

Easycompact Molded Case Circuit Breakers, EZC

Application: Easycompact circuit breakers are used in the circuit as the protection of any electrical installation not exceeding 50kA/415V, rated current from 80A to 400A, in particular for residential, buildings and industries with the following characteristics:

- Easy to choose;
- Easy to install;
- Easy to use;



EZC100N/2P



EZC100N/3P



EZC250N/3P



EZC400N/3P

Easycompact circuit breakers			EZC100N	EZC250N	EZC400N	
Fixed version			■	■	■	
Plug-in version			-	■	-	
Rated current, A	In	at 40°C	63, 80, 100	160, 200, 250	300, 350, 400	
Rated insulation voltage, V	Ui		690			
Rated impulse withstand voltage, kVUimp			6	6	8	
Rated operational voltage, V	Ue	AC50/60Hz	415	550	550	
		DC	125	250	250	
Electrical characteristics as per IEC 60947-2						
Ultimate breaking capacity, kA	Icu	AC50/60Hz	110/130V	25	50	85
			220/230/240V	18	50	36
			380V	2.5	25	36
			400/415V	2.5	20	36
			550V	-	8	15
Rated service breaking capacity, kA Ics	%Icu	110-400V	50%	50%	50%	
		415-550V	50%	50%	50%	
Suitability for isolation			■	■	■	
Utilisation category			A	A	A	
Pollution degree			3	3	3	
Endurance, C-O cycles		Mechanical	8500	10000	4000	
		Electrical	1500	5000	1000	
Electrical characteristics as per NEMA-AB1						
Breaking capacity, kA	HIC	AC50/60Hz	240V	10	50	50
			277/480V	10	18	25
Protection						
Overload protection	Bimetal		fixed	fixed	fixed	
Instantaneous protection	Magnetic	Fixed, ±20%	fixed	10xIn	10xIn	
Auxiliaries						
Indication contacts	Auxiliary switch	AX	-	■	■	
	Alarm switch	AL	-	■	■	
	Combined AX+AL	AXAL	-	■	■	
Voltage releases	Shunt trip release	SHT	-	■	■	
	Undervoltage release	UVR	-	■	■	
Installation						
Connection	Crimp lugs/bars		■	■	■	
	Box lugs for bare cables		■	■	■	
	Rotary handles	Direct	-	■	■	
		Extended	-	■	■	
Accessories	Terminal extensions		-	■	■	
	Spreaders		-	■	■	
	Phase barriers		■	■	■	
	Terminal shields		-	■	■	
	Padlocking system		■	■	■	
	DIN rail adaptor		■	■	■	
	Dimension and weight					
Dimension(mm)	DxHxW		60x130x75	60x165x105	103x257x140	
Weight(kg)			0.78	1.3	5	

Compact NSX Molded Case Circuit Breakers

Application: Compact NSX is the next-generation circuit breaker, protection and management of LV electrical installations:

- Standard applications: industries, buildings, and infrastructures;
- Specific applications demanding high performance at controlled cost, marine, oil, gas extraction and processing mining operations, metals and minerals production, and data centers;
- Motor protection;
- Control and isolation using switching disconnectors;



