

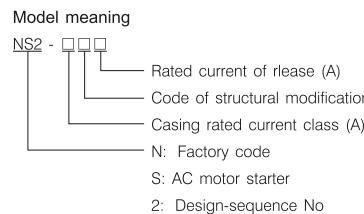
NS2 AC motor starter



Application

NS2-25~80B AC motor starter is applicable to a circuit with AC voltage up to 690V and current up to 80A. It can be used to protect a three-phase cage asynchronous motor and a distribution line against overload, phase-failure and short circuit, to control the motor's infrequent starting and other infrequent load conversion. It can also serve as isolator. The product is in conformity with the standards: IEC 60947-2 IEC 60947-4-1

Model meaning



Working condition

Environmental temperature

The upper limit of the environmental temperature is +55°C.

The lower limit of the temperature is -5°C.

The average temperature in 24 hours shall not exceed +35°C.

Altitude: The altitude of the installation place shall not exceed 2000m.

Pollution grade: Grade III

Atmosphere condition:

The relative humidity shall not exceed 50% when the environmental temperature is +40°C.

The relative humidity may be higher at the lower temperature condition. The maximum month-average relative humidity is 90% in the most humid month with a minimum month-average temperature +25°C. The factor that dew may occur on the product surface due to temperature change shall be taken into consideration.

Release grade:

10A(NS2-25)

10 (NS2-80B)

Rated working system:

Continuous working system

Installation condition:

The incline of the installation plane to the vertical plane shall not exceed 5° .

The product shall be installed and operated at a place without obvious shake, impact and vibration.



Main technical parameter

Operation features of the starter

No.	Casing rated current class (A)	Times of operation cycles per hour	Times of operation cycles		
			ON operation	OFF operation	Total
1	25	120	2000	10000	12000
2	80	120	2000	10000	12000

Note: Electrical service life can be regarded as the times of ON operation cycles under application class AC-3. Mechanical service life can be regarded as the times of OFF operation cycles.

Features of over-current dynamic protection

Features of starter actions under balanced load in all phases

No.	Multiple of setting current	Start state	Specified time	Expected result	Ambient temperature
1	1.05	Cold position	t≥2h	Not release	+20°C±2°C
2	1.2	Hot position (rise to specified current just after test of No. 1)	t<2h	Release	+20°C±2°C
3	1.5	Start after thermal balance of two times of the setting current	Grade of tripping 10A t<4min	Release	+20°C±2°C
4	7.2	Cold position	Grade of tripping 10A 2s<t≤10s	Release	+20°C±2°C

Features of the starter actions under unbalanced load of all phases (phase-failure)

No.	Multiple of setting current	Start state	Specified time	Expected result	Ambient temperature
1	1.0	0.9	Cold position	t≥2h	Not release
2	1.15	0	Hot position (rise to specified current just after test of No. 1)	t<2h	Release

Features of temperature compensation of the starter

No.	Multiple of setting current	Start state	Specified time	Expected result	Ambient temperature
1	1.0	Cold position	t≥2h	Not trip	+55°C±2°C
2	1.2	Hot position (rise to specified current just after test of No. 1)	t<2h	Trip	+55°C±2°C
3	1.05	Cold position	t≥2h	Not trip	+55°C±2°C
4	13	Hot position (rise to specified current just after test of No. 3)	t<2h	Trip	+55°C±2°C

Model	NS2-25				NS2-25											
Picture																
Rated insulation voltage U_i (V) 690																
Rated working voltage U_e (V) 230/240, 400/415, 440, 500, 690																
Rated voltage withstand against impact U_{imp} (V) 8000																
Regulating rang of setting current (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 6~10																
Rated current of release 0.16 0.25 0.4 0.63 1 1.6 2.5 4 6.3 10																
Rated ultimate short-circuit breaking capacity I_{cu} (KA)	230/240V	100	100	100	100	100	100	100	100							
	400/415V	100	100	100	100	100	100	100	100							
	440V	100	100	100	100	100	100	100	50							
	500V	100	100	100	100	100	100	100	10							
	690V	100	100	100	100	100	100	100	3							
Rated service short-circuit breaking capacity I_{cs} (KA)	230/240V	100	100	100	100	100	100	100	100							
	400/415V	100	100	100	100	100	100	100	100							
	440V	100	100	100	100	100	100	100	50							
	500V	100	100	100	100	100	100	100	50							
	690V	100	100	100	100	100	2.25	2.25	2.25							
Arcing distance (mm) 40 40 40 40 40 40 40 40 40																
Standard rated power of three-phase motor (KW)	230/240V	—	—	—	—	—	0.37	0.75	1.1							
	400	—	—	—	—	—	0.37	0.75	1.5							
	415	—	—	—	—	—	0.75	1.5	2.2							
	440V	—	—	—	—	0.37	0.55	1.1	1.5							
	500V	—	—	—	—	0.37	0.75	1.1	2.2							
	690V	—	—	—	0.37	0.55	1.1	3	4							
Current setting value of instantaneous electromagnetic release I_r (A) 1.5 2.4 5 8 13 22.5 33.5 51 78 138																
Current specification of melt of backup fuse current required only when expected short circuit current $I_{cc}>I_{cu}$ rated limit short circuit disconnection capacity	230/240V	aM A ★	★	★	★	★	★	★	★							
	gl/gG A	★	★	★	★	★	★	★	★							
	400/415V	aM A ★	★	★	★	★	★	★	★							
	gl/gG A	★	★	★	★	★	★	★	★							
	440V	aM A ★	★	★	★	★	★	★	50							
	gl/gG A	★	★	★	★	★	★	★	63							
	500V	aM A ★	★	★	★	★	★	★	50							
	gl/gG A	★	★	★	★	★	★	★	63							
	690V	aM A ★	★	★	★	★	16	25	32							
	gl/gG A	★	★	★	★	★	20	32	40							
Casing protection grade IP2LO																

