Medium Voltage Distribution

PIX

Up to 24 kV
Metal-clad switchgear
Vacuum version

Catalogue
2011

Schneider Electric

Delivery conditions
The General Conditions of Delivery as amended shall apply.
Illustrations
The illustrations are not binding.

Contents

Introduction

Safe operation with the panels and doors closed

The PIX system has been designed in accordance with international (IEC) standards, and gives an optimal solution to satisfy the requirements for MV electrical networks, in:

- Power stations
- HV/MV & MV/MV substations
- Industry
- Infrastructure
- Marine

PIX is available in a wide range of ratings:

- Rated Voltages: 12 kV, 17.5 kV, 24 kV.
- Rated current: up to 4000 A
- Rated short time withstand current up to 40 kA
- Rated peak withstand current up to 100 kA.

The indoor metal-clad PIX system is internal arc resistant and fitted with a withdrawable module which can be isolated with the door closed. The units are of a robust prefabricated construction using galvanised materials giving high corrosion resistance.

The front and end panels are painted in light beige colour (RAL 9001) with operating areas in blue (RAL 5023) and yellow for earthing switch operation.

The PIX system offers you the choice of two switching technologies, SF_6 & vacuum, for both circuit breakers and contactors.
PIX cubicles incorporate all necessary user-friendly, Schneider Electric digital control and protection relays for flexible system configuration, based on customer requirements.

Standard Schneider Electric solution for fully integrated, digital control + monitoring (DCX) or one box for protection and control can be used.

PIX, with these features, meets user requirements in the fields of:

- Personnel safety
- Easy operation and maintenance
- Easy installation and access.

Our development has been driven by these criterias, to design a PIX system incorporating the following features:

- Personal safety
- All operations are carried out with the panels and doors closed.
- The earthing switch, with its faults-making capability, is visible through an inspection window.
- Operation of the earthing switch uses an anti-reflex system.
- The electrical interlocks of the DCX in conjunction with the mechanical locking devices prevent ensafe operation.
- PIX gives an effective internal arc withstand, tested in accordance with the recommendations of IEC 60298, Appendix AA, Criteria 1 to 6, Class A.
- Over-pressure release is at the top of the unit.
- Metallic shutters closed when withdrawable module is in the disconnected position or removed.
- Cable voltage indication.

Introduction (contd.)

Easy operation and maintenance

■ Operation is simple and logical, with clear status indicators for all functions.
■ Manual or electrical control
■ The use of digital control and protection equipment with selftesting and monitoring procedures.

Easy installation and access

■ PIX was designed to minimize the space required, with access to all compartments via the front panel.
■ Can be installed against a wall.
■ Connection of the cables via the front is made easier by removing the separating plate between the cable and apparatus compartments. Optionally, the rear panel can be made removable.
■ Rigid, self-supporting construction.

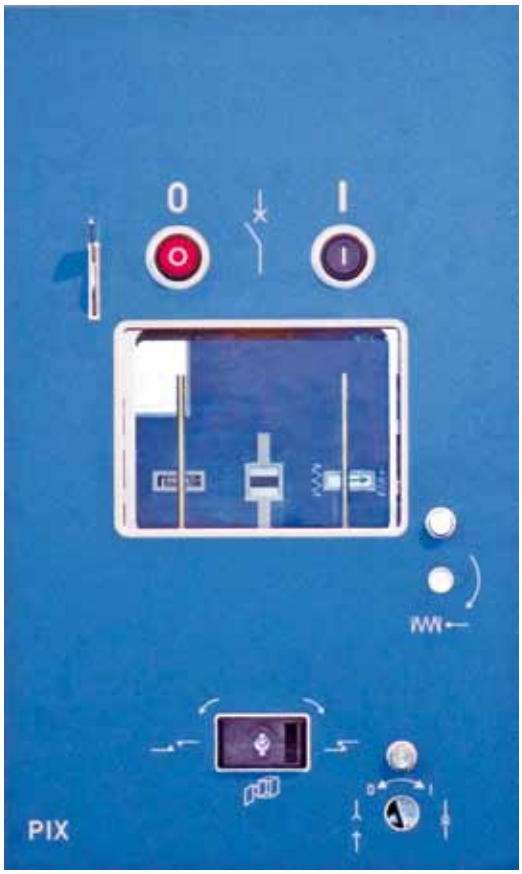
Environment

PIX system has been conceived with due consideration of its impact on the environment:

■ In a factory certified to ISO 14001

■ With a construction allowing maximum recyclable components at the end of product life.

Product description



Operating panel

The PIX metal-clad switchboards are extensible on both sides and consist of modular functional units, linked by a busbar, and connected to the substation earth via an earthing bus.

The cubicles are subdivided by metal partitions into four separate compartments, including a low voltage compartment for the control and monitoring equipment.

The three Medium Voltage compartments; bus bar, equipment & cables, are fitted with an overpressure release system, oriented towards the top of the unit inside of cubicle volume.

The fused switch-disconnectors are fixed type in the compartimented unit.

Main module compartment

Closed off by a door, this compartment contains:

■ A withdrawable module, fitted with a circuit breaker or contactor, which has two positions, “plugged in” or “disconnected/test”.

All operations of the withdrawable module and its associated equipment can be carried out with the compartment door closed.

For modules fitted with vacuum circuit breakers, the movement can be motorised.

Withdrawable modules of the same type are interchangeable.

The connection between the withdrawable module, the busbar and the cable branches is made by means of withdrawable silver plated contacts.

A 64-pin plug (Max.) connects the auxiliary circuits of the withdrawable module to the low voltage compartment.

■ For personnel safety, there are metallic shutters (1), installed in front of the spouts of the fixed “plug-in” contacts (2), which prevent access to the primary circuit, thus ensuring a protection when the withdrawable module is either in the “disconnected/test” position or removed from the compartment.

Main module compartment.

Once the withdrawable module has been removed, each shutter can be padlocked individually.

With the interlocking shutters option, the independant opening of the upper or lower shutter is only possible using a special tool (optionally supplied).

■ An earthing device for the removable module, to the IEC standards, ensures earthing continuity during removal, either through rullers or through an optional plug.

An inspection window on the door, allows the position of the withdrawable module to be clearly seen within the compartment. Its position is also shown on the mimic diagram on the DCX control unit.

The PIX system also offers, amongst the range of withdrawable modules, the functions of disconnecting link, voltage transformers and busbar earthing switch.

This compartment is fitted with mechanical locking devices in accordance with IEC standards, which are necessary to avoid any unsafe operations.

(For details, see the chapter on locks).

Product description (contd.)

HVX compartment without insulating protection plate

Cable connection compartment

Cable compartment

Normally closed with a bolted panel, accessible from the front panel, and with a removable horizontal panel between the cable & main module compartment, this design is made for ease of assembly and on-site testing of cables and accessories.

As an option, and depending on the installation of switchboard chosen, the rear panel can be made removable, to further improve access.

This compartment contains:

- The connections to the power cables, up to 6 x 630 mm0^2 per phase, with a choice of bottom plate (for details, see chapter on cable connections).
- The cable earthing switch is operated from the front of the cubicle by means of a removable lever.
  Its position is visible from the front panel, through the inspection window in the cable panel.
- Current transformers, with DIN dimensions, are fitted at the rear of the cubicle.
- The voltage transformers, fitted at the front of the compartment, are either fixed - with or without fuses, or removable with fuses.
- A metallic cable duct, located on the right-hand lateral part, guides the low voltage conductors into the control/command compartment safely.

At the front, upper section of thiscompartment, is the access to the earthing switch controls, along with its mimic diagram and VPIS type voltage indicators (IEC 61958).

VDS type voltage indicators (IEC 612345) can be offered as an option.

Details of the interlocks are given in the next chapter.

Busbar compartment

Busbar compartment

Located in the upper, rear of theunit, this compartment is accessible via the top or front panel of the cubicle, after removing the partitions, which separate it from the

switchgear compartment.

The bus bar consists of flat copper with rounded edges. The rated current will determine the number of bars to be mounted in parallel. The bus bar is linked and supported by solid connections to the spouts.

Optionally, this compartment can be fitted with:

- Segregations made of insulating materials, resistant to pressure, mounted between each cubicle.
- Encapsulation of the bus bars and branch connections.
- Fixed voltage transformers, without fuses.
- An earthing switch.

