

Data Sheet
DIN Rail Miniature Circuit Breakers
Ex9 Series - B1NQ



B1NQ2D25T



B1NQ2D25 with Front Mounting Clips

Miniature Circuit Breakers

NOARK Ex9 Series - B1NQ

Features

The B1NQ is compliant with UL/CSA/IEC standards for branch circuit protection in commercial and residential applications. The current limiting B1NQ is thermal-magnetic and protects against short circuit and overload conditions. The breaker provides optimum and efficient protection for branch and control circuits.

- Available in 1 and 2 poles
- Rated current from 0.5~63 A
- Available as surface, flush, or DIN rail mounted
- 1 pole and 2 pole breakers are UL Listed for use on 120/240 Vac single-phase, three-wire electrical systems
- Flexible terminals with less physical demand
- Detachable shield makes it faster and easier for installer
- Two terminal options: line side - box lug and load side - box lug and four points 1/4-inch insulated quick connector
- Multiple accessories including: surface and flush mounting clips, through-door handle, alarm switch, auxiliary contact, shunt trip, under-voltage trip and locking device

Certifications



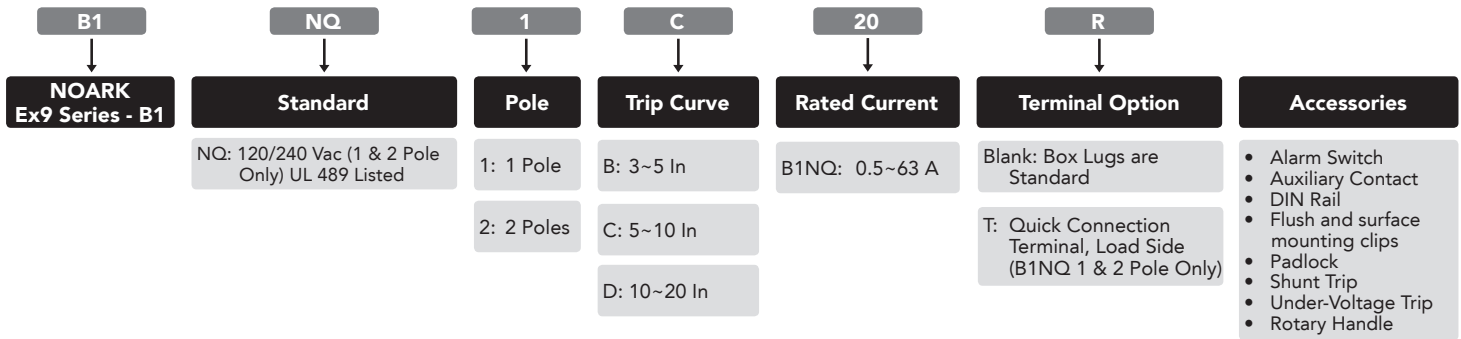
- UL 489 Listed, File No. E355392
- Compliant for Canada according to CSA C22.2 No. 5-02
- IEC/EN 60947-2 Compliant
- CE Approved
- RoHS Compliant



Miniature Circuit Breakers

B1NQ Product Selection Guide and Packaging

Product Selection Guide



Packaging

Breaker	Poles	MOQ (pc/box)	Quantity (pc/carton)	Carton Weight lbs (kgs) Gross	Piece Weight lbs (kgs)		Carton Dimensions in (mm)
					Gross	Net	
B1NQ	1	12	108	36.38 (16.5)	0.34 (0.153)	0.32 (0.146)	14.02x9.45x11.22 (356x240x285)
	2	6	54		0.67 (0.306)	0.65 (0.293)	
B1NQT	1	12	108	40.23 (18.25)	0.37 (0.169)	0.34 (0.156)	16.34x9.45x11.22 (415x240x285)
	2	6	54		0.75 (0.338)	0.69 (0.311)	

