

AIR CIRCUIT BREAKERS

DMX³

EFFICIENT
PROTECTION
UP TO 6300 A



-> CATALOGUE PAGES INSIDE

THE GLOBAL SPECIALIST
IN ELECTRICAL AND DIGITAL BUILDING INFRASTRUCTURES



DMX³ ACBs UP TO 6 300 A

EFFICIENT
PROTECTION
AND CONTROL
FOR ALL TYPE
OF BUILDINGS



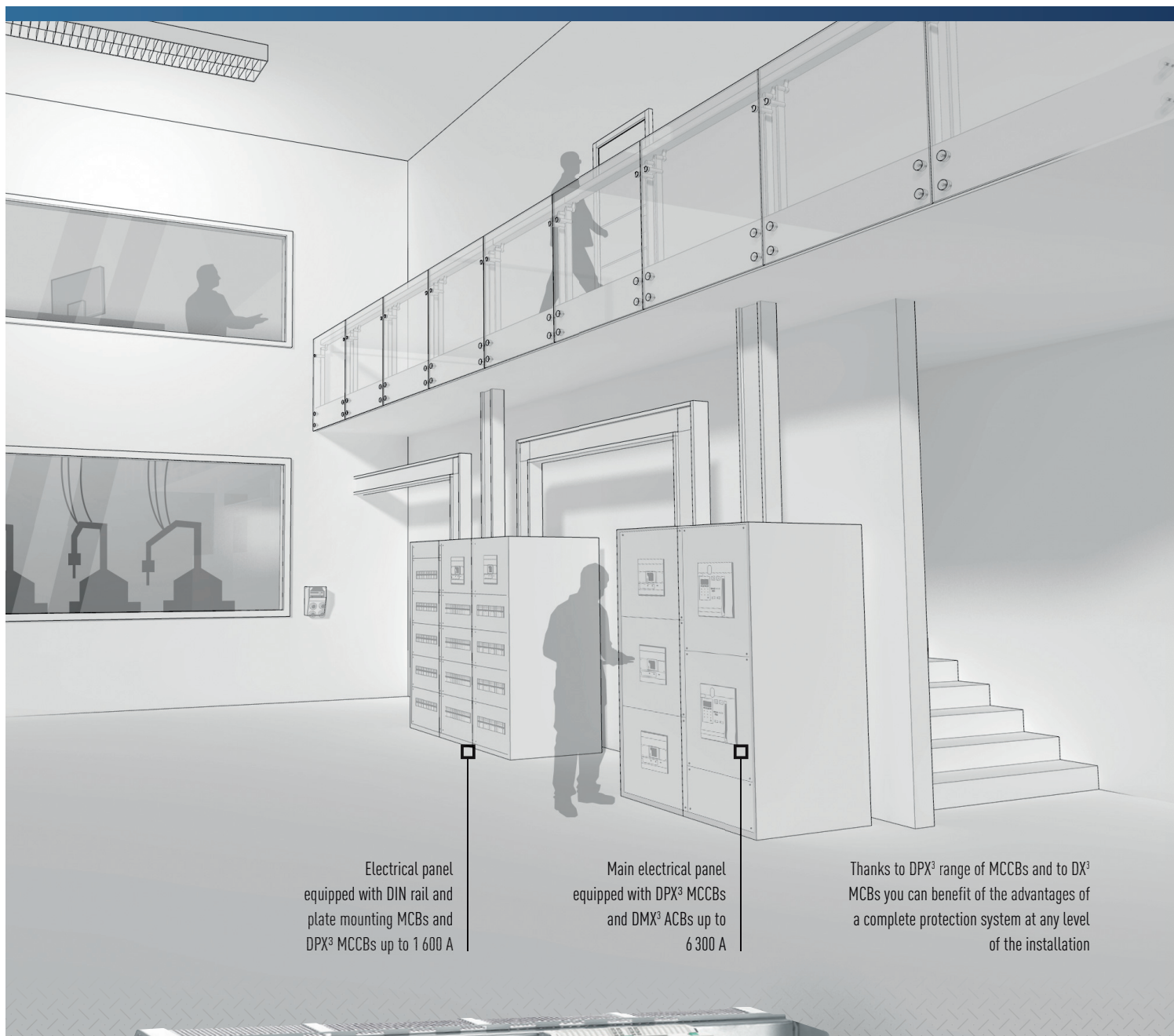
DMX³ frame 1600



DMX³ frame 2500



DMX³ frame 4000



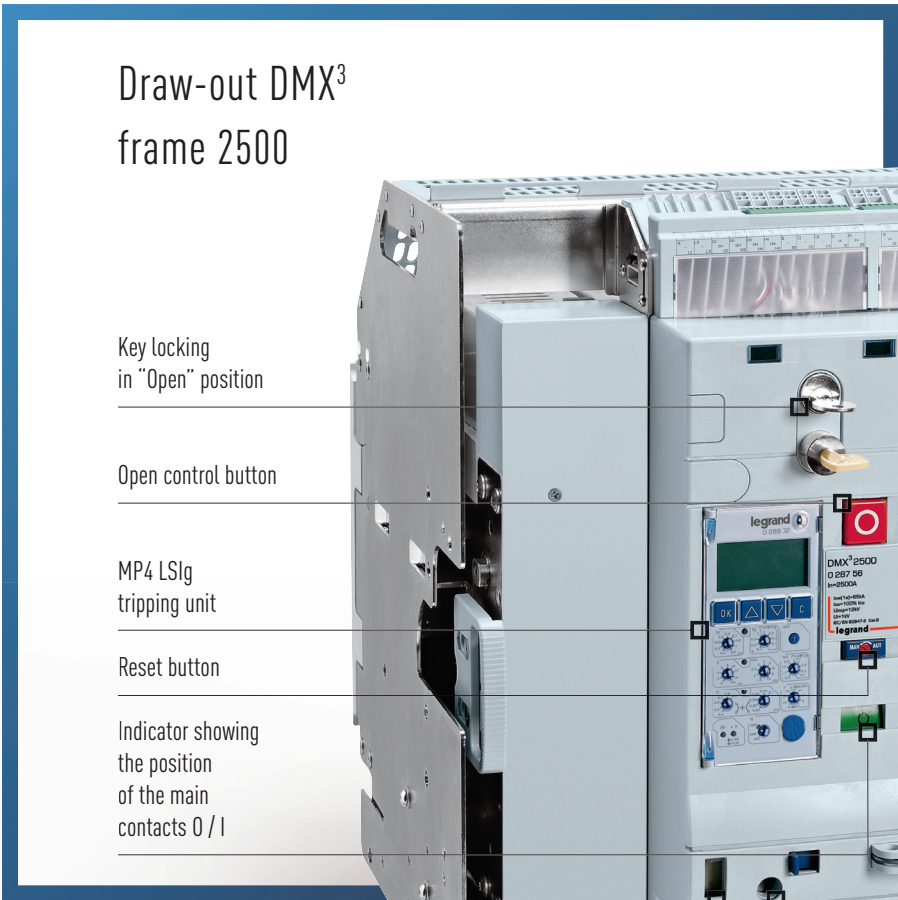
Electrical panel
equipped with DIN rail
and plate mounting MCBs and
DPX³ MCCBs up to 1 600 A

Main electrical panel
equipped with DPX³ MCCBs
and DMX³ ACBs up to
6 300 A

Thanks to DPX³ range of MCCBs and to DX³
MCBs you can benefit of the advantages of
a complete protection system at any level
of the installation



DMX³ frame 6300



Draw-out DMX³ frame 2500

Key locking
in "Open" position

Open control button

MP4 LSig
tripping unit

Reset button

Indicator showing
the position
of the main
contacts 0 / I

Device position
indicator:
- Plugged in
- TEST
- Drawn-out

Isolator terminal blocks
for auxiliary contacts

Windows for displaying
auxiliary equipment⁽¹⁾

Close control button

Colour marking
for breaking capacity

Indicator showing
the load status
of springs:
Charged / Discharged

Spring loading lever

Key locking in
drawn-out position

Lockable aperture
for insertion of the
extraction handle

Optimized performance up to 6300 A

DMX³ air circuit breakers and DMX³-I isolating switches are available in four frame sizes. Four breaking capacities for circuit breakers: 42 kA, 50 kA, 65 kA and 100 kA.

The range covers 11 rated currents, between 630 A and 6300 A. All range of DMX³ air circuit breakers and DMX³-I isolating switches is available in fixed and draw-out version.

- DMX³ 42 kA
- DMX³ 50 kA
- DMX³ 65 kA
- DMX³ 100 kA
- DMX³-I

(1) Available only on DMX³ 2500, 4000 and 6300

BREAKING CAPACITIES AND RATED CURRENTS

	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
DMX³-B	42 kA FIXED/DRAW-OUT					-					
DMX³-N	50 kA FIXED/DRAW-OUT									-	
DMX³-H	65 kA FIXED/DRAW-OUT									-	
DMX³-L	100 kA FIXED/DRAW-OUT									100 kA F/D-0	

OVERAL DIMENSIONS AND WEIGHT
Fixed version

		Height	Depth	Width	Weight ⁽²⁾
FRAME 1600 42 / 50 kA	3P	321 mm	203 mm	254 mm	20 kg
	4P	321 mm	203 mm	324 mm	25 kg
FRAME 2500 50 / 65 kA	3P	419 mm	354 mm	273 mm	41 kg
	4P	419 mm	354 mm	358 mm	48 kg
FRAME 4000 50 / 65 / 100 kA	3P	419 mm	354 mm	408 mm	59 kg
	4P	419 mm	354 mm	538 mm	76 kg
FRAME 6300 100 kA	3P	419 mm	354 mm	797 mm	118 kg
	4P	419 mm	354 mm	1064 mm	152 kg


Draw-out version

		Height	Depth	Width	Weight ⁽³⁾
FRAME 1600 42 / 50 kA	3P	352 mm	306 mm	282 mm	39 kg
	4P	352 mm	306 mm	352 mm	49 kg
FRAME 2500 50 / 65 kA	3P	465 mm	433 mm	327 mm	77 kg
	4P	465 mm	433 mm	412 mm	94 kg
FRAME 4000 50 / 65 / 100 kA	3P	465 mm	433 mm	425 mm	108 kg
	4P	465 mm	433 mm	555 mm	137 kg
FRAME 6300 100 kA	3P	465 mm	433 mm	804 mm	216 kg
	4P	465 mm	433 mm	1064 mm	274 kg



(2) For trip-free switches, please consult us

(3) Including base

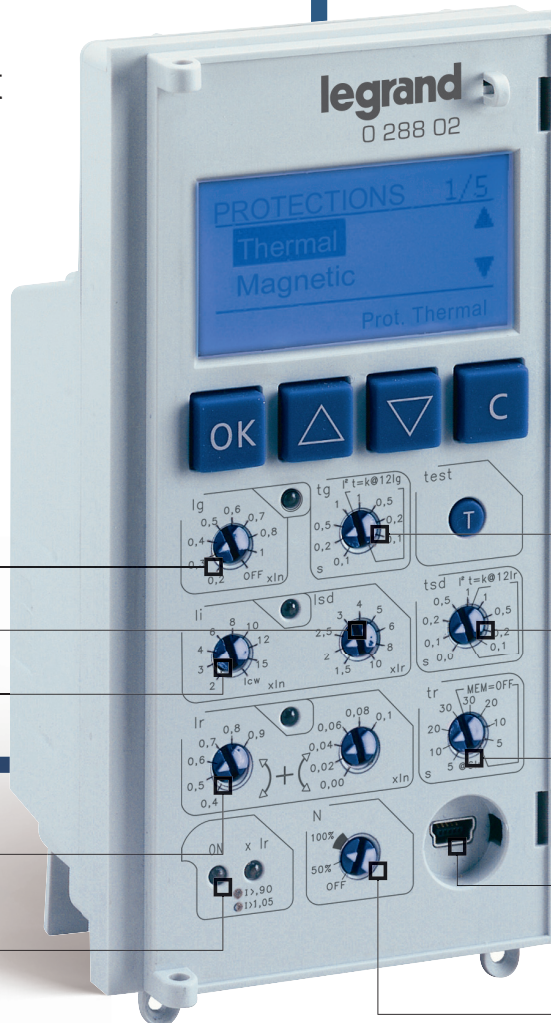


The overall dimensions of the breaker contribute considerably to an efficient use of the space inside the electrical panel. The constant depth for all the rated currents, for the frames 2500, 4000 and 6300 facilitates configuration of the enclosures and connection of the busbars.

Rated operational voltage U_e: 690 Vac 50/60 Hz
 Rated insulation voltage U_i: 1000 Vac 50/60 Hz
 Rated impulse withstand voltage U_{imp}: 12 kV
 Category of use: B
 Ambient temperature: - 25 °C to 70 °C
 Humidity: + 55 °C with relative humidity of 95%, conforms to IEC 68-2-30



MP4 LSI
electronic
protection unit
for DMX³ 1600



MP4 LSIg
electronic
protection unit
for DMX³ 2500
to 6300

Ig settings

Isd settings

li settings

lr settings

LEDs indicating
correct operation

tg settings

tsd settings

tr settings

Mini USB port
for PC connection

Neutral
protection

Precise & user friendly LCD tripping units

Besides their easy mounting and connection, strength and good continuity of operation, 3 types of electronic units allow precise adjustment of different limits for current values and time delay.

The result is an efficient protection against electrical faults while maintaining total discrimination with downstream breakers.

The LCD display lets you monitor the measured current values and informs you on fault adjustment and log (the cause of last trip and maintenance operations).

MP4 LI ELECTRONIC PROTECTION UNIT CAT. NOS. 0 281 64 AND 0 288 00

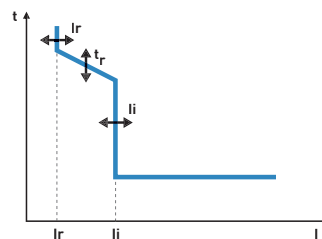


0 281 64

0 288 00

The following settings are adjusted using rotary selector switches:

- Long time delay protection against overloads: I_r
- Long delay protection operation time: t_r
- Instantaneous protection against very high short circuits: I_i
- Neutral protection: I_N



MP4 LSI ELECTRONIC PROTECTION UNIT CAT. NOS. 0 281 65 AND 0 288 01

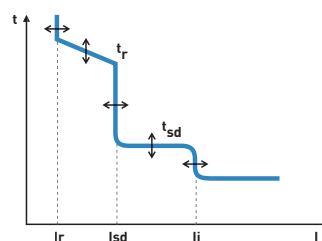


0 281 65

0 288 01

The following settings are adjusted using rotary selector switches:

- Long time delay protection against overloads: I_r
- Long delay protection operation time: t_r
- Short time delay protection against short circuits: I_{sd}
- Short time delay protection operation time: t_{sd}
- Instantaneous protection against very high short circuits: I_i
- Neutral protection: I_N



MP4 LSIg ELECTRONIC PROTECTION UNIT CAT. NOS. 0 281 66 AND 0 288 02

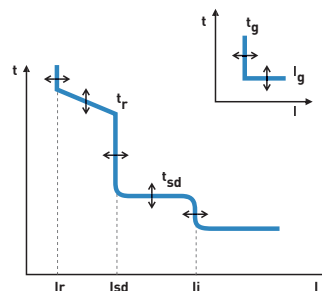


0 281 66

0 288 02

The following settings are adjusted using rotary selector switches:

- Long time delay protection against overloads: I_r
- Long delay protection operation time: t_r
- Short time delay protection against short circuits: I_{sd}
- Short time delay protection operation time: t_{sd}
- Instantaneous protection against very high short circuits: I_i
- Earth fault current: I_g
- Time delay on earth fault tripping: t_g
- Neutral protection: I_N



LEGRAND ADVANTAGE

All protection units of DMX³ 2500 to 6300 are equipped with batteries so you can monitor the parameters even when the breaker is not connected and all data remains stored in memory.

MORE INFORMATION

All DMX³ breakers are factory equipped with any MP4 protection unit LI, LSI or LSIg according to your requirements. You just need to select and indicate the 2 catalogue numbers when placing the order (1 for the breaker and 1 for the tripping unit).

MP6 LSI touch screen protection unit

Colour touch screen

LEDs indicating correct operation, pre-alarm and alarm for overload and temperature



Settings lock

Mini USB port for PC connection

ON button

Innovative & user friendly touch screen tripping units

MP6 electronic protection units are equipped with a colour touch screen, particularly user friendly, thanks to intuitive icon-based navigation system. The colour display provides a clear presentation of the parameters of the installation.

Touch screen protection units integrate all the functions of LCD tripping units and have an advanced measurement function which, in addition to monitoring currents, can also be used to display voltages, active and reactive powers, frequency, power factor, and also energy.

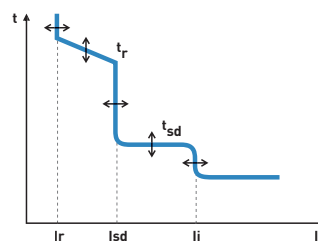
Alarms can be programmed on a number of these parameters: max. voltage, min. voltage, voltage imbalance, max. and min. frequency, etc.

MP6 LSI TOUCH SCREEN PROTECTION UNIT CAT.NO. 0 288 03



The following settings are adjusted using the touch screen:

- Long time delay protection against overloads: **I_r**
- Long delay protection operation time: **t_r**
- Short time delay protection against short circuits: **I_{sd}**
- Short time delay protection operation time: **t_{sd}**
- Instantaneous protection against very high short circuits: **I_i**
- Neutral protection: **I_N**



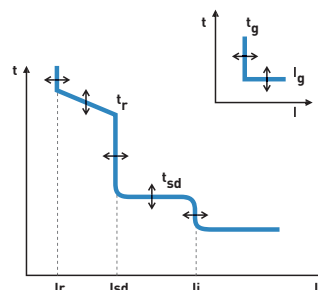
Tripping curve preview

MP6 LSiG TOUCH SCREEN PROTECTION UNIT CAT.NO. 0 288 04



The following settings are adjusted using the touch screen:

- Long time delay protection against overloads: **I_r**
- Long delay protection operation time: **t_r**
- Short time delay protection against short circuits: **I_{sd}**
- Short time delay protection operation time: **t_{sd}**
- Instantaneous protection against very high short circuits: **I_i**
- Earth fault current: **I_g**
- Time delay on earth fault tripping: **t_g**
- Neutral protection: **I_N**



Earth fault tripping curve preview



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LEGRAND ADVANTAGE

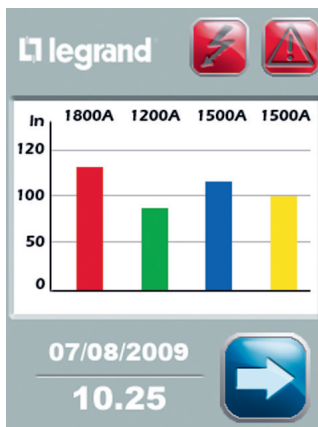
The icon-based interface of the management software and the innovative touch screen technology used for MP6 tripping units simplify setting and preparing operations of the DMX³ circuit breaker.

MORE INFORMATION

The MP4 and MP6 electronic protection units of the DMX³ ACBs equipped with communication option Cat.No 0 288 05 or 0 281 70 can communicate via an RS-485 port. This port is used for supervising

(remote monitoring and management) the devices in the installation, using the MODBUS protocol. It is therefore possible to control circuit breaker opening and closing, display the electrical parameters and detect all the alarms generated by each device, from a PC. Power Control Station is a software application for PCs allowing to exchange data with the protection unit of the DMX³ through the mini USB port. This software allows to monitor the status of the breaker, display information (firmware and device versions, alarms, measurements, parameters, fault history, settings), update the firmware of the protection unit, generate reports based on the data stored and read by the protection unit, run diagnostic tests.

STARTING MENU

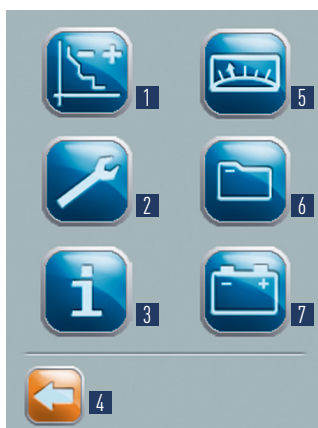


This menu displays the values of I_1 , I_2 , I_3 and I_N as a diagram, the date and the hour, and the alarm icon. If the breaker opens following an electrical fault a specific icon will appear on the upper part of the screen. Pressing this icon will open a new window showing the cause of the last event.

Other possible actions:

- Right arrow icon: access the main menu
- Alarm icon: preview the cause of the alarm in course

MAIN MENU



The main menu allows accessing different windows for setting different parameters of the breaker or previewing measured values, battery status, tripping history, etc.

The following accesses are possible:

- 1 Setting according to the tripping curves (current and time)
- 2 Access tripping unit settings (luminosity, contrast and sound volume)
- 3 Access to general information of the breaker
- 4 Back to the previous page
- 5 Access measured values menu
- 6 Access archives
- 7 Preview battery charging status

Innovative & user friendly touch screen tripping units

CONTINUED

MP6 electronic protection units collect all the useful information in 5 sections, each one easily reachable via the main menu in order to allow an efficient control.

MP6 electronic protection units have an intuitive graphical interface. All useful information and selected settings are easy to understand and visible at a glance.

For example current values can be visualized on the starting page thanks to a histogram. Different other settings can be simultaneously displayed on the "settings" screen in order to have a global view.

PROTECTIONS SETTING MENU



Vertical arrows allow scrolling between different electrical parameters:

li, lsd, tsd, lr, tr, lg, tg, etc.
Pressing horizontal icons gives access to corresponding windows allowing value settings. Each value can be increased/decreased, validated or suppressed. The values need to be saved into memory at the end of the process, for each setting.

