

Direct access to energy efficiency

Compact NSX

Next-generation LV moulded-case circuit breakers from 100 to 630 A



Energy
measurement
and control



Increased
energy
availability

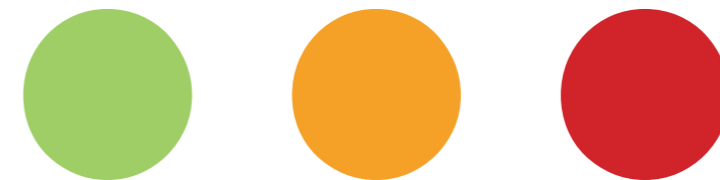


Safety and
protection

Schneider
Electric™



Intelligent outlook



Compact NSX Next-generation circuit breakers

The Compact™ range of circuit breakers set tomorrow's standards today and help exacting organisations achieve more from their LV infrastructure. An extended breaking capacity, the highest in its class, is available across the entire Compact NSX range.

A power monitoring unit also enhances their outstanding protective functions. For the first time, users can monitor both energy and power, offering new performance in a remarkably compact device.



Combine safety and performance

The Compact NSX range is innovative – it incorporates monitoring and communication functions, from 40 A upward, combined with impeccable protection.

Expert technology

A roto-active contact breaking principle provides better limitation and endurance performance:

- > Very high breaking capacity in a very small device.
- > Exceptional fault current limitation for extended system life.

Reduced installation costs

Achieve up to 30 % savings:

- > Total discrimination is ensured particularly in the case of miniature circuit breakers for considerable savings at the time of installation.
- > Smaller devices mean more economical switchboards for a significant impact on overall cost of installation – no need for over-calibration.

New breaking capacities

New performance levels improve application targeting:

- > 25 kA – Standard low short-circuit level applications, e.g., in service businesses.
- > 36-50 kA – Standard applications (industrial plants, buildings, and hospitals).
- > 70-100 kA – High performance at controlled cost.
- > 150 kA – Marine ready, with an Ics rating meeting IACS requirements for emergency, essential, and MCC loads.
- > 200 kA at up to 440 V – Industry-leading breaking capacity for high-density applications in oil and gas extraction and processing, mining operations, metals and minerals production, and data centres.
- > 100 kA from 500 to 690 V – The world's highest rated breaking capacity for the most demanding electrical environments, and ideal for high-efficiency, cost-effective 690 V systems.

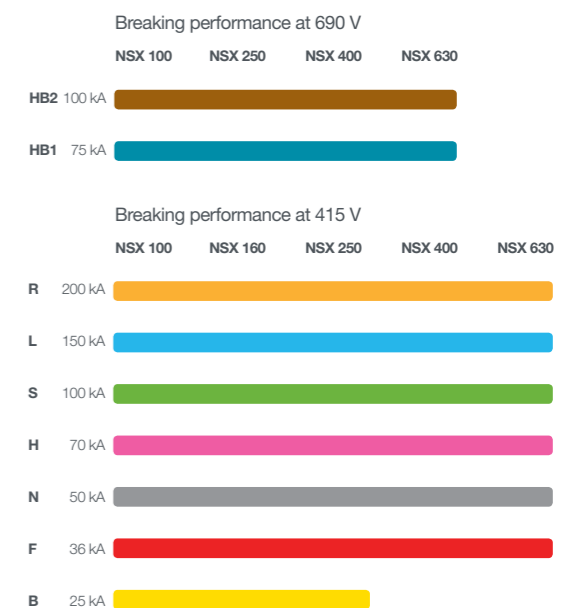
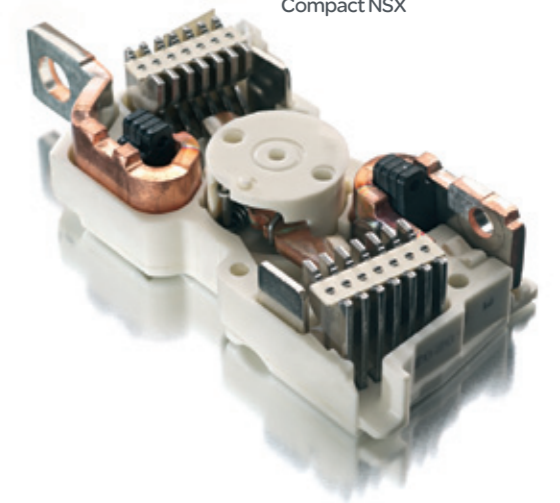
Enhanced protection for motors

The Compact NSX range meets the requirements of IEC 60947-4-1 standards for protection of motors:

- > Well adapted to motor-starting solutions up to 315 kW at 400 V, providing protection against short circuits, overloads, phase unbalance and loss.
- > Set up additional protection systems for starting and braking with the motor running, reverse braking, jogging, or reversing in complete safety.
- > Used in conjunction with a Schneider Electric contactor, the Compact NSX provides Type II coordination for motor applications.