Low voltage compartment standard

Low voltage compartment

This compartment contains all the secondary circuit functions for control, measurement, protection, monitoring, communication and other associated systems.

This independent compartment, is a separate assembly, supplied fully assembled and tested.

Product description (contd.)

Locks

The operation of PIX is designed to be completely safe. All the operations listed below are carried out from the front panel, with the door and panels closed.

- Connect or disconnect the withdrawable module.
- Re-load the spring mechanism.
- Mechanically close or open the circuit breaker or switch-disconnector.
- Open or close the earthing switch. Access to the withdrawable module compartment requires the use of a specialised handle and key.

The interlocks were designed with this operational ideology in mind and add to the security of the system by making it impossible to make unsafe operations

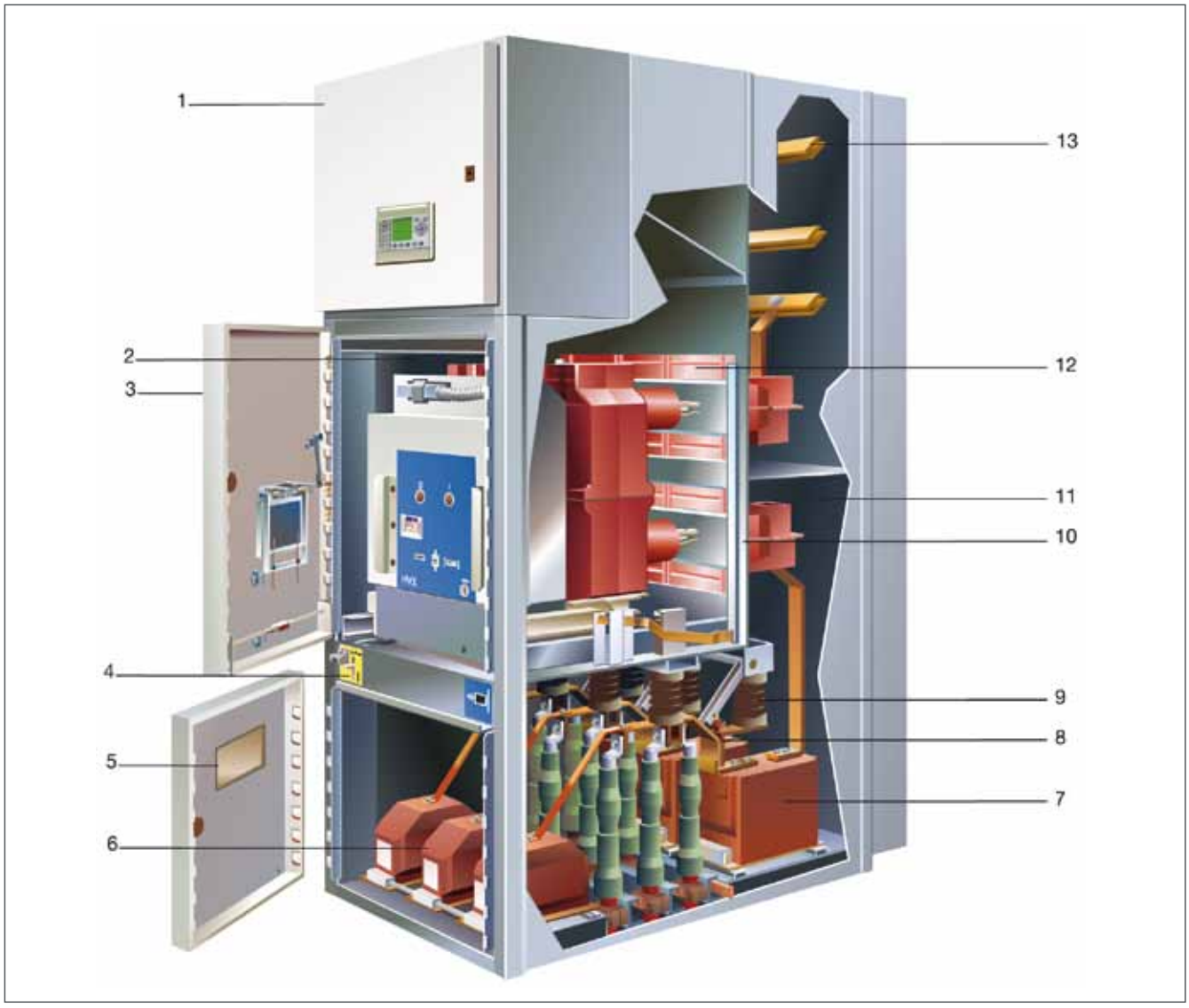
Actions	Status of elements involved	
	Basic locking devices	Optional locking devices
Plugging in the module	■ LV socket connected ■ Circuit breaker open ■ Earthing switch open	■ Module compartment access door closed
Closing the circuit breaker/contactor	■ Module completely plugged in, or plugged out/ test position ■ Plug-in lever removed	
Closing the earthing switch	■ Module plugged in/out/test posi-tion or removed	
Access to the cable compartment		■ Earthing switch closed
Opening of the earthing switch		■ Cable compartment panel closed
Access to the withdrawable module-compartment	(Reminder: requires the use of a specific key and handle)	■ Module in disconnected plugged-out/test
Partial re-opening of the earthing switch for cable testing		■ Is not possible to put it the panel again when earthing switch is in this position
Opening of the shutters		■ By the withdrawable module action -With specific tool.

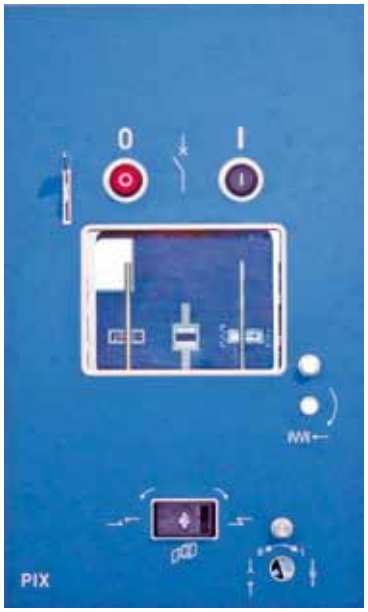
Other safety equipment

	Basic locking devices	Optional locking devices
Locking device using padlocks	■ Shutters ■ Earthing switch access (in open or closed position) ■ No access to operate the drawout module	
Locking devices (specific)		■ ON/OFF Buttons - Circuit breaker
Locking device using fixed locks		■ The door of the withdrawable module ■ Earthing switch, either in open or closed position ■ Module in plugged out position
Locking device by electromagnetic coil		■ Earthing switch, in open position ■ Disconnect link module (UTX)

Product description (contd.)

PIX in detail





Operating panel

Earthing switch drive

Earthing switch indicator

1 LV compartment standard
2 Circuit breaker
3 Switchgear compartment door
4 Earthing switch operating mechanism
5 Voltage presence indicator
6 E.S. mimic digram
7 Cable compartment panel
8 Voltage transformer
9 Current transformer
10 Cable connection
11 Earthing switch
12 Metal shutter for cable
13 Spouts
14 Metal shutter for busbar
15 Busbar

Standards
Regulations, provisions and standards

Safety has been certified by testing

PIX cubicles have been designed to meet the requirements of International standards (IEC) and validated by type tests, carried out by independant laboratories.

