

# Characteristics and Performance

## ComPacT NSX Circuit Breakers from 100 to 250 A up to 690 V

A



ComPacT NSX single-pole



ComPacT NSX two-pole

### ComPacT Circuit Breakers

Number of poles		
Control	Manual	toggle direct or extended rotary handle
Connections	Electric	
	Fixed	front connection rear connection
	Withdrawable	front connection rear connection

### Electrical Characteristics IEC/EN 60947-2

Rated current (A)	<b>In</b>	40 °C
Rated insulation voltage (V)	<b>Ui</b>	
Rated impulse withstand voltage (kV)	<b>Uimp</b>	
Rated operational voltage (V)	<b>Ue</b>	AC 50/60 Hz DC

### Type of Circuit Breaker

Ultimate breaking capacity (kA rms)	<b>Icu</b>	AC	220/240 V
		50/60 Hz	380/415 V
			440 V
			500/525 V
			660/690 V
DC		250 V (1P)	
		500 V (2P)	

Service breaking capacity (kA rms)	<b>Ics</b>	% Icu
Suitability for isolation		

Utilization category			
Durability (C-O cycles)	Mechanical		
	Electrical	277 V	In/2 In

### Protection and Measurements

Type of trip units			
Ratings		<b>In</b>	
Overload protection (thermal)	Long time threshold	<b>Ir</b>	
	Short-circuit protection (magnetic)	Instantaneous pickup	<b>Ii</b> value indicated for AC [1] real value for DC
Add-on earth-leakage protection	VigiPacT add-on combination with VigiPacT relay		

### Additional Indication and Control Auxiliaries

Indication contacts			
Voltage releases	MX shunt release		
	MN undervoltage release		

### Installation

Accessories	Terminal extensions and spreaders
	Terminal shields and interphase barriers
	Escutcheons
Dimensions (mm)	W x H x D
Weight (kg)	

### Source Changeover System

Manual mechanical interlocking

[1] The thresholds for TMD and TMG 1-pole and 2-pole magnetic trip units up to 63 A are indicated for AC. The real DC thresholds are indicated on the following line.

# Characteristics and Performance

## ComPacT NSX Circuit Breakers from 100 to 250 A up to 690 V

A

NSX100					NSX160					NSX250						
1		2			1		2			1						
⊙		⊙			⊙		⊙			⊙						
-		-			-		-			-						
-		-			-		-			-						
⊙		⊙			⊙		⊙			⊙						
⊙		⊙			⊙		⊙			⊙						
-		-			-		-			-						
-		-			-		-			-						
100		100			160		160			250						
750		750			750		750			750						
8		8			8		8			8						
277		690			277		690			277						
250		500			250		500			-						
F	N	M			F	M	S			F	M	S	N			
18	25	40			36	85	100			18	25	40	36	85	100	25
-	-	-			18	25	70			-	-	-	18	25	70	-
-	-	-			15	25	65			-	-	-	15	25	65	-
-	-	-			10	18	35			-	-	-	10	18	35	-
-	-	-			5	8	10			-	-	-	5	8	10	-
36	50	85			36	85	100			36	85	100	36	85	100	-
-	-	-			36	85	100			-	-	-	36	85	100	-
100 %					100 %					100 %			100 %			100 %
⊙					⊙					⊙			⊙			⊙
A					A					A			A			A
20000					20000					20000			20000			10000
20000					20000					20000			20000			10000
10000					10000					10000			10000			5000
built-in thermal-magnetic					built-in thermal-magnetic					built-in thermal-magnetic						
16	20	25	30	40	50	63	80	100	125	160	160	200	250			
fixed					fixed				fixed							
16	20	25	30	40	50	63	80	100	125	160	160	200	250			
fixed					fixed				fixed							
190	190	300	300	500	500	500	640	800	1000	1250	850	850	850			
260	260	400	400	700	700	700	800	1000	1200	1250	-	-	-			
-					-				-		-	-	-			
-					⊙				-		⊙					
-					⊙				-		⊙					
-					⊙				-		⊙					
⊙					⊙				⊙			⊙				
⊙					⊙				⊙			⊙				
⊙					⊙				⊙			⊙				
35 x 161 x 86					70 x 161 x 86				35 x 161 x 86			70 x 161 x 86				
0.7					1.2				0.7			1.2				
⊙					⊙				⊙			⊙				
⊙					⊙				⊙			⊙				