NSX100N



NS160N



NSX250N



NSX400N



NSX630N

Compact NSX circuit breakers			NSX100N	NSX160N	NSX250N	NSX400N	NSX630N	
Rated insulation voltage	Ui		800V					
Rated impulse withstand voltage	Uimp		8kV					
Rated operational voltage	Ue	AC50/60Hz	690V					
Suitability for isolation	IEC60947-2		■	■	■	■	■	
Number of poles			3	3	3	3	3	
Utilisation category			A	A	A	A	A	
Pollution degree	IEC60664-1		3	3	3	3	3	
Control	Manual	With toggle	■	■	■	■	■	
		With direct rotary handle	■	■	■	■	■	
Versions	Electric	With remote control	■	■	■	■	■	
	Fixed		■	■	■	■	■	
	Withdra- wable	Plug-in base Chassis	■	■	■	■	■	
Electrical characteristics as per IEC 60947-2								
Rated current, A	In	at 40°C	63, 80, 100	100,125,160	200,225,250	315,350,400	415,500,630	
Ultimate breaking capacity, kA	Icu	AC50/60Hz	220/240V	90	90	90	85	85
		380/415V	50	50	50	50	50	
		440V	50	50	50	42	42	
		500V	36	36	36	30	30	
		525V	35	35	35	22	22	
		660/690V	10	10	10	10	10	
Rated service breaking capacity, kA	Ics	AC50/60Hz	220/240V	90	90	90	85	85
		380/415V	50	50	50	50	50	
		440V	50	50	50	42	42	
		500V	36	36	36	30	30	
		525V	35	35	35	11	11	
		660/690V	10	10	10	10	10	
Endurance, C-O cycles	Mechanical		50000	40000	20000	15000	15000	
		Electrical	440V	30000	20000	10000	6000	4000
			690V	10000	7500	5000	3000	2000
Electrical characteristics as per NEMA-AB1								
Breaking capacity, kA	AC50/60Hz	240V	90	90	90	85	85	
		480V	50	50	50	42	42	
Protection								
Short-circuit protection	Magnetic only		■	■	■	■	■	
Overload protection	Bimetal		■	■	■	-	-	
	Electronic		-	-	-	■	■	
Auxiliaries								
Indication contacts	Auxiliary switch	AX	■	■	■	■	■	
	Alarm switch	AL	■	■	■	■	■	
	Combined AX+AL	AXAL	■	■	■	■	■	
Voltage releases	Shunt trip release	SHT	■	■	■	■	■	
	Undervoltage release	UVR	■	■	■	■	■	
Dimension and weight								
Dimension(mm)	DxHxW		105x161x86			140x255x110		
Weight(kg)			2.05	2.2	2.4	6.05	6.2	
Connection terminals	Pitch	With/without spreaders	35/45mm			45/52.5mm		
Large Cu or Al cables	Cross-section	mm ²	300			4x240		

Compact NS Molded Case Circuit Breakers

All compact NS circuit breakers are equipped with a Micrologic control unit that can be changed on site, control units are designed to protect Power circuits and loads, alarms may be programmed for remote indications.

Measurements of current, voltage, frequency, power and power quality continuity of service and energy management.

Protection: protection thresholds and delays are set using the adjustment dials.

1. Overload protection

- True rms long-time protection;
- Thermal memory: thermal image before and after tripping;
- Setting accuracy may be enhanced by limiting the setting range using a different long-time rating plug;
- Overload protection can be cancelled using a specific LT rating plug "Off";

2. Short-circuit protection

- Short-time (rms) and instantaneous protection;
- Selection of I²t type (On or Off) for short-time delay;

Indications: overload indication by alarm LED on the front, the LED goes on when the current exceeds the long-time trip threshold.



NS1000N



NS1600N

Compact NS circuit breakers			NS800N	NS1000N	NS1250N	NS1600N	NS2000N
Rated insulation voltage	U _i					800V	
Rated Impulse withstand voltage	U _{imp}					8kV	
Rated operational voltage	U _e	AC50/60Hz				690V	
Suitability for isolation	IEC60947-2		■	■	■	■	■
Number of poles			3	3	3	3	3
Utilisation category			B	B	B	B	B
Control	Manual	With toggle	■	■	■	■	■
		With direct rotary handl	■	■	■	■	■
	Electric		■	■	■	■	■
Versions	Fixed	Front connection	■	■	■	■	■
		Rear connection	■	■	■	■	-
	Withdrawable	Front connection	■	■	■	■	-
		Rear connection	■	■	■	■	-
Electrical characteristics as per IEC 60947-2							
Rated current, A	I _n	at 50°C	800	1000	1250	1600	2000
			220/240V	85	85	85	85
I _{cu}	Manual AC50/60Hz z	380/415V	50	50	50	50	70
		440V	50	50	50	50	65
		500/525V	40	40	40	40	65
		660/690V	30	30	30	30	65
			220/240V	50	50	50	50
I _{cs}	Manual AC50/60Hz z	380/415V	50	50	50	50	52
		440V	50	50	50	50	65
		500/525V	40	40	40	40	65
		660/690V	30	30	30	30	65
			220/240V	50	50	50	50
Ultimate breaking capacity, kA	Electrical AC50/60Hz z	380/415V	50	50	50	50	-
		440V	50	50	50	50	-
		500/525V	40	40	40	40	-
		660/690V	30	30	30	30	-
			220/240V	37	37	37	37
I _{cs}	Electrical AC50/60Hz z	380/415V	37	37	37	37	-
		440V	37	37	37	37	-
		500/525V	30	30	30	30	-
		660/690V	22	22	22	22	-
			220/240V	37	37	37	37
Short-time withstand current, kA rms	I _{cw}	AC50/60Hz 1s z	-	19.2	19.2	19.2	-
		3s	-	-	-	-	32
Integrated instantaneous protection, kA	peak±10%		40	40	40	40	130
Endurance, C-O cycles	Mechanical		10000	10000	10000	10000	5000
		Electrical	440V	5000	5000	4000	2000
		690V	2000	2000	2000	1000	1000
Pollution degree			3	3	3	3	3

