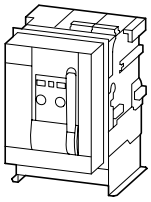
Moeller HPL0211-2004/2005

Circuit-breakers, switch-disconnectors
from 630 A – 6300 A



xEnergy

Catalogue:FK4810-1143G
"Type tested switchgear systems up to 4000 A"

IZM circuit-breakers

The IZM from Moeller embodies a concept for open circuit-breakers that exceeds the standard throughout the world. Based on state-of-the-art system engineering, these switches open up a new dimension in the rated current range from 630 to 6300 A. They excel not only for their performance, but also for their functionality, especially in their communications capabilities and their ease of handling and installation.
A comprehensive operator manual is supplied with each device.

Application areas

Coupler switches: Beside the IZM circuit-breakers, IN switch-disconnectors are available. These are used, for example, as coupler switches between different power supplies.
Main switches: You can use both IN switch-disconnectors and IZM circuit-breakers as mains isolating switches. In combination with a lockable handle, all IZM circuit-breakers (IN switch-disconnectors) fulfil the main switch and isolating characteristics to IEC/EN 60204-1. Four main applications: Dependent on the type of equipment to be protected, the circuit-breaker tasks are divided into four main areas of application:
- System protection
- Motor protection
- Transformer protection
- Generator protection.

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

Safety and reliability

Numerous locking features are provided or can be fitted by the user, on the one hand to protect the switch and system from unauthorised switching, and on the other for the protection of maintenance and operating personnel.
Further safety features are:
- Power feed from top or bottom as required
- Standard locking facility for the withdrawable unit when the switch is removed
- Standard locking facility for the switch in withdrawable unit to prevent removal
- High degree of protection with IP 55 terminal cover
- Standard with mechanical closing lockout after overload or short-circuit release
- The operating panel cannot be removed when the switch is operational
- Delivery including all auxiliary circuit connectors corresponding to built-in features including coding device to prevent mix-up of plug-connectors with fixed mounted breakers
- Devices with +IZM-XCOM-DP communication interfacing feature temperature sensors on the built-in microswitch detection units (XBSS) and on the communication module.

Standard version

IZM circuit-breaker has the following standard equipment:
- Mechanical ON and mechanical OFF switch
- Manual drive for charging the spring-operated stored energy mechanism
- Switch position indication **0 / I**
- Ready to switch on display **OK**
- Charge state display
- Auxiliary circuit switch 2 M + 2 B
- Horizontal main terminals on rear with fixed mounted and with withdrawable units up to 5000 A and on rear with vertical main terminals at 6300 A
- With 4-pole switches the 4th pole (N) is fitted on the left and can be loaded to 100 %
- Display of the contact erosion of the main contacts
- Auxiliary current plug system with screw terminations. The switch is always equipped with the required number of auxiliary current plugs.
- Mechanically tripped display of the overcurrent release system
- Mechanical reclosing lockout after trip
- Operating manual

Additional with withdrawable units:
- Main contacts: Laminated contacts on the back plate of the withdrawable unit, contact pin on basic unit
- Position display with operating console of the plug-in switch
- Captive crank handle for switch movement with withdrawable system
- Withdrawable unit with guide rails for simple handling
- Locking facility for switch movement in the withdrawable unit
- The switch cannot be moved in the withdrawable unit in the on state
- Rated current coding between the withdrawable unit and the switch.

Design

The compact design of the circuit-breakers provides optimum utilization of the available space, allowing control panels to be equipped more efficiently. The IZM for a rated current up to 6300 A, for example, can be installed in am 800 mm wide control panel field. Switches with a rated current of 1600 A need only a 400 mm field.

Operating console

The operating panel is designed to ensure that it can protrude through a cut-out in the door and that all operation elements and displays can be accessed when the control panel door is closed. The operating panels of all switches (fixed mounted/ withdrawable, 3/4-pole) have identical dimensions. The operating panel provides IP20 degree of protection.

Current range

The new IZM open circuit-breakers cover the entire range from 800 – 6300 A with just two frame sizes. The compact IZM1 frame size extends the rated current range downwards from 630 A. If required, the range can be extended to 250 A by exchanging the rating plug. And all this with a setting range of 0.4 – 1 × I_n.

Dimensions

The IZM devices have the same height and depth across their entire current range. Only their device varies depending on the number of poles and the frame size.

Terminations

As standard, IZM circuit-breakers are fitted with horizontal connections. Optionally, the following connections are possible: vertical connections, connections that are accessible from the front and flanged connections.

Trip electronics

The IZM units are equipped with microprocessor-controlled control units as standard. Five different control units are available for selection and thus offer optimum protection for your system: From simple system protection with overload and short-circuit release extending to a digital circuit-breaker with graphic display and the option of setting up time-discriminating networks.

Control circuit connections

The built-in auxiliary switches are connected to the male connector on the switch.
Irrespective of the mounting type, the customer connects the auxiliary power circuits to the control circuit plugs at the top of the circuit-breaker. The standard terminals are screw-type; spring-loaded terminals are optional.
ON fixed mounting units, the control circuit plugs are fitted directly to the plug connectors on the switch and are coded against accidental reversal.
To allow withdrawable units to be moved, a sliding contact module is fitted between switch and mounting. The sliding contact module allows a secure connection of the control circuit cable connectors in the "connected" and "test" positions of the switch.

Modularity

Because components are installed from the front, retrofitting accessories is especially quick and easy. This allows you to respond flexibly to changing requirements within your system.

Communication capability

With their communication-capability, the IZM circuit-breakers open up new possibilities in power distribution. Providing and transmitting all important operational information, they increase system transparency and shorten 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.
Internal system bus
The IZM universal and digital circuit-breakers contain an internal system bus as standard, which connects all intelligent components of the circuit-breaker.
Through the communications interface, the information from the intelligent components can then be transmitted through PROFIBUS-DP, for example with the IZM-XCOM communication module.
Expansion modules for the internal system bus:
External add-on modules can be connected to the IZM circuit-breakers through the internal system bus without extensive additional wiring. Digital input modules and digital and analog output modules are available for this purpose. A further module implements reduced-time selectivity control between IZM circuit-breakers.

Selection criteria for the IZM circuit-breakers

Fundamental criteria for the selection of circuit-breakers:
- Max. short-circuit current at the point of installation of the circuit-breaker I_k'' max: this value determines the short-circuit breaking capacity or the short-circuit current carrying capacity of the circuit-breaker. It is compared with the value I_{cu}, I_{cs}, I_{cw} of the switch and mainly determines the size of the switch → technical data.
- Rated current I_n which should flow through the respective branch circuit: This value may not be greater than the maximum switch rated current of the circuit-breaker. The rated current is defined with the IZM with the rated current module (Exception: XZMA overcurrent release for system protection).
- Ambient temperature of the circuit-breaker: This is generally the internal temperature in the control panel. Observe the derating table with increased ambient temperature → technical data.
- Circuit-breaker type: fixed mounted or withdrawable, 3 or 4-pole.
- Minimum short-circuit current, which flows through the switchgear: 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.

Notes
Operating manual AWB1230-1407D/GB, Article no. 232792

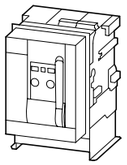
Approved performance data

Details of UL and CSA → chapter 19, Approvals

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

Circuit-breakers
with main switch and isolating characteristics (in combination with the "interlock in OFF" facility), from 630 – 6300 A

	Basic switching capacity (B)		Normal switching capacity (N)		High switching capacity (H)		
	Rated ultimate short-circuit breaking capacity I_{cu} with rated operational voltage U_e						
Rated current = rated uninterrupted current $I_n = I_u$ A	440 V $I_{cu} = I_{cs}$ kA	690 V $I_{cu} = I_{cs}$ kA	440 V $I_{cu} = I_{cs}$ kA	690 V $I_{cu} = I_{cs}$ kA	440 V $I_{cu} = I_{cs}$ kA	690 V $I_{cu} = I_{cs}$ kA	1000 V $I_{cu} = I_{cs}$ kA
IZM							
							
IZM...1(-4)-...							
630 – 1600	50	42	65	50			
→ page 11/12, 11/18							
IZM...2(-4)-...							
800 – 3200	55	50	80	75	100	85	45
→ page 11/14, 11/20							
IZM...3(-4)-...							
4000 – 6300					100	85	50
→ page 11/14, 11/20							

Optional electronic release for IZM circuit-breakers:
- Standard circuit-breaker A
- Selectively-operating circuit-breaker V
- Universal circuit-breaker U
- Digital circuit-breaker D

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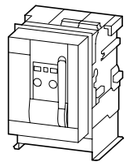
Moeller HPL0211-2004/2005

Switch-disconnector:
with main switch and isolating characteristics (in combination with the "interlock in OFF" facility), from 630 – 6300 A

Rated current I_n = rated uninterrupted current I_u
Rated short-circuit making capacity I_{cm}
Rated short-time withstand current I_{cw} t = 1 s

IN



INB1(-4)-...

I_n = 630 – 1600 A	I_{cm}/kA	105
	I_{cw}/kA	42

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INN1(-4)-...

I_n = 630 – 1600 A	I_{cm}/kA	143
	I_{cw}/kA	50

→ page 11/24

INB2(-4)-...

I_n = 800 – 3200 A	I_{cm}/kA	121
	I_{cw}/kA	55

→ page 11/26

INN2(-4)-...

I_n = 800 – 3200 A	I_{cm}/kA	176
	I_{cw}/kA	65

→ page 11/26

INH2(-4)-...

I_n = 800 – 3200 A	I_{cm}/kA	220
I_n = 800 – 3800 A	I_{cw}/kA	80

→ page 11/26

INH3(-4)-...

I_n = 4000 – 6300 A	I_{cm}/kA	220
I_n = 4000 – 5000 A	I_{cw}/kA	80
I_n = 6300 A	I_{cw}/kA	100

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Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

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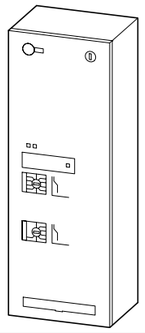
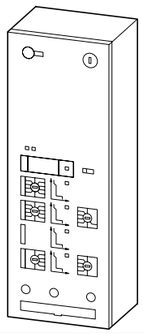
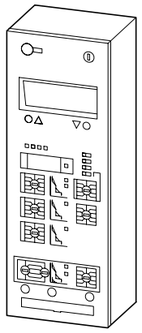
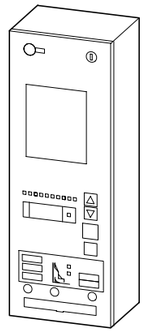
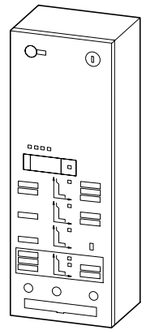
		IZM ...-A... Electronic release for distribution circuit protection 630 – 3200 A	IZM ...-V... Electronic release for selectively-opening circuit-breakers 630 – 6300 A	IZM ...-U... Electronic release for universal protection 630 – 6300 A	IZM ...-D... Digital release 630 – 6300 A	IZM ...-D... + IZM-XZMR Digital release for external parameterization only 630 – 6300 A
						
Basic protective functions						
Overload protection I_r	**L**	●	●	●	●	●
Adjustable delay t_r		–	–	●	●	●
Short-time delayed short-circuit protection I_{sd}	**S**	–	●	●	●	●
Non-delayed short-circuit protection I_i	**I**	●	●[2]	●	●	●
Neutral conductor protection	**N**	–	○	●	●	●
Earth-fault protection	**G**	–	○	○	○	○
Additional functions						
N conductor protection can be activated/deactivated		–	○	●	●	●
Short time delayed short-circuit protection can be activated/deactivated		–	–	●	●	●
Non-delayed short-circuit protection can be activated/deactivated		–	–	●	●	●
Thermal memory can be activated/deactivated		–	–	●	●	●
Load monitoring		–	–	●	●	●
Leading "L" trip signal, 200 ms		–	–	●	●	●
Short-time delayed short-circuit protection convertible to I^2t		–	–	●	●	●
Overload protection convertible to I^4t		–	–	●	●	●
Overload protection can be activated/deactivated		–	–	–	●	●
N conductor protection adjustable		–	–	●	●	●
Earth-fault protection convertible to I^2t		–	–	●	●	●
Earth fault alarm		–	–	○	○	○
Selectable parameter sets		–	–	–	●	●
Zone-selective interlocking		–	–	○	○	○
Parametric programming and visualization						
Parametric programming via rotary coding switch		●	●	●	–	–
Parametric programming via communication (absolute values)		–	–	–	●	●
Parametric programming via communication (absolute values)		–	–	–	●	–
Remote parameter definition of the basic functions		–	–	–	●	●
Remote parameter definition of additional functions		–	–	●	●	●
Setting through IZM-XEM-PG parameter assignment module or PROFIBUS-DP[1]	**Comm**	–	–	–	●	●
Menu-assisted setting directly on release[1]	**Menu**	–	–	–	●	–
Alphanumeric LCD (4-line display)		–	–	○	–	–
Graphic LCD		–	–	–	●	–
Other						
Connection feature for an external 24 V DC power supply		–	–	●	●	●

Notes

[1] Step width for Menu/Comm or Comm setting

Setting range	Step width
0 – 1	0.1
1 – 100	1
100 – 500	5
500 – 1000	10
1000 – 1600	50
1600 – 10 000	100
10 000 – max.	1000

[2] Fixed at $I_i \geqq 20 \times I_n$, max. 50 kA

● standard
○ optional

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

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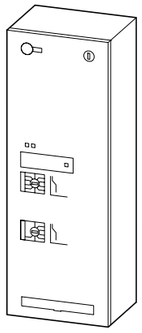
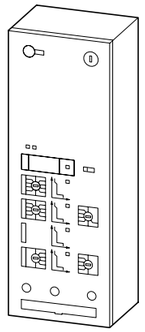
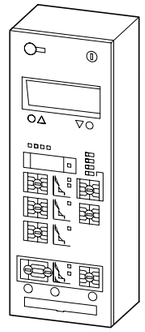
IZM ...-A...
Electronic release for distribution circuit protection
630 – 3200 A



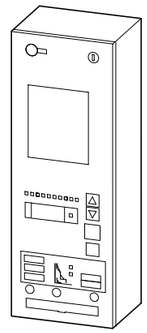
IZM ...-V...
Electronic release for selectively-opening circuit-breakers
630 – 6300 A



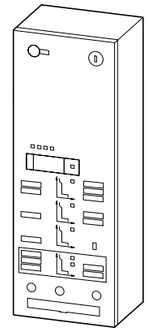
IZM ...-U...
Electronic release for universal protection
630 – 6300 A



IZM ...-D...
Digital release
630 – 6300 A



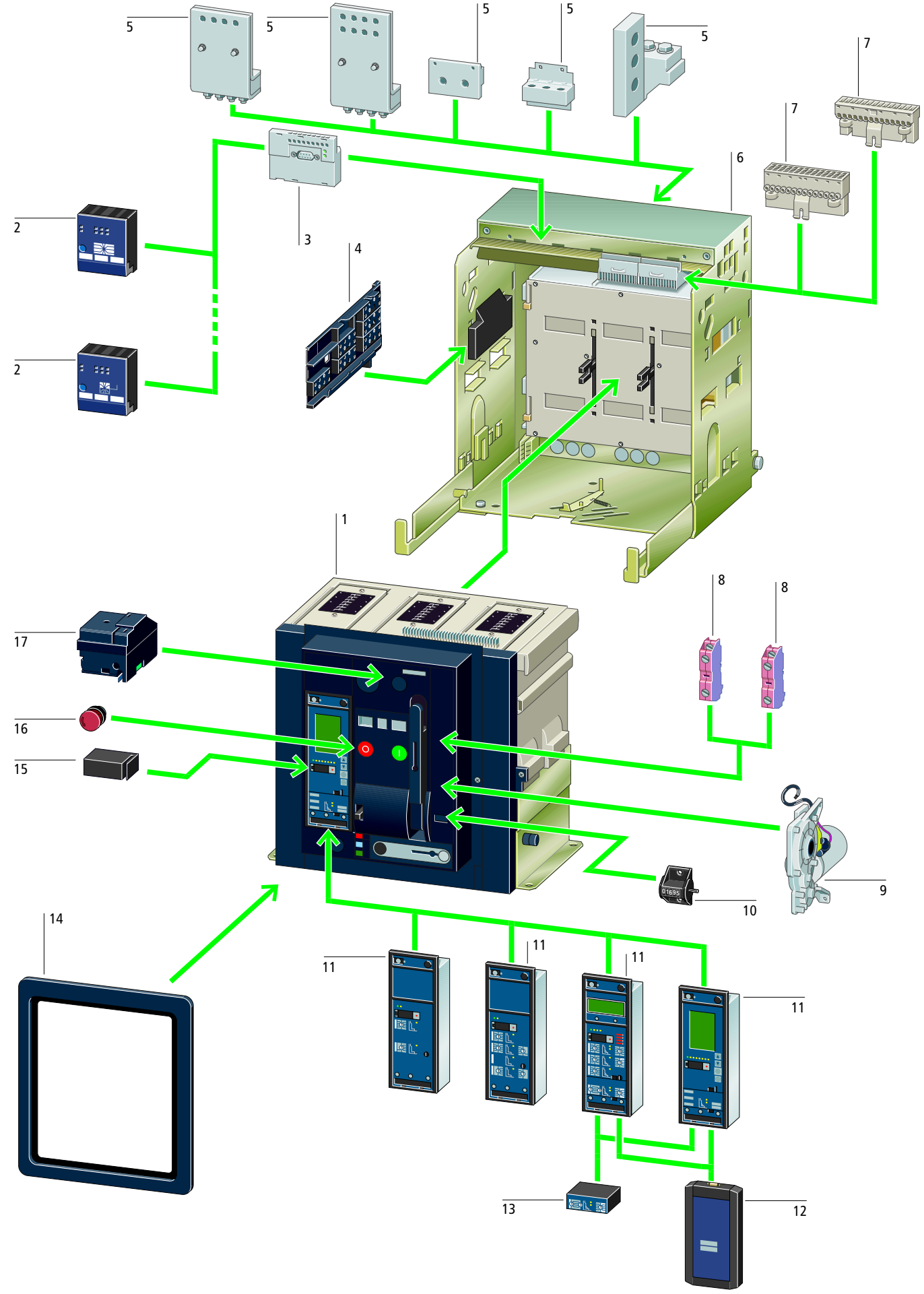
IZM ...-D... + IZM-XZMR
Digital release for external parameterization only
630 – 6300 A



Measuring functions						
"power" measuring function		–	–	○	○	○
"harmonic" measuring function		–	–	○	○	○
Communication						
Internal system bus		–	–	●	●	●
PROFIBUS-DP communication		–	–	○	○	●
Communication using Ethernet		–	–	○	○	○
LED display features						
Release active		●	●	●	●	●
Alarm		●	●	●	●	●
Control unit error message		●	●	●	●	●
Overload trip	**L**	–	●	●	●	●
Short-time delayed short-circuit trip	**S**	–	●	●	●	●
Non-delayed short-circuit trip	**I**	–	●	●	●	●
Neutral conductor trip	**N**	–	● (only possible with +IZM-XT option)	●	●	●
Earth-fault protection trip	**G**	–	● (only possible with +IZM-XT option)	● (only possible with (+)IZMU-XT option)	● (only possible with (+)IZMD-XT option)	● (only possible with (+)IZMD-XT option)
Earth-fault protection alarm	**G**	–	–	● (only possible with (+)IZMU-XT(A) option)	● (only possible with (+)IZMD-XT(A) option)	● (only possible with (+)IZMD-XT option)
Trip by extended protective function		–	–	●	●	●
Communication		–	–	●	●	●
Signals via signalling switch with external system bus modules (optocoupler or relay)						
Overload warning		–	–	●	●	●
Load shedding, load pick-up		–	–	●	●	●
Leading overload signal, 200 ms		–	–	●	●	●
Temperature alarm		–	–	●	●	●
Phase imbalance		–	–	●	●	●
Overload trip	**L**	–	–	●	●	●
Short-time delayed short-circuit trip	**S**	–	–	●	●	●
Non-delayed short-circuit trip	**I**	–	–	●	●	●
Neutral conductor trip	**N**	–	–	●	●	●
Earth-fault protection trip	**G**	–	–	● (only possible with (+)IZMU-XT option)	● (only possible with (+)IZMD-XT option)	●
Earth-fault protection alarm	**G**	–	–	● (only possible with (+)IZMU-XT(A) option)	● (only possible with (+)IZMD-XT(A) option)	●
Auxiliary relay		–	–	●	●	●
Control unit error message		–	–	●	●	●

Notes

● standard
○ optional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Basic Units

IZM circuit-breakers 1
Rated current from 630 – 6300 A
4-stage switching capacity
4 release types for different protection and indication function
3 and 4 pole design

→ page 11/12

Communication

Communication module 3
for PROFIBUS-DP

→ page 11/38

External expansion modules 2

→ page 11/40

Electronic releases 11
Standard protection functions
Optional protection functions
Additional functions
Parametric programming and visualization
Measuring functions
Communication

→ page 11/6, 11/29

Parameter assignment module 12

→ page 11/36

Earth-fault protection module 13
Earth-fault alarm module

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Add-on functions

Position switch 4
Modules for withdrawable units
Module 1
- Connected position: 1 changeover contact
- Test position: 1 changeover contact
- Disconnected position: 1 changeover contact

Module 2
- Connected position: 3 changeover contacts
- Test position: 2 changeover contacts
- Disconnected position: 1 changeover contact

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Control circuit plugs 7
Screw terminals
Springloaded terminals

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Auxiliary contacts 8
Normal auxiliary contacts with 2 break contacts and 2 make contacts (standard)
2 make contacts and 2 break contact additionally possible
Ready-to-close auxiliary contacts
Trip indication
Spring energy store status signal
Voltage release status signal

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Motor operators 9
Automatic charging of the stored energy mechanism for ON and OFF operations
Motor cut-off switch

→ page 11/44

Operations counter 10

→ page 11/44

Rated current modules 15
Rating plug

→ page 11/30

Emergency-Stop mushroom actuator 16

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Remote ON/OFF 17
Closing releases
Shunt release
Undervoltage release
- Non-delayed
- OFF-delayed

→ page 11/50

Mounting accessories

Connection types 5
Horizontal connection (standard)
Vertical connection
Front connection
(single hole fitting, double hole fitting)
Flanged connection (on withdrawable units)

→ page 11/56

Withdrawable unit 6
Replacing the circuit-breakers by insertion and withdrawal
3 positions, lockable
- Connected position
- Test position
- Disconnected position

Indication of the positions by position indication switch
Arcing chamber cover for reduction of the safety clearance
Shutter for automatic locking of the input and output contacts within the withdrawable unit, lockable

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Door seal 14
For door mounting, degree of protection IP40
Protective cover to IP55

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Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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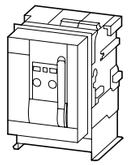
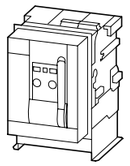
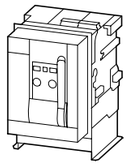
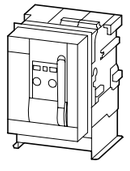
Rating data				Basic switching capacity (B) $I_{cu} = I_{cs}$ = 50 kA at 415 V 50/60 Hz		Std. pack	Normal switching capacity (N) $I_{cu} = I_{cs}$ = 65 kA at 415 V 50/60 Hz		Std. pack	Notes
Rated current = rated uninterrupted current[1]	Setting range			Type Article no.	Price See Price List		Type Article no.	Price See Price List		
	Overload releases	Short-circuit releases								
		Delayed	Non-delayed							
$I_n = I_u$	I_r	I_{sd}	I_i							
A	A	A	A							
IZM...1-...										
Circuit-breakers for distribution circuit protection (A)										
630	315 – 630	–	1260 – 5040	**IZMB1-A630** 229889		1 off	**IZMN1-A630** 229894		1 off	• Adjustable overload release $I_r = 0.5 – 1 \times I_n$ • Delay time t_r = 10 s at 6 × I_r • Adjustable non-delayed short-circuit release $I_i = 2 – 8 \times I_n$
800	400 – 800	–	1600 – 6400	**IZMB1-A800** 229890			**IZMN1-A800** 229895			
1000	500 – 1000	–	2000 – 8000	**IZMB1-A1000** 229891			**IZMN1-A1000** 229896			
1250	625 – 1250	–	2500 – 10000	**IZMB1-A1250** 229892			**IZMN1-A1250** 229898			
1600	800 – 1600	–	3200 – 12800	**IZMB1-A1600** 229893			**IZMN1-A1600** 229899			
Circuit-breaker for selective operation (V) and motor protection										
630	252 – 630	788 – 7560	12600	**IZMB1-V630** 229900		1 off	**IZMN1-V630** 229905		1 off	• Adjustable overload release $I_r = 0.4 – 1 \times I_n$ • Delay time t_r = 10 s at 6 × I_r • Adjustable delayed short-circuit release $I_{sd} = 1.25 – 12 \times I_n$ • Delay time t_{sd} = 0, 20 (motor protection), 100, 200, 300, 400 ms • Non-delayed short-circuit release $I_i \geqq 20 \times I_n$
800	320 – 800	1000 – 9600	16000	**IZMB1-V800** 229901			**IZMN1-V800** 229906			
1000	400 – 1000	1250 – 12000	20000	**IZMB1-V1000** 229902			**IZMN1-V1000** 229907			
1250	500 – 1250	1563 – 15000	25000	**IZMB1-V1250** 229903			**IZMN1-V1250** 229908			
1600	640 – 1600	2000 – 19200	32000	**IZMB1-V1600** 229904			**IZMN1-V1600** 229909			
Circuit-breaker for universal protection (U) and motor protection										
630	252 – 630	788 – 7560	945 – 7560, OFF	**IZMB1-U630** 229913		1 off	**IZMN1-U630** 229918		1 off	• Adjustable overload release $I_r = 0.4 – 1 \times I_n$ • Delay time t_r = 2 – 30 s when set to I^2t at 6 × I_r, t_r = 1, 2, 3, 4, 5 s with set to I^4t • Adjustable N conductor protection I_n= 0.5 × I_n, 1 × I_n, OFF (external transducer required for N conductor) • Adjustable delayed short-circuit release $I_{sd} = 1.25 – 12 \times I_n$ • Delay time t_{sd} = OFF, 20 (motor protection), 100, 200, 300, 400 ms • Note the adjustable non-delayed short-circuit release $I_i = 1.5 – 12 \times I_n$, further setting values: Max = 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$!
800	320 – 800	1000 – 9600	1200 – 9600, OFF	**IZMB1-U800** 229914			**IZMN1-U800** 229919			
1000	400 – 1000	1250 – 12000	1500 – 12000, OFF	**IZMB1-U1000** 229915			**IZMN1-U1000** 229920			
1250	500 – 1250	1563 – 15000	1875 – 15000, OFF	**IZMB1-U1250** 229916			**IZMN1-U1250** 229921			
1600	640 – 1600	2000 – 19200	2400 – 19200, OFF	**IZMB1-U1600** 229917			**IZMN1-U1600** 229922			
Digital circuit-breaker (D) incl. graphic display										
630	252 – 630	1.25 × I_n – 0.8 × I_{cw}	1.5 × I_n – 0.8 × I_{cs}	**IZMB1-D630** 229923		1 off	**IZMN1-D630** 229933		1 off	• Adjustable overload release $I_r = 0.4 – 1 \times I_n$ • Delay time t_r = 2 – 30 s when set to I^2t, t_r = 1, 2, 3, 4, 5 s wg´hen set to I^4t • Adjustable N conductor $I_n = 0.5 – 2 \times I_n$ (external transducer required for N conductor) • Adjustable delayed short-circuit release $I_{sd} = 1.25 \times I_n – 0.8 \times I_{cw}$, with max. setting of 0.8 × I_{cw} the setting of the delay time t_{sd} is only permissible to max. 400 ms, I_{cw} see Technical data • Delay time t_{sd} = OFF, 20, 100, 200, 300, 400, 500, 1000, 2000, 3000, 4000 ms • Observe adjustable non-delayed short-circuit release $I_i = 1.5 \times I_n – 0.8 \times I_{cs}$, OFF: $I_{cs} = I_{cw}$! • External 24 V DC power supply required (description → "components for communication")
800	320 – 800			**IZMB1-D800** 229927			**IZMN1-D800** 229934			
1000	400 – 1000			**IZMB1-D1000** 229930			**IZMN1-D1000** 229935			
1250	500 – 1250			**IZMB1-D1250** 229931			**IZMN1-D1250** 229936			
1600	640 – 1600			**IZMB1-D1600** 229932			**IZMN1-D1600** 229937			







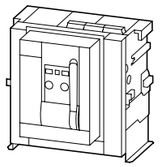
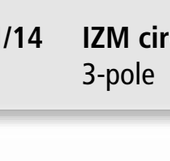
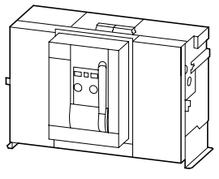


Notes [1] Rated current derating: → accessories "Rated current module"

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

Moeller HPL0211-2004/2005

Rating data					Basic switching capacity (B) $I_{cu} = I_{cs}$ = 55 kA at 415 V 50/60 Hz		Std. pack	Normal switching capacity (N) $I_{cu} = I_{cs}$ = 80 kA at 415 V 50/60 Hz		Std. pack	High switching capacity (H) $I_{cu} = I_{cs}$ = 100 kA at 415 V 50/60 Hz		Std. pack	Notes
Rated current = rated uninterrupted current[1]	Setting range				Type Article no.	Price See Price List		Type Article no.	Price See Price List		Type Article no.	Price See Price List		
	Overload releases	Short-circuit releases												
		Delayed	Non-delayed											
$I_n = I_u$	I_r	I_{sd}	I_i											
A	A	A	A											
														
Circuit-breakers for distribution circuit protection (A)														
IZM...2-A...														
	800	400 – 800	–	1600 – 6400	**IZMB2-A800** 225530		1 off	**IZMN2-A800** 225534		1 off	**IZMH2-A800** 225545		1 off	–
	1000	500 – 1000	–	2000 – 8000	**IZMB2-A1000** 225531			**IZMN2-A1000** 225535			**IZMH2-A1000** 225546			–
	1250	625 – 1250	–	2500 – 10000	**IZMB2-A1250** 225532			**IZMN2-A1250** 225536			**IZMH2-A1250** 225547			–
	1600	800 – 1600	–	3200 – 12800	**IZMB2-A1600** 225533			**IZMN2-A1600** 225537			**IZMH2-A1600** 225548			–
	2000	1000 – 2000	–	4000 – 16000	**IZMB2-A2000** 229979			**IZMN2-A2000** 225538			**IZMH2-A2000** 225549			–
	2500	1250 – 2500	–	5000 – 20000	**IZMB2-A2500** 229980			**IZMN2-A2500** 225539			**IZMH2-A2500** 225550			–
	3200	1600 – 3200	–	6400 – 25600	**IZMB2-A3200** 229982			**IZMN2-A3200** 225540			**IZMH2-A3200** 225551			–
Circuit-breaker for selective operation (V) and motor protection														
IZM...2-V...														
	800	320 – 800	1000 – 9600	16000	**IZMB2-V800** 229995		1 off	**IZMN2-V800** 230004		1 off	**IZMH2-V800** 230014		1 off	–
	1000	400 – 1000	1250 – 12000	20000	**IZMB2-V1000** 229996			**IZMN2-V1000** 230007			**IZMH2-V1000** 230016			–
	1250	500 – 1250	1563 – 15000	25000	**IZMB2-V1250** 229997			**IZMN2-V1250** 230008			**IZMH2-V1250** 230017			–
	1600	640 – 1600	2000 – 19200	32000	**IZMB2-V1600** 229998			**IZMN2-V1600** 230009			**IZMH2-V1600** 230018			–
	2000	800 – 2000	2500 – 24000	40000	**IZMB2-V2000** 229999			**IZMN2-V2000** 230010			**IZMH2-V2000** 230027			–
	2500	1000 – 2500	3125 – 30000	50000	**IZMB2-V2500** 230001			**IZMN2-V2500** 230011			**IZMH2-V2500** 230028			–
	3200	1280 – 3200	4000 – 38400	50000	**IZMB2-V3200** 230003			**IZMN2-V3200** 230012			**IZMH2-V3200** 230029			–
IZM...3-V...														
	4000	1600 – 4000	5000 – 48000	50000							**IZMH3-V4000** 230051		1 off	–
	5000	2000 – 5000	6250 – 50000								**IZMH3-V5000** 230053			–
	6300	2520 – 6300	7875 – 50000								**IZMH3-V6300** 232158			Only vertical version of main terminals

- Adjustable overload release $I_r = 0.5 – 1 \times I_n$
- Delay time t_r = 10 s at 6 × I_r
- Adjustable non-delayed short-circuit release $I_i = 2 – 8 \times I_n$

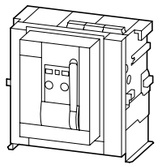
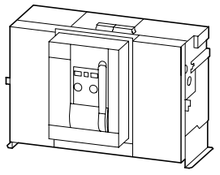
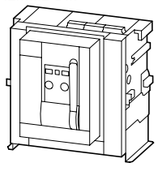
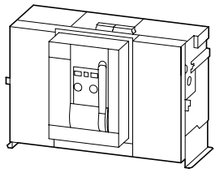
- Adjustable overload release $I_r = 0.4 – 1 \times I_n$
- Delay time t_r = 10 s at 6 × I_r
- Adjustable delayed short-circuit release $I_{sd} = 1.25 – 12 \times I_n$
- Delay time t_{sd} = 0, 20 (motor protection), 100, 200, 300, 400 ms
- Non-delayed short-circuit release $I_i \geqq 20 \times I_n$, max. 50 kA