23

new patents pending confirm the innovative character of Compact NSX





Measure the difference

Compact NSX circuit breakers provide outstanding protection as well as an integrated measurement unit to help you monitor power conditions and manage energy consumption.

Integrated monitoring

A Micrologic™ electronic tripping device with next-generation sensors:

- > An 'iron' sensor for the power supply to the electronics.
- > An 'air' sensor (Rogowski coils) for the measurement part.

The originality lies in how Compact NSX measures, processes, and displays data, either directly on screen, on the switchboard front panel, or via a monitoring system.

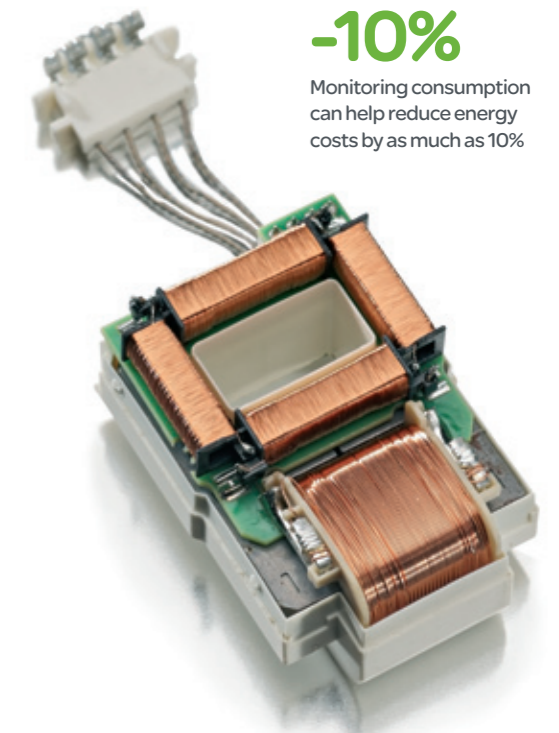
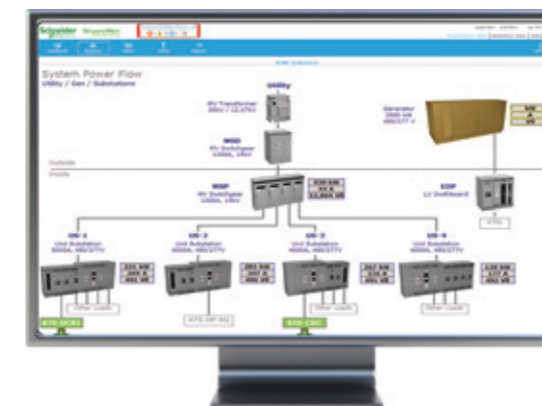
Accessibility of information

To keep costs under control and ensure service continuity, relevant information must be available in real time:

- > A kilowatt-hour meter helps optimise costs and their allocation.
- > Harmonic distortion rate shows the quality of electrical supply.
- > Alarm notification secures operational control and maintenance planning.
- > Event logs and tables, activated continuously, ensure the installed equipment base operates correctly, so energy efficiency is maximized.

Installation supervision

Used in conjunction with software, Compact NSX provides users with a set of parameters and tools to make it easy to monitor installations.



-10%

Monitoring consumption can help reduce energy costs by as much as 10%

ASIC

Electronics (ASIC), independent of measurement, manage protection functions. The high degree of integration in electronics guarantees protection against conducted or radiated interference



Opt for service continuity

The Compact NSX range provides exceptional discrimination that minimizes the impact of short circuits and ensures maximum service continuity.



Direct access to maintenance indicators

Total discrimination

Schneider Electric leverages over 30 years of experience and expertise in discrimination to ensure customers of maximum service continuity:

- > The downstream circuit breaker trips as close as possible to the fault, so that the upstream circuit breaker is not overloaded.

