



NB8-125R Moulded Case Circuit Breaker

1. General

1.1 function

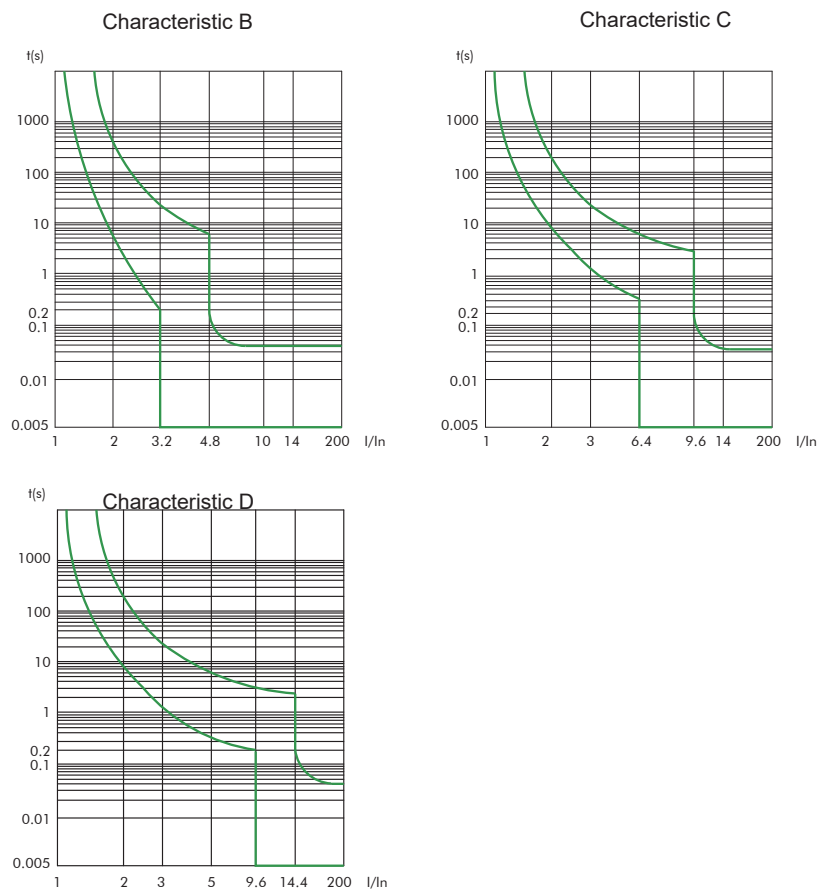
The NB8-125R circuit breaker complies with the IEC 60947-2 standard. It's designed for low-voltage applications with a rated operating voltage of up to 400V, 50/60Hz, and a rated current of up to 100A.

It offers protection against overload and short-circuit conditions and is suitable for occasional switching of circuits.

The breaking capacity of NB8-125R up to 25kA, which is adaptable to data center, mining, oil&gas application scenarios and so on.

2. Technical data

2.1 Curves



2.2

Tested according to		IEC/EN 60947-2
Poles		1P, 1P+N, 2P, 3P, 3P+N, 4P
Rated operating voltage U _e (V AC)		1P/1P+N: 230 2P/3P/3P+N/4P: 400
Rated frequency (Hz)		50/60
Rated current (A)		16, 20, 25, 32, 40, 50, 63, 80, 100
Tripping characteristics		4In (B), 8In (C), 12In (D)
Rated ultimate short-circuit breaking capacity I _{cu} (kA) AC 230/400V	16-63A	25
	80-100A	20
Rated service short-circuit breaking capacity I _{cs} (kA) AC 230/400V	16-63A	20
	80-100A	15
Rated impulse withstand voltage U _{imp} (kV)		8
Rated insulation voltage U (V AC)		690
Electrical life (cycles)		6 000
Mechanical life (cycles)		20 000
Selectivity Category		A
Selectivity class		3
Max. back-up fuse (A gG)		200
Mounting		Easy fastening onto 35mm device rail (DIN)
Line voltage connection		From top or bottom
Terminal connection type		Cable/Pin-type busbar
Terminal capacity (mm ²)		2.5-35
Fastening torque of terminals (N·m)		2.5-3.5
Ambient temperature (°C)		-30~+70
Altitude (m)		≤ 2000
Relative humidity		≤ 95%
Resistance to humidity and heat		Class 2
Pollution degree		3
Installation class		III
Degree of protection		IP20
Weight (kg)		0.22/per pole

2.3 Accessories

Auxiliary contacts	AX-B8R11, AX-B8R22	560032, 560033
Alarm contact	AL-B8R11	560040
Auxiliary and alarm contact	AXL-B8R	560041
Shunt trip releases	SHT-B8R, SHT-B8R11	560034-560036, 560037-560039
Undervoltage releases	UVT-B8R, UVT-B8R01, UVT-B8R10	560043-560044, 560045-560046, 560047-560048
Overvoltage release	OVT-B8R 280V AC±5%	560042
Max. number of installed accessories: 1 pcs of contact accessory (AX-B8R/AL-B8R/AXL-B8R), or 2 pcs of release (SHT-B8R/UVT-B8R/OVT-B8R), or 1 pcs of contact accessory + 1 pcs of release.		

