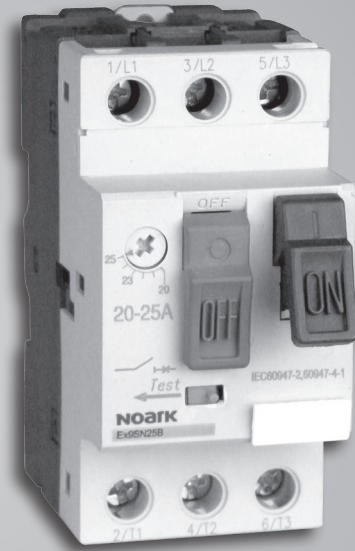


NOARK®

Data Sheet
Manual Motor Starters
Ex9SN Series



Manual Motor Starters NOARK Ex9SN Series

Manual motor starters are electromechanical protection devices for the main circuit. They are used mainly to switch motors manually ON/OFF and protect them fuse less against short circuit and loss-phase. None-fuss protection with a manual motor starter saves costs, space and ensures a quick reaction under short-circuit condition, by switching off the motor within milliseconds. Manual motor starter combinations are setup together with contactors and overload relays.

- Short-Circuit Protection
- Disconnect Function
 - Overload Protection
 - Loss-Phase Protection
- Suitable for Three and Single-Phase Application
- Trip-Free Mechanism
- Clear Switch Position Indication ON/OFF/TRIP
- Lockable Handle

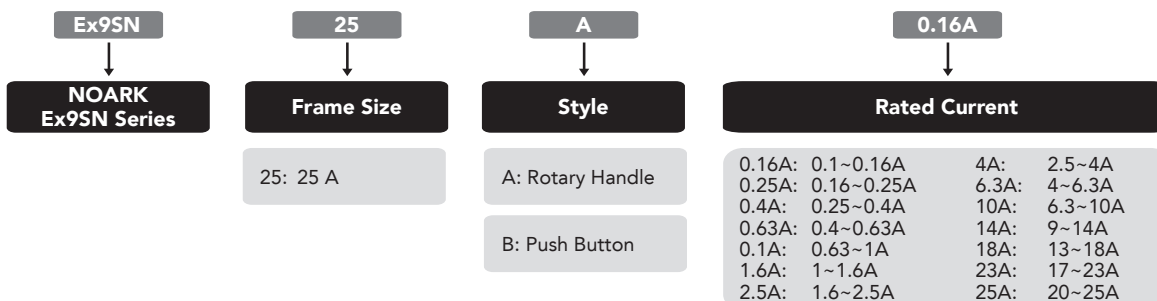
Conformed Standard	UL 508
Approvals	CSA C 22.2 No. 14, IEC/EN 60947-2 & 60947-4-1 CE Approved, RoHS Compliant
UL File Number	E232353



Operating Conditions

Tripping Class	Class 10 A	
Environmental Temperature	Transportation or Storage	-76 to 176 °F (-60 to +80 °C)
	Working at	-4 to 131 °F (-20 to +55 °C)
	Testing at	23 to 104 °F (-5 to +40 °C)
Altitude ft (m)	Not to exceed 6,562 (2,000)	
Air Conditions	At mounting site, relative humidity not exceed 50% at the max temperature of 104 °F (+40 °C), higher relative humidity is allowable under lower temperature	
Pollution Grade	Class III	
Release Grade	10 A (SN25)	
Rated Operational Frequency (Hz)	50/60	
Mounting Conditions	The inclination between the mounting plane and the vertical plane shall not exceed 5°. The product shall be installed and operated at a place without obvious shake, impact and vibration.	
Rated Insulation Voltage Ui (V)	IEC 690, UL/CSA 600	
Rated Operational Voltage Ue (V)	230/240, 400/415, 460/480, 575/600	
Rated Impulse Withstand Voltage Uimp (V)	6,000	
Interrupting Rating Icu	5 ka	
Service Life	Electrical	2,000
	Mechanical	10,000
Degree of Protection	IP 20	

Product Selection Guide



Manual Motor Starters

Properties

Overload Protection Properties

Series Number	Multiple of Setting Current	Initial Status	Time		Expected Results	Ambient Temperature
1	1.05	Cold Status	$t \geq 2h$		Non-Tripping	68°F to ±35.6°F (+20°C to ±2°C)
2	1.20	Heat Status (right after test 1)	$t < 2h$		Tripping	
3	1.50		Tripping Class	10A $t < 2$ min. 10 $t < 4$ min.		
4	7.20	Cold Status		Tripping Class		

Phase Failure Protection Properties

Series Number	Multiple of Setting Current		Initial Status	Time	Expected Results	Ambient Temperature
	Any 2 Phase	The Other Phase				
1	1.0	0.9	Cold Status	$t \geq 2h$	Non-Tripping	68°F to ±35.6°F (+20°C to ±2°C)
2	1.15	0	Heat Status (right after test 1)	$t < 2h$	Tripping	

