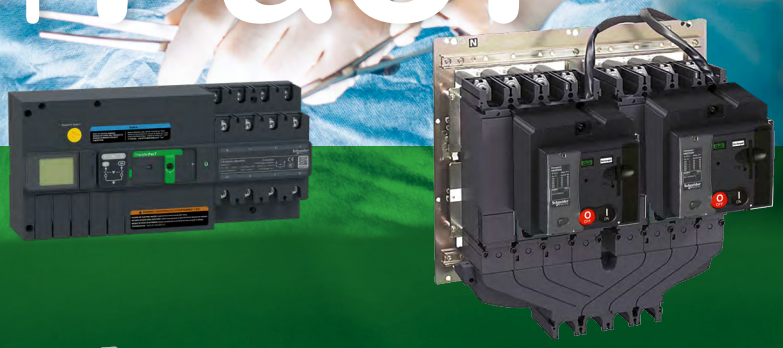
EcoStruxure
Innovation At Every Level

PacT Series

TransferPacT



Catalog 2024

Transfer Switching Equipment

Source-Changeover Systems

se.com

Life Is On | Schneider Electric

Green Premium™

An industry leading portfolio of offers delivering sustainable value

Green Premium™

More than 75% of our product sales offer superior transparency on the material content, regulatory information and environmental impact of our products:

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- REACh substance information
- Industry leading # of PEP's*
- Circularity instructions

The Green Premium program stands for our commitment to deliver customer valued sustainable performance. It has been upgraded with recognized environmental claims and extended to cover all offers including Products, Services and Solutions.

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Cost of ownership optimization through… Circular Performance

We're helping our customers optimize the total cost of ownership of their assets. To do this, we provide IoT-enabled solutions, as well as upgrade, repair, retrofit, and remanufacture services.

Peace of mind through… Well-being Performance

Green Premium products are RoHS and REACh compliant. We're going beyond regulatory compliance with step-by-step substitution of certain materials and substances from our products.

Improved sales through… Differentiation

Green Premium delivers strong value propositions through third-party labels and services. By collaborating with third-party organizations we can support our customers in meeting their sustainability goals such as green building certifications.

Discover what we mean by green
Check your products!

*PEP: Product Environmental Profile (i.e. Environmental Product Declaration)

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A transfer switching equipment is indispensable:

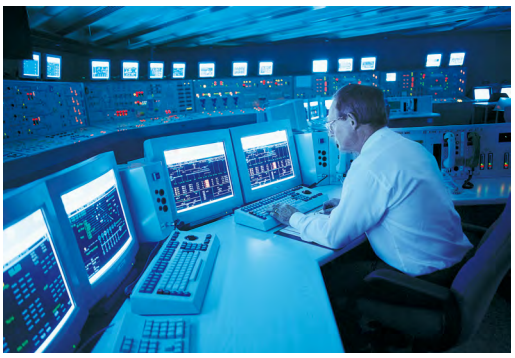
For critical applications in particular
For all others in general

A transfer switching equipment is indispensable for applications that need a continuous supply of electric power (hospitals, airports, banks, government facilities, etc.).

However transfer switching equipment is also suitable for all LV electrical installations exposed to:

> Nominal voltage loss or dip (when there is high demand for electric power)

> Unpredictable power quality



> Frequent power cuts

These factors, and many others, can damage the continuity of service of your electrical installation.

For infrastructure managers, a source-changeover system gives direct economic benefits. It is possible to select your source based on power cost.
In this case, the replacement source is used as an alternative, more economical source.

> Managing energy efficiently

> Power Cost

> Safety

Where backup supply must be reliable: now that is everywhere

Electricity is the fuel that feeds economic activity. Very few operations can withstand the financial impact of an electrical stoppage.

For occupant comfort, business continuity, and worker/visitor safety, dependability levels that used to apply to hospitals or airports are now becoming required in shopping malls and offices.

Additionally, utility companies make their contracts more sophisticated to deal with energy concerns. For example, including time restrictions to total accessible power.

For these reasons, backup power sources expand across all types of buildings, and require high performance connection and management.

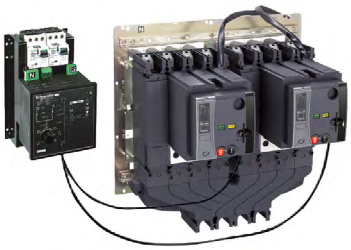
Enabling you to meet these challenges, TransferPacT comes as the natural continuation of the world leading low voltage distribution system developed by Schneider Electric.

> $740 000

average cost per event of unplanned downtime in a data center

Source

3 ways to switch the load to meet your needs



① Automatic Source-Changeover System (or ATSE: Automatic Transfer Switching Equipment)

An automatic controller may be added to a remote-operated source-changeover system. It is possible to automatically control source transfer according to programmed (dedicated controllers) or programmable (PLC) operating modes. These solutions ensure optimum energy management.

System

Derived ATSE: Two or three circuit breakers that may have different configurations, linked by an electrical interlocking system. A mechanical interlocking system protects against electrical malfunctions or incorrect manual operations, with an automatic control system (dedicated controllers or PLC).
Non-derived ATSE: Specifically designed ATSE with a specific controller for the system. A mechanical interlocking system is standard for product which protects against electrical malfunctions or incorrect manual operations.

② Manual Source-Changeover System (or MTSE: Manual Transfer Switching Equipment)

A very simple way to switch the load. It is controlled manually by an operator. The time required to switch from the 'N' source to 'R' source can vary.

System

Two or three mechanically interlocked manually-operated circuit breakers or two switch-disconnectors.

③ Remote-Operated Source-Changeover System (or RTSE: Remote Transfer Switching Equipment)

The most commonly used system for devices with high ratings. No direct human intervention is required. Source-changeover is controlled electrically.

System

Derived RTSE: Two or three circuit breakers that may have different configurations, linked by an electrical interlocking system.
In addition, a mechanical interlocking system protects against electrical malfunctions or incorrect manual operations.

Non-Derived RTSE:
Specifically TSE that is electrically operated and not self-acting. A mechanical interlocking system is standard for product which protects against electrical malfunctions or incorrect manual operations.

Applications

Commercial and service sector industry and infrastructure (operating rooms in hospitals, safety systems for buildings, computer rooms for banks and insurance companies, lighting and emergency lighting systems in malls, etc.)

Buildings and infrastructure where the need for continuity of service is significant but not a priority: offices, small and medium-sized businesses.

Industry like assembly lines, engine rooms on ships, critical auxiliaries in thermal powerstations, etc.
Infrastructure like port and railway installations, runway lighting systems, control systems
on military sites, etc.

Whatever the system, you benefit from our expertise!

For many years Schneider Electric's source changeover system have proved their reliability everywhere around the world, in most power dependable buildings. Switching is performed by ComPacT or MasterPacT circuit breakers, the ultimate references in industrial switchgear.

Maximized Continuity of Service

> Energy availability is ensured whatever is the external requirements (e.g. high power demand).

> Maintenance and replacement of the sources (N or R) can be done with no interruption of service.

You can maintain a continuous level of service and customer satisfaction.

Maximized Safety

For LV electrical installations where safety and continuity of service are critical for people and/or equipment such as hospitals, airports, banks, malls, etc.

Optimized Energy Management

> Transfer the load to a replacement source according to external requirements.

> Manage power sources according to power quality and power costs.

> Perform system regulation.

> Switch to an emergency replacement source.

You are no longer dependent on your power supply (and supplier)

Simplicity and Reliability

> Simple installation on LV switchboard.

> Optimized size of the switchboard.

> System based on pre-tested components.

> Compliance with IEC 60947-6-1.

Other Information

TransferPacT Automatic

> LVPED216028EN

ComPacT NSXm - NSX

> LVPED217032EN

ComPacT INS/INV

> LVPED213024EN

ComPacT NS

> LVPED211021EN

MasterPacT MTZ

> LVPED216026EN

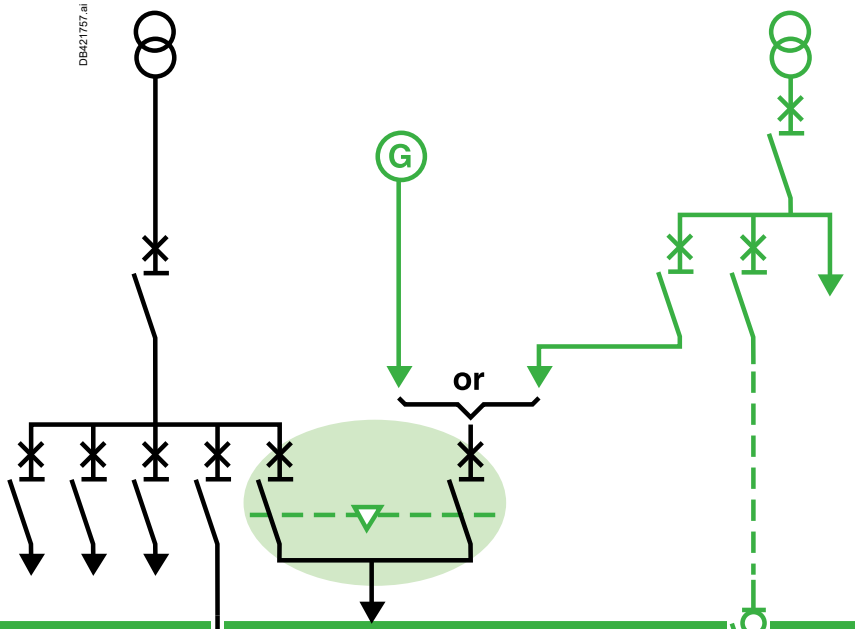
For maximized continuity of service...

Incoming Feeders and Main LV Switchboards

PB115735.eps

Currents
From 630 to 6300 A

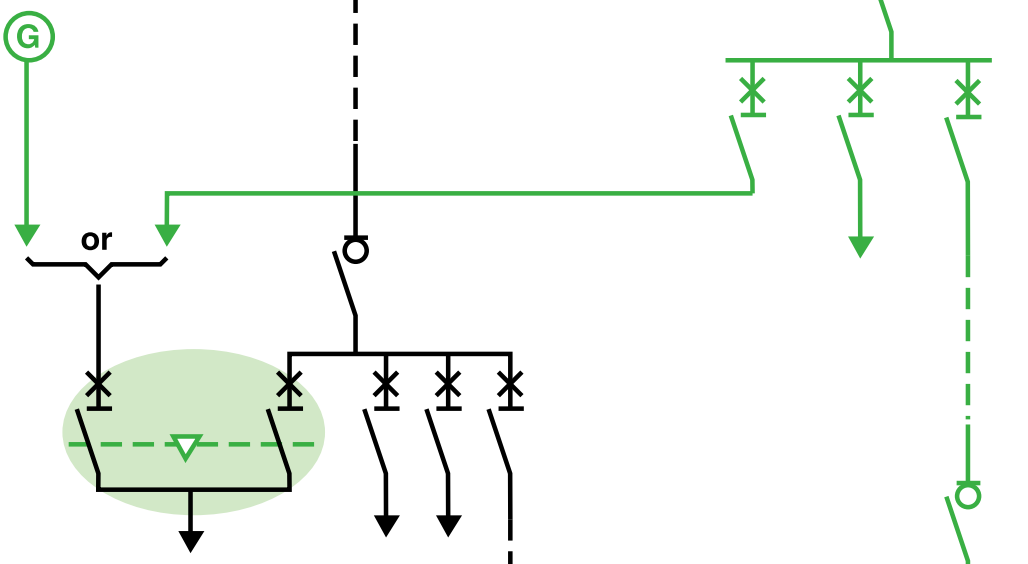
DB421757.ai



Power Distribution

PrismaSet-G.png

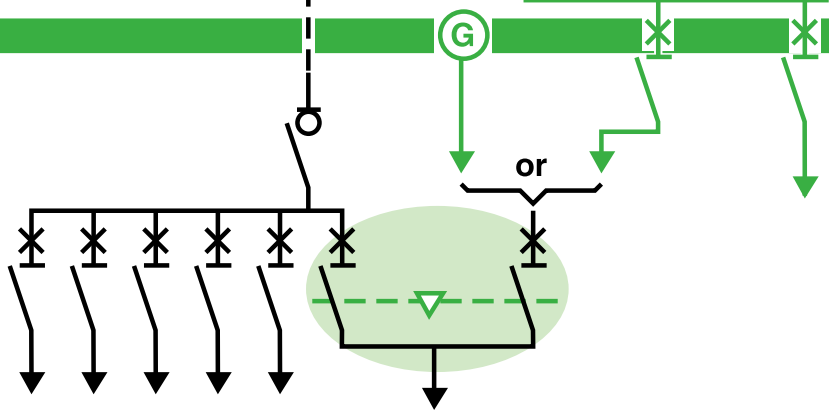
Currents
From 250 to 3200 A



Loads

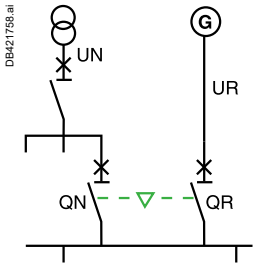
PB503346.eps

Currents
From 40 to 400 A



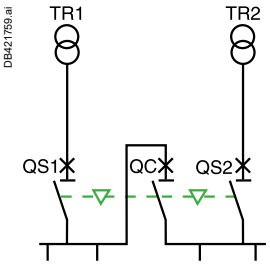
... in a wide range of applications

1 normal source
1 replacement source



QN	QR
0	0
1	0
0	1

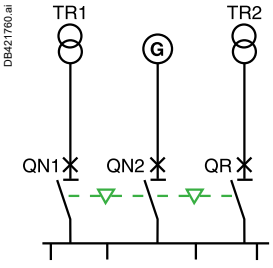
2 sources with coupler on busbars



QS1	QC	QS2
0	0	0
1	0	1
1	1	0
0	1	1
1	0	0 (1)
0	0	1 (1)

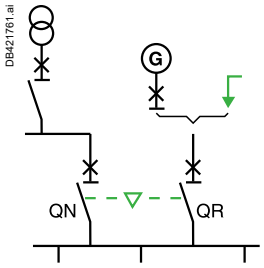
(1) possible by forcing operation

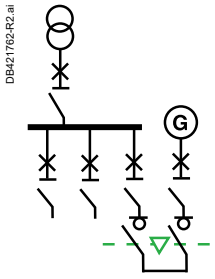
2 normal sources
1 replacement source



QN1	QN2	QR
0	0	0
1	1	0
0	0	1
1	0	0
0	1	0

Generator or permanent source

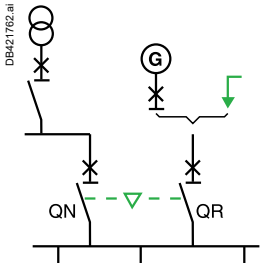


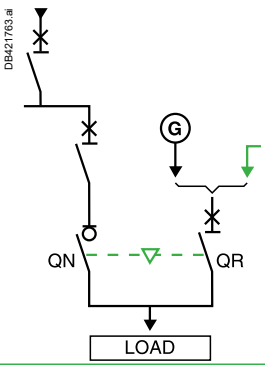


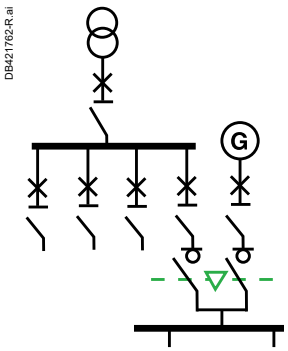
QN	QR
0	0
1	0
0	1

Typical applications:
- Continuous production processes
- Most distribution panels in hospitals, including operating rooms
- Computer rooms

Generator or permanent source







QN	QR
0	0
1	0
0	1

Typical applications:
- Large electrical installations (e.g. airports)
- Refrigeration units
- Special electricity tariffs
- Safety system such as fire alarm, fire pump, safety lifting stations

General Contents

General Contents

TransferPacT

TransferPacT Automatic and Active Automatic

(Automatic Transfer Switching Equipment)

A

TransferPacT Remote

(Remote Transfer Switching Equipment)

B

TransferPacT FXM

(MTSE/Complete Source Changeover Assembly)

C

TransferPacT: ComPacT and MasterPacT based

(Manual, Remote and Automatic TSE/Source Changeover Systems)

D

TransferPacT Automatic and Active Automatic

A

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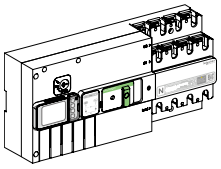
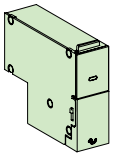
TransferPacT Class PC

ATSE: Automatic Transfer Switching Equipment (Non-derived ATSE, PC Type)

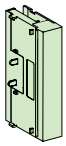
ATSE



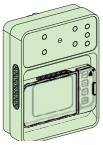
Function Modules



Indication Auxiliaries



External HMI



Cable

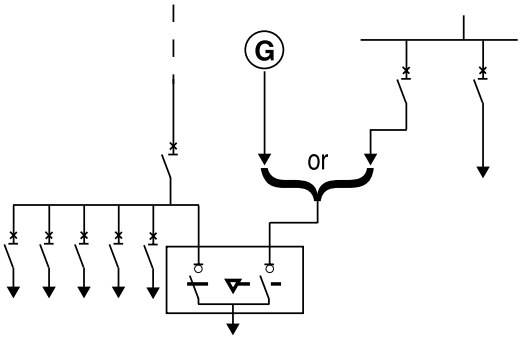
Definition of Class PC

Transfer switch equipment based on mechanical switching devices, that do not need electrical power to hold the main contacts open or closed. They are capable of making, carrying, and breaking currents under normal circuit conditions including operating overload conditions, and making and withstanding short-circuit currents.

Definition of ATSE (Automatic Transfer Switching Equipment)

Self-acting transfer switching equipment, including all necessary sensing inputs, monitoring, and control logic for transferring operations.

TransferPacT automatic transfer switching equipment is a Class PC ATSE specially designed in accordance with IEC 60947-6-1 requirements for power transfer. It has great withstand capabilities to short circuits and reliable making, carrying and breaking capabilities. Thus keeping reliable connectivity of circuits.
It is an all in one, Non-derived ATSE.



TransferPacT Class PC

TransferPacT is a high speed, comPacT, modular design intelligent automatic transfer switch that provides maximum scalability and robust performance. It is a Class PC ATSE designed according to IEC 60947-6-1, available through 32 A to 1600 A, 2,3,4 pole with rated operating voltage through 208 V to 440 V*.

*Note: Voltage varies depending on different frame. For more information, see general feature section.

Power availability

Maximized uptime:

Innovative technology ensuring transfer in less than 500 ms.

Vast application:

Utilization category AC-33B without derating, fits the most complicated load types.

Reliable under extreme condition:

Short circuit capabilities including short time withstand current for your power continuity.

Robust design – Extreme Environment Proof:

- Best-in-class electromagnetic protection, exceeding industry standards on class B.
- Designed to perform in harsh environments with operating temperature -25…70 °C
- Successfully passed testing in compliance with IEC 60068-2-6 and IEC 60068-2-27.

Efficiency

Easy installation:

- Built-in DPS and sensing wire, 30% of commissioning time saving.
- Multiple installation adapted. E.g. DIN rail for 32 A ~160 A (TA10, TA16).

Enhanced scalability:

- 10 function modules plug and play, non-disruption upgrading.

Connectivity

Natively connected – Integrated in EcoStruxure™ Power

- 24/7 precise power monitoring on voltage, frequency, voltage unbalance, phase rotation.

Cyber security

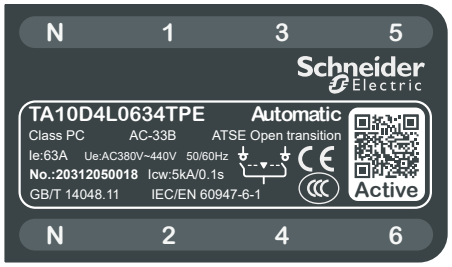
Designed according to cyber security standard IEC 62443 at the level of SL1.

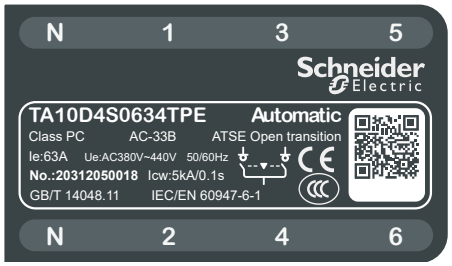
Sustainability

Green premium ecolabel.

- Green Package for full product range.
- Saving trees - Scan QR code for full version for technical documents.

General Features





Codes and Standard

- IEC 60947-1 General rules
- IEC 60947-6-1 Transfer switching equipment
- GB 14048.1 General rules
- GB/T 14048.11 Transfer switching equipment

Certifications and Declarations

- CB certification
- CE certification
- CCC certification
- UKCA declaration

Environmental Conditions

- TransferPacT ATSE can operate in an ambient temperature of -25 °C ~ +70 °C
- The altitude of the installation site shall not exceed 2000 m
- When the highest temperature is +55 °C, the relative humidity in air shall not exceed 95%
- Storage temperature: -40 °C ~ +85 °C

Vibration and Shock

- Tests are carried out in compliance with IEC 60068-2-6 and IEC 60068-2-27

Electromagnetic Compatibility (EMC)

- EMC Class A
- EMI Class B

Electrostatic discharge	Level 4
Radio-frequency electromagnetic field	Level 3
Fast transient bursts	Level 4
Surges	Level 4
Harmonic wave	Level 3
Voltage dips and short-time interruptions	Level 3

Degree of Pollution

- Pollution degree 3 as defined by IEC standard 60947

General Features

General Features

TransferPacT Active Automatic

TransferPacT Automatic

TransferPacT Automatic /TransferPacT Active Automatic		
Frame		
Conventional Thermal Current	Ith	at 60 °C
Rated operating current (A)	Ie	AC-33B
		AC-32B
Number of poles		
Operating positions		
Control types		
Electrical Characteristics as Defined by IEC 60947-1 / 60947-6-1 and EN 60947-1 / 60947-6-1		
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	Uimp	
Rated operating voltage (V)	Ue	AC50/60 Hz
Rated operating frequency (Hz)	F	
Rated short-time withstand current (kA)	Icw	
Rated short-circuit making capacity (400 V, 50 Hz)	Icm	switch alone
		with upstream circuit breaker
Rated duties		Uninterrupted duty
Contact Transfer Time* (I -> II or II -> I)		
I -> II or II -> I transfer time*, after power loss		
Mechanical durability		
Controller life expectancy （years)		
Suitability for Isolation		
Installation and Connection- Fixed, Front Connection		
Installation		
Wiring		
Switch Accessories		
Position feedback(Auxiliary contact)		
Terminal cover		
Rail buckle		
Terminal Shield		
Load extension bars		
Interphase barrier		
Degree of pollution		
Upstream protection	Refer to Complementary technical information	
Dimensions and weights		
Overall dimensions W x H x D (mm)	2pole	
	3pole	
	4pole	
Approximate weight (kg)	2pole	
	3pole	
	4pole	

Note:

■Standard □Optional

(1) default 230 V/400 V

* : Transfer times are at rated voltage, excluding time delays when applicable

**: suitable for normal and upside down installation

For the upstream protection coordination with transfer switching equipment, refer to coordination tables in page A55-A59 or complementary technical guid.

General Features

	TA10	TA16
	100	160
	100	160
	32,40,50,63	80,100,125,160
	80,100	
	2/3/4	3/4
	3	3
	Active Automatic HMI/ Automatic HMI	Active Automatic HMI/ Automatic HMI

	TA10	TA16
	800	800
	6	8
	2P:220/230/240/250 V(1) 3P,4P:380/400/415/440 V(1)	3P,4P:380/400/415/440 V(1)
	50/60 Hz	50/60 Hz
	5kA/0.1 s	10kA/0.1 s
	15 kA	20 kA
	75 kA	154 kA
	■	■
	≤ 200 ms	≤ 200 ms
	≤ 500 ms	≤ 500 ms
	8,000	10,000
	10	10
	■	■

	TA10	TA16
	Rail/base plate**	Rail/base plate**
	busbar /Cable	Busbar/crimp lug

	TA10	TA16
	□	□
	■	■
	■	■
	□	□
	□	□
	-	□
	3	3
	310 x 155 x 94	
	310 x 155 x 94	351 x 164 x 95
	310 x 155 x 94	351 x 164 x 95
	3.4	-
	3.4	5.6
	3.4	5.6

General Features

TransferPacT Active Automatic

TransferPacT Automatic

TransferPacT Automatic /TransferPacT Active Automatic		
Frame		
Conventional Thermal Current	Ith	at 60°C
Rated operating current (A)	Ie	AC-33B
Number of poles		
Operating positions		
Control types		
Electrical Characteristics as Defined by IEC 60947-1 / 60947-6-1 and EN 60947-1 / 60947-6-1		
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	Uimp	
Rated operating voltage (V)	Ue	AC50/60 Hz
Rated operating frequency (Hz)	F	
Rated short-time withstand current (kA)	Icw	
Rated short-circuit making capacity (400 V, 50 Hz)	Icm	switch alone
		with upstream circuit breaker
Rated duties		Uninterrupted duty
Contact Transfer Time* (I -> II or II -> I)		
I -> II or II -> I transfer time*, after power loss		
Mechanical durability		
Controller life expectancy （years)		
Suitability for Isolation		
Installation and Connection- Fixed, Front Connection		
Installation		
Wiring		
Switch Accessories		
Position feedback(Auxiliary contact)		
Terminal cover		
Rail buckle		
Terminal Shield		
Connection accessories	Crimp lug	
	Connector	
	Terminal Extension	
Interphase barrier		
Tightening torque for electrical connections (Nm)		
Degree of pollution		
Upstream protection	Refer to Complementary technical information	
Dimensions and weights		
Overall dimensions W x H x D (mm)	3pole	
	4pole	
Approximate weight (kg)	3pole	
	4pole	

Note:

■Standard □Optional

(1). at 50°C

General Features

	TA25	TA63	TA80
	250	630	800
	250	630	800(1)
	100,200,250	320,400,500,630	800
	3/4	3/4	3/4
	3	3	3
	Active Automatic HMI/ Automatic HMI	Active Automatic HMI/ Automatic HMI	Active Automatic HMI/ Automatic HMI

	TA25	TA63	TA80
	800	800	1000
	8	12	12
	208/220/230/240 V 380/400/415/440 V	208/220/230/240 V 380/400/415/440 V	208/220/230/240 V 380/400/415/440 V
	50/60 Hz	50/60 Hz	50/60 Hz
	15kA/0.1 s 10kA/0.5 s	25kA/0.1 s 20kA/0.5 s	25kA/0.1 s 20kA/0.5 s
	30 kA	40 kA	40 kA
	330 kA	330 kA	330 kA
	■	■	■
	≤ 200 ms	≤ 200 ms	≤ 200 ms
	≤ 500 ms	≤ 500 ms	≤ 500 ms
	10,000	10,000	10,000
	10	10	10
	■	■	■

	TA25	TA63	TA80
	Base Plate	Base Plate	Base Plate
	Busbar/Crimp lug/Cable	Busbar/Crimp Lug/Cable	Busbar/Crimp Lug/Cable

	TA25	TA63	TA80
	□ Maximum 3 sets	□ Maximum 3 sets	□ Maximum 3 sets
	-	-	-
	-	-	-
	□	□	□
	□	□	□
	□	-	□
	□	□	□
	□	□	□
	15±1.5	50±5	50±5
	3	3	3
	370 x 341 x 186	467 x 341 x 186	467 x 341 x 186
	370 x 341 x 186	467 x 341 x 186	467 x 341 x 186
	13.1	20.8	21.4
	13.3	22.1	22.4

General Features

TransferPacT Active Automatic

TransferPacT Automatic /TransferPacT Active Automatic		
Frame		
Conventional Thermal Current	Ith	at 60°C
Rated operating current (A)	Ie	AC-33B
Number of poles		
Operating positions		
Control types		
Electrical Characteristics as Defined by IEC 60947-1 / 60947-6-1 and EN 60947-1 / 60947-6-1		
Rated insulation voltage (V)	Ui	
Rated impulse withstand voltage (kV)	Uimp	
Rated operating voltage (V)	Ue	AC50/60 Hz
Rated operating frequency (Hz)	F	
Rated short-time withstand current (kA)	Icw	
Rated short-circuit making capacity (400 V, 50 Hz)	Icm	switch alone with upstream circuit breaker
Rated duties		Uninterrupted duty
Contact Transfer Time* (I -> II or II -> I)		
I -> II or II -> I transfer time*, after power loss		
Mechanical durability (2)		
Controller life expectancy （years)		
Suitability for Isolation		
Installation and Connection- Fixed, Front Connection		
Installation		
Wiring		
Switch Accessories		
Position feedback(Auxiliary contact)		
Terminal cover		
Rail buckle		
Connection accessories	Crimp lug	
	Connector	
	Terminal Extension	
Interphase barrier		
Tightening torque for electrical connections (Nm)		
Degree of pollution		
Upstream protection	Refer to Complementary technical information	
Dimensions and weights		
Overall dimensions W x H x D (mm)	3pole	
	4pole	
Approximate weight (kg)	3pole	
	4pole	

Note:

■Standard □Optional

(1). at 50°C

(2). durability with maintenance

General Features

	TA1A
	1600
	1600
	800,1000,1250,1600
	3/4
	3
	Active Automatic HMI

	TA1A
	1000
	12
	380/400/415/440 V
	50/60 Hz
	70kA/0.1 s 50kA/0.5 s
	105 kA
	154 kA
	■
	≤ 200 ms
	≤ 500 ms
	10,000
	10
	■

	TA1A
	Base
	Busbar/Crimp lug/Cable

	TA1A
	□
	Maximum 4 sets
	-
	-
	□
	□
	□
	□
	50±4
	3
	540 x 391 x 383.5
	540 x 391 x 383.5
	800-1250 A: 63.2 ; 1600 A: 65
	800-1250 A: 69.5 ; 1600 A: 72

Controller General Features

TransferPacT provides advanced microprocessor controller with two options:
- Active automatic HMI (LCD display and keypad)
- Automatic HMI (Rotary and DIP switch).

It is a robust and reliable controller which offers voltage, frequency, control, timing and diagnostic functions required for wide range of power application.
Automatic HMI is easy to install and use, while active automatic HMI contains every function needed with eight control modes.

There are two key breakthroughs for TransferPacT controller:

- Active automatic HMI and automatic HMI can be swapped, that means an easy way to upgrade your controller, or replace it for maintenance or renewal.
- 10 types of function modules can be installed on TransferPacT controller, at any time, which provides maximum scalability and a reduced total cost of ownership, since you can add a function as demand grows.

Controller Type		Active Automatic With LCD Display	Automatic With Setting By Rotary Switch
Installation		Embedded controller	Embedded controller
Controller Functional Characteristics			
2P (Phase-Neutral)		230 V: can be set at 220 V/240 V/250 V	230 V: can be set at 220 V/240 V/250 V
3P/4P (Phase -Phase)*		230V: Can be set at 208 V/220 V/240 V	-
3P/4P (Phase-Neutral)		400 V: Can be set at 380 V/415 V/440 V	400 V: Can be set at 380 V/415 V/440 V
Rated operating frequency (Hz)		50/60	50/60
Rated insulation voltage (V)			
3P/4P (Phase -Phase)*		300V	-
2P/3P/4P (Phase-Neutral)		500V	500V
Impulse withstand voltage (KV)			
3P/4P (Phase -Phase)*		4 kV	-
2P/3P/4P (Phase-Neutral)		6 kV	6 kV
Operating temperature		-25 °C to +70 °C	-25 °C to +70 °C
Operating altitude		≤2000 m	≤2000 m
Protection degree		IP20/IP40*	IP20
Pollution degree		3	3
Accuracy (for power deviation)	Voltage	1%	1%
	Frequency	0.1%	0.1%
Electrostatic discharge		Level 4	Level 4**
Radio-frequency electromagnetic field		Level 3	Level 3
Fast transient bursts		Level 4	Level 4
Surges		Level 4	Level 4
Harmonic wave		Class 3	Class 3
Voltage dips and short-time interruptions		Level 3	Level 3
Vibration		IEC 60068-2-6	IEC 60068-2-6
Shock		IEC 60068-2-27	IEC 60068-2-27
Display of Controller			
Display mode		LCD + LED + Indicator	Rotary switch + DIP switch + LED + Indicator
Single line diagram		■	■
Language		English/Chinese/French/Russian/Spanish/ Italian/German/Portuguese	Not Applicable
Power status		■	■
Position for contact (electrical indication)		■	■
Set value		Button	Rotary switch + DIP switch

Note: ■Standard □Optional
* IP40 for external HMI
** plastic cover need to close

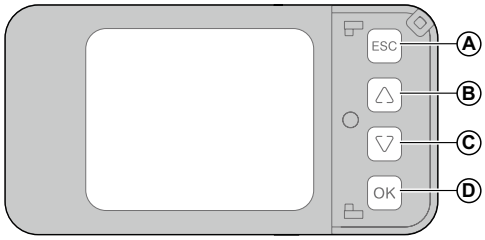
Controller General Features

Controller Type		Active Automatic With LCD Display	Automatic With Setting By Rotary Switch
Controll Mode			
Auto	Auto return	■	■
	Non return	■	■
Non-Auto	Handle	■	■
	Force	□	□
	Fire	□	□
	Inhibit	□	□
	Local	■	-
	Voluntary	□	□
	communication**	■	-
	Test	■	□
Auto Control			
Sampling		Three Phase for both Normal and Alternate	Three Phase for both Normal and Alternate
Voltage loss		< 36 V	< 36 V
Under voltage	Set value	70% to 95%	4%,6%, 8%, 10%, 12%, 14%, 16%, 18%, 20%
Over voltage	Set value	105% to 135%	4%, 6%, 8%, 10%, 12%, 14%, 16%, 18%, 20%
Under frequency	Set value	80% to 98%	2%, 3%, 4%, 5%, 6%, 7%, 8%, 9%, 10%
Over frequency	Set value	101% to 120%	2%, 3%, 4%, 5%, 6%, 7%, 8%, 9%, 10%
Unbalance of three phase voltage		2% to 30%	-
Phase rotation		Yes	-
Time Delay			
Transfer delay		0-30 minutes	U-U:0, 1, 2, 3, 5, 10, 20, 30, 60 s. U-G:5 s
Retransfer delay		0-60 minutes	0, 1, 2, 3, 5, 10, 20, 30, 60 min
Center off delay		0-30 s	0 or 5 s
Genset start delay		0-120 s	0, 1, 2, 3, 5, 10, 20, 30, 60 s
Genset cooldown delay		0-60 minutes	60 s
Loadshedding delay		0-15 s	-
Genset ready alarm delay		15-300 s	300 s
Test delay:on load		1-1800 s	
Test delay:off load		1-1800 s	
Other Functions			
Calendar time		■	-
Position feedback (mechnical)		□	□
Event log		■	-
Source priority		■	■
Communication		Modbus RTU	-
Transfer Inhibit		□	□
Password protection		■	-
Gen start-stop		□	□
Test		■	□
Load shedding		□	□
Fire protection		□	□
Failure lock		■	■
Alarm Indication		■	■
External power supply port (auxiliary supply)		■	-
Wrong connection of neutral alarm		■	-

Note: ■Standard □Optional
** communication transfer only applicable to Frame 250&630&800&1600

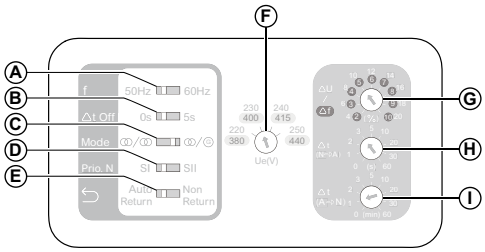
Controller General Features

Active Automatic HMI (With LCD Display) Description



Label	Description
A	Navigation button to return to previous page
B	Navigation button for rolling up
C	Navigation button for rolling down
D	OK button to confirm any status

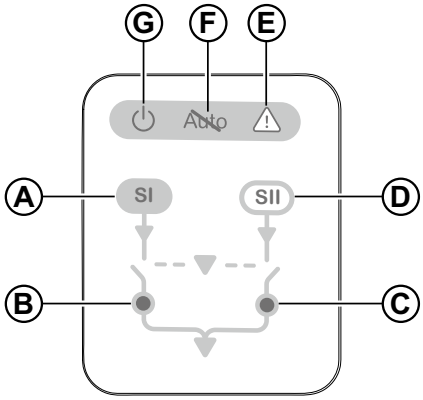
Automatic HMI (With Rotary Switch) Description

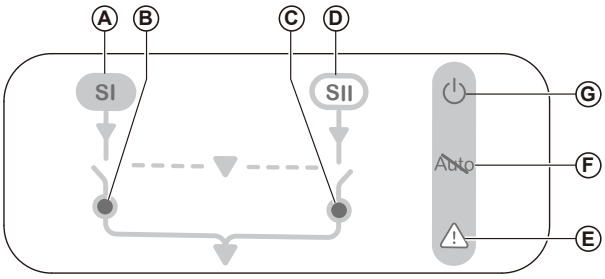


Label	Description
A	Rated frequency
B	Time delay for off position
C	Type of source = Utility/Utility = Utility/Genset
D	Source priority
E	Transition mode for return to normal position
F	Nominal voltage
G	Voltage and frequency thresholds setting
H	Transfer time delay in seconds from normal source to alternate source
I	Transfer time delay in minutes from alternate source to normal source

Controller General Features

Single Line Diagram Description

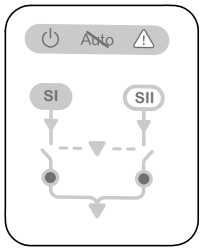


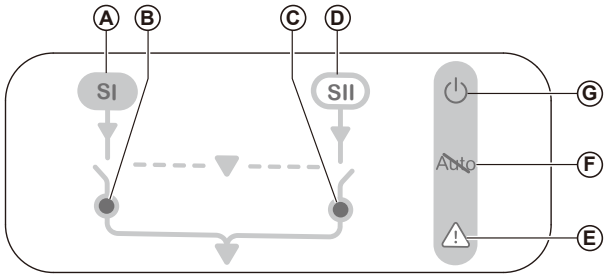


Label	Description
A	Source I power status indicator
B	Contact position of source I
C	Contact position of source II
D	Source II power status indicator
E	Alarm indicator
F	"Not in Auto" status indicator
G	Power ON indicator

Controller General Features

Single Line Diagram LEDs





LED Indication	Status	Description
		No energy, ATSE power off
	400 ms	ATSE updating in process or Test mode in progress
		ATSE is running in normal operation, ready to transfer
Auto		The ATSE is running in Auto mode
		ATSE is “Not in Automatic” mode, and will not automatically transfer in case of source failure.
		No alarm
		Alarm is active
SI		No Source I
		Source I out of range
		Source I present and in the range
SII		No Source II
		Source II out of range
		Source II present and in the range
		Source I is opened (Not connected)
		Time delay is running for transferring
		Source II is opened (Not connected)
		Source II is opened (Not connected)
		Time delay is running for transferring
		Source II is closed (Connected)

NOTE: The LED indicator on the equipment and the external HMI is for reference. In the event of a contradiction between the LED and the mechanical indication, the latter prevails

Control Mode and Transfer Logic Transfer Switching Equipment 32–1600 A

Overview

The control mode is used to operate TSE in different applications. The TransferPacT Active automatic contains every function needed with nine control modes:

- Auto mode
- Test mode
- Communication transfer mode*
- Voluntary transfer mode
- Local control mode
- Transfer inhibit mode
- Fire protection mode
- Force to off mode
- Handle transfer mode

The TransferPacT Automatic contains below control modes:

- Auto mode
- Test mode
- Voluntary transfer mode
- Transfer inhibit mode
- Fire protection mode
- Force to off mode
- Handle transfer mode

* communication transfer for Frame 250 ,Frame 630, Frame 800 and Frame 1600 only.

Priority of Control Mode

Type of mode	Handle	Force	Fire	Inhibit	Local	Voluntary	Comm	Test	Auto
Handle transfer mode	-	I	I	I	I	I	I	I	I
Force to off mode	x	-	I	I	I	I	I	I	I
Fire protection mode	x	x	-	I	I	I	I	I	I
Transfer inhibit mode	x	x	x	-	I	I	I	I	I
Local control mode	x	x	x	x	-	I	I	I	I
Voluntary transfer mode	x	x	x	x	x	-	I	I	I
Comm transfer mode	x	x	x	x	x	x	-	I	I
Test mode	x	x	x	x	x	x	x	-	I
Auto mode	x	x	x	x	x	x	x	x	-

"-" = No caution
"I" = Interrupt
"X" = Ignore

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Auto Control Mode

ATSE works on auto control mode normally. The controller monitors the real time values of both the sources. When there is source contingency, the transfer action will be energized to keep the power continuity for critical source.

Auto mode supports U-G or U-U applications.

NOTE: Auto transfer will not be active, if transfer action damages driving system (for example, both are out of range, TSE refuses to transfer).

There are two types of auto control mode:

- Auto-return
- Non-return

Naming	Condition for Stay on A Situation Return	
power source definition	N available	N available
	A available	A unavailable
Auto-return	Switch to N	Switch to N
Non-return	Stay at A	Switch to N

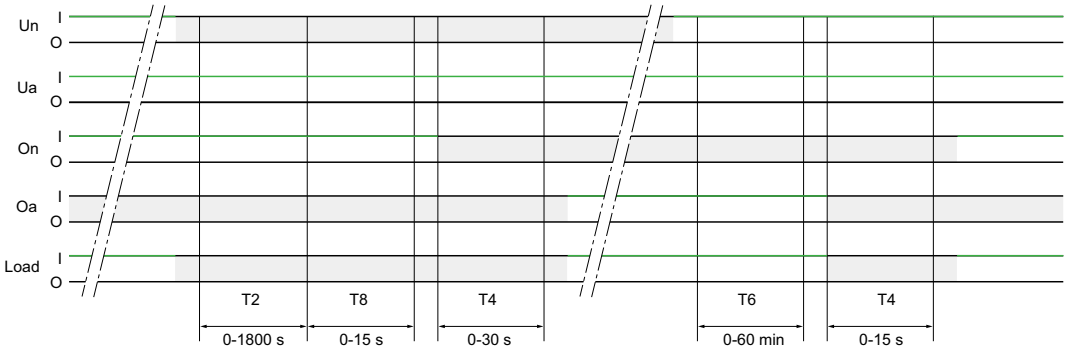
Auto return

The Auto return has two modes:

- When the voltage on the N source exceeds the threshold (over voltage, under voltage, over frequency, under frequency) or does not exist, the ATSE will be transferred to the A source.
- When the voltage on the N source is within the threshold range, the ATSE will be transferred to N source.

The process of transfer can be controlled by time delay.

Transfer Process for Auto return U-U Application



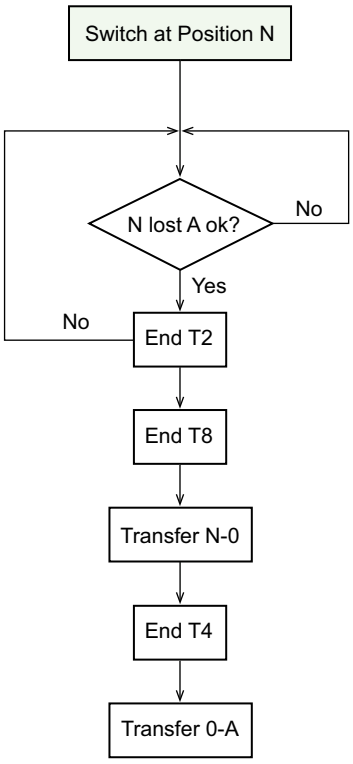
Symbols	Description
Un	Source I
Ua	Source II
On	Contact close at N source
Oa	Contact close at A source
Load	Status
T2	Transfer delay
T8	Loadshed Delay
T4	Center-off Delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Symbols	Description
T6	Re-Transfer Delay
Key	
O: OFF (circuit open)	
I: ON (circuit closed)	
: no Power	

A

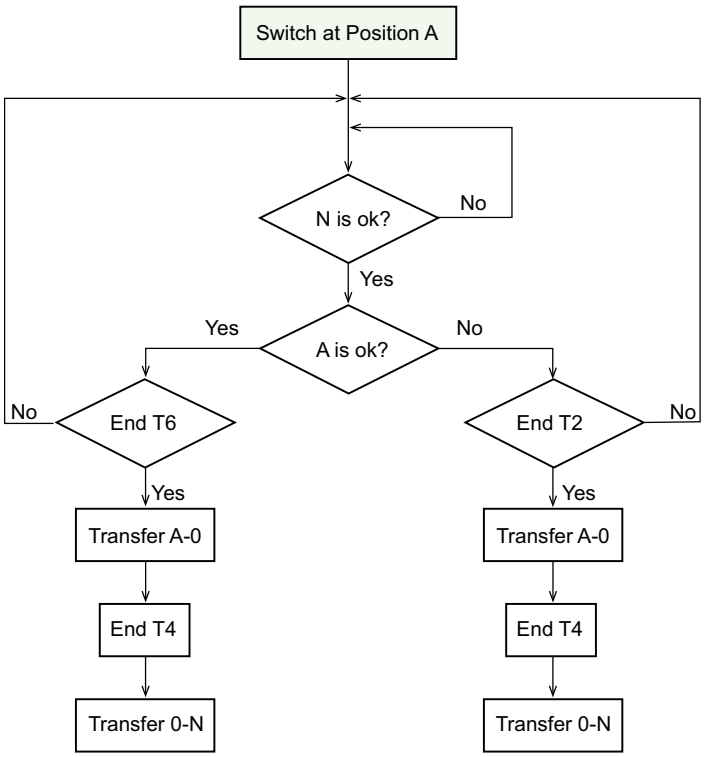
Transfer Logic for Auto-Return U-U Application



Transfer Logic

* T2 will reset if N becomes unavailable or A becomes unavailable

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

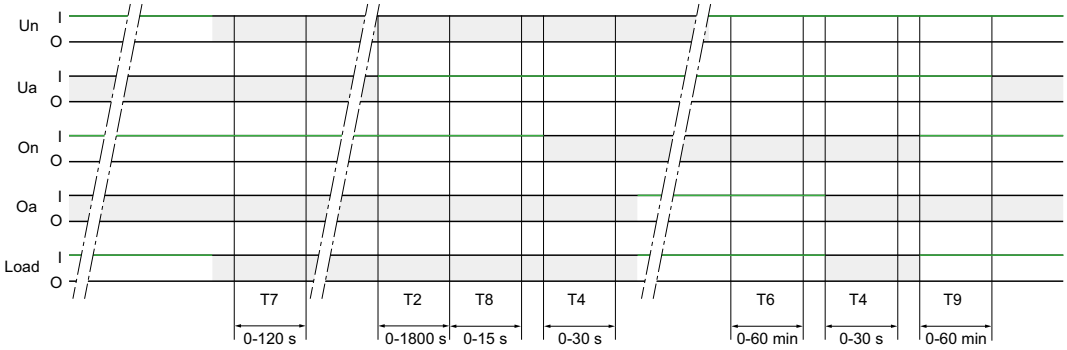


Retransfer Logic

- T2 will reset if N becomes unavailable
- T6 will reset if N becomes unavailable
- During T6, if A is not available it will keep to count T6 if the rest time of T6 is shorter than T2. Other wise it goes to T2

Retransfer principles when source A is ok, retransfer goes to T6, when source A is not ok and source A is utility, retransfer goes to T2. If source A is Genset and is not ok, retransfer delay is 0.

Transfer Process for U-G Application



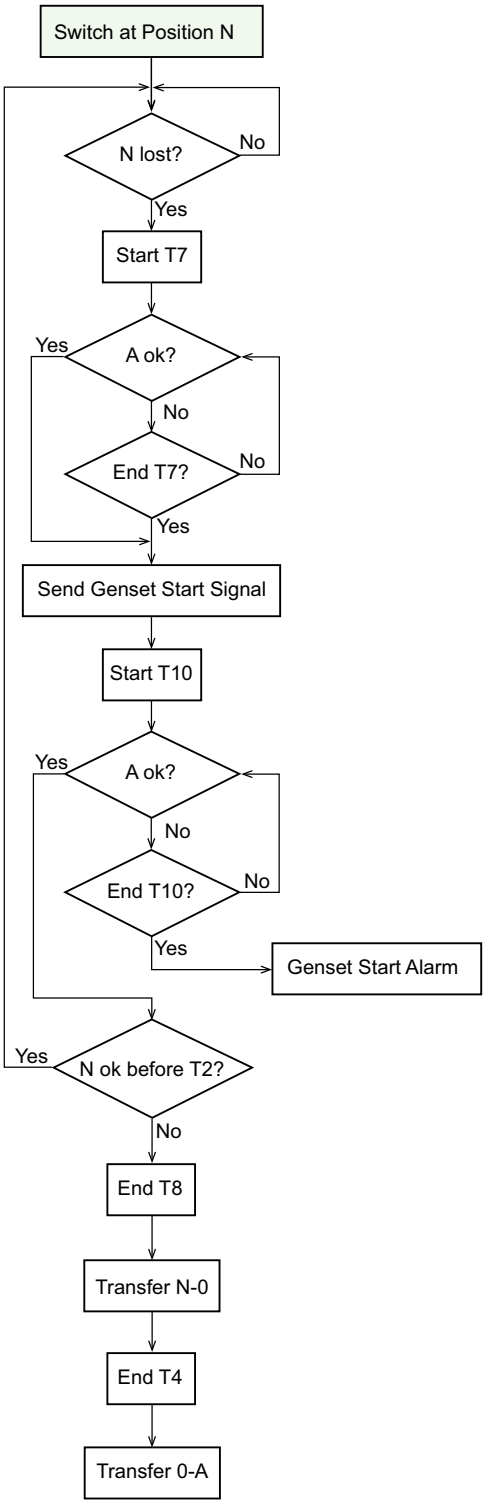
Symbols	Description
Un	Source I
Ua	Source II
On	Contact close at N source
Oa	Contact close at A source
Load	status
T7	Genset Start Delay
T2	Transfer delay
T8	Loadshed Delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Symbols	Description
T4	Center-off Delay
T6	Re-Transfer Delay
T9	Genset Cool Delay
Key	
O: OFF (circuit open)	
I: ON (circuit closed)	
: No Power	

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

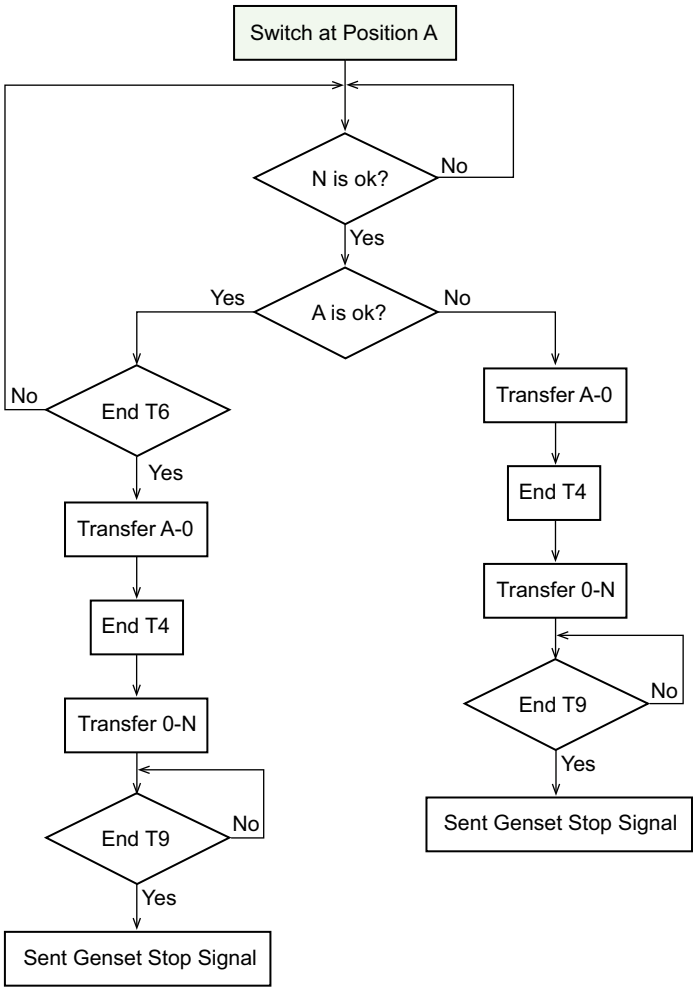
Transfer Logic for U-G Application



Transfer Logic

- T2 will reset if N becomes unavailable
- If disable Genset Start Fail Warning, T10 will not be counted
- The whole transfer will be canceled if N becomes available during T7

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A



Retransfer Logic

- T2 will reset if N becomes unavailable
- T6 will reset if N becomes unavailable
- During T6, if A is not available it will keep to count T6 if the rest time of T6 is shorter than T2. Other wise it goes to T2

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

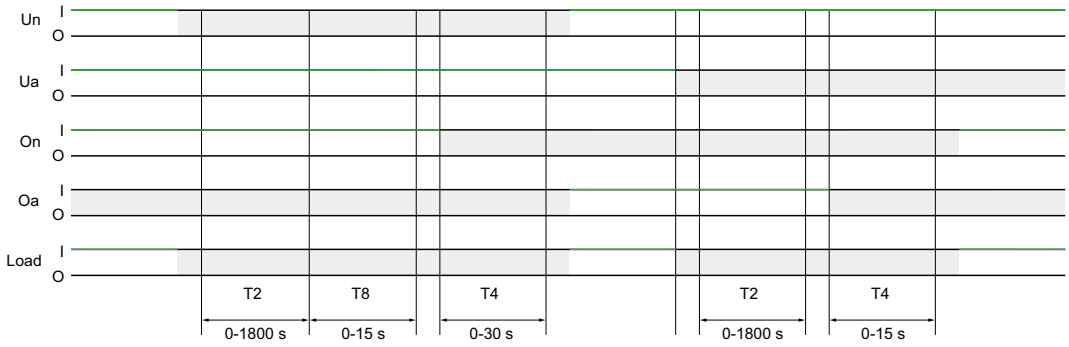
Non-Return

In the non-return mode, after auto transfer to replacement, the ATSE will be connected to the alternate source until:

- An external order is given to transfer back to N source.
- The alternate source is out of range. In such case, the ATSE controller will transfer back to the N source to maintain power availability.

There will be only one time power off, when there is normal power outage.

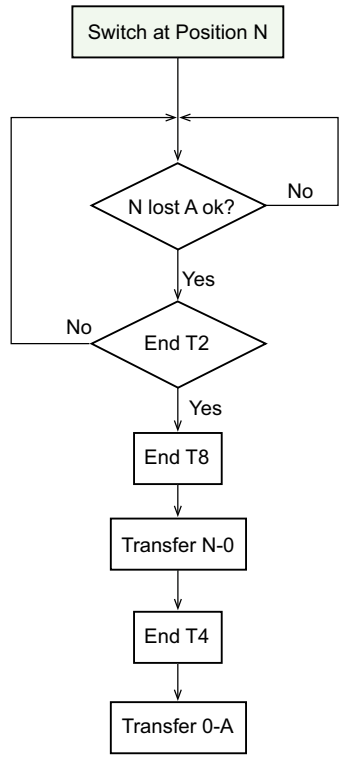
Transfer Process for Non-Return U-U Application



Symbols	Description
Un	Source I
Ua	Source II
On	Contact close at N source
Oa	Contact close at A source
Load	Status
T2	Transfer delay
T8	Loadshed Delay
T4	Center-off Delay
Key	
O: OFF (circuit open)	
I: ON (circuit closed)	
: No Power	

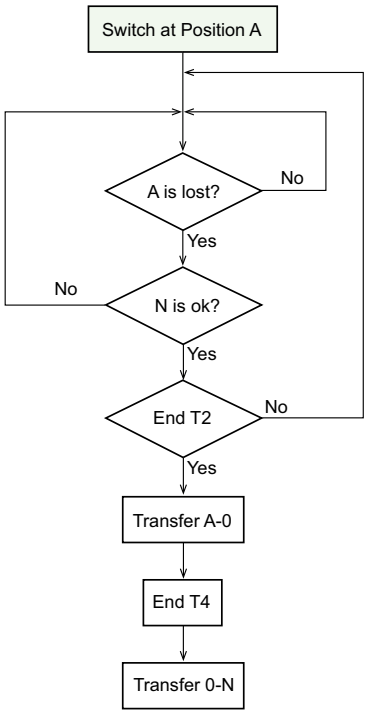
Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Logic for Non-Return U-U Application



Transfer Logic

* T2 will reset if N becomes unavailable or A becomes unavailable

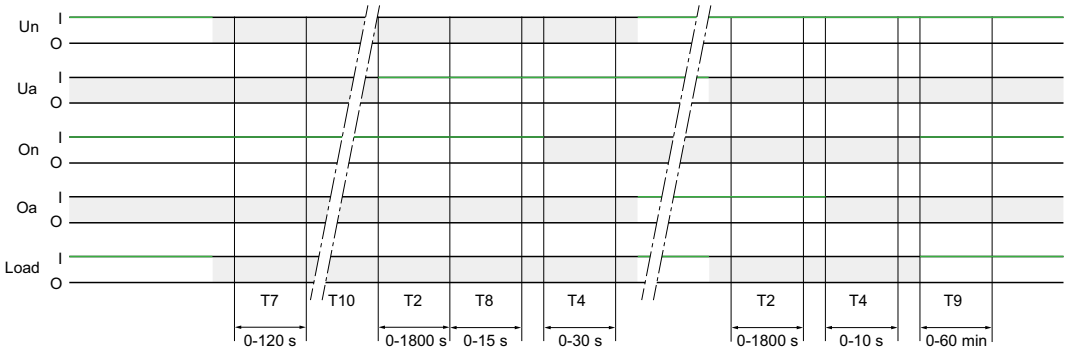


Retransfer Logic

* T2 will reset if N becomes unavailable

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

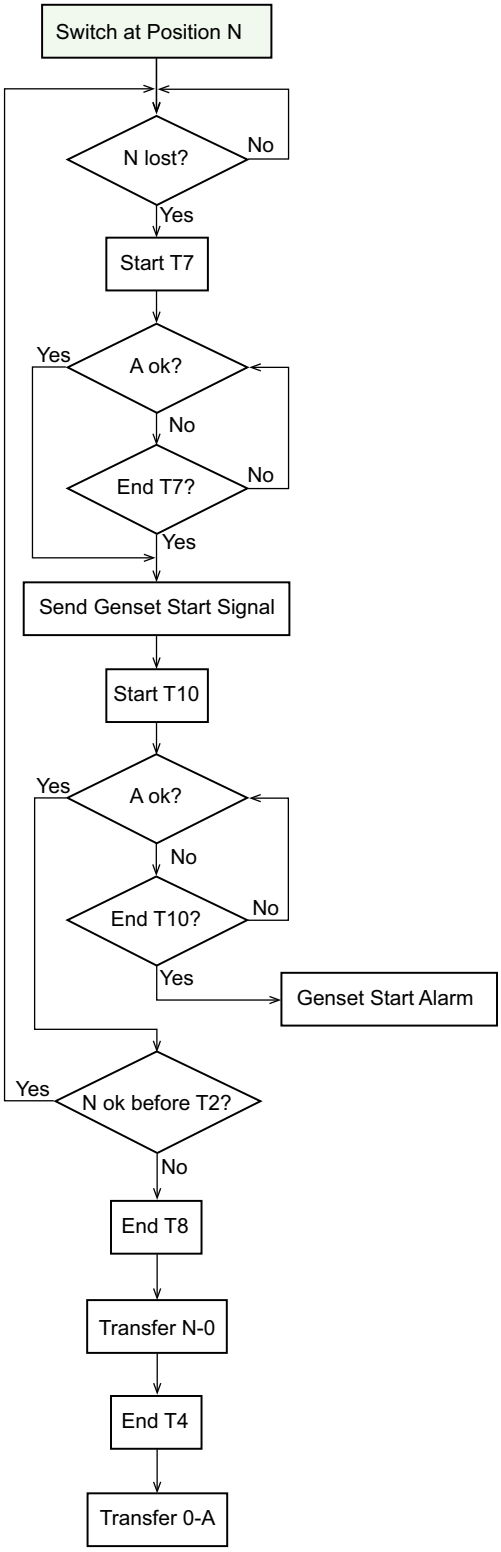
Transfer Process for Non-Return U-G Application



Symbols	Description
Un	Source I
Ua	Source II
On	Contact close at N source
Oa	Contact close at A source
Load	status
T7	Genset Start Delay
T2	Transfer delay
T8	Loadshed Delay
T4	Center-off Delay
T9	Genset Cool Delay
Key	
O: OFF (circuit open)	
I: ON (circuit closed)	
: No Power	

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

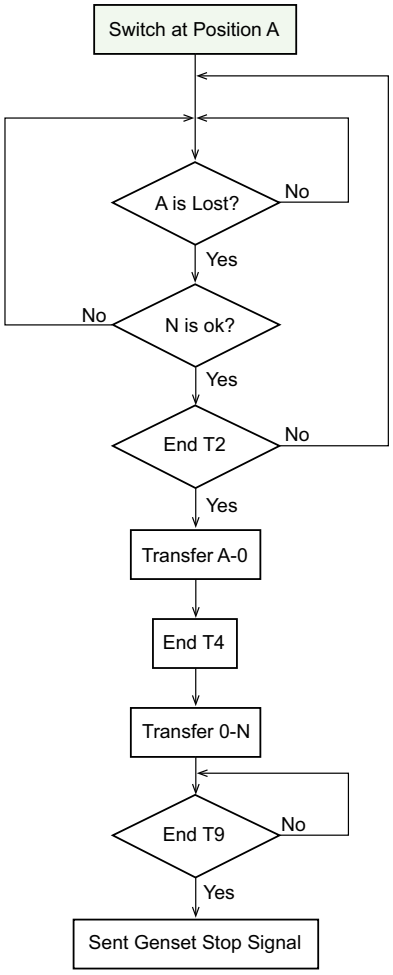
Logic of Non-Return for U-G Application



Transfer Logic

- T2 will reset if N becomes unavailable or A becomes unavailable
- If disable Genset Start Fail Warning, T10 will not be counted

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A



Retransfer Logic

* T2 will reset if N becomes unavailable

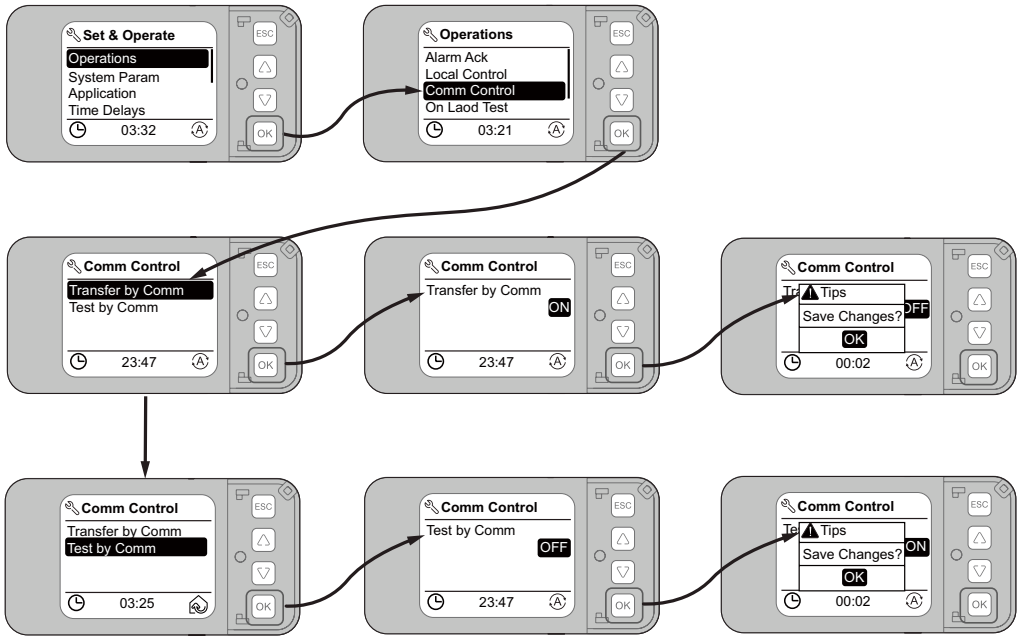
Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Communication Control Mode

The communication control function allows TSE to transfer or test through communication. The switch can refuse to respond if the action will damage the driving system. It cannot transfer to unavailable source either.
The communication control function can be enabled/disabled through Active Automatic HMI (only available for TransferPacT Active Automatic transfer switch equipment).

To use the communication control successfully, at least one Modbus module should be installed and activated.

NOTE: Communication control is OFF by default. Follow the instructions below to enable communication control.



Transfer by Communication

Transfer Logic Overview

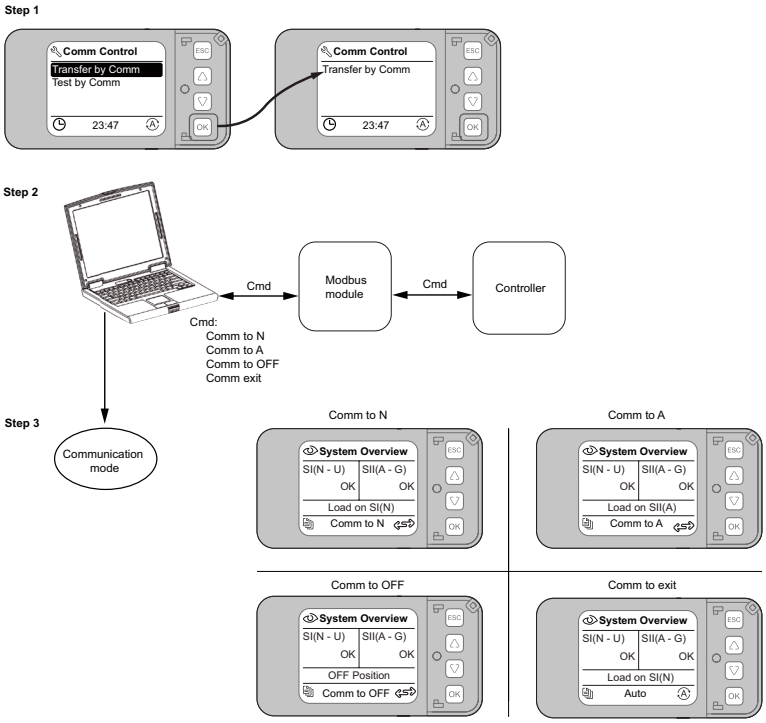
Transfer by communication support the following four commands:

- Comm to Normal Source
- Comm to Alternate Source
- Comm to OFF
- Comm to Exit

The command is sent through PC - Modbus. Comm to N/A is equivalent to the voluntary transfer mode on the transfer result. Comm to OFF is equivalent to local control to Off, but not equivalent to force to Off. The ATSE will transfer to OFF after receiving the command without any time delay.

When more than one Modbus modules are installed, the ATSE will only respond to the module which will send the command first. It will not response to any command from other modules until the first module sends the Exit command.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A



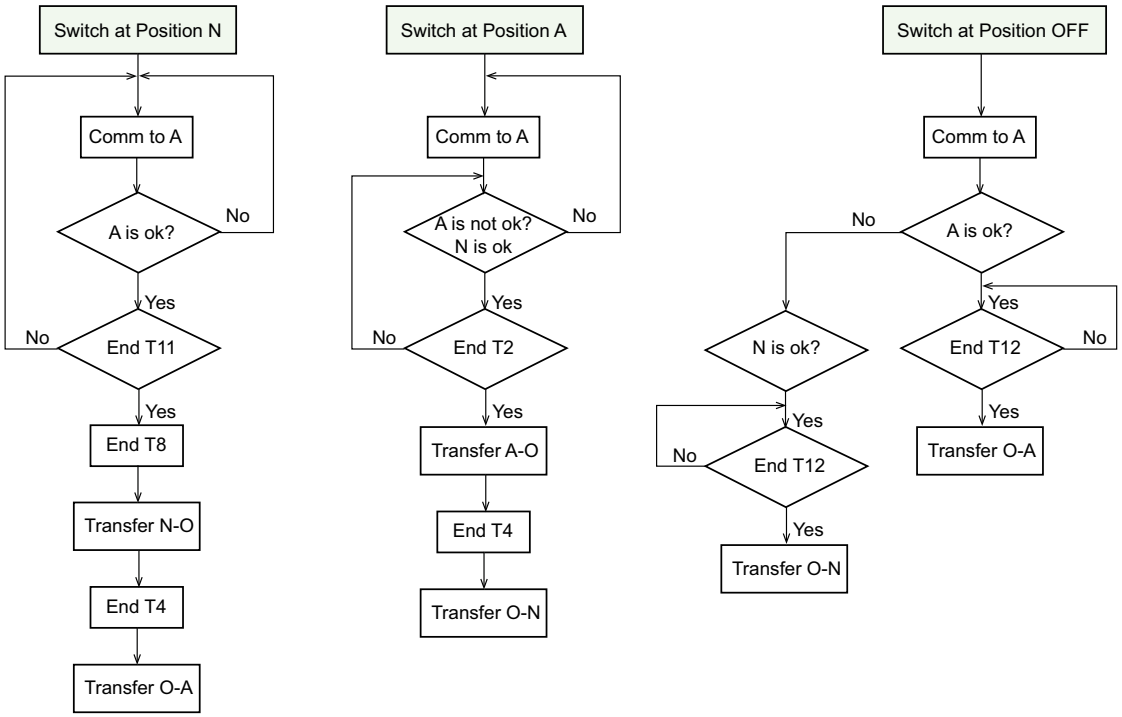
Exit Communication Control Mode

There are three ways to exit communication control mode:

- The Modbus master device sends the Exit command to the active Modbus module installed on ATSE.
- Turn off Transfer by Comm from active automatic HMI.
- The active Modbus module is offline.

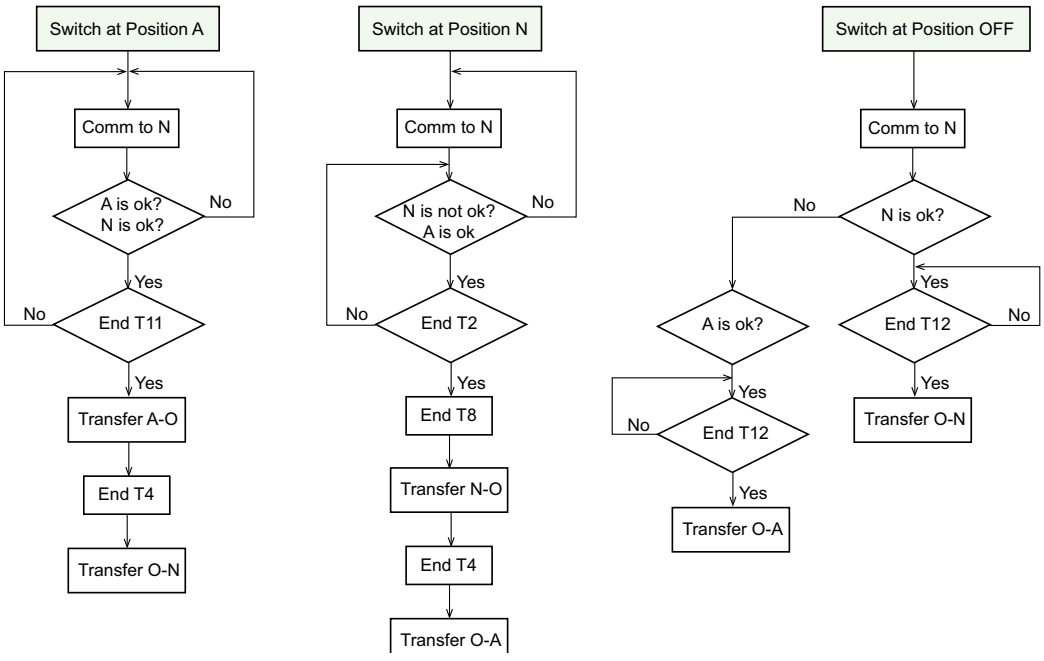
Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Transfer Logic of Communication to A (U-U Application)



* T11 is internal fixed time delay

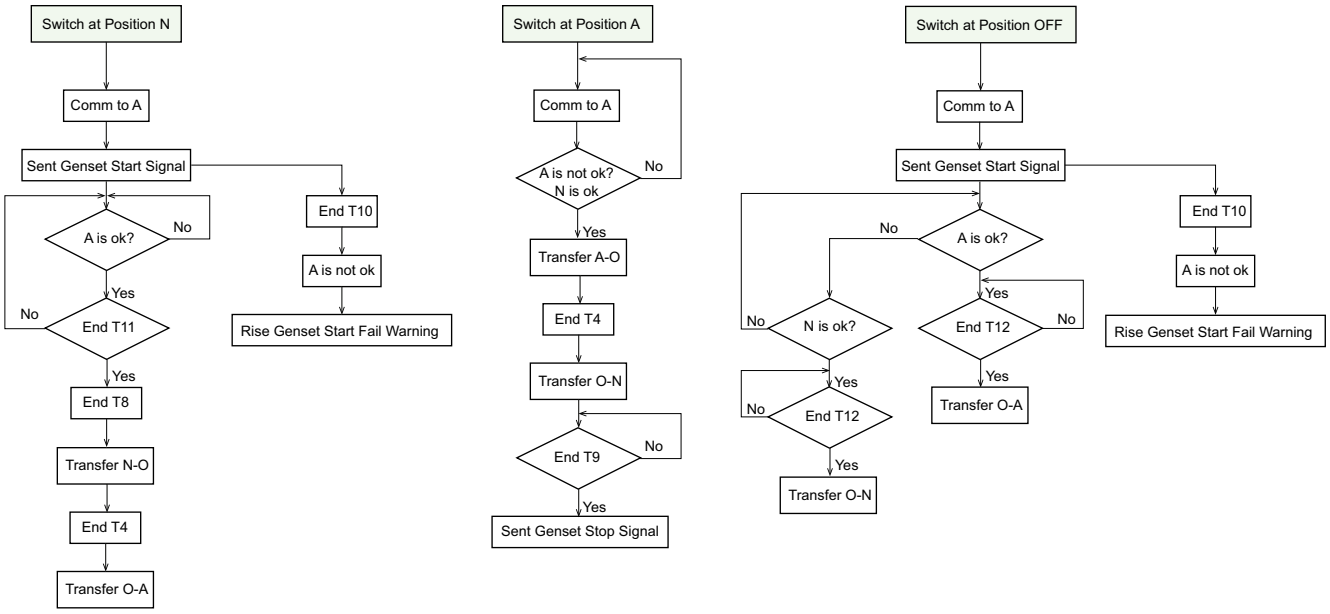
Transfer Logic of Communication to N (U-U Application)



* T11 is internal fixed time delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

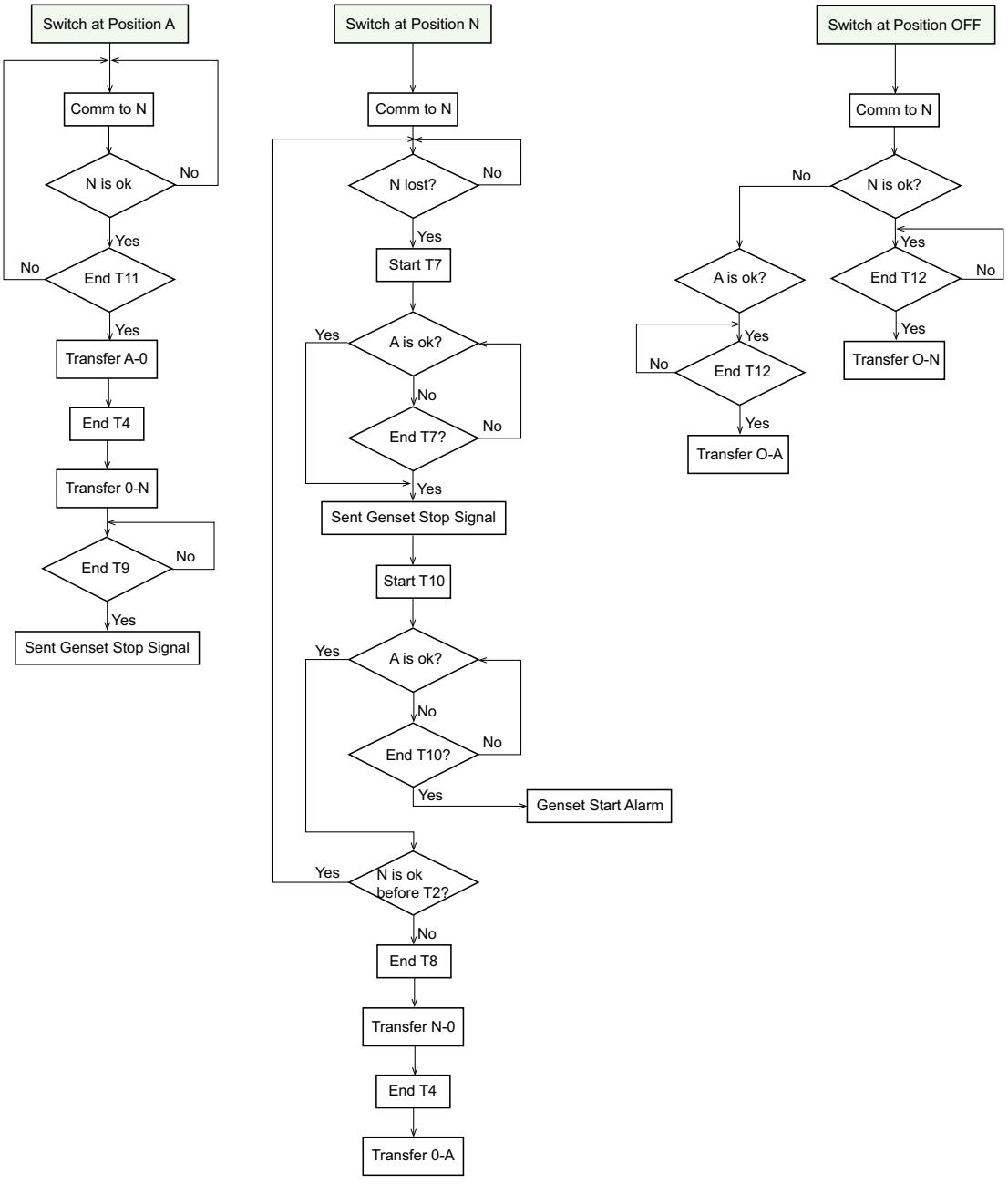
Transfer Logic of Communication to A (U-G Application)



* T11 is internal fixed time delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Transfer Logic of Communication to N (U-G Application)



* T11 is internal fixed time delay

Transfer Logic of Communication to Off

Comm to OFF is equivalent to local control to off in Local Control Mode, but different to Force to Off Mode. The ATSE will transfer to off after receiving the command without any time delay. For more information, see Local Control Mode, page A-44.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Test by Communication

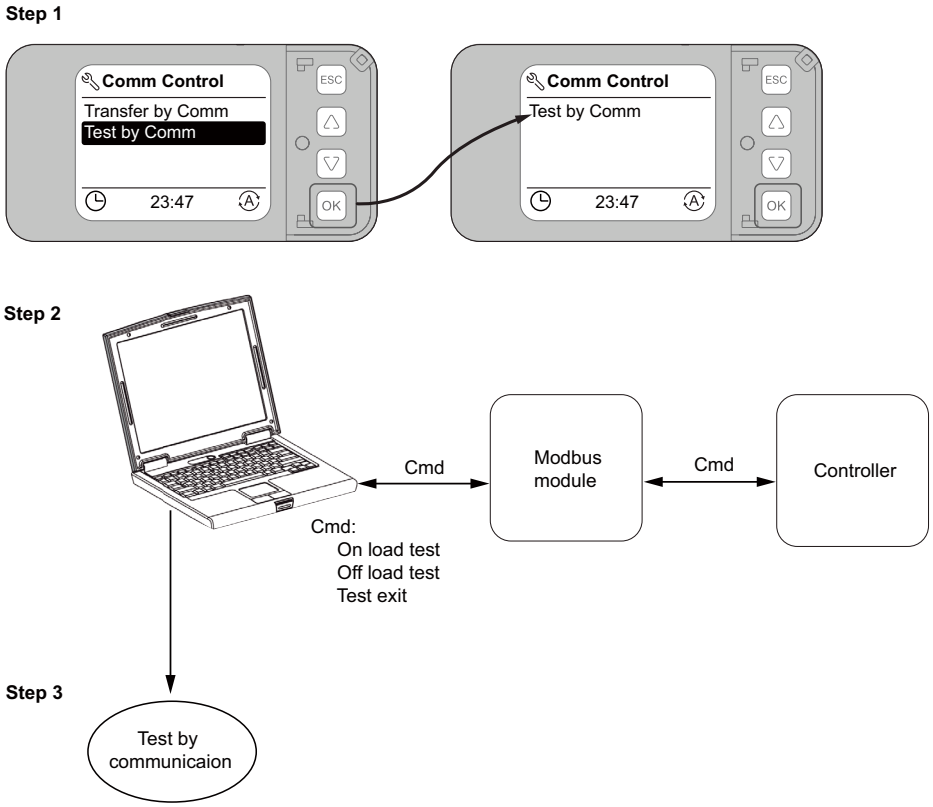
Transfer by communication that supports the following three commands:

- On Load Test
- Off Load test
- Test Exit

When more than one Modbus modules are installed, the ATSE will only respond to the module which send the command first. It will not respond to any command from other modules until the first module sends the Exit command.

When the test is ongoing, ATSE ignores any other interface signal from active automatic HMI or DI module (TPCDIO07).

The operation of Test by communication is equivalent to Test mode. For more information, see Test Mode, page A-37.



Stop Test by Communication

There are three ways to exit communication control mode:

- The Modbus master device send Test Exit command to the active Modbus module installed on ATSE.
- Turn off Test by Comm from active automatic HMI.
- The active Modbus module is offline.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Voluntary Transfer Mode

The voluntary transfer mode is equivalent to auto-priority mode on one source, with forced priority to the SI or SII source. It is activated when associated input is closed (the commercial reference number for the voluntary control module is TPCDIO08). It takes over 200 ms to activate the voluntary mode. The signal for voluntary transfer should be constant.

Voluntary transfer is normally used for special tariffs. Once the mode is set from voluntary to N or A, ATSE still remains in auto mode. When there is power contingency on target source, transfer switch can re-transfer to available source automatically.

> **NOTE**: Auto transfer will not be active, if transfer action damages driving system (for example, both source are out of range, TSE refuses to transfer).

The following are the voluntary transfer mode use cases:

Use Case 1: Typhoon Mode

During typhoon or earthquake, the Genset will be more stable than utility. The user for this case has installed a typhoon mode switch on his control panel. The user will activate the typhoon mode switch. It is connected to the input voluntary transfer mode which will transfer to alternate source (need accessory to have function of voluntary transfer using TPCDIO08 accessories). The ATSE will now activate the Genset output and will transfer to Genset once ready.

Now during the typhoon, the Genset is flooded. The ATSE will still be in auto mode. It detects alternate source failure. If the normal source is fine, it will try to transfer to normal source (voluntary is still an auto mode, and we have auto-return).
If the normal source is not available then ASTE will not do any transfer.
Still during typhoon, the Genset can restart (it was a fuel level problem). As the typhoon mode switch is still enabled, the ATSE will transfer back to the Genset.
The Genset output keeps activated.

So, whatever the source is connected, the typhoon is gone. The utility is back to normal. The user will deactivate the typhoon mode switch. The ATSE will transfer back to normal source at auto mode with auto-return, U-G.

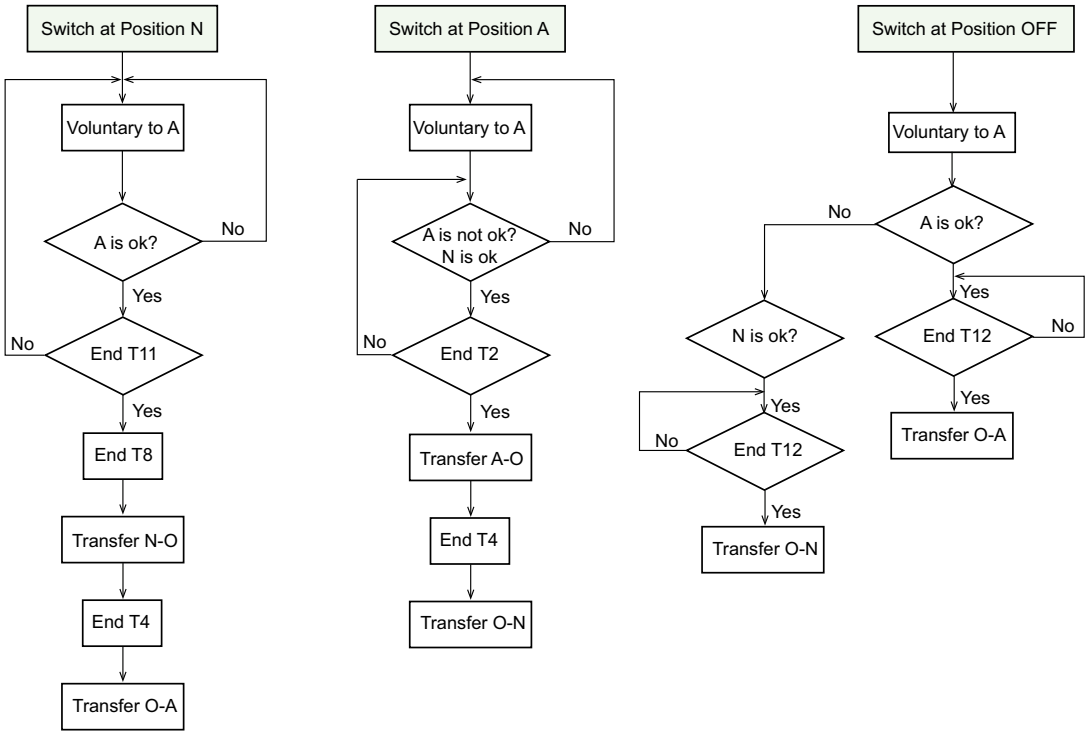
The configuration needed is a ATSE along with voluntary transfer module. With this configuration, the user don’t need to play with any ATSE settings (return mode, priority source, what is the normal source).

Use Case 2: Peak Tariff (Align with Controller UA/BA)

Initially this feature was created in UA BA in France for Special Tariff Fare (STF) capability. Special Tariff Fare (STF) in France is a special electricity pricing that allows to have discount price on low consumption hours, with the drawback of having a very expensive kWh price on peak hours. With this option, EDF (French utility) provides an output on the energy meter to warn the end user about the price increase. This output is wired on the voluntary transfer input of the controller, which automatically transfers the load to a cheaper alternate source. This allows to help shedding the peaks on the network.