2.4 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed

The reference temperature is 30°C

Current correction value under different ambient temperature									
In/Rated current (A)	16A	20A	25A	32A	40A	50A	63A	80A	100A
Copper wire cross-sectional area (mm ²)	2.5	2.5	4	6	10	10	16	25	35
T (°C)									
-30	20.5	25.3	31.1	40.5	51.0	64.0	82.0	100.0	124.0
-20	19.8	24.5	30.0	39.2	49.2	62.0	79.2	96.0	117.0
-10	19.0	23.7	29.0	37.9	47.5	59.8	76.3	92.0	111.5
0	18.4	22.8	28.0	36.5	45.8	57.4	73.2	88.0	107.0
10	17.6	21.9	27.0	35.0	44.0	55.0	70.0	84.5	104.0
20	16.8	21.0	26.0	33.6	42.0	52.6	66.6	82.0	102.0
30	16.0	20.0	25.0	32.0	40.0	50.0	63.0	80.0	100.0
40	15.0	18.0	23.0	29.0	38.0	46.0	57.0	73.0	93.0
50	14.0	17.0	21.0	27.0	34.0	42.0	53.0	67.0	86.0
60	13.0	16.0	19.0	24.0	30.0	38.0	48.0	61.0	78.0
70	11.0	14.0	17.0	22.0	28.0	35.0	44.0	56.0	70.0

When several simultaneously operating circuit breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in current rating.

You must then assign the rating (already derated if necessary according to ambient temperature) a downrating factor of 0.8.

2.5 Power loss per pole

Power loss per pole									
In(A)	16A	20A	25A	32A	40A	50A	63A	80A	100A
P(W)	3	4	4	5	6.5	8	10.5	12	14

NB8-125	R	1P	16A	25kA	4In
↓	↓	↓	↓	↓	↓
Frame	Breaking capacity code	Poles	Current(In)	Breaking capacity	Trip characteristic
NB8-125	R: 20~25kA	1P 1P+N 2P 3P 3P+N 4P	16A 20A 25A 32A 40A 50A 63A 80A 100A	20kA 25kA	4In (B) 8In (C) 12In (D)

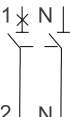
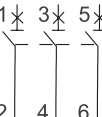
Diagram	Poles	In(A)	Icu(kA)	Trip characteristic	Description	Code
	1P	16	25	4In	NB8-125R 1P 16A 25kA 4In	559723
	1P	20	25	4In	NB8-125R 1P 20A 25kA 4In	559724
	1P	25	25	4In	NB8-125R 1P 25A 25kA 4In	559725
	1P	32	25	4In	NB8-125R 1P 32A 25kA 4In	559726
	1P	40	25	4In	NB8-125R 1P 40A 25kA 4In	559727
	1P	50	25	4In	NB8-125R 1P 50A 25kA 4In	559728
	1P	63	25	4In	NB8-125R 1P 63A 25kA 4In	559729
	1P	80	20	4In	NB8-125R 1P 80A 20kA 4In	559730
	1P	100	20	4In	NB8-125R 1P 100A 20kA 4In	559731
	1P+N	16	25	4In	NB8-125R 1P+N 16A 25kA 4In	559732
	1P+N	20	25	4In	NB8-125R 1P+N 20A 25kA 4In	559733
	1P+N	25	25	4In	NB8-125R 1P+N 25A 25kA 4In	559734
	1P+N	32	25	4In	NB8-125R 1P+N 32A 25kA 4In	559735
	1P+N	40	25	4In	NB8-125R 1P+N 40A 25kA 4In	559736
	1P+N	50	25	4In	NB8-125R 1P+N 50A 25kA 4In	559737
	1P+N	63	25	4In	NB8-125R 1P+N 63A 25kA 4In	559738
	1P+N	80	20	4In	NB8-125R 1P+N 80A 20kA 4In	559739
	1P+N	100	20	4In	NB8-125R 1P+N 100A 20kA 4In	559740
	2P	16	25	4In	NB8-125R 2P 16A 25kA 4In	559741
	2P	20	25	4In	NB8-125R 2P 20A 25kA 4In	559742
	2P	25	25	4In	NB8-125R 2P 25A 25kA 4In	559743
	2P	32	25	4In	NB8-125R 2P 32A 25kA 4In	559744
	2P	40	25	4In	NB8-125R 2P 40A 25kA 4In	559745
	2P	50	25	4In	NB8-125R 2P 50A 25kA 4In	559746
	2P	63	25	4In	NB8-125R 2P 63A 25kA 4In	559747
	2P	80	20	4In	NB8-125R 2P 80A 20kA 4In	559748
	2P	100	20	4In	NB8-125R 2P 100A 20kA 4In	559749
	3P	16	25	4In	NB8-125R 3P 16A 25kA 4In	559750
	3P	20	25	4In	NB8-125R 3P 20A 25kA 4In	559751
	3P	25	25	4In	NB8-125R 3P 25A 25kA 4In	559752
	3P	32	25	4In	NB8-125R 3P 32A 25kA 4In	559753
	3P	40	25	4In	NB8-125R 3P 40A 25kA 4In	559754
	3P	50	25	4In	NB8-125R 3P 50A 25kA 4In	559755
	3P	63	25	4In	NB8-125R 3P 63A 25kA 4In	559756
	3P	80	20	4In	NB8-125R 3P 80A 20kA 4In	559757
	3P	100	20	4In	NB8-125R 3P 100A 20kA 4In	559758