Notes [1] Rated current derating: → accessories "Rated current module"

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

Moeller HPL0211-2004/2005

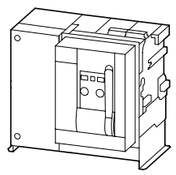
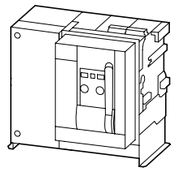
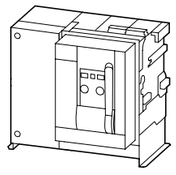
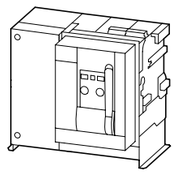
Rating data				Basic switching capacity (B) $I_{cu} = I_{cs}$ = 55 kA at 415 V 50/60 Hz			Normal switching capacity (N) $I_{cu} = I_{cs}$ = 80 kA at 415 V 50/60 Hz			High switching capacity (H) $I_{cu} = I_{cs}$ = 100 kA at 415 V 50/60 Hz				
Rated current = rated uninterrupted current[1]	Setting range			Type Article no.	Price See Price List	Std. pack	Type Article no.	Price See Price List	Std. pack	Type Article no.	Price See Price List	Std. pack		Notes
	Overload releases	Short-circuit releases												
		Delayed	Non-delayed											
$I_n = I_u$	I_r	I_{sd}	I_i											
A	A	A	A											
														
Circuit-breaker for universal protection (U) and motor protection														
IZM...2-U...														
	800	320 – 800	1000 – 9600	1.5 – 12 × I_n, OFF	**IZMB2-U800** 225556		**IZMN2-U800** 225560		1 off	**IZMH2-U800** 225572		1 off	–	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t at 6 × I_r, t_r = 1, 2, 3, 4, 5 s with set to I^4t • Adjustable N conductor protection I_n= 0.5 × I_n, 1 × I_n, OFF (external transducer required for N conductor) • Adjustable delayed short-circuit release I_{sd} = 1.25 – 12 × I_n • Delay time t_{sd} = OFF, 20 (motor protection), 100, 200, 300, 400 ms • Note the adjustable non-delayed short-circuit release I_i = 1.5 – 12 × I_n, further setting values: Max = 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$!
	1000	400 – 1000	1250 – 12000		**IZMB2-U1000** 225557		**IZMN2-U1000** 225561			**IZMH2-U1000** 225573			–	
	1250	500 – 1250	1563 – 15000		**IZMB2-U1250** 225558		**IZMN2-U1250** 225562			**IZMH2-U1250** 225574			–	
	1600	640 – 1600	2000 – 19200		**IZMB2-U1600** 225559		**IZMN2-U1600** 225564			**IZMH2-U1600** 225575			–	
	2000	800 – 2000	2500 – 24000		**IZMB2-U2000** 230069		**IZMN2-U2000** 225565			**IZMH2-U2000** 225576			–	
	2500	1000 – 2500	3125 – 30000		**IZMB2-U2500** 230070		**IZMN2-U2500** 225566			**IZMH2-U2500** 225577			–	
	3200	1280 – 3200	4000 – 38400		**IZMB2-U3200** 230071		**IZMN2-U3200** 225567			**IZMH2-U3200** 225578			–	
IZM...3-U...														
	4000	1600 – 4000	5000 – 48000	1.5 – 12 × I_n, OFF						**IZMH3-U4000** 225580		1 off	–	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t at 6 × I_r, t_r = 1, 2, 3, 4, 5 s with setting to I^4t • Adjustable N conductor protection I_n= 0.5 × I_n, 1 × I_n, OFF (external transducer required for N conductor) • Adjustable delayed short-circuit release I_{sd} = 1.25 – 12 × I_n • Delay time t_{sd} = OFF, 20 (motor protection), 100, 200, 300, 400 ms • Note the adjustable non-delayed short-circuit release I_i = 1.5 – 12 × I_n, further setting values: Max = 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$!
	5000	2000 – 5000	6250 – 60000							**IZMH3-U5000** 225581			–	
	6300	2520 – 6300	7875 – 75600							**IZMH3-U6300** 232159			Only vertical version of main terminals	
Digital circuit-breaker (D) incl. graphic display														
IZM...2-D...														
	800	320 – 800	1.25 × I_n – 0.8 × I_{cw}	1.5 × I_n – 0.8 × I_{cs}	**IZMB2-D800** 230083		**IZMN2-D800** 230090		1 off	**IZMH2-D800** 230097		1 off	–	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t, t_r = 1, 2, 3, 4, 5 s when set to I^4t • Adjustable N conductor I_N = 0.5 – 2 × I_n (external transducer required for N conductor) • Adjustable delayed short-circuit release I_{sd} = 1.25 × I_n – 0.8 × I_{cw}, with max. setting of 0.8 × I_{cw} the setting of the delay time t_{sd} is only permissivble up to max. 400 ms, I_{cw} → Technical data • Delay time t_{sd} = OFF, 20, 100, 200, 300, 400, 500, 1000, 2000, 3000, 4000 ms • Observe adjustable non-delayed short-circuit release I_i = 1.5 × I_n – 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$! • External 24 V DC power supply required (description → "components for communication")
	1000	400 – 1000			**IZMB2-D1000** 230084		**IZMN2-D1000** 230091			**IZMH2-D1000** 230098			–	
	1250	500 – 1250			**IZMB2-D1250** 230085		**IZMN2-D1250** 230092			**IZMH2-D1250** 230099			–	
	1600	640 – 1600			**IZMB2-D1600** 230086		**IZMN2-D1600** 230093			**IZMH2-D1600** 230100			–	
	2000	800 – 2000			**IZMB2-D2000** 230087		**IZMN2-D2000** 230094			**IZMH2-D2000** 230101			–	
	2500	1000 – 2500			**IZMB2-D2500** 230088		**IZMN2-D2500** 230095			**IZMH2-D2500** 230102			–	
	3200	1280 – 3200			**IZMB2-D3200** 230089		**IZMN2-D3200** 230096			**IZMH2-D3200** 230103			–	
IZM...3-D...														
	4000	1600 – 4000	1.25 × I_n – 0.8 × I_{cw}	1.5 × I_n – 0.8 × I_{cs}						**IZMH3-D4000** 230104		1 off	–	
	5000	2000 – 5000								**IZMH3-D5000** 230105			–	
	6300	2520 – 6300								**IZMH3-D6300** 232160			Only vertical version of main terminals	

Notes [1] Rated current derating: → accessories "Rated current module"

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004

Moeller HPL0211-2004

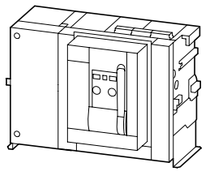
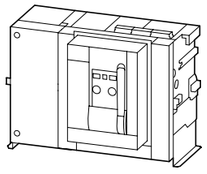
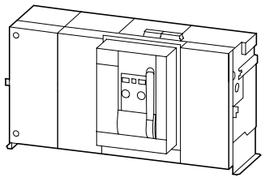
Rating data				Basic switching capacity (B) $I_{cu} = I_{cs}$ = 50 kA at 415 V 50/60 Hz		Std. pack	Normal switching capacity (N) $I_{cu} = I_{cs}$ = 65 kA at 415 V 50/60 Hz		Std. pack	Notes
Rated current = rated uninterrupted current[1]	Setting range			Type Article no.	Price See Price List		Type Article no.	Price See Price List		
	Overload releases	Short-circuit releases								
		Delayed	Non-delayed							
$I_n = I_u$	I_r	I_{sd}	I_i							
A	A	A	A							
IZM...1-4-...										
Circuit-breakers for distribution circuit protection (A)										
										
630	315 – 630	–	1260 – 5040	**IZMB1-4-A630** 229938		1 off	**IZMN1-4-A630** 229943		1 off	• Adjustable overload release I_r = 0.5 – 1 × I_n • Delay time t_r = 10 s at 6 × I_r • Adjustable non-delayed short-circuit release I_i = 2 – 8 × I_n • Supplied without overload protection in the fourth pole
800	400 – 800	–	1600 – 6400	**IZMB1-4-A800** 229939			**IZMN1-4-A800** 229944			
1000	500 – 1000	–	2000 – 8000	**IZMB1-4-A1000** 229940			**IZMN1-4-A1000** 229945			
1250	625 – 1250	–	2500 – 10000	**IZMB1-4-A1250** 229941			**IZMN1-4-A1250** 229946			
1600	800 – 1600	–	3200 – 12800	**IZMB1-4-A1600** 229942			**IZMN1-4-A1600** 229947			
Circuit-breaker for selective operation (V) and motor protection										
										
630	252 – 630	788 – 7560	12600	**IZMB1-4-V630** 229948		1 off	**IZMN1-4-V630** 229953		1 off	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 10 s at 6 × I_r • Adjustable delayed short-circuit release I_{sd} = 1.25 – 12 × I_n • Delay time t_{sd} = 0, 20 (motor protection), 100, 200, 300, 400 ms • Non-delayed short-circuit release I_i ≧ 20 × I_n • Without overload protection in the fourth pole (optional with overload protection in the fourth pole: +IZM-XT additionally required)
800	320 – 800	1000 – 9600	16000	**IZMB1-4-V800** 229949			**IZMN1-4-V800** 229954			
1000	400 – 1000	1250 – 12000	20000	**IZMB1-4-V1000** 229950			**IZMN1-4-V1000** 229955			
1250	500 – 1250	1563 – 15000	25000	**IZMB1-4-V1250** 229951			**IZMN1-4-V1250** 229956			
1600	640 – 1600	2000 – 19200	32000	**IZMB1-4-V1600** 229952			**IZMN1-4-V1600** 229957			
Circuit-breaker for universal protection (U) and motor protection										
										
630	252 – 630	788 – 7560	945 – 7560, OFF	**IZMB1-4-U630** 229958		1 off	**IZMN1-4-U630** 229963		1 off	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t at 6 × I_r, t_r = 1, 2, 3, 4, 5 s with setting to I^4t • Adjustable delayed short-circuit release I_{sd} = 1.25 – 12 × I_n • Delay time t_{sd} = OFF, 20 (motor protection), 100, 200, 300, 400 ms • Note the adjustable non-delayed short-circuit release I_i = 1.5 – 12 × $I_{n,}$ further setting values: Max. = 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$! • With overload protection on the 4th pole, can be set to OFF, 100 % or 50 % I_r
800	320 – 800	1000 – 9600	1200 – 9600, OFF	**IZMB1-4-U800** 229959			**IZMN1-4-U800** 229964			
1000	400 – 1000	1250 – 12000	1500 – 12000, OFF	**IZMB1-4-U1000** 229960			**IZMN1-4-U1000** 229965			
1250	500 – 1250	1563 – 15000	1875 – 15000, OFF	**IZMB1-4-U1250** 229961			**IZMN1-4-U1250** 229966			
1600	640 – 1600	2000 – 19200	2400 – 19200, OFF	**IZMB1-4-U1600** 229962			**IZMN1-4-U1600** 229967			
Digital circuit-breaker (D) incl. graphic display										
										
630	252 – 630	1.25 × I_n – 0.8 × I_{cw}	1.5 × I_n – 0.8 × I_{cs}	**IZMB1-4-D630** 229968		1 off	**IZMN1-4-D630** 229973		1 off	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t, t_r = 1, 2, 3, 4, 5 s when set to I^4t • Adjustable delayed short-circuit release I_{sd} = 1.25 × I_n – 0.8 × I_{cw}, with max. setting of 0.8 × I_{cw} the setting of the delay time t_{sd} is only permissible to max. 400 ms, I_{cw} → Technical data • Delay time t_{sd} = OFF, 20, 100, 200, 300, 400, 500, 1000, 2000, 3000, 4000 ms • Observe adjustable non-delayed short-circuit release I_i = 1.5 × I_n – 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$! • With overload protection on the 4th pole, can be set to OFF, 200 %, 100 % or 50 % I_r • External 24 V DC power supply required (description → "components for communication")
800	320 – 800			**IZMB1-4-D800** 229969			**IZMN1-4-D800** 229975			
1000	400 – 1000			**IZMB1-4-D1000** 229970			**IZMN1-4-D1000** 229976			
1250	500 – 1250			**IZMB1-4-D1250** 229971			**IZMN1-4-D1250** 229977			
1600	640 – 1600			**IZMB1-4-D1600** 229972			**IZMN1-4-D1600** 229978			

Notes [1] Rated current derating: → accessories "Rated current module"

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

Moeller HPL0211-2004/2005

Rating data				Basic switching capacity (B)		Normal switching capacity (N)		High switching capacity (H)				
Rated current = rated uninterrupted current[1]	Setting range			$I_{cu} = I_{cs}$ = 55 kA at 415 V 50/60 Hz		$I_{cu} = I_{cs}$ = 80 kA at 415 V 50/60 Hz		$I_{cu} = I_{cs}$ = 100 kA at 415 V 50/60 Hz				
	Overload release	Short-circuit releases		Type	Price	Type	Price	Type	Price	Std. pack		Notes
		Delayed	Non-delayed	Article no.	See Price List	Article no.	See Price List	Article no.	See Price List			
$I_n = I_u$	I_r	I_{sd}	I_i									
A	A	A	A									
Circuit-breakers for distribution circuit protection (A)												
IZM...2-4-A...												
												
800	400 – 800	–	1600 – 6400	**IZMB2-4-A800** 225583		**IZMN2-4-A800** 225587		**IZMH2-4-A800** 225598		1 off	–	• Adjustable overload release $I_r = 0.5 – 1 \times I_n$ • Delay time t_r = 10 s at 6 × I_r • Adjustable non-delayed short-circuit release $I_i = 2 – 8 \times I_n$ • Supplied without overload release in the fourth pole
1000	500 – 1000	–	2000 – 8000	**IZMB2-4-A1000** 225584		**IZMN2-4-A1000** 225588		**IZMH2-4-A1000** 225599			–	
1250	625 – 1250	–	2500 – 10000	**IZMB2-4-A1250** 225585		**IZMN2-4-A1250** 225589		**IZMH2-4-A1250** 225600			–	
1600	800 – 1600	–	3200 – 12800	**IZMB2-4-A1600** 225586		**IZMN2-4-A1600** 225590		**IZMH2-4-A1600** 225601			–	
2000	1000 – 2000	–	4000 – 16000	**IZMB2-4-A2000** 230118		**IZMN2-4-A2000** 225591		**IZMH2-4-A2000** 225602			–	
2500	1250 – 2500	–	5000 – 20000	**IZMB2-4-A2500** 230119		**IZMN2-4-A2500** 225592		**IZMH2-4-A2500** 225603			–	
3200	1600 – 3200	–	6400 – 25600	**IZMB2-4-A3200** 230120		**IZMN2-4-A3200** 225593		**IZMH2-4-A3200** 225604			–	
Circuit-breaker for selective operation (V) and motor protection												
IZM...2-4-V...												
												
800	320 – 800	1000 – 9600	16000	**IZMB2-4-V800** 230147		**IZMN2-4-V800** 230154		**IZMH2-4-V800** 230162		1 off	–	• Adjustable overload release $I_r = 0.4 – 1 \times I_n$ • Delay time t_r = 10 s at 6 × I_r • Adjustable delayed short-circuit release $I_{sd} = 1.25 – 12 \times I_n$ • Delay time t_{sd} = 0, 20 (motor protection), 100, 200, 300, 400 ms • Non-delayed short-circuit release $I_i \geqq 20 \times I_n$, max. 50 kA • Without overload release in the fourth pole (optional with overload protection in the fourth pole: +IZM-XT additionally required)
1000	400 – 1000	1250 – 12000	20000	**IZMB2-4-V1000** 230148		**IZMN2-4-V1000** 230156		**IZMH2-4-V1000** 230163			–	
1250	500 – 1250	1563 – 15000	25000	**IZMB2-4-V1250** 230149		**IZMN2-4-V1250** 230157		**IZMH2-4-V1250** 230180			–	
1600	640 – 1600	2000 – 19200	32000	**IZMB2-4-V1600** 230150		**IZMN2-4-V1600** 230158		**IZMH2-4-V1600** 230181			–	
2000	800 – 2000	2500 – 24000	40000	**IZMB2-4-V2000** 230151		**IZMN2-4-V2000** 230159		**IZMH2-4-V2000** 230182			–	
2500	1000 – 2500	3125 – 30000	50000	**IZMB2-4-V2500** 230152		**IZMN2-4-V2500** 230160		**IZMH2-4-V2500** 230183			–	
3200	1280 – 3200	4000 – 38400	50000	**IZMB2-4-V3200** 230153		**IZMN2-4-V3200** 230161		**IZMH2-4-V3200** 230184			–	
IZM...3-4-V...												
												
4000	1600 – 4000	5000 – 48000	50000					**IZMH3-4-V4000** 230185		1 off	–	
5000	2000 – 5000	6250 – 50000						**IZMH3-4-V5000** 230186			–	
6300	2520 – 6300	7875 – 50000						**IZMH3-4-V6300** 232161			Only vertical version of main terminals possible	

Notes [1] Rated current derating: → accessories "Rated current module"

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

Moeller HPL0211-2004/2005

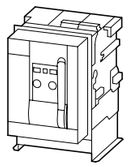
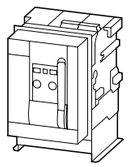
Rating data: Rated current = rated uninterrupted current $I_n = I_u$ A	Setting range: Overload release I_r A	Setting range: Short-circuit releases, Delayed I_{sd} A	Setting range: Short-circuit releases, Non-delayed I_i A	Basic switching capacity (B) $I_{cu} = I_{cs}$ = 55 kA at 415 V 50/60 Hz: Type / Article no.	Price See Price List	Normal switching capacity (N) $I_{cu} = I_{cs}$ = 80 kA at 415 V 50/60 Hz: Type / Article no.	Price See Price List	High switching capacity (H) $I_{cu} = I_{cs}$ = 100 kA at 415 V 50/60 Hz: Type / Article no.	Price See Price List	Std. pack		Notes
Circuit-breaker for universal protection (U) and motor protection												
IZM...2-4-U...												
800	320 – 800	1000 – 9600	1.5 – 12 × I_n, OFF	**IZMB2-4-U800** 225609		**IZMN2-4-U800** 225613		**IZMH2-4-U800** 225624		1 off	–	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t at 6 × I_r, t_r = 1, 2, 3, 4, 5 s with setting to I^4t • Adjustable delayed short-circuit release I_{sd} = 1.25 – 12 × I_n • Delay time t_{sd} = OFF, 20 (motor protection), 100, 200, 300, 400 ms • Note the adjustable non-delayed short-circuit release I_i = 1.5 – 12 × I_n, further setting values: Max. = 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$! • With overload protection on the 4th pole, can be set to OFF, 100 % or 50 % I_r
1000	400 – 1000	1250 – 12000		**IZMB2-4-U1000** 225610		**IZMN2-4-U1000** 225614		**IZMH2-4-U1000** 225625			–	
1250	500 – 1250	1563 – 15000		**IZMB2-4-U1250** 225611		**IZMN2-4-U1250** 225615		**IZMH2-4-U1250** 225626			–	
1600	640 – 1600	2000 – 19200		**IZMB2-4-U1600** 225612		**IZMN2-4-U1600** 225616		**IZMH2-4-U1600** 225627			–	
2000	800 – 2000	2500 – 24000		**IZMB2-4-U2000** 230198		**IZMN2-4-U2000** 225617		**IZMH2-4-U2000** 225628			–	
2500	1000 – 2500	3125 – 30000		**IZMB2-4-U2500** 230199		**IZMN2-4-U2500** 225618		**IZMH2-4-U2500** 225629			–	
3200	1280 – 3200	4000 – 38400		**IZMB2-4-U3200** 230200		**IZMN2-4-U3200** 225619		**IZMH2-4-U3200** 225630			–	
IZM...3-4-U...												
4000	1600 – 4000	5000 – 48000	1.5 – 12 × I_n, OFF					**IZMH3-4-U4000** 225632		1 off	–	
5000	2000 – 5000	6250 – 60000						**IZMH3-4-U5000** 225633			–	
6300	2520 – 6300	7875 – 75600						**IZMH3-4-U6300** 232162			Only vertical version of main terminals possible	
Digital circuit-breaker (D) incl. graphic display												
IZM...2-4-D...												
800	320 – 800	1.25 × I_n – 0.8 × I_{cw}	1.5 × I_n – 0.8 × I_{cs}	**IZMB2-4-D800** 230212		**IZMN2-4-D800** 230219		**IZMH2-4-D800** 230226		1 off	–	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t, t_r = 1, 2, 3, 4, 5 s when set to I^4t • Adjustable delayed short-circuit release I_{sd} = 1.25 × I_n – 0.8 × I_{cw}, with max. setting of 0.8 × I_{cw} the setting of the delay time t_{sd} is only permissible to max. 400 ms, I_{cw} → Technical data • Delay time t_{sd} = OFF, 20, 100, 200, 300, 400, 500, 1000, 2000, 3000, 4000 ms • Observe adjustable non-delayed short-circuit release I_i = 1.5 × I_n – 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$! • With overload protection on the 4th pole, can be set to OFF, 200 %, 100 % or 50 % I_r • External 24 V DC power supply required (description → "components for communication")
1000	400 – 1000			**IZMB2-4-D1000** 230213		**IZMN2-4-D1000** 230220		**IZMH2-4-D1000** 230227			–	
1250	500 – 1250			**IZMB2-4-D1250** 230214		**IZMN2-4-D1250** 230221		**IZMH2-4-D1250** 230228			–	
1600	640 – 1600			**IZMB2-4-D1600** 230215		**IZMN2-4-D1600** 230222		**IZMH2-4-D1600** 230229			–	
2000	800 – 2000			**IZMB2-4-D2000** 230216		**IZMN2-4-D2000** 230223		**IZMH2-4-D2000** 230230			–	
2500	1000 – 2500			**IZMB2-4-D2500** 230217		**IZMN2-4-D2500** 230224		**IZMH2-4-D2500** 230231			–	
3200	1280 – 3200			**IZMB2-4-D3200** 230218		**IZMN2-4-D3200** 230225		**IZMH2-4-D3200** 230232			–	
IZM...3-4-D...												
4000	1600 – 4000	1.25 × I_n – 0.8 × I_{cw}	1.5 × I_n – 0.8 × I_{cs}					**IZMH3-4-D4000** 230233		1 off	–	• Adjustable overload release I_r = 0.4 – 1 × I_n • Delay time t_r = 2 – 30 s when set to I^2t, t_r = 1, 2, 3, 4, 5 s when set to I^4t • Adjustable delayed short-circuit release I_{sd} = 1.25 × I_n – 0.8 × I_{cw}, with max. setting of 0.8 × I_{cw} the setting of the delay time t_{sd} is only permissible to max. 400 ms, I_{cw} → Technical data • Delay time t_{sd} = OFF, 20, 100, 200, 300, 400, 500, 1000, 2000, 3000, 4000 ms • Observe adjustable non-delayed short-circuit release I_i = 1.5 × I_n – 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$! • With overload protection on the 4th pole, can be set to OFF, 200 %, 100 % or 50 % I_r • External 24 V DC power supply required (description → "components for communication")
5000	2000 – 5000							**IZMH3-4-D5000** 230234			–	
6300	2520 – 6300							**IZMH3-4-D6300** 232163			Only vertical version of main terminals possible	

Notes Rated current derating: → accessories "Rated current module"

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

Moeller HPL0211-2004/2005

	Rated current = rated uninterrupted current[1)] $I_n = I_u$ A	Rated short-circuit making capacity I_{cm} kA	Rated short-time withstand current t = 1 s I_{cw} kA	3-pole Type Article no.	Price See Price List	Std. pack	4-pole Type Article no.	Price See Price List	Std. pack	Notes
IN...1(-4)-...										
	630	105	42	**INB1-630** 230261		1 off	**INB1-4-630** 230281		1 off	The INB1(-4)-... switch-disconnector is identical in design to the IZMB1(-4)-... circuit-breaker, however without the electronic trip-release and without the internal converter.
	800			**INB1-800** 230269			**INB1-4-800** 230283			
	1000			**INB1-1000** 230270			**INB1-4-1000** 230285			
	1250			**INB1-1250** 230272			**INB1-4-1250** 230287			
	1600			**INB1-1600** 230273			**INB1-4-1600** 230288			
	630	143	50	**INN1-630** 230274		1 off	**INN1-4-630** 230291		1 off	The INN1(-4)-... switch-disconnector is identical in design to the IZMN1(-4)-... circuit-breaker, however without the electronic trip-release and without the internal converter.
	800			**INN1-800** 230276			**INN1-4-800** 230293			
	1000			**INN1-1000** 230277			**INN1-4-1000** 230294			
	1250			**INN1-1250** 230278			**INN1-4-1250** 230296			
	1600			**INN1-1600** 230279			**INN1-4-1600** 230297			

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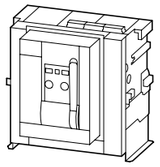
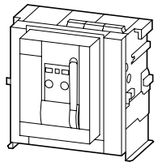
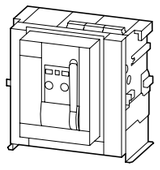
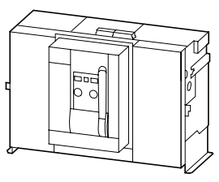
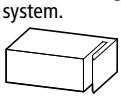
	Rated current = rated uninterrupted current $I_n = I_u$ A	Rated short-circuit making capacity I_{cm} kA	Rated short-time withstand current t = 1 s I_{cw} kA	3-pole Type Article no.	Price See Price List	Std. pack	4-pole Type Article no.	Price See Price List	Std. pack		Notes
IN...2(-4)-...											
	800	121	55	**INB2-800** 230300		1 off	**INB2-4-800** 230325		1 off	–	The INB2(-4)-... switch-disconnector is identical in design to the IZMB2(-4)-... circuit-breaker, however without the electronic trip-release and without the internal converter.
	1000			**INB2-1000** 230302			**INB2-4-1000** 230326			–	
	1250			**INB2-1250** 230303			**INB2-4-1250** 230327			–	
	1600			**INB2-1600** 230304			**INB2-4-1600** 230328			–	
	2000			**INB2-2000** 230305			**INB2-4-2000** 230329			–	
	2500			**INB2-2500** 230306			**INB2-4-2500** 230330			–	
	3200			**INB2-3200** 230307			**INB2-4-3200** 230331			–	
	800	176	65	**INN2-800** 230308		1 off	**INN2-4-800** 230332		1 off	–	The INN2(-4)-... switch-disconnector is identical in design to the IZMN2(-4)-... circuit-breaker, however without the electronic trip-release and without the internal converter.
	1000			**INN2-1000** 230309			**INN2-4-1000** 230333			–	
	1250			**INN2-1250** 230310			**INN2-4-1250** 230334			–	
	1600			**INN2-1600** 230311			**INN2-4-1600** 230335			–	
	2000			**INN2-2000** 230312			**INN2-4-2000** 230336			–	
	2500			**INN2-2500** 230313			**INN2-4-2500** 230337			–	
	3200			**INN2-3200** 230314			**INN2-4-3200** 230338			–	
	800	220	65	**INH2-800** 230315		1 off	**INH2-4-800** 230339		1 off	–	The INH2(-4)-... switch-disconnector is identical in design to the IZMH2(-4)-... circuit-breaker, however without the electronic trip-release and without the internal converter.
	1000		65	**INH2-1000** 230316			**INH2-4-1000** 230340			–	
	1250		65	**INH2-1250** 230317			**INH2-4-1250** 230341			–	
	1600		65	**INH2-1600** 230318			**INH2-4-1600** 230342			–	
	2000		65	**INH2-2000** 230319			**INH2-4-2000** 230343			–	
	2500		65	**INH2-2500** 230320			**INH2-4-2500** 230344			–	
	3200		80	**INH2-3200** 230321			**INH2-4-3200** 230345			–	
INH3(-4)-...											
	4000	220	80	**INH3-4000** 230322		1 off	**INH3-4-4000** 230346		1 off	–	The INH3(-4)-... switch-disconnector is identical in design to the IZMH3(-4)-... circuit-breaker, however without the electronic trip-release and without the internal converter.
	5000		80	**INH3-5000** 230323			**INH3-4-5000** 230347			–	
	6300		100	**INH3-6300** 232164			**INH3-4-6300** 232165			Only vertical version of main terminals possible	

Pole	For use with basic unit	Rated operational current I_e A	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	Std. pack	**Notes**
Increasing the rated operational voltage to 1000 V AC						
3-pole	IZMH2-... INH2-...	Up to 2000 A	**+IZM2-20-X1000V** 257038		1 off	A rated operational voltage of 1000 V AC is only possible for INH2-... and INH3-... switch-disconnectors and for IZMH2-... and IZMH3-... circuit-breakers **with high switching capacity**. Observe reduced values in the technical specifications.
		Up to 2500 A	**+IZM2-25-X1000V** 257039			
		Up to 3200 A	**+IZM2-32-X1000V** 257040			
	IZMH3-... INH3-...	Up to 4000 A	**+IZM3-40-X1000V** 257041			
		Up to 5000 A	**+IZM3-50-X1000V** 257042			
		Up to 6300 A	**+IZM3-63-X1000V** 257043			
4-pole	IZMH2-4-... INH2-4-...	Up to 2000 A	**+IZM2-204-X1000V** 257044			
		Up to 2500 A	**+IZM2-254-X1000V** 257045			
		Up to 3200 A	**+IZM2-324-X1000V** 257046			
	IZMH3-4-... INH3-4-...	Up to 4000 A	**+IZM3-404-X1000V** 257047			
		Up to 5000 A	**+IZM3-504-X1000V** 257048			
		Up to 6300 A	**+IZM3-634-X1000V** 257049			

	Type Article no.	Price See Price List	Std. pack		Notes
Electronic overcurrent release					
System protection	**IZM-XZMA** 259210		1 off	–	Order separately for spare part requirement. Please state the article number of the circuit-breaker with order! Order internal wiring separately if required: IZM-XZM-VLIS(-VLEW). **Modification of a switch-disconnector by Moeller Field Service possible.** For IZM-XZMU(...), IZM-XZMR(...) and IZM-XZMD(...) releases, the X8 control circuit plug is required. If not available, order the IZM-XKL(Z)(-AV) control circuit plug with the order. → terminal assignment plan page 11/51 Accessories for overcurrent release (incl. Rating Plug IZM-XRP...) must be ordered seperatly.
Selectively-opening circuit-breakers	**IZM-XZMV** 259211			–	
Selectively-opening circuit-breakers with earth-fault protection	**IZM-XZMV-XT** 281344			–	
Universal	**IZM-XZMU** 259213			–	
Universal with "power" measuring function	**IZM-XZMU-MP** 281345			–	
Universal with "harmonic" measuring function	**IZM-XZMU-MH** 281346			–	
Remote	**IZM-XZMR** 259214			The difference to type suffix +IZM-XZMR → 11/32 is that these types do not include the IZM-XCOM-DP communication interface.	
Remote with "power" measuring function	**IZM-XZMR-MP** 281347				
Remote with "harmonic" measuring function	**IZM-XZMR-MH** 281348				
Digital	**IZM-XZMD** 259215			–	
Digital with "power" measuring function	**IZM-XZMD-MP** 281349			–	
Digital with "harmonic" measuring function	**IZM-XZMD-MH** 281410			–	
Internal wiring for conversion/upgrade Required with release upgrade					
With upgrade from XZMA(V) to XZMU(R)(D) release	**IZM-XZM-VLIS** 281411		1 off	With release upgrade, the necessary "internal system bus" wiring between the release and X8, if communication functions or an external 24 V DC supply are to be used.	–
For the connection of external N and/or G converters to the XZMU(R)(D) release	**IZM-XZM-VLEW** 281412		1 off	With release upgrade, the necessary wiring between the release and X8, if neutral pole protection or earth-fault protection are to be implemented.	–
Hand-held test unit					
For checking that the overcurrent release, energy transformer, current transformer and F5 tripping magnet are functioning correctly; suitable for all overcurrent releases from 07/02	**IZM-XPH** 226018		1 off	–	With mains cable Mains voltages: 220 – 240 V or 110 – 125 V, 50/60 Hz possible.

Rated current module/rating plug

Exchangeable module which enables reduction of the rated current of the device for optimum matching to the system, e.g. with commissioning of a section of the system.



