NS Series Moulded Case Circuit Breaker



1.Application

NS series moulded case circuit breaker is one of breaker which adopts international advanced design, manufacture technology to develop. The rated insulating voltage is 750V, suit-able for AC 50Hz(60Hz),rated working voltage 690V or below, rated working current is 12.5A to1250A of circuit and used in distributing electric energy, and non-frequent breaking in the nor-mal conditions , protecting the current& equipment from overload & under voltage, circuit breaker with rated frame current 400A or below, can be used in mouse-cage motor's non-frequent start, breaking during working, protecting motor from overload, short circuit & undervoltage, the product conforms to IEC60947-2 standard.

2.Main Technical Specifications

Type	Pole number	Rated insulating voltage(V)	Rated operating voltage(V)	Rated ultimate short circuit breaking capacity Icu (KA) at 380/415V	Rated servies short circuit breaking capacity Ics at 380/415V(KA)	Operation performance		Utilization category
						ON	OFF	
NS-100N	3, 4pole	750	690 and below	25	25	1500	8500	A
NS-100H				70	70			
NS-100L				150	150			
NS-160N				36	36	1000	7000	
NS-160H				70	70			
NS-160L				150	150			
NS-250N				36	36	1000	7000	
NS-250H				70	70			
NS-250L				150	150			
NS-400N				45	45	1000	4000	
NS-400H				70	70			
NS-400L				150	150			
NS-630N				45	45	1000	4000	
NS-630H				70	70			

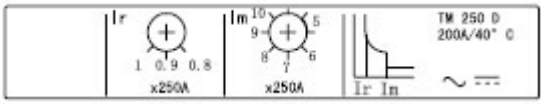
NS-630L				150	150			
NS-1250N	3 pole			50	37.5	1000	4000	
NS-1600N				50	37.5			

Note:1. The N-pole breaker has no protection which closing and opening with the other three poles.

2. The type of thermal magnetic for NS-400/630 has no four poles.

3 Trip units main technical parameter

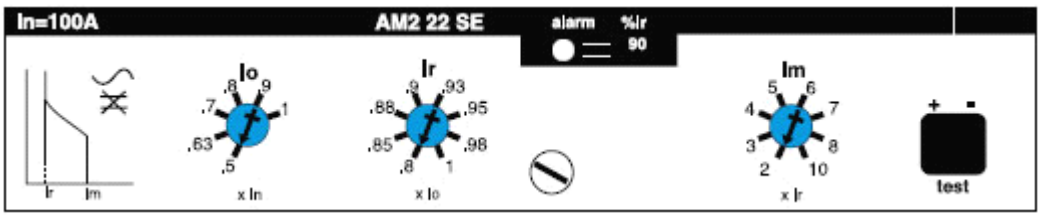
Thermal magnetic release



Type	Rated currentIn(A)	Note
NS-100	12.5,16,20,25,32,40,50,63,80,100	Tadjustable (0.8~1In)M adjustable (5~10In)
NS-160	16,20,25,32,40,50,63,80,100,125,160	
NS-250	160,180,200,225,250	
NS-400	315,350,400	
NS-630	400,500,630	
NS-1250	800,1000,1250	Tadjustable (0.8~1In)M fixed
NS-1600	1000,1250,1600	

Electronic release

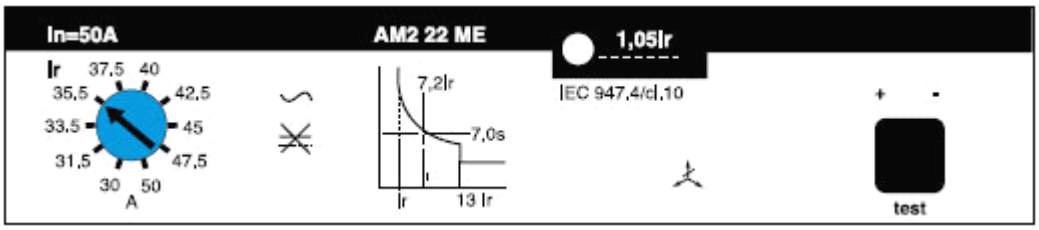
NS 22SE: protection of low-voltage distribution networks for NS-100\160\250



1. Overload protection with adjustable threshold
2. Short-circuit protection with adjustable threshold
3. Load indication : light at 90% of Ir setting threshold;
Flashing at 105% or more of Ir setting threshold

Type	Rated current In(A)	Note
NS-100	40,100	Ir=0.4~1×In(adjustable 48 setting)
NS-160	40,100,160	Tripping between 1.05~.3×Ir (IEC60947-2)
NS-250	40,100,160,250	(**Long-time overload protection**) Im=2-3-4-5-6-7-8-10×Ir (**Short-circuit protection**)