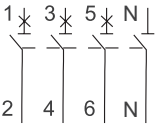
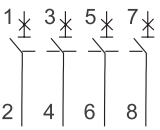
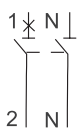
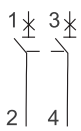
Diagram	Poles	In(A)	Icu(kA)	Trip characteristic	Description	Code
	3P+N	16	25	4In	NB8-125R 3P+N 16A 25kA 4In	559759
	3P+N	20	25	4In	NB8-125R 3P+N 20A 25kA 4In	559760
	3P+N	25	25	4In	NB8-125R 3P+N 25A 25kA 4In	559761
	3P+N	32	25	4In	NB8-125R 3P+N 32A 25kA 4In	559762
	3P+N	40	25	4In	NB8-125R 3P+N 40A 25kA 4In	559763
	3P+N	50	25	4In	NB8-125R 3P+N 50A 25kA 4In	559764
	3P+N	63	25	4In	NB8-125R 3P+N 63A 25kA 4In	559765
	3P+N	80	20	4In	NB8-125R 3P+N 80A 20kA 4In	559766
	3P+N	100	20	4In	NB8-125R 3P+N 100A 20kA 4In	559767
	4P	16	25	4In	NB8-125R 4P 16A 25kA 4In	559768
	4P	20	25	4In	NB8-125R 4P 20A 25kA 4In	559769
	4P	25	25	4In	NB8-125R 4P 25A 25kA 4In	559770
	4P	32	25	4In	NB8-125R 4P 32A 25kA 4In	559771
	4P	40	25	4In	NB8-125R 4P 40A 25kA 4In	559772
	4P	50	25	4In	NB8-125R 4P 50A 25kA 4In	559773
	4P	63	25	4In	NB8-125R 4P 63A 25kA 4In	559774
	4P	80	20	4In	NB8-125R 4P 80A 20kA 4In	559775
	4P	100	20	4In	NB8-125R 4P 100A 20kA 4In	559776
	1P	16	25	8In	NB8-125R 1P 16A 25kA 8In	559777
	1P	20	25	8In	NB8-125R 1P 20A 25kA 8In	559778
	1P	25	25	8In	NB8-125R 1P 25A 25kA 8In	559779
	1P	32	25	8In	NB8-125R 1P 32A 25kA 8In	559780
	1P	40	25	8In	NB8-125R 1P 40A 25kA 8In	559781
	1P	50	25	8In	NB8-125R 1P 50A 25kA 8In	559782
	1P	63	25	8In	NB8-125R 1P 63A 25kA 8In	559783
	1P	80	20	8In	NB8-125R 1P 80A 20kA 8In	559784
	1P	100	20	8In	NB8-125R 1P 100A 20kA 8In	559785
	1P+N	16	25	8In	NB8-125R 1P+N 16A 25kA 8In	559786
	1P+N	20	25	8In	NB8-125R 1P+N 20A 25kA 8In	559787
	1P+N	25	25	8In	NB8-125R 1P+N 25A 25kA 8In	559788
	1P+N	32	25	8In	NB8-125R 1P+N 32A 25kA 8In	559789
	1P+N	40	25	8In	NB8-125R 1P+N 40A 25kA 8In	559790
	1P+N	50	25	8In	NB8-125R 1P+N 50A 25kA 8In	559791
	1P+N	63	25	8In	NB8-125R 1P+N 63A 25kA 8In	559792
	1P+N	80	20	8In	NB8-125R 1P+N 80A 20kA 8In	559793
	1P+N	100	20	8In	NB8-125R 1P+N 100A 20kA 8In	559794
	2P	16	25	8In	NB8-125R 2P 16A 25kA 8In	559795
	2P	20	25	8In	NB8-125R 2P 20A 25kA 8In	559796
	2P	25	25	8In	NB8-125R 2P 25A 25kA 8In	559797
	2P	32	25	8In	NB8-125R 2P 32A 25kA 8In	559798
	2P	40	25	8In	NB8-125R 2P 40A 25kA 8In	559799
	2P	50	25	8In	NB8-125R 2P 50A 25kA 8In	559800
	2P	63	25	8In	NB8-125R 2P 63A 25kA 8In	559801
	2P	80	20	8In	NB8-125R 2P 80A 20kA 8In	559802
	2P	100	20	8In	NB8-125R 2P 100A 20kA 8In	559803