Miniature Circuit Breakers

B1NQ Specifications

Conformed Standard	UL 489
Poles	1 and 2
Rated Operational Voltage (V)	120/240 Vac
Rated Frequency (Hz)	50/60
Rated Current (A)	0.5~63
Instantaneous Tripping Type	B (3~5 In), C (5~10 In), D (10~20 In)
Interrupting (kA)	120 Vac
	240 Vac
	60 Vdc
Inverse Time-Delay Over-Current Release Type	Thermal-Magnetic
Service Life	Electrical
	Mechanical
Protection Degree	IP 20
Electrical Connection	Multiple Wiring Available
Wire AWG (mm ²)	Single Wire
	Two Wires
Load	14~4 (2.5~25) 14~6 (2.5~16) / 14~10 (2.5~6)
Mounting Feet	Box Lug / Quick Connection Terminal
Testing Ambient Air Temperature Range	Standard
Operating Temperature Range	23 °F to 104 °F (-5 °C to +40 °C) -22 °F to 167 °F (-30 °C to +75 °C)
Insulation Coordination	Rated Insulation Voltage (Vac)
	Rated Impulse Withstand Voltage (kV)
Pollution Degree	500 6
Mounting	Class III
Altitude ft (m)	Class III / 35 mm DIN rail / Surface and Flush Mount
Atmospheric Conditions	Does not exceed 6,561 (2,000) At 68 °F (+20), the relative humidity does not exceed 90% At 104 °F (+40), the relative humidity does not exceed 50%

Miniature Circuit Breakers

B1NQ Temperature De-rating

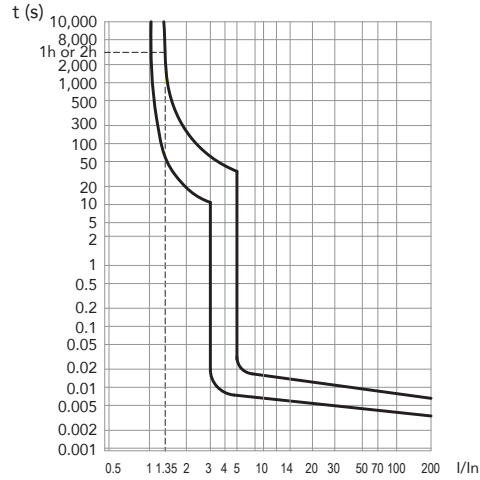
When the ambient temperature slightly changes, please refer to the table below for the Temperature Compensation Coefficient

Ambient Temperature °F (°C)		-22 (-30)	-13 (-25)	-4 (-20)	5 (-15)	14 (-10)	23 (-5)	32 (0)	41 (5)	50 (10)	59 (15)	68 (20)	77 (25)	86 (30)	95 (35)	104 (40)	113 (45)	122 (50)	131 (55)	140 (60)	149 (65)	158 (70)	167 (75)						
Rated Amperes (A)	0.5	1.26	1.24	1.22	1.20	1.18	1.16	1.14	1.10	1.08	1.06	1.04	1.00										0.89	0.86	0.83	0.80	0.76	0.72	0.66
	1	1.21	1.19	1.18	1.16	1.14	1.12	1.10	1.08	1.06	1.04	1.02											0.91	0.89	0.87	0.84	0.80	0.77	0.73
	1.6	1.32	1.29	1.28	1.24	1.21	1.19	1.16	1.13	1.10	1.08	1.03											0.85	0.81	0.77	0.73	0.68	0.63	0.58
	2	1.21	1.19	1.18	1.16	1.14	1.12	1.10	1.08	1.06	1.04	1.02											0.91	0.89	0.87	0.84	0.80	0.74	0.68
	3	1.27	1.25	1.22	1.20	1.18	1.15	1.13	1.11	1.08	1.05	1.03											0.88	0.85	0.82	0.78	0.75	0.71	0.67
	4	1.25	1.23	1.21	1.19	1.17		1.12	1.10	1.07		1.08											1.03	0.89	0.86	0.83	0.80	0.77	0.73
	5	1.26	1.24	1.22	1.19	1.17	1.15	1.13	1.11	1.09	1.07	1.02											0.90	0.87	0.85	0.82	0.77	0.72	0.68
	6	1.23	1.21	1.19		1.17	1.15	1.13	1.11	1.09	1.07	1.02											0.90	0.87	0.85	0.82	0.77	0.72	0.68
	8	1.29	1.26	1.24	1.22	1.19	1.17	1.14	1.11	1.09	1.06	1.03											0.88	0.84	0.80	0.76	0.72	0.64	0.56
	10	1.28	1.25	1.23	1.21	1.18	1.16	1.13		1.08		1.06											1.03	0.88	0.85	0.82	0.78	0.73	0.68
	13	1.20	1.18	1.16	1.15	1.13	1.11	1.09	1.08	1.06	1.04	1.02											0.92	0.90	0.88	0.85	0.80	0.75	0.68
	15	1.28	1.25	1.23	1.21	1.18	1.16	1.13	1.11	1.08	1.06	1.03											0.88	0.85	0.82	0.78	0.72	0.65	0.58
	16	1.24	1.22	1.20	1.18	1.16	1.14	1.11	1.09	1.07	1.05	1.02											0.90	0.87	0.84	0.81	0.75	0.70	0.64
	20	1.23	1.21	1.19	1.17	1.15	1.13																				1.11	1.09	1.07
	25	1.24	1.22	1.20	1.18	1.16	1.14	1.15	1.12	1.09	1.06	1.03											0.87	0.83	0.79	0.75	0.69	0.64	0.58
	30	1.30	1.27	1.25	1.22	1.20	1.17																				1.15	1.12	1.09
	32	1.23	1.21	1.19	1.17	1.15	1.13	1.11	1.09	1.07	1.04	1.02											0.91	0.88	0.85	0.78	0.73	0.68	0.62
	35	1.31	1.29	1.26	1.23	1.21	1.18	1.15	1.12	1.09	1.06	1.03											0.86	0.82	0.78	0.74	0.69	0.64	0.58
	40	1.23	1.21	1.19	1.17	1.15	1.13	1.11	1.09	1.07	1.05	1.02											0.91	0.88	0.85	0.82	0.74	0.66	0.56
	45																										0.75	0.68	0.60
50	0.75												0.68	0.60															
60	1.29	1.27	1.24	1.22	1.19	1.17	1.14	1.11	1.09	1.06	1.03	0.87	0.84	0.80	0.76	0.70	0.63	0.55											
63	1.27	1.25	1.22	1.20	1.18	1.15	1.13		1.08	1.05	0.87	0.88	0.85	0.82	0.78	0.72	0.65	0.57											