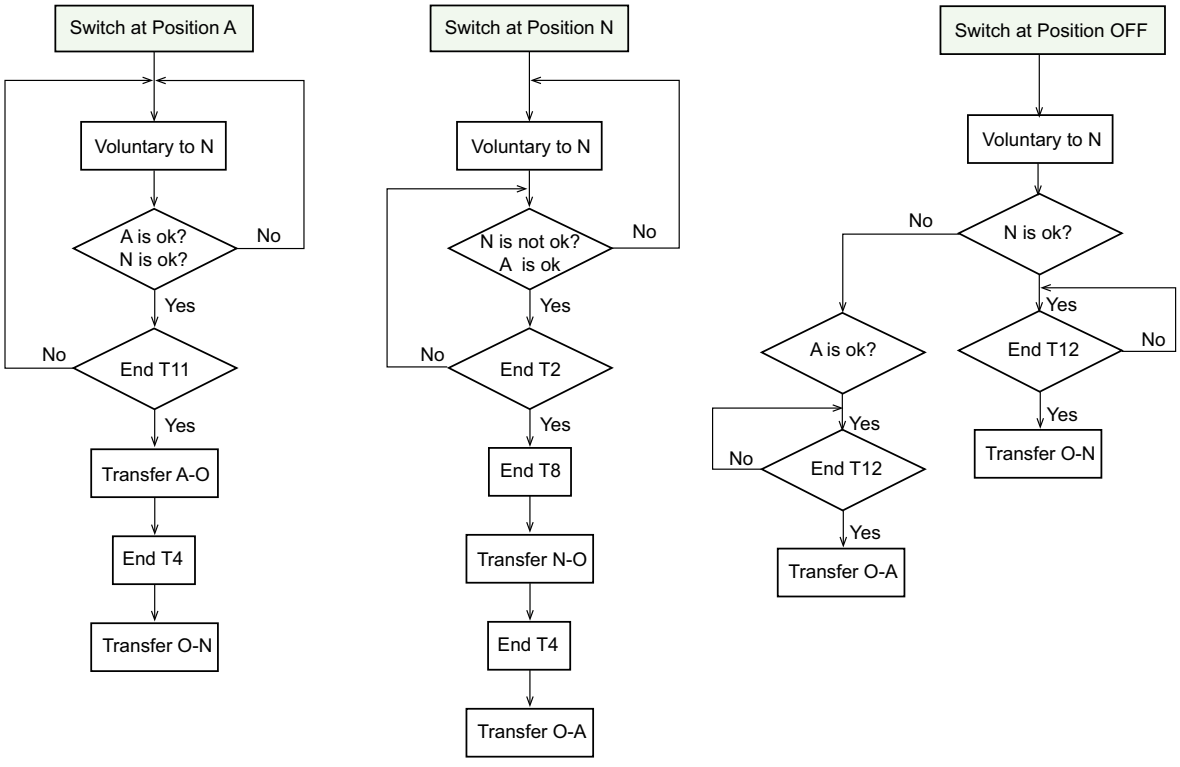
Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Transfer Logic of Voluntary to A (U-U Application)



* T11 is internal fixed time delay

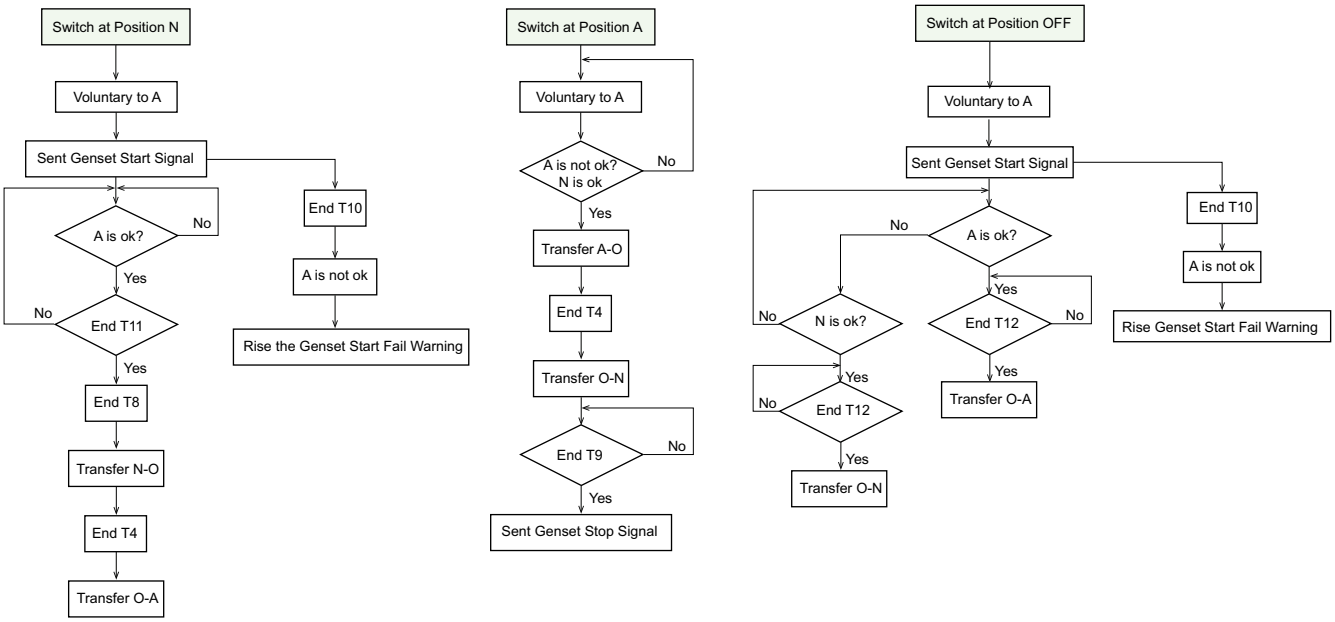
Transfer Logic of Voluntary to N (U-U Application)



* T11 is internal fixed time delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

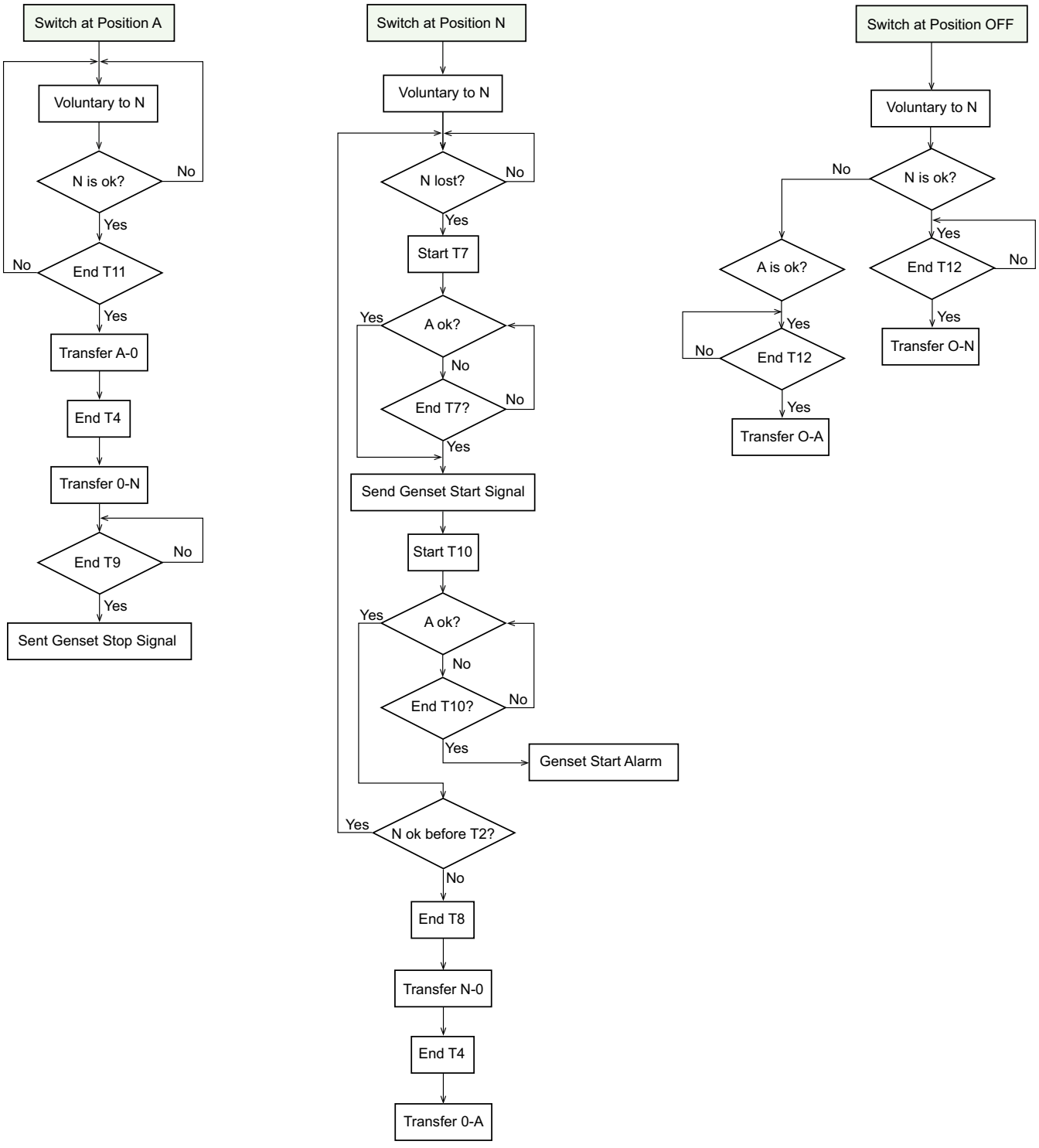
Transfer Logic of Voluntary to A (U-G Application)



* T11 is internal fixed time delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Transfer Logic of Voluntary to N (U-G Application)



* T11 is internal fixed time delay

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Test Mode

The test mode is a procedure to simulate the transfer process with following purpose:

- Test normal transfer actions for ATSE-On load test
- Test Genset-Off load test
- Test Genset-Transfer functions-On load test

Ways to Start Test

There are three ways to conduct the test:

- Through Active Automatic HMI.
- Through DI using TPCDIO07 accessories.
- Through Modbus communication using TPCCOM16 module.

There is no priority among the test command from HMI, DI and Modbus. ATSE will act upon receiving the command from any way.

When the test is ongoing, ATSE ignores any other command until receiving the command to exit test.

Command to exit test should be sent through the same way used to start the test.Otherwise ATSE will not respond. For example, if you start the test through DI module, you have to stop the test through DI module as well.

Default Time for Test

- Default as unlimited test (no time duration, has to stop the test manually).
- If you select limited test, the default time duration is 30 s.

Time Range for Test

- 10 s–1800 s with steps of 1 s.
- Time delay can be bypassed by pressing ESC key in Active Automatic HMI.

Pre-Condition to Start Test Mode

The following conditions are mandatory for the test:

- ATSE is in auto mode.
- ATSE is in normal position while in U to U Application.
- ATSE is in alternate position while in U to U Application.
- ATSE is in normal position while in U to G Application.
- For U-U application, R source shall be available before test. Otherwise, there will be an alarm.
  NOTE: On load test will not be active, if transfer action damages driving system (for example, both source are out of range, TSE refuses to transfer).

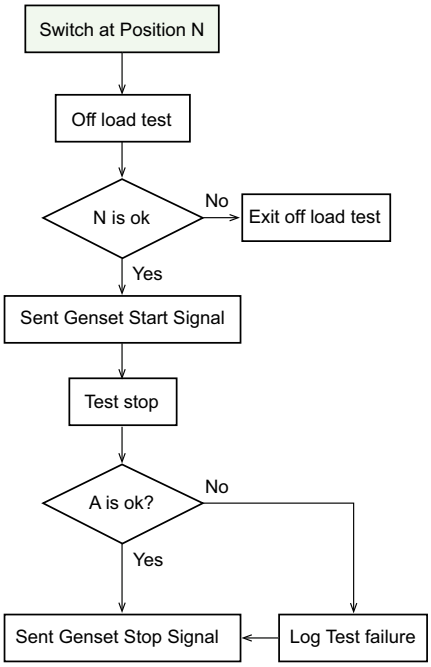
1. Source N is abnormal during the T7, T10, T2, T13, and T14 delay.
2. Interrupted by higher priority signals.
3. When not in the T8 and T4 phases, the controller terminates the current test after receiving the stop request.
4. The Onload test fails.

Off Load Test

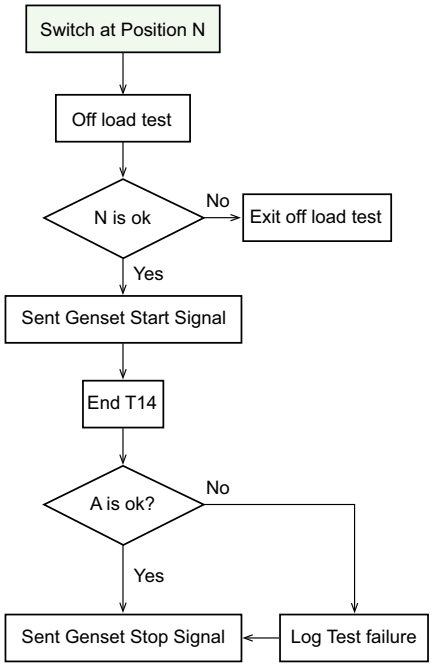
- The purpose of this function is to check the Genset can start, without power interruption.
  NOTE:
  - This test does not check if the switch is able to make the transfer.
  - The test is only available with U-G configuration.
- The off load test should not be proposed, when the ATSE doesn't have Genset output feature.
- This function will only be accessible for product with HMI, as the Test mode default value is On load.
- The orders from higher priority will interrupt the test procedure.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Off Load Test



T14 is Unlimited



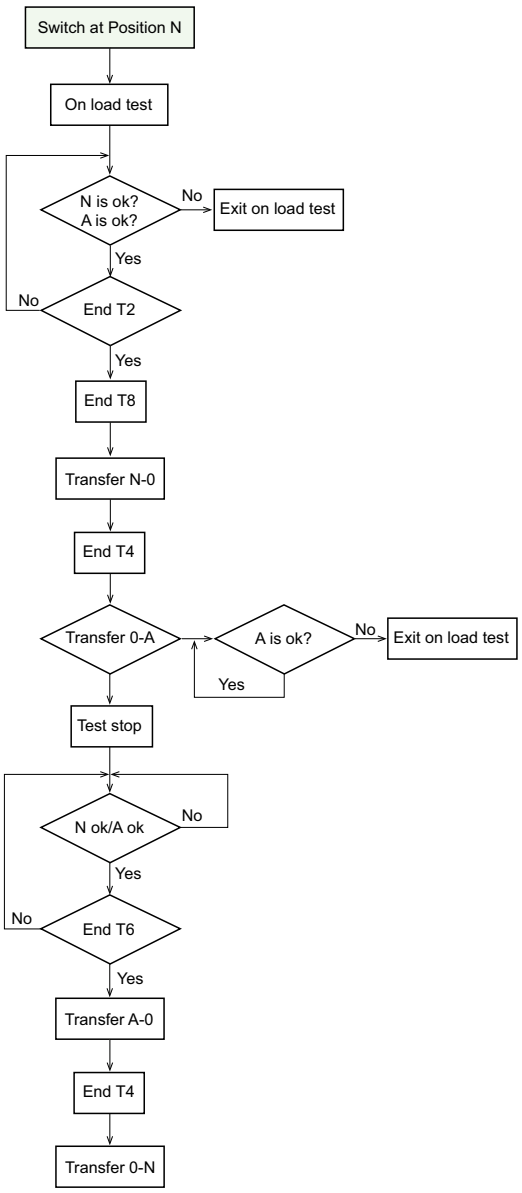
T14 is Limited

On Load Test

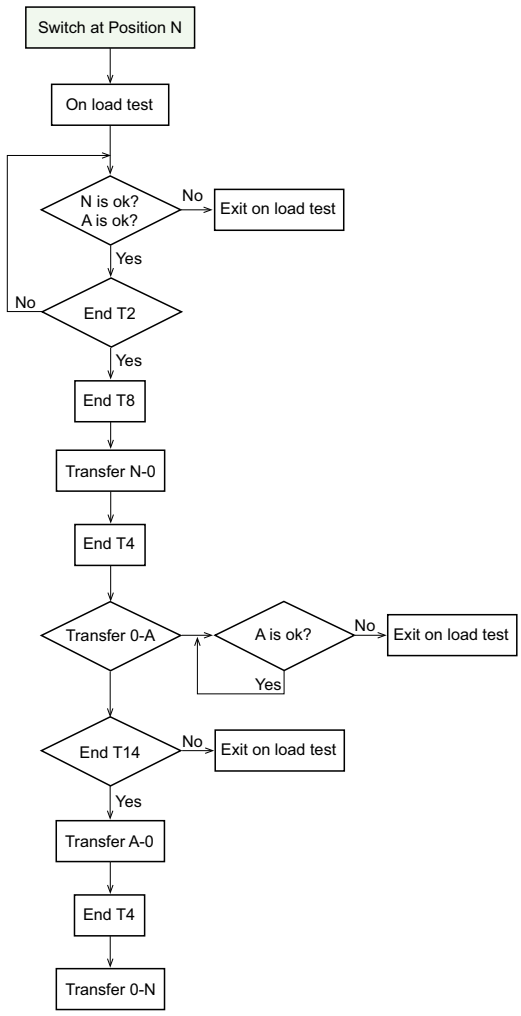
- The purpose of this function is to execute ATSE transfer (when the source is still valid) to make sure the system is still able to execute the transfer. The UU and U-G configuration are both available.
- When the ATSE receive the testing start request:
  - The ATSE shall initiate the transfer to the Alternate source if the Alternate source is in range, and according to the transfer delays (T7, T2…).
  - The ATSE shall log a test start event.
- Two conditions to return to N source:
  - When the ATSE receive the stop request from user.
  - When the Test timer is activated, and the test timer is completed.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Logic of on Load Test U-U



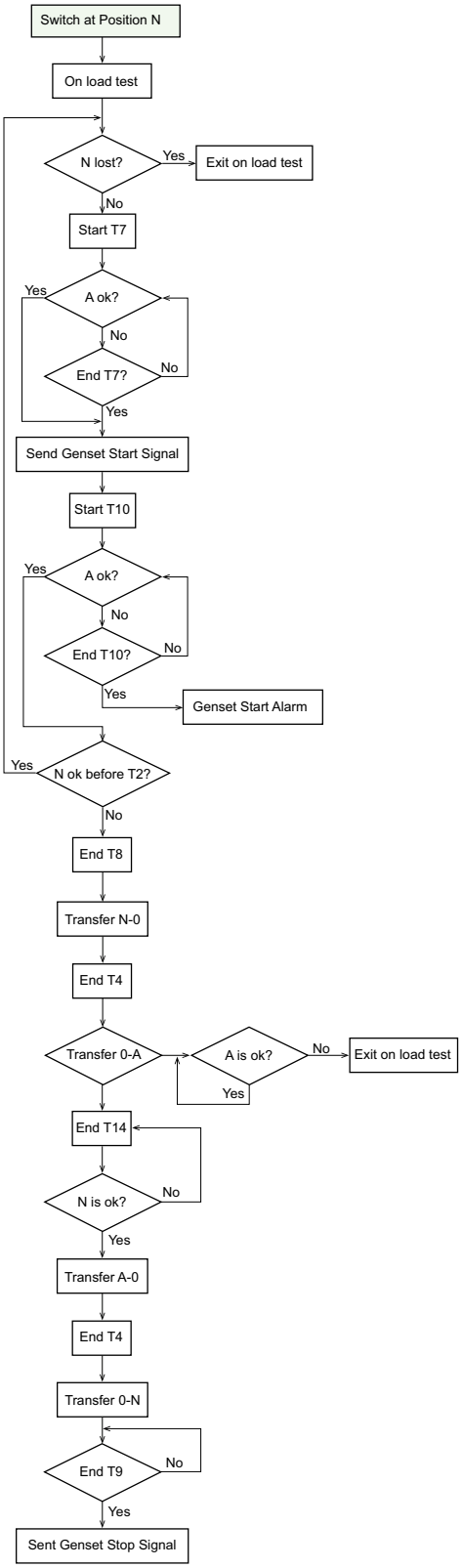
Unlimited Test



Limited Test

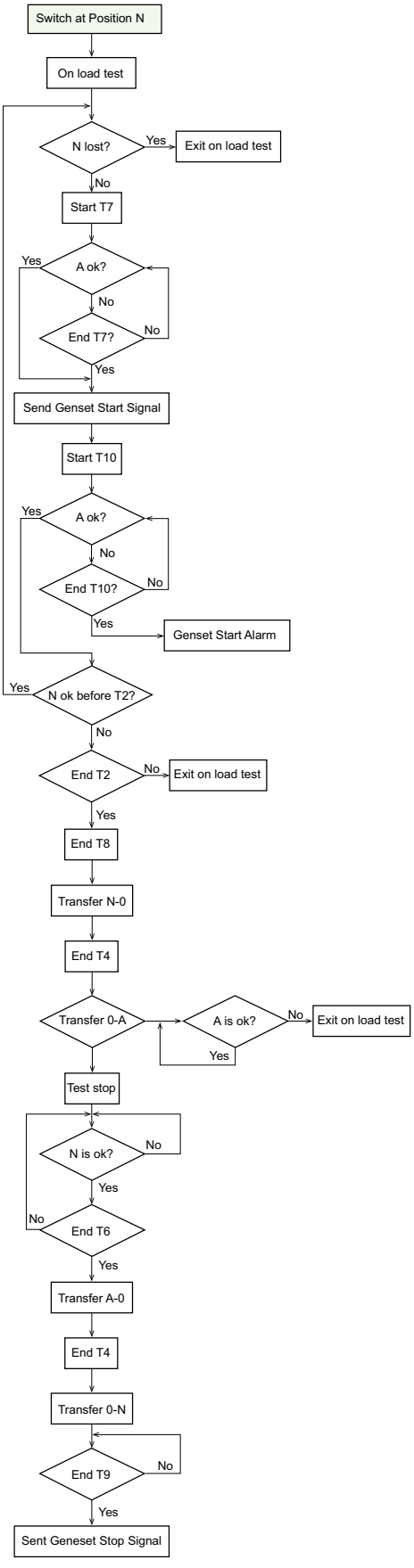
Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Logic of on Load Test U-G



Limited Test

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A



Unlimited Test

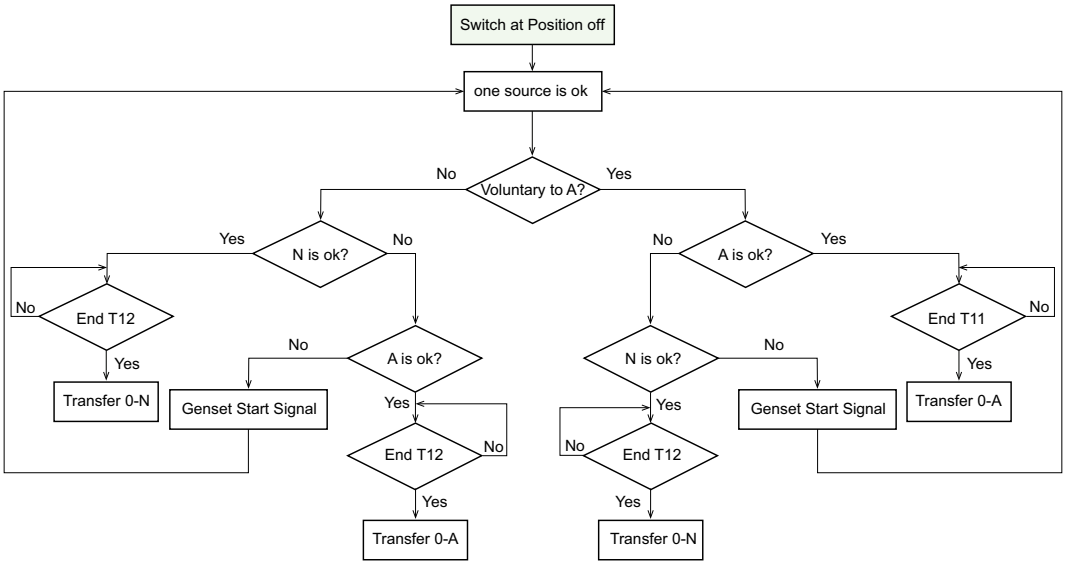
Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Return or Start from Auto Mode at Off Position

When switch is at OFF position, this state is interim, and it happens under two conditions:

- Enter the auto mode from other modes or from power on.
- End of off delay (T4), ATSE is unable to switch to N or A, due to both power source loss (with 24 V).

The load shedding will be activated from OFF to A source in both U-U and U-G configuration.



* T12 is internal fixed time delay.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Local Control Mode

⚠CAUTION

HAZARD OF EQUIPMENT DAMAGE

Enable the local control through Active Automatic HMI to exit the auto mode.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

POTENTIAL POWER OUTAGE OF EQUIPMENT

To re-enter Auto mode, disable local control through Active Automatic HMI or External HMI.

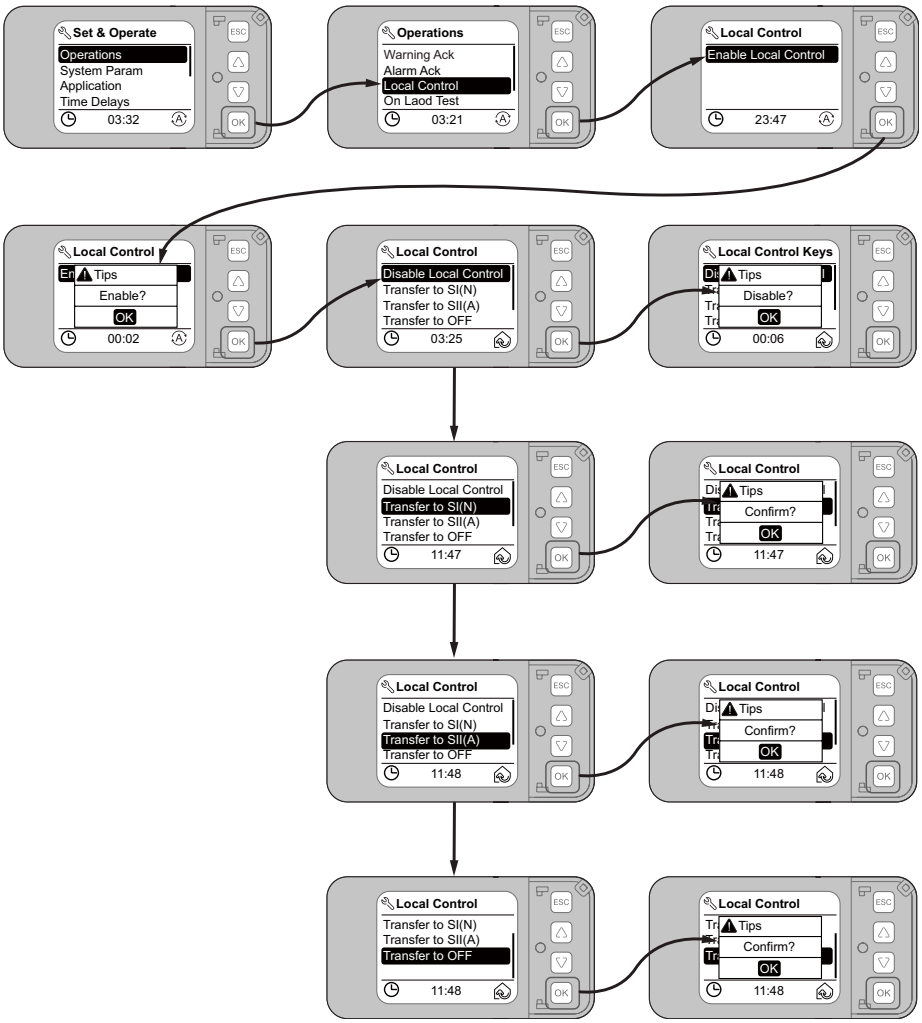
Failure to follow these instructions can result in equipment damage.

The local mode is activated through the HMI (only available for Active Automatic, RS version change to Automatic). It allows locally to change the logical position of the TSE. The switch will refuse to active if the action will damage the driving system. It cannot transfer to unavailable source.

NOTE: Local transfer will not be active, if transfer action damage driving system (for example, both overvoltage are out of range, TSE refuses to transfer) or both sources are out of operating voltage of solenoid.

Auto Genset start signal and load shedding signal is not available for this mode. In this case, the target source conformity is verified before transfer and time delays are not considered.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A



Local Control to N

The command is sent through HMI. There is no time delay except OFF delay.

The switch will transfer to normal after receiving the order to it when normal power is in tolerance.

Local Control to A

The command is sent through HMI. There is no time delay except OFF delay.

The switch will transfer to alternate after receiving the order to it when alternate power is in tolerance.

Local Control to O

The command is send through HMI. There shall be no time delay. The switch will transfer to OFF after receiving the order to it.

Control Mode and Transfer Logic
Transfer Switching Equipment 32–1600 A

Transfer Inhibit Mode

When the transfer inhibition input is active, the controller can not send any order to TSE. Front face selection buttons are locked and the HMI only displays transfer inhibit.

Fire, Force to OFF and Handle mode still works as before. When exit Fire, Force to OFF and Handle mode, transferring blocked by transfer inhibit.

Use this mode only when inhibit signal (from DI) is active and no higher operation mode is running. When ATS transfer is ongoing, wait until transfer completed.

Exit this mode after inhibit signal is inactive.

Accessories are required using TPCDIO07 to extend this function of the TSE.

Application

- Transfer inhibit occurs when there is power interruption because of short circuit.
- This function can be used to lock the controller by customized signals.
- This function can be used for cooperation with different ATSE.

Fire Protection Mode

- An emergency stop order to transfer ATSE to off position. All the other transfer mode will be canceled except force to OFF and handle control. There shall be no time delay.
- Exit fire protection after signal disappeared.
- Require accessories TPCDIO10 or TPCDIO11 or TPCDIO13 or TPCDIO14 to extend this function.

Application

- The fire protection signal can transfer ATSE to off position when there is fire emergency.

Force to OFF Mode

- Transfer ATSE to OFF position with an emergency stop order. All the other transfer mode will be canceled except handle control. There should be no time delay.
- Exit Force after signal disappeared.
- Accessories are required using TPCDIO07 to extend this function of TSE.

Handle Transfer Mode

- The handle or manual transfer mode is activated from the TSE directly. It deactivates the controller control function except position status (outputs and LEDs), source status LEDs and alarm LED.
- No operation for load shedding and generator, keep the status as before.
- No alarm relay output.

Controller Accessories

Load Shedding and Availability Warning

Function:

Load shedding

- The emergency power (Genset) sometimes may not afford all loads. A signal from controller will shed some non-critical loads
- Load shedding will send the signal after enabling this function

Availability warning output

- When transfer switch is not in auto or power lost on two sources, a dry contact will output the signal
- After back to Auto status or power recovery, the signal will be stopped

Compatibility: Active Automatic and Automatic

Rating: 250 VAC, 5 A or 30 VDC, 5 A
Digital output

Transfer Inhibit and Remote Testing

Function:

Transfer inhibit

- Transfer Inhibit when there is power interruption because of short circuit
- This function can be used to lock the controller by customized signals
- This function can be used for cooperation with different ATSE
- Remote transfer inhibit signal to Exit this mode

Remote testing

- Remote testing is an input signal to start test procedure.
- The remote test can only be started at Auto mode
- For Active Automatic HMI, on load, off load test and time duration can be selected.
- For Automatic HMI, on load test is unlimited.

Compatibility: Active Automatic and Automatic
Dry Contact
Digital input

Voluntary Remote Control

Function:

Voluntary transfer to N or A

- Voluntary transfer is an active input. It can transfer the ATSE to Normal or Alternate source according to requirements (such as energy saving)
- Voluntary transfer will still keep the power continuity as much as possible. The function will be bypassed if target source loses the power. For example, after voluntary to A while A source failed, ATSE will transfer back to N if N is available
- Exit voluntary mode after signal disappeared

Force to Off

- An emergency stop order to transfer ATSE to off position. All the other transfer mode will be canceled except handle control
- Exit Force after signal disappeared

Compatibility: Active Automatic and Automatic
Dry Contact
Digital input

Controller Accessories

Fire Protection

Function:

The fire protection signal can transfer ATSE to off position when there is fire emergency.

- Fire protection with input of DC24 V pulse signal. Input Voltage: 24 VDC (-20% ~ +20%), Maximum Input Current: 10 mA
- Fire protection with input of DC24 V Constant signal. Input Voltage: 24 VDC (-20% ~ +20%), Maximum Input Current: 10mA
- Fire protection with input of AC230 V Constant. Input Voltage: 230 VAC (-20% ~ +20%), 50 Hz/60 Hz Maximum Input Current: 10 mA
- Fire protection with 1 input, dry contact

Compatibility: Active Automatic and Automatic
Digital input

BUS Extension and 24 VDC Auxiliary Supply

Function:

BUS extension

- Can be used to connect external HMI

DC 24V Auxiliary Supply

- External power for controller when both source failure
- External power to keep power for Modbus communication when both source failure

Compatibility: Active Automatic
Rating: Input Voltage: 24 VDC (-20% ~ +20%), Maximum Input Current: 1 A

Modbus RTU (Serial Port)

Function:

Modbus

- Can be used to connect with other system
- Require External 24 V or at least one main source to keep communication
- With Protocol Modbus RTU communication

Compatibility: Active Automatic

Genset Start and Alarm

Function:

Genset start output

- When utility source is lost, a dry contact will start Genset. No matter with or without external 24 V, a time delay (T7) before genset start can be set
- When Utility source has recovered, and ATSE has transferred back to Utility, Genset signal will remain until end of Genset cooldown timer

Alarm

- When there is critical alarm, a dry contact will output the signal
- Restart controller (open and close dielectric door) to shut down the Alarm

Compatibility: Active Automatic and Automatic
Rating: 250 VAC, 5 A or 30 VDC, 5 A
Digital output
Note: The alarm signal is irrelevant to generator start or stop. It is relevant to transfer errors and phase rotations (for Active automatic version only) errors, for more detail, refer to DOCA0214EN–00

Controller Accessories

External HMI

- Door mounted HMI provide exact same function as TransferPacT active automatic HMI Including status display, settings, event log, control transfer switch.It consists of an install base and LCD display, IP40. TPCCIF04

IP54 Cover

- Optional accessory, Protective cover for external HMI for outdoor installations.

  TPCOTH37 or TPCOTH38(economic solution).

HMI Cable

Used to connect the TSE and external HMI. 2*RJ45 port.

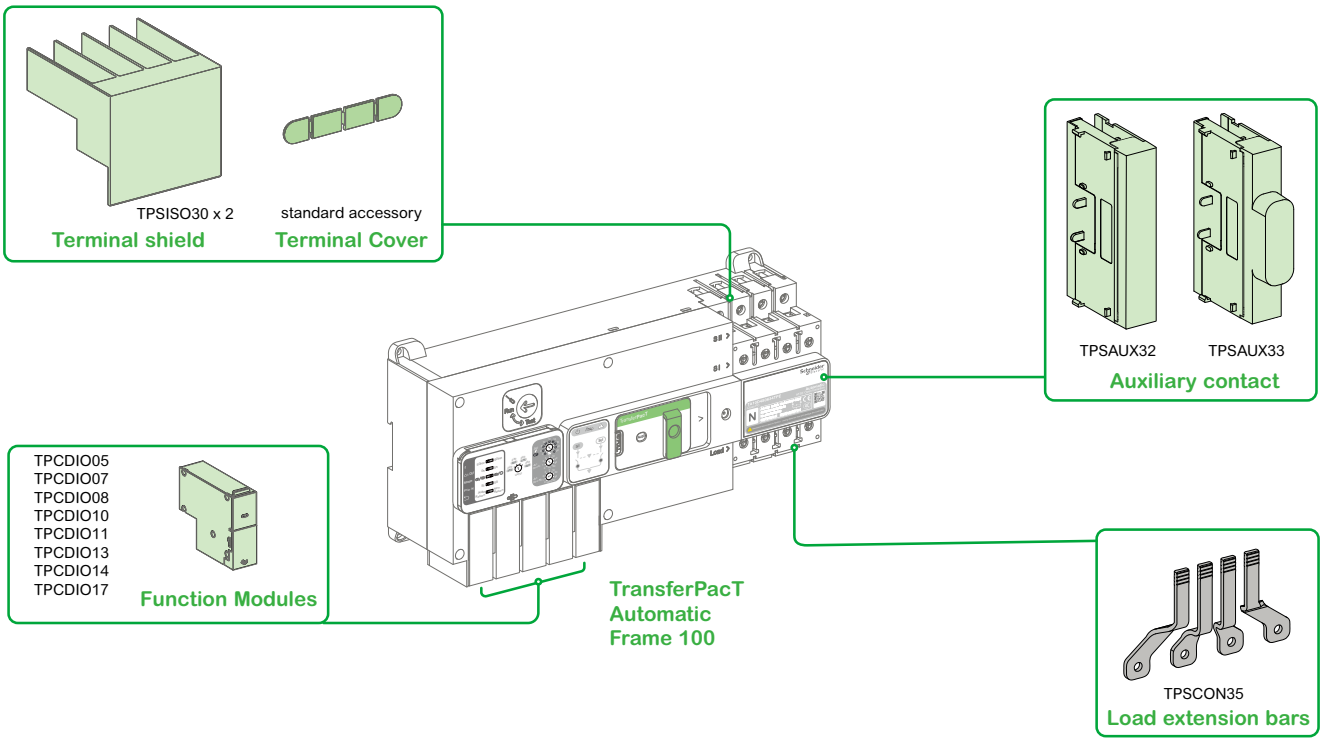
- TRV00810: cable length is 1 m
- TRV00820: cable length is 2 m
- TRV00830: cable length is 3 m

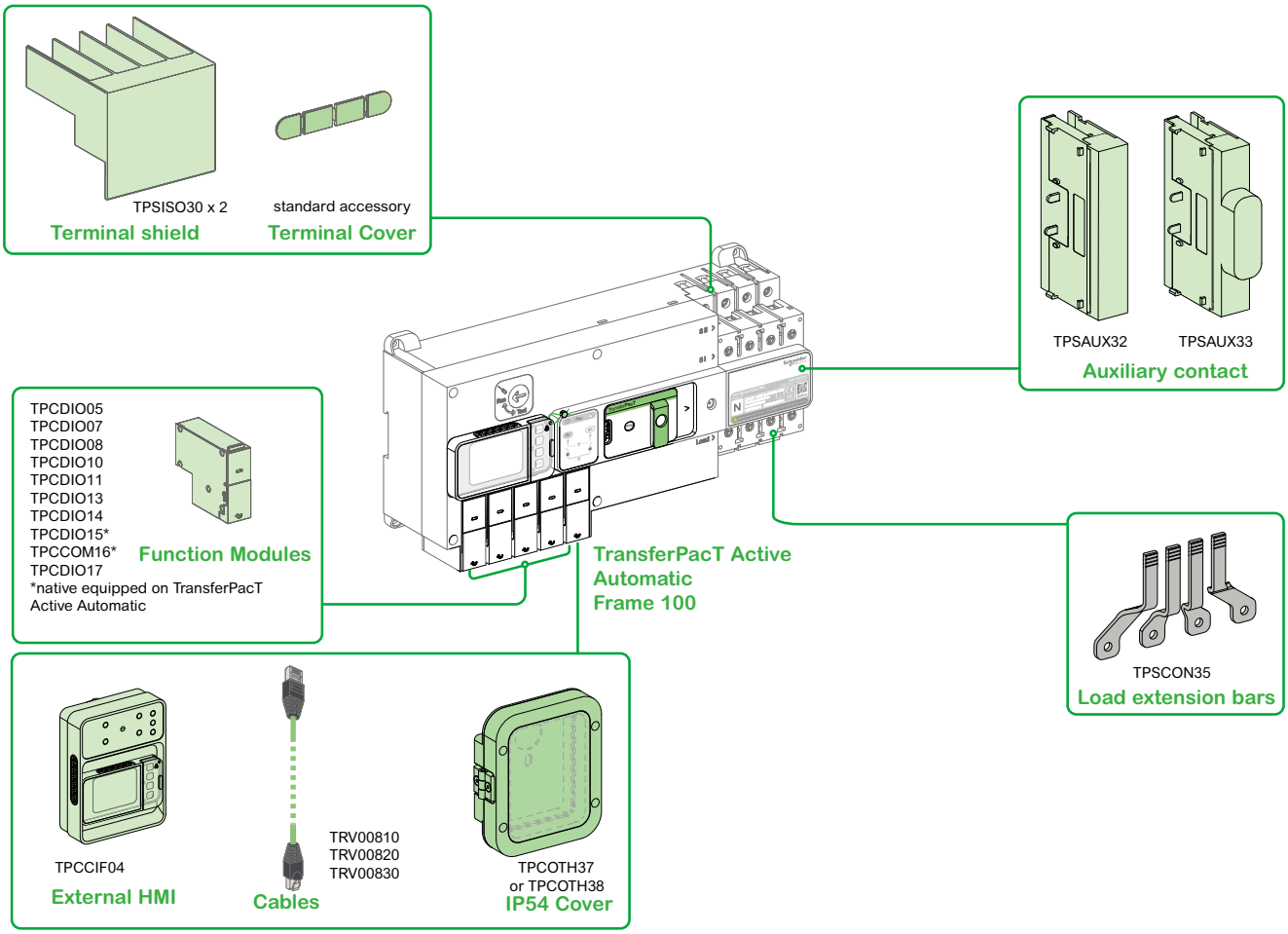
Energy Sensor

- Function: provides accurate real-time measurements and energy values.
- Application: for Frame 250 4P,downstream(load side) only. neutral be on left.

  LV434021

Electrical and Mechanical Accessories - Frame 100





Electrical and Mechanical Accessories - Frame 100

Auxiliary Contact Module

- TPSAUX32: Provide the open and closed status indication for both source I and source II.
- TPSAUX33: Provide the open and closed status indication for OFF position.

Insulating Accessories

Terminal Shield

Optional accessory, Provide terminal protection on the cable incoming and output.

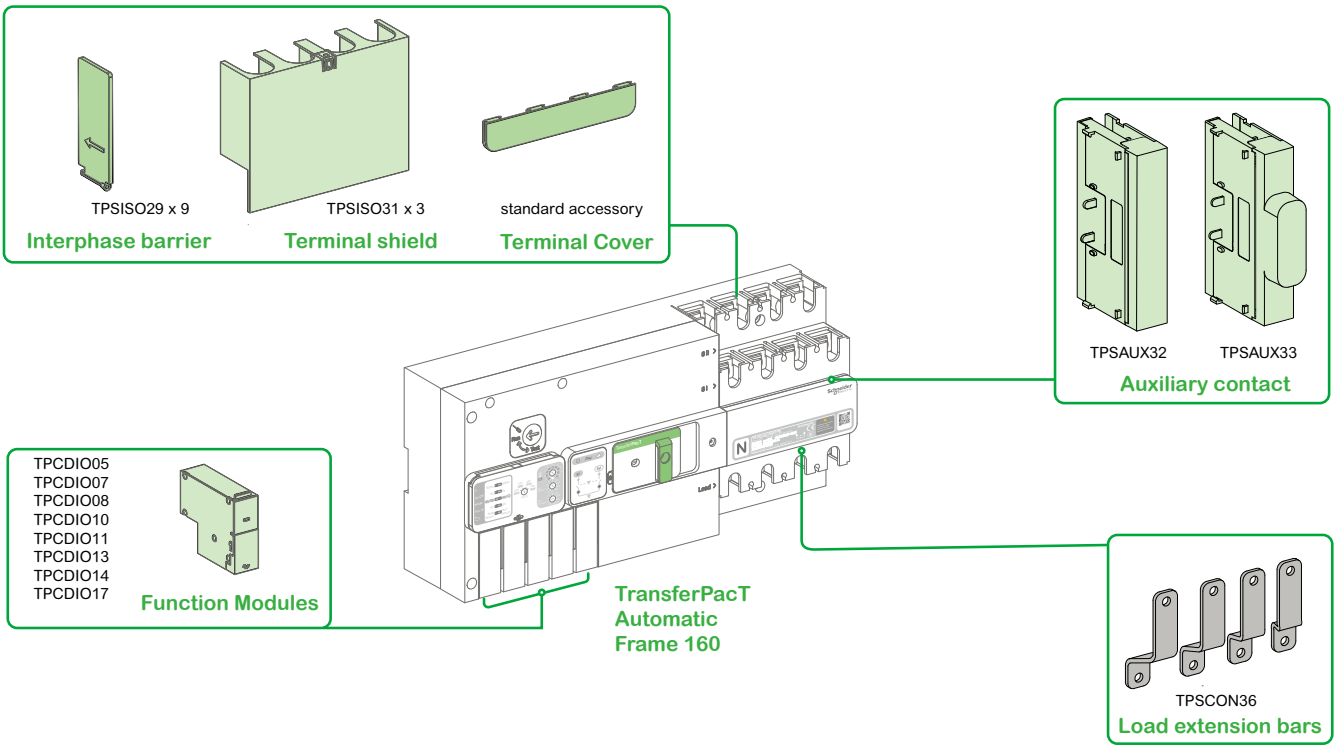
- TPSISO30: Terminal Shield (set of 2)

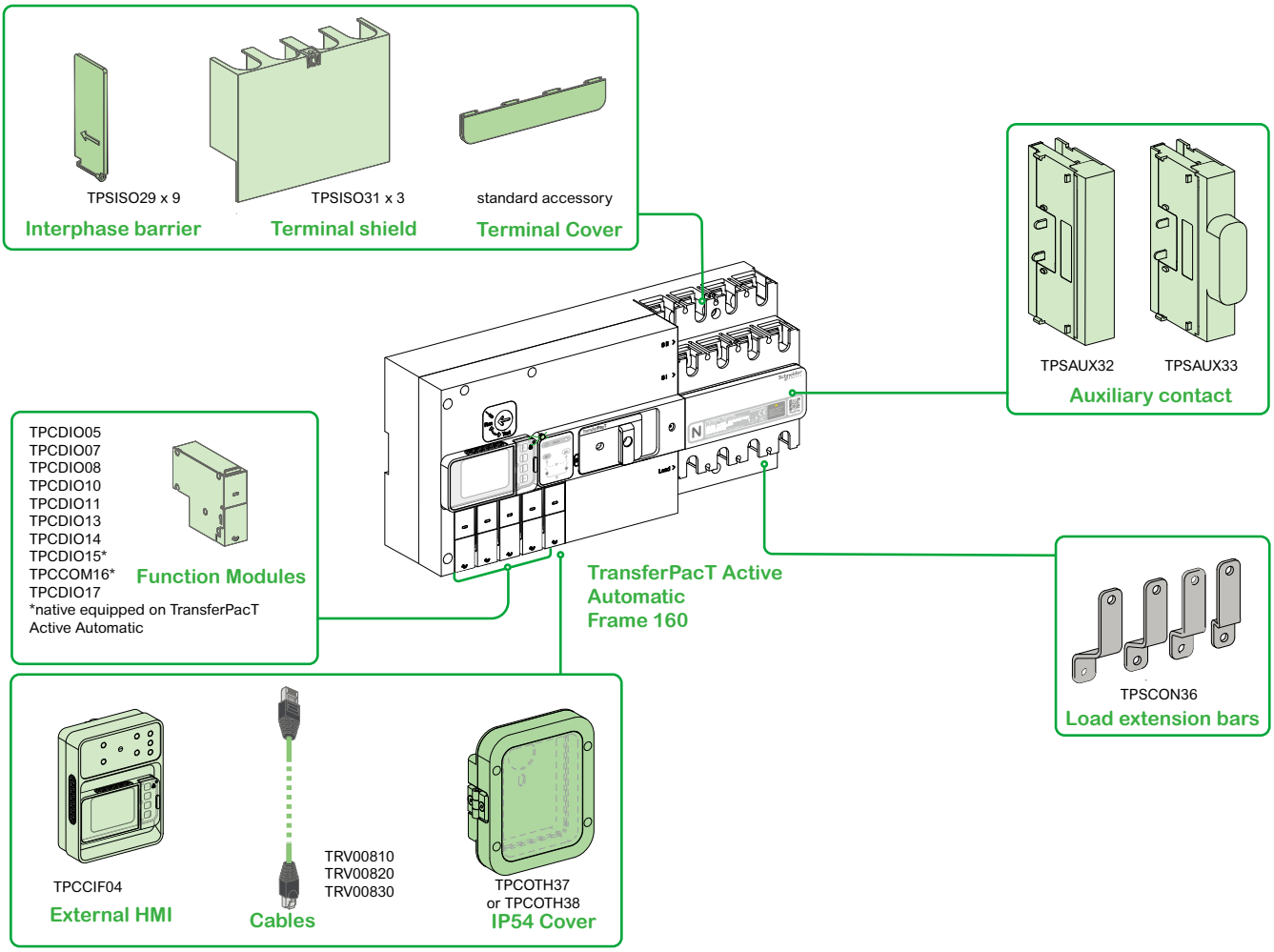
Terminal Extension

- Natively supplied with interphase barriers.

Type	Pole	Commercial Reference	Quantity
Spreaders			
18-28 mm	3P	TPSCON35	4
	4P	TPSCON35	4

Electrical and Mechanical Accessories- Frame 160



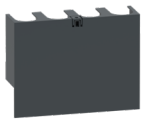


Electrical and Mechanical Accessories - Frame 160

Auxiliary Contact Module

- TPSAUX32: Provide the open and closed status indication for both source I and source II.
- TPSAUX33: Provide the open and closed status indication for OFF position.

Insulating Accessories



Terminal Shield

Optional accessory, Provide terminal protection on the cable incoming and output.

- TPSISO31: Terminal Shield(set of 3)

Interphase Barrier

Optional accessory, Provide protection for the cable incoming and output, effectively avoiding short circuits between phases.

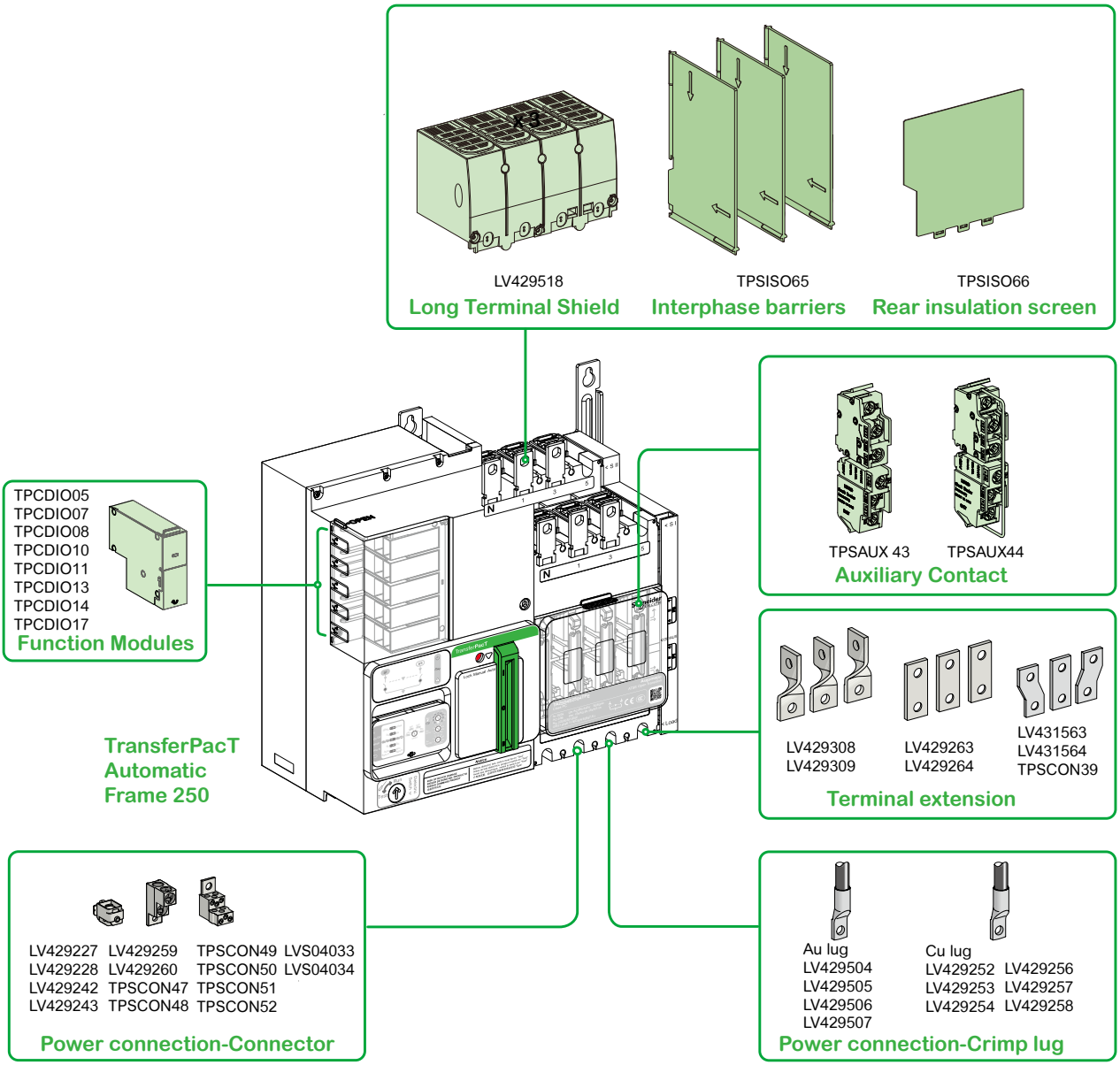
- TPSISO29: Interphase barrier(set of 9)

Terminal Extension

- Natively supplied with interphase barriers.

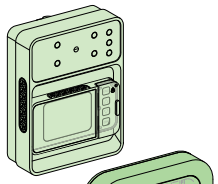
Type	Pole	Commercial Reference	Quantity
Spreaders			
30-40 mm	3P	TPSCON36	4
	4P	TPSCON36	4

Electrical and Mechanical Accessories - Frame 250

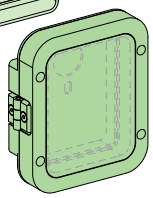


Electrical and Mechanical Accessories- Frame 250

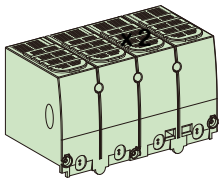
TPCCIF04
External HMI



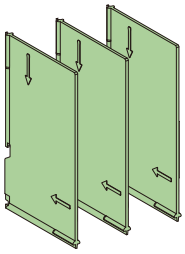
TRV00810
TRV00820
TRV00830
Cables



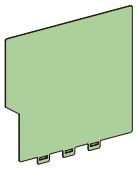
TPCOTH37
or TPCOTH38
IP54 Cover



LV429518
Long Terminal Shield

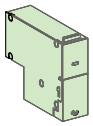


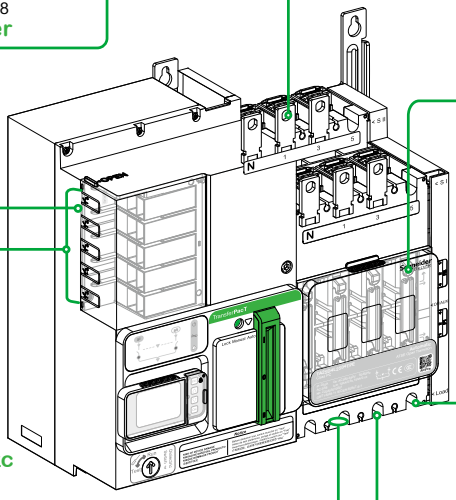
TPSISO65
Interphase barriers



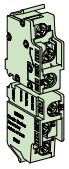
TPSISO66
Rear insulation screen

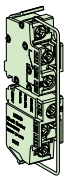
TPCDIO05
TPCDIO07
TPCDIO08
TPCDIO10
TPCDIO11
TPCDIO13
TPCDIO14
TPCDIO15*
TPCCOM16*
TPCDIO17
*native equipped on
TransferPacT Active Automatic
Function Modules





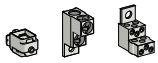
TransferPacT
Active Automatc
Frame 250





TPSAUX 43 TPSAUX44
Auxiliary Contact

LV429308
LV429309
LV429263
LV429264
LV431563
LV431564
TPSCON39
Terminal extension



LV429227 LV429259 TPSCON49 LVS04033
LV429228 LV429260 TPSCON50 LVS04034
LV429242 TPSCON47 TPSCON51
LV429243 TPSCON48 TPSCON52
Power connection-Connector

Al lug
LV429504
LV429505
LV429506
LV429507

Cu lug
LV429252 LV429256
LV429253 LV429257
LV429254 LV429258
Power connection-Crimp lug

Electrical and Mechanical Accessories- Frame 250

Auxiliary Contact Module

- TPSAUX43: Provide the open and closed status indication for both source I and source II .
- TPSAUX44: Provide the open and closed status indication for OFF position.

Insulating Accessories

Terminal Shield

Optional accessory, Provide terminal protection on the cable incoming and output.

- LV429518: Terminal Shield (set of 1)

Interphase Barrier

Optional accessory, Provide protection for the cable incoming and output, effectively avoiding short circuits between phases.

- TPSISO65: Interphase barriers (set of 3)

Insulation Screen

Optional accessory, PProvide protection for the cable incoming and output.

- TPSISO66: Insulating screen. Applicable for source II only, maximum 1 set.

Electrical and Mechanical Accessories- Frame 250

Connection Accessories

Bare Cable Connector

Cable material	number	Cross section	Pole	Commercial reference	Quantity
Aluminum/Copper	1 cable	25 to 95 mm²	3P	LV429227	3
			4P	LV429228	4
		120 to 185 mm²	3P	LV429259	3
			4P	LV429260	4
		120 to 240 mm²	3P	TPSCON49 [b]	3
			4P	TPSCON50 [b]	4
	2 cables	50 to 120 mm²	3P	TPSCON51 [a,b]	3
			4P	TPSCON52 [a,b]	4
	6 cables	1.5 to 35 mm²	3P	TPSCON47 [b]	3
			4P	TPSCON48 [b]	4
	9 cables		3P	LVS04033 [a]	3
			4P	LVS04034 [a]	4
steel	1 cable	1.5 to 95 mm²	3P	LV429242	3
			4P	LV429243	4

a: Applicable for load side only
b: Must select terminal shield to ensure incoming and output terminal protection.

Electrical and Mechanical Accessories- Frame 250

Crimp Lug for Cables

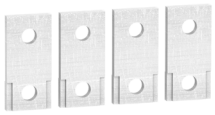
- Natively supplied with interphase barriers.

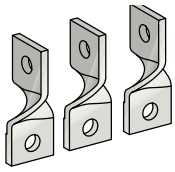
Cable material	Cross section	Pole	Commercial reference	Quantity
Aluminum	150 mm²	3P	LV429504	3
		4P	LV429505	4
	185 mm²	3P	LV429506	3
		4P	LV429507	4
Copper	120 mm²	3P	LV429252	3
		4P	LV429256	4
	150 mm²	3P	LV429253	3
		4P	LV429257	4
	185 mm²	3P	LV429254	3
		4P	LV429258	4

Terminal Extension

- Natively supplied with interphase barriers.

Type	Pole	Commercial reference	Quantity
Spreaders			
35-45 mm	3P	LV431563	3
	4P	LV431564 [b]	4
	4P	TPSCON39 [a]	4
Straight	3P	LV429263	3
	4P	LV429264	4
Edge wise	3P	LV429308	3
	4P	LV429309	4

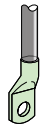
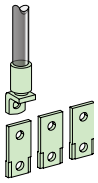
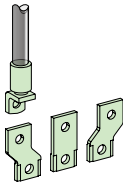
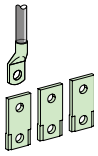
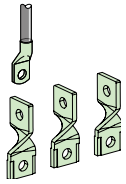
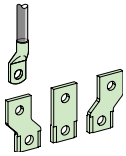




a: For incomings only
b: For load only.

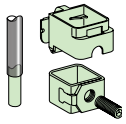
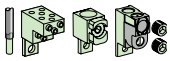
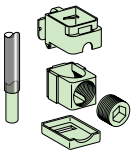
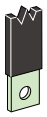
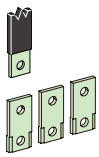
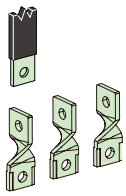
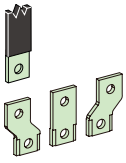
Electrical and Mechanical Accessories- Frame 250

Compatibility Matrix

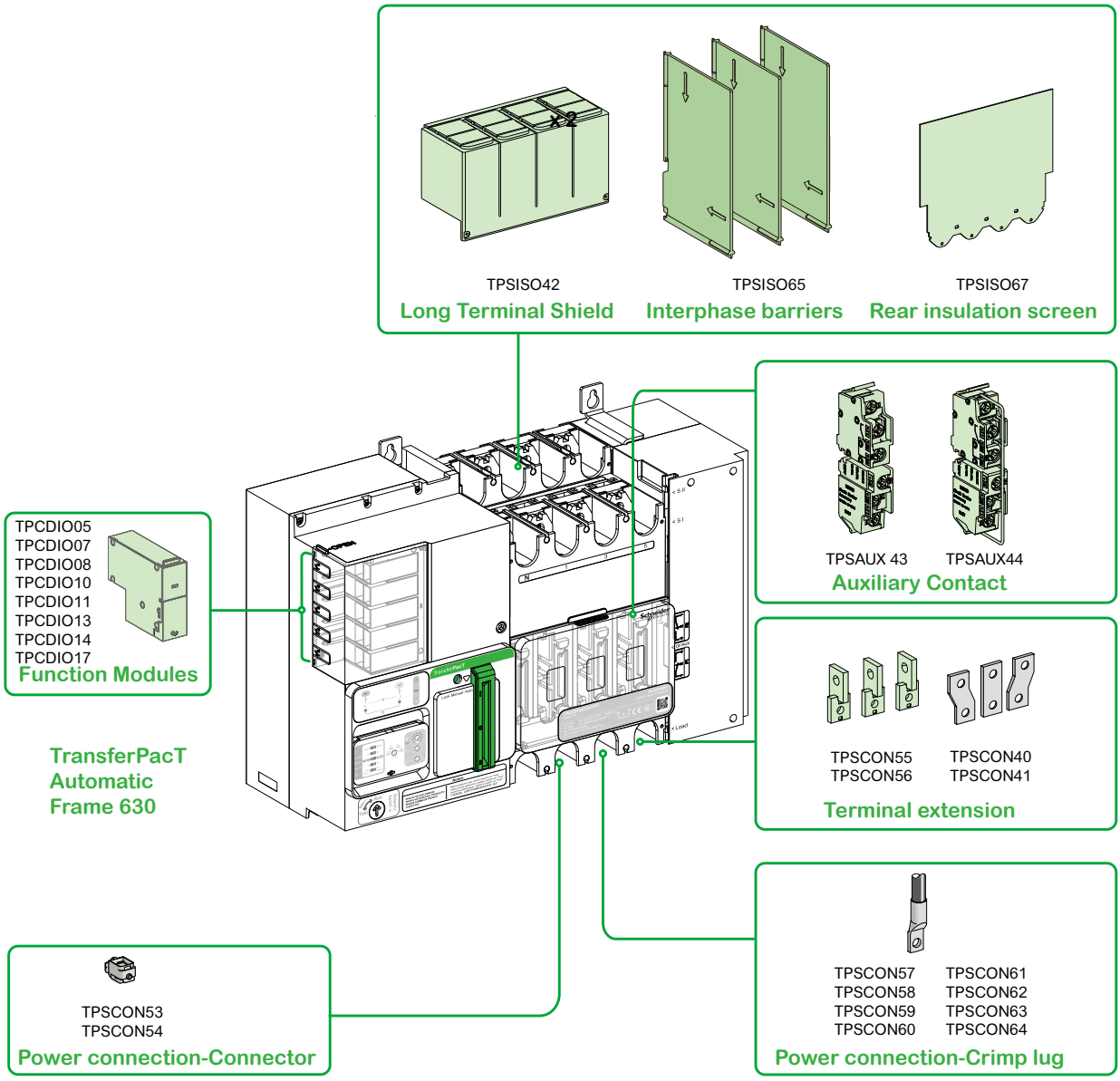
	Type of conductor	No insulation	Interphase barrier	Long terminal shield	Insulating screen for 1 lug per terminal	Insulating screen for 2 lugs per terminal
	Cables(Al) +crimp lugs	-	Mandatory (Supplied)	Possible	-	-
	Cables(Cu) +crimp lugs	-	Mandatory (Supplied)	Possible	Possible	Possible
	Cables (Al) + crimp lugs + straight terminal extensions	-	Mandatory (Supplied)	-	Mandatory	-
	Cables (Al) + crimp lugs + Spreaders terminal extensions	-	Mandatory (Supplied)	-	Mandatory	-
	Cables (Cu) + crimp lugs + straight terminal extensions	-	Mandatory (Supplied)	-	Mandatory	NA /Mandatory (120 mm 2 only)
	Cables (Cu) + crimp lugs + edgewise terminal extensions	-	Mandatory (Supplied)	-	Possible	-
	Cables (Cu) +crimp lugs +Spreader terminal extensions	-	Mandatory (Supplied)	-	Mandatory	NA /Mandatory (120 mm 2 only)

Electrical and Mechanical Accessories- Frame 250

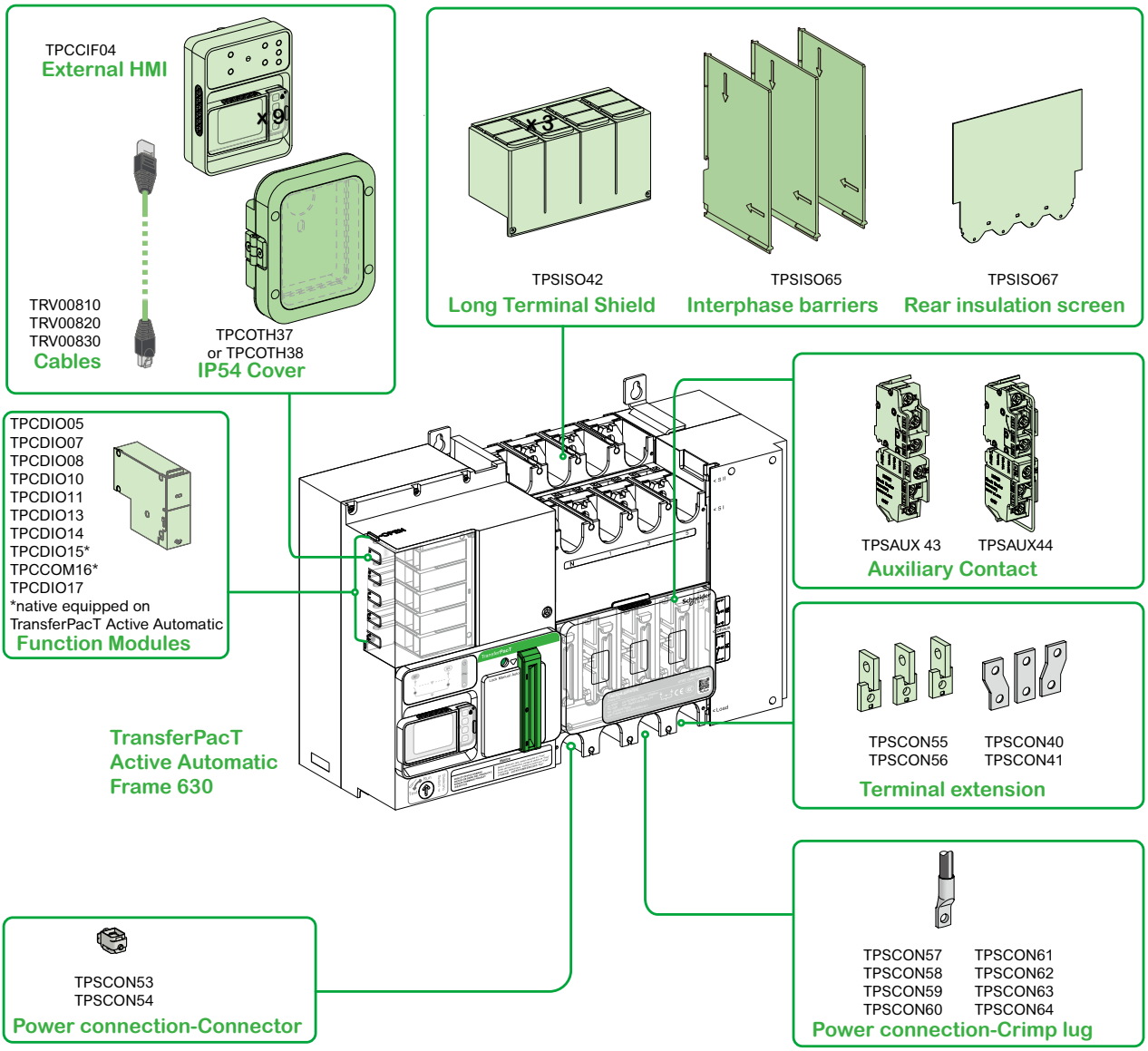
Compatibility Matrix

Type of conductor	No insulation	Interphase barrier	Long terminal shield	Insulating screen	
Cables +Steel connectors LV429242 LV429243	Possible	Possible	Possible	-	
Cables +Alluminum connectors TPSCON47 TPSCON48 TPSCON49 TPSCON50 TPSCON51 TPSCON52	-	-	Mandatory	-	
Cables +connectors +Alluminum connectors LV429227 LV429259 LV429228 LV429260	Possible	Possible	Possible	-	
Insulated bars	Possible	Possible	Possible	Possible	
Insulated bars +straight terminal extension	Mandatory (supplied)	-	-	Mandatory	
Insulated bars +edgewise terminal extension	Mandatory (supplied)	-	-	Possible	
Insulated bars +spreader terminal extension	Mandatory (supplied)	-	-	Mandatory	

Electrical and Mechanical Accessories- Frame 630



Electrical and Mechanical Accessories- Frame 630



Electrical and Mechanical Accessories- Frame 630

Auxiliary Contact Module

- TPSAUX43: Provide the open and closed status indication for both source I and source II .
- TPSAUX44: Provide the open and closed status indication for OFF position .

Insulating Accessories

Terminal Shield

Optional accessory, Provide terminal protection on the cable incoming and output.

- TPSISO42: Terminal Shield (set of 1)

Interphase Barrier

Optional accessory, Provide protection for the cable incoming and output, effectively avoiding short circuits between phases.

- TPSISO65: Interphase barriers (set of 3)

Insulation Screen

Optional accessory, PProvide protection for the cable incoming and output.

- TPSISO67: Insulating screen (set of 1). Applicable for source and load, maximum 3 set.

Electrical and Mechanical Accessories- Frame 630

Connection Accessories

Bare Cable Connector

Cable Material	Number	Cross Section	Pole	Commercial Reference	Quantity
Aluminum/Copper	1 cable	35 to 300 mm²	3P	TPSCON53 [b]	3
			4P	TPSCON54 [b]	4

b: Must select terminal shield to ensure incoming and output terminal protection.

Crimp Lug for Cables

- Natively supplied with interphase barriers.

Cable Material	Cross Section	Pole	Commercial Reference	Quantity
Aluminum	240 mm²	3P	TPSCON61	3
		4P	TPSCON62	4
	300 mm²	3P	TPSCON63	3
		4P	TPSCON64	4
Copper	240 mm²	3P	TPSCON57	3
		4P	TPSCON58	4
	300 mm²	3P	TPSCON59	3
		4P	TPSCON60	4

Terminal Extension

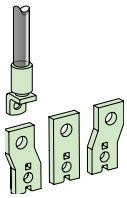
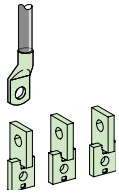
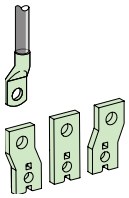
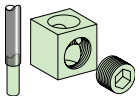
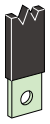
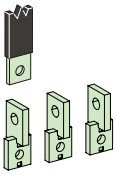
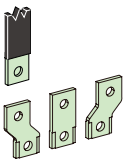
- Natively supplied with interphase barriers.

Type	Pole	Commercial Reference	Quantity
Spreaders			
45-55 mm	3P	TPSCON40	3
	4P	TPSCON41[a]	4
	4P	TPSCON68 [b]	4
Edge wise	3P	TPSCON55	3
	4P	TPSCON56	4

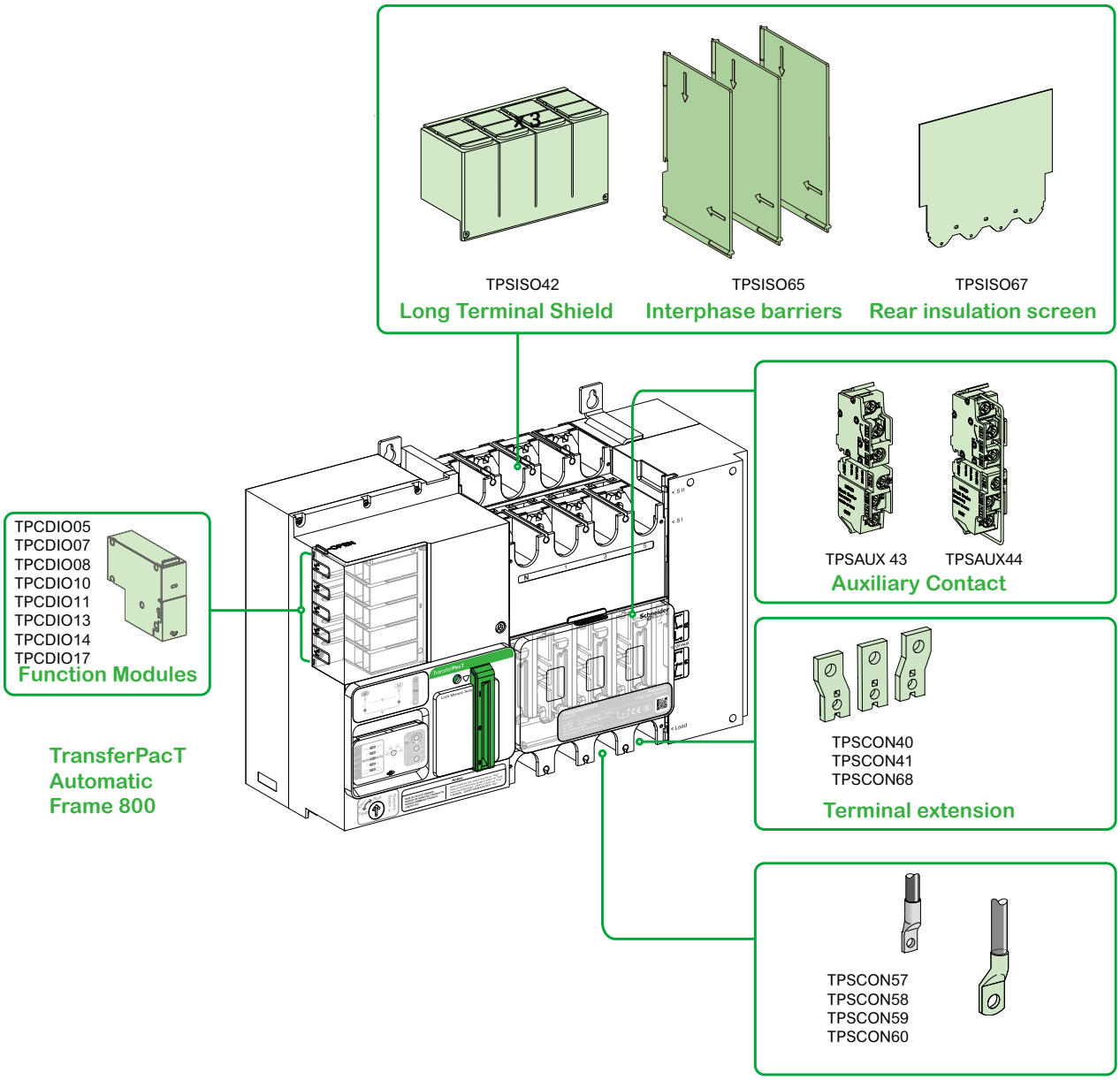
a: For incomings only
b: For load only.

Electrical and Mechanical Accessories- Frame 630

Compatibility Matrix

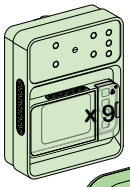
	Type of Conductor	No Insulation	Interphase Barrier	Long Terminal Shield	Insulating Screen for 1 Lug per Terminal	Insulating Screen for 2 Lugs per Terminal
	Cables (Al) +crimp lugs	-	Mandatory (Supplied)	Possible (instead of phase barriers)	SI: front screen mandatory Load: front screen mandatory	-
	Cables (Cu) +crimp lugs	-	Mandatory (Supplied)	Possible (instead of phase barriers)	SII: rear screen possible	SII: rear screen mandatory
	Cables (Alu) +crimp lugs +Spreaders terminal extensions	-	Mandatory (Supplied)		SI: front screen mandatory SII: rear screen mandatory Load: front screen mandatory	-
	Cables (Cu) +crimp lugs + edgewise terminal extensions	-	Mandatory (Supplied)	-	Possible	-
	Cables (Alu) +crimp lugs +Spreaders terminal extensions	-	Mandatory (Supplied)	-	SI: front screen mandatory SII: rear screen mandatory Load: front screen mandatory	SI: front screen mandatory SII: rear screen mandatory Load: front screen mandatory
	cables+ aluminum connectors	-	-	Mandatory	-	-
	Insulated bars	Possible	Possible	Possible	Possible	-
	Insulated bars +edgewise terminal extension	-	Mandatory (supplied)	-	Possible	-
	Insulated bars +spreader terminal extension	-	Mandatory (supplied)	-	Mandatory	-

Electrical and Mechanical Accessories- Frame 800

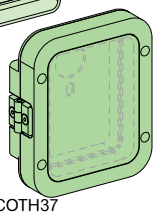


Electrical and Mechanical Accessories- Frame 800

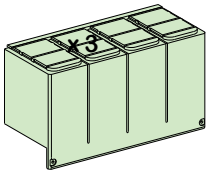
TPCCIF04
External HMI



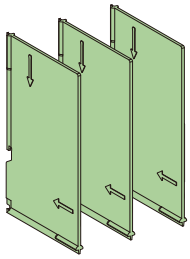
TRV00810
TRV00820
TRV00830
Cables



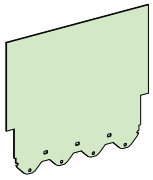
TPCOTH37
or TPCOTH38
IP54 Cover



TPSISO42
Long Terminal Shield

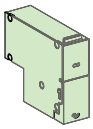


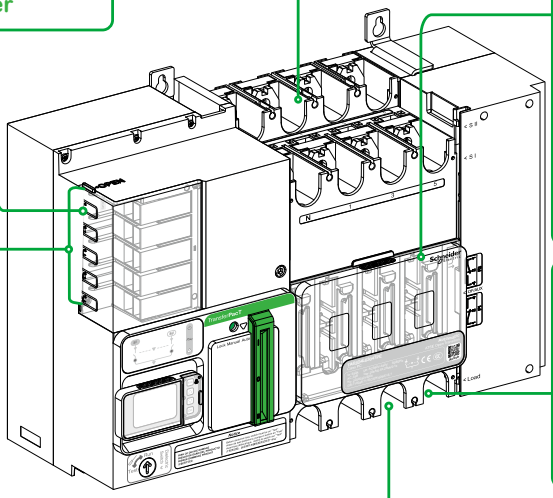
TPSISO65
Interphase barriers



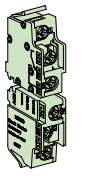
TPSISO67
Rear insulation screen

TPCDIO05
TPCDIO07
TPCDIO08
TPCDIO10
TPCDIO11
TPCDIO13
TPCDIO14
TPCDIO15*
TPCCOM16*
TPCDIO17
*native equipped on
TransferPacT Active Automatic
Function Modules

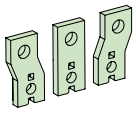




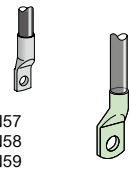
TransferPacT
Active Automatic
Frame 800



TPSAUX 43
TPSAUX44
Auxiliary Contact



TPSCON40
TPSCON41
TPSCON68
Terminal extension



TPSCON57
TPSCON58
TPSCON59
TPSCON60
Power connection-Crimp lug

Electrical and Mechanical Accessories- Frame 800

Auxiliary Contact Module

- TPSAUX43: Provide the open and closed status indication for both source I and source II .
- TPSAUX44: Provide the open and closed status indication for OFF position .

Insulating Accessories

Terminal Shield

Optional accessory: Provide terminal protection on the bar incoming and output.

- TPSISO42: Terminal Shield (set of 1)

Interphase Barrier

Optional accessory: Provide protection for the cable incoming and output, effectively avoiding short circuits between phases.

- TPSISO65: Interphase barriers (set of 3)

Insulation Screen

Optional accessory: PProvide protection for the cable incoming and output.

- TPSISO67: Insulating screen (set of 1). Applicable for source and load, maximum 3 set.

Electrical and Mechanical Accessories- Frame 800

Crimp Lug for Cables

- Natively supplied with interphase barriers.

Cable Material	Cross Section	Pole	Commercial Reference	Quantity
Copper	240 mm²	3P	TPSCON57	3
		4P	TPSCON58	4
	300 mm²	3P	TPSCON59	3
		4P	TPSCON60	4

Terminal Extension

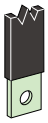
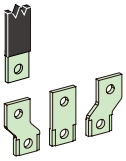
- Natively supplied with interphase barriers.

Type	Pole	Commercial Reference	Quantity
Spreaders			
45-55 mm	3P	TPSCON40	3
	4P	TPSCON41[a]	4
	4P	TPSCON68 [b]	4

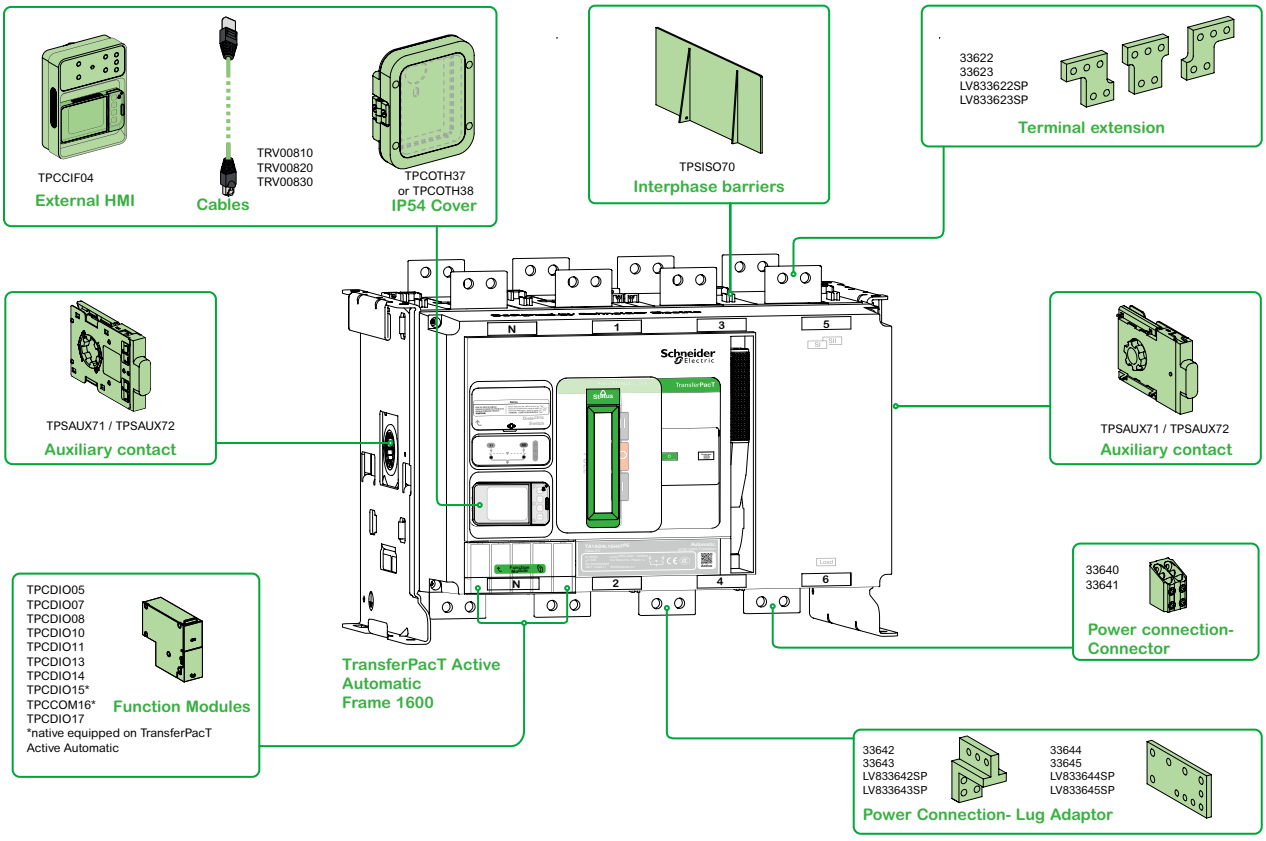
a: For incomings only
b: For load only.

Electrical and Mechanical Accessories- Frame 800

Compatibility Matrix

	Type of Conductor	No Insulation	Interphase Barrier	Long Terminal Shield	Insulating Screen for 1 Lug per Terminal	Insulating Screen for 2 Lugs per Terminal
	Cables (Cu) +crimp lugs	-	Mandatory (Supplied)	-	SII: rear screen possible	SII: rear screen mandatory
	Insulated bars	Possible	Possible	Possible	Possible	-
	Insulated bars +spreader terminal extension	-	Mandatory (supplied)	-	Mandatory	-

Electrical and Mechanical Accessories- Frame 1600



Electrical and Mechanical Accessories- Frame 1600

Auxiliary Contact Module

- TPSAUX71: Provide the open and closed status indication for both source I and source II .
- TPSAUX72: Provide the open and closed status indication for OFF position .

Insulating Accessories

Interphase Barrier

Optional accessory: Provide protection for the cable incoming and output, effectively avoiding short circuits between phases. 3 pieces for Source I & Source II, 3 pieces for load.

- TPSISO70: Interphase barriers (set of 3)

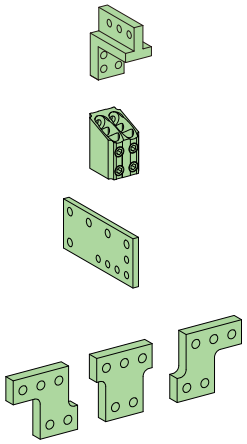
Installation Kit

Optional accessory: Provide upside down installation product.

- TPSOTH73: upside down installation kit (set of 2)

Electrical and Mechanical Accessories- Frame 1600

Crimp Lug for Cables



Type	Pole	Commercial Reference	Quantity
Vertical Connection adaptors	3P	33642	3
	4P	33643	4
	3P	LV833642SP	3
	4P	LV833643SP	4
Connectors 240 mm²	3P	33640	3
	4P	33641	4
Cable lug adaptors	3P	33644	3
	4P	33645	4
	3P	LV833644SP	3
	4P	LV833645SP	4
spreaders 70 mm to 95 mm	3P	33622	3
	4P	33623	4
	3P	LV833622SP	3
	4P	LV833623SP	4

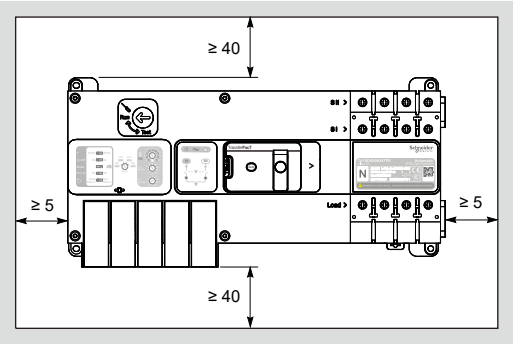
Note:
1: Do not apply spreaders on load side.
2: Do not apply spreaders with other connection accessories.