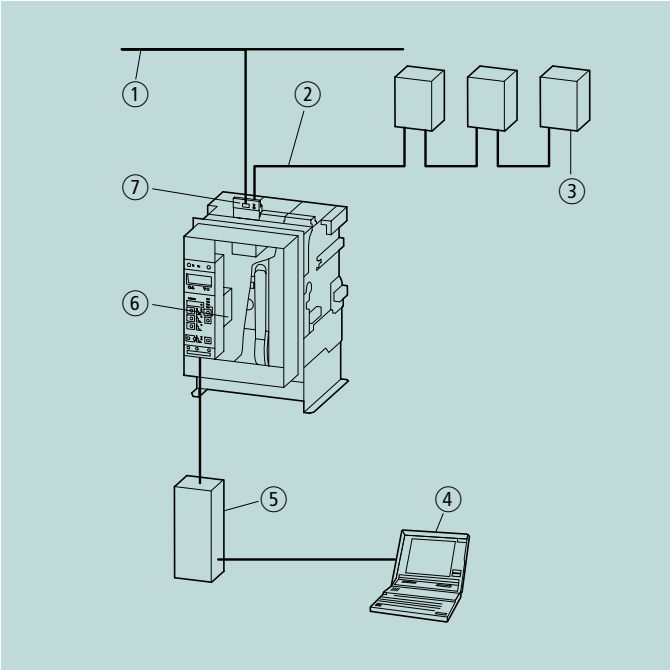
Can be exchanged in	Rated current = rated uninterrupted current $I_n = I_u$ A	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	Std. pack	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
IZM...-1(-4)-... IZM...-2(-4)-...	250	**+IZM-XRP250** 230675		1 off	**IZM-XRP250** 230622		1 off	Not for use with IZM...-A... circuit-breakers for system protection Replaceable module, allows reduction of rated current of device (for example for partial commissioning). The upper limit of the rated uninterrupted current I_u of the circuit-breaker cannot be exceeded. The error indication flashes and the overcurrent release assumes that the smallest possible rating plug is fitted if the following is true on switching ON: • the fitted rating plug is too large, • a rating plug smaller than 1250 A is fitted on the IZM...3-..., • no rating plug is fitted.
IZM...-1(-4)-... IZM...-2(-4)-...	315	**+IZM-XRP315** 230676			**IZM-XRP315** 230623			
IZM...-1(-4)-... IZM...-2(-4)-...	400	**+IZM-XRP400** 230677			**IZM-XRP400** 230624			
IZM...-1(-4)-... IZM...-2(-4)-...	500	**+IZM-XRP500** 230678			**IZM-XRP500** 230625			
IZM...-1(-4)-... IZM...-2(-4)-...	630	**+IZM-XRP630** 230679			**IZM-XRP630** 230626			
IZM...-1(-4)-... IZM...-2(-4)-...	800	**+IZM-XRP800** 230681			**IZM-XRP800** 230628			
IZM...-1(-4)-... IZM...-2(-4)-...	1000	**+IZM-XRP1000** 230682			**IZM-XRP1000** 230629			
IZM...-1(-4)-... IZM...-2(-4)-... IZM...-3(-4)-...	1250	**+IZM-XRP1250** 230683			**IZM-XRP1250** 230630			
IZM...-1(-4)-... IZM...-2(-4)-... IZM...-3(-4)-...	1600	**+IZM-XRP1600** 230684			**IZM-XRP1600** 230631			
IZM...-2(-4)-... IZM...-3(-4)-...	2000	**+IZM-XRP2000** 230685			**IZM-XRP2000** 230632			
IZM...-2(-4)-... IZM...-3(-4)-...	2500	**+IZM-XRP2500** 230686			**IZM-XRP2500** 230633			
IZM...-2(-4)-... IZM...-3(-4)-...	3200	**+IZM-XRP3200** 230687			**IZM-XRP3200** 230634			
IZM...-3(-4)-...	4000	**+IZM-XRP4000** 230688			**IZM-XRP4000** 230635			
IZM...-3(-4)-...	5000	**+IZM-XRP5000** 230689			**IZM-XRP5000** 230636			
IZM...-3(-4)-...	6300	**+IZM-XRP6300** 230690			**IZM-XRP6300** 230637			

	Type suffix Article no. for ordering with basic unit	**Price** See Price List	Std. pack	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack		**Notes**
Earth-fault protection for IZM with IZM...-V... selectively-operating circuit-breakers								
Earth-fault protection (vectorial summation), incl. N conductor protection with 4-pole circuit-breakers)	**+IZM-XT** 230830		1 off				Settings for IZM...1-... and IZM...2-...: 100, 300, 600, 900, 1200 A Settings for IZM...3-...: 400, 600, 800, 1000, 1200 A	With 3-pole circuit-breakers, an external transducer for the N conductor is required for vectorial summation.
Earth-fault protection for IZM with IZM...-U... universal circuit-breakers								
Earth fault protection (vectorial summation convertible), with alarm and tripping function	**+IZMU-XT** 225661 **+IZMU-XTA** 230428		1 off	**IZMU-XT** 230426 **IZMU-XTA** 230427		1 off	Settings for IZM...1-... and IZM...2-...: 100, 300, 600, 900, 1200 A Settings for IZM...3-...: 400, 600, 800, 1000, 1200 A Through an external transducer, the earth-fault current in the transformer's star point can alternatively be measured. Commercially available current transformers 1200 A/1 A with an apparent power of P_n = 15 VA can be used. Measuring principle changeover on earth-fault protection module.	With 3-pole circuit-breakers, an external transducer for the N conductor is required for vectorial summation.
Display for universal release								
4-line	**+IZM-XAM** 230430		1 off	**IZM-XAM** 232188		1 off	Display of: • Currents I_{L1}, I_{L2}, I_{L3}, I_N, I_g, maintenance information, trip cause and phase. In conjunction with the IZM-XMP(H) measuring function display of: • U, P, $\cos\varphi$, W, f (distortion factor and harmonic content). When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order if required, refer to the terminal assignment plan on page 12/51. An external 24 V DC power supply is required for full functionality (description → "components for communication"). Without an external power supply the data for trip will **not** be saved. However, the phase currents and the set parameters can be read off under the following conditions: • The load for the main circuit is > 80 A (applies for frame size 1 and 2). • The load for the main circuit is > 200 A (applies for frame size 3).	

	Type suffix Article no. for ordering with basic unit	Price See Price List	Std. pack	Type Article no. when ordered separately	Price See Price List	Std. pack	
Earth fault protection for IZM with digital circuit-breaker IZM...-R(D)...(+IZM-XZMR)							
With 3-pole circuit-breakers, an external transducer for the N conductor is required for vectorial summation.							
Earth fault protection (vectorial summation convertible), with alarm and tripping function	**+IZMD-XT** 230431		1 off	**IZMD-XT** 230432		1 off	Settings: • IZM...1(2)-...: 1000 – 1200 A • IZM...3-...: 400 – 1200 A Through an external transducer, the earth-fault current in the transformer's star point can alternatively be measured. Commercially available current transformers 1200 A/1 A with an apparent power of P_n = 15 VA can be used. Menu-driven measuring principle changeover with cursor keys.
Earth fault protection (vectorial summation convertible), alarm function only	**+IZMD-XTA** 230434			**IZMD-XTA** 230433			
Release variant exclusively with external parameterization access for IZM with IZM...-D... digital release							
Supplied as standard: +IZM-XCOM-DP communication interface	**+IZM-XZMR** 263471						Can only be ordered in combination with IZM...-D... basic device type. Protection function as with digital circuit-breaker, however, without display and operating elements. **For applications without onsite operation with enhanced safety demands.**

		For use with	Type Article no.	Price See Price List	Std. pack	Notes
Measurement transformer for N conductor and earth-fault protection						
Ring-type transformer (Rogowski convertor)						
	IZM...1-...	Circuit-breakers IZM...-V... IZM...-U... IZM...-D...	**IZM1-XW** 230439		1 off	With 3-pole circuit-breakers, an external transducer for the N conductor is required for the earth-fault protection (for vectorial summation). Required for connection to the IZM-XKL(Z)(-AV) control-circuit, order if necessary. → terminal assignment plan page 11/51
	IZM...2-...		**IZM2-XW** 230440			
	IZM...3-...		**IZM3-XW** 230441			
Transformer with copper connection						
	IZM...1-...	Circuit-breakers IZM...-V... IZM...-U... IZM...-D...	**IZM1-XWC** 230442		1 off	
	IZM...2-...		**IZM2-XWC** 230443			
	IZM...3-...		**IZM3-XWC** 230444			

	Rated control voltage U_s V	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	Std. pack	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
Accessories for electronic overcurrent release								
Cover can be sealed								
Suitable for IZM...A(V)(U) control units and for IZM...D-...+IZM-XZMR (without graphic display)		**+IZM-XHB** 230638		1 off	**IZM-XHB** 230639		1 off	Sealable cover for setting buttons, with lockable cover for reset button (with key)
Suitable for IZM...D- control unit with graphic display (without +IZM-XZMR option)		**+IZM-XHBG** 232190		1 off	**IZM-XHBG** 232191		1 off	
Automatic reset of the mechanical reclosing lockout								
	–	**+IZM-XOW** 230783		1 off	**IZM-XOW** 257027		1 off	• No Reset required after overcurrent trip • Tripped indicator (red pin) and IZM-XHIA remain as continuous signal • Switch can be immediately switched on again • Permissible only if a mechanical manual reset is not essential
Remote reset								
	24 DC	**+IZM-XFR24DC** 230725		1 off				Switch is immediately ready for operation again after the Remote Reset command (on condition that the spring-operated stored-energy mechanism is charged automatically by a motor operator). IZM-XFR... includes the IZM-XOW-function: • Automatic reset of the mechanical reclosing lockout • Resetting the trip indication (red pin and IZM-XHIA are reset) X8 control circuit plug required. If not available, order the IZM-XKL(Z)(-AV) control circuit plug with the order. → terminal assignment plan page 11/51
	48 DC	**+IZM-XFR48DC** 230726						
	125 DC 120 AC	**+IZM-XFR120AC/125DC** 230727						
	250 DC 220 – 240 AC 50/60 Hz	**+IZM-XFR230AC/250DC** 230728						



① PROFIBUS-DP
② Internal system bus
③ External expansion modules (max. 8 modules)
④ Parametric programming of the IZM without additional software
⑤ IZM-XEM-PG(E) parameter assignment module
⑥ IZM-XMP(H) measurement module
⑦ IZM-XCOM-DP communication module

Moeller IZM...-U... and IZM...-D... circuit-breakers are open circuit-breakers with communication features. Their extremely space-efficient design provides information concerning all the important switch functions.
- The circuit-breakers can be parameterized via the local interface of the XZMD(R) overcurrent release. All device-specific data can be shown.
- Built-in circuit-breaker bus for communication between IZM and release, measuring function, switchgear signals, remote monitoring, tripping and parameterization
- Connection of external modules to the internal system bus, e.g. for monitoring (even with subsequent upgrading without additional wiring).
- Simple connection to PROFIBUS-DP with communication module for IZM with universal and digital circuit-breakers
- The IZM circuit-breakers can be incorporated in wide-area communication solutions based on PROFIBUS-DP. Within the system the circuit-breakers can be parameterized by a programmable logic control (PLC). All available data can be read.
- Switching, controlling and data transfer through central PC
- Data acquisition and power management through measuring function

Control voltage supply

The basic functions of the electronic overcurrent release do not require auxiliary power. With the "Universal" and "Digital" release it is possible to use additional functions which necessitate a data exchange via the internal system bus. These devices are fitted with the internal system bus as standard. For data communications, an external 24 V DC power supply is required, which must fulfil the following conditions:
- Primary switched-mode power supply unit
- 24 V DC, ± 3 %
- Rated output current: 5 A per circuit-breaker with the greatest possible number of external expansion modules.

For example, you can use the Moeller switched-mode power supply unit SN4-050-BI7, Article. No. 200034.
Connection to control circuit connections X8:3 and X8:4 or to one of the expansion modules. The various components are then supplied with power through the internal system bus connection.

Additional functions through the use of:
- Communication module
- Expansion modules
- Measuring modules
- 4-line display or graphic display
- Parameter assignment module

With the 4-line display, the phase currents and the set parameters can be viewed without an external power supply, as soon as the load exceeds 80 A (at IZM...1(2)...) or 200 A (with IZM...3...) on the main circuit.

If the parameter assignment module is used in Offline mode (i.e. without connection to an electronic release), it can not be supplied through the internal system bus. In that case, a standard commercial 24 V DC mains adapter with 5.5 mm jack (plus on the insider) and a load carrying capacity of 500 mA can be used. The mains adapter must meet the SELV regulations.

Communication module

The IZM-XCOM-DP communication module enables connection of the IZM circuit-breaker to the PROFIBUS-DP. A PROFIBUS master can communicate with the IZM via the DP and DPV1 protocols for monitoring purposes.
Maintenance information received on time (e.g. via the operating time/hours or via the wear and usage of the main contacts) enables the user to prevent system standstills. With threshold violation signals, users can take preventative measures before it comes to a trip. For later analysis with the IZM-XEM-PG parameter assignment module, the relevant data generated when a trip takes place is saved in the device (for example tripping current with date and time).
Because the communication module is attached to the frame of the circuit-breaker, the built-in temperature sensor measures the temperature inside the control panel. The switch position is transmitted to PROFIBUS through three microswitches in the underside of the communication module (operating, test or isolated position).
All microswitches that record information about the state of the circuit-breaker are installed on or connected to the breaker status sensor (BSS module) for signalling internal switching states. The module provides this digital information (ON, OFF, status of the spring energy store, availability, voltage release) on the built-in system bus. A further temperature sensor determines the temperature in the circuit-breaker. This reading is also made available through a bus line.

Internal system bus

The internal system bus used in the circuit-breakers with communication features allows various external expansion modules to be connected to the data exchange process.
The available modules include digital output modules, an analog output module, a digital input module and the ZSI module for reduced-time selectivity control. The digital output modules – optionally with relay outputs or optocoupler outputs – are available in a user-programmable version and a version programmable with a rotary coding switch.
The power for the external expansion module is provided by the internal system bus.

Measuring function

With the data and functions provided by the measuring function, the power distribution can be analysed in detail. With the setpoint functions of the measuring functions, users can signal or record specific events in the network. In addition, extended protective functions can be implemented, providing additional tripping conditions that are not covered by the overcurrent release. The measuring function is available in two versions:

"power" measuring function:

The "power" measuring function determines currents, voltages, ratings, power factors, energy values , frequencies, harmonic distortion, form factors and peak factors.

"harmonic" measuring function:

The "harmonic" measuring function provides two additional, independent curve form memories and a frequency analysis up to the 29th harmonic (fast Fourier transformation, or FFT), which can be used for a harmonic compensation.

Digital output module with rotary coding switch

This module can output 6 binary data units concerning the switching state (trip causes and warnings) of external switching devices (e.g. lamps, horns, klaxons) or for switching off further system components (e.g. frequency inverters).
Various versions of digital output modules are available, both with and without a rotary coding switch. Modules with a rotary coding switch allow selection between two signal blocks, each with six defined assignments, and an additional response delay.
All digital output modules are available as versions with opto-coupler outputs (make contact, 150 mA) or with relay outputs (changeover contacts up to 10 A). Up to two modules of this type can be connected to an IZM.

Digital output module, configurable

For high-performance solutions, the configurable output module is available. With this unit, any event on the internal system bus can be switched directly on one of six available outputs or three of these outputs can be assigned with up to six events ("OR" operation). The module can be configured with the IZM-XEM-PG or IZM-XEM-PGE parameter assignment module (with Ethernet interface).
As for the output modules with rotary coding switch, an optocoupler and a relay version are available. Only one module of this type can be used per IZM.

Analog output module

The analog output module can be used in conjunction with one of the two measuring functions to output the following measured values of the circuit-breaker to analog indication devices in the control panel door:
- I_{L1}, I_{L2}, I_{L3}, I_N or
- U_{L12}, U_{L23}, U_{L31}, U_{L1N} or
- P_{L1}, P_{L2}, P_{L3}, S_{tot} or
- $\cos\varphi_1$, $\cos\varphi_2$, $\cos\varphi_3$, $\Delta I_{\%}$ or
- f_{avg}, U_{LLavg}, $P_{tot,\ avg}$

Four interfaces (4 – 20 mA/0 – 10 V) are available for this purpose. The measured values for output are selected with a rotary coding switch. The use of the analog output module removes the need for additional transducers and their conventional installation and wiring in the main circuit. Up to two modules of this type can be connected to an IZM.

Digital input module

With the digital input module, six additional binary signals (24 V DC) can be connected to the system. Alternatively, a changeover between two parameter sets (e.g. for motoric and regenerative operation) can be implemented quickly and easily.

ZSI module

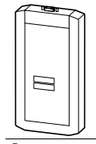
Where full selectivity at low delay times is an issue even if the circuit-breakers are arranged in hierarchical groups, the ZSI modules have the solution. They are used to connect the circuit-breakers with each other.
If a short-circuit occurs, each circuit-breaker through which short-circuit current flows determines whether the adjacent circuit-breaker on the next lower level is also affected. This allows the exact location of the short-circuit to be identified and only the circuit-breaker immediately upstream of the fault location is tripped.
With the microprocessor controlled "delayed discrimination control" (ZSI) the tripping delay of these upstream circuit-breakers can be reduced to a max. of 50 ms.

Parameter assignment module

The IZM-XEM-PG parameter assignment module with integrated webserver allows access to all device information for analysis or parameterization purposes. The parameter assignment module is connected to the local interface of the overcurrent release and, acting as a Web server, makes the data available through the Hypertext Transfer Protocol (HTTP). With this interface, any PC – desktop, notebook or palmtop – with a Web browser with Java 2 Virtual Machine can become a user interface. The required HTTP files are included as standard.
No additional software needs to be installed. The data is displayed in a clear tree structure for quick access. With the parameter assignment module, the switch parameters can not only be changed, but also saved for later transmission to identical circuit-breakers.
Depending on the equipment level of the IZM circuit-breaker, the following values can be displayed: current, voltage, power, energy, $\cos\varphi$, frequency and harmonics as well as temperature.
All status information for the circuit-breaker, warning and trip indications, threshold violations – each with date and time of occurrence, maintenance and statistical information (to reduce or prevent system downtimes).
The parameter assignment module is fitted with a magnet on its back, which makes it ideally suited as a portable "online" parameterization and diagnostics tool. Alternatively, the parameter assignment module can be used to create and modify parameter sets offline on a notebook. A printing function allows all processes and settings to be documented on paper.

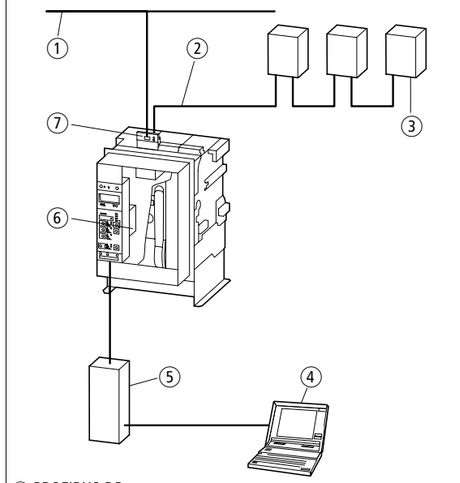
Circuit-breakers, switch-disconnectors from 630 A to 6300 A

Moeller HPL0211-2004/2005

	Description	Type suffix Article no. for ordering with basic unit	Price See Price List	Std. pack
Parameter definition systems				
Suitable for IZM...-U... and IZM...-D...				
				
Parameter assignment and operating module	• Parameterization, operation, monitoring and diagnostics of the IZM circuit-breaker via the local interface. • Includes the connection cable to the IZM circuit-breaker and null modem cable to the PC/Laptop, runs under Internet Explorer with JAVA2 VM 1.4.0-01.	–		
Parameter assignment and operating module with Ethernet interface	• Parameterization, operation, monitoring and diagnostics of the IZM circuit-breaker via the local interface. • Includes the connection cable to the IZM circuit-breaker and null modem cable to the PC/Laptop, runs under Internet Explorer with JAVA2 VM 1.4.0-01. • With integrated Ethernet interface for connection to Ethernet/Internet/ Intranet.	–		
Connection cable to the X8 terminal	For IZM-XEM-PGE parameter assignment and operating device	–		

Moeller HPL0211-2004/2005

Type Article no. when ordered separately	Price See Price List	Std. pack	Notes
IZM-XEM-PG 230759		1 off	System requirement of the input/output module is a standard browser with Java 2 Virtual Machine (e.g. Internet Explorer, V5.5 or higher or Netscape Navigator, V6.2 or higher). Once the parameter assignment module has been connected to the circuit-breaker, the browser can access the web pages of the parameter assignment module and the data from the circuit-breakers.
IZM-XEM-PGE 230782		1 off	
IZM-XEM-VLPGE-X8 281413		1 off	Connection cable for connecting the IZM-XEM-PGE to the X8 terminal strip. For permanent use on a circuit-breaker, which does not feature the IZM-XCOM-DP communication modules or expansion modules.



① PROFIBUS-DP
② Internal system bus
③ External expansion modules
④ Parametric programming of the IZM without additional software
⑤ IZM-XEM-PG(E) parameter assignment module
⑥ IZM-XMP(H) measuring module
⑦ IZM-XCOM-DP communication module

To utilise the functionality of the communications interface, an external 24 V DC power supply must be connected to terminals X8.3 and X8.4.
The various components are then supplied with power through the internal system bus connection (included as standard).

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

	Description	Moeller HPL0211-2004/2005 Type suffix Article no. for ordering with basic unit	Price See Price List	Std. pack	Moeller HPL0211-2004/2005 Type Article no. when ordered separately	Price See Price List	Std. pack	Notes	Notes
Communication modules									
Suitable for IZM...-U... and IZM...-D...									
PROFIBUS-DP communication interface 	PROFIBUS-DP communication connection including connection cable and BSS module (Breaker Status Sensor) for bus side signalling of internal switching states. With integrated temperature sensor and micro switches for position signalling (for switches in withdrawable units).	**+IZM-XCOM-DP** 230751		1 off	**IZM-XCOM-DP** 230833		1 off	With use of the communication module, the installation feature for the IZM-XHIA, -XHIF, -XHIS and -XHIS1 auxiliary contacts is not applicable. The respective signals are detected internally via the Breaker-Status-Sensor and can be accessed with the parameter assignment module, via expansion modules or via the PROFIBUS.	External 24 V DC power supply required. Description → "components for communication" The (+)IZM-XCOM-DP order type already includes the IZM-XBSS Breaker Status Sensor and also an actuation module. Breaker-Status-Sensor and actuation module are attached to the basic unit. When separately ordering the basic unit and withdrawable unit, the required order options are to be assigned to the basic unit. The +IZM-XBSS plus type is only required however, if internal signals are required without any further communication interfacing. The IZM-XBSS single type is only intended for spare part requirement. The IZM-XBSS Breaker-Status-Sensor is installed in the basic unit.
Separate communication module without BSS module	Required with spare part requirement or if the communication interfacing without Breaker-Status-Sensor is to be implemented.				**IZM-XCO-DP** 257028		1 off	With use of the communication module, the installation feature for the IZM-XHIA, -XHIF, -XHIS and -XHIS1 auxiliary contacts is not applicable. The respective signals are only available in conjunction with a BSS module via communication.	
Separate Breaker-Status-Sensor (BSS module)	Required with spare part requirement or if the Breaker-Status-Sensor without communication interfacing is to be implemented. Serves for signalling internal switching states on the internal system bus: Main contact ON/OFF, trip indication, spring-charge state signals, ready-to-close indication, voltage trip state With integrated temperature sensor.	**+IZM-XBSS** 259201		1 off	**IZM-XBSS** 259202		1 off	With use of the BSS module, the installation feature for the IZM-XHIA, -XHIF, -XHIS and -XHIS1 auxiliary contacts is not applicable. The respective signals are detected internally via the Breaker-Status-Sensor and can be accessed with the parameter assignment module or with external expansion modules.	
Measurement modules									
Suitable for IZM...-U... and IZM...-D...									
"power" measuring function	An external 3-phase voltage transformer is required for the measuring function. Allows measurement of *I*, *U*, *P*, *cos φ*, W, *f* and total harmonic distortion, peak factor and form factor.	**+IZM-XMP** 230436		1 off	**IZM-XMP** 230834		1 off	Configuration of the measuring function (setting of the energy flow direction, transformer primary and secondary voltage and connection type): • For IZM with digital circuit-breaker (IZM...-D...): menu assisted via graphic display • For IZM with universal circuit-breaker (IZM...-U...): IZM-XEM-PG(E) parameter assignment module required	External 24 V DC power supply required (description → "components for communication")
"harmonic" measuring function	An external 3-phase voltage transformer is required for the measuring function. As "power" measuring function, but two additional, independent waveform memories (for currents and voltages) and a frequency analysis up to the 29th harmonic	**+IZM-XMH** 230437		1 off	**IZM-XMH** 230835		1 off	Configuration of the measuring function (setting of the energy flow direction, transformer primary and secondary voltage and connection type): • For IZM with digital circuit-breaker (IZM...-D...): menu assisted via graphic display • For IZM with universal circuit-breaker (IZM...-U...): IZM-XEM-PG(E) parameter assignment module required	
Voltage transformer									
230 V/100 V	Necessary for the "power" and "harmonic" measuring function				**IZM-XW05U230** 256989		1 off	–	Standard: customer screw-type terminal connection. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order separately if required. → terminal assignment plan page 11/51
440 V/100 V	Necessary for the "power" and "harmonic" measuring function				**IZM-XW05U440** 230447		1 off	–	
500 – 690 V/100 V	Necessary for the "power" and "harmonic" measuring function				**IZM-XW05U690** 230449		1 off	–	

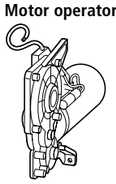
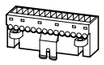
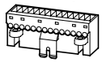
Circuit-breakers, switch-disconnectors from 630 A to 6300 A

	Description	Type suffix Article no. for ordering with basic unit	Price See Price List	Std. pack	Type Article no. when ordered separately	Price See Price List	Std. pack		Notes
		Moeller HPL0211-2004/2005			Moeller HPL0211-2004/2005				
Expansion module									
Suitable for IZM...-U... and IZM...-D...									
Digital output module relay	Six digital outputs, time delay adjustable from 0 to 2 s. Outputs optionally assigned with • Signal from overload trip, delayed/non-delayed short-circuit trip, earth-fault alarm/trip and neutral conductor trip or • Signal from overload warning, release electronics fault, load shedding, load pick-up, temperature alarm, current phase asymmetry				**IZM-XEM-6DO-R** 230753		1 off	Max. summation current, 6 channels: AC-12, 250 V: 10 A DC-12, 24 V: 10 A DC-12, 250 V: 250 mA	For connection with further modules a prefabricated connection cable is included with each expansion module. The length of the connection cable is 0.2 m. For connection to the switch the longer, prefabricated connection cable **IZM-XEM-VL1(VL2)(VLM-X8)** is required (not supplied). The IZM-XBSS Breaker-Status-Sensor is required to read the internal switch states. External 24 V DC power supply required (description → "components for communication") For use without a communication module, an IZM-XKL(Z)(-AV) control circuit plug at position X8 is required. Order separately if required. Dimension W × H × D: 70 × 86 × 95 mm Installation on 35 mm mounting rail
Digital output module					**IZM-XEM-6DO-T** 230754		1 off	Load carrying capacity of the outputs: DC-12, 24 V: 100 mA	
Digital output module relay, freely programmable	Six digital outputs, programmable with the parameter assignment module or via PROFIBUS-DP with additional software (on request)				**IZM-XEM-6PDO-R** 230755		1 off	Max. summation current, 6 channels: AC-12, 250 V: 10 A DC-12, 24 V: 10 A DC-12, 250 V: 250 mA	
Digital output module optocoupler, freely programmable					**IZM-XEM-6PDO-T** 230756		1 off	Load carrying capacity of the outputs: DC-12, 24 V: 10 A	
Analog output module	Four analog outputs, 4 – 20 mA or 0 – 10 V Outputs optionally assigned with phase currents, phase voltages, effective and apparent power, frequency, power factor				**IZM-XEM-4AO** 230757		1 off	–	
Digital input module	Six digital inputs (24 V DC) Transmission of additional information to PROFIBUS-DP				**IZM-XEM-6DI** 230758		1 off	–	
Zone-selective interlocking	Optimization of time selectivity				**IZM-XEM-ZSI** 230752		1 off	Between the setting marks I_{sd} and I_i of the short-circuit protection, the time selectivity can be optimized: • The delay is reduced on all IZM hierarchical levels to a total of 50 ms. • One module is required per circuit-breaker.	
Connecting cables									
For connecting the expansion modules to the built-in system bus									
0.5 m	IZM **with** communication interface **IZM-XCOM-DP**				**IZM-XEM-VL05** 230848		1 off	–	–
1 m					**IZM-XEM-VL1** 230850		1 off	–	–
2 m					**IZM-XEM-VL2** 230852		1 off	–	–
2 m	IZM **without** communication interface **IZM-XCOM-DP** Connection to X8				**IZM-XEM-VLM-X8** 281414		1 off	–	–
Documentation									
"IZM – communication solutions" manual					**AWB1230-1465** on request		1 off	–	–

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

		Rated control voltage U_s V	Moeller HPL0211-2004/2005 Type suffix Article no. for ordering with basic unit	Price See Price List	Std. pack	Moeller HPL0211-2004/2005 Type Article no. when ordered separately	Price See Price List	Std. pack		Notes
Auxiliary contacts										
Standard auxiliary contact	2 make contacts	–				**IZM-XHI20** 256922		1 off	–	XHI indicates position of main contacts. Depending on the selected combination the same terminal assignment for make contacts and break contacts; see terminal assignment diagram. Up to 8 switching contacts or standard auxiliary contacts can be used at the same time. Standard on IZM, do not order separately: • IZM-XHI standard auxiliary contacts with 2 make contacts and 2 break contacts. The standard terminals are screw-type; spring-loaded terminals are optional. When ordered separately an additional control circuit cable connection may need to be fitted. → terminal assignment plan page 11/51
	1 make contact and 1 break contact	–				**IZM-XHI11** 256923		1 off	–	
	Additional 2 make contacts and 2 break contact	–	**+IZM-XHI22** 230605		1 off	**IZM-XHI22** 230606		1 off	–	
	Additional 3 make contacts and 1 break contact	–	**+IZM-XHI31** 256920		1 off				–	
	Four additional make contacts	–	**+IZM-XHI40** 256921		1 off				–	
Trip-indicating auxiliary contact	–	–	**+IZM-XHIA** 263476		1 off	**IZM-XHIA** 263475		1 off	–	Optionally, signals trip caused by the overcurrent release: overload, short-circuit and earth-fault tripping. ON remote switching through shunt release or undervoltage release, the IZM (unlike the NZM switch-disconnectors) does not go into its tripped position. When the circuit-breaker is fitted with IZM-XCOM-DP or IZM-XBSS communication interfacing, the XHIA connection to X7 is not required. The signal can be accessed via the communication interface. The standard terminals are screw-type; spring-loaded terminals are optional. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order separately if required. → terminal assignment plan page 11/51
Availability signal	1 make contact	–	**+IZM-XHIB** 225680		1 off	**IZM-XHIB** 225876		1 off	–	Availability is also signalled locally by the OK indication and means: • Spring energy store tensioned • Undervoltage release excited • Shunt release not excited • Electrical interlock in the plant control cancelled • Mechanical interlock ineffective • Locking devices not activated The standard terminals are screw-type; spring-loaded terminals are optional.
Spring-charge state signal	1 make contact	–	**+IZM-XHIF** 256925		1 off	**IZM-XHIF** 256924		1 off	–	"Spring energy store charged" is one of several preconditions for availability. The standard terminals are screw-type; spring-loaded terminals are optional. When the circuit-breaker is fitted with IZM-XCOM-DP or IZM-XBSS communication interfacing, the XHIF connection to X7 is not required. The signal can be accessed via the communication interface. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order separately if required. → terminal assignment plan page 11/51
Voltage release status signal Signals the state of the voltage release	For the 1st shunt release or for the 2nd voltage release (+IZM-XA1..., IZM-XE/A..., (+)IZM-XU(V)...)	–	**+IZM-XHIS** 230713		1 off	**IZM-XHIS** 230714		1 off	XHIS and XHIS1 are the same type of construction	Signals whether the shunt release/undervoltage release is excited/de-energised. XHIS and XHIS1 are of identical design. When ordering separately, always choose XHIS. Up to two XHIS(1) auxiliary switches can be used. When the circuit-breaker is fitted with IZM-XCOM-DP or IZM-XBSS communication interfacing, the XHIS(1) connection to X7 is not required. The signal can be accessed via the communication interface.1 The standard terminals are screw-type; spring-loaded terminals are optional. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order separately if required. → terminal assignment plan page 11/51
	For the 2nd voltage release (+IZM-XA1..., IZM-XE/A..., (+)IZM-XU(V)...)	–	**+IZM-XHIS1** 256926		1 off				XHIS and XHIS1 are the same type of construction	