Total service continuity

The Compact NSX range offers innovative capabilities to ensure maximum continuity and uptime for your facilities:

- > R, HB1, and HB2 high breaking capacity levels enable the circuit breakers to withstand demanding fault conditions, staying reliably in service after 3 faults. After a fault is cleared, remote control reclosing functionality puts circuits back into operation quickly.
- > SDTAM module allows remote indication of motor overloads and actuation of a contact switch. The SDTAM switches the contact instead of tripping the circuit breaker. The module allows for machine restart directly from the contact switch without having to operate circuit breakers.

Preventive maintenance

Maintenance indicators provide information on the number of operations, level of wear on contacts, and total load rates. Maintenance is now preventive, avoiding faults.



100%
service continuity

Added simplicity

The Compact NSX range incorporates the same principles of easy installation and use that made its predecessor so successful, and takes these to a higher level.



65%

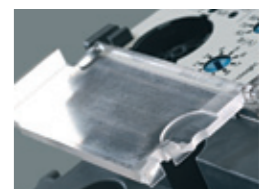
time savings in installation compared with a classic monitoring solution



The green 'Ready' LED flashes to show that all is well



LTS installation system



Transparent protective cover

Simple in design

- > Installers mount and wire Compact NSX in the same way as Compact NS, which makes engineering for a retrofit or extension simple.
- > Design is simplified using support software that helps you with parameter settings and planning switchboard installation.

Simple to install

- > A Limited Torque Screw (LTS) system ensures proper installation of the tripping device for added flexibility.
- > A transparent sealed flap protects access to tripping device switches and prevents settings from being changed.
- > New electrical control adjustment also has a transparent sealable cover to prevent it from being operated accidentally.
- > Pre-wired connectivity and plug-and-play interface modules allow for easy integration with communication networking.

Simple to use

- > Users customize alarms for all parameters, assign them to indicator lights, choose display priorities, and configure time delay thresholds and modes.
- > A wealth of information, including continuously-activated event logs and tables, helps you ensure that the installed equipment base is operating correctly and that settings are optimized.

Choose the expertise of Schneider Electric

Whether in buildings, factories or mission-critical infrastructures, Schneider Electric commits to helping you reduce energy costs and CO₂ emissions. We offer products, solutions, and services that integrate with all levels of the energy value chain.

Solutions adapted to all needs

Through flexible solutions for commercial and industrial buildings, Schneider Electric commits to help customers gradually move towards an active approach to their energy efficiency. We help you get more return from investments and future design solutions.

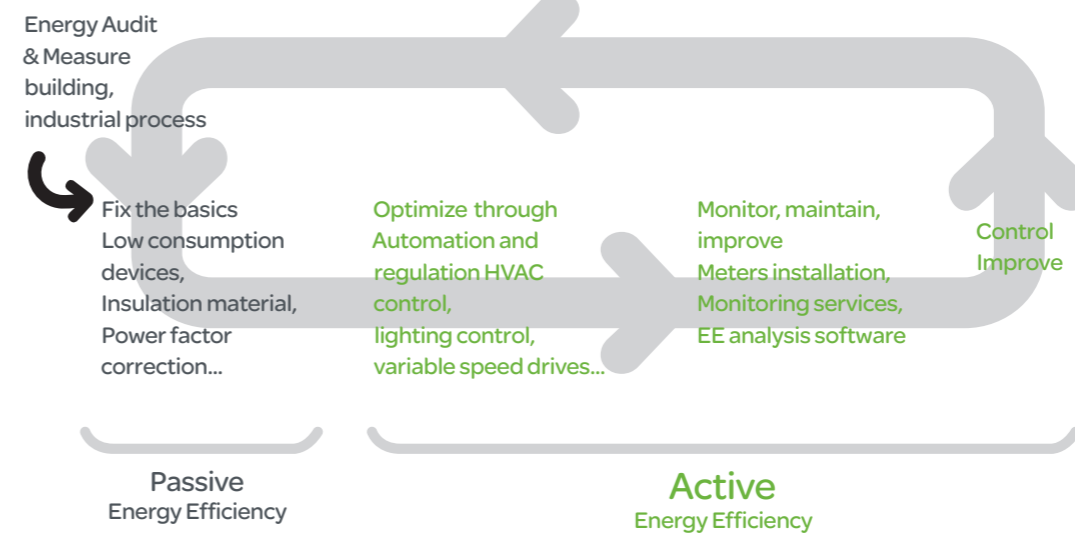
up to 30%
savings in energy costs

Energy performance contracts

Schneider Electric offers innovative service to modernise technical installations. Our objective is: to dramatically reduce energy costs, whilst improving comfort and safety, all in an environmentally friendly way.