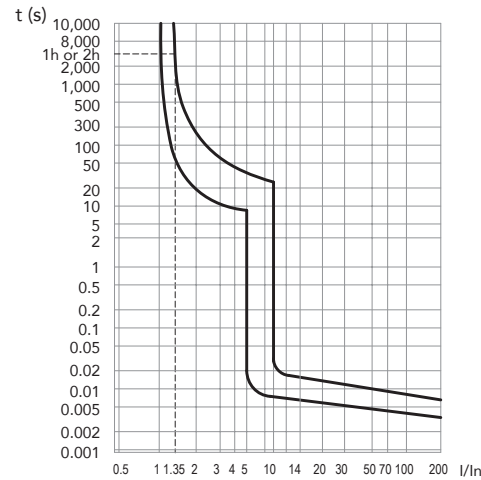
Miniature Circuit Breakers B1NQ Trip Curves and Wiring Diagram

Trip Curves

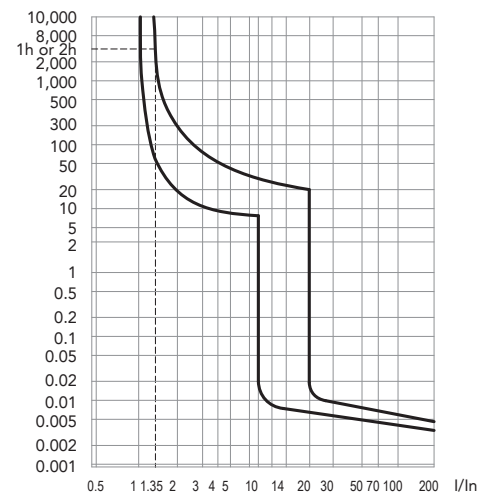
B Curve
($I_n=3/5$)



C Curve
($I_n=5/10$)

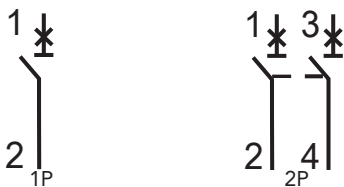


D Curve
($I_n=10/20$)