Automatic Transfer Switching Equipment

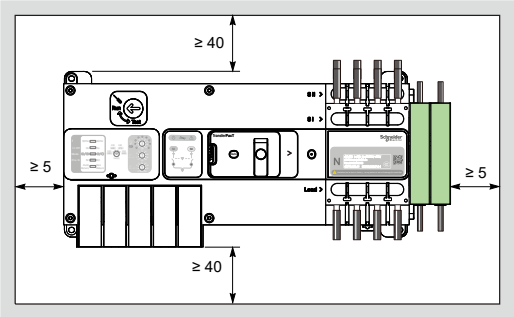
Class PC

TransferPacT Active Automatic and Automatic Frame 100/2P, 3P, 4P

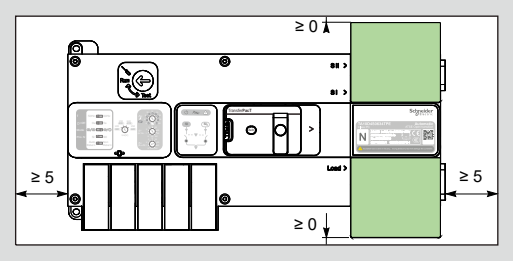
Minimum Electrical Clearance



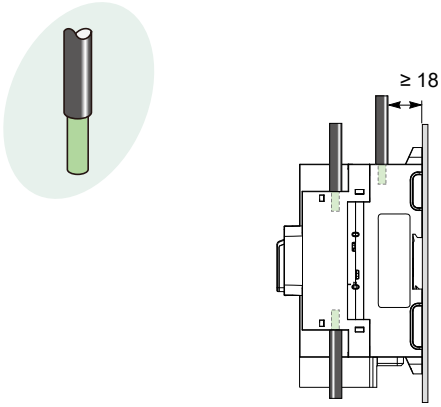
Bare Product



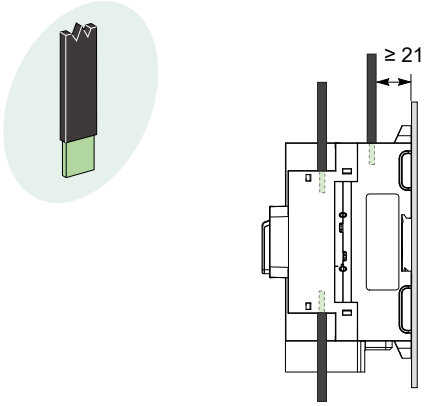
With Auxiliary Contact



With Terminal Shield



Cable to Base Plate



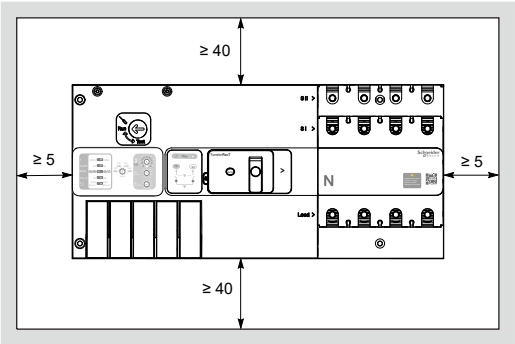
Busbar to Base Plate

Automatic Transfer Switching Equipment

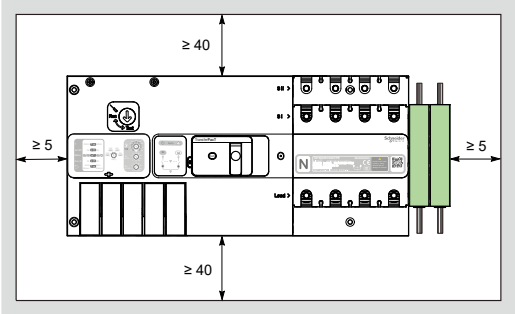
Class PC

TransferPacT Active Automatic and Automatic Frame 160/3P, 4P

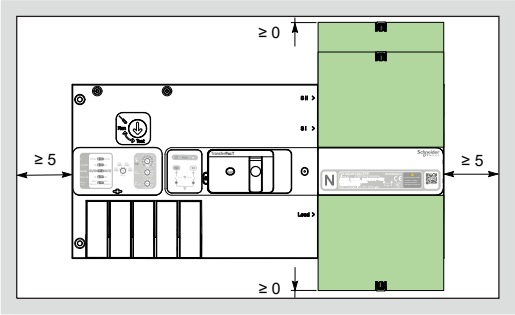
Minimum Electrical Clearance



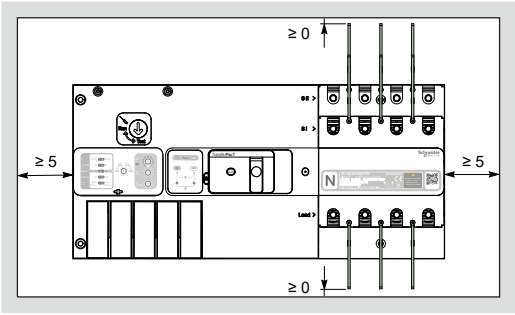
Bare Product



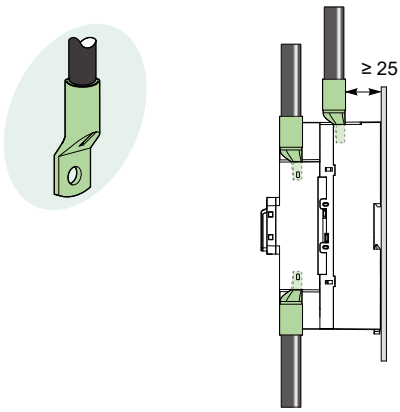
With Auxiliary Contact



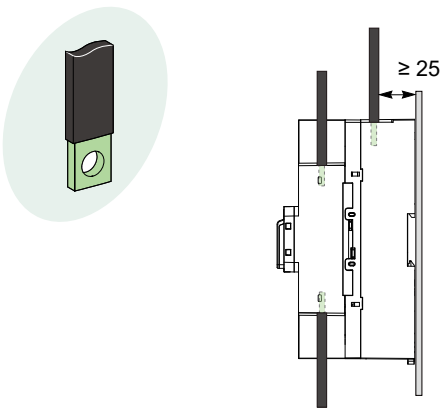
With Terminal Shield



With Interphase Barriers



Crimp Lug to Base Plate



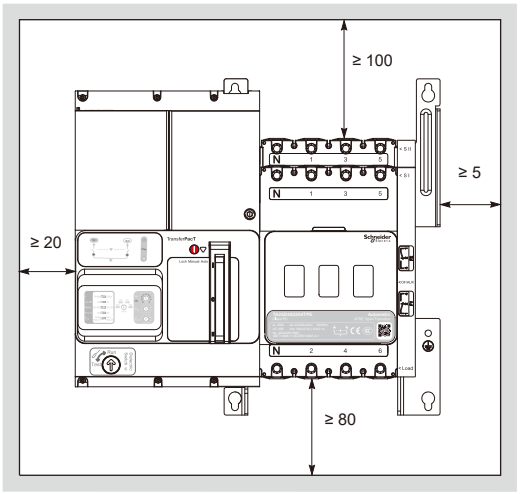
Busbar to Base Plate

Automatic Transfer Switching Equipment

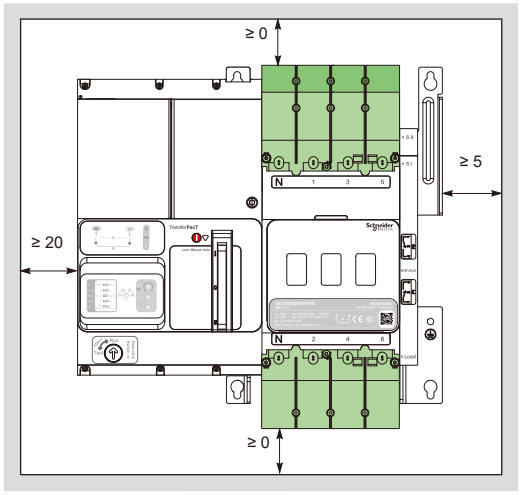
Class PC

TransferPacT Active Automatic and Automatic Frame 250/3P, 4P

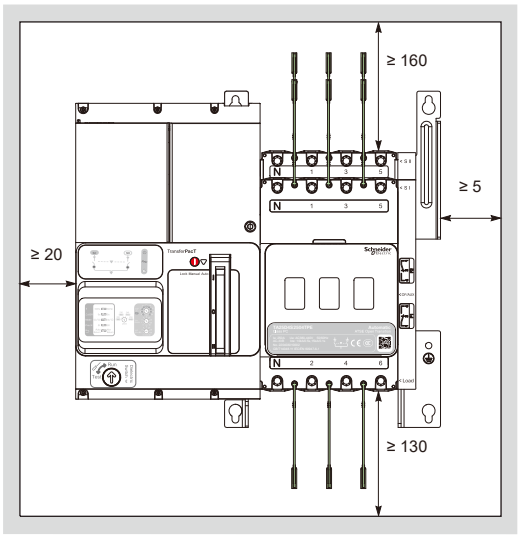
Minimum Electrical Clearance



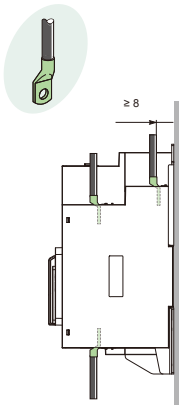
Bare Product



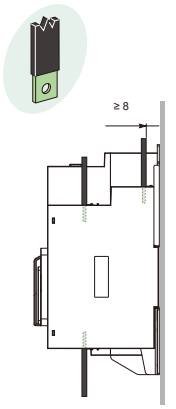
With Terminal Shield



With Interphase Barriers



Crimp Lug to Base Plate



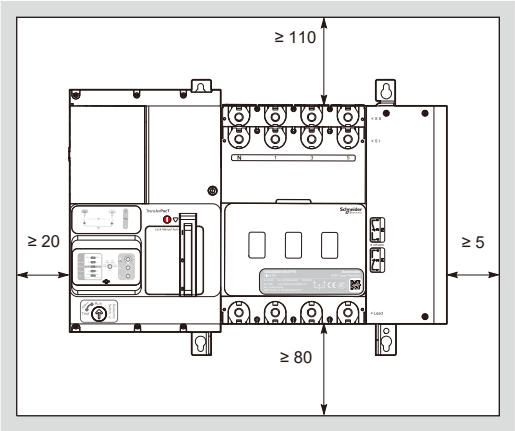
Busbar to Base Plate

Automatic Transfer Switching Equipment

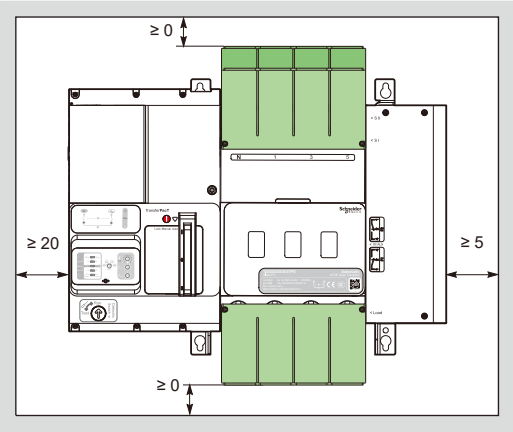
Class PC

TransferPacT Active Automatic and Automatic Frame 630/3P, 4P

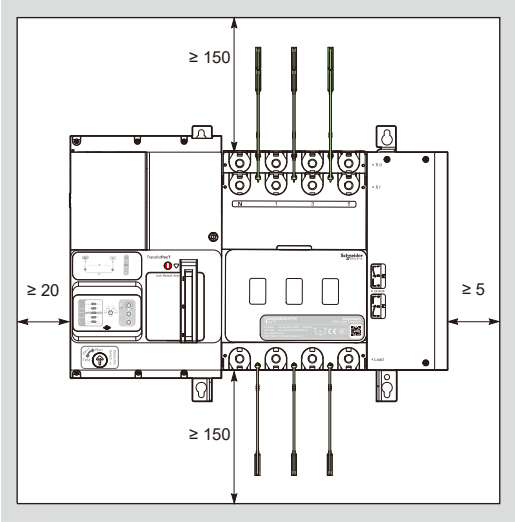
Minimum Electrical Clearance



Bare Product

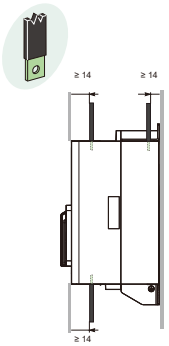


With Terminal Shield



With Interphase Barriers

Crimp Lug to Base Plate



Busbar to Base Plate

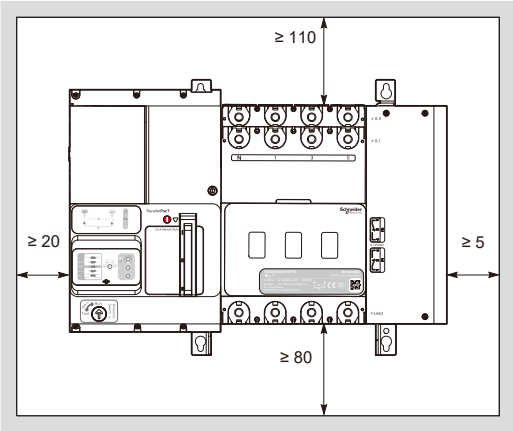
Automatic Transfer Switching Equipment

Class PC

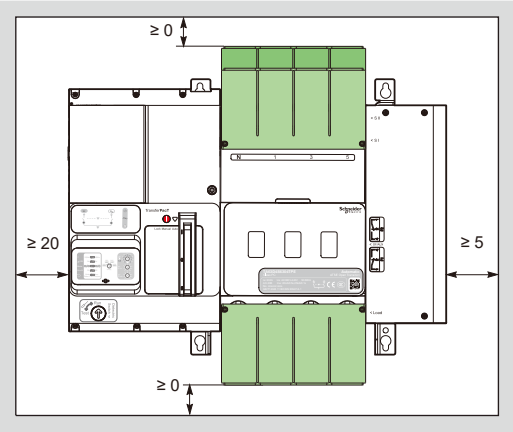
TransferPacT Active Automatic and Automatic Frame 800/3P, 4P

A

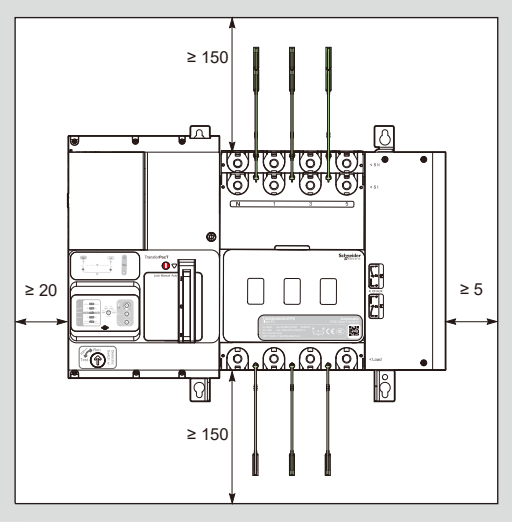
Minimum Electrical Clearance



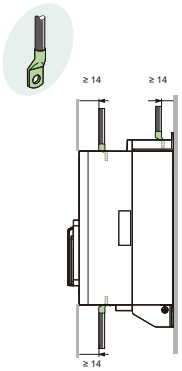
Bare Product



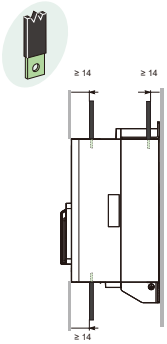
With Terminal Shield



With Interphase Barriers



Crimp Lug to Base Plate



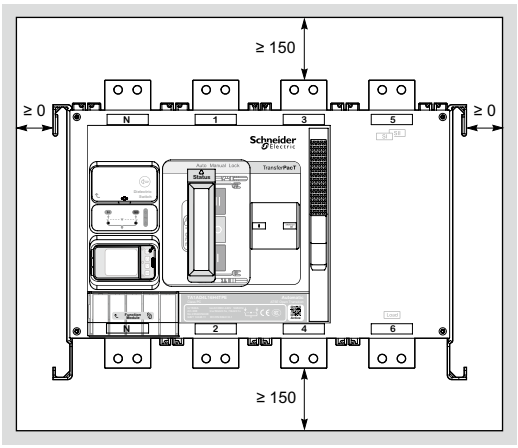
Busbar to Base Plate

Automatic Transfer Switching Equipment

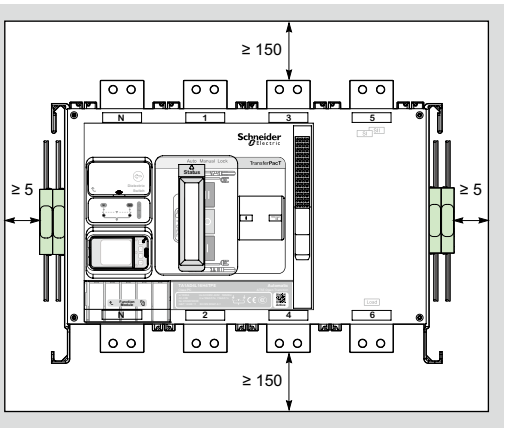
Class PC

TransferPacT Active Automatic and Automatic Frame 1600/3P, 4P

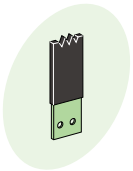
Minimum Electrical Clearance

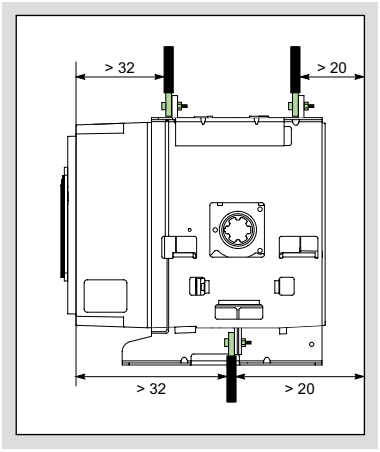


Bare Product

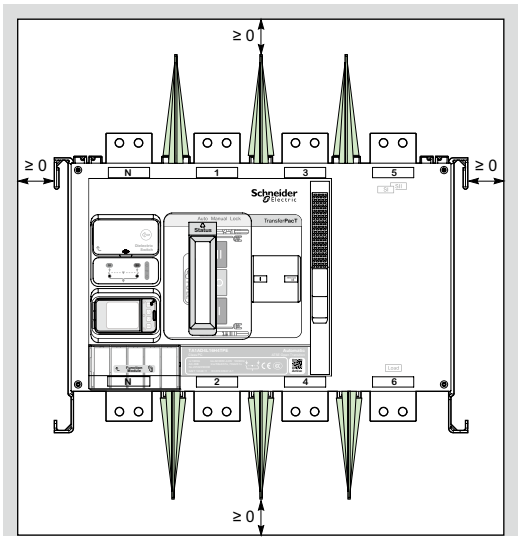


With Auxiliary Contacts





Busbar to panel



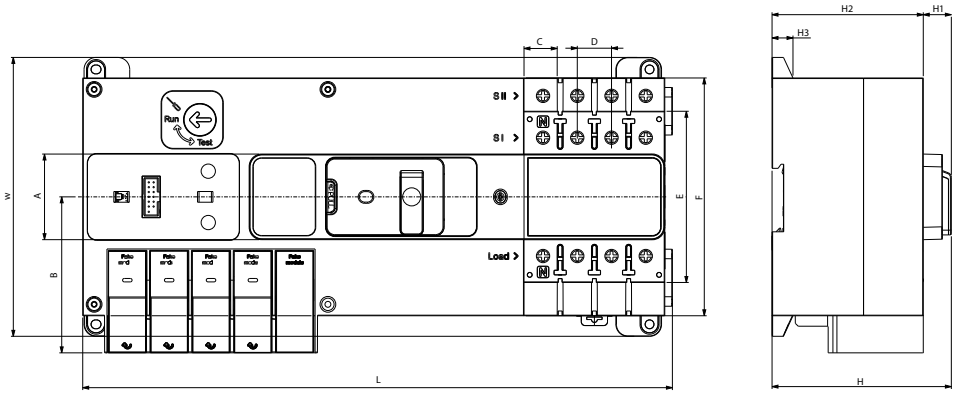
With Interphase Barriers

Automatic Transfer Switching Equipment

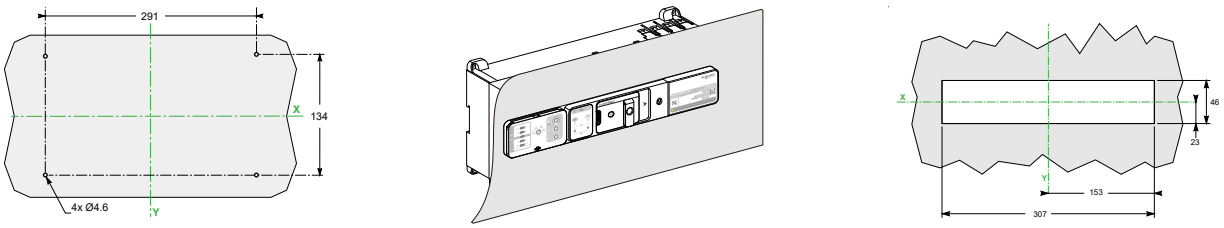
Class PC

TransferPacT Active Automatic and Automatic Frame 100/2P, 3P, 4P

Dimensions



Panel and Front Panel Cut



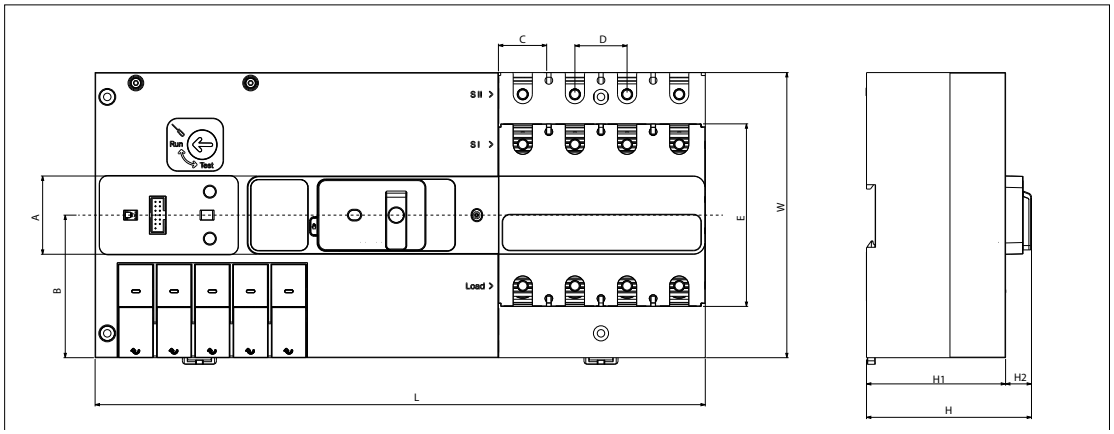
Frame	L	W	H	A	B	C	D	E	F	H1	H2	H3
100	310	147	94	45	82	17.5	18	90	125	15	79.5	11

Automatic Transfer Switching Equipment

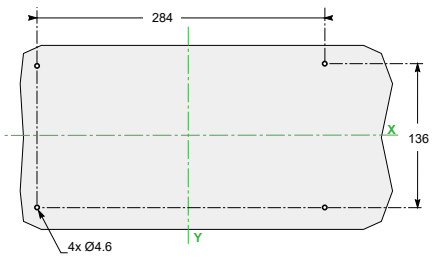
Class PC

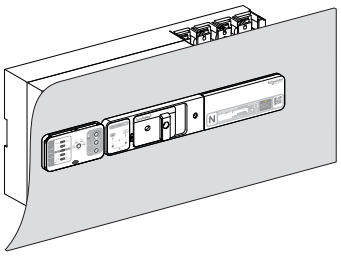
TransferPacT Active Automatic & Automatic Frame 160 / 3P, 4P

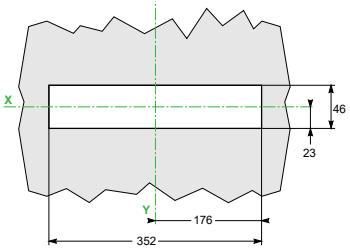
Dimensions



Panel and Front Panel Cut







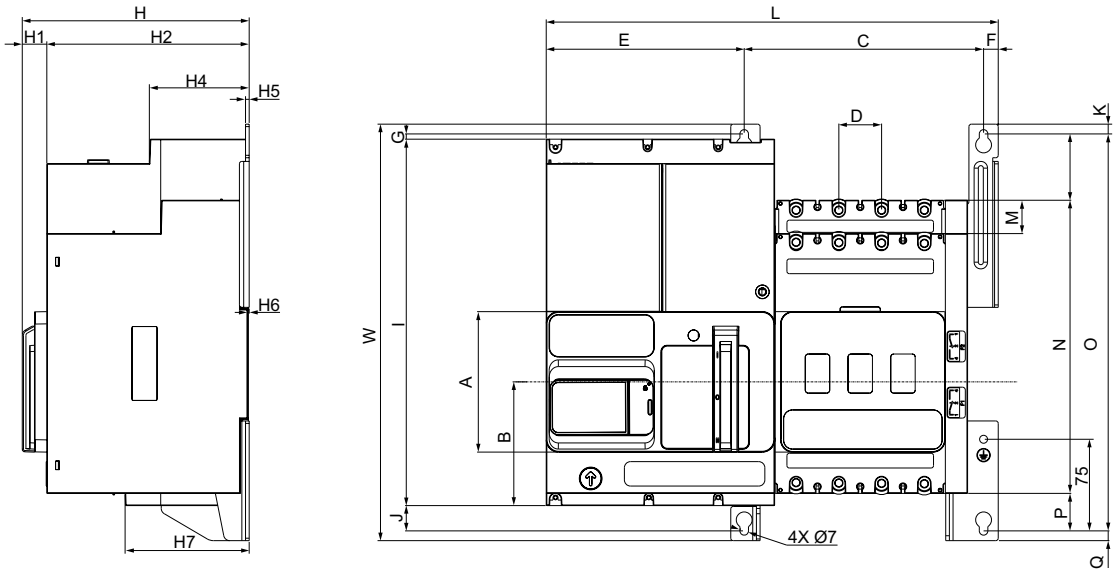
Frame	L	W	H	A	B	C	D	E	F	H1	H2	H3
160	351	164	95	45	82	28	30	105		80	15	

Automatic Transfer Switching Equipment

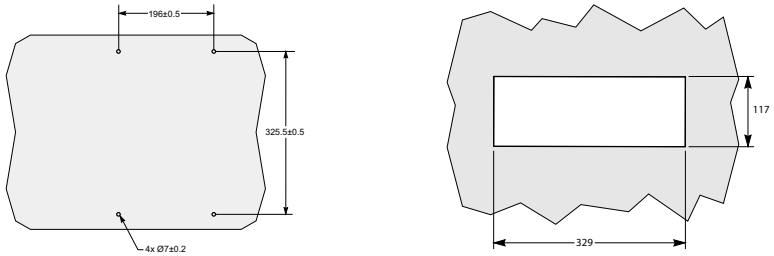
Class PC

TransferPacT Active Automatic & Automatic Frame 250 / 3P, 4P

Dimensions



Panel and Front Panel Cut



Frame	L	W	H	A	B	C	D	E	F	H1	H2
250	370	341	185.8	115	101.3	196	35	162	12	20.1	165.7

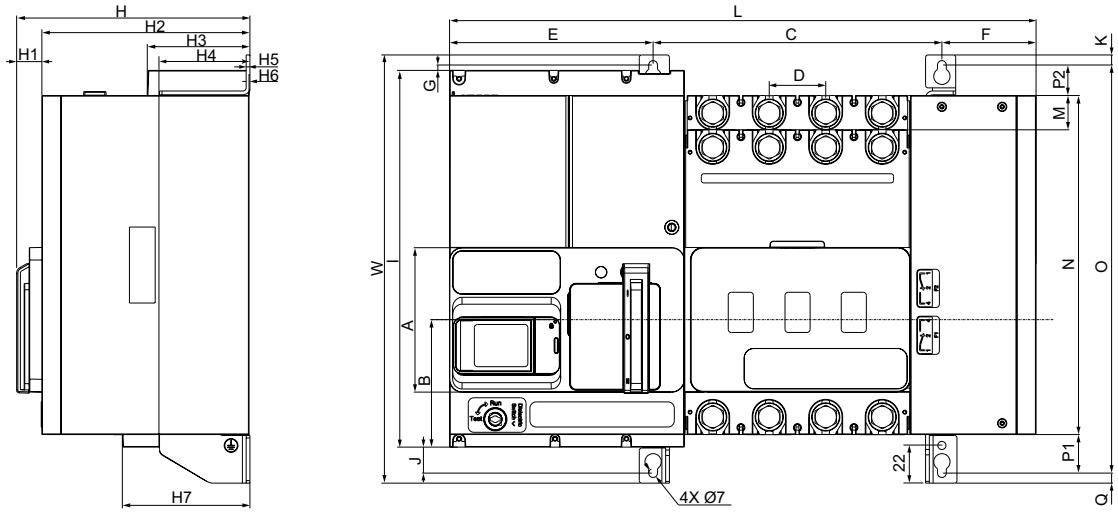
Frame	H4	H5	H6	H7	I	J	K	M	N	O	P	Q
250	81.75	3	0.7	101.6	300	20.7	8	27.3	240	325	30.7	8

Automatic Transfer Switching Equipment

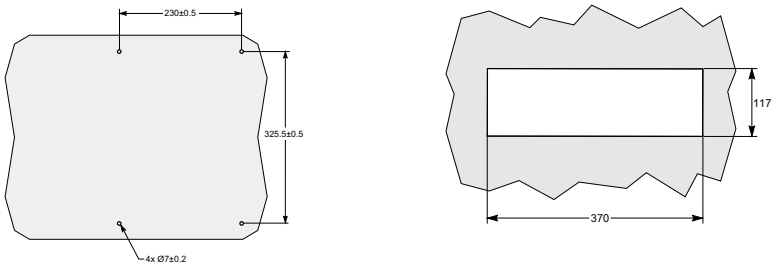
Class PC

TransferPacT Active Automatic&Automatic Frame 630 / 3P, 4P

Dimensions



Panel and Front Panel Cut



Frame	L	W	H	A	B	C	D	E	F	G	H1	H2	H3
630	467	341	185.8	115	101.5	230	45	162	75	4.3	20.1	165.7	81.7

Frame	H4	H5	H6	H7	I	J	K	M	N	O	P1	P2	Q
630	72.45	3	0.7	101.6	300	20.7	8	27.3	270	325	30.7	24.3	8

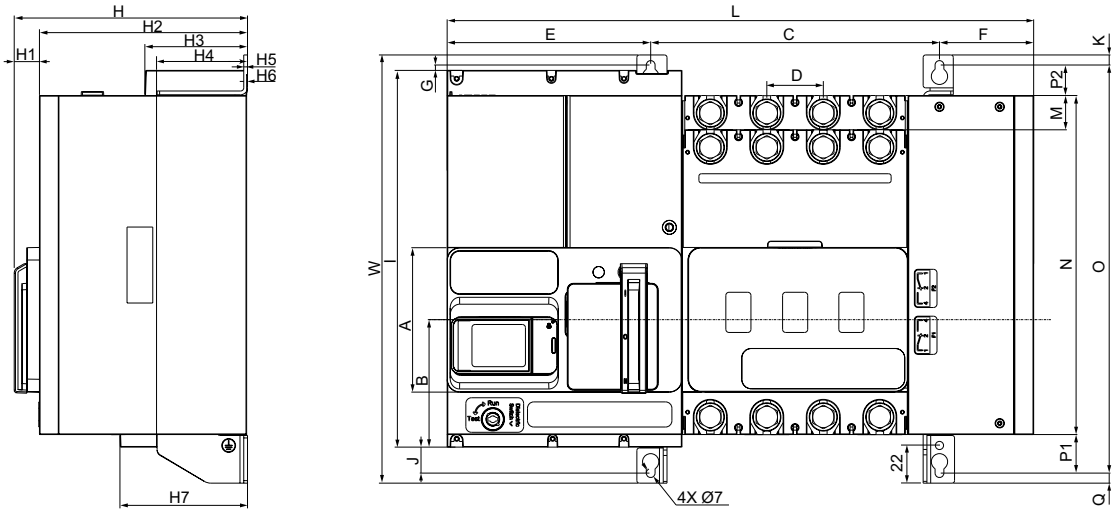
Automatic Transfer Switching Equipment

Class PC

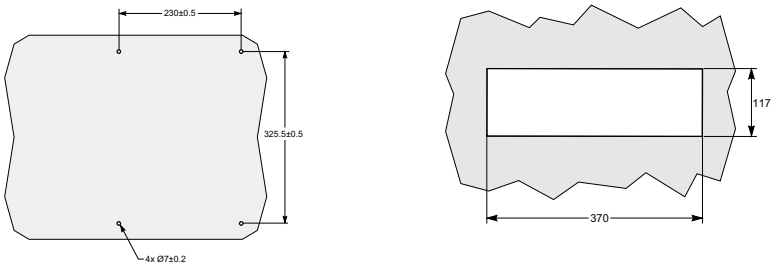
TransferPacT Active Automatic&Automatic Frame 800 / 3P, 4P

A

Dimensions



Panel and Front Panel Cut



Frame	L	W	H	A	B	C	D	E	F	G	H1	H2	H3
800	467	341	185.8	115	101.5	230	45	162	75	4.3	20.1	165.7	81.7

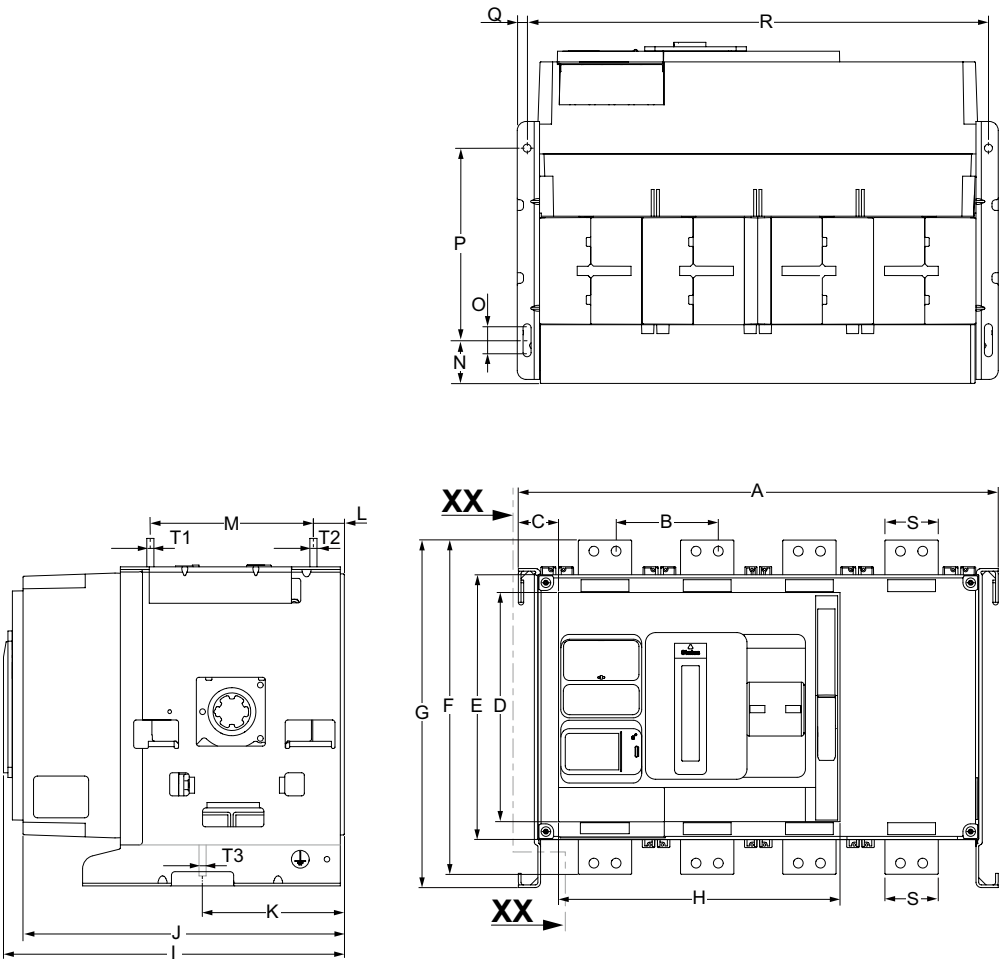
Frame	H4	H5	H6	H7	I	J	K	M	N	O	P1	P2	Q
800	72.45	3	0.7	101.6	300	20.7	8	27.3	270	325	30.7	24.3	8

Automatic Transfer Switching Equipment

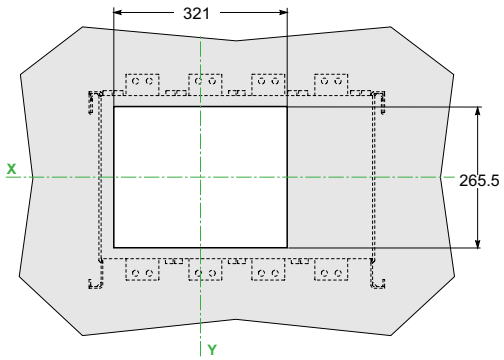
Class PC

TransferPacT Active Automatic&Automatic Frame 1600 / 3P, 4P

Dimensions (mm)



Door Cutout (mm)



Frame	A	B	C	D	E	F	G	H	I	J	K	L
800-1600 A	540	115	45	258	298	376	391	317	383.5	361.5	126.5	34.75

Frame	M	N	O	P	Q	R	S	T1	T2	T3
800-1250 A	183.5	48.5	28	216	11	518	60	6	6	6
1600 A								8	8	10

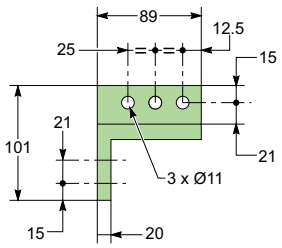
Automatic Transfer Switching Equipment

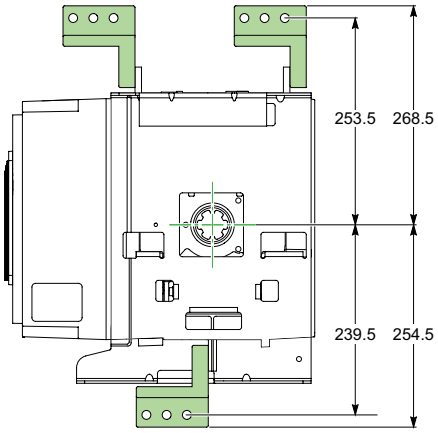
Class PC

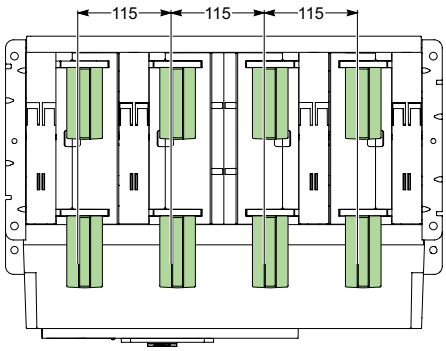
TransferPacT Frame 1600 Wring Capacity

A

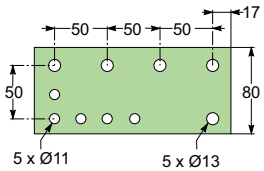
Dimensions with Vertical connection Adaptors (mm)

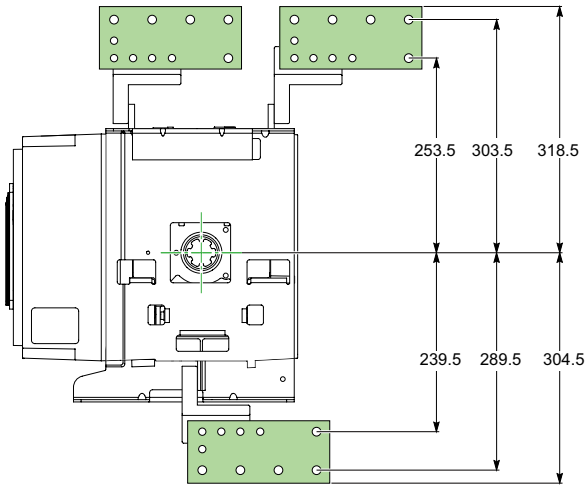


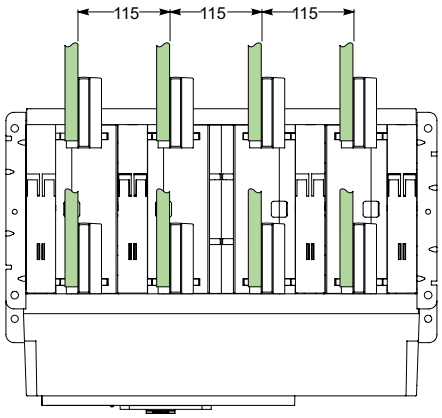




Dimension with Cable lug Adaptors (mm)





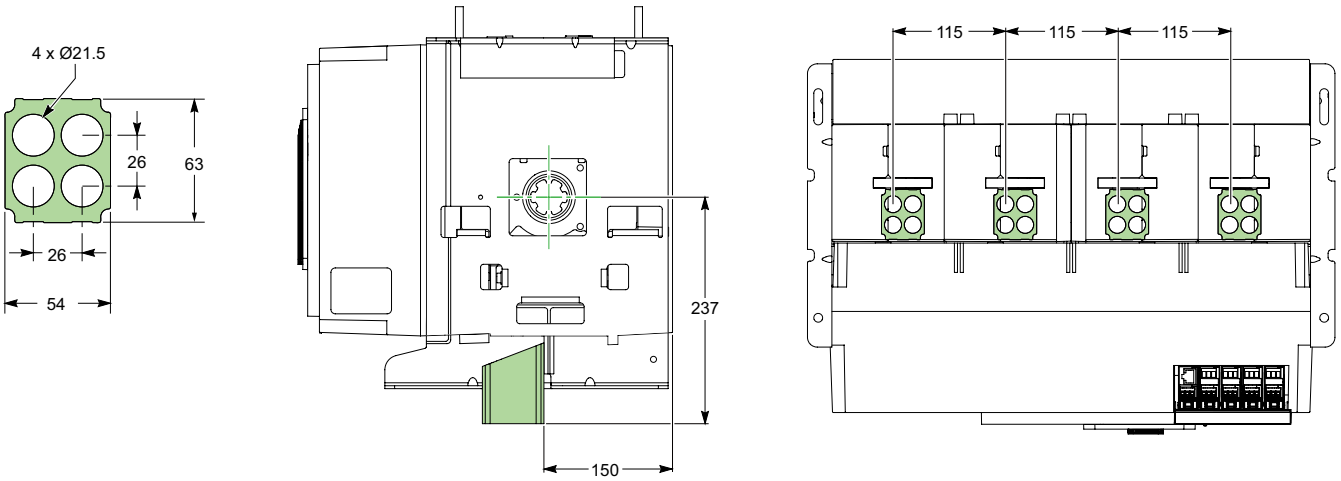


Automatic Transfer Switching Equipment

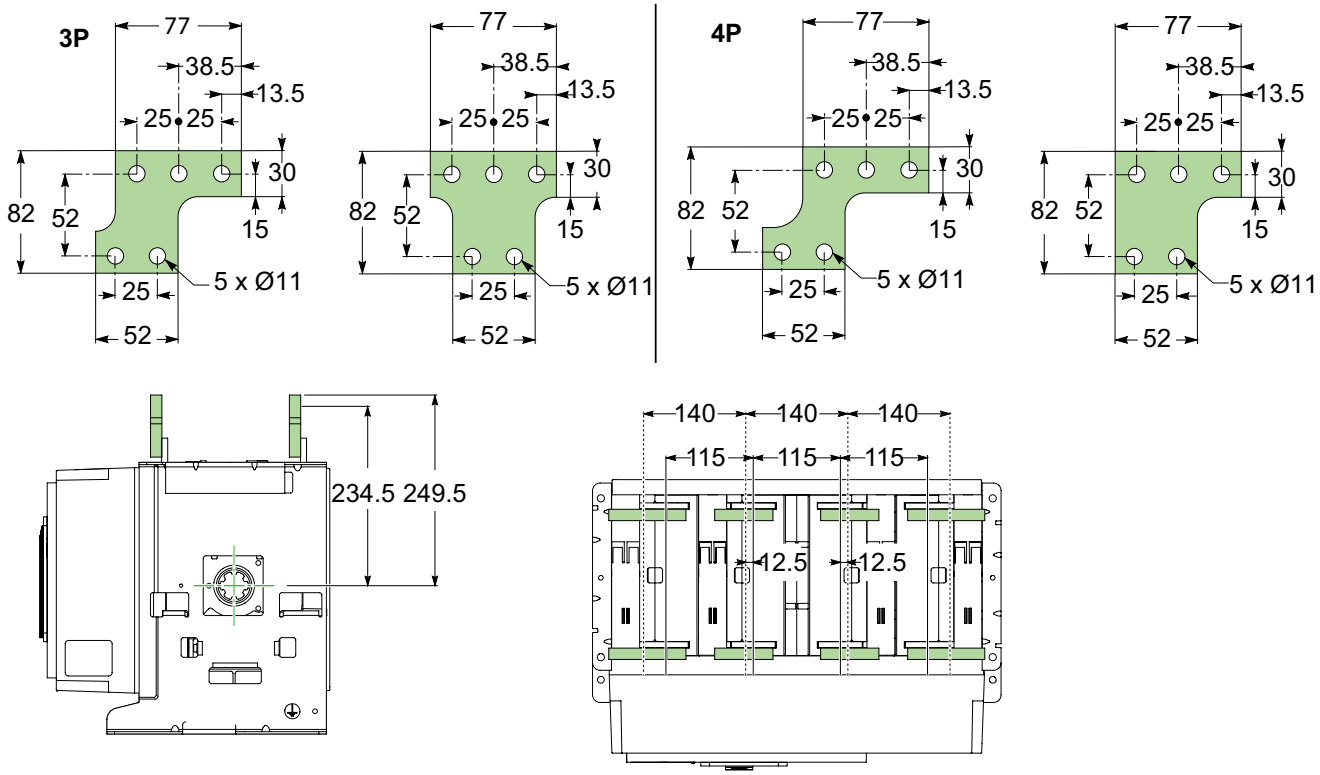
Class PC

TransferPacT Frame 1600 Wring Capacity

Dimensions with Bare Cable Connector (mm)



Dimension with Spreaders (mm)



Automatic Transfer Switching Equipment

TransfePacT Active Automatic

Class PC

A

External HMI

Overview

The external HMI is used to display the HMI on the panel. The HMI consists of external HMI base and a LCD screen.

The external HMI must be connected with the function module with commercial reference as TPCDIO15. The connection of the external HMI is done using a cable and an external HMI base and LCD display.

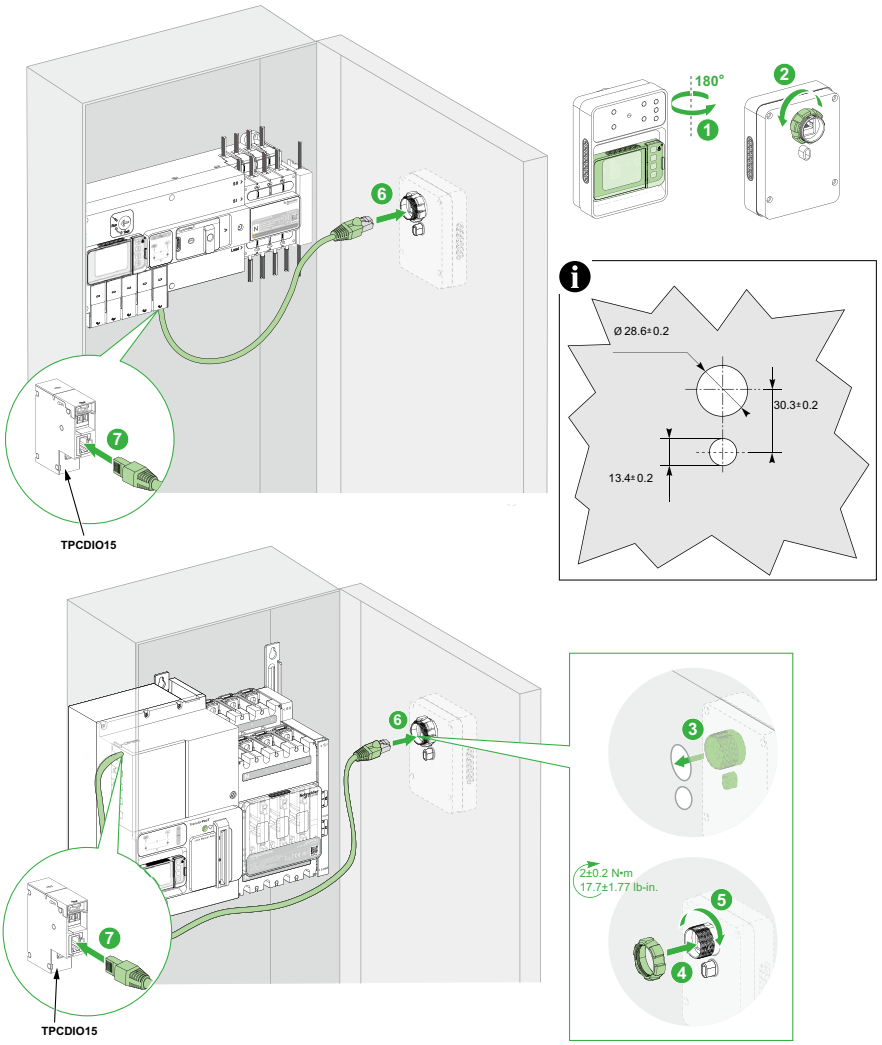
Position of External HMI and Switch

Perform the following procedure to connect the external HMI on the panel door.

1. Rotate the external HMI to the back side.
2. Remove the nut of external HMI.
3. Insert the external HMI on the front door.

NOTE: Please make the cutout on the front door as per the dimension given.

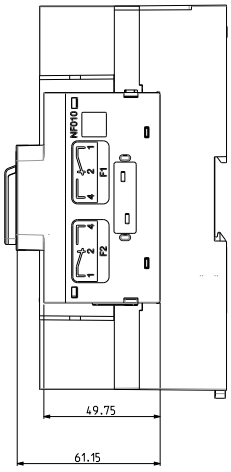
4. Insert the nut.
5. Lock the nut.
6. Insert the cable into the external HMI.
7. Insert the other end of the cable into the function module (TPCDIO15).

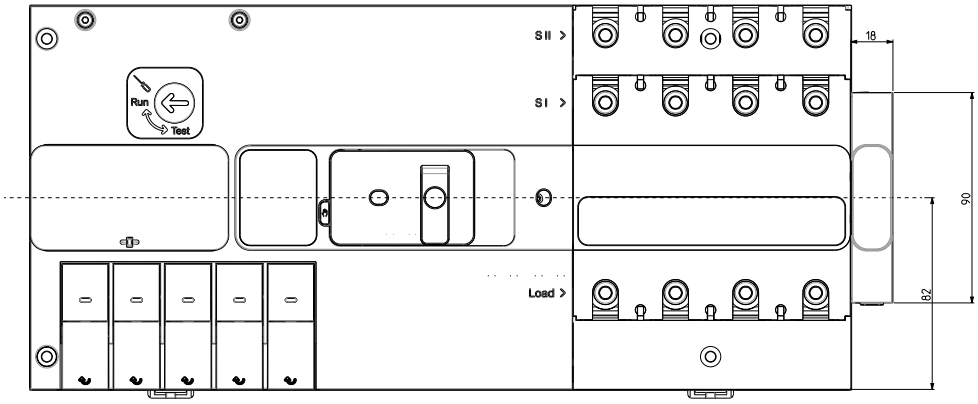


Automatic Transfer Switching Equipment

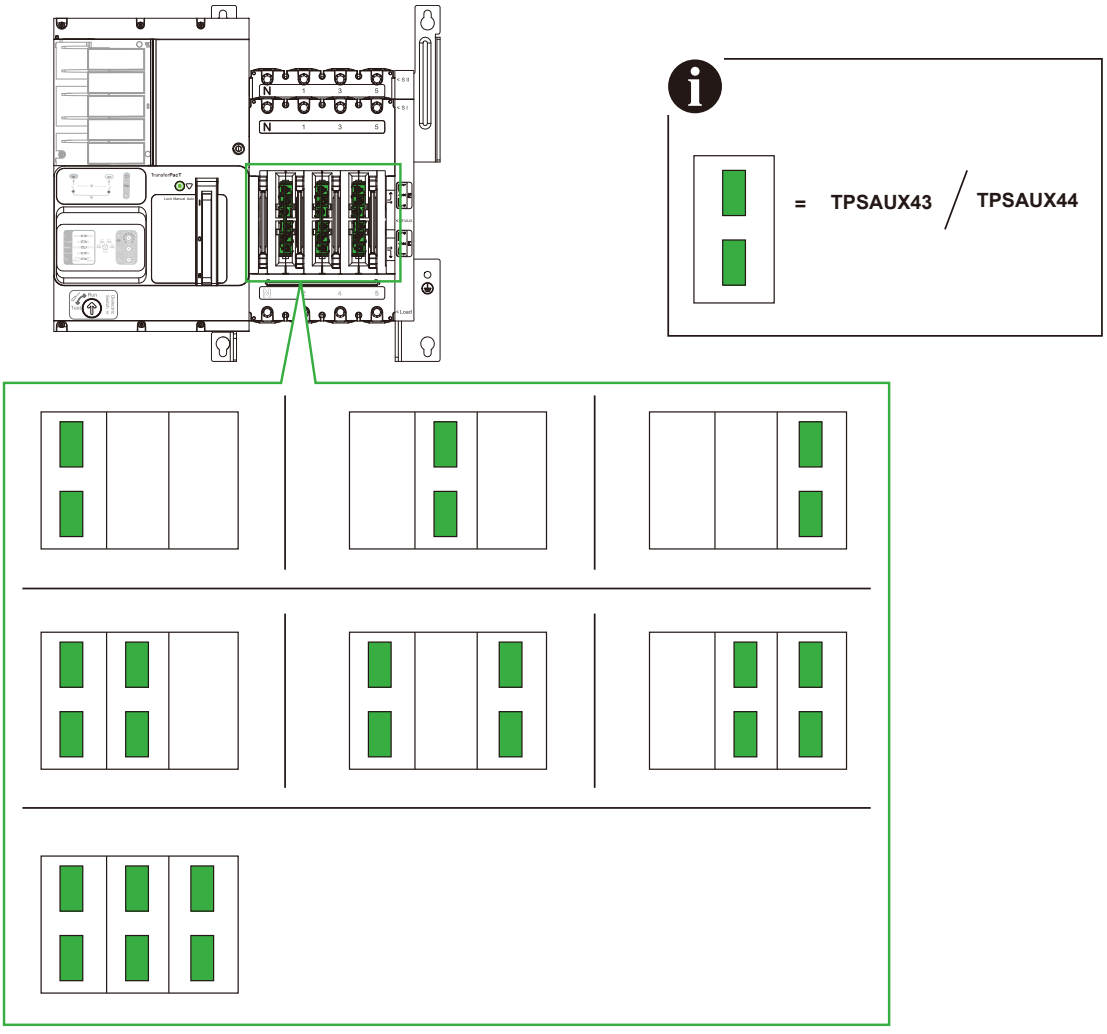
TransferPacT Active Automatic and Automatic

Auxiliary Contact for Frame 100 & Frame 160





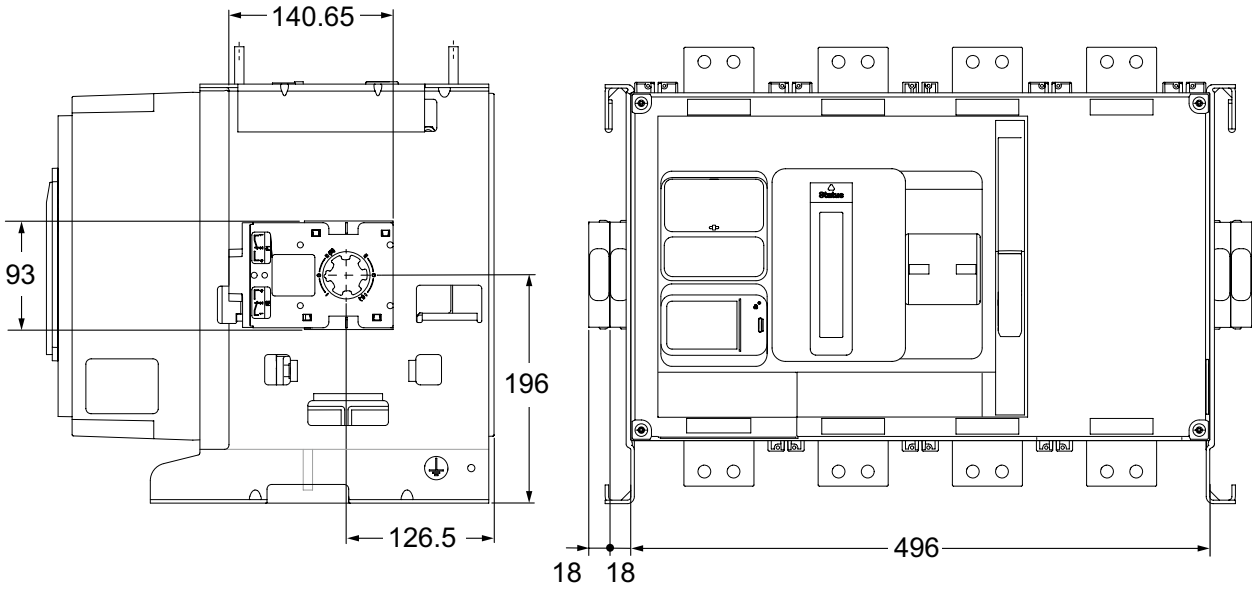
Auxiliary Contact for Frame 250 & Frame 630 & Frame 800



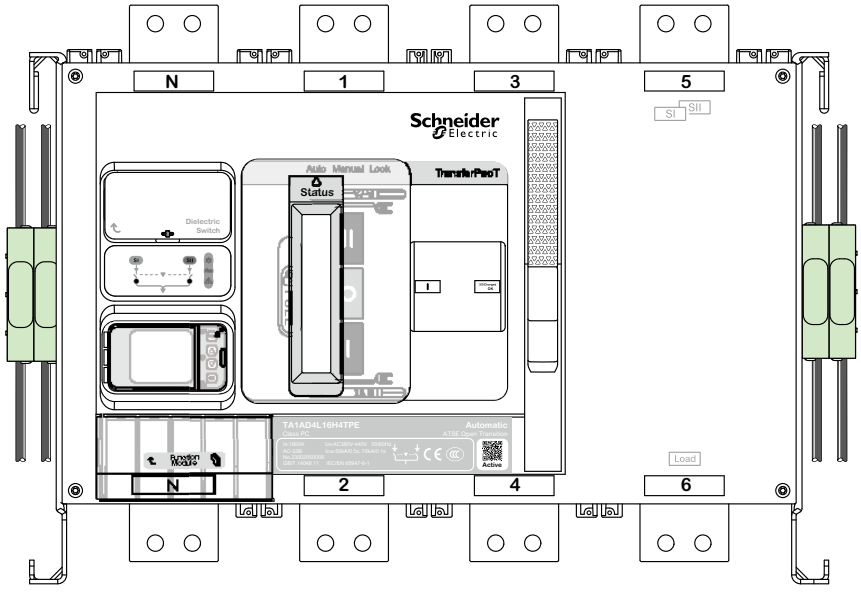
Automatic Transfer Switching Equipment

TransferPacT Active Automatic and Automatic

Auxiliary Contact for Frame 1600



Auxiliary Contact for Frame 1600



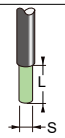
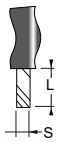
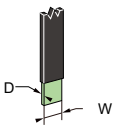
Note: Maximum 4 add on auxiliary contacts (2 on each side) can be installed.

Automatic Transfer Switching Equipment

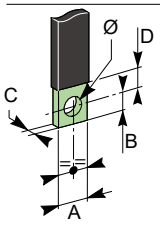
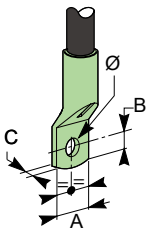
Class PC

TransferPacT , Frame 100 & Frame 160, Wiring Capacity

Dimensions for Frame 100

	Pole partition	(mm)	18
	Cable-Rigid Cu/Al	L (mm)	≤ 13
		S (mm²)	≤ 1.5-35
	Cable-Flexible Cu/Al	L (mm)	≤ 13
		S (mm²)	≤ 1.5-35
	Bar	W (mm)	≤ 10
		D (mm)	≤ 5
	Torque	(Nm)	3.5±0.3

Dimensions for Frame 160

	Pole partition	(mm)	30
	Bars	A (mm)	≤ 20
		B (mm)	≤ 6
		C (mm)	≤ 6
		D (mm)	12 ≤ D ≤ 14
		Ø (mm)	≥ 6.4
	Cable with Crimp Lug	A(mm)	≤ 20
		B (mm)	≤ 6
		C (mm)	≤ 6
		Ø (mm)	≥ 6.4
	Torque	(Nm)	8±0.8

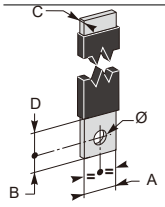
Automatic Transfer Switching Equipment

Class PC

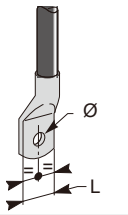
TransferPacT, Frame 250, Wiring Capacity

A

Dimensions for Frame 250

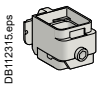


	Pole partition	(mm)	35
Bars		A (mm)	≤ 25
		B (mm)	≤ 10
		C (mm)	≤ 6
		D (mm)	10 ≤ D ≤ 15
		Ø (mm)	≥ 8

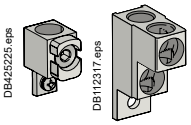


Cable with Crimp Lug	L(mm)	≤ 25
	Ø (mm)	≥ 8
Torque	(Nm)	15±1.5

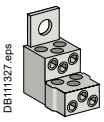
Connection of Bare Cabels to Frame 250



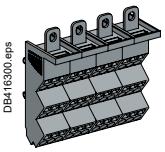
1-cable connector



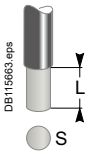
2-cable connector



Distribution connector



Linergy DX distribution block



	1-cable connector	Steel ≤ 160 A	Aluminium ≤ 250 A		
	L (mm)	25	25		
	S (mm²) Cu/Al	1.5 to 95 [1]	25 to 50	70 to 95	120 to 240 150 max. flex.
	Torque (Nm)	12	20	26	31
	2-cable connector				
	L (mm)	25 or 50			
	S (mm²) Cu/Al	2 x 50 to 2 x 120			
	Torque (Nm)	22			
	6-cable distribution connector (aluminium)				
	L (mm)	15 or 30			
	S (mm²) Cu/Al	1.5 to 6 [1]	8 to 35		
	Torque (Nm)	4	6		
	Linergy DP distribution block (9 cables)				
	L (mm)	12	16		
	S (mm²) Cu/Al	6 x 4 to 10	3 x 6 to 16		

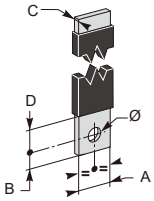
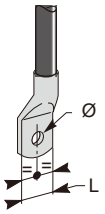
[1] For flexible cables from 1.5 to 4 mm², connection with crimped or self-crimping ferrules.

Automatic Transfer Switching Equipment

Class PC

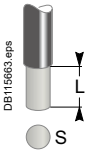
TransferPacT, Frame 630, Wiring Capacity

Dimensions for Frame 630

	Pole partition	(mm)	45
	Bars	A (mm)	≤ 32
		B (mm)	≤ 15
		C (mm)	3 ≤ D ≤ 10
		D (mm)	13 ≤ D ≤ 15
		Ø (mm)	≥ 10
	Cable with Crimp Lug	L(mm)	≤ 25
		Ø (mm)	≥ 10
	Torque	(Nm)	50±5

Connection of Bare Cabels to Frame 630

1-cable connector

		1-cable connector
	L (mm)	30
	S (mm²) Cu/Al	35 to 300 rigid 240 max. flex.
	Torque (Nm)	31

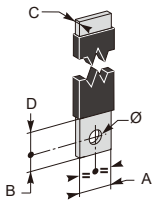
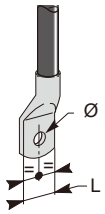
Automatic Transfer Switching Equipment

Class PC

TransferPacT, Frame 800, Wiring Capacity

A

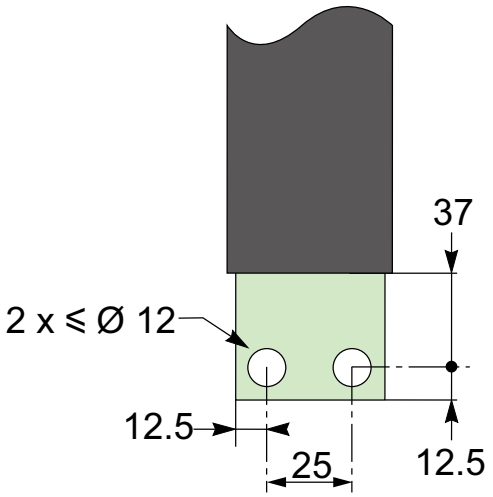
Dimensions for Frame 800

	Pole partition	(mm)	45
	Bars	A (mm)	≤ 32
		B (mm)	≤ 15
		C (mm)	8 ≤ D ≤ 17
		D (mm)	13 ≤ D ≤ 15
		Ø (mm)	≥ 10
	Cable with Crimp Lug	L(mm)	≤ 25
		Ø (mm)	≥ 10
	Torque	(Nm)	50±5

Automatic Transfer Switching Equipment

Class PC

TransferPacT, Frame 1600, Wiring Capacity (mm)



Busbar Connection recommendation

Connection	Service current	Ti : 40 °C		Ti : 50 °C		Ti : 60 °C		Ti : 70 °C	
		No. of 5 mm thick bars	No. of 10 mm thick bars	No. of 5 mm thick bars	No. of 10 mm thick bars	No. of 5 mm thick bars	No. of 10 mm thick bars	No. of 5 mm thick bars	No. of 10 mm thick bars
Horizontal Connection	800	2b.50 x 5	1b.50 x 10	2b.50 x 5	1b.50 x 10	2b.60 x 5	1b.60 x 10	3b.50 x 5	2b.40 x 10
	1000	2b.60 x 5	1b.60 x 10	2b.60 x 5	1b.60 x 10	2b.80 x 5	2b.40 x 10	3b.60 x 5	2b.50 x 10
	1250	3b.50 x 5	2b.40 x 10	3b.50 x 5	2b.40 x 10	3b.60 x 5	2b.50 x 10	3b.80 x 5	2b.60 x 10
	1250	2b.80x5		2b.80x5					
	1600	3b.80 x 5	2b.60 x 10	3b.80 x 5	2b.60 x 10	3b.100 x 5	3b.50 x 10	3b.100 x 5	2b.80 x 10
Vertical Connection	800	2b.40 x 5	1b.40 x 10	2b.40 x 5	1b.40 x 10	2b.50 x 5	1b.50 x 10	2b.50 x 5	1b.50 x 10
	1000	2b.50 x 5	1b.50 x 10	2b.50 x 5	1b.50 x 10	2b.60 x 5	1b.60 x 10	2b.60 x 5	1b.60 x 10
	1250	2b.60 x 5	1b.60 x 10	2b.60 x 5	1b.60 x 10	3b.50 x 5	2b.40 x 10	2b.80 x 5	2b.50 x 10
	1600	3b.60 x 5	2b.50 x 10	3b.60 x 5	2b.50 x 10	2b.100 x 5	2b.60 x 10	3b.80 x 5	2b.60 x 10

Installation Recommendation
Use at High Temperatures

Frame 100 & Frame 160

Power Dissipated and Resistance per Pole

TranferPacT	Frame 100				Frame 160		
	40	63	80	100	100	125	160
Rating (A)	40	63	80	100	100	125	160
Resistance per pole (mΩ)	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Power dissipated per pole (W)	0.5	1.2	1.9	2	2	3.1	5.1

Temperature Derating

TranferPacT		Frame 100				Frame 160		
		40	63	80	100	100	125	160
Front connection with bare-cable connectors or lugs								
Thermal current Ith at	60 °C	40	63	80	100	100	125	160
	65 °C	40	63	80	100	100	125	160
	70 °C	40	63	80	100	100	125	150
TransferPacT		**100**				**160**		
Front connection								
Thermal current Ith at	60 °C	100				160		
	65 °C	100				160		
	70 °C	100				160		
Front connection with right-angle terminal extension + bare-cable connectors								
Thermal current Ith at	55 °C	100				160		
	60 °C	100				160		
	65 °C	100				160		
	70 °C	100				160		

Frame 250 & Frame 630

Power Dissipated and Resistance per Pole

TranferPacT	250				630			
Rating (A)	100	160	200	250	320	400	500	630
Resistance per pole (mΩ)	0.15	0.15	0.15	0.15	0.09	0.09	0.09	0.09
Power dissipated per pole (W)	1.5	3.8	6	9.4	9.2	14.4	22.5	35.7

Temperature derating

TranferPacT		100	160	200	250	320	400	500	630
Connection by bars									
Thermal current Ith at	60 °C	100	160	200	250	320	400	500	630
	65 °C	100	160	200	250	320	400	500	590
	70 °C	100	160	200	250	320	400	500	550
Connection by cables with crimp lugs									
Thermal current Ith at	60 °C	100	160	200	250	320	400	500	630
	65 °C	100	160	200	250	320	400	500	590
	70 °C	100	160	200	250	320	400	500	550
Connection by cables with connector and terminal shield									
Thermal current Ith at	40 °C	100	160	200	250	320	400	500	592
	45 °C	100	160	200	250	320	400	500	571
	50 °C	100	160	200	250	320	400	500	548
	55 °C	100	160	200	250	320	400	500	525
	60 °C	100	160	200	250	320	400	500	501
	65 °C	100	160	200	250	320	400	475	475
	70 °C	100	160	200	250	320	400	448	448
Connection of terminal extensions									
Thermal current Ith at	60 °C	100	160	200	250	320	400	500	630
	65 °C	100	160	200	250	320	400	500	590
	70 °C	100	160	200	250	320	400	500	550

Installation Recommendation

Use at High Temperatures

Frame 800

Power Dissipated and Resistance per Pole

TranferPacT	800
Rating (A)	800
Resistance per pole (mΩ)	0.07
Power dissipated per pole (W)	44.8

Temperature derating

TranferPacT		800
Connection by bars		
Thermal current Ith at	50 °C	800
	55 °C	780
	60 °C	757
	65 °C	733
	70 °C	708
Connection by cables with crimp lugs		
Thermal current Ith at	50 °C	800
	55 °C	780
	60 °C	757
	65 °C	733
	70 °C	708
Connection of terminal extensions		
Thermal current Ith at	50 °C	800
	55 °C	780
	60 °C	757
	65 °C	733
	70 °C	708

Frame 1600

Power Dissipated and Resistance per Pole

TranferPacT	800	1000	1250	1600
Rating (A)	800	1000	1250	1600
Resistance per pole (mΩ)	0.035	0.035	0.035	0.028
Power dissipated per pole (W)	22.4	35	54.7	71.7

Temperature derating

TranferPacT		800	1000	1250	1600
Connection by bars					
Thermal current Ith at	40 °C	800	1000	1250	1600
	45 °C	800	1000	1250	1600
	50 °C	800	1000	1250	1600
	55 °C	800	1000	1250	1560
	60 °C	800	1000	1250	1520
	65 °C	800	1000	1250	1480
	70 °C	800	1000	1250	1440

Installation Recommendation
Use at High Altitude

Frame 100 & Frame 160

Altitude Derating

Altitude (m)		2000	3000	4000	5000
Impulse withstand voltage (kV) Uimp	Frame 100	6	5.3	4.7	4.1
	Frame 160	8	7	6.3	5.4
	Controller	6	6	6	5.9
Rated insulation voltage (V) Ui	Switch	800	700	620	540
	Controller	500	500	500	500
Rated current (A) at 40°C In x		1	0.96	0.93	0.9

Frame 250 & Frame 630

Altitude Derating

Altitude (m)		2000	3000	4000	5000
Impulse withstand voltage (kV) Uimp	Frame 250	8	7.1	6.4	5.6
	Frame 630	12	11	10	8
	Controller	6	6	6	5.9
Rated insulation voltage (V) Ui	Switch	800	710	640	560
	Controller	500	500	500	500
Rated current (A) at 40°C In x		1	0.98	0.97	0.95

Frame 800

Altitude Derating

Altitude (m)		2000	3000	4000	5000
Impulse withstand voltage (kV) Uimp	Frame 800	12	11	10	8
	Controller	6	6	6	5.9
Rated insulation voltage (V) Ui	Switch	1000	900	780	700
	Controller	500	500	500	500
Rated current (A) at 40°C In x		1	0.98	0.97	0.95

Frame 1600

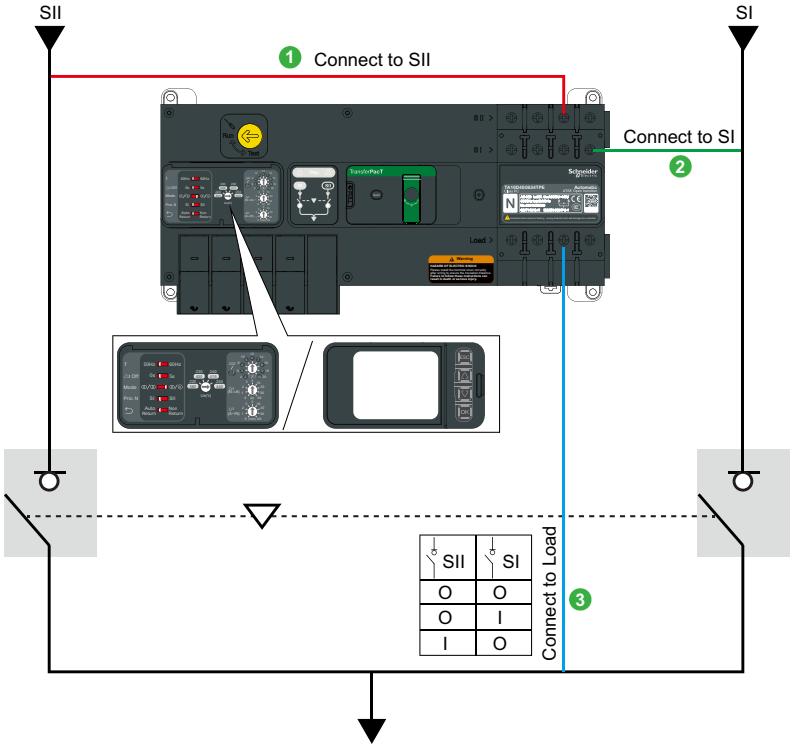
Altitude Derating

Altitude (m)		2000	3000	4000	5000
Impulse withstand voltage (kV) Uimp	Frame 1600	12	11	10	8
	Controller	6	6	6	5.9
Rated insulation voltage (V) Ui	Frame 1600	1000	900	780	700
	Controller	500	500	500	500
Rated current (A) at 40°C In x		1	0.99	0.96	0.94

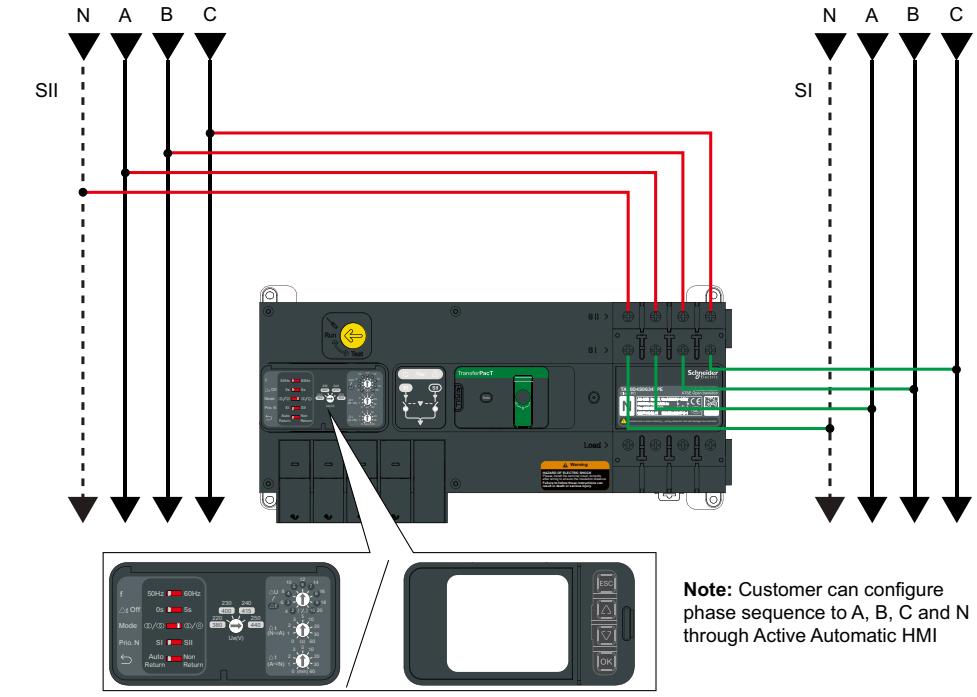
Automatic Transfer Switching Equipment

TransferPacT Active Automatic and Automatic

Wiring Diagrams for Frame 100: 32-100 A



3P/4P

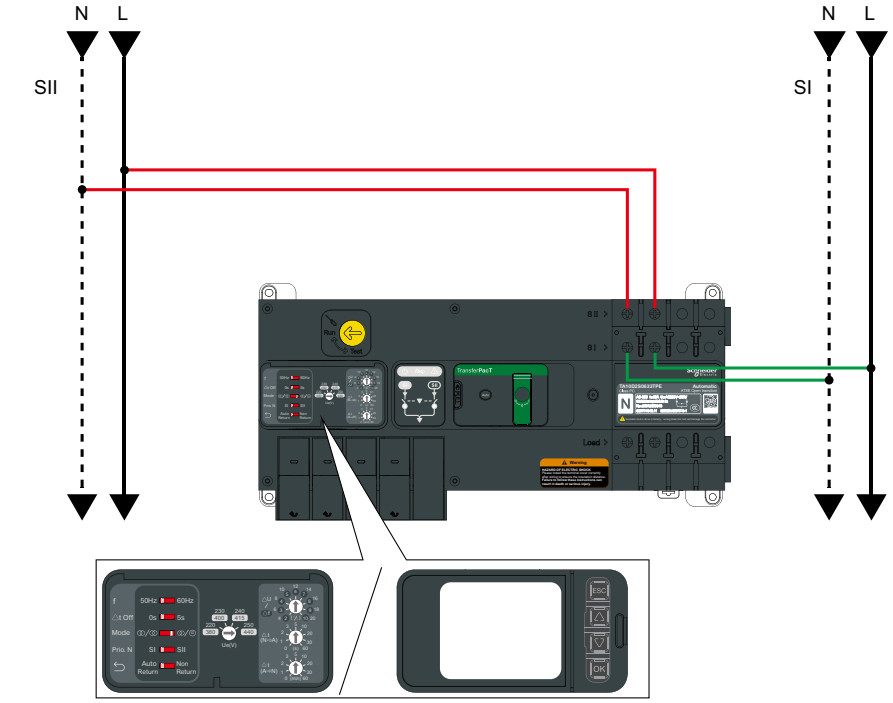


Note: Customer can configure phase sequence to A, B, C and N through Active Automatic HMI

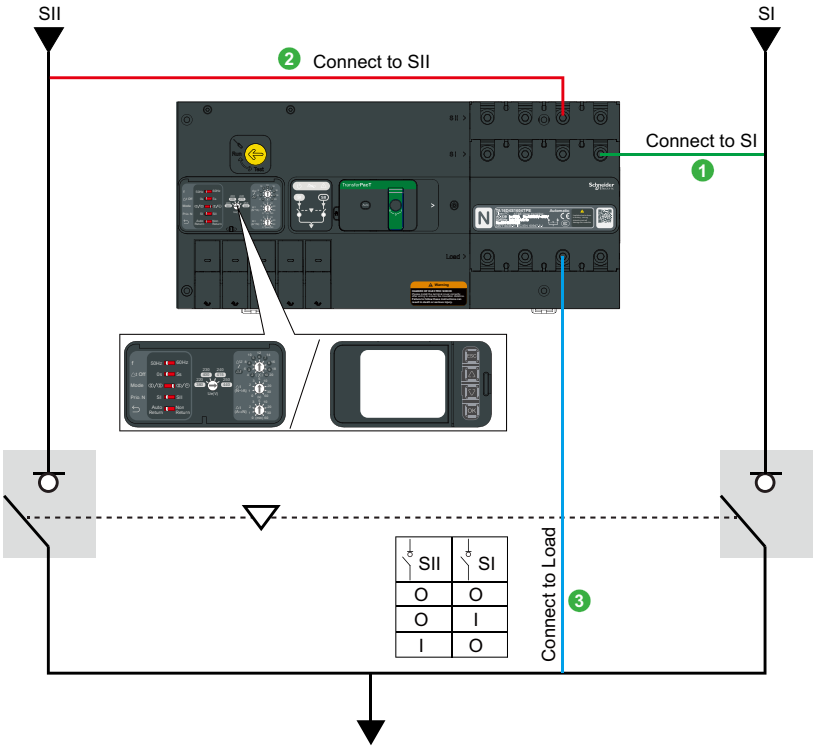
Automatic Transfer Switching Equipment
TransferPacT Active Automatic and Automatic

A

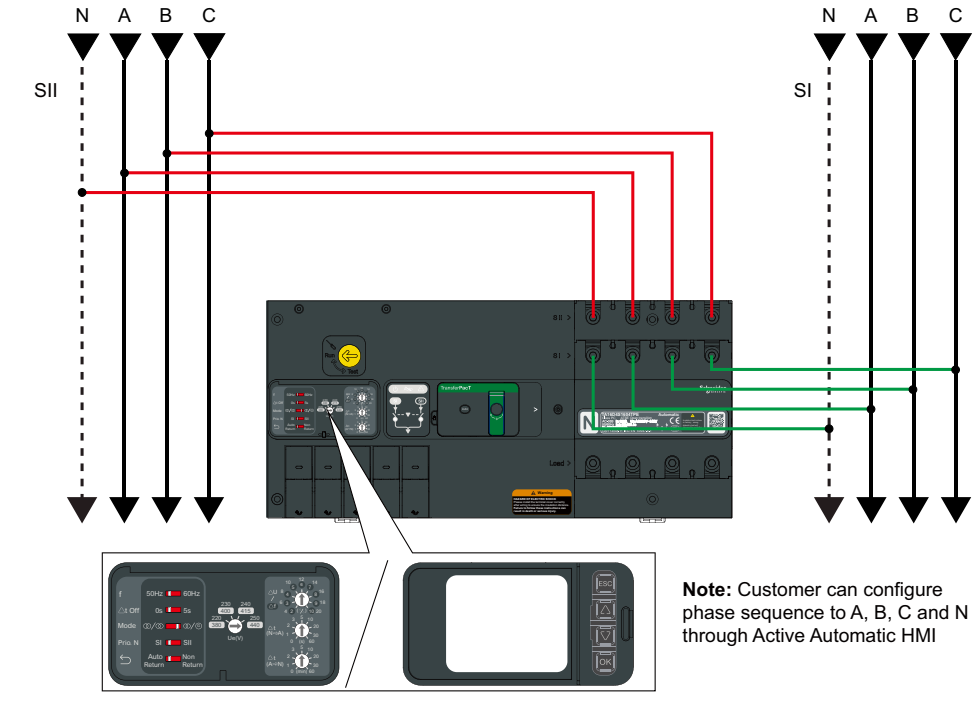
2P



Automatic Transfer Switching Equipment
TransferPacT Active Automatic and Automatic
Wiring Diagrams for Frame 160: 80-160 A



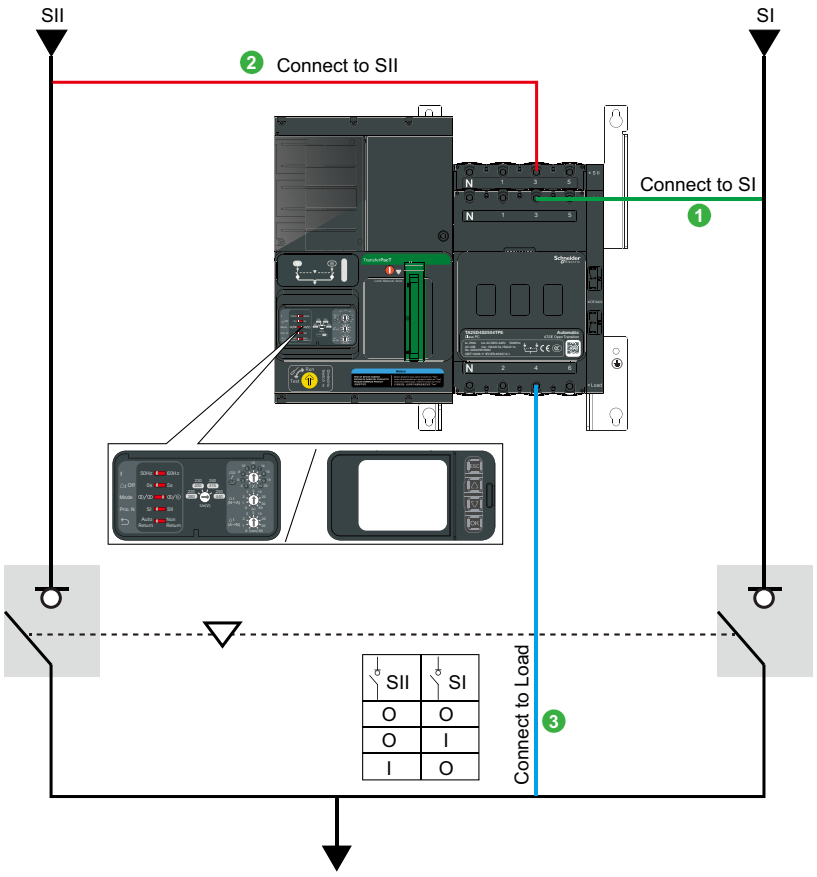
3P/4P



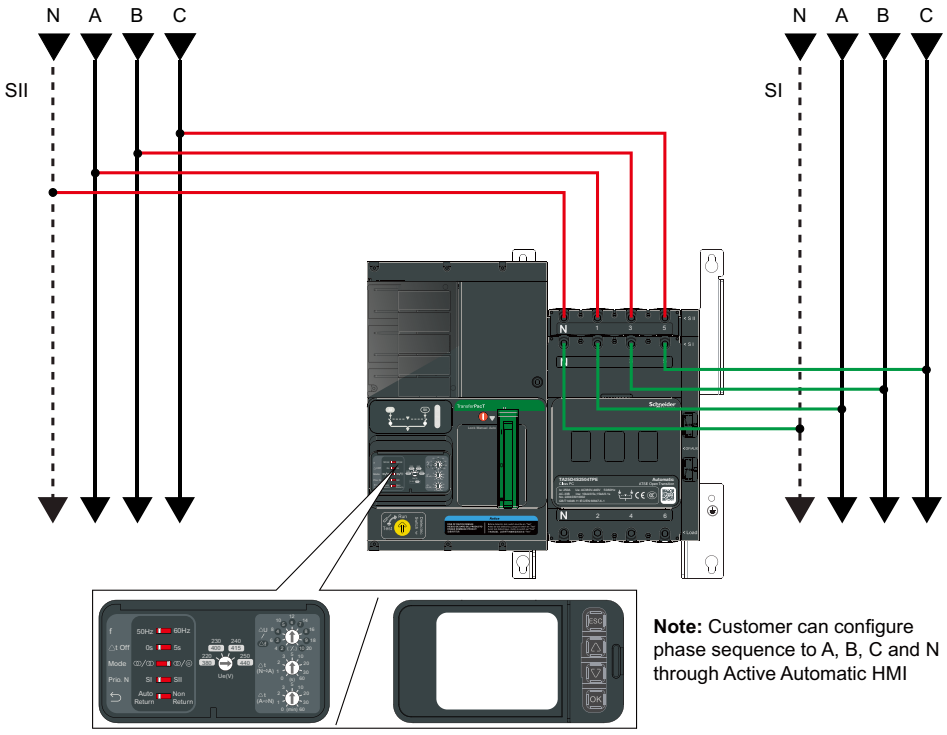
Note: Customer can configure phase sequence to A, B, C and N through Active Automatic HMI

Automatic Transfer Switching Equipment
TransferPacT Active Automatic and Automatic

Wiring Diagrams for Frame 250: 100-250 A

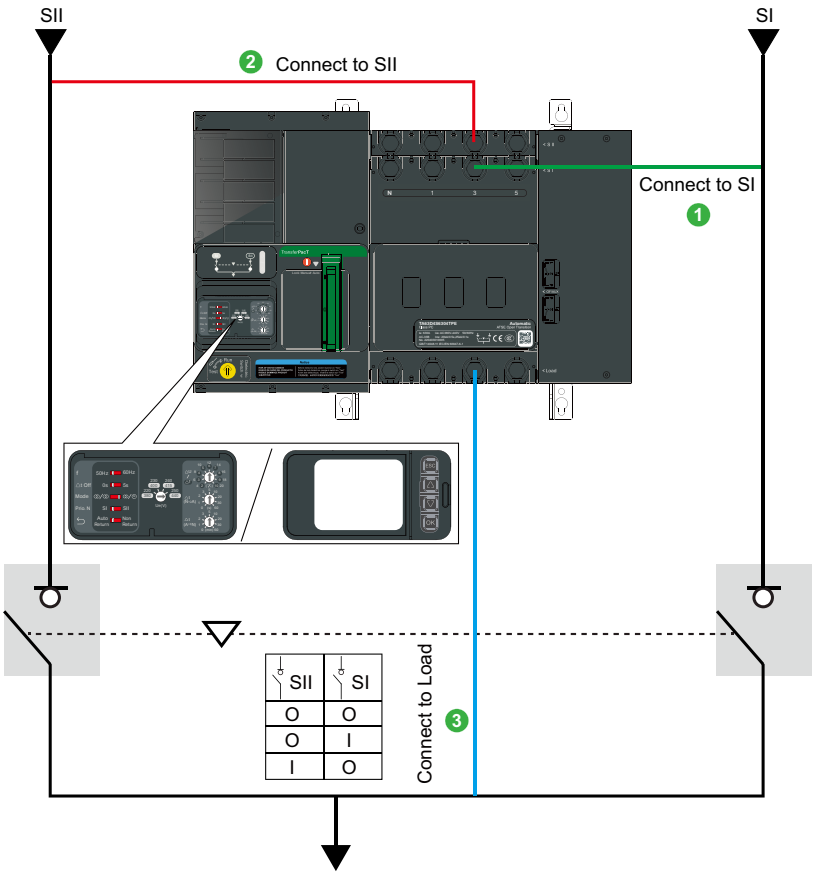


3P/4P

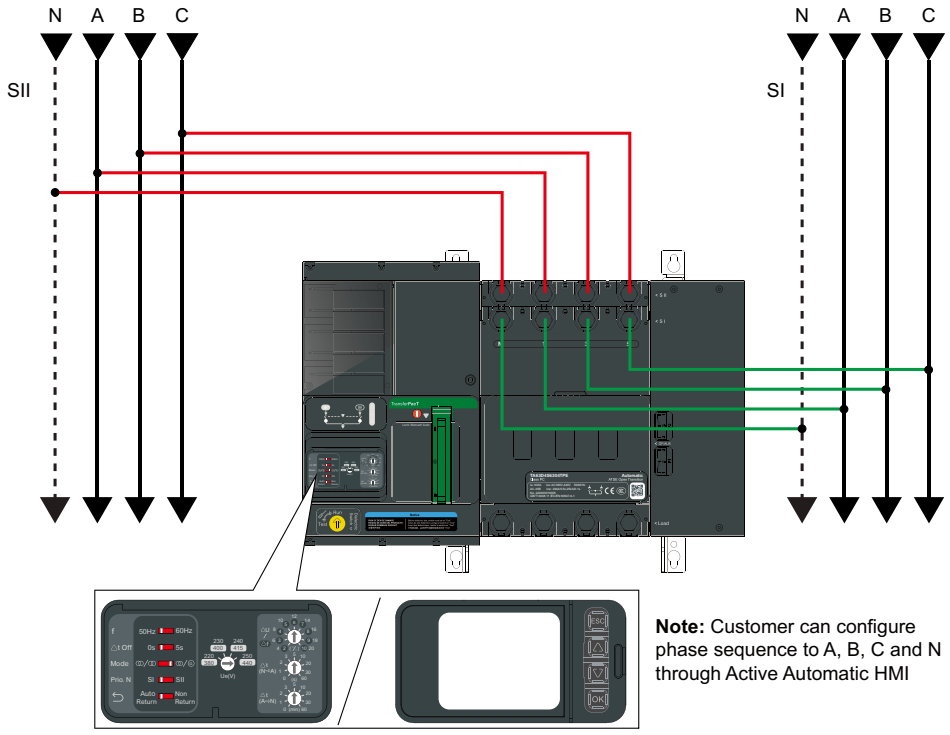


Note: Customer can configure phase sequence to A, B, C and N through Active Automatic HMI

Automatic Transfer Switching Equipment
TransferPacT Active Automatic and Automatic
Wiring Diagrams for Frame 630: 320-630 A and Frame 800: 800A



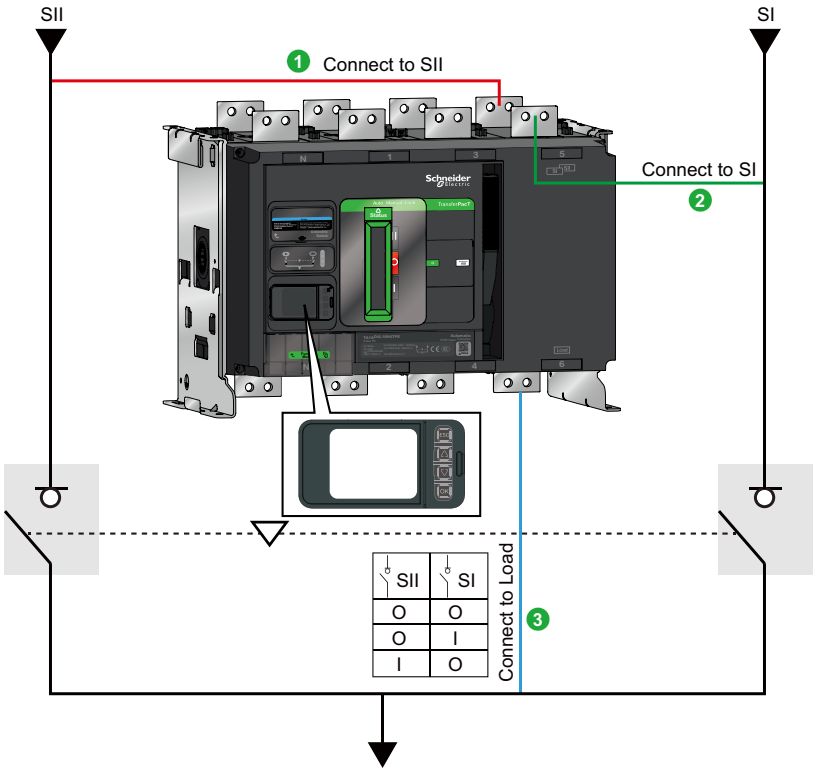
3P/4P



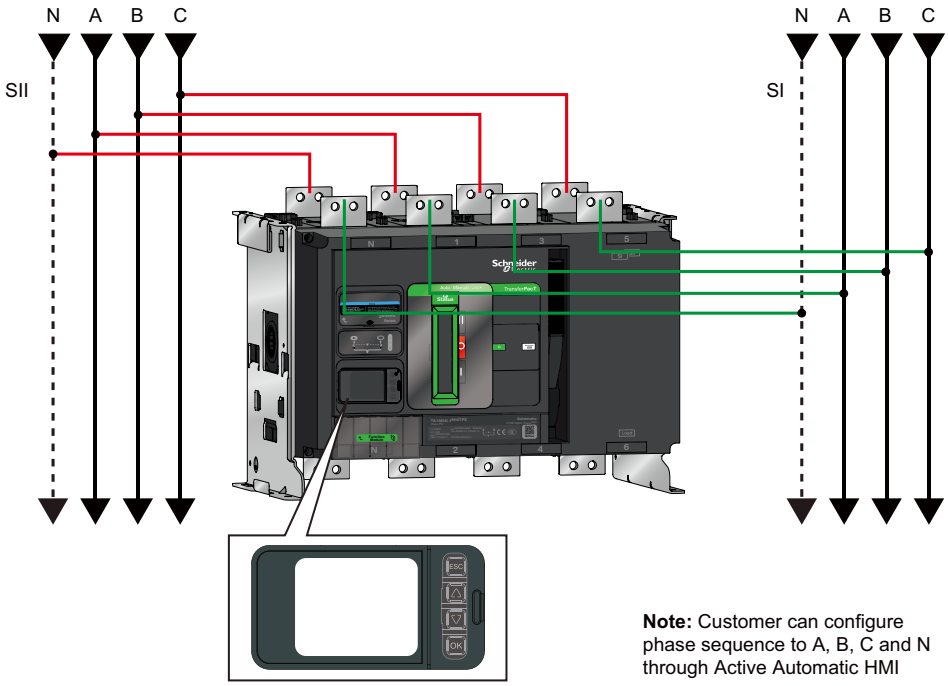
Note: Customer can configure phase sequence to A, B, C and N through Active Automatic HMI

Automatic Transfer Switching Equipment
TransferPacT Active Automatic and Automatic

Wiring Diagrams for Frame 1600: 800-1600A

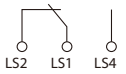
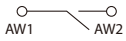
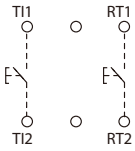
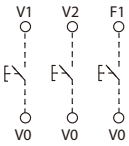
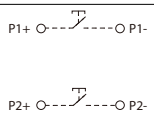
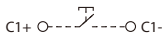
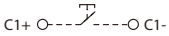
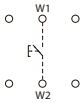
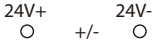
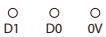
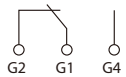


3P/4P



Note: Customer can configure phase sequence to A, B, C and N through Active Automatic HMI

Automatic Transfer Switching Equipment
Function Module

	Maximum Qty per Product	Ternminal Code	Terminal Definition
	1	LS1,LS2,LS4	loadshedding signal output
 TPCDIO05		AW1,AW2	Availability warning output
 TPCDIO07	1	TI1,TI2	Transfer Inhibit signal input, short to work
		RT1,RT2	Remote testing input,short to work
 TPCDIO08	1	V0,V1	short to Transfer to Normal
		V0,V2	short to Transfer to Alternate
		V0,F1	short to Transfer to OFF
 TPCDIO10	1	P1+,P1-	DC24 V pluse signal,enable fire protetion
		P2+,P2-	DC24 V pluse signal,diable fire protection
 TPCDIO11	1	C1+,C1-	DC24 V constant signal,enable fire protetion
 TPCDIO13	1	C1+,C1-	AC230 V constant signal,enable fire protetion
 TPCDIO14	1	W1,W2	Passive Signal, Short to enable fire protetion
 TPCDIO15	1	24V+,24V-	DC 24 V external power port (auxiliary supply)
		RJ45	Bus extension
 TPCCOM16	2	D1,D0,0V	modbus communication port
 TPCDIO17	1	G1,G2,G4	Genset start signal output
		A1,A2	Alarming output

NOTE: for detailed function module terminal definition and default settings, refer to user guide DOCA0214EN–00

Automatic Transfer Switching Equipment
Auxiliary Contact

TPSAUX32

TPSAUX43

TPSAUX71

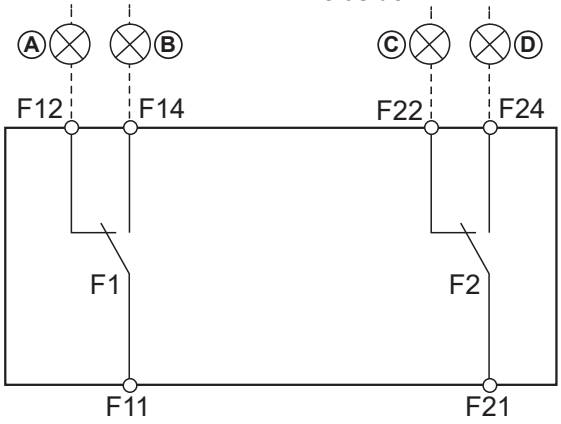
When installed on left side

Ⓐ SI open
Ⓑ SI closed
Ⓒ SII open
Ⓓ SII closed

Transfer switching equipment is closed at SI:
- F11-F14 is closed
- F11-F12 is opened

Transfer switching equipment is closed at SII:
- F21-F24 is closed
- F21-F22 is opened

Transfer switching equipment is at OFF position:
- F11-F12 and F21-F22 are closed
- F11-F14 and F21-F24 are opened

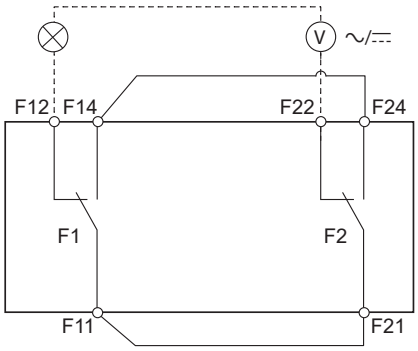


TPSAUX33

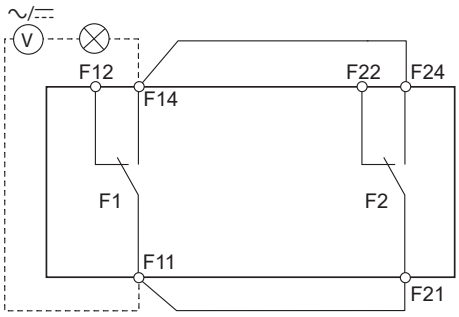
TPSAUX44

TPSAUX72

Transfer switching equipment is at OFF position:
F12-F22 is closed



Transfer switching equipment is not at OFF position:
F11-F14 and F21-F24 are closed



NOTE: terminal capacity for auxiliary contact is AC250 V 2 A.