Isomax S Molded Case Circuit Breakers

Description: Sace isomax S molded case circuit breakers offer performance features that meet the full spectrum of application requirements, from small users through to large industrial electricity distribution installations.

Technical data of Sace S Molded Case Circuit Breakers

Type & specifications: Sace				S1	S3	S5	S6	S7								
Number of poles				3	3	3	3	3								
Rated uninterrupted current, I _u				A	100-125	160-250	400-630	630-800	1250-1600							
Rated service voltage, U _e		AC50/60Hz	V	500	690	690	690	690								
		DC	V	250	750	750	750	-								
Rated impulse withstand voltage, U _{imp}				kV	6	8	8	8	8							
Rated insulation voltage, U _i				V	500	800	800	800	800							
Test voltage at industrial frequency for 1 minute				V	3000	3000	3000	3000	3000							
Breaking class					B	N	N	H	N	H	N	H	S	H		
Rated limit short-circuit breaking capacity, I _{cu}		AC, 50/60Hz	220/230V	kA	25	40	65	100	65	100	65	100	85	100		
			380/415V	kA	16	25	35	65	35	65	35	65	35	65	50	65
			440V	kA	10	16	30	50	30	50	30	50	30	50	40	55
			550V	kA	8	12	25	40	25	40	25	40	25	40	35	45
			690V	kA	-	-	14	18	20	25	20	25	20	25	20	25
DC		250V/2P in series	kA	16	25	35	65	35	65	35	65	-	-			
		500V/2P in series	kA	-	-	35	50	35	50	20	50	-	-			
		500V/3P in series	kA	-	-	-	-	-	-	-	-	-	-			
		750V/3P in series	kA	-	-	20	35	20	35	16	35	-	-			
Rated duty short-circuit making capacity, I _{cs}				I _{cu}	50%	50%	100%	75%	100%	100%	100%	100%	100%	75%		
Rated short-circuit making capacity, I _{cm} /415VAC				kA	32	53	74	143	74	143	74	143	105	143		
Tripping time, 415VAC				ms	8	8	8	7	8	7	10	8	22	22		
Use category, IEC 60947-2					A	A	B/A	B	B							
Isolation behavior					■	■	■	■	■							
Release		Thermo-magnetic	T fixed, M fixed 5lth	■	■	-	-	-	-	-	-	-	-			
			T fixed, M fixed 10lth	■	■	-	-	-	-	-	-	-	-	-		
			T adjustable, M fixed 3lth	-	-	-	-	-	-	-	-	-	-	-		
			T adjustable, M fixed 5lth	-	-	■	■	-	-	-	-	-	-	-		
			T adjustable, M fixed 10lth	-	-	■	■	-	-	-	-	-	-	-		
			T adjustable, M adjustable	-	-	-	-	■	■	-	-	-	-	-		
		Magnetic only: M fixed	-	■	■	■	-	-	-	-	-	-	-			
Microprocessor-based	PR211/P	-	-	-	-	■	■	■	■	■	■	■				
	PR212/P	-	-	-	-	■	■	■	■	■	■	■				
Interchangeability					-	-	■	■	■							
Versions		Fixed		FC-R	F-EF-ES-FC	F-EF-ES-FC	F-EF-ES-FC	F-EF-ES-FC	F-EF-ES-FC							
		Plug-in		FC-R	EF-FC-R	EF-FC-R	-	-								
Fixing on DIN rail					EN 50022	EN 50023	EN 50023	-	-							
Mechanical life					25000/240	25000/120	20000/120	20000/120	10000/120							
Electrical life/415V					8000/120	8000/120	7000/60	7000/60	7000/20							
Basic dimensions		Fixed	3P, mm	W	78	105	140	210	210							
				D	70	103.5	103.5	103.5	138.5							
				H	120	170	254	268	406							
Weight		3P	Fixed	kg	0.9	2.6	5	9.5	17							
			Plug-in	kg	1	3.1	6.1	-	-							



