NS2 Manual Motor Starter

1. General

1.1 Certificates: CE, ESC, UkrSEPRO, GOST, RCC, UL;
1.2 Electric ratings: AC690V, 25A, 80A;
1.3 Standard: IEC/EN 60947-2, IEC60947-4-1

2. Type designation

N S 2 - □ □ /□

- Rated current of release
- Code of structural modification
- Frame size rated current (A)
- Design sequence No.
- AC motor starter
- Company code

3. Operating conditions

3.1 Temperature: -5℃～+40℃,
average temperature in 24 hours not exceed +35℃
3.2 Altitude: not exceed 2000m
3.3 Air conditions:
At mounting site, relative humidity not exceed 50% at the max temperature of +40℃, higher relative humidity is allowable under lower temperature,
for example, RH could be 90% at +20℃
3.4 Pollution grade: Grade III
3.5 Release grade:
10A(NS2-25, NS2-25X)
10 (NS2-80B)
3.6 Rated operational system:
Continuous operational system
3.7 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.

4. Technical data

4.1 Protection properties

Over-load Protection Properties

Series No.	Multiple of setting current	Initial status	Time		Expected results	Ambient temperature
1	1.05	Cold status	t≥2h		Non-tripping	+20℃±2℃
2	1.20	Heat status (right after test.1)	t<2h		Tripping	+20℃±2℃
3	1.50	Heat status (right after test.1)	Tripping class	10A t<2min 10 t<4min	Tripping	+20℃±2℃
4	7.20	Cold status	Tripping class	10A 2s<t≤10s 10 4s<t≤10s	Tripping	+20℃±2℃

Phase failure protection properties

Series No.	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≥2h	Non-tripping	+20℃±2℃
2	1.15	0	Heat status (right after test.1)	t<2h	Tripping	+20℃±2℃

Temperature compensation properties

Series No.	Multiple of setting current	Initial status	Time	Expected results	Ambient temperature
1	1.0	Cold status	t≥2h	Non-tripping	+40℃±2℃
2	1.2	Heat status (right after test.1)	t<2h	Tripping	+40℃±2℃
3	1.05	Cold status	t≥2h	Non-tripping	-5℃±2℃
4	1.3	Heat status (right after test.3)	t<2h	Tripping	-5℃±2℃

4.2 Technical parameters

Model			NS2-25, NS2-25X			
Picture						
Rated insulation voltage Ui(V)			690			
Rated operational voltage Ue(V)			230/240, 400/415, 440, 500, 690			
Rated impulse withstand voltage Uimp(V)			8000			
Regulating rang of setting current (A)			0.1~0.16	0.16~0.25	0.25~0.4	0.4~0.63
Rated current of release			0.16	0.25	0.4	0.63
Rated ultimate short-circuit breaking capacity Icu(kA)	230/240V		100	100	100	100
	400/415V		100	100	100	100
	440V		100	100	100	100
	480/500V		100	100	100	100
	660/690V		100	100	100	100
Rated service short-circuit breaking capacity Ics(kA)	230/240V		100	100	100	100
	400/415V		100	100	100	100
	440V		100	100	100	100
	480/500V		100	100	100	100
	660/690V		100	100	100	100
Arcing distance (mm)			40	40	40	40
Standard rated power of three-phase motor (kW)	230/240V		-	-	-	-
	400V		-	-	-	-
	415V		-	-	-	-
	440V		-	-	-	-
	500V		-	-	-	-
	660/690V		-	-	-	0.37
Current setting value of instantaneous electromagnetic release Ir(A)			1.5	2.4	5	8
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	aM A	★	★	★	★
		gl/gG A	★	★	★	★
	400/415V	aM A	★	★	★	★
		gl/gG A	★	★	★	★
	440V	aM A	★	★	★	★
		gl/gG A	★	★	★	★
	500V	aM A	★	★	★	★
		gl/gG A	★	★	★	★
★: fuse is not required	690V	aM A	★	★	★	★
		gl/gG A	★	★	★	★
Degree of protection			IP2L0	IP2L0	IP2L0	IP2L0