Automatic Transfer Switching Equipment
Auxiliary Contact

TPSAUX71

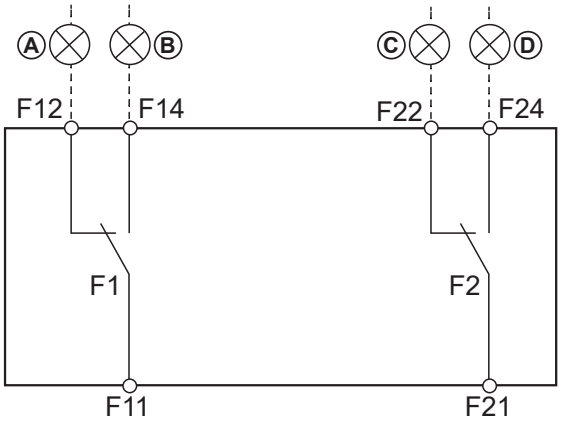
TPSAUX71 When installed on right side

Ⓐ SII open
Ⓑ SII closed
Ⓒ SI open
Ⓓ SI closed

Transfer switching equipment is closed at SI:
- F21-F24 is closed
- F21-F22 is opened

Transfer switching equipment is closed at SII:
- F11-F14 is closed
- F11-F12 is opened

Transfer switching equipment is at OFF position:
- F21-F22 and F11-F12 are closed
- F21-F24 and F11-F14 are opened



Note: Only TPSAUX71 has different definition when installed on different sides.

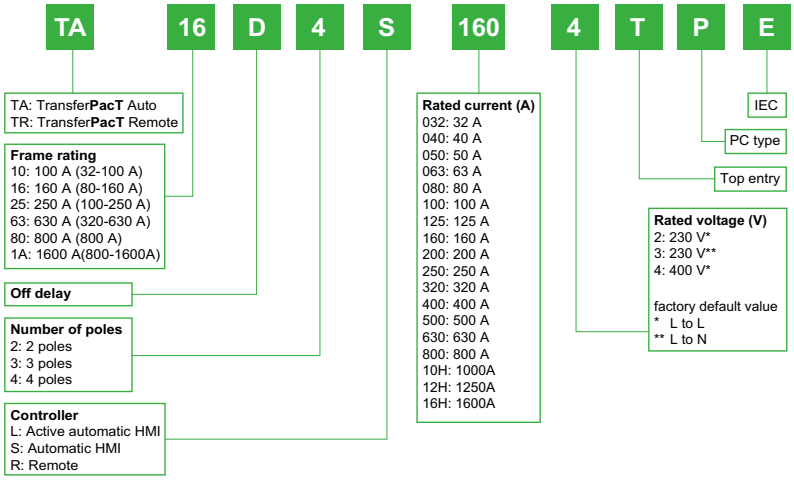
Electrical Characteristic of OF Auxiliary Contact

U / Cat	AC								DC				
	24	40	130	240	440	480	600	690	24	48	125	130	250
12	10	10	10	10	10	10		6*	10	2.5		0.8	0.3*
13	6	6	5	4	3	2		1	2.5	1.2		0.35	0.05*
14									1	0.2		0.05	0.03*
15	6	6	5	4	2*	1.5*		0.1					
UL489						6	3				0.8		0.3

Coding Principle

TA16D4L1604TPE-ISO.png

The commercial reference of TranferPacT Automatic Transfer Switching Equipment is coded with significant features to explain the type of frame rating,transition, controller type, rated voltage, rated current and number of poles



References of TransferPacT Active Automatic and Automatic 32-1600 A

TransferPacT Active Automatic

TA10D4L0634TPE-C.png

TA16D4L1604TPE-C.png

TA25D4L2504TPE_Image.png

TA63D4L6304TPE.png

TA1AD4L16H4TPE-C.png

	2P	3P	4P
32A	**TA10D2L0323TPE**	**TA10D3L0324TPE**	**TA10D4L0324TPE**
40A	**TA10D2L0403TPE**	**TA10D3L0404TPE**	**TA10D4L0404TPE**
50A	**TA10D2L0503TPE**	**TA10D3L0504TPE**	**TA10D4L0504TPE**
63A	**TA10D2L0633TPE**	**TA10D3L0634TPE**	**TA10D4L0634TPE**
80A	**TA10D2L0803TPE**	**TA10D3L0804TPE**	**TA10D4L0804TPE**
100A	**TA10D2L1003TPE**	**TA10D3L1004TPE**	**TA10D4L1004TPE**
80A		**TA16D3L0804TPE**	**TA16D4L0804TPE**
100A		**TA16D3L1004TPE**	**TA16D4L1004TPE**
125A		**TA16D3L1254TPE**	**TA16D4L1254TPE**
160A		**TA16D3L1604TPE**	**TA16D4L1604TPE**
100A[1]		**TA25D3L1002TPE**	**TA25D4L1002TPE**
250A[1]		**TA25D3L2502TPE**	**TA25D4L2502TPE**
200A		**TA25D3L2004TPE**	**TA25D4L2004TPE**
250A		**TA25D3L2504TPE**	**TA25D4L2504TPE**
630A[1]		**TA63D3L6302TPE**	**TA63D4L6302TPE**
800A[1]		**TA80D3L8002TPE**	**TA80D4L8002TPE**
320A		**TA63D3L3204TPE**	**TA63D4L3204TPE**
400A		**TA63D3L4004TPE**	**TA63D4L4004TPE**
500A		**TA63D3L5004TPE**	**TA63D4L5004TPE**
630A		**TA63D3L6304TPE**	**TA63D4L6304TPE**
800A		**TA80D3L8004TPE**	**TA80D4L8004TPE**
800 A		**TA1AD3L8004TPE**	**TA1AD4L8004TPE**
1000 A		**TA1AD3L10H4TPE**	**TA1AD4L10H4TPE**
1250 A		**TA1AD3L12H4TPE**	**TA1AD4L12H4TPE**
1600 A		**TA1AD3L16H4TPE**	**TA1AD4L16H4TPE**

1. For phase to phase 208 V/220 V/230 V/240 V application.

References of TransferPacT Active Automatic and Automatic 32-1600 A

TransferPacT Automatic

TA10D4S0634TPE-C.png

TA16D4S1604TPEC.png

TR25D4S2504TPE.png

TA63D4S6304TPE.png

	2P	3P	4P
32A	**TA10D2S0323TPE**	**TA10D3S0324TPE**	**TA10D4S0324TPE**
40A	**TA10D2S0403TPE**	**TA10D3S0404TPE**	**TA10D4S0404TPE**
50A	**TA10D2S0503TPE**	**TA10D3S0504TPE**	**TA10D4S0504TPE**
63A	**TA10D2S0633TPE**	**TA10D3S0634TPE**	**TA10D4S0634TPE**
80A	**TA10D2S0803TPE**	**TA10D3S0804TPE**	**TA10D4S0804TPE**
100A	**TA10D2S1003TPE**	**TA10D3S1004TPE**	**TA10D4S1004TPE**
80A		**TA16D3S0804TPE**	**TA16D4S0804TPE**
100A		**TA16D3S1004TPE**	**TA16D4S1004TPE**
125A		**TA16D3S1254TPE**	**TA16D4S1254TPE**
160A		**TA16D3S1604TPE**	**TA16D4S1604TPE**
200A		**TA25D3S2004TPE**	**TA25D4S2004TPE**
250A		**TA25D3S2504TPE**	**TA25D4S2504TPE**
320A		**TA63D3S3204TPE**	**TA63D4S3204TPE**
400A		**TA63D3S4004TPE**	**TA63D4S4004TPE**
500A		**TA63D3S5004TPE**	**TA63D4S5004TPE**
630A		**TA63D3S6304TPE**	**TA63D4S6304TPE**
800A		**TA80D3S8004TPE**	**TA80D4S8004TPE**

TransferPacT Automatic Function Modules

TPCDIO06_ISO.png

For Active Automatic and Automatic HMI	
Load shedding and Availability warning	**TPCDIO05**
Transfer inhibit and Remote testing	**TPCDIO07**
Voluntary Remote control	**TPCDIO08**
Fire Protection 24 Vdc pulse	**TPCDIO10**
Fire Protection 24 Vdc constant	**TPCDIO11**
Fire Protection 230 Vac constant	**TPCDIO13**
Fire Protection Dry contact	**TPCDIO14**
Genset start and Alarm	**TPCDIO17**
For Active Automatic HMI only (* Native equipped for TransferPacT active automatic. no need to order except for renewal or replace)	
BUS Extension and 24 VDC auxiliary supply	**TPCDIO15**
Modbus RTU (Serial Port)	**TPCCOM16**

TransferPacT Automatic spare part

TPCCIF01_ISO.png

TPCCIF02_ISO.png

Active Automatic HMI	**TPCCIF01**
Automatic HMI	**TPCCIF02**

References of TransferPacT Active Automatic and Automatic 32-1600 A

TransferPacT Active Automatic External HMI

TPCCIF04_ISO.png

	1x	External HMI	**TPCCIF04**

TPCOTH18_ISO.eps

	1x	HMI Cable 1 m	**TRV00810**
		HMI Cable 2 m	**TRV00820**
		HMI Cable 3 m	**TRV00830**

TPCOTH37_ISO.png

	1x	IP54 cover (for outdoor installation)	**TPCOTH37** **TPCOTH38***

* TPCOTH38 is the same material, economic replacement for TPCOTH37

Auxiliary Contacts

TPSAUX32_ISO.png

OF for Source position for frame 100 and frame 160	**TPSAUX32**
OF for Off position for frame 100 and frame 160	**TPSAUX33**
OF for Source position for frame 250 and frame 630	**TPSAUX43**
OF for Off position for frame 250 and frame 630	**TPSAUX44**
OF for Source position for frame 1600	**TPSAUX71**
OF for Off position for frame 1600	**TPSAUX72**

Insulation Accessory

Terminal shield for frame 100 (set of 2)	**TPSISO30**
Terminal shield for frame 160 (set of 3)	**TPSISO31**

Terminal Shield for frame 250 (100-250 A) (set of 1)	**LV429518**
Terminal Shield for frame 630 (320-630 A) (set of 1)	**TPSISO42**

Interphase barrier frame 160 (set of 9)	**TPSISO29**
Interphase barriers for frame 250 (100-250 A) and frame 630 (320-630A) (set of 3)	**TPSISO65**
Interphase barriers, TransferPacT, Accessories for Frame 1600A, set of 3	**TPSISO70**

Insulating screen for frame 250 (100-250 A) (set of 1).	**TPSISO66**
Insulating screen for frame 630 (320-630 A) (set of 1).	**TPSISO67**

Installaction Kit

mounting kit for upside down installtion, Frame 1600A	**TPSOTH73**

References of TransferPacT Active Automatic and Automatic 32-1600 A

Connection accessory-bare cable connector

Aluminum	1 cable 25 mm² to 95 mm², frame 250 (set of 3).	**LV429227**
	1 cable 25 mm² to 95 mm², frame 250 (set of 4).	**LV429228**
	1 cable 120mm² to 185mm², frame 250 (set of 3).	**LV429259**
	1 cable 120mm² to 185mm², frame 250 (set of 4).	**LV429260**
	1 cable 120 to 240 mm², frame 250 (set of 3).	**TPSCON49** [b]
	1 cable 120 to 240 mm², frame 250 (set of 4).	**TPSCON50** [b]
	1 cable 35 to 300 mm², frame 630 (set of 3).	**TPSCON53** [b]
	1 cable 35 to 300 mm², frame 630 (set of 4).	**TPSCON54** [b]
	2 cables 50 to 120 mm², frame 250 (set of 3).	**TPSCON51** [a]
	2 cables 50 to 120 mm², frame 250 (set of 4).	**TPSCON52** [a]
	6 cables 1.5 to 35 mm², frame 250 (set of 3).	**TPSCON47** [b]
	6 cables 1.5 to 35 mm², frame 250 (set of 4).	**TPSCON48** [b]
	9 cables for frame 250 (set of 3).	**LVS04033** [a]
	9 cables for frame 250 (set of 4).	**LVS04034** [a]
	4 cables up to 240mm², for frame 1600 (set of 3).	**33640**
	4 cables up to 240mm²,for frame 1600 (set of 4).	**33641**
Steel	1 cable 1.5 to 95 mm², frame 250, up to 160 A only (set of 3).	**LV429242**
	1 cable 1.5 to 95 mm², frame 250, up to 160 A only (set of 4).	**LV429243**

a: Applicable for load side only
b: Must select terminal shield to ensure incoming and output terminal protection.

Connection accessory-crimp lug

Aluminum	150 mm², frame 250 (set of 3).	**LV429504**
	150 mm², frame 250 (set of 4).	**LV429505**
	185 mm², frame 250 (set of 3).	**LV429506**
	185 mm², frame 250 (set of 4).	**LV429507**
	240 mm², frame 630 (set of 3).	**TPSCON61**
	240 mm², frame 630 (set of 4).	**TPSCON62**
	300 mm², frame 630 (set of 3).	**TPSCON63**
	300 mm², frame 630 (set of 4).	**TPSCON64**
Copper	120 mm², frame 250 (set of 3).	**LV429252**
	120 mm², frame 250 (set of 4).	**LV429256**
	150 mm², frame 250 (set of 3).	**LV429253**
	150 mm², frame 250 (set of 4).	**LV429257**
	185 mm², frame 250 (set of 3).	**LV429254**
	185 mm², frame 250 (set of 4).	**LV429258**
	240 mm², frame 630 (set of 3).	**TPSCON57**
	240 mm², frame 630 (set of 4).	**TPSCON58**
	300 mm², frame 630 (set of 3).	**TPSCON59**
	300 mm², frame 630 (set of 4).	**TPSCON60**

References of TransferPacT Active Automatic and Automatic 32-1600 A

Connection accessory-terminal extensions

edgewise terminal extensions for frame 250 (set of 3)	**LV429308**
edgewise terminal extensions for frame 250 (set of 4)	**LV429309**
edgewise terminal extensions for frame 630 (set of 3)	**TPSCON55**
edgewise terminal extensions for frame 630 (set of 4)	**TPSCON56**
Straight terminal extensions for frame 250 (set of 3)	**LV429263**
Straight terminal extensions for frame 250 (set of 4)	**LV429264**
Spreader for frame 100 (set of 4), load side only	**TPSCON35** [b]
Spreader for frame 160 (set of 4), load side only	**TPSCON36** [b]
35 mm ~ 45 mm Spreader for frame 250 (set of 3)	**LV431563**
35 mm ~ 45 mm Spreader for frame 250 (set of 4), load side only	**LV431564** [b]
35 mm ~ 45 mm Spreader for frame 250 (set of 4), incomings only	**TPSCON39** [a]
45 mm ~ 55 mm Spreader for frame 630 (set of 3)	**TPSCON40**
45 mm ~ 55 Spreader for frame 630 (set of 4), incomings only	**TPSCON41** [a]
45 mm ~ 55 Spreader for frame 630 (set of 4), load side only	**TPSCON68** [b]
70 mm ~ 95 mm Spreader for frame 1600 (set of 3)	**33622**
70 mm ~ 95 mm Spreader for frame 1600 (set of 4)	**33623**
70 mm ~ 95 mm Spreader for frame 1600 (set of 3)	**LV833622SP**
70 mm ~ 95 mm Spreader for frame 1600 (set of 4)	**LV833623SP**

a: for imcomings only
b: for load side only

Connection Accessories - Adapter

vertical connection adapter for frame 1600, set of 3	**33642**
vertical connection adapter for frame 1600, set of 4	**33643**
vertical connection adapter for frame 1600, set of 3	**LV833642SP**
vertical connection adapter for frame 1600, set of 4	**LV833643SP**
cable lug adapters, connection up to 4 cables with lugs, frame 1600, set of 3	**33644**
cable lug adapters, connection up to 4 cables with lugs, frame 1600, set of 4	**33645**
cable lug adapters, connection up to 4 cables with lugs, frame 1600, set of 3	**LV833644SP**
cable lug adapters, connection up to 4 cables with lugs, frame 1600, set of 4	**LV833645SP**

Circuit Breaker/Transfer Switching Equipment Coordination

Upstream: Acti9 iC60, C120, NG125

Downstream: TransferPacT Automatic TA10, TA16

Ue: ≤415 V AC

Load side	TSE		TA10						TA16			
	Rating (A)		32	40	50	63	80	100	80	100	125	160
	Ith (A) 60°C		32	40	50	63	80	100	80	100	125	160
	Icw (kA)		3	3	3	3	3	3	5.5	5.5	5.5	5.5
	Icm (kA)		15	15	15	15	15	15	20	20	20	20
Supply side	Icu											
Circuit breaker:	Rating	415 V	TSE conditionnal short-circuit current and related making capacity:									
iC60N	<= 32	10	T	T	T	T	T	T	T	T	T	T
B-C-D Curves	40	10		T	T	T	T	T	T	T	T	T
	50	10			T	T	T	T	T	T	T	T
	63	10				T	T	T	T	T	T	T
iC60H	<= 32	15	T	T	T	T	T	T	T	T	T	T
B-C-D Curves	40	15		T	T	T	T	T	T	T	T	T
	50	15			T	T	T	T	T	T	T	T
	63	15				T	T	T	T	T	T	T
iC60L	<= 25	25	T	T	T	T	T	T	T	T	T	T
B-C-D-K-Z Curves	32	20	T	T	T	T	T	T	T	T	T	T
	40	20		T	T	T	T	T	T	T	T	T
	50	15			T	T	T	T	T	T	T	T
	63	15				T	T	T	T	T	T	T
C120N	63	10				T	T	T	T	T	T	T
B-C-D Curves	80	10					T	T	T	T	T	T
1P 240V	100	10								T	T	T
2,3,4P 415V	125	10									T	T
C120H	63	15				T	T	T	T	T	T	T
B-C-D Curves	80	15					T	T	T	T	T	T
1P 240V	100	15								T	T	T
2,3,4P 415V	125	15									T	T
NG125N	<= 32	25	T	T	T	T	T	T	T	T	T	T
B-C-D Curves	40	25		T	T	T	T	T	T	T	T	T
	50	25			T	T	T	T	T	T	T	T
	63	25				T	T	T	T	T	T	T
	80	25					T	T	T	T	T	T
	100	25								T	T	T
	125	25									T	T
NG125H	<= 32	36	T	T	T	T	T	T	T	T	T	T
C- Curve	40	36		T	T	T	T	T	T	T	T	T
	50	36			T	T	T	T	T	T	T	T
	63	36				T	T	T	T	T	T	T
	80	36					T	T	T	T	T	T
NG125L	<= 32	50	T	T	T	T	T	T	T	T	T	T
C- Curve	40	50		T	T	T	T	T	T	T	T	T
	50	50			T	T	T	T	T	T	T	T
	63	50				T	T	T	T	T	T	T
	80	50					T	T	T	T	T	T

T	: Protection of the Transfer Switching Equipment is ensured but combination not very relevant
T	: Transfer Switching Equipment is totally coordinated up to the Icu of the circuit breaker installed on supply side
36/75	: Transfer Switching Equipment is protected up to 36 kA rms / 75 kA peak
	: Protection of the Transfer Switching Equipment is not ensured.

Circuit-Breaker/Transfer Switching Equipment Coordination

Upstream: ComPacT NSXm

Downstream: TransferPacT Automatic TA10, TA16

Ue: ≤440 V AC

Load side			TSE	TA10						TA16			
			Rating (A)	32	40	50	63	80	100	80	100	125	160
			Ith (A) 60°C	32	40	50	63	80	100	80	100	125	160
			Icw (kA)	3	3	3	3	3	3	5.5	5.5	5.5	5.5
			Icm (kA)	15	15	15	15	15	15	20	20	20	20
Supply side	Icu (kA)												
Circuit breaker:	415 V	440 V	Ir (A)	TSE conditionnal short-circuit current and related making capacity:									
NSXm E TMD Micrologic 4.1	16	10	Ir <= 32	T	T	T	T	T	T	T	T	T	T
			Ir <= 40		T	T	T	T	T	T	T	T	T
			Ir <= 50			T	T	T	T	T	T	T	T
			Ir <= 63			T	T	T	T	T	T	T	T
			Ir <= 80					T	T	T	T	T	T
			Ir <= 100						T		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSXm B TMD Micrologic 4.1	25	20	Ir <= 32	T	T	T	T	T	T	T	T	T	T
			Ir <= 40		T	T	T	T	T	T	T	T	T
			Ir <= 50			T	T	T	T	T	T	T	T
			Ir <= 63			T	T	T	T	T	T	T	T
			Ir <= 80					T	T	T	T	T	T
			Ir <= 100						T		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSXm F TMD Micrologic 4.1	36	35	Ir <= 32	T	T	T	T	T	T	T	T	T	T
			Ir <= 40		T	T	T	T	T	T	T	T	T
			Ir <= 50			T	T	T	T	T	T	T	T
			Ir <= 63			T	T	T	T	T	T	T	T
			Ir <= 80					T	T	T	T	T	T
			Ir <= 100						T		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSXm N TMD Micrologic 4.1	50	50	Ir <= 32	**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 40		**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 50			**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 63				**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 80					**36/75**	**36/75**	T	T	T	T
			Ir <= 100						**36/75**		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSXm N TMD Micrologic 4.1	70	65	Ir <= 32	**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 40		**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 50			**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 63				**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 80					**36/75**	**36/75**	T	T	T	T
			Ir <= 100						**36/75**		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T

T	: Protection of the Transfer Switching Equipment is ensured but combination not very relevant
T	: Transfer Switching Equipment is totally coordinated up to the Icu of the circuit breaker installed on supply side
36/75	: Transfer Switching Equipment is protected up to 36 kA rms / 75 kA peak
	: Protection of the Transfer Switching Equipment is not ensured.

Circuit-Breaker/Transfer Switching Equipment Coordination

Upstream: ComPacT NSX100-250

Downstream: TransferPacT Automatic TA10, TA16

Ue: ≤440 V AC

Load side	TSE			TA10						TA16			
			Rating (A)	32	40	50	63	80	100	80	100	125	160
			Ith (A) 60°C	32	40	50	63	80	100	80	100	125	160
			Icw (kA)	3	3	3	3	3	3	5.5	5.5	5.5	5.5
			Icm(kA)	15	15	15	15	15	15	20	20	20	20
Supply side Circuit breaker	Icu (kA) 415 V	Icu (kA) 440 V	Ir	TSE conditionnal short-circuit current and related making capacity:									
NSX100B NSX160B TMD/TMG/ Micrologic	25	20	Ir <= 32	T	T	T	T	T	T	T	T	T	T
			Ir <= 40		T	T	T	T	T	T	T	T	T
			Ir <= 50			T	T	T	T	T	T	T	T
			Ir <= 63				T	T	T	T	T	T	T
			Ir <= 80						T		T	T	T
			Ir <= 100						T		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSX250B TMD/TMG/ Micrologic	25	20	Ir <= 32	T	T	T	T	T	T	T	T	T	T
			Ir <= 40		T	T	T	T	T	T	T	T	T
			Ir <= 50			T	T	T	T	T	T	T	T
			Ir <= 63				T	T	T	T	T	T	T
			Ir <= 80						T		T	T	T
			Ir <= 100						T		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSX100F NSX160F TMD/TMG/ Micrologic	36	35	Ir <= 32	T	T	T	T	T	T	T	T	T	T
			Ir <= 40		T	T	T	T	T	T	T	T	T
			Ir <= 50			T	T	T	T	T	T	T	T
			Ir <= 63				T	T	T	T	T	T	T
			Ir <= 80						T		T	T	T
			Ir <= 100						T		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSX250F TMD/TMG/ Micrologic	36	35	Ir <= 32	**25/52**	**25/52**	**25/52**	**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 40		**25/52**	**25/52**	**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 50			**25/52**	**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 63				**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 80					**25/52**	**25/52**		T	T	T
			Ir <= 100						**25/52**		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSX100N/H NSX160N/H TMD/TMG/ Micrologic	50/ 70	50/ 65	Ir <= 32	**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 40		**36/75**	**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 50			**36/75**	**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 63				**36/75**	**36/75**	**36/75**	T	T	T	T
			Ir <= 80					**36/75**	**36/75**		T	T	T
			Ir <= 100						**36/75**		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T
NSX250N/H TMD/TMG/ Micrologic	50/ 70	50/ 65	Ir <= 32	**25/52**	**25/52**	**25/52**				T	T	T	T
			Ir <= 40		**25/52**	**25/52**	**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 50			**25/52**	**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 63				**25/52**	**25/52**	**25/52**	T	T	T	T
			Ir <= 80					**25/52**	**25/52**		T	T	T
			Ir <= 100						**25/52**		T	T	T
			Ir <= 125									T	T
			Ir <= 160										T

Circuit-Breaker/Transfer Switching Equipment Coordination
Upstream: ComPacT NSX100-250
Downstream: TransferPacT Automatic TA10, TA16

Ue: ≤440 V AC

Load side			TSE	TA10						TA16			
			Rating (A)	32	40	50	63	80	100	80	100	125	160
			Ith (A) 60°C	32	40	50	63	80	100	80	100	125	160
			Icw (kA)	3	3	3	3	3	3	5.5	5.5	5.5	5.5
			Icm(kA)	15	15	15	15	15	15	20	20	20	20
Supply side Circuit breaker	Icu (kA) 415V	Icu (kA) 440V	Ir	TSE conditionnal short-circuit current and related making capacity:									
NSX100S/L/R NSX160S/L/R TMD/TMG/ Micrologic	100/ 150/ 200	90/ 150/ 200	Ir <= 32	36/75	36/75	36/75	36/75	36/75	36/75	65/143	65/143	65/143	65/143
			Ir <= 40		36/75	36/75	36/75	36/75	36/75	65/143	65/143	65/143	65/143
			Ir <= 50			36/75	36/75	36/75	36/75	65/143	65/143	65/143	65/143
			Ir <= 63				36/75	36/75	36/75	65/143	65/143	65/143	65/143
			Ir <= 80					36/75	36/75	65/143	65/143	65/143	65/143
			Ir <= 100						36/75		65/143	65/143	65/143
			Ir <= 125									65/143	65/143
			Ir <= 160										65/143
NSX250S/L/R TMD/TMG/ Micrologic	100/ 150/ 200	90/ 150/ 200	Ir <= 32	25/52	25/52	25/52	25/52	25/52	25/52	65/143	65/143	65/143	65/143
			Ir <= 40		25/52	25/52	25/52	25/52	25/52	65/143	65/143	65/143	65/143
			Ir <= 50			25/52	25/52	25/52	25/52	65/143	65/143	65/143	65/143
			Ir <= 63				25/52	25/52	25/52	65/143	65/143	65/143	65/143
			Ir <= 80					25/52	25/52	65/143	65/143	65/143	65/143
			Ir <= 100						25/52		65/143	65/143	65/143
			Ir <= 125									65/143	65/143
			Ir <= 160										65/143

T : Protection of the Transfer Switching Equipment is ensured but combination not very relevant

T : Transfer Switching Equipment is totally coordinated up to the Icu of the circuit breaker installed on supply side

36/75 : Transfer Switching Equipment is protected up to 36 kA rms / 75 kA peak

: Protection of the Transfer Switching Equipment / circuit breaker is not ensured.

Circuit-Breaker/Transfer Switching Equipment Coordination

Upstream: ComPacT NSX100-630 NS630b NS800L/H/L

Downstream: TransferPacT Automatic TA25, TR25, TA63, TR63, TA80, TR80

Ue: ≤440 V AC

Load side			TSE	TA25, TR25				TA63, TR63				TA80, TR80
			Rating (A)	100	160	200	250	320	400	500	630	800
			Ith (A) 60˚C	100	160	200	250	320	400	500	630	800
			Icw (kA)	15/0.1s	15/0.1s	15/0.1s	15/0.1s	25/0.1s	25/0.1s	25/0.1s	25/0.1s	25/0.1s
				10/0.5s	10/0.5s	10/0.5s	10/0.5s	20/0.5s	20/0.5s	20/0.5s	20/0.5s	20/0.5s
				8/1s	8/1s	8/1s	8/1s	15/1s	15/1s	15/1s	15/1s	15/1s
			Icm(kA)	30	30	30	30	40	40	40	40	40
Supply side Circuit breaker	Icu (kA) 415V	Icu (kA) 440V	Ir	TSE conditionnal short-circuit current and related making capacity:								
NSX100B/F/N/H/S/L NSX160B/F/N/H/S/L NSX250B/F/N/H/S/L TMD/TMG/ Micrologic	25/36/50/70/100/150	20/35/50/65/90/130	Ir≤100	T	T	T	T	T	T	T	T	T
			Ir≤160		T	T	T	T	T	T	T	T
			Ir≤200			T	T	T	T	T	T	T
			Ir≤250				T	T	T	T	T	T
NSX100R NSX250R TMD/TMG/ Micrologic	200	200	Ir≤100	T	T	T	T	T	T	T	T	T
			Ir≤160		T	T	T	T	T	T	T	T
			Ir≤200			T	T	T	T	T	T	T
			Ir≤250				T	T	T	T	T	T
NSX400F/N/H/S/L NSX630F/N/H/S/L Micrologic Note: Min. In 100 A Max. In 570A	36/50/70/100/150	30/42/65/90/130	Ir=100	T	T	T	T	T	T	T	T	T
			Ir≤160		T	T	T	T	T	T	T	T
			Ir≤200			T	T	T	T	T	T	T
			Ir≤250				T	T	T	T	T	T
			Ir≤320					T	T	T	T	T
			Ir≤400						T	T	T	T
			Ir≤500							T	T	T
			Ir≤630								T	T
NSX400R NSX630R Micrologic Note: Min. In 100 A Max. In 570A	200	200	Ir=100	150/330	150/330	150/330	150/330	T	T	T	T	T
			Ir≤160		150/330	150/330	150/330	T	T	T	T	T
			Ir≤200			150/330	150/330	T	T	T	T	T
			Ir≤250				150/330	T	T	T	T	T
			Ir≤320					T	T	T	T	T
			Ir≤400						T	T	T	T
			Ir≤500							T	T	T
			Ir≤630								T	T
NS630b/800 N	50	50	Ir≤320					20/50	20/50	20/50	20/50	20/50
			Ir≤400						20/50	20/50	20/50	20/50
			Ir≤500							20/50	20/50	20/50
			Ir≤630								20/50	20/50
			Ir≤800									20/50
NS630b/800H	70	65	Ir≤320					20/50	20/50	20/50	20/50	20/50
			Ir≤400						20/50	20/50	20/50	20/50
			Ir≤500							20/50	20/50	20/50
			Ir≤630								20/50	20/50
			Ir≤800									20/50
NS630b/800 L	150	130	Ir≤320					T	T	T	T	T
			Ir≤400						T	T	T	T
			Ir≤500							T	T	T
			Ir≤630								T	T
			Ir≤800									T

T : Transfer Switching Equipment is totally coordinated up to the Icu of the circuit breaker installed on supply side

150/330 : Transfer Switching Equipment is protected up to 150 kA rms / 330 kA peak

: Protection of the Transfer Switching Equipment / circuit breaker is not ensured.

Circuit-Breaker/Transfer Switching Equipment Coordination
Upstream: ComPacT NS630b to 1600/ MasterPact MTZ1/MTZ2
Downstream: TransferPacT Automatic TA1A

Ue: ≤440 V AC

Load side			TSE	TA1A(1600)			
			Rating (A)	800	1000	1250	1600
			Ith (A) 60°C	32	40	50	63
			Icw (kA)	70/0.1s 50/0.5s	70/0.1s 50/0.5s	70/0.1s 50/0.5s	70/0.1s 50/0.5s
			Icm(kA)	105	105	105	105
Supply side Circuit breaker	Icu (kA)			TTSE conditionnal short-circuit current and related making capacity:			
	415 V	440 V	Ir				
NS630b-1600N	50	50	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
			Ir≤1250			T	T
			Ir≤1600				T
NS630b/1600H	70	65	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
			Ir≤1250			T	T
			Ir≤1600				T
NS630b/1000 L	150	130	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
MTZ1 H1 06-16	42	42	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
			Ir≤1250			T	T
			Ir≤1600				T
MTZ1 H2 06-16	50	50	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
MTZ1 H3 06-16	66	66	Ir≤1250			T	T
			Ir≤1600				T
			Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
			Ir≤1250			T	T
			Ir≤1600				T
MTZ1 L1 06-10	150	130	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
MTZ2 N1 08-20	42	42	Ir≤800	T	T	T	T
			Ir≤1000		T	T	T
			Ir≤1250			T	T
			Ir≤1600				T
MTZ2 H1 08-20	66	66	Ir≤800	**50/105**	**50/105**	**50/105**	**50/105**
			Ir≤1000		**50/105**	**50/105**	**50/105**
			Ir≤1250			**50/105**	**50/105**
			Ir≤1600				**50/105**
MTZ2 H2 08-20	100	100	Ir≤800	**50/105**	**50/105**	**50/105**	**50/105**
			Ir≤1000		**50/105**	**50/105**	**50/105**
			Ir≤1250			**50/105**	**50/105**
			Ir≤1600				**50/105**

T : Total coordination, Transferpact is protected up to Icu of downstream circuit-breaker

50/105 : Transferpact is protected up to 70 kArms/130 kA peak of presumed short-circuit current

: Protection of the Transfer Switching Equipment / circuit breaker is not ensured.

Fuses/Transfer Switching Equipment Coordination
Upstream: gG Fuse
Downstream: TransferPacT Automatic TA10, TA16

Ue: ≤440 V AC

Load side	TSE	TA10						TA16			
	Rating (A)	32	40	50	63	80	100	80	100	125	160
	Ith (A) 60°C	32	40	50	63	80	100	80	100	125	160
Supply side		3	3	3	3	3	3	5.5	5.5	5.5	5.5
Fuse type	Rating (A)	15	15	15	15	15	15	20	20	20	20
gG fuse link without overload relay	25	T	T	T	T	T	T	T	T	T	T
	32		T	T	T	T	T	T	T	T	T
	40			T	T	T	T	T	T	T	T
	50				T	T	T	T	T	T	T
	63						T		T	T	T
	80						T		T	T	T
	100									T	T
	125										T
	160										
gG fuse link with overload relay	<= 50	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T
	80		T	T	T	T	T	T	T	T	T
	100			T	T	T	T	T	T	T	T
	125			80/176	80/176	80/176	80/176	T	T	T	T
	160				36/75	36/75	36/75	50/105	50/105	50/105	50/105
	200								36/75	36/75	36/75

T : Protection of the Transfer Switching Equipment is ensured but combination not very relevant

T : Transfer Switching Equipment is totally coordinated up to the Icu of the circuit breaker installed on supply side

36/75 : Transfer Switching Equipment is protected up to 36 kA rms / 75 kA peak

: Protection of the Transfer Switching Equipment is not ensured.

Important Notice : Current limitation caracteristics can be signifiantly different from one manufacturer to another This table can not dispense to check selected fuse caractersistics

Fuses/Transfer Switching Equipment Coordination

Upstream: gG Fuse

Downstream: TransferPacT Automatic TA25, TR25, TA63, TR63, TA80, TR80

Ue: ≤440 V AC

Load side	TSE	TA25, TR25				TA63, TR63				TA80, TR80
	Rating (A)	100	160	200	250	320	400	500	630	800
	Ith (A) 60°C	100	160	200	250	320	400	500	630	800
	Icw (kA)	15/0.1s 10/0.5s 8/1s	15/0.1s 10/0.5s 8/1s	15/0.1s 10/0.5s 8/1s	15/0.1s 10/0.5s 8/1s	25/0.1s 20/0.5s 15/1s	25/0.1s 20/0.5s 15/1s	25/0.1s 20/0.5s 15/1s	25/0.1s 20/0.5s 15/1s	25/0.1s 20/0.5s 15/1s
	Icm(kA)	30	30	30	30	40	40	40	40	40
Supply side Fuse type	**Rating (A)**									
gG fuse without other Overload protection	80	T	T	T	T	T	T	T	T	T
	100		T	T	T	T	T	T	T	T
	160			T	T	T	T	T	T	T
	200				T	T	T	T	T	T
	250					T	T	T	T	T
	320						T	T	T	T
	400							T	T	T
	500								T	T
	630								T	T
	800									T
gG fuse for protection against short-circuit only O/L protection ensured by external relay or other means	100	T	T	T	T	T	T	T	T	T
	160		T	T	T	T	T	T	T	T
	200			T	T	T	T	T	T	T
	250				T	T	T	T	T	T
	320					T	T	T	T	T
	400						T	T	T	T
	500							T	T	T
	630								T	T
	800									T

T	: Transfer Switching Equipment is totally coordinated up to the Icu of the circuit breaker installed on supply side
150/330	: Transfer Switching Equipment is protected up to 150 kA rms / 330 kA peak
	: Protection of the Transfer Switching Equipment / circuit breaker is not ensured.

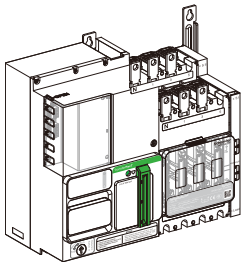
TransferPacT Remote

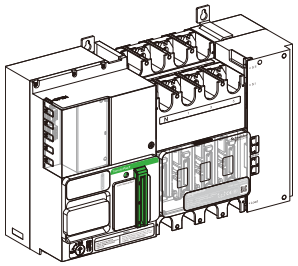
TransferPacT Class PC B-2
General Features B-3
Electrical and Mechanical Accessories - Frame 250 ..... B-8
Electrical and Mechanical Accessories- Frame 630 ..... B-14
Electrical and Mechanical Accessories- Frame 800 ..... B-18
Terminal Definition and Transfer Process B-22
Remote Transfer Switching Equipment B-23
References of TransferPacT Remote 160-800 A B-36

TransferPacT Class PC

RTSE: Remote Transfer Switching Equipment

(Non-derived RTSE,PC Type)





Definition of Class PC

Transfer switch equipment based on mechanical switching devices, that do not need electrical power to hold the main contacts open or closed and capable of making, carrying, and breaking currents under normal circuit conditions including operating overload conditions, and making and withstanding short-circuit currents.

Definition of RTSE(Remote Transfer Switching Equipment)

Transfer switching equipment that is electrically operated and not self-acting.
It is the most commonly used system for transfer loads without direct human intervention. Transfer process is conducted electrically. In some occasions, customers want to use a third-party system to control the TSE from distance (such as control room), or users want to use an intelligent system to operate the TSE, which requires remote control functions.

TransferPacT Remote is a class PC, solenoid drive all in one RTSE.
TransferPacT RTSE has intelligent control with CPU integrated in switch, it is designed to manage the transfer according to the incoming command of the third party. It can work with third party system, like generator-set controllers, PLCs etc.

General Features

Power availability

Vast application:

Utilization category AC-33B without derating, fits the most complicated load types.

Reliable under extreme condition:

Short circuit capabilities including short time withstand current for your power continuity.

Robust design – Extreme Environment Proof:

- Best-in-class electromagnetic protection, exceeding industry standards on class B.
- Designed to perform in harsh environments with operating temperature -25…70 °C
- Successfully passed testing in compliance with IEC 60068-2-6 and IEC 60068-2-27.

Efficiency

Easy installation:

- Built-in DPS and sensing wire, 30% of commissioning time saving.

Easy Operation:

- Simple reliable mechanism, manual and remote operation available
- Input and output terminals to provide product status and operation
- Wide voltage range for multiple grid: 208 VAC-240 VAC, 380 VAC-440 VAC.

Sustainability

Green premium ecolabel.

- Green package for full product range.
- Saving trees - Scan QR code for full version for technical documents.

Cyber security

Designed according to cyber security standard IEC 62443 at the level of SL1.

General Features

TransferPacT Remote

TransferPacT Remote			
Frame			
Conventional Thermal Current	Ith	at 60°C	
Rated operating current (A)	Ie	AC-33B	
Number of poles			
Operating positions			
Electrical characteristics as defined by IEC 60947-1 / 60947-6-1 and EN 60947-1 / 60947-6-1			
Rated insulation voltage (V)	Ui		
Rated impulse withstand voltage (kV)	Uimp		
Rated operating voltage (V)	Ue	AC50/60 Hz	
Rated operating frequency (Hz)	F		
Rated short-time withstand current (kA)	Icw		
Rated short-circuit making capacity (400 V, 50 Hz)	Icm	switch alone	
		with upstream circuit breaker	
Rated duties		Uninterrupted duty	
Mechanical durability			
Controller life expectancy (years)			
Suitability for Isolation			
Installation and connection- Fixed, front connection			
Installation			
Wiring			
Switch Accessories			
Position feedback(Auxiliary contact)			
Terminal cover			
Rail buckle			
Terminal Shield			
Connection accessories	Crimp lug		
	Connector		
	Terminal Extension		
Interphase barrier			
Tightening torque for electrical connections (Nm)			
Degree of pollution			
Upstream protection	Refer to Complementary technical information		
Dimensions and weights			
Overall dimensions W x H x D (mm)	3pole		
	4pole		
Approximate weight (kg)	3pole		
	4pole		

Note:

■Standard □Optional

(1). at 50°C

General Features

	TR25	TR63	TR80
	250	630	800
	250	630	800(1)
	160, 200, 250	320, 400, 500, 630	800
	3/4	3/4	3/4
	3	3	3
	TR25	**TR63**	**TR80**
	800	800	1000
	8	12	12
	380/400/415/440 V	380/400/415/440 V	380/400/415/440 V
	50/60 Hz	50/60 Hz	50/60 Hz
	15kA/0.1 s 10kA/0.5 s	25kA/0.1 s 20kA/0.5 s	25kA/0.1 s 20kA/0.5 s
	30 kA	40 kA	40 kA
	330 kA	330 kA	330 kA
	■	■	■
	10,000	10,000	10,000
	10	10	10
	■	■	■
	TR25	**TR63**	**TR80**
	base plate	base plate	base plate
	busbar /crimp lug /cable	Busbar/crimp lug / cable	Busbar/crimp lug / cable
	TR25	**TR63**	**TR80**
	□ Maximum 3 sets	□ Maximum 3 sets	□ Maximum 3 sets
	-	-	-
	-	-	-
	□	□	□
	□	□	□
	□	□	□
	□	□	□
	□	□	□
	15±1.5	50±5	50±5
	3	3	3
	370 x 341 x 186	467 x 341 x 186	467 x 341 x 186
	370 x 341 x 186	467 x 341 x 186	467 x 341 x 186
	13.1	20.8	21.4
	13.3	22.1	22.4

General Features

Besides the terminals for I/O signals, it also provides power and product state and alarm indication through LED indicator on product front face. TransferPacT Remote is designed to manage the transfer according to the incoming command of the third party. It can work with third party system, like generator-set controllers, PLCs etc.

Controller Type	Remote Version Without HMI
Controller Functional Characteristics	
3P/4P (Phase-Phase)	230 V: 208 V ~ 240 V
3P/4P (Phase-Phase)	400 V: 380 V ~ 440 V
Rated operating frequency (Hz)	50/60
Rated insulation voltage (V)	500 V for 380 ~ 440 V, 300 V for 208 ~ 240 V
Impulse withstand voltage (KV)	6 kV for 380 ~ 440 V, 4 kV for 208 ~ 240 V
Operating temperature	-25 °C to +70 °C
Operating altitude	≤2000 m
Protection degree	IP20
Pollution degree	3
Electrostatic discharge	Level 4
Radio-frequency electromagnetic field	Level 3
Fast transient bursts	Level 4
Surges	Level 4
Harmonic wave	Class 3
Voltage dips and short-time interruptions	Level 3
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Display of Controller	
Display mode	LED + Indicator
Single line diagram	■
Power status	power / mode display
Position feedback	□
Control Function	
Power avaiability	■ output singnal
Remote transfer to A	■ input singnal
Remote transfer to N	■ input singnal
Remote transfer to O	■ input singnal

Note: ■Standard □Optional

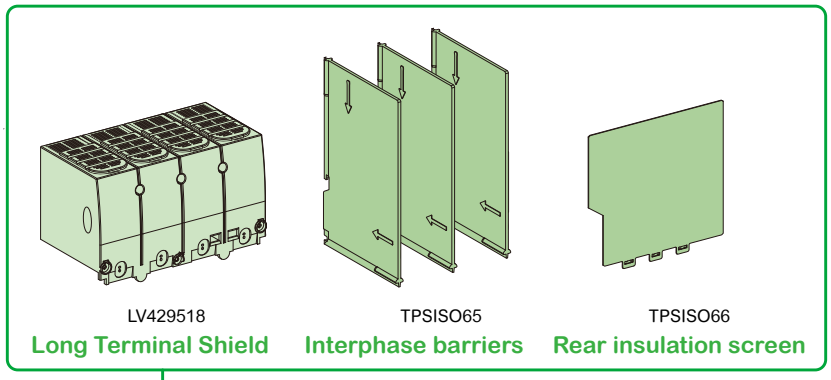
General Features

HMI Description

Label	Description
G	Power status indicator
E	Alarm indicator

LED Indication	Status	Description
		Both sources are out of range, or the transfer switch equipment is in manual/lock mode
		Either source is in range and transfer switch equipment is in RUN mode
		No alarm
		Alarm is active (Transfer failure, transfer switch equipment contact position failure, internal error occurred)

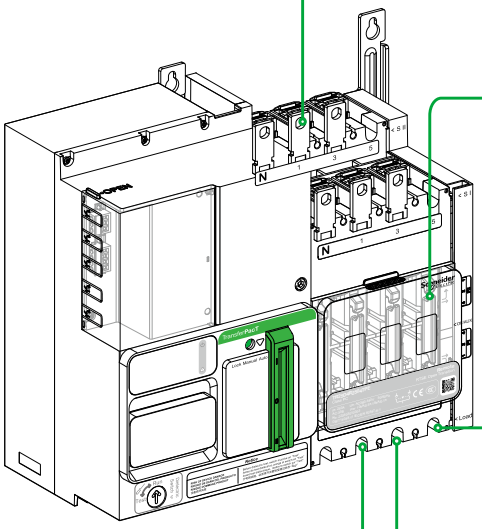
Electrical and Mechanical Accessories - Frame 250



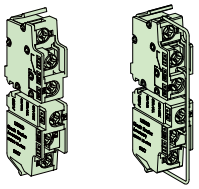
LV429518
Long Terminal Shield

TPSISO65
Interphase barriers

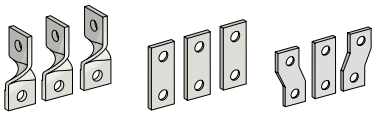
TPSISO66
Rear insulation screen



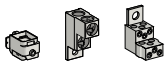
TransferPacT Remote Frame 250



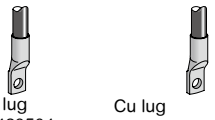
TPSAUX 43
TPSAUX44
Auxiliary Contact



LV429308
LV429309
LV429263
LV429264
LV431563
LV431564
TPSCON39
Terminal extension



LV429227 LV429259 TPSCON49 LVS04033
LV429228 LV429260 TPSCON50 LVS04034
LV429242 TPSCON47 TPSCON51
LV429243 TPSCON48 TPSCON52
Power connection-Connector



Au lug
LV429504
LV429505
LV429506
LV429507

Cu lug
LV429252 LV429256
LV429253 LV429257
LV429254 LV429258
Power connection-Crimp lug

Electrical and mechanical accessories - Frame 250

Auxiliary Contact Module

- TPSAUX43: provide the open and closed status indication for both source I and source II .
- TPSAUX44: provide the open and closed status indication for OFF position.

Insulating Accessories

Terminal Shield

Optional accessory, provide terminal protection on the cable incoming and output.

- LV429518: Terminal shield (set of 1)

Interphase Barrier

Optional accessory, provide protection for the cable incoming and output, effectively avoiding short circuits between phases.

- TPSISO65: Interphase barriers (set of 3)

Insulation Screen

Optional accessory, provide protection for the cable incoming and output.

- TPSISO66: Insulating screen. Applicable for source II only, maximum 1 set.

Electrical and Mechanical Accessories - Frame 250

Connection Accessories

Bare Cable Connector

Cable Material	number	Cross Section	Pole	Commercial Reference	Quantity
Aluminum	1 cable	25 to 95 mm²	3P	LV429227	3
			4P	LV429228	4
		120 to 185 mm²	3P	LV429259	3
			4P	LV429260	4
		120 to 240 mm²	3P	TPSCON49 [b]	3
			4P	TPSCON50 [b]	4
	2 cables	50 to 120 mm²	3P	TPSCON51 [a,b]	3
			4P	TPSCON52 [a,b]	4
	6 cables	1.5 to 35 mm²	3P	TPSCON47 [b]	3
			4P	TPSCON48 [b]	4
	9 cables		3P	LVS04033 [a]	3
			4P	LVS04034 [a]	4
steel	1 cable	1.5 to 95 mm²	3P	LV429242	3
			4P	LV429243	4

a: Applicable for load side only
b: Must select terminal shield to ensure incoming and output terminal protection.

Electrical and Mechanical Accessories - Frame 250

Crimp Lug for Cables

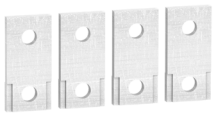
- Natively supplied with interphase barriers.

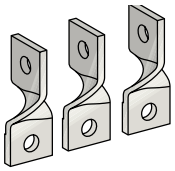
Cable Material	Cross Section	Pole	Commercial Reference	Quantity
Aluminum	150 mm²	3P	LV429504	3
		4P	LV429505	4
	185 mm²	3P	LV429506	3
		4P	LV429507	4
Copper	120 mm²	3P	LV429252	3
		4P	LV429256	4
	150 mm²	3P	LV429253	3
		4P	LV429257	4
	185 mm²	3P	LV429254	3
		4P	LV429258	4

Terminal Extension

- Natively supplied with interphase barriers.

Type	Pole	Commercial Reference	Quantity
Spreaders			
35-45 mm	3P	LV431563	3
	4P	LV431564 [b]	4
	3P	TPSCON39 [a]	4
	4P	TPSCON39 [a]	4
Straight	3P	LV429263	3
	4P	LV429264	4
Edge wise	3P	LV429308	3
	4P	LV429309	4

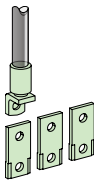
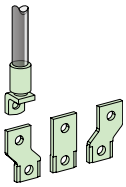
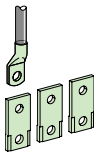
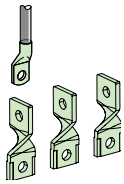
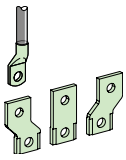




a: For incomings only
b: For load only.

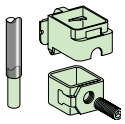
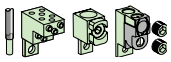
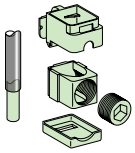
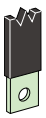
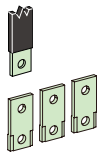
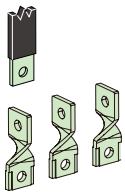
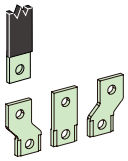
Electrical and Mechanical Accessories - Frame 250

Compatibility Matrix

	Type of conductor	No insulation	Interphase barrier	Long terminal shield	Insulating screen for 1 lug per terminal	Insulating screen for 2 lugs per terminal
	Cables(Al) +crimp lugs	-	Mandatory (Supplied)	Possible	-	-
	Cables(Cu) +crimp lugs	-	Mandatory (Supplied)	Possible	Possible	Possible
	Cables (Al) + crimp lugs + straight terminal extensions	-	Mandatory (Supplied)	-	Mandatory	-
	Cables (Al) + crimp lugs + Spreaders terminal extensions	-	Mandatory (Supplied)	-	Mandatory	-
	Cables (Cu) + crimp lugs + straight terminal extensions	-	Mandatory (Supplied)	-	Mandatory	NA /Mandatory (120 mm 2 only)
	Cables (Cu) + crimp lugs + edgewise terminal extensions	-	Mandatory (Supplied)	-	Possible	-
	Cables (Cu) +crimp lugs +Spreader terminal extensions	-	Mandatory (Supplied)	-	Mandatory	NA /Mandatory (120 mm 2 only)

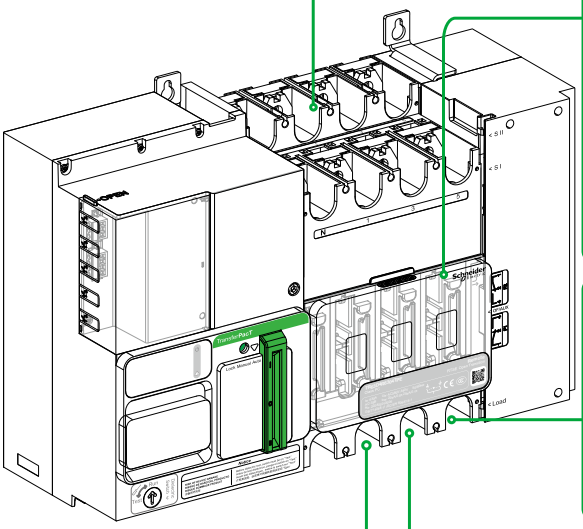
Electrical and Mechanical Accessories - Frame 250

Compatibility Matrix

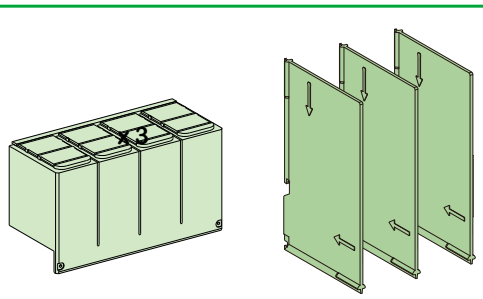
Type of conductor	No insulation	Interphase barrier	Long terminal shield	Insulating screen	
Cables +Steel connectors LV429242 LV429243	Possible	Possible	Possible	-	
Cables +Alluminum connectors TPSCON47 TPSCON48 TPSCON49 TPSCON50 TPSCON51 TPSCON52	-	-	Mandatory	-	
Cables +connectors +Alluminum connectors LV429227 LV429259 LV429228 LV429260	Possible	Possible	Possible	-	
Insulated bars	Possible	Possible	Possible	Possible	
Insulated bars +straight terminal extension	Mandatory (supplied)	-	-	Mandatory	
Insulated bars +edgewise terminal extension	Mandatory (supplied)	-	-	Possible	
Insulated bars +spreader terminal extension	Mandatory (supplied)	-	-	Mandatory	

B

Electrical and Mechanical Accessories- Frame 630



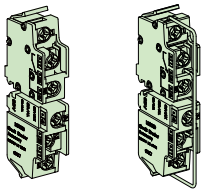
TransferPacT
Remote
Frame 630



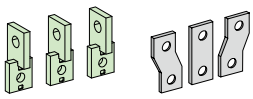
TPSISO42
Long Terminal Shield

TPSISO65
Interphase barriers

TPSISO67
Rear insulation screen



TPSAUX 43
TPSAUX44
Auxiliary Contact



TPSCON55
TPSCON56
TPSCON40
TPSCON41
Terminal extension

TPSCON57
TPSCON58
TPSCON59
TPSCON60
TPSCON61
TPSCON62
TPSCON63
TPSCON64
Power connection-Crimp lug

TPSCON53
TPSCON54
Power connection-Connector

Electrical and Mechanical Accessories- Frame 630

Auxiliary Contact Module

- TPSAUX43: provide the open and closed status indication for both source I and source II .
- TPSAUX44: provide the open and closed status indication for OFF position .

Insulating Accessories

Terminal Shield

Optional accessory, provide terminal protection on the cable incoming and output.

- TPSISO42: Terminal shield (set of 1)

Interphase Barrier

Optional accessory, provide protection for the cable incoming and output, effectively avoiding short circuits between phases.

- TPSISO65: Interphase barriers (set of 3)

Insulation Screen

Optional accessory, provide protection for the cable incoming and output.

- TPSISO67: Insulating screen (set of 1). Applicable for source and load, maximum 3 set.

Electrical and Mechanical Accessories- Frame 630

Connection Accessories

Bare Cable Connector

Cable Material	Number	Cross Section	Pole	Commercial Reference	Quantity
Aluminum	1 cable	35 to 300 mm²	3P	TPSCON53 [b]	3
			4P	TPSCON54 [b]	4

b: Must select terminal shield to ensure incoming and output terminal protection.

Crimp Lug for Cables

- Natively supplied with interphase barriers.

Cable Material	Cross Section	Pole	Commercial Reference	Quantity
Aluminum	240 mm²	3P	TPSCON61	3
		4P	TPSCON62	4
	300 mm²	3P	TPSCON63	3
		4P	TPSCON64	4
Copper	240 mm²	3P	TPSCON57	3
		4P	TPSCON58	4
	300 mm²	3P	TPSCON59	3
		4P	TPSCON60	4

Terminal Extension

- Natively supplied with interphase barriers.

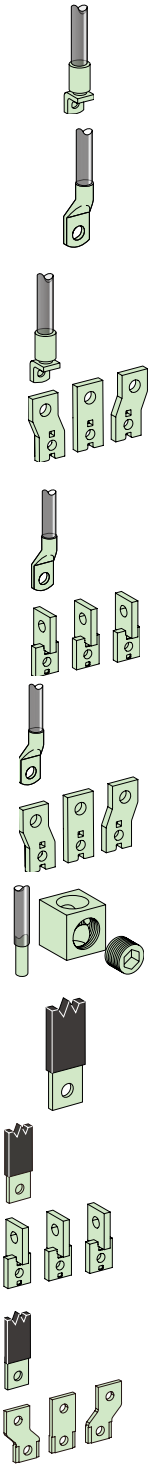
Type	Pole	Commercial Reference	Quantity
Spreaders			
45-55 mm	3P	TPSCON40	3
	4P	TPSCON41 [a]	4
	3P	TPSCON68 [b]	4
	4P	TPSCON68 [b]	4
Edge wise	3P	TPSCON55	3
	4P	TPSCON56	4

a: For incomings only
b: For load only.

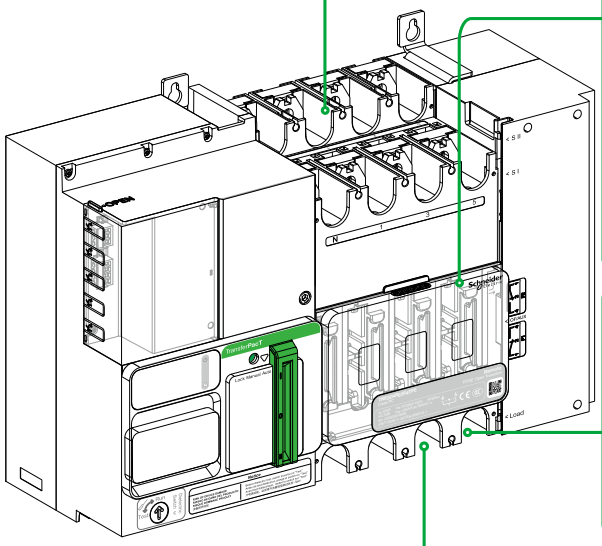
Electrical and Mechanical Accessories- Frame 630

Compatibility Matrix

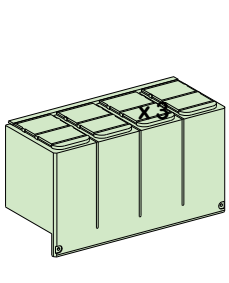
Type of Conductor	No Insulation	Interphase Barrier	Long Terminal Shield	Insulating Screen for 1 Lug per Terminal	Insulating Screen for 2 Lugs per Terminal
Cables (Al) +crimp lugs	-	Mandatory (Supplied)	Possible (instead of phase barriers)	SI: front screen mandatory Load: front screen mandatory	-
Cables (Cu) +crimp lugs	-	Mandatory (Supplied)	Possible (instead of phase barriers)	SII: rear screen possible	SII: rear screen mandatory
Cables (Alu) +crimp lugs +Spreaders terminal extensions	-	Mandatory (Supplied)		SI: front screen mandatory SII: rear screen mandatory Load: front screen mandatory	-
Cables (Cu) +crimp lugs + edgewise terminal extensions	-	Mandatory (Supplied)	-	Possible	-
Cables (Alu) +crimp lugs +Spreaders terminal extensions	-	Mandatory (Supplied)	-	SI: front screen mandatory SII: rear screen mandatory Load: front screen mandatory	SI: front screen mandatory SII: rear screen mandatory Load: front screen mandatory
cables+ aluminum connectors	-	-	Mandatory	-	-
Insulated bars	Possible	Possible	Possible	Possible	-
Insulated bars +edgewise terminal extension	-	Mandatory (supplied)	-	Possible	-
Insulated bars +spreader terminal extension	-	Mandatory (supplied)	-	Mandatory	-



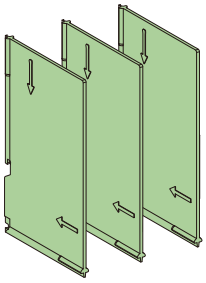
Electrical and Mechanical Accessories- Frame 800



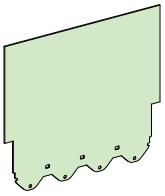
TransferPacT
Remote
Frame 800



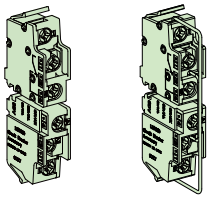
TPSISO42
Long Terminal Shield



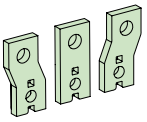
TPSISO65
Interphase barriers



TPSISO67
Rear insulation screen



TPSAUX 43 TPSAUX44
Auxiliary Contact



TPSCON40
TPSCON41
TPSCON68
Terminal extension

TPSCON57
TPSCON58
TPSCON59
TPSCON60
Power connection-Crimp lug

Electrical and Mechanical Accessories- Frame 800

Auxiliary Contact Module

- TPSAUX43: Provide the open and closed status indication for both source I and source II .
- TPSAUX44: Provide the open and closed status indication for OFF position .

Insulating Accessories

Terminal Shield

Optional accessory: Provide terminal protection on the cable incoming and output.

- TPSISO42: Terminal shield (set of 1)

Interphase Barrier

Optional accessory: Provide protection for the bar incoming and output, effectively avoiding short circuits between phases.

- TPSISO65: Interphase barriers (set of 3)

Insulation Screen

Optional accessory: Provide protection for the cable incoming and output.

- TPSISO67: Insulating screen (set of 1). Applicable for source and load, maximum 3 set.

Electrical and Mechanical Accessories- Frame 800

Crimp Lug for Cables

- Natively supplied with interphase barriers.

Cable Material	Cross Section	Pole	Commercial Reference	Quantity
Copper	240 mm²	3P	TPSCON57	3
		4P	TPSCON58	4
	300 mm²	3P	TPSCON59	3
		4P	TPSCON60	4

Terminal Extension

- Natively supplied with interphase barriers.

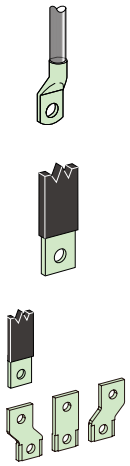
Type	Pole	Commercial Reference	Quantity
Spreaders			
45-55 mm	3P	TPSCON40	3
	4P	TPSCON41 [a]	4
	3P	TPSCON68 [b]	4
	4P	TPSCON68 [b]	4

a: For incomings only
b: For load only.

Electrical and Mechanical Accessories- Frame 800

Compatibility Matrix

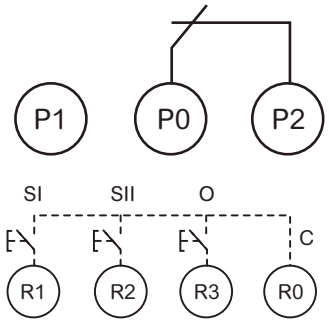
Type of Conductor	No Insulation	Interphase Barrier	Long Terminal Shield	Insulating Screen for 1 Lug per Terminal	Insulating Screen for 2 Lugs per Terminal
Cables (Cu) +crimp lugs	-	Mandatory (Supplied)	-	SII: rear screen possible	SII: rear screen mandatory
Insulated bars	Possible	Possible	Possible	Possible	-
Insulated bars +spreader terminal extension	-	Mandatory (supplied)	-	Mandatory	-



Terminal Definition and Transfer Process

Terminal Definition

TransferPacT Remote provides transfer solutions with input and output terminals.

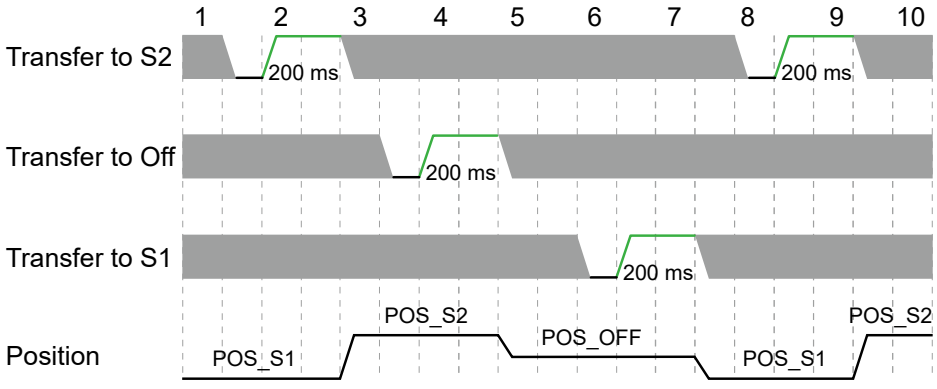


Description	Terminal label	Definition
Product Availability	P0	Common Terminal for P1,P2
	P1	output signal, when either source voltage is in range and product is NOT in manual mode, NO terminal will close.
	P2	output signal, when either source voltage is in range and product is NOT in manual mode, NC terminal will open.
Remote Transfer	R0	Common Terminal for R1,R2,R3
	R1	Passive input signal, remote transfer to position I when closed with R0 and last for at least 200ms.
	R2	Passive input signal, remote transfer to position II when closed with R0 and last for at least 200ms
	R3	Passive input signal, remote transfer to position O when closed with R0 and last for at least 200ms

Remote Transfer Process

The RTSE transfers to a stable position after receiving a rising edge signal. The rising edge signal should last for no less than 200 ms.
The RTSE will remain on the stable position until receiving a new signal. It will not respond to the new signal when:

- Position slider is in the left and transfer switch equipment is in RUN mode.
- Transfer switch equipment is in alarm state.
- Transfer switch equipment is executing the transfer action.



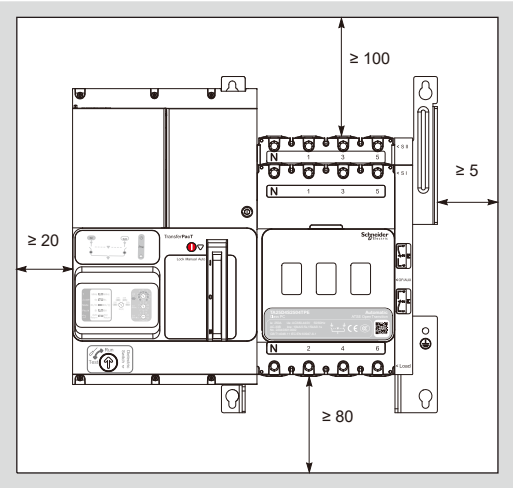
: No requirement on the signal voltage level. It can either be high or low level.

Remote Transfer Switching Equipment

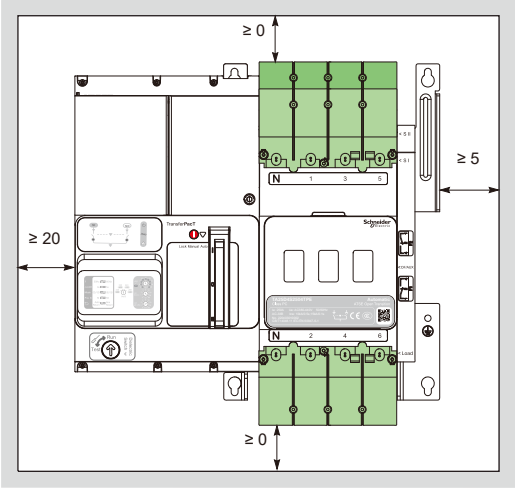
Class PC

TransferPacT Remote Frame 250/3P, 4P

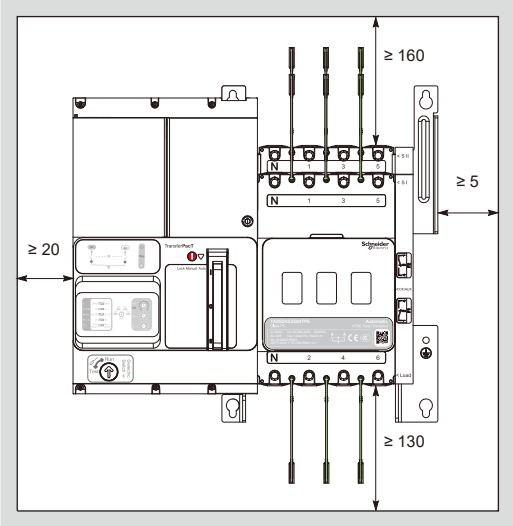
Minimum Electrical Clearance



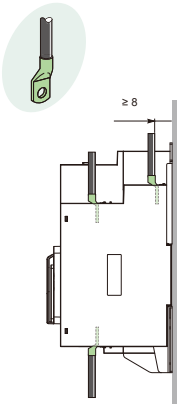
Bare Product



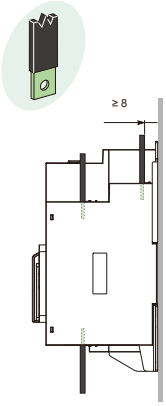
With Terminal Shield



With Interphase Barriers



Crimp Lug to Base Plate



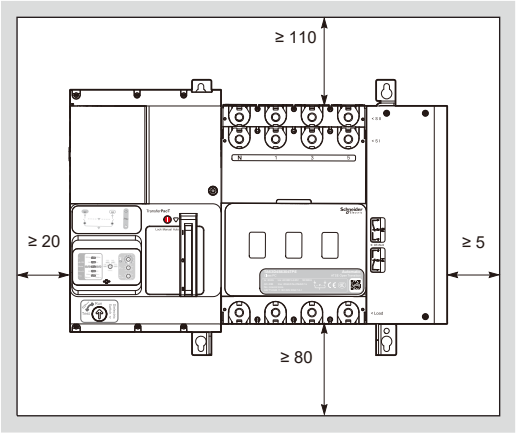
Busbar to Base Plate

Remote Transfer Switching Equipment

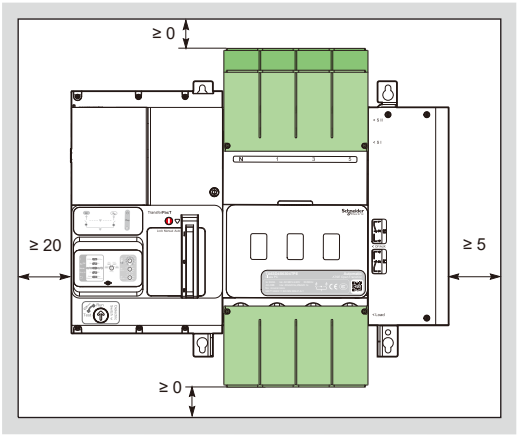
Class PC

TransferPacT Remote Frame 630/3P, 4P

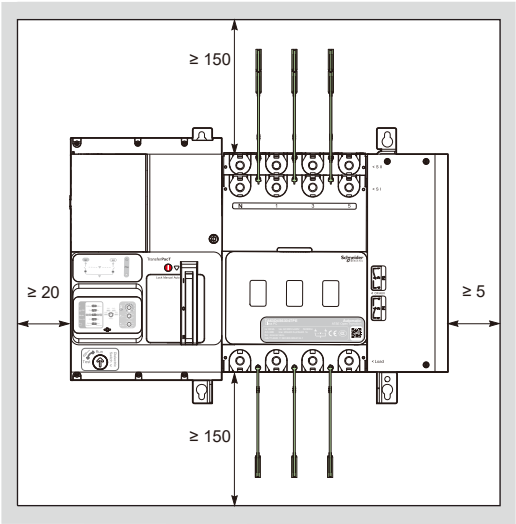
Minimum Electrical Clearance



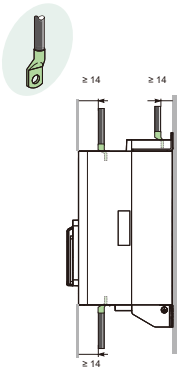
Bare Product



With Terminal Shield



With Interphase Barriers



Crimp Lug to Base Plate

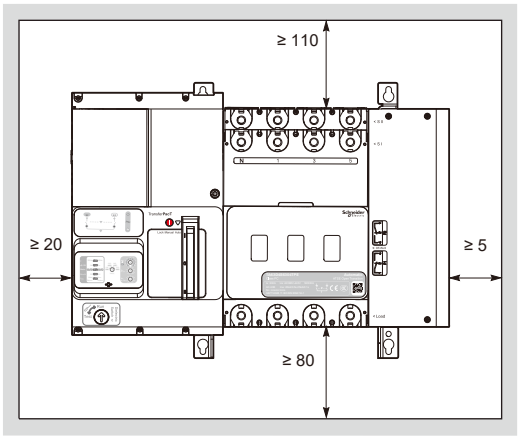
Busbar to Base Plate

Remote Transfer Switching Equipment

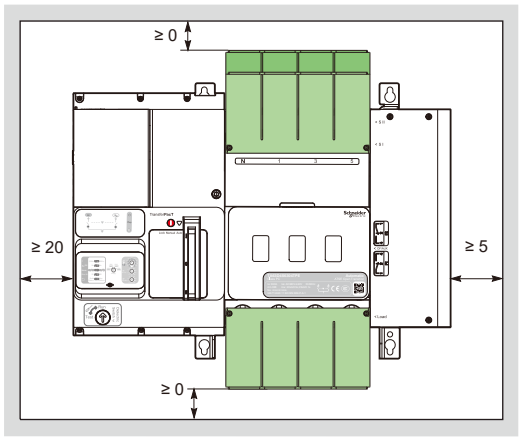
Class PC

TransferPacT Remote Frame 800/3P, 4P

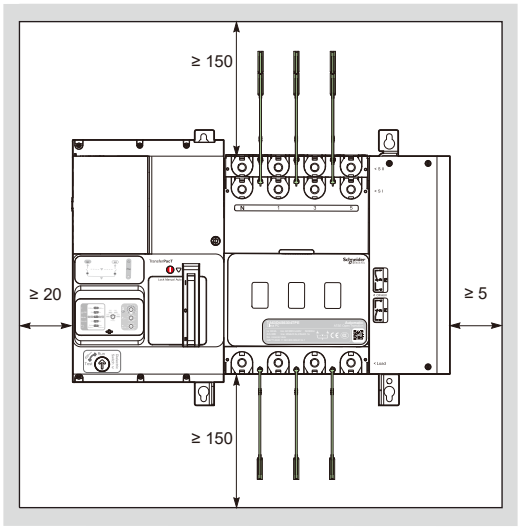
Minimum Electrical Clearance



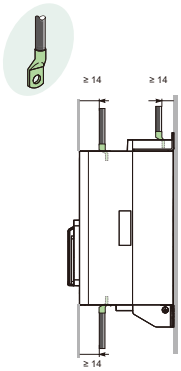
Bare Product



With Terminal Shield



With Interphase Barriers



Crimp Lug to Base Plate

Busbar to Base Plate

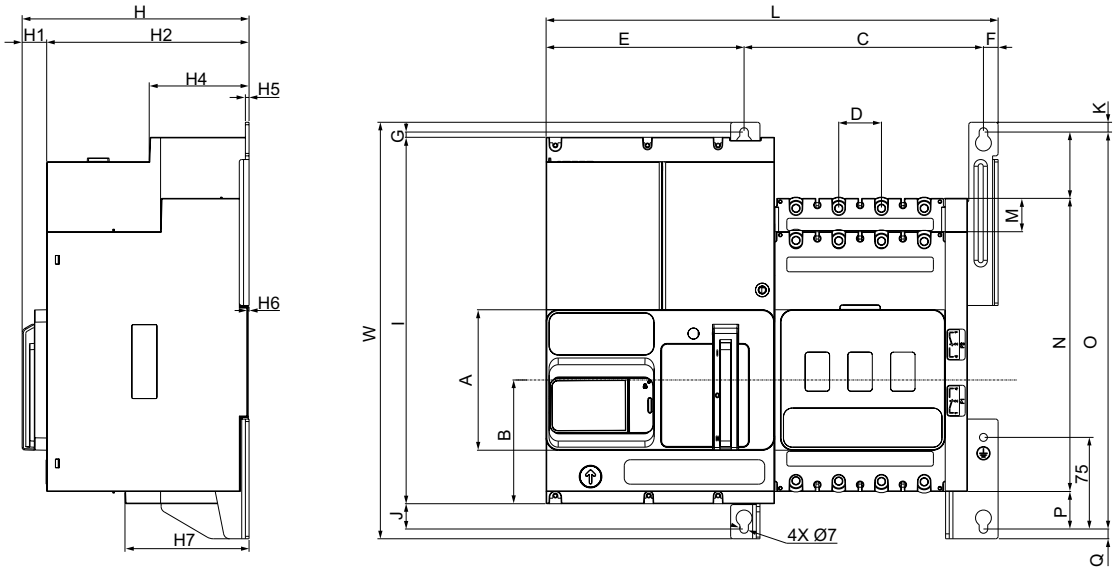
B

Remote Transfer Switching Equipment

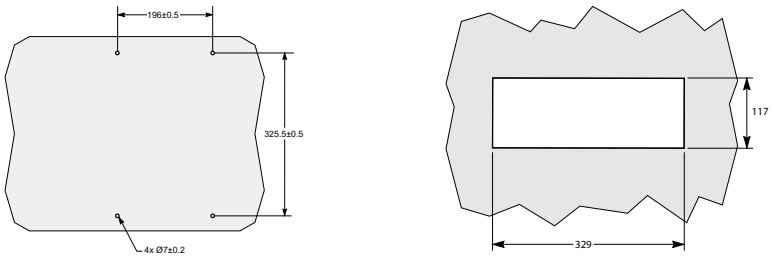
Class PC

TransferPacT Remote Frame 250 / 3P, 4P

Dimensions



Panel and Front Panel Cut



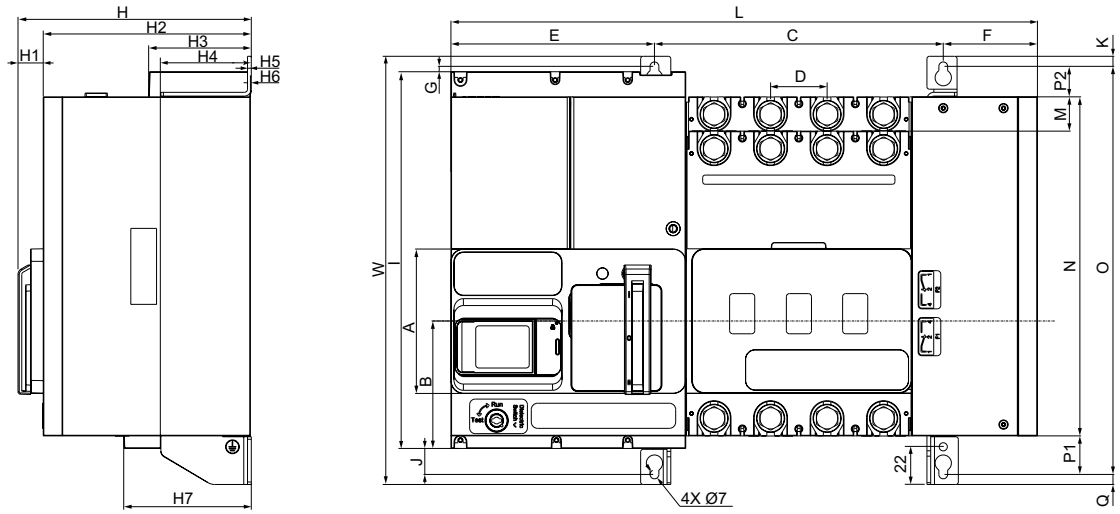
Frame	L	W	H	A	B	C	D	E	F	H1	H2	
250	370	341	185.8	115	101.3	196	35	162	12	20.1	165.7	
Frame	**H4**	**H5**	**H6**	**H7**	**I**	**J**	**K**	**M**	**N**	**O**	**P**	**Q**
250	81.75	3	0.7	101.6	300	20.7	8	27.3	240	325	30.7	8

Remote Transfer Switching Equipment

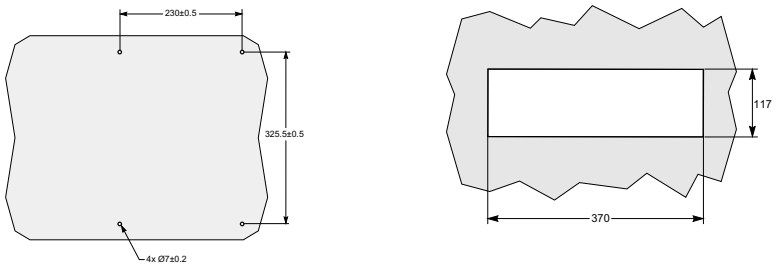
Class PC

TransferPacT Remote Frame 630 / 3P, 4P

Dimensions



Panel and Front Panel Cut



Frame	L	W	H	A	B	C	D	E	F	G	H1	H2	H3
630	467	341	185.8	115	101.5	230	45	162	75	4.3	20.1	165.7	81.7

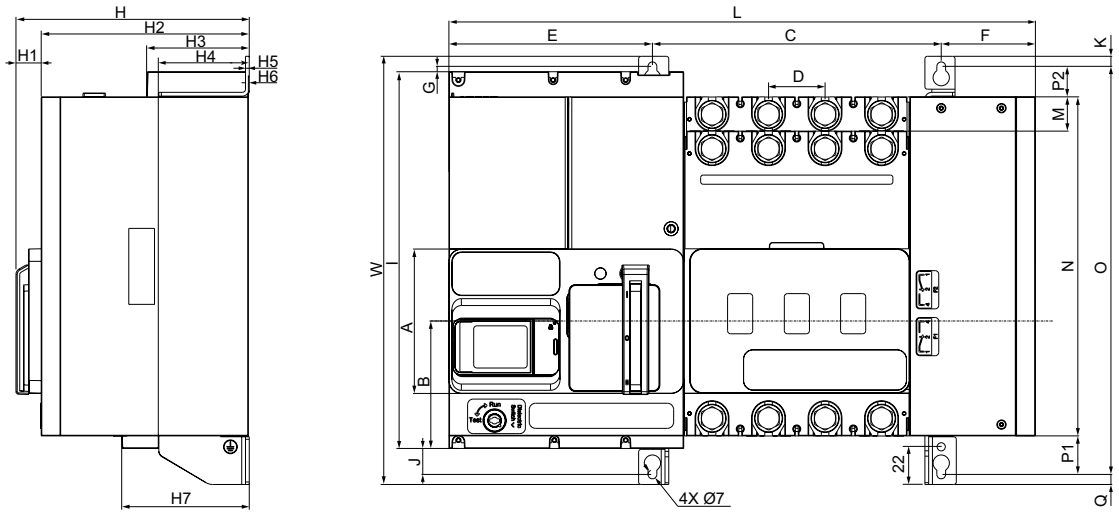
Frame	H4	H5	H6	H7	I	J	K	M	N	O	P1	P2	Q
630	72.45	3	0.7	101.6	300	20.7	8	27.3	270	325	30.7	24.3	8

Remote Transfer Switching Equipment

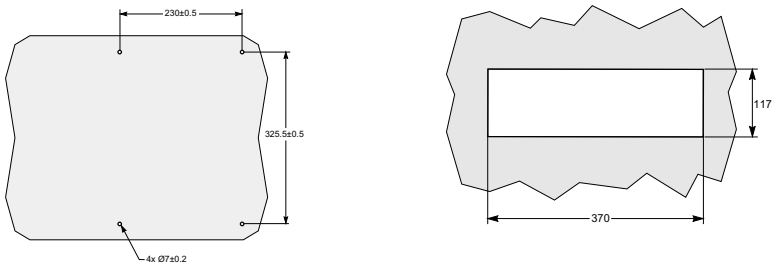
Class PC

TransferPacT Remote Frame 800 / 3P, 4P

Dimensions



Panel and Front Panel Cut

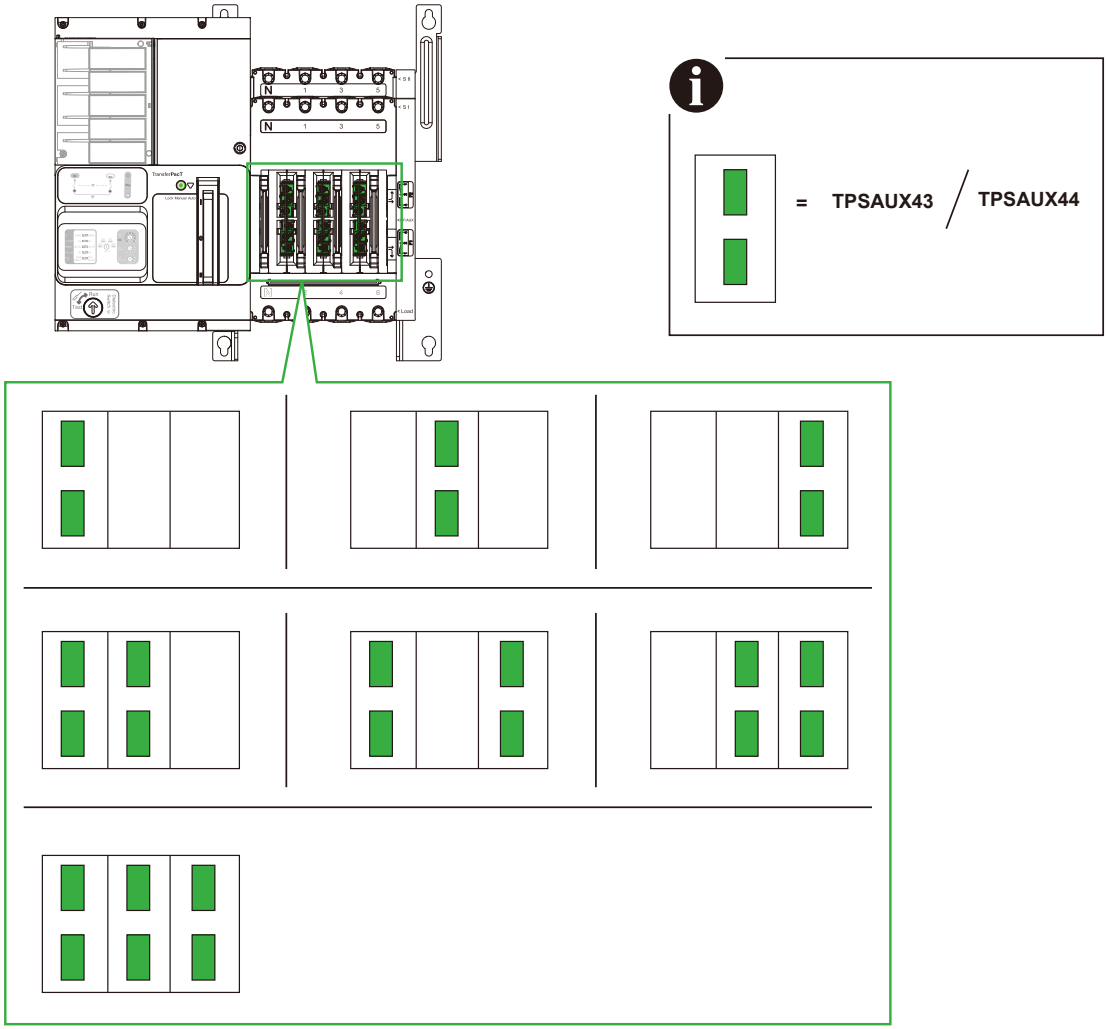


Frame	L	W	H	A	B	C	D	E	F	G	H1	H2	H3
800	467	341	185.8	115	101.5	230	45	162	75	4.3	20.1	165.7	81.7

Frame	H4	H5	H6	H7	I	J	K	M	N	O	P1	P2	Q
800	72.45	3	0.7	101.6	300	20.7	8	27.3	270	325	30.7	24.3	8

Remote Transfer Switching Equipment

Auxiliary Contact for Frame 250 & Frame 630 & Frame 800

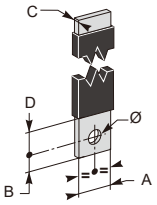


Remote Transfer Switching Equipment

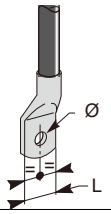
Class PC

TransferPacT Remote , Frame 250, Wiring Capacity

Dimensions for Frame 250

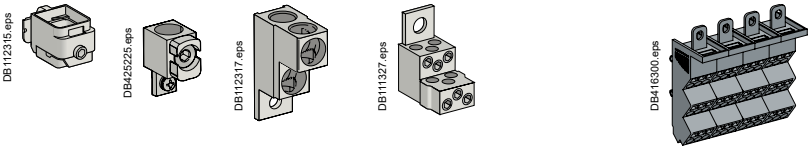


	Pole partition	(mm)	35
	Bars	A (mm)	⩽ 25
		B (mm)	⩽ 10
		C (mm)	⩽ 6
		D (mm)	10 ⩽ D ⩽ 15
		Ø (mm)	⩾ 8

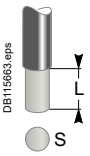


	Cable with Crimp Lug	L(mm)	⩽ 25
		Ø (mm)	⩾ 8
	Torque	(Nm)	15±1.5

Connection of Bare Cabels to Frame 250



1-cable connector | 2-cable connector | Distribution connector | Linergy DX distribution block



1-cable connector	Steel ⩽ 160 A	Aluminium ⩽ 250 A		
L (mm)	25	25		
S (mm²) Cu/Al	1.5 to 95 [1]	25 to 50	70 to 95	120 to 240 150 max. flex.
Torque (Nm)	12	20	26	31
2-cable connector				
L (mm)	25 or 50			
S (mm²) Cu/Al	2 x 50 to 2 x 120			
Torque (Nm)	22			
6-cable distribution connector (aluminium)				
L (mm)	15 or 30			
S (mm²) Cu/Al	1.5 to 6 [1]	8 to 35		
Torque (Nm)	4	6		
Linergy DP distribution block (9 cables)				
L (mm)	12	16		
S (mm²) Cu/Al	6 x 4 to 10	3 x 6 to 16		

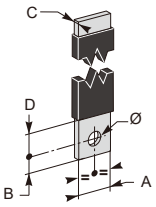
[1] For flexible cables from 1.5 to 4 mm², connection with crimped or self-crimping ferrules.