MEASURED VALUES MENU



This window allows previewing of measured values for:

- Currents
 - Voltages (Ph/N and Ph/Ph)
 - Active and reactive powers
 - Power factor (total and per phase)
 - Active and reactive energy
 - Harmonics (for currents and voltages)
- Pressing **I**, **m**, **M** and **avg** icons at the bottom of the window will display respectively: instantaneous, minimum, maximum and average value of electrical parameters.



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MORE INFORMATION

• The following events and values are registered into memory and can be accessed via specific menu: cause of the last event, event counter, events history with date and hour, alarms history with date and hour

- MP6 tripping units allow following application: logical selectivity, management of non priority loads, contact management (with Cat.No 0 288 12)
- MP6 tripping units allow following alarms: power reverse, current imbalance, maximum and minimum voltage values U1N, U2N, U3N, maximum currents I1, I2, I3, voltage imbalance (phase-neutral), inversed phase rotation, maximum and minimum frequency values.

Draw-out DMX³ frame 2500



Fast clipping control accessories

You can remotely control the DMX³ thanks to its range of accessories: shunt trips, undervoltage releases, motor operators and closing coils.

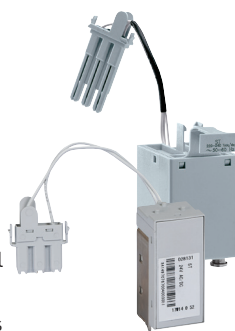
All the control accessories are simply clipped on to the front panel of the circuit breaker, which is especially configured in order to facilitate the clipping.

Every type of accessory is compatible with its own location, in order to avoid any possible mistake.

All control accessories can be easily installed without any special tool and in a very short time. The installation is to be done on the front panel of the air circuit breaker. In that way, the separation between power and control circuits is guaranteed.

SHUNT TRIP

Shunt trips are devices used for the remote instantaneous opening of the air circuit breaker. They are generally controlled through an N/O type contact. The actual offer of shunt trips proposes different supply voltages from 24 V to 480 V (440 V for DMX³ 1600 frame), compatibles with AC and DC currents. The shunt trips are already equipped with a special fast connector, to be directly inserted into auxiliary contacts block. An auxiliary contact is connected in series with the coil, cutting off its power supply when the main poles are open.

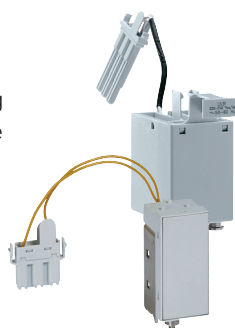


Shunt trip for DMX³ 1600, DMX³ 2500 to 6300

	FOR DMX ³	
Size	1600	2500 to 6300
Rated operating voltage Vn	24 V ~/ 48 V ~/ 110 - 130 V ~/ 220 - 250 V ~/ 415 - 440 V ~	
Voltage range (% Vn)	70 to 110	
Pick-up consumption (W/VA)	400/400	500/500
Pick-up time (ms)	300	180
Hold consumption (W/VA)	50/50	5/5
Opening time (ms)	50	30
Insulation voltage (kV)	2.5	

UNDERVOLTAGE RELEASE

Undervoltage releases are devices which are generally controlled by an N/C type contact. The trigger instantaneous opening of the circuit breaker if their supply voltage drops below a certain threshold and in particular if the control contact opens. These releases are equipped with a device for limiting their consumption after the circuit has been closed.



Undervoltage release for DMX³ 1600, DMX³ 2500 to 6300

	FOR DMX ³	
Size	1600	2500 to 6300
Rated operating voltage Vn	24 V ~/ 48 V ~/ 110 - 130 V ~/ 220 - 250 V ~/ 415 - 440 V ~	
Voltage range (% Vn)	85 to 110	
Pick-up consumption (W/VA)	400/400	500/500
Pick-up time (ms)	300	180
Hold consumption (W/VA)	50/50	5/5
Opening time (ms)	60	
Insulation voltage (kV)	2.5	

CLOSING COILS

These coils are used for remotely controlling the closing of the power contacts of the circuit breaker. The springs of the circuit breaker are to be loaded prior to the action of the closing coils. They are controlled by an N/O type contact.



Closing coils for DMX³ 1600, DMX³ 2500 to 6300

	FOR DMX ³	
Size	1600	2500 to 6300
Rated operating voltage Vn	24 V ~/ 48 V ~/ 110 - 130 V ~/ 220 - 250 V ~/ 415 - 440 V ~	
Voltage range (% Vn)	85 to 110	
Pick-up consumption (W/VA)	400/400	500/500
Pick-up time (ms)	300	180
Hold consumption (W/VA)	50/50	5/5
Opening time (ms)	50	
Insulation voltage (kV)	2.5	

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LEGRAND ADVANTAGE

Electrical connection is made in no time thanks to the fast connector supplied on all above accessories.

OTHER ELECTRICAL FEATURES

Number of control auxiliaries for DMX³ = 3
Shunt trip: 1
Undervoltage release: 1
Closing coils: 1



MOTOR OPERATORS

Motor operators, are used for remotely reloading the springs of the circuit breaker mechanism immediately after the device closes. The device can thus be re-closed almost immediately after an opening operation.

To motorise a DMX³ it is necessary to add a release coil (undervoltage release or shunt trip) and a closing coil.

If the supply voltage of the controls fails, it is still possible to reload the springs manually. Motor-driven controls have "limit switch" contacts which cut off the power supply of their motor after the springs have been reloaded. Motor operators are easy to mount, with only three screws.



Motor operator for DMX³ 1600, DMX³ 2500 to 6300

Size	FOR DMX ³		
	1600	2500 to 6300	
		42, 50, 65 kA	100 kA
Rated operating voltage V _n	24 V ~/≡	24 V ~/≡	
	48 V ~/≡	48 V ~/≡	
	110 - 130 V ~/≡	110 - 130 V ~/≡	
	220 - 250 V ~/≡	220 - 250 V ~/≡	
	415 - 440 V ~	415 - 440 V ~	480 V ~
Voltage range (% V _n)	85 to 110		
Max. power consumption (W/VA)	240/240	180/180	240/240
Max. peak current for about 80 ms	2 to 3 x I _n		
Charging time (s)	5	5	7
Operating frequency (n°/min)	2	2	1

SAFETY AND PADLOCKING ACCESSORIES FOR AN INCREASED SECURITY

The DMX³ circuit breakers draw-out types are delivered as standard with safety padlocking shutters preventing access to live terminals. They have a number of other safety devices, such as:

- Key-operated locks:
 - Main contacts open
 - Circuit breaker in draw-out position
- Padlocks for:
 - Main contacts open
 - Contact shutters closed (for draw-out position)
- Door locking in order to prevent the opening of the electrical switchboard door when the contacts of the ACB are closed.



Fixed version equipped with padlocking system



Draw-out version equipped with key-operated locks

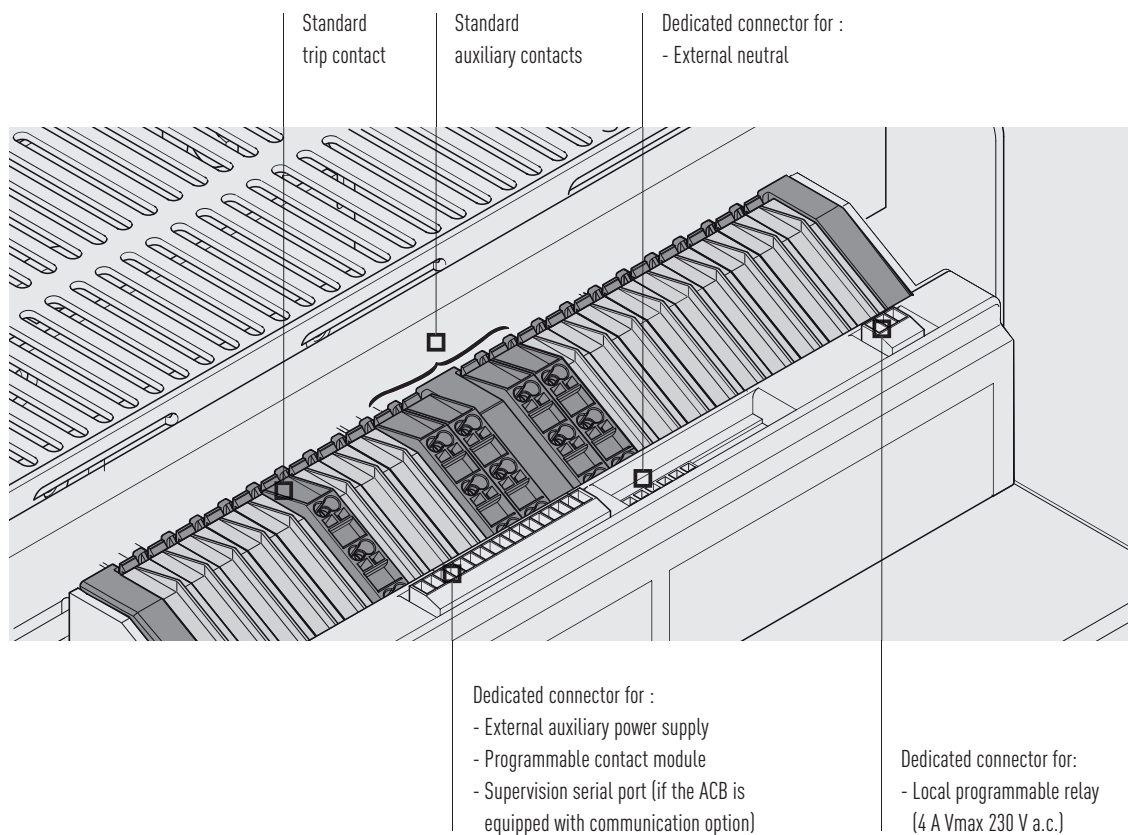
Easy identification of control accessories

Electrical auxiliaries are connected on the front panel on terminal blocks provided for this purpose. Accessories are identified on the front panel.

As the cover has window, it is easy to ascertain, which devices are fitted on the circuit breaker.

FRONT PANEL CONNECTION TERMINAL BLOCK

The terminal block of DMX³ ACBs offers the possibility to connect a trip contact, up to 10 auxiliary contacts (up to 6 contacts for DMX³ 1600) and different other control and signalling functions



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MORE INFORMATION

	DMX ³ 1600	DMX ³ 2500	DMX ³ 4000	DMX ³ 6300
External auxiliary power supply	0 281 72		0 288 06	
Programmable contact module	0 281 99		0 288 12	
Communication option	0 281 70		0 288 05	
External neutral	0 281 71	0 288 11		0 288 10

FIXED VERSION-CHOOSE YOUR CONNECTION ACCESSORIES: 3 POSSIBILITIES

The type of rear terminals can be easily changed according to your needs.

REAR TERMINALS FOR HORIZONTAL OR VERTICAL CONNECTION



Frame 1600:

3P: Cat. N° 0 280 35

4P: Cat. N° 0 280 41

FRONT TERMINALS FOR VERTICAL CONNECTION



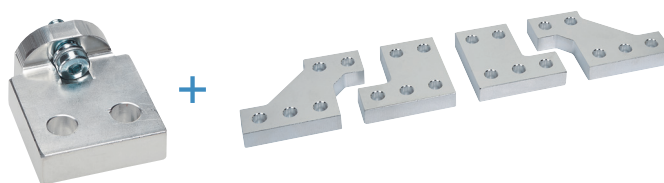
Frame 1600:

3P: Cat. N° 0 281 55

4P: Cat. N° 0 281 56

SPREADERS FOR HORIZONTAL CONNECTION

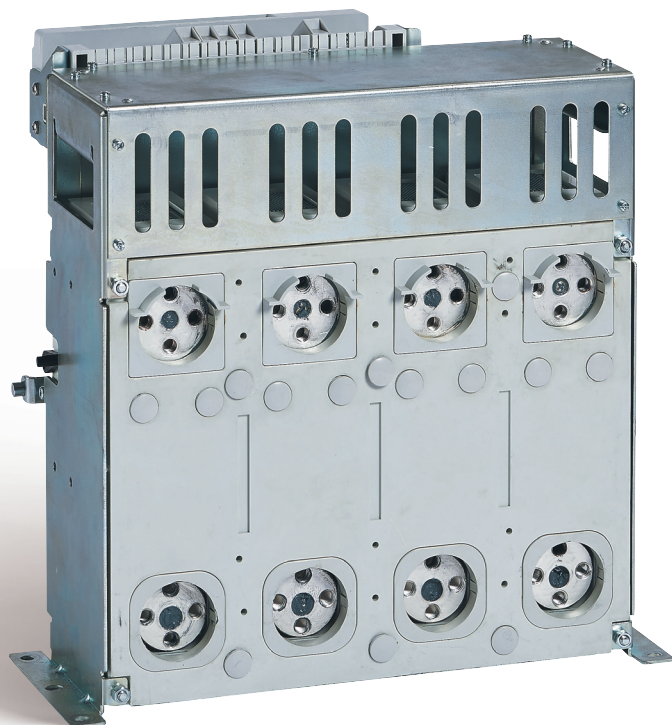
For any situation requiring a bigger width for a safe connection (i.e. aluminium bus bars).



Frame 1600:

3P: Cat. N° 0 280 35 + 0 281 59

4P: Cat. N° 0 280 41 + 0 281 60



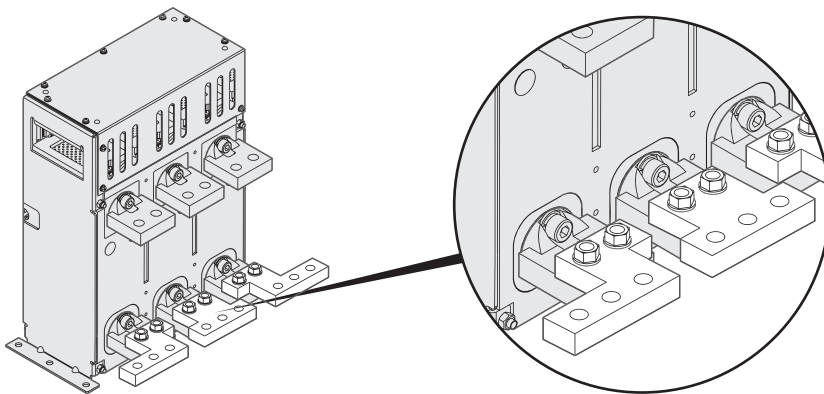
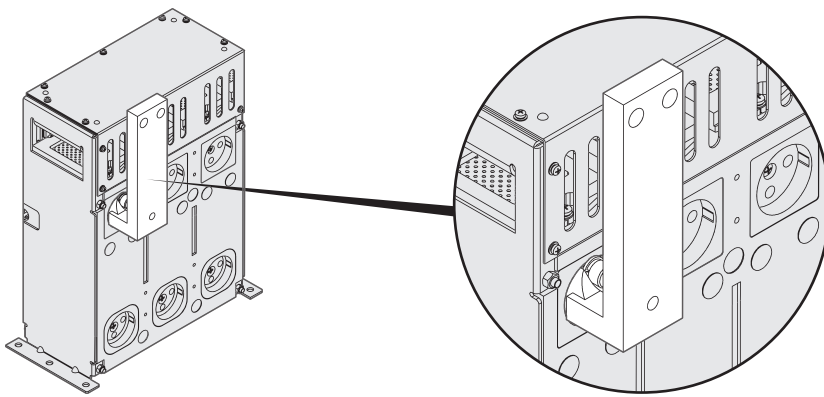
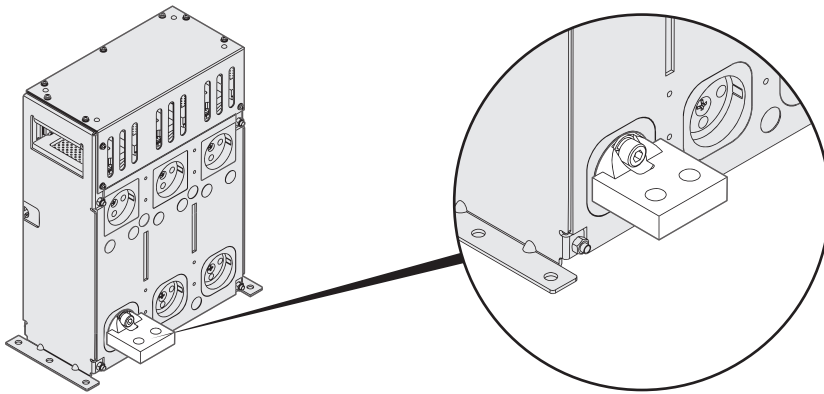
The breaker is supplied without terminals.

Connection: maximum adaptability DMX³ 1600

The fixed version of DMX³ 1600 are supplied without terminals.

You can change connection type according to your needs by adding required terminals.

FIXED VERSION: EXAMPLES OF CONNECTIONS



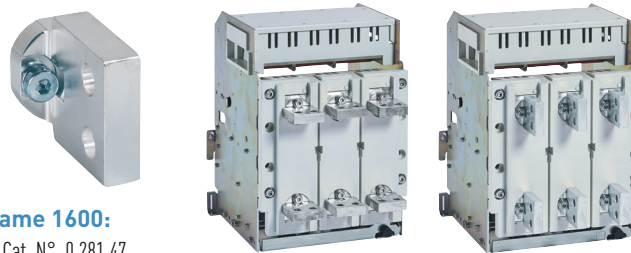
DRAW-OUT VERSION-CHOOSE YOUR CONNECTION ACCESSORIES : 3 POSSIBILITIES

The type of rear terminals can be easily changed according to your needs.



The breaker is supplied without terminals.

REAR TERMINALS FOR HORIZONTAL OR VERTICAL CONNECTION



Frame 1600:

3P: Cat. N° 0 281 47

4P: Cat. N° 0 281 48

FRONT TERMINALS FOR VERTICAL CONNECTION



Frame 1600:

3P: Cat. N° 0 281 57

4P: Cat. N° 0 281 58

SPREADERS FOR HORIZONTAL CONNECTION

For any situation requiring a bigger width for a safe connection (i.e. aluminium bus bars).



Frame 1600:

3P: Cat. N° 0 281 47 + 0 281 59

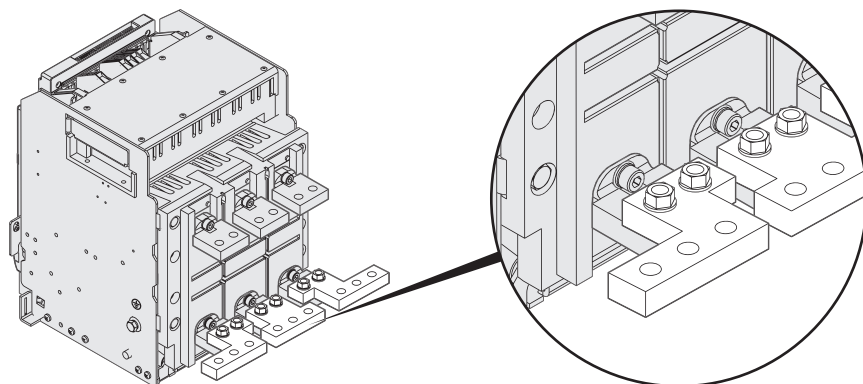
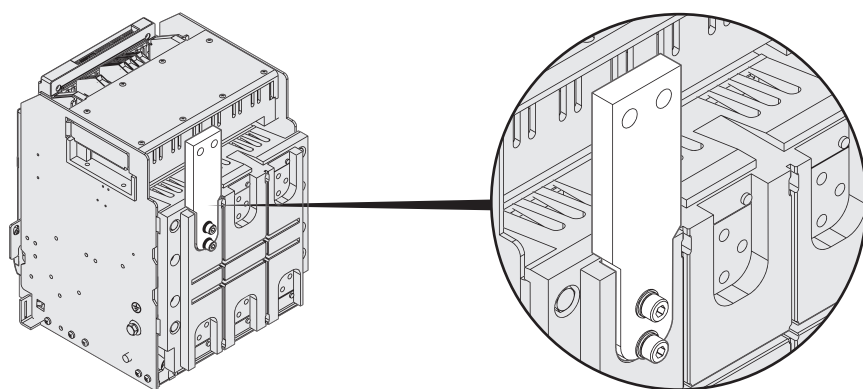
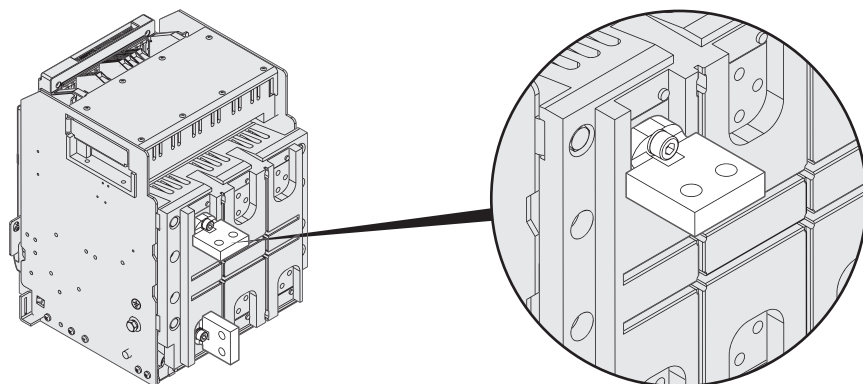
4P: Cat. N° 0 281 48 + 0 281 60

Connection:
maximum
adaptability
DMX³ 1600
CONTINUED

The draw-out version of DMX³ 1600 are supplied without terminals.