Regulations, provisions and standards

Designation	IEC standard
Switchgear	IEC 62271-200 / EN 62271-200
Internal arc qualification	IEC 62271-200 / EN 62271-200
Earthing switchMulti-purpose switch disconnector	IEC 62271-102 / EN 62271-102
Fuse switch-disconnector combination	IEC 60265-1 / EN 60265-1
Circuit breaker	IEC 62271-105 / EN 62271-105
acuum contactor	IEC 62271-100 / EN 62271-100
Current transformer	IEC 60470 / EN 60470
Voltage transformer	IEC 60044-1 / EN 60044-1
Voltage Detecting Systems (VDS)	IEC 60044-2 / EN 60044-2
Protection against acci¬dental contact,	IEC 61243-5
foreign bodies and water	IEC 60529 / EN 60529
Erection	HD 637 S1
Operation of electrical equipment	EN 50110-1
Environment and operating conditions:	IEC 60694 / EN 60694 (in future IEC 62271-1)

Operating conditions

Operating conditions for interior use, in accordance with IEC 60694	
Ambient temperature	■ + 40°C ■ maxi + 55°C with corresponding under-rating current ■ + 35°C on average over a 24 hour period ■ - 5°C minimum
Ambient air	■ No impurities due to dust, flammable/corrosive gases & vapours, smoke or salt.
Humidity	■ Average relative humidity over a 24 hour period: 95% ■ Average steam pressure over a 24 hour period: Max. 2.2 kPa ■ Average relative humidity over a 1 month period: 90% ■ Average steam pressure over a 1 month period: Max. 1.8 kPa
Altitude	■ Up to 1,000 m above sea level, corresponding to atmospheric conditions of: 1013 hPa, + 20 °C, 11g/m3 water. ■ Above 1,000 m, a derating factor is applied, please contact us for details.
Vibration	■ Negligible ■ For particular conditions, please contact us.

Protection degree

Standard degree of protection of the external enclosure: **IP 3X** Optionally, there is the possibility of various IP, ratings in accordance with the table below.	Meaning for the protection of equipment				Meaning for the protection of people	
Elements of code **IP**	**1st element**		**2nd element**		**Additional element**	
Protection against water ingress with harmful effects	2 3 4 X	> = 12.5 mm > = 2.5 mm > = 1 mm Not defined			Not used element covered by 1st element	
			0 1 2 X	Not protected Vertical dripping water Dripping water with 15° inclination Not defined		
Protection against access to the dangerous parts by means of tools					C D X	D = 2.5 mm L = 100 mm D = 1 mm L = 100 mm Not defined

Technical data

Functional unit

Designation		PIX 12	PIX 17	PIX 24
Reference standards			**IEC 62271**	
Rated voltage	**kV rms**	12	17.5	24
Power frequency withstand voltage 50 Hz 1 min	**kV rms**			
to earth and between phases		28	38	50
on the isolating distance		32	45	60
Impulse withstand voltage 1,2 / 50 micro sec				
to earth and between phases	**kV peak**	75	95	125
on the isolating distance		85	110	145
Rated frequency	**Hz**	50 / 60	50 / 60	50 / 60
Short time current				
1 sec withstand (2)	**kA rms**	25 / 31.5 / 40	25 / 31.5 /40	16 / 25 / 31.5
3 sec withstand (2) (1)		25/ 31.5 / 40	25 / 31.5 / 40	16 /25 / 31.5
Peak withstand		63 / 80 / 100	63 / 80 / 100	40 / 63 / 80
Rated current				
Busbar with natural ventilation	**A**	Up to 3150	Up to 3150	Up to 2500
Busbar with forced ventilation		Up to 4000	Up to 4000	
Functions Disconnect link		Up to 3150	Up to 3150	Up to 2500
Functions CB with natural ventilation	**A rms**	Up to 3150	Up to 3150	Up to 2500
Functions CB with forced ventilation		Up to 4000	Up to 4000	
Functions SWD		630	630	630
Functions Air SWD + fuses		400	400	400
Functions Contactor		200-400		
Internal arc withstand	**kA**	Up to 40 kA - 1 sec	Up to 40 kA - 1sec	Up to 31.5 kA - 1sec
Earthing switch making capacity (2)	**kA peak**	63 / 80 / 100	63 / 80 / 100	40 / 63 / 80
Earthing switch endurance				
number of making operation		2	2	2
mechanical (C/O)		1000	1000	1000
Degree of protection				
external enclosure standard		IP 3X	IP 3X	IP 3X
open door without withdrawable module		IP 2X	IP 2X	IP 2X
Approximate heat dissipation	**W**			
Functions CB I_r = 800A		650	650	650
Force on floor (without cubicle weight) Functions CB	**daN**	750	750	750
(1) Earthing switch limited 40 kA - 1sec				
(2) For SWD and SWD + fuses functions				
Short time current	**kA rms**			
1 sec withstand		16 / 25	16 / 25	16 / 25
peak withstand	**kA peak**	40 / 63	40 / 63	40 / 63
Earthing switch making capacity	**kA peak**	40 / 63	40 / 63	40 / 63

For 50 kA, 5000 A, please refer to PIX-H documentation or contact us.

Technical data (contd.)

HVX drawout circuit breaker module - characteristics

For the cubicles		PIX 12	PIX 17	PIX 24
Designation		**HVX 12**	**HVX 17**	**HVX 24**
Reference standards			**IEC 62271-100**	
Rated voltage	**kV**	12	17.5	24
Rated current	**A rms**	Up to 3150	Up to 3150	Up to 2500
Rated breaking capacity				
short circuit current	**kA rms**	16/25/31.5/40	25/31.5/40	16/25/31.5
cable charging current	**A**	25	31.5	31.5
line charging current		10	10	
single capacitor bank		400	400	
no load transformer		10	10	
Rated making capacity	**kA peak**	40/63/80/100	63/80/100	40/63/80
Rated operating time				
opening	**ms**	40-47	40-47	40-47
breaking		55-62	55-62	55-62
arcing		2-15	2-15	2-15
closing		50-58	50-58	50-58
Rated operating sequence		O-3min-CO-3min-CO	O-3min-CO-3min-CO	O-3min-CO-3min-CO
		CO-15s-CO	CO-15s-CO	CO-15s-CO
		O-0.3s-CO-3min-CO	O-0.3s-CO-3min-CO	O-0.3s-CO-3min-CO
		O-0.3s-CO-15s-CO	O-0.3s-CO-15s-CO	O-0.3s-CO-15s-CO
Endurance				
mechanical (C/O) for switching chamber		30 000	30 000	30 000
mechanical (C/O) for mechanism		10 000	10 000	10 000
electrical (C/O at In up to 3150 A)		10 000	10 000	10 000

Technical data (contd.)

HVX spring operating mechanism

Designation		FH2-01 (hand) / FK2-01 (motor)	
Reference standards		IEC	IEC
		DC	AC
Rated supply voltage [1]	V	24-48-60-110-125-220	120-230
Rated frequency	Hz		50/60
Reset motor			
Voltage variation range	% of Un	85 to 110	85 to 110
Power consumption (maxi)	W / VA	100	100
Starting current	A		
Reset time	s	8-12	8-12
Shunt opening coil			
Voltage variation range	% of Un	70 to 110	70 to 110
Power consumption (maxi)	W / VA	≤ 250	≤ 250
Minimum impulse duration	ms	50	50
Under voltage opening coil			
Voltage range for closing	% of Un	> 85	> 85
Voltage range for tripping	% of Un	35 to 0	35 to 0
Power consumption (maxi)	W/VA	10	10
Shunt closing coil			
Rated current	% of Un	85 to 110	85 to 110
Power consumption maxi	W/VA	≤ 250	≤ 250
Auxiliary contacts			
Rated current	A	15	15
Breaking capacity 48V (L/R 10ms)		10	-
Breaking capacity 125V (L/R 10ms)		4	-
Breaking capacity 220V (L/R 10ms)		2	-
Breaking capacity 120 or 230 Vdc		-	10

[1] No 125 Vdc for reset motor - No 220 Vdc and 120 Vac for under voltage opening coil.

Technical data (contd.)

HVX up to 2000 A

HVX > 2000 A

Equipment

	FH2-01 (hand)		FK2-01 (motor)	
	Basic	**Optional**	**Basic**	**Optional**
Manual opening and closing	■		■	
CB Position indicators	■		■	
Spring charging motor			■	
Spring position indicator	■		■	
Shunt trip coil		■	■	
Second shunt trip coil		■		■
CT operated release		■		■
Undervoltage shunt tripping coil		■		■
Closing coil			■	
Operation counter	■		■	
Anti-pumping relay		■		■
'ee auxiliary contacts				
CB position 2NO / 2NC	■		■	
3NO / 4 NC		■		■
Spring charged position 2NO / 1NC	■		■	

For more information refer to HVX documentation bprob/hvxb-24 kv/uke/pdb/04.01/ger/2854

Technical data (contd.)

