release

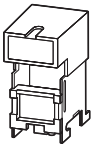
Shunt release
Specific models available for integrated protection and monitoring or electrical interlocking functions. Please contact Eaton sales for more details.



Second shunt release
Cannot be combined with an undervoltage release.

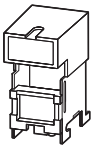


Closing release
Specific models available for integrated protection and monitoring or electrical interlocking functions. Please contact Eaton sales for more details.

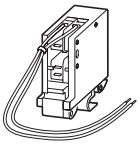


Rated control voltage U_s V	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
Closing release can be combined in use with 1 shunt release and 1 undervoltage release or with 2 shunt releases		
24DC	IZM97,99... IN97,99...	**IZMC2-ST24DC** YC-500006
24DC	IZM97,99... 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
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
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

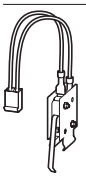
Voltage Release

		Rated control voltage U_s V	For use with	**Part no.** Article no. Suffix + for ordering with circuit breaker basic device
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
		380-415 AC	IZM97,99... IN97,99...	**+IZMC2-UVR400AC** YC-300018
Time-delay module In use with undervoltage module. Time setting: 0.1 s, 0.5 s, 1.0 s, 2.0 s.	In use with IZMC2-UVR110VAC	120 AC	IZM97,99... IN97,99...	**IZMC2-UVR-TD-120AC** YC-500100
	In use with IZMC2-UVR230VAC	230 AC	IZM97,99... IN97,99...	**IZMC2-UVR-TD-230AC** YC-500101

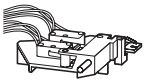
Auxiliary Contacts



	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device	Notes
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



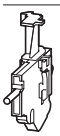
Latch check switch Latch check switch = latch check signal with 1 convertible contact (1CO)			
–	IZM97,99... IN97,99...	**IZMC2-LCS-SR** YC-500036	For connection to closing release
–	IZM97,99... IN97,99...	**+IZMC2-LCS-SR** YC-300036	For connection to closing release
–	IZM97,99... IN97,99...	**IZMC2-LCS** YC-500037	For external signal
–	IZM97,99... IN97,99...	**+IZMC2-LCS** YC-300037	For external signal



Trip Signal Switch

Trip signal switch (OTS)
2CO switches

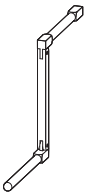
	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device	Notes
–	IZM97,99...	**IZMC2-OTS** YC-500038	–
–	IZM97,99...	**+IZMC2-OTS** YC-300038	–



Automatic Reset

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. Cannot be combined with remote reset.

	For use with	Part no. Article no. Suffix + for ordering with circuit breaker basic device	Notes
–	IZM97,99...	**IZMC2-RA** YC-500043	–
–	IZM97,99...	**+IZMC2-RA** YC-300043	–

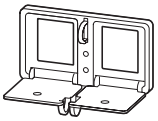


Collapsible Hand Lever

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

	For use with	Part no. Article no.	Notes
–	IZM97,99... IN97,99...	**IZMC2-LT** YC-500136	Handle un-foldable

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 	Plastic cover, ON and OFF position button lock	IZM97,99... IN97,99...	**IZMC2-PLPC-P** YC-500044
	Plastic cover, ON and OFF position button lock	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
	Metal cover, ON and OFF position button lock	IZM97,99... IN97,99...	**+IZMC2-PLPC-M** YC-300045
OFF position safety lock The cylinder lock of each part are not interchangeable	OFF Position Safety Lock, Kirk lock, including lock cylinder and key, A type, IZM97/99	IZM97,99... IN97,99...	**IZMC2-1L1K** YC-500125
	OFF Position Safety Lock, Kirk lock, including lock cylinder and key, B type, IZM97/99	IZM97,99... IN97,99...	**IZMC2-1L1K-B** YC-500126
	OFF Position Safety Lock, Kirk lock, including lock cylinder and key, C type, IZM97/99	IZM97,99... IN97,99...	**IZMC2-1L1K-C** YC-500127
	OFF Position Safety Lock, Kirk lock, including lock cylinder and key, D type, IZM97/99	IZM97,99... IN97,99...	**IZMC2-1L1K-D** YC-500128
	OFF Position Safety Lock, Kirk lock, including lock cylinder and key, E type, IZM97/99	IZM97,99... IN97,99...	**IZMC2-1L1K-E** YC-500129
	OFF Position Safety Lock, Kirk lock, including lock cylinder and key, F type, IZM97/99	IZM97,99... IN97,99...	**IZMC2-1L1K-F** YC-500130

Notes: 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.

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: 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.

Cassette interlocking device	During mounting, if the circuit breaker is in connection position, then this device prevent the circuit breaker from tripping and avoid the circuit breaking closing.		
	Mounting on the right side	IZM97,99...W IN97,99...W	**IZMC2-KLP-CASS-R** YC-500134
	Mounting on the left side	IZM97,99...W IN97,99...W	**IZMC2-KLP-CASS-L** YC-500135

Interlocking Device

		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). It requires additional ropes.	IZM97,99...F IN97,99...F	**IZMC2-MIL2C-F** YC-500139
	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. It requires 2 set of ropes.	IZM97,99...F IN97,99...F	**IZMC2-MIL31C-F** YC-500140
	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. It requires 3 set of ropes.	IZM97,99...F IN97,99...F	**IZMC2-MIL32C-F** YC-500141
	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. It requires 3 set of ropes.	IZM97,99...F IN97,99...F	**IZMC2-MIL33C-F** YC-500142
Mechanical interlocking of withdrawable circuit breaker	2 circuit breakers interlocking: 1 for normal power supply (A), 1 for emergency supply (B). It requires additional ropes.	IZM97,99...W IN97,99...W	**IZMC2-MIL2C-W** YC-500143
	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. It requires 2 set of ropes.	IZM97,99...W IN97,99...W	**IZMC2-MIL31C-W** YC-500144
	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. It requires 3 set of ropes.	IZM97,99...W IN97,99...W	**IZMC2-MIL32C-W** YC-500145
	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. It requires 3 set of ropes.	IZM97,99...W IN97,99...W	**IZMC2-MIL33C-W** YC-500146
Ropes for mechanical interlocking	Type of mechanical interlock depends on length of rope. One set of rope device includes 2 ropes		
	Length 1520mm	IZM97,99... IN97,99...	**IZMC2-MIL-CAB1520** YC-500147
	Length 1830mm	IZM97,99... IN97,99...	**IZMC2-MIL-CAB1830** YC-500148
	Length 2440mm	IZM97,99... IN97,99...	**IZMC2-MIL-CAB2440** YC-500149
	Length 3050mm	IZM97,99... IN97,99...	**IZMC2-MIL-CAB3050** YC-500150

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

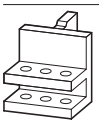
32 type interlocking logic

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

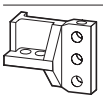
33 type interlocking logic

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

Vertical Wiring Supplied as Standard on Vertical Main Wiring Terminal



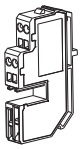
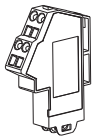
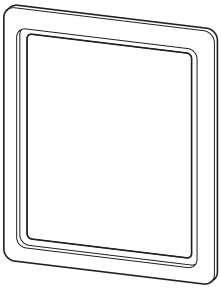
6 pcs for 3P
8 pcs for 4P



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

Rated Current I_n A	Rated ultimate switching capacity I_{cu} KA	Pole	For use with	**Part no.** Article no.
Vertical connection by fixed or withdrawable circuit breaker				
≤1600	≤65	3	IZM97... IN97...	**IZMC2-TV323B-1600** YC-500109
≤2000	≤100	3	IZM97B...20 IN97B...20 IZM97H...IN97H...	**IZMC2-TV323H-2000** YC-500110
2500-3200	100	3	IZM97... IN97...	**IZMC2-TV323H-3200** YC-500111
≤1600	≤65	4	IZM97... IN97...	**IZMC2-TV324B-1600** YC-500112
≤2000	≤100	4	IZM97B...20 IN97B...20 IZM97H...IN97H...	**IZMC2-TV324H-2000** YC-500113
2500-3200	100	4	IZM97... IN97...	**IZMC2-TV324H-3200** YC-500114
4000	100	3	IZM99... IN99...	**IZMC2-TV633H-4000** YC-500115
5000-6300	100	3	IZM99... IN99...	**IZMC2-TV633H-6300** YC-500116
4000	100	4	IZM99... IN99...	**IZMC2-TV634H-4000** YC-500117
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.				
	Control circuit terminal, 8	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB8-W-2** YC-500103
	Control circuit terminal, 20	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB20-W-2** YC-500104
	Control circuit 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.				
	Control circuit terminal, 8	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB8-F-2** YC-500106
	Control circuit terminal, 20	–	IZM97,99 IN97,99...	**IZMC2-SEC-TB20-F-2** YC-500107
	Control circuit 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.				
		–	IZM97,99 IN97,99...	**IZMC2-DEG** YC-500137
IP54 protection cover		–	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 V DC	24 V DC	24 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 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	According to IEC standards			

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	According to IEC standards			

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	According to IEC standards			
Pick-up voltage		× U_c	According to IEC standards			

Accessories of IZM97/IZM99

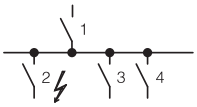
			Undervoltage release IZMC2-UVR220DC	IZMC2-UVR230AC	IZMC2-UVR400AC
Rated control voltage					
AC 50/60 Hz	U_s	V	-	208-240	380-415
DC	U_s	V	220-250	-	-
Power consumption					
AC		VA	-	10 (pick-up 400)	10 (pick-up 400)
DC		W	10(250	-	-
Response time of circuit breaker		ms	70	70	70
Operating range					
Drop-out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

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 IZM

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)											
NZMB(C)(N)(H)1-A(M)...	20	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-100	T	T	T	T	T	T	T	T	T	T	T	T
NZMB(C)(N)(H)2-A(M)(V)...	20	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	90	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	140	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	300	25-150	T	T	T	T	T	T	T	T	T	T	T	T
NZMC(N)(H)3-A(M)(V)...	220	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	320	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	350	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	450	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	500	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-150	T	T	T	T	T	T	T	T	T	T	T	T
NZMN(H)4-A(M)(V)...	550	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	630	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	800	50-100	-	-	-	T	T	T	T	T	T	T	T	T
	875	50-100	-	-	-	T	T	T	T	T	T	T	T	T
	1000	50-100	-	-	-	-	-	-	T	T	T	T	T	T
	1250	50-100	-	-	-	-	-	-	-	-	-	T	T	T
	1400	50-100	-	-	-	-	-	-	-	-	-	T	T	T
	1600	50-100	-	-	-	-	-	-	-	-	-	-	-	-

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
T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T
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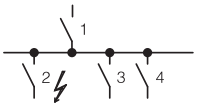
New Generation Air Circuit Breaker IZM

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)											
NZMB(C)(N)(H)1-A(M)...	20	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-100	T	T	T	T	T	T	T	T	T	T	T	T
NZMB(C)(N)(H)2-A(M)(V)...	20	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	90	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	140	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	300	25-150	T	T	T	T	T	T	T	T	T	T	T	T
NZMC(N)(H)3-A(M)(V)...	220	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	320	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	350	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	450	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	500	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-150	T	T	T	T	T	T	T	T	T	T	T	T
NZMN(H)4-A(M)(V)...	550	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	630	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	800	50-100	-	-	-	T	T	T	T	T	T	T	T	T
	875	50-100	-	-	-	T	T	T	T	T	T	T	T	T
	1000	50-100	-	-	-	-	-	-	T	T	T	T	T	T
	1250	50-100	-	-	-	-	-	-	-	-	-	T	T	T
	1400	50-100	-	-	-	-	-	-	-	-	-	T	T	T
	1600	50-100	-	-	-	-	-	-	-	-	-	-	-	T

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

Incoming circuit breaker ZM97...-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
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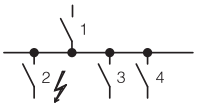
New Generation Air Circuit Breaker IZM

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

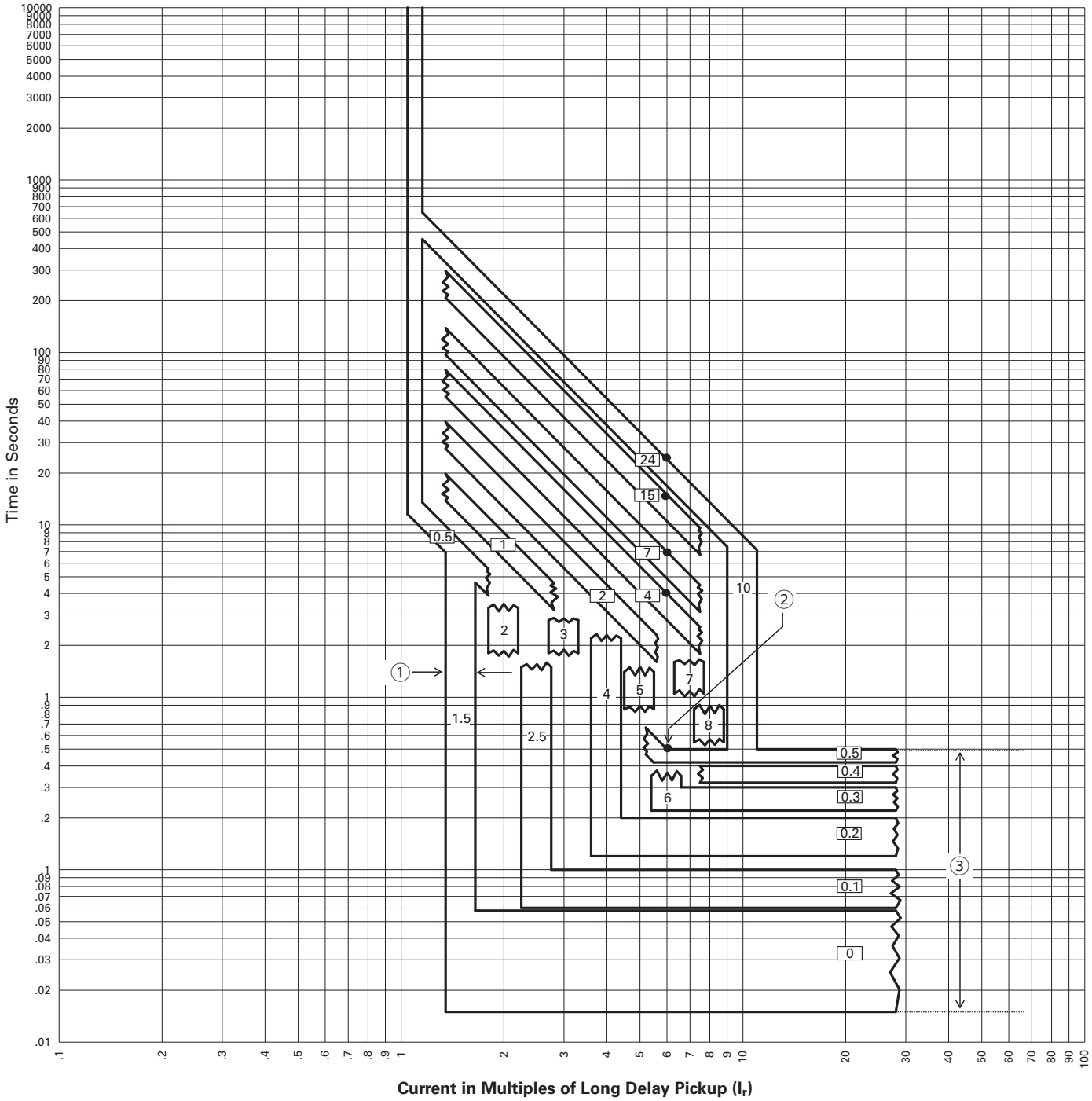
Selectivity 415 V AC
Between circuit-breakers enables the separate disconnection of faulty system sections. Selectivity exists between incoming circuitbreaker 1 and outgoing circuit-breaker 2 if, only outgoing breaker 2 trips at position 2 during a short-circuit. System sections 3 and 4 remain operational.

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)											
NZMB(C)(N) (H)1-A(M)...	20	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-100	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-100	T	T	T	T	T	T	T	T	T	T	T	T
NZMB(C)(N) (H)2-A(M) (V)...	20	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	25	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	32	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	40	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	50	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	63	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	80	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	90	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	100	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	125	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	140	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	160	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	200	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	220	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	250	25-150	T	T	T	T	T	T	T	T	T	T	T	T
	300	25-150	T	T	T	T	T	T	T	T	T	T	T	T
NZMC(N)(H) 3-A(M)(V)...	220	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	250	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	320	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	350	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	400	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	450	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	500	36-150	T	T	T	T	T	T	T	T	T	T	T	T
	630	36-150	T	T	T	T	T	T	T	T	T	T	T	T
NZMN(H) 4-A(M)(V)...	550	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	630	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	800	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	875	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	1000	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	1250	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	1400	50-100	T	T	T	T	T	T	T	T	T	T	T	T
	1600	50-100	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

IZM97(99)...V(U)...PXR20/25 Long Delay(L) and Short Delay(S) Curves
L-Protection: I²t-Characteristic curve and S-Protection: Flat characteristic curve



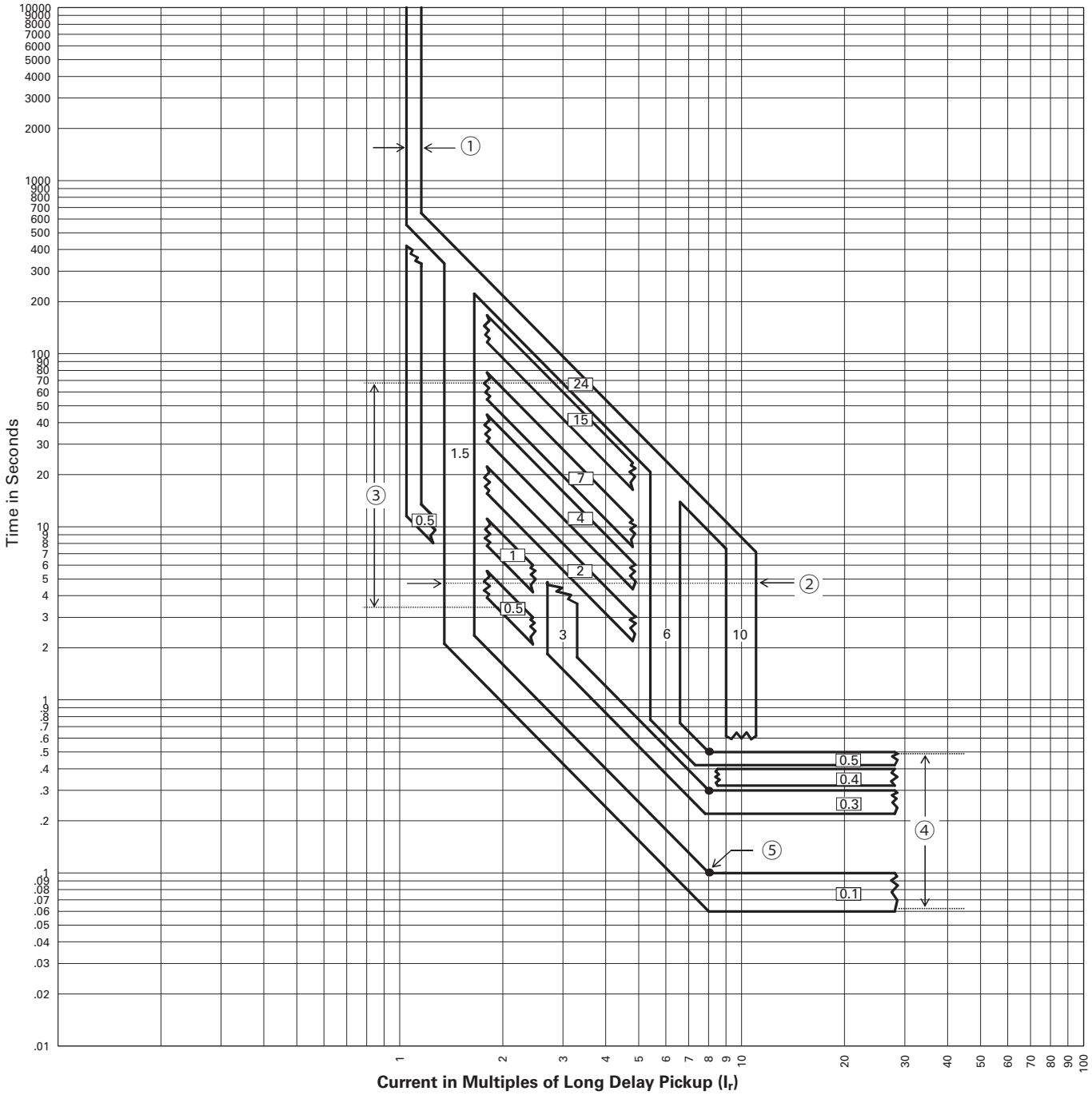
Notes:

1. Short slope: Flat, the actual pickup point has 100% ±10% tolerance.
2. Long delay I²T 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 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 IZM

Tripping Curves

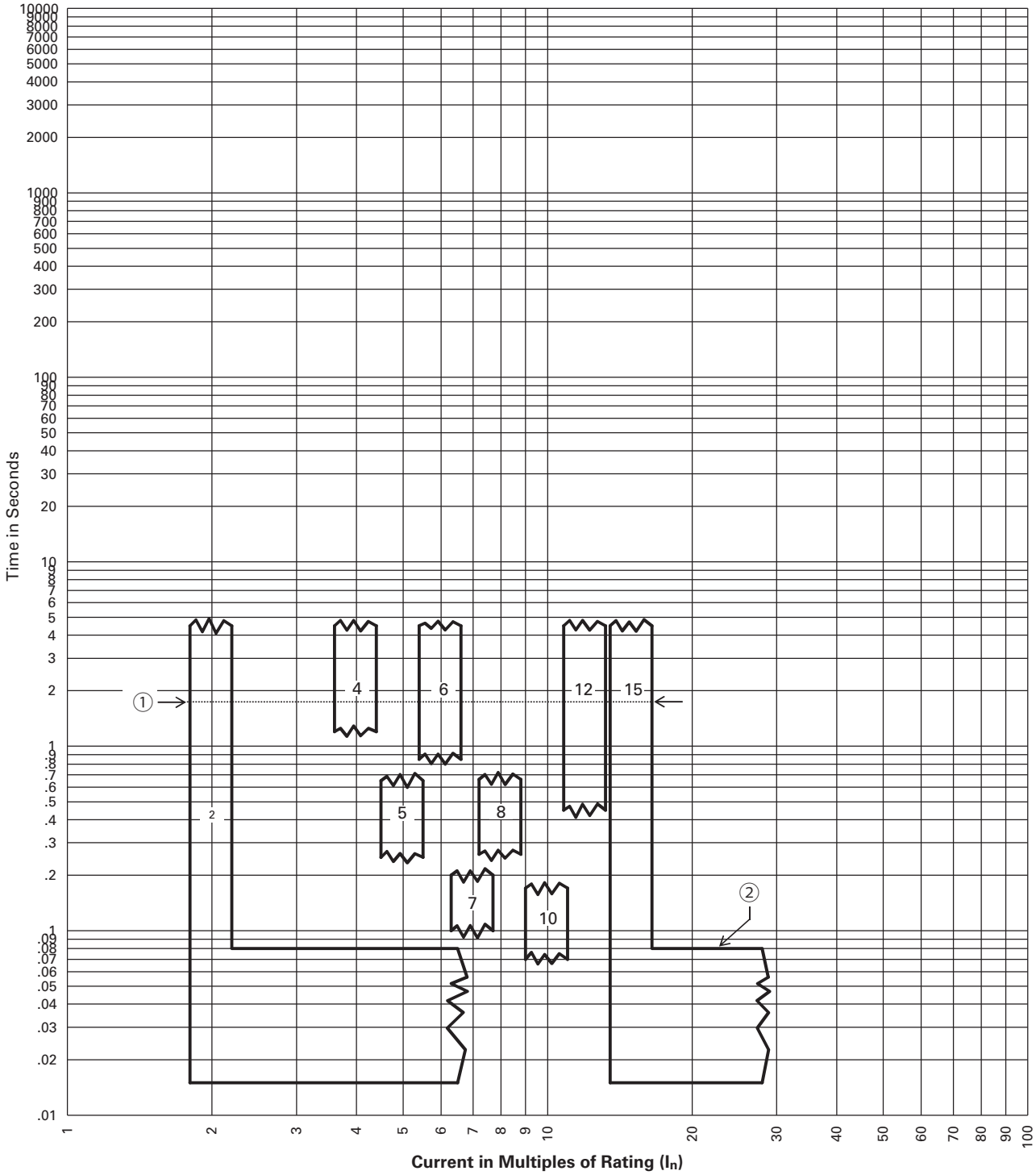
IZM97(99)...V(U)...PXR20/25 Long Delay(L) and Short Delay(S) Curves
S-Protection with: I²t-Characteristic curve ON



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 = I²T. 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. I²T 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 I²T 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 IZM97/99 circuit breakers including all frame sizes, ratings, and constructions.

IZM97(99)...V(U)...PXR20/25 Instantaneous(I) Curves
I-Protection: Adjustable



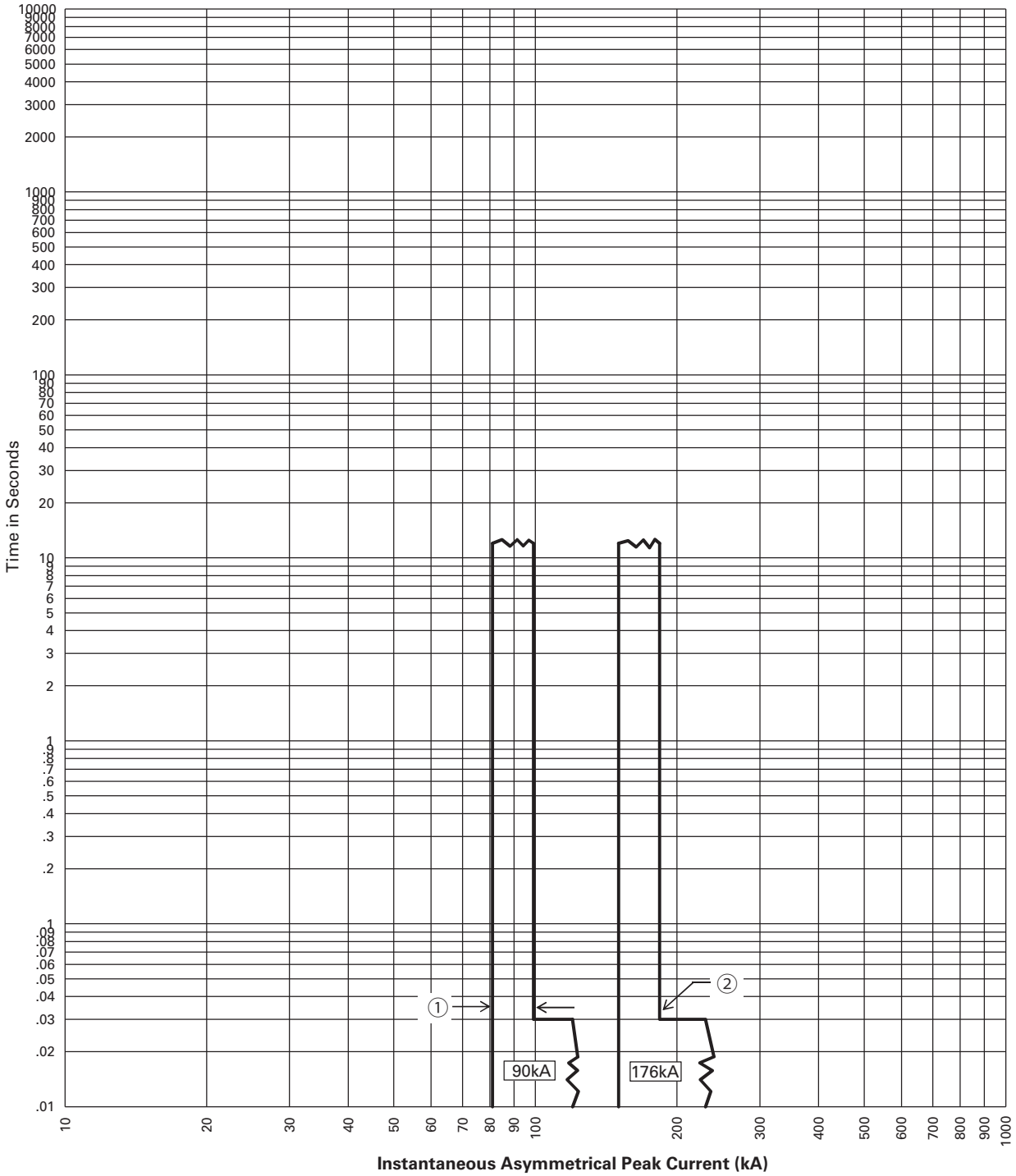
Notes:

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 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 IZM

Tripping Curves

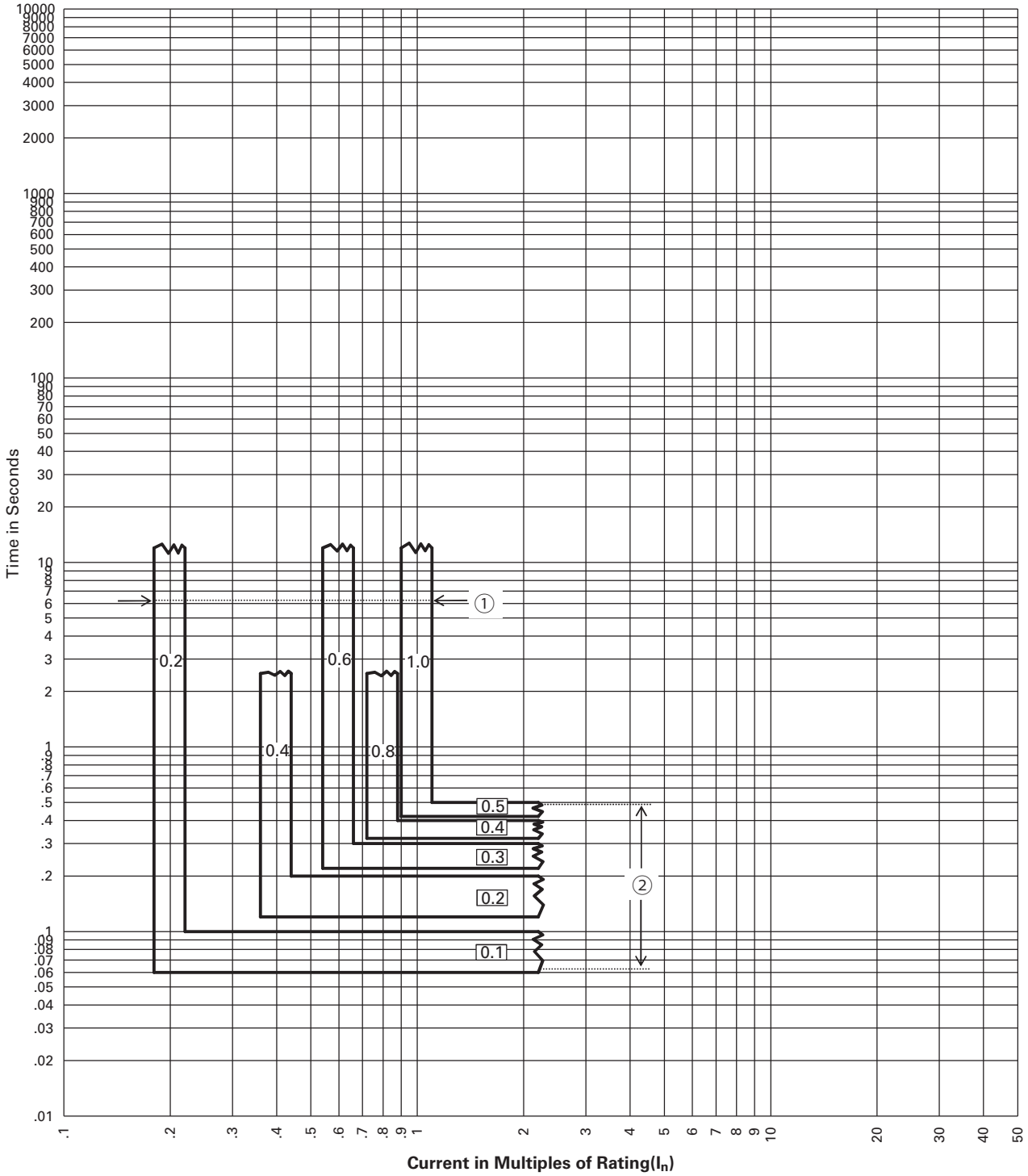
IZM97(99)...V(U)...PXR20/25 Instantaneous(I) Curves
Instantaneous Trip at High Fault Currents



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.

IZM97(99)...V(U)...PXR20/25 Ground(G) Curves
G: Ground fault protection - Flat characteristic curve



Notes:

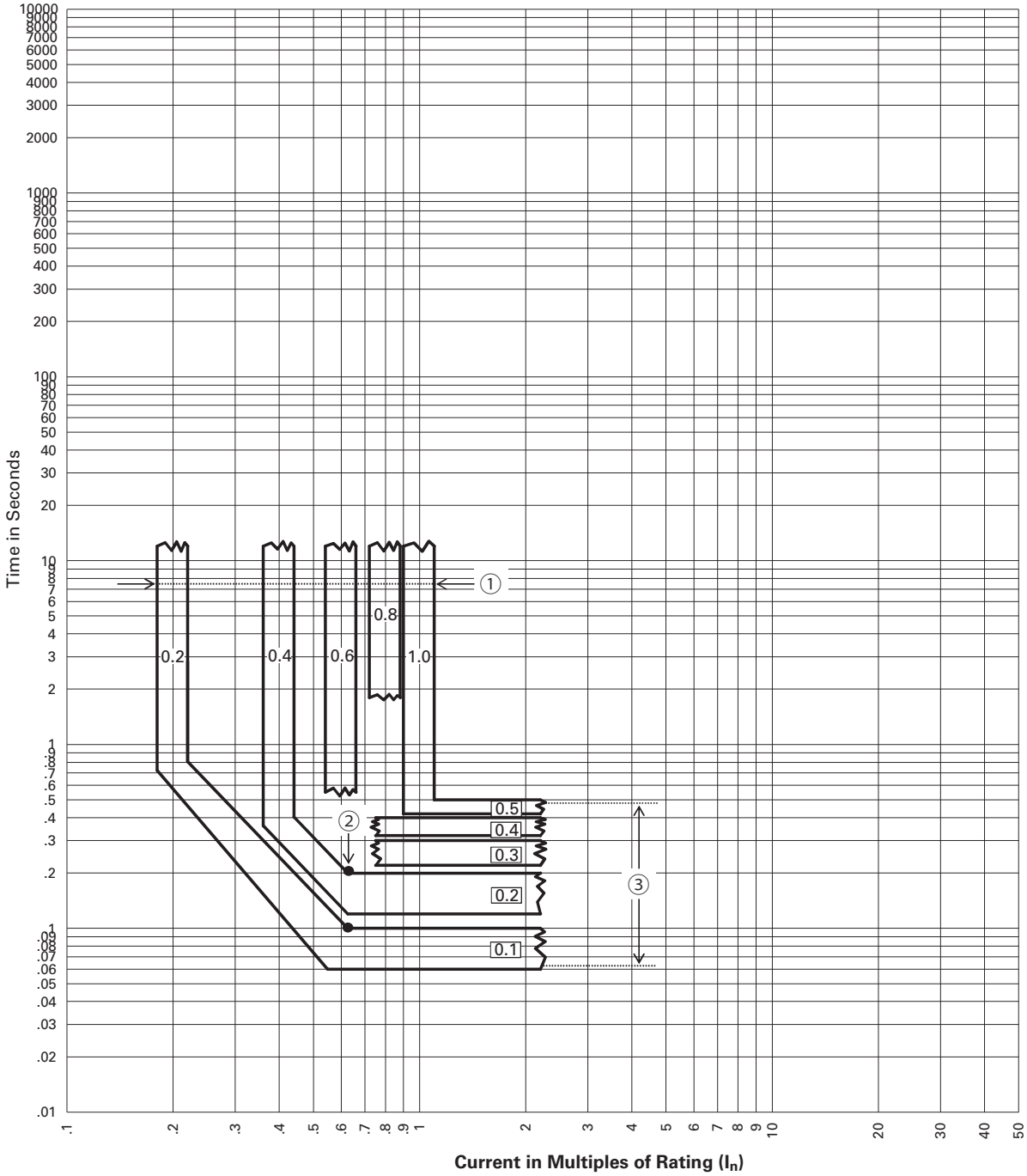
1. Ground PU setting from 0.2 to 1.0 of I_n with steps of 0.2 , have tolerance of 100% ± 10%.
2. Ground Flat time from 0.1s to 0.5s, with 0.1s increments.
3. Ground slope: Flat, trip time tolerance is +0 / -80ms for all settings except 0.1s setting is 0.06s to 0.1s.
4. The curve is shown as a multiple 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 IZM97/99 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 IZM

Tripping Curves

IZM97(99)...V(U)...PXR20/25 Ground(G) Curves

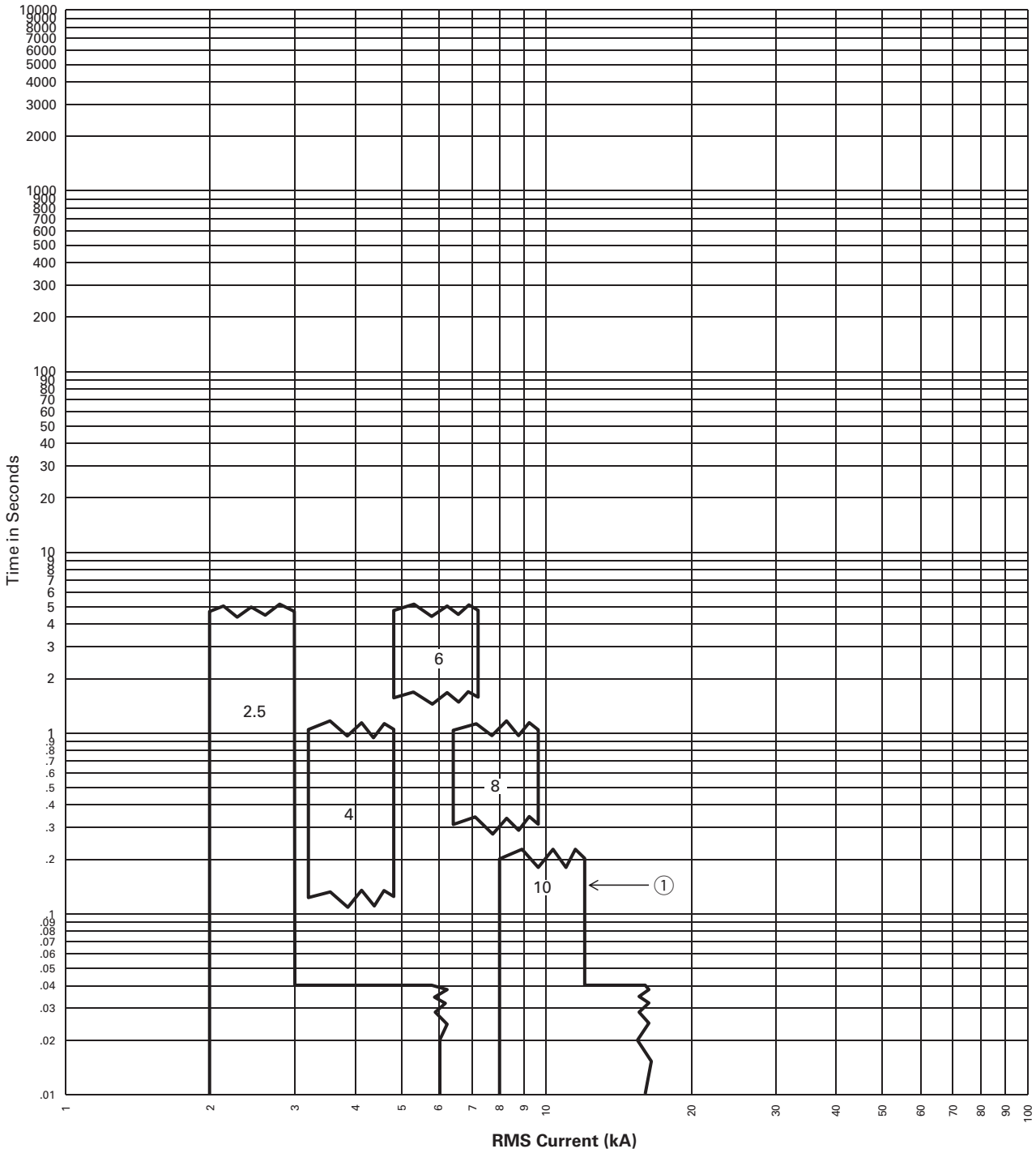
G: Ground fault protection-I²t-Characteristic curve ON