NS2-25, NS2-25X


			690		
			230/240, 400/415, 440, 500, 690		
			8000		
0.63~1	1~1.6	1.6~2.5	2.5~4	4~6.3	6~10
1	1.6	2.5	4	6.3	10
100	100	100	100	100	100
100	100	100	100	100	100
100	100	100	100	50	15
100	100	100	100	50	10
100	100	3	3	3	3
100	100	100	100	100	100
100	100	100	100	100	100
100	100	100	100	50	15
100	100	100	100	50	10
100	100	2.25	2.25	2.25	2.25
40	40	40	40	40	40
-	-	0.37	0.75	1.1	2.2
-	0.37	0.75	1.5	2.2	4
-	-	0.75	1.5	2.2	4
0.37	0.55	1.1	1.5	3	4
0.37	0.75	1.1	2.2	3.7	5.5
0.55	1.1	1.5	3	4	7.5
13	22.5	33.5	51	78	138
★	★	★	★	★	★
★	★	★	★	★	★
★	★	★	★	★	★
★	★	★	★	★	★
★	★	★	★	50	50
★	★	★	★	63	63
★	★	★	★	50	50
★	★	★	★	63	63
★	★	16	25	32	32
★	★	20	32	40	40
IP2L0	IP2L0	IP2L0	IP2L0	IP2L0	IP2L0

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4.3 Technical parameters

Model			NS2-25, NS2-25X			
Picture						
Rated insulation voltage Ui(V)			690			
Rated operational voltage Ue(V)			230/240, 400/415, 440, 500, 690			
Rated impulse withstand voltage Uimp(V)			8000			
Regulating rang of setting current (A)			9~14	13~18	17~23	20~25
Rated current of release			14	18	23	25
Rated ultimate short-circuit breaking capacity Icu(kA)	230/240V		100	100	50	50
	400/415V		15	15	15	15
	440V		8	8	6	6
	480/500V		6	6	4	4
	660/690V		3	3	3	3
Rated service short-circuit breaking capacity Ics(kA)	230/240V		100	100	50	50
	400/415V		7.5	7.5	6	6
	440V		4	4	3	3
	500V		4.5	4.5	3	3
	660/690V		2.25	2.25	2.25	2.25
Arcing distance (mm)			40	40	40	40
Standard rated power of three-phase motor (kW)	230/240V		3	4	5.5	5.5
	400V		5.5	7.5	11	11
	415V		5.5	9	11	11
	440V		7.5	9	11	11
	500V		7.5	9	11	15
	660/690V		9	11	15	18.5
Current setting value of instantaneous electromagnetic release Ir(A)			170	223	327	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	aM A	★	★	80	80
		gl/gG A	★	★	100	100
	400/415V	aM A	63	63	80	80
		gl/gG A	80	80	100	100
	440V	aM A	50	50	63	63
		gl/gG A	63	63	80	80
	500V	aM A	50	50	50	50
		gl/gG A	63	63	63	63
★: fuse is not required	690V	aM A	40	40	40	40
		gl/gG A	50	50	50	50
Degree of Protection			IP2L0	IP2L0	IP2L0	IP2L0

NS2-80B				
				
		690		
		230/240, 400/415		
		8000		
	16~25	25~40	40~63	56~80
	25	40	63	80
	-	-	-	-
	15	15	15	15
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	7.5	7.5	7.5	7.5
	-	-	-	-
	-	-	-	-
	-	-	-	-
	50	50	50	50
	5.5	11	15	22
	11	18.5	30	40
	11	22	33	45
	-	-	-	-
	-	-	-	-
	-	-	-	-
	327	480	756	960
	★	★	★	★
	★	★	★	★
	250	250	315	315
	315	315	400	400
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	IP2L0	IP2L0	IP2L0	IP2L0

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5. Accessories

5.1 Under-voltage release

Rated insulation voltage Ui(V)	Voltage range of operation	Model	Specification
690	35%~70%Ue	NS2-UV110	110~115V 50Hz
690	35%~70%Ue	NS2-UV110	127V 60Hz
690	35%~70%Ue	NS2-UV220	220~240V 50Hz
690	35%~70%Ue	NS2-UV380	380~400V 50Hz
690	35%~70%Ue	NS2-UV380	440V 60Hz

5.2 Shunt release

Rated insulation voltage Ui(V)	Voltage range of operation	Model	Specification
690	70%~110%Ue	NS2-SH110	110~115V 50Hz
690	70%~110%Ue	NS2-SH110	127V 60Hz
690	70%~110%Ue	NS2-SH220	220~240V 50Hz
690	70%~110%Ue	NS2-SH380	380~400V 50Hz
690	70%~110%Ue	NS2-SH380	440V 60Hz