CVX drawout contactor module

CVX drawout contactor module on truck

CVX drawout contactor module - characteristics

For the cubicles		PIX 12	PIX 12
Designation		**CVX 07**	**CVX 12**
Contactor designation		**CBX**	
Reference standards		IEC	
Category		AC3 - AC4	AC3 - AC4
Rated voltage	**kV**	7.2	12
Rated current	**A rms**	400	400
Maximum motor rated current	**A**	320	320
Rated breaking capacity			
short circuit current with fuses	**kA rms**	40	40
short circuit current without fuses	**kA rms**	6	4
single capacitor bank	**A**	280	280
Rated making capacity with fuses	**kA peak**	100	100
Rated making capacity without fuses	**kA peak**	15	10
Rated operating time			
opening with d.c. magnetic holding control	**ms**	60 to 100	60 to 100
opening with a.c. magnetic holding control	**ms**	90 to 120	90 to 120
opening with mechanical latch control	**ms**	20 to 30	20 to 30
closing	**ms**	60 to 100	60 to 100
Rated operating sequence number	**per hour**	1200	1200
Endurance			
mechanical with magnetic holding (C/O)		3 000 000	3 000 000
electrical with mechanical latch (C/O)		200 000	200 000
electrical (C/O at 400 A)		500 000	500 000
electrical (C/O at 250 A)		1 000 000	1 000 000
electrical (breaking at Icc 3.2 kA)		25	25
electrical (making at Icc 4 kA)		100	100

Technical data (contd.)

CBX electromagnetic operating mechanisms

Designation			
Reference standards		**IEC**	
		DC	**AC**
Rated supply voltage Reference standards	**V**	24-48-60-110-125-220	120-230
Rated frequency	**Hz**		50/60
Magneticholding control circuit			
Voltage range for closing	**% of Un**	> 85	> 85
Voltage range for opening	**% of Un**	75 to 10	75 to 10
Power consumption on closing	**W / VA**	615	615
Power consumption on holding	**W / VA**	150	150
Mechanical latch control circuit			
Voltage variation range	**% of Un**	70 to 110	85 to 110
Power consumption on closing	**W / VA**	615	615
Power consumption on opening	**W**	240	240
Minimum impulse duration	**ms**	20	20
Auxiliarycontacts:			
Rated current	**A**	15	15
Breaking capacity 48 Vdc (L/R 10 ms)			
Breaking capacity 220Vdc (L/R 20 ms)			

Equipment

Operating mechanism	Magnetic holding	Mechanical latch
Manual opening		■
Contactor Position indicators	■	■
Magnetic holding coil	■	
Shunt trip coil		■
Closing coil		■
Operation counter	■	■
Anti-pumping relay	■	■
Free auxiliary contacts		■
Contactor position 3 NO / 3 NC	■	■
Fuse position 1 O/C	■	■

For more information refer to CBX documentation

Technical data (contd.)

UTX drawout disconnecting link module

Disconnect link 12 kV

Disconnect link 24 kV

Auxiliary contacts for withdrawable module

Position	HVX - UTX - MTX		CVX	
	Basic	Optional	Basic	Optional
Plugged in and test/unplugged				
1 O/C (reverse)	■			
4 O/C (reverse				■
Plugged in				
1 N/C	■			
1 N/C + 1 N/O		■		
2 N/C			■	
Unplugged/test				
1 NC	■			
1 N/C + 1 N/O		■		
2 N/C			■	

Auxiliary contacts for earthing switch

Position	Basic	Optional
Close/Open 1 O/C (reverse)	■	
Closed 3 N/C		■
Opened 3 N/C		■

MTX drawout VT's module

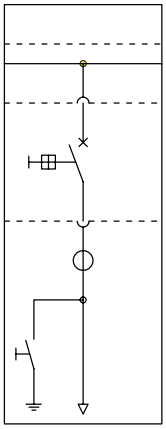
MTX drawout VT's moduls

LTRI air switch - disconnector

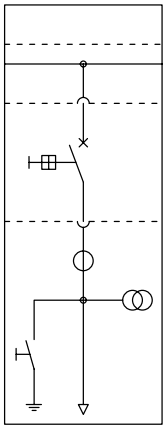
LTRI Air Switch-Disconnector

Range of equipment

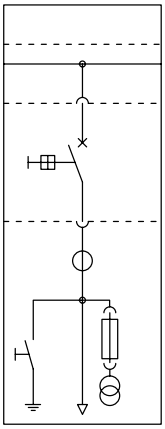
Product range



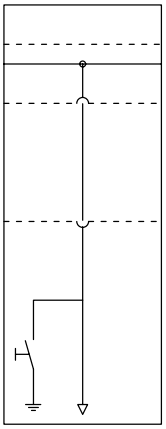
Incoming/Outgoing with circuit breaker



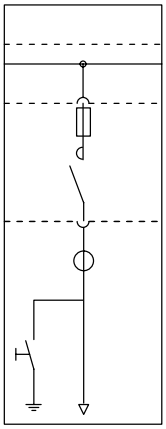
Incoming/Outgoing with circuit breaker + fixed VT's



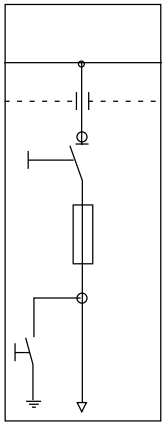
Incoming/Outgoing with circuit breaker withdrawable cable VT's with removable fuses



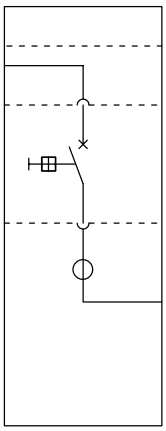
Outgoing with disconnect link



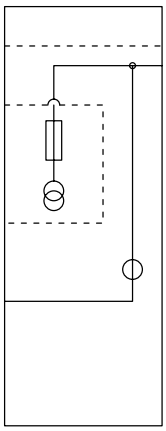
Contactor outgoing



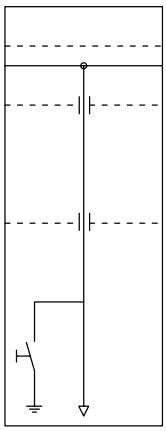
Switch disconnector and fuses outgoing



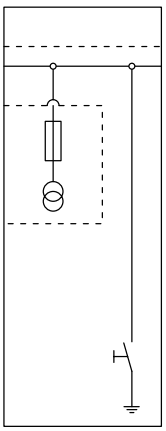
Bus section with circuit breaker



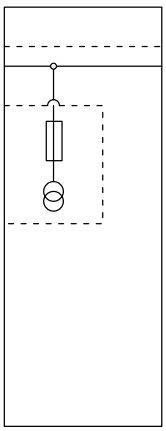
Bus riser with transformers



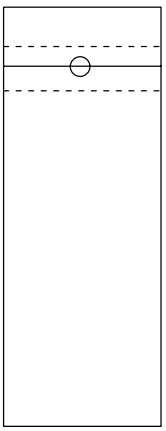
Direct incoming



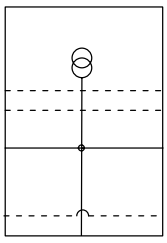
Busbar voltage metering with earthing switch



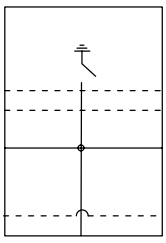
Busbar voltage metering



Busbar current metering

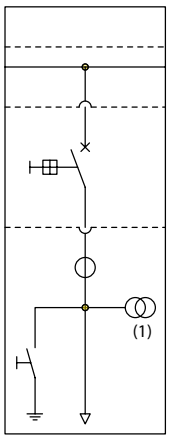


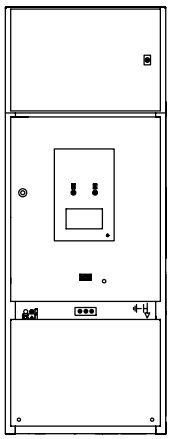
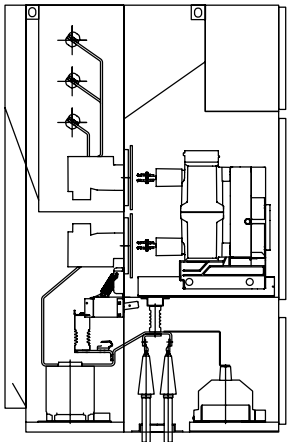
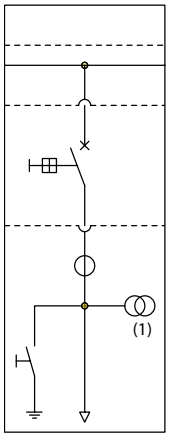
Busbar with voltage transformer on the top