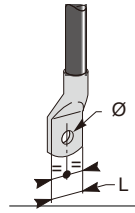
Remote Transfer Switching Equipment

Class PC

TransferPacT Remote , Frame 630, Wiring Capacity

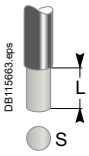
Dimensions for Frame 630



	Pole partition	(mm)	45
	Bars	A (mm)	⩽ 32
		B (mm)	⩽ 15
		C (mm)	3 ⩽ D ⩽ 10
		D (mm)	13 ⩽ D ⩽ 15
		Ø (mm)	⩾ 10
	Cable with Crimp Lug	L(mm)	⩽ 25
		Ø (mm)	⩾ 10
	Torque	(Nm)	50±5

Connection of Bare Cabels to Frame 630

1-cable connector



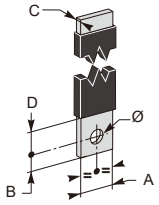
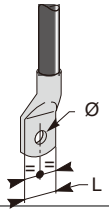
	1-cable connector
L (mm)	30
S (mm²) Cu/Al	35 to 300 rigid 240 max. flex.
Torque (Nm)	31

Remote Transfer Switching Equipment

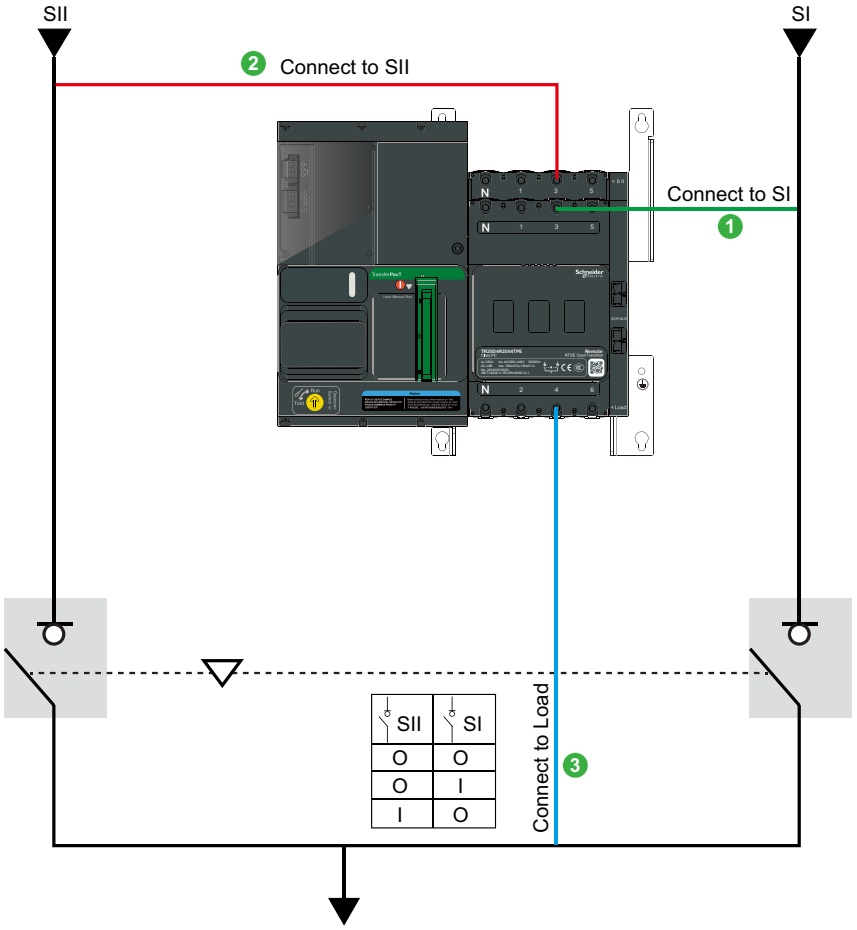
Class PC

TransferPacT Remote , Frame 800, Wiring Capacity

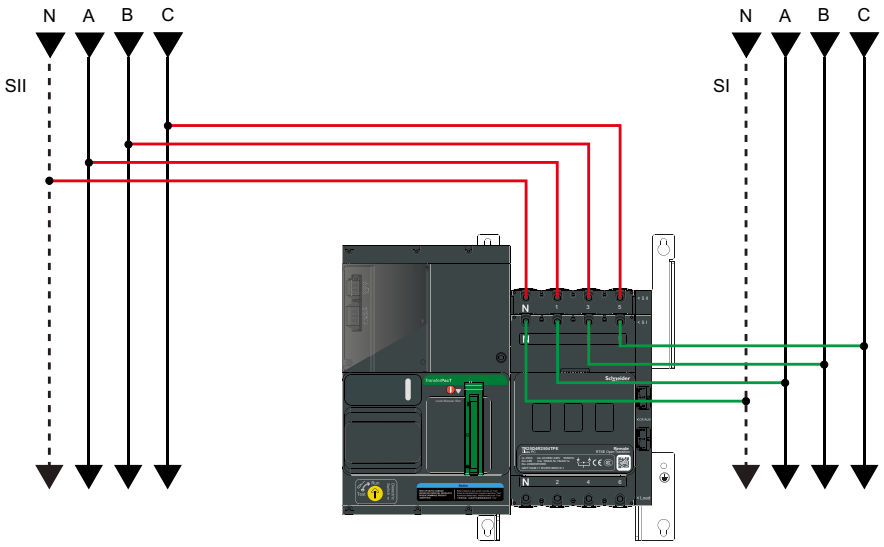
Dimensions for Frame 800

	Pole partition	(mm)	45
	Bars	A (mm)	≤ 32
		B (mm)	≤ 15
		C (mm)	8 ≤ D ≤ 17
		D (mm)	13 ≤ D ≤ 15
		Ø (mm)	≥ 10
	Cable with Crimp Lug	L(mm)	≤ 25
		Ø (mm)	≥ 10
	Torque	(Nm)	50±5

Remote Transfer Switching Equipment
TransferPacT Remote
Wiring Diagrams for Frame 250: 160 A-250 A

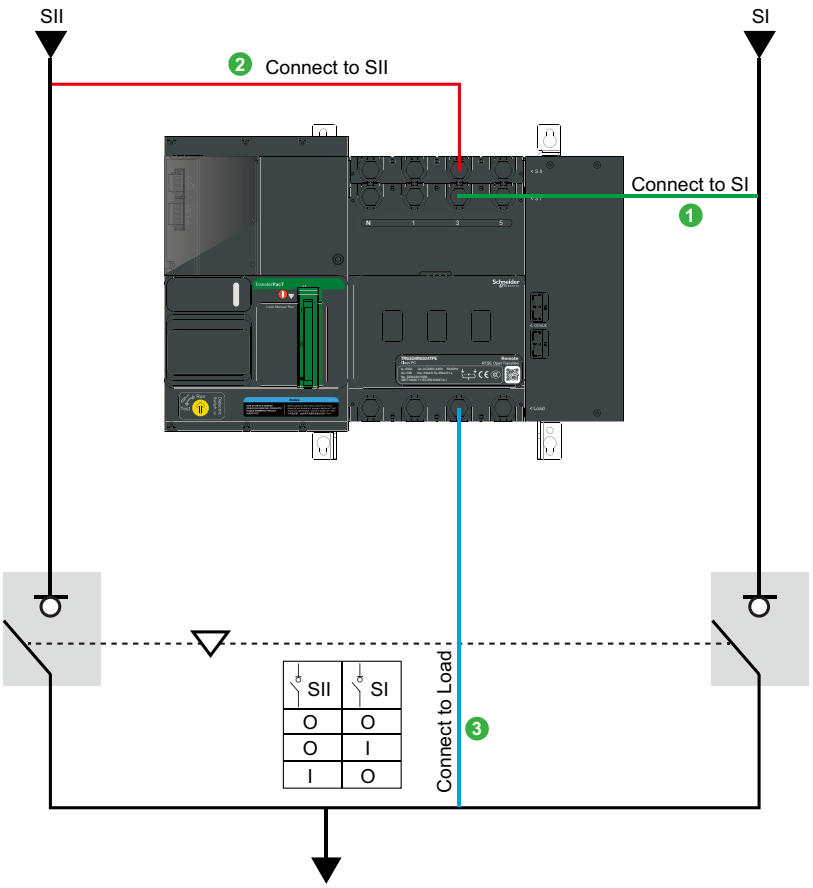


3P/4P

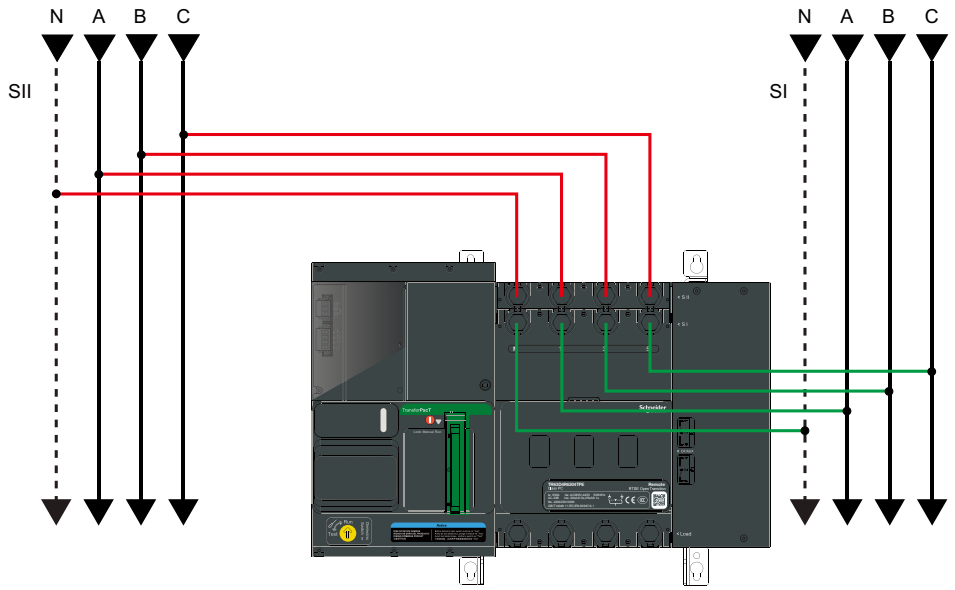


Remote Transfer Switching Equipment
TransferPacT Remote

Wiring Diagrams for Frame 630: 320 A-630 A and Frame 800: 800A



3P/4P



Remote Transfer Switching Equipment
Auxiliary Contact

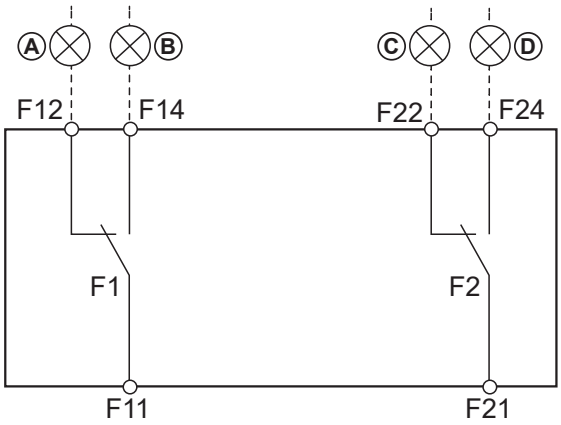
TPSAUX43

Ⓐ SI open
Ⓑ SI closed
Ⓒ SII open
Ⓓ SII closed

Transfer switching equipment is closed at SI:
- F11-F14 is closed
- F11-F12 is opened

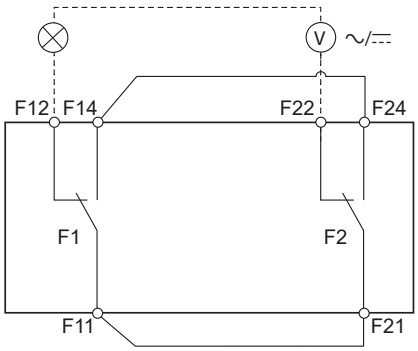
Transfer switching equipment is closed at SII:
- F21-F24 is closed
- F21-F22 is opened

Transfer switching equipment is at OFF position:
- F11-F12 and F21-F22 are closed
- F11-F14 and F21-F24 are opened

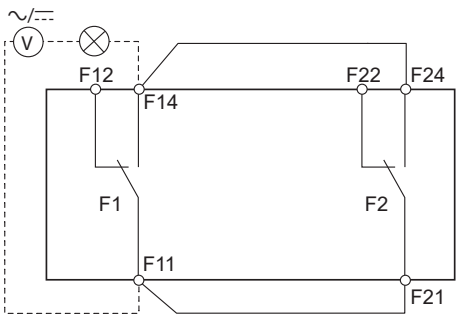


TPSAUX44

Transfer switching equipment is at OFF position:
F12-F22 is closed



Transfer switching equipment is not at OFF position:
F11-F14 and F21-F24 are closed



NOTE: terminal capacity for auxiliary contact is AC250 V 2 A.

References of TransferPacT Remote 160-800 A

TransferPacT Remote

TR25D4R2504TPE_Image.png

TA63D4L63304TPE.png

	3P	4P
250A[1]	**TR25D3R2502TPE**	**TR25D4R2502TPE**
160A	**TR25D3R1604TPE**	**TR25D4R1604TPE**
200A	**TR25D3R2004TPE**	**TR25D4R2004TPE**
250A	**TR25D3R2504TPE**	**TR25D4R2504TPE**
630A[1]	**TR63D3R6302TPE**	**TR63D4R6302TPE**
800A[1]	**TR80D3R8002TPE**	**TR80D4R8002TPE**
320A	**TR63D3R3204TPE**	**TR63D4R3204TPE**
400A	**TR63D3R4004TPE**	**TR63D4R4004TPE**
500A	**TR63D3R5004TPE**	**TR63D4R5004TPE**
630A	**TR63D3R6304TPE**	**TR63D4R6304TPE**
800A	**TR80D3R8004TPE**	**TR80D4R8004TPE**

1. For phase to phase 208V/220V/230V/240V application.

Connection Accessory

Auxiliary Contacts

TPSAUX43_Image.png

OF for Source position for frame 250 and frame 630	**TPSAUX43**
OF for Off position for frame 250 and frame 630	**TPSAUX44**

Insulation Accessory

TPSISO42_Image.png

TPSISO29_ISO.png

TPSISO67_Image.png

Terminal Shield for frame 250 (100 - 250 A) (set of 1)	**LV429518**
Terminal Shield for frame 630 (320 - 630 A) (set of 1)	**TPSISO42**
Interphase barriers for frame 250 (100 - 250 A) and frame 630 (320 - 630 A) (set of 3)	**TPSISO65**
Insulating screen for frame 250 (100 - 250 A) (set of 1).	**TPSISO66**
Insulating screen for frame 630 (320 - 630 A) (set of 1).	**TPSISO67**

References of TransferPacT Remote 160-800 A

Connection Accessory - Bare Cable Connector

Aluminum	1 cable 25 mm² to 95 mm², frame 250 (set of 3).	**LV429227**
	1 cable 25 mm² to 95 mm², frame 250 (set of 4).	**LV429228**
	1 cable 120mm² to 185mm², frame 250 (set of 3).	**LV429259**
	1 cable 120mm² to 185mm², frame 250 (set of 4).	**LV429260**
	1 cable 120 to 240 mm², frame 250 (set of 3).	**TPSCON49** [b]
	1 cable 120 to 240 mm², frame 250 (set of 4).	**TPSCON50** [b]
	1 cable 35 to 300 mm², frame 630 (set of 3).	**TPSCON53** [b]
	1 cable 35 to 300 mm², frame 630 (set of 4).	**TPSCON54** [b]
	2 cables 50 to 120 mm², frame 250 (set of 3).	**TPSCON51** [a,b]
	2 cables 50 to 120 mm², frame 250 (set of 4).	**TPSCON52** [a,b]
	6 cables 1.5 to 35 mm², frame 250 (set of 3).	**TPSCON47** [b]
	6 cables 1.5 to 35 mm², frame 250 (set of 4).	**TPSCON48** [b]
	9 cables for frame 250 (set of 3).	**LVS04033**
	9 cables for frame 250 (set of 4).	**LVS04034**
Steel	1 cable 1.5 to 95 mm², frame 250, up to 160 A only (set of 3).	**LV429242**
	1 cable 1.5 to 95 mm², frame 250, up to 160 A only (set of 4).	**LV429243**

a: Applicable for load side only
b: Must select terminal shield to ensure incoming and output terminal protection.

Connection Accessory - Crimp Lug

Aluminum	150 mm², frame 250 (set of 3).	**LV429504**
	150 mm², frame 250 (set of 4).	**LV429505**
	185 mm², frame 250 (set of 3).	**LV429506**
	185 mm², frame 250 (set of 4).	**LV429507**
	240 mm², frame 630 (set of 3).	**TPSCON61**
	240 mm², frame 630 (set of 4).	**TPSCON62**
	300 mm², frame 630 (set of 3).	**TPSCON63**
	300 mm², frame 630 (set of 4).	**TPSCON64**
Copper	120 mm², frame 250 (set of 3).	**LV429252**
	120 mm², frame 250 (set of 4).	**LV429256**
	150 mm², frame 250 (set of 3).	**LV429253**
	150 mm², frame 250 (set of 4).	**LV429257**
	185 mm², frame 250 (set of 3).	**LV429254**
	185 mm², frame 250 (set of 4).	**LV429258**
	240 mm², frame 630 (set of 3).	**TPSCON57**
	240 mm², frame 630 (set of 4).	**TPSCON58**
	300 mm², frame 630 (set of 3).	**TPSCON59**
	300 mm², frame 630 (set of 4).	**TPSCON60**

References of TransferPacT Remote 160-800 A

Connection Accessory - Terminal Extensions

edgewise terminal extensions for frame 250 (set of 3)	**LV429308**
edgewise terminal extensions for frame 250 (set of 4)	**LV429309**
edgewise terminal extensions for frame 630 (set of 3)	**TPSCON55**
edgewise terminal extensions for frame 630 (set of 4)	**TPSCON56**
Straight terminal extensions for frame 250 (set of 3)	**LV429263**
Straight terminal extensions for frame 250 (set of 4)	**LV429264**
Spreader for frame 100(set of 4), load side only	**TPSCON35** [b]
Spreader for frame 160(set of 4), load side only	**TPSCON36** [b]
35 mm ~ 45mm Spreader for frame 250 (set of 3)	**LV431563**
35 mm ~ 45mm Spreader for frame 250 (set of 4), load side only	**LV431564** [b]
35 mm ~ 45mm Spreader for frame 250 (set of 4), incomings only	**TPSCON39** [a]
45 mm ~ 55mm Spreader for frame 630 (set of 3)	**TPSCON40**
45 mm ~ 55mm Spreader for frame 630 (set of 4), incomings only	**TPSCON41** [a]
45 mm ~ 55mm Spreader for frame 630 (set of 4), load side only	**TPSCON68** [b]

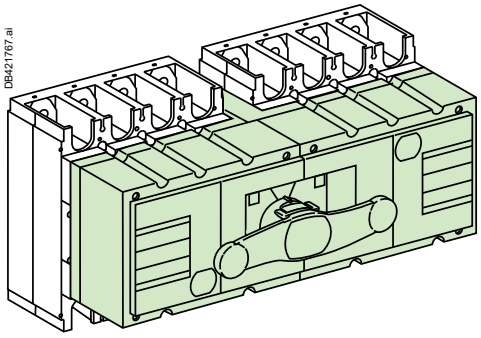
a: for imcomings only
b: for load side only

B

TransferPacT FXM

Switching Devices.....C-2
TransferPacT FXM100 to 630.....C-4
MTSE/Manual Source-Changeover Systems.....C-8
References of TransferPacT FXM.....C-9
Order Form for Manual Source-Changeover Systems..C-10

Complete Source-changeover Assembly (or MTSE: Manual Transfer Switching Equipment)



Definition of Class PC

Transfer switch equipment based on mechanical switching devices, that do not need electrical power to hold the main contacts open or closed and capable of making, carrying, and breaking currents under normal circuit conditions including operating overload conditions, and making and withstanding short-circuit currents.

Definition of Derived TSE

TSE based on switching devices that have certain tests required for compliance with IEC 60947-6-1 as defined in Table 9, covered by IEC 60947-3 for Class PC, IEC 60947-2 or IEC 60947-6-2 for Class CB, or IEC 60947-4-1 for Class CC

Definition of MTSE (Manual Transfer Switching Equipment)

Manually operated transfer switching equipment, transfer switching equipment operated manually and non-electrically.

TransferPacT FXM is a Class PC, Derived MTSE (Complete Source-Changeover Assembly)

These assemblies provide an easy way to implement source changeover functions with:

- A single 3-position rotary handle that controls the two switch-disconnectors (Normal source ON, OFF, Replacement source ON)
- A smaller size, taking up less room in the switchboard.

A complete source changeover assembly can be ordered with a single catalog number.

Switching Devices

Complete source changeover assembly

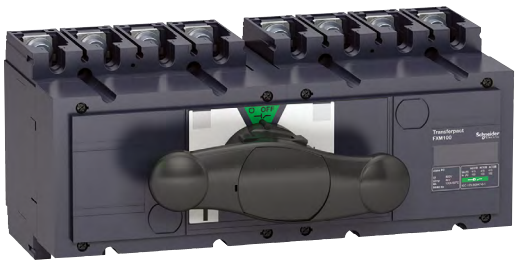
	TransferPacT FXM100 to 250			TransferPacT FXM320 to 630		
	Normal ON	OFF	Replacement ON	Normal ON	OFF	Replacement ON
Locking by padlocks	○	◉	○	○	◉	○
Locking by keylock	-	◉	-	-	◉	-
Door locking [1]	◉	-	◉	◉	-	◉
Door lock defeat [1]	◉ [2]	-	◉ [2]	◉ [2]	-	◉ [2]
Door locking device padlocked [1]	-	◉	-	-	◉	-
Lead-sealable handle	○	◉	○	○	◉	○

◉ Standard. ○ By simple modification of the standard rotary handle.
[1] With extended rotary control. **[2]** Using a special tool.

C

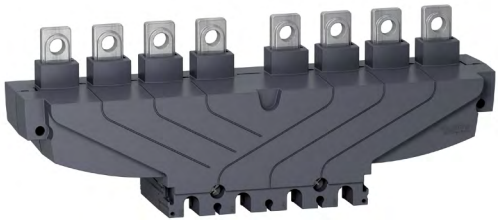
TransferPacT FXM100 to 630 (Complete Source-Changeover Assembly)

31141_Image_2.eps



Complete source-changeover assembly.

PB110856_60.eps



Coupling accessory.

FXM			
Number of poles			
Electrical characteristics as defined by IEC 60947-1 / 60947-6-1 and EN 60947-1 / 60947-6-1			
Conventional thermal current (A)	**Ith**	at 60 °C	
Conventional thermal current in enclosure	**Ithe**	at 60 °C	
Rated insulation level (V)	**Ui**	AC 50/60 Hz	
Impulse-withstand voltage (kV)	**Uimp**		
Rated operational voltage (V)	**Ue**	AC 50/60 Hz	
		DC	
Rated operational voltage AC20 and DC20 (V)		AC 50/60 Hz	
Rated operational current (A)	**Ie**	**Electrical AC**	**50/60 Hz**
			220-240 V
			380-415 V
			440-480 V
			500-525 V
			660-690 V
		Electrical DC	
			125 V (2P in series)
			250 V (4P in series)
Rated duties		Uninterrupted duty	
		Intermittent duty	
Short-circuit making capacity (kA peak)	**Icm**	Min. (switch-disconnector alone)	
		Max. (with upstream protection circuit breaker)	
Short-time withstand current (A rms)	**Icw**	1 s	
		3 s	
		20 s	
		30 s	
Suitability for isolation			
Durability (category A) (O - C-O cycles)		Mechanical	
		Electrical AC	**50/60 Hz**
			440 V
			500 V
			690 V
		Electrical DC	
			250 V
Positive contact indication			
Visible break			
Emergency-off switch-disconnector			
Degree of pollution			
Upstream protection			
See the “Complementary technical information”.			

TransferPacT FXM100 to 630 (Complete Source-Changeover Assembly)

	FXM100		FXM160		FXM200		FXM250		FXM320		FXM400		FXM500		FXM630		
	3-4		3-4		3-4		3-4		3-4		3-4		3-4		3-4		
	100		160		200		250		320		400		500		630		
	100		160		200		250		320		400		500		630		
	750		750		750		750		750		750		750		750		
	8		8		8		8		8		8		8		8		
	690		690		690		690		690		690		690		690		
	250		250		250		250		250		250		250		250		
	750		750		750		750		750		750		750		750		
	AC22A	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630	
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630	
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630	
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630	
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	630	630	
	DC22A	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC23B**
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	550	550	630
	100	100	160	160	200	200	250	250	320	320	400	400	500	500	550	550	630
	◉		◉		◉		◉		◉		◉		◉		◉		
	Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		Class 120 - 60 %		
	30		30		30		30		50		50		50		50		
	330		330		330		330		330		330		330		330		
	8500		8500		8500		8500		20000		20000		20000		20000		
	4900		4900		4900		4900		11500		11500		11500		11500		
	2200		2200		2200		2200		4900		4900		4900		4900		
	1800		1800		1800		1800		4000		4000		4000		4000		
	◉		◉		◉		◉		◉		◉		◉		◉		
	15000		15000		15000		15000		10000		10000		10000		10000		
	AC22A	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	**AC22A**	**AC23A**	
	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
	DC22A	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC22A**	**DC23A**	**DC23A**	**DC23B**	**DC23A**	**DC23B**	**DC23A**	**DC23B**	**DC23A**	**DC23B**	
	1500	1500	1500	1500	1500	1500	1500	1500	1000	-	1000	-	1000	-	1000	200	
	◉		◉		◉		◉		◉		◉		◉		◉		
	-		-		-		-		-		-		-		-		
	-		-		-		-		-		-		-		-		
	3		3		3		3		3		3		3		3		
	-		-		-		-		-		-		-		-		

TransferPacT FXM100 to 630 (Complete Source-Changeover Assembly)

FXM	
Installation	
Fixed, front connection	
Fixed, rear connection	
On symmetrical rails	
On a backplate	
Connection	
By cables	To bare cable connectors
By cables with lugs	Directly to terminals
	To spreaders
	To vertical-connection adapters via cable-lug adapters
Flat-facing bars	Directly to terminals
	To spreaders
Edgewise bars	To vertical-connection adapters
Indication and measurement auxiliaries	
Auxiliary contacts	
Voltage-presence indicator	
Current-transformer module	
Ammeter module	
Control, locking and interlocking	
Control	Direct front rotary handle
	Extended front rotary handle
	Direct lateral rotary handle
	Extended lateral rotary handle
Interlocking	By keylock
	Mechanical
Complete source-changeover assembly	
Operating torque (Nm) (typical value for 3-4 poles with front handle)	
Installation and connection accessories	
Bare cable connectors	
Rear connectors	
Terminal extensions	
Spreaders	
One-piece spreader	
Terminal shrouds	
Terminal shields	
Interphase-barrier	
Front panel escutcheons	
Coupling accessories(downstream, outgoing pitch for FXM100-250 is 35mm, FXM 320-630 is 45mm)	
Tightening torque for electrical connections (Nm)	
Dimensions and weights	
Overall dimensions H x W x D (mm)	3 poles
	4 poles
Approximate weight (kg)	3 poles
	4 poles

TransferPacT FXM100 to 630 (Complete Source-Changeover Assembly)

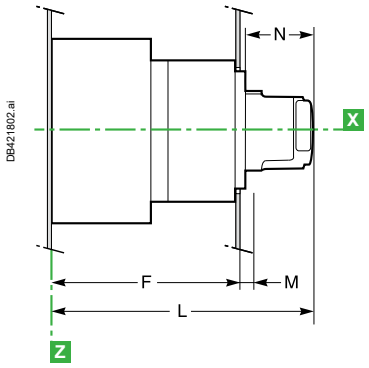
	FXM100	FXM160	FXM200	FXM250	FXM320	FXM400	FXM500	FXM630
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	-	-	-	-	-	-	-	-
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	-	-	-	-	-	-	-	-
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	-	-	-	-	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	5 < Nm < 6.2	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16.5	13.5 < Nm < 16.5
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	◉	◉	◉	◉	◉	◉	◉	◉
	◉	◉	◉	◉	◉	◉	◉	◉
	-	-	-	-	-	-	-	-
	◉	◉	◉	◉	◉	◉	◉	◉
	15	15	15	15	50	50	50	50
	136 x 295 x 131	136 x 295 x 131	136 x 295 x 131	136 x 295 x 131	205 x 395 x 155	205 x 395 x 155	205 x 395 x 155	205 x 395 x 155
	136 x 295 x 131	136 x 295 x 131	136 x 295 x 131	136 x 295 x 131	205 x 395 x 155	205 x 395 x 155	205 x 395 x 155	205 x 395 x 155
	6.4	6.4	6.4	6.4	13.5	13.5	13.5	13.5
	6.4	6.4	6.4	6.4	13.5	13.5	13.5	13.5

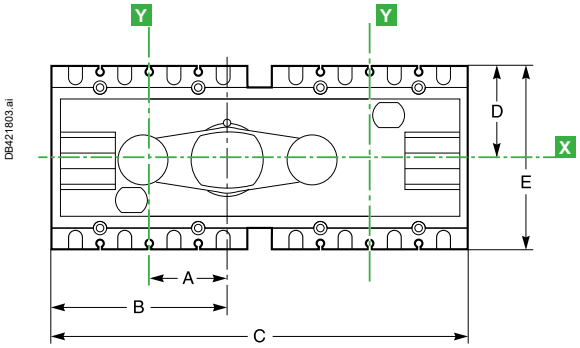
C

MTSE/Manual Source-Changeover Systems
TransferPacT FXM

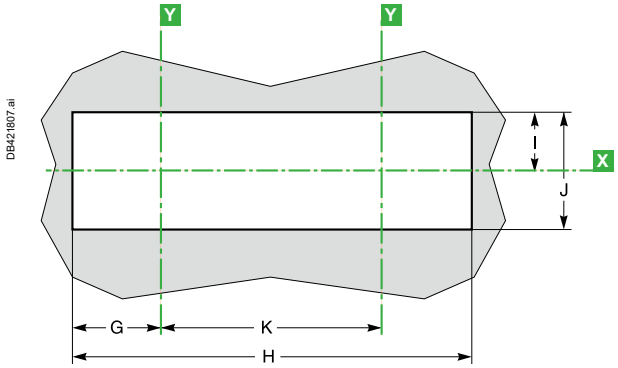
Class PC

Complete Manual Source-Changeover Assembly
TransferPacT FXM with direct rotary handle





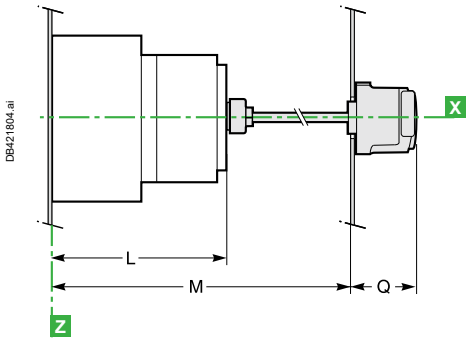
Front Panel Cutout

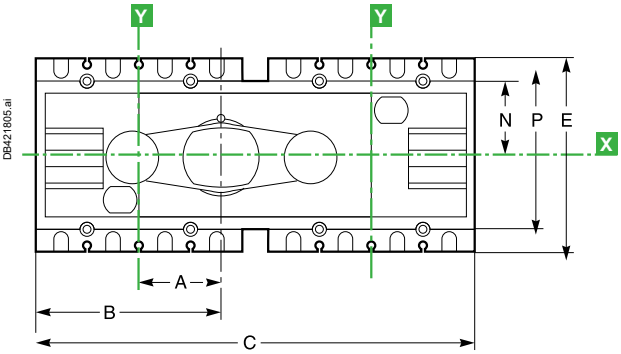


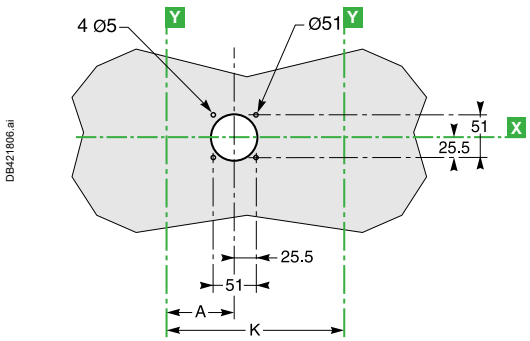
Dimensions (mm)

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N
FXM 100 to 250 A	60.4	130.4	296	68	136	131	61.8	279.3	42	84	156	186.5	5.5	50
FXM 320 to 630 A	82.5	175	395	102.5	205	155	87	383.7	64	128	210	213	8	50

TransferPacT FXM with Extended Handle







Dimensions (mm)

Type	A	B	C	E	K	L	M	N
FXM 100 to 250 A	60.4	130.4	295	136	156	138.5	631	50
FXM 320 to 630 A	82.5	175	395	205	210	162.5	658	75

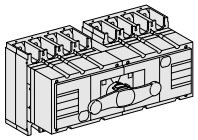
Dimensions (mm)

Type	P	Mmax	Mmin	Q
FXM 100 to 250 A	100	567.5	195	64
FXM 320 to 630 A	150	593	220.5	64

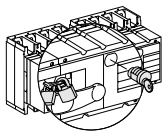
Note: lines **X** and **Y** indicate the axes of symmetry of the switch-disconnector.
Reference plane **Z** corresponds to the back of the switch-disconnector.

References of TransferPacT FXM

TransferPacT FXM (complete source-changeover assembly)

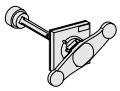

DB404170.eps

	3P	4P
FXM100	31140	31141
FXM160	31144	31145
FXM200	31142	31143
FXM250	31146	31147
FXM320	31148	31149
FXM400	31150	31151
FXM500	31152	31153
FXM630	31154	31155


DB107711.eps

Locking for TransferPacT FXM

Handle locking by 1 to 3 padlocks (in OFF position)		Built in
By keylock	Keylocking device	31097
	+ Ronis 1351B.500 keylock	41940
	or + Profalux KS5 B24 D4Z keylock	42888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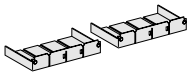
Rotary handle

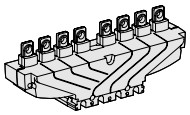
Extended front control for complete source changeover assembly	31055

Connection Accessories

Downstream coupling accessories

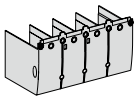
Short terminal shields (1 pair) + “Normal” source/“Replacement” source


DB101062.eps


DB413292.eps

	3/4P
INS250/INS250	LV429359
INS320 to INS630/INS320 to INS630	LV432620

Long terminal shields (1 piece)


Db403921.eps

INS250	Long terminal shield	LV429518
INS320 to INS630	Long terminal shield, 45 mm (1 piece)	LV432594
	Long terminal shield for spreaders, 52.5 mm (1 piece)	LV432596

C

Order Form for Manual Source-Changeover Systems

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭ .

Complete Source-Changeover Assembly			
INS250-100 A	☐	INS250-160 A	☐
INS250-200 A	☐	INS250-250 A	☐
INS320	☐	INS400	☐
INS500	☐	INS630	☐

ATS, RTS and MTS based on ComPacT and MasterPacT range

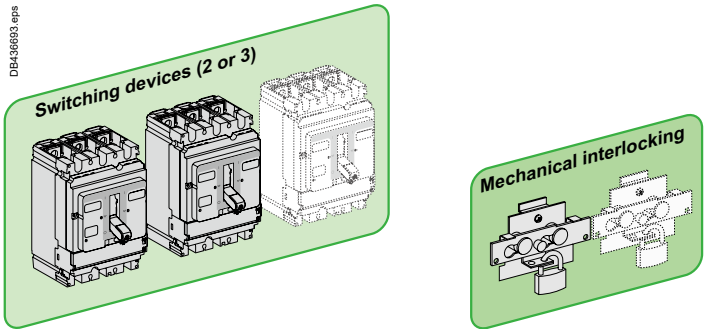
Manual, Remote and Automatic Transfer Switch D-2
Switching Devices..... D-4
TransferPacT D-10
Mechanical Interlocking..... D-10
TransferPacT Controllers D-18
Manual Source-Changeover Systems D-28
Source-Changeover Systems D-37
Standard Configurations D-45
Remote-Operated Source-Changeover Systems D-47
Source-Changeover Systems with UA Controllers D-59
Source-Changeover Systems with BA Controllers D-61
Remote-Operated Source-Changeover Systems..... D-62
References of Source-Changeover Systems for 2 Devices .D-71
Order Form for Source-Changeover Systems for 2 Devices. D-77

Manual, Remote and Automatic Transfer Switch

Schneider Electric offers source change-over systems based on ComPacT and MasterPacT devices.
They are made of up to 3 circuit breakers or switch-disconnetors linked by an electrical interlocking system that may have different configurations. Moreover, a mechanical interlocking system must be added to protect against electrical malfunctions or incorrect manual operations. In addition, a controller can be used for automatically control the source transfer.
The following pages present the different solutions for mechanical and electrical interlocking and associated controllers.

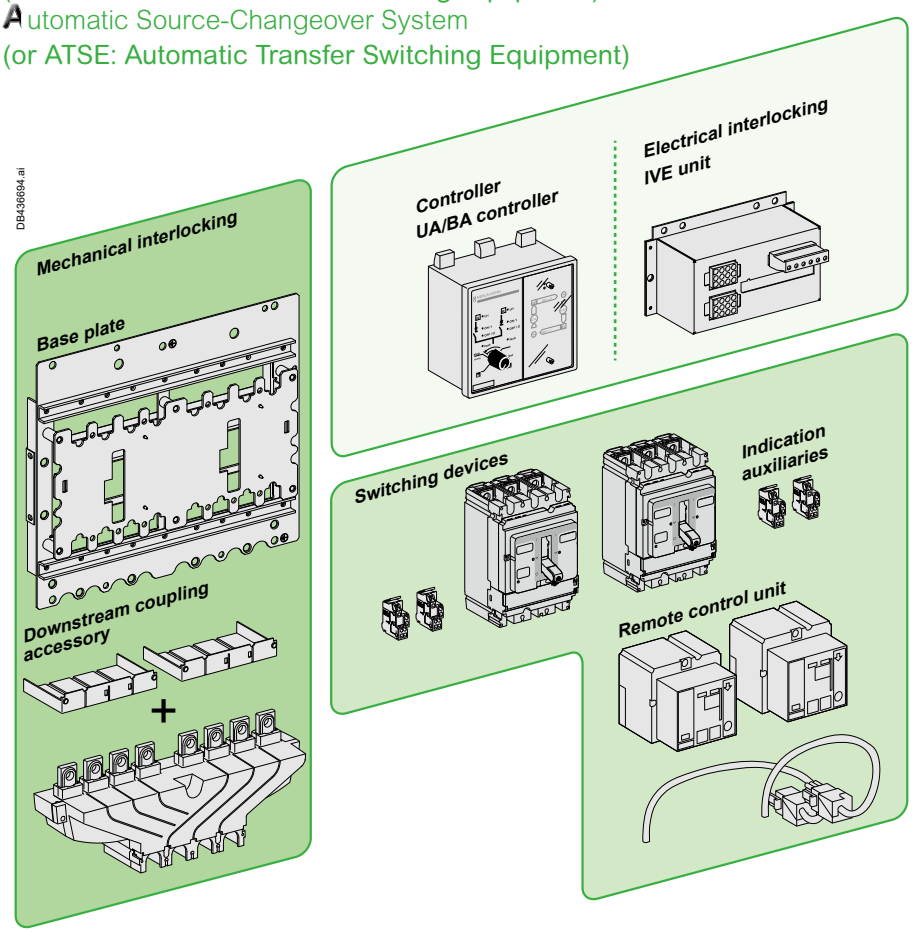
M

Manual Source-Changeover System
(or MTSE: Manual Transfer Switching Equipment)



R/A

Remote-Operated Source-Changeover System
(or RTSE: Remote Transfer Switching Equipment)
Automatic Source-Changeover System
(or ATSE: Automatic Transfer Switching Equipment)



Manual, Remote and Automatic Transfer Switch

Switching Devices

	Class PC	Class CB
ComPacT INS/INV	D-4	-
ComPacT NSX	D-5	D-8
ComPacT NS	D-5	D-9
MasterPacT MTZ1	D-5	D-9
MasterPacT MTZ2/MTZ3	D-5	D-9

Mechanical Interlocking

Mechanical interlocks	D-10
Keylocks with captive keys	D-12
Cables or connecting rods	D-15

D

TransferPacT

Electrical Interlocking

Electrical interlocking	
IVE unit + base plate	D-16
IVE unit, Operating sequences	D-17

TransferPacT Controller

With automatic controller	
Controller selection	D-18
Controller installation	D-19
BA controller	D-20
BA controller, Operating sequences	D-21
UA controller	D-22
UA controller, Operating sequences, Forced operation mode	D-23
UA controller, Operating sequences, Special-tariff mode	D-24
UA controller, Operating sequences, Test mode and automatic operation	D-25
UA/BA controller, Operating sequences	D-26

Information

IEC 60947-6-1 applies to transfer switching equipment (TSE) to be used in power systems for transferring a load supply between a normal and an alternate source (other power supply or generator).

TSE is classified according to
- The method of controlling the transfer
  - Manually transfer switching equipment (MTSE)
  - Automatic transfer switching equipment (ATSE)
- their short circuit capability
  - Class PC: TSE that is capable of making and withstanding, but not intended for breaking short-circuit currents. Switch and switch-disconnectors are the most useful products used.
  - Class CB: TSE that is capable of making, withstanding, it's intended for breaking short-circuit currents and is provided with over-current releases. Circuit breakers (air circuit breaker or moulded-case circuit breaker) are the most useful products used.

Switching Devices
Class PC

Range		ComPacT INS	ComPacT INS/INV
Types of devices		INS40 to INS80 INS100 to INS160	INS250 to INS630 INV100 to INV630
Mixing possibilities		All devices, not possible with a complete assembly source-changeover	All devices, not possible with a complete assembly source-changeover
Electrical characteristics			
Current rating		40 to 160 A	100 to 630 A
Insulating voltage Ui (V AC)		750	800
Rated operational voltage			
Positive break indication		■	■
Number of poles (N and R devices must have the same number of poles)		3, 4	3, 4
Operating temperature		-25 °C and +70 °C	-25 °C and +70 °C
Additional indication and control auxiliaries			
Indication contacts		OF	OF
Voltage releases	MX shunt		
	MN undervoltage		
Voltage presence indicator		■	■
Voltage transformer			
Ammeter module		■	■
Insulation monitoring module			
Installation and connection			
Fixed front connected		■	■
Fixed rear connected		■	■
Withdrawable, plug-in or drawout			
Installation and connection accessories			
Downstream coupling accessory			■
Bare-cable connectors		■	■
Terminal extensions		■	■
Terminal shields and inter-phase barriers		■	■
Front panel escutcheons			■
Locking	by padlock	■	■
	by keylock	■	■

Switching Devices
Class PC

Range		ComPacT NSX		ComPacT NS	MasterPacT	
Types of devices		NSX100 to NSX250	NSX400 to NSX630	NS630b to NS1600	MTZ1 06 to 16	MTZ2 08 to 40 MTZ3 40 to 63
Mixing possibilities		all devices	all devices	all devices	all mixing possibilities	all mixing possibilities
		NSX100NA to NSX250NA	NSX100NA to NSX630NA	NS630bNA to NSX1600NA	(fixed, drawout or fixed + drawout) HA	(fixed, drawout or fixed + drawout) NA/HA/HA10
		fixed/fixed or plug-in/plug-in	fixed/fixed or plug-in/plug-in	fixed/fixed or plug-in/plug-in		
Electrical characteristics						
Current rating		15 to 250 A	15 to 630 A	250 to 1600 A	600 to 1600 A	800 to 6300 A
Insulating voltage Ui (V AC)		750	750	750	1000	1000
Rated operational voltage						
Positive break indication		■	■		■	■
Number of poles (N and R devices must have the same number of poles)		3, 4	3, 4	3, 4	3, 4	3, 4
Operating temperature		-25 °C to +70 °C (50 °C for 440 V - 60 Hz)		-25 °C to +70 °C (50 °C for 440 V - 60 Hz)	-25 °C to +70 °C	
Control characteristics						
Control voltage	AC	48 V - 50 Hz 110/130, 220/240, 380/440 V - 50/60 Hz	48 V - 50 Hz 110/130, 220/240, 380/440 V - 50/60 Hz		48 to 415 V - 50/60 Hz 440 V - 60 Hz	
	DC	24-250 V	24-250 V	24-250 V	24-250 V	24-250 V
Maximum consumption	AC	500 VA	500 VA	180 VA	180 VA	180 VA
	DC	500 W	500 W	180 W	180 W	180 W
Minimum switching time		800 ms	800 ms	800 ms	800 ms	800 ms
Protection and measurement						
Earth-leakage protection	by Vigi module	■	■			
	by control unit			■	■	■
	by add-on VigiPact relay	■	■	■	■	■
Current measurements				■	■	■
Voltage, frequency, power measurements, etc.					■	■
Additional indication and control auxiliaries						
Indication contacts		OF + SDE (+ SDV)	3 OF + SDE (+ SDV)	2 OF + SDE	2 OF + SDE	2 OF + SDE
Voltage releases	MX shunt	■	■	■	■	■
	MN undervoltage	■	■	■	■	■
Voltage presence indicator		■	■			
Voltage transformer		■	■			
Ammeter module		■	■			
Insulation monitoring module		■	■			
Installation and connection						
Fixed front connected					■	■
Fixed rear connected		■ (long rear connections)	■ (long rear connections)	■ (vertical or horizontal)	■ (vertical or horizontal)	■ (vertical or horizontal)
Withdrawable, plug-in or drawout		■ (plug-in on base)	■ (plug-in on base)	■ (drawout)	■ (drawout)	■ (drawout)
Installation and connection accessories						
Downstream coupling accessory		■	■			
Bare-cable connectors		■	■	■		
Terminal extensions		■	■			
Terminal shields and inter-phase barriers			■	■		
Front panel escutcheons		■	■	■	■	■
Locking	by padlock	■	■	■	■	■
	by keylock	■	■	■	■	■

D

Switching Devices

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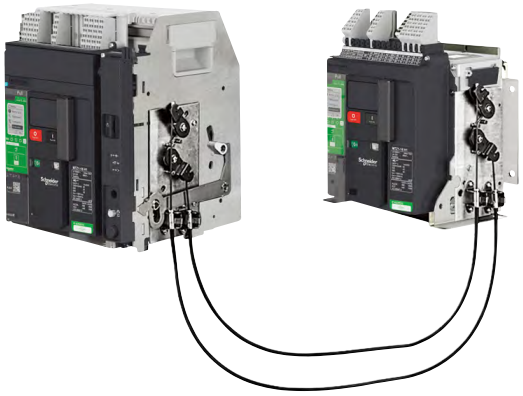
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ComPacT NSX and ComPacT NS class PC and CB	NSX100 to 250	NSX400 to NSX630	NS630b to NS1600
Number of poles	3, 4	3, 4	3, 4
Rated current In (A)	100 to 250	400 to 630	630 to 1600
Mechanical durability (O_N-C_R-O_R-C_N cycles)	20000 - 40000 - 50000	15000	8000
Electrical durability at In (O_N-C_R-O_R-C_N cycles) for ≤ 440 V and 480 V NEMA [2]	10000 - 20000 - 30000	4000 - 6000	2000
Electrical durability at In (O_N-C_R-O_R-C_N cycles) for U = 500 V to 690 V [2]	5000 - 7500 - 10000	2000 - 3000	1500

MasterPacT class PC and CB	MTZ1 06 to 10	MTZ1 12 to 16	MTZ2 08 to 16	MTZ2 20	MTZ2 25 to 40	MTZ3 40 to 63
Number of poles	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Rated current In (A)	630 to 1600	1250 to 1600	800 to 1600	2000	2500 to 4000	4000 to 6300
Mechanical durability [1] (O_N-C_R-O_R-C_N cycles)	8000	8000	10000	10000	10000	5000
Electrical durability at In (O_N-C_R-O_R-C_N cycles) [1] for ≤ 440 V and 480 V NEMA [2]	6000	6000 MTZ1 16: 3000	10000	8000	5000	1500
Electrical durability at In (O_N-C_R-O_R-C_N cycles) [1] for U = 500 V to 690 V [2]	3000	2000 MTZ1 16: 1000	10000	6000	2500	1500

[1] Mechanical and electrical durability not applicable to MasterPacT H3 and L versions.
[2] Electrical durability tests carried out with a power factor of 0.8 as per IEC 947-2.

Note:
ON: opening of N source
CR: closing of R source
OR: opening of R source
CN: closing of N source

D

Switching Devices
Class CB

Range		ComPacT NSX	
Types of devices		NSX100 to NSX250	NSX400 to NSX630
Mixing possibilities		all devices	all devices
		NSX100 to NSX250	NSX100 to NSX630
		N/H/L	N/H/L
		fixed/fixed or plug-in/plug-in	fixed/fixed or plug-in/plug-in
Electrical characteristics			
Current rating		15 to 250 A	15 to 630 A
Insulating voltage Ui (V AC)		750	750
Rated operational voltage			
Positive break indication		■	■
Number of poles (N and R devices must have the same number of poles)		3, 4	3, 4
Operating temperature		-25 °C to +70 °C (50 °C for 440 V - 60 Hz)	
Motor mechanism			
Control voltage	AC	48 V - 50 Hz 110/130, 220/240, 380/440 V - 50/60 Hz	48 V - 50 Hz 110/130, 220/240, 380/440 V - 50/60 Hz
	DC	24-250 V	24-250 V
Maximum consumption	AC	500 VA	500 VA
	DC	500 W	500 W
Minimum switching time		800 ms	800 ms
Protection and measurement			
Earth-leakage protection	by Vigi module	■	■
	by control unit		
	by add-on VigiPact relay	■	■
Current measurements			
Voltage, frequency, power measurements, etc.			
Additional indication and control auxiliaries			
Indication contacts		OF + SDE (+ SDV)	3 OF + SDE (+ SDV)
Voltage releases	MX shunt	■	■
	MN undervoltage	■	■
Voltage presence indicator		■	■
Voltage transformer		■	■
Ammeter module		■	■
Insulation monitoring module		■	■
Installation and connection			
Fixed front connected			
Fixed rear connected		■ (long rear connections)	■ (long rear connections)
Withdrawable, plug-in or drawout		■ (plug-in on base)	■ (plug-in on base)
Installation and connection accessories			
Downstream coupling accessory		■	■
Bare-cable connectors		■	■
Terminal extensions		■	■
Terminal shields and inter-phase barriers			■
Front panel escutcheons		■	■
Locking	by padlock	■	■
	by keylock	■	■

ComPacT NSX	NSX100-250	NSX400 to NSX630
Rated current In (A)	100 to 250	400 to 630
Mechanical durability (O_N-C_R-O_R-C_N cycles) [1]	20000 - 40000 - 50000	15000
Electrical durability at In (O_N-C_R-O_R-C_N cycles) [1] for ≤ 440 V and 480 V NEMA [2]	10000 - 20000 - 30000	4000 - 6000
Electrical durability at In (O_N-C_R-O_R-C_N cycles) [1] for U = 500 V to 690 V [2]	5000 - 7500 - 10000	2000 - 3000

[1] Mechanical and electrical durability not applicable to MasterPacT H3 and L1 versions, please refer to the MasterPacT NT/NW catalog.
[2] Electrical durability tests carried out with a power factor of 0.8 as per IEC 947-2.

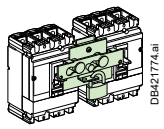
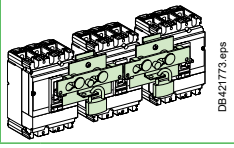
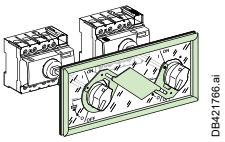
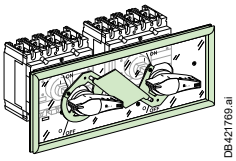
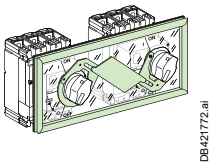
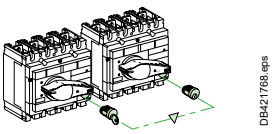
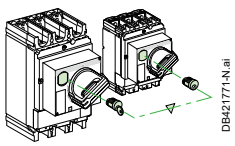
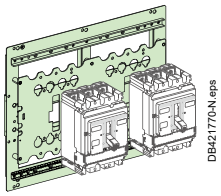
Note:
ON: opening of N source
CR: closing of R source
OR: opening of R source
CN: closing of N source

Switching Devices
Class CB

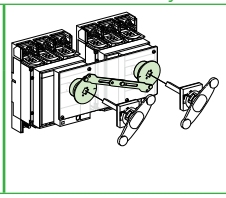
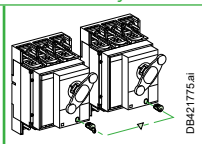
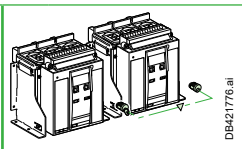
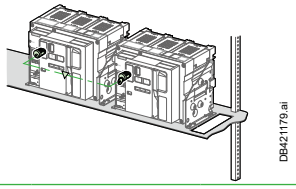
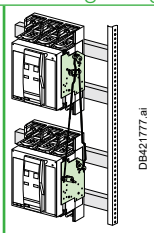
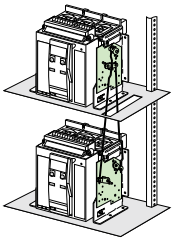
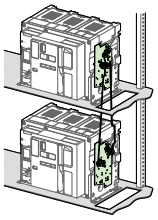
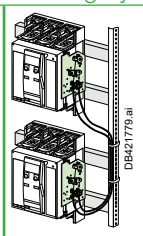
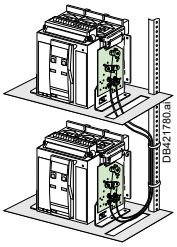
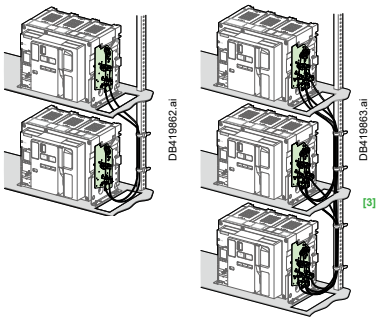
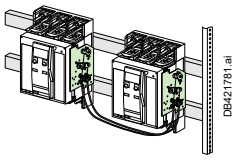
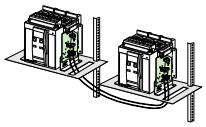
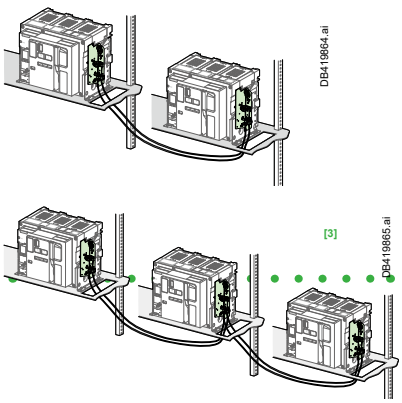
	ComPacT NS	MasterPacT MTZ1	MasterPacT MTZ2/MTZ3
	NS630b to NS1600	MTZ1 06 to 16	MTZ2 08 to 40 and MTZ3 40 to 63
	all devices	all mixing possibilities	all mixing possibilities
	NS630b to 1600	(fixed, drawout or fixed + drawout)	(fixed, drawout or fixed + drawout)
	N/H/L	H1/H2/H3/L1	N1/H1/H2/H3/L1/H10 for MTZ2
	fixed/fixed or plug-in/plug-in		H1/H2 for MTZ3
	250 to 1600 A	600 to 1600 A	800 to 6300 A
	750	1000	1000
		■	■
	3, 4	3, 4	3, 4
		-25 °C to +70 °C	
		48 to 415 V - 50/60 Hz 440 V - 60 Hz	48 to 415 V - 50/60 Hz 440 V - 60 Hz
	24-250 V	24-250 V	24-250 V
	180 VA	180 VA	180 VA
	180 W	180 W	180 W
	800 ms	800 ms	800 ms
	■	■	■
	■	■	■
	■	■	■
		■	■
	2 OF + SDE	2 OF + SDE	2 OF + SDE
	■	■	■
	■	■	■
		■	■
	■ (vertical or horizontal)	■ (vertical or horizontal)	■ (vertical or horizontal)
	■ (drawout)	■ (drawout)	■ (drawout)
	■		
	■		
	■	■	■
	■	■	■
	■	■	■

ComPacT NS	MasterPacT MTZ1/MTZ2/MTZ3					
NS630b to NS1600	**MTZ1 06 to 10**	**MTZ1 12 to 16**	**MTZ2 08 to 16**	**MTZ2 20**	**MTZ2 25 to 40**	**MTZ3 40 to 63**
630 to 1600	630 to 1600	1250 to 1600	800 to 1600	2000	2500 to 4000	4000 to 6300
8000	8000	8000	10000	10000	10000	5000
2000	6000	6000	10000	8000	5000	1500
1500	3000	3000	10000	6000	2500	1500

TransferPacT
Mechanical Interlocking

Range	ComPact		ComPacT
Models	INS40 to INS80 INS100 to INS160	INS250 to INS630 INV250 to INV630	NSX100 to NSX250 NSX400 to NSX630
Current rating (A)	40 to 160	100 to 630	100 to 630
Type of device	Class PC	Class PC	Class PC and Class CB
Interlocking by toggles			
M			 
Interlocking by rotary handles			
M			
Interlocking by keylocks with captive keys			
M			
Interlocking by a base plate			
A			

TransferPacT
Mechanical Interlocking

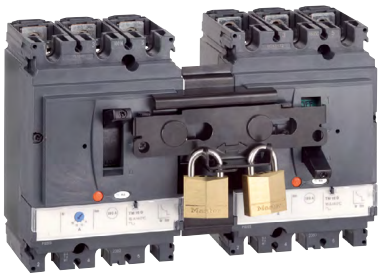
Range	ComPacT	MasterPacT	
Models	NS630b to NS1600	MTZ1 06 to 16	MTZ2 08 to 40 and MTZ3 40 to 63
Current rating (A)	630b to 1600	630 to 1600	800 to 6300
Type of device	Class PC and Class CB	Class PC and Class CB	Class PC and Class CB
Interlocking by extended rotary handles			
M	 DB421783.ai		
Interlocking via device keylocks by captive keys			
M	 DB421775.ai	 DB421776.ai	 DB421179.ai
Mechanical interlocking using connecting rods			
MA	 DB421777.ai [1]	 DB421778.ai	 DB419861.ai
Mechanical interlocking by cables			
MA	 DB421779.ai [1] [2]	 DB421780.ai	 DB419862.ai DB419863.ai [3]
Mechanical interlocking by cables			
MA	 DB421781.ai	 DB421782.ai	 DB419864.ai [3] DB419865.ai

[1] Implemented with NS630b to NS1600 electrically-operated devices only.
[2] For source-changeover systems using cables, always respect the installation conditions specified on.
[3] Not compatible with automatic controller.

Note: for other cases, please consult us.

TransferPacT
Mechanical Interlocking

PB113435.eps

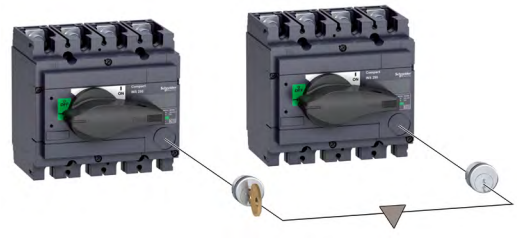


Interlocking of two or three toggle-controlled devices.

PB113418-N.eps

Interlocking of two devices by rotary handles.

PB113829.eps



Interlocking with keylocks.

Interlocking of Two or Three Toggle-Controlled Devices

Interlocking system

Two devices can be interlocked using this system. Two identical interlocking systems can be used to interlock three devices installed side by side.

Authorized positions:

- one device closed (ON), the others open (OFF)
- all devices open (OFF).

The system is locked using one or two padlocks (Ø5 to 8 mm).

This system can be expanded to more than three devices.

There are two interlocking-system models:

- one for ComPacT INS/INV
- one for ComPacT NSX100 to NSX250
- one for ComPacT NSX400 to NSX630.

Combinations of Normal and Replacement devices

All toggle-controlled fixed or plug-in ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors of the same frame size can be interlocked. The devices must be either all fixed or all plug-in versions.

Interlocking of Two Devices By Rotary Handles

Interlocking system

Interlocking involves padlocking the rotary handles on two devices which may be either circuit breakers or switch-disconnectors.

Authorized positions:

- one device closed (ON), the other open (OFF)
- both devices open (OFF).

The system is locked using up to three padlocks (Ø5 to 8 mm).

There are two interlocking-system models:

- one for ComPacT INS/INV
- one for ComPacT NSX100 to NSX250
- one for ComPacT NSX400 to NSX630.

Combinations of Normal and Replacement devices

All rotary-handle fixed or plug-in ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors of the same frame size can be interlocked. The devices must be either all fixed or all plug-in versions.

Interlocking of Devices by Keylocks (Captive Keys)

Interlocking using keylocks is very simple and makes it possible to interlock two or more devices that are physically distant or that have very different characteristics, for example medium-voltage and low-voltage devices or a ComPacT NSX100 to NSX630 switch-disconnector and circuit breaker.

Interlocking system

Each device is equipped with an identical keylock and the key is captive on the closed (ON) device. A single key is available for all devices. It is necessary to first open (OFF position) the device with the key before the key can be withdrawwn and used to close another device.

A system of wall-mounted captive key boxes makes a large number of combinations possible between many devices.

Combinations of Normal and Replacement devices

All rotary-handle ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors can be interlocked between each other or with any other device equipped with the same type of keylock.

TransferPacT
Mechanical Interlocking

Interlocking of Two Devices by Base Plate

Interlocking system

A base plate designed for two ComPacT NSX devices can be installed horizontally or vertically on a mounting rail. Interlocking is carried out on the base plate by a mechanism located behind the devices. In this way, access to the device controls and trip units is not blocked.

Combinations of Normal and Replacement devices

All rotary-handle and toggle-controlled ComPacT NSX100 to NSX630 circuit breakers and switch-disconnectors can be interlocked. Devices must be either all fixed or all plug-in versions, with or without earth-leakage protection or measurement modules.

An adaptation kit is required to interlock:

- two plug-in devices
- a ComPacT NSX100 to NSX250 with an NSX400 to NSX630.

Connection to the downstream installation can be made easier using a coupling accessory.

Downstream coupling accessory

This accessory simplifies connection to bars and cables with lugs.

It may be used to couple two switch-disconnectors and circuit breakers of the same size, ComPacT INS/INV100 to 630 and ComPacT NSX100 to 630.

Pitch between outgoing terminals:

- ComPacT INS250 and INV100 to 250: 35 mm
- ComPacT INS/INV320 to INS/INV630: 45 mm
- ComPacT NSX100 to NSX250: 35 mm
- ComPacT NSX400 to NSX630: 45 mm.

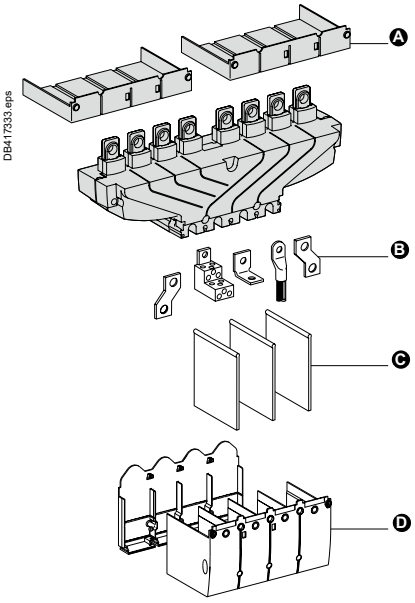
For ComPacT NSX circuit breakers, the downstream coupling accessory can be used only with **fixed versions**.

Connection and Insulation Accessories

The coupling accessory can be fitted with the same connection and insulation accessories as the circuit breakers and switch-disconnectors.

Possible uses	Downstream coupling	
	Possible mounting	Outgoing pitch (mm)
Manual source-changeover systems		
INS250 (100 to 250 A) with rotary handle	■	35
NSX100 to NSX250 with rotary handle	■	35
NSX100 to NSX250 on base plate with toggle control	■	35
INS400 to INS630 (320 to 630 A) with rotary handle	■	45
NSX400 to NSX630 with rotary handle	■	45
NSX400 to NSX630 on base plate with toggle control	■	45

Interlocking on a base plate.



A Short terminal shields
B Terminals
C Interphase barriers
D Long terminal shields

D

TransferPacT
Mechanical Interlocking

For implementing the mechanical interlocking, two different possibilities are offered:
- interlocking with rods
- interlocking with cables.

Note: for mechanical interlocking application with connecting rods and cables, pushbutton cover is mandatory to prevent wrong mechanical close order.
Commercial references for pushbutton cover:
- MasterPacT MTZ1 : LV833897
- MasterPacT MTZ2 and MTZ3 : LV848536
- ComPacT NS630b to 1600: 33897

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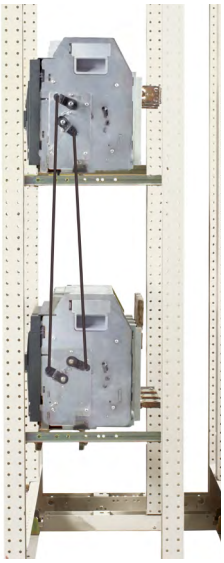


Interlocking of two MasterPacT MTZ1, MTZ2/MTZ3 circuit breakers using connecting rods.

Interlocking with Rods

Interlocking of Two ComPacT NS630b to 1600 Devices Using Connecting Rods

Both devices must be installed one above the other.
For ComPacT NS, only associations between similar type devices are allowed (2 fixed or 2 drawout devices).

Installation
This function requires:
- an adaptation fixture on the right side of each circuit breaker or switch-disconnector
- a set of connecting rods with no-slip adjustments.

The adaptation fixtures, connecting rods and circuit breakers or switch-disconnectors are supplied separately, ready for assembly.
The maximum vertical distance between the fixing plates is 900 mm.

Possible combinations of "S1" and "S2" source circuit breakers
Combinations are possible between ComPacT NS devices and between ComPacT NS devices with MasterPacT MTZ1 devices (either 2 fixed or 2 withdrawable/drawout devices).

Interlocking of Two MasterPacT MTZ Using Connecting Rods

Both devices must be installed one above the other.
For MasterPacT MTZ1 only associations between similar type devices are allowed (2 fixed or 2 drawout devices).
For MasterPacT MTZ2 and MTZ3, all mixed associations between fixed type and drawout type devices are possible.

	Source 2							
	Fixed				Drawout			
Source 1	NS630b to NS1600	MTZ1	MTZ2	MTZ3	NS630b to NS1600	MTZ1	MTZ2	MTZ3
Fixed								
NS630b to NS1600	◉	◉						
MTZ1	◉	◉						
MTZ2			◉	◉			◉	◉
MTZ3			◉	◉			◉	◉
Drawout								
NS630b to NS1600					◉	◉		
MTZ1					◉	◉		
MTZ2			◉	◉			◉	◉
MTZ3			◉	◉			◉	◉

Installation
This function requires:
- an adaptation fixture on the right side of each circuit breaker or switch-disconnector
- a set of connecting rods with no-slip adjustments
- a mechanical operation counter CDM (mandatory).

The adaptation fixtures, connecting rods, circuit breakers and switch-disconnectors are supplied separately, ready for assembly.
The maximum vertical distance between the fixing plates is 900 mm.

TransferPacT
Mechanical Interlocking

Interlocking with Cables

Interlocking of Two ComPacT NS630b to 1600 Devices Using Cables

For cable interlocking, the circuit breakers may be mounted one above the other or side-by-side.
The interlocked devices may be fixed or drawout, three-pole or four-pole, and have different ratings and sizes.

Installation
This function requires:
- an adaptation fixture on the right side of each device
- a set of cables with no-slip adjustments.

The maximum distance between the fixing plates (vertical or horizontal) is 2000 mm.

Possible combinations of "S1" and "S2" source circuit breakers
All mixed associations between ComPacT NS 630b to 1600 and MasterPacT MTZ1 or MTZ2 or MTZ3 fixed type and drawout type devices are possible.

Interlocking of Two or Three MasterPacT MTZ Using Cables

For cable interlocking, the circuit breakers can be installed either one above the other or side-by-side. All mixed associations between MasterPacT MTZ1, MTZ2, MTZ3 fixed type and drawout type devices are possible.
Note: mechanical interlocking for 3 devices is only possible with MTZ2 and MTZ3.

Interlocking between two MasterPacT MTZ1, MTZ2, MTZ3 devices
This function requires:
- an adaptation fixture on the right side of each device
- a set of cables without slip adjustments
- a mechanical operation counter CDM (mandatory).

The maximum distance between the fixing plates (vertical or horizontal) is 2000 mm.

Interlocking between three MasterPacT MTZ2, MTZ3 devices
This function requires:
- a specific adaptation fixture installed on the right side of each device
- two sets of cables without slip adjustments
- a mechanical operation counter CDM (mandatory).

The maximum distance between the fixing plates (vertical or horizontal) is 1000 mm.

Installation
The adaptation fixtures, sets of cables and circuit breakers or switch-disconnectors are supplied separately, ready for assembly.
Installation conditions for cable interlocking systems:
- cable length: 2.5 m
- cable bending radius: greater than 100 mm
- maximum number of curves: 3.

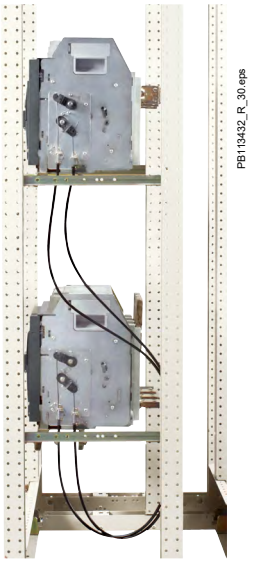
Note: for cable length higher than 2.5 m please consult us before ordering the circuit breakers for a customized solution.

Choice Criteria

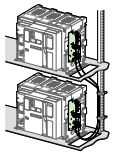
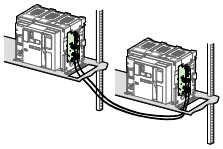
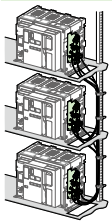
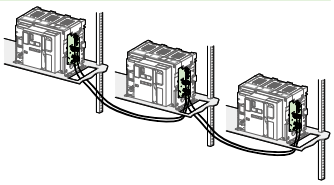
In applications where the continuity of service is critical[1] (data centers, airports, hospitals, marine, oil&gas, process industry, etc.), mechanical interlocking by rods and drawout devices are strongly recommended.
Mechanical interlocking by rods is preferred as less energy is consumed by friction, so it has less effect on the circuit breaker closing energy.
In terms of breaker mounting type, the drawout version is preferred as :
- it provides mechanical isolation of the circuit breaker from possible external stress on the terminals by having a flexible connection at cluster level
- it allows simple and total access for periodic maintenance
- it allows quick replacement of the device if necessary.

When not possible, cable interlocking or fixed versions can be used, but the installation rules detailed in the 2 sections below must be strictly respected and mainly:
- the busbars or the cables used for power connection must apply no stress on the circuit breaker terminals.

Their weight must be supported by the switchboard frame.



Interlocking of two MasterPacT circuit breakers using cables.

Vertical	Horizontal
2 devices MTZ1 - MTZ2 - MTZ3	
	
3 devices MTZ2 - MTZ3	
	

[1] For more details please contact your local support.
Note: for more details on installation rules, please also refer to "MasterPacT MTZ User Guide".

TransferPacT
Electrical Interlocking - IVE unit

Electrical interlocking is used with a mechanical interlocking system. Morover, the relays controlling the closing order to the “N” and “R” circuit breakers must be mechanically and/or electrically interlocked to prevent them from giving simultaneous closing commands.

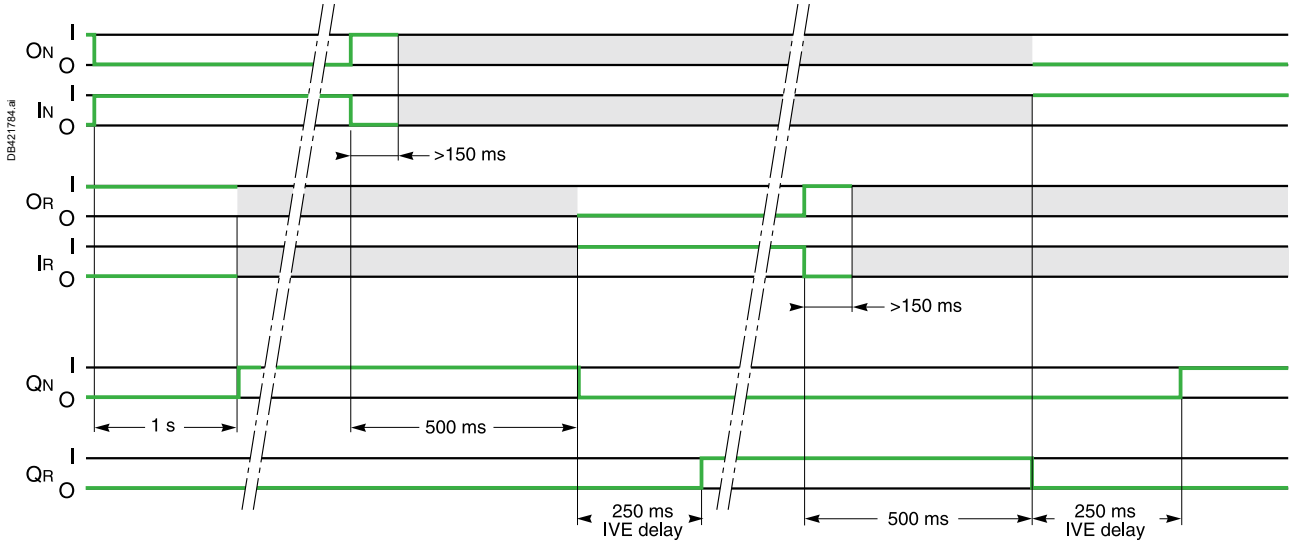
IVE unit.

Electrical interlocking is carried out by an electrical control device.
For ComPacT NSX up to 630 A, electrical interlocking is implemented by the IVE unit integrating control circuits and an external terminal block in accordance with the page D-47 of the chapter “Electric diagrams” of this catalog.
The integrated control circuits implement the time delays required for correct source transfer.
For ComPacT NS630b to NS1600 and MasterPacT, this function can be implemented in one of two ways:
- Using the IVE unit
- By an electrician based on the diagrams in accordance with the pages D-61 to D-70 of the chapter “Electric diagrams” of this catalog.

Characteristics of the IVE unit
- External connection terminal block:
  - Inputs: circuit breaker control signals
  - Outputs: status of the SDE contacts on the “N” and “R” source circuit breakers.
- 2 connectors for the two “N” and “R” source circuit breakers:
  - Inputs:
    - Status of the OF contacts on each circuit breaker (ON or OFF)
    - Status of the SDE contacts on the “N” and “R” source circuit breakers
  - Outputs: power supply for operating mechanisms.
- Control voltage:
  - 24 to 250 V DC
  - 48 to 415 V 50/60 Hz - 440 V 60 Hz.

The IVE unit control voltage must be same as that of the circuit breaker operating mechanisms.

IVE Unit



Symbols

QN: “Normal” ComPacT circuit breaker equipped for remote operation (motor mechanism)
QR: “Replacement” ComPacT circuit breaker equipped for remote operation (motor mechanism)
ON: Circuit breaker QN opening order
OR: Circuit breaker QR opening order
IN: Circuit breaker QN closing order
IR: Circuit breaker QR closing order
L1: Faulty “Normal” indication LED
L2: Faulty “Replacement” indication LED

Key
O: OFF (circuit open)
I: ON (circuit closed)
: either ON or OFF.

Note: following all trips (overload, short-circuit, earth-leakage fault, voluntary trip), a manual reset on the front of the motor mechanism is required.

TransferPacT
Electrical Interlocking - IVE unit

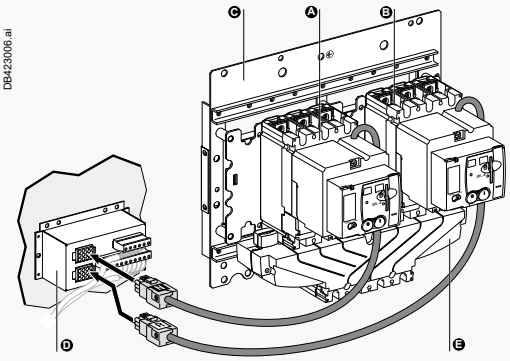
Necessary Equipment

For ComPacT NSX100 to NSX630, each circuit breaker must be equipped with:
- A motor mechanism
- An OF contact
- An SDE contact

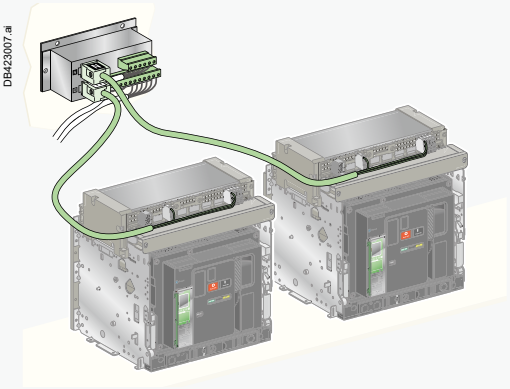
The components are supplied ready for assembly and the circuit breakers prewired. The prewiring must not be modified.

For ComPacT NS630b to NS1600, each circuit breaker must be equipped with:
- A motor mechanism
- An available OF contact
- A CE connected-position contact (carriage switch) on withdrawable circuit breakers
- An SDE contact

For MasterPacT MTZ, each circuit breaker must be equipped with:
- A remote-operation system made up of:
  - MCH gear motor
  - MX or MN opening release
  - XF closing release
  - PF “ready to close” contact
- CDM mechanical operation counter (mandatory)
- An available OF contact
- One to three CE connected-position contacts (carriage switches) on drawout circuit breakers (depending on the installation).



ComPacT NSX



MasterPacT MTZ

- **A** Circuit breaker QS1 equipped with a motor mechanism and auxiliary contacts, connected to the N source
- **B** Circuit breaker QS2 equipped with a motor mechanism and auxiliary contacts, connected to the R source
- **C** Base plate with mechanical interlocking
- **D** Electrical interlocking unit IVE
- **E** Coupling accessory (downstream connection)

D

TransferPacT Controllers
Controller Selection

By combining a remote-operated source-changeover system with an integrated BA or UA automatic controller, it is possible to automatically control source transfer according to user-selected sequences.
These controllers can be used on source-changeover systems comprising 2 circuit breakers.
For source-changeover systems comprising 3 circuit breakers, the automatic control diagram must be prepared by the installer as a complement to to diagrams provided in the “electrical diagrams” section of this catalog.

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BA controller.

DB403810.eps

UA controller.

Controller		BA	UA
Compatible circuit breakers		All ComPact NS, ComPact NSX and MasterPacT circuit breakers	
4-position switch			
Automatic operation		◉	◉
Forced operation on “Normal” source		◉	◉
Forced operation on “Replacement” source		◉	◉
Stop (both “Normal” and “Replacement” sources off)		◉	◉
Automatic operation			
Monitoring of the “Normal” source and automatic transfer		◉	◉
Generator set startup control			◉
Delayed shutdown (adjustable) of generator set			◉
Load shedding and reconnection of non-priority circuits			◉
Transfer to the “Replacement” source if one of the phases of the “Normal” phase is absent			◉
Test			
By opening the P25M circuit breaker supplying the controller		◉	
By pressing the test button on the front of the controller			◉
Indications			
Circuit breaker status indication on the front of the controller: on, off, fault trip		◉	◉
Automatic mode indicating contact		◉	◉
Other functions			
Selection of type of “Normal” source: single-phase or three-phase (for example, 220 V single-phase or 220 V three-phase)			◉
Voluntary transfer to “Replacement” source (e.g. energy management commands)		◉	◉
During peak-tariff periods (energy management commands) forced operation on “Normal” source if “Replacement” source not operational			◉
Additional contact (not part of controller). Transfer to “Replacement” source only if contact is closed (e.g. used to test the frequency of UR).		◉	◉
Setting of maximum startup time for the replacement source			◉
Power supply			
Control voltages [1]	110 V	◉	◉
	220 to 240 V 50/60 Hz	◉	◉
	380 to 415 V 50/60 Hz and 440 V 60 Hz	◉	◉
Operating thresholds			
Undervoltage	0.35 Un ⩽ voltage ⩽ 0.7 Un	◉	◉
Phase failure	0.5 Un ⩽ voltage ⩽ 0.7 Un		◉
Voltage presence	voltage ⩾ 0.85 Un	◉	◉
IP degree of protection (EN 60529) and IK degree of protection against external mechanical impacts (EN 50102)			
Front	IP40	◉	◉
Side	IP30	◉	◉
Connectors	IP20	◉	◉
Front	IK07	◉	◉
Characteristics of output contacts (dry, volt-free contacts)			
Rated thermal current (A)	8		
Minimum load	10 mA at 12 V		
Output contacts:	Position of the Auto/Stop switch	◉	◉
	Load shedding and reconnection order		◉
	Generator set start order.		◉

		AC				DC	
Utilisation category (IEC 947-5-1)		AC12	AC13	AC14	AC15	DC12	DC13
Operational current (A)	24 V	8	7	5	5	8	2
	48 V	8	7	5	5	2	-
	110 V	8	6	4	4	0.6	-
	220/240 V	8	6	4	3	-	-
	250 V	-	-	-	-	0.4	-
	380/415 V	5	-	-	-	-	-
	440 V	4	-	-	-	-	-
	660/690 V	-	-	-	-	-	-

[1] The controller is powered by the ACP control plate. The same voltage must be used for the ACP plate, the IVE unit and the circuit breaker operating mechanisms.
If this voltage is the same as the source voltage, then the “Normal” and “Replacement” sources can be used directly for the power supply.
If not, an isolation transformer must be used.

TransferPacT Controllers
Controller Installation

TransferPacT ACP Control Plate

The control plate provides in a single unit:
- protection for the BA or UA controller with two highly limiting P25M circuit breakers (infinite breaking capacity) for power drawn from the AC source
- control of circuit breaker ON and OFF functions via two relay contactors
- connection of the circuit breakers to the BA or UA controller via a built-in terminal block.

Control voltages
- 110 V 50/60 Hz.
- 220 to 240 V 50/60 Hz.
- 380 to 415 V 50/60 Hz and 440 V 60 Hz.

The same voltage must be used for the TransferPacT ACP control plate, the controller and the circuit breaker operating mechanisms.

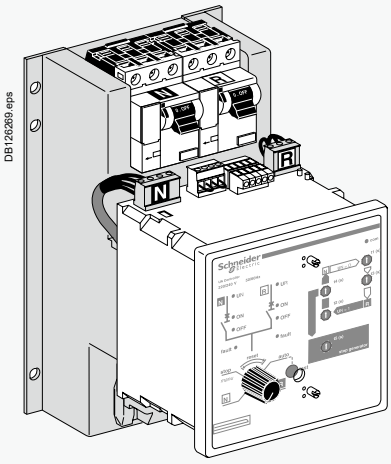
Installation

Connection between the TransferPacT ACP control plate and the IVE unit may use:
- wiring done by the installer
- prefabricated wiring (optional).