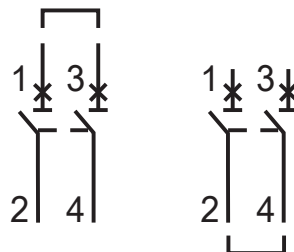


Wiring Diagram

AC Connection



DC Connection



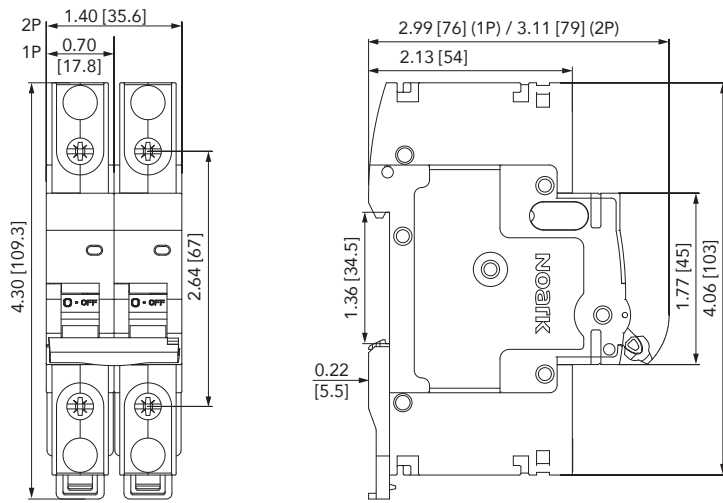
Miniature Circuit Breakers

B1NQ Dimensions

B1NQ

1P/2P

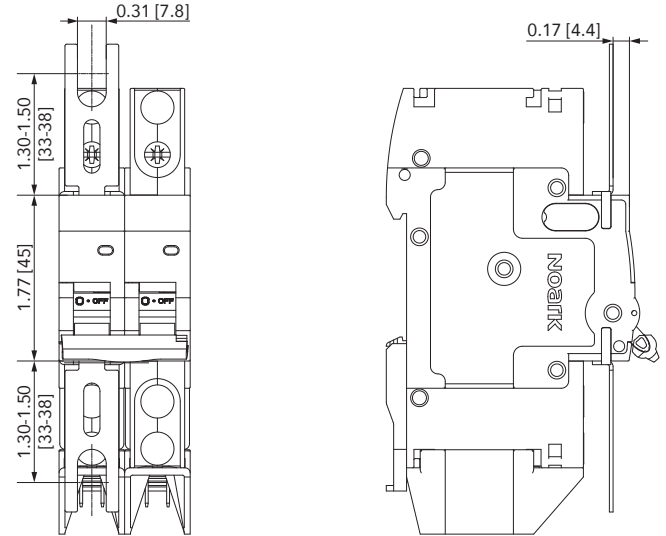
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B1NQ with Flush Mounting Clip

1P/2P

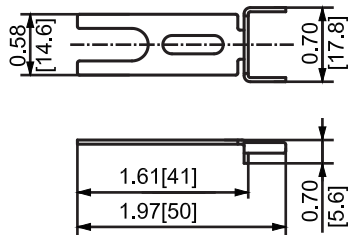
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B1NQ

Flush Mount Clip

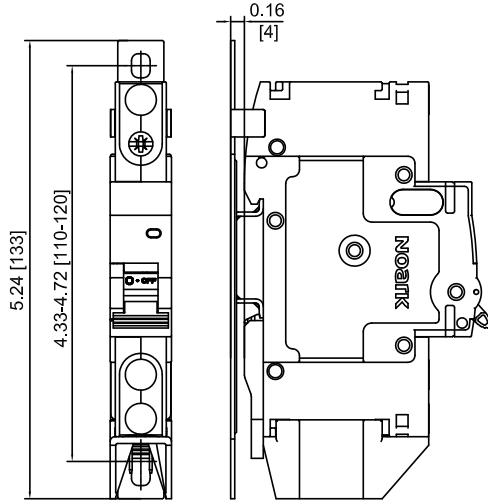
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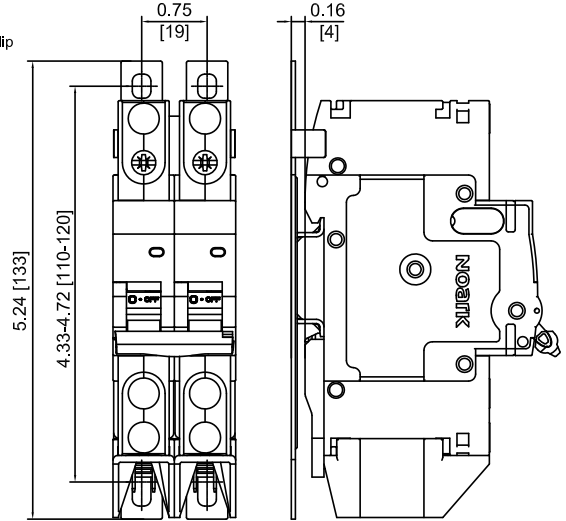
Miniature Circuit Breakers