Sace S6N



Sace S7S

Notes:





- The percentage I_{cs} performance of S3N/H, S5N/H and S6N/H circuit breakers is 25% lower at 690V;
- The plug-in version of circuit breaker S5 is only available for rated current 400A;
- Explanation of accessories

RC	Rear terminals for copper/aluminium cables	F	Front terminals	FC	Front terminals for copper cables
HR	Rear horizontal flat bar terminals	EF	Extended front terminals	FC CuAl	Front terminals for Cu/Al cables
VR	Rear vertical flat bar terminals	ES	Spread front terminals	R	Rear threaded terminals

Tmax T Molded Case Circuit Breakers

The series of Tmax molded case circuit breakers are divided into different basic sizes, with an application range from 15A to 630A and breaking capacities up to 100kA at 480VAC.

Technical Data of Tmax molded case circuit breakers

Frame		Tmax T1	Tmax T2	Tmax T3	Tmax T4	Tmax T5							
	Rated uninterrupted current, Iu	A	160	160	250	250/320	400/630						
	Number of poles		3	3	3	3	3						
	Rated service voltage, Ue	AC50/60Hz	V	690	690	690	690	690					
		DC	V	500	500	500	750	750					
	Rated impulse withstand voltage, Uimp	kV	8	8	8	8	8						
	Rated insulation voltage, Ui	V	800	800	800	1000	1000						
	Test voltage at industrial frequency for 1M	V	3000	3000	3000	3500	3500						
	Rated ultimate short-circuit breaking capacity, Icu	Breaking class	kA	B	N	N	S	N	S	N	S	N	S
220/230VAC, 50/60Hz		kA	25	50	65	85	50	85	70	85	70	85	
380/415VAC, 50/60Hz		kA	16	36	36	50	36	50	36	50	36	50	
440VAC, 50/60Hz		kA	10	32	30	45	25	40	30	40	30	40	
500VAC, 50/60Hz		kA	8	15	25	30	20	30	25	30	25	30	
690VAC, 50/60Hz		kA	3	6	6	7	5	8	20	25	20	25	
250VDC, 2 poles in series		kA	16	36	36	50	36	50	36	50	36	50	
250VDC, 3 poles in series		kA	20	40	40	55	40	55	-	-	-	-	
500VDC, 2 poles in series		kA	-	-	-	-	-	-	25	36	25	36	
500VDC, 3 poles in series		kA	16	36	36	50	36	50	-	-	-	-	
750VDC, 3 poles in series		kA	-	-	-	-	-	-	16	25	16	25	
Rated service short-circuit breaking capacity, Ics		220/230VAC, 50/60Hz	Icu	100%	75%	100%	100%	75%	50%	100%	100%	100%	100%