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 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 IZM97 up to 1600A



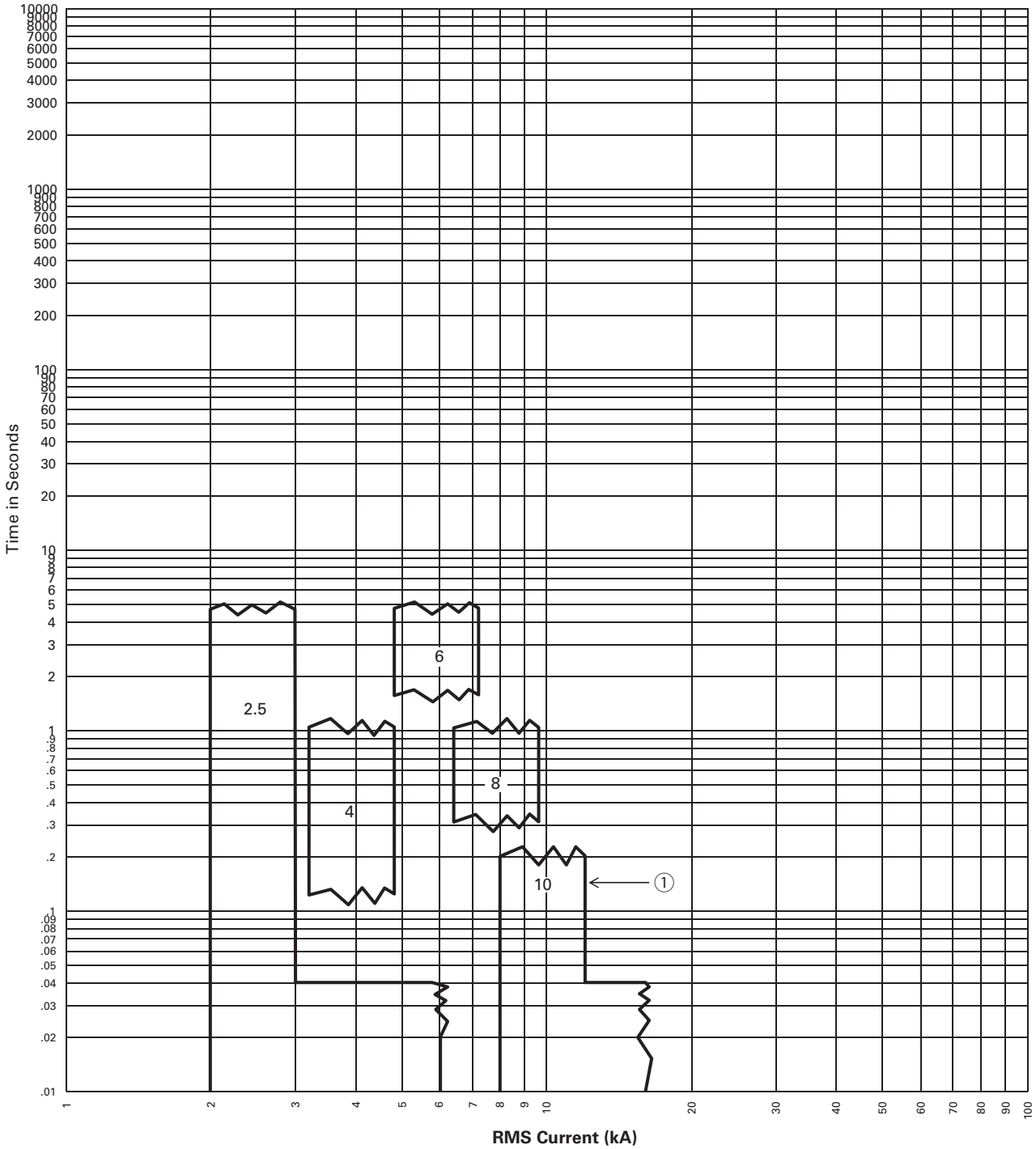
Notes:

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 IZM

Tripping Curves

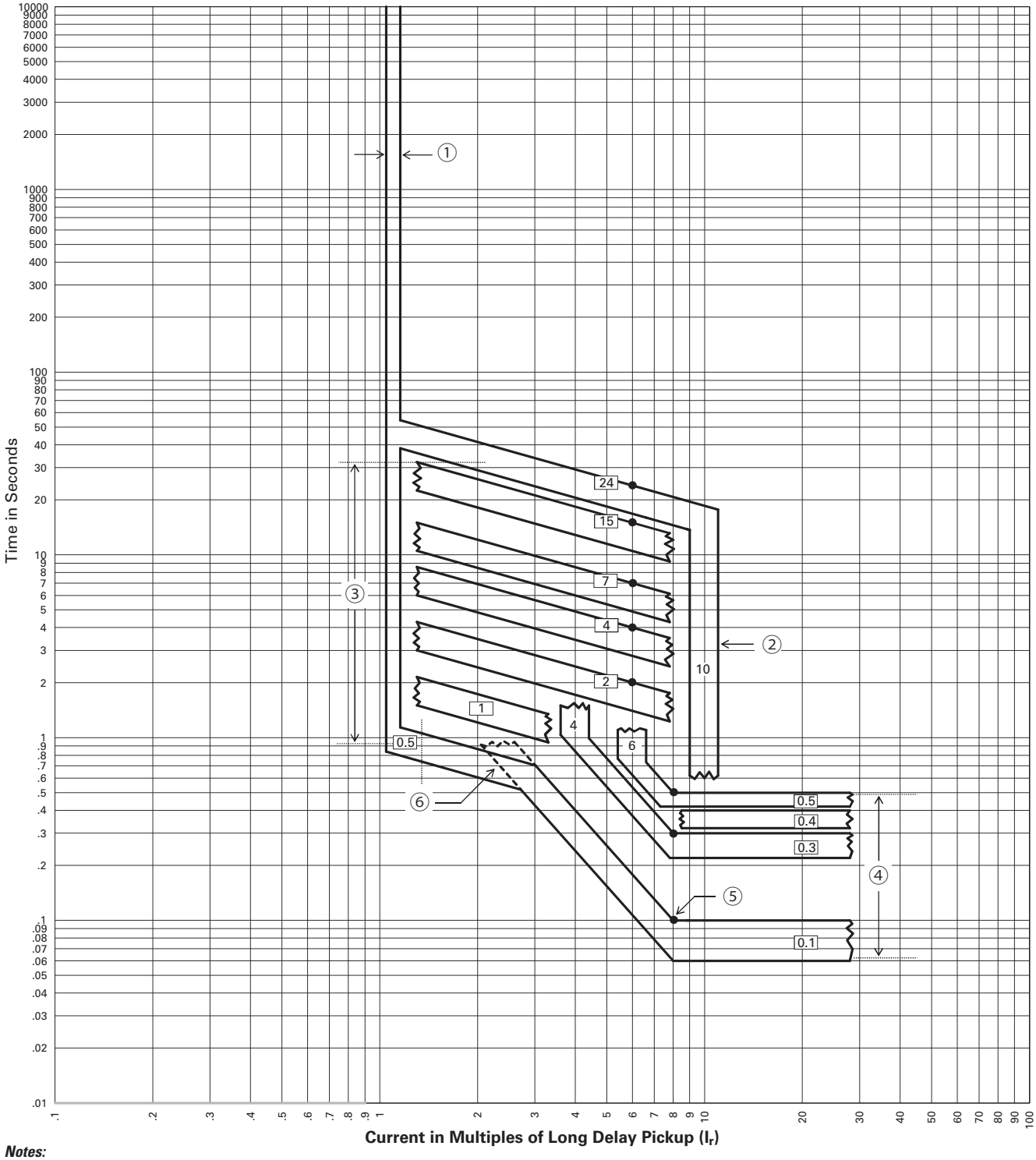
IZM97(99)...V(U)...PXR20/25 Maintenance Mode Curve
Arc-flash Reduction Maintenance Mode for IZM99 up to 4000A



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 Long Delay(L) Curves
L-Protection: $I^{0.5}t$-Characteristic curve



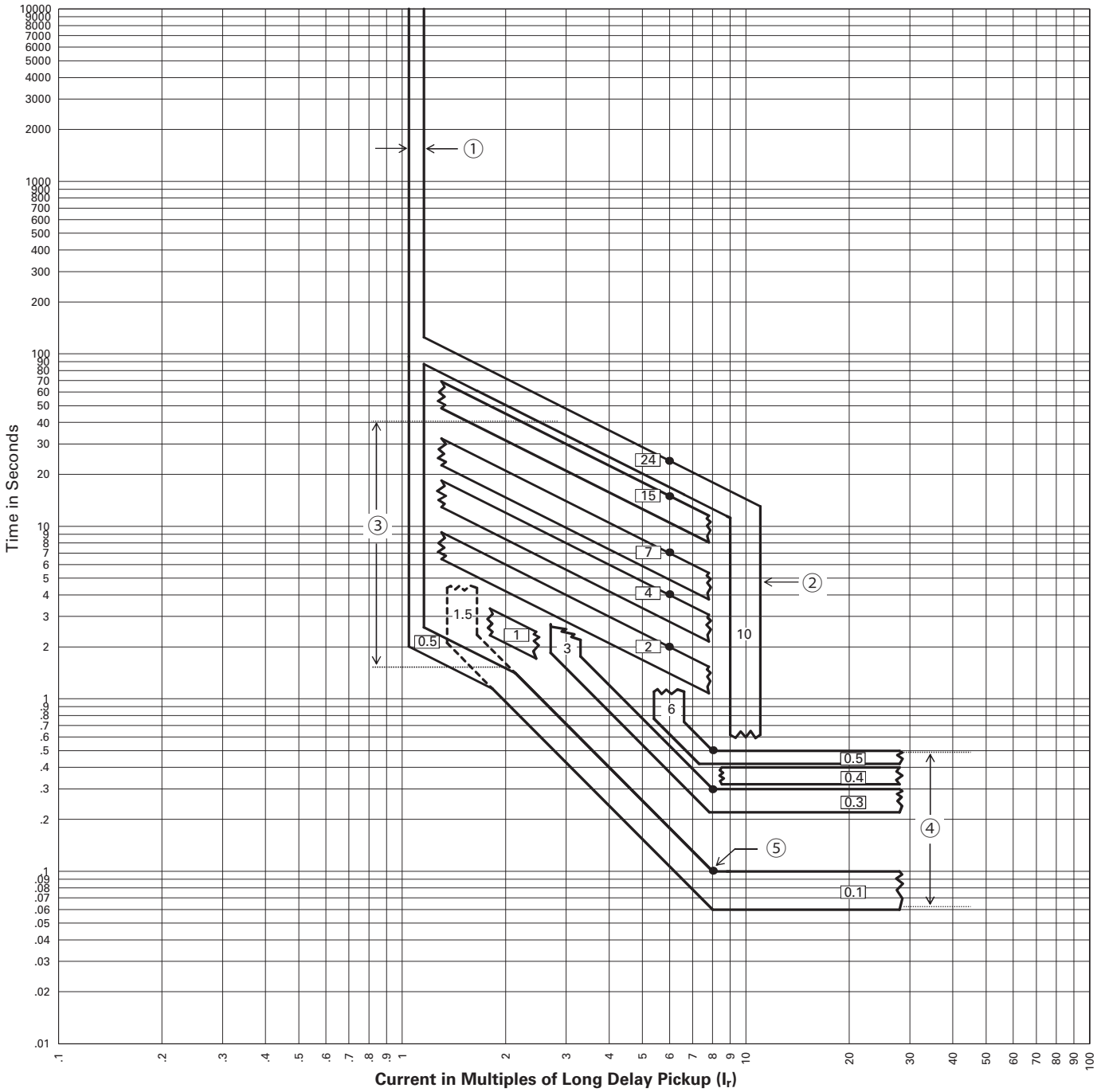
Notes:

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 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 IZM

Tripping Curves

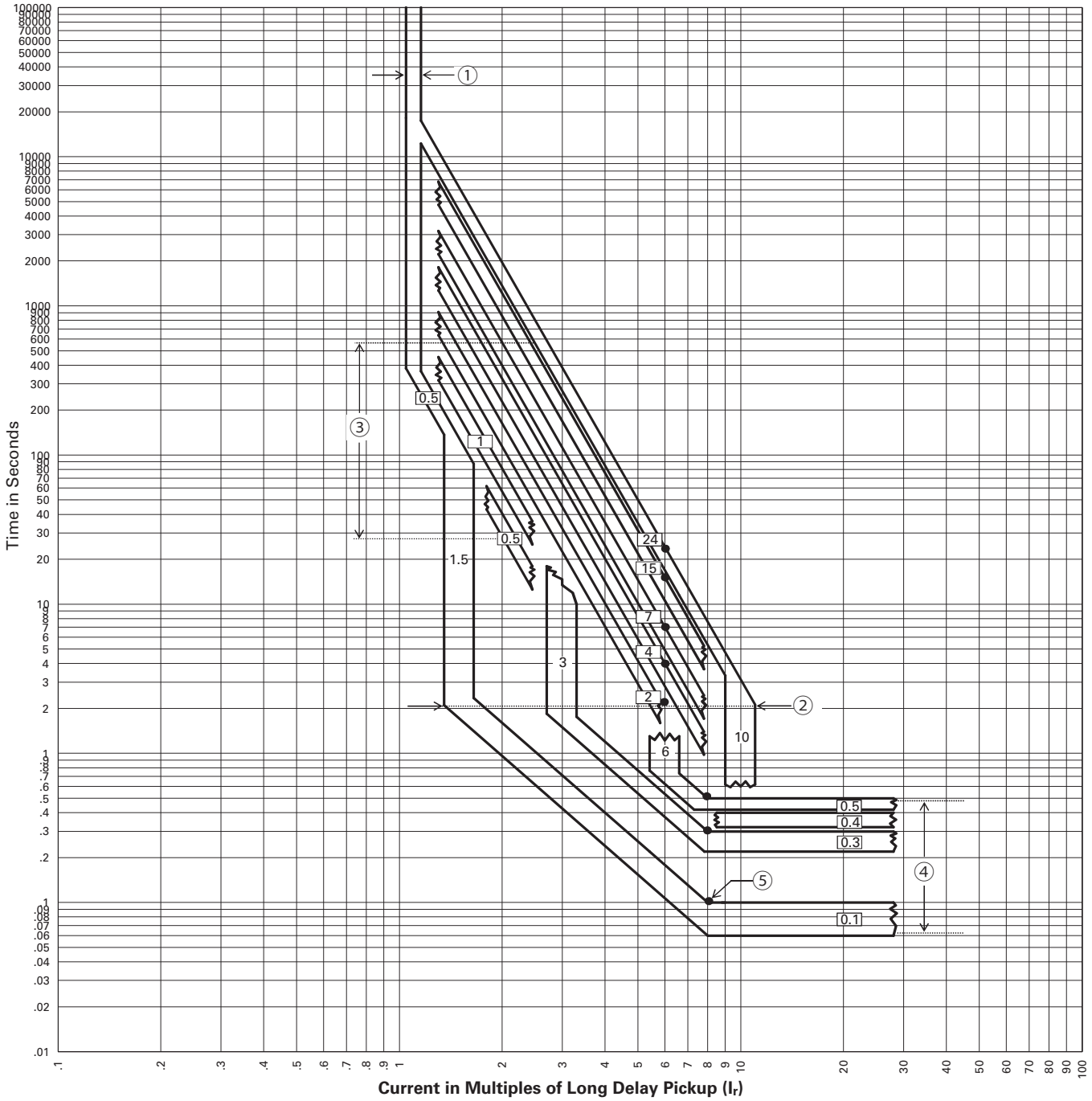
IZM97(99)...V(U)...PXR20/25 Long Delay(L) Curves
L-Protection: I²t-Characteristic curve



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 IZM97/99 circuit breakers including all frame sizes, ratings, and constructions.

IZM97(99)...V(U)...PXR20/25 Long Delay(L) Curves
L-Protection: I^4t-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 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 IZM

Temperature and Altitude Derating Factors

Temperature Derating

	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

IZM 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.