B1NQ Dimensions

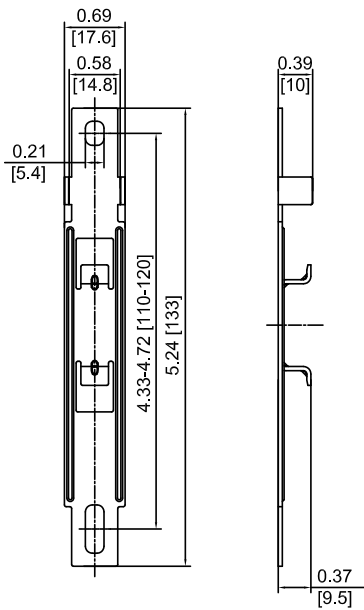
B1NQ
with Surface Mount Clip
1P
Unit: in [mm]



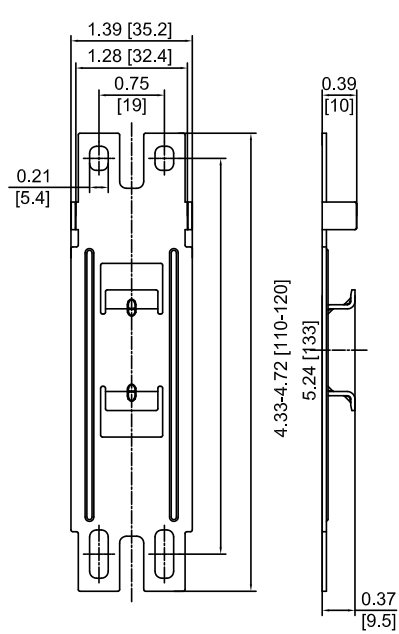
B1NQ
with Surface Mount Clip
2P
Unit: in [mm]



B1NQ
Surface Mount Clip
1P
Unit: in [mm]



B1NQ
Surface Mount Clip
2P
Unit: in [mm]



Miniature Circuit Breakers

B1NQ Accessories: Product Selection Guide and Packaging

Accessory Product Selection Guide

AL31	11	N	A	35	A75
Description	Auxiliary Contact	Device Category	Rated Voltage	Width	Depth
AL31: Alarm Switch	01: 1NC (UVT31)	N: UL 489	A: 110-415 Vac, 110-130 Vdc (SHT31) 240 Vac (UVT31)	35: 35 mm (TH)	A75: 7.5 mm (TH)
AX31: Auxiliary Contact	10: 1NO (UVT31)		B: 48 Vac/dc (SHT31/UVT31)	1: Gray/Green (ERH)	
TH: DIN Rail	11: 1NO+1NC (AL31/AX31/SHT31)		C: 12~24 Vac/dc (SHT31)	2: Red/Yellow (ERH)	
FMC31: Flush Mount Clip	Blank: No Auxiliary Contact (SHT31/UVT31)		L: Vertical, Front Mount (ERH)		
SMC31: Surface Mount Clip	1: 1 P (SMC31)		S: Horizontal, Side Mount (ERH)		
KLK31: Padlock	2: 2 P (SMC31)		LD: Vertical, Front Mount with Door Interlock (ERH)		
SHT31: Shunt Trip	31: 6 in (ERH)		SD: Horizontal, Side Mount with Door Interlock (ERH)		
UVT31: Under-Voltage Trip	32: 10 in (ERH)				
ERH: Extended Rotary Handle					

Packaging

Accessory	MOQ	Quantity (pc/box)	Box Weight lbs (kgs)		Piece Weight lbs (kgs)		Dimensions in (mm)
			Gross		Gross	Net	
Alarm Switch	N/A	72	11.91 (5.4)		0.17 (0.075)	0.13 (0.060)	14.37x9.45x11.22 (365x240x285)
Auxiliary Contact							
Shunt Trip			22.05 (10)		0.31 (0.139)	0.29 (0.131)	
Under-Voltage Trip							