# Characteristics and Performance

## ComPacT NSX Circuit Breakers from 100 to 250 A up to 690 V

### ComPacT New Generation Overview



A



ComPacT NSX250 HB2

### Common Characteristics

Rated voltages	Insulation voltage (V) $U_i$	800
	Insulation voltage for ELCB [5] $U_i$	500
	Impulse withstand voltage (kV) $U_{imp}$	8
	Operational voltage (V) $U_e$ AC 50/60 Hz	690
	Operation voltage for ELCB [5] $U_e$ AC 50/60 Hz	440
Suitability for isolation	IEC/EN 60947-2	yes
Utilization category		A
Pollution degree	IEC 60664-1	3

### Circuit Breakers

#### Breaking Capacity Levels

##### Electrical characteristics as per IEC/EN 60947-2

Rated current (A)	$I_n$	40 °C
-------------------	-------	-------

Number of poles

##### Breaking capacity (kA rms)

$I_{cu}$	AC 50/60 Hz	220/240 V
		380/415 V
		440 V
		500 V
		525 V
		660/690 V

##### Service breaking capacity (kA rms)

$I_{cs}$	AC 50/60 Hz	220/240 V
		380/415 V
		440 V
		500 V
		525 V
		660/690 V

Durability (C-O cycles)	Mechanical		
		Electrical	440 V
		690 V	$I_n/2$
			$I_n$

##### Characteristics as per UL 60947-4-1

Breaking capacity (kA rms)	AC 50/60 Hz	240 V
		480 V
		600 V

### Protection and Measurements

Short-circuit protection	Magnetic only
Overload/short-circuit protection	Thermal magnetic
	Electronic

With neutral protection (Off-0.5-1-OSN) [1]

With ground-fault protection

With zone selective interlocking (ZSI) [2]

Display/I, U, f, P, E, THD measurements/interrupted-current measurement

Options	Power meter display on door
	Operating assistance
	Counters
	Histories and alarms
	Metering Com
	Device status/control Com
	Earth-leakage protection

By VigiPacT add-on [3]

By VigiPacT relay

### Installation/Connections

#### Dimensions and weights

Dimensions (mm)	Fixed, front connections	2/3P
		4P
Weight (kg)	Fixed, front connections	2/3P
		4P

#### Connections

Connection terminals	Pitch	With/without spreaders
Large Cu or Al cables	Cross-section	mm <sup>2</sup>

### Source-Changeover System

Manual mechanical interlocking
Automatic source-changeover

[1] OSN: Over Sized Neutral protection for neutrals carrying high currents (e.g. 3rd harmonics).

[2] ZSI: Zone Selective Interlocking using pilot wires.

[3] VigiPacT add-on is not available for breaking capacity levels HB1/HB2.

[4] There is no 160 A frame, use 250 A frame with lower rating trip units for R, HB1, HB2.

[5] Earth Leakage Circuit Breaker (MicroLogic Vigi 4.2 and 7.2 E).



# Characteristics and Performance

## ComPacT NSX Circuit Breakers from 400 to 630 A up to 690 V



ComPacT NSX630 HB2

A

### Common Characteristics

Rated voltages	Insulation voltage (V)	Ui	800
	Insulation voltage for ELCB [4]		500
	Impulse withstand voltage (kV)	Uimp	8
	Operational voltage (V)	Ue AC 50/60 Hz	690
	Operation voltage for ELCB [4]	Ue AC 50/60 Hz	440
Suitability for isolation		IEC/EN 60947-2	yes
Utilization category			A
Pollution degree		IEC 60664-1	3

### Circuit Breakers

#### Breaking Capacity Levels

##### Electrical characteristics as per IEC/EN 60947-2

Rated current (A)	In	40 °C
-------------------	----	-------

Number of poles

##### Breaking capacity (kA rms)

Icu	AC 50/60 Hz	220/240 V
		380/415 V
		440 V
		500 V
		525 V
		660/690 V

##### Service breaking capacity (kA rms)

Ics	AC 50/60 Hz	220/240 V
		380/415 V
		440 V
		500 V
		525 V
		660/690 V

Durability (C-O cycles)

Mechanical	440 V	In/2
		In
Electrical	690 V	In/2
		In

##### Characteristics as per UL 60947-4-1

Breaking capacity (kA rms)	AC 50/60 Hz	240 V
		480 V
		600 V

#### Protection and Measurements

Short-circuit protection	Magnetic only
Overload/short-circuit protection	Thermal magnetic
	Electronic
	With neutral protection (Off-0.5-1-OSN) [1]
	With ground-fault protection
	With zone selective interlocking (ZSI) [2]