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
E01 +		OT1C	OT1B	OT2C	N1	ALMC	ALM2	G1	+ 24V	ZIN	ZCOM	CMM1	CMM3	PTVA	PTVC	MODB	MODG	2CMM	2CMM	ARCO			
E02 -	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

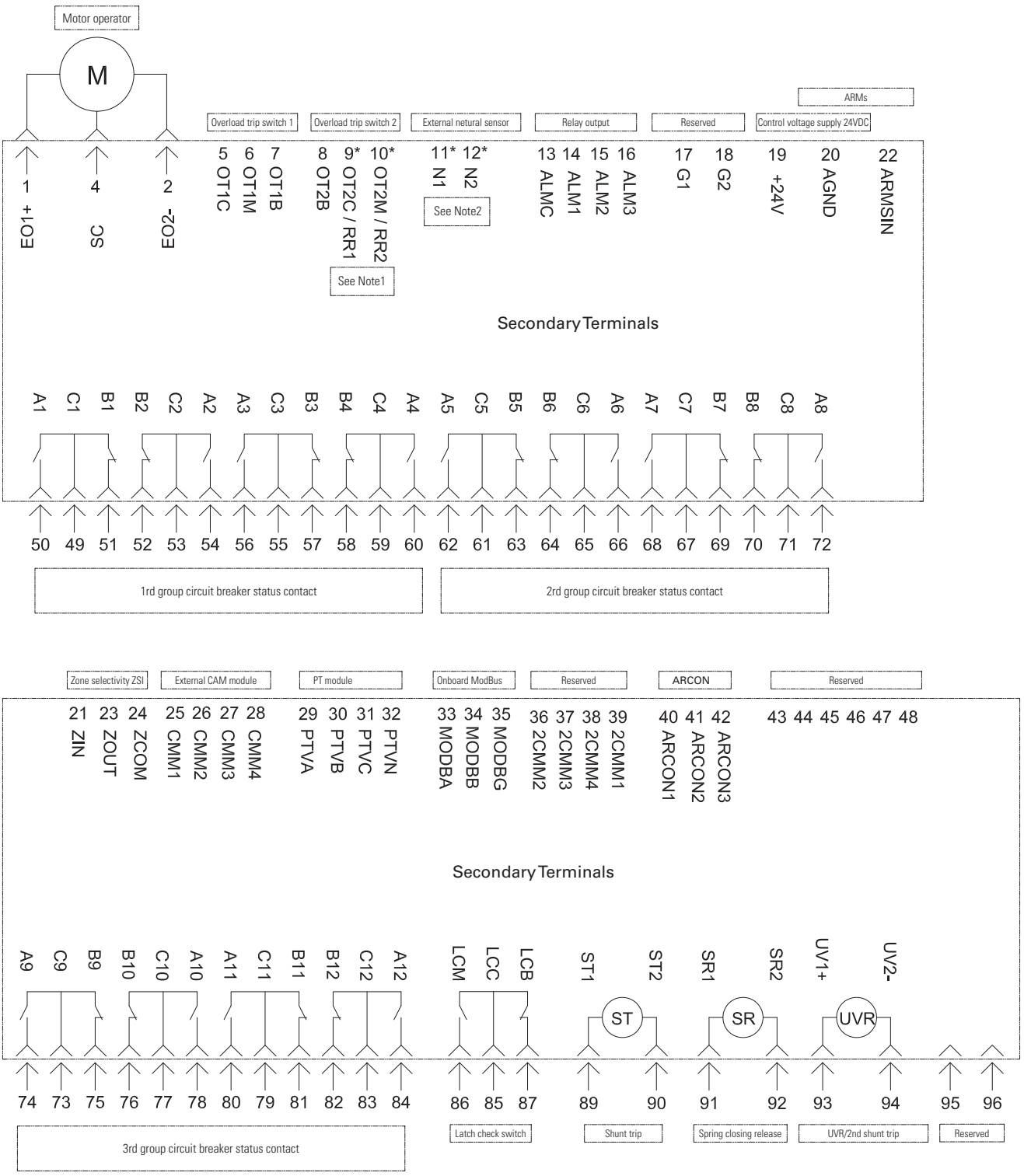
1, 2 - Motor operator
4 - Message :Spring energy store tensioned
5~7 - Overload trip switch 1 (OTS) (5-COM, 6-N.O, 7-N.C.)
8~10 - Overload trip switch 2 (OTS)/ (8-NC, 9-COM,10-NO)
11,12 - External netural sensor
13~16 - Alarm
17,18 - Reserved
19, 20 - Control voltage supply 24VDC
21, 23,24 - Zone selectivity 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-NO, 87-NC)
89, 90 - Shunt trip
91, 92- Spring closing release
93, 94 - UVR/2nd shunt trip

IZM97/99 control circuit internal wiring diagram

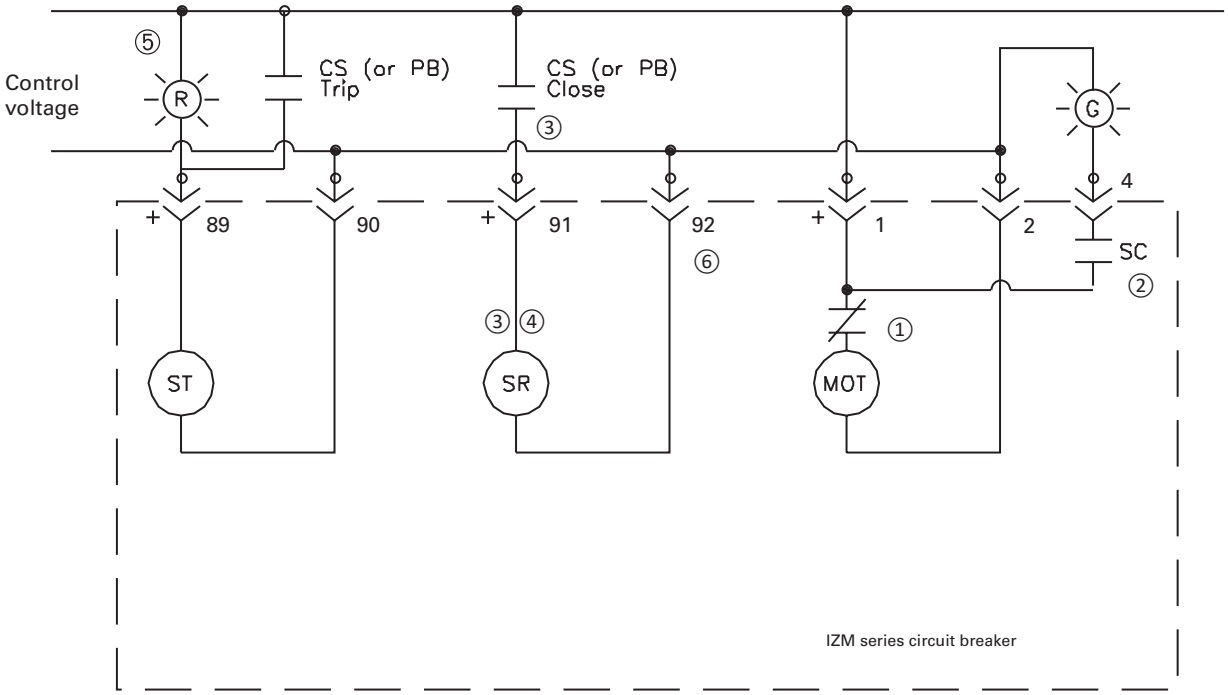
PXR20&25 wiring diagrams



Note 1:
1). Remote reset tripping indication, to be wired as shown here: 5(OT1C), 6(OT1M), 7(OT1B) + 9(RR1), 10(RR2)
2). No remote reset tripping indication, to be wired as shown here: 5(OT1C), 6(OT1M), 7(OT1B) + 8(OT2B), 9(OT2C), 10(OT2M)

Note 2:
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

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

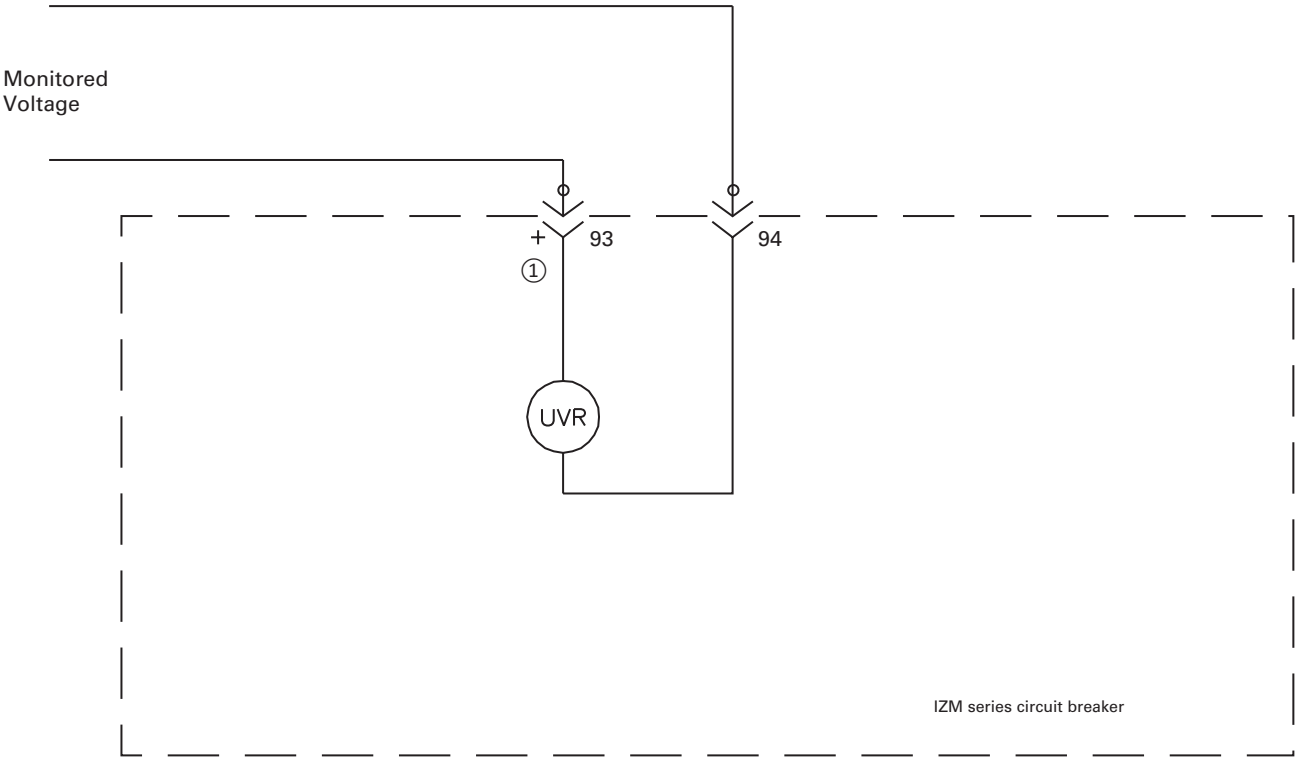
Description of Operation:

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. 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. ReferencePage 50 for internal circuit breaker wiring.

New Generation Air Circuit Breaker IZM

Circuit breaker wiring diagram

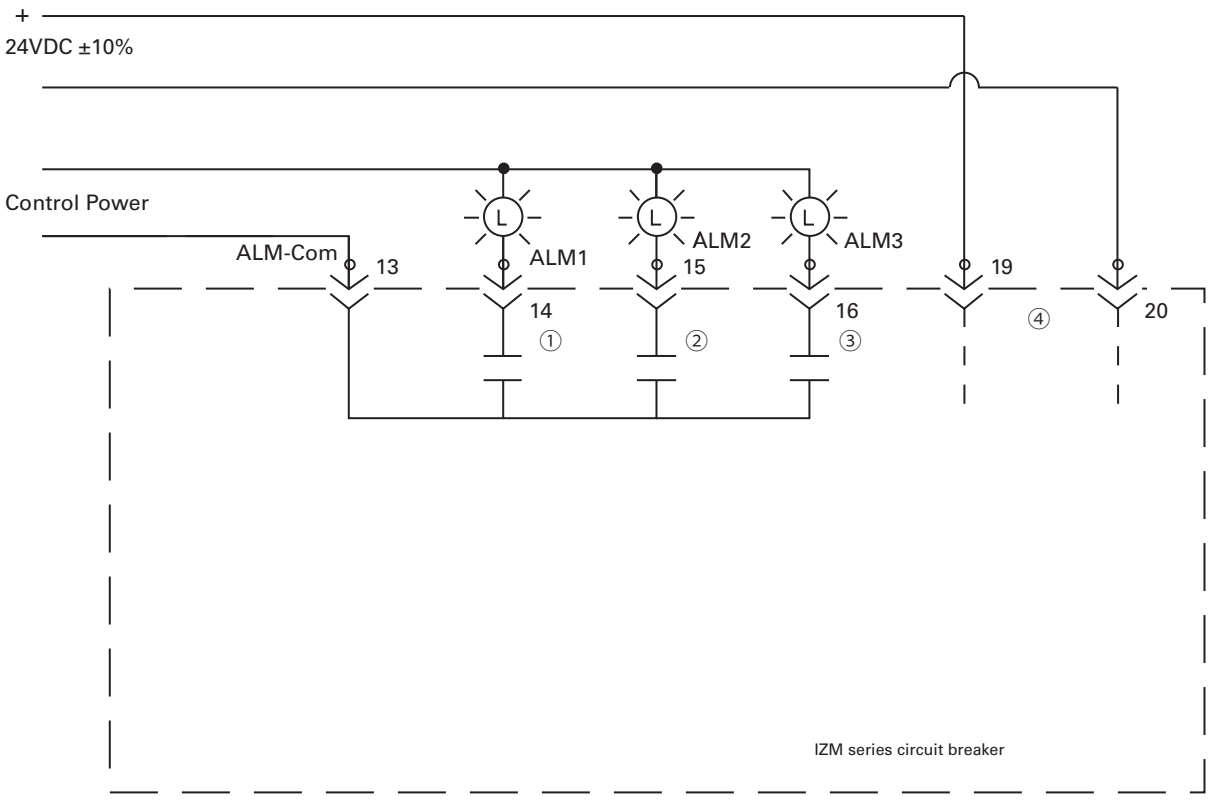
Under Voltage Release



Notes:

1. Treated as the positive voltage for DC ratings.

PXR Alarm Wiring



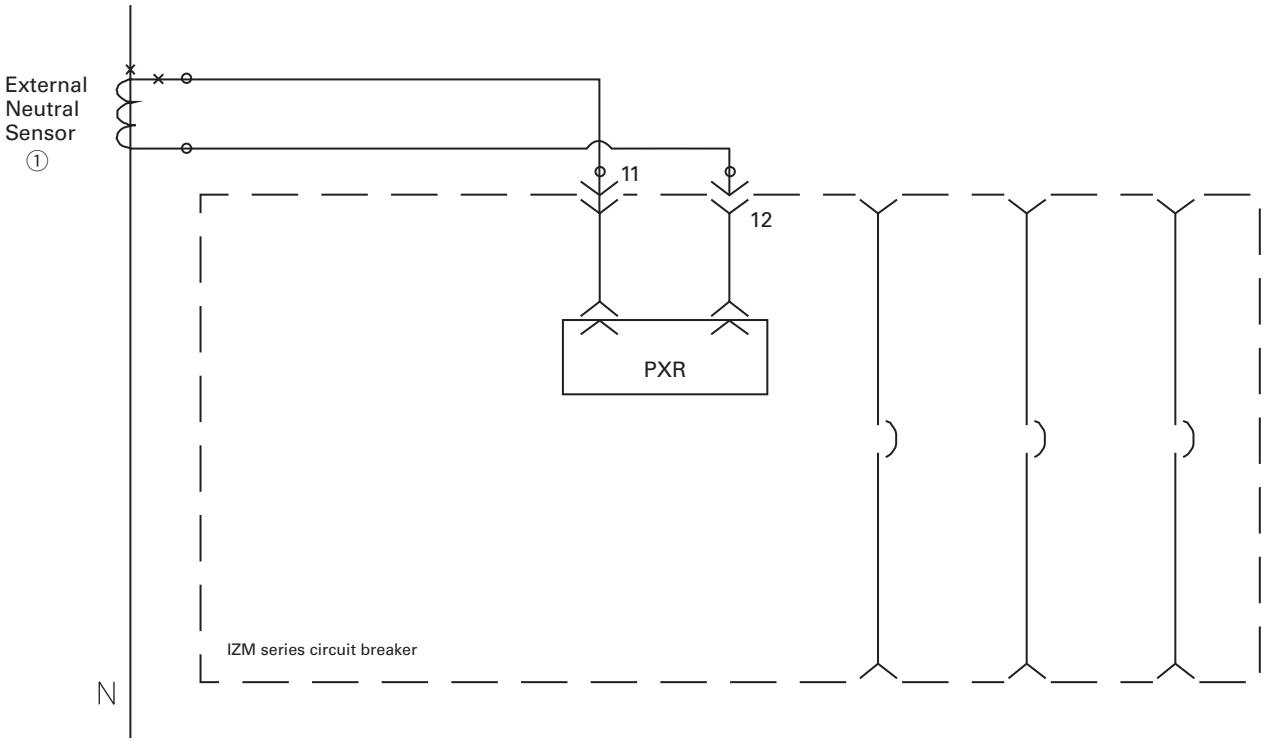
Notes:

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 + 24 V voltage dc supply.

New Generation Air Circuit Breaker IZM

Circuit breaker wiring diagram

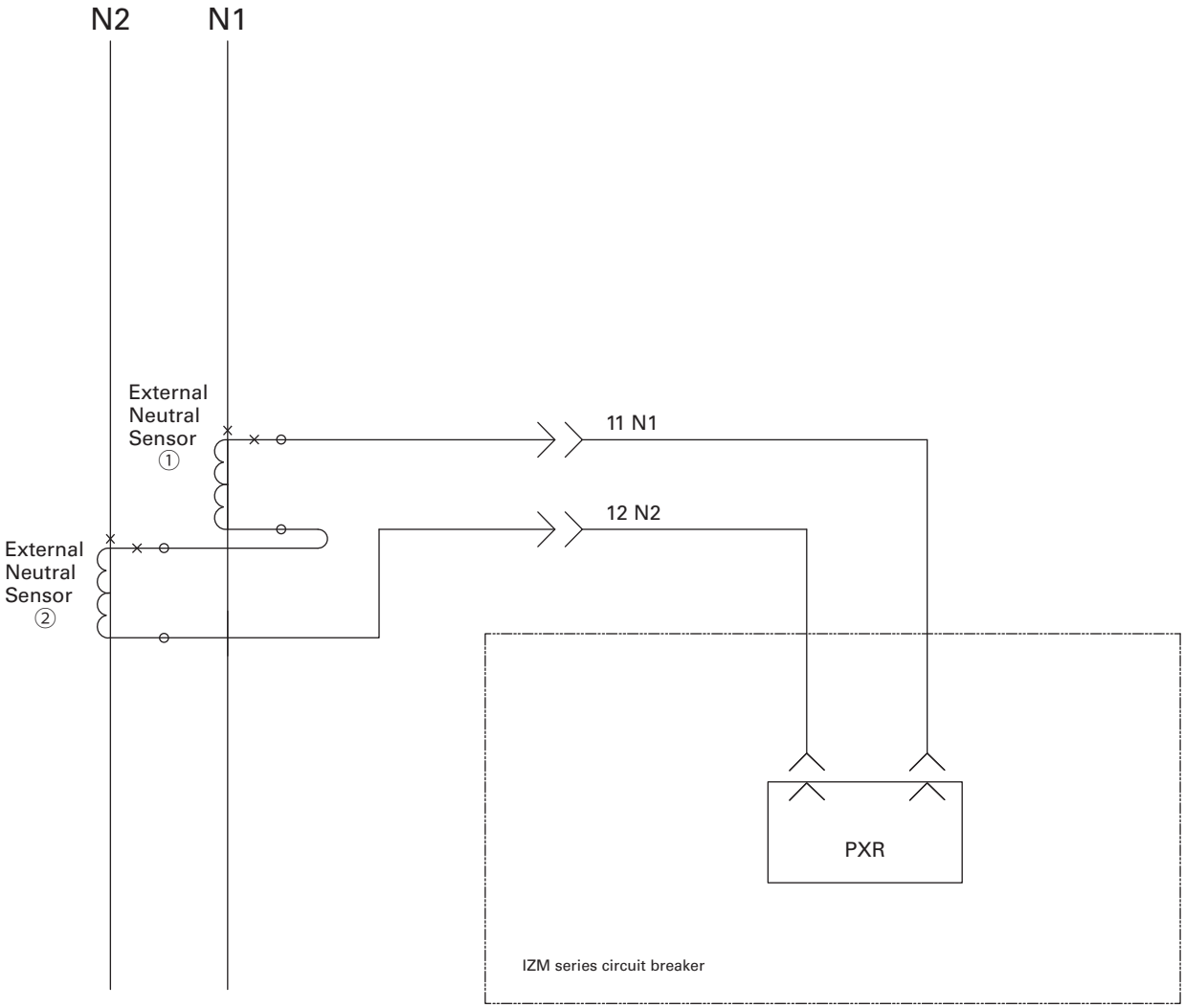
Ground Fault Residual, 3 pole, 4 pole (IZM97 800-4000A)



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.