Miniature Circuit Breakers

B1NQ Accessories: Specifications

Auxiliary Contact and Alarm Contact				
Standards	IEC/EN 60947-5-1			
Rated Current	Voltage	480 Vac	277 Vac	240 Vac
	NO/NC	3A	3A	6A
Auxiliary Contacts	1NO+1NC			
Wiring	18-14 AWG (0.5-4 mm ²); 140/167°F (60/75°C) Cu wire			
Tightening Torque	9 lb. in (1.0 Nm)			
Reference Stripping Length	0.3 in (7 mm)			
Shunt Trip				
Standards	IEC/EN 60947-1			
Rated Control Voltage	110-415 Vac / 110-130 Vdc; 48-60 Vac/dc; 12-24 Vac/dc			
Wiring	18-14 AWG (0.5-4 mm ²); 140/167°F (60/75°C) Cu wire			
Tightening Torque	9 lb. in (1.0 Nm)			
Reference Stripping Length	0.3 in (7 mm)			
Auxiliary Contacts	1NO+1NC/ no aux contacts			
Under-Voltage Release				
Standards	IEC/EN 60947-1; IEC/EN 60947-5-1			
Rated Control Voltage	24 Vac; 48 Vac/dc			
Wiring	18-14 AWG (0.5-4 mm ²); 140/167°F (60/75°C) Cu wire			
Tightening Torque	9 lb. in (1.0 Nm)			
Reference Stripping Length	0.3 in (7 mm)			
Auxiliary Contacts	1NO/1NC/No Auxiliary Contact			

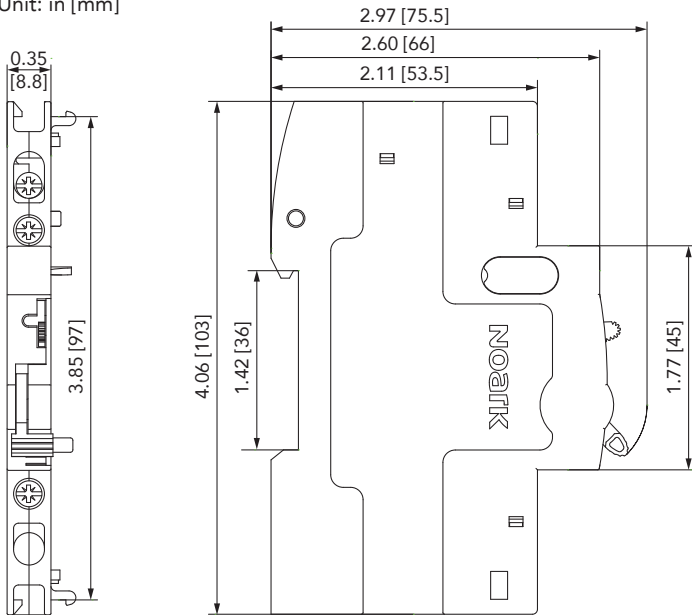
Miniature Circuit Breakers

B1NQ Accessories: Dimensions

AL31N/AX31N

Alarm Switch/Auxiliary Contact

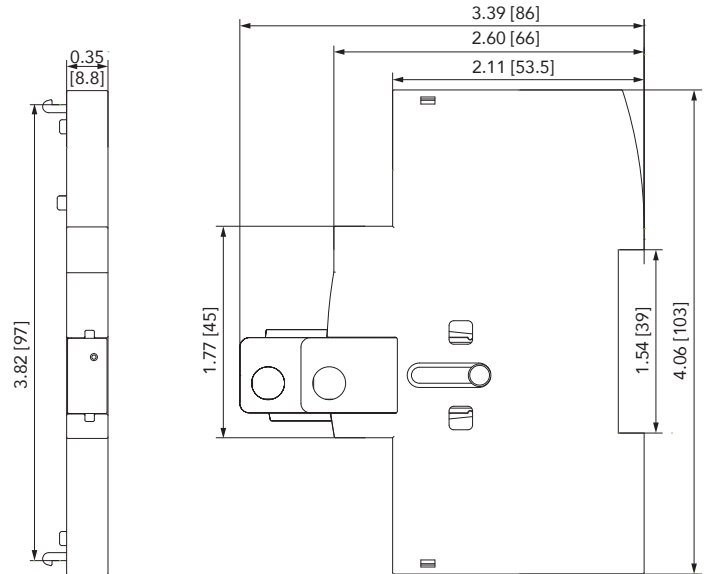
Unit: in [mm]