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

		Rated control voltage U_s V	Moeller HPL0211-2004/2005 Type suffix Article no. for ordering with basic unit	Price See Price List	Std. pack	Moeller HPL0211-2004/2005 Type Article no. when ordered separately	Price See Price List	Std. pack		Notes
Motor operators										
	–	24 – 30 DC	**+IZM-XM24-DC** 230538		1 off	**IZM-XM24-DC** 230539		1 off	–	Automatic charging of the spring-operated stored energy mechanism Standard: customer screw-type terminal connection. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order separately if required. → terminal assignment plan page 11/51 For remote operation, closing release and shunt release or undervoltage release are additionally required.
	–	48 – 60 DC	**+IZM-XM48-60DC** 230540			**IZM-XM48-60DC** 230541			–	
	–	110 – 125 DC 110 – 127 AC	**+IZM-XM110AC/DC** 230542			**IZM-XM110AC/DC** 230543			–	
	–	220 – 250 DC 208 – 240 AC	**+IZM-XM230AC/220DC** 230544			**IZM-XM230AC/220DC** 230545			–	
Motor cut-off switch										
	Thumb-grip handle	–	**+IZM-XMS** 230717		1 off	**IZM-XMS** 230718		1 off	Cannot be combined with electrical ON, Only for switches with motor-operator	–
Operations counter										
	Mechanical, 5-position	–	**+IZM-XSZ** 230729		1 off	**IZM-XSZ** 259216		1 off	Only possible with motor operator	The operations counter can be used only in combination with the motor operator.
Control circuit connections										
Featured ex works										
	Spring-loaded fixed mounting	–	**+IZM-XKLZ** 256914		1 off				–	Standard: customer screw-type terminal connection. Each switch is fitted with the number of control circuit connections required depending on the accessories fitted. ON fixed mounting switches, these are protected against reversal with coding pins. When retrofitting accessories, additional control circuit connections may have to be supplemented. → terminal assignment plan page 11/51
	Spring-loaded terminals, withdrawable modules	–	**+IZM-XKLZ-AV** 256915		1 off				–	
Retrofitting										
	1 set screw-type terminals, fixed mounted	–				**IZM-XKL** 225857		1 off	–	Depending on the accessories fitted, up to four sets are required per switch. A set for fixed mounting consists of 1 hand plug 1 plug connector. For withdrawable modules, a sliding contact module is also required per set. When retrofitting accessories, additional control circuit connections may have to be supplemented. → terminal assignment plan page 11/51
	1 set screw-type terminals, withdrawable units	–				**IZM-XKL-AV** 232324		1 off	–	
	1 set spring-loaded terminals, fixed mounted	–				**IZM-XKLZ** 256912		1 off	–	
	1 set spring-loaded terminals, withdrawable units	–				**IZM-XKLZ-AV** 256913		1 off	–	
Individual parts for replacement										
	Screw-type manual connector	–				**IZM-XKL-HS** 256919		1 off	–	–
	Spring-loaded manual connector	–				**IZM-XKL-HZ** 256918		1 off	–	–
	Plug connector	–				**IZM-XKL-ML** 259207		1 off	–	–
	Sliding contact module	–				**IZM-XKL-SK** 259208		1 off	–	–
	Blanking block	–				**IZM-XKL-B** 256917		1 off	–	–
	Coding set for 4 hand connectors, fixed mounting	–				**IZM-XKL-C** 256916		1 off	Prevents reversal of control circuit plugs, for example during maintenance.	–
Adapter plug connector										
	For 1000 V switch	–				**IZM-XKL-AML-1000V** 263472		1 off	One off required per control circuit connector (only for subsequent ordering of accessories).	–

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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Rated control voltage U_s V	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**	
Closing releases							
Closing releases 100 % duty factor							
24 DC	**+IZM-XE24DC** 230564		**IZM-XE/A24DC** 230565		1 off	Closing releases and shunt releases have the same construction. The function is determined by the position where it is installed.	For Remote ON, a closing release is required. Remote OFF must be implemented with shunt releases or undervoltage releases. The following can be fitted in addition to the closing release: • Up to two shunt releases or • One shunt release and one undervoltage release
30 DC	**+IZM-XEDC** 230566		**IZM-XE/A30DC** 230567				
48 DC	**+IZM-XE48DC** 230568		**IZM-XE/A48DC** 230569				
60 DC	**+IZM-XE60DC** 230570		**IZM-XE/A60DC** 230571				
110 DC 110 AC 50/60 Hz	**+IZM-XE110AC/DC** 230572		**IZM-XE/A110AC/DC** 230573				
220 DC 230 AC 50/60 Hz	**+IZM-XE230AC/220DC** 230574		**IZM-XE/A230AC/220DC** 230575				
Overexcited closing release Retrieval time: 25 ms 5 % duty factor							
24 DC	**+IZM-XE24DC05** 230576		**IZM-XE/A24DC05** 230577		1 off	Not suited for uninterrupted operation With cut-off switch (internal auxiliary switch)	
48 DC	**+IZM-XE48DC05** 230578		**IZM-XE/A48DC05** 230579				
110 – 125 DC 110 – 127 AC 50/60 Hz	**+IZM-XE110AC/DC05** 230580		**IZM-XE/A110AC/DC05** 230581				
220 – 250 DC 208 – 240 AC 50/60 Hz	**+IZM-XE230AC/DC05** 230582		**IZM-XE/A230AC/DC05** 230583				
Shunt release							
First shunt release 100 % duty factor							
24 DC	**+IZM-XA24DC** 230546		**IZM-XE/A24DC** 230565		1 off	Closing releases and shunt releases have the same construction. The function is determined by the position where it is installed.	For Remote ON, a closing release is required. Remote OFF must be implemented with shunt releases or undervoltage releases. The following can be fitted in addition to the closing release: • Up to two shunt releases or • One shunt release and one undervoltage release Capacitor storage unit on request.
30 DC	**+IZM-XA30DC** 230548		**IZM-XE/A30DC** 230567				
48 DC	**+IZM-XA48DC** 230550		**IZM-XE/A48DC** 230569				
60 DC	**+IZM-XA60DC** 230552		**IZM-XE/A60DC** 230571				
110 DC 110 AC 50/60 Hz	**+IZM-XA110AC/DC** 230554		**IZM-XE/A110AC/DC** 230573				
220 DC 230 AC 50/60 Hz	**+IZM-XA230AC/220DC** 230556		**IZM-XE/A230AC/220DC** 230575				

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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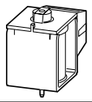
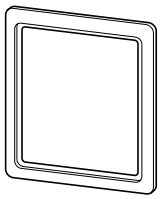
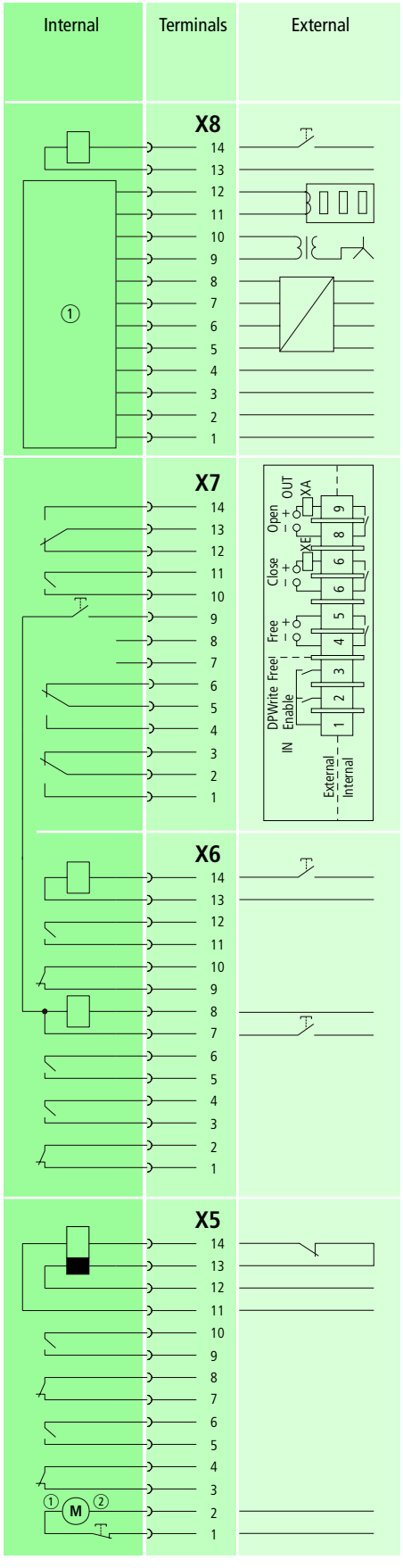
Rated control voltage U_s V	Type suffix Article no. for ordering with basic unit	**Price** See Price List	Type Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
Shunt release 						
Second shunt releases 100 % duty factor						
24 DC	**+IZM-XA1(24DC)** 230760		**IZM-XE/A24DC** 230565		1 off	Closing releases and shunt releases have the same construction. The function is determined by the position where it is installed. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order if required. → terminal assignment plan page 11/51
30 DC	**+IZM-XA1(30DC)** 230762		**IZM-XE/A30DC** 230567			
48 DC	**+IZM-XA1(48DC)** 230764		**IZM-XE/A48DC** 230569			
60 DC	**+IZM-XA1(60DC)** 230766		**IZM-XE/A60DC** 230571			
110 DC 110 AC 50/60 Hz	**+IZM-XA1(110AC/DC)** 230768		**IZM-XE/A110AC/DC** 230573			
220 DC 230 AC 50/60 Hz	**+IZM-XA1(230AC/220DC)** 230770		**IZM-XE/A230AC/220DC** 230575			For Remote ON, a closing release is required. Remote OFF must be implemented with shunt releases or undervoltage releases. The following can be fitted in addition to the closing release: • Up to two shunt releases or • One shunt release and one undervoltage release
Undervoltage release						
Short-time delay (200 ms) possible with jumper						
24 DC	**+IZM-XU24DC** 230584		**IZM-XU24DC** 230585		1 off	When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order if required. → terminal assignment plan page 11/51
30 DC	**+IZM-XU30DC** 230586		**IZM-XU30DC** 230587			
48 DC	**+IZM-XU48DC** 230588		**IZM-XU48DC** 230589			
110 – 125 DC 110 – 127 AC 50/60 Hz	**+IZM-XU127AC/125DC** 230591		**IZM-XU127AC/125DC** 230592			
220 – 250 DC 208 – 240 AC 50/60 Hz	**+IZM-XU240AC/250DC** 230593		**IZM-XU240AC/250DC** 230594			
380 – 415 AC 50/60 Hz	**+IZM-XU415AC** 230595		**IZM-XU415AC** 230596			
Delayed Delay time 0.2 – 3.2 s						
48 DC	**+IZM-XUV48DC** 230597		**IZM-XUV48DC** 230598		1 off	With second input for non-delayed trip. When ordering separately, an IZM-XKL(Z)(-AV) control circuit plug is required for the connection. Order if required. → terminal assignment plan page 11/51
110 – 125 DC 110 – 127 AC 50/60 Hz	**+IZM-XUV127AC/125DC** 230599		**IZM-XUV127AC/125DC** 230600			
220 – 250 DC 208 – 240 AC 50/60 Hz	**+IZM-XUV240AC/250DC** 230601		**IZM-XUV240AC/250DC** 230602			
380 – 415 AC 50/60 Hz	**+IZM-XUV415AC** 230603		**IZM-XUV415AC** 230604			

Rated control voltage U_s V	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
Electrical ON • Cannot be combined with motor cut-off switch • Cannot be combined with communication module • Can only be used in conjunction with closing release						
Push-button with sealable shroud	**+IZM-XEE-TP** 230721		**IZM-XEE-TP** 230722		1 off	A control circuit plug is required for the connection when ordered separately. Order separately if required. → terminal assignment plan page 11/51
Safety lock, Make: CES	**+IZM-XEE-C** 230723		**IZM-XEE-C** 230724		1 off	Cover for mechanical ON (IZM-XVD) order separately, if required.
Emergency-Stop actuator						
–	**+IZM-XPV** 230646		**IZM-XPV** 230647		1 off	mushroom actuator instead of the mechanical OFF-actuator

	Type Article no.	**Price** See Price List	Std. pack	**Notes**
Mounting brackets for fixed mounted circuit-breaker 	**IZM1/2-XTW** 230731		1 off	1 pair, wall mounting for: • IZM...1-... • IZM...2-... • IN...1-... • IN...2-...
Door seal 	**IZM-XRT** 230730		1 off	Cover of the door cut-out, degree of protection IP41. Cannot be combined with IZM-XDT protective cover.
Protective covers	**IZM-XDT** 230750		1 off	Degree of protection IP55, transparent, Cannot be combined with door sealing frame. Shroud removable or can be opened to left or right.

Control circuit plug IZM-XKL(-AV) for customer connection (→ page 11/45)
Control circuit plugs X8, X7, X6, X5 are identical



X8: optional control circuit plug
(Connections X8:1 to X8:8 only with IZM...-U... and IZM...-D...)

① electronic overload release

XFR remote reset
G-converter S2
G-converter S1
IZM-XW(C) N-converter S2
IZM-XW(C) N-converter S1
External voltage transformer star
External voltage transformer L3
External voltage transformer L2
External voltage transformer L1
0 V DC
24 V DC
Internal system bus +
Internal system bus –

L/L+ U_s
N/L-
e.g. converter transformer star point or summation current transformer 1200 A/1 A
Jumper if no N-converter
L1
L2
L3
N
24 V DC external power supply
Terminating resistor with no external system bus module

X7: optional control circuit plug
Not available with IZM-XCOM-DP communication function.
The communications module is at the position of X7.

XHIA tripped signalling switch
XHIF spring-operated stored energy mechanism state signal
XEE electrically "ON"
XHIS signalling switch on first voltage release
XHIS signalling switch on second voltage release

IZM-XCOM-DP
L/L+ U_s

X6: standard control circuit plug

XE/A first shunt release
XHI standard auxiliary switch: S1 "M"
XHI standard auxiliary switch: S1 "B"
XE/A closing release
XHIB "ready to close" auxiliary switch
XHI standard auxiliary switch: S2 "M"
XHI standard auxiliary switch: S2 "B"

L/L+ U_s
N/L-
N/L- U_s
L/L+

X5: optional control circuit plug

Only XUV "non-delayed trip"
XA1, XU, XUV second voltage release
XHI11/XHI22/XHI31 standard auxiliary contact: S3 "M", XHI40: S7 "M"
XHI11/XHI22/XHI31 standard auxiliary contact: S3 "B", XHI40: S7 "M"
XHI22 standard auxiliary contact: S4 "M", XHI31/XHI40: S8 "M"
XHI22 standard auxiliary contact: S4 "B", XHI31/XHI40: S8 "M"
Motor operators
XMS optional motor cut-off switch

Emergency-stop or jumper
L/L+ U_s
N/L-
L/L+ U_s
N/L-

① black-white
② brown

	Type suffix Article no. for ordering with basic unit	**Price** See Price List	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
ON and OFF key locking facility						
Locking set with two covers for padlocks or seal, two covers for tool operation and two lock barrel holders	**+IZM-XVD** 230642		**IZM-XVD** 230645		1 off	Prevents local switching. Electrical remote operation is still possible. Can be locked with a 6 – 8 mm padlock. Padlock and barrel lock are not supplied.
Locking set as before, but with a CES safety lock			**IZM-XVD-CES** 256975		1 off	Prevents local switching. Electrical remote operation is still possible.
Locking device, Locking in OFF						
With CES safety lock	**+IZM-XVDM** 230640		**IZM-XVDM** 230643		1 off	Locking in OFF position fulfils isolator conditions
With Ronis safety lock	**+IZM-XVDM-R** 263860		**IZM-XVDM-R** 263861			Locking in OFF position fulfils isolator conditions
Castell mounting kit	**+IZM-XVDME-C** 230641		**IZM-XVDME-C** 230644			Locking in OFF position fulfils isolator conditions. The lock is not included as standard.
Locking shackle, for up to four 6 mm padlocks, lockable	**+IZM-XVDMV** 230778		**IZM-XVDMV** 230779			Locking in OFF position fulfils isolator conditions. Padlocks are not included as standard.
Locking in OFF position, independently of switch, only for withdrawable modules (CES lock in control panel door)	**+IZM-XVZ-AV** 263436		**IZM-XVZ-AV** 256986			Locking in OFF position fulfils isolator conditions.
Locking as previously with additional Ronis safety lock	**+IZM-XVZ-R-AV** 263438		**IZM-XVZ-R-AV** 263437			Cannot be combined with (+)IZM-XVK-AV and IZM-XVV.
Locking device to prevent movement Prevents movement of the switch in the withdrawable unit						
Locking of the crank handle to prevent movement (lock beside the crank handle); make: CES	**+IZM-XVK-AV** 230648		**IZM-XVK-AV** 230649		1 off	Cannot be combined with (+)IZM-XV-AV and IZM-XVV.
Lock to prevent movement out of the disconnected position (lock in the control panel door); make: CES	**+IZM-XV-AV** 230650		**IZM-XV-AV** 230651		1 off	Cannot be combined with (+)IZM-XVK-AV and IZM-XVV.
Locking as previously with additional Ronis safety lock	**+IZM-XV-R-AV** 263463		**IZM-XV-R-AV** 263464			Cannot be combined with (+)IZM-XVK-AV and IZM-XVV.
Operator lever locking facility						
Hand lever can be locked with a padlock.			**IZM-XVS** 256987		1 off	Prevents manual charging of the spring energy store. The padlock is not included as standard.

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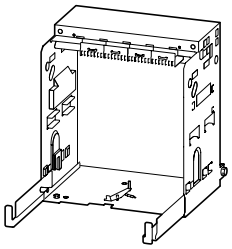
	Type suffix Article no. for ordering with basic unit	Price See Price List	Type Article no. when ordered separately	Price See Price List	Std. pack	Notes
Door interlock						
For fixed mounting, effective when switch in ON position	**+IZM-XVT** 230652		**IZM-XVT** 230653		1 off	Interlock can be overridden with tool
For withdrawable units, effective in connected position	**+IZM-XVT-AV** 230654		**IZM-XVT-AV** 230655		1 off	Interlock can be overridden with tool
Manual reset						
For fixed mounting	**+IZM-XVE** 230656		**IZM-XVE** 230657		1 off	–
For withdrawable units	**+IZM-XVE-AV** 230658		**IZM-XVE-AV** 230659		1 off	–
Locking arrangement						
Locking arrangement for open control panel utilization prevention						
–			**IZM-XVV** 230661		1 off	Cannot be combined with (+)IZM-XVK-AV and IZM-XV-AVV.
–	**+IZM-XVV** 230660					Cannot be combined with (+)IZM-XVK-AV and IZM-XV-AVV.
Mechanical interlock						
Mechanical interlock with Bowden cables for 2 or 3 IZM/IN switches (side-by-side or above each other)						
Assembly kit for one fixed mounted breaker, with	**+IZM-XMV** 230662		**IZM-XMV** 232168		1 off	Order an assembly kit with each switch
Assembly kit for one withdrawable switch, with 2 m Bowden cables	**+IZM-XMV-AV** 230663		**IZM-XMV-AV** 232169			Order an assembly kit with each switch For IZM(IN)...3-..., one additional adapter set required per switch: (+)IZM3-XMVAS-AV
Adapter set, required from withdrawable units of frame size 3	**+IZM3-XMVAS-AV** 263473		**IZM3-XMVAS-AV** 263474			For withdrawable IZM(IN)...3-..., one additional adapter set required per switch:
2 m Bowden cables			**IZM-XMVB200** 232176			With triple-locking additional Bowden cables may be required to suit the application (see manual AWB1230-1407D/GB, chapter 18).
3 m Bowden cables			**IZM-XMVB300** 232177			
4.5 m Bowden cables			**IZM-XMVB450** 232178			
6 m Bowden cables			**IZM-XMVB600** 232179			
Components for replacement purposes						
Individual components for replacement purposes or with separate order of withdrawable unit and switch for withdrawable unit						
Intermediate shaft with coupling	**+IZM-XMVAD** 232170		**IZM-XMVAD** 232175		1 off	Installation on the switch for withdrawable unit. (IZM-XMV-AV) = (IZM-XMVAD) + (IZM-XMVAD-AV)
Mechanical locking module for withdrawable unit, with 2 m Bowden cables	**+IZM-XMVAD-AV** 259205		**IZM-XMVAD-AV** 259206		1 off	For fitting to the withdrawable unit (IZM-XMV-AV) = (IZM-XMVAD) + (IZM-XMVAD-AV)

Pole	For use with	Rated current = rated uninterrupted current $I_n = I_u$ A	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	Std. pack	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	
Withdrawable unit									
									
3-pole	IZM...1-... IN...1-...	1000	**+IZM1-XAV10** 230733		1 off	**IZM1-XAV10** 230734		1 off	Standard: Horizontal connections (exception 6300 A: vertical), Variants → terminals for withdrawable unit. A rated operational voltage of 1000 V is possible only when ordering together with the basic unit for 1000 V. When ordering separately, note: • Withdrawable units already contain four control circuit plugs (X5 – X8) with screw-type terminals. • Can be combined only with basic units that have been prepared for withdrawable units (basic unit +IZM-XAVE or with IZM...-XUS...-AV conversion kit)
	IZM...1-... IN...1-...	1600	**+IZM1-XAV16** 230735			**IZM1-XAV16** 230736			
	IZM...2-... IN...2-...	2000	**+IZM2-XAV20** 225772			**IZM2-XAV20** 225978			
		2500	**+IZM2-XAV25** 225773			**IZM2-XAV25** 225979			
		3200	**+IZM2-XAV32** 225774			**IZM2-XAV32** 225980			
	IZM...3-... IN...3-...	4000	**+IZM3-XAV40** 230737			**IZM3-XAV40** 230738			
		5000	**+IZM3-XAV50** 230739			**IZM3-XAV50** 230740			
		6300	**+IZM3-XAV63** 225776			**IZM3-XAV63** 225982			
4-pole	IZM...1-4-... IN...1-4-...	1000	**+IZM1-XAV104** 230742			**IZM1-XAV104** 230743			
	IZM...1-4-... IN...1-4-...	1600	**+IZM1-XAV164** 230744			**IZM1-XAV164** 230745			
	IZM...2-4-... IN...2-4-...	2000	**+IZM2-XAV204** 225779			**IZM2-XAV204** 225985			
		2500	**+IZM2-XAV254** 225780			**IZM2-XAV254** 225986			
		3200	**+IZM2-XAV324** 225781			**IZM2-XAV324** 225987			
	IZM...3-4-... IN...3-4-...	4000	**+IZM3-XAV404** 230746			**IZM3-XAV404** 230747			
		5000	**+IZM3-XAV504** 230748			**IZM3-XAV504** 230749			
		6300	**+IZM3-XAV634** 257006			**IZM3-XAV634** 257001			
Replacement switch									
for withdrawable unit									
–	–	–	**+IZM-XAVE** 225784		1 off				Type suffix: Preparation for basic unit for use in the withdrawable unit • For replacements or • When ordering basic unit and withdrawable unit separately The basic unit is factory-modified (cranks, control sliders, side panels) to allow its insertion in the respective withdrawable unit.

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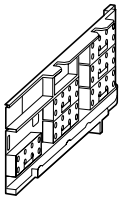
	Pole	For use with	Type suffix Article no. for ordering with basic unit	Price See Price List	Type Article no. when ordered separately	Price See Price List	Std. pack	Notes
Conversion kit								
Fixed mounted in withdrawable unit								
	3-pole	IZM...1-... IN...1-...			**IZM1-XUS-AV** 256950		1 off	Retrospectively converting fixed mounting switches (cranks, control sliders, side panels) to allow the switch to be used in the respective withdrawable unit. Conversion kit not required • If basic unit is ordered directly together with the withdrawable unit • If a single basic unit is combined directly with the type suffix +IZM-XAVE
		IZM...2-... IN...2-...			**IZM2-XUS-AV** 256951			
		IZM...3-... IN...3-...			**IZM3-XUS-AV** 256952			
	4-pole	IZM...1-4-... IN...1-4-...			**IZM1-XUS4-AV** 256955			
		IZM...2-4-... IN...2-4-...			**IZM2-XUS4-AV** 256957			
		IZM...3-4-... IN...3-4-...			**IZM3-XUS4-AV** 256959			
Position switch								
For withdrawable unit, with 1.5 m incomer, prefabricated								
	–	Module 1	**+IZM-XHIAV1** 230708		**IZM-XHIAV1** 232166		1 off	Position signal Connected position: 1 changeover contact Test position: 1 changeover contact Disconnected position: 1 changeover contact
	–	Module 2	**+IZM-XHIAV2** 230709		**IZM-XHIAV2** 232167		1 off	Position signal Connected position: 3 changeover contacts Test position: 2 changeover contacts Disconnected position: 1 changeover contact
Shutter								
	3-pole	IZM...1-... IN...1-...	**+IZM1-XIKL** 230664		**IZM1-XIKL** 230665		1 off	Standard: Can be locked with padlocks
		IZM...2-... IN...2-...	**+IZM2-XIKL** 225808		**IZM2-XIKL** 226007			
		IZM...3-... IN...3-...	**+IZM3-XIKL** 225810		**IZM3-XIKL** 226009			
	4-pole	IZM...1-4-... IN...1-4-...	**+IZM1-XIKL4** 230666		**IZM1-XIKL4** 230667			
		IZM...2-4-... IN...2-4-...	**+IZM2-XIKL4** 225809		**IZM2-XIKL4** 226008			
		IZM...3-4-... IN...3-4-...	**+IZM3-XIKL4** 225811		**IZM3-XIKL4** 226010			
Arcing chamber cover								
For withdrawable unit ≦ 690 V								
	3-pole	IZM...1-... IN...1-...	**+IZM1-XLKA-AV** 230696		**IZM1-XLKA-AV** 230697		1 off	–
		IZM...2-... IN...2-...	**+IZM2-XLKA-AV** 230698		**IZM2-XLKA-AV** 230699			–
		IZM...3-... IN...3-...	**+IZM3-XLKA-AV** 230700		**IZM3-XLKA-AV** 230701			–
	4-pole	IZM...1-4-... IN...1-4-...	**+IZM1-XLKA4-AV** 230702		**IZM1-XLKA4-AV** 230703			–
		IZM...2-4-... IN...2-4-...	**+IZM2-XLKA4-AV** 230704		**IZM2-XLKA4-AV** 230705			–
		IZM...3-4-... IN...3-4-...	**+IZM3-XLKA4-AV** 230706		**IZM3-XLKA4-AV** 230707			–
Coding system for withdrawable unit								
	–	–			**IZM-XCE** 225999		1 off	36 coding variants

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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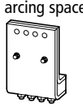
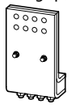
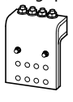
	For use with	Rated current = rated uninterrupted current $I_n = I_u$ A	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	Std. pack	**Type** Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
Connection type for fixed mounted unit, individual connectors									
Vertical connection 	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XATV10** 257013		1 off	**IZM1-XATV10** 257009		1 off	– For the 3-pole circuit-breakers, order six connections and for the 4-pole circuit-breakers order eight connections.
	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XATV16** 230450			**IZM1-XATV16** 230451			(+)IZM1-XATV16 consists of 2 × (+)IZM1-XATV10
	IZM...2(-4)-... IN...2(-4)-...	2500	**+IZM2-XATV25** 230877			**IZM2-XATV25** 230878			–
	IZM...2(-4)-... IN...2(-4)-...	3200	**+IZM2-XATV32** 230452			**IZM2-XATV32** 230453			(+)IZM2-XATV32 consists of 2 × (+)IZM2-XATV25
	IZM...3(-4)-... IN...3(-4)-...	5000	**+IZM3-XATV50** 230454			**IZM3-XATV50** 230455			(+)IZM3-XATV50 has the same design as the vertical connection supplied as standard with the 6300 A (fixed mounting) devices.
Front connection top (single-hole fitting) When front connections are used, a partition between busbar and arcing space must be fitted on the system side. 	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XAT1F10-O** 230456		1 off	**IZM1-XAT1F10-O** 230457		1 off	– For the 3-pole circuit-breakers, order three connections and for the 4-pole circuit-breakers order four connections.
	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XAT1F16-O** 230458			**IZM1-XAT1F16-O** 230459			–
	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XAT1F20-O** 230460			**IZM2-XAT1F20-O** 230461			–
		2500	**+IZM2-XAT1F25-O** 230462			**IZM2-XAT1F25-O** 230463			–
		3200	**+IZM2-XAT1F32-O** 230464			**IZM2-XAT1F32-O** 230465			–
	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XAT1F40-O** 230466			**IZM3-XAT1F40-O** 230467			–
Front connection bottom (single-hole fitting) When front connections are used, a partition between busbar and arcing space must be fitted on the system side. 	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XAT1F10-U** 230468		1 off	**IZM1-XAT1F10-U** 230469		1 off	– For the 3-pole circuit-breakers, order three connections and for the 4-pole circuit-breakers order four connections.
	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XAT1F16-U** 230470			**IZM1-XAT1F16-U** 230471			–
	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XAT1F20-U** 230472			**IZM2-XAT1F20-U** 230473			–
		2500	**+IZM2-XAT1F25-U** 230474			**IZM2-XAT1F25-U** 230475			–
		3200	**+IZM2-XAT1F32-U** 230476			**IZM2-XAT1F32-U** 230477			–
	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XAT1F40-U** 230478			**IZM3-XAT1F40-U** 230479			–
Front connection, top (double-hole fitting according to DIN 43673) When front connections are used, a partition between busbar and arcing space must be fitted on the system side. 	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XATF10-O** 230480		1 off	**IZM1-XATF10-O** 230481		1 off	– For the 3-pole circuit-breakers, order three connections and for the 4-pole circuit-breakers order four connections.
	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XATF16-O** 230482			**IZM1-XATF16-O** 230483			–
	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XATF20-O** 230484			**IZM2-XATF20-O** 230485			–
		2500	**+IZM2-XATF25-O** 230486			**IZM2-XATF25-O** 230487			–
		3200	**+IZM2-XATF32-O** 225819			**IZM2-XATF32-O** 226022			–
	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XATF40-O** 230488			**IZM3-XATF40-O** 230489			–
Front connection bottom (double-hole fitting according to DIN 43673) When front connections are used, a shaft between busbar and arcing space must be fitted on the system side. 	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XATF10-U** 230490		1 off	**IZM1-XATF10-U** 230491		1 off	– For the 3-pole circuit-breakers, order three connections and for the 4-pole circuit-breakers order four connections.
	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XATF16-U** 230492			**IZM1-XATF16-U** 230493			–
	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XATF20-U** 230494			**IZM2-XATF20-U** 230495			–
		2500	**+IZM2-XATF25-U** 230496			**IZM2-XATF25-U** 230497			–
		3200	**+IZM2-XATF32-U** 225820			**IZM2-XATF32-U** 226023			–
	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XATF40-U** 230498			**IZM3-XATF40-U** 230499			–

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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	Pole	For use with	Rated current = rated uninterrupted current $I_n = I_u$ A	**Type suffix** Article no. for ordering with basic unit	**Price** See Price List	Std. pack
Connection type for withdrawable unit, individual connectors						
Vertical connection 	–	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XATV10-AV** 230500		1 off
	–	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XATV16-AV** 230502		
	–	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XATV20-AV** 230504		
	–		2500	**+IZM2-XATV25-AV** 230506		
	–		3200	**+IZM2-XATV32-AV** 230508		
	–	IZM...3(-4)-... IN...3(-4)-...	5000	**+IZM3-XATV50-AV** 230510		
Front connection (single hole fitting)	–	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XAT1F10-AV** 230514		1 off
	–	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XAT1F16-AV** 230516		
	–	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XAT1F20-AV** 230518		
	–		2500	**+IZM2-XAT1F25-AV** 230520		
	–		3200	**+IZM2-XAT1F32-AV** 230522		
	–	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XAT1F40-AV** 230524		
Front connection (double-hole fitting according to DIN 43673)	–	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XATF10-AV** 230526		1 off
	–	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XATF16-AV** 230528		
	–	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XATF20-AV** 230530		
	–		2500	**+IZM2-XATF25-AV** 230532		
	–		3200	**+IZM2-XATF32-AV** 230534		
	–	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XATF40-AV** 230536		
Insulator for front connections	3-pole	IZM...1-... IN...1-...	–			off
		IZM...2-... IN...2-...	–			
		IZM...3-... IN...3-...	–			
	4-pole	IZM...1-4-... IN...1-4-...	–			
		IZM...2-4-... IN...2-4-...	–			
		IZM...3-4-... IN...3-4-...	–			
Flange connection 	–	IZM...1(-4)-... IN...1(-4)-...	1000	**+IZM1-XATA10-AV** 230817		1 off
	–	IZM...1(-4)-... IN...1(-4)-...	1600	**+IZM1-XATA16-AV** 230819		
	–	IZM...2(-4)-... IN...2(-4)-...	2000	**+IZM2-XATA20-AV** 230821		
	–		2500	**+IZM2-XATA25-AV** 230823		
	–		3200	**+IZM2-XATA32-AV** 230825		
	–	IZM...3(-4)-... IN...3(-4)-...	4000	**+IZM3-XATA40-AV** 230827		

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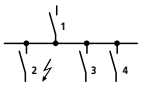
Type Article no. when ordered separately	**Price** See Price List	Std. pack	**Notes**
IZM1-XATV10-AV 230501		1 off	For the 3-pole circuit-breakers, order six connections and for the 4-pole circuit-breakers order eight connections.
IZM1-XATV16-AV 230503			
IZM2-XATV20-AV 230505			
IZM2-XATV25-AV 230507			
IZM2-XATV32-AV 230509			
IZM3-XATV50-AV 230511			
IZM1-XAT1F10-AV 230515		1 off	For the 3-pole switches order six connections and for the 4-pole switches order eight connections. When ordering front connectors for withdrawable units separately, additional insulators are required, which must be ordered separately. When ordering with the basic unit (type suffix), the insulators are included as standard.
IZM1-XAT1F16-AV 230517			
IZM2-XAT1F20-AV 230519			
IZM2-XAT1F25-AV 230521			
IZM2-XAT1F32-AV 230523			
IZM3-XAT1F40-AV 230525			
IZM1-XATF10-AV 230527		1 off	For the 3-pole switches order six connections and for the 4-pole switches order eight connections. When ordering front connectors for withdrawable units separately, additional insulators are required, which must be ordered separately. When ordering with the basic unit (type suffix), the insulators are included as standard.
IZM1-XATF16-AV 230529			
IZM2-XATF20-AV 230531			
IZM2-XATF25-AV 230533			
IZM2-XATF32-AV 230535			
IZM3-XATF40-AV 230537			
IZM1-XATFS 256927		1 off	For withdrawable units, the insulators for installing the front connections are required. When ordering the front connections separately, you must order one insulator for each connection side (incoming and outgoing side).
IZM2-XATFS 256928			
IZM3-XATFS 256930			
IZM1-XATFS4 256938			
IZM2-XATFS4 256940			
IZM3-XATFS4 256942			
IZM1-XATA10-AV 230818		1 off	For the 3-pole circuit-breakers, order six connections and for the 4-pole circuit-breakers order eight connections.
IZM1-XATA16-AV 230820			
IZM2-XATA20-AV 230822			
IZM2-XATA25-AV 230824			
IZM2-XATA32-AV 230826			
IZM3-XATA40-AV 230828			



I_n: Rated current

I_u: Rated uninterrupted current

I_i: Setting of non-delayed short-circuit release

Selectivity
between circuit-breakers facilitates isolation of faulty **sections** of the system.
Incoming circuit-breaker 1 and outgoing circuit-breaker 2 operate selectively (overcurrent discrimination), when in the event of a short-circuit at position 2 **only** outgoing circuit-breaker 2 trips. System sections 3 and 4 remain operational.