Temperature Compensation Properties

Series Number	Multiple of Setting Current	Initial Status	Time	Expected Results	Ambient Temperature
1	1.0	Cold Status	$t \geq 2h$	Non-Tripping	104°F to 35.6°F (+40°C to +2°C)
2	1.2	Heat Status (right after test 1)	$t < 2h$	Tripping	
3	1.05	Cold Status	$t \geq 2h$	Non-Tripping	-23°F to 35.6°F (-5°C to +2°C)
4	1.3	Heat Status (right after test 1)	$t < 2h$	Tripping	

Manual Motor Starters Specifications

Setting Current Range (A)		0.1-0.16	0.16-0.25	0.25-0.4	0.4-0.63	0.63-1	1-1.6	1.6-2.5	2.5-4	4-6.3	6.3-10	9-14	13-18	17-23	20-25	
Rated Current of Release		0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	14	18	23	25	
UL Ratings																
Single-Phase (HP)	120 Vac						-	-	1/8	1/4	1/2	3/4	1	1.5	2	
	204 Vac					-	1/10	1/6	1/3	1/2	1.5	2	3			
Three-Phase (HP)	240 Vac	-	-	-	-		-	1/2	1	1.5	3		10	7.5		
	480 Vac					1/2	3/4	1	2	3	5	10		15		
	600 Vac								1.5	3	5	7.5	10	15	20	
IEC Ratings																
400/415 Vac	Icu(kA)	100									15					
	Ics % Icu										50			40		
690 Vac	Icu (kA)	100						3								
	Ics % Icu							75								
Rated Ultimate Short-Circuit Breaking Capacity Icu (kA)	230/240V							100	100		100		50			
	400/415V								50		15		15			
	440V									8		6				
	480/500V									10		6		4		
	660/690V							3								
Rated Service Short-Circuit Breaking Capacity Ics (kA)	230/240V							100	100		100		50			
	400/415V										7.5		6			
	440V									4		3				
	480/500V									4.5		3				
	660/690V							2.25								
Arcing Distance		1.57 in (40 mm)														
Standard Rated Power of Three-Phase Motor (kW)	230/240V					-	-	0.37	0.75	1.1	2.2	3	4	5.5		
	400V					-	-	0.37	0.75	1.5	2.2	4	5.5	7.5	11	
	415V					-	-	-	0.75	1.5	2.2	4	5.5	7.5	11	11
	440V					-	0.37	0.55	1.1	2.2	3.7	5.5	7.5	9	11	15
	500V					0.37	0.55	0.75	1.1	2.2	3.7	5.5	7.5	9	11	15
	660/690V					0.37	0.55	1.1	1.5	3	4	7.5	9	11	15	18.5
Current Setting Value of Instantaneous Electrmagnetic Release Ir (A)		1.5	2.4	5	8	13	22.5	33.5	51	78	138	170	223	327		
Current Rating of Fuse-Link of Back-Up Fuse, Which is Only Needed in Case of Icc>Icu (Icc: Prospective Short-Circuit Breaking Current)	230/240V							†	†		†		80			
	aM A								†		†		100			
	gl/gG A							†		†		80				
	400/415V							†		†		80				
	aM A							†		†		100				
	gl/gG A							†		†		100				
	440V							†		50		63				
	aM A							†		63		80				
	gl/gG A							†		50		80				
	500V							†		50		63				
aM A							†		63		80					
†: Fuse is not Required	690V							16		25		40				
gl/gG A	690V							20		32		40				
Degree of Protection		IL2L0														

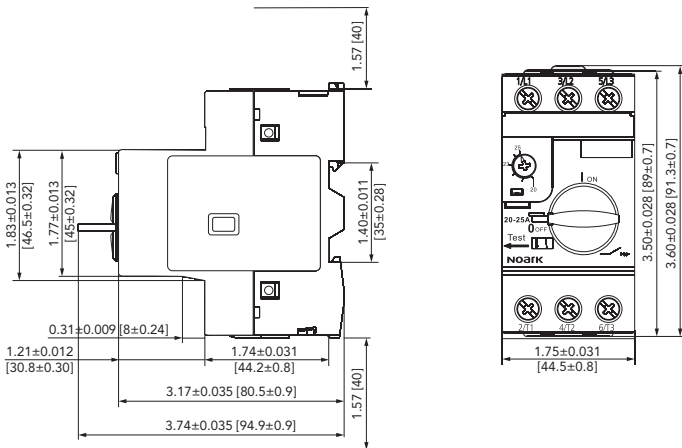
Manual Motor Starters Packing Information

	Unit Weight GW/NW lb (kg):	Carton Dimension in (mm)	Full Pack Pieces
Starters	45.42 (20.6)/ 41.01 (18.6)	15.79x14.72x9.26 (401x374x236)	64