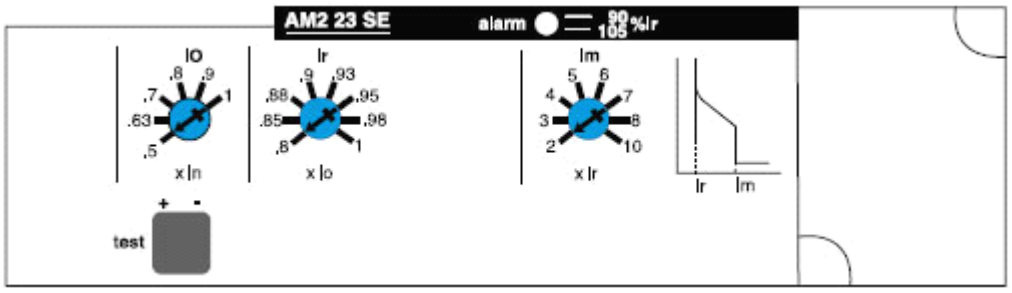
NS 22ME: protection of motor for NS-100\160\250



1. Overload protection with adjustable threshold, as defined by IEC60947-4 (2) tripping class 10
2. Short-circuit protection with fixed threshold (13xIr)
3. phase failure protection (tripping time delay between 3.5s-6s)
4. Load indication : dark less than 105% of Ir setting threshold;
Flashing at 105% or more of Ir setting threshold

Type	Rated current In(A)	Note
NS-100	40,50,80,100	Ir=0.6-0.63-0.67-0.71-0.75-0.80-0.85-0.90-0.95-1×In
NS-160	40,50,80,100,150	
NS-250	40,50,80,100,150,220	

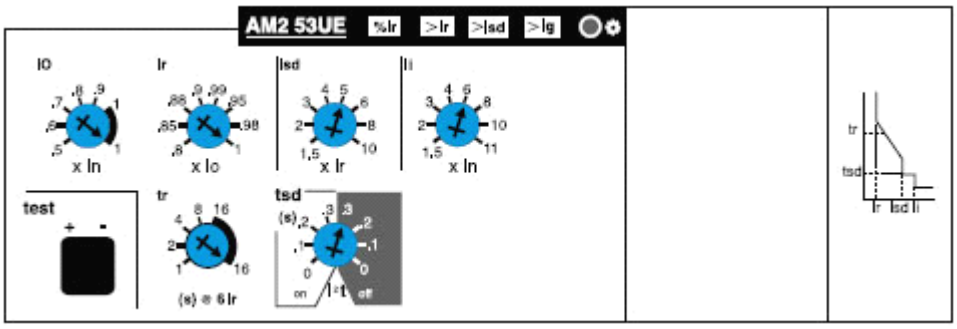
NS 23SE: protection of low-voltage distribution networks for NS-400\630



1. Overload protection with adjustable threshold
2. Short-circuit protection with adjustable threshold
3. Load indication : light at 90% of Ir setting threshold;
Flashing at 105% or more of Ir setting threshold

Type	Rated current In(A)	Note
NS-400	400	Ir=0.4~1×In(adjustable 48 setting)
NS-630	630	Tripping between 1.05~1.3×Ir (IEC60947-2) (Long-time overload protection) Im=2-3-4-5-6-7-8-10×Ir (Short-circuit protection)

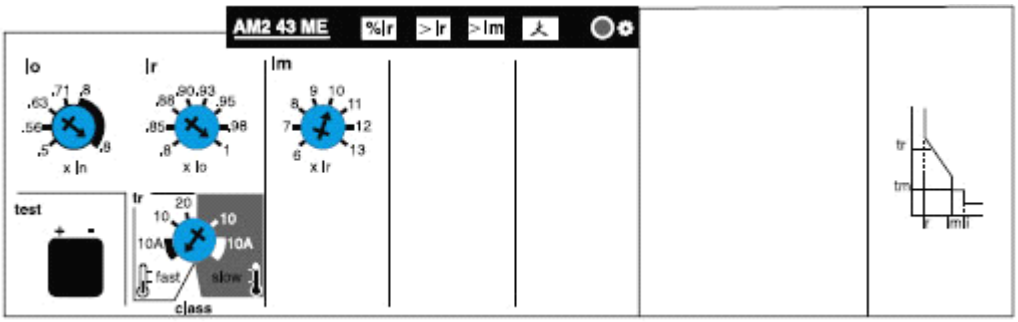
NS 53UE: protection of low-voltage distribution networks for NS-400\630



1. Overload protection with adjustable threshold, as defined by IEC60947-2
2. Short-circuit protection with adjustable threshold
3. Instantaneous short-circuit protection
4. Earth fault protection with adjustable threshold
5. Load indication : light at 90% of Ir setting threshold;
Flashing more than Ir setting threshold
6. Fault indication
LEDs indicates the type of fault that caused tripping
Overload (LT protection) or abnormal component temperature (>Ir);
Short-circuit (ST or instantaneous protection)(>Im);
Earth fault (if earth fault protection option is present)(Ig);
Microprocessor malfunction (both (>Ir) and (>Im) LEDs go on ,plus the (Ig) LEDs if earth fault protection option is present)
Battery powered. Spare battery are supplied in an adapter box. When a fault occurs , the LED indicating the type of fault ,lights for about 10 minutes . The information is however stored in memory . The LED can be illuminated by pressing the test pushbutton. The LED automatically goes off and the memory is cleared when the circuit breaker is reset .