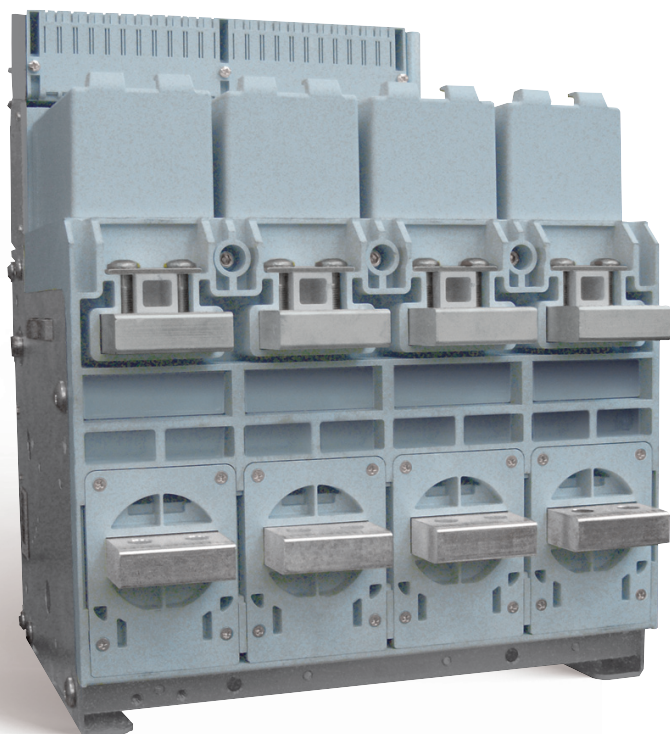
You can change connection type according to your needs by adding required terminals.

DRAW-OUT VERSION: EXAMPLES OF CONNECTIONS



FIXED VERSION-CHOOSE YOUR CONNECTION ACCESSORIES: 3 POSSIBILITIES

The type of rear terminals can be easily changed according to your needs.



The breaker is supplied with rear terminals for horizontal connection

REAR TERMINALS FOR FLAT CONNECTION



Frame 2500:

3P: Cat. N° 0 288 84
4P: Cat. N° 0 288 85

Frame 4000:

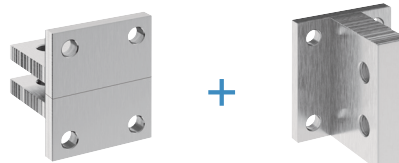
3P: Cat. N° 0 288 92
4P: Cat. N° 0 288 93

Frame 6300:

3P: Cat. N° 0 288 92 x 2
4P: Cat. N° 0 288 93 x 2

REAR TERMINALS FOR VERTICAL CONNECTION

This type of connection uses 2 accessories: the previous rear terminals for flat connection, which must be equipped with the vertical ones.



Frame 1:

3P: Cat. N° 0 288 84 + 0 288 82
4P: Cat. N° 0 288 85 + 0 288 83

Frame 2 and 3⁽¹⁾:

3P: Cat. N° 0 288 92 + 0 288 94
4P: Cat. N° 0 288 93 + 0 288 95

(1) For frame 6300 the quantity is multiplied by 2

SPREADERS

For any situation requiring a bigger width for a safe connection (i.e. aluminium bus bars).

Frame 2500:

3 types of accessories



Flat connection

3P: Cat. N° 0 288 86
4P: Cat. N° 0 288 87



Vertical connection

3P: Cat. N° 0 288 88
4P: Cat. N° 0 288 89



Horizontal connection

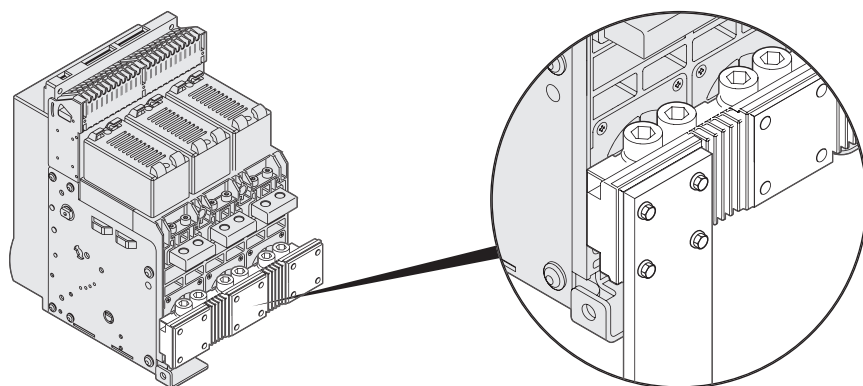
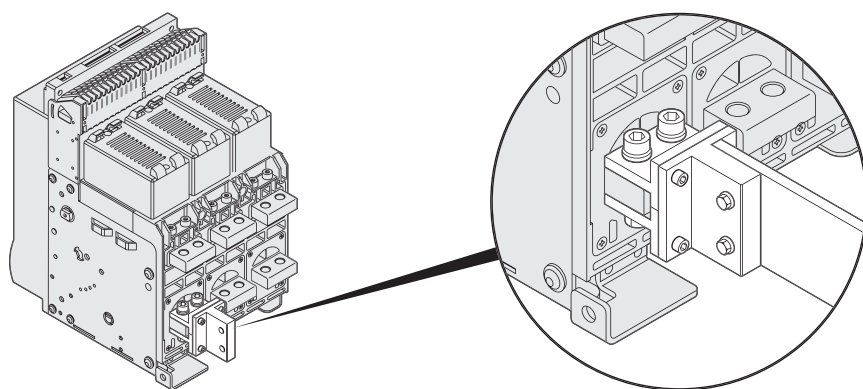
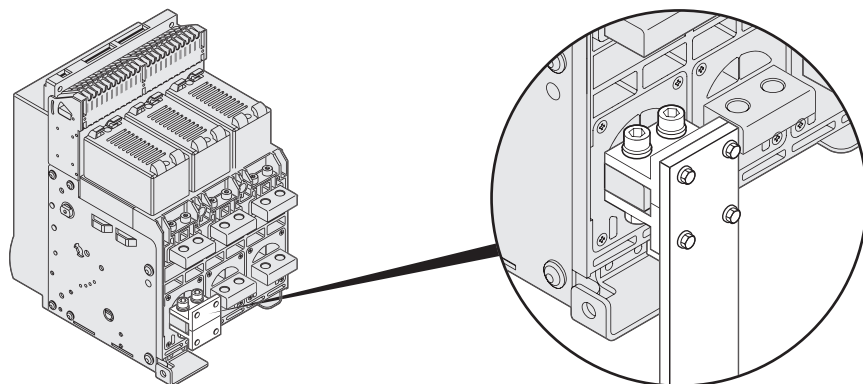
3P: Cat. N° 0 288 90
4P: Cat. N° 0 288 91

Connection: maximum adaptability DMX³ 2500 to 6300

The fixed version of DMX³ is equipped with rear terminals for horizontal connection with bars.

You can change connection type according to your needs.

FIXED VERSION: EXAMPLES OF CONNECTIONS



DRAW-OUT VERSION-CHOOSE YOUR CONNECTION ACCESSORIES

Draw-out version of the DMX³ breakers is supplied with rear terminals for flat connection with bars. You can easily transform those terminals into vertical or horizontal type by using the unique reversible connector.

2 TYPES OF FIXING

Reversible connector for vertical or horizontal connection.



Frame 2500:

3P: Cat. N° 0 288 96

4P: Cat. N° 0 288 97

Frame 4000:

3P: Cat. N° 0 288 94

4P: Cat. N° 0 288 95

Frame 6300:

3P: Cat. N° 0 288 94 x 2

4P: Cat. N° 0 288 95 x 2



The breaker is supplied with rear terminals for flat connection

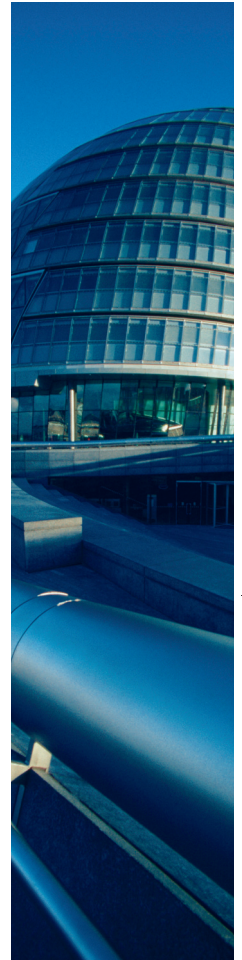
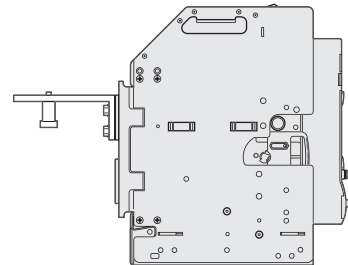
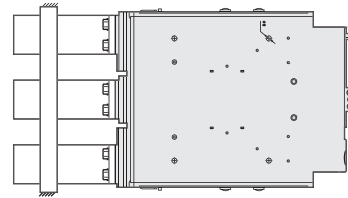
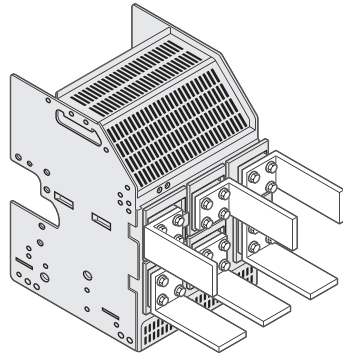
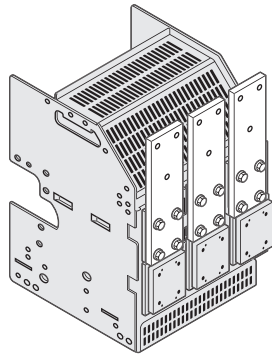
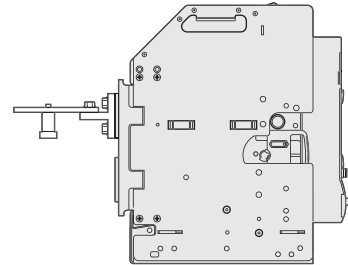
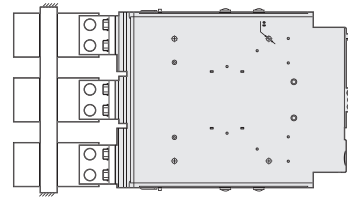
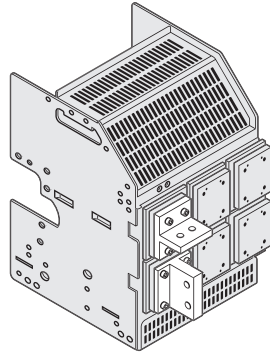
FLAT CONNECTION USING THE REAR TERMINALS OF THE BREAKER

Connection:
maximum
adaptability
DMX³ 2500
to 6300
CONTINUED

The draw-out version is equipped with rear terminals for flat connection with bars.

DRAW-OUT VERSION: EXAMPLES OF CONNECTIONS

Draw-out version of the DMX³ breakers is supplied with rear terminals for flat connection with bars. You can easily transform the rear terminals into vertical or horizontal type by using the unique reversible connector.



CONNECTIONS: A FEW RECOMMENDATIONS!

- Connections provide the electrical connection of equipment and are also responsible for a considerable proportion of their heat dissipation.
- Connections must never be under-sized.
- Plates or terminals must be used over a maximum area.

- Heat dissipation is encouraged by arranging the bars vertically. If an uneven number of bars is connected, place the higher number of bars on the upper part of the terminal.
- Avoid bars running side by side: this causes poor heat dissipation and vibrations.
- Place spacers between the bars to maintain a distance between them which is at least equivalent to their thickness.

Automatic transfer switches

Stylish ergonomic design

Backlit screen, very easy to read, adjustable brightness and contrast. Menu available in 5 or 8 languages depending on unit model

Clear marking on the front panel for easy identification of the various functions

Touch-sensitive buttons for programming the various operating parameters directly on the control unit

The optical communication port on the front can take a USB or a Wi-Fi connection module, which allows communication with a computer, smartphone or a tablet for programming, diagnostics and data downloading, without having to cut off the power to the electrical panel.

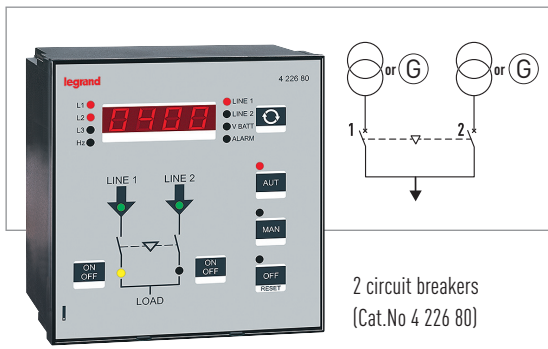
Continuity of service & increased safety

Automatic transfer switches answer the double need of continuity of service and greater safety (security). Traditionally used in hospitals, public buildings, industries with continuous manufacturing

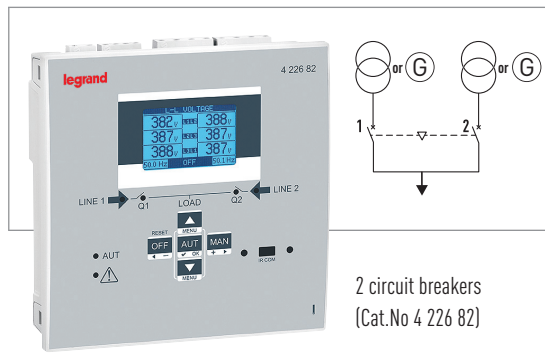
processes, airports and military applications, automatic transfer switches become increasingly required for new applications such as telecommunications and computing treatment or in the management of

energy sources, notably those say "renewable energies". Our range of control units includes 3 different types, depending on the desired service level.

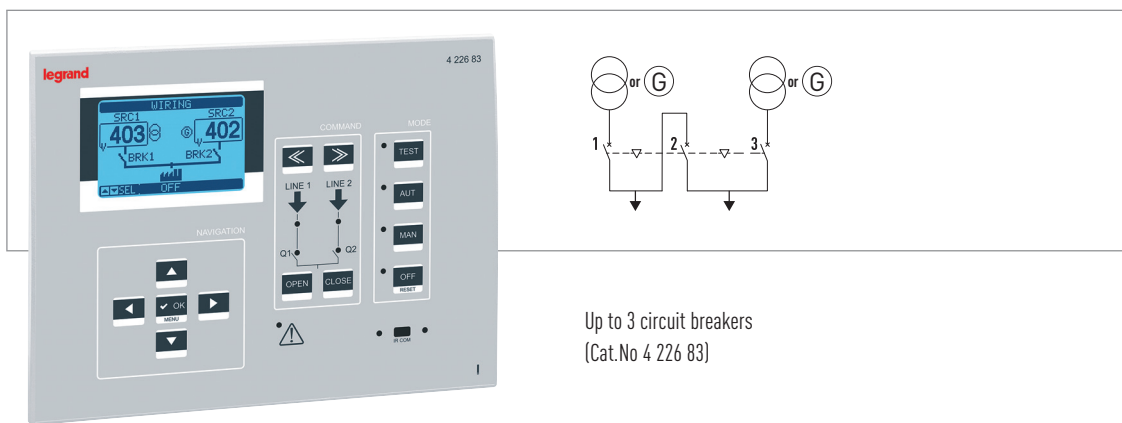
STANDARD UNIT



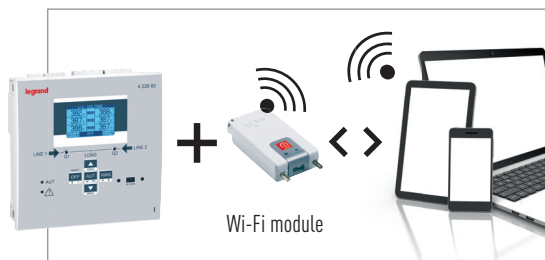
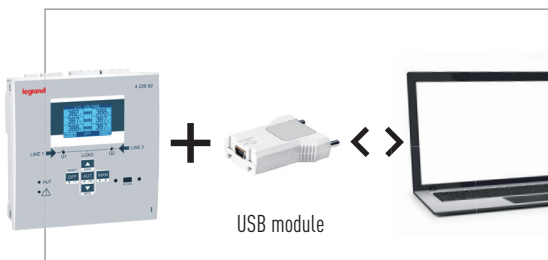
CONFIGURABLE UNIT



CONFIGURABLE UNIT

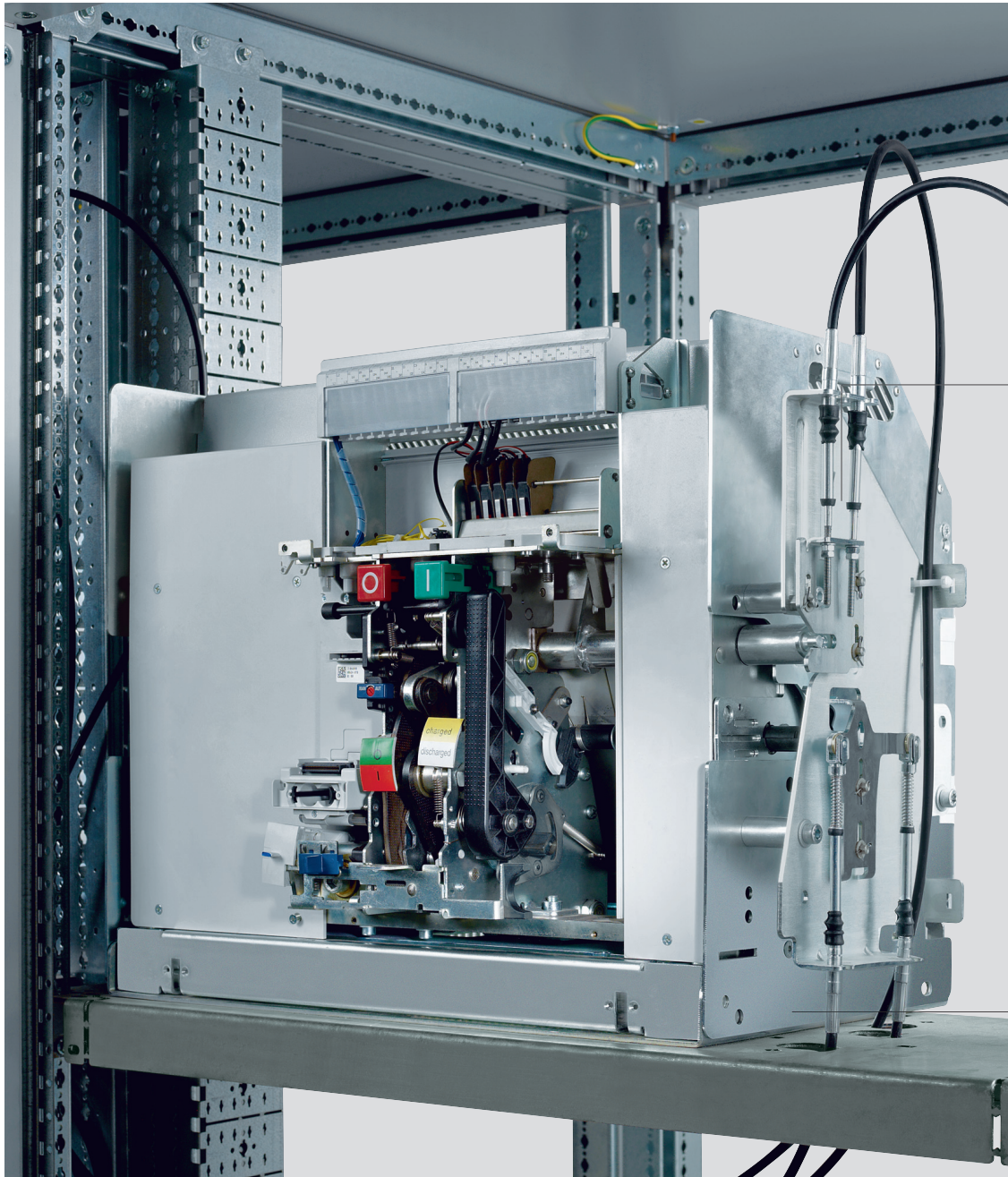


Configurable models are fitted with an optical port designed to take communication modules. These modules can be used to configure the control units via a PC, tablet or smartphone, on which the software or Legrand app has already been installed.

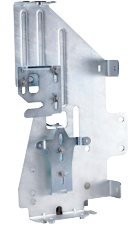


LEGRAND ADVANTAGE

Thanks to its digital displays and different LEDs it is possible to watch permanently the state of the inverter, as well as the presence and the value of the voltage on each power supply.



Mechanical interlock device



Cable for mechanical interlock



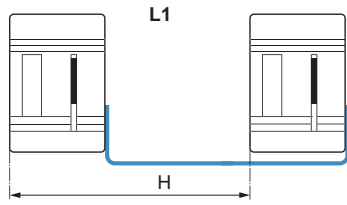
Transfer switching & interlocking

Mechanical interlock is set up using cables and a mechanical interlock device and can interlock 2 or 3 devices, which may be different type in a vertical or horizontal configuration.

The interlock device is mounted on the right-hand side of the air circuit breaker.