5.3 Instantaneous auxiliary contact

5.3.1 NS2-AE20, NS2-AE11

Rated insulation voltage Ui(V)	Conventional heating current Ith(A)	Model	Configuration
250	2.5	NS2-AE20	2N/O
250	2.5	NS2-AE11	1N/O+1N/C

Application class, rated operational voltage and tated operational current of instantaneous auxiliary contact

Utilization category	AC-15				DC-13		
Rated operational voltage Ue(V)	24	48	110/127	230/240	24	48	60
Rated operational current Ie(A)	2	1.25	1	0.5	1	0.3	0.15
Normal operational power P(W)	48	60	127	120	24	15	9

5.3.2 NS2-AU20, NS2-AU11

Rated insulation voltage Ui(V)	Conventional heating current Ith(A)	Model	Configuration
690	6	NS2-AU20	2N/O
690	6	NS2-AU11	1N/O+1N/C

Note: NS2-80B temporarily only has NS2-AU auxiliary contact, which is for NS2-80B special use.

Application class, rated operational voltage and rated operational current of instantaneous auxiliary contact

Utilization category	AC-15						
Rated operational voltage Ue(V)	48	110/127	230/240	380/415	440	500	690
Rated operational current Ie(A)	6	4.5	3.3	2.2	1.5	1	0.6
Normal operational power P(W)	300	500	720	850	650	500	400

Utilization category	DC-13				
Rated operational voltage Ue(V)	24	48	60	110	220
Rated operational current Ie(A)	6	5	3	1.3	0.5
Normal operational power P(W)	140	240	180	140	120

5.4 Fault signal contact and instantaneous auxiliary contact

Rated insulation voltage Ui(V)	Conventional heating current Ith(A)		Model	Configuration
	Instantaneous auxiliary contact	Fault signal contact		
690	6	2.5	NS2-FA0110	1N/C+1N/O
690	6	2.5	NS2-FA0101	1N/C+1N/C
690	6	2.5	NSE-FA1010	1N/O+1N/O
690	6	2.5	NS2-FA1001	1N/O+1N/C

Application class, rated working voltage and rated operational current of fault signal contact

Application class	AC-14				DC-13		
Rated operational voltage Ue(V)	24	48	110/127	230/240	24	48	60
Rated operational current Ie(A)	1.5	1	0.5	0.3	1	0.3	0.15
Normal operational power P(W)	36	48	72	72	24	15	9
Operation features (times)	1000	1000	1000	1000	1000	1000	1000

Capacity of abnormal connection and disconnection of fault signal contact and insrantaneous auxiliary contact

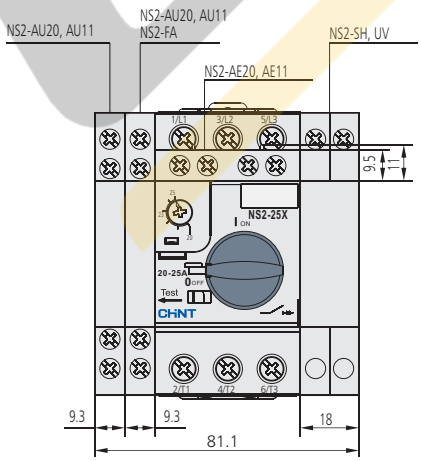
Utilization category	Connection			Disconnection			Number of on/off operation cycles and operation frequency		
	I/Ie	U/Ue	Cos ϕ or t0.95	I/Ie	U/Ue	Cos ϕ or t0.95	Number of operation cycles	Number of operation cycles per min.	On power time
AC-14	6	1.1	0.7	6	1.1	0.7	10	2	0.05
AC-15	10	1.1	0.3	10	1.1	0.3	10	2	0.05
DC-13	1.1	1.1	6Pe	1.1	1.1	6Pe	10	2	0.05

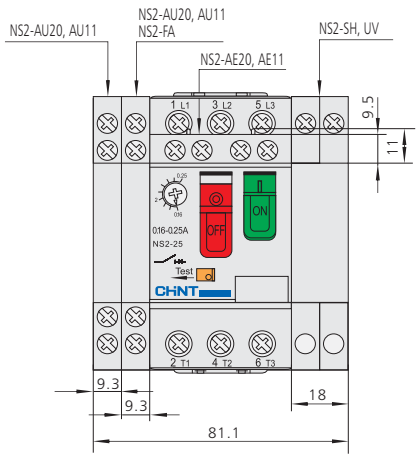
Note: Pe≥50W, upper limit of T0.95≈6 Pe≤300ms.