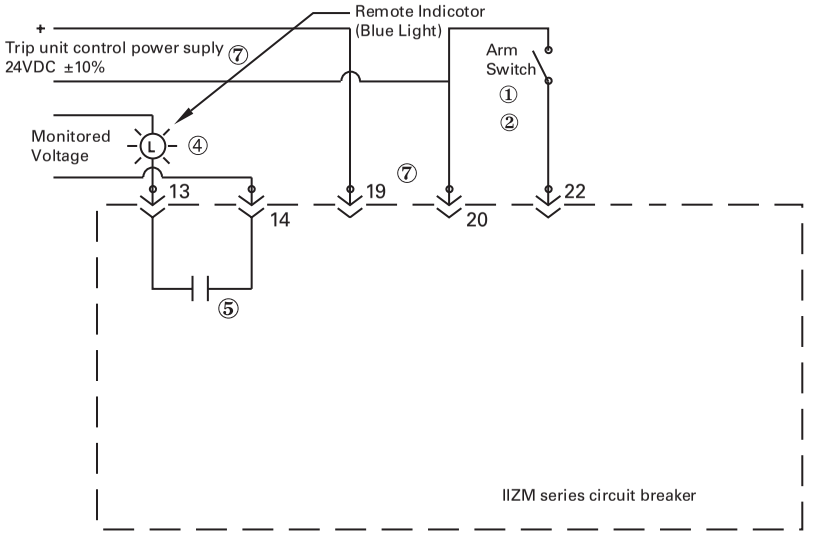
Ground Fault Residual, 3 pole, 4 pole (IZM99 4000-6300A)



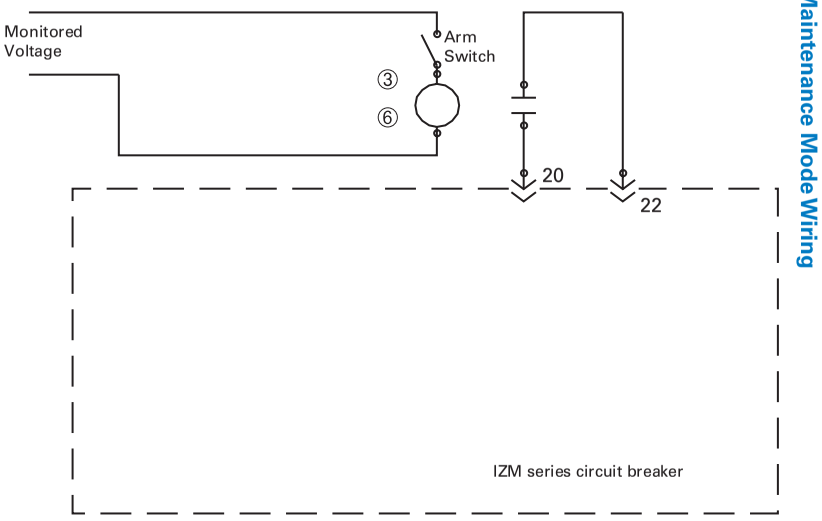
Notes1, 2:

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

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



Maintenance Mode Wiring

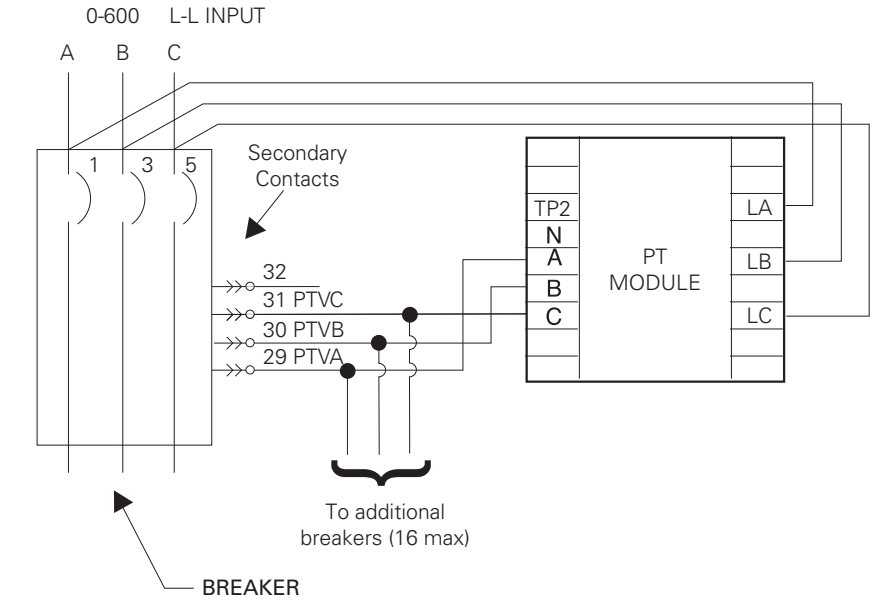


Alternate Customer Wiring (partial)

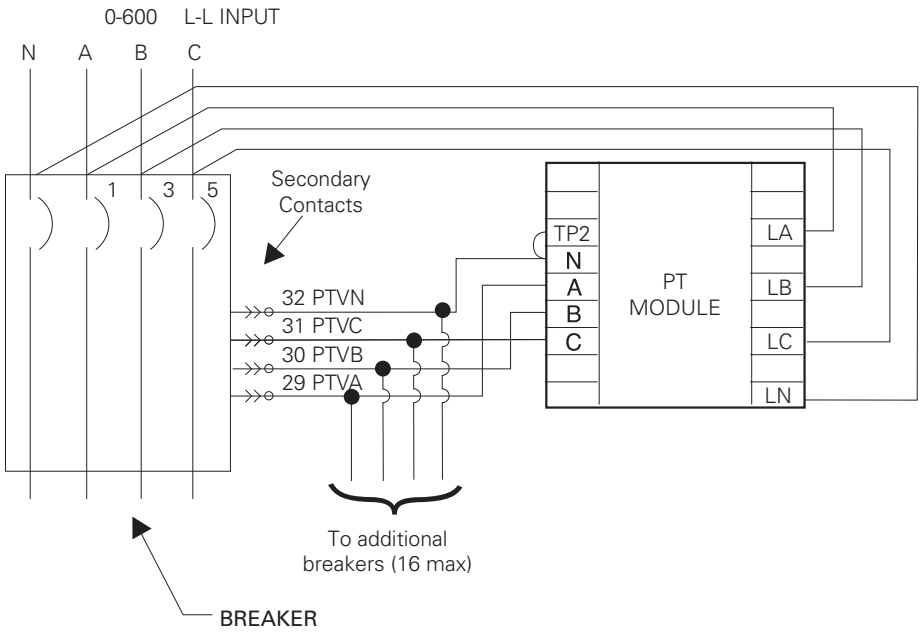
Notes:

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.

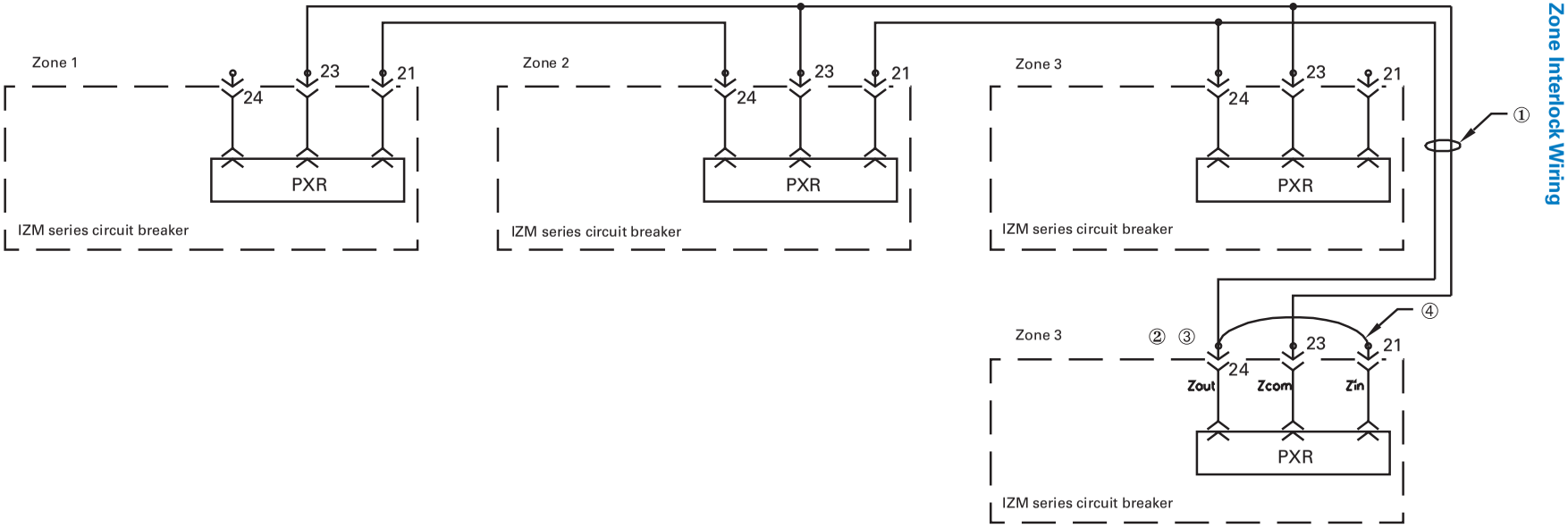
External PT Module for PXR25 U type trip unit



IZM circuit breaker - 3 pole - 3 wire



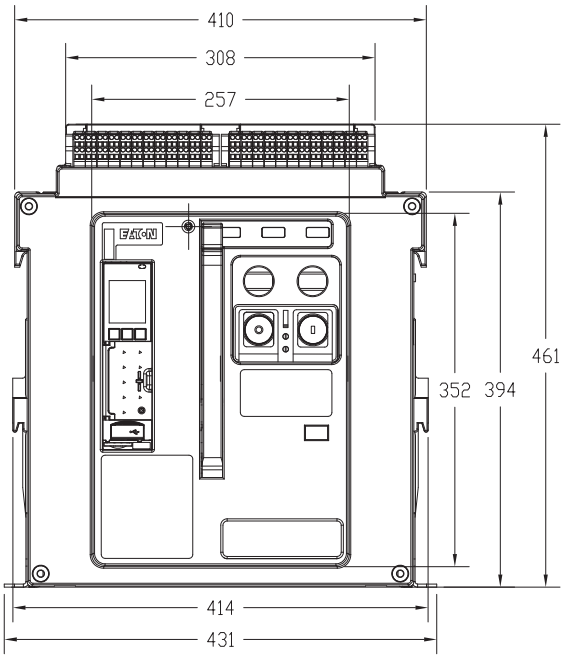
IZM circuit breaker - 3 pole or 4 pole - 4 wire



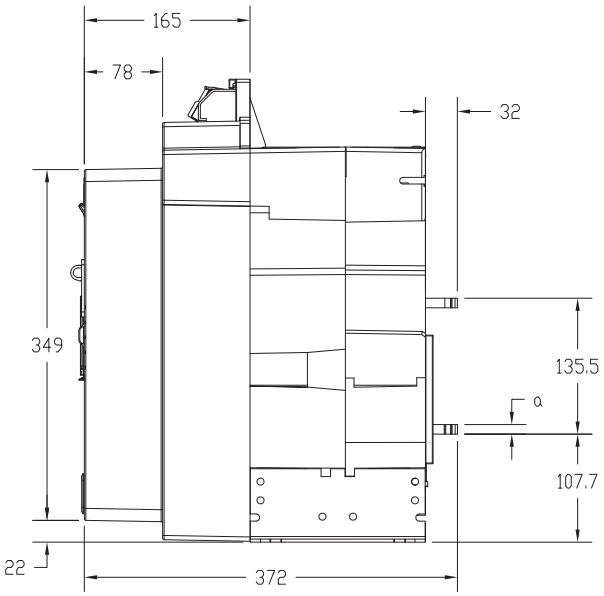
Notes:

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.

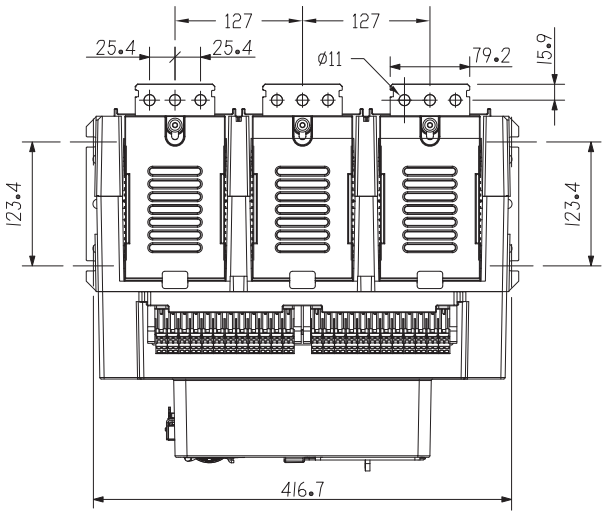
IZM97 Fixed Type Dimensions and Horizontal Board Dimensions (3P, 800~3200A)



Front view



Right view



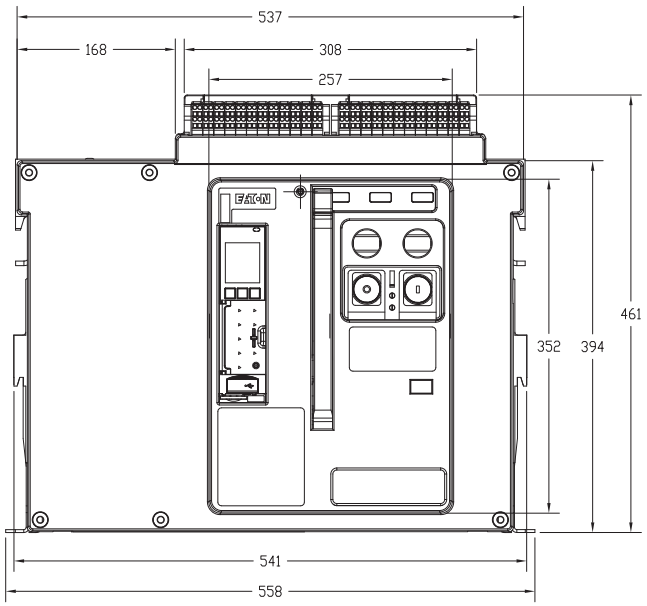
Top view

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

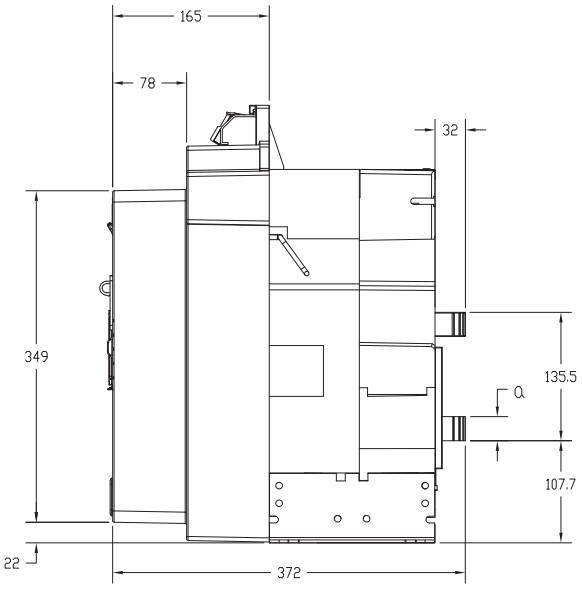
New Generation Air Circuit Breaker IZM

Basic Device Dimensions

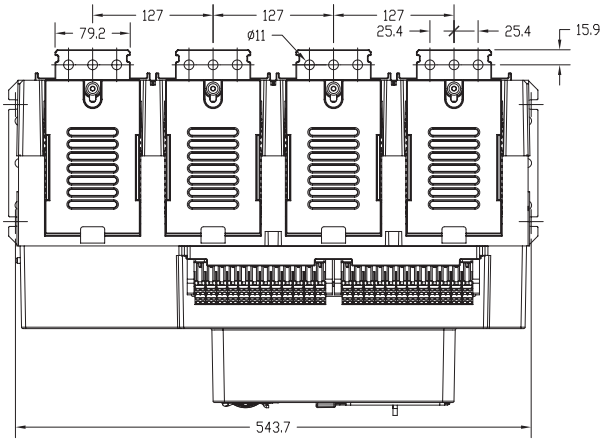
IZM97 Fixed Type Dimensions and Horizontal Board Dimensions (4P, 800~3200A)



Front view



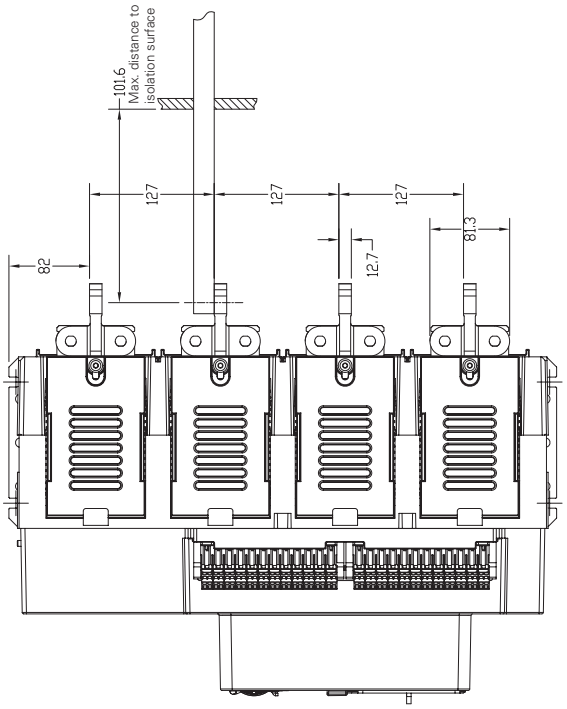
Right view

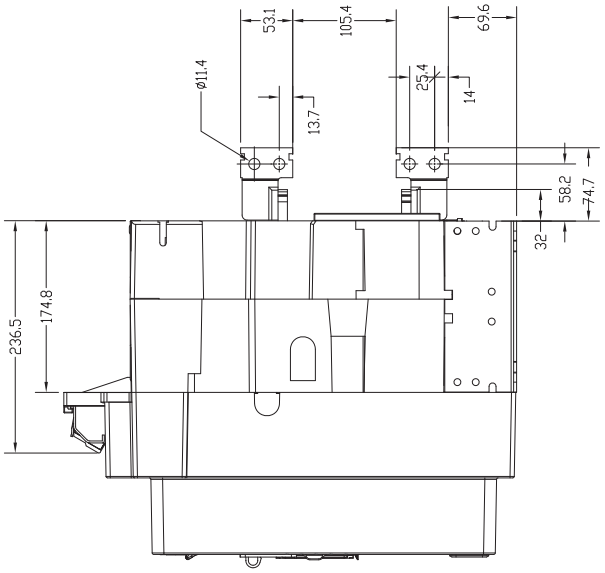


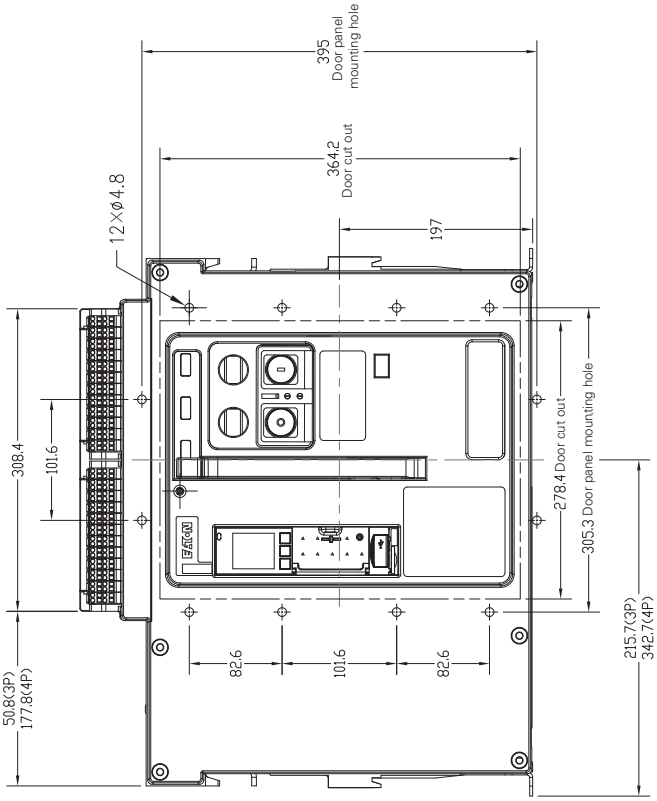
Top view

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

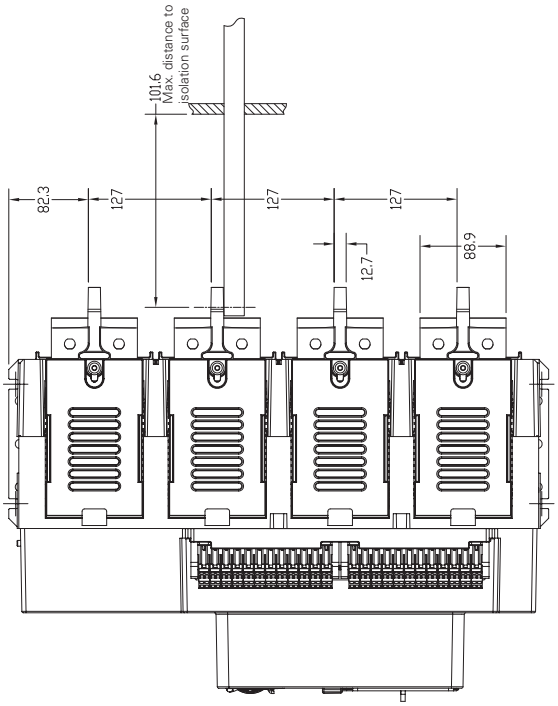
IZM97 Fixed Type Panel Cutout and External Vertical Board Dimensions (3P and 4P, 800~1600A)