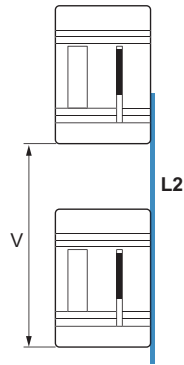
DMX³ 1600

Horizontal configuration



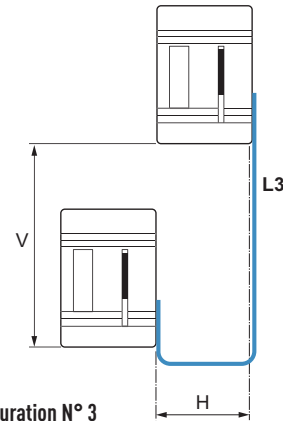
Configuration N° 1
Required cable length:
 $L = 620 + H$

Vertical configuration



Configuration N° 2
Required cable length:
 $L = 950 + V$

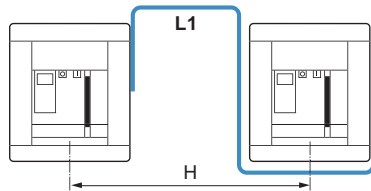
Vertical + Horizontal configuration



Configuration N° 3
Required cable length:
 $L = 620 + V + H$

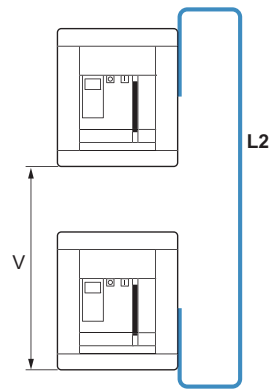
DMX³ 2500 / 4000 / 6300

Horizontal configuration



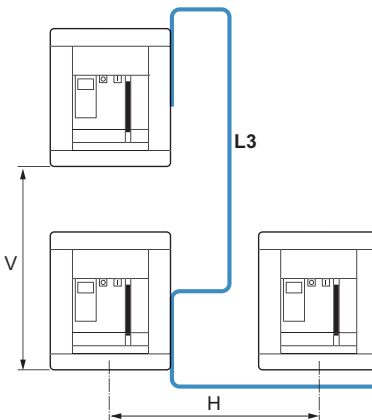
Configuration N° 1
Required cable length:
 $L = 1430 + H$

Vertical configuration



Configuration N° 2
Required cable length:
 $L = 1570 + V$

Vertical + Horizontal configuration



Configuration N° 3
Required cable length:
 $L = 1430 + V + H$



EXAMPLES OF CABLE INTERLOCK SELECTION FOR 2 OR 3 AIR CIRCUIT BREAKERS

Distance between air circuit breakers	DMX ³ 1600 (2 ACBs) Configuration N° 3: $L = 620 + H + V$				DMX ³ 2500 / 4000 / 6300 (3 ACBs) Configuration N° 3: $L = 1430 + H + V$				
	Horizontal (mm)								
		725	1 000	1 450	2 000	725	1 000	1 450	2 000
Vertical (mm)	800	0 289 20	0 289 20	0 289 21	0 289 22	0 289 21	0 289 22	0 289 23	0 289 24
	1 000	0 289 20	0 289 21	0 289 22	0 289 23	0 289 22	0 289 22	0 289 23	0 289 24
	1 600	0 289 21	0 289 22	0 289 23	0 289 24	0 289 23	0 289 24	0 289 24	0 289 25
	2 000	0 289 22	0 289 23	0 289 24	0 289 25	0 289 24	0 289 24	0 289 25	0 289 25

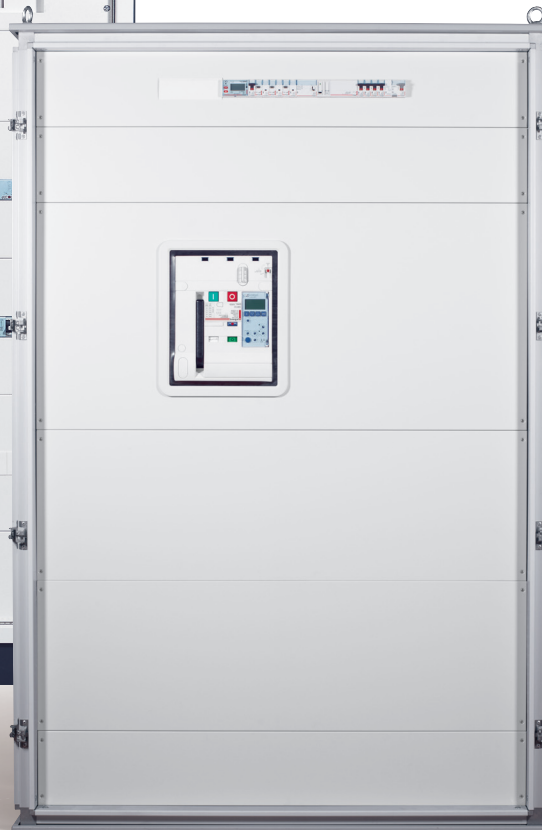
CABLE LENGTH

Cat.Nos	0 289 17	0 289 18	0 289 20	0 289 21	0 289 22	0 289 23	0 289 24	0 289 25
Length (mm)	1 000	1 500	2 600	3 000	3 600	4 000	4 600	5 600

DMX³ 1600 inside
an XL³ S 4000 enclosure



DMX³ 6300 inside
an XL³ 6300 enclosure



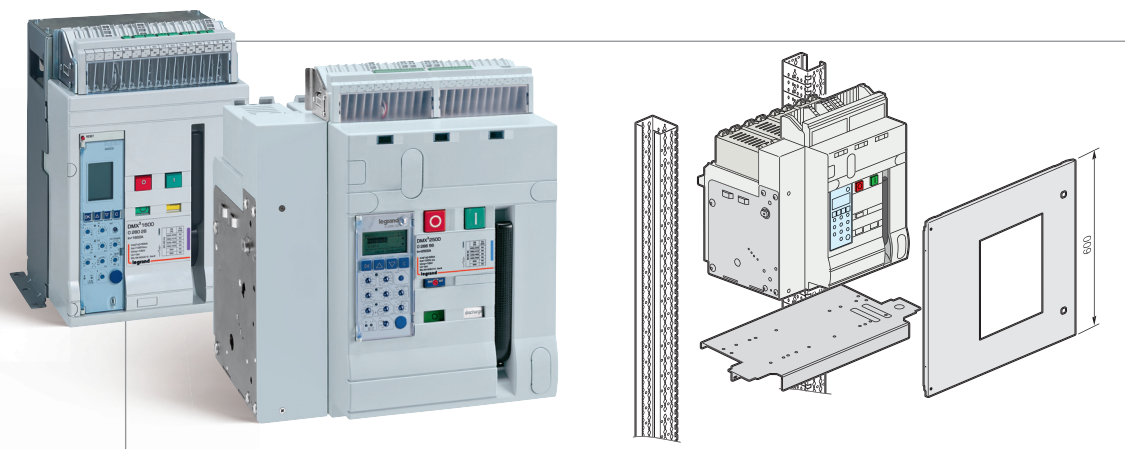
Be free to choose XL³ or XL³ S fully adaptable enclosure

It is very easy to create the configuration you want thanks to the different available sizes of XL³ S 4000 or XL³ 4000 and 6300 enclosures.

A full range of accessories, such as dedicated fixing plates and faceplates, facilitates the integration of DMX³ devices inside the enclosures.

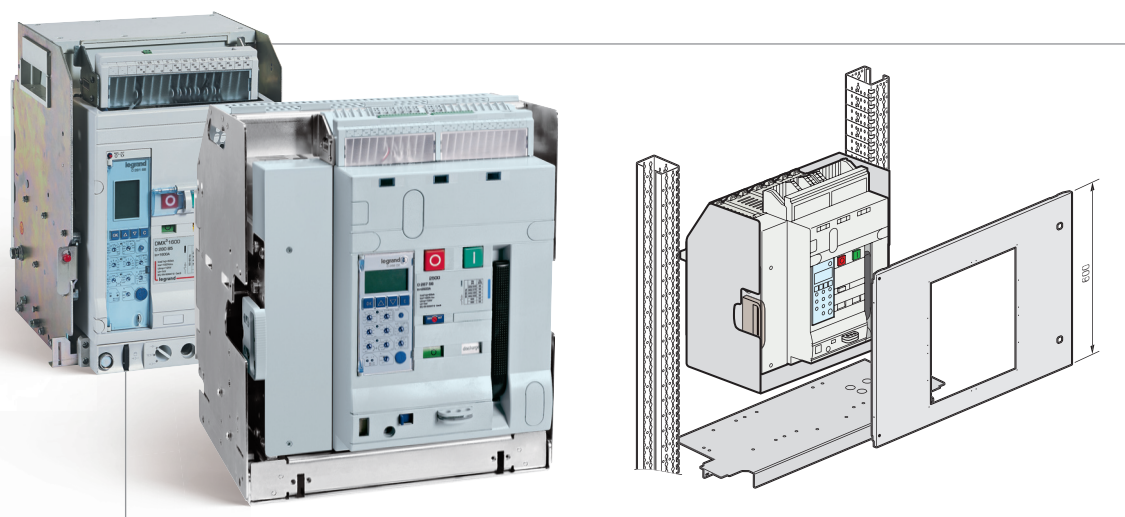
XLPro³ software let you choose the optimum configuration between XL³ and XL³ S, according to the size and the requirements of your installation.

DMX³ FIXED VERSION

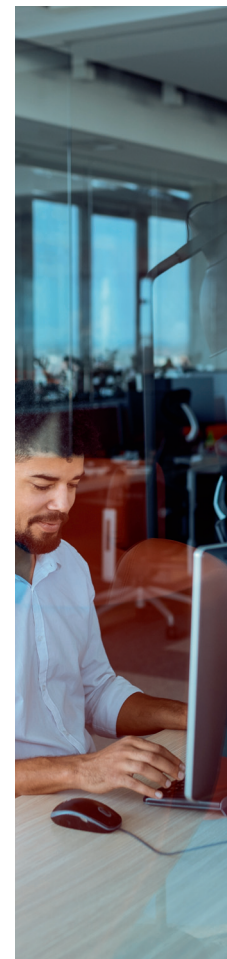


DMX³ size 1600 and DMX³ size 2500

DMX³ DRAW-OUT VERSION



DMX³ size 1600 and DMX³ size 2500



MOUNTING PRINCIPLE

In XL³ and XL³ S, the DMX³ devices and the associated busbars are arranged according to an identical principle for power ratings up to 4000 A, that is, the possibility of mounting two devices per enclosure.

The installation height of DMX³ units is always 600 mm whatever the type and size of the device. When 2 DMX³ devices are installed in the same cell, this leaves at least a useful 600 mm for running the busbars.

Air circuit breakers DMX³ 1600 from 630 to 1600 A



0 280 28 + 0 281 66 + 0 280 35 (p. 158)



0 280 85 + 0 281 66 + 0 280 53

DMX³ 1600 electronic protection units



0 281 65



0 281 66



0 281 72

Dimensions **p. 38-39**
Electrical characteristics **p.40-41**

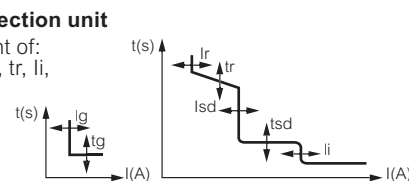
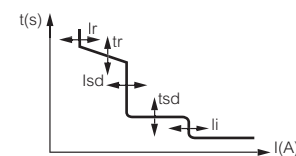
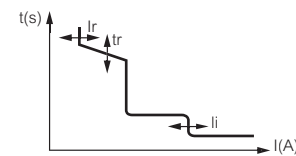
Settings and curves **p.40**

Automatic air circuit breakers must be equipped with DMX³ 1600 electronic protection units Cat.No 0 281 64/65/66, imperatively ordered together for factory assembly
Please ask for DMX³ order form
Conform to IEC 60947-2

DMX³ circuit breakers must be equipped with electronic protection units (to be ordered together for factory assembly) enabling very precise adjustments of the protection conditions, while maintaining total discrimination with downstream devices
Conform to IEC 60947-2

Pack	Cat.Nos		Fixed version
	Frame 1600		Supplied with - 4 auxiliary contacts: NO/NC - door sealing
			Breaking capacity Icu 42 kA (415 V~)
		In (A)	
	3P	4P	
1	0 280 00	0 280 06	630
1	0 280 01	0 280 07	800
1	0 280 02	0 280 08	1000
1	0 280 03	0 280 09	1250
1	0 280 04	0 280 10	1600
			Breaking capacity Icu 50 kA (415 V~)
1	0 280 24	0 280 30	630
1	0 280 25	0 280 31	800
1	0 280 26	0 280 32	1000
1	0 280 27	0 280 33	1250
1	0 280 28	0 280 34	1600
			Draw-out version
			Supplied with: - 4 auxiliary contacts: NO/NC - door sealing To be installed on a draw-out base Cat.No 0 281 53 or 0 281 54
	Frame 1600		Breaking capacity Icu 42 kA (415 V~)
			In (A)
	3P	4P	
1	0 280 71	0 280 76	630
1	0 280 72	0 280 77	800
1	0 280 73	0 280 78	1000
1	0 280 74	0 280 79	1250
1	0 280 75	0 280 80	1600
			Breaking capacity Icu 50 kA (415 V~)
1	0 280 81	0 280 86	630
1	0 280 82	0 280 87	800
1	0 280 83	0 280 88	1000
1	0 280 84	0 280 89	1250
1	0 280 85	0 280 90	1600
			Draw-out base
1	0 281 53	0 281 54	For DMX ³ and DMX ³ -I 1600 Cat.No 0 280 71 to 0 280 90 and 0 280 47/53/59/65/91/92

Pack	Cat.Nos	MP4 protection units with LCD screen
1	0 281 64	Integrated LCD screen for displaying electrical values, settings and log Adjustment via selector switches LI protection unit Adjustment of: Ii, Ir, tr
1	0 281 65	LSI protection unit Adjustment of: I _{sd} , t _{sd} , Ir, tr and Ii
1	0 281 66	LSI_g protection unit Adjustment of: I _{sd} , t _{sd} , Ir, tr, Ii, I _g and t _g
1	0 281 70 ¹	Accessories for electronic protection units Communication option for DMX ³ electronic protection units
1	0 281 72	External auxiliary power supply (input 230 V AC)
1	0 281 71 ¹	External neutral for DMX ³ 1600
1	0 281 99 ¹	Programmable output option



¹: Optional accessories, to be ordered when ordering electronic protection unit and DMX³ air circuit breakers for factory assembly

Auxiliaries and accessories
for DMX³ 1600 **p. 30**



Trip free switches DMX³-I 1600

from 1000 to 1600 A



0 280 52 + 0 280 35 (p. 158)

Dimensions p. 38-39

Conform to IEC 60947-3

Pack	Cat.Nos		Fixed version
	Frame 1600 3P 4P		Supplied with: - 4 auxiliary contacts: NO/NC - door sealing
1	0 280 50	0 280 56	In (A) 1000
1	0 280 51	0 280 57	1250
1	0 280 52	0 280 58	1600
	Frame 1600 3P 4P		Draw-out version Supplied with: - 4 auxiliary contacts: NO/NC - door sealing To be installed on a draw-out base Cat.No 0 281 53 or 0 281 54 (p. 28)
1	0 280 47	0 280 65	In (A) 1000
1	0 280 53	0 280 91	1250
1	0 280 59	0 280 92	1600

Trip free switches DMX³-I 1600

from 1000 to 1600 A

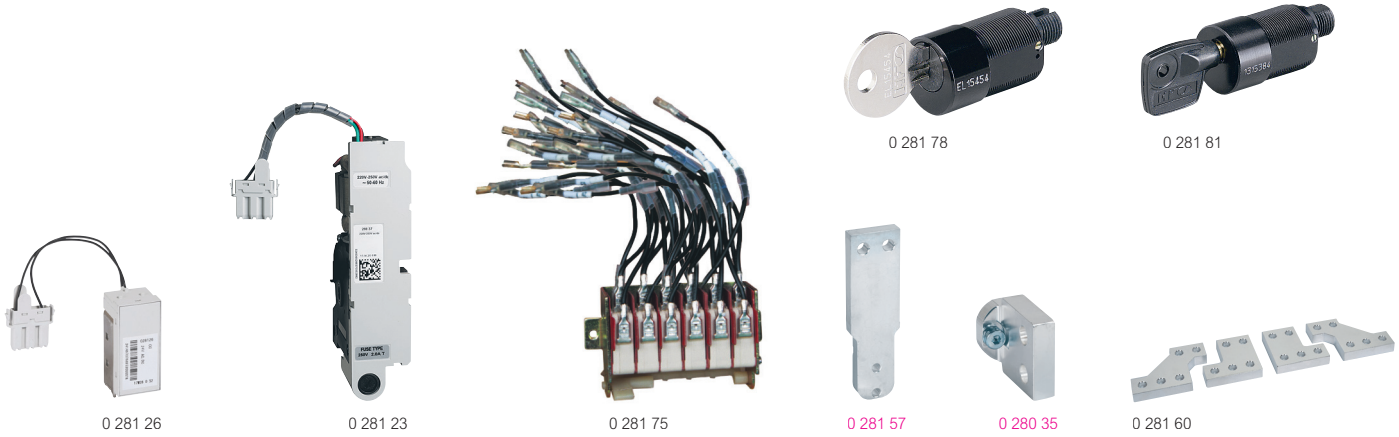
Technical characteristics

Trip free switch DMX ³ -I		1600
Frame		1600
Rating In (A)		1000 1250 1600
Rated insulation voltage U _i (V)		1000
Rated impulse withstand voltage U _{imp} (kV)		12
Rated operational voltage (50/60Hz) U _e (V)		690
Category of use		AC23A
Isolation behaviour		Yes
Short-circuit making capacity I _{cm} (kA)	220 / 240 V \sim	105
	380 / 415 V \sim	105
	440 / 460 V \sim	105
	480 / 500 V \sim	105
	600 V \sim	88
	690 V \sim	88
Short time withstand current I _{cw} (kA) for t = 1 s	220 / 240 V \sim	50
	380 / 415 V \sim	50
	440 / 460 V \sim	50
	480 / 500 V \sim	50
	600 V \sim	42
	690 V \sim	42
Endurance (cycles)	mechanical without maintenance	5000
	mechanical with maintenance	10000
	electrical	1500 at 690 V / 3000 at 415 V
Temperature	operation	-5°C to +70°C
	storage	-25°C to +85°C

Temperature derating

Fixed / draw-out version

	Temperature									
	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ -I 1600	1000	1	1000	1	1000	1	1000	1	1000	0.95
	1250	1	1250	1	1250	1	1187	0.95	1125	0.9
	1600	1	1600	1	1328	0.83	1280	0.8	1216	0.76



Pack	Cat.Nos	Control and signalling auxiliaries
		Shunt trip When energised the circuit breaker will be tripped
1	0 281 31	24 V~/=
1	0 281 32	48 V~/=
1	0 281 33	110 - 130 V~/=
1	0 281 34	220 - 250 V~/=
1	0 281 35	415 - 440 V~
		Undervoltage releases When the coil is de-energised, the circuit breaker will be tripped
1	0 281 36	24 V~/=
1	0 281 37	48 V~/=
1	0 281 38	110 - 130 V~/=
1	0 281 39	220 - 250 V~/=
1	0 281 40	415 - 440 V~
		Module for delayed tripping To be used with above undervoltage releases
1	0 288 62	110 V~/=
1	0 288 63	230 V~/=
		Motor operators To motorize a DMX ³ , it is possible to attach, to the motor operators, a release coil (undervoltage or trip on energising) and a closing coil
1	0 281 20	24 V~/=
1	0 281 21	48 V~/=
1	0 281 22	110 - 130 V~/=
1	0 281 23	220 - 250 V~/=
1	0 281 24	415 - 440 V~
		Closing coils Enables remote closing of the circuit breaker if the closing spring is charged
1	0 281 26	24 V~/=
1	0 281 27	48 V~/=
1	0 281 28	110 - 130 V~/=
1	0 281 29	220 - 250 V~/=
1	0 281 30	415 - 440 V~
		Signalling contact for draw-out version Inserted / test / draw-out signalling contact 1 changeover contact per position (up to 2 contacts with double accessory if the safety button for test position cat no. 0 281 87 is not mounted)
1	0 281 73	
		Locking
		Key locking in «open» position
1	0 281 78	1 lock + 1 Ronis type flat key (n° ABA90GEL6149) random
1	0 281 79	1 lock + 1 Ronis type flat key (n° ABA90GEL6149) fixed (cod. EL43525)
1	0 281 80	1 lock + 1 Ronis type flat key (n° ABA90GEL6149) fixed (cod. EL43363)
1	0 281 81	1 lock + 1 Profalux type star key (n° HBA90GPS6149) random

Pack	Cat.Nos	Locking (continued)
		Key locking in the draw-out position Mounting of the lock on the base
1	0 281 82	1 lock with star type key (n° HBA90GPS6149) random
1	0 281 83	1 lock with flat type key (n° ABA90GEL6149) random
		Door locking Prevents opening of the door with the circuit breaker closed Left-hand and right-hand side mounting
1	0 281 84	
		Padlock Padlock for buttons
1	0 281 77	
		Accessories
1	0 281 88	Mechanical counter Counts total number of operation cycles of the device
1	0 281 74	Contact «ready to close» with charged springs
1	0 281 75	Module with 6 auxiliary contacts
1	0 281 87	Inserted / test / draw-out lock button
1	0 281 89	Rating mis-insertion device Prevents the insertion of a draw-out circuit breaker in an incompatible base
		Front terminals
		For frontal connection For DMX ³ Frame 1600 fixed version
1	0 281 55 0 281 56	
1	0 281 57 0 281 58	For DMX ³ Frame 1600 draw-out version
		Reversible rear terminals Can be fixed in horizontal or vertical position
1	0 280 35 0 280 41	For DMX ³ Frame 1600 fixed version
1	0 281 47 0 281 48	For DMX ³ Frame 1600 draw-out version
		Spreaders for DMX³ Frame 1600 fixed and draw-out versions To be fixed onto reversible rear terminals of the circuit breaker Cat.Nos 0 280 35/41 or 0 281 47/48 For connection with bars (horizontal use)
		Insulation shields
		For fixed version For DMX ³ /DMX ³ -I Frame 1600
1	0 281 49 0 281 50	
		For draw-out version For DMX ³ /DMX ³ -I Frame 1600
1	0 281 51 0 281 52	