Type	Rated current In(A)	Note
NS-400	400	Ir=0.4~1×In(adjustable 48 setting)
NS-630	630	Tripping between 1.05~1.3×Ir (IEC60947-2) at 6×Ir Trip time: 1s, 2s, 4s, 8s, 16s(adjustable) (Long-time overload protection) Isd=1.5-2-3-4-5-6-7-8-10×Ir Trip time: 0s, 0.1s, 0.2s, 0.3s adjustable+I2t (Short-circuit short time delay protection) Ii=1.5-2-3-4-6-7-8-10-11×Ir (Instantaneous short-circuit protection) Ig=0.1-0.2-0.3-0.4-0.5-0.6-0.7-0.8-1×Ir Trip time: 0.1s, 0.2s, 0.3s, 0.4s adjustable+I2t (Earth fault protection) (If option is present)

NS 43ME: protection of motor for NS-400\630



1. Overload protection with adjustable threshold, as defined by IEC60947-4 (2) tripping class 10A,10 and 20
2. Short-circuit protection with adjustable threshold (6...13xIr)
3. Phase failure protection (built-in electronic release: operates unbalanced single-phase current at 40% and more than)(tripping time delay 4s¡À10%),as defined by IEC60947-4.1
4. Load indication : Flashing more than Ir setting threshold
5. Fault indication

LEDs indicates the type of fault that caused tripping

Overload (LT protection) or abnormal component temperature (>Ir);

Short-circuit (ST or instantaneous protection)(>Im);

Phase failure (right LED);

Microprocessor malfunction ((>Ir) (>Im) and phase failure LEDs all go on)

Battery powered. Spare battery are supplied in an adapter box. When a fault occurs ,the LED indicating the type of fault ,lights for about 10 minutes . The information is however stored in memory . The LED can be illuminated by pressing the test pushbutton. The LED automatically goes off and the memory is cleared when the circuit breaker is reset .

Type	Rated current In(A)	Note
NS-400	400	Ir=0.4~1×In(adjustable 48 setting) Trip degree: class 10A, 10,20(IEC60947-4) (Long-time overload protection) Im=6-7-8-9-10-11-12-13×Ir (Short-circuit protection)
NS-630	630	

4.Accessories

Accessories	Rated operating voltage	Consumption		For type
		Pick-up	Seal-in	
Shunt release(MX)	24V 100V 220/230V 380/400V	<10VA	<5VA	NS-100~630
Under-voltagerelease(UN)	220/230V 380/400V	<10VA	<5VA	

Accessories	Rated operating voltage	Consumption		For type
		AC12	AC15	
Auxiliary contact(OF)	380/400V	6	3	NS-100~630
Alarm contact(AL)	380/400V	6	3	

Rotary handle

Direct rotary handle

Degree of protection:IP40

Function:

1) suitability for isolation

2) indication of three positions 0(off) I(on) and tripped

3) press "push to trip" button, can trip-free

4) visibility of and access to trip unit settings

5) the circuit breaker can be locked in the off position by one to three padlocks , diameter 5 to 8mm(not supplied)

Extended rotary handle

Degree of protection:IP55

Function:

1) Suitability for isolation

2) Indication of three positions 0(off) I(on) and tripped

3) Visibility of and access to trip unit settings when the door is open

4) Door opening prevented when circuit breaker is on

5) The circuit breaker can be locked in the off position by one to three padlocks , diameter 5 to 8mm(not supplied).Locking prevents opening of the switchboard door

5.Installation

Circuit breaker may be mounted vertically, horizontally or flat on their back without any derating of characteristics.