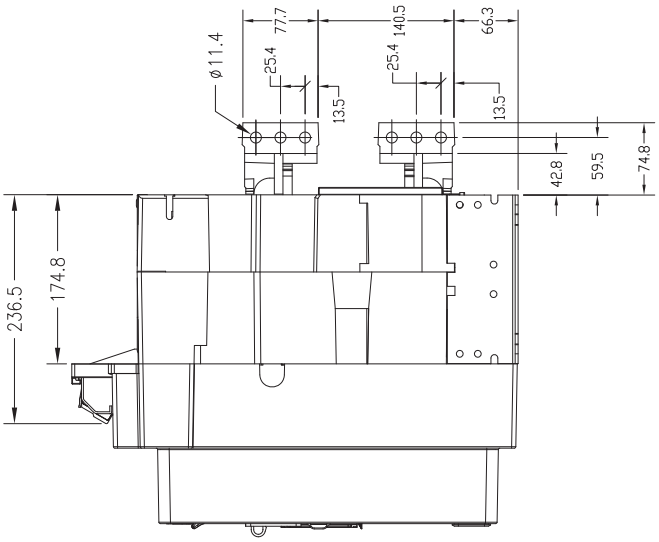


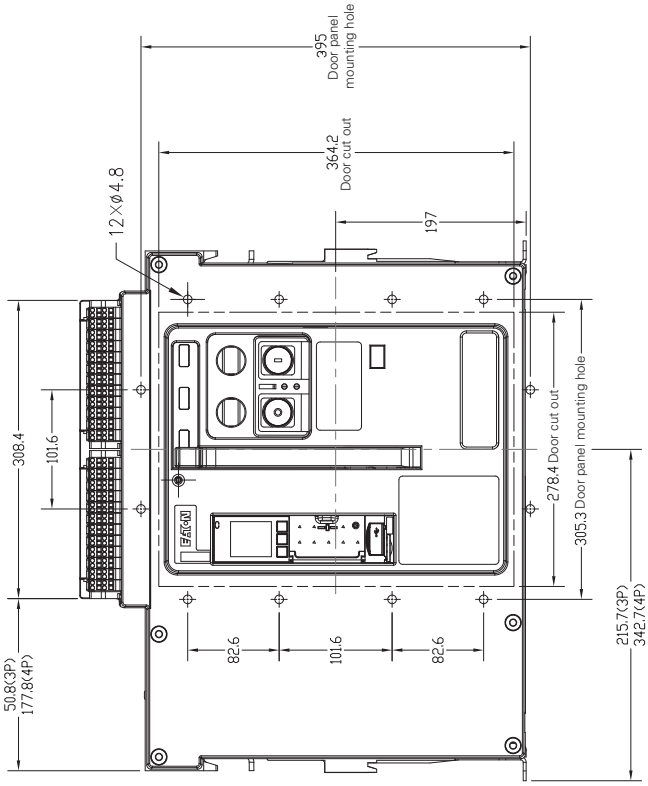




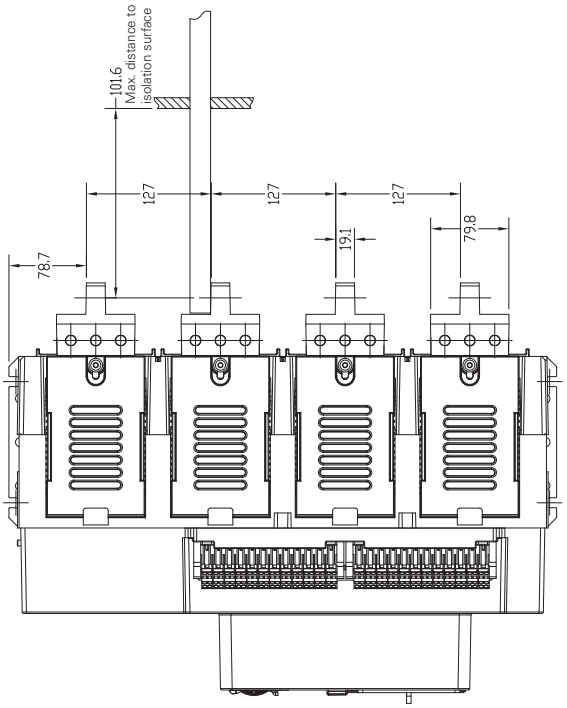
IZM97 Fixed Type External Vertical Board Dimensions (3P and 4P, 2000A)

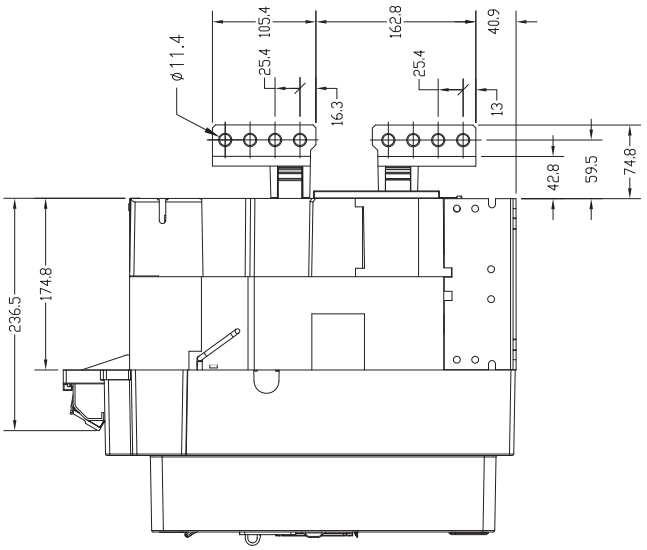


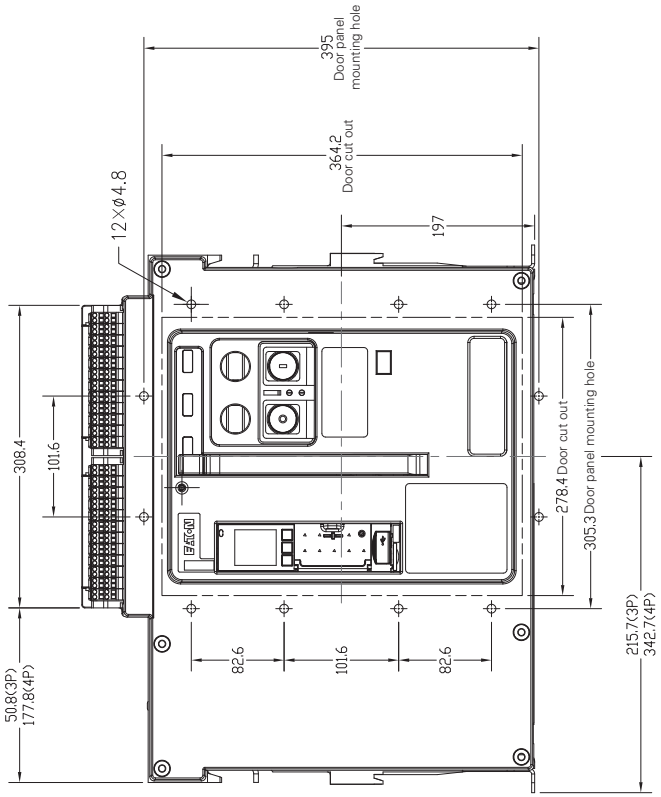




IZM97 Fixed Type External Vertical Board Dimensions (3P and 4P, 2500~3200A)



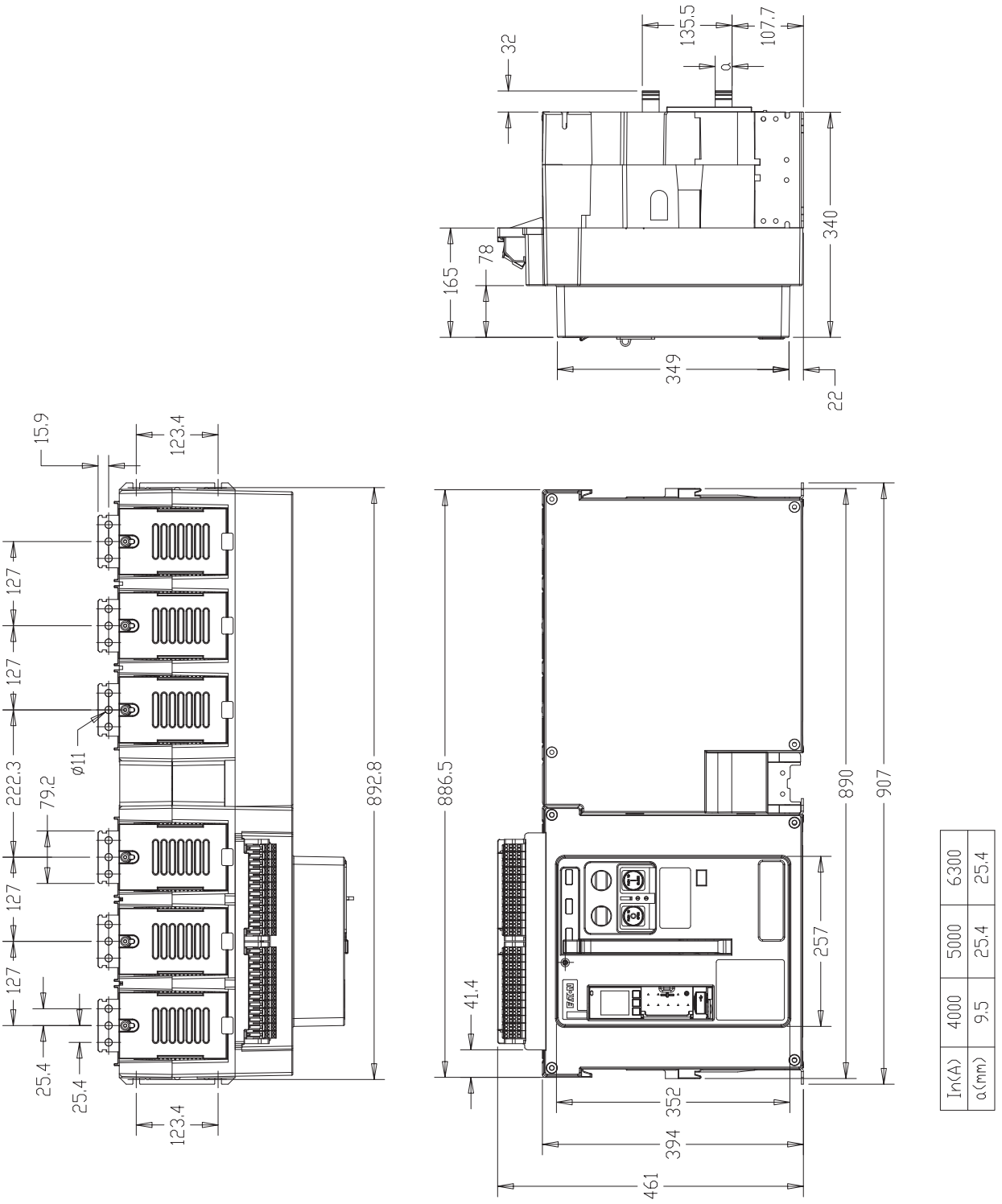




New Generation Air Circuit Breaker IZM

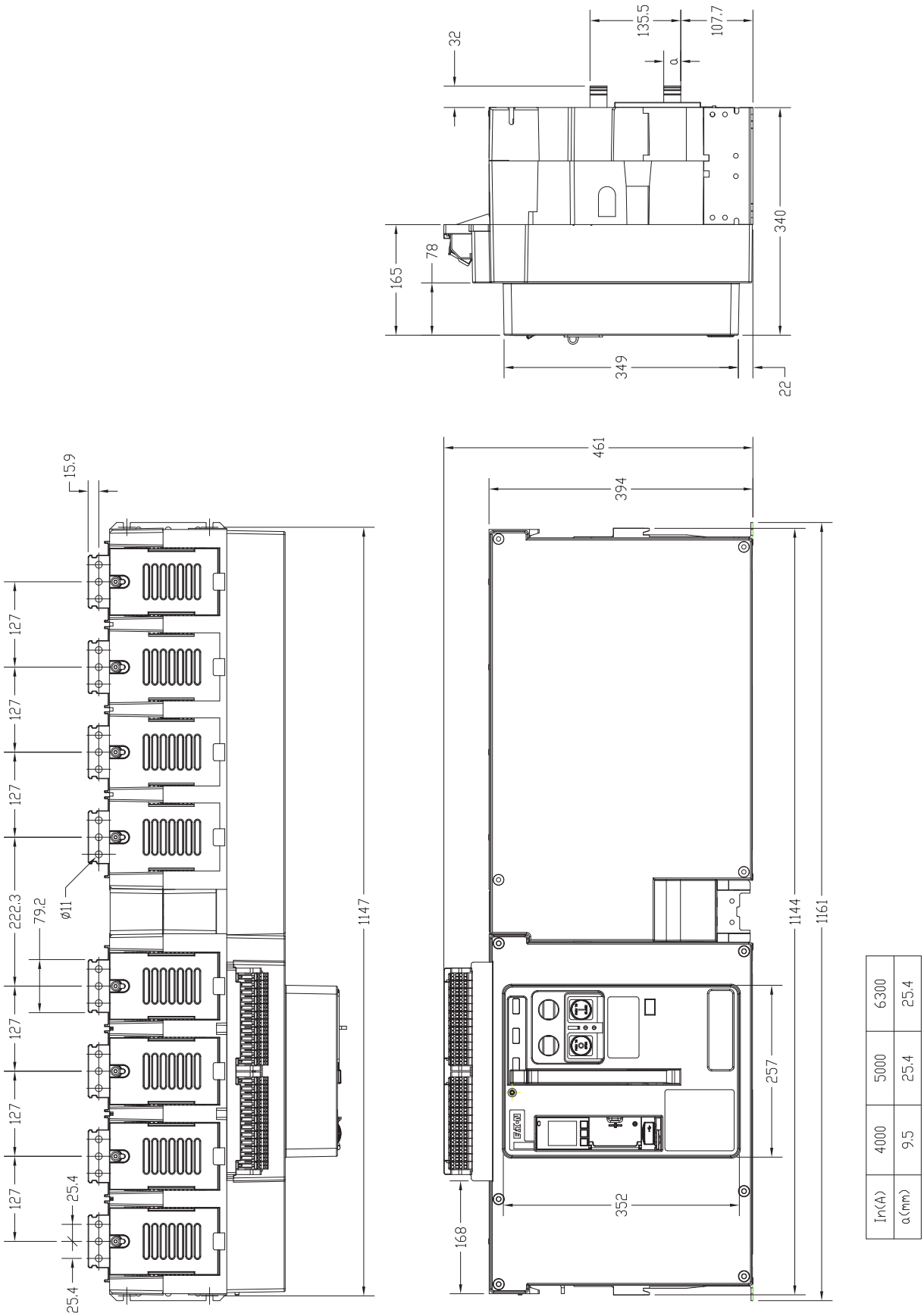
Basic Device Dimensions

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



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

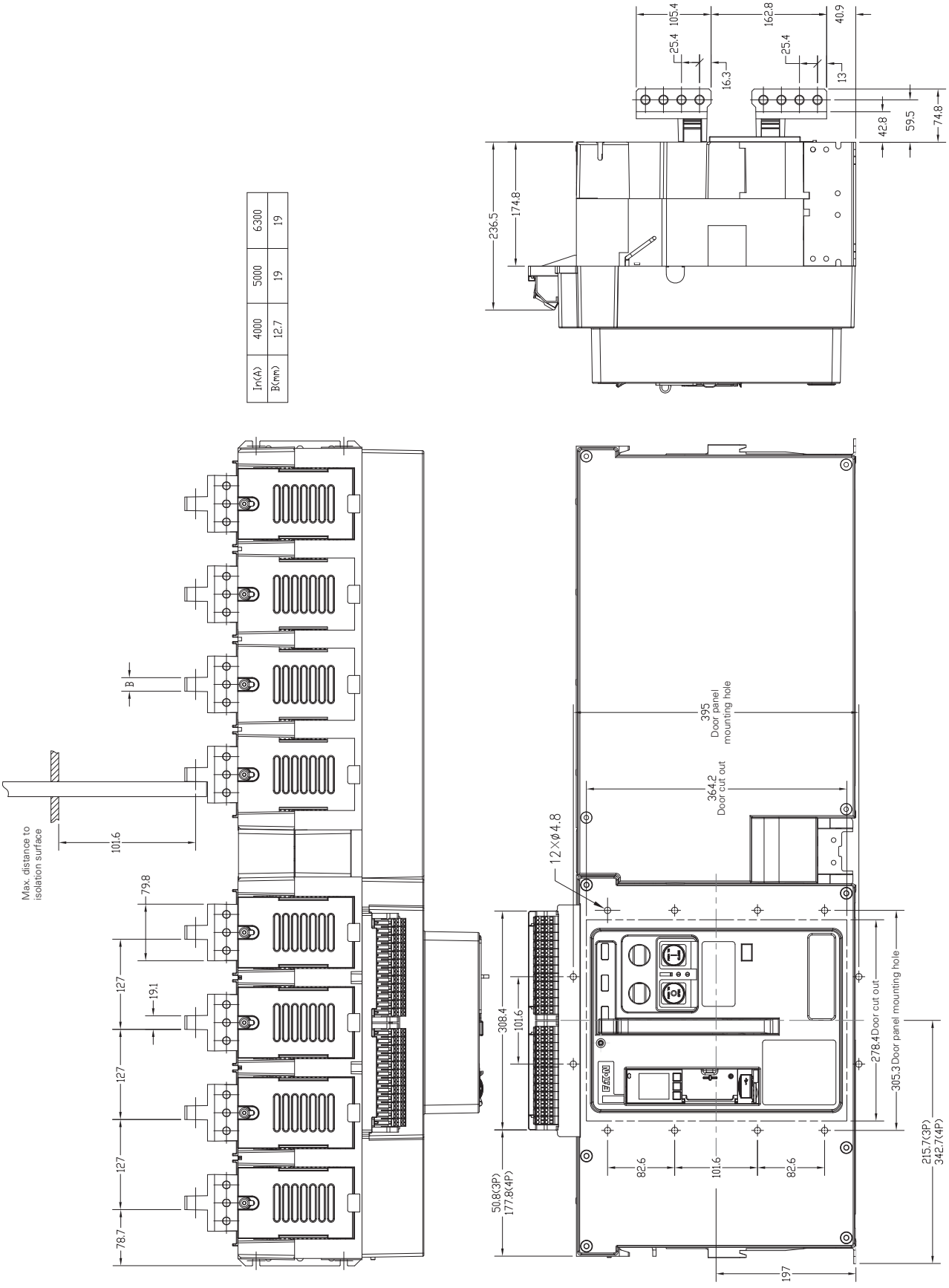
IZM99 Fixed Type Dimensions and Horizontal Board Dimensions (4P, 4000~6300A)