Model	NS2-25				NS2-80B				
Picture									
Rated insulation voltage U_i (V)	690				690				
Rated working voltage U_e (V)	230/240, 400/415, 440, 500, 690				230/240, 400/415, 440, 500, 690				
Rated voltage withstand against impact U_{imp} (V)	8000				8000				
Regulating rang of setting current (A)	9~14	13~18	17~23	20~25	16~25	25~40	40~63	56~80	
Rated current of release	14	18	23	25	25	40	63	80	
Rated ultimate short-circuit breaking capacity I_{cu} (KA)	230/240V 400/415V 440V 500V 690V	100 15 8 6 3	100 15 6 4 3	50 50 6 4 3	100 100 25 8 4	100 35 25 8 4	100 35 25 8 4	100 35 25 8 4	
Rated service short-circuit breaking capacity I_{cs} (KA)	230/240V 400/415V 440V 500V 690V	100 7.5 4 4.5 2.25	100 7.5 4 4.5 2.25	50 6 3 3 2.25	75 50 12.5 4 2	75 17.5 12.5 4 2	75 17.5 12.5 4 2	75 17.5 12.5 4 2	
Arcing distance (mm)	40	40	40	40	50	50	50	50	
Standard rated power of three-phase motor (KW)	230/240V 400 415 440V 500V 690V	3 5.5 5.5 7.5 7.5 9	4 7.5 9 9 9 11	5.5 11 11 11 15 15	5.5 11 11 11 15 18.5	11 18.5 22 22 25 33	15 30 33 33 40 55	22 40 45 45 55 65	
Current setting value of instantaneous electromagnetic release I_r (A)	170	223	327	327	327	480	756	960	
Current specification of melt of backup fuse current required only when expected short circuit current $I_{cc} > I_{cu}$ rated limit short circuit disconnection capacity	230/240V 400/415V 440V 500V 690V	aM A gl/gG A aM A gl/gG A aM A gl/gG A aM A gl/gG A aM A gl/gG A	★ ★ 63 80 50 63 50 63 40 50	★ ★ 63 80 50 63 50 63 40 50	80 100 80 100 63 63 50 63 40 50	80 100 80 100 63 63 50 63 40 50	★ ★ ★ ★ 200 250 250 125 160 125 160 200 160	★ ★ 250 315 250 315 160 200 160 200 200	★ ★ 315 400 315 400 200 250 200 250
★: fuse is not required									
Casing protection grade	IP2LO	IP2LO	IP2LO	IP2LO	IP2LO	IP2LO	IP2LO	IP2LO	

Accessories**Under-voltage release**

Type, model and specification of under-voltage release

**Features of actions**

When voltage drops down to the range of 70%~35% the rated voltage, the under-voltage release should act. When supply voltage is lower than 35% the rated voltage of the release, the under-voltage release should prevent the starter from closing. When supply voltage is equal to or higher than 85% the rated voltage of the release, the under-voltage release should guarantee closing action of the starter.

Shunt release

Type, model and specification of under-voltage release

**Instantaneous auxiliary contact (NS2-AE20, NS2-AE11)**

Type, model and specification of instantaneous auxiliary contact



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

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

**Instantaneous auxiliary contact (NS2-AU20, NS2-AU11)**

Type, model and specification of instantaneous auxiliary contact

Rated insulation voltage Ui(V)	Conventional heating current Ith (A)	Model	Specification
690	6	NS2-AU20	2NO
690	6	NS2-AU11	1NO+1NC

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

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

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

Fault signal contact and instantaneous auxiliary contact

Type, model and specification of fault signal contact and instantaneous auxiliary contact



Rated insulation voltage Ui(V)	Conventional heating current Ith (A)		Fault signal contact	Model	Specification
	Instantaneous auxiliary contact	Fault signal contact			
690	6	2.5	NS2-FA110	1NC +1NO	
690	6	2.5	NS2-FA101	1NC +1NC	
690	6	2.5	NS2-FA1010	1NO +1NO	
690	6	2.5	NS2-FA1001	1NO +1NC	