4 steps

- > Diagnosis
- > Proposals
- > Implementation
- > Follow-up



Environmentally responsible

Compact NSX circuit breakers are part and parcel of the Schneider Electric energy efficiency approach. Designed for easy disassembly and recycling at end of life, Compact NSX complies with environmental directives RoHS* and WEEE**, and with ISO 14001 standards, thanks to non-polluting factories.

* RoHS = Restriction of Hazardous Substances
** WEEE = Waste Electrical and Electronic Equipment

Compact NSX characteristics



Common characteristics			
Rated voltages			
Insulation voltage (V)	Ui		800
Impulse withstand voltage (kV)	Uimp		8
Operational voltage (V)	Ue	AC 50/60 Hz	690
Suitability for isolation		IEC/EN 60947-2	yes
Utilisation category			A
Pollution degree		IEC 60664-1	3

Common characteristics			
Control			
Manual	With toggle		■
	With direct or extended rotary handle		■
Electrical	With remote control		■
Versions			
Fixed			■
Withdrawable	Plug-in base		■
	Chassis		■

Circuit breakers			NSX100								NSX160						NSX250								NSX400								NSX630																							
			B	F	N	H	S	L	R	HB1	HB2	B	F	N	H	S	L	B	F	N	H	S	L	R	HB1	HB2	F	N	H	S	L	R	HB1	HB2	F	N	H	S	L6	Ir = 225 - 500A			Ir = 501 - 630A													
Breaking capacity levels																																																								
Electrical characteristics as per IEC 60947-2																																																								
Rated current (A)	In	40 °C	100														160						250								400								630																	
Number of poles			2 ⁽³⁾ , 3, 4														2 ⁽³⁾ , 3, 4						2 ⁽³⁾ , 3, 4								3, 4																									
Breaking capacity (kA rms)	Icu	AC 50/60 Hz	220/240 V	40	85	90	100	120	150	200	-	-	40	85	90	100	120	150	40	85	90	100	120	150	200	-	-	85	90	100	120	150	200	-	-	40	85	100	120	150	200	-	-	200	-	-	200	-	-							
		380/415 V	25	36	50	70	100	150	200	-	-	25	36	50	70	100	150	25	36	50	70	100	150	200	-	-	36	50	70	100	150	200	-	-	36	50	70	100	150	200	-	-	200	-	-	200	-	-								
		440 V	20	35	50	65	90	130	200	-	-	20	35	50	65	90	130	20	35	50	65	90	130	200	-	-	35	50	65	90	130	200	-	-	30	42	65	90	130	200	-	-	200	-	-	200	-	-								
		500 V	15	25	36	50	65	70	80	85	100	15	30	36	50	65	70	15	30	36	50	65	70	80	85	100	25	36	50	65	70	80	85	100	25	30	50	65	70	80	85	100	80	85	100	80	85	100								
		525 V	-	22	35	35	40	50	65	80	100	-	22	35	35	40	50	-	22	35	35	40	50	65	80	100	22	35	35	40	50	65	80	100	20	22	35	40	50	65	80	100	20	22	35	40	50	65	80	100	80	100	65	80	100	25
		660/690 V	-	8	10	10	15	20	45	75	100	-	8	10	10	15	20	-	8	10	10	15	20	45	75	100	8	10	10	15	20	45	75	100	10	10	20	25	35	45	75	100	45	75	100	45	75	100								
Service breaking capacity (kA rms)	Ics	AC 50/60 Hz	220/240 V	40	85	90	100	120	150	200	-	-	40	85	90	100	120	150	40	85	90	100	120	150	200	-	-	85	90	100	120	150	200	-	-	40	85	100	120	150	200	-	-	200	-	-	200	-	-							
		380/415 V	25	36	50	70	100	150	200	-	-	25	36	50	70	100	150	25	36	50	70	100	150	200	-	-	36	50	70	100	150	200	-	-	36	50	70	100	150	200	-	-	200	-	-	200	-	-								
		440 V	20	35	50	65	90	130	200	-	-	20	35	50	65	90	130	20	35	50	65	90	130	200	-	-	35	50	65	90	130	200	-	-	30	42	65	90	130	200	-	-	200	-	-	200	-	-								
		500 V	7.5	12.5	36	50	65	70	80	85	100	15	30	36	50	65	70	15	30	36	50	65	70	80	85	100	12.5	36	50	65	70	80	85	100	25	30	50	65	70	80	85	100	80	85	100	80	85	100								
		525 V	-	11	35	35	40	50	65	80	100	-	22	35	35	40	50	-	22	35	35	40	50	65	80	100	11	35	35	40	50	65	80	100	10	11	11	12	12	65	80	100	16	20	25	80	100	20								