Equipment for DMX³ 1600 transfer switches



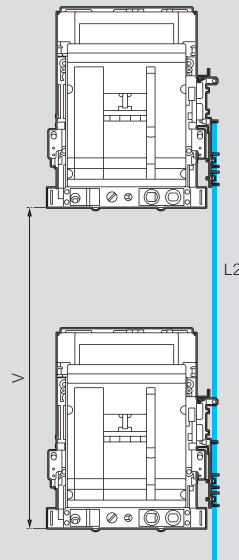
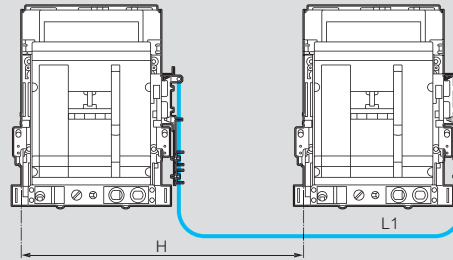
0 289 20

Technical characteristics p. 40-41

Pack	Cat.Nos	Equipment for transfer switches
1	0 281 90	The mechanical interlock is set up using cables and can interlock devices, which may be different type in a vertical or horizontal configuration The interlock unit is mounted on the right-hand side of the device Cable interlock to be ordered separately (cable length to be specified according to every configuration - see below) Interlock for DMX ³ frame 1600
Cable interlock		
Length		
1	0 289 17	1000 mm
1	0 289 18	1500 mm
1	0 289 20	2600 mm
1	0 289 21	3000 mm
1	0 289 22	3600 mm
1	0 289 23	4000 mm
1	0 289 24	4600 mm
1	0 289 25	5600 mm

Equipment for DMX³ 1600 transfer switches - Installation principle

Choice of cable interlock

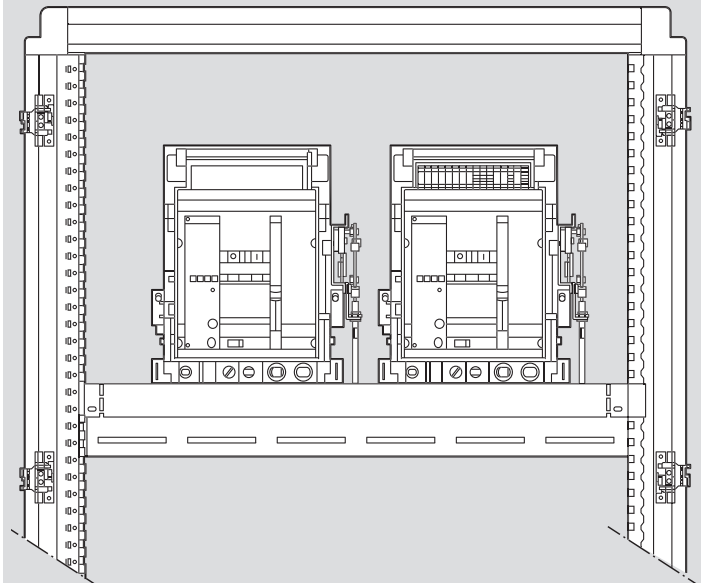


Calculation of cable length:
 $L1 = 600 + H$
 $L2 = 950 + V$

Installation principle

For XL³ 4000 - 36 modules

2 DMX³ / DMX³-I can be installed side by side on the same fixing plate.



Automatic transfer switch control units p. 37



Air circuit breakers DMX³ 2500 and 4000

from 800 to 4000 A



0 286 56 + 0 288 02 (p. 161)



0 286 74 + 0 288 02 (p. 161)



0 287 56 + 0 288 02 (p. 161)



Dimensions **p. 42-45**
Electrical characteristics **p. 47-49**

Automatic air circuit breakers must be equipped with electronic protection unit (p. 161), imperatively ordered together for factory assembly
Please ask for DMX³ order form
Conform to IEC 60947-2

Pack	Cat.Nos		Fixed version	Pack	Cat.Nos		Draw-out version
			Supplied with - 4 auxiliary contacts: NO/NC - rear terminals for horizontal connection with bars - door sealing				Supplied with: - 4 auxiliary contacts: NO/NC - draw-out base and kit - flat rear terminals for connection with bars - door sealing
			DMX³ - N 2500				DMX³ - N 2500
			Breaking capacity Icu 50 kA (415 V _N)				Breaking capacity Icu 50 kA (415 VA)
	Frame 2500				Frame 2500		
	3P	4P	In(A)		3P	4P	In(A)
1	0 286 21	0 286 31	800	1	0 287 21	0 287 31	800
1	0 286 22	0 286 32	1000	1	0 287 22	0 287 32	1000
1	0 286 23	0 286 33	1250	1	0 287 23	0 287 33	1250
1	0 286 24	0 286 34	1600	1	0 287 24	0 287 34	1600
1	0 286 25	0 286 35	2000	1	0 287 25	0 287 35	2000
1	0 286 26	0 286 36	2500	1	0 287 26	0 287 36	2500
			DMX³ - H 2500				DMX³ - H 2500
			Breaking capacity Icu 65 kA (415 V _N)				Breaking capacity Icu 65 kA (415 VA)
	Frame 2500				Frame 2500		
	3P	4P	In(A)		3P	4P	In(A)
1	0 286 41	0 286 51	800	1	0 287 41	0 287 51	800
1	0 286 42	0 286 52	1000	1	0 287 42	0 287 52	1000
1	0 286 43	0 286 53	1250	1	0 287 43	0 287 53	1250
1	0 286 44	0 286 54	1600	1	0 287 44	0 287 54	1600
1	0 286 45	0 286 55	2000	1	0 287 45	0 287 55	2000
1	0 286 46	0 286 56	2500	1	0 287 46	0 287 56	2500
			DMX³ - L 2500				DMX³ - L 2500
			Breaking capacity Icu 100 kA (415 V _N)				Breaking capacity Icu 100 kA (415 VA)
	Frame 4000				Frame 4000		
	3P	4P	In(A)		3P	4P	In(A)
1	0 286 61	0 286 71	800	1	0 287 61	0 287 71	800
1	0 286 62	0 286 72	1000	1	0 287 62	0 287 72	1000
1	0 286 63	0 286 73	1250	1	0 287 63	0 287 73	1250
1	0 286 64	0 286 74	1600	1	0 287 64	0 287 74	1600
1	0 286 65	0 286 75	2000	1	0 287 65	0 287 75	2000
1	0 286 66	0 286 76	2500	1	0 287 66	0 287 76	2500
			DMX³ - N 4000				DMX³ - N 4000
			Breaking capacity Icu 50 kA (415 V _N)				Breaking capacity Icu 50 kA (415 VA)
	Frame 4000				Frame 4000		
	3P	4P	In(A)		3P	4P	In(A)
1	0 286 27	0 286 37	3200	1	0 287 27	0 287 37	3200
1	0 286 28	0 286 38	4000	1	0 287 28	0 287 38	4000
			DMX³ - H 4000				DMX³ - H 4000
			Breaking capacity Icu 65 kA (415 V _N)				Breaking capacity Icu 65 kA (415 VA)
	Frame 4000				Frame 4000		
	3P	4P	In(A)		3P	4P	In(A)
1	0 286 47	0 286 57	3200	1	0 287 47	0 287 57	3200
1	0 286 48	0 286 58	4000	1	0 287 48	0 287 58	4000
			DMX³ - L 4000				DMX³ - L 4000
			Breaking capacity Icu 100 kA (415 V _N)				Breaking capacity Icu 100 kA (415 VA)
	Frame 4000				Frame 4000		
	3P	4P	In(A)		3P	4P	In(A)
1	0 286 67	0 286 77	3200	1	0 287 67	0 287 77	3200
1	0 286 68	0 286 78	4000	1	0 287 68	0 287 78	4000

Air circuit breakers DMX³ 6300

5000 and 6300 A



0 289 51 + 0 288 02

Dimensions **p. 46**
 Electrical characteristics **p. 47-49**

Automatic air circuit breakers must be equipped with electronic protection unit, imperatively ordered together for factory assembly
 Please ask for DMX³ order form
 Conform to IEC 60947-2

Pack	Cat.Nos		Fixed version
	Frame 6300		Supplied with - 4 auxiliary contacts: NO/NC - rear terminals for horizontal connection with bars - door sealing DMX³ - L 6300 Breaking capacity I _{cu} 100 kA (415 V _~)
	3P	4P	In(A)
1	0 289 50	0 289 60	5000
1	0 289 51	0 289 61	6300
	Frame 6300		Supplied with: - 4 auxiliary contacts: NO/NC - draw-out base and kit - flat rear terminals for connection with bars - door sealing DMX³ - L 6300 Breaking capacity I _{cu} 100 kA (415 V _~)
	3P	4P	In(A)
1	0 289 52	0 289 62	5000
1	0 289 53	0 289 63	6300

Electronic protection units for DMX³ 2500, 4000 and 6300



0 288 02



0 288 03

Settings and curves **p. 47**

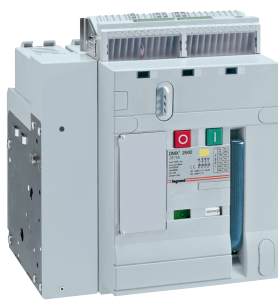
DMX³ circuit breakers must be equipped with electronic protection units (to be ordered together for factory assembly) enabling very precise adjustments of the protection conditions, while maintaining total discrimination with downstream devices
 All protection units are equipped with batteries for powering in case of mains fault or when the breaker is open or not connected

Pack	Cat.Nos	MP4 protection units with LCD screen
1	0 288 00	Integrated LCD screen for displaying electrical values, settings and log Adjustment via selector switches LI protection unit Adjustment of: I _i , I _r , t _r
1	0 288 01	LSI protection unit Adjustment of: I _s d, t _s d, I _r , t _r and I _i
1	0 288 02	LSIg protection unit Adjustment of: I _s d, t _s d, I _r , t _r , I _i , I _g and t _g
		MP6 touch screen protection units Measure and display instantaneous, maximum and average values of different electrical values and protection conditions Fault signalling and log
1	0 288 03	LSI protection unit Adjustment of: I _s d, t _s d, I _r , t _r and I _i
1	0 288 04	LSIg protection unit Adjustment of: I _s d, t _s d, I _r , t _r , I _i , I _g and t _g
		Accessories for electronic protection units
1	0 288 05 ¹	Communication option for DMX ³ electronic protection units
1	0 288 06 ¹	24 V DC external auxiliary power supply
1	0 288 10 ¹	External neutral for DMX ³ 6300
1	0 288 11 ¹	External neutral for DMX ³ 2500 and 4000
1	0 288 12 ¹	Module programmable output

¹: Optional accessories, to be ordered when ordering electronic protection unit and DMX³ air circuit breakers for factory assembly

Trip free switches DMX³-I

from 1250 to 6300 A



0 286 96



0 287 96

Dimensions p. 42-46

Conform to IEC 60947-3

Pack	Cat.Nos		Fixed version
	Frame 2500		Supplied with: - 4 auxiliary contacts: NO/NC - flat rear terminals for connection with bars - door sealing
			DMX³-I 2500
	3P	4P	In(A)
1	0 286 83	0 286 93	1250
1	0 286 84	0 286 94	1600
1	0 286 85	0 286 95	2000
1	0 286 86	0 286 96	2500
	Frame 4000		DMX³-I 4000
	3P	4P	In(A)
1	0 286 87	0 286 97	3200
1	0 286 88	0 286 98	4000
	Frame 6300		DMX³-I 6300
	3P	4P	In(A)
1	0 289 70	0 289 71	6300

Pack	Cat.Nos		Draw-out version
	Frame 2500		Supplied with: - 4 auxiliary contacts: NO/NC - draw-out base and kit - flat rear terminals for connection with bars - door sealing
			DMX³-I 2500
	3P	4P	In(A)
1	0 287 83	0 287 93	1250
1	0 287 84	0 287 94	1600
1	0 287 85	0 287 95	2000
1	0 287 86	0 287 96	2500
	Frame 4000		DMX³-I 4000
	3P	4P	In(A)
1	0 287 87	0 287 97	3200
1	0 287 88	0 287 98	4000
	Frame 6300		DMX³-I 6300
	3P	4P	In(A)
1	0 289 77	0 289 78	6300

Trip free switches DMX³-I

from 1250 to 6300 A

Technical characteristics

Trip free switch DMX ³ -I	2500	4000	6300
Frame	2500	4000	6300
Rating In (A)	1250 1600 2000 2500	3200 4000	6300
Rated insulation voltage Ui (V)	1000	1000	1000
Rated impulse withstand voltage Uimp (kV)	12	12	12
Rated operational voltage (50/60Hz) Ue (V)	690	690	690
Isolation behaviour	Yes	Yes	Yes
Short-circuit making capacity Icm (kA)	230 V~	143	220
	415 V~	143	220
	500 V~	143	220
	600 V~	132	165
	690 V~	121	143
Short time withstand current Icw (kA) for t = 1 s	230 V~	65	85
	415 V~	65	85
	500 V~	65	85
	600 V~	60	75
	690 V~	55	65
Endurance (cycles)	mechanical	10000	10000
	electrical	5000	5000
Temperature	operation	-5°C to +70°C	-5°C to +70°C
	storage	-25°C to +85°C	-25°C to +85°C

Temperature derating

Fixed version

	Temperature									
	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ -I 2500	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1880	0.94
	2500	1	2500	1	2350	0.94	2250	0.9	2150	0.86
DMX ³ -I 4000	3200	1	3200	1	3200	1	3136	0.98	3008	0.94
	4000	1	4000	1	3680	0.92	3440	0.86	3120	0.78
DMX ³ -I 6300	6300	1	6300	1	6048	0.96	5796	0.92	5544	0.88

Draw-out version

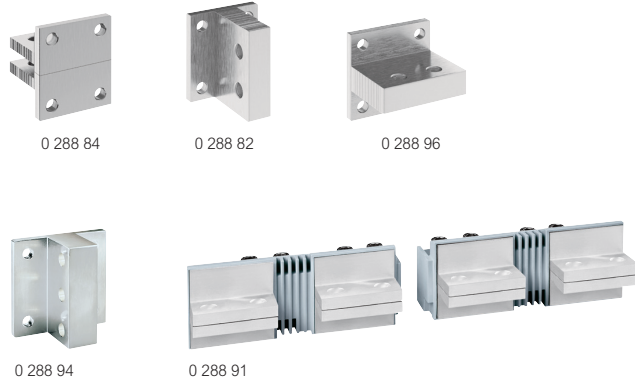
	Temperature									
	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ -I 2500	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1875	0.94
	2500	1	2400	0.96	2250	0.9	2100	0.84	1950	0.78
DMX ³ -I 4000	3200	1	3200	1	3200	1	3072	0.96	2880	0.9
	4000	1	3760	0.94	3440	0.86	3200	0.8	2960	0.74
DMX ³ -I 6300	6300	1	6174	0.98	5985	0.95	5796	0.92	5292	0.84

Auxiliaries and accessories for DMX³ 2500, 4000 and 6300



Pack	Cat.Nos	Control and signalling auxiliaries	Pack	Cat.Nos	Locking
		Shunt trip When energised the circuit breaker will be tripped			Key locking in "open" position Lock and star key N° HBA90GPS6149 - to be fitted on the frame Cat.No 0 288 28 Lock and flat key N° ABA90GEL6149 - to be fitted on the frame Cat.No 0 288 28 2 hole support frame for locks Cat.Nos 0 288 30/31 Set of 5 key barrels with flat key
1	0 288 48	24 V~ / =	1	0 288 30	
1	0 288 49	48 V~ / =	1	0 288 31	
1	0 288 50	110 - 130 V~ / =	1	0 288 28	
1	0 288 51	220 - 250 V~ / =	1	0 288 29	
1	0 288 52	415 - 480 V~			Key locking in the draw-out position Mounting of the lock on the base Lock and star key N° HBA90GPS6149 Lock and flat key N° ABA90GEL6149
		Undervoltage releases When the coil is de-energised, the circuit breaker will be tripped			Door locking Prevents opening of the door with the circuit breaker closed Left-hand and right-hand side mounting
1	0 288 55	24 V~ / =	1	0 288 32	
1	0 288 56	48 V~ / =	1	0 288 33	
1	0 288 57	110 - 130 V~ / =			Padlocks in "open" position Padlocking system for ACB (padlock not supplied)
1	0 288 58	220 - 250 V~ / =	1	0 288 24	Padlock for buttons
1	0 288 59	415 - 480 V~	1	0 288 26	Padlocking system for shutters (padlock not supplied)
		Module for delayed tripping To be used with above undervoltage releases			Equipment for conversion of a fixed device into draw-out device
1	0 288 62	110 V~ / =			Bases for draw-out device
1	0 288 63	230 V~ / =			For DMX ³ /DMX ³ -I frame 2500
		Motor operators To motorize a DMX ³ , it is possible to attach, to the motor operators, a release coil (undervoltage or trip on energising) and a closing coil			For DMX ³ /DMX ³ -I frame 4000
1	0 288 34	24 V~ / =			For DMX ³ /DMX ³ -I frame 6300
1	0 288 35	48 V~ / =			
1	0 288 36	110 - 130 V~ / =			
1	0 288 37	220 - 250 V~ / =			
1	0 288 38	415 - 440 V~			
1	0 288 40	480 V~ / =			
		Closing coils Enables remote closing of the circuit breaker if the closing spring is charged			Transformation kit for draw-out version
1	0 288 41	24 V~ / =			For DMX ³ /DMX ³ -I frame 2500
1	0 288 42	48 V~ / =			For DMX ³ /DMX ³ -I frame 4000
1	0 288 43	110 - 130 V~ / =			For DMX ³ /DMX ³ -I frame 6300
1	0 288 44	220 - 250 V~ / =			
1	0 288 45	415 - 480 V~			
		Signalling contact for auxiliaries Signalling contact for shunt trips, undervoltage releases and closing coils			Accessories
1	0 288 16				Rating mis-insertion device Prevents the insertion of a draw-out circuit breaker in an incompatible base
		Signalling contact for draw-out version Inserted / test / draw-out signalling contact			Operations counter Counts total number of operation cycles of the device
1	0 288 13	3 changeover contacts per position			Contact "ready to close" with charged springs Additional signalling contact Lifting plate

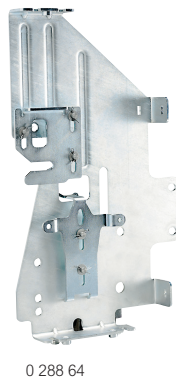
Rear terminals for DMX³ 2500, 4000 and 6300



Dimensions p. 42-46

Pack	Cat.Nos		Rear terminals
1	3P	4P	For DMX³ frame 2500 fixed version For flat connection with bars To be fixed onto horizontal rear terminals of the circuit breaker
	0 288 84	0 288 85	
1	0 288 82	0 288 83	For vertical connection with bars Those terminals are used in order to transform a flat connection into a vertical one To be fixed onto Cat.Nos 0 288 84/85 according to the number of poles
1	0 288 96	0 288 97	For DMX³ frame 2500 draw-out version For vertical or horizontal connection with bars To be fixed onto plate rear terminals of the circuit breaker
1	0 288 92	0 288 93	For DMX³ frame 4000 and 6300 fixed version For flat connection with bars To be fixed onto horizontal rear terminals of the circuit breaker 2 sets are required for frame 6300
1	0 288 94	0 288 95	For DMX³ frame 4000 and 6300 fixed or draw-out version On DMX ³ fixed version: - For vertical connection with bars - To be fixed onto Cat.Nos 0 288 92/93 according to the number of poles On DMX ³ draw-out version: - For vertical or horizontal connection with bars - To be fixed directly onto plate rear terminals of the circuit breaker 2 sets are required for frame 6300
Spreaders for DMX³ frame 2500 fixed version			
1	3P	4P	To be fixed onto horizontal rear terminals of the circuit breaker
	0 288 86	0 288 87	
	0 288 88	0 288 89	
1	0 288 90	0 288 91	For horizontal connection with bars
Insulation shields			
1	3P	4P	For fixed version Insulation shields for DMX ³ /DMX ³ -I frames 2500 / 4000 / 6300
1	0 288 98	0 288 99	
1	0 288 18	0 288 19	For draw-out version Insulation shields for DMX ³ /DMX ³ -I frames 2500 / 4000 / 6300

Equipment for DMX³ 2500, 4000 and 6300 transfer switches



Technical characteristics p. 50

Pack	Cat.Nos	Equipment for transfer switches
		The mechanical interlock is set up using cables and can interlock 2 or 3 devices, which may be different type in a vertical or horizontal configuration The interlock unit is mounted on the right-hand side of the device Cable interlock to be ordered separately (cable length to be specified according to every configuration - see below)
1	0 288 64	Interlock for DMX ³ frame 2500
1	0 288 65	Interlock for DMX ³ frame 4000
1	0 288 66	Interlock for DMX ³ frame 6300
		Cable interlock
		Length
1	0 289 17	1000 mm
1	0 289 18	1500 mm
1	0 289 20	2600 mm
1	0 289 21	3000 mm
1	0 289 22	3600 mm
1	0 289 23	4000 mm
1	0 289 24	4600 mm
1	0 289 25	5600 mm