5.5 Installation box for NS2-25

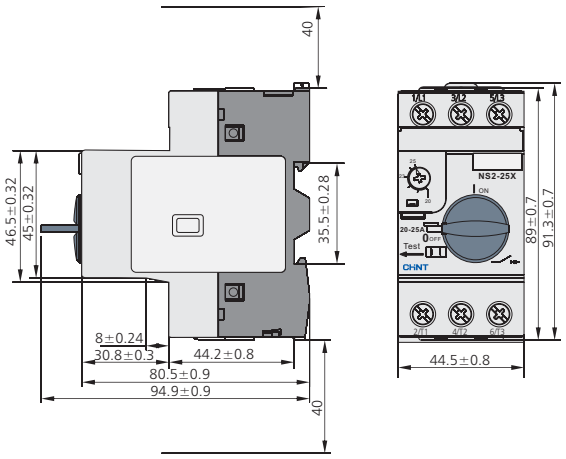
	NS2-MC Installation box without pushbutton	IP55
	NS2-MC01 Installation box with emergency pushbutton	IP55

6. Overall and mounting dimension (mm)

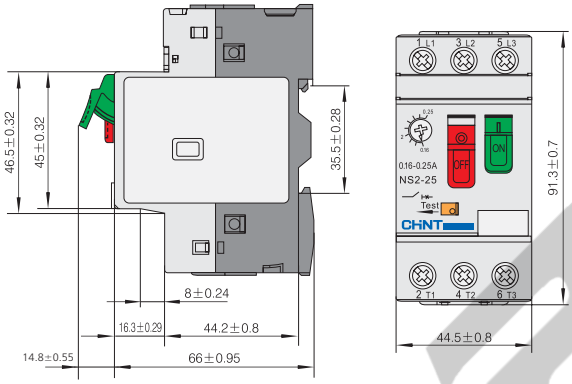




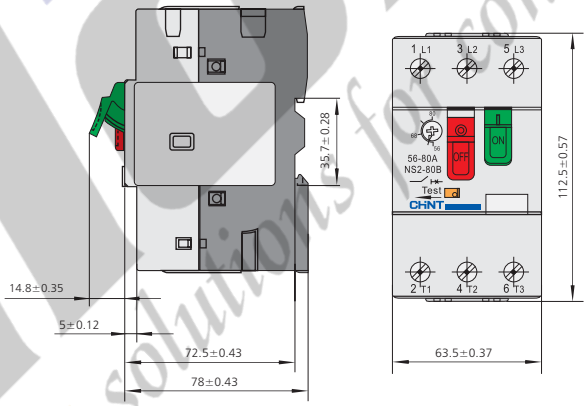
NS2-25X



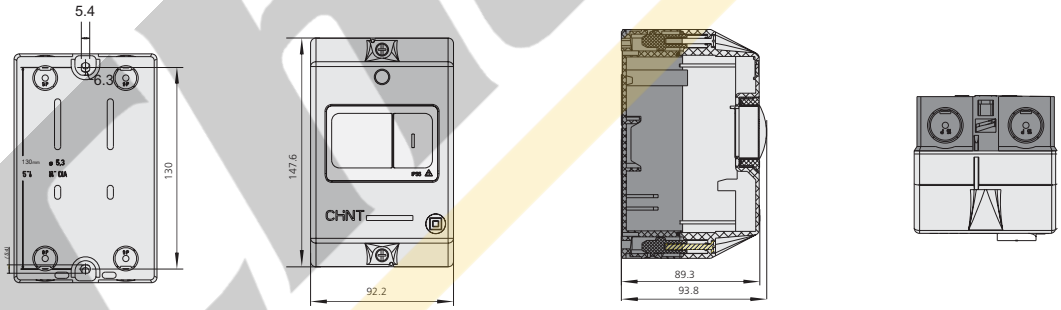
NS2-25



NS2-80B



NS2-MC



NS2-MC01