Dimensions

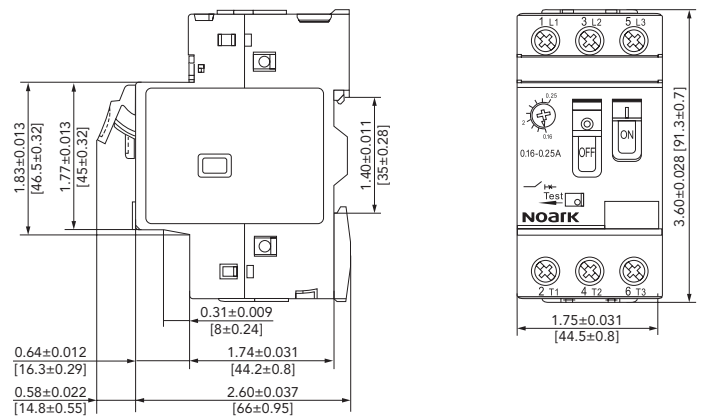
Ex9SN25A

Unit: in. [mm]



Ex9SN25B

Unit: in. [mm]



Manual Motor Starters Accessory Specifications

	Auxiliary Contact			Enclosure		Shunt Trip Release	Under-Voltage Release
	Side Mount	Front Mount	Fault Signal Contact	Actuating Diaphragm	Emergency Stop Pushbutton		
	ASNA	ASNB	ASNF	ASNEA	ASNEB		
UL File Number	E467185						
UL Ratings							
Electrical Contact Type	B600	D300	Fault: D300 Auxiliary: B600			-	
Rated Insulation Voltage Ui (V)	690	250	690			690	
Voltage Range of Operation (Ue)	-					70~110%	35~70%
Ue Max (V)	690	250	Fault: 240 Auxiliary: 690				
Conventional Heating Current Ith (A)	6	2.5	Fault: 2.5 Auxiliary: 6				
AC-15	720 Vac 240 V	120 Vac 240 V	Fault: 720 Vac/240 V Auxiliary: 720 Vac/240 V				
IEC Ratings							
IEC File Number	IEC/EN 60947-5-1					IEC/EN 60947-2	
IEC Ratings							
Pick-Up Voltage (Un)						-	85~110%
Drop-Off Voltage (Un)						70~110%	35~70%
IP Class				IP 55		-	