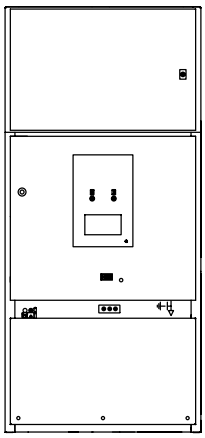
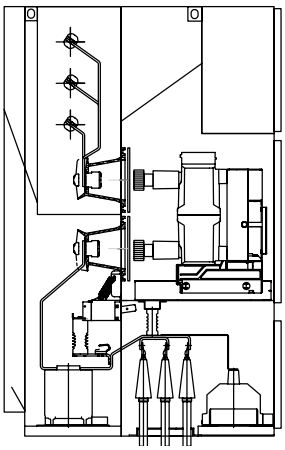
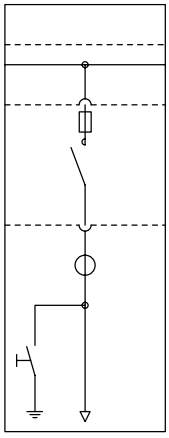
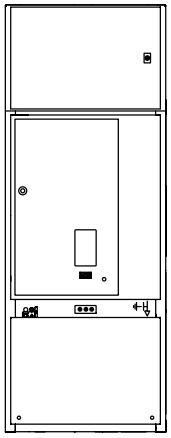
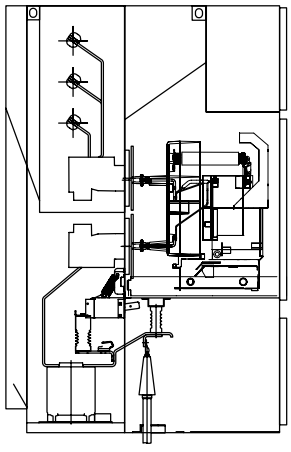


Busbar with earthing switch on the top

Range of equipment (contd.)



Equipment range

■ Incoming or outgoing unit with circuit breaker up to 2000 A.

On request:

- □ VT's with fuses
- □ Withdrawable cable VT's with removable fuses
- □ Fixed VT's without fuses (1)
- □ Surge arresters

■ Incoming or outgoing unit with circuit breaker 2500 to 3150 A.

On request:

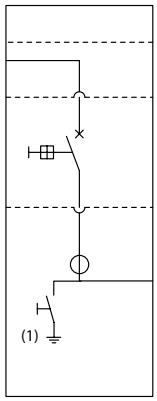
- □ VT's with fuses
- □ Withdrawable cable VT's with removable fuses
- □ Fixed VT's without fuses (1)
- □ Surge arresters

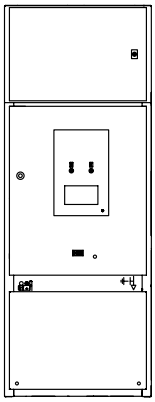
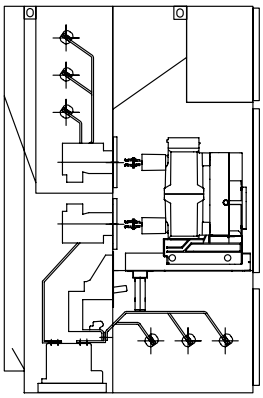
■ Outgoing unit with contactor and fuses 200, 400 A.

On request:

- □ Surge arresters

Range of equipment (contd.)

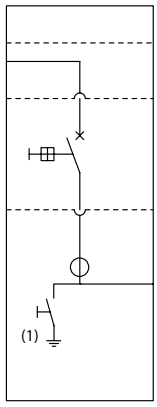


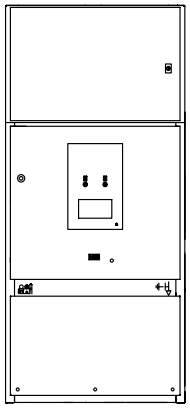
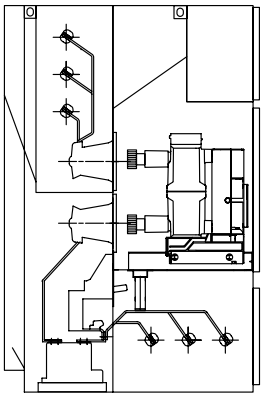



■ Bus section unit with circuit breaker up to 2000 A

On request:

□ Busbar earthing switch (1)

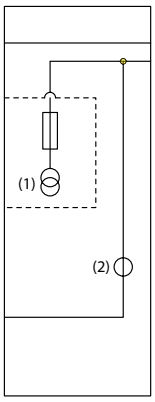


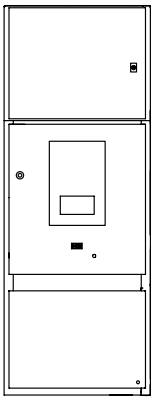
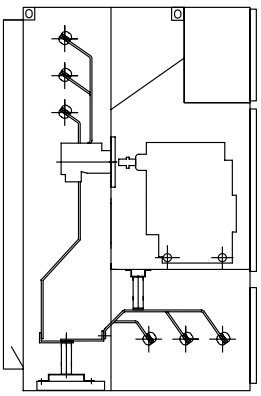



■ Bus section unit circuit breaker 2500 to 3150 A

On request:

□ Busbar earthing switch (1)



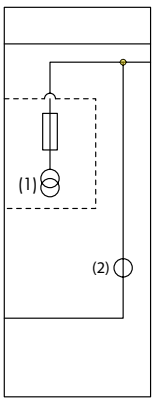



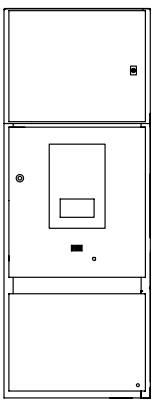
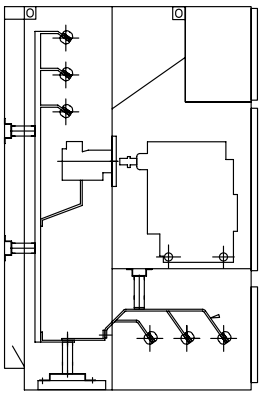
■ Bus riser unit up to 2000 A.

On request:

□ Withdrawable VT's module with fuses (1).

□ Current transformers (2)



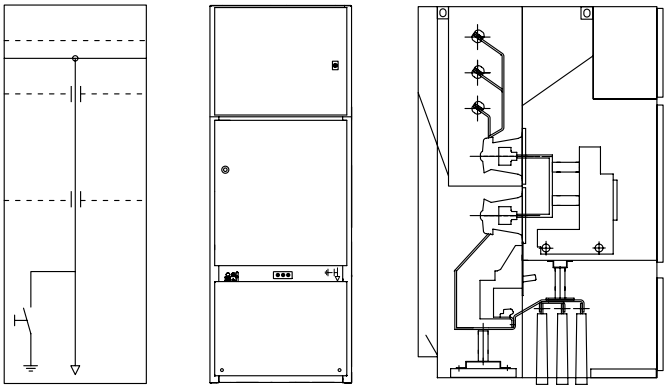
■ Bus riser unit 2500 A to 3150 A.

On request:

□ Withdrawable VT's module with fuses (1).

□ Current transformers (2)

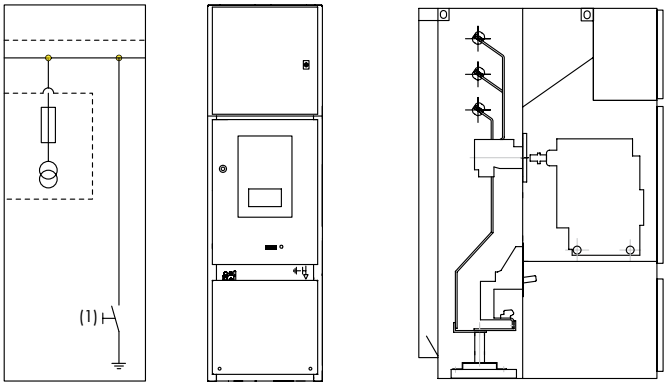
Range of equipment (contd.)