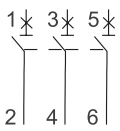
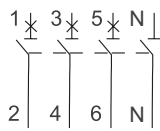
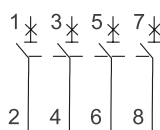
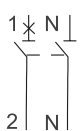
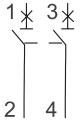
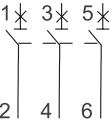
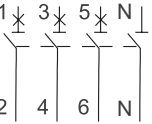
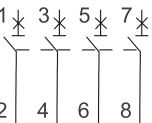
Diagram	Poles	In(A)	Icu(kA)	Trip characteristic	Description	Code
	3P	16	25	8In	NB8-125R 3P 16A 25kA 8In	559804
	3P	20	25	8In	NB8-125R 3P 20A 25kA 8In	559805
	3P	25	25	8In	NB8-125R 3P 25A 25kA 8In	559806
	3P	32	25	8In	NB8-125R 3P 32A 25kA 8In	559807
	3P	40	25	8In	NB8-125R 3P 40A 25kA 8In	559808
	3P	50	25	8In	NB8-125R 3P 50A 25kA 8In	559809
	3P	63	25	8In	NB8-125R 3P 63A 25kA 8In	559810
	3P	80	20	8In	NB8-125R 3P 80A 20kA 8In	559811
	3P	100	20	8In	NB8-125R 3P 100A 20kA 8In	559812
	3P+N	16	25	8In	NB8-125R 3P+N 16A 25kA 8In	559813
	3P+N	20	25	8In	NB8-125R 3P+N 20A 25kA 8In	559814
	3P+N	25	25	8In	NB8-125R 3P+N 25A 25kA 8In	559815
	3P+N	32	25	8In	NB8-125R 3P+N 32A 25kA 8In	559816
	3P+N	40	25	8In	NB8-125R 3P+N 40A 25kA 8In	559817
	3P+N	50	25	8In	NB8-125R 3P+N 50A 25kA 8In	559818
	3P+N	63	25	8In	NB8-125R 3P+N 63A 25kA 8In	559819
	3P+N	80	20	8In	NB8-125R 3P+N 80A 20kA 8In	559820
	3P+N	100	20	8In	NB8-125R 3P+N 100A 20kA 8In	559821
	4P	16	25	8In	NB8-125R 4P 16A 25kA 8In	559822
	4P	20	25	8In	NB8-125R 4P 20A 25kA 8In	559823
	4P	25	25	8In	NB8-125R 4P 25A 25kA 8In	559824
	4P	32	25	8In	NB8-125R 4P 32A 25kA 8In	559825
	4P	40	25	8In	NB8-125R 4P 40A 25kA 8In	559826
	4P	50	25	8In	NB8-125R 4P 50A 25kA 8In	559827
	4P	63	25	8In	NB8-125R 4P 63A 25kA 8In	559828
	4P	80	20	8In	NB8-125R 4P 80A 20kA 8In	559829
	4P	100	20	8In	NB8-125R 4P 100A 20kA 8In	559830
	1P	16	25	12In	NB8-125R 1P 16A 25kA 12In	559831
	1P	20	25	12In	NB8-125R 1P 20A 25kA 12In	559832
	1P	25	25	12In	NB8-125R 1P 25A 25kA 12In	559833
	1P	32	25	12In	NB8-125R 1P 32A 25kA 12In	559834
	1P	40	25	12In	NB8-125R 1P 40A 25kA 12In	559835
	1P	50	25	12In	NB8-125R 1P 50A 25kA 12In	559836
	1P	63	25	12In	NB8-125R 1P 63A 25kA 12In	559837
	1P	80	20	12In	NB8-125R 1P 80A 20kA 12In	559838
	1P	100	20	12In	NB8-125R 1P 100A 20kA 12In	559839
	1P+N	16	25	12In	NB8-125R 1P+N 16A 25kA 12In	559840
	1P+N	20	25	12In	NB8-125R 1P+N 20A 25kA 12In	559841
	1P+N	25	25	12In	NB8-125R 1P+N 25A 25kA 12In	559842
	1P+N	32	25	12In	NB8-125R 1P+N 32A 25kA 12In	559843
	1P+N	40	25	12In	NB8-125R 1P+N 40A 25kA 12In	559844
	1P+N	50	25	12In	NB8-125R 1P+N 50A 25kA 12In	559845
	1P+N	63	25	12In	NB8-125R 1P+N 63A 25kA 12In	559846
	1P+N	80	20	12In	NB8-125R 1P+N 80A 20kA 12In	559847
	1P+N	100	20	12In	NB8-125R 1P+N 100A 20kA 12In	559848