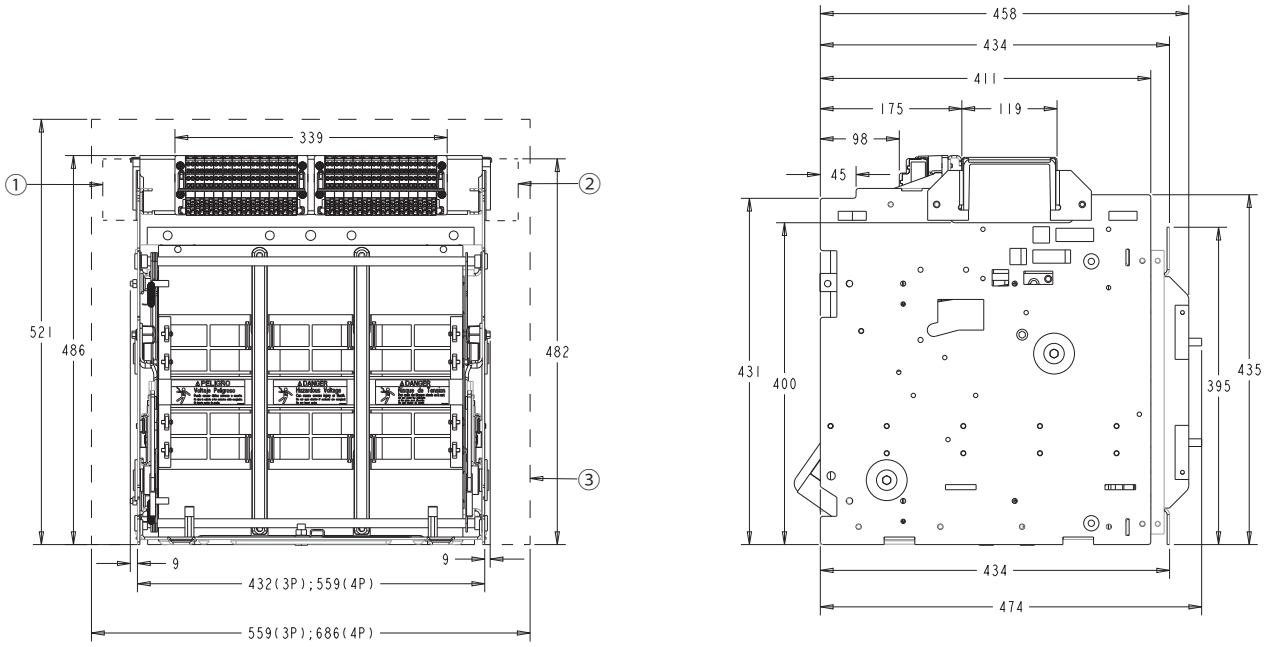
In(A)	4000	5000	6300
a(mm)	9.5	25.4	25.4

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

In(A)	4000	5000	6300
B(mm)	12.7	19	19

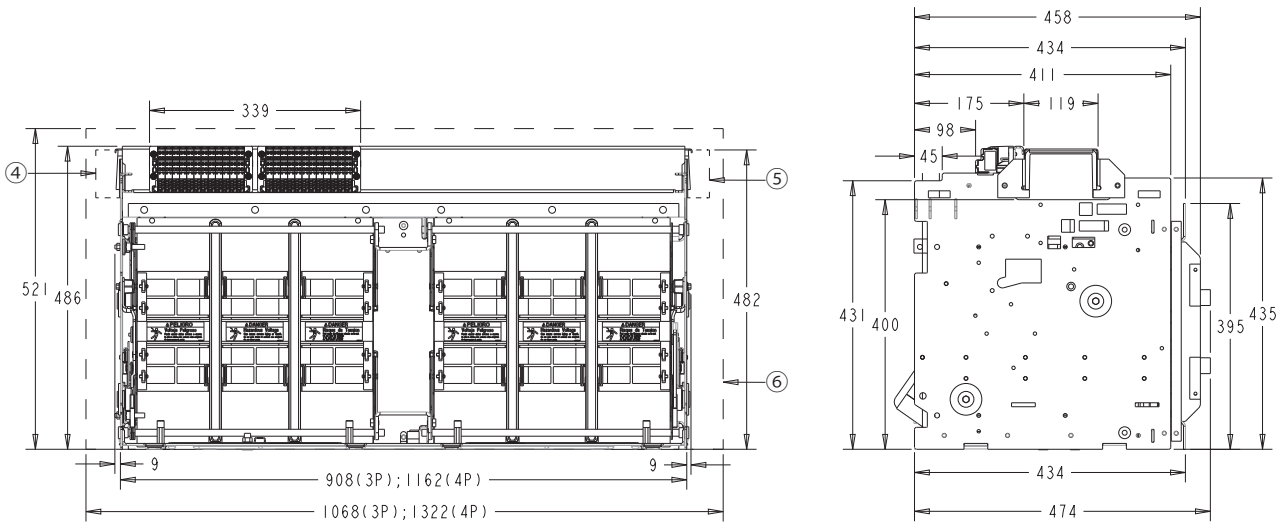


IZM97 Withdrawable Type Dimensions (3P and 4P, 800~3200A)



Notes: ①② Drawer switch position ③ Recommended minimum mounting space

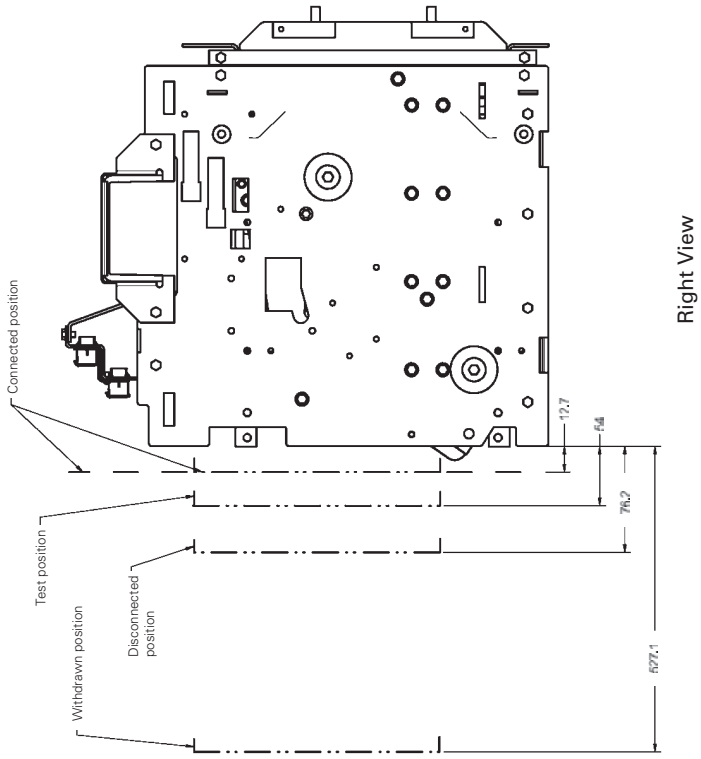
IZM99 Withdrawable Type Dimensions (3P and 4P,4000~6300A)



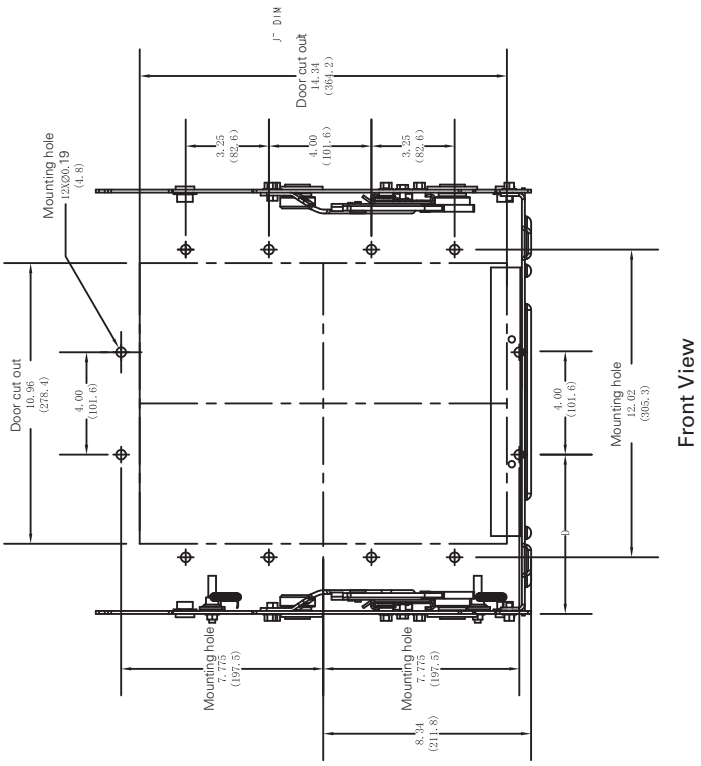
Notes: ④⑤ Drawer switch position ⑥ Recommended minimum mounting space

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

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



Right View



Front View

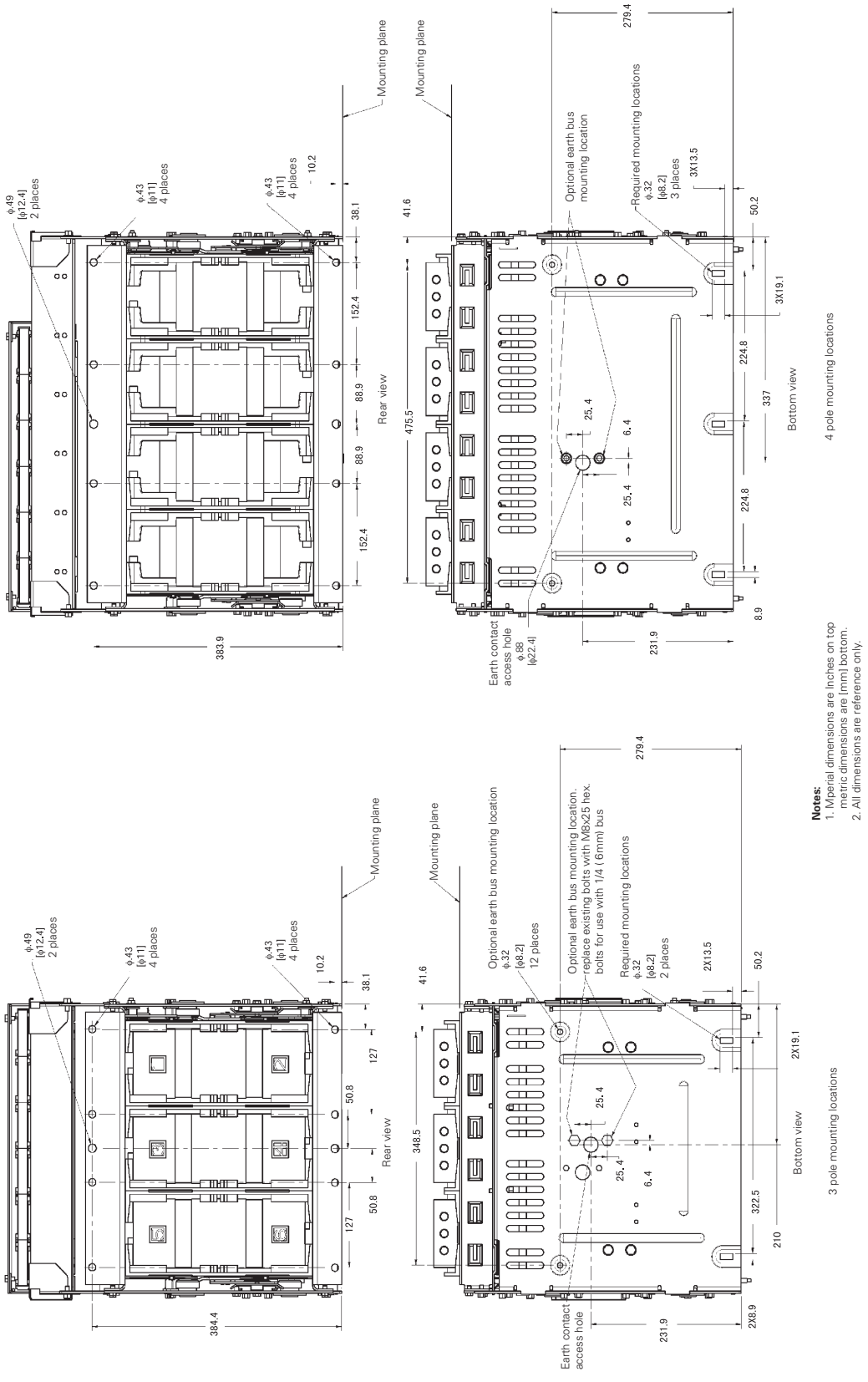
Panel cutout size and circuit breaker position

Note:

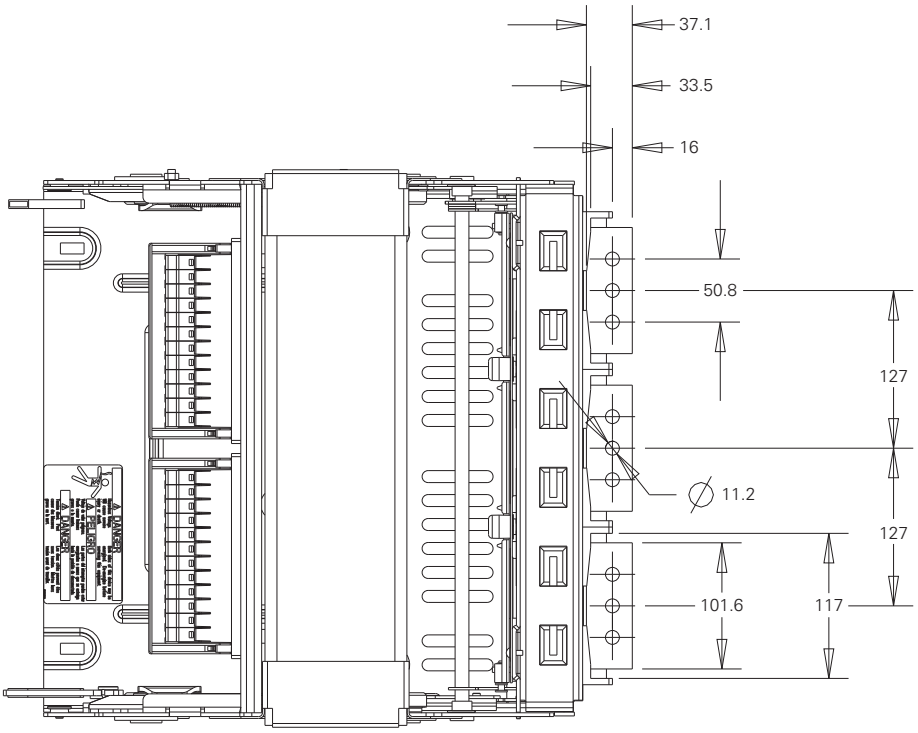
1. Mperial dimensions are Inches on top metric dimensions are [mm] bottom.
2. All dimensions are reference only
3. Tolerance range is shown as follow:

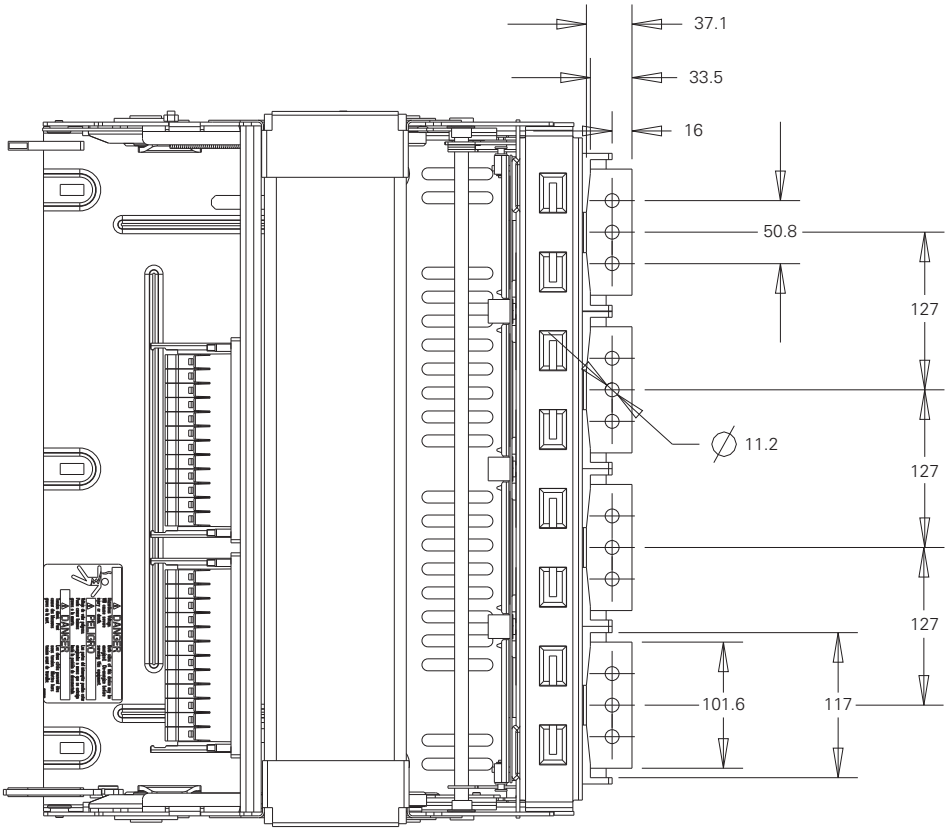
0~5mm	±0.1mm
5~10mm	±0.2mm
10~50mm	±0.5mm
50~200mm	±3.0mm

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

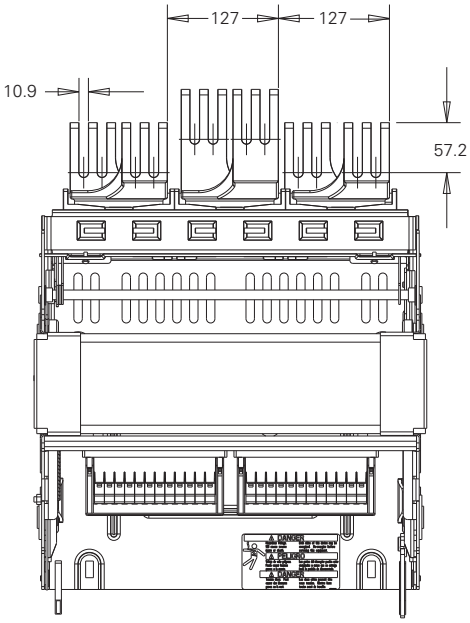


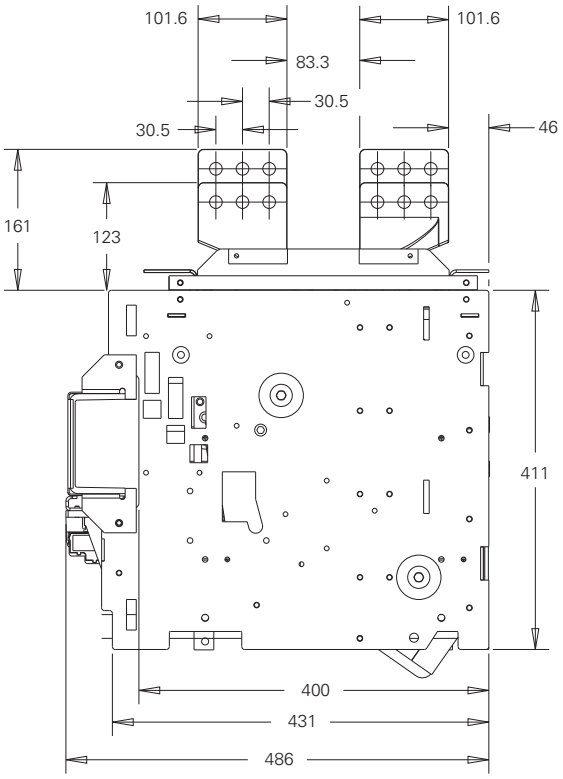
IZM97 Withdrawable Type Cassette Horizontal Board Wiring Dimensions (3P and 4P, 800~3200A)