■ Direct incoming unit up to 3150 A.

On request:

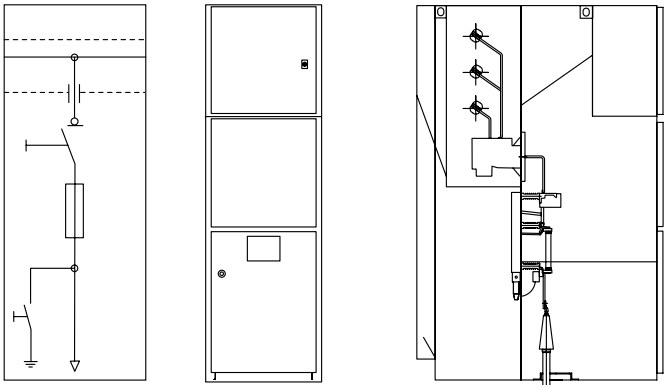
- □ Surge arresters
- □ Fixed VT's with fuses
- □ Fixed VT's without fuses
- □ VT's removable fuses.



■ Busbar voltage metering

On request:

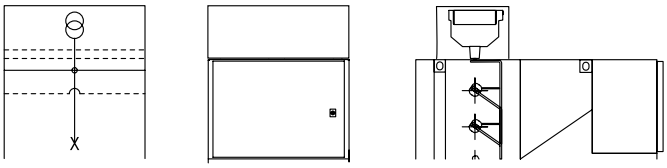
- □ Busbar earthing switch (1)



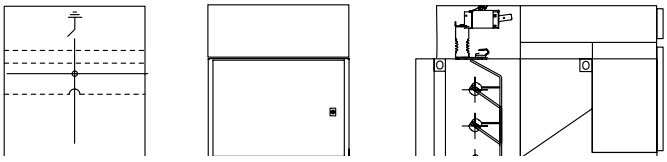
■ Outgoing unit with switch disconnector and fuses

On request:

- □ Current transformers



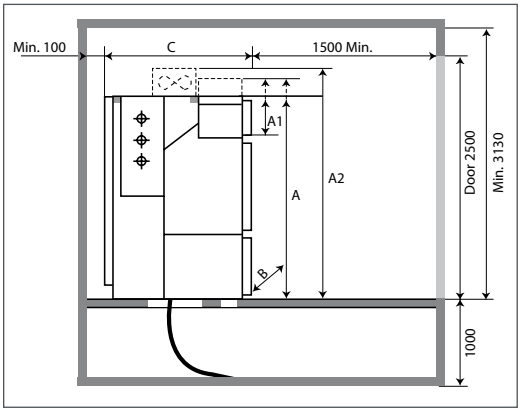
■ Busbar voltage transformers without fuses on the top

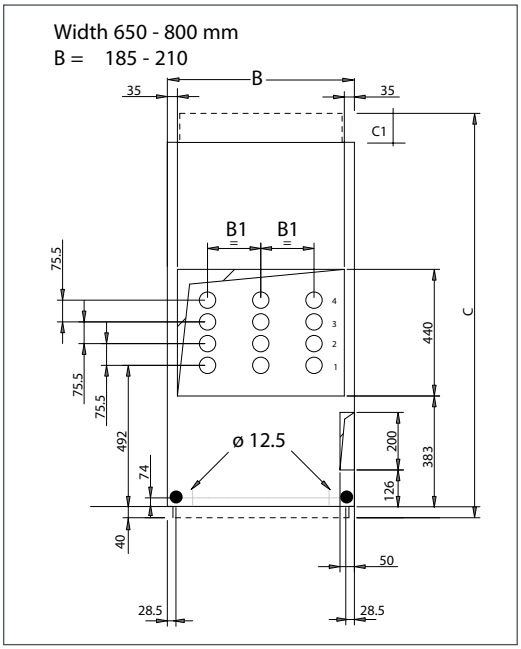


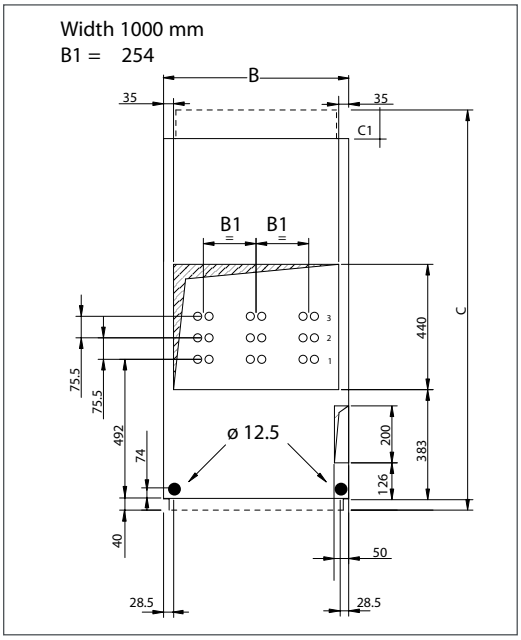
■ Busbar earthing switch on the top

Design data

PIX 12







Functions PIX 12 up to 40 kA 4000A				
	Icc (kA)	≤ 31.5	40	
	In (A)	B (width)		Approximate weight (kg)
Incoming or outgoing				
CB	≤1250	650	800	720
Disconnect link			650 (1)	
Bus section	1600	800	800	770
	2000	1000	1000	770
	≥ 2500	1000	1000	820
Direct incoming	≤ 1250	650	800	650
			650 (1)	
	1600	800	800	700
	2000	800	800	750
	≥ 2500	1000	1000	750
Bus riser	1250	650	650	600
Bus riser disconnect link	1600	800	800	650
	2000	800	800	700
	≥ 2500	1000	1000	700
Busbar voltage metering		650	650	600
Switch disconnector and fuses outgoing		650	-	600
Contactor		650	650	700

Dimensions in mm

- (1) Depth 1605 for internal arc withstand 40 kA with width 650 mm
- (2) Depth 1605 for 2 CT/phase

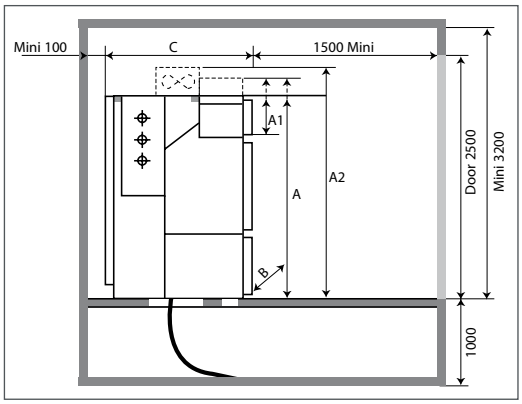
For seismic and arrangement on skid please contact us.