Diagram	Poles	In(A)	Icu(kA)	Trip characteristic	Description	Code
	2P	16	25	12In	NB8-125R 2P 16A 25kA 12In	559849
	2P	20	25	12In	NB8-125R 2P 20A 25kA 12In	559850
	2P	25	25	12In	NB8-125R 2P 25A 25kA 12In	559851
	2P	32	25	12In	NB8-125R 2P 32A 25kA 12In	559852
	2P	40	25	12In	NB8-125R 2P 40A 25kA 12In	559853
	2P	50	25	12In	NB8-125R 2P 50A 25kA 12In	559854
	2P	63	25	12In	NB8-125R 2P 63A 25kA 12In	559855
	2P	80	20	12In	NB8-125R 2P 80A 20kA 12In	559856
	2P	100	20	12In	NB8-125R 2P 100A 20kA 12In	559857
	3P	16	25	12In	NB8-125R 3P 16A 25kA 12In	559858
	3P	20	25	12In	NB8-125R 3P 20A 25kA 12In	559859
	3P	25	25	12In	NB8-125R 3P 25A 25kA 12In	559860
	3P	32	25	12In	NB8-125R 3P 32A 25kA 12In	559861
	3P	40	25	12In	NB8-125R 3P 40A 25kA 12In	559862
	3P	50	25	12In	NB8-125R 3P 50A 25kA 12In	559863
	3P	63	25	12In	NB8-125R 3P 63A 25kA 12In	559864
	3P	80	20	12In	NB8-125R 3P 80A 20kA 12In	559865
	3P	100	20	12In	NB8-125R 3P 100A 20kA 12In	559866
	3P+N	16	25	12In	NB8-125R 3P+N 16A 25kA 12In	559867
	3P+N	20	25	12In	NB8-125R 3P+N 20A 25kA 12In	559868
	3P+N	25	25	12In	NB8-125R 3P+N 25A 25kA 12In	559869
	3P+N	32	25	12In	NB8-125R 3P+N 32A 25kA 12In	559870
	3P+N	40	25	12In	NB8-125R 3P+N 40A 25kA 12In	559871
	3P+N	50	25	12In	NB8-125R 3P+N 50A 25kA 12In	559872
	3P+N	63	25	12In	NB8-125R 3P+N 63A 25kA 12In	559873
	3P+N	80	20	12In	NB8-125R 3P+N 80A 20kA 12In	559874
	3P+N	100	20	12In	NB8-125R 3P+N 100A 20kA 12In	559875
	4P	16	25	12In	NB8-125R 4P 16A 25kA 12In	559876
	4P	20	25	12In	NB8-125R 4P 20A 25kA 12In	559877
	4P	25	25	12In	NB8-125R 4P 25A 25kA 12In	559878
	4P	32	25	12In	NB8-125R 4P 32A 25kA 12In	559879
	4P	40	25	12In	NB8-125R 4P 40A 25kA 12In	559880
	4P	50	25	12In	NB8-125R 4P 50A 25kA 12In	559881
	4P	63	25	12In	NB8-125R 4P 63A 25kA 12In	559882
	4P	80	20	12In	NB8-125R 4P 80A 20kA 12In	559883
	4P	100	20	12In	NB8-125R 4P 100A 20kA 12In	559884