		380/415VAC, 50/60Hz	Icu	100%	75%	100%	100%	75%	50%	100%	100%	100%	100%
	440VAC, 50/60Hz	Icu	100%	50%	100%	100%	75%	50%	100%	100%	100%	100%	
	500VAC, 50/60Hz	Icu	100%	50%	100%	100%	75%	50%	100%	100%	100%	100%	
	690VAC, 50/60Hz	Icu	100%	50%	100%	100%	75%	50%	100%	100%	100%	100%	
Rated short-circuit making capacity, Icm	220/230VAC, 50/60Hz	kA	52.5	105	143	187	105	187	154	187	154	187	
	380/415VAC, 50/60Hz	kA	32	75.6	75.6	105	75.6	105	75.6	105	75.6	105	
	440VAC, 50/60Hz	kA	17	46.2	63	94.5	52.5	84	63	84	63	84	
	500VAC, 50/60Hz	kA	13.6	30	52.5	63	40	63	52.5	63	52.5	63	
	690VAC, 50/60Hz	kA	4.3	9.2	9.2	11.9	7.7	13.6	40	52.5	40	52.5	
Opening time, 415VAC			7	5	3	3	7	6	5	5	6	6	
Category of utilisation, IEC 60947-2			A	A	A	A	A	A	A	A	A-B		
Isolation behavior			■	■	■	■	■	■	■	■	■		
Thermo-magnetic releases	T fixed, M fixed	TMF	-	-	-	-	-	-	-	-	-		
	T adjustable, M fixed	TMD	■	■	■	■	■	■	■	■	-		
	T adjustable, M adjustable, (5-10)xIn	TMA	-	-	-	-	-	■	-	■	■		
	T adjustable, M fixed, 3xIn	TMG	-	-	-	-	■	-	-	-	-		
	T adjustable, M adjustable, (2.5-5)xIn	TMG	-	-	-	-	-	-	-	-	■		
	Magnetic only	MA	-	■	■	■	■	■	■	■	-		
Electronic releases	PR221DS-LS/I		-	■	-	-	-	■	-	■	■		
	PR221DS-I		-	■	-	-	-	■	-	■	■		
	PR222DS/P-LSI		-	-	-	-	-	■	-	■	■		
	PR222DS/P-LSIG		-	-	-	-	-	■	-	■	■		
	PR222DS/PD-LSI		-	-	-	-	-	■	-	■	■		
	PR222DS/PD-LSIG		-	-	-	-	-	■	-	■	■		
	PR222MP		-	-	-	-	-	■	-	■	■		
Interchangeability			-	-	-	-	-	■	-	■	■		
Versions			Fixed	Fixed/Plug-in	Fixed/Plug-in	Fixed/Plug-in	Fixed/Plug-in	Fixed/Plug-in	Fixed/Plug-in	Fixed/Plug-in	Fixed/Plug-in		
Fixing on DIN rail			EN 50022	EN 50022	EN 50022	EN 50022	-	-	-	-	-		
Mechanical life	Number of operations/operations		25000/240	25000/240	25000/240	25000/240	20000/240	20000/240	20000/120	20000/120	20000/120		
Electric life	per hour		8000/120	8000/120	8000/120	8000/120	8000/120	8000/120	7000/60	7000/60	7000/60		
Dimensions	WxDxH	mm	76x70x130	90x70x130	105x70x150	105x70x150	105x104x205	105x104x205	140x104x205	140x104x205	140x104x205		
Weight		kg	0.9	1.1	1.5	1.5	2.35	2.35	3.25	3.25	3.25		