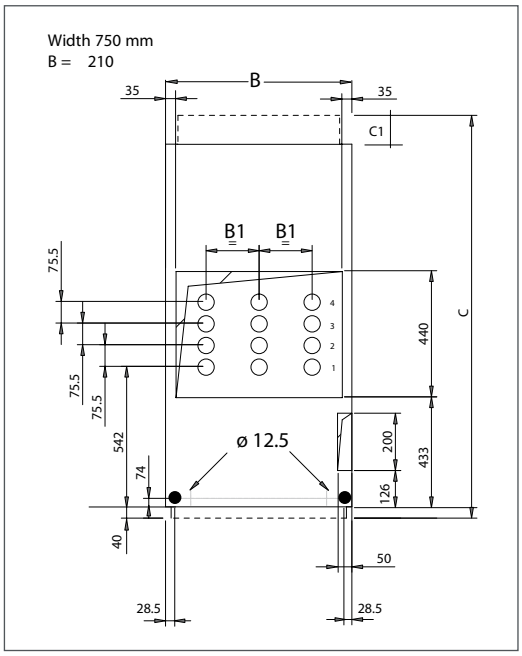
A:	2130	2230	2330
A1:	530	630	730
A2:	2730*		
C:	1405/1605 (1) (2)		
C1:	100/300		

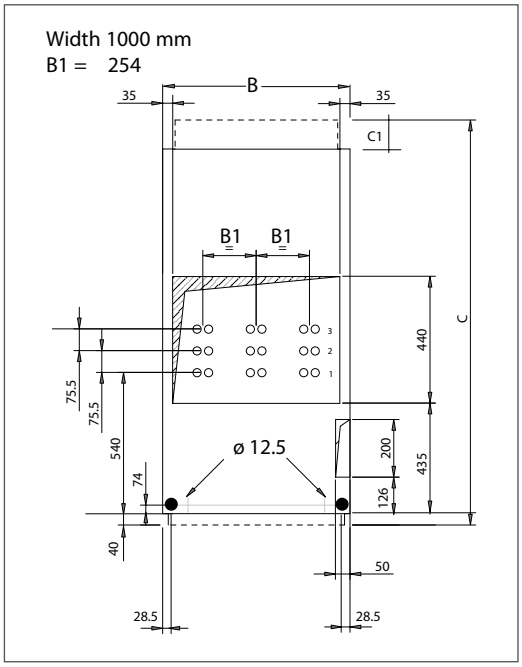
* Height with forced cooling or duct for gas evacuation.

Design data (contd.)

PIX 17







Functions PIX 17 up to 40 kA 4000A

	Icc (kA)	≤ 25	31.5-40	
	In (A)	B (width)		Approximate weight (kg)
Incoming or outgoing CB	≤ 1600	750	750 (1)	850
Disconnect link	2000	750	750 (1)	850
Bus section	≥ 2500	1000	1000	850
Direct incoming	≤ 1600	750	750 (1)	730
	2000	750	750 (1)	780
	≥ 2500	1000	1000	780
Bus riser Bus riser disconnect link	1600	750	750	680
	2000	750	750	730
	≥ 2500	1000	1000	730
Busbar voltage metering		750	750	650
Switch disconnector and fuses outgoing		750	-	650

Dimensions in mm
- (1) Depth 1605 for internal arc withstand 40 kA
- (2) Depth 1605 for 2 CT/phase

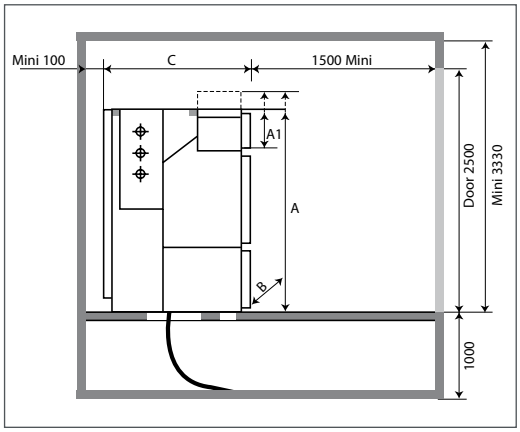
For seismic and arrangement on skid please contact us.

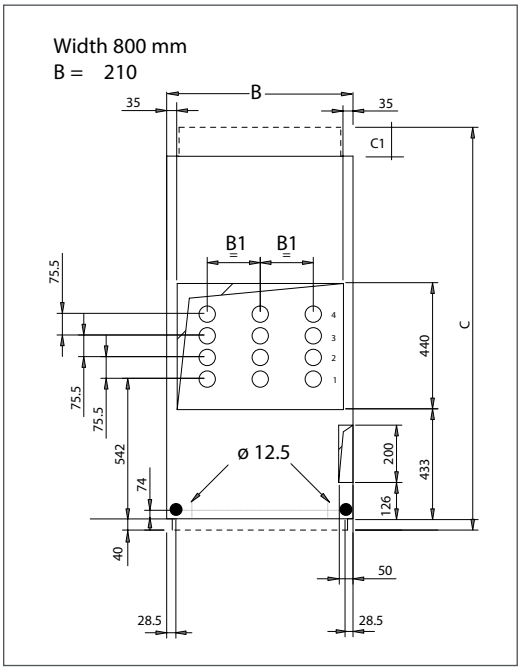
A:	2200	2300	2400
A1:	600	700	800
A2:	2800*		
C:	1505/1605 (1) (2)		
C1:	100/200		

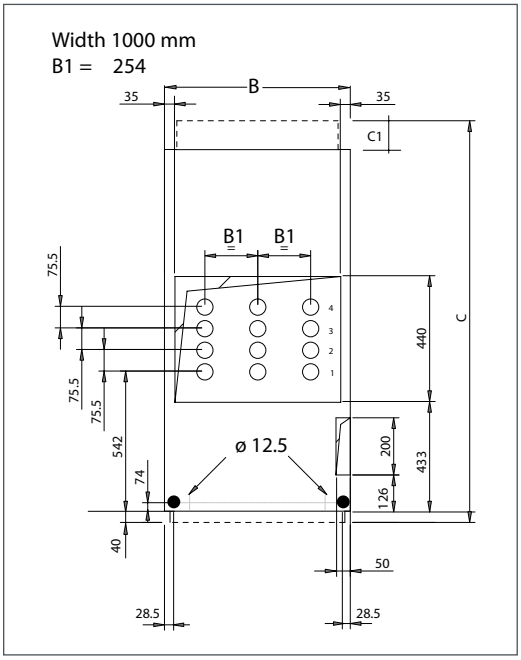
* Up to 2800 with forced cooling or duct for gas evacuation.

Design data (contd.)

PIX 24







Functions PIX 24 up to 31.5 kA 2500A				
	Icc (kA)	≤ 25	31.5-40	
	In (A)	B (Width)		Approximate weight (kg)
Incoming or outgoing CB Disconnect link Bus section	≤ 1600	800	800	820
	2000	1000	1000	870
	≥ 2500	1000	1000	870
Direct incoming	≤ 1600	800	800	750
	2000	800	800	800
	2500	1000	1000	800
Bus riser Bus riser disconnect link	≤ 1600	800	800	700
	2000	1000	800	750
	2500	1000	1000	750
Busbar voltage metering		800	800	700
Switch disconnector and fuses outgoing		800	-	700

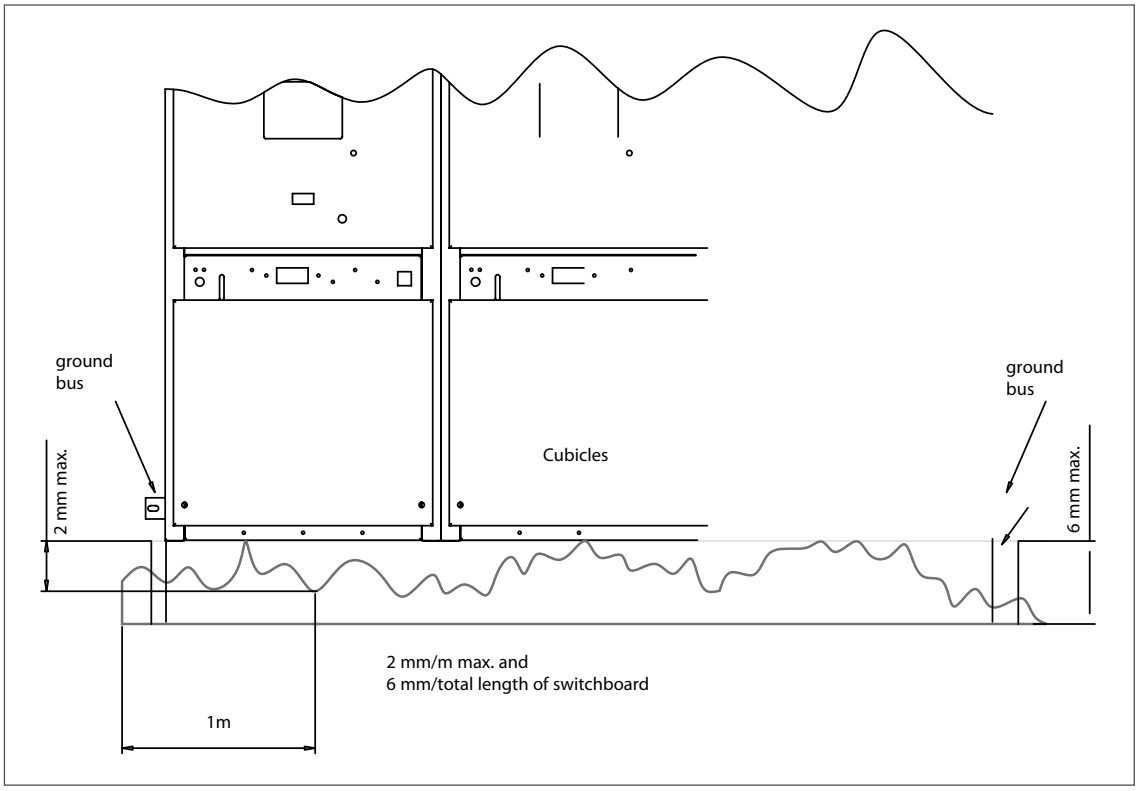
Dimensions in mm
For seismic and arrangement on skid please contact us.