Selection:
Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
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, D 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).

Type	IZM...1-A... **incoming circuit-breakers with standard trip release (A)**										IZM...1-V... **incoming circuit-breakers with selectively-operating trip release (V)**									
$I_n = I_u$ [A]	630		800		1000		1250		1600		630		800		1000		1250		1600	
I_i [A]	5040		6400		8000		10000		12800		12600		16000		20000		25000		32000	
I_{cu} [kA]	50	65	50	65	50	65	50	65	50	65	50	65	50	65	50	65	50	65	50	65

Outgoing circuit-breaker			Prospective short-circuit current (kA)																	
	I_u [A]	I_{cu} [kA]	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**
NZM...1-A...	40	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	50	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	63	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	80	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	100	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	125	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
NZM...2-A...	40	100 (150)	5	5	6	6	8	8	12	12	20	20	20	20	40	40	T	T	T	T	T	T
	50	100 (150)	5	5	6	6	8	8	12	12	20	20	20	20	40	40	T	T	T	T	T	T
	63	100 (150)	5	5	6	6	8	8	12	12	20	20	20	20	40	40	T	T	T	T	T	T
	80	100 (150)	5	5	6	6	8	8	12	12	20	20	20	20	40	40	T	T	T	T	T	T
	100	100 (150)	5	5	6	6	8	8	12	12	20	20	20	20	40	40	T	T	T	T	T	T
	125	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
	160	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
	200	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
	250	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
NZM...1-M...	40	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	50	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	63	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
	80	25 (50)	5	5	6	6	8	8	12	12	16	16	16	16	T(35)	T(35)	T	T	T	T	T	T
NZM...2-M	125	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
	160	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
	200	25 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	T(40)	T(40)	T	T	T	T	T	T
NZM...2-	100	50 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	16	16	T	T	T	T	T	T
	160	50 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	16	16	T	T	T	T	T	T
	250	50 ... 150	5	5	6	6	8	8	12	12	20	20	20	20	16	16	T	T	T	T	T	T
NZM...3-	250	50 ... 150	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	T	T
	400	50 ... 150	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	T	T
	630	50 ... 150	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	T	T
NZM...4-	630	50 ... 100	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	32	32
	800	50 ... 100	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	32	32
	1000	50 ... 100	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	32	32
	1250	50 ... 100	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	32	32
	1600	50 ... 100	5	5	6	6	8	8	12	12	12	12	12	12	16	16	20	20	30	30	32	32

Notes T: full selectivity

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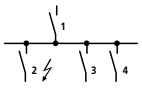

I_n: Rated current

I_u: Rated uninterrupted current

I_i: Setting of non-delayed short-circuit release

Selectivity
between circuit-breakers facilitates isolation of faulty **sections** of the system.
Incoming circuit-breaker 1 and outgoing circuit-breaker 2 operate selectively (overcurrent discrimination), when in the event of a short-circuit at position 2 **only** outgoing circuit-breaker 2 trips. System sections 3 and 4 remain operational.

Selection:
Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
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, D 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).

Type		IZM...1-U... **incoming circuit-breaker with universal trip release (U)**										IZM...1-D... **incoming circuit-breaker with digital trip release (D)**									
$I_n = I_u$ [A]		630		800		1000		1250		1600		630		800		1000		1250		1600	
I_i [kA]		40	52	40	52	40	52	40	52	40	52	40	52	40	52	40	52	40	52	40	52
I_{cu} [kA]		50	65	50	65	50	65	50	65	50	65	50	65	50	65	50	65	50	65	50	65
		OFF/ON		OFF/ON		OFF/ON		OFF/ON		OFF/ON											
Outgoing circuit-breaker		Prospective short-circuit current (kA)																			
	I_u [A]	I_{cu} [kA]	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**	**B**	**N**
NZM...1-A...	40	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	63	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	80	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	125	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-A...	40	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	63	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	80	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	100 (150)	T	T	T	T	T	T	T	T	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	T	T	T	T	T	T	T	T
	160	25 ... 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	200	25 ... 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250	25 ... 100	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...1-M...	40	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	50	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	63	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	80	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	100	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-M...	125	25 ... 150	T	T	T	T	T	T	T	T	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	T	T	T	T	T	T	T	T
	200	25 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-VE...	100	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	160	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	250	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...3-...E...	250	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	400	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	630	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...4-...E...	630	50 (100)	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52
	800	50 (100)	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52
	1000	50 (100)	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52
	1250	50 (100)	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52
	1600	50 (100)	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52	T/40	T/52

Notes T: full selectivity

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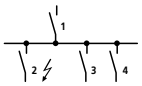

I_n: Rated current

I_u: Rated uninterrupted current

I_i: Setting of non-delayed short-circuit release

Selectivity
between circuit-breakers facilitates isolation of faulty **sections** of the system.
Incoming circuit-breaker 1 and outgoing circuit-breaker 2 operate selectively (overcurrent discrimination), when in the event of a short-circuit at position 2 **only** outgoing circuit-breaker 2 trips. System sections 3 and 4 remain operational.

Selection:
Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
These details represent the limits of selectivity.
Both circuit-breakers will switch off with higher short-circuit currents.

	Type		IZM...2-A... **incoming circuit-breaker with standard trip release (A)** $I_i = 8 \times I_n$																				
	$I_n = I_u$ [A]		800			1000			1250			1600			2000			2500			3200		
	I_i [A]		6400			8000			10000			12800			16000			20000			25600		
	I_{cu} [kA]		55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100
Outgoing circuit-breaker			Prospective short-circuit current (kA)																				
	I_u [A]	I_{cu} [kA]	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**
NZM...1-A...	40	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	50	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	63	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	80	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	100	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	125	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
NZM...2-A...	40	100 (150)	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	55	65	65	T	T	T
	50	100 (150)	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	55	65	65	T	T	T
	63	100 (150)	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	55	65	65	T	T	T
	80	100 (150)	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	55	65	65	T	T	T
	100	100 (150)	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	55	65	65	T	T	T
	125	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
	160	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
	200	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
	250	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
NZM...1-M...	40	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	50	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	63	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	80	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
	100	25 (50)	6	6	6	8	8	8	10	10	10	16	16	16	T(25)	T(25)	T(25)	T(42)	T(42)	T(42)	T	T	T
NZM...2-M...	125	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
	160	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
	200	25 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	T(30)	T(30)	T(30)	T(55)	T(65)	T(65)	T	T	T
NZM...2-	100	50 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	T(55)	T(65)	T(65)	T	T	T
	160	50 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	T(55)	T(65)	T(65)	T	T	T
	250	50 ... 150	6	6	6	8	8	8	10	10	10	20	20	20	30	30	30	T(55)	T(65)	T(65)	T	T	T
NZM...3-E...	250	50 ... 150	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	30	30	30
	400	50 ... 150	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	30	30	30
	630	50 ... 150	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	30	30	30
NZM...4-	630	50 (100)	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	25	25	25
	800	50 (100)	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	25	25	25
	1000	50 (100)	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	25	25	25
	1250	50 (100)	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	25	25	25
	1600	50 (100)	6	6	6	8	8	8	10	10	10	12	12	12	16	16	16	20	20	20	25	25	25

Notes T: full selectivity

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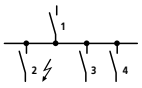

I_n: Rated current

I_u: Rated uninterrupted current

I_i: Setting of non-delayed short-circuit release

Selectivity
between circuit-breakers facilitates isolation of faulty **sections** of the system.
Incoming circuit-breaker 1 and outgoing circuit-breaker 2 operate selectively (overcurrent discrimination), when in the event of a short-circuit at position 2 **only** outgoing circuit-breaker 2 trips. System sections 3 and 4 remain operational.

Selection:
Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
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, D 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).

Type	IZM...2(3)-V... **incoming circuit-breaker with selectively-operating circuit-breakers (V) I_{max} = 50 kA**																							
$I_n = I_u$ [A]	800			1000			1250			1600			2000			2500			3200			4000	5000	6300
I_i [A]	50000			50000			50000			50000			50000			50000			50000			50000		
I_{cu} [kA]	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	100	100	100
Outgoing circuit-breaker	Prospective short-circuit current (kA)																							
I_u I_{cu} [kA]	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**
NZM...1-A...																								
40 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
50 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
63 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
80 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
100 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
125 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-A																								
40 100 (150)	40	40	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
50 100 (150)	40	40	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
63 100 (150)	40	40	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
80 100 (150)	40	40	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
100 100 (150)	40	40	40	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
125 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
160 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
200 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
250 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...1-M...																								
40 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
50 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
63 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
80 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
100 25 (50)	T(35)	T(35)	T(35)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-M																								
125 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
160 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
200 25 ... 150	T(40)	T(40)	T(40)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-E																								
100 50 ... 150	16	16	16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
160 50 ... 150	16	16	16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
250 50 ... 150	16	16	16	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...3-...E...																								
250 50 ... 150	16	16	16	20	20	20	30	30	30	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
400 50 ... 150	16	16	16	20	20	20	30	30	30	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
630 50 ... 150	16	16	16	20	20	20	30	30	30	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
NZM...4-...E																								
630 50 ... 100	16	16	16	20	20	20	30	30	30	32	32	32	40	40	40	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)
800 50 ... 100	16	16	16	20	20	20	30	30	30	32	32	32	40	40	40	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)
100 50 ... 100	16	16	16	20	20	20	30	30	30	32	32	32	40	40	40	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)
125 50 ... 100	16	16	16	20	20	20	30	30	30	32	32	32	40	40	40	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)
160 50 ... 100	16	16	16	20	20	20	30	30	30	32	32	32	40	40	40	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)	T(50)

Notes T: full selectivity

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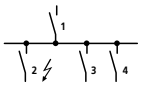


I_n: Rated current

I_u: Rated uninterrupted current

I_i: Setting of non-delayed short-circuit release

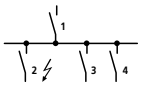
Selectivity
between circuit-breakers facilitates isolation of faulty **sections** of the system.
Incoming circuit-breaker 1 and outgoing circuit-breaker 2 operate selectively (overcurrent discrimination), when in the event of a short-circuit at position 2 **only** outgoing circuit-breaker 2 trips. System sections 3 and 4 remain operational.

Selection:
Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
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, D 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).

Type	IZM..2(3)-U... **incoming circuit-breaker with universal trip-release (U)** $I_i = 0.8 \times I_{cu}$ **(=** $0.8 \times I_{cs}$**)**																										
$I_n = I_u$ [A]	800			1000			1250			1600			2000			2500			3200			4000	5000	6300		
I_i [kA]	44	64	80	44	64	80	44	64	80	44	64	80	44	64	80	44	64	80	44	64	80	80				
I_{cu} [kA]	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	55	80	100	100	100	100		
Outgoing circuit-breaker	Prospective short-circuit current (kA)																										
I_u [A] I_{cu} [kA]	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**		
	OFF/ON			OFF/ON			OFF/ON			OFF/ON			OFF/ON			OFF/ON			OFF/ON			OFF/ON				
NZM...1-A...																										
40 25 (25)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
50 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
63 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
80 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
100 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
125 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
NZM...2-A																										
40 100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
50 100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
63 100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
80 100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
100 100 (150)	T	T	T	T	T	T	T	T	T	T	T	T	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	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	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	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	T	T	T	T	T	T	T	T	T	T	T	T		
NZM...1-M																										
40 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
50 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
63 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
80 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
100 25 (50)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
NZM...2-M																										
125 25 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	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	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	T	T	T	T	T	T	T	T	T	T	T	T		
NZM...2-E																										
100 50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
160 50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
250 50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T		
NZM...3-...E...																										
250 50 ... 150	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
400 50 ... 150	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
630 50 ... 150	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
NZM...4-...E																										
630 50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
800 50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
100 50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
125 50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		
160 50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)		

Notes T: full selectivity

Moeller HPL0211-2004/2005



I_n: Rated current

I_u: Rated uninterrupted current

I_i: Setting of non-delayed short-circuit release

Selectivity
between circuit-breakers facilitates isolation of faulty **sections** of the system.
Incoming circuit-breaker 1 and outgoing circuit-breaker 2 operate selectively (overcurrent discrimination), when in the event of a short-circuit at position 2 **only** outgoing circuit-breaker 2 trips. System sections 3 and 4 remain operational.

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Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
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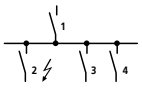
Both circuit-breakers will switch off with higher short-circuit currents.
On IZM circuit-breakers with V, U, D releases, the delay time t_{sd} must be at least 100 ms longer than the delay time of the next downstream levels (2, 3, 4).

	Type		IZM...2-D... **incoming circuit-breaker with digital trip release (D)** $I_i = 0.8 \times I_{cu} = 0.8 \times I_{cs}$											
	$I_n = I_u$ [A]		800			1000			1250			1600		
	I_i [A]		44000	64000	80000	44000	64000	80000	44000	64000	80000	44000	64000	80000
	I_{cu} [kA]		55	80	100	55	80	100	55	80	100	55	80	100
Outgoing circuit-breaker			Prospective short-circuit current (kA)											
	I_u [A]	I_{cu} [kA]	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**
NZM...1-A...	40	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	50	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	63	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	80	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	100	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	125	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-A	40	100	T	T	T	T	T	T	T	T	T	T	T	T
	50	100	T	T	T	T	T	T	T	T	T	T	T	T
	63	100	T	T	T	T	T	T	T	T	T	T	T	T
	80	100	T	T	T	T	T	T	T	T	T	T	T	T
	100	100	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
	160	25 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	200	25 ... 150												
	250	25 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM...1-M...	40	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	50	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	63	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	80	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	100	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-M	125	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
NZM...2-E	100	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	160	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	250	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM...3-...E...	250	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	400	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	630	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM4-...E	630	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)
	800	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)
	1000	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)
	1250	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)
	1600	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)

Notes T: full selectivity



I_n: Rated current

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Provided that the short-circuit current does not exceed those values specified ($I_{cc\ rms}$ in kA) in the table, the outgoing circuit-breakers will behave selectively to the incoming circuit-breaker.
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On IZM circuit-breakers with V, U, D 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).

	Type		IZM...2(3)-D... **incoming circuit-breaker with digital trip release (D)** $I_i = 0.8 \times I_{cu} = 0.8 \times I_{cs}$											
	$I_n = I_u$ [A]		2000			2500			3200			4000	5000	6300
	I_i [A]		44000	64000	80000	44000	64000	80000	44000	64000	80000	80000	80000	80000
	I_{cu} [kA]		55	80	100	55	80	100	55	80	100	100	100	100
Outgoing circuit-breaker			Prospective short-circuit current (kA)											
	I_u [A]	I_{cu} [kA]	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**	**B**	**N**	**H**
NZM...1-A...	40	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	50	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	63	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	80	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	100	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	125	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-A	40	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T
	50	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T
	63	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T
	80	100 (150)	T	T	T	T	T	T	T	T	T	T	T	T
	100	100 (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
	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
	250	25 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM...1-M...	40	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	50	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	63	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	80	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
	100	25 (50)	T	T	T	T	T	T	T	T	T	T	T	T
NZM...2-M...	125	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
	250	25 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM....2-E	100	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	160	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	250	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM...3-...E...	250	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	400	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
	630	50 ... 150	T	T	T	T	T	T	T	T	T	T	T	T
NZM...4-...E	630	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)
	800	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)
	1000	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)
	1250	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)
	1600	50 (100)	45	T(64)	T(80)	45	T(64)	T(80)	45	T(64)	T(80)	T(80)	T(80)	T(80)

Notes T: full selectivity

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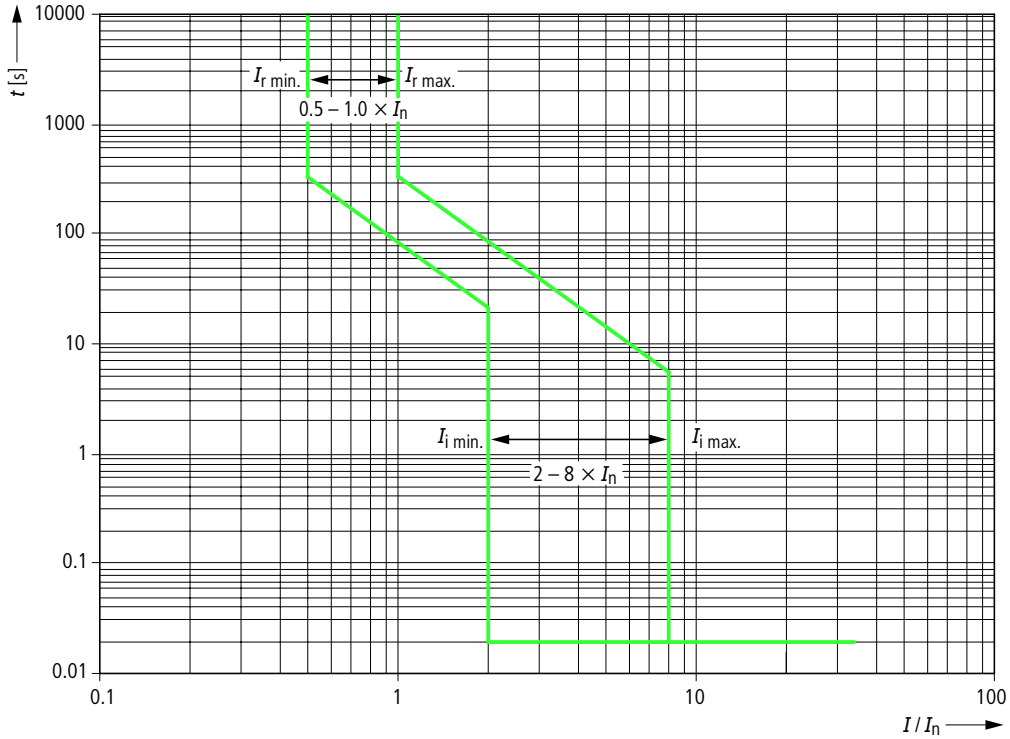
The following characteristics each demonstrate the largest and smallest setting in the respective protective area. In order to receive a complete tripping characteristic, the respective characteristic sections have to be brought together. The characteristic curves indicate the behaviour of the overcurrent release when it has been activated by one of the currents flowing before the trip. If the overcurrent trip occurs directly after switch on and if the overcurrent release is not activated for this reason, the opening delay may extend by 15 ms depending on the level of overcurrent. In order to determine the total opening delay of the switch, about 15 ms are to be added to the shown opening delays for the duration of the arc.

The curves shown apply for an ambient temperature on the switch of -5 to +55°C. The release can be operated at ambient temperatures from -20 to +70°C (with LCD display up to 55°C). An extended tolerance range can apply with these temperatures.

Tolerances with the setting currents:
L: trip between 1.05 and 1.2 x Ir
S: -0%, +20%
I: -0%, +20%
G: -0%, +20%

Tolerances with the trip times:
L: -20%, +0%
S: -0%, +60 ms
I: < 50 ms
G: -0 ms, +60 ms

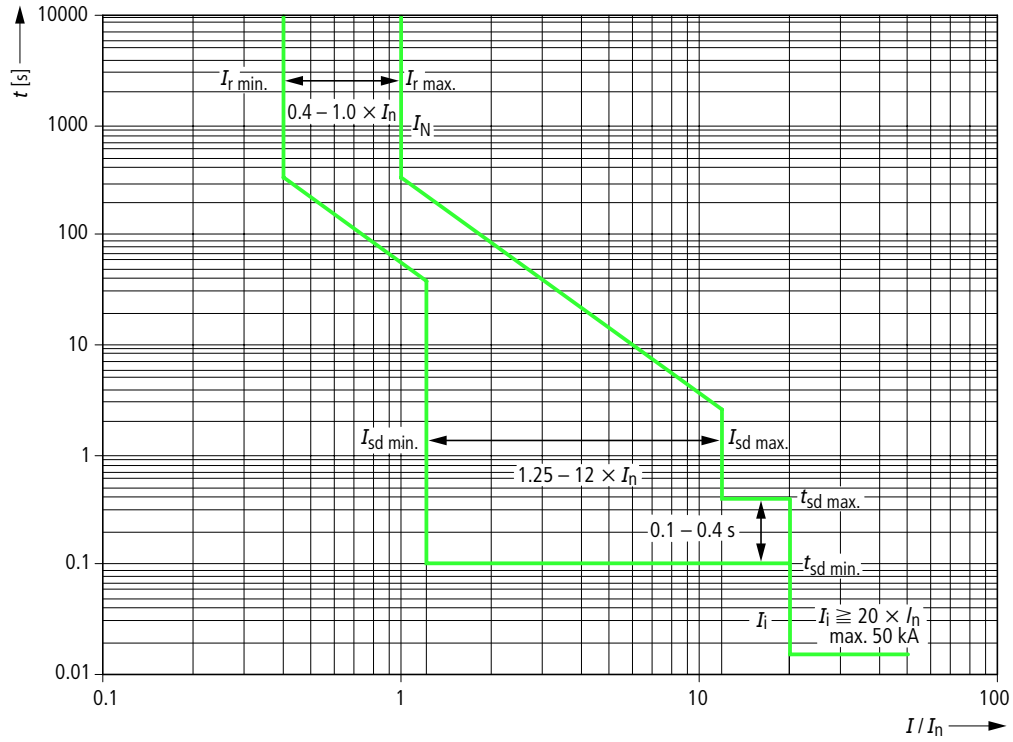
Trip for IZM...-A... system protection
L-, I-trip (L = current dependent delayed overload release
I = non-delayed short-circuit release)



Trip for IZM...-V... selectively-opening circuit-breakers

L-, S-, I-trip (L = current-dependent delayed overload release
S = short-time delayed short-circuit release
I = non-delayed short-circuit release)

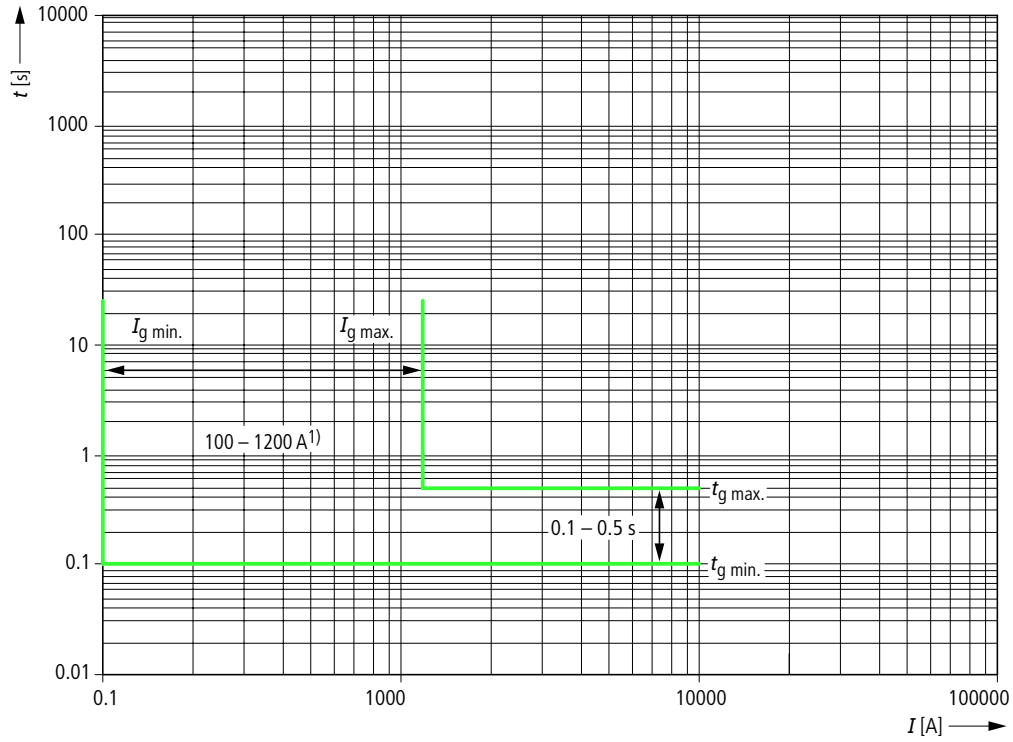
N-trip with +IZM-XT option (N = neutral pole overload release)



Earth fault release for IZM...-V...

G-trip (G = earth-fault release)

+IZM-XT option



1) IZM...1-.../IZM...2-...: 100 – 1200 A
IZM...3-... : 400 – 1200 A

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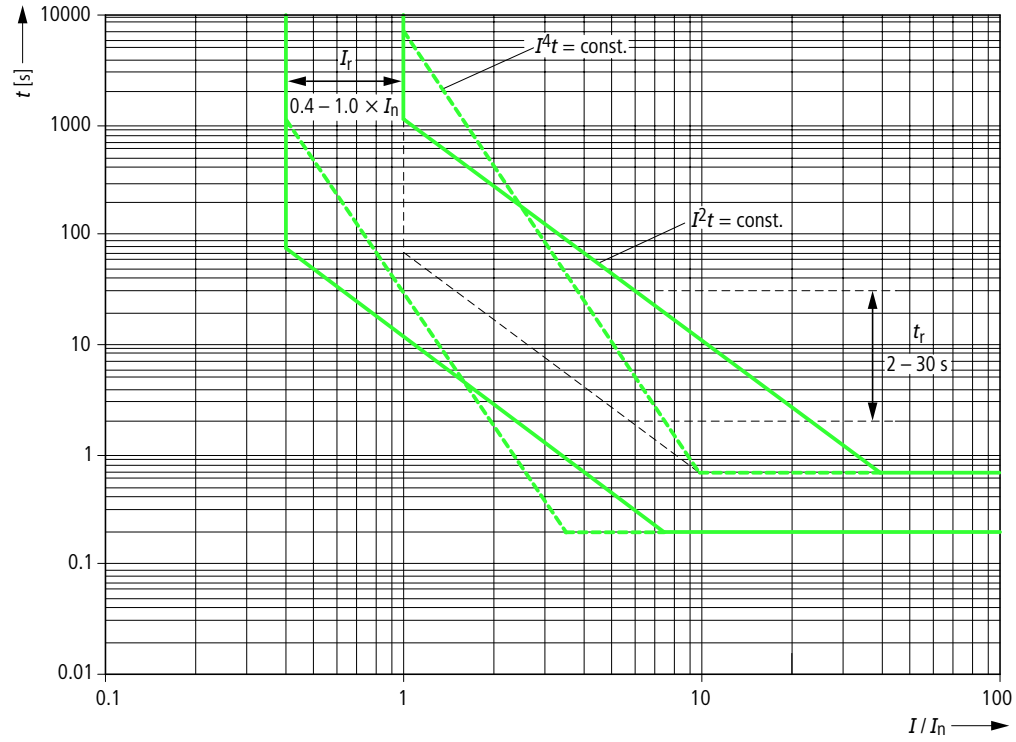
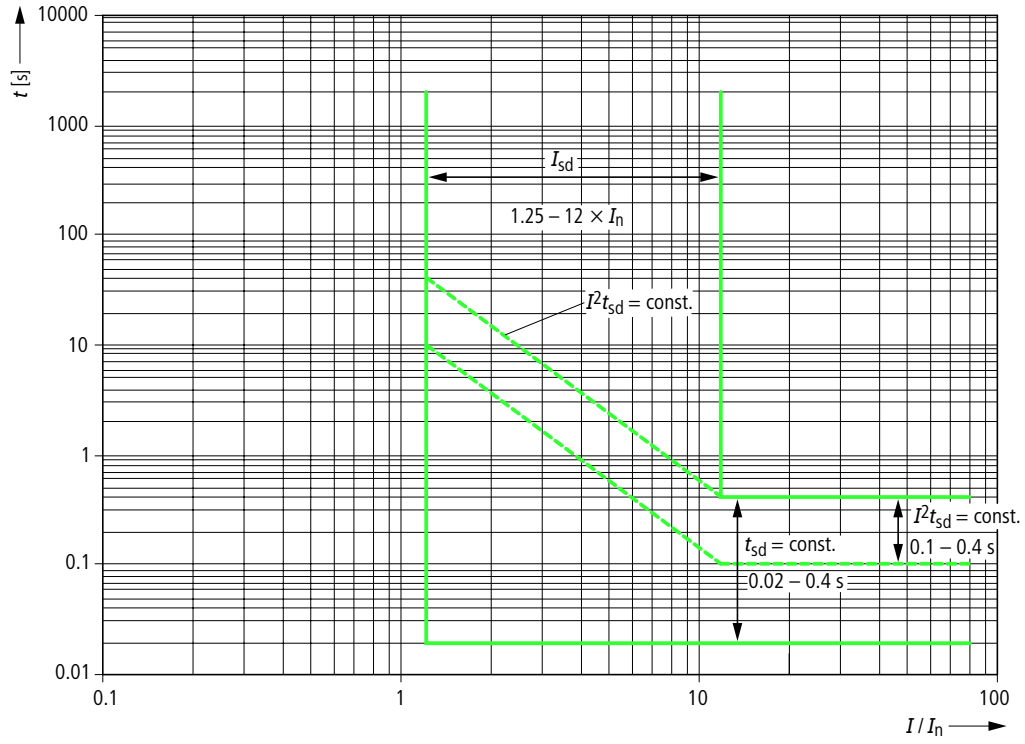
Trip for IZM...-U... universal protection

L-trip (L = current-dependent delayed overload release)

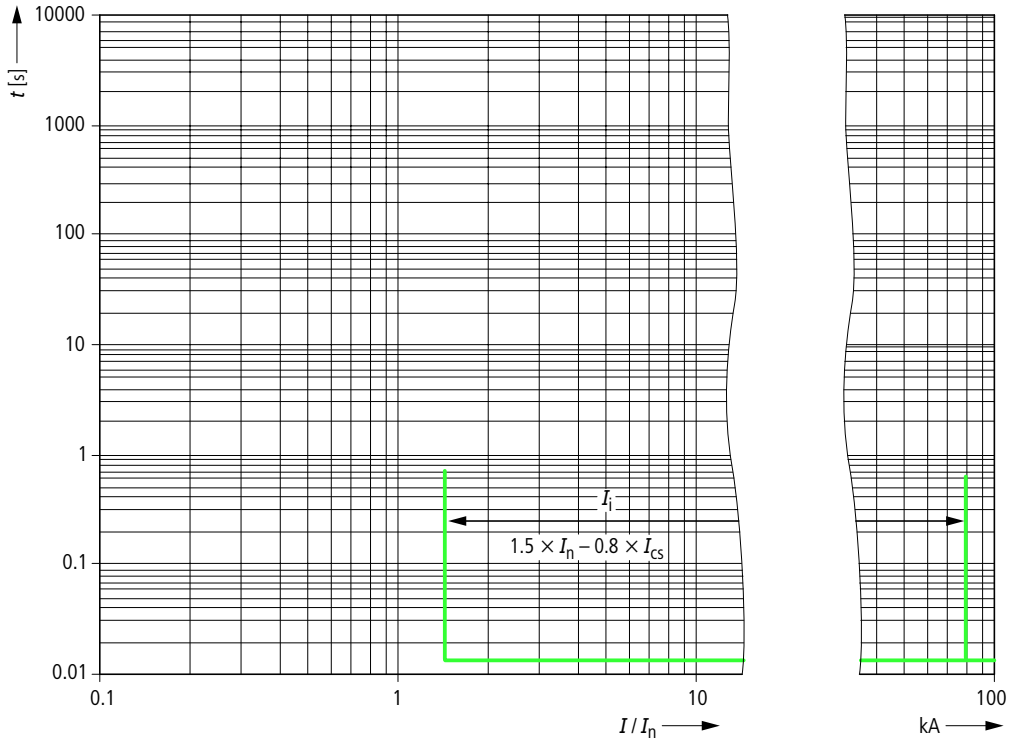


S-trip (S = short-time delayed short-circuit release)

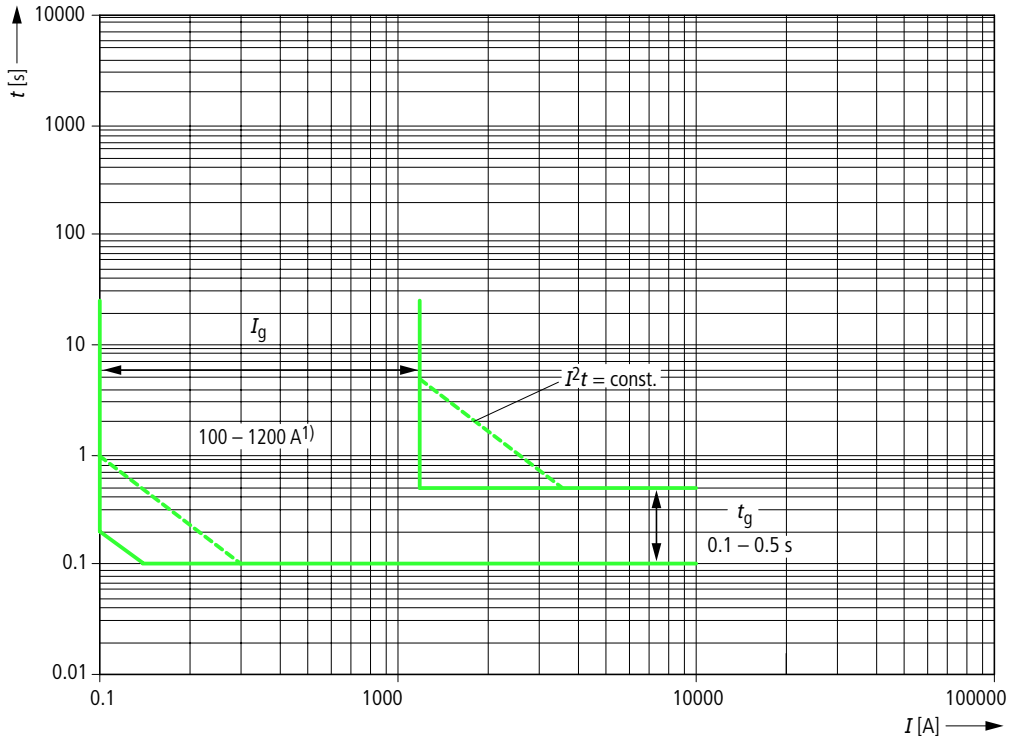


The characteristics apply for a IZMH2-... circuit-breaker, 440 V, with ground-fault protection module.