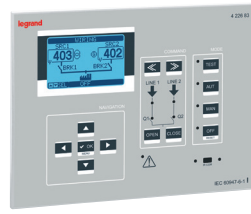
Automatic transfer switch control units



4 226 80



4 226 82 + 4 226 88



4 226 83



4 226 86



4 226 89



Technical characteristics **p. 50**
Configuration software **see e-catalogue**

They can control transfer switching between two sources, manage generator start/stop, control single phase, two-phase and three-phase networks, control phase-phase and phase-neutral voltages
For DPX³ and DMX³ circuit breakers and CTX³ contactors

Pack	Cat.Nos	Automatic transfer switch control units	Pack	Cat.Nos	Dual power supply selector
1	4 226 80	For standard management of 2 circuit breakers 6 programmable digital inputs and 6 programmable relay outputs Digital display Power supply: 12...48 V _{DC} IP54	1	4 226 86	Dual power supply selector measures and controls two supply voltages at its inputs (single phase, 230 V _~) and selects the most adapted voltage for auxiliary circuits supply Equipped with 1 alarm contact, if no supply voltage can be selected within the limits
1	4 226 82 ¹	For advanced management of 2 circuit breakers 6 programmable digital inputs and 7 programmable relay outputs Can be equipped with maximum 2 plug-in modules between: - extension modules Cat.No 4 226 90/91/92 - opto-isolated RS485 communication interface Cat.No 4 226 89 LCD display IR communication port on the front panel for connection of USB or WiFi modules Cat.No 4 226 87/88 Can be configured with the help of front panel touch keys or of the Legrand dedicated software Power supply: 12-24 V _{DC} ; 110-240 V _~ IP40	1		Plug-in modules
			1	4 226 89	Opto-isolated RS485 interface
			1	4 226 90	4 opto-isolated static outputs
			1	4 226 91	2 relay outputs, rated 5 A 250 V _~
			1	4 226 92	2 opto-isolated digital inputs and 2 relay outputs rated 5 A 250 V _~
1	4 226 83 ¹	For advanced management of 3 circuit breakers 8 programmable digital inputs and 7 programmable relay outputs Can be equipped with maximum 3 plug-in extension modules between Cat.No 4 226 90/91/92 Integrated opto-isolated RS485 communication interface LCD display IR communication port on the front panel for connection of USB or WiFi modules Cat.No 4 226 87/88 Can be configured with the help of front panel touch keys or of the Legrand dedicated software Power supply: 12-24-48 V _{DC} ; 110-240 V _~ IP65			Communication accessories
					These communication devices can be used to connect Alptec 8 and Alptec 3.2/5.2/8.2 power factor controllers and automatic transfer switch controllers to a computer; smartphone or tablet For programming, downloading data, diagnostics and upgrading the firmware
			1	4 226 87 ¹	USB front connector Computer connection cable with USB connector The computer identifies the connection as a standard USB connection. There is no need to switch off the controller power supply
			1	4 226 88 ¹	Wi-Fi front connector Wi-Fi connection device compatible with computers, smartphones and tablets There is no need to switch off the controller power supply

¹: Configuration software available for download via E-catalogue



Transfer switching technical guide
available for download on
www.docexport.legrand.com



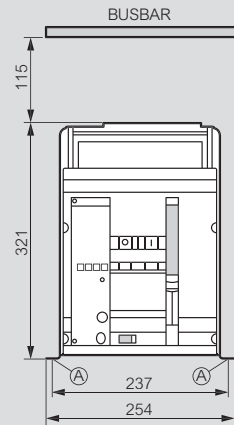
DMX³ 1600 and DMX³-I 1600 - Frame 1600

dimensions

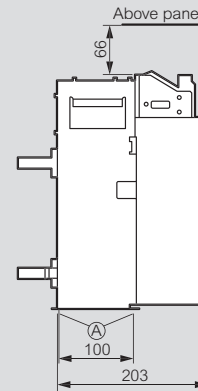
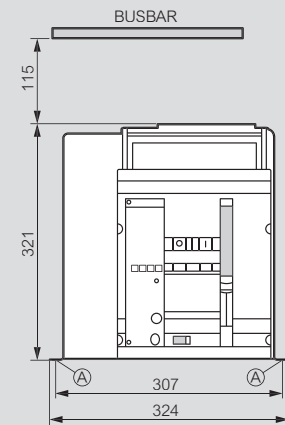
Fixed version

Overall dimensions

3P version



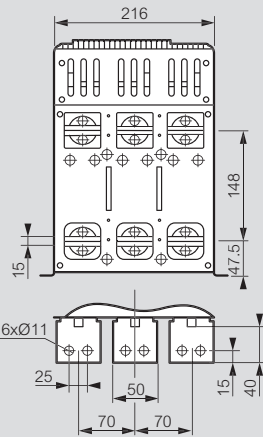
4P version



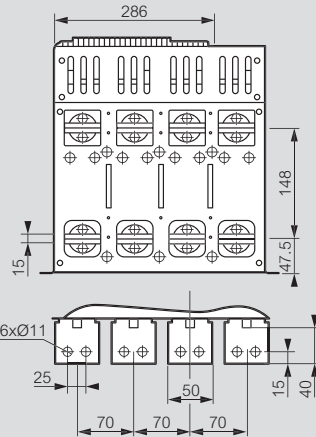
A = fixing point on plate of enclosure

Rear terminals for horizontal connection with bars

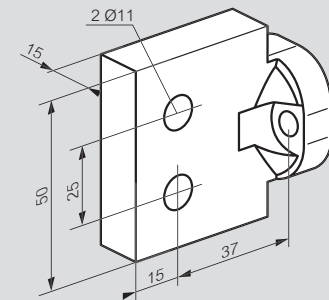
3P version



4P version

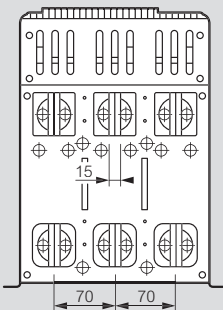


Reversible rear terminals

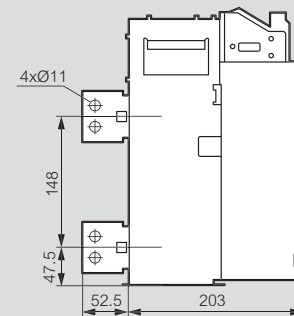
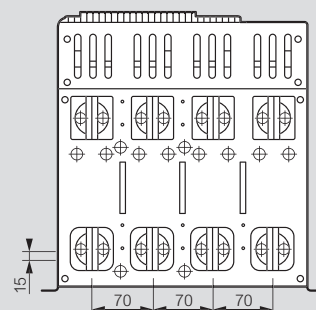


Rear terminals for vertical connection with bars

3P version



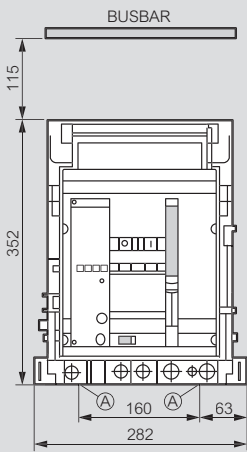
4P version



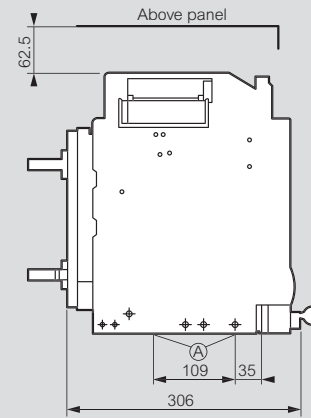
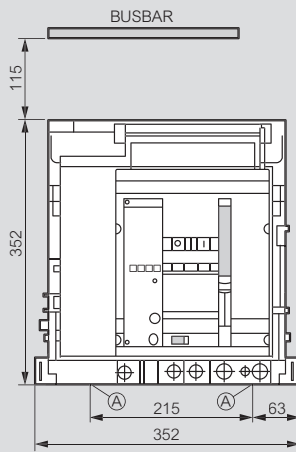
Draw-out version

Overall dimensions

3P version



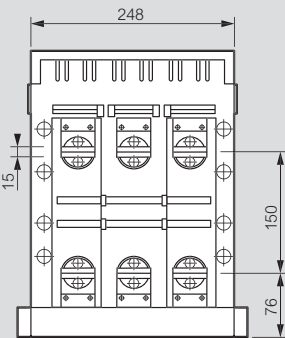
4P version



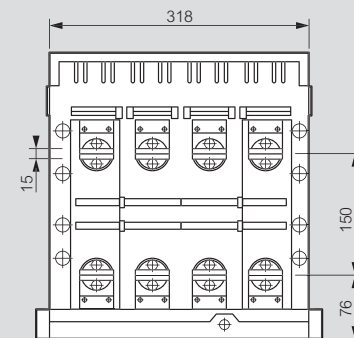
A = fixing point on plate of enclosure

Rear terminals for horizontal connection with bars

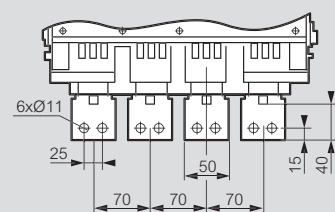
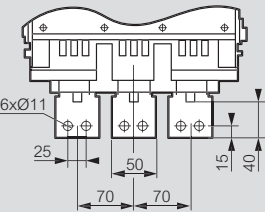
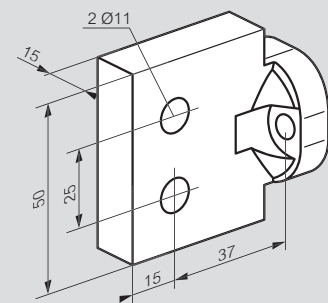
3P version



4P version

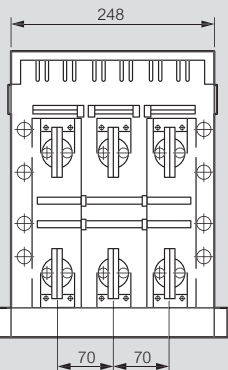


Reversible rear terminals

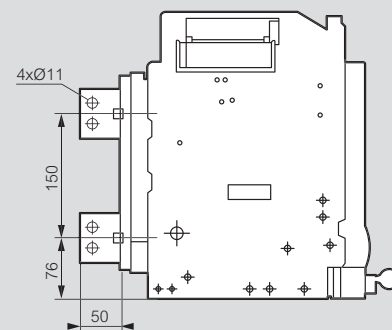
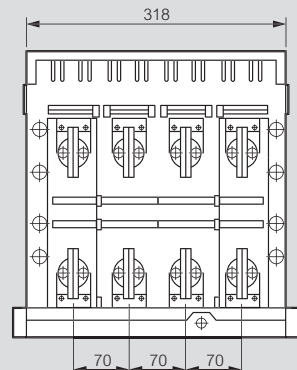


Rear terminals for vertical connection with bars

3P version



4P version



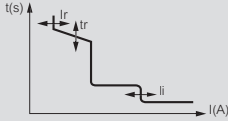
DMX³ 1600

electronic protection units

Settings of the electronic protection units

MP4 LI

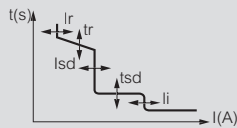
I_r, t_r, I_i adjustment on front panel



- **Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- **Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps)
t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- **Short time delay protection against short-circuits**
Fixed thresholds:
I_{sd} = 10 x I_r
t_{sd} = 1 s
- **Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i = 2-3-4-6-8-10-12-15 x I_n or I_{cw}
- **Neutral protection:** OFF-50%-100%

MP4 LSI

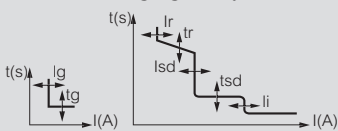
I_r, t_r, I_{sd}, t_{sd}, I_i adjustment on front panel



- **Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- **Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps) t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- **Short time delay protection against short circuits**
I_{sd} from 1.5 to 10 x I_r (9 steps) I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 x I_r
- **Short time delay protection operation time**
t_{sd} = 0.1-0.2-0.5-1 s (t=const),
0.3-0.2-0.1-0.01 s (I²t=const)
- **Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i=off-2-3-4-6-8-10-12-15 x I_n or I_{cw}
- **Neutral protection:** OFF-50%-100%

MP4 LSig

I_r, t_r, I_{sd}, t_{sd}, I_g, t_g, I_i adjustment on front panel



- **Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- **Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps) t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- **Short time delay protection against short circuits**
I_{sd} from 1.5 to 10 x I_r (9 steps) I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 x I_r
- **Short time delay protection operation time**
t_{sd} = 0.1-0.2-0.5-1 s (t=const),
0.3-0.2-0.1-0.01 s (I²t=const)
- **Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i = 2-3-4-6-8-10-12-15 x I_n or I_{cw}
- **Earth fault current**
I_g from 0.2 to 1 x I_n (9 steps) I_g = 0.2-0.3-0.4-0.5-0.6-0.7-0.8-1 x I_n : OFF
t_g from 0.1 + 1 s (4 steps) t_g = 0.1-0.2-0.5-1 s
(both t = const and I²t = const)
- **Neutral protection:** OFF-50%-100%

Selectivity in three-phase network 415 V~

DMX³/DPX³

Downstream	Upstream	DMX ³ 1600				
		630 A	800 A	1000 A	1250 A	1600 A
DPX ³ 160 ⁽¹⁾		T	T	T	T	T
DPX ³ 250 ⁽¹⁾ TM and elec.		T	T	T	T	T
DPX ³ 630 ⁽¹⁾ TM and elec.			T	T	T	T
DPX ³ 1600 ⁽¹⁾ thermal magnetic	630 A		T	T	T	T
	800 A			T	T	T
	1000 A				T	T
	1250 A					T
DPX ³ 1600 ⁽¹⁾ electronic	630 A				T	T
	800 A				T	T
	1000 A					T
	1250 A					T
	1600 A					T

1: All breaking capacities
T: total selectivity, up to downstream circuit breaking capacity according to IEC 60947-2

DMX³/DMX³

Downstream	Upstream	DMX ³ 1600				
		630 A	800 A	1000 A	1250 A	1600 A
DMX ³	630 A		T	T	T	T
	800 A			T	T	T
	1000 A				T	T
	1250 A					T
	1600 A					

T: total selectivity, up to downstream circuit breaking capacity according to IEC 60947-2
I_{cu} of downstream circuit breaker ≤ I_{cu} of upstream circuit breaker
Selectivity values are intended with protection unit properly adjusted

DMX³/DX³

	Upstream	DMX ³ 1600				
		630 A	800 A	1000 A	1250 A	1600 A
DX ³ 6000 - 10 kA		T	T	T	T	T
DX ³ 10000 - 16 kA		T	T	T	T	T
DX ³ 25 kA		T	T	T	T	T
DX ³ 36 kA		T	T	T	T	T
DX ³ 50 kA		T	T	T	T	T

T: total selectivity, up to downstream circuit breaking capacity according to IEC 60947-2
I_{cu} of downstream circuit breaker ≤ I_{cu} of upstream circuit breaker
Selectivity values are intended with protection unit properly adjusted

DMX³ tripping curves
see technical sheet

DMX³ 1600

technical characteristics (continued)

Technical characteristics

DMX³ 1600

DMX ³ according to IEC 60947-2		DMX ³ 1600	
		42 kA	50 kA
Frame current (A)		1600	
Number of poles		3P-4P	
Rating In (A)		630/800/1000/1250/1600	
Rated insulation voltage Ui (V)		1000	
Rated impulse withstand voltage Uimp (kV)		12	
Rated operational voltage (50/60Hz) Ue (V)		690	
Category of use		B	
Ultimate breaking capacity Icu (kA)	220 / 240 V~	42	50
	380 / 415 V~	42	50
	440 / 460 V~	42	50
	480 / 500 V~	42	50
	600 V~	42	42
	690 V~	42	42
Service breaking capacity Ics (% Icu)		100 %	100 %
Short-circuit making capacity Icm (kA)	220 / 240 V~	88	105
	380 / 415 V~	88	105
	440 / 460 V~	88	105
	480 / 500 V~	88	105
	600 V~	88	88
	690 V~	88	88
Short time withstand current Icw (kA) for t = 1s	220 / 240 V~	42	50
	380 / 415 V~	42	50
	440 / 460 V~	42	50
	480 / 500 V~	42	50
	600 V~	42	42
	690 V~	42	42
Magnetic threshold Ii (x In)	Instantaneous releases (2 ÷ 15) & Icw		
Isolation behavior		Yes	
Endurance (cycle)	mechanical without maintenance	5000	
	mechanical with maintenance	10000	
	electrical	1500 at 690 V / 3000 at 415 V	

Temperature derating

Fixed and draw-out version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 1600	630	1	630	1	630	1	630	1	630	1
	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	950	0.95
	1250	1	1250	1	1250	1	1187	0.95	1125	0.9
	1600	1	1600	1	1330	0.83	1280	0.8	1216	0.76

Derating at different altitudes

Air circuit breaker	DMX ³ 1600			
Altitude H (m)	< 2000	3000	4000	5000
Rated current (at 40°C) I _n (A)	I _n	0.93 x I _n	0.88 x I _n	0.82 x I _n
Rated voltage U _e (V)	690	600	500	440
Rated insulation voltage U _i (V)	1000	900	750	600

Minimum recommended dimension of copper busbars per pole

In (A)	Fixed version		Draw-out version	
	Horizontal bars (mm)	Vertical bars (mm)	Horizontal bars (mm)	Vertical bars (mm)
630	2 x 40 x 5	2 x 40 x 5	2 x 40 x 5	2 x 40 x 5
800	2 x 30 x 10	2 x 50 x 5	2 x 50 x 5	2 x 30 x 10
1000	2 x 30 x 10	1 x 60 x 10 / 2 x 60 x 5	2 x 60 x 5	2 x 30 x 10
1250	2 x 40 x 10	1 x 80 x 10 / 2 x 40 x 10	2 x 80 x 5	2 x 40 x 10
1600	2 x 50 x 10	2 x 50 x 10	2 x 50 x 10	2 x 50 x 10

Note: The tables presenting the minimum recommended dimensions of connection plates and bars per pole should be used solely as a general guideline for selecting products. Due to extensive variety of switchgear constructions shapes and conditions that can affect the behavior of the apparatus, the solution used must always be verified

For minimum recommended section of aluminium busbars
Please, consult us

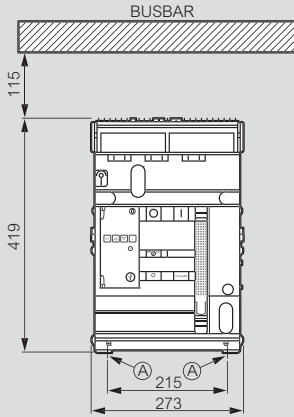
DMX³ 2500 and DMX³-I 2500 - frame 2500

dimensions

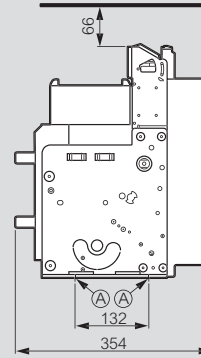
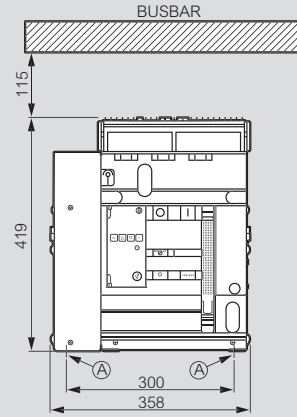
Fixed version - frame 2500

Overall dimensions

3P version

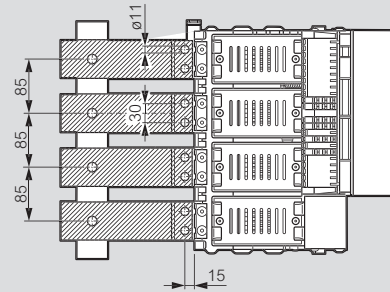
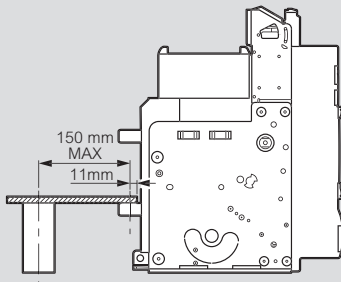


4P version



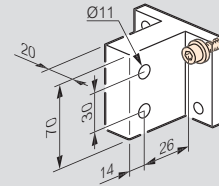
A = fixing point on plate of enclosure

Connection principle



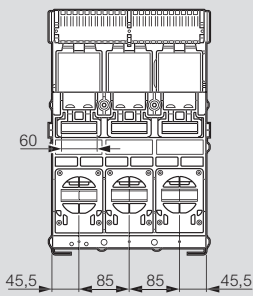
Rear terminals for vertical connection with bars

Cat.Nos 0 288 82/83

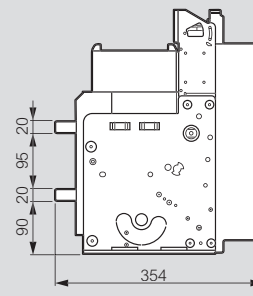
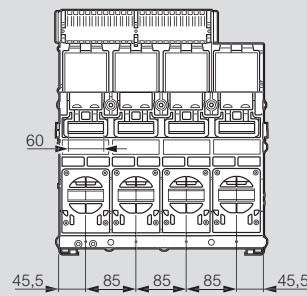