A:	2330	2430	2530*
A1:	530	630	730
A2:	1605		
C:	100		

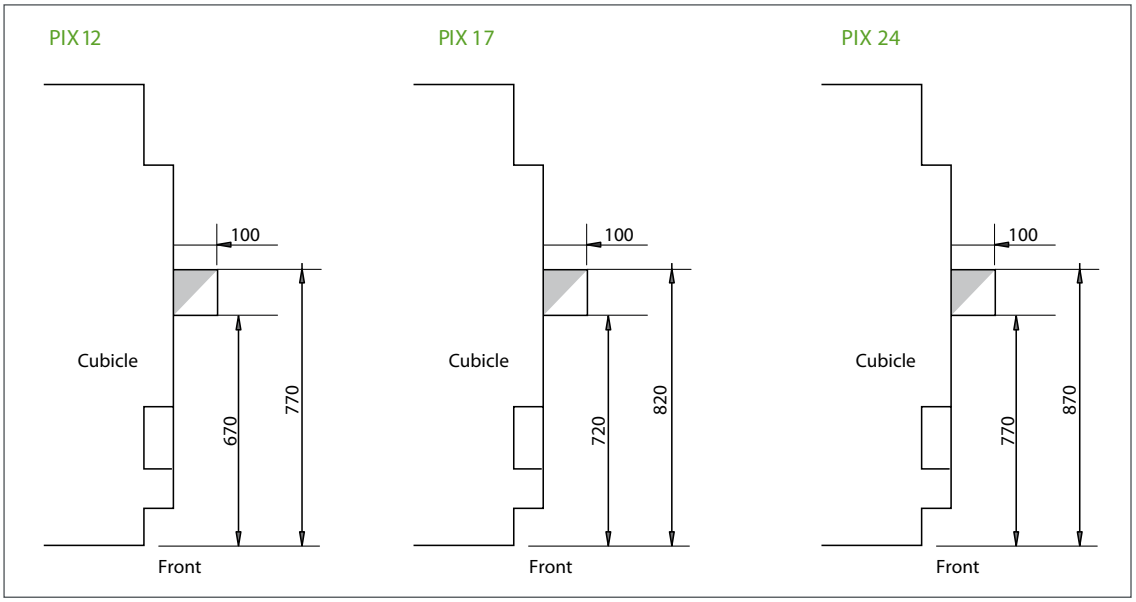
* Height:
= 2730 with duct for gas evacuation.
= 2890 with deflectors for internal arc withstanding.

Design data (contd.)

Floor plan

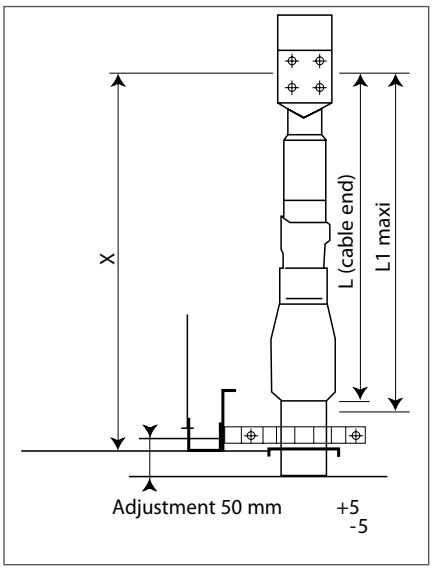


Detail A

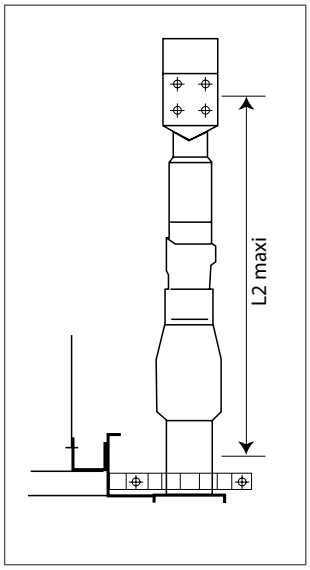


Cable connections

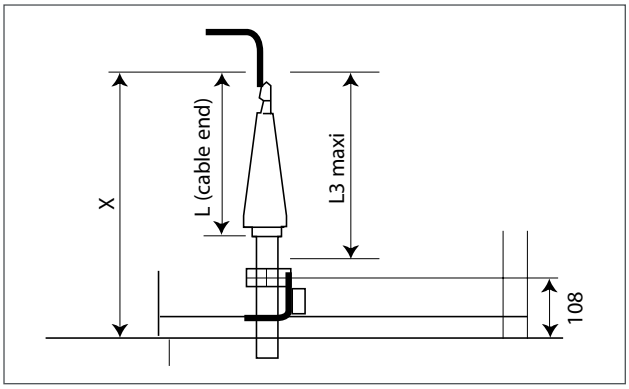
The manufacturer's instructions for the ends of the cables must be followed.



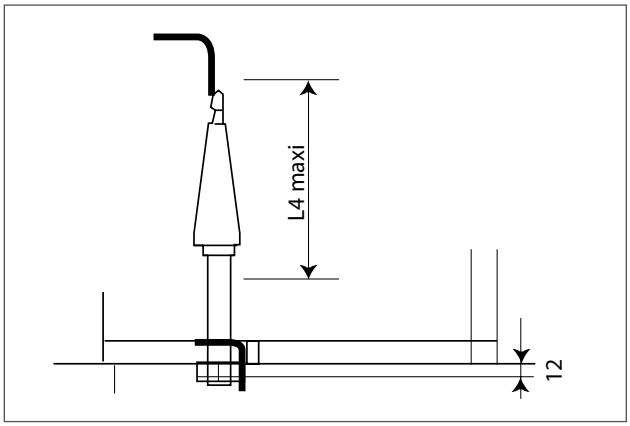
Cable glands in upper position



Cable glands in lower position



Assembly with DIN clamps Cable 95 mm².



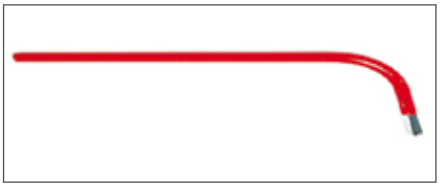
Assembly with DIN clamps Cables 300 - 630 mm².

	PIX 12	PIX 17	PIX 24
X	430	460	555
L1	390	420	515
L2	440	470	565
L3	290	320	415
L4	410	440	495

Accessories

■ Door locking key

■ Handle switching compartment



■ Earthing switch operating lever

■ Plug in handle

■ Circuit breaker mechanism reset handle

■ LTRI red isolating sheet

■ Handling trolley

Shipping instructions

Delivery

The cubicles, which make up the switchboard are delivered individually, ready for assembly.
The connection should be carried out on-site.

Packaging

- For transportation by lorry:

The product is fixed to a wooden pallet and protected by plastic cover.

The front panel is protected by polystyrene panels.

- For transportation by sea:

The product is covered with a plastic heat welded cover, with desiccant materials, then installed into a wooden case.

- For transportation by air:

The product is covered with a plastic heat welded cover, with desiccant materials, then installed into a wooden case.

Notes

Notes

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RCS Nanterre 954 503 439
Capital social 896 313 776 €
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PIX bis 24 kV EN 1008

As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

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