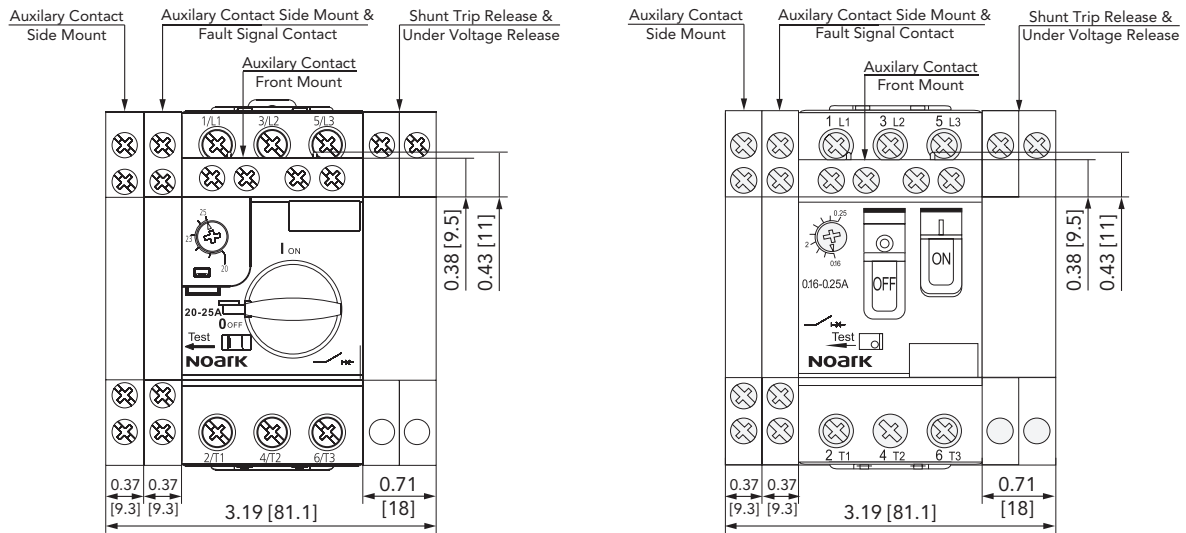
Accessory Product Selection Guide

ASN	A	11	A
Manual Motor Starter Accessory	Description	Auxiliary Contact	Rated Voltage
A:	Auxiliary Contact, Side Mount	11: 1NO+1NC	A: 110-115 Vac 50 Hz 127V 60Hz
B:	Auxiliary Contact, Front Mount	20: 2NO	B: 220-240 Vac 60Hz
UV:	Under Voltage Release	1001: 1NO (Fault) + 1NC (Auxiliary)	C: 380-400 Vac 50 Hz 440V 60Hz
T:	Shunt Trip Release	0101: 1NC (Fault) + 1NC (Auxiliary)	D: 380-400 Vac 60Hz
F:	Fault Signal Contact w/ Auxiliary Contact	1010: 1NO (Fault) + 1NO (Auxiliary)	
EA:	Enclosure w/ Actuating Diaphragm	0110: 1NC (Fault) + 1NO (Auxiliary)	
EB:	Enclosure w/ Emergency Stop Pushbutton		
EC1:	Enclosure with Rotary Handle (Black/Gray)		
EC2:	Enclosure with Rotary Handle (Red./Yellow)		

Manual Motor Starters Accessory Dimensions

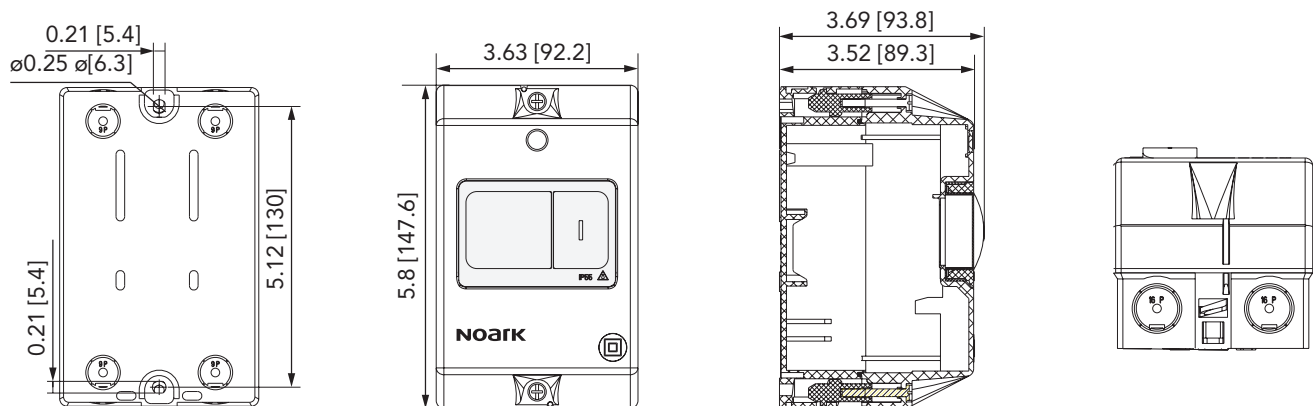
Manual Motor Starter with Accessories

Unit: in. [mm]



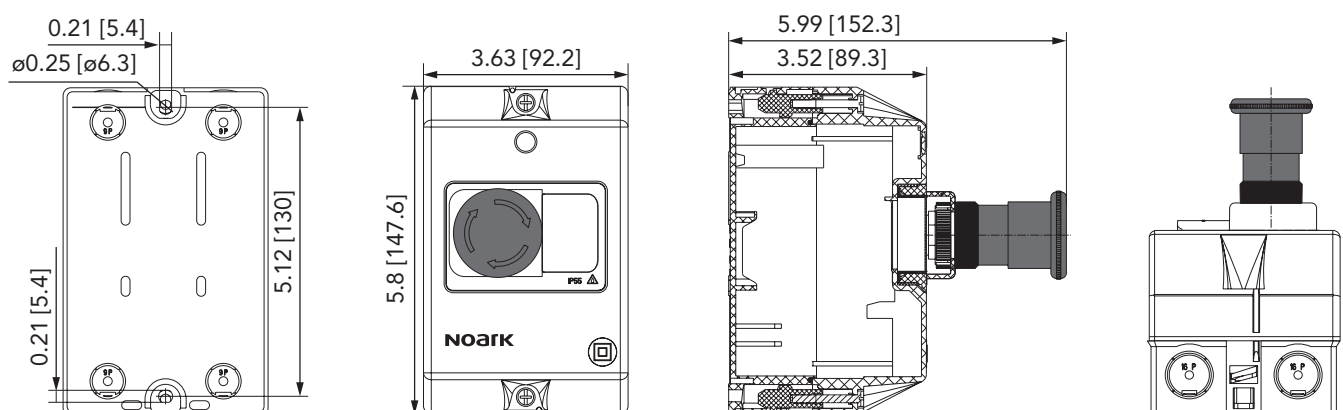
Enclosure with Actuating Diaphragm

Unit: in. [mm]



Enclosure with Emergency Stop Pushbutton

Unit: in. [mm]



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