		660/690 V	-	4	10	10	15	20	45	75	100	-	8	10	10	15	20	-	8	10	10	15	20	45	75	100	4	10	10	15	20	45	75	100	10	10	10	12	12	45	75	100	12	19	25	12	19	25								
Durability (C-O cycles)	Mechanical		50000														40000						20000								15000						15000																			
		Electrical	440 V	50000														40000						20000								12000						8000																		
			690 V	20000														15000						10000								6000						6000																		
		10000														7500						5000								3000						2000																				
Characteristics as per Nema AB1																																																								
Breaking capacity (kA rms)	AC 50/60 Hz	240 V	40	85	90	100	120	150	200	-	-	40	85	90	100	120	150	40	85	90	100	120	150	200	-	-	85	90	100	120	150	200	-	-	40	85	100	120	150	200	-	-	200	-	-	200	-	-								
		480 V	20	35	50	65	90	130	150	85	100	20	35	50	65	90	130	20	35	50	65	90	130	150	85	100	35	50	65	90	130	150	85	100	30	42	65	90	130	150	85	100	150	85	100	150	85	100								
		600 V	-	8	20	35	40	50	50	75	100	-	20	20	35	40	50	-	20	20	35	40	50	50	75	100	8	20	35	40	50	50	75	100	-	20	35	40	50	50	75	100	50	75	100	50	75	100								
Characteristics as per UL 508																																																								
Breaking capacity (kA rms)	AC 50/60 Hz	240 V	-	85	85	85	-	-	-	-	-	-	85	85	85	-	-	-	85	85	85	-	-	-	-	-	85	85	85	-	-	-	-	-	85	85	85	-	-	-	-	-	-	-	-	-	-	-	-	-						
		480 V	-	25	50	65	-	-	-	-	-	-	35	50	65	-	-	-	35	50	65	-	-	-	-	-	25	50	65	-	-	-	-	-	35	50	65	-	-	-	-	-	-	-	-	-	-	-	-	-						
		600 V	-	10	10	10	-	-	-	-	-	-	10	10	10	-	-	-	15	15	15	-	-	-	-	-	10	10	10	-	-	-	-	-	20	20	20	-	-	-	-	-	-	-	-	-	-	-	-	-						
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 Vigi module ⁽⁴⁾		■														■						■								■																									
		By Vigiex relay	■														■						■								■																									
Installation / connections																																																								
Dimensions and weights																																																								
Dimensions (mm)	Fixed, front connections	2/3P	105 x 161 x 86														105 x 161 x 86						105 x 161 x 86								140 x 255 x 110						140 x 255 x 110																			
		4P	140 x 161 x 86														140 x 161 x 86						140 x 161 x 86								185 x 255 x 110						185 x 255 x 110																			
Weight (kg)	Fixed, front connections	2/3P	2.05														2.2						2.4								6.05						6.2																			
		4P	2.4														2.6						2.8								7.90						8.13																			
Connections																																																								
Connection terminals	Pitch	With/without spreaders	35/45 mm														35/45 mm						35/45 mm								45/52.5 mm						45/52.5 mm																			
Large Cu or Al cables	Cross-section	mm ²	300														300						300								4 x 240						4 x 240																			

(1) OSN: Over Sized Neutral protection for neutrals carrying high currents (e.g. 3rd harmonics).
 (2) ZSI: Zone Selective Interlocking using pilot wires.
 (3) 2P circuit breaker in 3P case for B and F types, only with thermal-magnetic trip unit.
 (4) Vigi module is not available for breaking capacity levels HB1 and HB2.

Make the most of your energySM

Schneider Electric Industries SAS

Head Office

35 rue Joseph Monier
92500 Rueil Malmaison Cedex- France
Tel.: +33 (0)1 41 29 70 00
www.schneider-electric.com

Design: Global Marketing, Communications Strategy and Design

Photos: Schneider Electric

Publishing: Altavia connection – Made in France

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