Trip for IZM...-U... universal protection
I-trip (I = non-delayed short-circuit release)



Earth fault release for IZM...-U...
G-trip (G = earth-fault release)
(+)IZMU-XT(A) option



1) IZM...1-.../IZM...2-...: 100 – 1200 A
IZM...3-... : 400 – 1200 A

The characteristics apply for a IZMH2-... circuit-breaker, 440 V, with ground-fault protection module.

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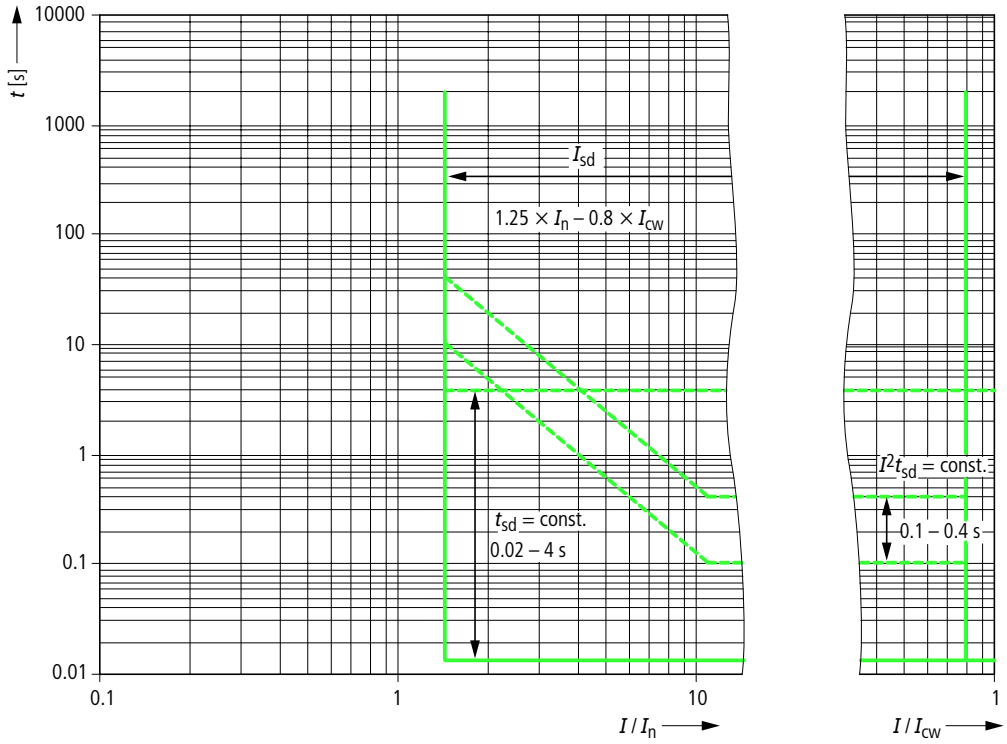
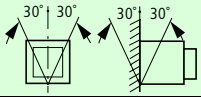
IZM...-D... digital circuit-breaker
S-trip (S = short-time delayed short-circuit release)



The characteristics apply for a IZMH2-... circuit-breaker, 440 V, with ground-fault protection module.
L-, I-, G-trip: see universal circuit-breaker

			IZM...1(-4)-...630		IZM...1(-4)-...800		IZM...1(-4)-...1000		IZM...1(-4)-...1250		IZM...1(-4)-...1600	
			B	N	B	N	B	N	B	N	B	N
General												
Standards			IEC/EN 60947, VDE 0660									
Climatic proofing			IEC/EN 60947-2-30									
Ambient temperature												
Storage (observe special requirements for LCDs)		°C	-40 – 70 (devices with LCD display up to 55 °C)									
Operation (open)		°C	-25 – 70 (devices with LCD display up to 55 °C)									
Mounting position												
Utilization category			B									
Degree of protection			IP20, IP41 with door frame seals, IP55 with protective cover									
Direction of incoming supply			As required									
Main contacts												
Rated current = rated uninterrupted current	$I_n = I_u$	A	630	630	800	800	1000	1000	1250	1250	1600	1600
Rated impulse withstand voltage	U_{imp}	V AC	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000
Rated operational voltage	U_e	V AC	690	690	690	690	690	690	690	690	690	690
Use in IT electrical power networks up to U = 440 VAC	I_{IT}	kA	23	23	23	23	23	23	23	23	23	23
Overvoltage category/ pollution degree			III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Switching capacity												
Rated short-circuit making capacity												
Up to 440 V 50/60 Hz	I_{cm}	kA	105	143	105	143	105	143	105	143	105	143
Up to 690 V 50/60 Hz	I_{cm}	kA	88	105	88	105	88	105	88	105	88	105
Up to 1000 V 50/60 Hz	I_{cm}	kA	–	–	–	–	–	–	–	–	–	–
Rated short-time withstand current 50/60 Hz												
t = 0.5 s	I_{cw}	kA	42	65	42	65	42	65	42	65	42	65
t = 1 s	I_{cw}	kA	42	50	42	50	42	50	42	50	42	50
t = 2 s	I_{cw}	kA	29	35	29	35	29	35	29	35	29	35
t = 3 s	I_{cw}	kA	24	29	24	29	24	29	24	29	24	29
t = 4 s	I_{cw}	kA	21	25	21	25	21	25	21	25	21	25
Rated short-circuit breaking capacity I_{cn}												
IEC/EN 60947 test cycle I_{cu} O-t-CO												
Up to 440 V 50/60 Hz	I_{cu}	kA	50	65	50	65	50	65	50	65	50	65
Up to 690 V 50/60 Hz	I_{cu}	kA	42	50	42	50	42	50	42	50	42	50
Up to 1000 V 50/60 Hz	I_{cu}	kA	–	–	–	–	–	–	–	–	–	–
IEC/EN 60947 test cycle I_{cs} O-t-CO-t-CO												
Up to 440 V 50/60 Hz	I_{cs}	kA	50	65	50	65	50	65	50	65	50	65
Up to 690 V 50/60 Hz	I_{cs}	kA	42	50	42	50	42	50	42	50	42	50
Up to 1000 V 50/60 Hz	I_{cs}	kA	–	–	–	–	–	–	–	–	–	–

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				IZM...1(-4)-...630		IZM...1(-4)-...800		IZM...1(-4)-...1000		IZM...1(-4)-...1250		IZM...1(-4)-...1600	
				B	N	B	N	B	N	B	N	B	N
Switching times													
Opening delay[1]			ms	38	38	38	38	38	38	38	38	38	38
Closing delay[2]			ms	35	35	35	35	35	35	35	35	35	35
Closing delay electrical (via closing release)[3]			ms	80	80	80	80	80	80	80	80	80	80
Opening delay electrical[4] (via shunt release/ undervoltage release)			ms	73	73	73	73	73	73	73	73	73	73
Opening delay via trip electronics[5] (non-delayed short-circuit release)			ms	50	50	50	50	50	50	50	50	50	50
Lifespan													
Mechanical, without maintenance		Operations		10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Mechanical, with maintenance[6]		Operations		20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
Electrical, without maintenance		Operations		10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Electrical, with maintenance[6]		Operations		20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
Maximum operating frequency													
690 V version		Operations/h		60	60	60	60	60	60	60	60	60	60
Heat dissipation at rated current I_n with 3-phase symmetric loading													
Fixed mounted			W	100	100	100	100	100	100	105	105	150	150
Withdrawable units			W	195	195	195	195	195	195	205	205	350	350
Weight													
Fixed mounted	3-pole		kg	43	43	43	43	43	43	43	43	43	43
	4-pole		kg	50	50	50	50	50	50	50	50	50	50
Withdrawable units	3-pole		kg	70	70	70	70	70	70	70	70	70	70
	4-pole		kg	84	84	84	84	84	84	84	84	84	84
Copper busbar conductor cross-section													
Fixed mounted	blank		mm	1 × 40 × 10		1 × 50 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	
	black		mm	1 × 40 × 10		1 × 60 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	
Withdrawable units	blank		mm	1 × 40 × 10		1 × 50 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	
	black		mm	1 × 40 × 10		1 × 50 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	

Notes

[1] Time for mechanical latch release until contact separation + statistical mean value of the arc quenching time
[2] Time for mechanical latch release until closing of main contacts
[3] Time from application of voltage until closing of main contacts. Closing delay with overexcited closing release (5% DF): 50 ms
[4] Time from application of voltage until contact separation + statistical mean value of the arc quenching time
[5] Exception: release for protection of systems (XZMA): 85 ms
[6] Maintenance means: Exchange of main contact and arcing chamber

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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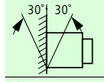
			IZM...2(-4)-...800			IZM...2(-4)-...1000			IZM...2(-4)-...1250		
			B	N	H	B	N	H	B	N	H
General											
Standards			IEC/EN 60947, VDE 0660								
Climatic proofing			IEC/EN 60947-2-30								
Ambient temperature											
Storage (observe special requirements for LCDs)		°C	-40 – 70 (devices with LCD display up to 55 °C)								
Operation (open)		°C	-25 – 70 (devices with LCD display up to 55 °C)								
Mounting position											
											
Utilization category			B								
Degree of protection			IP20, IP41 with door frame seals, IP55 with protective cover								
Direction of incoming supply			As required								
Main contacts											
Rated current = rated uninterrupted current	$I_n = I_u$	A	800	800	800	1000	1000	1000	1250	1250	1250
Rated impulse withstand voltage	U_{imp}	V AC	12000	12000	12000	12000	12000	12000	12000	12000	12000
Rated operational voltage	U_e	V AC	690	690	690 1000	690	690	690 1000	690	690	690 1000
Use in IT electrical power networks up to U = 440 V AC	I_{IT}	kA	50	50	50	50	50	50	50	50	50
Use in IT electrical power networks up to U = 690 V AC **only for 1000 V variants**	I_{IT}	kA	–	–	50	–	–	50	–	–	50
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V	1000	1000	1000	1000	1000	1000	1000	1000	1000
Switching capacity											
Rated short-circuit making capacity											
Up to 440 V 50/60 Hz	I_{cm}	kA	121	176	220	121	176	220	121	176	220
Up to 690 V 50/60 Hz	I_{cm}	kA	105	165	187	105	165	187	105	165	187
Up to 1000 V 50/60 Hz	I_{cm}	kA	–	–	95	–	–	95	–	–	95
Rated short-time withstand current 50/60 Hz											
t = 0.5 s	I_{cw}	kA	55	80	85	55	80	85	55	80	85
t = 1 s	I_{cw}	kA	55	65	80	55	65	80	55	65	80
t = 2 s	I_{cw}	kA	39	46	50	39	46	50	39	46	50
t = 3 s	I_{cw}	kA	32	37	40	32	37	40	32	37	40
t = 4 s	I_{cw}	kA	27	32	32	27	32	32	27	32	32
Rated short-circuit breaking capacity I_{cn}											
IEC/EN 60947 test cycle I_{cu} O-t-CO											
Up to 440 V 50/60 Hz	I_{cu}	kA	55	80	100	55	80	100	55	80	100
Up to 690 V 50/60 Hz	I_{cu}	kA	50	75	85	50	75	85	50	75	85
Up to 1000 V 50/60 Hz	I_{cu}	kA	–	–	45	–	–	45	–	–	45
IEC/EN 60947 test cycle I_{cs} O-t-CO-t-CO											
Up to 440 V 50/60 Hz	I_{cs}	kA	55	80	100	55	80	100	55	80	100
Up to 690 V 50/60 Hz	I_{cs}	kA	50	75	85	50	75	85	50	75	85
Up to 1000 V 50/60 Hz	I_{cs}	kA	–	–	45	–	–	45	–	–	45

Notes *) Switching capacity on N pole = 60 %

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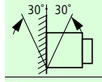
			IZM...2(-4)-...1600			IZM...2(-4)-...2000			IZM...2(-4)-...2500			IZM...2(-4)-...3200			IZM...3 (-4)-... 4000	IZM...3 (-4)-... 5000	IZM...3 (-4)-... 6300
			B	N	H	B	N	H	B	N	H	B	N	H	H	H	H
General																	
Standards			IEC/EN 60947, VDE 0660														
Climatic proofing			IEC/EN 60947-2-30														
Ambient temperature																	
Storage (observe special requirements for LCDs)		°C	-40 – 70 (devices with LCD display up to 55 °C)														
Operation (open)		°C	-25 – 70 (devices with LCD display up to 55 °C)														
Mounting position																	
																	
Utilization category			B														
Degree of protection			IP20, IP41 with door frame seals, IP55 with protective cover														
Direction of incoming supply			As required														
Main contacts																	
Rated current = rated uninterrupted current	$I_n = I_u$	A	1600	1600	1600	2000	2000	2000	2500	2500	2500	3200	3200	3200	4000	5000	6300
Rated impulse withstand voltage	U_{imp}	V AC	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000
Rated operational voltage	U_e	V AC	690	690	690 1000	690	690	690 1000	690	690	690 1000	690	690	690 1000	690 1000	690 1000	690 1000
Use in IT electrical power networks up to U = 440 V AC	I_{IT}	kA	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Use in IT electrical power networks up to U = 690 V AC **only for 1000 V variants**	I_{IT}	kA	–	–	50	–	–	50	–	–	50	–	–	50	–	–	–
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Switching capacity																	
Rated short-circuit making capacity																	
Up to 440 V 50/60 Hz	I_{cm}	kA	121	176	220	121	176	220	121	176	220	121	176	220	220*	220*	220*
Up to 690 V 50/60 Hz	I_{cm}	kA	105	165	187	105	165	187	105	165	187	105	165	187	187*	187*	187*
Up to 1000 V 50/60 Hz	I_{cm}	kA	–	–	95	–	–	95	–	–	95	–	–	95	105*	105*	105*
Rated short-time withstand current 50/60 Hz																	
t = 0.5 s	I_{cw}	kA	55	80	85	55	80	85	55	80	85	55	80	85	85	85	100
t = 1 s	I_{cw}	kA	55	65	80	55	65	80	55	65	80	55	65	80	80	80	100
t = 2 s	I_{cw}	kA	39	46	50	39	46	50	39	46	50	39	46	56	56	56	70
t = 3 s	I_{cw}	kA	32	37	40	32	37	40	32	37	40	32	37	50	46	46	57
t = 4 s	I_{cw}	kA	27	32	32	27	32	32	27	32	32	27	32	40	40	40	50
Rated short-circuit breaking capacity I_{cn}																	
IEC/EN 60947 test cycle I_{cu} O-t-CO																	
Up to 440 V 50/60 Hz	I_{cu}	kA	55	80	100	55	80	100	55	80	100	55	80	100	100*	100*	100*
Up to 690 V 50/60 Hz	I_{cu}	kA	50	75	85	50	75	85	50	75	85	50	75	85	85*	85*	85*
Up to 1000 V 50/60 Hz	I_{cu}	kA	–	–	45	–	–	45	–	–	45	–	–	45	50*	50*	50*
IEC/EN 60947 test cycle I_{cs} O-t-CO-t-CO																	
Up to 440 V 50/60 Hz	I_{cs}	kA	55	80	100	55	80	100	55	80	100	55	80	100	100*	100*	100*
Up to 690 V 50/60 Hz	I_{cs}	kA	50	75	85	50	75	85	50	75	85	50	75	85	85*	85*	85*
Up to 1000 V 50/60 Hz	I_{cs}	kA	–	–	45	–	–	45	–	–	45	–	–	45	50*	50*	50*

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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			IZM...2(-4)-...800			IZM...2(-4)-...1000			IZM...2(-4)-...1250		
			B	N	H	B	N	H	B	N	H
Switching times											
Opening delay[1]		ms	34	34	34	34	34	34	34	34	34
Closing delay[2]		ms	35	35	35	35	35	35	35	35	35
Closing delay electrical (via closing release)[3]		ms	100	100	100	100	100	100	100	100	100
Opening delay electrical[4] (via shunt release/ undervoltage release)		ms	73	73	73	73	73	73	73	73	73
Opening delay via trip electronics[5] (non-delayed short-circuit release)		ms	50	50	50	50	50	50	50	50	50
Lifespan											
Mechanical, without maintenance	Operations		10000	10000	10000	10000	10000	10000	10000	10000	10000
Mechanical, with maintenance[6]	Operations		15000	15000	15000	15000	15000	15000	15000	15000	15000
Electrical, without maintenance	Operations		7500	7500	7500	7500	7500	7500	7500	7500	7500
Electrical, with maintenance[6]	Operations		15000	15000	15000	15000	15000	15000	15000	15000	15000
1000 V version	Operations		1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum operating frequency											
690 V version	Operations/h		60	60	60	60	60	60	60	60	60
1000 V version	Operations/h		–	–	20	–	–	20	–	–	20
Heat dissipation at rated current I_n with 3-phase symmetric loading											
Fixed mounted		W	40	40	40	45	45	45	80	80	80
Withdrawable units		W	85	85	85	95	95	95	165	165	165
Weight											
Fixed mounted											
3-pole		kg	56	56	56	56	56	56	56	56	56
4-pole		kg	67	67	67	67	67	67	67	67	67
Withdrawable units											
3-pole		kg	91	91	91	91	91	91	91	91	91
4-pole		kg	109	109	109	109	109	109	109	109	109
Copper busbar cross-sections											
Copper busbar											
Fixed mounted											
blank		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		
black		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		
Withdrawable units											
blank		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		
black		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		

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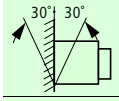
	IZM...2(-4)-...1600			IZM...2(-4)-...2000			IZM...2(-4)-...2500			IZM...2(-4)-...3200			IZM...3 (-4)-... 4000	IZM...3 (-4)-... 5000	IZM...3 (-4)-... 6300
	B	N	H	B	N	H	B	N	H	B	N	H	H	H	H
Switching times															
Opening delay[1]	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Closing delay[2]	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Closing delay electrical (via closing release)[3]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Opening delay electrical[4] (via shunt release/ undervoltage release)	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Opening delay via trip electronics[5] (non-delayed short-circuit release)	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Lifespan															
Mechanical, without maintenance	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	5000	5000	5000
Mechanical, with maintenance[6]	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	10000	10000	10000
Electrical, without maintenance	7500	7500	7500	7500	7500	7500	7500	7500	7500	4000	4000	4000	2000	2000	2000
Electrical, with maintenance[6]	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	10000	10000	10000
1000 V version	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Maximum operating frequency															
690 V version	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1000 V version	–	–	20	–	–	20	–	–	20	–	–	20	20	20	20
Heat dissipation at rated current I_n with 3-phase symmetric loading															
Fixed mounted	85	85	85	180	180	180	270	270	270	410	410	410	520	630	900
Withdrawable units	175	175	175	320	320	320	520	520	520	710	710	710	810	1050	1600
Weight															
Fixed mounted															
3-pole	56	56	56	56	56	56	59	59	59	64	64	64	82	82	90
4-pole	67	67	67	67	67	67	71	71	71	77	77	77	99	99	108
Withdrawable units															
3-pole	91	91	91	91	91	91	102	102	102	113	113	113	148	148	166
4-pole	109	109	109	109	109	109	123	123	123	136	136	136	190	190	227
Copper busbar cross-sections															
Copper busbar															
Fixed mounted															
blank	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	5 × 100 × 10	6 × 120 × 10
black	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	4 × 120 × 10	6 × 120 × 10
Withdrawable units															
blank	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	6 × 100 × 10	6 × 120 × 10
black	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	4 × 120 × 10	6 × 120 × 10

Notes

[1] Time for mechanical latch release until contact separation + statistical mean value of the arc quenching time
[2] Time for mechanical latch release until closing of main contacts
[3] Time from application of voltage until closing of main contacts. Closing delay with overexcited closing release (5% DF): 50 ms
[4] Time from application of voltage until contact separation + statistical mean value of the arc quenching time
[5] Exception: release for protection of systems (XZMA): 85 ms
[6] Maintenance means: Exchange of main contact and arcing chamber

			IN...1(-4)-...630		IN...1(-4)-...800		IN...1(-4)-...1000		IN...1(-4)-...1250		IN...1(-4)-...1600	
			B	N	B	N	B	N	B	N	B	N
General												
Standards			IEC/EN 60947, VDE 0660									
Climatic proofing			IEC/EN 60947-2-30									
Ambient temperature												
Storage		°C	-40 – 70									
Operation (open)		°C	-25 – 70									
Mounting position												
												
Utilization category			B									
Degree of protection			IP20, IP41 with door frame seals, IP55 with protective cover									
Direction of incoming supply			As required									
Main contacts												
Rated current = rated uninterrupted current	$I_n = I_u$	A	630	630	800	800	1000	1000	1250	1250	1600	1600
Rated impulse withstand voltage	U_{imp}	V AC	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000
Rated operational voltage	U_e	V AC	690	690	690	690	690	690	690	690	690	690
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Switching capacity												
Rated short-circuit making capacity												
Up to 440 V 50/60 Hz	I_{cm}	kA	105	143	105	143	105	143	105	143	105	143
Up to 690 V 50/60 Hz	I_{cm}	kA	88	105	88	105	88	105	88	105	88	105
Up to 1000 V 50/60 Hz	I_{cm}	kA	–	–	–	–	–	–	–	–	–	–
Rated short-time withstand current 50/60 Hz												
t = 0.5 s	I_{cw}	kA	42	65	42	65	42	65	42	65	42	65
t = 1 s	I_{cw}	kA	42	50	42	50	42	50	42	50	42	50
t = 2 s	I_{cw}	kA	29	35	29	35	29	35	29	35	29	35
t = 3 s	I_{cw}	kA	24	29	24	29	24	29	24	29	24	29
t = 4 s	I_{cw}	kA	21	25	21	25	21	25	21	25	21	25
Switching times												
Opening delay[1)]		ms	38	38	38	38	38	38	38	38	38	38
Closing delay[2)]		ms	35	35	35	35	35	35	35	35	35	35
Opening delay electrical via closing release[3)]		ms	80	80	80	80	80	80	80	80	80	80
Opening delay electrical via shunt release/undervoltage release[4)]		ms	73	73	73	73	73	73	73	73	73	73
Lifespan												
Mechanical, without maintenance	Operations		10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Mechanical, with maintenance[6)]	Operations		20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
Electrical, without maintenance	Operations		10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Electrical, with maintenance[6)]	Operations		20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
1000 V version	Operations		–	–	–	–	–	–	–	–	–	–
Maximum operating frequency												
690 V version	Operations/h		60	60	60	60	60	60	60	60	60	60
1000 V version	Operations/h		–	–	–	–	–	–	–	–	–	–
Heat dissipation at rated current I_n with 3-phase symmetric loading												
Fixed mounted		W	100	100	100	100	100	100	105	105	170	170
Withdrawable units		W	195	195	195	195	195	195	205	205	350	350

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			IN...1(-4)-...630		IN...1(-4)-...800		IN...1(-4)-...1000		IN...1(-4)-...1250		IN...1(-4)-...1600	
			B	N	B	N	B	N	B	N	B	N
Weight												
Fixed mounted												
3-pole		kg	43	43	43	43	43	43	43	43	43	43
4-pole		kg	50	50	50	50	50	50	50	50	50	50
Withdrawable units												
3-pole		kg	70	70	70	70	70	70	70	70	70	70
4-pole		kg	84	84	84	84	84	84	84	84	84	84
Copper busbar cross-sections												
Copper busbar												
Fixed mounted												
blank		mm	1 × 40 × 10		1 × 50 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	
black		mm	1 × 40 × 10		1 × 60 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	
Withdrawable units												
blank		mm	1 × 40 × 10		1 × 50 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	
black		mm	1 × 40 × 10		1 × 50 × 10		1 × 60 × 10		2 × 40 × 10		2 × 50 × 10	

Notes

[1] Time for mechanical latch release until contact separation + statistical mean value of the arc quenching time
[2] Time for mechanical latch release until closing of main contacts
[3] Time from application of voltage until closing of main contacts. Closing delay with overexcited closing release (5% DF): 50 ms
[4] Time from application of voltage until contact separation + statistical mean value of the arc quenching time
[6] Maintenance means: Exchange of main contact and arcing chamber

Circuit-breakers, switch-disconnectors from 630 A to 6300 A

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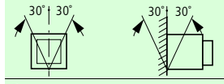
			IN...2(-4)-800			IN...2(-4)-1000			IN...2(-4)-1250		
			B	N	H	B	N	H	B	N	H
General											
Standards			IEC/EN 60947 VDE 0660								
Climatic proofing			IEC/EN 60947-2-30								
Ambient temperature											
Storage		°C	–40/70								
Operation (open)		°C	–25/70								
Mounting position											
Utilization category			B								
Degree of protection			IP20, IP41 with door frame seals, IP55 with protective cover								
Direction of incoming supply			As required								
Main contacts											
Rated current = rated uninterrupted current	$I_n = I_u$	A	800	800	800	1000	1000	1000	1250	1250	1250
Rated impulse withstand voltage	U_{imp}	V AC	12000	12000	12000	12000	12000	12000	12000	12000	12000
Rated operational voltage	U_e	V AC	690	690	690 1000	690	690	690 1000	690	690	690 1000
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	U_i	V	1000	1000	1000	1000	1000	1000	1000	1000	1000
Switching capacity											
Rated short-circuit making capacity											
Up to 440 V 50/60 Hz	I_{cm}	kA	121	176	220	121	176	220	121	176	220
Up to 690 V 50/60 Hz	I_{cm}	kA	105	165	187	105	165	187	105	165	187
Up to 1000 V 50/60 Hz	I_{cm}	kA	–	–	95	–	–	95	–	–	95
Rated short-time withstand current 50/60 Hz											
t = 0.5 s	I_{cw}	kA	55	80	85	55	80	85	55	80	85
t = 1 s	I_{cw}	kA	55	65	80	55	65	80	55	65	80
t = 2 s	I_{cw}	kA	39	46	50	39	46	50	39	46	50
t = 3 s	I_{cw}	kA	32	37	40	32	37	40	32	37	40
t = 4 s	I_{cw}	kA	27	32	32	27	32	32	27	32	32
Switching times											
Opening delay[1]		ms	34	34	34	34	34	34	34	34	34
Closing delay[2]		ms	35	35	35	35	35	35	35	35	35
Opening delay electrical via closing release[3]		ms	80	80	80	80	80	80	80	80	80
Opening delay electrical via shunt release/ undervoltage release[4]		ms	73	73	73	73	73	73	73	73	73
Lifespan											
Mechanical, without maintenance		Operations	10000	10000	10000	10000	10000	10000	10000	10000	10000
Mechanical, with maintenance[6]		Operations	15000	15000	15000	15000	15000	15000	15000	15000	15000
Electrical, without maintenance		Operations	7500	7500	7500	7500	7500	7500	7500	7500	7500
Electrical, with maintenance[6]		Operations	15000	15000	15000	15000	15000	15000	15000	15000	15000
1000 V version		Operations	–	–	1000	–	–	1000	–	–	1000
Maximum operating frequency											
690 V version		Operations/h	60	60	60	60	60	60	60	60	60
1000 V version		Operations/h	–	–	20	–	–	20	–	–	20
Heat dissipation at rated current I_n with 3-phase symmetric loading											
Fixed mounted		W	40	40	40	40	40	40	80	80	80
Withdrawable units		W	95	95	95	95	95	95	165	165	165

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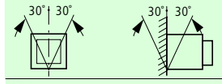
	IN...2(-4)-1600			IN...2(-4)-2000			IN...2(-4)-2500			IN...2(-4)-3200			IN...3 (-4)- 4000	IN...3 (-4)- 5000	IN...3 (-4)- 6300
	B	N	H	B	N	H	B	N	H	B	N	H	H	H	H
General															
Standards	EC/EN 60947 VDE 0660														
Climatic proofing	IEC/EN 60947-2-30														
Ambient temperature															
Storage	–40/70														
Operation (open)	–25/70														
Mounting position															
Utilization category	B														
Degree of protection	IP20, IP41 with door frame seals, IP55 with protective cover														
Direction of incoming supply	As required														
Main contacts															
Rated current = rated uninterrupted current	1600	1600	1600	2000	2000	2000	2500	2500	2500	3200	3200	3200	4000	5000	6300
Rated impulse withstand voltage	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000	12000
Rated operational voltage	690	690	690 1000	690	690	690 1000	690	690	690 1000	690	690	690	690 1000	690 1000	690 1000
Overvoltage category/pollution degree	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Switching capacity															
Rated short-circuit making capacity															
Up to 440 V 50/60 Hz	121	176	220	121	176	220	121	176	220	121	176	220	220*	220*	220*
Up to 690 V 50/60 Hz	105	165	187	105	165	187	105	165	187	105	165	187	187*	187*	187*
Up to 1000 V 50/60 Hz	–	–	95	–	–	95	–	–	95	–	–	95	105*	105*	105*
Rated short-time withstand current 50/60 Hz															
t = 0.5 s	55	80	85	55	85	85	55	80	85	55	80	85	85	85	100
t = 1 s	55	65	80	55	65	80	55	65	80	55	65	80	80	80	100
t = 2 s	39	46	50	39	46	50	39	46	50	39	46	56	56	56	70
t = 3 s	32	37	40	32	37	40	32	37	40	32	37	50	46	46	57
t = 4 s	27	32	32	27	32	32	27	32	32	27	32	40	40	40	50
Switching times															
Opening delay[1]	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Closing delay[2]	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Opening delay electrical via closing release[3]	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Opening delay electrical via shunt release/ undervoltage release[4]	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Lifespan															
Mechanical, without maintenance	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	5000	5000	5000
Mechanical, with maintenance[6]	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	10000	10000	10000
Electrical, without maintenance	7500	7500	7500	7500	7500	7500	7500	7500	7500	4000	4000	4000	2000	2000	2000
Electrical, with maintenance[6]	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	10000	10000	10000
1000 V version	–	–	1000	–	–	1000	–	–	1000	–	–	1000	1000	1000	1000
Maximum operating frequency															
690 V version	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1000 V version	–	–	20	–	–	20	–	–	20	–	–	20	20	20	20
Heat dissipation at rated current I_n with 3-phase symmetric loading															
Fixed mounted	85	85	85	180	180	180	270	270	270	410	410	410	520	630	900
Withdrawable units	175	175	175	320	320	320	520	520	520	710	710	710	810	1050	1600

Notes

[1] Time for mechanical latch release until contact separation + statistical mean value of the arc quenching time
[2] Time for mechanical latch release until closing of main contacts
[3] Time from application of voltage until closing of main contacts. Closing delay with overexcited closing release (5% DF): 50 ms
[4] Time from application of voltage until contact separation + statistical mean value of the arc quenching time
[6] Maintenance means: Exchange of main contact and arcing chamber
[*] Switching capacity on N pole = 60 %

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				IN...2(-4)-800			IN...2(-4)-1000			IN...2(-4)-1250		
				B	N	H	B	N	H	B	N	H
Weight												
Fixed mounted	3-pole		kg	56	56	56	56	56	56	56	56	56
	4-pole		kg	67	67	67	67	67	67	67	67	67
Withdrawable units	3-pole		kg	91	91	91	91	91	91	91	91	91
	4-pole		kg	109	109	109	109	109	109	109	109	109
Copper busbar conductor cross-section												
Fixed mounted	blank		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		
	black		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		
Withdrawable units	blank		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		
	black		mm	1 × 50 × 10			1 × 60 × 10			2 × 40 × 10		