Switch-disconnectors 16 to 125A, OT Series

Applications: Switch-disconnectors suitable for diverse applications such as machinery, power distribution, switchboards, motor control centers or photovoltaic installations;

The most compact solution, possible thanks to a uniquely short current path and a double-sided spring construction combined with a small amount of components, such switches therefore have a small foot-print area, allowing installation in confined spaces;

Quick and perfect installation every time:



-Base, door or DIN rail mounted, IEC, including protected terminal clamps IP20;

-Installation in any direction: horizontal, vertical or even at the ceiling;

-A wide range of accessories to customize the installation such as handles shafts, auxiliary contacts, cabling accessories and additional power poles;

Switch-disconnectors OT from 16 to 125A can be snap-on or screw-mounted have adjustable feet that allow top or side mounting, snap-on accessories are available;

High performance: switch-disconnectors have a powerful construction and quick-make/quick break operation features that enhance performance;

	Number of Poles	lth, Oper A	Oper Cable Cross Section, mm ²	In, AC22A/23A, 400V, A	Type	Order Number	Weight	Units/Pack
Shaft and handle need to be ordered separately								
	3	25	0.75...10	16/16	OT16F3	1SCA104811R10010.110	1/120	1/120
		32	0.75...10	25/20	OT25F3	1SCA104857R10010.110	1/120	1/120
		40	0.75...10	40/23	OT40F3	1SCA104902R10010.110	1/120	1/120
		63	1.50...35	63/45	OT63F3	1SCA105332R10010.270	1/80	1/80
		80	1.50...35	80/75	OT80F3	1SCA105798R10010.270	1/80	1/80
		115	10.0...70	100/80	OT100F3	1SCA105004R10010.360	1/60	1/60
	4	25	0.75...10	16/16	OT16F4N2	1SCA104829R10010.140	1/120	1/120
		32	0.75...10	25/20	OT25F4N2	1SCA104886R10010.140	1/120	1/120
		40	0.75...10	40/23	OT40F4N2	1SCA104932R10010.140	1/120	1/120
		63	1.50...35	63/45	OT63F4N2	1SCA105365R10010.300	1/80	1/80
		80	1.50...35	80/75	OT80F4N2	1SCA105413R10010.300	1/80	1/80
		115	10.0...70	100/80	OT100F4N2	1SCA105018R10010.500	1/60	1/60
		125	10.0...70	125/90	OT125F4N2	1SCA105051R10010.500	1/60	1/60


Auxiliary Contacts, OF/SD

The common-point changeover contacts provide remote circuit-breaker status information, they can be used for indication, electrical locking, relaying, etc, comply with IEC60947-5 international recommendation.

A single type of contact provides all the different indication functions:

- OF (On/Off) indicates the position of the circuit breaker contacts;
- SD (trip indication) indicates that the circuit breaker has tripped due to
 - an overload
 - a short-circuit
 - operation of a voltage release
 - operation of the "push to trip" button
 - disconnection when the device is On

Electrical characteristics of auxiliary contacts

	Contacts		Standard				Low level				
	Type of contacts		All				OF, SD				
 OF/SD	Rated thermal current, A		6				5				
	Minimum load		100mA at 24VDC				1mA at 4VDC				
	Utilisation cat. (IEC60947-5-1)		AC12	AC15	DC12	DC14	AC12	AC15	DC12	DC14	
		24V	AC/DC	6	6	6	1	5	3	5	1
		48V	AC/DC	6	6	2.5	0.2	5	3	2.5	0.2
		110V	AC/DC	6	5	0.6	0.05	5	2.5	0.6	0.05
	Operational Current, A	220/240V	AC	6	4	-	-	5	2	-	-
		250V	DC	-	-	0.3	0.03	5	-	0.3	0.03
		380/440V	AC	6	2	-	-	5	1.5	-	-
		480V	AC	6	1.5	-	-	5	1	-	-
		660/690V	AC	6	0.1	-	-	-	-	-	-

Remote tripping, MX/MN

MX or MN voltage releases are used to trip the circuit breaker, they serve primarily for remote, emergency-off commands, it is advised to test the system six months.


Circuit breakers controlled by MX or MN: when the circuit breakers have been tripped by an MX or MN release, they must be reset before it can be closed.

MX shunt release opens the circuit breaker via an impulse-type ($\geq 20\text{ms}$) or maintained order, when MX release is supplied, it automatically opens the circuit breaker, opening is ensured for a voltage $U \geq 0.7 \times U_n$.


MN undervoltage release opens the circuit breaker when its supply voltage drops to a value below 35% of rated voltage U_n :

- Automatic opening of the circuit breaker is ensured when the continuous voltage supply to release $U \leq 0.35 \times U_n$;
- If the supply voltage is between 0.35 and 0.7 U_n , opening is possible, but not guaranteed. Above 0.7 U_n , opening does not take place;

Electrical characteristics of shunt release MX

 MX/SHT	Power supply	VAC	50/60Hz: 24-48-100/130-200/240
			50Hz: 380/415, 60Hz: 208/277
		VDC	12-24-30-48-60-125-250
	Operating range		0.7 to 1.1 U_n
	Consumption, VA or W		Pick-up: 10
	Response time, ms		50

Electrical characteristics of undervoltage release MN

 MN/UVR	Power supply	VAC	50/60Hz: 24-48-100/130-200/240
			50Hz: 380/415, 60Hz: 208/277
		VDC	12-24-30-48-60-125-250
	Operating threshold		Opening 0.35 to 0.7 U_n
			Closing 0.85 U_n
	Operating range		0.85 to 1.1 U_n
Consumption, VA or W		Pick-up: 10, Hold: 5	
	Response time, ms		50