Rear terminals for horizontal connection with bars

3P version

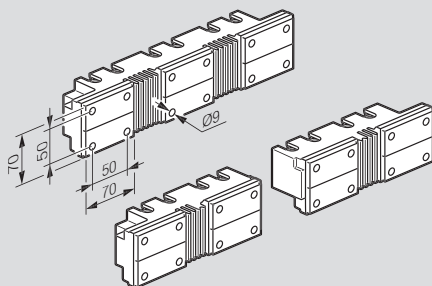


4P version



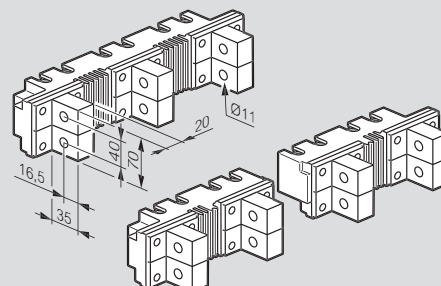
Spreaders for flat connection with bars

Cat.Nos 0 288 86/87



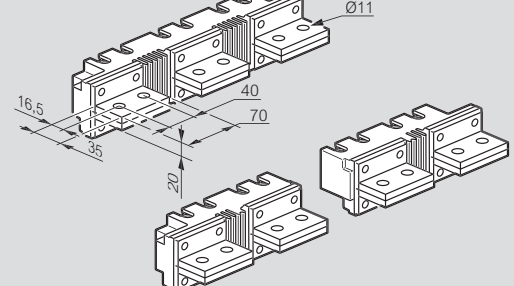
Spreaders for vertical connection with bars

Cat.Nos 0 288 88/89



Spreaders for horizontal connection with bars

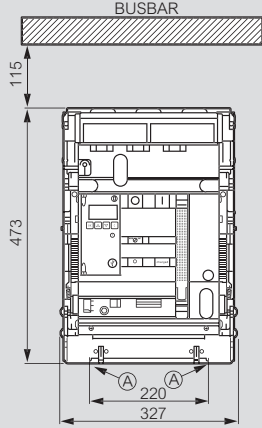
Cat.Nos 0 288 90/91



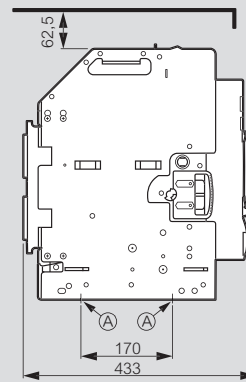
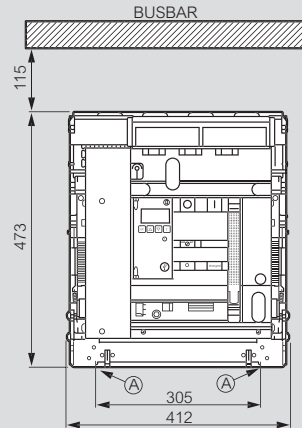
Draw-out version - frame 2500

Overall dimensions

3P version



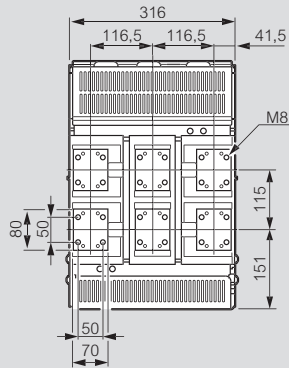
4P version



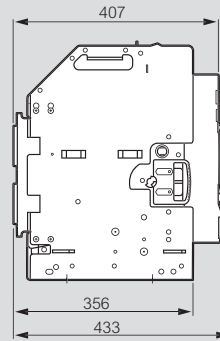
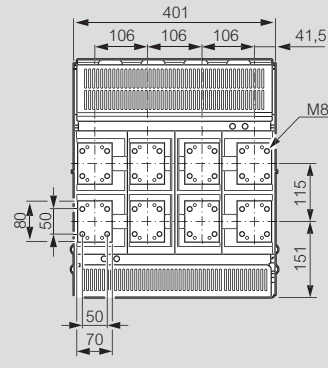
A = fixing point on plate of enclosure

Rear terminals for flat connection with bars

3P version

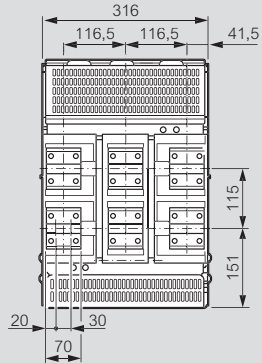


4P version

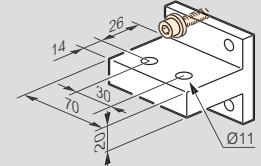
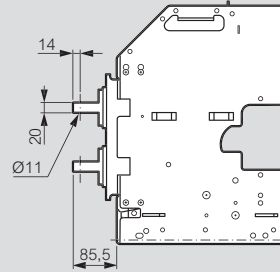
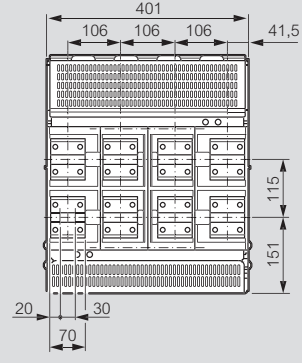


Rear terminals for horizontal connection with bars - Cat.Nos 0 288 96/97

3P version

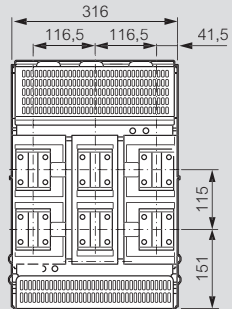


4P version

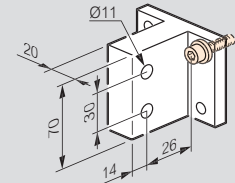
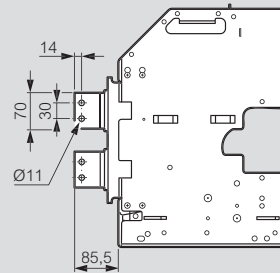
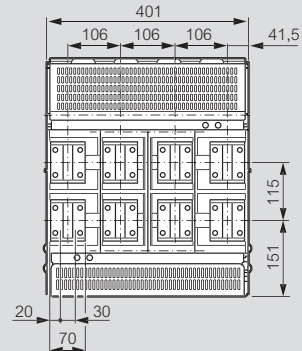


Rear terminals for vertical connection with bars - Cat.Nos 0 288 96/97

3P version



4P version



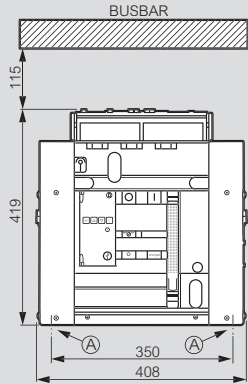
DMX³ 2500, DMX³-I 2500, DMX³ 4000 and DMX³-I 4000 - frame 4000

dimensions

Fixed version - frame 4000

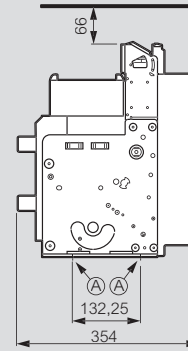
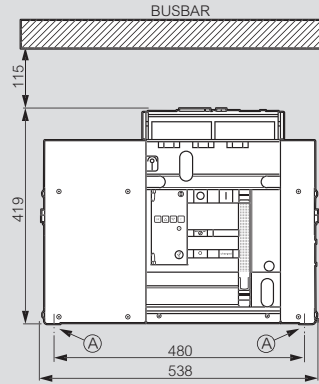
Overall dimensions

3P version

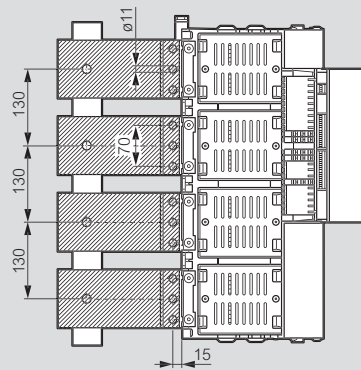
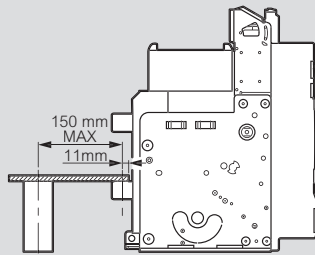


A = fixing point on plate of enclosure

4P version

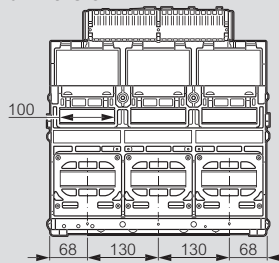


Connection principle

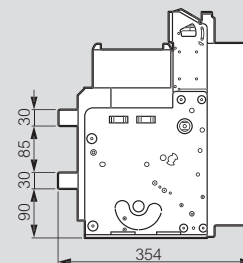
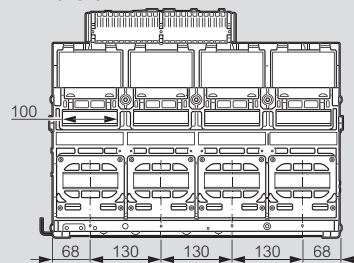


Rear terminals

3P version



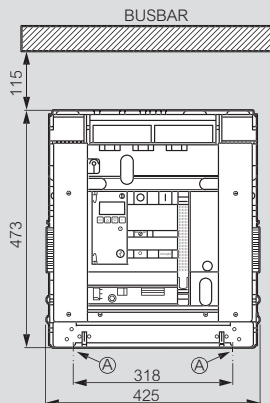
4P version



Draw-out version - frame 4000

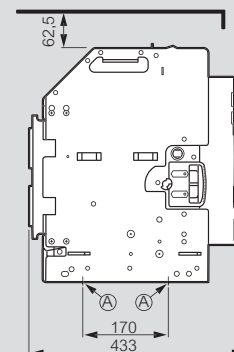
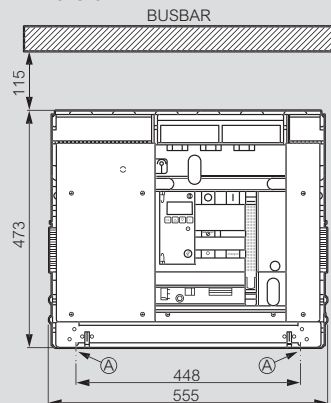
Overall dimensions

3P version



A = fixing point on plate of enclosure

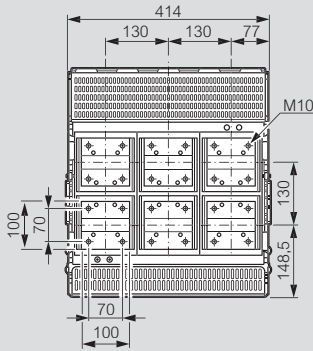
4P version



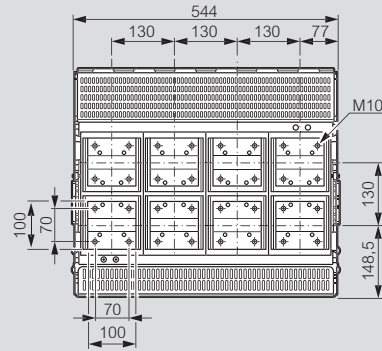
Draw-out version - frame 4000 (continued)

Rear terminals for flat connection with bars

3P version



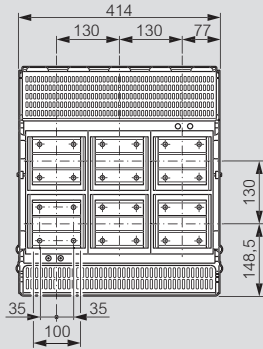
4P version



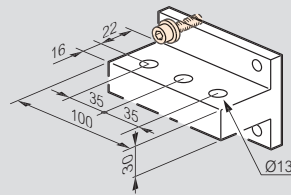
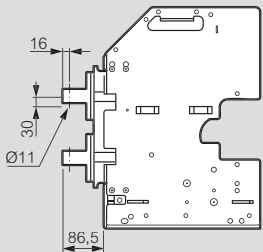
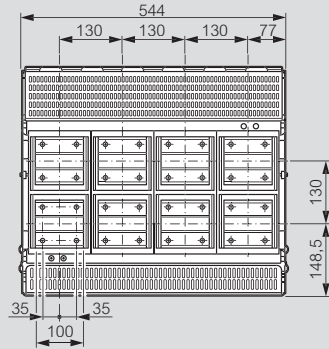
Rear terminals for horizontal connection with bars

Cat.Nos 0 288 92/93

3P version



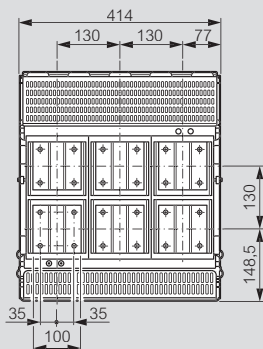
4P version



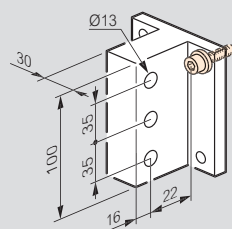
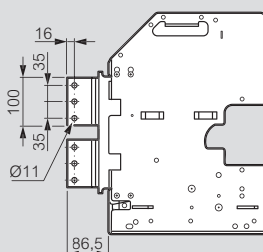
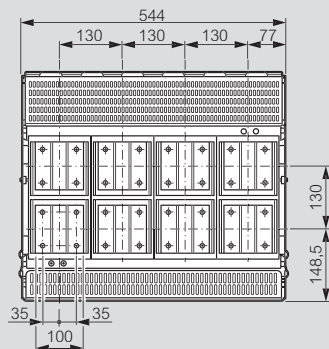
Rear terminals for vertical connection with bars

Cat.Nos 0 288 92/93

3P version



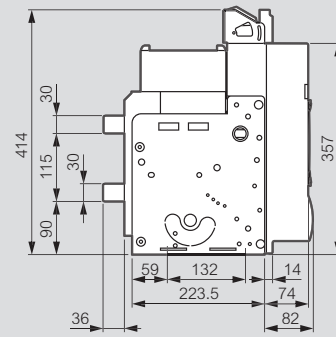
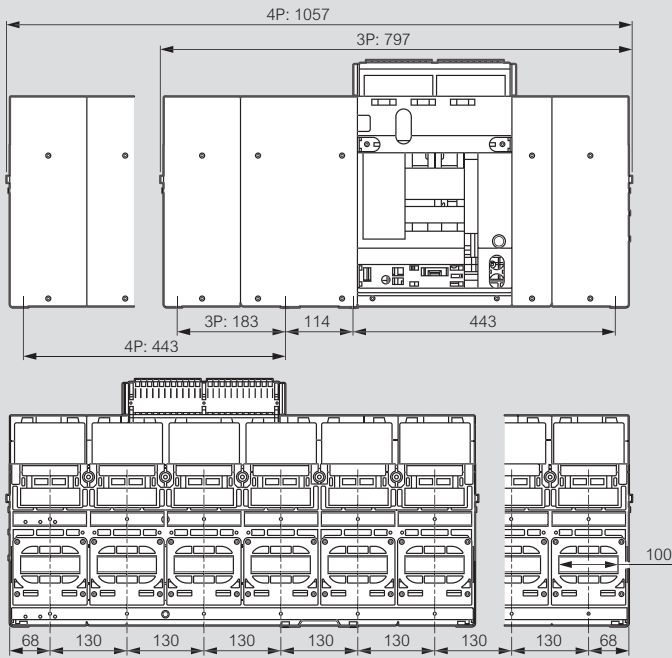
4P version



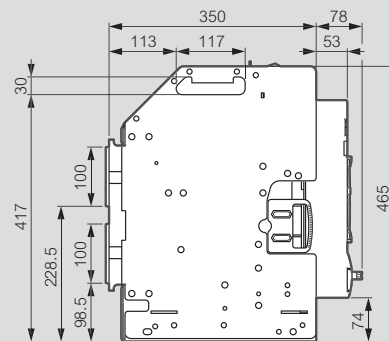
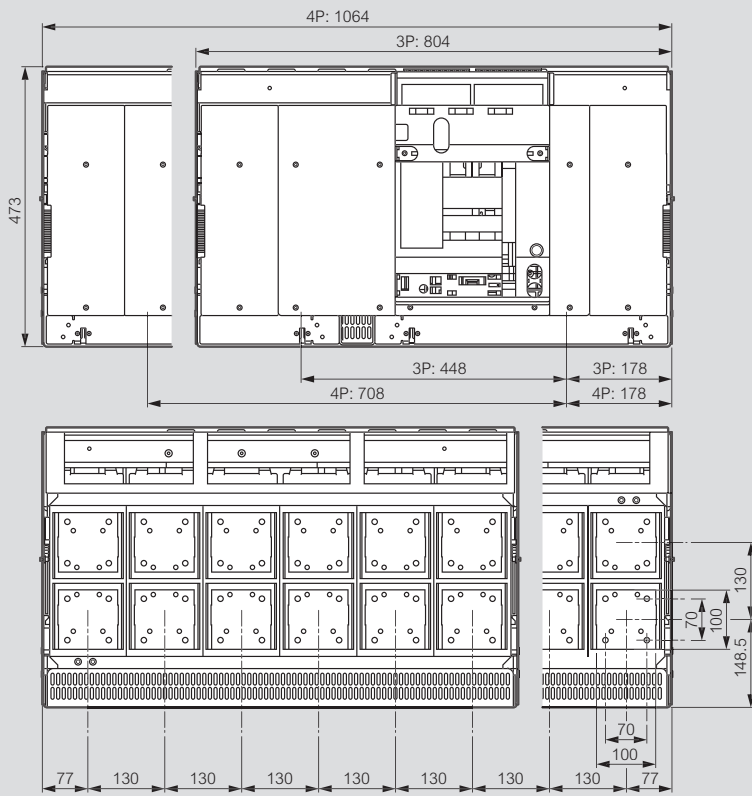
DMX³ 6300 et DMX³-I 6300 - frame 6300

taille 3

Fixed version - frame 6300



Draw-out version - frame 6300



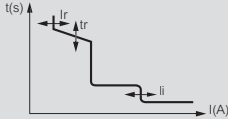
DMX³

electronic protection units

Settings of the electronic protection units

MP4 LI

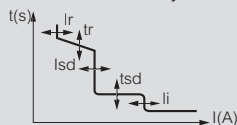
I_r, t_r, I_i, adjustment on front panel



- Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps)
t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- Short delay protection against short-circuits**
Fixed threshold:
I_{sd} = 10 x I_r
t_{sd} = 1 s
- Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i = 2-3-4-5-6-8-10-12-15 x I_n or I_{cw}
- Neutral protection:** I_n = OFF - 50% - 100% - 100%

MP4 LSI

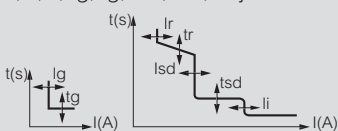
I_r, t_r, I_{sd}, t_{sd}, I_i adjustment on front panel



- Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps) t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- Short time delay protection against short circuits**
I_{sd} from 1.5 to 10 x I_r (9 steps) I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 x I_r
- Short time delay protection operation time**
t_{sd} from 0 to 0.3 s (4 + 4 steps) t_{sd} = 0-0.1-0.2-0.3 s (t=cost), 0.3-0.2-0.1-0.01 s (I²t=cost)
- Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i=off-2-3-4-6-8-10-12-15 x I_n or I_{cw}
- Neutral protection:** I_n = OFF - 50% - 100% - 100%

MP4 LSIg

I_r, t_r, I_i, I_g, t_g, I_{sd}, t_{sd}, adjustment on front panel



- Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps) t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- Short time delay protection against short circuits**
I_{sd} from 1.5 to 10 x I_r (9 steps) I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 x I_r
- Short time delay protection operation time**
t_{sd} from 0 to 0.3 s (4 + 4 steps) t_{sd} = 0-0.1-0.2-0.3 s (t=const), 0.3-0.2-0.1-0.001 s (I²t=const)
- Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i = 2-3-4-6-8-10-12-15 x I_n or I_{cw}
- Earth fault current**
I_g from 0.2 to 1 x I_n (9 steps) I_g = 0.2-0.3-0.5-0.6-0.7-0.8-1 x I_n : OFF
t_g from 0.1 + 1 s (4 steps) t_g = 0.1-0.2-0.5-1 s (both t = const and I²t = const)
- Neutral protection:** I_n = OFF - 50% - 100% - 100%

Selectivity in three-phase network 415 V~

DMX³/DPX³

Downstream	Upstream	DMX ³ 2500				DMX ³ 4000	DMX ³ 6300
		800 A	1000 A	1250 A	1600 A	2000 & 2500 A	3200 & 4000 A
DPX ³ 160 ⁽¹⁾		T	T	T	T	T	T
DPX ³ 250 ⁽¹⁾		T	T	T	T	T	T
DPX ³ 630 ⁽¹⁾ TM and elec.		T	T	T	T	T	T
	630 A	T	T	T	T	T	T
	800 A		T	T	T	T	T
DPX ³ 1600 ⁽¹⁾ thermal magnetic				T	T	T	T
	800 A			T	T	T	T
	1000 A			T	T	T	T
DPX ³ 1600 ⁽¹⁾ electronic					T	T	T
	630 A			T	T	T	T
	800 A			T	T	T	T
DPX ³ 1600 ⁽¹⁾ electronic					T	T	T
	1000 A				T	T	T
	1250 A				T	T	T
DPX ³ 1600 ⁽¹⁾ electronic						T	T
	630 A					T	T
	800 A					T	T
DPX ³ 1600 ⁽¹⁾ electronic							T
	1000 A						T
	1250 A						T
DPX ³ 1600 ⁽¹⁾ electronic							
	630 A						
	800 A						

1: All breaking capacities
T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2