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				IN...2(-4)-1600			IN...2(-4)-2000			IN...2(-4)-2500			IN...2(-4)-3200			IN...3 (-4)- 4000	IN...3 (-4)- 5000	IN...3 (-4)- 6300
				B	N	H	B	N	H	B	N	H	B	N	H	H	H	H
Weight																		
Fixed mounted	3-pole		kg	56	56	56	56	56	56	59	59	59	64	64	64	82	82	90
	4-pole		kg	67	67	67	67	67	67	71	71	71	77	77	77	99	99	108
Withdrawable units	3-pole		kg	91	91	91	91	91	91	102	102	102	113	113	113	148	148	166
	4-pole		kg	109	109	109	109	109	109	123	123	123	136	136	136	190	190	227
Copper busbar conductor cross-section																		
Fixed mounted	blank		mm	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	5 × 100 × 10	6 × 120 × 10
	black		mm	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	4 × 120 × 10	6 × 120 × 10
Withdrawable units	blank		mm	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	6 × 100 × 10	6 × 120 × 10
	black		mm	2 × 50 × 10			3 × 50 × 10			2 × 100 × 10			3 × 100 × 10			4 × 100 × 10	4 × 120 × 10	6 × 120 × 10

			IZM...-A... (XZMA)	IZM...-V... (XZMV)	IZM...-U... (XZMU)	IZM...-D... (XZMD, XZMR[1])
Control unit						
Overload protection L						
Can be activated/deactivated			–	–	–	Yes
Setting range	I_r		0.5 – 1.0 × I_n	0.4 – 1.0 × I_n	0.4 – 1.0 × I_n	0.4 – 1.0 × I_n
Delay time with						
6 × I_r	t_r	s	10	10	–	–
6 × I_r with time delay setting to overcome current peaks to I^2t	t_r	s	–	–	2 – 30	2 – 30
6 × I_r with time delay setting to overcome current peaks to I^4t	t_r	s	–	–	1 – 5	1 – 5
Phase-failure sensitivity			–	Only with t_{sd} = 20 ms (motor protection)	Only with t_{sd} = 20 ms (motor protection)	ON/OFF via Menu/Comm
Thermal memory			–	–	Can be activated/ deactivated	Can be activated/deacti-vated via Menu/Comm
Tolerance			Protection functions to IEC/EN 60947	Protection functions to IEC/EN 60947	Protection functions to IEC/EN 60947	Protection functions to IEC/EN 60947
Short-time delayed short-circuit protection S						
Setting range	I_{sd}		–	1.25 – 12 × I_n	1.25 – 12 × I_n	1.25 × I_n – 0.8 × I_{cw}
Delay time	t_{sd}	ms	–	0, 20 (motor protection), 100, 200, 300, 400	20 (motor protection), 100, 200, 300, 400, OFF	20 (motor protection), 80... 4000, OFF
I^2t_{sd} at 12 × I_n	t_{sd}	ms	–	–	100, 200, 300, 400, OFF	100... 400, OFF
ZSI function			–	–	With "IZM-XEM-ZSI" option	With "IZM-XEM-ZSI" option
Non-delayed short-circuit protection I						
Can be deactivated			–	–	OFF	OFF via Menu/Comm
Setting range	I_i		2 – 8 × I_n	Fixed at $I_i \geqq 20 \times I_n$ (max. 50 kA)	1.5 × I_n – 12 × I_n, Max = 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$	1.5 × I_n – 0.8 × I_{cs}, OFF: $I_{cs} = I_{cw}$
N conductor protection N				Only with "+IZM-XT" option		
Setting range	I_N		–	$I_N = I_n$	0 %, 50 %, 100 % of I_n, can be switched on/off with sliding switch	50 % to 200 % of I_n and OFF, via Menu/COMM
Earth-fault protection G						
			–	Only with "+IZM-XT" option	Module can be fitted by user	Module can be fitted by user
Setting range of the response current I_g for the trip	I_g		–	OFF, A, B, C, D, E	OFF, A, B, C, D, E	OFF, A... E
Setting range of the response current I_g for the alarm	I_g		–	–	A, B, C, D, E	OFF, A... E
Delay time	t_g	ms	–	100, 200, 300, 400, 500	100, 200, 300, 400, 500	100 ... 500
Delay time with I^2t	t_g	ms	–	–	100, 200, 300, 400, 500	100 ... 500
Trip function			–	Can be activated/ deactivated	Can be activated/ deactivated	Can be activated/deacti-vated via Menu/Comm
Alarm function			–	–	–	Can be activated/deacti-vated via Menu/Comm
ZSI function			–	–	With "IZM-XEM-ZSI" option	With "IZM-XEM-ZSI" option
Acquisition of earth-fault current through summation current transfor-mation with built-in or external trans-ducer for the N conductor			–	Yes	Yes, can be selected	Yes, can be selected
Acquisition of earth-fault current through external transducer for the protective conductor			–	–	Yes, can be selected	Yes, can be selected

IZM...-V.../IZM...-U... Setting range of the response current I_g **IZM...1(-4)-.../ IZM...2(-4)-...**	IZM...-V.../IZM...-U... Setting range of the response current I_g **IZM...1(-4)-.../ IZM...2(-4)-...**	Setting range I_g **IZM...1(-4)-.../ IZM...2(-4)-...**
A: 100 A B: 300 A C: 600 A D: 900 A E: 1200 A	A: 100 A B: 300 A C: 600 A D: 900 A E: 1200 A	A: 100 A E: 1200 A
IZM...3(-4)-...	**IZM...3(-4)-...**	**IZM...3(-4)-...**
A: 400 A B: 600 A C: 800 A D: 1000 A E: 1200 A	A: 400 A B: 600 A C: 800 A D: 1000 A E: 1200 A	A: 400 A E: 1200 A

Notes

[1] Control unit XZMR receives "+IZM-XZMR" with plus option. All settings only via communications interfaces (via Comm) possible, i.e. a) with IZM-XEM-PG(E) parameter assignment module or b) via PROFIBUS.

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				IZM-XHI... standard auxiliary contact	IZM-XHIB ready to close signal	IZM-XHIA trip-indicating auxiliary contact	IZM-XHIAV... position signalling switch
Auxiliary contacts							
Rated insulation voltage							
AC		U_i	V AC	500	–	–	440
DC		U_i	V DC	500	–	–	250
Rated operational voltage		U_e	V AC/ DC	500 220	220 220	230 220	440 250
Rated impulse withstand voltage		U_{imp}	kV	4	–	–	4
Short-circuit protection							
max. fuse			A gL	10	2	6	8
Fuseless			Type	FAZ-C10/1	–	–	FAZ-C6/1
Rated breaking capacity							
AC-12							
	24 – 230 V		A	10	–	–	–
	110/127 V		A	–	0.14	–	13
	220/230 V		A	–	0.1	6	13
	400 V		A	10	–	–	0.6
	500 V		A	10	–	–	–
AC–15							
	24 – 230 V		A	4	–	–	–
	110/127 V		A	–	–	–	5
	220/230 V		A	–	–	–	4
	400 V		A	3	–	–	3
	440 V		A	–	–	–	3
	500 V		A	2	–	–	–
DC-12							
	24 V		A	10	0.2	6	13
	30 V		A	–	–	–	10
	48 V		A	8	–	–	2.5
	110 V		A	3.5	–	0.4	0.8
	220 V		A	1	0.1	0.2	0.6
DC-13							
	24 V		A	8	–	–	3
	48 V		A	4	–	–	–
	110 V		A	1.2	–	–	–
	220/250 V		A	0.4	–	–	0.1
	400 V		A	–	–	–	–
Terminal capacity							
Flexible without ferrules			mm^2	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)
Flexible with ferrule			mm^2	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)

			Voltage releases					
			IZM-XE, IZM-XE/A closing release		IZM-XA(1), IZM-XE/A shunt release		IZM-XU(V) undervoltage release	
			100 % duty factor	5 % duty factor	100 % duty factor	5 % duty factor	delayed t = 0.2 – 3.2 s	non-delayed and t = 200 ms
Voltage releases								
Rated control voltage								
AC 50/60 Hz	U_s	V	110, 230	110 – 127, 208 – 240	110, 230	110 – 127, 208 – 240	110 – 127, 208 – 240, 380 – 415	110 – 127, 208 – 240, 380 – 415
DC	U_s	V	24, 30, 48, 60, 110, 220	24, 48, 110 – 125, 220 – 250	24, 30, 48, 60, 110, 220	24, 48, 110 – 125, 220 – 250	48, 110 – 125, 220 – 250	24, 30, 48, 110 – 125, 220 – 250
Power consumption								
AC 50/60 Hz		VA	15	15	15	15	5 (pick-up 200)	5 (pick-up 200)
DC		W	15	15	15	15	5 (pick-up 200)	5 (pick-up 200)
Response time of the circuit-breaker with U_s		ms	80	50	73	35	80 non-delayed, otherwise corresponding delay time	80 non-delayed, otherwise corresponding delay time
Minimum command time		ms	60	25	60	25	–	–
Operating range								
Drop-out voltage		× U_s	–	–	–	–	0.35 – 0.7	0.35 – 0.7
Pick-up voltage		× U_s	0.85 – 1.1	0.85 – 1.1	0.85 – 1.1	0.85 – 1.1	0.85 – 1.1	0.85 – 1.1
Extended operating range for battery operation								
Pick-up voltage		× U_s	0.7 – 1.26	0.7 – 1.26	0.7 – 1.26	0.7 – 1.26	0.85 – 1.26	0.85 – 1.26
Short-circuit protection								
DIAZED fuses (utilization category gL)			1 A TDz (slow fuse)	1 A TDz (slow fuse)	1 A TDz (slow fuse)	1 A TDz (slow fuse)	1 A TDz (slow fuse)	1 A TDz (slow fuse)
Miniature circuit-breaker with characteristic C			1 A	1 A	1 A	1 A	1 A	1 A
Terminal capacity								
Flexible without ferrules		mm^2	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)
Flexible with ferrule		mm^2	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)

			IZM-XM24-30DC	IZM-XM48-60DC	IZM-XM110AC/DC	IZM-XM230AC/220DC
Motor operators						
Rated control voltage						
AC 50/60 Hz	U_s	V	–	–	110 – 127	208 – 240
DC	U_s	V	24 – 30	48 – 60	110 – 125	220 – 250
Operating range		$\times U_s$	0.85 – 1.1	0.85 – 1.1	0.85 – 1.1	0.85 – 1.1
Extended operating range for battery operation 24 V to 220 V DC		$\times U_s$	0.7 – 1.26	0.7 – 1.26	0.7 – 1.26	0.7 – 1.26
Necessary tome requirement for charging of the spring-operated stored energy mechanism with 1 × U_s	U_s	V	≦ 10	≦ 10	≦ 10	≦ 10
Starting current		A	19.3 (24 V DC) 24.5 (30 V DC)	7.6 (48 V DC) 11.6 (60 V DC)	8.8 (110 V AC) 7 (110 V DC)	3.9 (220 V AC) 2.6 (220 V DC)
Power consumption						
AC 50/60 Hz		VA	110	110	110	110
DC		W	110	110	110	110
Duration of the charging procedure		s	≦ 10	≦ 10	≦ 10	≦ 10
Short-circuit protection						
DIAZED fuses (utilization category gL)			2 A TDz (slow fuse)	2 A TDz (slow fuse)	1 A TDz (slow fuse)	1 A TDz (slow fuse)
Miniature circuit-breaker with characteristic C			2 A	2 A	1 A	1 A
Terminal capacity						
Flexible without ferrules		mm²	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)	2 × (0.5 – 2.5)
Flexible with ferrule		mm²	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)	2 × (0.5 – 1.5)

	Max. continuous current mA	Max. starting current mA
Current consumption of the communications module		
XZMU release	120	2000
XZMR release	120	2000
XZMD release	170	2000
XMP or XMH measuring function	120	120
XBSS Breaker Status Sensor	40	110
XCOM-DP communication module	125	280
ZSI module	50	125
Digital output module with rotary coding switch, relay outputs	180	125
Digital output module with rotary coding switch, optocoupler outputs	50	125
Digital output module, configurable, relay outputs	180	125
Digital output module, configurable, optocouplers	50	125
Analog output module	110	800
Digital input module	30	125
PG (E) parameter assignment module	250	350

Permissible continuous current (A)
dependent on the ambient temperature

Type	Version	Ambient temperature		
		up to 55 °C	60 °C	70 °C
IZM...1(-4)-...630 IN...1(-4)-630	Fixed mounted	630	630	630
	Withdrawable units	630	630	630
IZM...1(-4)-...800 IN...1(-4)-800	Fixed mounted	800	800	800
	Withdrawable units	800	800	800
IZM...1(-4)-...1000 IN...1(-4)-1000	Fixed mounted	1000	1000	1000
	Withdrawable units	1000	1000	910 (1000)
IZM...1(-4)-...1250 IN...1(-4)-1250	Fixed mounted	1250	1250	1250
	Withdrawable units	1250	1250	1140 (1210)
IZM...1(-4)-...1600 IN...1(-4)-1600	Fixed mounted	1600	1600	1500 (1600)
	Withdrawable units	1600	1600	1390 (1490)
IZM...2(-4)-...800 IN...2(-4)-800	Fixed mounted	800	800	800
	Withdrawable units	800	800	800
IZM...2(-4)-...1000 IN...2(-4)-1000	Fixed mounted	1000	1000	1000
	Withdrawable units	1000	1000	1000
IZM...2(-4)-...1250 IN...2(-4)-1250	Fixed mounted	1250	1250	1250
	Withdrawable units	1250	1250	1250
IZM...2(-4)-...1600 IN...2(-4)-1600	Fixed mounted	1600	1600	1600
	Withdrawable units	1600	1600	1520 (1600)
IZM...2(-4)-...2000 IN...2(-4)-2000	Fixed mounted	2000	2000	2000
	Withdrawable units	2000	2000	2000
IZM...2(-4)-...2500 IN...2(-4)-2500	Fixed mounted	2500	2500	2350 (2360)
	Withdrawable units	2500	2500	2220 (2280)
IZM...2(-4)-...3200 IN...2(-4)-3200	Fixed mounted	3200	3150	2910 (2940)
	Withdrawable units	3200	3070	2790 (2870)
IZM...3(-4)-...4000 IN...3(-4)-4000	Fixed mounted	4000	4000	4000
	Withdrawable units	4000	4000	4000
IZM...3(-4)-...5000 IN...3(-4)-5000	Fixed mounted	5000	5000	5000 (4860)
	Withdrawable units	5000	5000	5000 (4730)
IZM...3(-4)-...6300 IN...3(-4)-6300	Fixed mounted 6300 A (40 °C)	6150	5910 (5970)	5610 (5670)
	Withdrawable 6300 A (40 °C)	5920	5810 (5900)	5400 (5500)

Notes Values in brackets: black painted copper busbars, partially with reduced recommended terminal capacity

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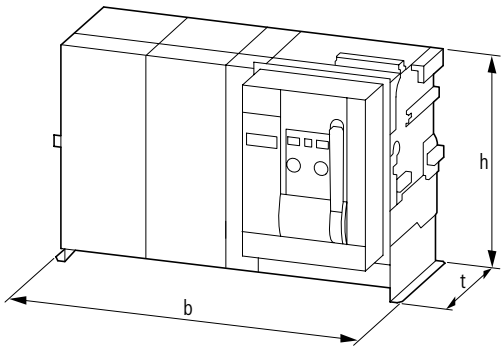
External dimensions

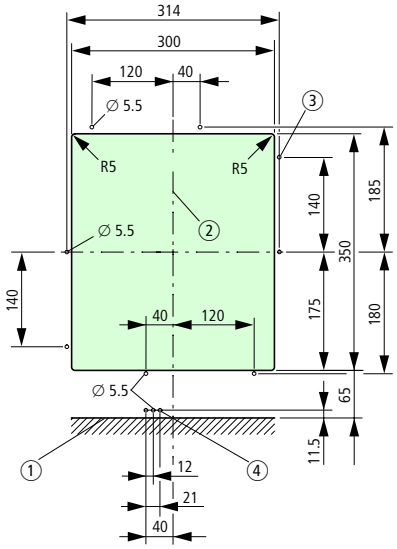


3-pole	Fixed mounted			Withdrawable units		
	b	h	t[1]	b	h	t[1]
IZM(IN)...1-...	320	434	357	320	460	471
IZM(IN)...2-...	460	434	357	460	460	471
IZM(IN)...3-...	704	434	357	704	460	471

4-pole	Fixed mounted			Withdrawable units		
	b	h	t[1]	b	h	t[1]
IZM(IN)...1-...	410	434	357	410	460	471
IZM(IN)...2-...	590	434	357	590	460	471
IZM(IN)...3-...	914	434	357	914	460	471

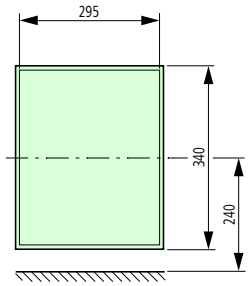
[1] including dimensions for horizontal connection.
Height "h" up to control circuit plug upper edge as screw termination for circuit-breakers/switch-disconnectors with $U_e \leqq 690$ V.
Deviations for $U_e = 1000$ V see detail drawings.

Door cut-out for operating panel
using the door seal



① Mounting surface
② IZM/IN operating panel centre
③ 8 mounting bores for door seal
④ 3 mounting bores for door locking

Door cut-out with edge protection
Cut-out after mounting of the edge protection



Safety clearance to earthed/grounded parts

Rated operational voltage [V AC]	Above control circuit plug [mm]	Side (each off) [mm]	Rear [mm]
IZM(IN).1-..., fixed mounted			
440	75[1]	0	0
690	75[1]	0	0
IZM(IN).1-..., withdrawable, without arc chute extension			
440	50[1]	0	0
690	50[1]	0	0
IZM(IN).1-..., withdrawable, with arc chute extension			
440	0	0[2]	0
690	0	0[2]	0
IZM(IN).2-..., fixed mounted			
440	75[1]	0	0
690	75[1]	0	0
1000	180	0	0
IZM(IN).2-..., withdrawable, without arc chute extension			
440	50[1]	0	0
690	50[1]	0	0
1000	100	0	0
IZM(IN).2-..., withdrawable, with arc chute extension			
440	0	0[2]	0
690	0	0[2]	0
IZM(IN).3-..., fixed mounted			
440	75[1]	0	0
690	75[1]	0	0
1000	180	0	0
IZM(IN).3-..., withdrawable, without arc chute extension			
400	50[1]	0	0
690	50[1]	0	0
1000	100	0	0
IZM(IN).3-..., withdrawable, with arc chute extension			
440	0	0[2]	0
690	0	0[2]	0

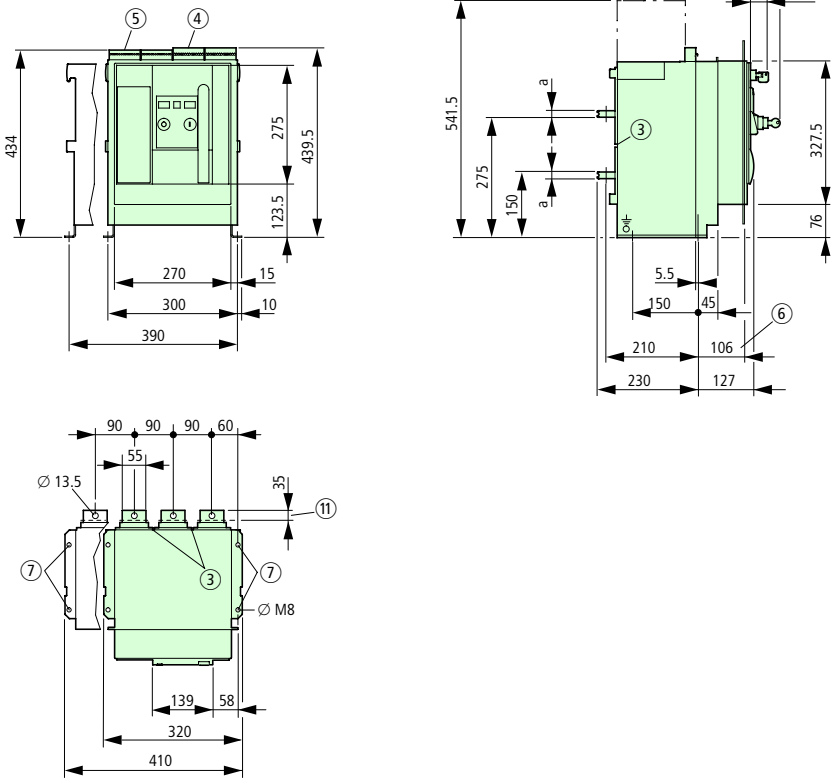
Safety clearance to live parts

Rated operational voltage [V AC]	Above control circuit plug [mm]	Side (each off) [mm]	Rear [mm]
IZM(IN).1-..., fixed mounted			
440	150	20	20
690	300	50	125
IZM(IN).1-..., withdrawable, without arc chute extension			
440	150	20	14
690	300	50	14
IZM(IN).1-..., withdrawable, with arc chute extension			
440	14	100	14
690	14	100	14
IZM(IN).2-..., fixed mounted			
440	250	50	20
690	600	100	140
1000	430	100	125
IZM(IN).2-..., withdrawable, without arc chute extension			
440	250	50	14
690	600	100	30
1000	350	100	14
IZM(IN).2-..., withdrawable, with arc chute extension			
440	14	50	14
690	14	225	14
IZM(IN).3-..., fixed mounted			
440	75	20	20
690	500	100	125
1000	430	100	125
IZM(IN).3-..., withdrawable, without arc chute extension			
400	50	20	14
690	500	100	14
1000	350	100	14
IZM(IN).3-..., withdrawable, with arc chute extension			
440	14	50	14
690	14	200	14

[1] Values for plate; 0 mm for struts and grating
[2] 40 mm (IZM(IN).2-...: 70 mm) for plates, which cover side apertures in drawer frames
All safety clearances above the switch relate to the upper edge of the control circuit plug - not to the upper edge of the arcing chamber!
See dimensional drawings.

Connection types

Standard version horizontal connection



① Mounting area for removal of the arcing chamber
③ Grooves (4 mm wide, 5 mm depth) for support of phase barriers in the unit
④ Control circuit plug with screw terminals
⑤ Control circuit plug with spring-loaded terminals
⑥ Dimensions for internal area of closed control panel door
⑦ Attachment points for circuit-breaker mounting in the control panel
⑧ Locking in OFF (optional accessories)
⑨ Key operation (optional accessories)
⑪ Connection lugs

Rated current I_u	a	b	c
Up to 1000 A	10	10	10
1250 – 1600 A	15	15	15

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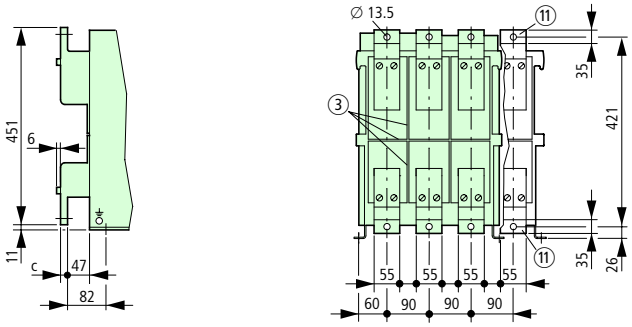
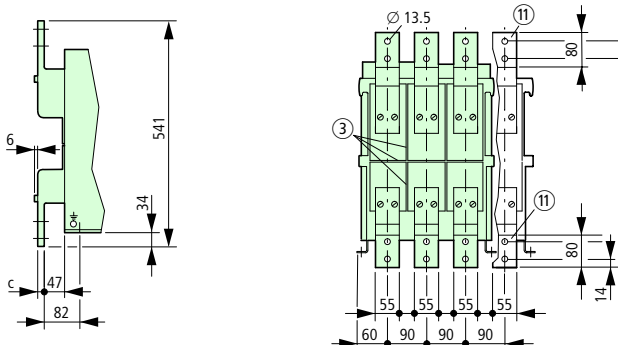
Connection types

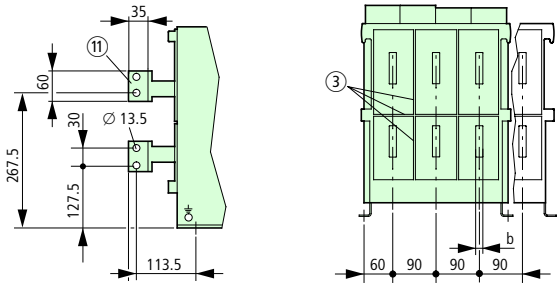
Optional terminals
Front connection (single hole fitting): IZM1-XAT1F...



Front connection (double hole fitting) to DIN 43673: IZM1-XATF...



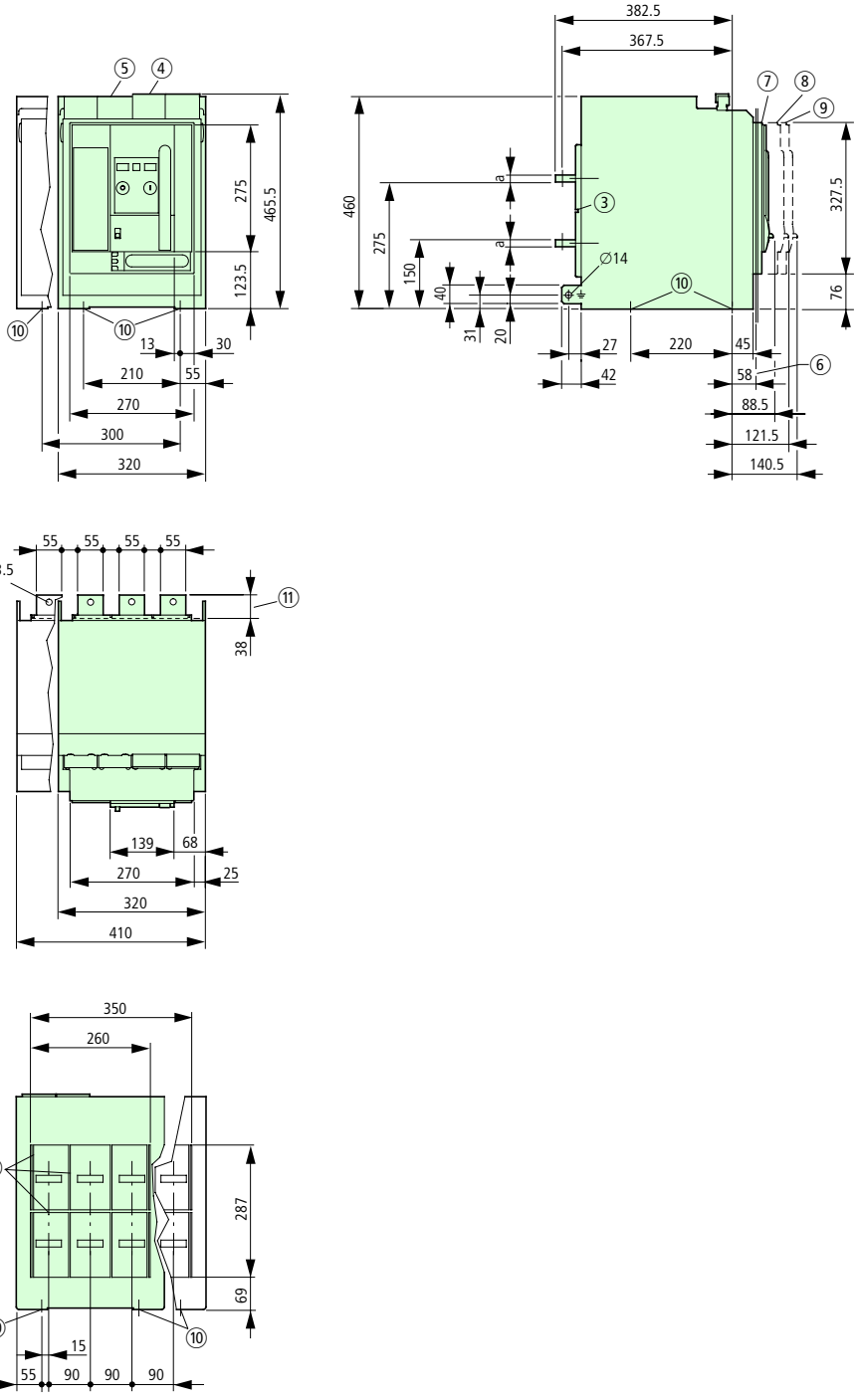
Vertical connection: IZM1-XATV...



Notes When front connections are used, a partition between busbar and arcing space must be fitted on the system side.

Connection types

Standard version horizontal connection



③ Grooves (4 mm wide, 5 mm depth) for support of phase barriers in the unit
④ Control circuit plug with screw terminals
⑤ Control circuit plug with spring-loaded terminals
⑥ Dimensions for internal area of closed control panel door
⑦ IZM in connected position
⑧ IZM in test position
⑨ IZM in disconnected position
⑩ Fixing holes, ∅ 10 mm
⑪ Connection lugs

Rated current I_u	a	b	c
Up to 1000 A	10	10	10
1250 – 1600 A	15	15	15

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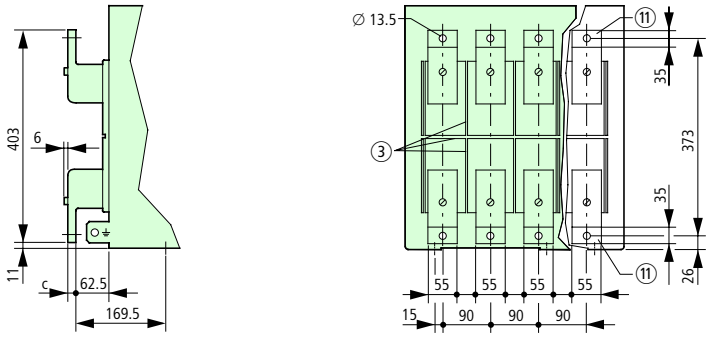
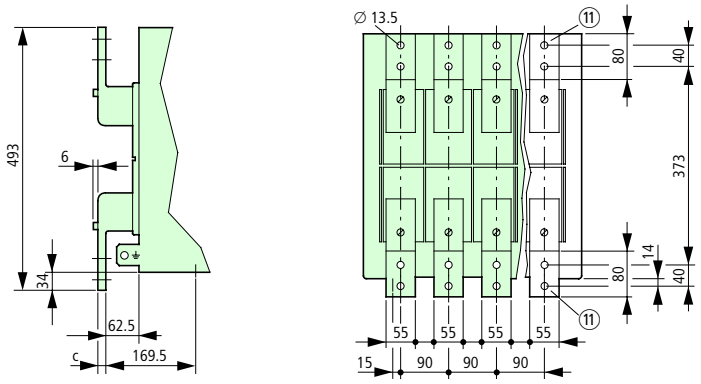
Connection types

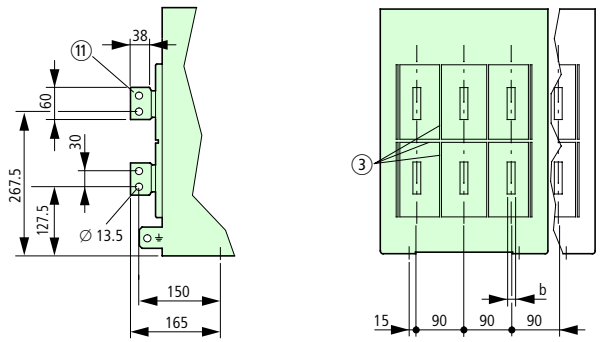
Front connection (single hole fitting): IZM1-XAT1F...-AV



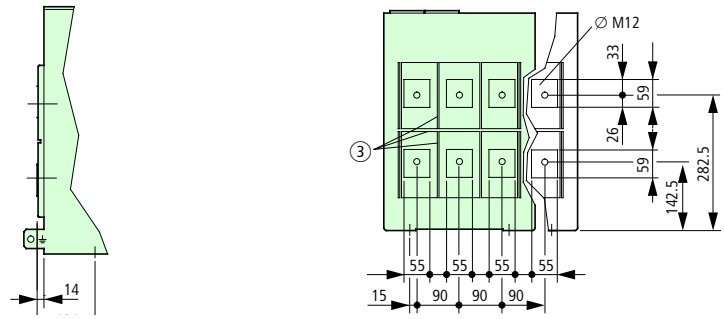
Front connection (double hole fitting) to DIN 43673: IZM1-XATF...-AV



Vertical connection: IZM1-XATV...-AV



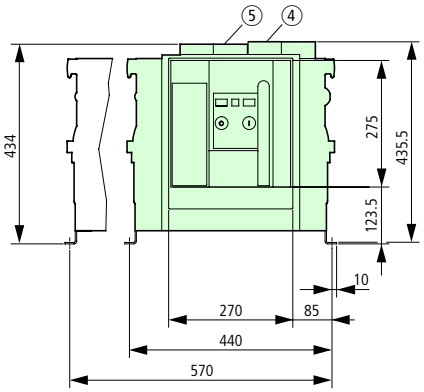
Flange connection: IZM1-XATA...-AV

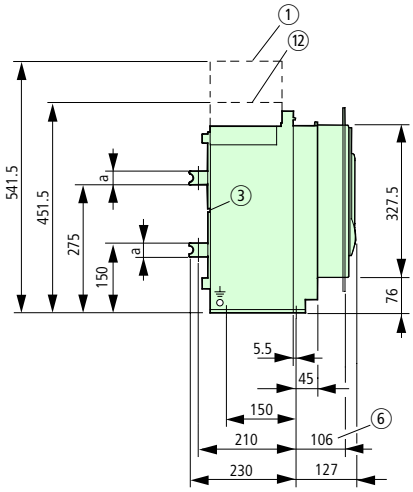


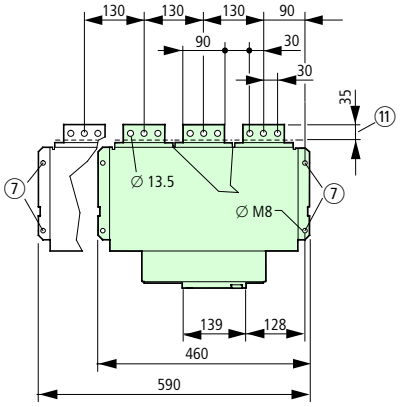
Notes When front connections are used, a partition between busbar and arcing space must be fitted on the system side.