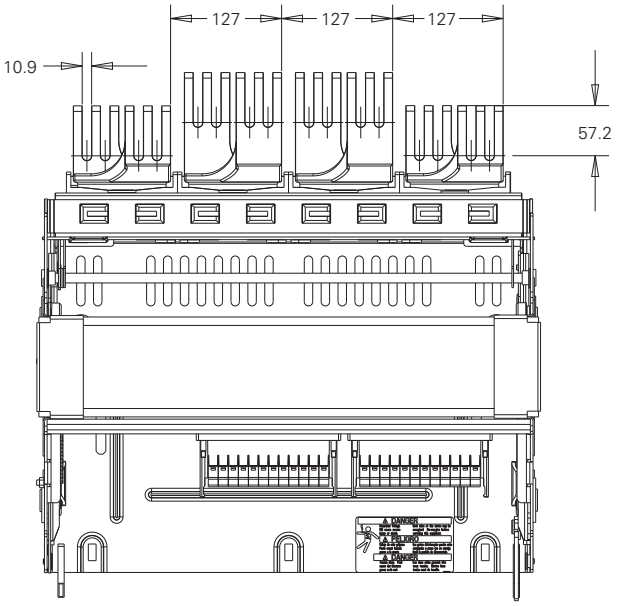


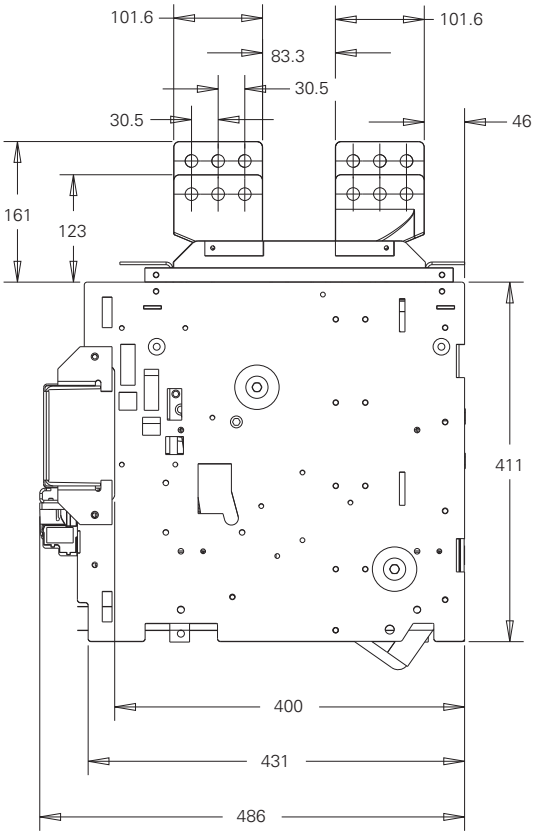


IZM97 Withdrawable Type Cassette Vertical Board Wiring Dimensions (3P and 4P, 4000A)







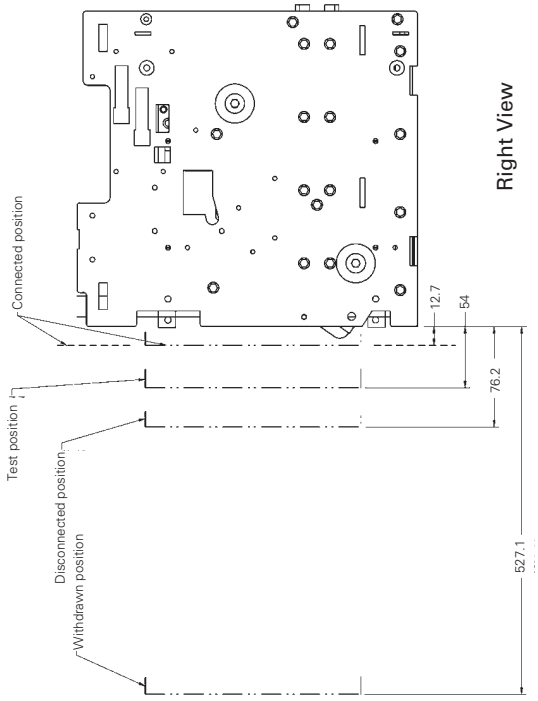


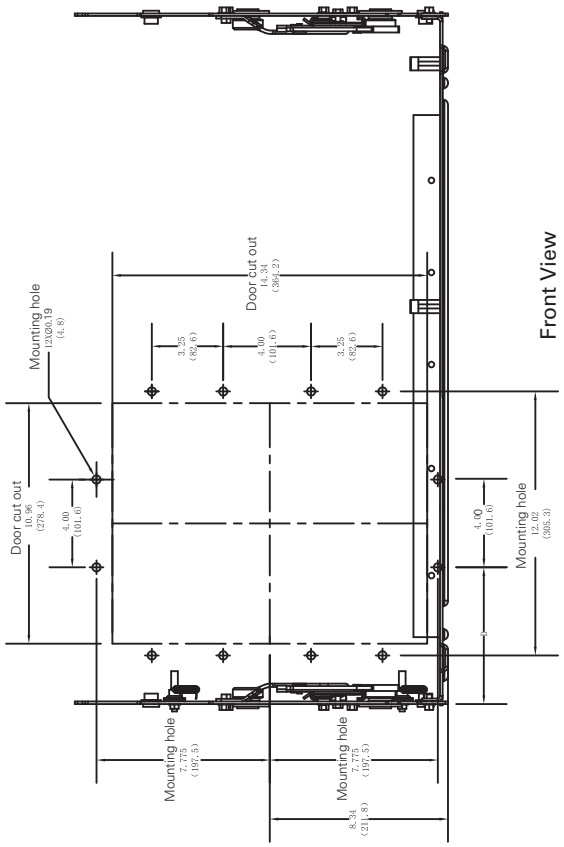
New Generation Air Circuit Breaker IZM

Basic Device Dimensions

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]





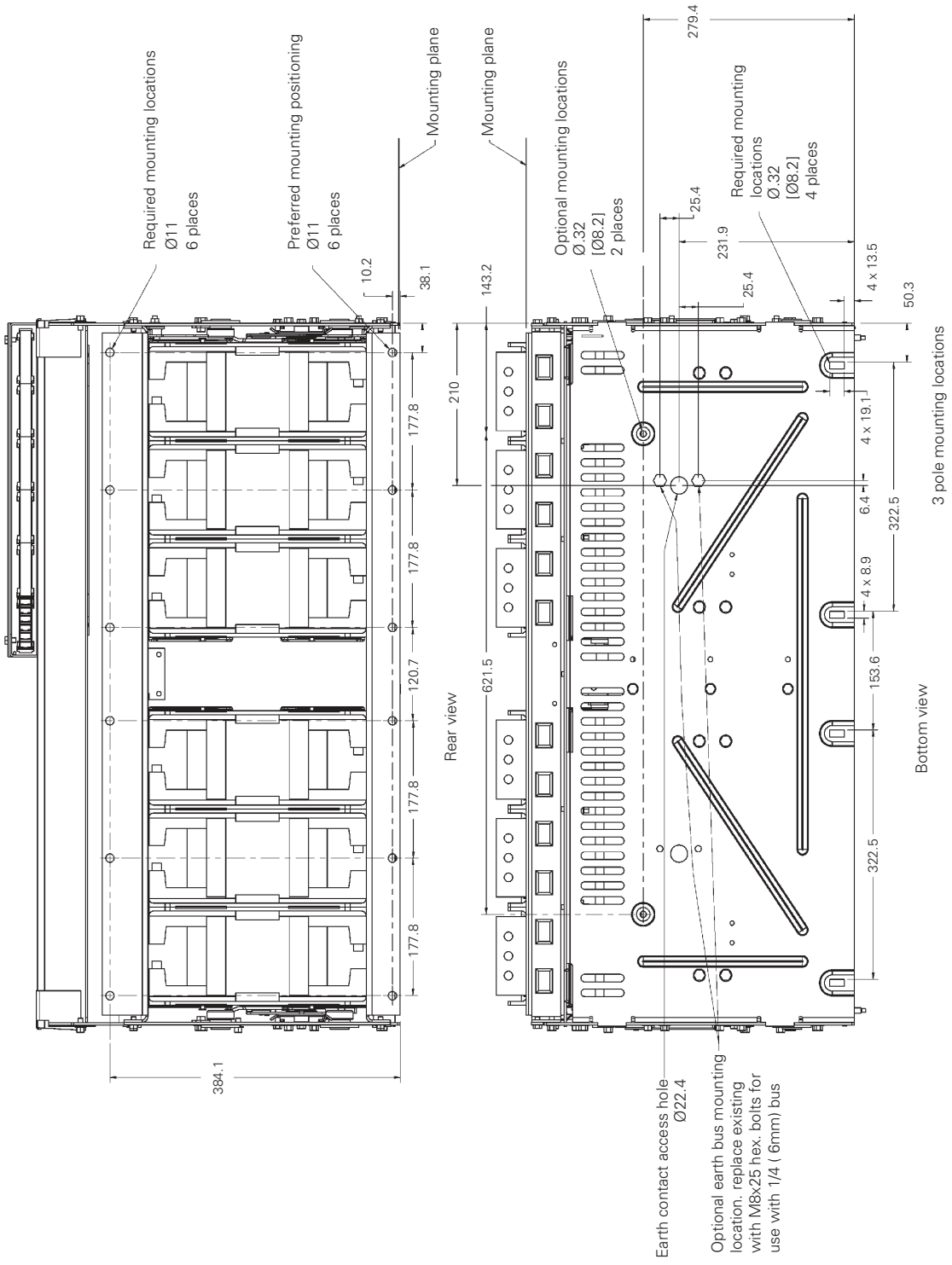
Panel cutout size and circuit breaker position

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

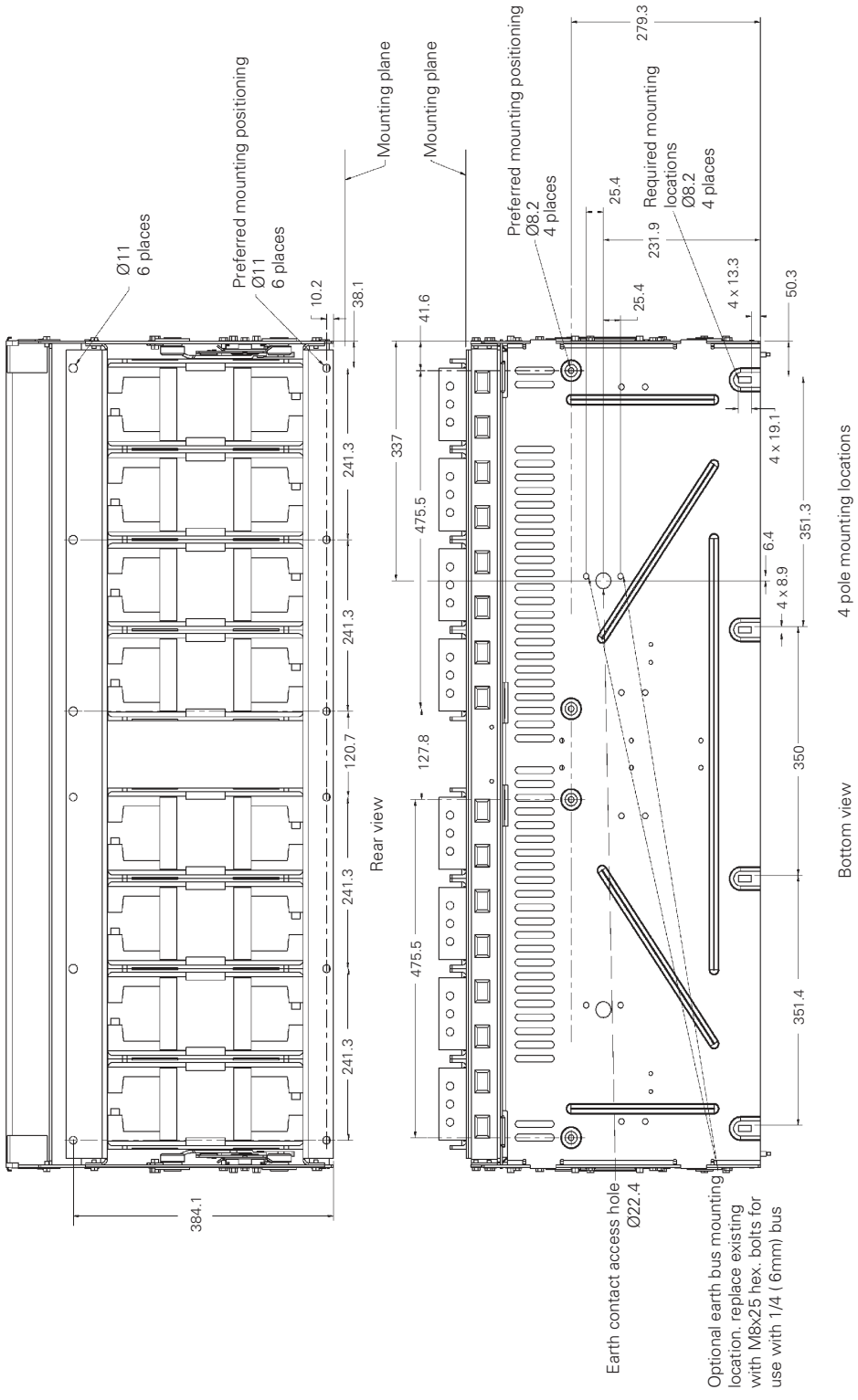
IZM99 Withdrawable Type Cassette Dimensions and Mounting Dimensions (3P, 4000~6300A)



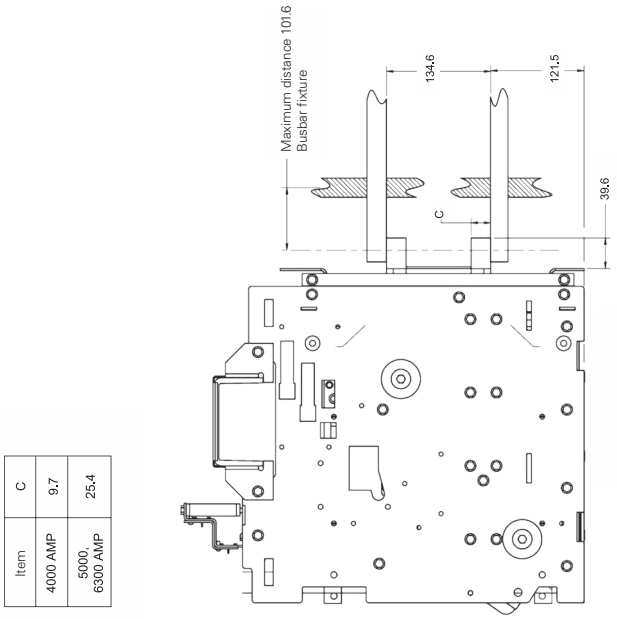
New Generation Air Circuit Breaker IZM

Basic Device Dimensions

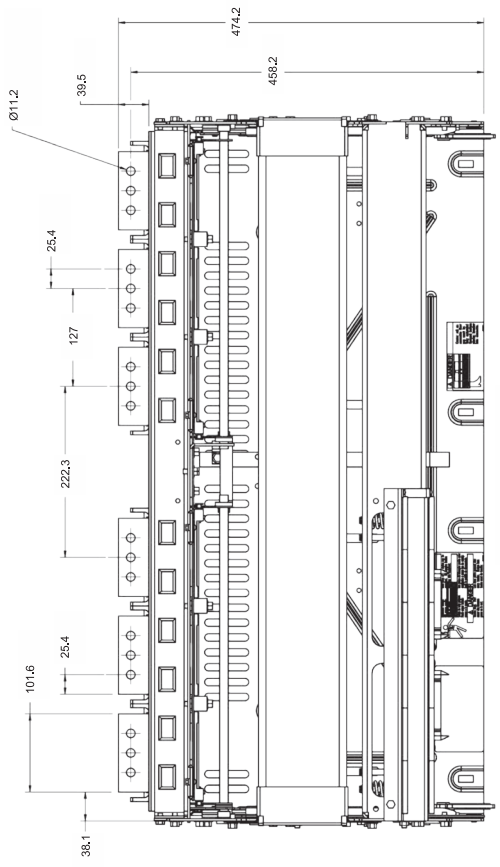
IZM99 Withdrawable Type Cassette Dimensions and Mounting Dimensions (4P, 4000~6300A)



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



Item	C
4000 AMP	9.7
5000, 6300 AMP	25.4



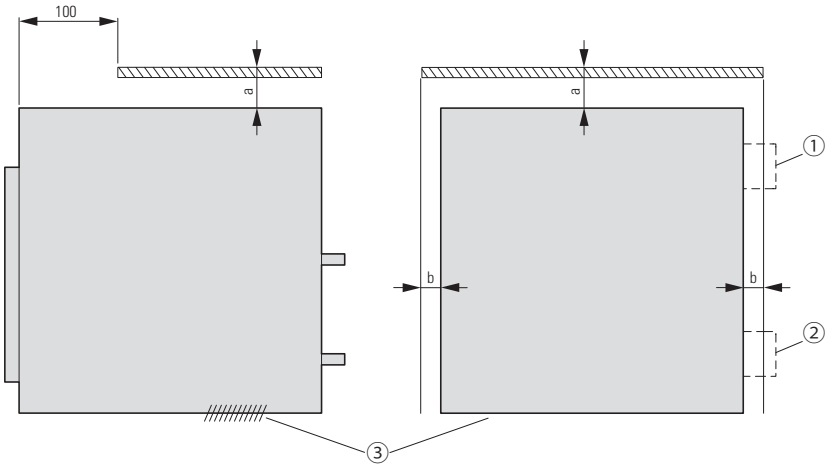
3P

New Generation Air Circuit Breaker IZM

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.

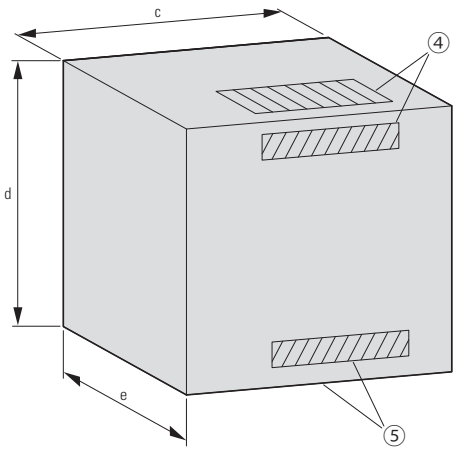


① Cell switch (optional)
② Locking facilities (optional)
③ Ventilation openings (do not cover!)

	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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