DMX³/DMX³

Downstream	Upstream	DMX ³									
		800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
DMX ³	800 A		T	T	T	T	T	T	T	T	T
	1000 A			T	T	T	T	T	T	T	T
	1250 A				T	T	T	T	T	T	T
	1600 A					T	T	T	T	T	T
DMX ³	2000 A					T	T	T	T	T	T
	2500 A						T	T	T	T	T
	3200 A							T	T	T	T
	4000 A								T	T	T
	5000 A									T	T
6300 A										T	T

T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2
I_{cu} of downstream circuit breaker ≤ I_{cu} of upstream circuit breaker
Selectivity values are intended with protection unit properly adjusted

DMX³/DX³

	DMX ³ 2500						DMX ³ 4000		DMX ³ 6300		
	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
DX ³ 6000 - 10 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 10000 - 16 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 25 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 36 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 50 kA	T	T	T	T	T	T	T	T	T	T	T

T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2

DMX³ tripping curves, see technical sheet

For the settings of MP6 protection units Please, consult us

Technical characteristics

DMX³ 2500

DMX ³ according to IEC 60947-2	DMX ³ 2500																		
	800			1000			1250			1600			2000			2500			
	N	H	L	N	H	L	N	H	L	N	H	L	N	H	L	N	H	L	
Number of poles	3P - 4P			3P - 4P			3P - 4P			3P - 4P			3P - 4P			3P - 4P			
Rating In (A)	800			1000			1250			1600			2000			2500			
Rated insulation voltage Ui (V)	1000			1000			1000			1000			1000			1000			
Rated impulse withstand voltage Uimp (kV)	12			12			12			12			12			12			
Rated operational voltage (50/60Hz) Ue (V)	690			690			690			690			690			690			
Frame	2500		4000	2500		4000	2500		4000	2500		4000	2500		4000	2500		4000	
Ultimate breaking capacity Icu (kA)	230 V~	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	415 V~	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	500 V~	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	600 V~	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75
	690 V~	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65
Service breaking capacity Ics (% Icu)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Short-circuit making capacity Icm (kA)	230 V~	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	415 V~	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	500 V~	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	600 V~	105	132	165	105	132	165	105	132	165	105	132	165	105	132	165	105	132	165
	690 V~	105	121	143	105	121	143	105	121	143	105	121	143	105	121	143	105	121	143
Short time withstand current Icw (kA) for t = 1s	230 V~	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	415 V~	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	500 V~	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	600 V~	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75
	690 V~	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65
Category of use	B			B			B			B			B			B			
Isolation behavior	Yes			Yes			Yes			Yes			Yes			Yes			
Endurance (cycles) without maintenance	mechanical	10000			10000			10000			10000			10000			10000		
	electrical	5000			5000			5000			5000			5000			5000		

DMX³ 4000

DMX ³ according to IEC 60947-2	DMX ³ 4000						
	3200			4000			
	N	H	L	N	H	L	
Number of poles	3P - 4P			3P - 4P			
Rating In (A)	3200			4000			
Rated insulation voltage Ui (V)	1000			1000			
Rated impulse withstand voltage Uimp (kV)	12			12			
Rated operational voltage (50/60Hz) Ue (V)	690			690			
Frame	4000			4000			
Ultimate breaking capacity Icu (kA)	230 V~	50	65	100	50	65	100
	415 V~	50	65	100	50	65	100
	500 V~	50	65	100	50	65	100
	600 V~	50	60	75	50	60	75
	690 V~	50	55	65	50	55	65
Service breaking capacity Ics (% Icu)	100	100	100	100	100	100	
Short-circuit making capacity Icm (kA)	230 V~	105	143	220	105	143	220
	415 V~	105	143	220	105	143	220
	500 V~	105	143	220	105	143	220
	600 V~	105	132	165	105	132	165
	690 V~	105	121	143	105	121	143
Short time withstand current Icw (kA) for t = 1s	230 V~	50	65	85	50	65	85
	415 V~	50	65	85	50	65	85
	500 V~	50	65	85	50	65	85
	600 V~	50	60	75	50	60	75
	690 V~	50	55	65	50	55	65
Category of use	B			B			
Isolation behavior	Yes			Yes			
Endurance (cycles) without maintenance	mechanical	10000			10000		
	electrical	5000			5000		

DMX³ 6300

DMX ³ according to IEC 60947-2	DMX ³ 6300		
	5000	6300	
	L	L	
Number of poles	3P - 4P	3P - 4P	
Rating In (A)	5000	5000	
Rated insulation voltage Ui (V)	1000	1000	
Rated impulse withstand voltage Uimp (kV)	12	12	
Rated operational voltage (50/60Hz) Ue (V)	690	690	
Frame	6300	6300	
Ultimate breaking capacity Icu (kA)	230 V~	100	100
	415 V~	100	100
	500 V~	100	100
	600 V~	75	75
	690 V~	65	65
Service breaking capacity Ics (% Icu)	100	100	
Short-circuit making capacity Icm (kA)	230 V~	220	220
	415 V~	220	220
	500 V~	220	220
	600 V~	165	165
	690 V~	143	143
Short time withstand current Icw (kA) for t = 1s	230 V~	100	100
	415 V~	100	100
	500 V~	100	100
	600 V~	75	75
	690 V~	65	65
Category of use	B	B	
Isolation behavior	Yes	Yes	
Endurance (cycles)	mechanical	5000	5000
	electrical	2500	2500

Temperature derating

Fixed version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 2500	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1880	0.94
DMX ³ 4000	2500	1	2500	1	2350	0.94	2250	0.9	2150	0.86
	3200	1	3200	1	3200	1	3136	0.98	3008	0.94
DMX ³ 6300	4000	1	4000	1	3680	0.92	3440	0.86	3120	0.78
	5000	1	5000	1	5000	1	5000	1	5000	1
	6300	1	6300	1	6048	0.96	5796	0.92	5544	0.88

Draw-out version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 2500	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1875	0.94
DMX ³ 4000	2500	1	2500	1	2250	0.9	2100	0.84	1950	0.78
	3200	1	3200	1	3200	1	3072	0.96	2880	0.9
DMX ³ 6300	4000	1	4000	1	3440	0.86	3200	0.8	2960	0.74
	5000	1	5000	1	5000	1	5000	1	5000	1
	6300	1	6300	1	5985	0.95	5796	0.92	5292	0.84

Derating at different altitudes

Air circuit breaker	DMX ³ 2500, DMX ³ 4000 and DMX ³ 6300			
Altitude H (m)	< 2000	3000	4000	5000
Rated current (at 40°C) I _n (A)	I _n	0.98 x I _n	0.94 x I _n	0.90 x I _n
Rated voltage U _e (V)	690	600	500	440
Rated insulation voltage U _i (V)	1000	900	750	600

Minimum recommended dimension of copper busbars per pole

Frame 2500 - fixed and draw-out versions

I _n (A)	Vertical bars (mm)	Horizontal bars (mm)
630	50 x 10	60 x 10
800	60 x 10	60 x 10
1000	80 x 10	80 x 10
1250	80 x 10	2 x 60 x 10
1600	2 x 60 x 10	2 x 80 x 10
2000	2 x 80 x 10	3 x 80 x 10
2500	3 x 80 x 10	3 x 80 x 10

Frame 6300 - fixed and draw-out versions

I _n (A)	Vertical bars (mm)	Horizontal bars (mm)
5000	6 x 100 x 10	6 x 100 x 10
6300	7 x 100 x 10	7 x 100 x 10

Note: The tables presenting the minimum recommended dimensions of connection plates and bars per pole should be used solely as a general guideline for selecting products. Due to extensive variety of switchgear constructions shapes and conditions that can affect the behavior of the apparatus, the solution used must always be verified

Frame 4000 - fixed and draw-out versions

I _n (A)	Vertical bars (mm)	Horizontal bars (mm)
630	1 x 40 x 10 or 2 x 40 x 5	2 x 40 x 5
800	1 x 50 x 10 or 2 x 50 x 5	2 x 50 x 5
1000	1 x 50 x 10 or 2 x 50 x 5	2 x 50 x 5
1250	2 x 50 x 5	1 x 50 x 10 + 1 x 50 x 5
1600	1 x 50 x 10 + 1 x 50 x 5	2 x 50 x 10
2000	2 x 50 x 10	2 x 60 x 10
2500	3 x 50 x 10	3 x 60 x 10
3200	3 x 100 x 10	3 x 100 x 10
4000	4 x 100 x 10	5 x 100 x 10

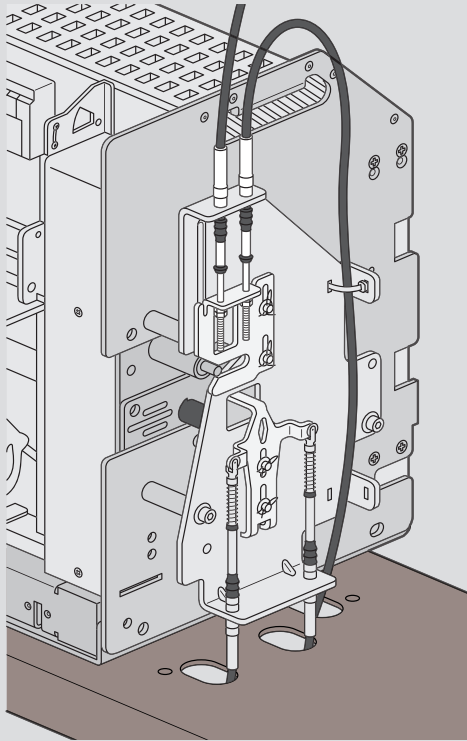


For minimum recommended dimensions of aluminium busbars
Please, consult us

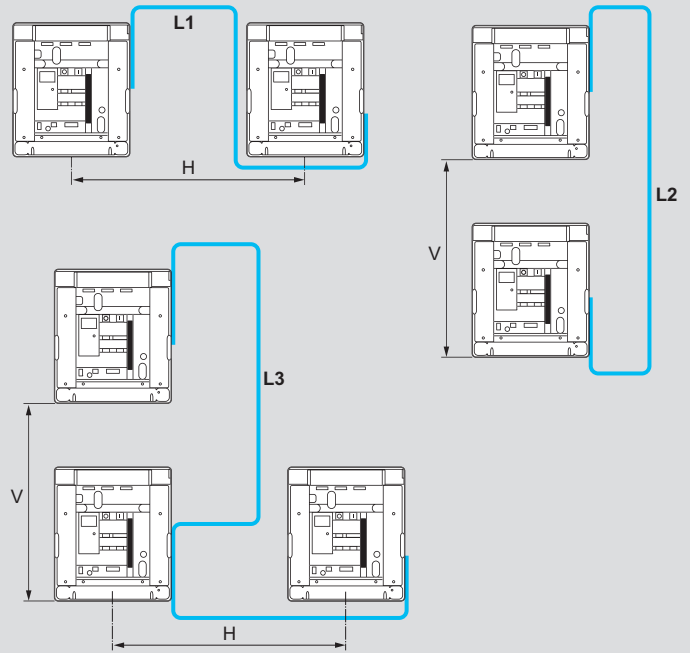
Supply invertors equipment for DMX³ 2500, 4000 and 6300

installation principle

■ Mounting of interlock unit



■ Choice of cable interlock



Calculation of cable length:
 $L1 = 1430 + H$
 $L2 = 1570 + V$
 $L3 = 1430 + V + H$

Automation control units for transfer switches

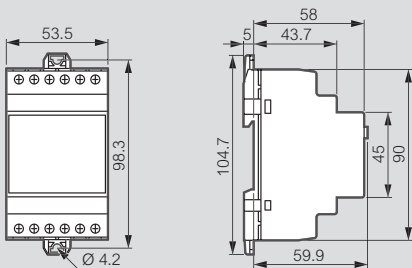
technical characteristics and dimensions

Technical characteristics

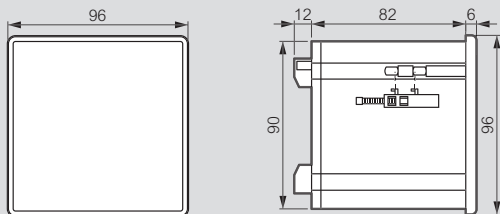
		Cat.Nos		
		4 226 80	4 226 82	4 226 83
Voltage Inputs	Ue max rated voltage	480 V~ L-L (277 V~ L-N)	100-480 V~	600 V~ L-L (346 V~ L-N)
	Measuring range	50-576 V~ (L-L)	50-576 V~ L-L	50...720 V L-L
	Primary voltage VT max	-	50000 V	50000 V
	Frequency range	45...66 Hz	45...65 Hz - 360...440 Hz	45...65 Hz - 360...440 Hz
	Measurement type	True RMS value	True RMS value	True RMS value
	Connection modes	Single phase, two-phase or three-phase system	Single phase, two-phase or three-phase system with or without neutral	Single phase, two-phase or three-phase system with or without neutral
	Measuring error	± 0.25% f.s. ± 1 digit	± 0.25% f.s. ± 1 digit	± 0.25% f.s. ± 1 digit
Ambient condition	Operating temperature	-20...+60 °C	-30...+70 °C	-30...+70 °C
	Storage temperature	-30...+80 °C	-30...+80 °C	-30...+80 °C
	Relativity humidity	< 90 %	80 % (IEC/EN 60068-2-78)	80 % (IEC/EN 60068-2-78)
	Maximum pollution degree	3	2	2
	Overtoltage category	3	3	3
	Measurement category	III	III	III
	Rated impulse withstand voltage	Uimp 4.0 kV	Uimp 7.3 kV	Uimp 7.3 kV

Dimensions

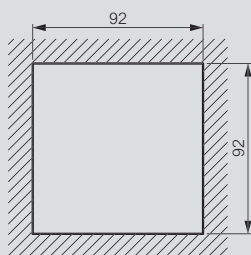
Cat.No 4 226 86



Cat.No 4 226 80

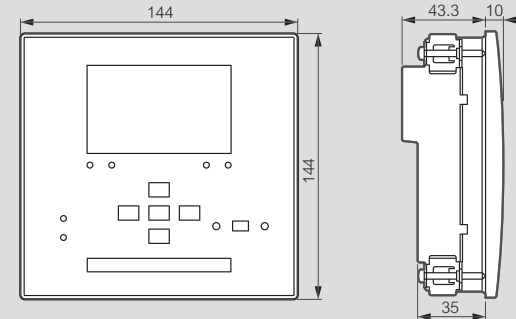


Door cut

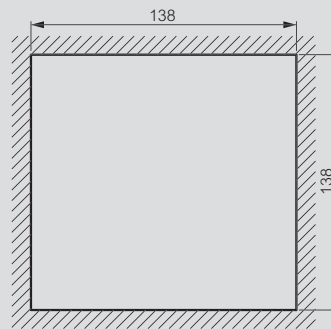


Dimensions (continued)

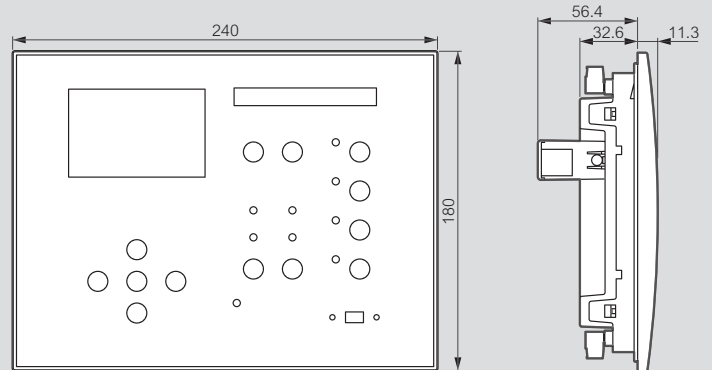
Cat.No 4 226 82



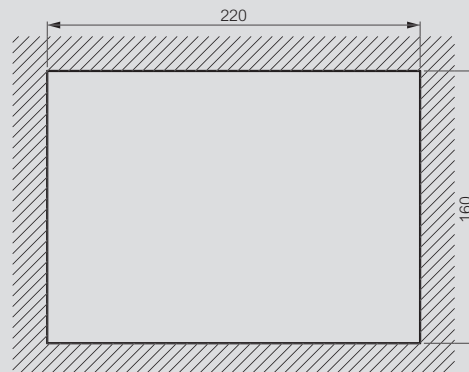
Door cut



Cat.No 4 226 83



Door cut



Catalogue number index

Cat.Nos	Page N°	Pack	Cat.Nos	Page N°	Pack	Cat.Nos	Page N°	Pack	Cat.Nos	Page N°	Pack	Cat.Nos	Page N°	Pack	Cat.Nos	Page N°	Pack
0 280 00			0 281 26	30	1	0 286 33	32	1	0 287 34	32	1	0 288 15	35	1	0 289 00		
0 280 00	28	1	27	-	1	34	-	1	35	-	1	16	-	1	0 289 02	35	1
01	-	1	28	-	1	35	-	1	36	-	1	18	36	1	03	-	1
02	-	1	29	-	1	36	-	1	37	-	1	19	-	1	04	-	1
03	-	1	30	-	1	37	-	1	38	-	1	20	35	1	05	-	1
04	-	1	31	-	1	38	-	1	41	-	1	21	-	1	09	-	1
06	-	1	32	-	1	41	-	1	42	-	1	23	-	1	10	-	1
07	-	1	33	-	1	42	-	1	43	-	1	24	-	1	11	-	1
08	-	1	34	-	1	43	-	1	44	-	1	25	-	1	12	-	1
09	-	1	35	-	1	44	-	1	45	-	1	26	-	1	13	-	1
10	-	1	36	-	1	45	-	1	46	-	1	28	-	1	14	-	1
24	-	1	37	-	1	46	-	1	47	-	1	29	-	1	15	-	1
25	-	1	38	-	1	47	-	1	48	-	1	30	-	1	16	-	1
26	-	1	39	-	1	48	-	1	51	-	1	31	-	1	17	31	1
27	-	1	40	-	1	51	-	1	52	-	1	32	-	1	17	36	1
28	-	1	47	-	1	52	-	1	53	-	1	33	-	1	18	31	1
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35	30	1	53	28	1	58	-	1	61	-	1	40	-	1	22	31	1
41	-	1	54	-	1	61	-	1	62	-	1	41	-	1	22	36	1
47	29	1	55	30	1	62	-	1	63	-	1	42	-	1	23	31	1
50	-	1	56	-	1	63	-	1	64	-	1	43	-	1	23	36	1
51	-	1	57	-	1	64	-	1	65	-	1	44	-	1	24	31	1
52	-	1	58	-	1	65	-	1	66	-	1	45	-	1	24	36	1
53	-	1	59	-	1	66	-	1	67	-	1	48	-	1	25	31	1
56	-	1	60	-	1	67	-	1	68	-	1	49	-	1	25	36	1
57	-	1	64	28	1	68	-	1	71	-	1	50	-	1	50	33	1
58	-	1	65	-	1	71	-	1	72	-	1	51	-	1	51	-	1
59	-	1	66	-	1	72	-	1	73	-	1	52	-	1	52	-	1
65	-	1	70	-	1	73	-	1	74	-	1	55	-	1	53	-	1
71	28	1	71	-	1	74	-	1	75	-	1	56	-	1	60	-	1
72	-	1	72	-	1	75	-	1	76	-	1	57	-	1	61	-	1
73	-	1	73	30	1	76	-	1	77	-	1	58	-	1	62	-	1
74	-	1	74	-	1	77	-	1	78	-	1	59	-	1	63	-	1
75	-	1	75	-	1	78	-	1	83	34	1	62	30	1	70	34	1
76	-	1	77	-	1	83	34	1	84	-	1	62	35	1	71	-	1
77	-	1	78	-	1	84	-	1	85	-	1	63	30	1	77	-	1
78	-	1	79	-	1	85	-	1	86	-	1	63	35	1	78	-	1
79	-	1	80	-	1	86	-	1	87	-	1	64	36	1	4 226 00		
80	-	1	81	-	1	87	-	1	88	-	1	65	36	1	4 226 80	37	1
81	-	1	82	-	1	88	-	1	93	-	1	66	-	1	82	-	1
82	-	1	83	-	1	93	-	1	94	-	1	79	35	1	83	-	1
83	-	1	84	-	1	94	-	1	95	-	1	82	36	1	86	-	1
84	-	1	87	-	1	95	-	1	96	-	1	83	-	1	87	-	1
85	-	1	88	-	1	96	-	1	97	-	1	84	-	1	88	-	1
86	-	1	89	-	1	97	-	1	98	-	1	85	-	1	89	-	1
87	-	1	89	30	1	98	-	1	0 288 00			86	-	1	90	-	1
88	-	1	90	31	1	0 287 00			0 288 00	33	1	87	-	1	91	-	1
89	-	1	99	28	1	0 287 21	32	1	01	-	1	88	-	1	92	-	1
90	-	1	0 286 00			22	-	1	02	-	1	89	-	1	93	-	1
91	29	1	0 286 21	32	1	23	-	1	03	-	1	89	-	1	94	-	1
92	-	1	22	-	1	24	-	1	04	-	1	90	-	1	95	-	1
0 281 00			23	-	1	25	-	1	05	-	1	91	-	1	96	-	1
0 281 20	30	1	24	-	1	26	-	1	06	-	1	92	-	1	97	-	1
21	-	1	25	-	1	27	-	1	10	-	1	93	-	1	98	-	1
22	-	1	26	-	1	28	-	1	11	-	1	94	-	1	99	-	1
23	-	1	27	-	1	31	-	1	12	-	1	95	-	1	<p>In accordance with its policy of continuous improvement, the Company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in this catalogue are for guidance and cannot be held binding on the Company.</p>		
24	-	1	28	-	1	32	-	1	13	35	1	96	-	1			
			31	-	1	33	-	1	14	-	1	97	-	1			



Notes





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