KLK31N

Padlock

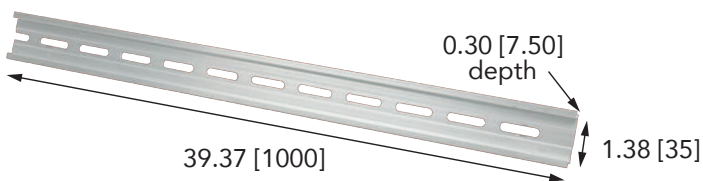
Unit: in [mm]



TH35A75

DIN Rail (35 mm)

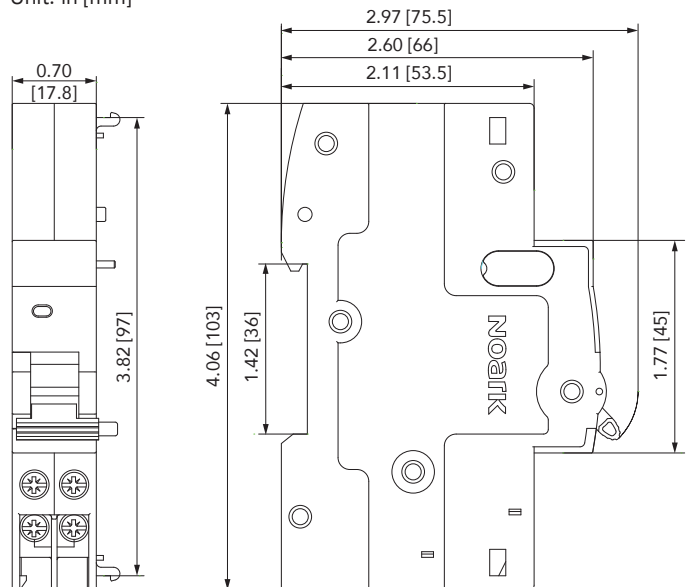
Unit: in [mm]



SHT31N/UVT31N

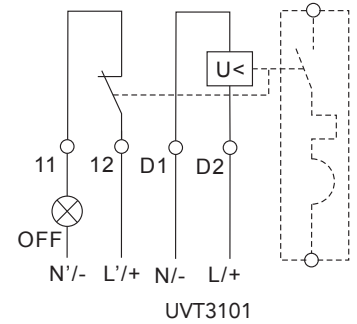
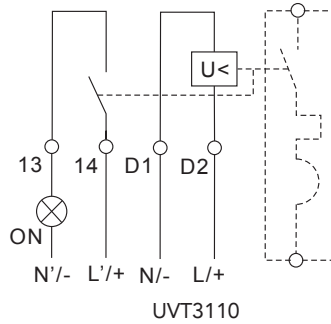
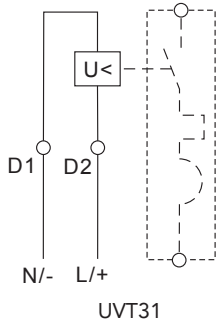
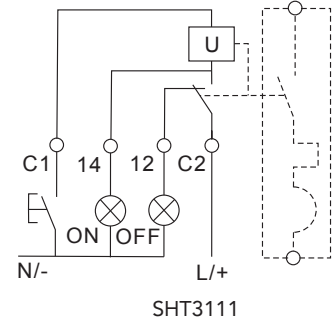
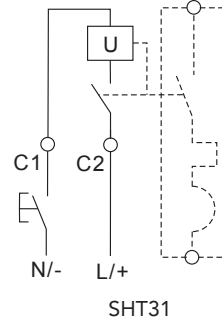
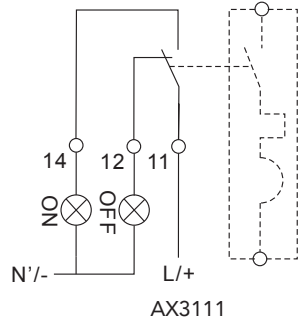
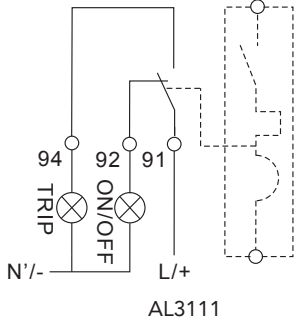
Shunt Trip/Under-Voltage Trip

Unit: in [mm]



Miniature Circuit Breakers

B1NQ Accessories: Wiring Diagrams




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