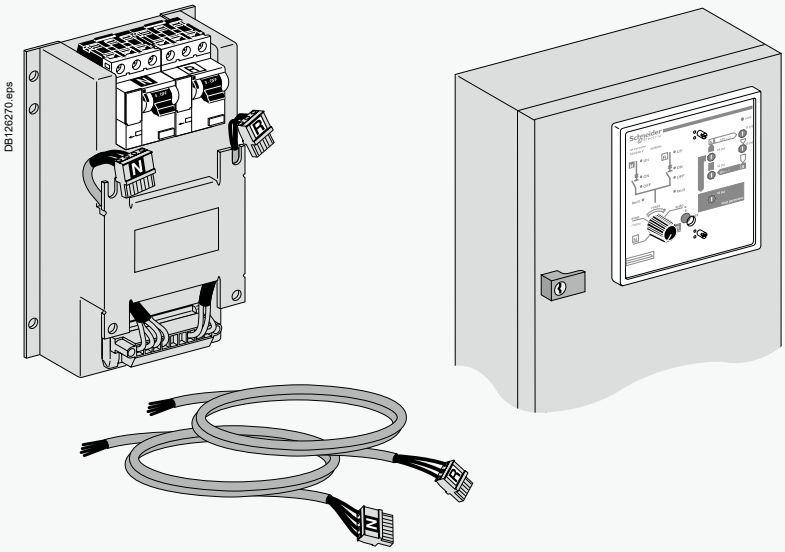
Installation of the BA and UA Controllers

The BA and UA controllers may be installed in one of two manners:
- directly mounted on the TransferPacT ACP control plate
- mounted on the front panel of the switchboard
- if the length of the connection between the controller and the control plate (ACP) is less than or equivalent to 1 m, the connecting cable **ref. 29368** can be ordered as an optional extra. Cables longer than 1 m, but not longer than 2 m will be the responsibility of the installer.

TransferPacT ACP control plate.



Mounting on the TransferPacT ACP control plate.



Mounting on the front panel of the switchboard.

TransferPacT Controllers
BA Controller

The BA controller is used to create simple source-changeover systems that switch from one source to another depending on the presence of voltage UN on the “Normal” source.
It is generally used to manage two permanent sources and can control ComPact NS, ComPact NSX and MasterPacT MTZ circuit breakers and switch-disconnectors.

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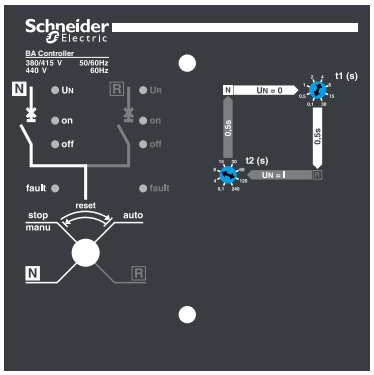


Front of the BA controller.

Operating Modes

A four-position switch may be used to select:
- automatic operation
- forced operation on the “Normal” source
- forced operation on the “Replacement” source
- stop (both “Normal” and “Replacement” sources off).

Setting the Time Delays

Time delays are set on the front of the controller.
t1. delay between detection that the “Normal” source has failed and the transmission of the order to open the “Normal” source circuit breaker (adjustable from 0.1 to 30 seconds).
t2. delay between detection that the “Normal” source has returned and the transmission of the order to open the “Replacement” source circuit breaker (adjustable from 0.1 to 240 seconds).

Circuit Breaker Commands and Status Indications

The status of the circuit breakers is indicated on the front of the controller.
- ON, OFF, fault.

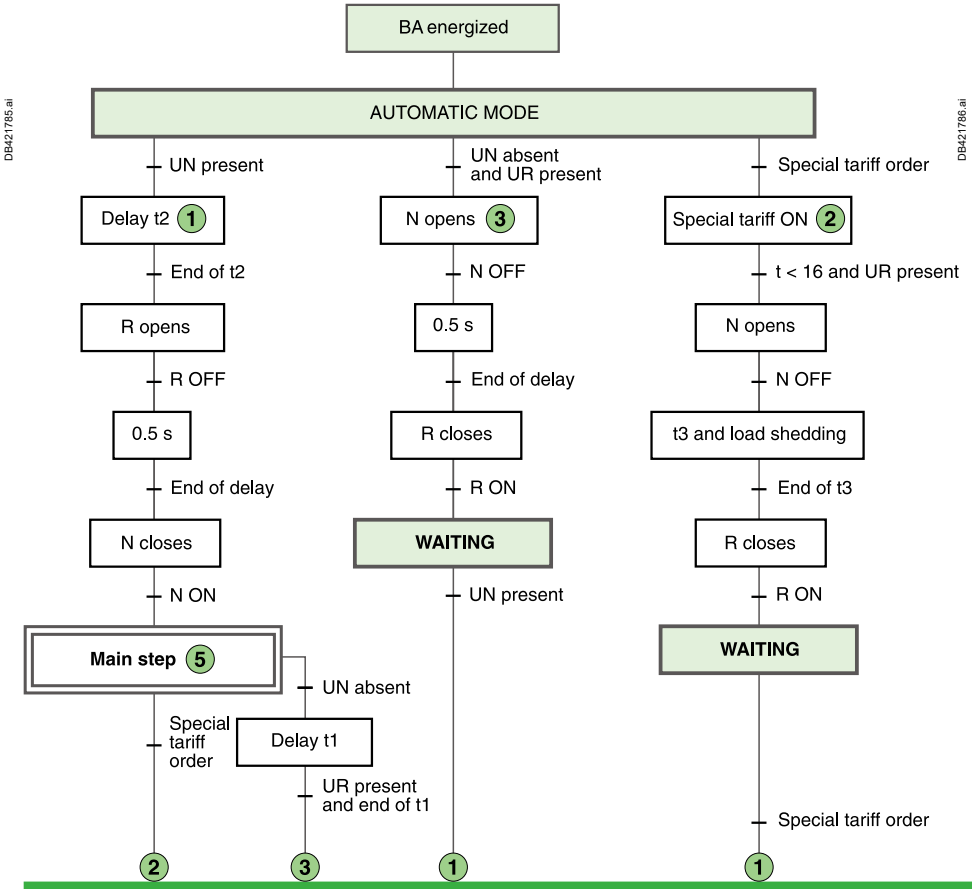
A built-in terminal block may be used to connect the following input/output signals:
- inputs:
  - voluntary order to transfer to source R (e.g. for special tariffs, etc.)
  - additional control contact (not part of the controller). Transfer to the “Replacement” source takes place only if the contact is closed (e.g. used to test the frequency of UR, etc.)
- outputs:
  - indication of operation in automatic or stop mode via changeover contacts.

Test

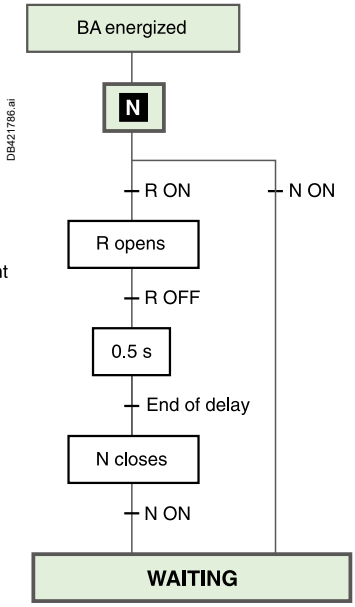
It is possible to test the operation of the BA controller by turning OFF (opening) the P25M circuit breaker for the “Normal” source and thus simulating a failure of voltage UN.

TransferPacT Controllers
BA Controller
Operating Sequences

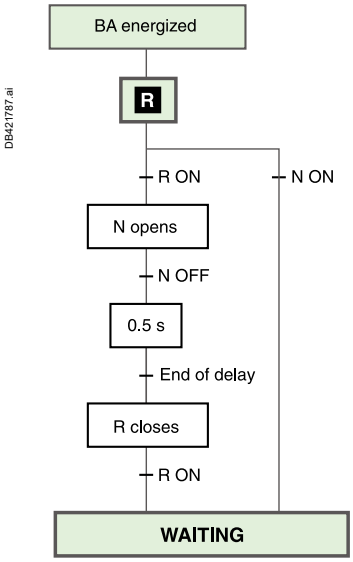
Switch Set to Auto (automatic operation and special-tariff mode)



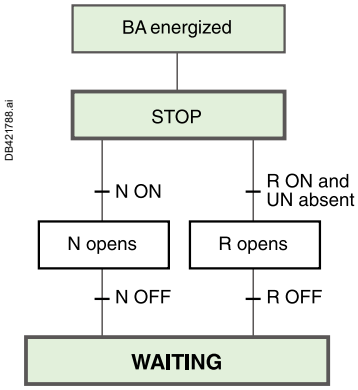
Switch Set to the "N" Position (forced operation on the "Normal" source)



Switch set to the "R" position (forced operation on the "Replacement" source)



Switch set to the "Stop" position



Key
UN: "Normal" source voltage
UR: "Replacement" source voltage
N : "Normal" source circuit breaker
R: "Replacement" source circuit breaker

WAITING The system exits this mode when the operating mode is modified or when an external event occurs (e.g. failure or return of UN).

(1) The number sends to the indicated step when the condition is true.

TransferPacT Controllers
UA controller

The UA controller is used to create a source-changeover system integrating the following automatic functions:
- transfer from one source to another depending on the presence of voltage UN on the “Normal” source
- startup of an engine generator set
- shedding and reconnection of non-priority circuits
- transfer to the “Replacement” source if one of the phases on the “Normal” source fails.

The UA controller can control ComPact NS, ComPact NSX and MasterPacT MTZ devices.

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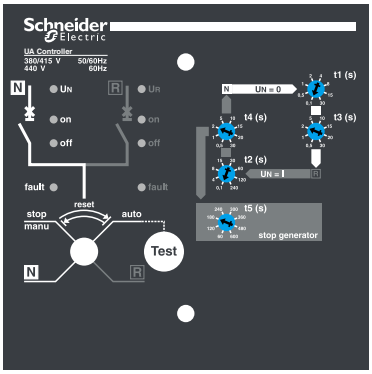


Front of the UA controller.

Operating Modes

A four-position switch may be used to select:
- automatic operation
- forced operation on the “Normal” source
- forced operation on the “Replacement” source
- stop (both “Normal” and “Replacement” sources off, then manual operation).

Setting the Time Delays

Time delays are set on the front of the controller.

t1. delay between detection that the “Normal” source has failed and the transmission of the order to open the “Normal” source circuit breaker (adjustable from 0.1 to 30 seconds).

t2. delay between detection that the “Normal” source has returned and the transmission of the order to open the “Replacement” source circuit breaker (adjustable from 0.1 to 240 seconds).

t3. delay following opening of QN with load shedding and before closing of QR (adjustable from 0.5 to 30 seconds).

t4. delay following opening of QR with load reconnection and before closing of QN (adjustable from 0.5 to 30 seconds).

t5. delay for confirmation that UN is present before shutting down the engine generator set (adjustable from 60 to 600 seconds).

t6. delay before startup of the engine generator set (120 or 180 seconds).

Commands and Indications

Circuit breaker status indications on the front of the controller:
- ON, OFF, fault.

A built-in terminal block may be used to connect the following input/output signals:
- inputs:
  - voluntary order to transfer to source R (e.g. for special tariffs, etc.)
  - additional control contact (not part of the controller). Transfer to the “Replacement” source takes place only if the contact is closed (e.g. used to test the frequency of UR, etc.)
- outputs:
  - control of an engine generator set (ON / OFF)
  - shedding of non-priority circuits
  - indication of operation in automatic mode via changeover contacts.

Distribution-System Settings

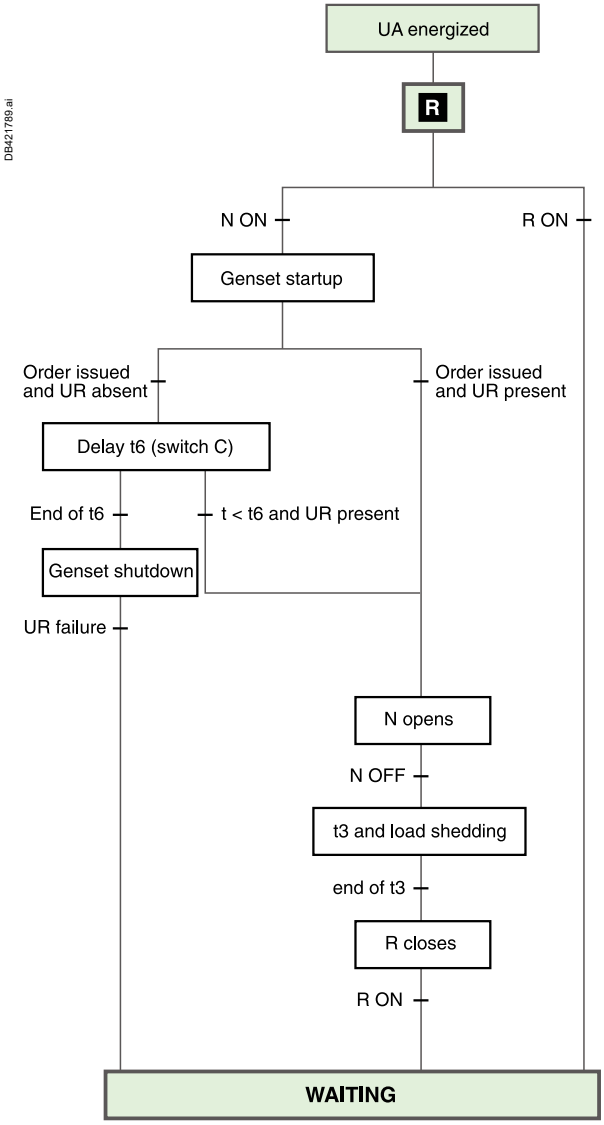
Three switches are used to:
- select the type of “Normal” source, whether single-phase or three-phase (e.g. 240 V single-phase or 240 V three-phase)
- select whether to remain (or not) on the “Normal” source if the “Replacement” source is not operational during operation on special tariffs
- select the maximum permissible startup time for the engine generator set during operation on special tariffs (120 or 180 seconds).

Test

A pushbutton on the front of the controller may be used to test transfer from the “Normal” source to the “Replacement” source, then the return to the “Normal” source. The test lasts approximately three minutes.

TransferPacT Controllers
UA Controller
Operating Sequences, Forced Operation Mode

Switch set to the "R" position (forced operation on the "Replacement" source)

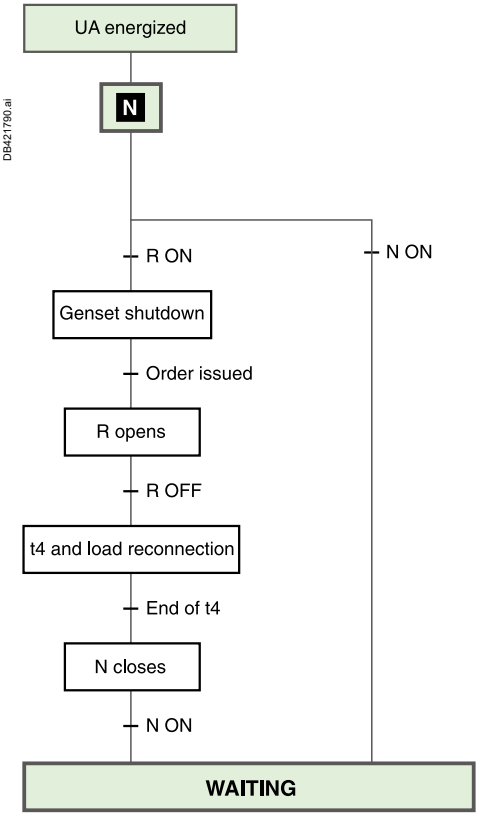


WAITING The system exits this mode when the operating mode is modified or when an external event occurs (e.g. failure or return of UN).

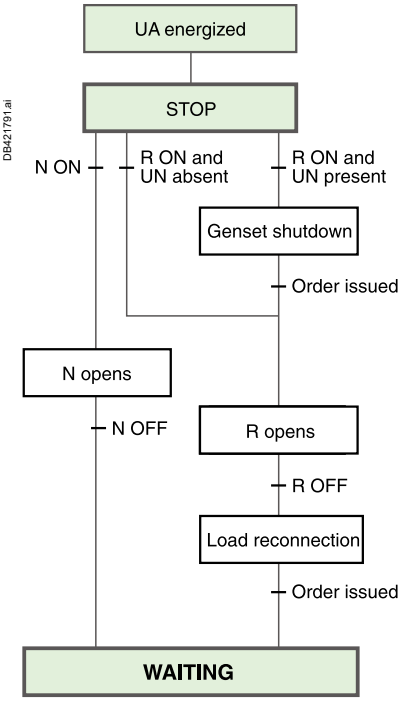
When the UA controller is not energized, the output for generator set startup is activated).

Key
UN: "Normal" source voltage
UR: "Replacement" source voltage
N : "Normal" source circuit breaker
R: "Replacement" source circuit breaker

Switch set to the "N" position (forced operation on the "Normal" source)



Switch set to the "Stop" position



D

TransferPacT Controllers

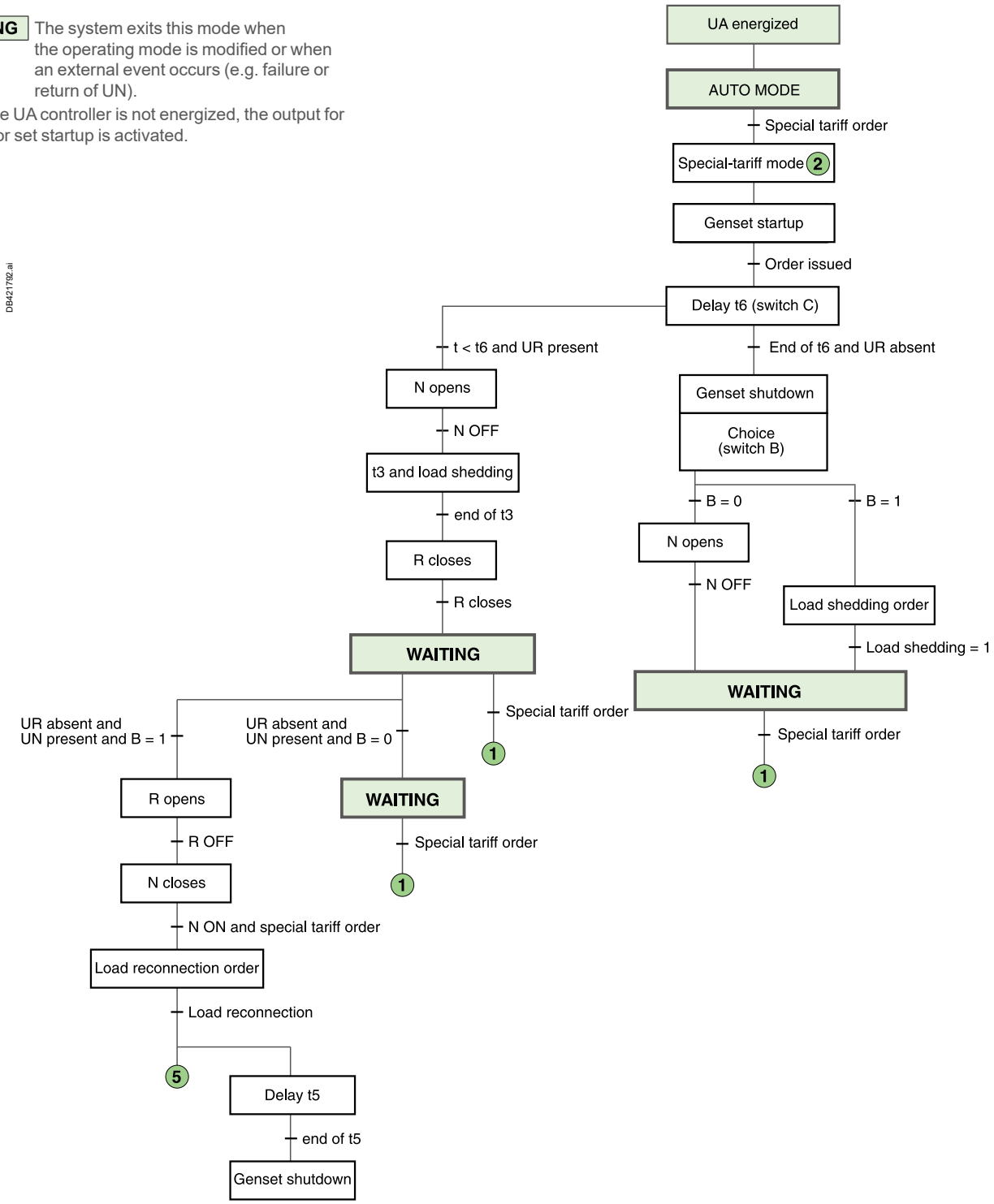
UA Controller

Operating Sequences, Special-Tariff Mode

Switch Set to the “Auto” Position (special-tariff mode)

WAITING The system exits this mode when the operating mode is modified or when an external event occurs (e.g. failure or return of UN).

When the UA controller is not energized, the output for generator set startup is activated.



Key

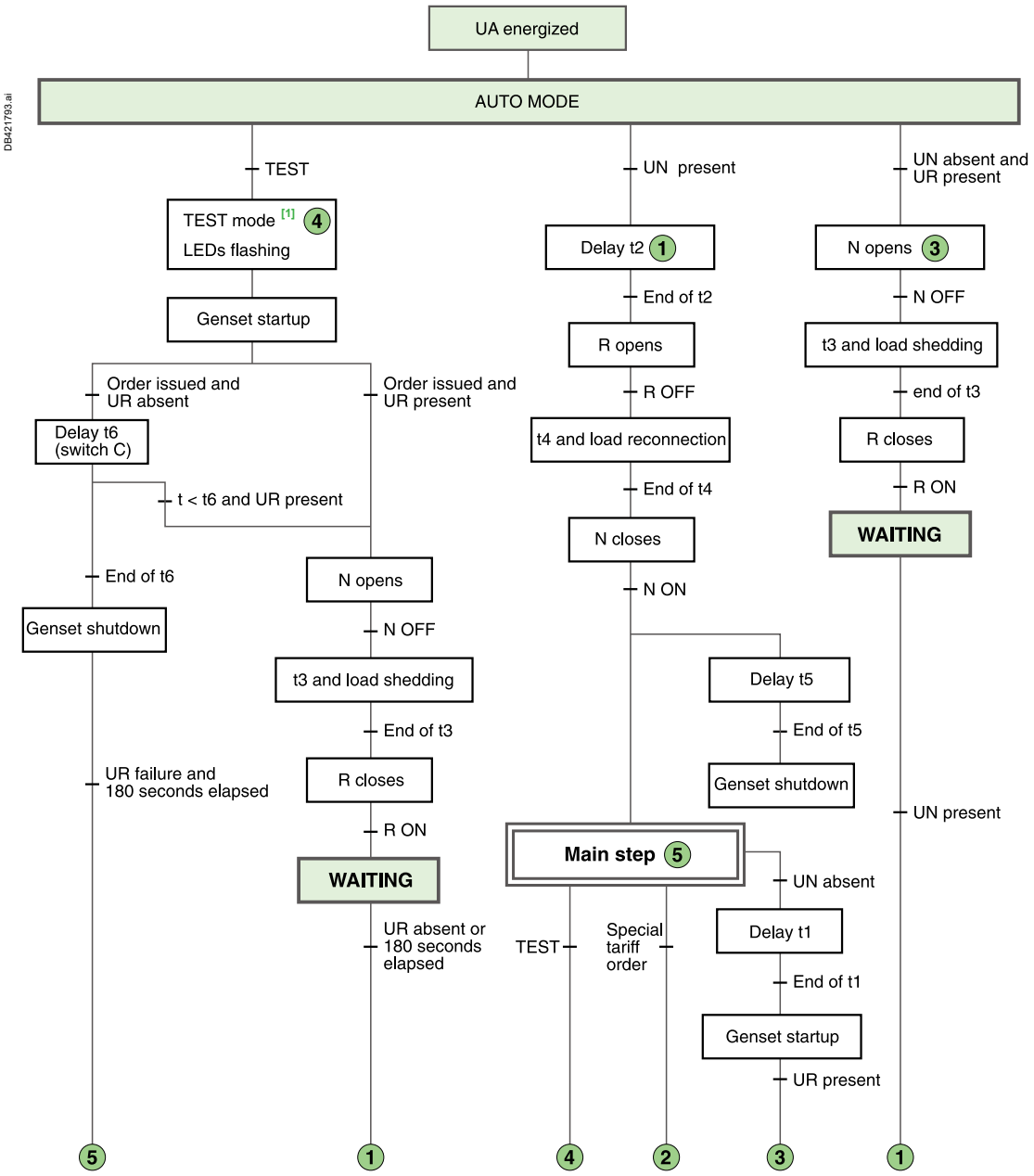
UN: “Normal” source voltage
UR: “Replacement” source voltage
N: “Normal” source circuit breaker
R: “Replacement” source circuit breaker
B: Penalties accepted (N ON), i.e. B = 1
(1) The number sends to the indicated step when the condition is true.

TransferPacT Controllers

UA Controller

Operating Sequences, Test Mode and Automatic Operation

Switch Set to the "Auto" Position (automatic operation and test mode).



WAITING The system exits this mode when the operating mode is modified or when an external event occurs (e.g. failure or return of UN).

When the UA controller is not energized, the output for generator set startup is activated).

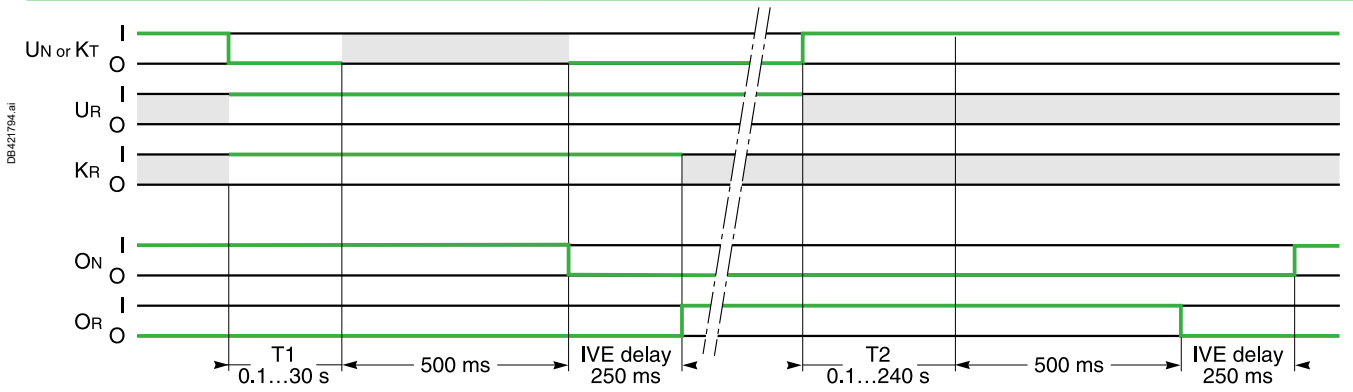
Key

UN: "Normal" source voltage
UR: "Replacement" source voltage
N: "Normal" source circuit breaker
R: "Replacement" source circuit breaker
B: Penalties accepted (N ON), i.e. B = 1
[1] The test lasts 180 seconds.

(1) The number sends to the indicated step when the condition is true.

TransferPacT Controllers
UA/BA Controller

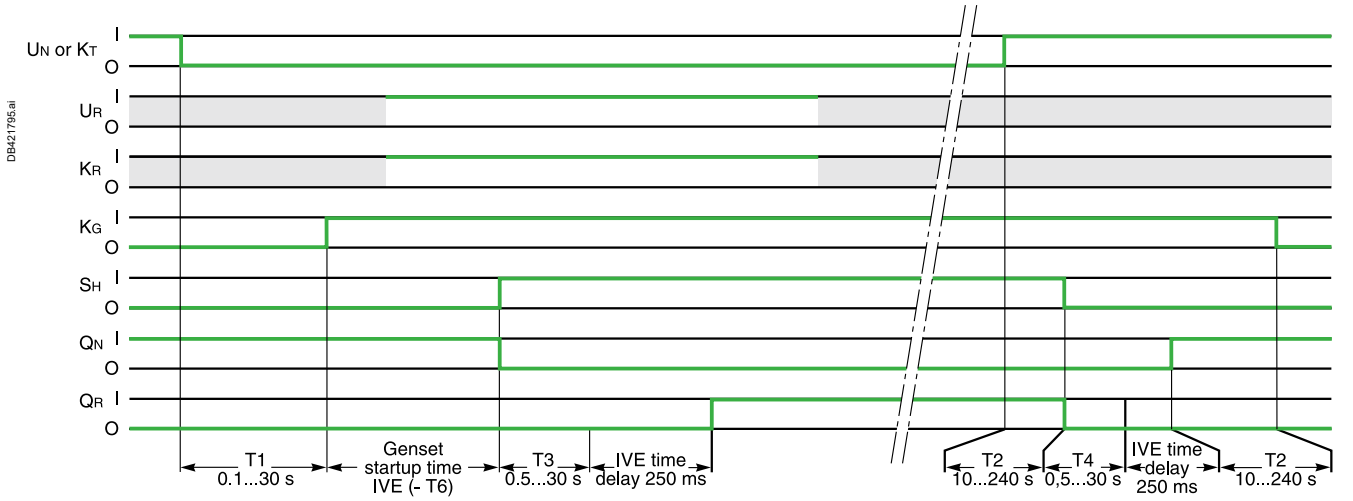
BA Controller



Inputs
UN: “Normal” source voltage
UR: “Replacement” source voltage
KT: order for forced-operation on R
KR: additional check before transfer

Outputs
QN: “Normal” source circuit breaker
QR: “Replacement” source circuit breaker

UA Controller



Inputs
UN: “Normal” source voltage
UR: “Replacement” source voltage
KT: order for forced-operation on R

Outputs
KG: order to the genset
SH: load-shedding order
QN: “Normal” source circuit breaker
QR: “Replacement” source circuit breaker

Key
O: OFF (circuit open)
I: ON (circuit closed
: either ON or OFF.

Important
If UR is not ON when the transfer order is issued (KT or UN), the sequence is not carried out. If KR status is not ON when the transfer order is issued (KT or UN), the transfer sequence is carried out later when KR status becomes I.

D

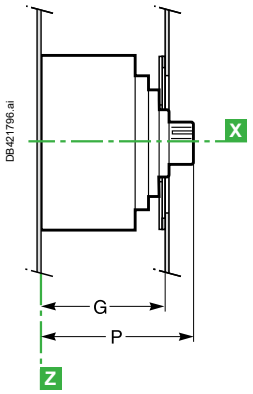
Manual Source-Changeover Systems

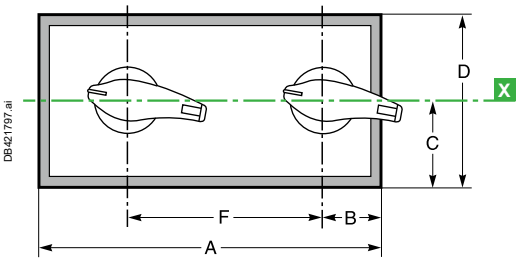
ComPacT INS/INV

Class PC

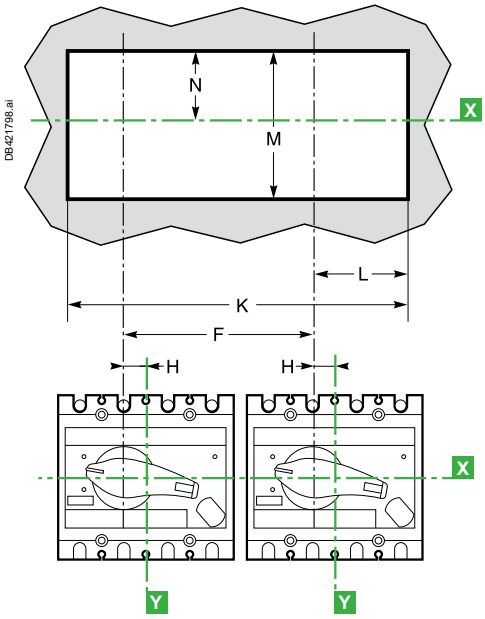
Interlocking of Direct Rotary Handles (ComPacT INS/INV250 - 100 to 250 A / ComPacT INS/INV320/400/500/630)

Dimensions





Front-Panel Cutout



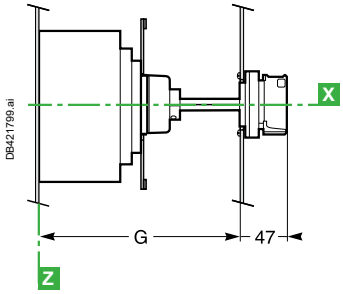
Dimensions (mm)

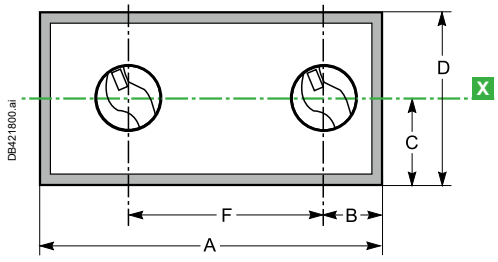
Type	A	B	C	D	F	G	H	K	L	M	N	P
INS/INV250 - 100 to 250 A	325	90	87.5	175	156	106	17.5	295	75.5	150	75	131
INS/INV320/400/500/630	416	115	100	200	210	130	22.5	386	100	175	74.5	160.4

Note: X and Y are the symmetry planes for a 3-pole device.

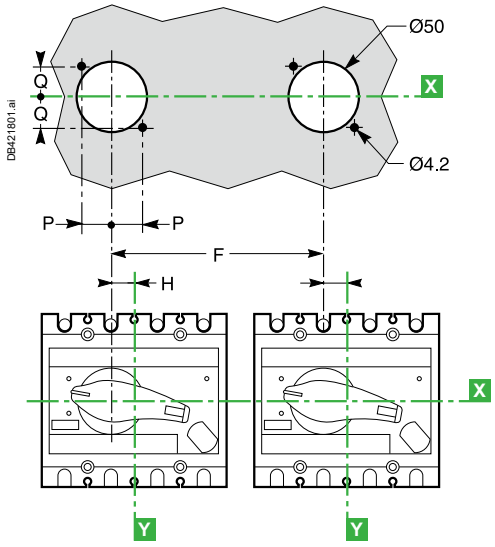
Interlocking of Extended Rotary Handles (ComPacT INS40/63/80/100/125/160 / ComPacT INS/INV250 - 100 to 250 A / ComPacT INS/INV320/400/500/630)

Dimensions





Front-Panel Cutout



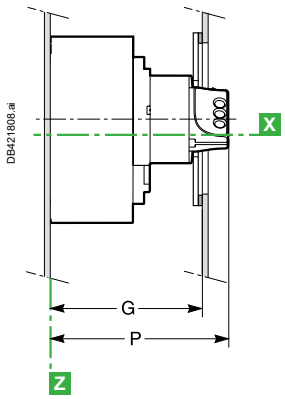
Dimensions (mm)

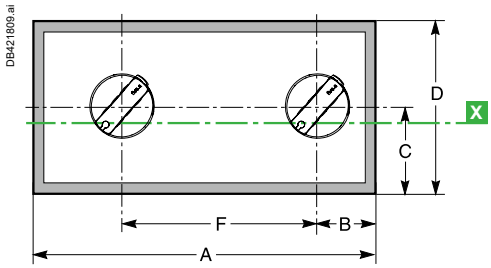
Type	A	B	C	D	F	G min	G max	H	P	Q
INS40/63/80	325	90	87.5	175	156	155	396	0	25.5	25.5
INS100/125/160	325	90	87.5	175	156	200	441	0	25.5	25.5
INS/INV250 - 100 to 250 A	325	90	87.5	175	156	185	600	17.5	25.5	25.5
INS320/400/500/630	416	115	100	200	210	204	600	22.5	30.8	30.8

Manual Source-Changeover Systems
ComPacT NSX
Class PC and CB

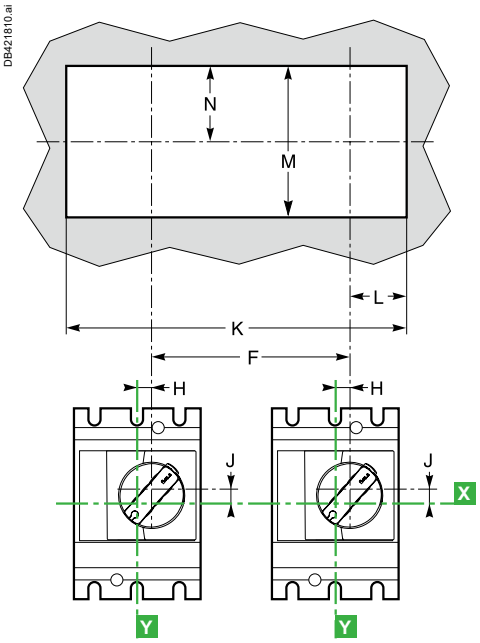
Interlocking of Cirect Rotary Handles (ComPacT NSX100 to NSX630 and ComPacT NSX100 NA to NSX630 NA)

Dimensions





Front-Panel Cutout

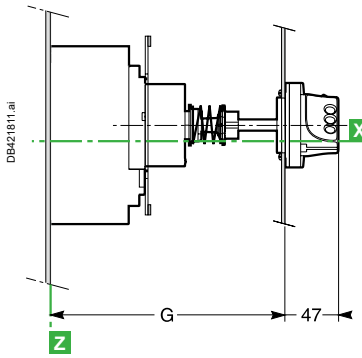


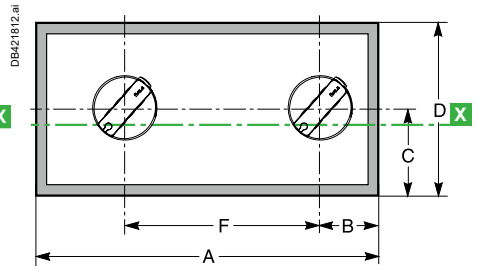
Dimensions (mm)

	A	B	C	D	F	G	H	J	K	L	M	N	P
NSX100/160/250 and NA	325	90	87.5	175	156	133	9.25	9	295	75.5	150	75	155
NSX400/630 and NA	416	115	100	200	210	157	5	24.6	386	100	175	74.5	179

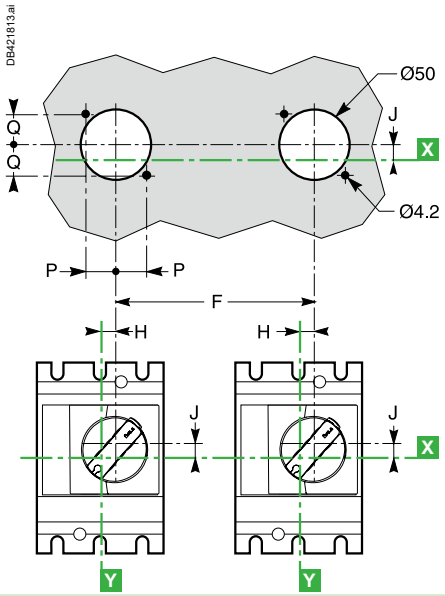
Interlocking of Extended Rotary Handles (ComPacT NSX100 to NSX630 and ComPacT NSX100 NA to NSX630 NA)

Dimensions





Front-Panel Cutout



Dimensions (mm)

Type	A	B	C	D	F	G min	G max	H	J	P	Q
NSX100/160/250 and NA	325	90	87.5	175	156	171	600	9.25	9	25.5	25.5
NSX400/630 and NA	416	115	100	200	210	195	600	5	24.6	30.8	30.8

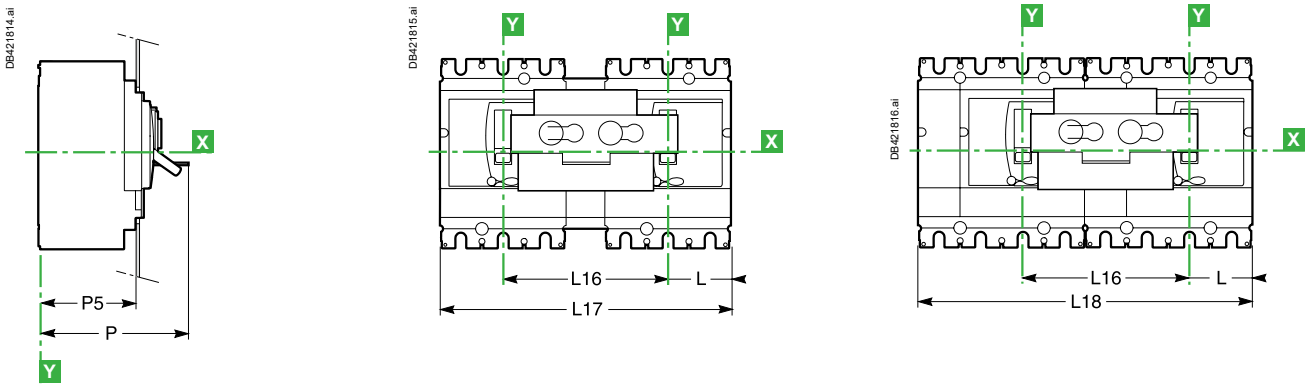
Manual Source-Changeover Systems
ComPacT NSX
Class PC and CB

Interlocking of Toggles (ComPacT NSX100 to NSX630 and ComPacT NSX100 NA to NSX630 NA)

Dimensions

3 Poles

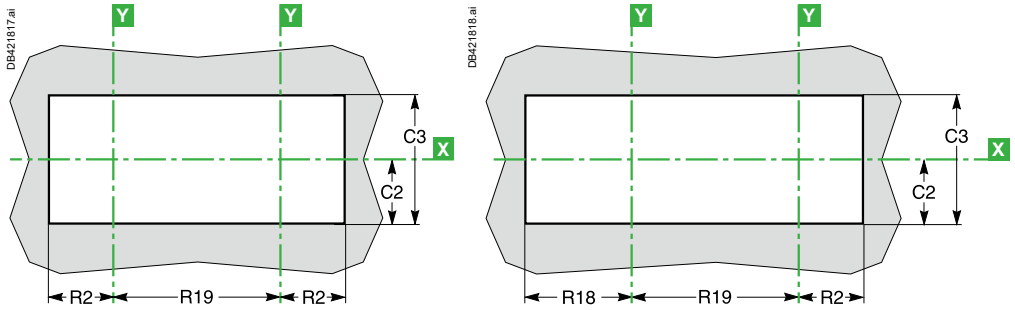
4 Poles



Front-Panel Cutout

3 Poles on Left

4 Poles on Left



Dimensions (mm)

Type	C2	C3	L	L16	L17	L18	R2	R18	R19	P5	P
NSX100/160/250 and NA	54	108	52.5	140	245	280	54	89	140	83	120
NSX400/630 and NA	92.5	182	70	185	325	370	71.5	116.5	185	107	150

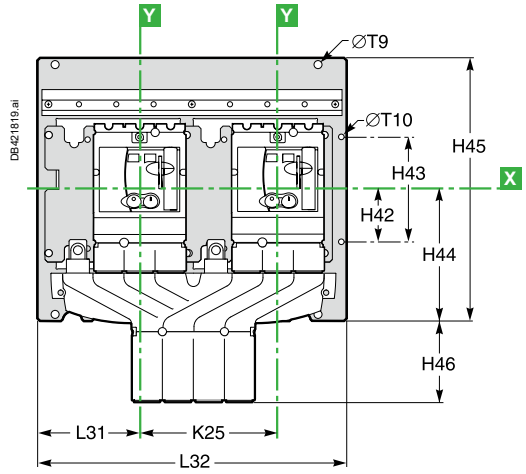
Manual Source-Changeover Systems

ComPacT NSX - Interlocking on a Base Plate

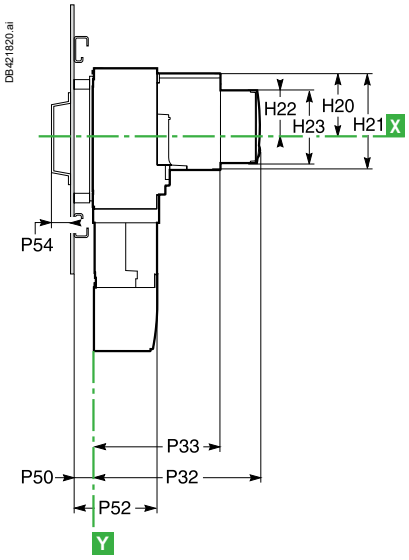
Class PC and CB

ComPacT NSX100 to NSX250 and ComPacT NSX100 NA to NSX250 NA

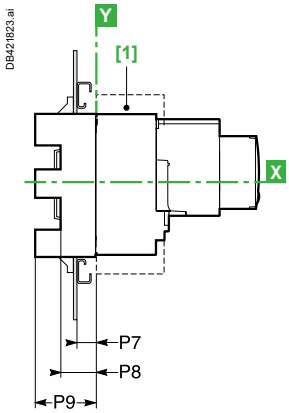
Dimensions, 3 or 4 Poles



Fixed Device

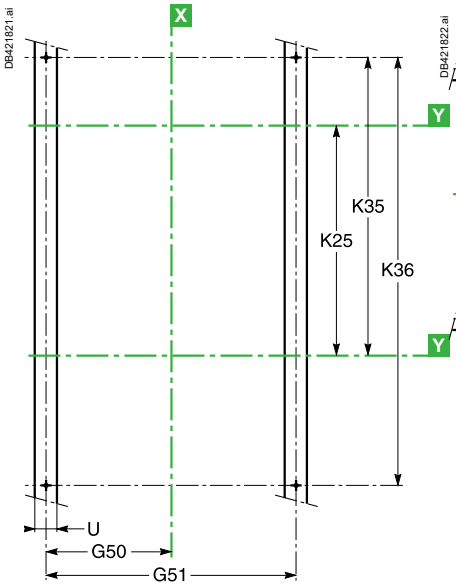


Withdrawable Device

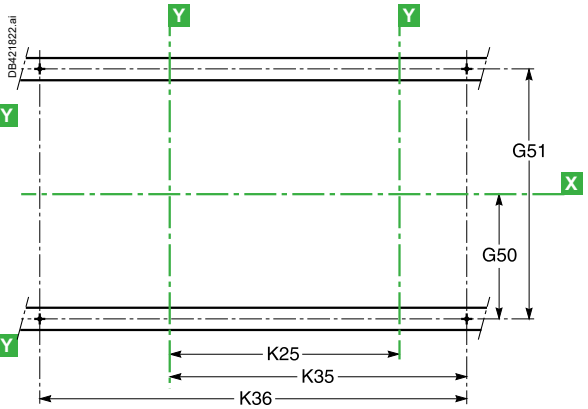


[1] Short terminal shields are mandatory.

Vertical Mounting



Horizontal Mounting



Dimensions (mm)

Type	G50	G51	H20	H21	H22	H23	H42	H43	H44	H45	H46	K25	K35	K36
NSX100/160/250 and NA	137.5	285	62.5	97	45.5	73	60	120	144.5	300	37	156	210.5	300
NSX400/630 and NA	180	360	100	152	83	123	60	120	189	378	77	210	282.5	400

Dimensions (mm)

Type	L31	L32	P7	P8	P9	P32	P33	P50	P52	P54	ØT9	ØT10	U
NSX100/160/250 and NA	110.5	354	25	45	75	182	143	25	99.5	21	9	6	⩽ 32
NSX400/630 and NA	150.5	466	25	45	100	256	215	25	123	21	9	6	⩽ 32

Note: coupling accessory: only for changeover systems using fixed versions of ComPacT NSX circuit breakers.

Manual Source-Changeover Systems

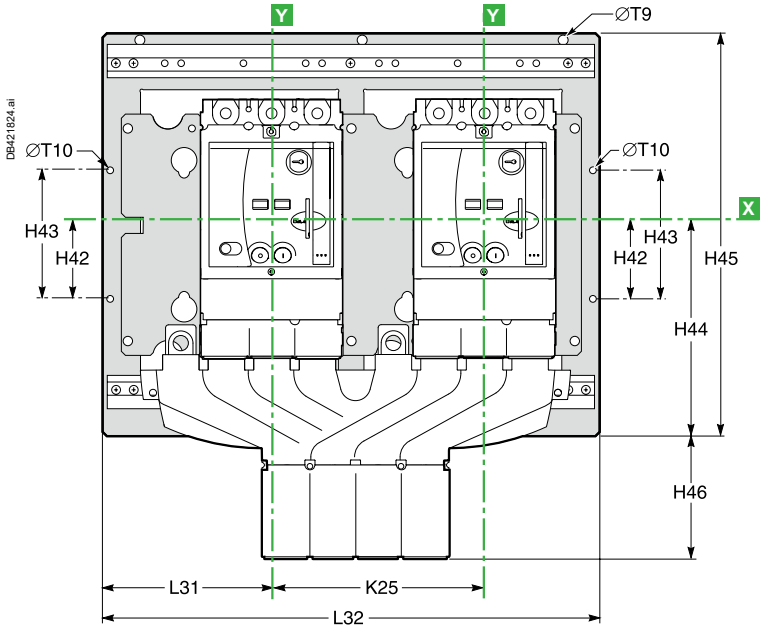
ComPacT NSX - Interlocking on a Base Plate

Class PC and CB

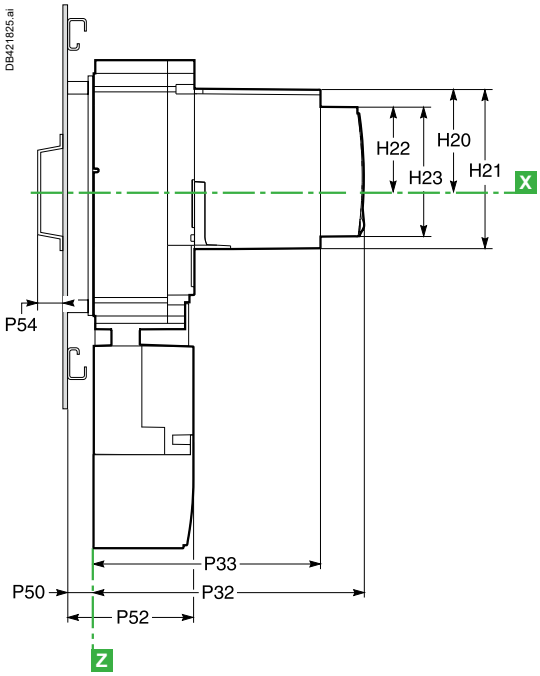
ComPacT NSX400 to NSX630 and ComPacT NSX400 NA to NSX630 NA

Dimensions, 3 or 4 Poles

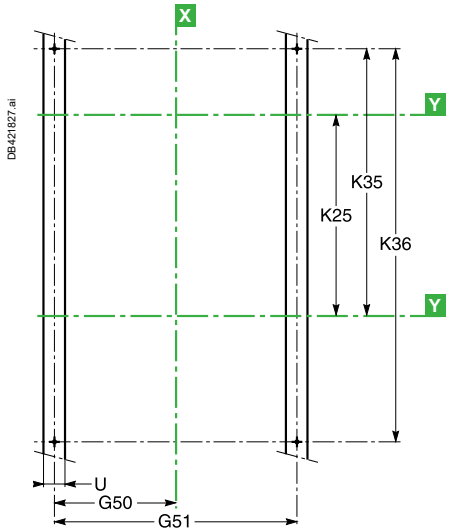
Fixed Device



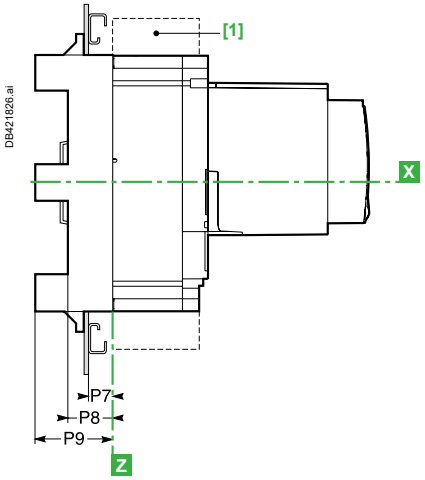
Note: coupling accessory: only for changeover systems using fixed versions of ComPacT NSX circuit breakers.



Vertical mounting

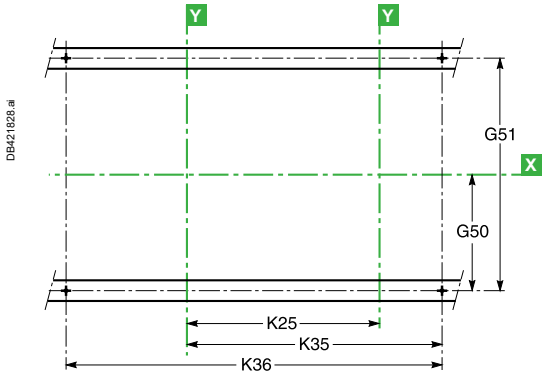


Withdrawable device



[1] Short terminal shields are mandatory.

Horizontal mounting



Note: for dimensions see page C-22.

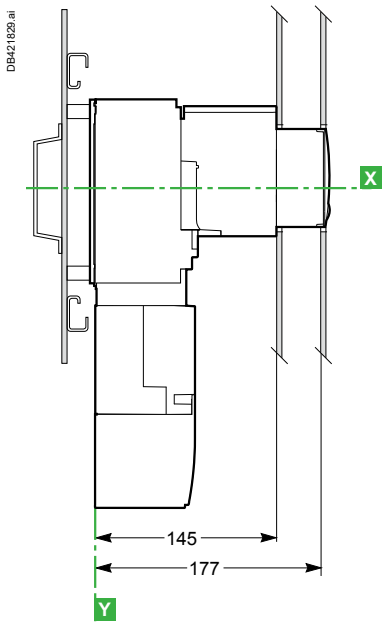
Manual Source-Changeover Systems

ComPacT NSX - Interlocking on a Base Plate

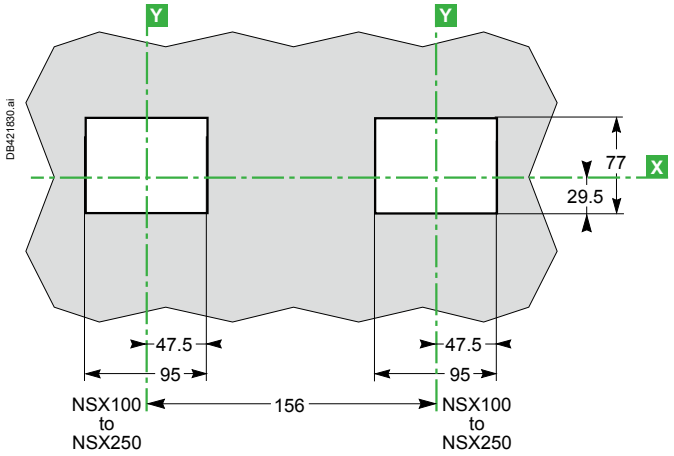
Class PC and CB

"Normal" and "Replacement" source devices: NSX100 to NSX250

Dimensions

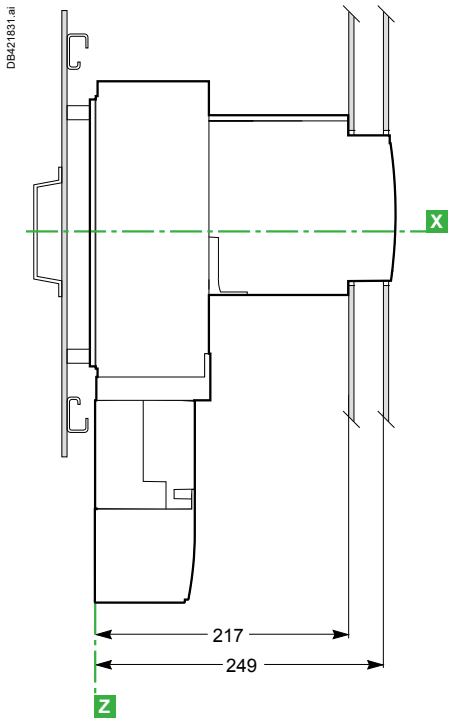


Front-Panel Cutout

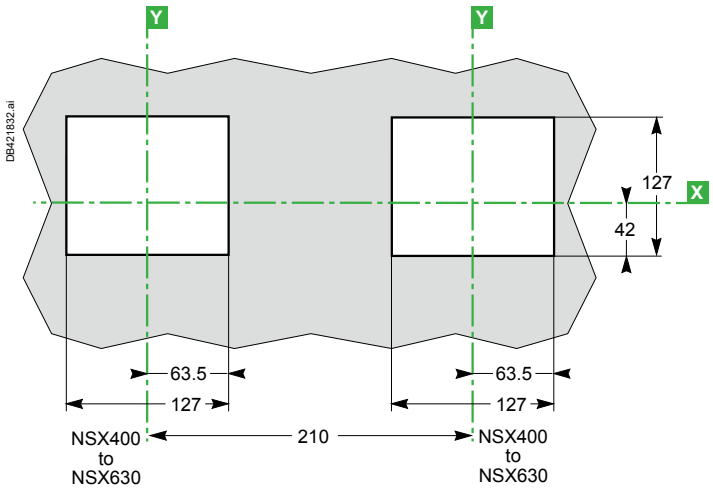


"Normal" and "Replacement" source devices: NSX400 to NSX630

Dimensions



Front-panel cutout



Note for ComPacT NSX: For dimensions with the accessories (IP40 escutcheons and Vigi escutcheon protection collars), see Catalog ComPacT.

D

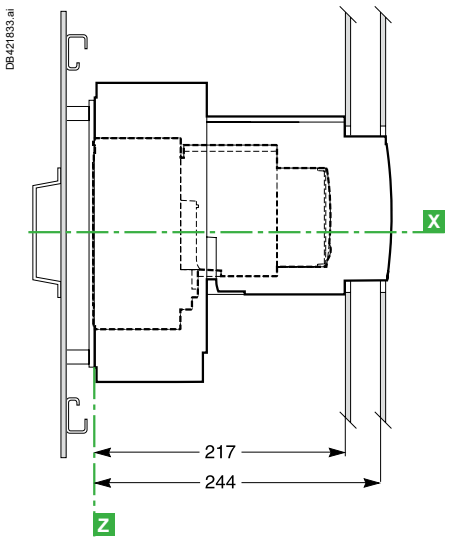
Manual Source-Changeover Systems

ComPacT NSX - Interlocking on a Base Plate

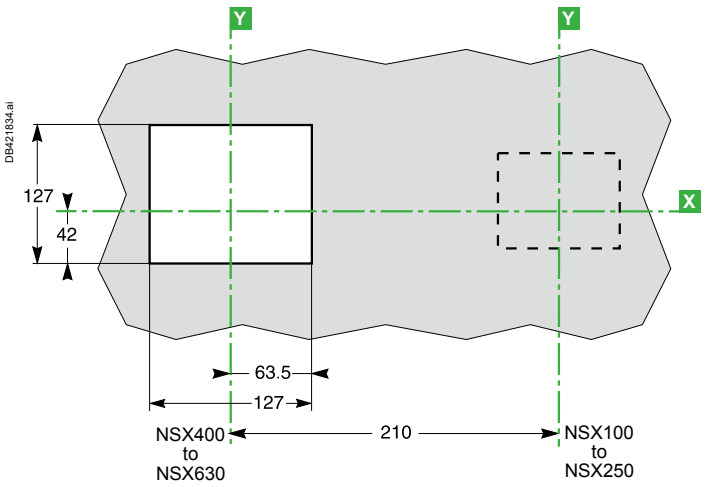
Class PC and CB

NSX400 to NSX630 as the “Normal” Device, NSX100 to NSX250 as the “Replacement” Device

Dimensions



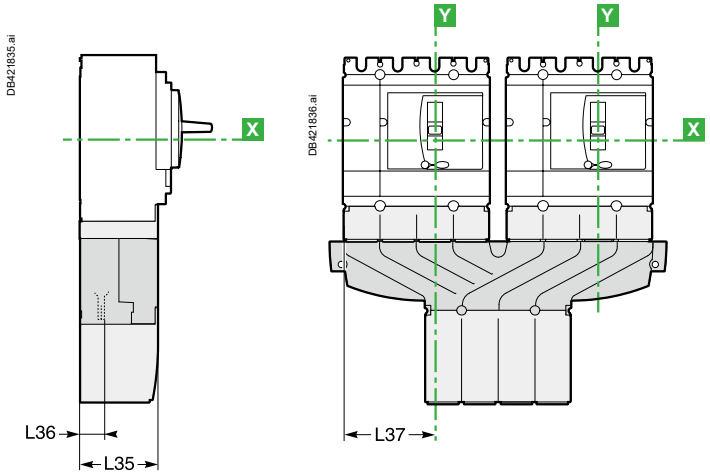
Front-Panel Cutout



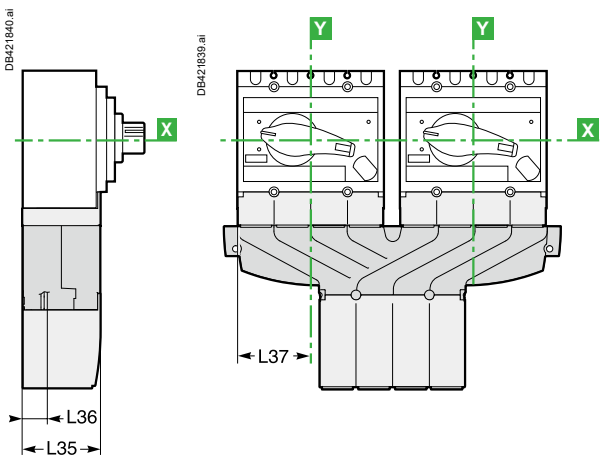
Manual Source-Changeover Systems
Downstream Coupling Accessory
Class PC and CB

Downstream Coupling Accessory
ComPacT NSX100 to NSX630, ComPacT NSX100 NA to NSX630 NA and ComPacT INS/INV [1]

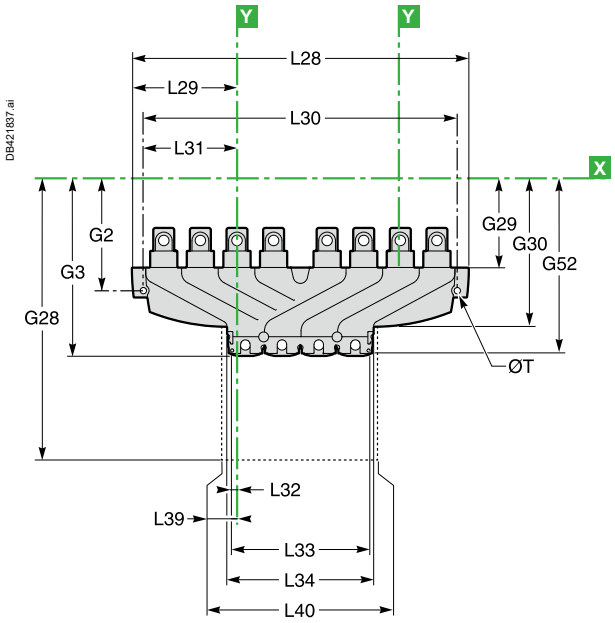
Dimensions for ComPacT NSX



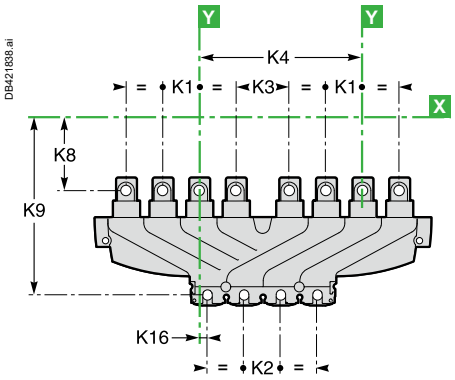
Dimensions for ComPacT INS/INV



Dimensions



Connection



Dimensions (mm)

Type	G2	G3	G28	G29	G30	G52	K1	K2	K3	K4	K8	K9	K16
NSX100/160/250 and NA	118	181.5	244.5	96	152.5	178	35	35	51	156	70	170	8
NSX400/630 and NA	165.9	264.7	337.5	143.5	220.5	264.7	45	45	75	210	113.5	250.7	15
INS250 - 100 to 250 A	105.5	169	232	83.5	140	165.5	35	35	51	156	57.5	157.5	25.5
INS320/400/500/630	141	240.7	313	119	195.6	240	45	45	75	210	88.5	225.7	37.5

Dimensions (mm)

Type	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L39	L40	ØT
NSX100/160/250 and NA	320	99.5	300	89.5	4.73	130.5	139.5	74.5	19.5	87.5	9.5	140	6
NSX400/630 and NA	425	130	400	117.5	5.15	175.3	184.7	98.5	26	115	9.85	184.7	6
INS250 - 100 to 250 A	320	83	300	72	12.8	130.5	139.5	74.5	21.5	70	8.5	140	6
INS320/400/500/630	425	107.5	400	95	17.35	175.3	184.7	98.5	26	92.5	12.65	184.7	6

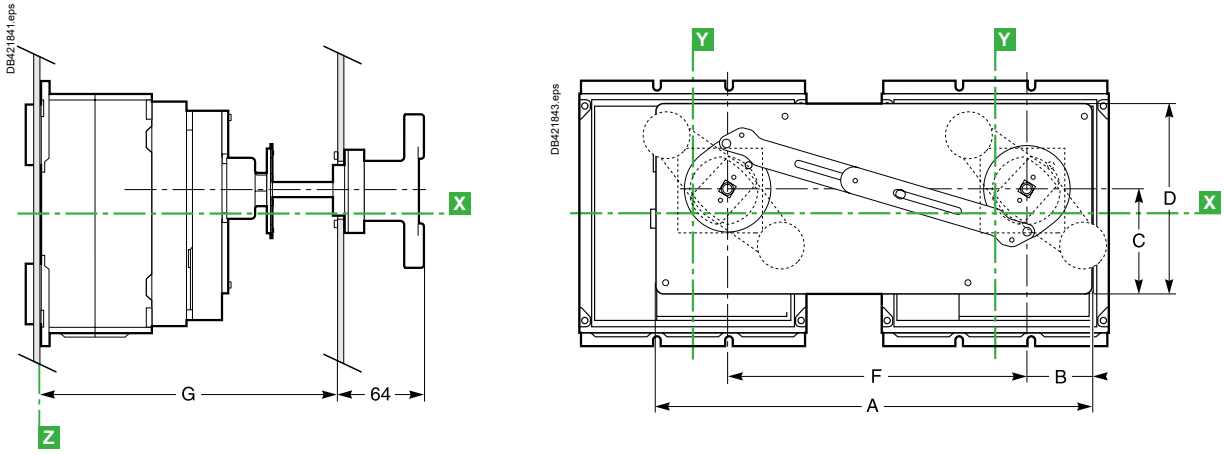
[1] coupling accessory: only for changeover systems using fixed versions of ComPacT NSX circuit breakers.

Manual Source-Changeover Systems
ComPacT NS - Interlocking on a Base Plate

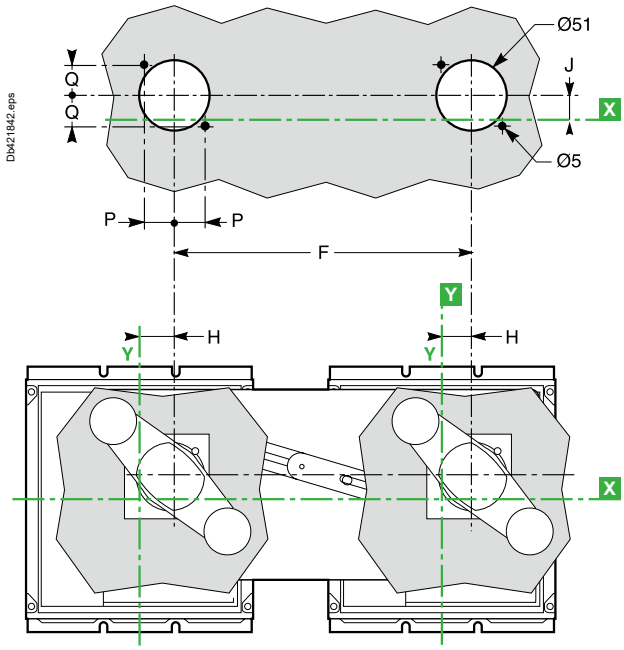
Class PC and CB

Interlocking of Extended Rotary Handles
ComPacT NS630b to 1600 and ComPacT NS630b NA to NS1600 NA

Dimensions



Front-panel cutout



Dimensions (mm)

Type	A	B	C	D	F	G min	G max	H	J	P	Q	R
NS630b/800/1000/1200/1600	411	63.5	98	175	280	218	605	25	24	25.5	25.5	64

Source-Changeover Systems

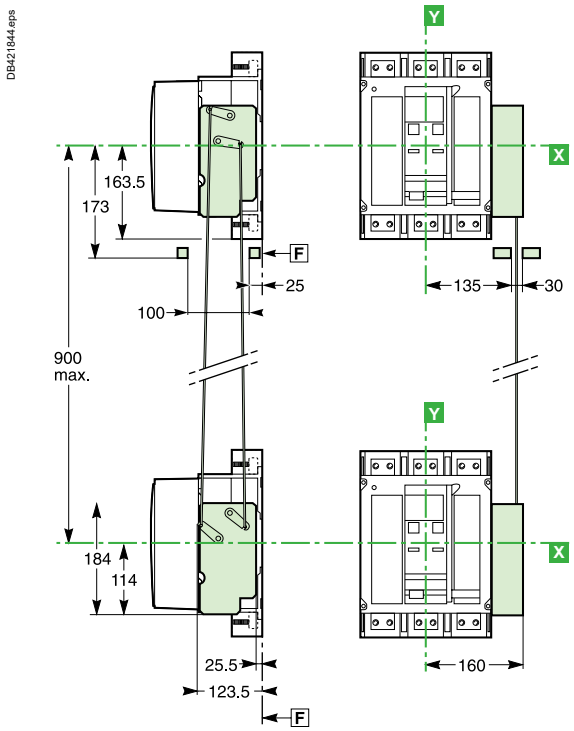
Mechanical Interlocking Using Connecting Rods

ComPacT NS and MasterPacT MTZ1

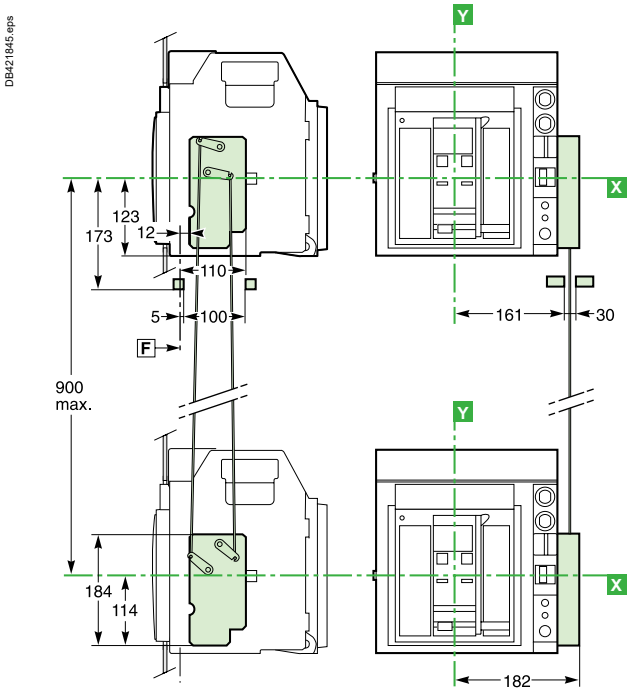
Class PC and CB

ComPacT NS630b to NS1600 and ComPacT NS630b NA to NS1600 NA
Devices One Above the Other

Fixed devices

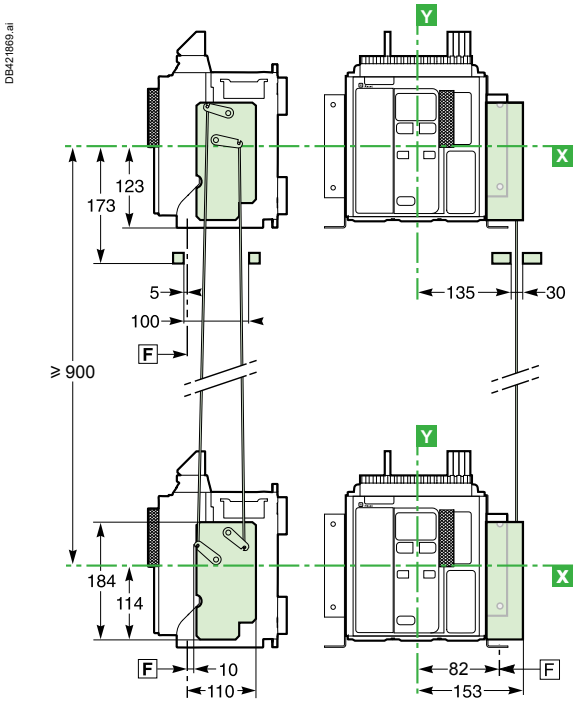


Withdrawable devices

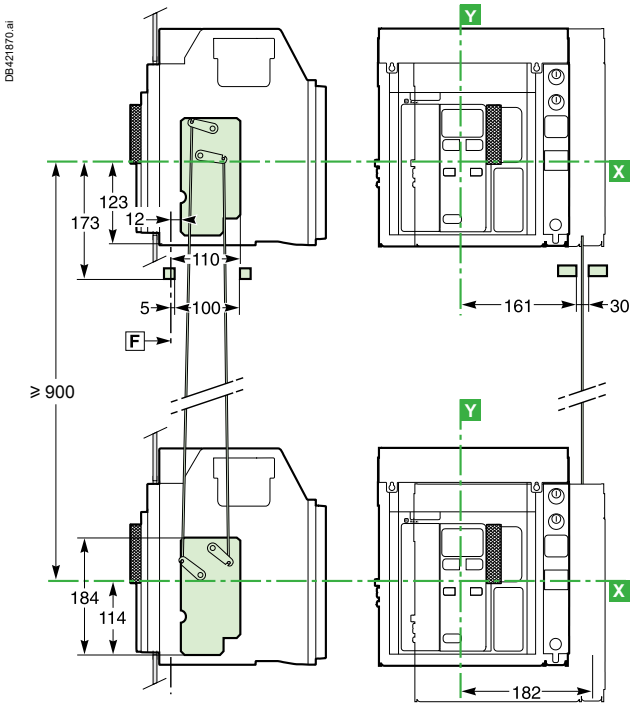


Two MasterPacT MTZ1 devices (switch-disconnectors or circuit breakers) one above the other

Fixed devices



Withdrawable devices



D

Source-Changeover Systems

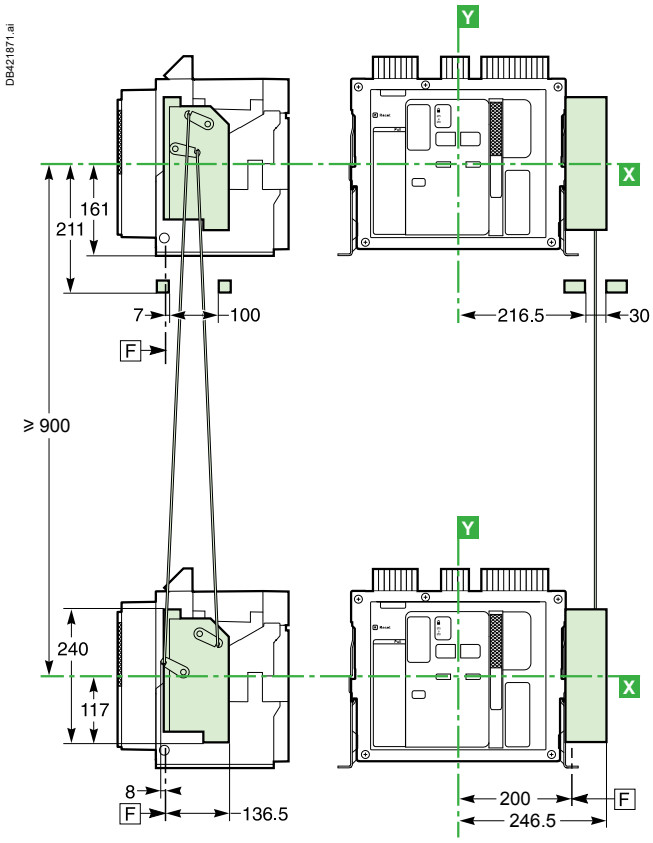
Mechanical Interlocking Using Connecting Rods

MasterPacT MTZ2/MTZ3

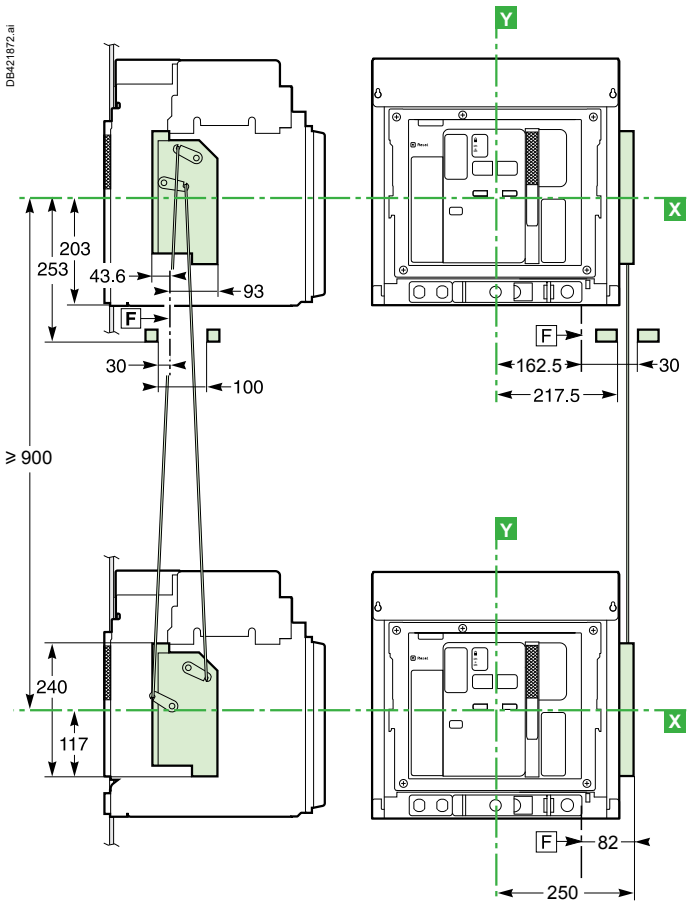
Class PC and CB

Two MasterPacT MTZ2/MTZ3 devices (switch-disconnectors or circuit breakers)
One Above the Other

Fixed Devices



Withdrawable Devices



Source-Changeover Systems

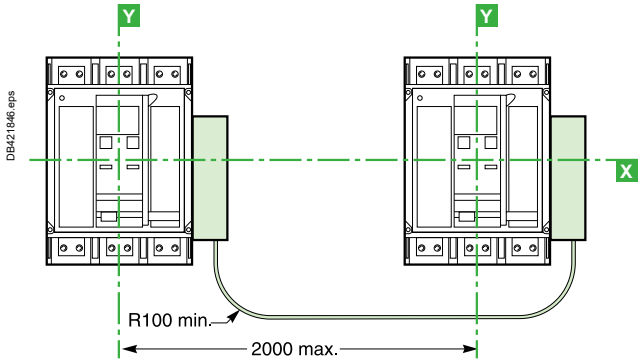
Mechanical Interlocking Using Connecting Cables

ComPacT NS and MasterPacT MTZ1/MTZ2/MTZ3

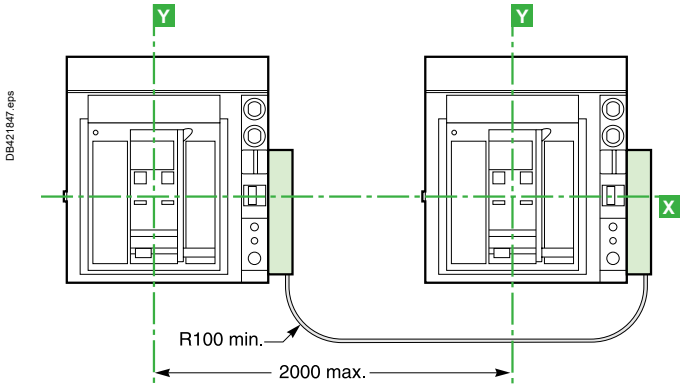
Class PC and CB

ComPacT NS630b to NS1600 and ComPacT NS630b NA to NS1600 NA Devices Side-by-Side

Fixed Devices

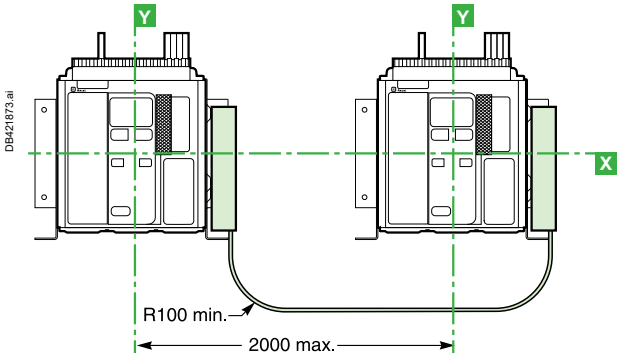


Withdrawable Devices

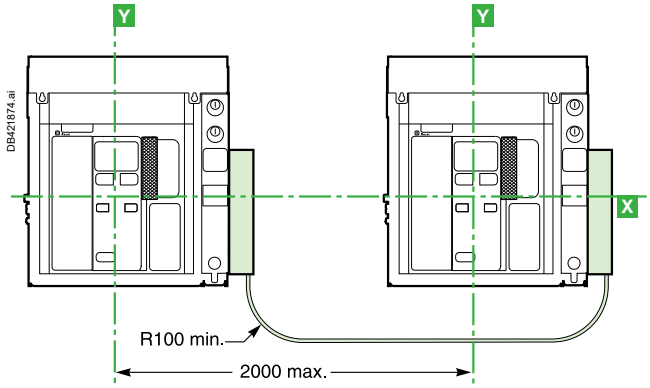


Two MasterPacT MTZ1 Devices (switch-disconnectors or circuit breakers) Side-by-Side

Fixed Devices

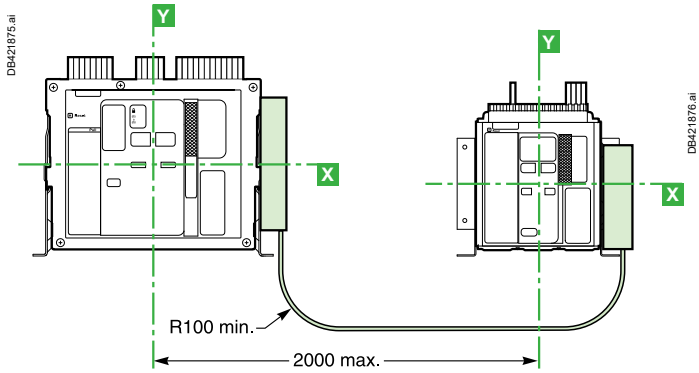


Drawout Devices

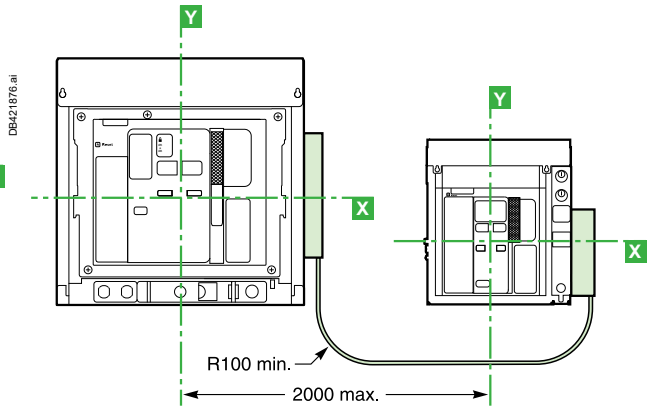


Combination of two MasterPacT MTZ1 and MTZ2/MTZ3 Devices (switch-disconnectors or circuit breakers) Side-by-Side

Fixed Devices



Drawout Devices



Source-Changeover Systems

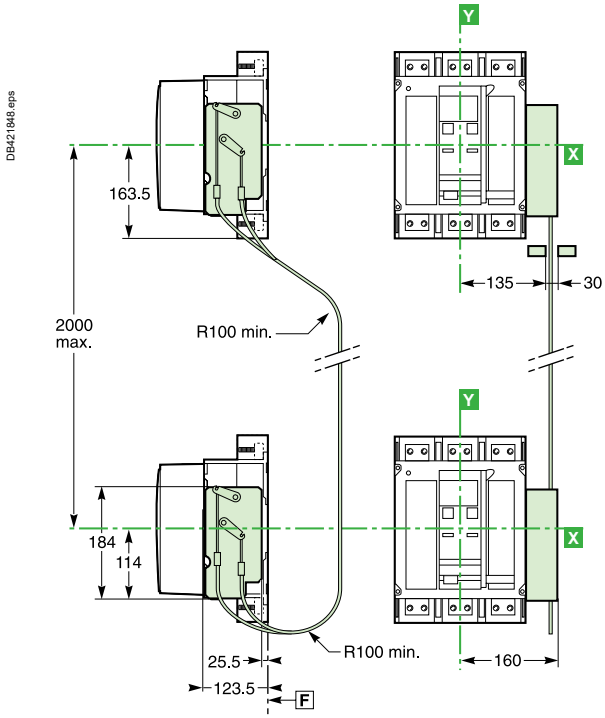
Mechanical Interlocking Using Connecting Cables

ComPacT NS and MasterPacT MTZ1

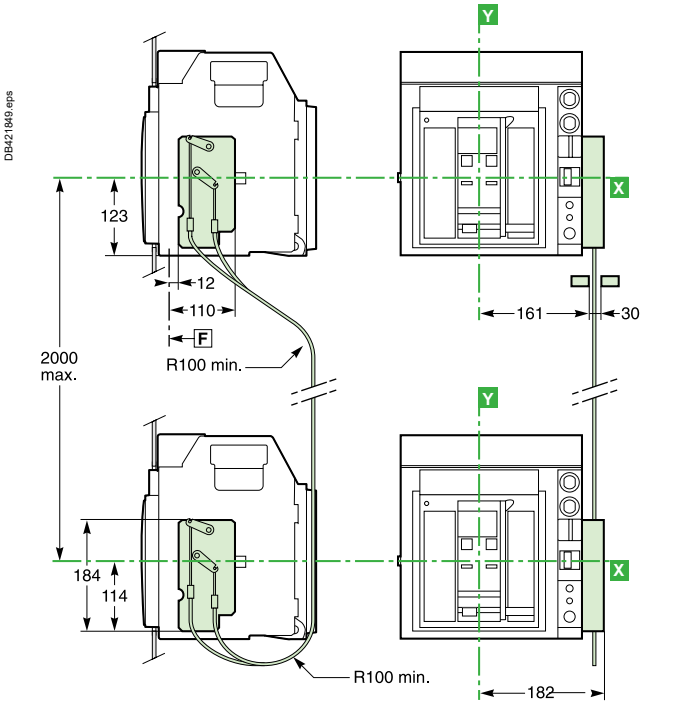
Class PC and CB

Two ComPacT NS630b to NS1600 and ComPacT NS630b NA to NS1600 NA Devices One Above the Other

Fixed Devices

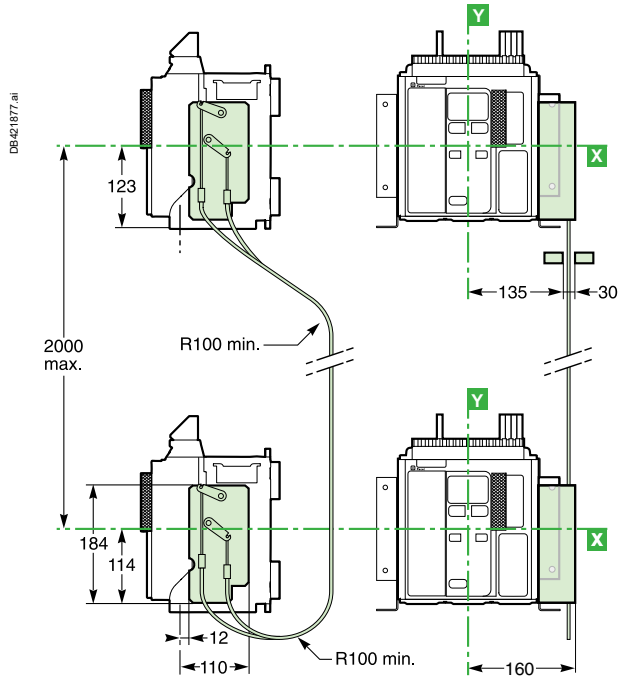


Withdrawable Devices

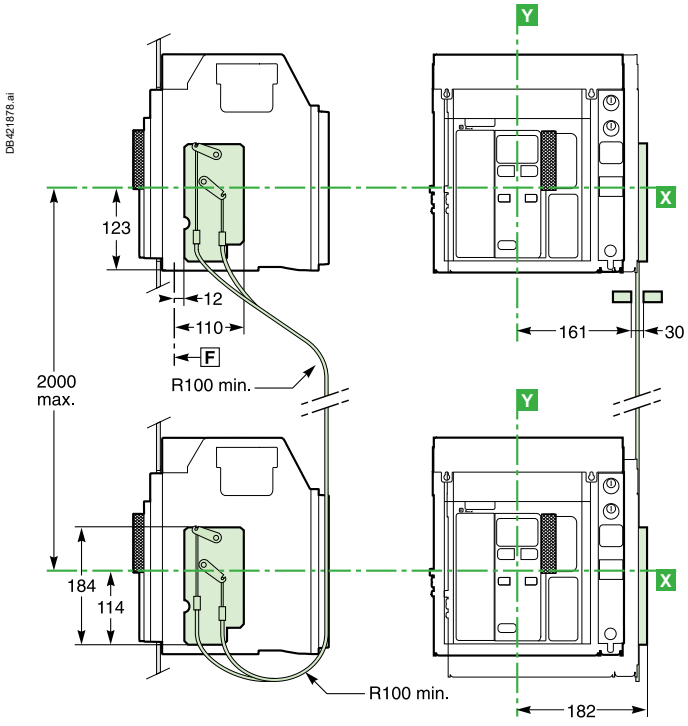


Two MasterPacT MTZ1 Devices (switch-disconnectors or circuit breakers) One Above the Other