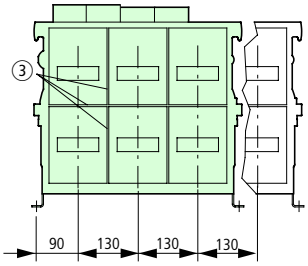
Connection types

Standard version horizontal connection









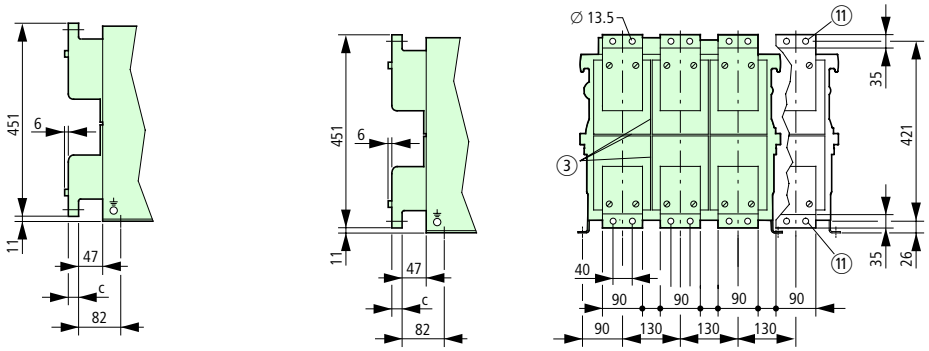
① Mounting area for removal of the arcing chambers
With U_e = 1000 V, 175 mm are required for removal of the arcing chamber.
③ Grooves (4 mm wide, 5 mm depth) for support of phase barriers in the unit
④ Control circuit plug with screw terminals
⑤ Control circuit plug with spring-loaded terminals
⑥ Dimensions for internal area of closed control panel door
⑦ Attachment points for circuit-breaker mounting in the control panel
⑪ Connection lugs
⑫ Circuit-breaker upper edge – only for 1000 V AC version.

Rated current I_u	a	b	c
Up to 2000 A	10	10	10
2500 A	15	15	20
3200 A	30	30	20

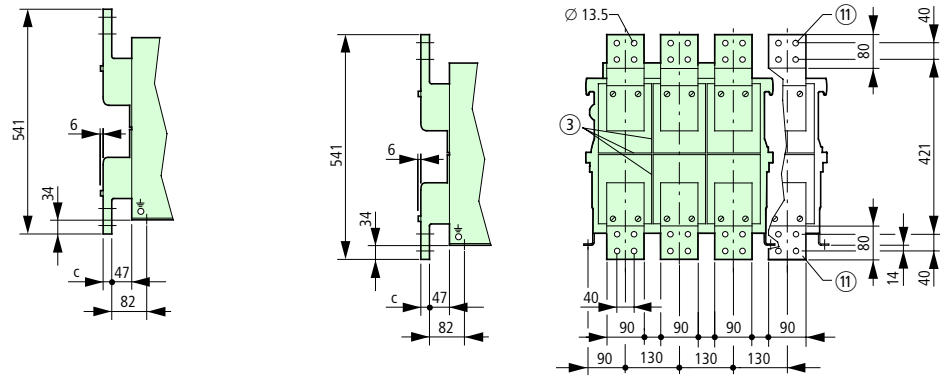
Moeller HPL0211-2004/2005

Connection types

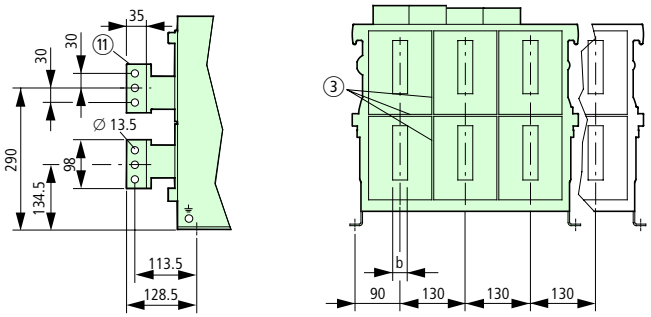
Front connection (single hole fitting): IZM2-XAT1F...



Front connection (double hole fitting): IZM2-XATF...



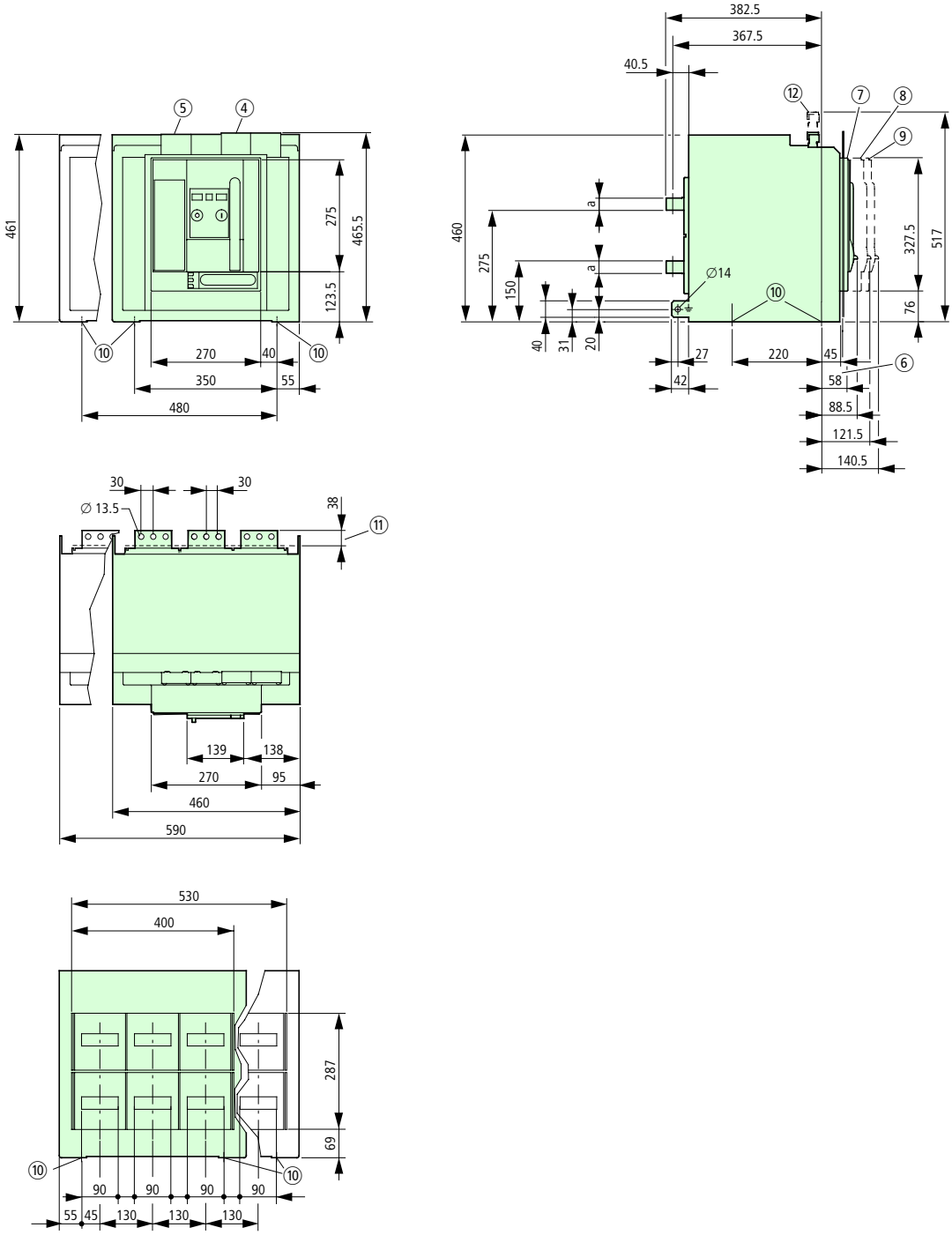
Vertical connection: IZM2-XATV...



Notes When front connections are used, a partition between busbar and arcing space must be fitted on the system side.

Connection types

Standard version horizontal connection



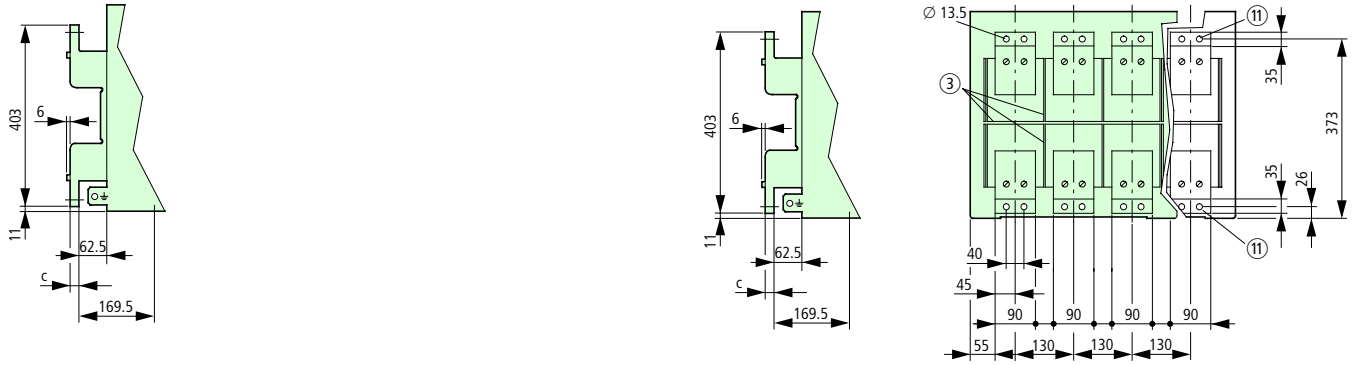
③ Grooves (4 mm wide, 5 mm depth) for support of phase barriers in the unit
④ Control circuit plug with screw terminals
⑤ Control circuit plug with spring-loaded terminals
⑥ Dimensions for internal area of closed control panel door
⑦ IZM in connected position
⑧ IZM in test position
⑨ IZM in disconnected position
⑩ Fixing holes, ∅ 10 mm
⑪ Connection lugs
⑫ Circuit-breaker upper edge – only for 1000 V AC version.

Rated current I_u	a	b	c
Up to 2000 A	10	10	10
2500 A	15	15	20
3200 A	30	30	20

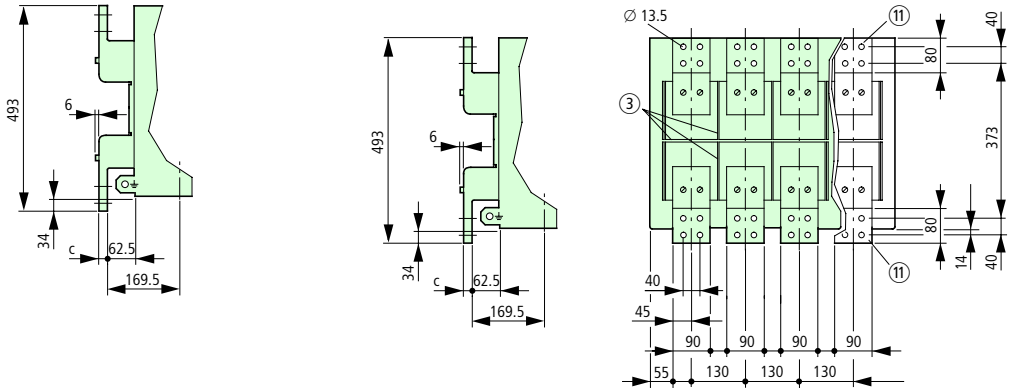
Moeller HPL0211-2004/2005

Connection types

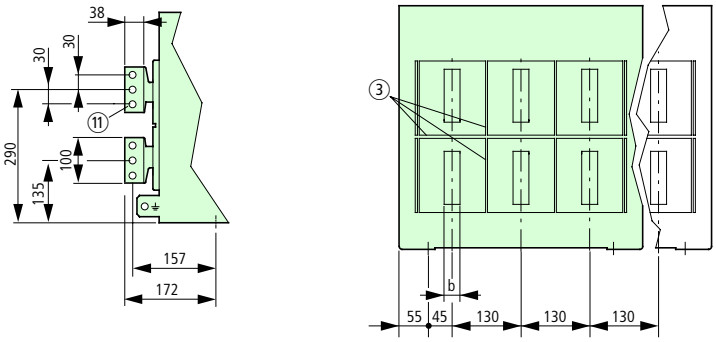
Front connection (single hole fitting): IZM2-XAT1F...-AV



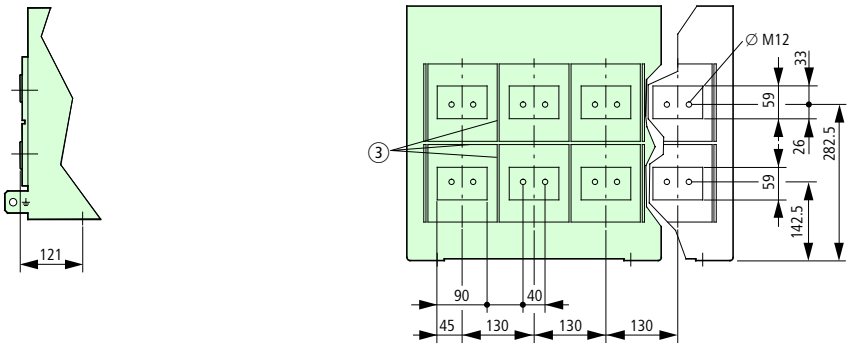
Front connection (double hole fitting): IZM2-XATF...-AV



Vertical connection: IZM2-XATV...-AV



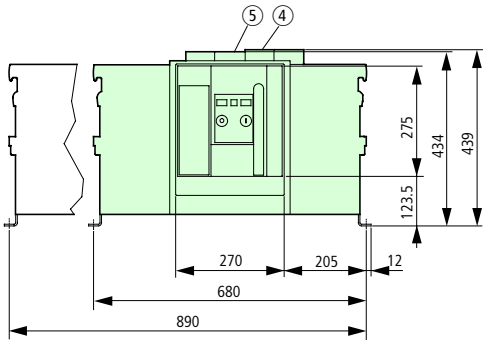
Flange connection: IZM2-XATA...-AV

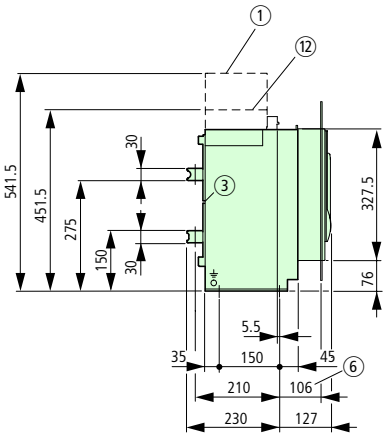


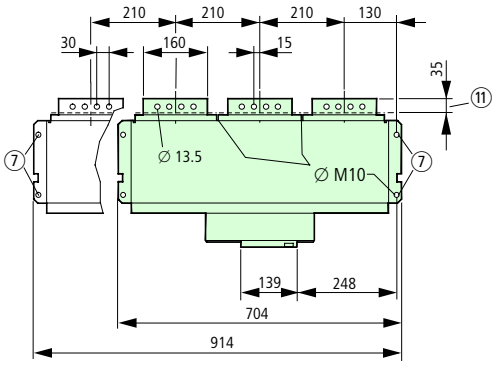
Notes When front connections are used, a partition between busbar and arcing space must be fitted on the system side.

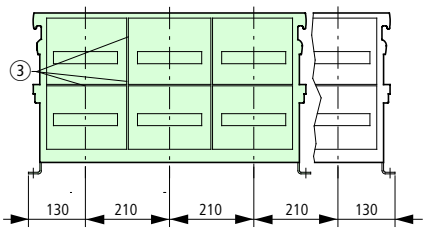
Connection types

Standard version horizontal connection ≦ 6300 A









① Mounting area for removal of the arcing chambers
With U_e = 1000 V, 175 mm are required for removal of the arcing chamber.
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⑦ Attachment points for circuit-breaker mounting in the control panel
⑪ Connection lugs
⑫ Circuit-breaker upper edge – only for 1000 V AC version.

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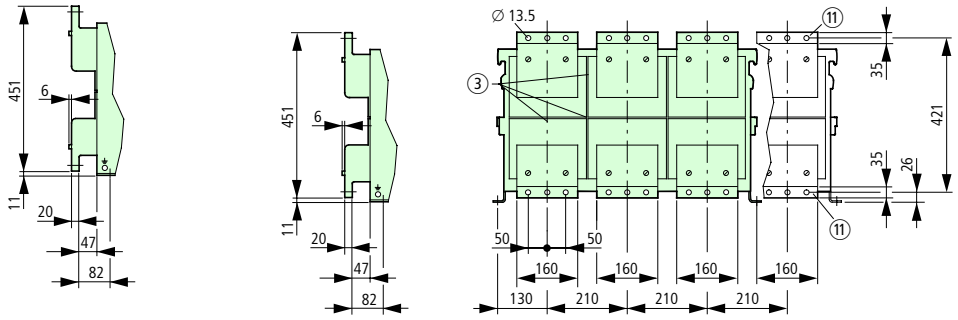
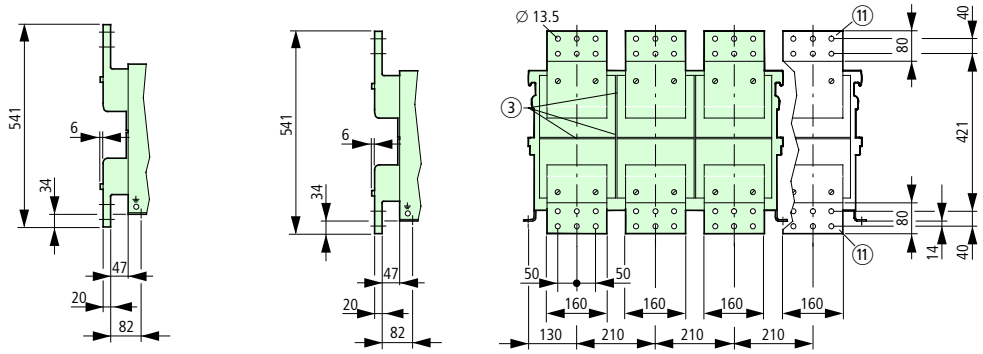
Connection types

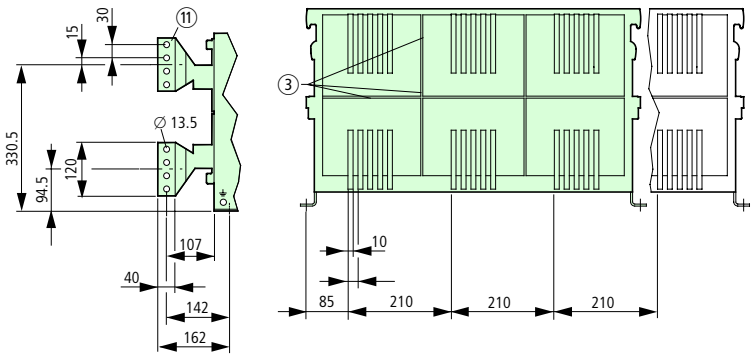
Front connection (single hole fitting): IZM3-XAT1F... ≦ 4000 A



Front connection (double hole fitting): IZM3-XATF... ≦ 4000 A



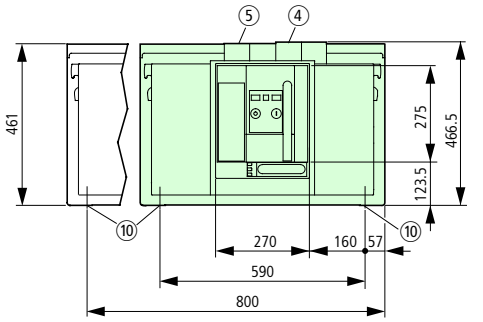
Vertical connection: IZM3-XATV... ≦ 5000 A

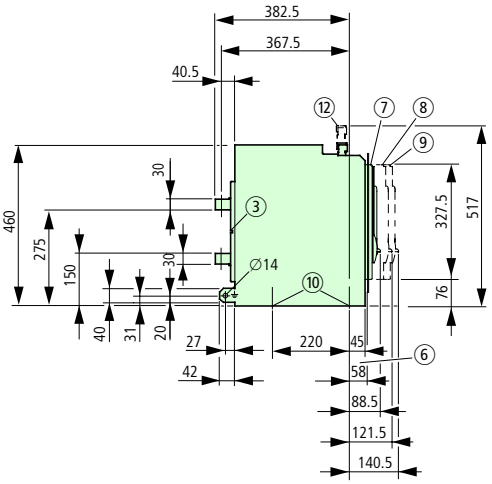


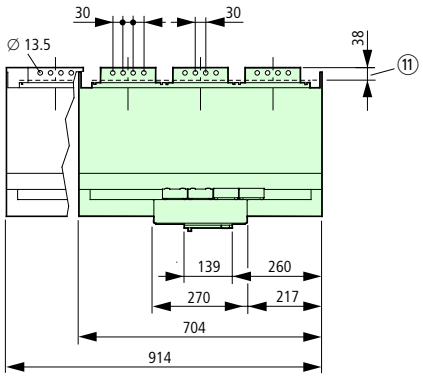
Notes When front connections are used, a partition between busbar and arcing space must be fitted on the system side.

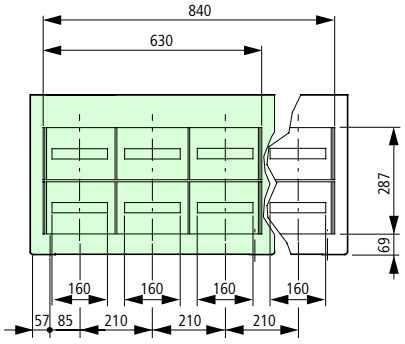
Connection types

Standard version horizontal connection ≦ 5000 A







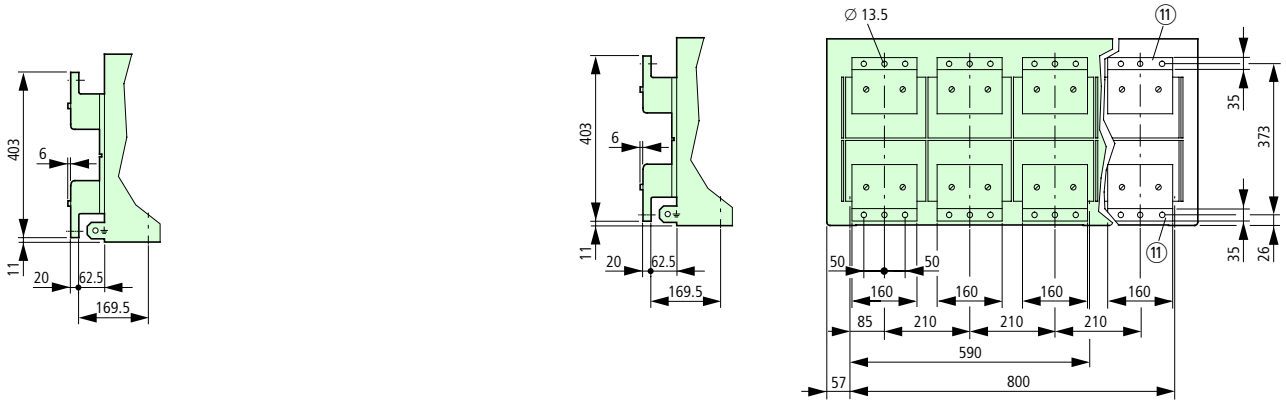


③ Grooves (4 mm wide, 5 mm depth) for support of phase barriers in the unit
④ Control circuit plug with screw terminals
⑤ Control circuit plug with spring-loaded terminals
⑥ Dimensions for internal area of closed control panel door
⑦ IZM in connected position
⑧ IZM in test position
⑨ IZM in disconnected position
⑩ Fixing holes, ∅ 10 mm
⑪ Connection lugs
⑫ Circuit-breaker upper edge – only for 1000 V AC version.

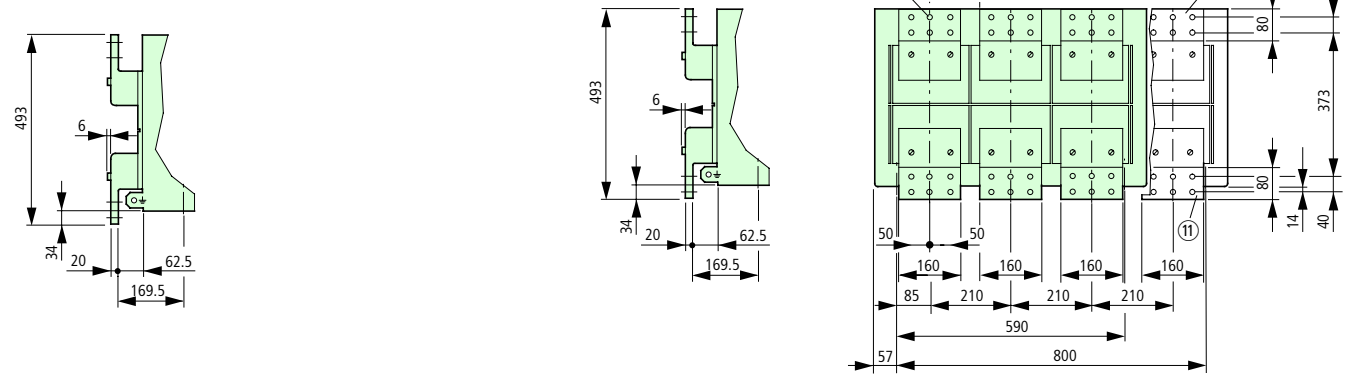
Rated current I_u	a	b
4000 A	40	210
5000 A	40	210
6300 A	5	245

Connection types

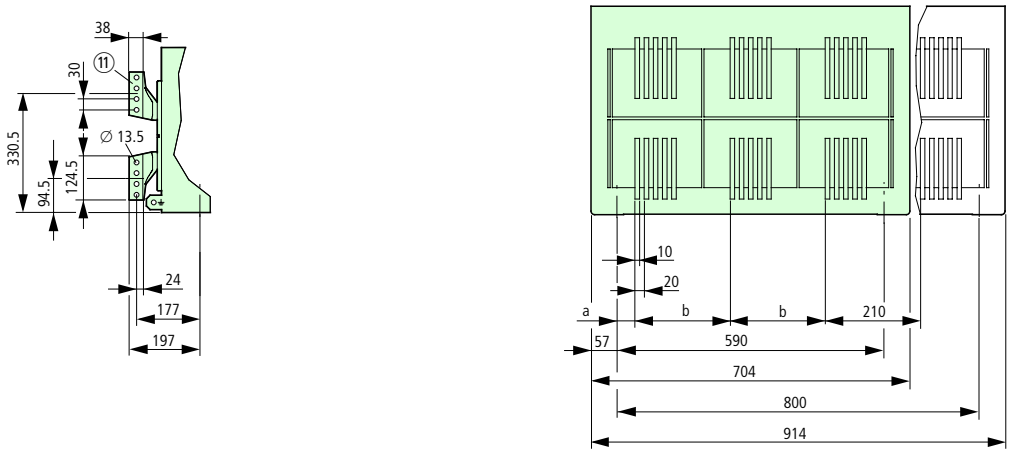
Front connection (single hole fitting): IZM3-XAT1F...-AV ≦ 4000 A



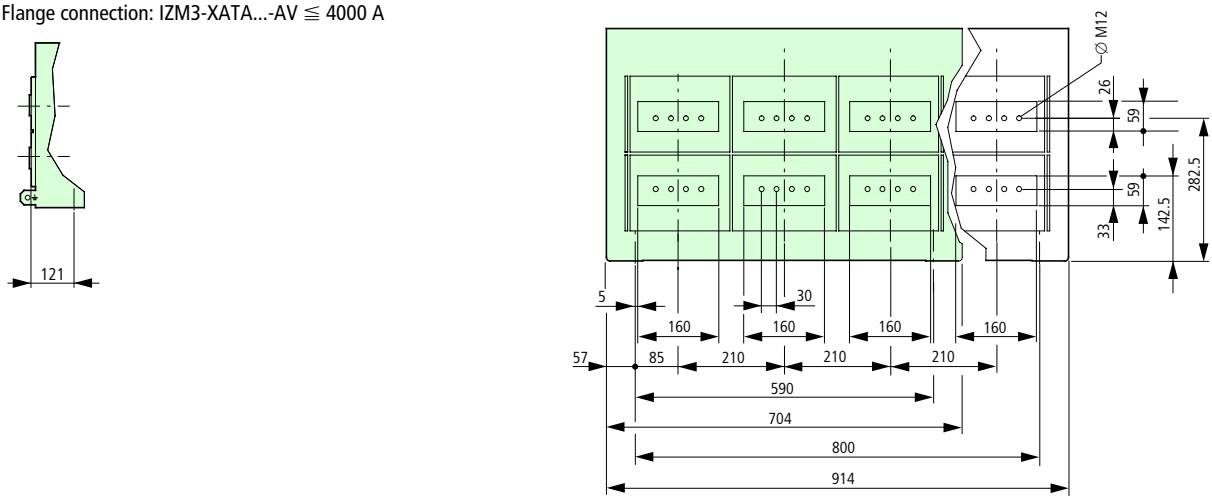
Front connection (double hole fitting): IZM3-XATF...-AV ≦ 4000 A



Vertical connection: IZM3-XATV...-AV ≦ 6300 A



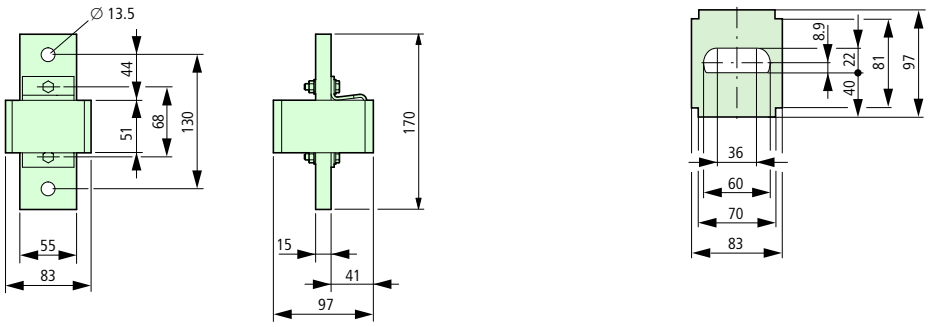
Flange connection: IZM3-XATA...-AV ≦ 4000 A



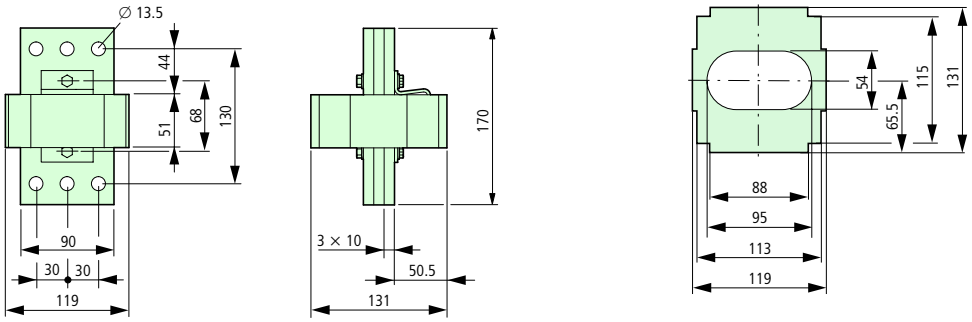
Notes When front connections are used, a partition between busbar and arcing space must be fitted on the system side.

External transformer for N conductor

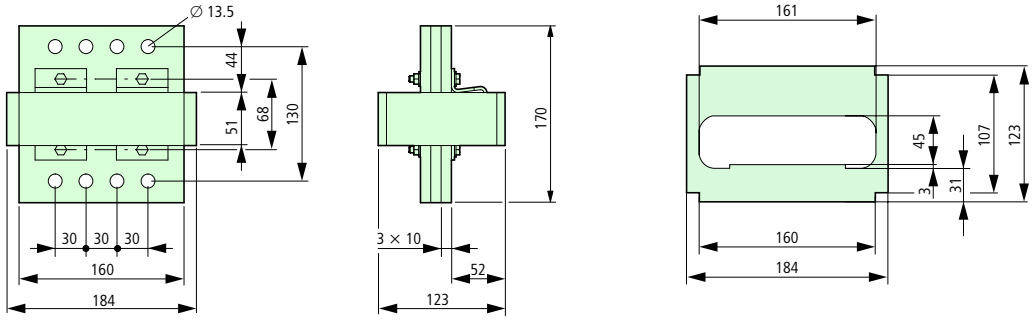
IZM1-XW(C)



IZM2-XW(C)



IZM3-XW(C)



Voltage transformer
For IZM with measuring function
for mounting on 35 mm top-hat rail