Display/I, U, f, P, E, THD measurements/interrupted-current measurement

Options	Power meter display on door
	Operating assistance
	Counters
	Histories and alarms
	Metering Com
	Device status/control Com

Earth-leakage protection	By VigiPacT add-on [3]
	By VigiPacT relay

#### Installation/Connections

##### Dimensions and weights

Dimensions (mm) W x H x D	Fixed, front connections	2/3P
		4P
Weight (kg)	Fixed, front connections	2/3P
		4P

##### Connections

Connection terminals	Pitch	With/without spreaders
Large Cu or Al cables	Cross-section	mm <sup>2</sup>

#### Source-Changeover System

Manual mechanical interlocking

Automatic source-changeover

[1] OSN: Over Sized Neutral protection for neutrals carrying high currents (e.g. 3rd harmonics).

[2] ZSI: Zone Selective Interlocking using pilot wires.

[3] VigiPacT add-on is not available for breaking capacity levels HB1/HB2.

[4] Earth Leakage Circuit Breaker (MicroLogic Vigi 4.3 and 7.3 E)

# Characteristics and Performance

## ComPacT NSX Circuit Breakers from 400 to 630 A up to 690 V



### Common Characteristics

Control	Manual	With toggle	<input checked="" type="radio"/>
		With direct or extended rotary handle	<input checked="" type="radio"/>
Versions	Electrical	With remote control	<input checked="" type="radio"/>
	Fixed		<input checked="" type="radio"/>
	Withdrawable	Plug-in base	<input checked="" type="radio"/>
		Chassis	<input checked="" type="radio"/>

NSX400									NSX630									I <sub>r</sub> = 225 - 500 A			I <sub>r</sub> = 501 - 630 A					
F	N	H	S	L	R	HB1	HB2		F	N	H	S	L	R	HB1	HB2		R	HB1	HB2	R	HB1	HB2			
<b>400</b>					<b>400</b>					<b>630</b>					<b>630</b>											
3, 4					3, 4					3, 4					3, 4											
40	85	100	120	150	200	-	-		40	85	100	120	150	200	-	-		200	-	-	200	-	-	200	-	-
36	50	70	100	150	200	-	-		36	50	70	100	150	200	-	-		200	-	-	200	-	-	200	-	-
30	42	65	90	130	200	-	-		30	42	65	90	130	200	-	-		200	-	-	200	-	-	200	-	-
25	30	50	65	70	80	85	100		25	30	50	65	70	80	85	100		80	85	100	80	85	100	80	85	100
20	22	35	40	50	65	80	100		20	22	35	40	50	65	80	100		65	80	100	65	80	100	65	80	100
10	10	20	25	35	45	75	100		10	10	20	25	35	45	75	100		45	75	100	45	75	100	45	75	100
40	85	100	120	150	200	-	-		40	85	100	120	150	200	-	-		200	-	-	200	-	-	200	-	-
36	50	70	100	150	200	-	-		36	50	70	100	150	200	-	-		200	-	-	200	-	-	200	-	-
30	42	65	90	130	200	-	-		30	42	65	90	130	200	-	-		200	-	-	200	-	-	200	-	-
25	30	50	65	70	80	85	100		25	30	50	65	70	80	85	100		80	85	100	80	85	100	80	85	100
10	11	11	12	12	65	80	100		10	11	11	12	12	65	80	100		65	80	100	-	-	-	-	-	-
10	10	10	12	12	45	75	100		10	10	10	12	12	45	75	100		45	75	100	-	-	-	-	-	-
15000					15000				15000					15000				15000			15000			15000		
12000					12000				8000					8000				8000			8000			8000		
6000					6000				4000					4000				4000			4000			4000		
6000					6000				6000					6000				6000			6000			6000		
3000					3000				2000					2000				2000			2000			2000		
85	85	85	-	-	-	-	-		85	85	85	-	-	-	-	-		-	-	-	-	-	-	-	-	-
35	50	65	-	-	-	-	-		35	50	65	-	-	-	-	-		-	-	-	-	-	-	-	-	-
20	10	20	-	-	-	-	-		20	20	20	-	-	-	-	-		-	-	-	-	-	-	-	-	-

<input checked="" type="radio"/>	<input checked="" type="radio"/>
-	-
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>

140 x 255 x 110	140 x 255 x 110
185 x 255 x 110	185 x 255 x 110
6.05	6.2
7.90	8.13
45/52.5 mm	45/52.5 mm
45/70 mm	45/70 mm
4 x 240	4 x 240

<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="radio"/>	<input checked="" type="radio"/>