Fixed Devices



Drawout Devices



Source-Changeover Systems

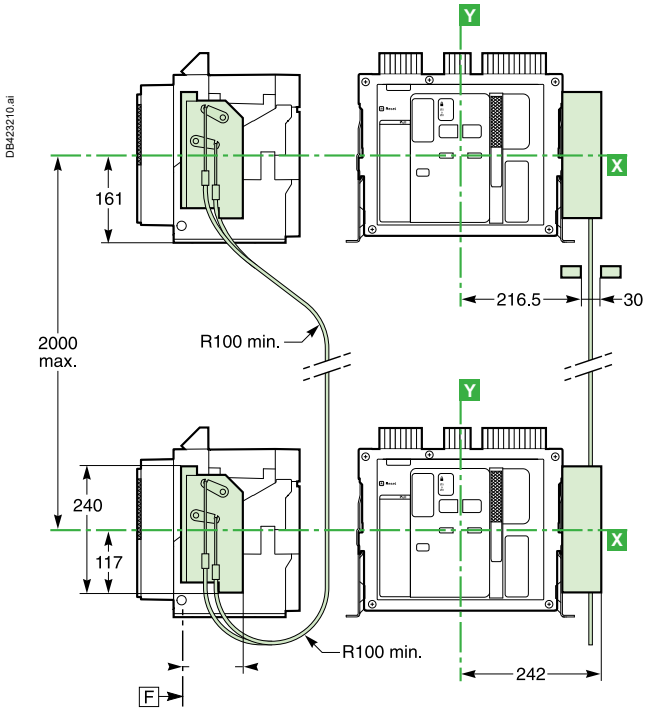
Mechanical Interlocking Using Connecting Cables

MasterPacT MTZ

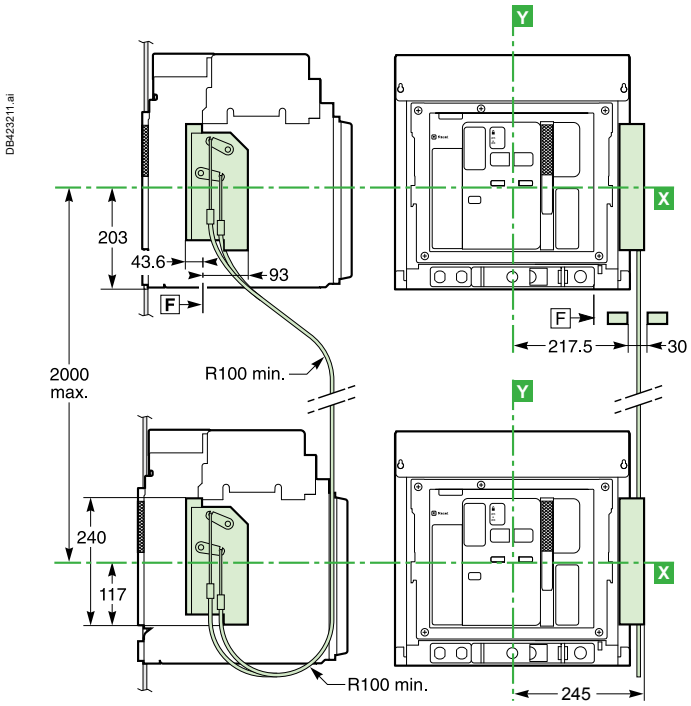
Class PC and CB

Two MasterPacT MTZ2/MTZ3 Devices (switch-disconnectors or circuit breakers) One Above the Other

Fixed Devices

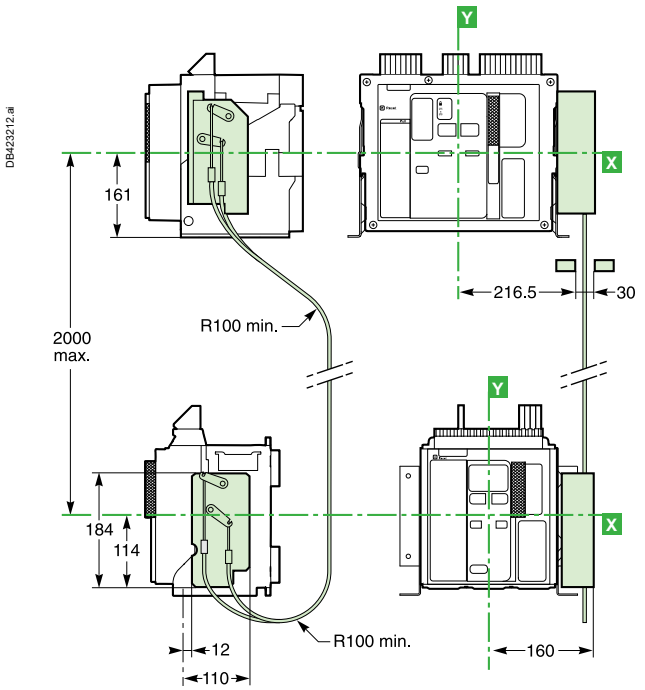


Drawout devices

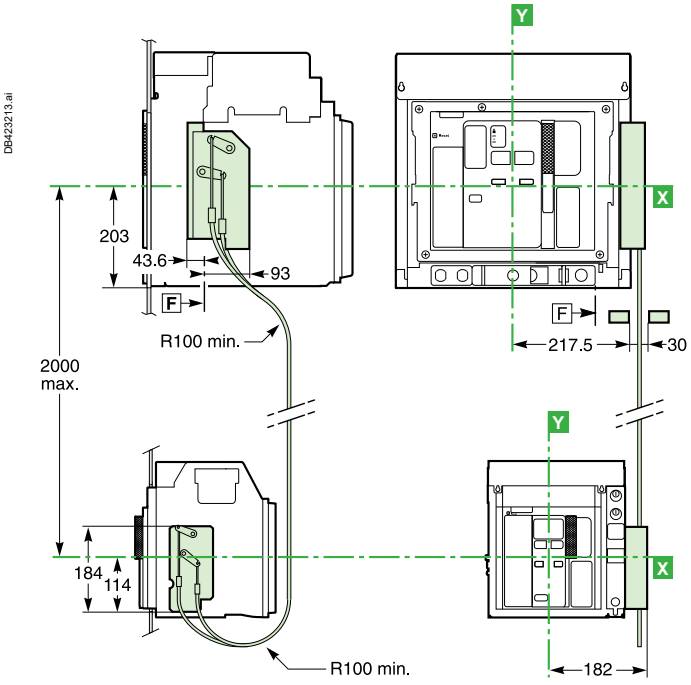


Two MasterPacT MTZ1 and MTZ2/MTZ3 Devices (switch-disconnectors or circuit breakers) One Above the Other

Fixed Devices



Drawout Devices



Source-Changeover Systems

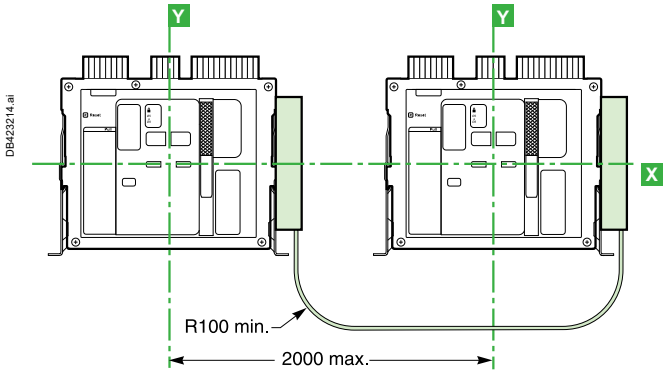
Mechanical Interlocking Using Connecting Cables

MasterPacT MTZ2/MTZ3

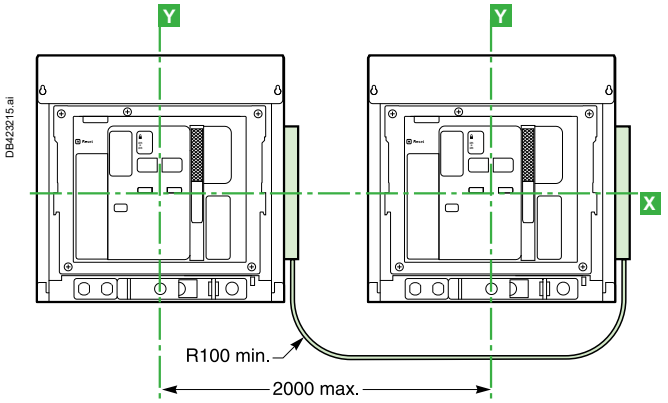
Class PC and CB

Two MasterPacT MTZ2/MTZ3 Devices Side-by-Side

Fixed Devices

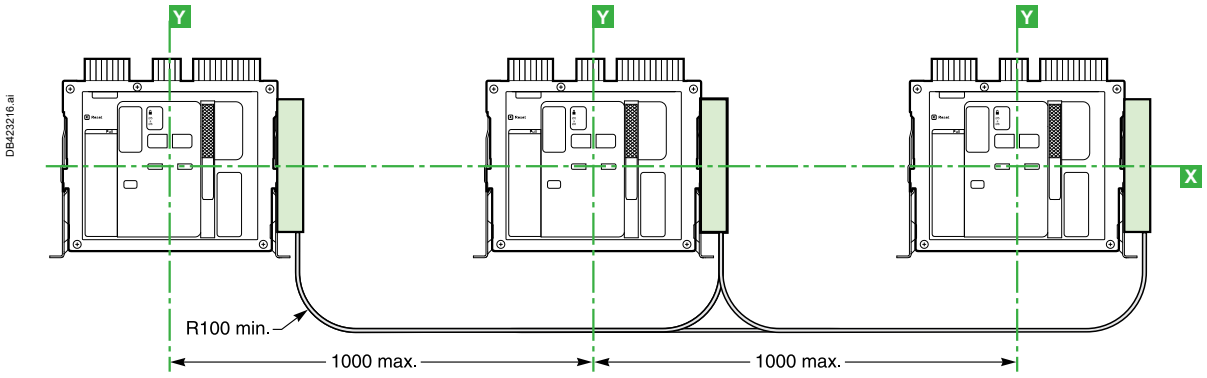


Drawout Devices

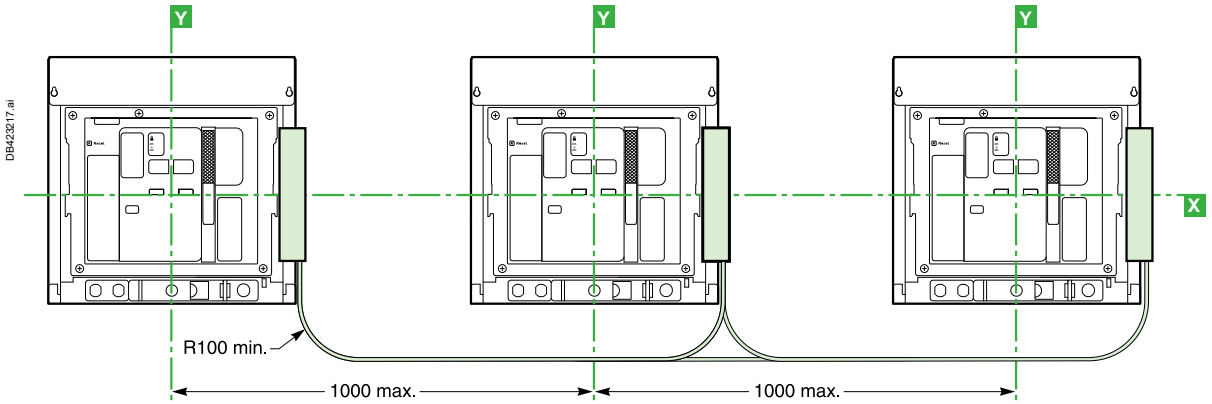


Three MasterPacT MTZ2/MTZ3 Devices (switch-disconnectors or circuit breakers) Side-by-Side

Fixed Devices



Drawout Devices



Source-Changeover Systems

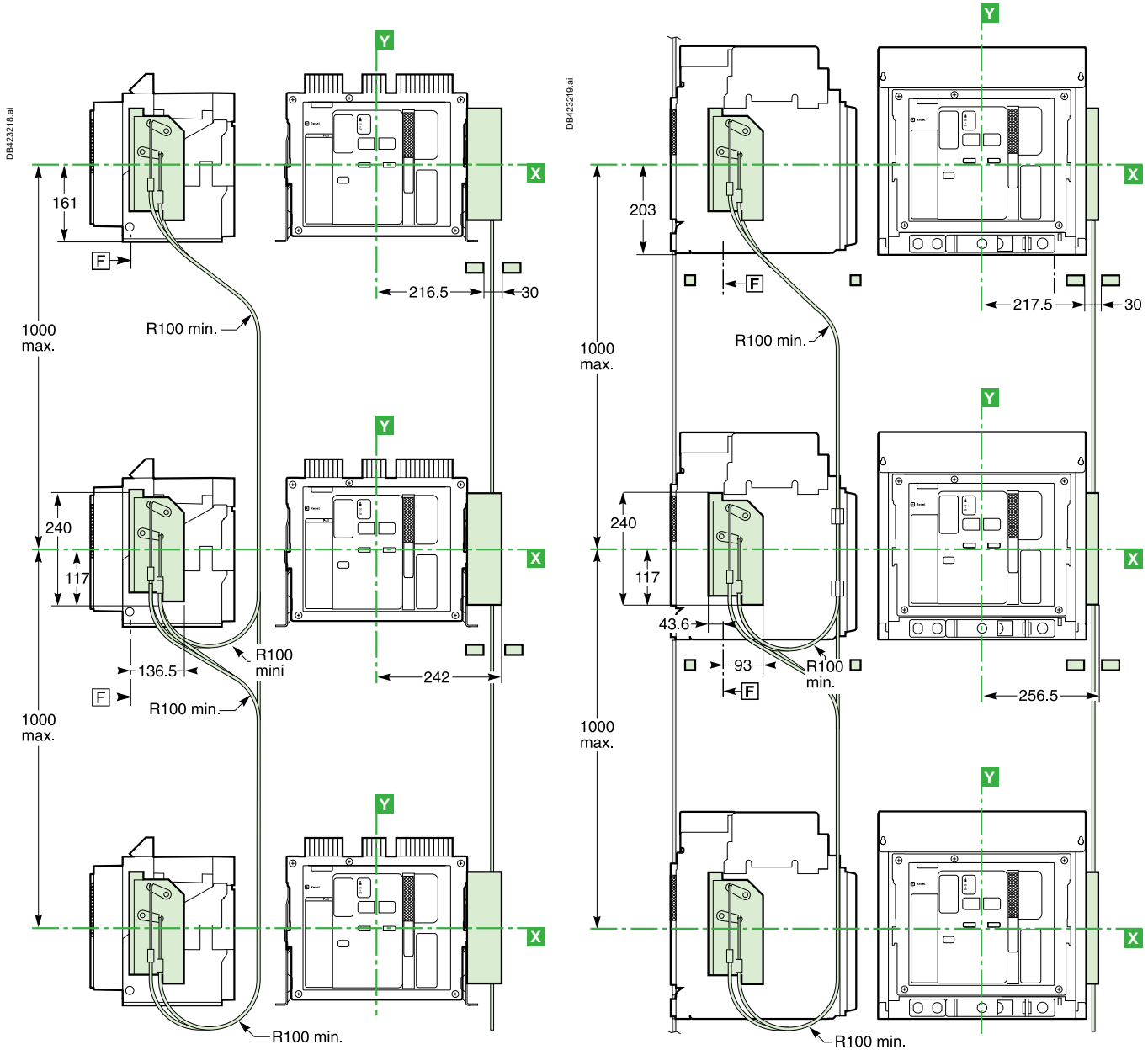
Mechanical Interlocking Using Connecting Cables

MasterPacT MTZ2/MTZ3

Class PC and CB

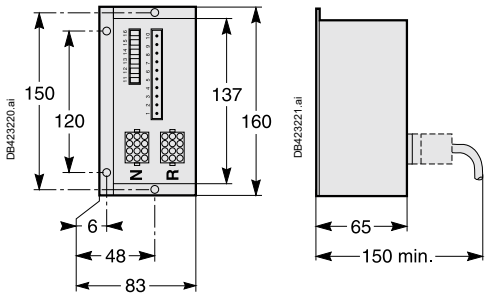
Three MasterPacT MTZ2/MTZ3 Devices (switch-disconnectors or circuit breakers)
One Above the Other

Fixed Devices	Drawout Devices

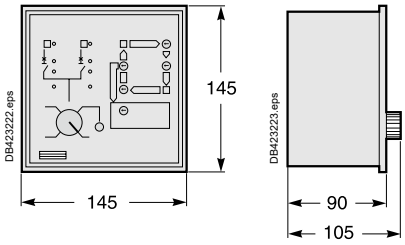


TransferPacT
IVE unit, UA/BA Controllers

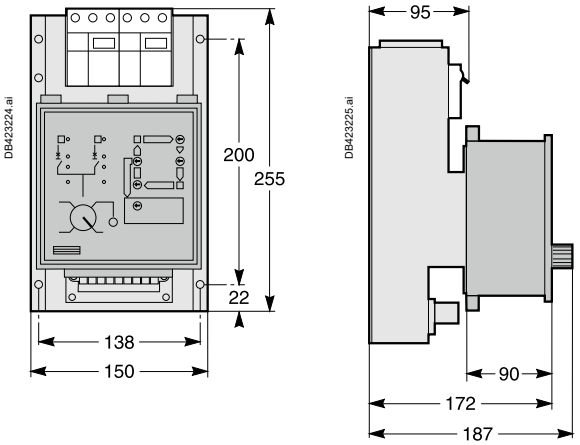
IVE Unit



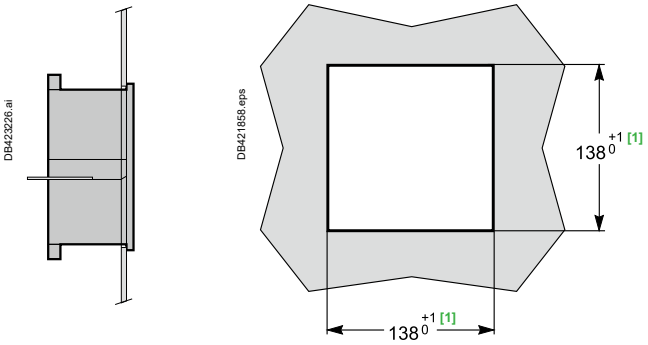
UA/BA Controllers



ACP Control Plate and UA/BA Controllers



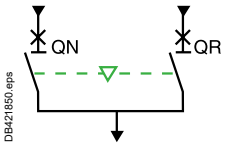
Door Cutout for UA/BA Controllers



[1] Cutout according to DIN 43700 standard.

Standard Configurations

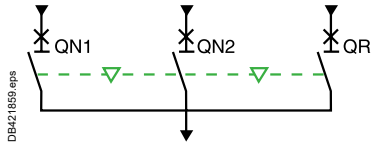
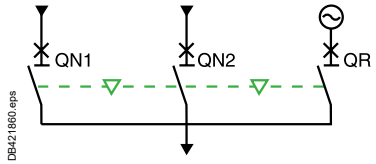
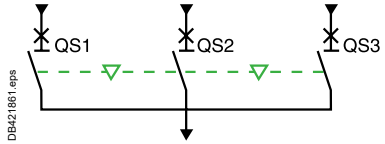
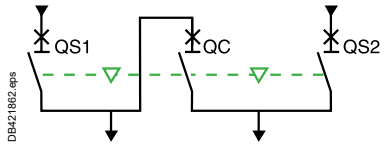
ComPacT NS, MasterPacT MTZ1 and MTZ2/MTZ3

Types of Mechanical Interlocking	Possible Combinations	Typical Electrical Diagrams	Diagram No.	Page
2 devices				
	**QN** **QR** 0 0 1 0 0 1	**ComPacT NSX100 to 630:** ■ Electrical interlocking without emergency power off (EPO) auxiliaries: □ With EPO by MN □ With EPO by MX **ComPacT NS630b to 1600:** ■ Electrical interlocking with lockout after fault: □ Permanent replacement source (with IVE) □ With emergency off by shunt release MX (with IVE) □ With emergency off by undervoltage release MN (with IVE) **MasterPacT MTZ1 and MTZ2/3:** ■ Electrical interlocking with lockout after fault: □ Permanent replacement source (with IVE) □ With EPO by MX (with IVE) □ With EPO by MN (with IVE) ■ Automatic control with lockout after fault: □ permanent replacement source (with IVE) □ engine generator set (with IVE)	 **51201177** **51201178** **51201179** **51201183** **51201184** **51201185** 	 C-39 C-40 C-41 C-42 C-43 C-44 C-11 C-12 C-13 C-14 C-15

D

Standard Configurations

MasterPacT MTZ2/MTZ3 Only

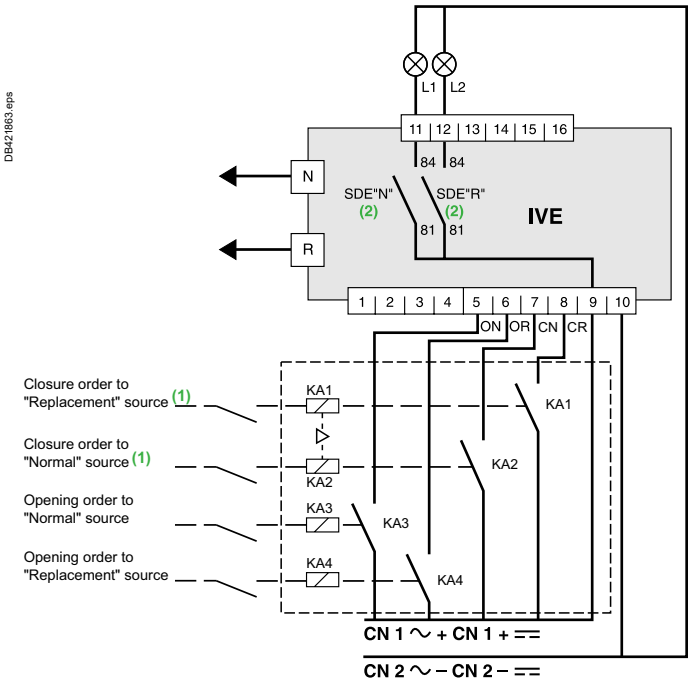
Types of mechanical interlocking	Possible combinations	Typical electrical diagrams	Page
3 devices: 2 "Normal" sources and 1 "Replacement" source			
	**QN1 QN2 QR** 0 0 0 1 1 0 0 0 1	■ Electrical interlocking: □ Without lockout after fault □ With lockout after fault	 C-19 C-20
3 devices: 2 "Normal" sources and 1 "Replacement" source with source selection			
	**QN1 QN2 QR** 0 0 0 1 0 0 0 0 1 1 1 0 0 1 0	■ Automatic control with engine generator set: □ Without lockout after fault (with MN) □ With lockout after fault (with MN)	 C-21 C-22
3 devices: 3 sources, only one device			
	**QS1 QS2 QS3** 0 0 0 1 0 0 0 1 0 0 0 1	■ Electrical interlocking: □ Without lockout after fault □ With lockout after fault	 C-23 C-24
3 devices: 2 sources + 1 coupling			
	**QS1 QC QS2** 0 0 0 1 0 1 1 1 0 0 1 1 1 0 0 [1] 0 0 1 [1] **[1]** possible by forcing operation	■ Electrical interlocking: □ Without lockout after fault □ With lockout after fault ■ Automatic control with lockout after fault	 C-25 C-26 C-27

"Lockout after fault" option. This option makes it necessary to manually reset the device following fault tripping.

Remote-Operated Source-Changeover Systems
2 ComPacT NSX100/630, NS630b/1600 or MasterPacT MTZ1/MTZ2/MTZ3 Devices

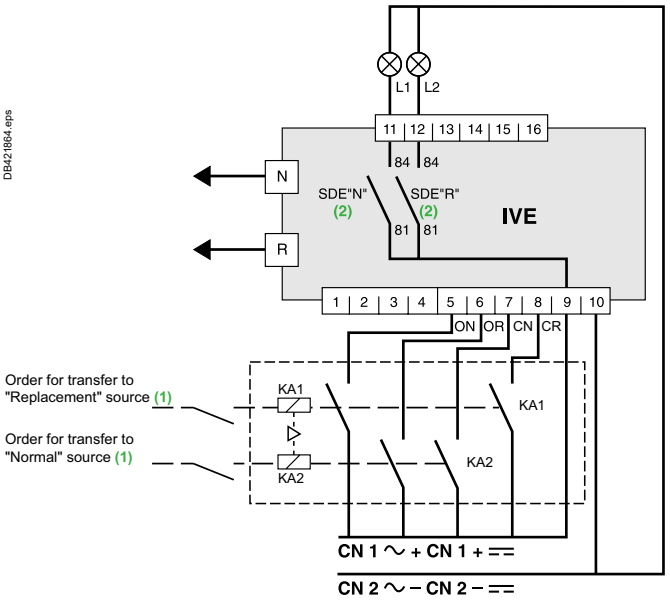
Electrical Interlocking By The Ive Unit

Independent order to Normal/Replacement source



Controlling each circuit breaker independently.

Simultaneous order to Normal/Replacement source



Control of two circuit breakers by “common” transfer order.

[1] See section “IMPORTANT” here after.
[2] Operating diagram: the SDE “fault-trip” signals are transmitted to the IVE unit. The SDE auxiliary contacts are mounted in the circuit breakers.

IMPORTANT
The relays controlling the closing order to the “Normal” and “Replacement” circuit breakers must be mechanically and/or electrically interlocked to prevent them from giving simultaneous closing commands.

It is recommended to use **Tesys** K relays from Schneider Electric reference LC2-K06010●●. These relays are mechanically and electrically interlocked.

Legends
ON “Normal” source opening order
OR “Replacement” source opening order
CN “Normal” source closing order
CR “Replacement” source closing order
KA1 auxiliary relay
KA2 auxiliary relay
KA3 auxiliary relay
KA4 auxiliary relay
L1 “Normal” source “fault-trip” signal
L2 “Replacement” source “fault-trip” signal
N “Normal” source auxiliary wiring connector
R “Replacement” source auxiliary wiring connector

Note: diagram shown with circuits de-energized, circuit breakers open and relays in normal position.

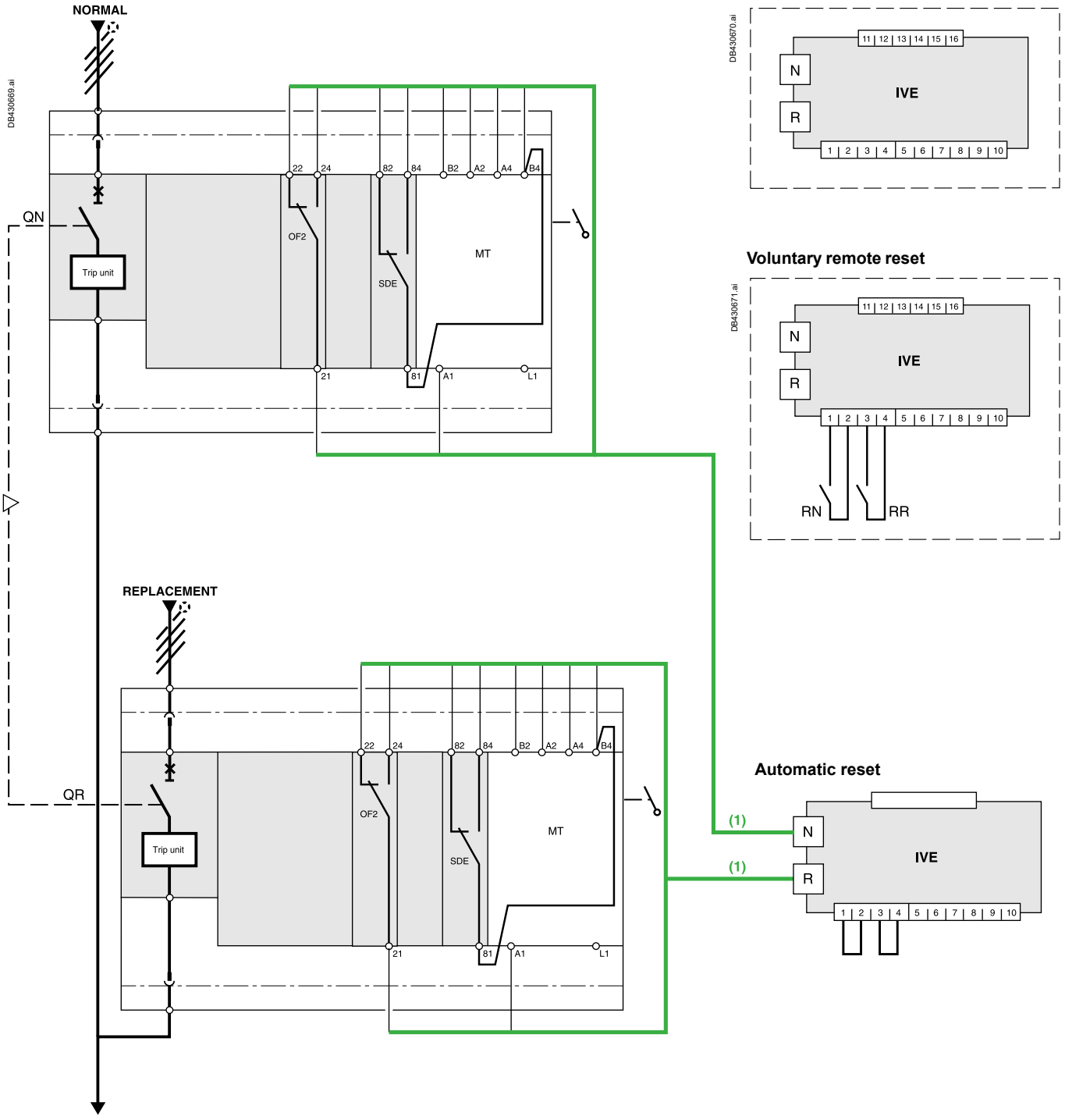
Remote-Operated Source-Changeover Systems

2 ComPacT NSX100/630 Devices

Diagram no. 51201177

Source-Changeover System Without Automatic-Control System

Without auxiliaries for emergency off



Legends

QN	"Normal" source ComPacT NSX equipped with motor mechanism
QR	"Replacement" source ComPacT NSX equipped with motor mechanism
SDE	"fault-trip" indication contact
IVE	electrical interlocking and terminal block unit
MT	motor mechanism
OF2	breaker ON/OFF indication contact
RN	reset order for breaker QN
RR	reset order for breaker QR

[1] Prefabricated wiring: cannot be modified.

States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

Note: diagram shown with circuits de-energized, circuit breakers open and relays in normal position.

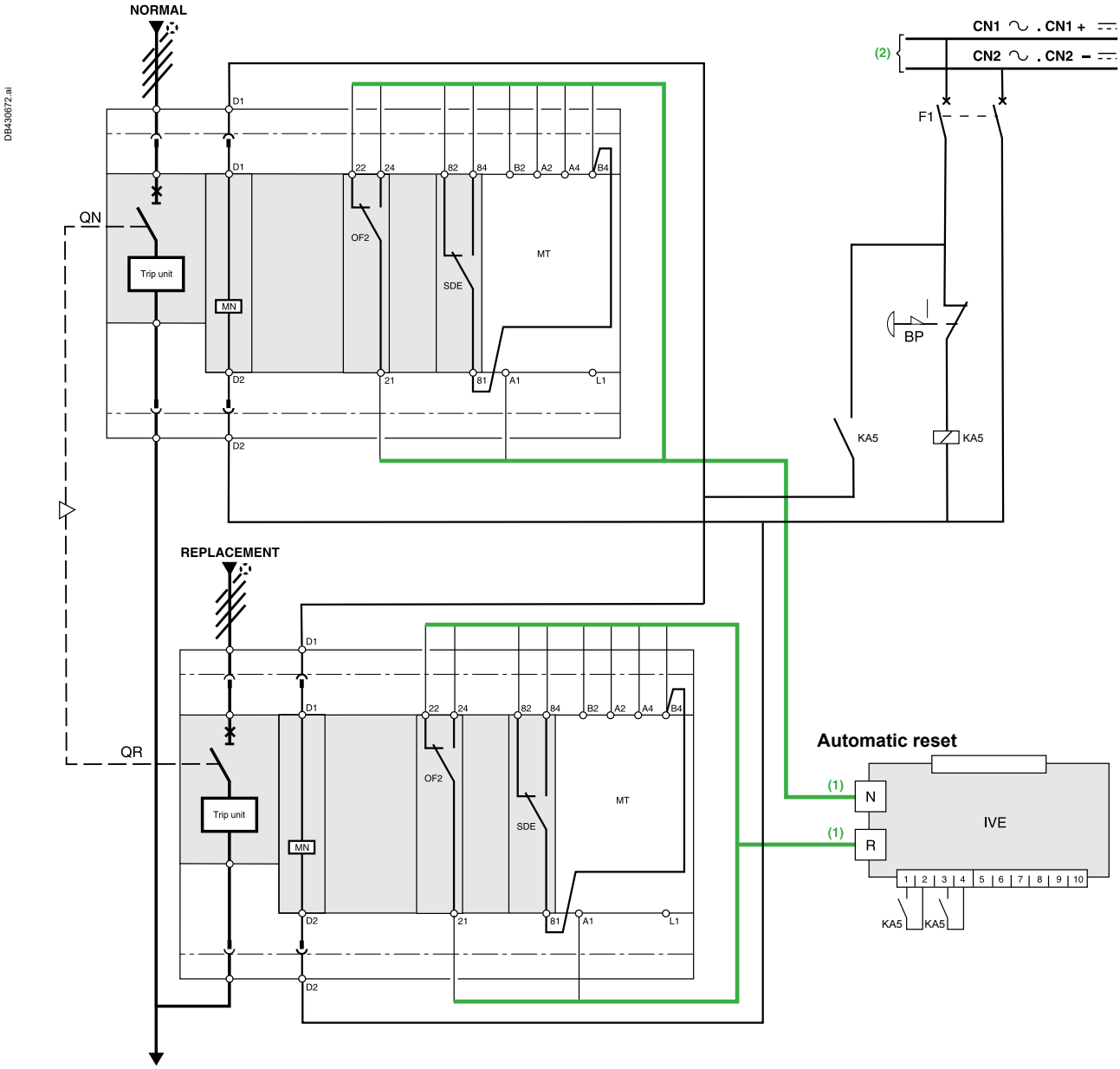
Remote-Operated Source-Changeover Systems

2 ComPacT NSX100/630 Devices

Diagram no. 51201178

Source-Changeover System without Automatic-Control System

With emergency off by MN release and automatic reset



[1] Prefabricated wiring supplied.
[2] Independent auxiliary source.

Legends

QN	"Normal" source ComPacT NSX equipped with motormechanism
QR	"Replacement" source ComPacT NSX equipped with motor mechanism
MN	undervoltage release
OF2	breaker ON/OFF indication contact
SDE	"fault-trip" indication contact
MT	motor mechanism
IVE	electrical interlocking and terminal block unit
BP	emergency off button with latching
KA5	auxiliary relay
F1	auxiliary power supply circuit breaker

States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

Note: after a fault trip, the breaker must be reset manually by pressing its reset button.
Diagram shown with circuits de-energized, circuit breakers open and relays in normal position.

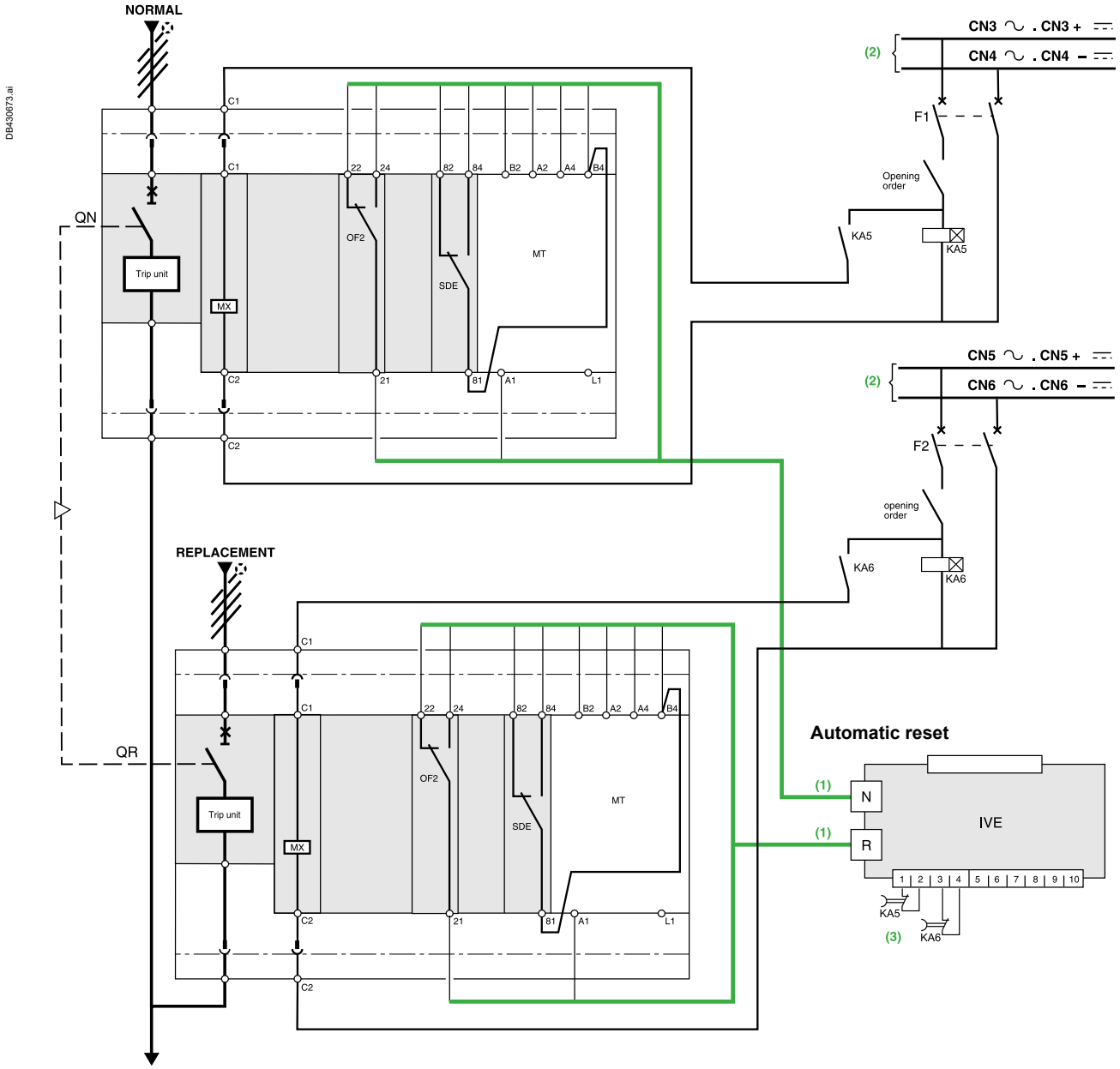
Remote-Operated Source-Changeover Systems

2 ComPacT NSX100/630 Devices

Diagram no. 51201179

Source-Changeover System without Automatic-Control System

With emergency off by MX release and automatic reset



Legends

QN	"Normal" source ComPacT NSX equipped with motor mechanism
QR	"Replacement" source ComPacT NSX equipped with motor mechanism
SDE	"fault-trip" indication contact
OF2	breaker ON/OFF indication contact
MX	shunt release
MT	motor mechanism
IVE	electrical interlocking and terminal block unit
KA5	time-delayed auxiliary relays
KA6	time-delayed auxiliary relays
F1	auxiliary power supply circuit breaker
F2	auxiliary power supply circuit breaker

[1] Prefabricated wiring supplied

[2] This source can be:
- the source present in the case of voltage monitoring
- an independent source.

In this case, the MX release must be protected.

[3] The reset orders must be delayed by 0.3 seconds.

States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

Note: after a fault trip, the breaker must be reset manually by pressing its reset button.

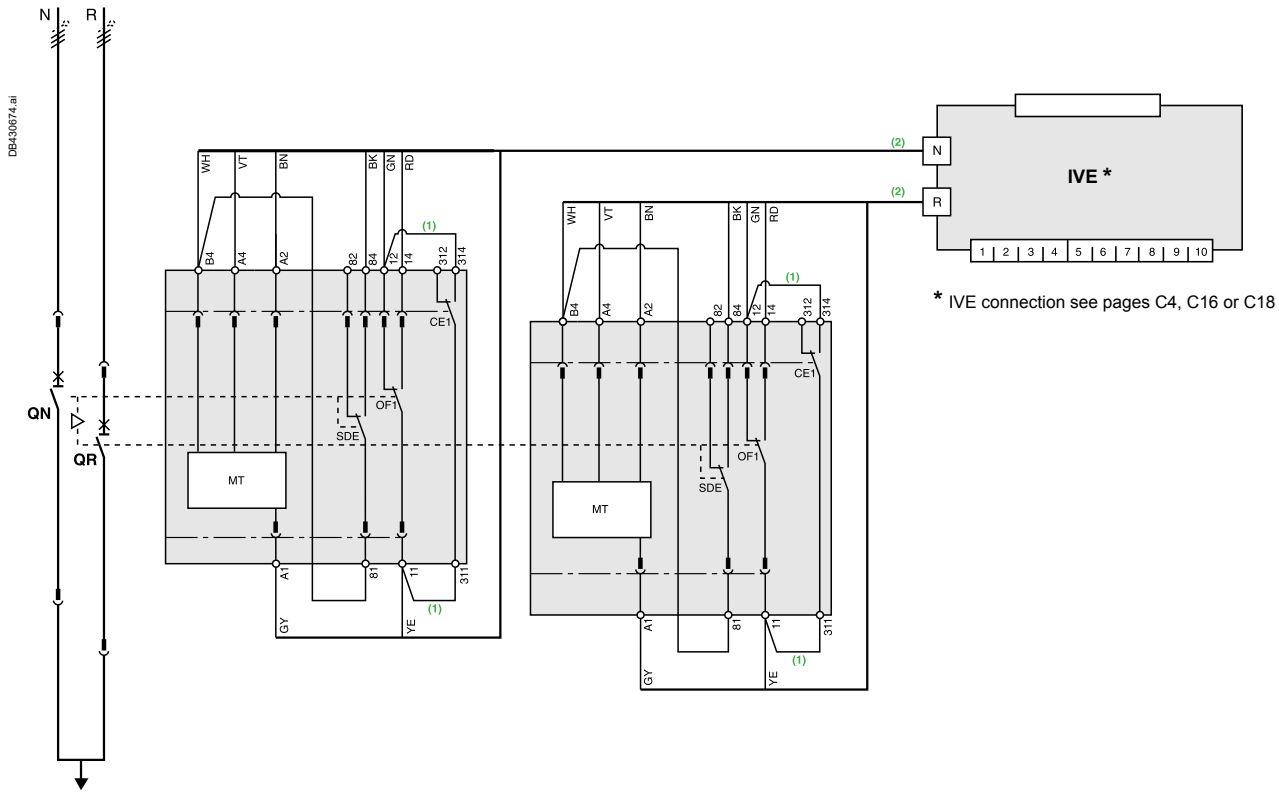
Diagram shown with circuits de-energized, circuit breakers open and relays in normal position.

Remote-Operated Source-Changeover Systems

2 ComPacT NS630b/1600 Devices

Diagram no. 51201183

Electrical Interlocking by IVE Unit



* IVE connection see pages C4, C16 or C18

ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired on fixed version.
[2] Prefabricated wiring supplied.

Legends

QN	"Normal" source ComPacT NS630b to 1600
QR	"Replacement" source ComPacT NS630b to 1600
OF...	breaker ON/OFF indication contact
SDE	"fault-trip" indication contact
CE1	"connected-position" indication contact (carriage switch)
F1	auxiliary power supply circuit breaker
IVE	electrical interlocking and terminal block unit
ON	"Normal" source opening order
OR	"Replacement" source opening order
CN	"Normal" source closing order (0.25 second delay)
CR	"Replacement" source closing order (0.25 second delay)
MT	Motor Mechanism

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

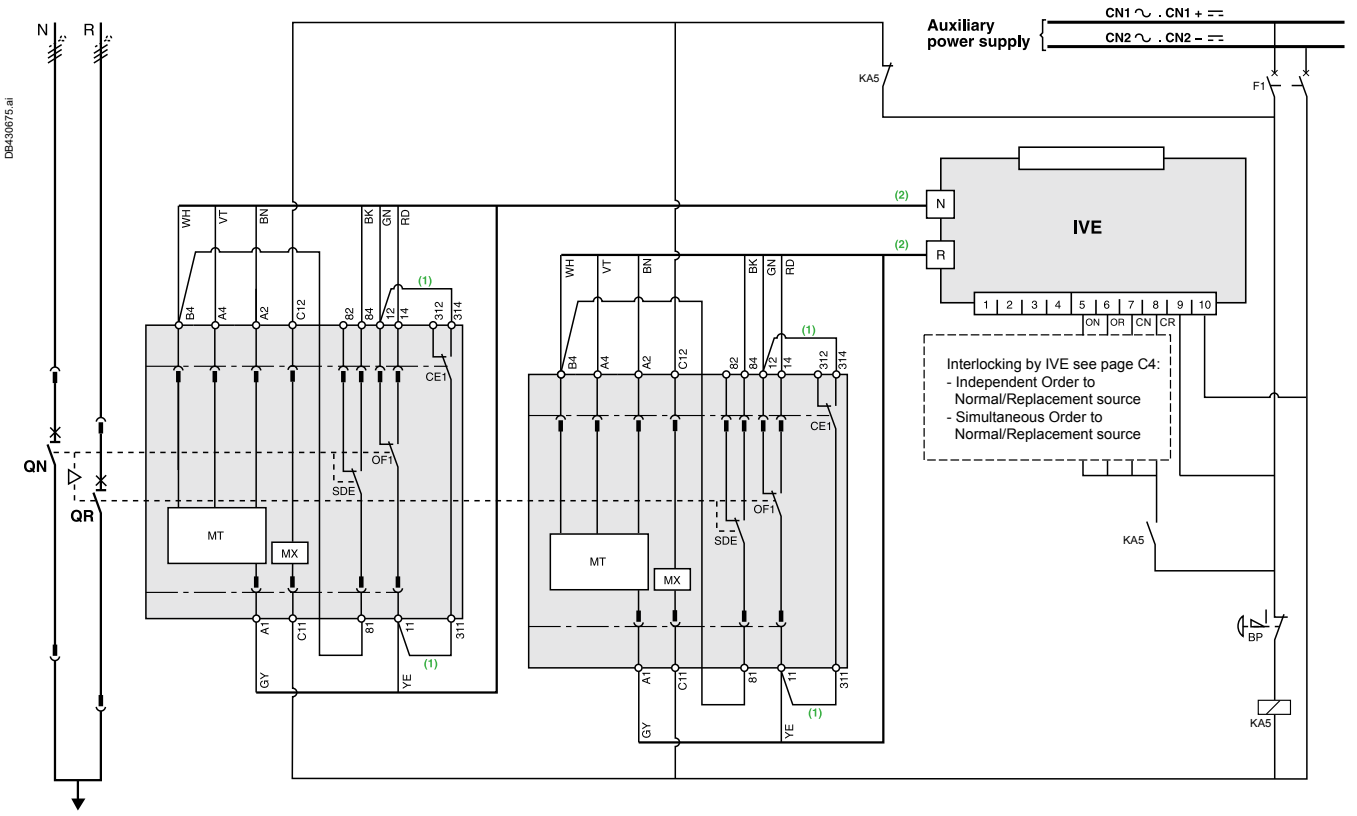
Note: after a fault trip, the breaker must be reset manually by pressing its reset button.
Diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MT...).

Remote-Operated Source-Changeover Systems

2 ComPacT NS630b/1600 Devices

Diagram no. 51201184

Electrical Interlocking by IVE Unit with Emergency Off by Shunt Release



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired on fixed version.
[2] Prefabricated wiring supplied.

Legends

QN	"Normal" source ComPacT NS630b to 1600
QR	"Replacement" source ComPacT NS630b to 1600
OF...	breaker ON/OFF indication contact
SDE	"fault-trip" indication contact
CE1	"connected-position" indication contact (carriage switch)
F1	auxiliary power supply circuit breaker
IVE	electrical interlocking and terminal block unit
MX	shunt release
BP	emergency off button with latching
KA5	auxiliary relay
ON	"Normal" source opening order
OR	"Replacement" source opening order
CN	"Normal" source closing order (0.25 second delay)
CR	"Replacement" source closing order (0.25 second delay)
MT	Motor Mechanism

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

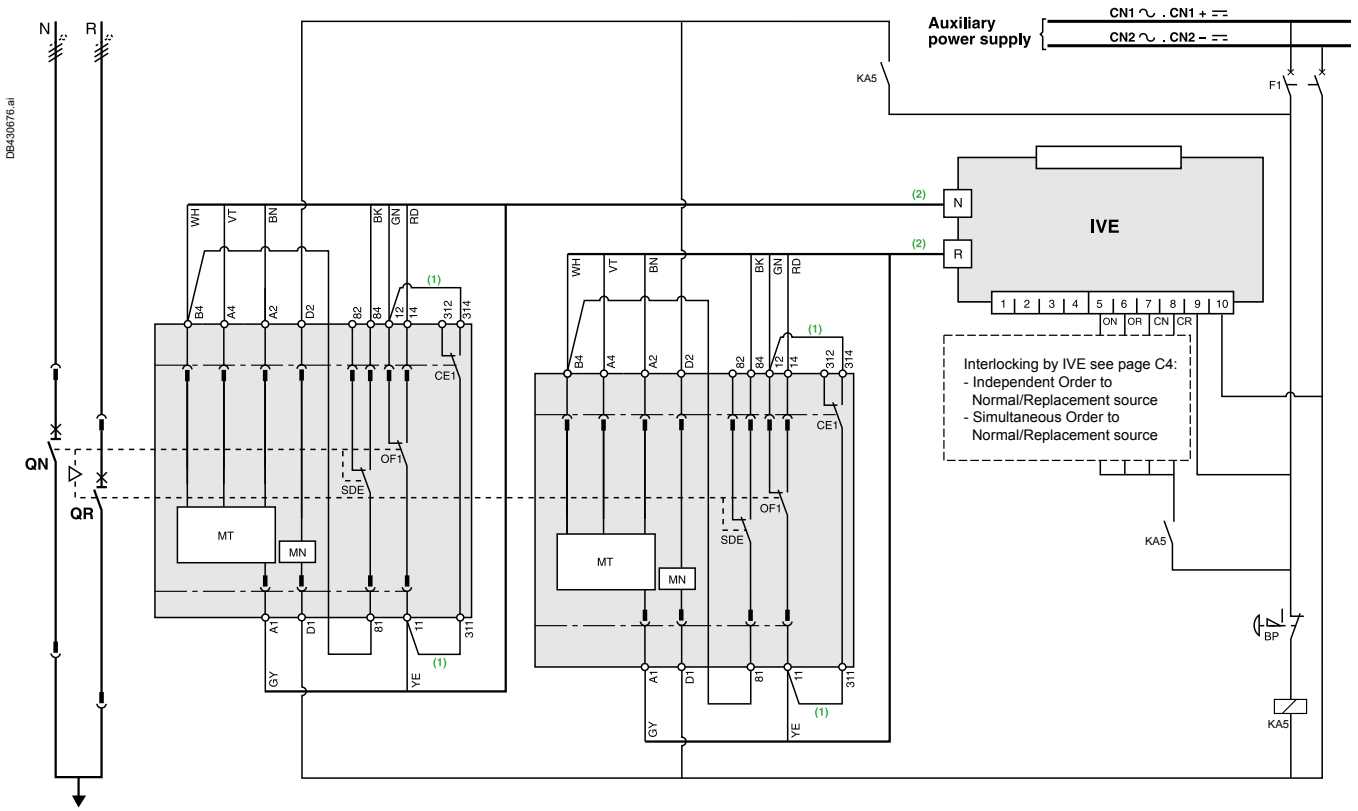
Note: after a fault trip, the breaker must be reset manually by pressing its reset button.
Diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MX, MT...).

Remote-Operated Source-Changeover Systems

2 ComPacT NS630b/1600 Devices

Diagram no. 51201185

Electrical Interlocking by IVE Unit with Emergency off by Undervoltage Release



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired on fixed version.
[2] Prefabricated wiring supplied.

Legends

QN	"Normal" source ComPacT NS630b to 1600
QR	"Replacement" source ComPacT NS630b to 1600
OF...	breaker ON/OFF indication contact
SDE	"fault-trip" indication contact
CE1	"connected-position" indication contact (carriage switch)
F1	auxiliary power supply circuit breaker
IVE	electrical interlocking and terminal block unit
MN	undervoltage release
BP	emergency off button with latching
KA5	auxiliary relay
ON	"Normal" source opening order
OR	"Replacement" source opening order
CN	"Normal" source closing order (0.25 second delay)
CR	"Replacement" source closing order (0.25 second delay)
MT	Motor Mechanism

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

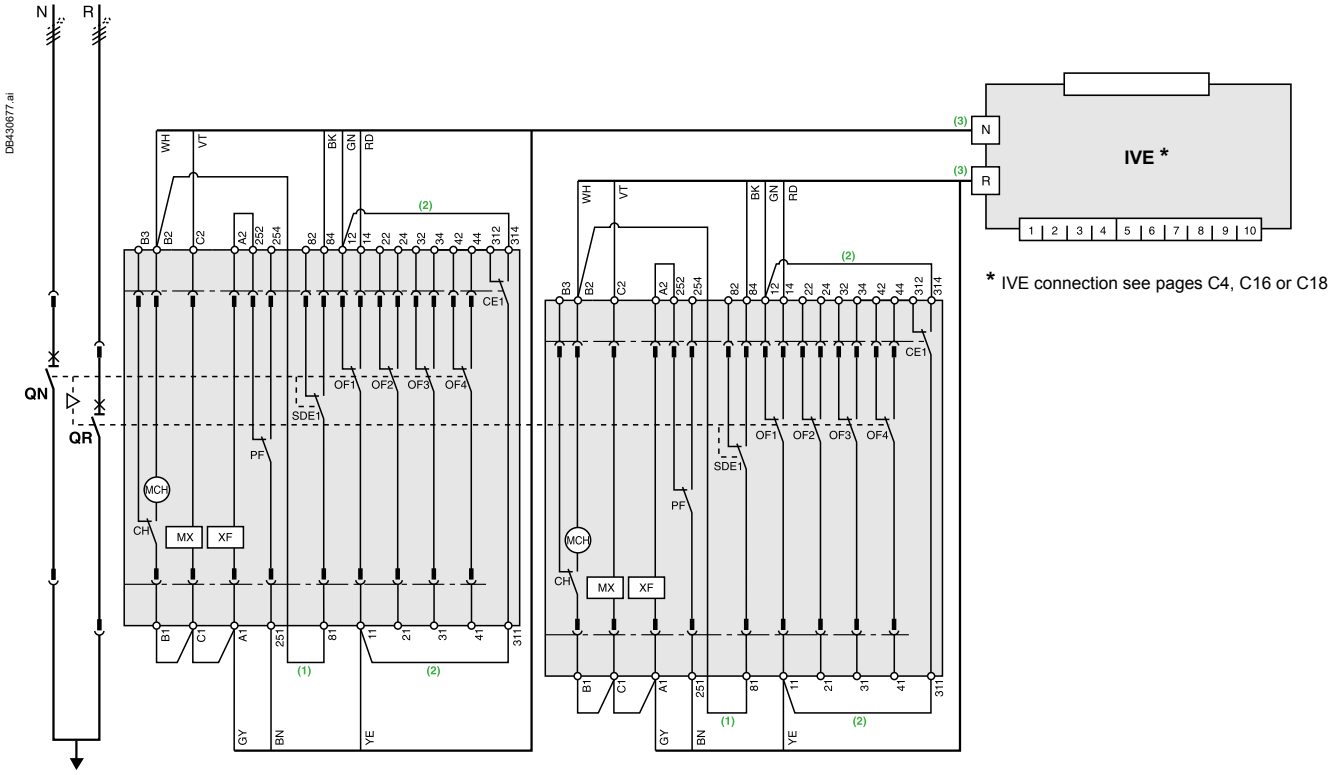
States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

Note: after a fault trip, the breaker must be reset manually by pressing its reset button.
Diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MN, MT...).

Remote-Operated Source-Changeover Systems
2 MasterPacT MTZ1 or MTZ2/MTZ3 Devices

Electrical interlocking by IVE unit with lockout after a fault



* IVE connection see pages C4, C16 or C18

ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired for the “without lockout after a fault” solution.
[2] Not to be wired on fixed version.
[3] Prefabricated wiring supplied.

Legends

QN	“Normal” source MasterPacT MTZ1 or MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ1 or MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
SDE1	“fault-trip” indication contact
PF	“ready-to-close” contact
CE1	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
IVE	electrical interlocking and terminal block unit
F1	auxiliary power supply circuit breaker
ON	“Normal” source opening order
OR	“Replacement” source opening order
CN	“Normal” source closing order (0.25 second delay)
CR	“Replacement” source closing order (0.25 second delay)

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

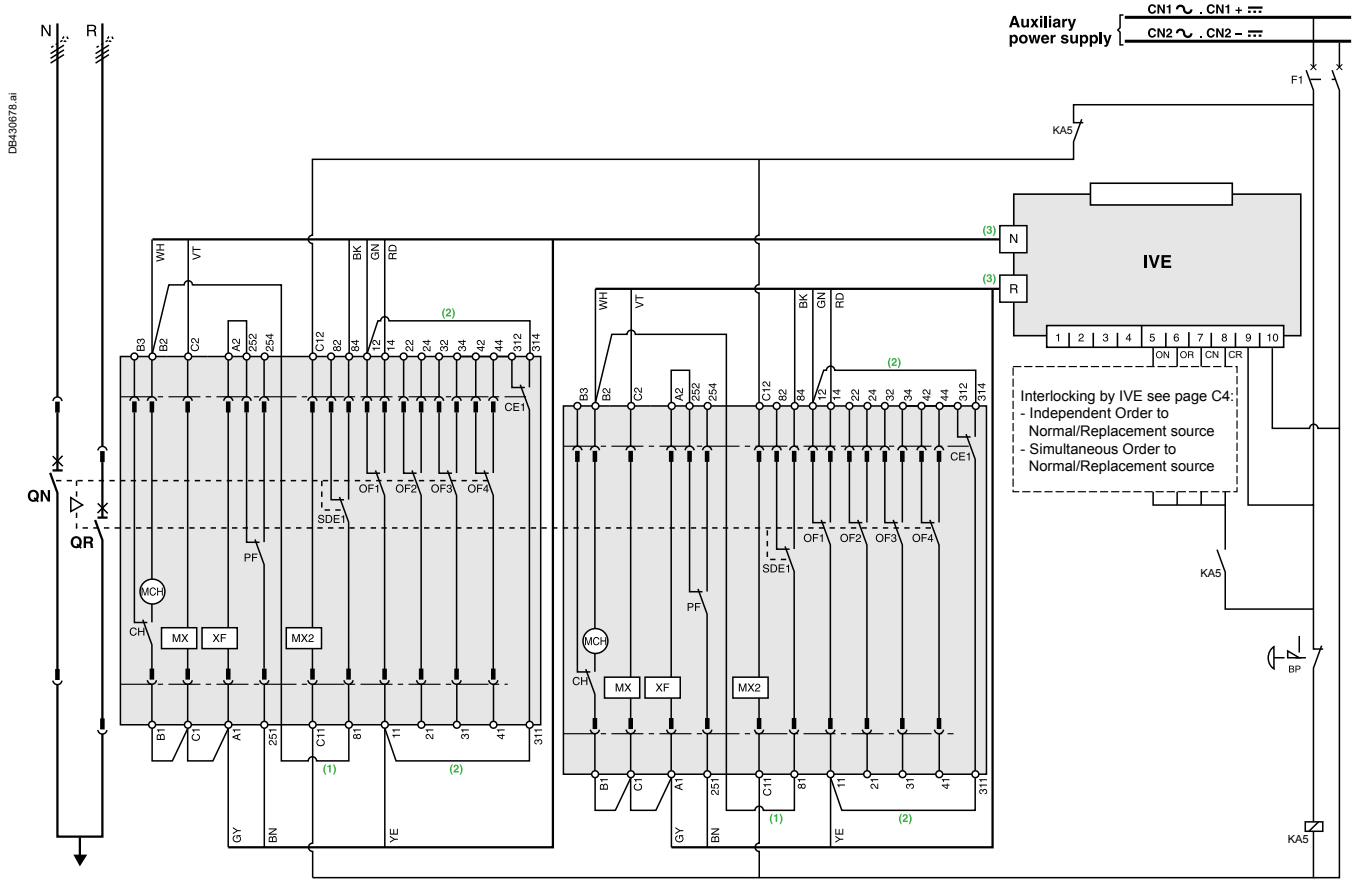
States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems
2 MasterPacT MTZ1 or MTZ2 or MTZ3 Devices

Electrical interlocking by IVE unit with lockout after a fault and emergency off by shunt release



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired for the “without lockout after a fault” solution.
[2] Not to be wired on fixed version.
[3] Prefabricated wiring supplied.

Legends

QN	“Normal” source MasterPacT MTZ1 or MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ1 or MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
SDE1	“fault-trip” indication contact
PF	“ready-to-close” contact
CE1	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
IVE	electrical interlocking and terminal block unit
KA5	auxiliary relay
F1	auxiliary power supply circuit breaker
BP	emergency off button with latching
ON	“Normal” source opening order
OR	“Replacement” source opening order
CN	“Normal” source closing order (0.25 second delay)
CR	“Replacement” source closing order (0.25 second delay)

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

States permitted by mechanical interlocking system

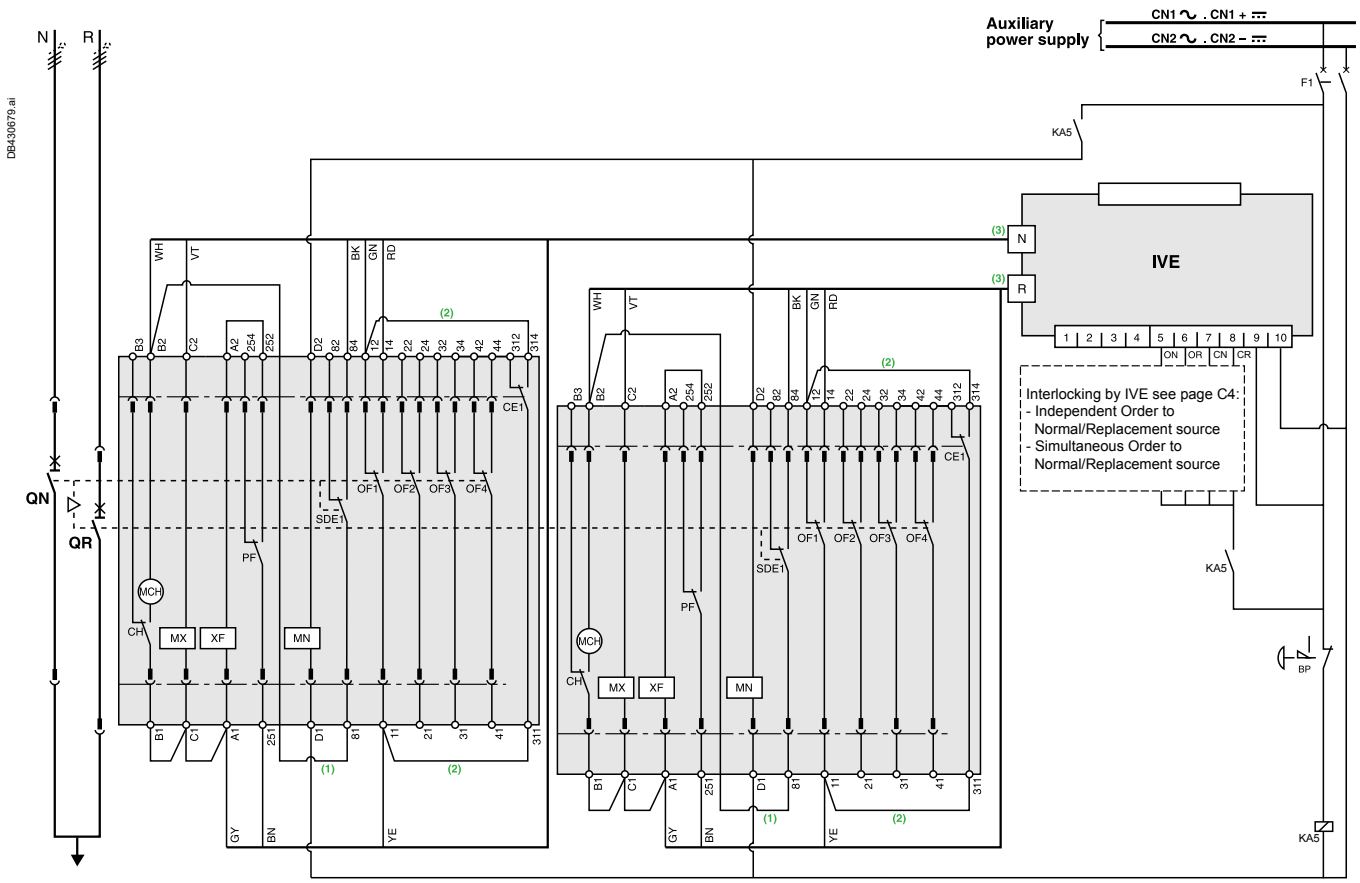
Normal	Replacement
0	0
1	0
0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems

2 MasterPacT MTZ1 or MTZ2 or MTZ3 Devices

Electrical Interlocking by IVE Unit with Lockout after A Fault and Emergency off by Undervoltage Release



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired for the “without lockout after a fault” solution.
[2] Not to be wired on fixed version.
[3] Prefabricated wiring supplied.

Legends

QN	“Normal” source MasterPacT MTZ1 or MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ1 or MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
MN	undervoltage release
OF...	breaker ON/OFF indication contact
SDE1	“fault-trip” indication contact
PF	“ready-to-close” contact
CE1	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
IVE	electrical interlocking and terminal block unit
KA5	auxiliary relay
F1	auxiliary power supply circuit breaker
BP	emergency off button with latching
ON	“Normal” source opening order
OR	“Replacement” source opening order
CN	“Normal” source closing order (0.25 second delay)
CR	“Replacement” source closing order (0.25 second delay)

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

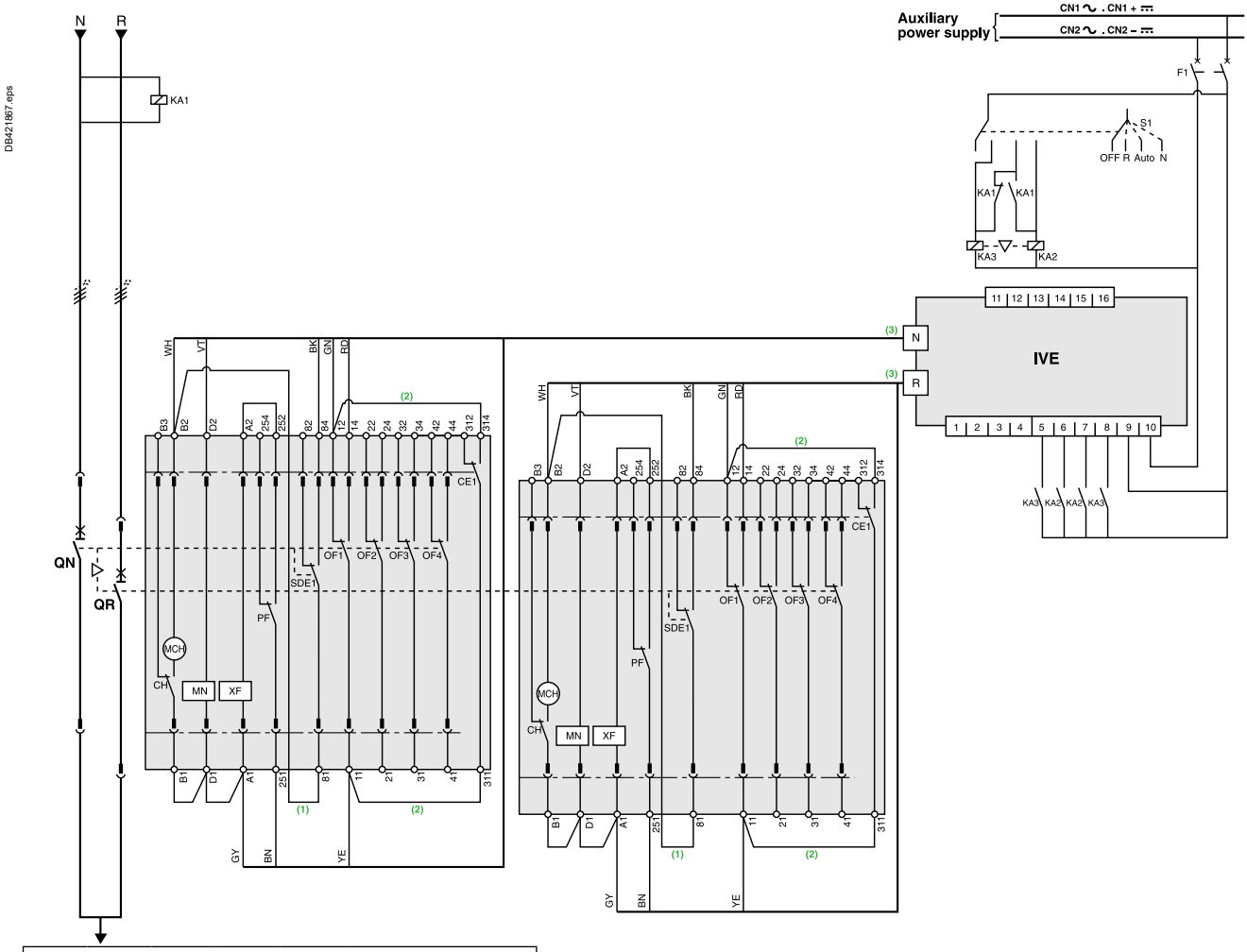
States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, MN, XF...).

Remote-Operated Source-Changeover Systems
2 MasterPacT MTZ1 or MTZ2 or MTZ3 Devices

Automatic-Control System for Permanent Replacement Source with Lockout after A Fault (with MN)



ATTENTION
The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired for the “without lockout after a fault” solution.
[2] Not to be wired on fixed version.
[3] Prefabricated wiring supplied.

IMPORTANT

The relays controlling the closing order to the “Normal” and “Replacement” circuit breakers must be mechanically and/or electrically interlocked to prevent them from giving simultaneous closing commands.

It is recommended to use **Tesys** K relays from Schneider Electric reference LC2-K06010●●. These relays are mechanically and electrically interlocked.

Legends

QN	“Normal” source MasterPacT MTZ1 or MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ1 or MTZ2 or MTZ3
MCH	spring-charging motor
XF	standard closing voltage release
MN	undervoltage release
OF...	breaker ON/OFF indication contact
SDE1	“fault-trip” indication contact
PF	“ready-to-close” contact
CE1	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
IVE	electrical interlocking and terminal block unit
F1	auxiliary power supply circuit breaker
F2	circuit breaker (high breaking capacity)
S1	control switches
KA1	auxiliary relays
KA2	auxiliary relays
KA3	auxiliary relays

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

States permitted by mechanical interlocking system

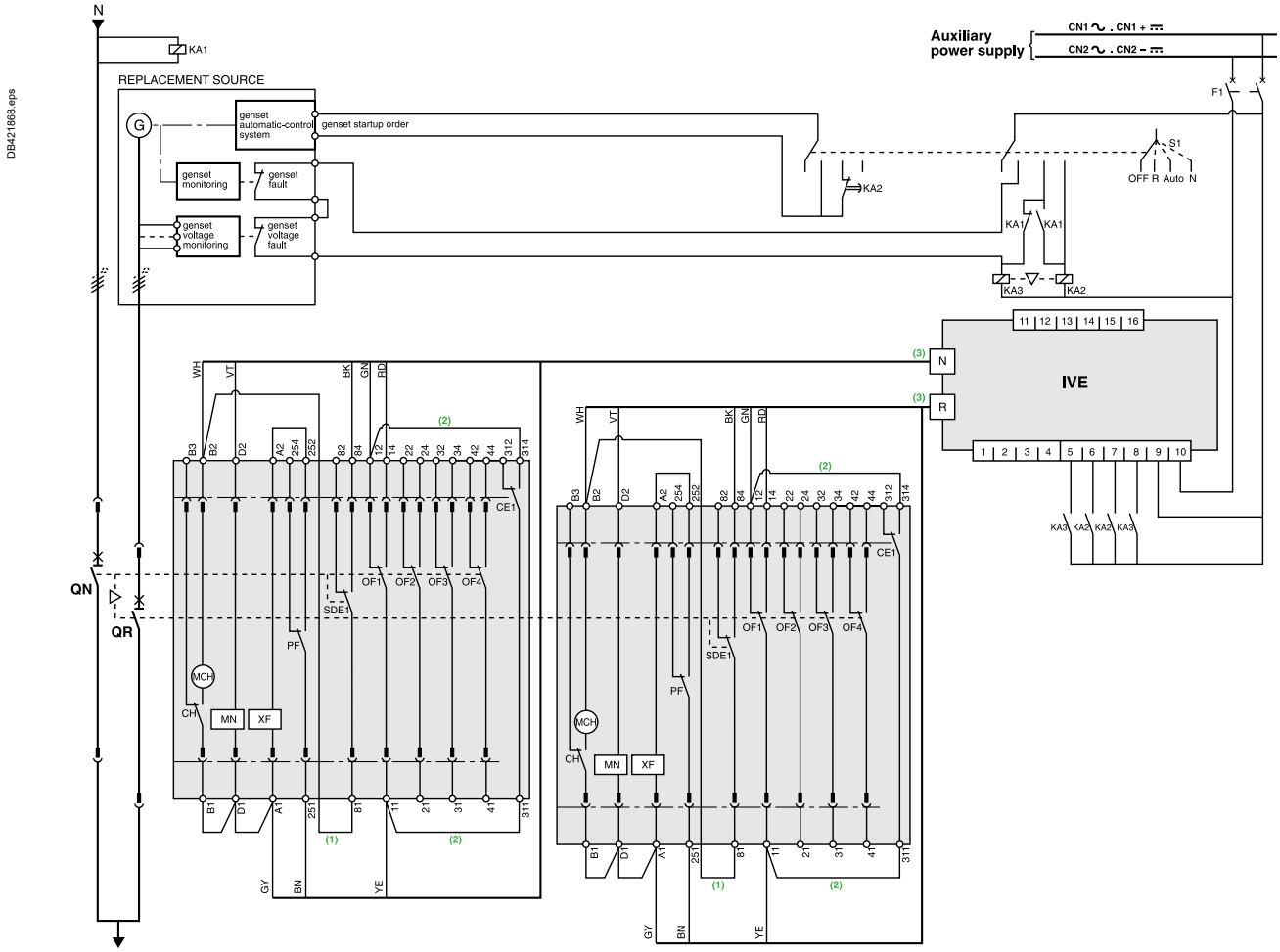
Normal	Replacement
0	0
1	0
0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MN, XF...).

Remote-Operated Source-Changeover Systems

2 MasterPacT MTZ1 or MTZ2 or MTZ3 Devices

Automatic-Control System for Replacement Source Generator Set with Lockout after A Fault (with MN)



ATTENTION
The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect wire BK to terminal 82.**

[1] Not to be wired for the “without lockout after a fault” solution.
[2] Not to be wired on fixed version.
[3] Prefabricated wiring supplied.

IMPORTANT

The relays controlling the closing order to the “Normal” and “Replacement” circuit breakers must be mechanically and/or electrically interlocked to prevent them from giving simultaneous closing commands.

It is recommended to use **Tesys** K relays from Schneider Electric reference LC2-K06010●●. These relays are mechanically and electrically interlocked.

Legends

QN	“Normal” source MasterPacT MTZ1 or MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ1 or MTZ2 or MTZ3
MCH	spring-charging motor
XF	standard closing voltage release
MN	undervoltage release
OF...	breaker ON/OFF indication contact
SDE1	“fault-trip” indication contact
PF	“ready-to-close” contact
CE1	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
IVE	electrical interlocking and terminal block unit
F1	auxiliary power supply circuit breaker
F2	circuit breaker (high breaking capacity)
S1	control switches
KA1	auxiliary relay
KA2	time delay for genset startup order to avoid starting the genset for transient UN disturbances
KA3	auxiliary relay

Wiring colour codes

RD	GN	BK	VT	YE	GY	WH	BN
red	green	black	violet	yellow	grey	white	brown

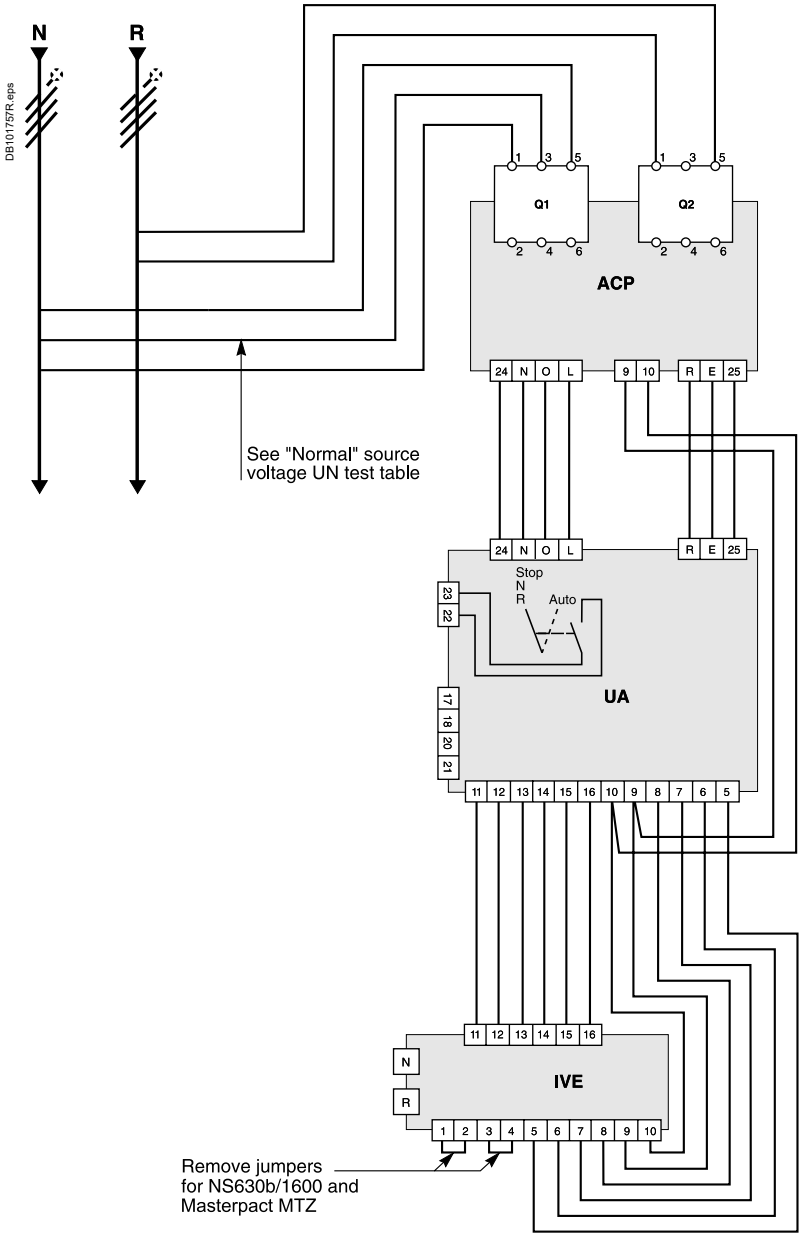
States permitted by mechanical interlocking system

Normal	Replacement
0	0
1	0
0	1

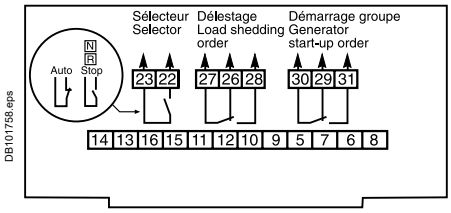
Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MN, XF...).

Source-Changeover Systems with UA Controllers
2 ComPacT NSX100/630, NS630b/1600 or MasterPacT MTZ1/MTZ2/MTZ3 Devices

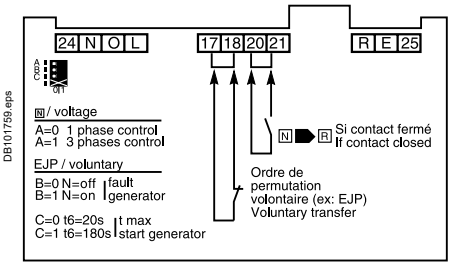
Source-Changeover System with UA Controller



Load shedding and genset management



Transfer conditions

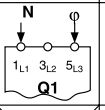
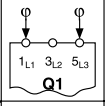
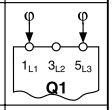
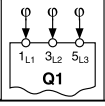
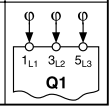


Terminals 20 and 21:
additional control contact (not part of controller).

Tests on "Normal" and "Replacement" source voltages

"Normal" source voltage UN test

DB101761.eps

Ref. UA UA150	29472 29474	29472 29474	29473 29475
Supply voltage / Switch position	N / φ 220/240VAC 50/60Hz	φ / φ 220/240VAC 50/60Hz	φ / φ 380/415VAC 50/60Hz 440V - 60Hz
A = 0			
A = 1			

"Replacement" source voltage UR test
The single-phase check for UR is implemented across terminals 1 and 5 of circuit breaker Q2.

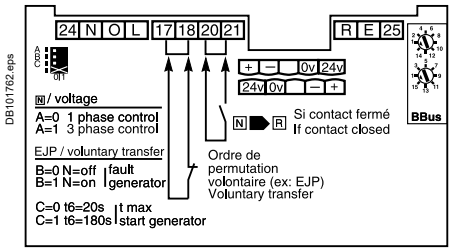
Legends
- Q1 circuit breaker supplying and protecting the automatic-control circuits for the "Normal" source
- Q2 circuit breaker supplying and protecting the automatic-control circuits for the "Replacement" source
- ACP control plate
- UA automatic controller
- IVE electrical interlocking and terminal block unit

Note: diagram shown with circuits de-energized, circuit breakers open and relays in normal position.

Source-Changeover Systems with UA Controllers
Controller Settings

Source Changeover System with UA Controller

Controller settings



Tests on “Normal” source voltage

A = 0 single-phase test,
A = 1 three-phase test.

Voluntary transfert (e.g. for energy management)

- action in the event of genset failure

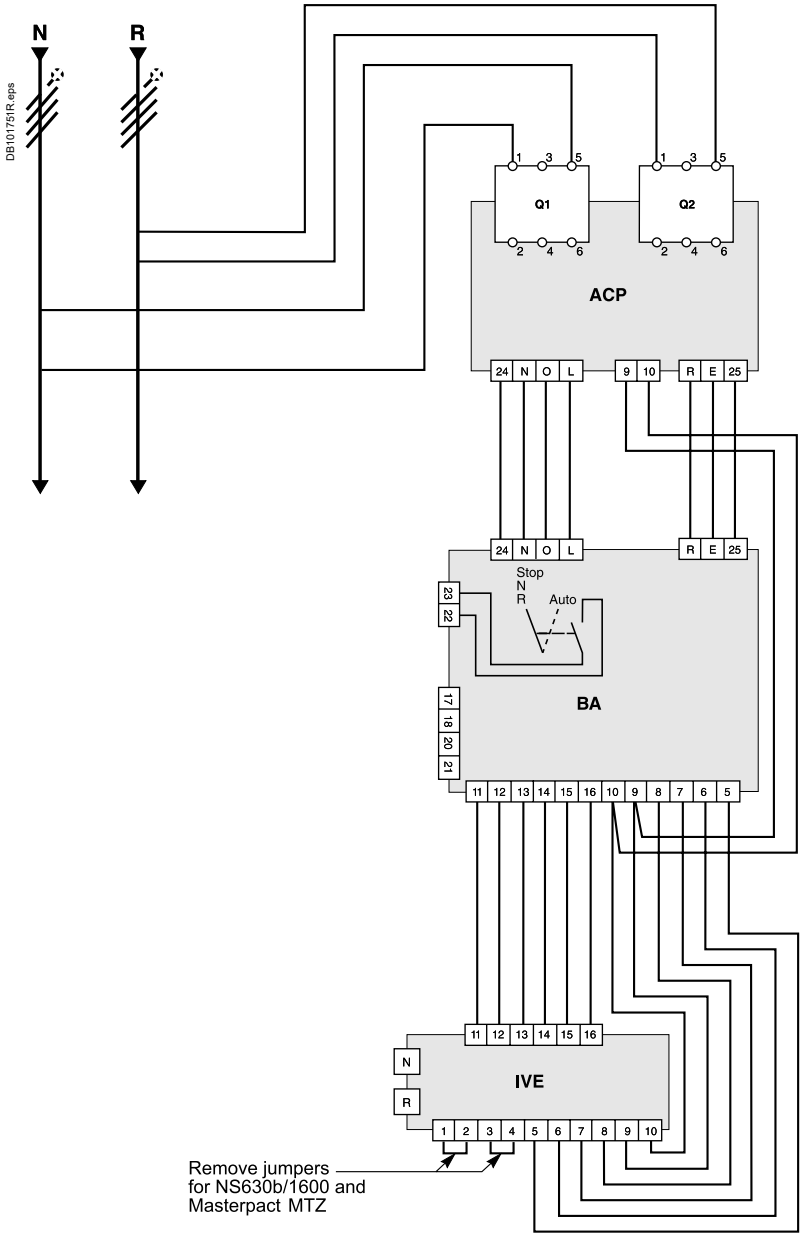
B = 0 circuit breaker N opens,
B = 1 circuit breaker N remains closed.

- maximum permissible genset startup time (T6)

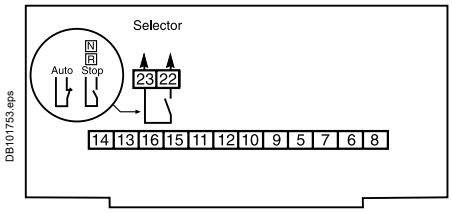
C = 0 T = 120 s,
C = 1 T = 180 s.
After this time has elapsed, the genset is considered to have failed.

Source-Changeover Systems with BA Controllers
2 ComPacT NSX100/630, NS630b/1600 or MasterPacT MTZ1/MTZ2/MTZ3 Devices

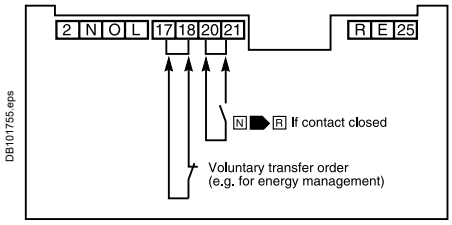
Source-Changeover System with BA Controller



Coupling



Transfer conditions



Terminals 20 and 21:
additional control contact (not part of controller).

Tests on "Normal" and "Replacement" source voltages
The single-phase check for UN and UR is implemented across terminals 1 and 5 of circuit breakers Q1 and Q2.

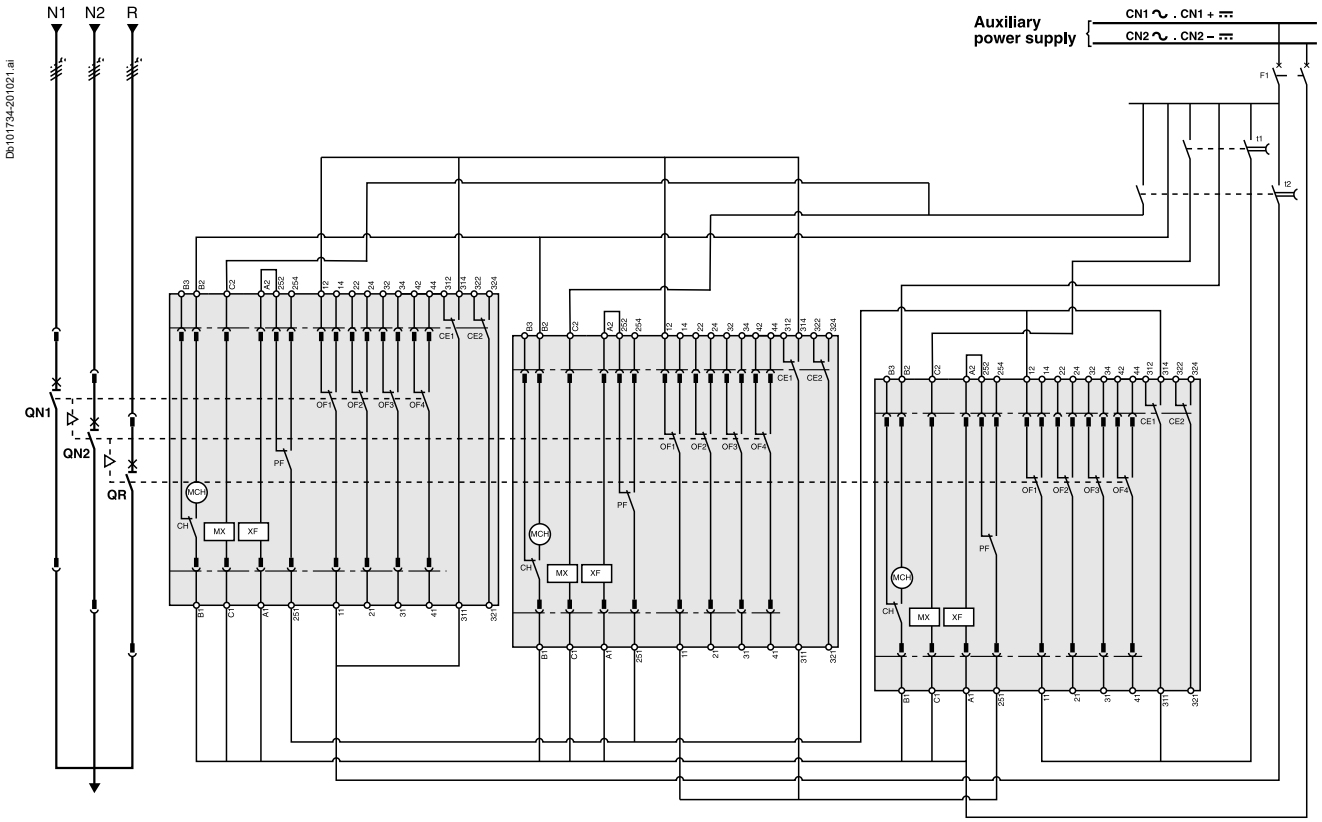
Legends

Q1	circuit breaker supplying and protecting the automatic-control circuits for the "Normal" source
Q2	circuit breaker supplying and protecting the automatic-control circuits for the "Replacement" source
ACP	control plate
BA	automatic controller
IVE	electrical interlocking and terminal block unit

Note: diagram shown with circuits de-energized, circuit breakers open and relays in normal position.