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

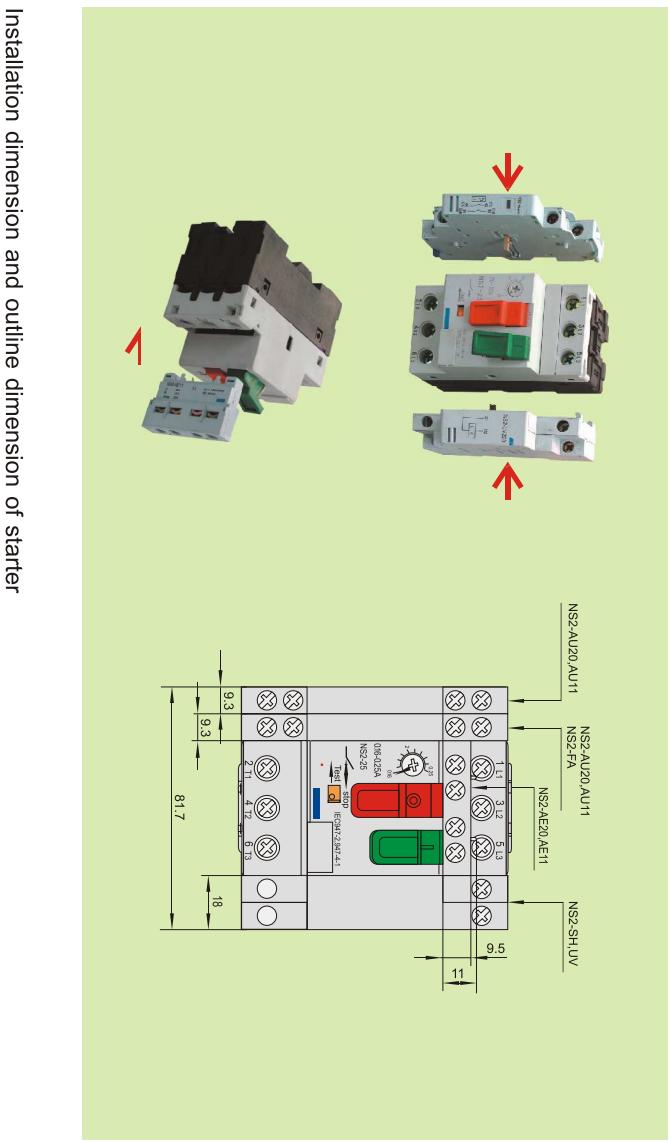
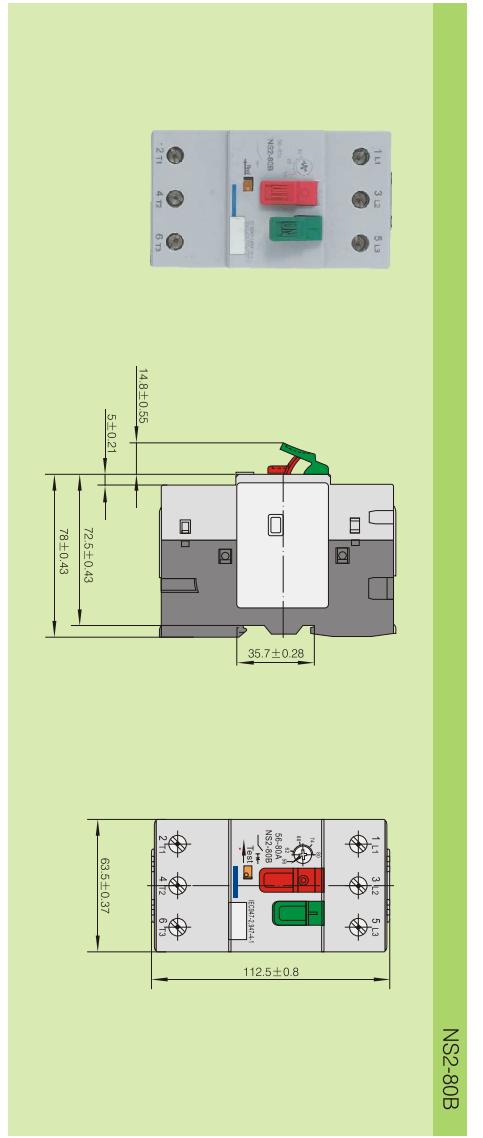
Application class	AC-15					
Rated working voltage Ue(V)	24	48	110/127	230/240	24	48
Rated working current Ie(A)	1.5	1	0.5	0.3	1	0.3
Normal working power P(W)	36	48	72	72	24	15

Operation features (times)	1000	1000	1000	1000	1000	1000
	1000	1000	1000	1000	1000	1000

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

Application class	Connection				Disconnection				Number of on/off operation cycles and operation frequency		
	I/e	U/Ue	Cos φ or T0.95	I/e	U/Ue	Cos φ or T0.95	Number of operation cycles	Number of operation cycles per min.	Conduction 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.



Installation dimension and outline dimension of starter

Standard rail erection is adopted for starter. The rail should meet the requirement on erection rail TH35-7.5 of steel profile stipulated in A.2.1 of JB6525.