

ComPact NSX power loss/ resistance

Equipped with thermal-magnetic trip units

ComPact NSX thermal power loss values are used to calculate total temperature rise in the switchboard in which the circuit breakers are installed.

The values indicated in the tables below are typical values for a device at full rated load and 50/60 Hz.

Power loss per pole (P/pole) in Watts (W)

The value indicated is the power loss at I_N , 50/60 Hz, for a three-pole or four-pole circuit breaker. Measurement and calculation of power loss are carried out in compliance with the recommendations of Annex G of standard IEC 60947-2.

Resistance per pole (R/pole) in milliohms (mΩ)

The value of the resistance per pole is provided as a general indication for a new device.

The value of the contact resistance must be determined on the basis of the measured voltage drop, in accordance with the manufacturer's test procedure (ABT instruction document no. 1 - BEE - 02.2 -A).

Note: this measurement is not sufficient to determine the quality of the contacts, i.e. the capacity of the circuit breaker to carry its rated current.

Additional power loss

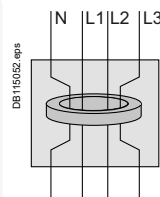
Additional power loss is equal to the sum of the power dissipated by the following:

- Vigi add-on: note that the deviation of the N and L3 bars required to pass through the toroid results in higher power losses compared to those of the L1 and L2 bars (diagram opposite). When calculating total power loss, use L1, L2, L3 for a 3P device and N, L1, L2, L3 for a 4P device
- disconnecting contacts (plug-in and withdrawable devices)
- ammeter module
- transformer module.

Calculation of total power loss

Total power loss at full rated load and 50/60 Hz is equal to the sum of the device and additional power losses per pole multiplied by the number of poles (2, 3 or 4).

If a Vigi is installed, it is necessary to differentiate between N and L3 on one hand and L1 and L2 on the other.



With a Vigi add-on, the deviation of the N and L3 bars required to pass through the toroid results in higher power losses compared to those of the L1 and L2 bars.

ComPact NSX100 to 250 equipped with TM-D and TM-G trip units

Type of device	Fixed device		Additional power / pole						
	3/4 poles Rat. (A)	R/pole	P/pole	Vigi add-on (N, L3)	Vigi add-on (L1, L2)	Plug-in / withdr.	Ammeter module	Transfo. module	PowerTag NSX module
NSX100	16	11.42	2.92	0	0	0	0	0	0
	25	6.42	4.01	0	0	0.1	0	0	0
	32	3.94	4.03	0.06	0.03	0.15	0.1	0.1	0
	40	3.42	5.47	0.10	0.05	0.2	0.1	0.1	0
	50	1.64	4.11	0.15	0.08	0.3	0.1	0.1	0.1
	63	2.17	8.61	0.3	0.15	0.4	0.1	0.1	0.1
	80	1.37	8.77	0.4	0.2	0.6	0.1	0.1	0.1
	100	0.88	8.8	0.7	0.35	1	0.2	0.2	0.2
NSX160	80	1.26	8.06	0.4	0.2	0.6	0.1	0.1	0.1
	100	0.77	7.7	0.7	0.35	1	0.2	0.2	0.2
	125	0.69	10.78	1.1	0.55	1.6	0.3	0.3	0.3
	160	0.55	13.95	1.8	0.9	2.6	0.5	0.5	0.5
NSX250	125	0.61	9.45	1.1	0.55	1.6	0.3	0.3	0.3
	160	0.46	11.78	1.8	0.9	2.6	0.5	0.5	0.5
	200	0.39	15.4	2.8	1.4	4	0.8	0.8	0.8
	250	0.3	18.75	4.4	2.2	6.3	1.3	1.3	1.3

ComPact NSX100 to 630 equipped with MA/1.3-M trip units

Type of device	Fixed device		Additional power / pole						
	3 poles Rat. (A)	R/pole	P/pole	Vigi add-on (N, L3)	Vigi add-on (L1, L2)	Plug-in / withdr.	Ammeter module	Transfo. module	PowerTag NSX module
NSX100	2.5	148.42	0.93	0	0	0	0	0	0
	6.3	99.02	3.93	0	0	0	0	0	0
	12.5	4.05	0.63	0	0	0	0	0	0
	25	1.66	1.04	0	0	0.1	0	0	0
	50	0.67	1.66	0.2	0.1	0.3	0.1	0.1	0.1
	100	0.52	5.2	0.7	0.35	1	0.2	0.2	0.2
NSX160	150	0.38	8.55	1.35	0.68	2.6	0.45	0.45	0.5
NSX250	220	0.3	14.52	2.9	1.45	4.89	0.97	0.97	1
NSX400	320	0.12	12.29	3.2	1.6	6.14	1.54	1.54	1.43
NSX630	500	0.1	25	13.99	7	15	3.75	3.75	3.5

ComPact NSX power loss/ resistance

Equipped with electronic trip units

The values indicated in the table below are typical values for a device at full rated load and 50/60 Hz. The definitions and information are the same as that for circuit breakers equipped with thermal-magnetic trip units.

ComPact NSX100 to 630 equipped with MicroLogic trip units

Type of device		Fixed device		Additional power (W)/ pole						
3/4 poles	Rating (A)	R/pole (mΩ)	P/Pole (w)	Vigi add-on (N/L3)	Vigi add-on (L1/L2)	Plug-In	Transfo Module	PowerTag NSX module		
NSX + MicroLogic 2.2/5.2/6.2										
NSX100	<40 A	0.84	1.3	0.1	0.06	0.2	0.1	0		
	40 A ≤ 100 A	0.47	4.7	0.7	0.35	1	0.2	0.2		
NSX160	<40 A	0.73	1.2	0.4	0.2	0.6	0.1	0		
	40 A ≤ 160 A	0.36	9.2	1.8	0.9	2.6	0.5	0.5		
NSX250	<40 A	0.27	2.7	1.1	0.55	1.6	0.2	0		
	40 A ≤ 250 A	0.28	17.6	4.4	2.2	6.3	1.3	1.3		
NSX + MicroLogic 2.3/5.3/6.3										
NSX400	<400 A	0.12	19.2	3.2	1.6	9.6	2.4	2.24		
NSX630	<630 A	0.1	39.7	6.5	3.25	19.49	5.95	5.56		
NSX + MicroLogic add-on 4.2/7.2		N/L1/L3	L2	N/L1/L3	L2					
NSX100	<100 A	0.58	0.49	5.8	4.9	-	-	1	0.2	
NSX160	<160 A	0.48	0.39	12.3	10.0	-	-	2.6	0.5	
NSX250	<250 A	0.4	0.33	25	20.6	-	-	6.3	1.3	
NSX + MicroLogic add-on 4.3/7.3										
NSX400	<400 A	0.16	0.14	25.6	22.4	-	-	9.6	2.4	
NSX630 ^[1]	<630 A	0.14	0.12	55.6	47.6	-	-	19.49	5.95	

Power loss/resistance values presented above are not contractual.

[1] The power loss values for Vigi add-on and withdrawable circuit breakers are given for 570 A.