Remote-Operated Source-Changeover Systems
3 MasterPacT MTZ2/MTZ3 Devices

2 Normal Sources and 1 Replacement Source: Electrical Interlocking without Lockout after A Fault



Legends

QN...	“Normal” source MasterPacT MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
PF	“ready-to-close” contact
CE	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
F1	auxiliary power supply circuit breaker
t1	order for transfer from “R” to “N1 + N2” (QN1 and QN2 closing time delay = 0.25 sec. minimum)
t2	order for transfer from “N1 + N2” to “R” (QR closing time delay = 0.25 sec. minimum)

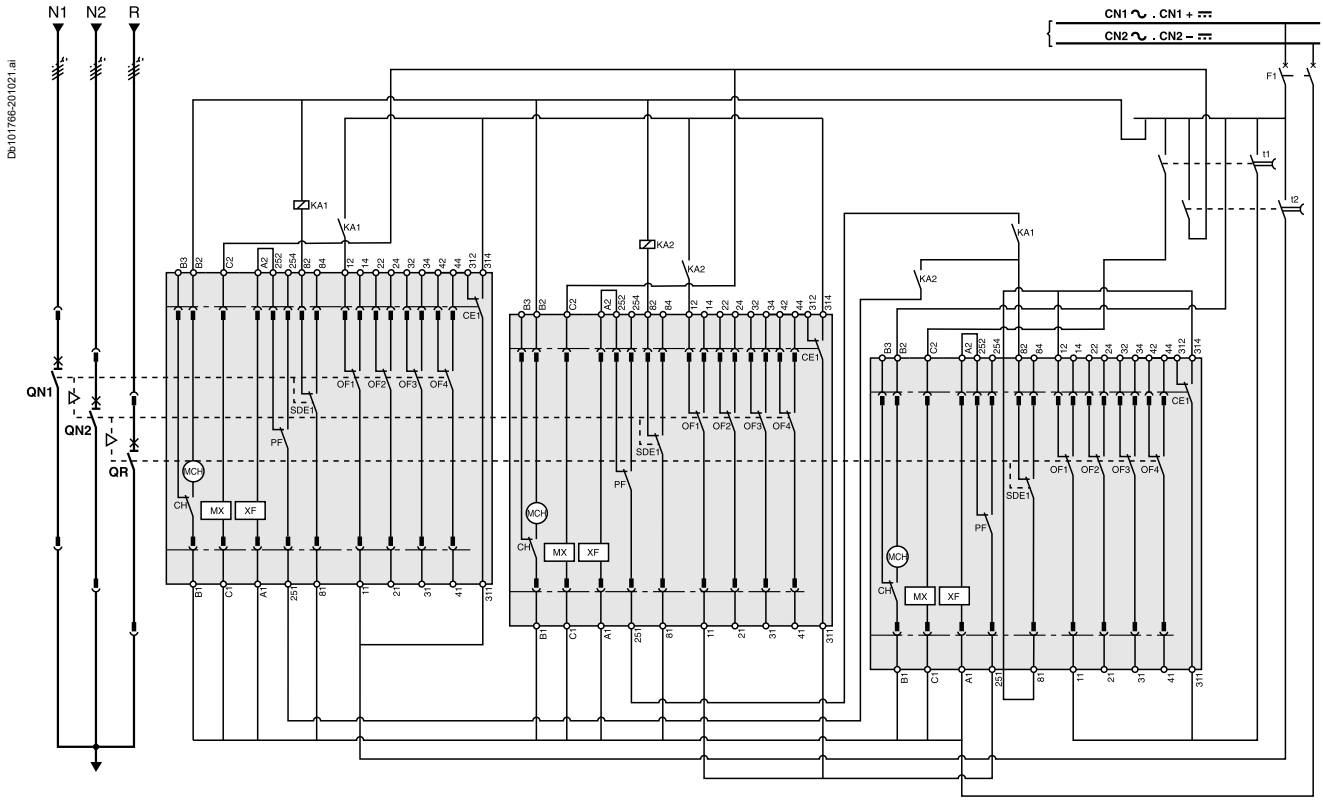
States permitted by mechanical interlocking system

Normal 1	Normal 2	Replacement
0	0	0
1	1	0
0	0	1
1	0	0
0	1	0

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems
3 MasterPacT MTZ2/MTZ3 Devices

2 Normal Sources and 1 Replacement Source: Electrical Interlocking with Lockout after A Fault



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect the SDE to terminals 81 and 84.**

Legends

QN...	"Normal" source MasterPacT MTZ2 or MTZ3
QR	"Replacement" source MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
SDE1	"fault-trip" indication contact
PF	"ready-to-close" contact
CE1	"connected-position" indication contact (carriage switch)
CH	"springs charged" indication contact
F1	auxiliary power supply circuit breaker
S1	control switches
S2	source selection switches
KA1	auxiliary relay
KA2	auxiliary relays with 10 to 180 sec. time delay
t1	order for transfer from "R" to "N1 + N2" (QN1 and QN2 closing time delay = 0.25 sec. minimum)
t2	order for transfer from "N1 + N2" to "R" (QR closing time delay = 0.25 sec. minimumm)

States permitted by mechanical interlocking system

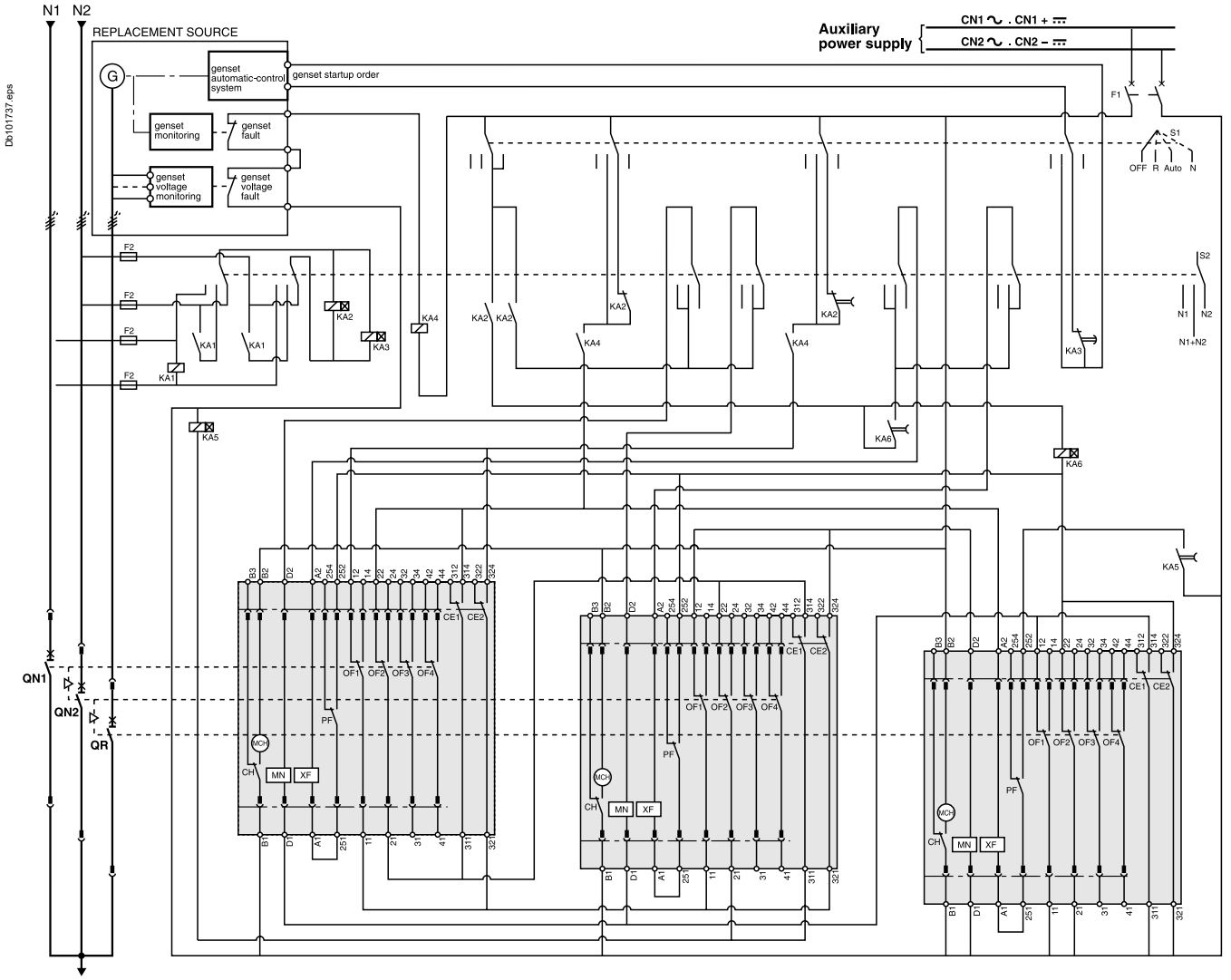
Normal 1	Normal 2	Replacement
0	0	0
1	1	0
0	0	1
1	0	0
0	1	0

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems

3 MasterPacT MTZ2/MTZ3 Devices

2 Normal Sources and 1 Replacement Source: Automatic-Control System for Generator Set without Lockout after A Fault (with MN)



Legends

QN...	“Normal” source MasterPacT MTZ2 or MTZ3
QR	“Replacement” source MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
XF	standard closing voltage release
MN	undervoltage release
OF...	breaker ON/OFF indication contact
PF	“ready-to-close” contact
CE...	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
F1	auxiliary power supply circuit breaker
F2/F3	circuit breaker (high breaking capacity)
S1	control switches
S2	source selection switches
KA1	auxiliary relay
KA2	auxiliary relays with 10 to 180 sec. time delay
KA3	auxiliary relays with 0.1 to 30 sec. time delay
KA4	auxiliary relay
KA5	auxiliary relays with 0.25 sec. time delay
KA6	auxiliary relays with 0.25 sec. time delay

States permitted by mechanical interlocking system and with associated automatism

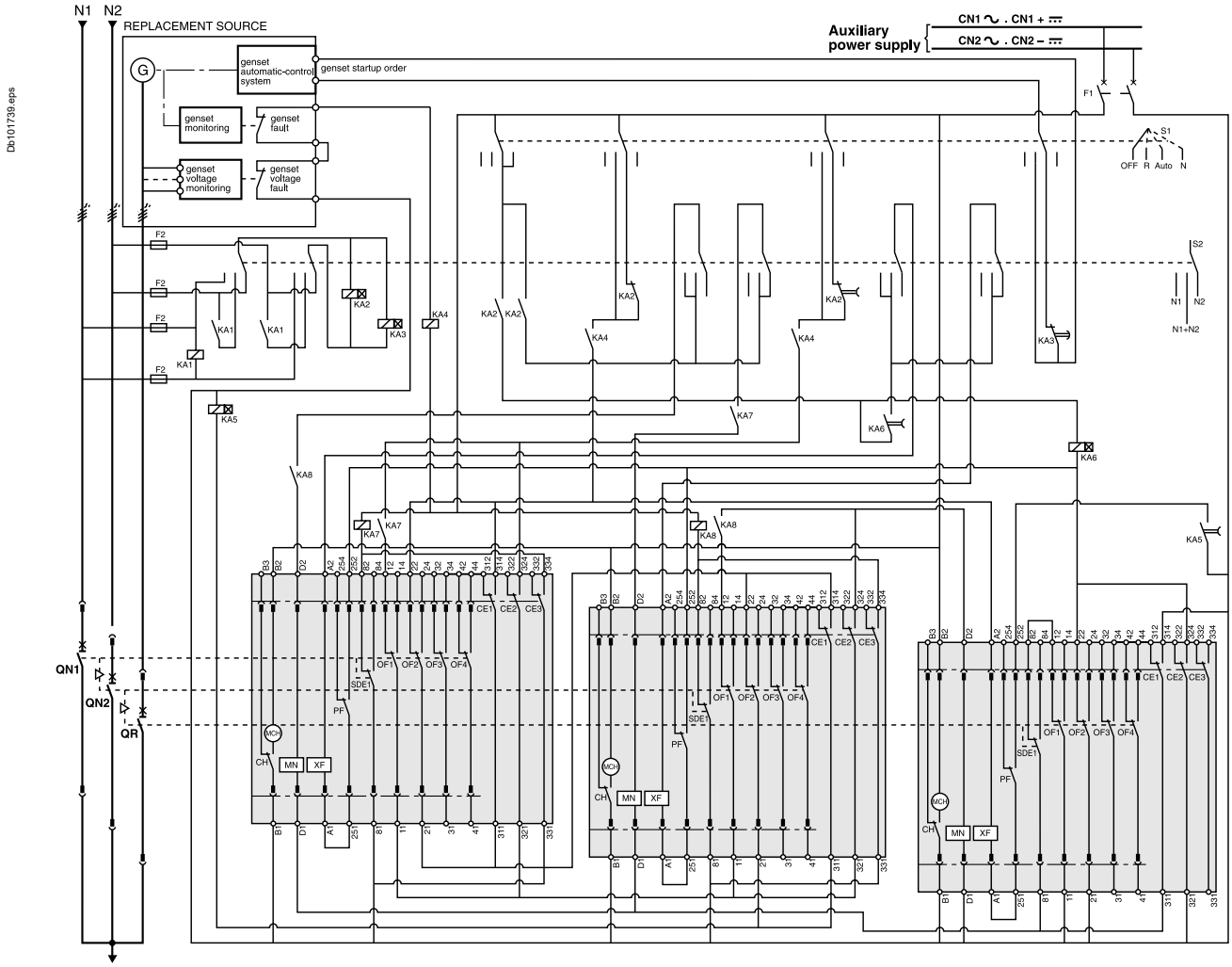
Normal 1	Normal 2	Replacement
0	0	0
1	1	0
0	0	1
1	0	0
0	1	0

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MN, XF...).

Remote-Operated Source-Changeover Systems

3 MasterPacT MTZ2/MTZ3 Devices

2 Normal Sources and 1 Replacement Source: Automatic-Control System for Generator Set with Lockout after A Fault (with MN)



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect the SDE to terminals 81 and 84.**

Legends

QN...	"Normal" source MasterPacT MTZ2 or MTZ3
QR	"Replacement" source MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
XF	standard closing voltage release
MN	undervoltage release
OF...	breaker ON/OFF indication contact
SDE1	"fault-trip" indication contact
PF	"ready-to-close" contact
CE...	"connected-position" indication contact (carriage switch)
CH	"springs charged" indication contact
F1	auxiliary power supply circuit breaker
F2/F3	circuit breaker (high breaking capacity)
S1	control switches
S2	source selection switches
KA1	auxiliary relay
KA2	auxiliary relays with 10 to 180 sec. time delay
KA3	auxiliary relays with 0.1 to 30 sec. time delay
KA4	auxiliary relay
KA5	auxiliary relays with 0.25 sec. time delay
KA6	auxiliary relays with 0.25 sec. time delay
KA7	auxiliary relay
KA8	auxiliary relay

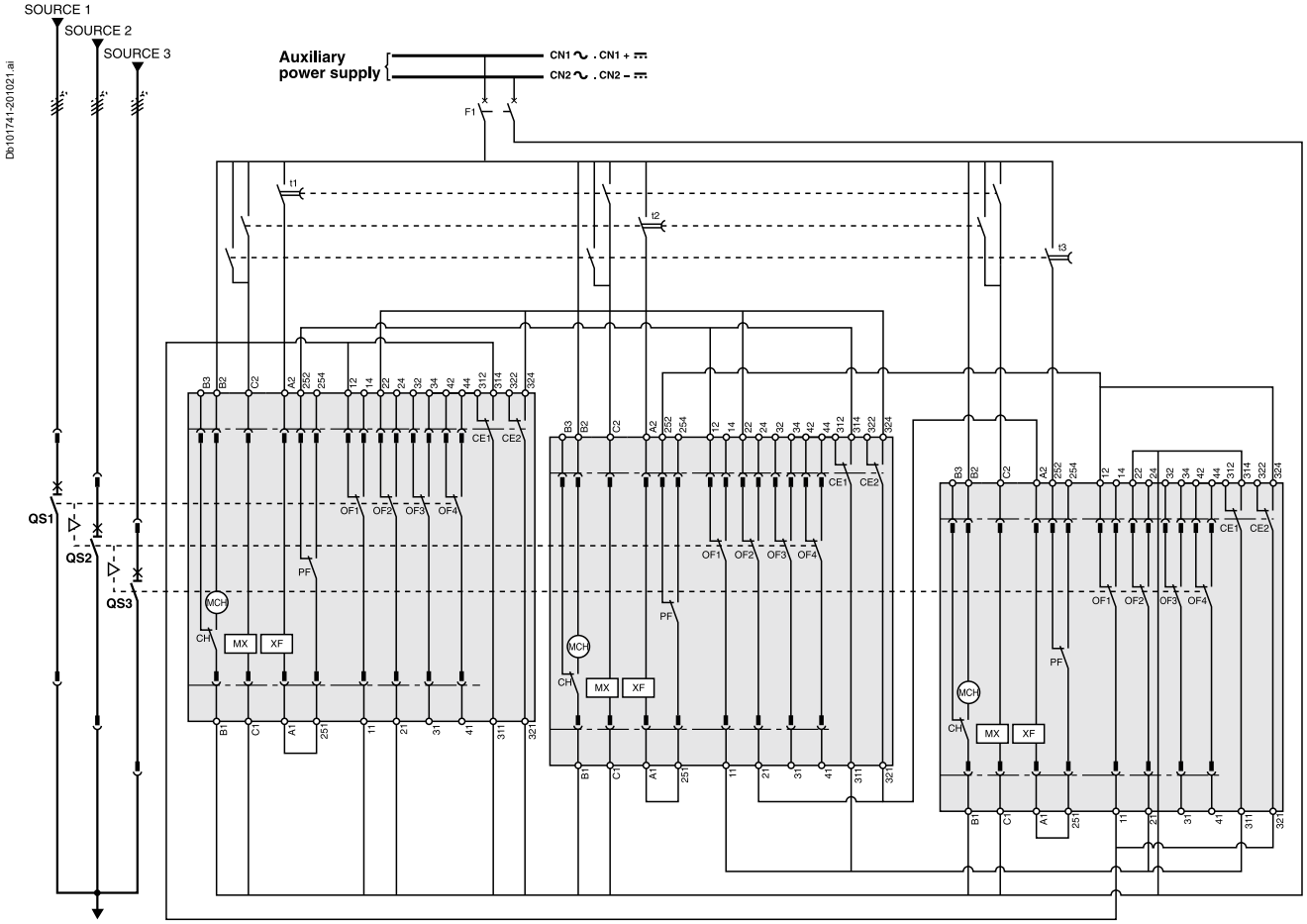
States permitted by mechanical interlocking system and with associated automatism

Normal 1	Normal 2	Replacement
0	0	0
1	1	0
0	0	1
1	0	0
0	1	0

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MN, XF...).

Remote-Operated Source-Changeover Systems
3 MasterPacT MTZ2/MTZ3 Devices

3 Sources with only 1 Device Closed: Electrical Interlocking without Lockout after A Fault



Legends

QS...	“Source” MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
PF	“ready-to-close” contact
CE...	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
F1	auxiliary power supply circuit breaker
t1	order for transfer to “Source 1” (QS1 closing time delay = 0.25 sec. minimum)
t2	order for transfer to “Source 2” (QS2 closing time delay = 0.25 sec. minimum)
t3	order for transfer to “Source 3” (QS3 closing time delay = 0.25 sec. minimum)

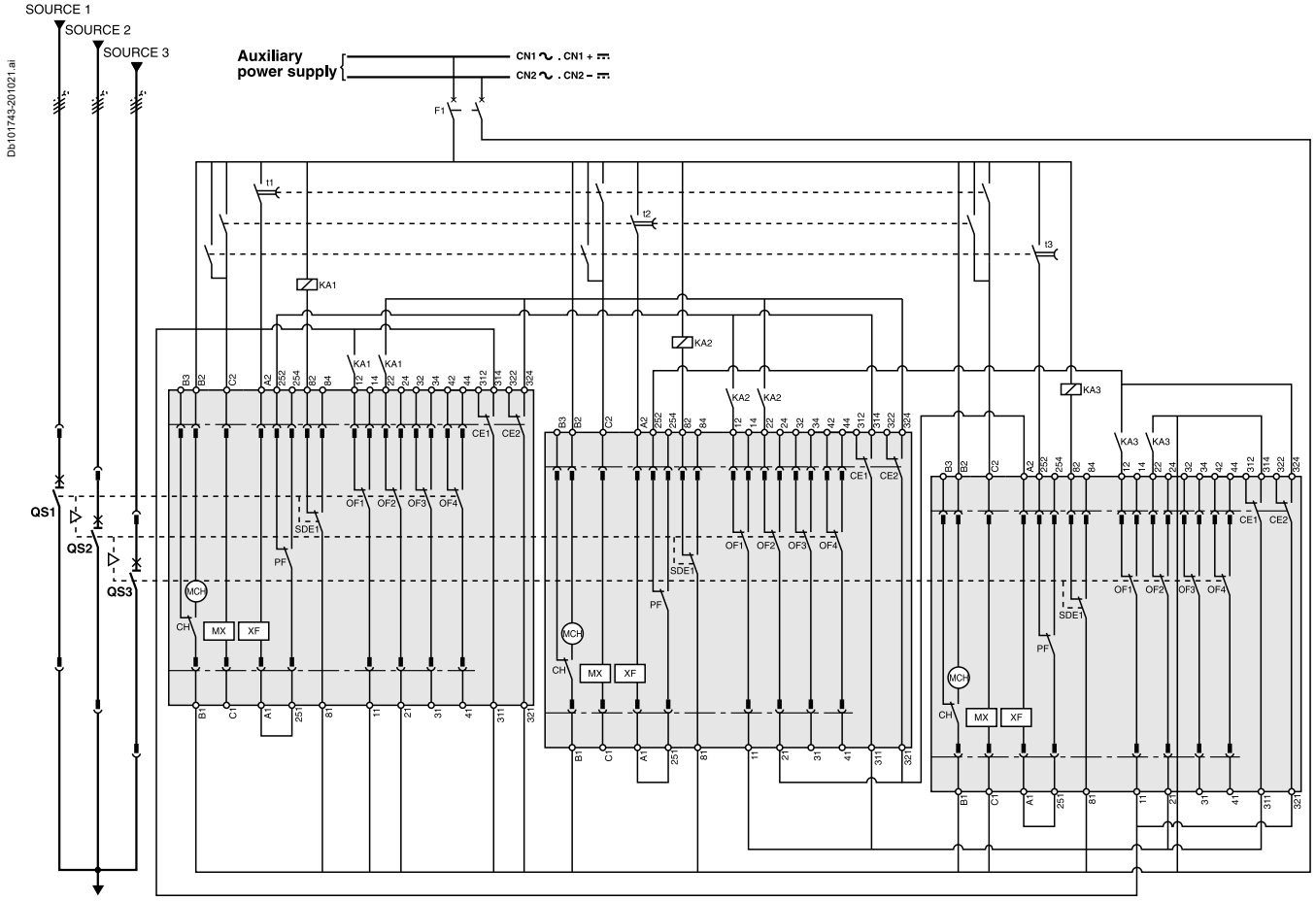
States permitted by mechanical interlocking system

Source 1	Source 2	Source 3
0	0	0
1	0	0
0	1	0
0	0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems
3 MasterPacT MTZ2/MTZ3 Devices

3 Sources with only 1 Device Closed: Electrical Interlocking with Lockout after A Fault



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect the SDE to terminals 81 and 84.**

Legends

QS...	"Source" MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
SDE1	"fault-trip" indication contact
PF	"ready-to-close" contact
CE...	"connected-position" indication contact (carriage switch)
CH	"springs charged" indication contact
F1	auxiliary power supply circuit breaker
t1	order for transfer to "Source 1" (QS1 closing time delay = 0.25 sec. minimum)
t2	order for transfer to "Source 2" (QS2 closing time delay = 0.25 sec. minimum)
t3	order for transfer to "Source 3" (QS3 closing time delay = 0.25 sec. minimum)
KA1	auxiliary relays
KA2	auxiliary relays
KA3	auxiliary relays

States permitted by mechanical interlocking system

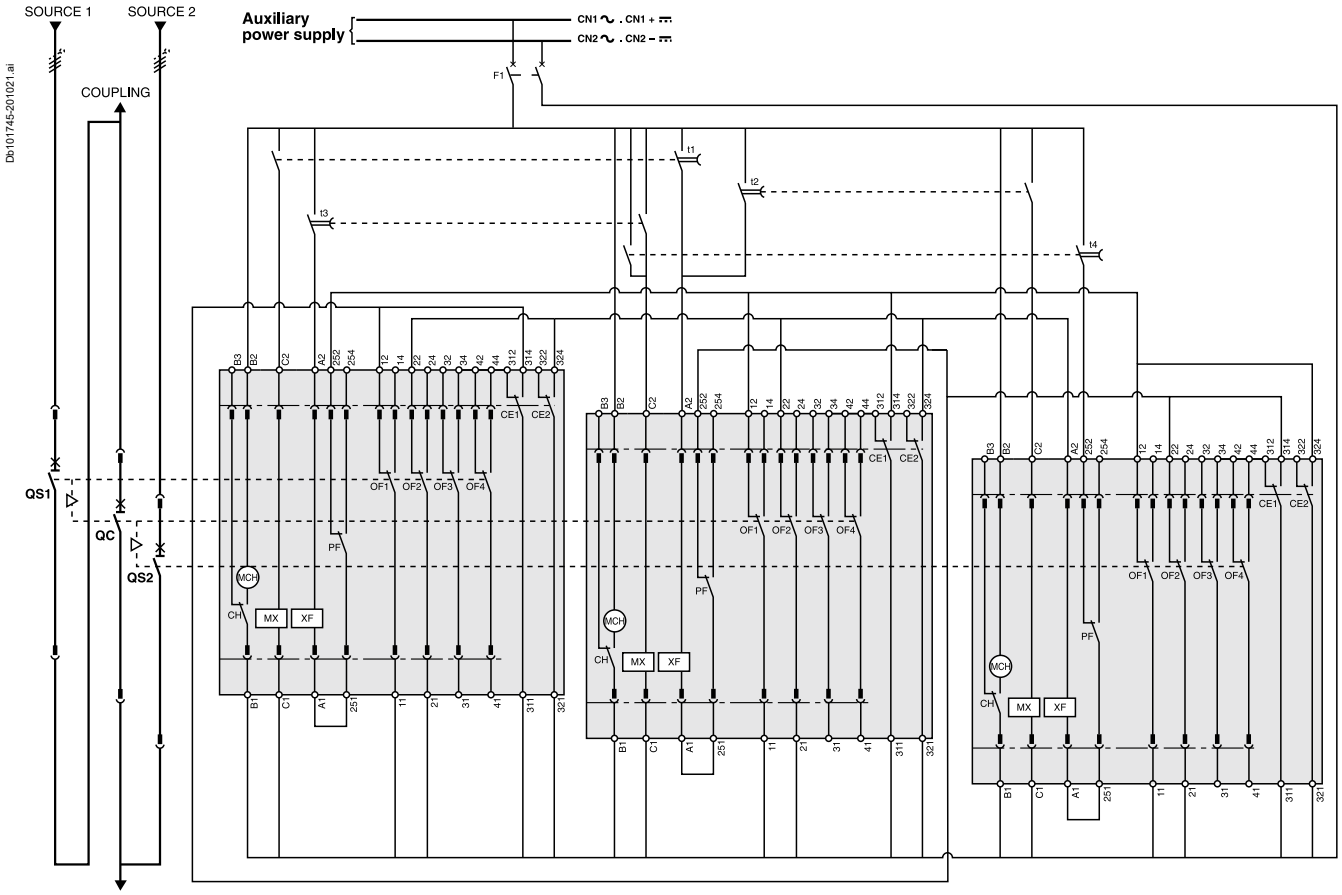
Source 1	Source 2	Source 3
0	0	0
1	0	0
0	1	0
0	0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems

3 MasterPacT MTZ2/MTZ3 Devices

2 Sources and 1 Coupling: Electrical Interlocking without Lockout after A Fault



Legends

QS...	“Source” MasterPacT MTZ2 or MTZ3
QC	“Coupling” MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
PF	“ready-to-close” contact
CE...	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
F1	auxiliary power supply circuit breaker
t1	coupling order for “Source 1 failure” (QC closing time delay = 0.25 sec. minimum)
t2	coupling order for “Source 2 failure” (QC closing time delay = 0.25 sec. minimum)
t3	coupling order for “Source 1 restored” (QS1 closing time delay = 0.25 sec. minimum)
t4	coupling order for “Source 2 restored “ (QS2 closing time delay = 0.25 sec. minimum)

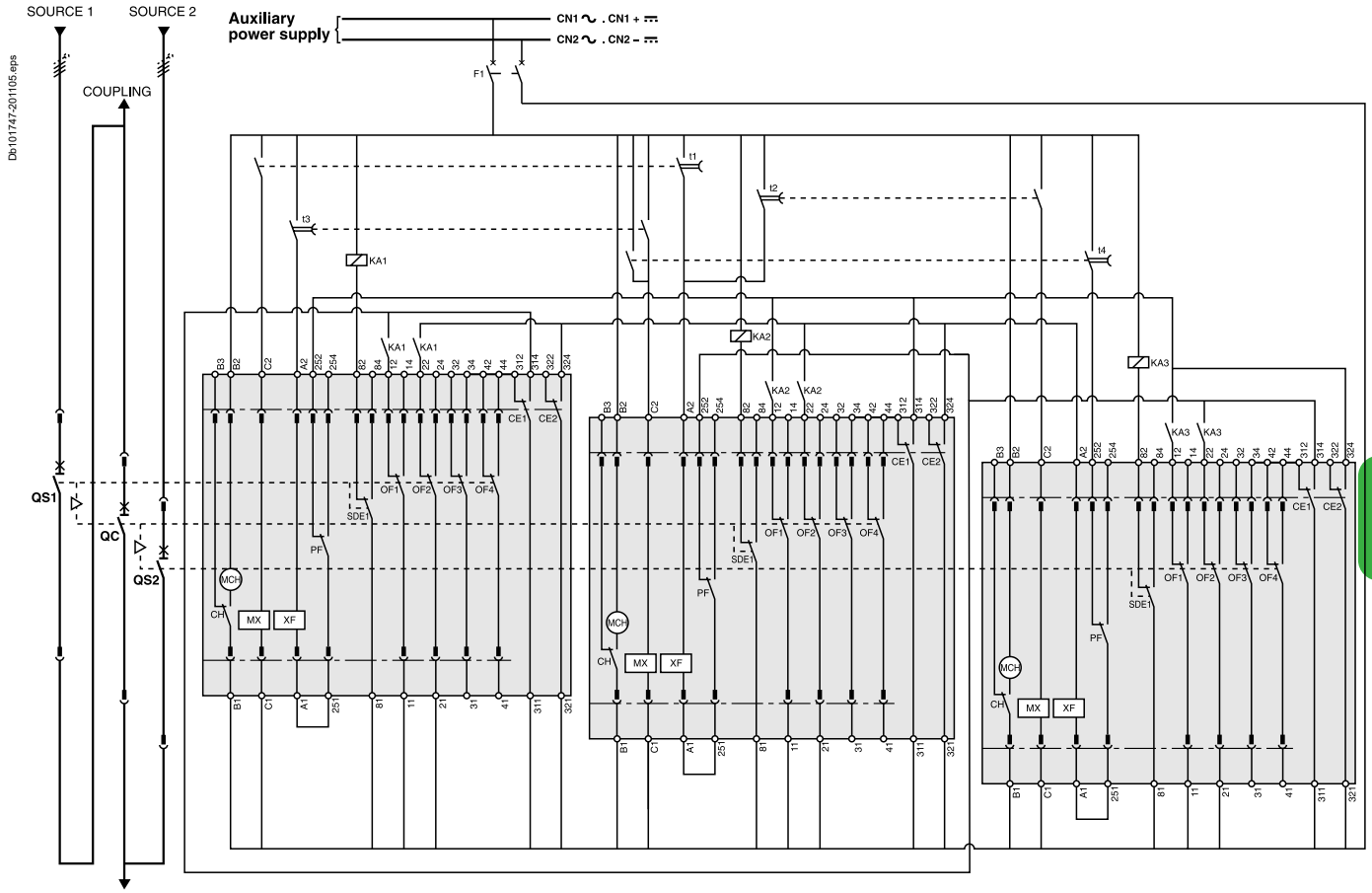
States permitted by mechanical interlocking system

Source 1	Source 2	Coupling
0	0	0
1	1	0
1	0	1
0	1	1
1	0	0
0	1	0
0	0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems
3 MasterPacT MTZ2/MTZ3 Devices

2 Sources and 1 Coupling: Electrical Interlocking with Lockout after A Fault



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect the SDE to terminals 81 and 84.**

Legends

QS...	"Source" MasterPacT MTZ2 or MTZ3
QC	"Coupling" MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
SDE1	"fault-trip" indication contact
PF	"ready-to-close" contact
CE...	"connected-position" indication contact (carriage switch)
CH	"springs charged" indication contact
F1	auxiliary power supply circuit breaker
t1	coupling order for "Source 1 failure" (QC closing time delay = 0.25 sec. minimum)
t2	coupling order for "Source 2 failure" (QC closing time delay = 0.25 sec. minimum)
t3	coupling order for "Source 1 restored" (QS1 closing time delay = 0.25 sec. minimum)
t4	coupling order for "Source 2 restored " (QS2 closing time delay = 0.25 sec. minimum)
KA1	auxiliary relays
KA2	auxiliary relays
KA3	auxiliary relays

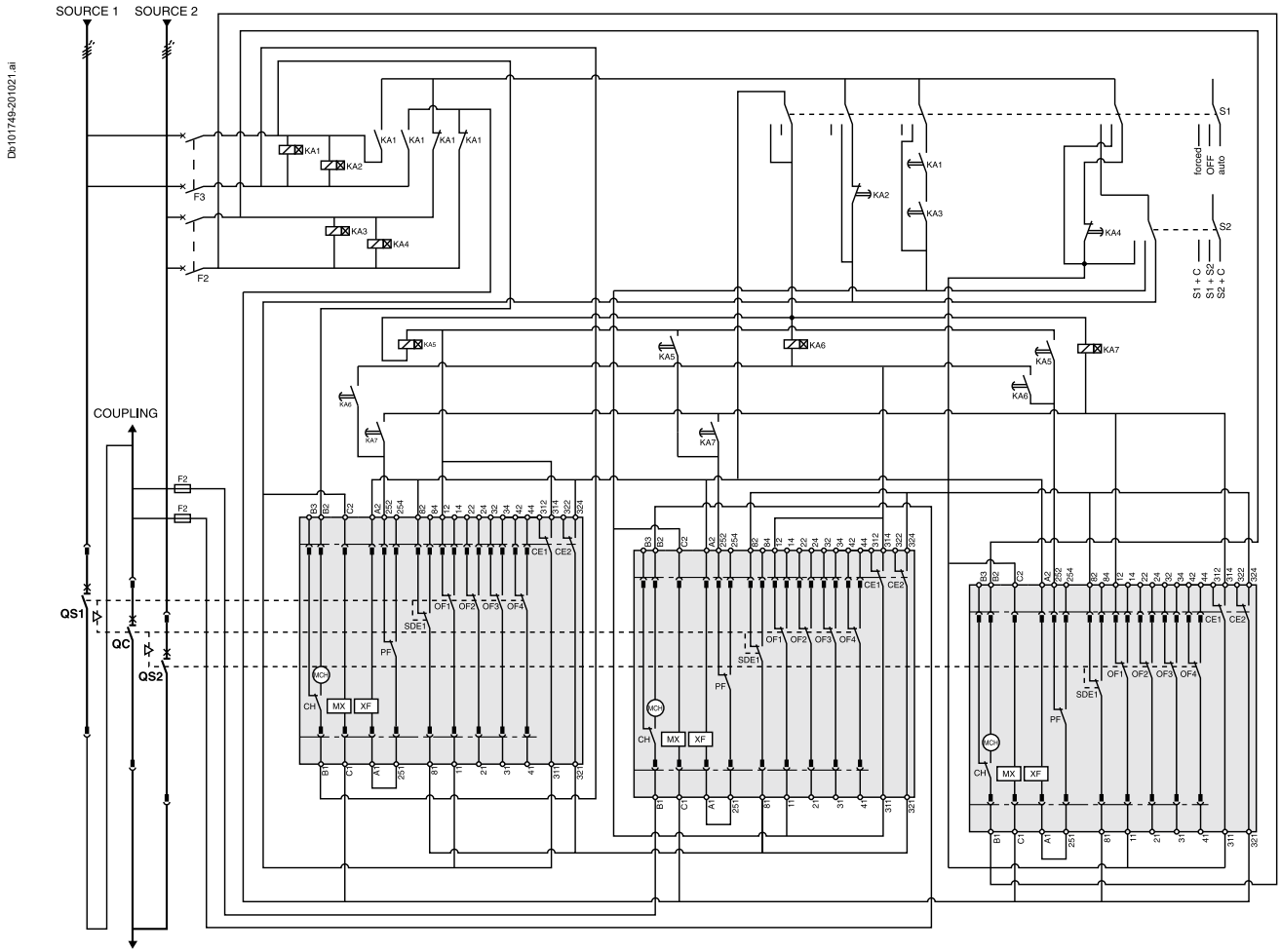
States permitted by mechanical interlocking system

Source 1	Source 2	Coupling
0	0	0
1	1	0
1	0	1
0	1	1
1	0	0
0	1	0
0	0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

Remote-Operated Source-Changeover Systems
3 MasterPacT MTZ2/MTZ3 Devices

2 Sources and 1 Coupling: Automatic-Control System with Lockout after A Fault



ATTENTION

The diagram shows the electrical wiring for circuit breakers. When wiring the SDE with **switch-disconnectors, connect the SDE to terminals 81 and 84.**

Legends

QS...	“Source” MasterPacT MTZ2 or MTZ3
QC	“Coupling” MasterPacT MTZ2 or MTZ3
MCH	spring-charging motor
MX	standard opening voltage release
XF	standard closing voltage release
OF...	breaker ON/OFF indication contact
SDE1	“fault trip” indication contact
PF	“ready-to-close” contact
CE...	“connected-position” indication contact (carriage switch)
CH	“springs charged” indication contact
F1	auxiliary power supply circuit breaker
F2/F3	circuit breaker (high breaking capacity)
S1	control switches
S2	source selection switches
KA1	auxiliary relays with 10 to 180 sec. time delay
KA2	auxiliary relays with 0.1 to 30 sec. time delay
KA3	auxiliary relays with 10 to 180 sec. time delay
KA4	auxiliary relays with 0.1 to 30 sec. time delay
KA5	auxiliary relays with 0.25 sec. time delay
KA6	auxiliary relays with 0.25 sec. time delay
KA7	auxiliary relays with 0.25 sec. time delay

States permitted by mechanical interlocking system and with associated automatism

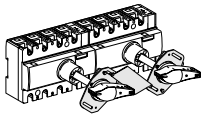
Source 1	Source 2	Coupling
0	0	0
1	1	0
1	0	1
0	1	1
1	0	0
0	1	0
0	0	1

Note: diagram shown with circuit breakers in connected position, open, charged, and ready to close.
Auxiliary power supply = supply voltage of auxiliary relays (KA...) = supply voltage of electrical auxiliaries (electrical operation, MCH, MX, XF...).

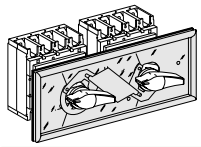
References of Source-Changeover Systems for 2 Devices
ComPacT INS40 to INS2500, INV100 to INV2500

Manual Source-Changeover Systems

Interlocking for rotary handle

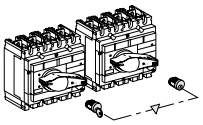

DB107710.eps

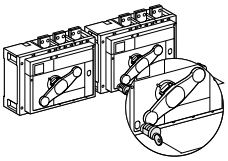
		3/4P
Mechanical device for INS40 to INS160 equipped with an extended rotary handle		28953


DB404077.eps

Mechanical device for INS250-100 to INS250/INV100 to INV250 equipped with a direct or extended rotary handxle		31073
Mechanical device for INS/INV320 to INS/INV630 equipped with a direct or extended rotary handle		31074

Interlocking

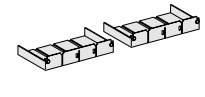

Db101549.eps


DB404080.eps

		3/4P
Locking device for Ronis/Profalux keylocks on INS250-100 to INS250/INV100 to INV250	2x	31087
Locking device for Ronis/Profalux keylocks on INS/INV320 to INS/INV630	2x	31088
Locking device for Ronis/Profalux keylocks on INS/INV630b to INS/INV2500	2x	31291
+ Ronis 1351B.500 keylock (2 keylocks / 1 key)		41950
or + Profalux KS5 B24 D4Z keylock (2 keylocks / 1 key)		42878

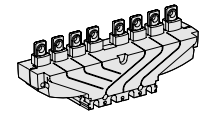
Connection Accessories

Downstream coupling accessories

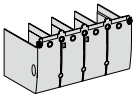

DB101062.eps

Short terminal shields (1 pair) + “Normal” source/“Replacement” source

	3/4P
INS250/INS250	LV429359
INS320 to INS630/INS320 to INS630	LV432620


DB413292.eps

Long terminal shields (1 piece)


Db403921.eps

INS250	Long terminal shield	LV429518
INS320 to INS630	Long terminal shield, 45 mm (1 piece)	LV432594
	Long terminal shield for spreaders, 52.5 mm (1 piece)	LV432596

Terminal Extensions

DB115652.eps

Spreaders	52.5 mm	4P	LV432491

D

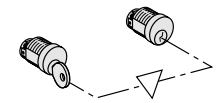
References of Source-Changeover Systems for 2 Devices
ComPacT NSX100 to NSX630

Manual source changeover

Mechanical interlocking

For toggle controlled circuit breakers	NSX100...250		**LV429354T**
	NSX400...630		**LV432614T**
For rotary handled circuit breakers	With direct rotary handle	NSX100...250	**LV429369T**
		NSX400...630	**LV432621T**
	With extended rotary handle	NSX100...250	**LV429369ET**
		NSX400...630	**LV432621ET**

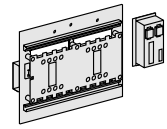
Key lock interlocking



Keylock kit (keylock not included)		**LV429344**
1 set of 2 keylocks	Ronis 1351B.500	**41950**
(1 key only,keylock not included)	Profalux KS5 B24 D4Z	**42878**

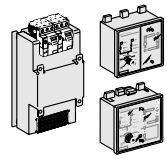
Remote controlled source changeover

Plate + IVE unit



Source “Normal”/source “Replacement” (identical voltages)			24 to 250 V DC	48 to 415 V AC 50/60 Hz 440 V 60 Hz
NSX100...250/NSX100...250				
Plate + IVE unit [1]			**29351**	**29350**
Plate			**29349**	**29349**
IVE unit			**29356**	**29352**
Auxiliary switches 2 OF + 2 SDE		4 x	**29450**	4 x **29450**
Safety trip interlock (for fixed version only)		2 x	**LV429270**	2 x **LV429270**
Spare wiring system (device/IVE unit)			**29365**	**29365**
Back sockets option add:	Only long RC		[2]	[2]
Plug in base option add:	Plug in kit		[2]	[2]
NSX400...630/NSX100...630				
Plate + IVE unit [1]			**32611**	**32610**
Plate			**32609**	**32609**
IVE unit			**29356**	**29352**
Auxiliary switches 2 OF + 2 SDE		4 x	**29450**	4 x **29450**
Safety trip interlock (for fixed version only)		2 x	**LV432520**	2 x **LV432520**
Spare wiring system (device/IVE unit)			**29365**	**29365**
Back sockets option add:	Only long RC		[2]	[2]
Plug in base option add:	Plug in kit		[2]	[2]
	Adaptator kit for NSX100...250	1 x	**32618**	1 x **32618**

Control unit option



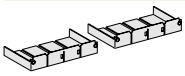
	110/127 V AC 50/60 Hz	220/240 V AC 50/60 Hz	380/415 V AC 50/60 Hz 440 V 60 Hz
ACP + controller BA [1]		**29470**	**29471**
Plate ACP		**29363**	**29364**
Controller BA		**29376**	**29377**
ACP + controller UA [1]	**29448**	**29472**	**29473**
Plate ACP	**29447**	**29363**	**29364**
Controller UA	**29446**	**29378**	**29380**

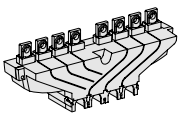
Wiring cable between UA/BA and ACP/IVE

Wiring cable (1.5 meter)	**29368**	**29368**

Connection Accessories

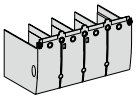
Downstream coupling accessories





Short terminal shields (1 pair) + “Normal” source/“Replacement” source

		3P	**4P**
	NSX100...250/NSX100...250 / 250 A	**LV429358**	**LV429359**
	NSX400...630/NSX400...630 / 630 A	**LV432619**	**LV432620**



Long terminal shields (1 piece)

		3/4P
NSX100...250	Long terminal shield	**LV429518**
NSX400...630	Long terminal shield, 45 mm (1 piece)	**LV432594**
	Long terminal shield for spreaders, 52.5 mm (1 piece)	**LV432596**

Terminal extensions

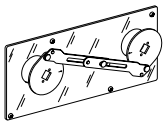
Spreaders	52.5 mm	4P	**LV432491**

[1] The supply voltages UA/BA controller, ACP plate, IVE unit and the remote control must be identical whatever the source changeover type.
[2] See products pages.

References of Source-Changeover Systems for 2 Devices
ComPacT NS630b to NS1600
Circuit Breakers and Switch-Disconnectors

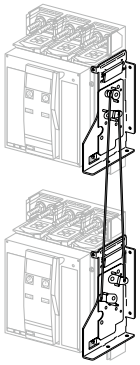
Mechanical Interlocking for Source-Changeover Systems

Interlocking


DB404090.eps

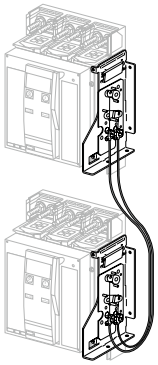
For 2 devices with extended rotary handles	**33890**

Interlocking using connecting rods


DB404091.eps

Complete assembly with 2 adaptation fixtures + rods	
2 ComPacT fixed devices	**33910**
2 ComPacT withdrawable devices	**33913**
Push button cover (mandatory)	**2x 33897**

Interlocking using cables


DB404092.eps

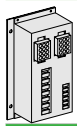
Complete assembly with 2 adaptation fixtures + cables	
2 ComPacT fixed devices	**33911**
2 ComPacT withdrawable devices	**33914**
1 ComPacT fixed + 1 ComPacT withdrawable device	**33915**
Push button cover (mandatory)	**2x 33897**

Associated controller

The automatic-control option includes:
- an IVE electrical-interlocking unit
- an ACP control plate
- a BA or UA controller, depending on the required functions
- a UA/BA adapter kit.

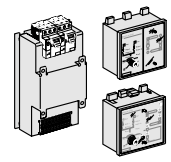
Note: the circuit breaker auxiliaries (MCH, MX, XF) and the automatic-control components (IVE, ACP, UA or BA) must have the same voltages.

TransferPacT Electrical Interlocking


DB404093.eps

IVE unit	24 to 250 V DC	48/415 V AC 50/60 Hz 440 V 60 Hz
For 2 devices	**29356**	**29352**
Wiring kit for connection of 2 fixed/withdrawable devices to the IVE unit		**54655**

TransferPacT Controllers


DB404087.eps

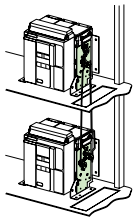
Control unit	110/127 V AC 50/60 Hz	220/240 V AC 50/60 Hz	380/415 V AC 50/60 Hz 440 V 60 Hz
ACP + controller BA [1]		**29470**	**29471**
Plate ACP		**29363**	**29364**
Controller BA		**29376**	**29377**
ACP + controller UA [1]	**29448**	**29472**	**29473**
Plate ACP	**29447**	**29363**	**29364**
Controller UA	**29446**	**29378**	**29380**

[1] The supply voltages of the UA/BA controller, ACP plate, IVE unit and circuit breaker operating mechanism must be identical whatever the type of source-changeover system.

References of Source-Changeover Systems for 2 Devices
MasterPacT MTZ1
Circuit Breakers and Switch-Disconnectors

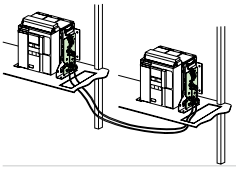
Mechanical interlocking for Source-Changeover Systems

Interlocking using connecting rods


DB421418.eps

Complete assembly with 2 adaptation fixtures + rods	
2 MasterPacT MTZ1 fixed devices	**33912**
2 MasterPacT MTZ1 drawout devices	**33913**
Push button cover (mandatory)	**2x LV833897**

Interlocking using cables [1]


DB421419.eps

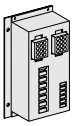
Choose 2 adaptation fixtures (1 for each breaker + 1 set of cables)	
1 adaptation fixture for MasterPacT MTZ1 fixed devices	**33200**
1 adaptation fixture for MasterPacT MTZ1 drawout devices	**33201**
1 set of 2 cables	**33209**
Push button cover (mandatory)	**2x LV833897**

Associated Controller

The automatic-control option includes:
- an IVE electrical-interlocking unit
- an ACP control plate
- a BA or UA controller, depending on the required functions
- a UA/BA adapter kit.

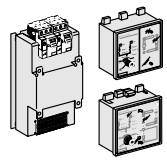
Note: the circuit breaker auxiliaries (MCH, MX, XF) and the automatic-control components (IVE, ACP, UA or BA) must have the same voltages.

TransferPacT Electrical Interlocking


DB404093.eps

IVE unit	24 to 250 V DC	48/415 V AC 50/60 Hz 440 V 60 Hz
For 2 devices	**29356**	**29352**
Wiring kit for connection of 2 fixed/drawout devices to the IVE unit		**54655**

TransferPacT Controllers


DB404087.eps

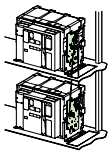
Control unit	110/127 V AC 50/60 Hz	220/240 V AC 50/60 Hz	380/415 V AC 50/60 Hz 440 V 60 Hz
ACP + controller BA [2]		**29470**	**29471**
Plate ACP		**29363**	**29364**
Controller BA		**29376**	**29377**
ACP + controller UA [2]	**29448**	**29472**	**29473**
Plate ACP	**29447**	**29363**	**29364**
Controller UA	**29446**	**29378**	**29380**

[1] Can be used with any combination of MTZ1 or MTZ2/MTZ3, fixed or drawout devices.
[2] The supply voltages of the UA/BA controller, ACP plate, IVE unit and circuit breaker operating mechanism must be identical whatever the type of source-changeover system.

References of Source-Changeover Systems for 2 Devices
MasterPacT MTZ2/MTZ3
Circuit Breakers and Switch-Disconnectors

Mechanical Interlocking for Source-Changeover Systems for 2 Devices

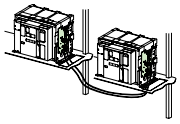
Interlocking of 2 devices using connecting rods


DB421405.eps

Complete assembly with 2 adaptation fixtures + rods	
2 MasterPacT MTZ2/MTZ3 fixed devices	**48612**
2 MasterPacT MTZ2/MTZ3 drawout devices	**48612**
Push button cover (mandatory)	**2x LV848536**

Note: Can be used with 1 MTZ2/MTZ3 fixed + 1 MTZ2/MTZ3 drawout.

Interlocking of 2 devices using cables [1]


DB421406.eps

Choose 2 adaptation fixtures (1 for each breaker + 1 set of cables)	
1 adaptation fixture for MasterPacT MTZ2/MTZ3 fixed devices	**47926**
1 adaptation fixture for MasterPacT MTZ2/MTZ3 drawout devices	**47926**
1 set of 2 cables	**33209**
Push button cover (mandatory)	**2x LV848536**

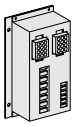
Associated Controller for 2 Devices

The automatic-control option includes:
- an IVE electrical-interlocking unit
- an ACP control plate
- a BA or UA controller, depending on the required functions
- a UA/BA adapter kit.

Note: the circuit breaker auxiliaries (MCH, MX, XF) and the automatic-control components (IVE, ACP, UA or BA) must have the same voltages.

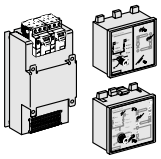
TransferPacT Electrical Interlocking

IVE unit	24 to 250 V DC	48/415 V AC 50/60 Hz 440 V 60 Hz
For 2 devices	**29356**	**29352**
Wiring kit for connection of 2 fixed/drawout devices to the IVE unit		**54655**


DB404093.eps

TransferPacT Controllers

Control unit	110/127 V AC 50/60 Hz	220/240 V AC 50/60 Hz	380/415 V AC 50/60 Hz 440 V 60 Hz
ACP + controller BA [2]		**29470**	**29471**
Plate ACP		**29363**	**29364**
Controller BA		**29376**	**29377**
ACP + controller UA [2]	**29448**	**29472**	**29473**
Plate ACP	**29447**	**29363**	**29364**
Controller UA	**29446**	**29378**	**29380**

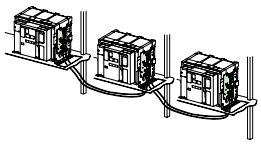

DB404087.eps

[1] Can be used with any combination of MTZ1 or MTZ2/MTZ3, fixed or drawout devices.
[2] The supply voltages of the UA/BA controller, ACP plate, IVE unit and circuit breaker operating mechanism must be identical whatever the type of source-changeover system.

References of Source-Changeover Systems for 3 Devices
MasterPacT MTZ2/MTZ3
Circuit Breakers and Switch-Disconnectors

Mechanical interlocking for source-changeover systems for 3 devices

Interlocking of 3 devices using cables



DB421407.eps

Choose 3 adaptation fixtures (1 complete set with 3 adaptation fixtures + cables)	
3 sources, only 1 device closed, fixed or drawout devices	**48610**
2 sources, 1 coupling, fixed or drawout devices	**48609**
2 normal, 1 replacement source, fixed or drawout devices	**48608**
Push button cover (mandatory)	**3x LV848536**

Order Form for Source-Changeover Systems for 2 Devices
ComPacT INS40 to INS630
Switch-Disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭ .

Mechanical Interlocking of Two INS40 to INS630 Devices
Devices with Front Rotary Handles, Mounted Side by Side

	Two devices with direct rotary handles			
	INS250	☐	INS320/400/500/630	☐
	Two devices with extended rotary handles			
	INS40/63/80	☐	INS100/125/160	☐
	INS250	☐	INS320/400/500/630	☐
Downstream coupling accessory	INS250	☐	INS320/400/500/630	☐
Long terminal shields	INS250	☐	INS320/400/500/630	☐

D

Order Form for Source-Changeover Systems for 2 Devices
ComPacT INS40 to INS630
Switch-Disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭.
(one sheet per device, make copies if necessary)

Device identification:

Q 1 - NORMAL SOURCE ☐

Q 2 - REPLACEMENT SOURCE ☐

Switch-Disconnector

ComPacT type	**INS40/63/80**	☐
	INS100/125/160	☐
	INS250	☐
	INS320/400/500/630	☐
Rating	**A**	☐
Number of poles	**3 or 4**	☐

Connections

Front connection	Standard				
Rear connection	2 short	☐	2 long		☐
INS40/80 connectors	Distribution 3x16□ rigid/10□ flexible				☐
INS100/160 connectors	Snap-on ≤ 95□				☐
	Distribution 4x25□ rigid/16□ flexible				☐
INS250 connectors	Snap-on 1.5□ to 95□ (< 160 A)				☐
	Snap-on 10□ to 185□ (< 250 A)				☐
	Volt. tap connector for 185□ connector				☐
	Clips for connectors	Set of 10			☐
	Distribution 6x1.5□ to 35□ rigid with interphase barriers				☐
INS320/630 connectors	1 cable 35□ to 300□				☐
	2 cables 35□ to 240□				☐
	Voltage tap connector for 185□ connector				☐
Distribution blocks	Linergy DX				
	4P	125 A ☐	160 A	☐	
	1P		160 A	☐	
	Linergy BS (multi stage)		160 A ☐	250 A	☐
	Linergy DP			250 A	☐
Rt-angle extension	Set of 3 or 4	250 A ☐		630 A	☐
Straight extension	INS250				☐
Edgewise ext.	INS630				☐
Spreader	INS250 (45 mm)				☐
	Front alignment base				☐
	INS320/630	52.5 mm ☐		70 mm	☐
	One-piece	INS250 ☐		INS630	☐
Cu cable lugs supplied with 2 or 3 inter-phase barriers	INS100/160		For 95□ cable		☐
	INS250		For 120□ cable		☐
			For 150□ cable		☐
			For 185□ cable		☐
	INS320/630		For 240□ cable		☐
			For 300□ cable		☐
Al cable lugs supplied with 2 or 3 inter-phase barriers	INS250		For 150□ cable		☐
			For 185□ cable		☐
	INS320/630		For 240□ cable		☐
			For 300□ cable		☐
Terminal shrouds	INS40/63/80 ☐		INS100/125/160		☐
Terminal shields	INS40/63/80 ☐		INS100/125/160		☐
	INS250			Long	☐
	INS320/630			Long	☐
	Long for 52.5 mm spreaders				☐
Interphase barriers	INS100/160		Set of 6		☐
	INS250		Set of 6		☐
	INS320/630		Set of 6		☐

Indication and Measurements

4P ammeter module	For INS250	Rating	100 A	☐
			150 A	☐
			250 A	☐
	Adaptation kit required for direct handles			☐
	For INS320/630	Rating	400 A	☐
			600 A	☐
4P current-transformer module	For INS250	Rating	100 A	☐
			150 A	☐
			250 A	☐
	For INS320/630	Rating	400 A	☐
			600 A	☐
Auxiliary contact	For INS40/160	1OF/CAF/CAO	Standard	☐
			Low level	☐
	For INS250/630	1 OF/CAM	Standard	☐
			Low level	☐

Rotary Handles

Extended front handles	INS40 to INS160	Black	☐	Red on yellow front	☐
	INS250	Black	☐	Red on yellow front	☐
	INS320 to INS630	Black	☐	Red on yellow front	☐
	For complete changeover assembly			INS250	☐
				INS320/630	☐

Locking of Rotary Handles

Padlocking	1 to 3 padlocks (in OFF position)		☐
Keylocking	Keylock adapter (keylock not included)		☐
	Keylocks Ronis 1351B.500 ☐	Profalux KS5 B24 D4Z	☐

Installation Accessories

Front-panel escutcheon	For switch-disconnectors	☐
	For ammeter module, IP40	☐

Order Form for Source-Changeover Systems for 2 Devices
ComPacT NSX100 to NSX630
Circuit Breakers and Switch-Disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭.

Diagram for Two ComPacT NSX Devices

Without automatic control, without emergency off auxiliaries	(no. 51201177)	☐
Without automatic control, with emergency off by MN	(no. 51201178)	☐
Without automatic control, with emergency off by MX	(no. 51201179)	☐

Mechanical Interlocking of Two NSX100 to NSX630 Devices

(fixed, plug-in)

Manually operated devices, mounted side by side:

Two devices with toggles	☐
Two devices with rotary handles	☐

Mechanical and Electrical Interlocking of Two NSX100 to NSX630 Devices

(fixed or plug-in)

Electrically operated devices, mounted side by side:

Select 1 base plate + IVE unit, the 4 auxiliary contacts and the options / accessories

Base plate + IVE unit	Identical voltages:		48 to 415 V AC 50/60 Hz		
	24 to 250 V DC	☐	440/480 V AC 60 Hz		☐
	"Normal" NSX100/250	☐	"Replacement" NSX100/250		☐
	"Normal" NSX400/630	☐	"Replacement" NSX400/630		☐
	"Normal" NSX400/630	☐	"Replacement" NSX100/250		☐
	Adapter kit for NSX400/630 with NSX100/250 (plug-in)				☐
Auxiliary contacts	2 OF + 2 SDE (mandatory)			Quantity	4
Options	Long rear connections	☐	Plug-in base		☐
Downstream coupling accessory (for fixed version)	3P	☐	NSX100/250		☐
	4P	☐	NSX400/630		☐
Prefabricated wiring	Between device and IVE			Quantity	▭

Automatic-Control Option

Power supply 220/240 V - 50/60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐
Power supply 380/415 V - 50/60 Hz and 440 V - 60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐

D

Order Form for Source-Changeover Systems for 2 devices
ComPacT NSX100 to NSX630
Circuit Breakers and Switch-Disconnectors

(One sheet per device, make copies if necessary)

Name of customer: _____

Address for delivery: _____

Requested delivery date: _____

Customer order no.: _____

To indicate your choices, check the applicable square boxes and enter the appropriate information in the rectangles ☐

Q 1 - NORMAL SOURCE ☐

Q 2 - REPLACEMENT SOURCE ☐

Circuit Breaker or Switch Disconnector

ComPacT type	**NSX100/160/250**	☐	**NSX400/630**	☐
Rating	**A**			☐
Circuit breaker	**B, F, N, H, S, L**			☐
Switch-discon.	**NA**			☐
No. of poles	**2, 3 or 4**			☐
No. of poles protected	**2d, 3d or 4d**			☐
Fixed device	Front connections			☐
Plug-in/withdr.	Plug-in ☐	Withdrawable		☐
Earth-leakage protection	**ME, MH, MB**			☐
Vigi module	Voltage	**V**		☐
	4P option on 3P NSX			☐

Trip Unit

Thermal-mag.	**TMD** rating (16 … 250 A)			☐
	TMG rating (16 … 63 A)			☐
	MA rating (2.5 … 220 A)			☐
Electronic	**MicroLogic 2.2**	☐	**MicroLogic 2.3**	☐
	MicroLogic 2.2 G	☐	**MicroLogic 2.3 AB**	☐
	MicroLogic 2.2 AB	☐	**MicroLogic 5.3 A**	☐
	MicroLogic 5.2 A	☐	**MicroLogic 5.3 E**	☐
	MicroLogic 5.2 E	☐	**MicroLogic 5.3 A-Z**	☐
	MicroLogic 5.2 A-Z	☐	**MicroLogic 6.3 A**	☐
	MicroLogic 6.2 A	☐	**MicroLogic 6.3 E**	☐
	MicroLogic 6.2 E	☐	**MicroLogic 1.3 M**	☐
	MicroLogic 2.2 M	☐	**MicroLogic 2.3 M**	☐
	MicroLogic 6.2 E-M	☐	**MicroLogic 6.3 E-M**	☐
	SDTAM module	☐		
External neutral CT				☐
24 V DC power supply connector				☐
ZSI wiring accessory for NS630b MTZ1/MTZ2/MTZ3				☐
External power supply module 24 V DC	24-30 V DC ☐		48-60 V DC	☐
	100-125 V AC ☐		110-130 V AC	☐
	200-240 V AC ☐		380-415 V AC	☐
Battery module				☐

Connection

Rear-connection kit	Short ☐		Long	☐
	Mixed ☐			
NSX100/250 connectors	Snap-on 1.5▫ to 95▫ (< 160 A)			☐
	Snap-on 25▫ to 95▫ (< 250 A)			☐
	Snap-on 120▫ to 185▫ (< 250 A)			☐
	Distribution 6 x 1.5▫ to 35▫			☐
	Aluminium 2 cables 50▫ to 120▫			☐
NSX400/630 connectors	1 cable 35▫ to 300▫			☐
	2 cables 35▫ to 240▫			☐
Right-angle terminal extensions				☐
Straight extensions	NSX100/250			☐
Edgewise extensions	☐ 45° term. ext.	☐	Dbl.-L term. ext.	☐
Spreader	NSX100/250 (one piece)	☐	(45 mm)	☐
	NSX400/630 (52.5 mm)	☐	(70 mm)	☐
Cu cable lugs	NSX100/250 120▫	☐	150▫ ☐ 185▫	☐
	NSX400/630		240▫ ☐ 300▫	☐
Al cable lugs	NSX100/250		150▫ ☐ 185▫	☐
	NSX400/630		240▫ ☐ 300▫	☐
V mesrt Input for connector	For lugs NSX100/250 ⩽ 185▫			☐
	For lugs NSX400/630			☐
Terminal shields	NSX100/250		Long	☐
	NSX400/630		Long	☐
	Long for 52.5 mm spreaders			☐
Interphase barriers			Set of 6	☐
2 insulating scrn.	NSX100/250 ☐	NSX400/630	70 pitch	☐

Test Tool

Pocket battery for MicroLogic	☐
Maintenance case	☐
USB maintenance interface	☐
Power supply 110-240 V AC	☐
Spare MicroLogic cord	☐

Indication and Measurement

Ammeter module	Standard	3P ☐	4P	☐
	I max	3P ☐		
Current-transformer module		3P ☐	4P	☐
Current-transformer module + TCU		3P ☐	4P	☐
Insulation-monitoring module		3P ☐	4P	☐
Voltage-presence indicator				
Auxiliary contact	OF ☐ SD ☐ SDE ☐	SDV ☐	Standard	☐
	OF ☐ SD ☐ SDE ☐	SDV ☐	Low level	☐
SDE adapter (TM, MA or MicroLogic 2 trip units)				☐
SDX module				☐

Remote Operation

Electrical operation	Motor mechanism	AC ☐	DC ☐	**V**	☐
Voltage releases	Instantaneous MX	AC ☐	DC ☐	**V**	☐
	Instantaneous MN	AC ☐	DC ☐	**V**	☐
	Fixed time delay MN	AC ☐	DC ☐	**V**	☐
	Adjust. time delay MN	AC ☐	DC ☐	**V**	☐

Rotary Handles

Direct	Black	☐	Red and yellow front	☐
	MCC conversion access.	☐	CNOMO conversion access.	☐
Extended	Black	☐	Red and yellow front	☐
	Telescopic handle for withdrawable device			☐
Indication auxiliary	1 early-break switch	☐	2 early-make switches	☐

Locking

Toggle (1 to 3 padlocks)	Removable	☐	Fixed	☐
Rotary handle	Keylock adapter (keylock not included)			☐
	Keylocks Ronis 1351B.500	☐	Profalux KS5 B24 D4Z	☐
Motor mechanism	Keylock adapter + keylock Ronis (special)		NSX100/250	☐
	Keylock adapter (keylock not included)		NSX400/630	☐
	Keylocks Ronis 1351B.500		Profalux KS5 B24 D4Z	☐

Interlocking

Mechanical	Toggle operated	☐	Rotary Handle	☐
By key (2 keylocks, 1 key) for rotary handle	Locking kit without locks			
	Keylocks Ronis 1351B.500	☐	Profalux KS5 B24 D4Z	☐

Installation Accessories

IP30 escutcheon for all types (toggle/rotary handle/motor mechanism)	☐
IP30 escutcheon (with access to toggle + trip unit)	☐
IP30 escutcheon for Vigi module	☐
IP40 escutcheon for all types (toggle/rotary handle/motor mechanism)	☐
IP40 escutcheon for Vigi module	☐
IP40 escutcheon for Vigi or ammeter module	☐
Toggle cover	☐
Sealing accessories	☐
DIN rail adapter	☐
3P 60 mm busbar adapter	☐

Plug-In / Withdrawable Configuration Accessories

Auxiliary connections	1 automatic connector fixed part with 9 wires (for base)				☐
	1 automatic connector moving part with 9 wires (for circuit breaker)				☐
	1 sup. for 3 auto. conn. moving parts ☐		1 sup. for 2 auto. conn.		☐
	9-wire manual auxiliary connector (fixed + moving)				☐
Plug-in base accessories	Long insulated terminals			Set of 2	☐
	2 IP4 shutters for base				☐
Chassis accessories	Escutcheon collar	Toggle ☐		Vigi	☐
	Locking kit (keylock not included)				☐
	2 carriage switches (conn./disconnected position indication)				☐
Parts or plug-in Withdrawable kits	Plug-in base FC/RC	2P ☐	3P ☐	4P	☐
	Set of two power connections	Standard ☐		Vigi	☐
	Safety trip for advanced opening				☐
	For 3P/4P chassis			Moving part	☐
				Fixed part	☐
Adaptater for plug-in base (for terminal shield or interphase barriers)					☐

Communication

	NSX Cord L = 0.35 m ☐		NSX Cord L = 1.3 m ☐
	NSX Cord U > 480 V AC L = 0.35 m ☐		NSX Cord L = 3 m ☐
BSCM (NSX400/630)			☐
Communicating motor mechanism 220-240 V			☐
Switchboard front display module FDM121			☐
FDM mounting accessory			☐
Modbus interface			☐
Stacking accessory			☐
ULP line termination			☐
RJ45 connectors female/female	Wire length RJ45 L = 0.3 m ☐		Wire length RJ45 L = 0.6 m ☐
	Wire length RJ45 L = 1 m ☐		Wire length RJ45 L = 2 m ☐
	Wire length RJ45 L = 3 m ☐		Wire length RJ45 L = 5 m ☐

Order form for source-changeover systems for 2 devices
ComPacT NS630b to NS1600
Circuit breakers and switch-disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭.

Diagram for two ComPacT NS devices

Electrical interlocking with lockout after fault:

Permanent replacement source (with IVE unit)	(no. 51201183)	☐
With emergency off by MX (with IVE unit)	(no. 51201184)	☐
With emergency off by MN (with IVE unit)	(no. 51201185)	☐

Interlocking using connecting rods between two NS630b to NS1600 devices

Manually operated devices installed side-by-side:

	For two fixed NS devices with extended rotary handles	☐

Electrically operated devices installed one above the other:

Select a complete set including two adaptation fixtures and the connecting rods

Complete set for:	2 fixed NS devices	☐
	2 withdrawable NS devices	☐

Interlocking using cables between two NS630b to NS1600 devices

Electrically operated devices installed one above the other or side-by-side:

Select a complete set including two adaptation fixtures and the cables

Complete set for:	2 fixed NS devices	☐
	2 withdrawable NS devices	☐
	1 fixed NS device + 1 withdrawable NS device	☐

Electrical interlocking between two NS630b to NS1600 devices

1 IVE unit 48/415 V - 50/60 Hz and 440 V - 60 Hz	☐
1 wiring kit for connection between 2 fixed / withdrawable devices to the IVE unit	☐

Automatic-control option

Power supply 110 V - 50/60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐
Power supply 220/240 V - 50/60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐
Power supply 380/415 V - 50/60 Hz and 440 V - 60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐

Order Form for Source-Changeover Systems for 2 Devices
ComPacT NS630b to NS1600
Circuit Breakers and Switch-Disconnectors

(One sheet per device, make copies if necessary)

Name of customer: _____

Address for delivery: _____

_____

Requested delivery date: _____

Customer order no.: _____

To indicate your choices, check the applicable square boxes and enter the appropriate information in the rectangles ☐

Device identification:

Q 1 - NORMAL SOURCE ☐

Q 2 - REPLACEMENT SOURCE ☐

Circuit Breaker or Switch Disconnector

ComPacT type	**NS630b to NS1600**	☐
Rating	**A**	☐
Circuit breaker	**N, H, L**	☐
Switch-disconnector	**NA**	☐
Number of poles	**3 or 4**	☐
Device	Fixed	☐
	Withdr. with chassis	☐
	Withdr. without chassis (moving part only)	☐
Chassis alone without connections		☐

MicroLogic Control Unit

Basic protection	**2.0**	☐	**5.0**	☐	**6.0**	☐					
A - ammeter	**2.0**	☐	**5.0**	☐	**6.0**	☐	**7.0**	☐			
E - energy meter	**2.0**	☐	**5.0**	☐	**6.0**	☐					
P - power meter			**5.0**	☐	**6.0**	☐	**7.0**	☐			
AD - external power-supply module									V	☐	
TCE - external sensor (CT) for neutral protection											☐
Rectangular sensor	280 x 115 mm										☐
TCW - external sensor for SGR protection											☐
LR - long-time rating plug	Standard 0.4 to 1 Ir										☐
	Low setting 0.4 to 0.8 Ir										☐
	High setting 0.8 to 1 Ir										☐
	LT OFF										☐

Communication

Eco COM module Modbus	Device	☐	Chassis	☐
Front Display Module (FDM121)	☐	Mounting accessory		☐
Breaker ULP cord	L = 0.35 m	☐		
	L = 1.3 m	☐		
	L = 3 m	☐		

Connections

Horizontal rear connections	Top	☐	Bottom	☐
Vertical rear connections	Top	☐	Bottom	☐
Front connections	Top	☐	Bottom	☐
4x240□ bare cable connectors + shields	NS - FC fixed			☐
Long connection shields	NS - FC fixed			☐
Vertical-connection adapters	NS - FC fixed, withdr.			☐
Cable-lug adapters	NS - FC fixed, withdr.			☐
Arc chute screen	NS - FC fixed			☐
Interphase barriers	NS - FC fixed, withdr.			☐
Spreaders	NS - FC fixed, withdr.			☐
VO - safety shutters on chassis	NS - FC fixed			☐

Indication Contacts

SD trip indication (maximum 1)						
	6 A-240 V AC	☐	Low level	☐		
SDE fault-trip indication (maximum 1) (SDE integrated in electrically operated devices)						
	6 A-240 V AC	☐	Low level	☐		
OF ON/OFF indication contacts (maximum 3)						
	6 A-240 V AC	qty ☐	Low level	qty ☐		
Carriage switches (possible combinations: 3 CE, 2 CD, 1 CT)						☐
CE - "connected" position	6 A-240 V AC	qty ☐	Low level	qty ☐		
CD - "disconnected" position	6 A-240 V AC	qty ☐	Low level	qty ☐		
CT - "test" position	6 A-240 V AC	qty ☐	Low level	qty ☐		
Auxiliary terminals for chassis alone			Jumpers (set of 10)			☐
	3-wire terminal (30 parts)	☐	6-wire terminal (10 parts)			☐

Remote Operation

Electrical operation	Standard	☐			Communicating		☐
	Power supply	AC ☐	DC ☐	**V**			
Voltage releases	MX	AC ☐	DC ☐	**V**			
	MN	AC ☐	DC ☐	**V**			
	MN delay unit		Adjustable ☐	Non-adjustable			☐

Rotary Handles for Fixed and Withdrawable Device

Direct	Black	☐	Red on yellow front	☐
			CNOMO conversion access.	☐
Extended	Black	☐	Red on yellow front	☐
	Telescopic handle for withdrawable device			☐
Indication auxiliary	6 A-240 V AC		2 early-make switches	☐
			2 early-break switches	☐

Locking

Toggle (1 to 3 padlocks)	Removable system	☐	Fixed system		☐
Rotary handle using a keylock	OFF position	☐	ON and OFF positions		☐
	Ronis 1351B.500	☐	Profalux KS5 B24 D4Z		☐
	Keylock kit (without keylock)				☐
For electrically operated devices	**VBP** - ON/OFF pushbutton locking				☐
	OFF position locking:				
	VCPO - by padlocks				☐
	VSPO - by keylocks				
	Keylock kit (w/o keylock)	Profalux ☐	Ronis		☐
	1 keylock	Profalux ☐	Ronis		☐
	2 identical keylocks, 1 key	Profalux ☐	Ronis		☐
Chassis locking in "disconnected" position:					
VSPD - by keylocks	Keylock kit (w/o keylock)	Profalux ☐	Ronis		☐
		Kirk ☐	Castell		☐
	1 keylock	Profalux ☐	Ronis		☐
	2 identical keylocks, 1 key	Profalux ☐	Ronis		☐
	2 keylocks, different keys	Profalux ☐	Ronis		☐
	Optional connected/disconnected/test position locking				☐
VPEC - door interlock			On right-hand side of chassis		☐
			On left-hand side of chassis		☐
VPOC - racking interlock					☐
VDC - mismatch protection					☐

Accessories

CDM - mechanical operation counter				☐
CDP - escutcheon				☐
CP - transparent cover for escutcheon				☐
OP - blanking plate for escutcheon				☐
Mounting brackets for fixed NS			For mounting on horizontal plane	☐
Test kits	Mini	☐	Portable test kit	☐

Order Form for Source-Changeover Systems for 2 Devices
MasterPacT MTZ1/MTZ2/MTZ3
Circuit Breakers and Switch-Disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭.

Diagram for 2 MasterPacT MTZ1/MTZ2/MTZ3 Devices

Electrical interlocking with lockout after fault:

Permanent replacement source (with IVE unit)	☐
With emergency off by MX (with IVE unit)	☐
With emergency off by MN (with IVE unit)	☐

Automatic control with lockout after fault:

Permanent replacement source (with IVE unit)	☐
Engine generator set (with IVE unit)	☐

Interlocking Using Connecting Rods (MTZ1/MTZ2/MTZ3 devices one above the other)

Select a complete set including two adaptation fixtures and the connecting rods

Complete set for:	2 drawout MTZ1	☐	2 fixed MTZ1	☐
	2 drawout MTZ2/3	☐	2 fixed MTZ2/3	☐
	1 fixed MTZ1 device + 1 fixed MTZ2/3 device			☐
	1 drawout MTZ1 device + 1 drawout MTZ2/3 device			☐

Interlocking Using Cables (MTZ1/MTZ2/MTZ3 devices one above the other or side-by-side)

Select two adaptation fixtures (one for each device) and a set of two cables

Adaptation fixture for: (MTZ1/MTZ2/3 fixed and drawout devices may be mixed)	1 fixed MTZ1 device	qty ▭
	1 drawout MTZ1 device	qty ▭
	1 fixed MTZ2/3 device	qty ▭
	1 drawout MTZ2/3 device	qty ▭
	1 set of 2 cables (for two devices)	☐

Electrical Interlocking 2 MasterPacT MTZ1/MTZ2/MTZ3 Devices

1 IVE unit 48/415 V - 50/60 Hz and 440 V - 60 Hz	☐
1 wiring kit for connection between 2 fixed / withdrawable devices to the IVE unit	☐

Automatic-Control Option

Power supply 220/240 V - 50/60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐
Power supply 380/415 V - 50/60 Hz and 440 V - 60 Hz:	ACP + BA controller	☐
	ACP + UA controller	☐
	ACP + UA150 controller	☐

D

Order Form for Source-Changeover Systems for 2 devices MasterPacT MTZ1/MTZ2/MTZ3

Circuit Breakers and Switch-Disconnectors

(One sheet per device, make copies if necessary)

Name of customer: _____

Address for delivery: _____

_____

Requested delivery date: _____

Customer order no.: _____

To indicate your choices, check the applicable square boxes and enter the appropriate information in the rectangles

Device identification:

Q 1 - NORMAL SOURCE ☐

Q 2 - REPLACEMENT SOURCE ☐

Circuit Breaker or Switch Disconnector

MasterPacT type		**MTZ1** ☐	**MTZ2/MTZ3** ☐
Rating	**A**		☐
Sensor rating	**A**		☐
Circuit breaker	**N1, H1, H2, H3, L1**		☐
Switch-disconnector	**NA, HA, HF, ES, HA10 (MTZ2/3)**		☐
Number of poles	**3 or 4**		☐
Option: neutral on right side			☐
Device	Fixed		☐
	Withdr. with chassis		☐
	Withdr. without chassis (moving part only)		☐
Chassis alone without connections			☐

MicroLogic Control Unit

LI		**2.X** ☐
LSI		**5.X** ☐
LSIG		**6.X** ☐
LSIV		**7.X** ☐
AD - external power-supply module		**V** ☐
TCE - external sensor (CT) for neutral protection		☐
Rectangular sensor for earth-leakage protection	MTZ1 (280 x 115 mm)	☐
	MTZ2/3 (470 x 160 mm)	☐
LR - long-time rating plug	Standard 0.4 to 1 Ir	☐
	Low setting 0.4 to 0.8 Ir	☐
	High setting 0.8 to 1 Ir	☐
	LT OFF	☐
PTE - external voltage measurement input (required for reverse supply)		☐
BAT - battery module		☐

Communication

Eco COM module Modbus	Device	☐	Chassis	☐
Front Display Module (FDM121)	☐		Mounting accessory	☐
Breaker ULP cord	L = 0.35 m	☐		
	L = 1.3 m	☐		
	L = 3 m	☐		
ULP port	☐		IFM	☐
ULP cord	☐		EIFE	☐
I/O module	☐		FDM128	☐
IFE	☐			

Connections

Horizontal	Top	☐	Bottom	☐
Vertical	Top	☐	Bottom	☐
Front	Top	☐	Bottom	☐
Vertical-connection adapters	MTZ1 - FC fixed, draw.			☐
Cable-lug adapters	MTZ1 - FC fixed, draw.			☐
Arc chute screen	MTZ1 - FC fixed			☐
Interphase barriers	MTZ1 - MTZ2/3 fixed, draw.			☐
Spreaders	MTZ1 fixed, drawout			☐
Disconnectable front connection adapter	MTZ2/3 fixed			☐
Lugs for 240² or 300² cables	MTZ2/3 fixed, drawout			☐
VO - safety shutters on chassis	MTZ1, MTZ2/3			X
VIVC - shutter position indication and locking	MTZ2/3			☐

Indication Contacts

OF - ON/OFF indication contacts				
Standard	4 OF 6 A-240 V AC (10 A-240 V AC and low-level for MTZ2/3)			
Additional	1 block of 4 OF for MTZ2/3	max. 2	qty	☐
EF - combined "connected/closed" contacts				
	1 EF 6 A-240 V AC for MTZ2/3	max. 8	qty	☐
	1 EF low-level for MTZ2/3	max. 8	qty	☐
SDE - "fault-trip" indication contact				
Standard	1 SDE 6 A-240 V AC			
Additional	1 SDE 6 A-240 V AC ☐		1 SDE Low level	☐
Programmable contacts			2 M2C contacts	☐
Carriage switches	6 A-240 V AC ☐		Low level	☐
CE - "connected" position	max. 3 for MTZ2/3 / MTZ1		qty	☐
CD - "disconnected" position	max. 3 for MTZ2/3, 2 for MTZ1		qty	☐
CT - "test" position	max. 3 for MTZ2/3, 1 for MTZ1		qty	☐
AC - MTZ2/3 actuator for 6 CE - 3 CD - 0 CT additional carriage switches			qty	☐

Remote Operation

Remote ON/OFF	**MCH** - gear motor		**V** ☐
	XF - closing voltage release		**V** ☐
	MX - opening voltage release		**V** ☐
	PF - "ready to close" contact	Low level	☐
		6 A-240 V AC	☐
	BPFE - electrical closing pushbutton		☐
	Res - electrical reset option		**V** ☐
	RAR - automatic reset option		☐
Remote tripping	**MN** - undervoltage release		**V** ☐
	R - delay unit (non-adjustable)		☐
	Rr - adjustable delay unit		☐
	2nd MX - shunt release		**V** ☐

Locking

VBP - ON/OFF pushbutton locking (by transparent cover + padlocks)				☐
OFF position locking:				
VCPO - by padlocks				☐
VSPO - by keylocks	Keylock kit (w/o keylock)	Profalux ☐	Ronis	☐
		Kirk ☐	Castell	☐
	1 keylock	Profalux ☐	Ronis	☐
	2 identical keylocks, 1 key	Profalux ☐	Ronis	☐
	2 keylocks, different keys (MTZ2/3)	Profalux ☐	Ronis	☐
Chassis locking in "disconnected" position:				
VSPD - by keylocks	Keylock kit (w/o keylock)	Profalux ☐	Ronis	☐
		Kirk ☐	Castell	☐
	1 keylock	Profalux ☐	Ronis	☐
	2 identical keylocks, 1 key	Profalux ☐	Ronis	☐
	2 keylocks, different keys	Profalux ☐	Ronis	☐
	Optional connected/disconnected/test position locking			☐
VPEC - door interlock		On right-hand side of chassis		☐
		On left-hand side of chassis		☐
VPOC - racking interlock				☐
IPA - cable-type door interlock				☐
IBPO - racking interlock between crank and OFF pushbutton for MTZ2/3				☐
DAE - automatic spring discharge before breaker removal for MTZ2/3				☐
VDC - mismatch protection device - chassis				☐

Accessories

CDM - mechanical operation counter		☐
CB - auxiliary terminal shield for chassis		☐
CDP - escutcheon		☐
CP - transparent cover for escutcheon		☐
OP - blanking plate for escutcheon		☐
Brackets for mounting MTZ2/3 fixed	On backplates	☐

Order Form for Source-Changeover Systems for 3 Devices
MasterPacT MTZ2/MTZ3
Circuit Breakers and Switch-Disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭.

Diagram for 3 MasterPacT MTZ2/MTZ3 Devices

2 "Normal" sources + 1 "Replacement" source:

- Electrical interlocking without lockout after fault ☐
- Electrical interlocking with lockout after fault ☐

2 "Normal" sources + 1 "Replacement" source with source selection:

- Automatic control w/ engine generator set w/o lockout after fault ☐
- Automatic control w/ engine generator set w/ lockout after fault ☐

3 sources, only 1 device ON:

- Electrical interlocking without lockout after fault ☐
- Electrical interlocking with lockout after fault ☐

2 "Normal" sources + 1 coupling:

- Electrical interlocking without lockout after fault ☐
- Electrical interlocking with lockout after fault ☐
- Automatic control with lockout after fault: ☐

Interlocking Using Cables (MTZ2/MTZ3 devices one above the other or side-by-side)

Select a complete set including three adaptation fixtures and the cables

1 complete set for:

- 3 sources / 1 device ON, fixed or drawout ☐
- 2 sources + 1 coupling, fixed or drawout ☐
- 2 sources + 1 replacement source, fixed or drawout ☐

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Order Form for Source-Changeover Systems for 3 Devices
MasterPacT MTZ2/MTZ3
Circuit Breakers and Switch-Disconnectors

To indicate your choices, check the applicable square boxes ☐ and enter the appropriate information in the rectangles ▭.
(one sheet per device, make copies if necessary)

Device identification:

Q 1 - NORMAL SOURCE	
Q 2 - REPLACEMENT SOURCE	

Circuit breaker or Switch-Disconnector

MasterPacT type		**MTZ2/MTZ3**
Rating	**A**	
Sensor rating	**A**	
Circuit breaker	**N1, H1, H2, H3, L1**	
Switch-disconnector	**NA, HA, HF**	
Number of poles	**3 or 4**	
Option: neutral on right side		
Device	Fixed	
	Drawout with chassis	
	Drawout without chassis (moving part only)	
Chassis alone without connections		

MicroLogic Control Unit

LI	**2.X**
LSI	**5.X**
LSIG	**6.X**
LSIV	**7.X**
AD - external power-supply module	**V**
TCE - external sensor (CT) for neutral protection	
Rectangular sensor for earth-leakage protection	470 x 160 mm
TCW - external sensor for SGR protection	
LR - long-time rating plug	Standard 0.4 to 1 Ir
	Low setting 0.4 to 0.8 Ir
	High setting 0.8 to 1 Ir
	LT OFF
PTE - external voltage measurement input (required for reverse supply)	
BAT - battery module	

Communication

Eco COM module Modbus	Device	☐	Chassis	
Front Display Module (FDM121)		☐	Mounting accessory	
Breaker ULP cord	L = 0.35 m	☐		
	L = 1.3 m	☐		
	L = 3 m	☐		
ULP port		☐	IFM	
ULP cord		☐	EIFE	
I/O module		☐	FDM128	
IFE		☐		

Connections

Horizontal	Top	☐	Bottom	
Vertical	Top	☐	Bottom	
Front	Top	☐	Bottom	
Interphase barriers	Fixed, drawout			
Disconnectable front connection adapter	Fixed			
VO - safety shutters on chassis				X
VIVC - shutter position indication and locking				

Indication Contacts

OF - ON/OFF indication contacts			
Standard	4 OF 6 A-240 V AC (10 A-240 V AC and low-level)		
Additional	1 block of 4 OF	max. 2	qty
EF - combined "connected/closed" contacts			
	1 EF 6 A-240 V AC	max. 8	qty
	1 EF low-level	max. 8	qty
SDE - "fault-trip" indication contact			
Standard	1 SDE 6 A-240 V AC		
Additional	1 SDE 6 A-240 V AC ☐	1 SDE Low level	☐
Programmable contacts		2 M2C contacts	☐
Carriage switches	6 A-240 V AC ☐	Low level	☐
CE - "connected" position	Max. 3		qty
CD - "disconnected" position	Max. 3		qty
CT - "test" position	Max. 3		qty
AC - MTZ2/3 actuator for 6 CE - 3 CD - 0 CT additional carriage switches			qty

Remote Operation

Remote ON/OFF	**MCH -** gear motor		**V**
	XF - closing voltage release		**V**
	MX - opening voltage release		**V**
	PF - "ready to close" contact	Low level	
		6 A-240 V AC	
	BPFE - electrical closing pushbutton		
	Res - electrical reset option		**V**
	RAR - automatic reset option		
Remote tripping	**MN** - undervoltage release		**V**
	R - delay unit (non-adjustable)		
	Rr - adjustable delay unit		
	2eme MX - shunt release		**V**

Locking

VBP - ON/OFF pushbutton locking (by transparent cover + padlocks)				
OFF position locking:				
VCPO - by padlocks				
VSPO - by keylocks	Keylock kit (w/o keylock)	Profalux ☐	Ronis	
		Kirk ☐	Castell	
	1 keylock	Profalux ☐	Ronis	
	2 identical keylocks, 1 key	Profalux ☐	Ronis	
	2 keylocks (MTZ2/3)	Profalux ☐	Ronis	
Chassis locking in "disconnected" position:				
VSPD - by keylocks	Keylock kit (w/o keylock)	Profalux ☐	Ronis	
		Kirk ☐	Castell	
	1 keylock	Profalux ☐	Ronis	
	2 identical keylocks, 1 key	Profalux ☐	Ronis	
	2 keylocks, different keys	Profalux ☐	Ronis	
	Optional connected/disconnected/test position locking			
VPEC - door interlock		On right-hand side of chassis		
		On left-hand side of chassis		
VPOC - racking interlock				
IPA - cable-type door interlock				
IBPO - racking interlock between crank and OFF pushbutton for MTZ2/3				
DAE - automatic spring discharge before breaker removal for MTZ2/3				
VDC - mismatch protection				

Accessories

CDM - mechanical operation counter	
CB - auxiliary terminal shield for chassis	
CDP - escutcheon	
CP - transparent cover for escutcheon	
OP - blanking plate for escutcheon	
Brackets for mounting MTZ2/3 fixed	On backplates

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