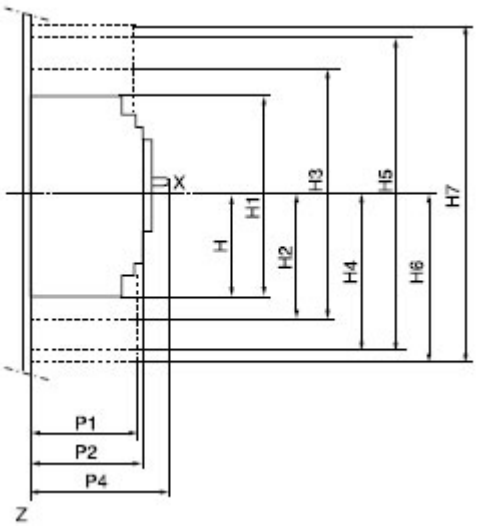
6.Fix

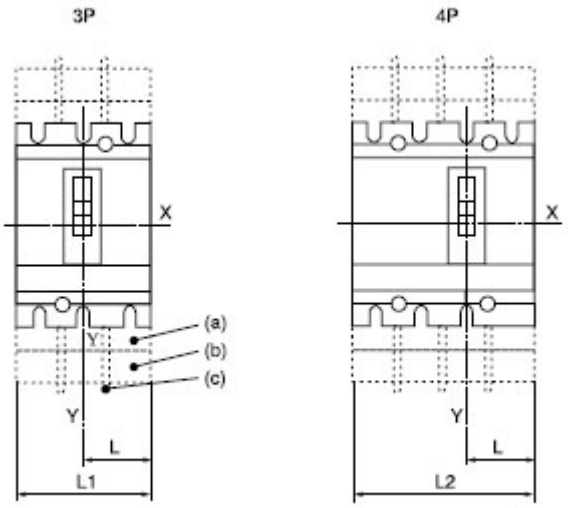
Mounting on back plate , mounting on rails

7.Connection

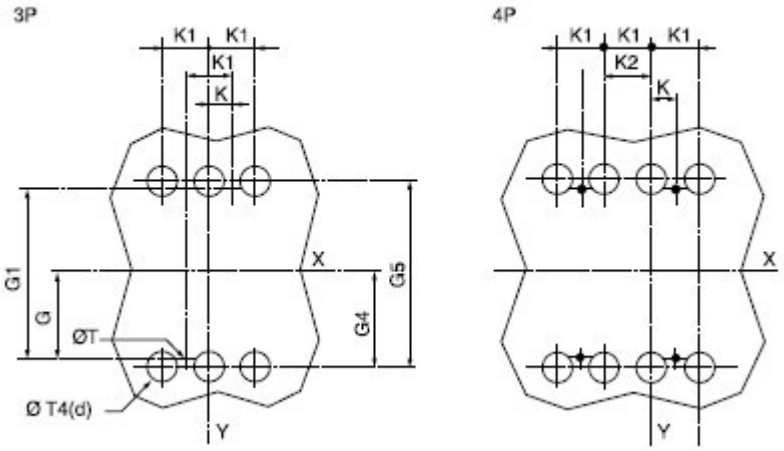
Front panel connection , black panel connection , plug-in connection

8. Outline and Installation Dimension



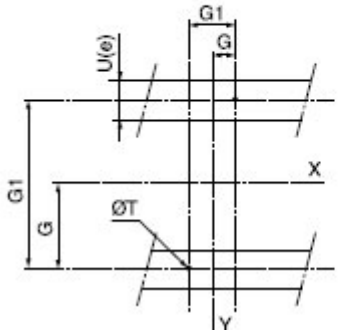


Mounting on backplate

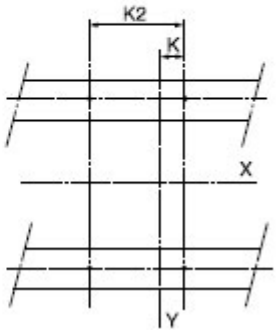


Mounting on rails

3P

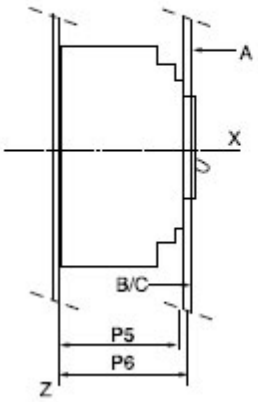


4P

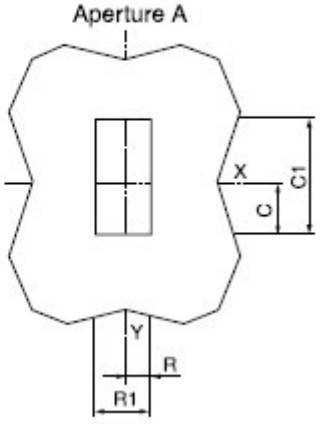


Aperture on a front panel

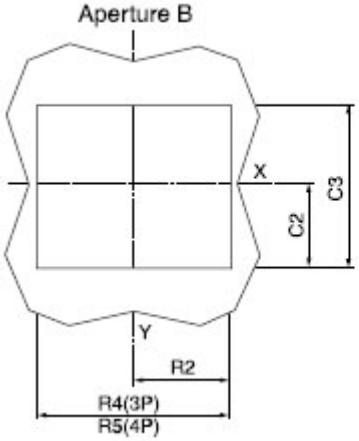
Fitting to fixed and plug-in circuit breaker



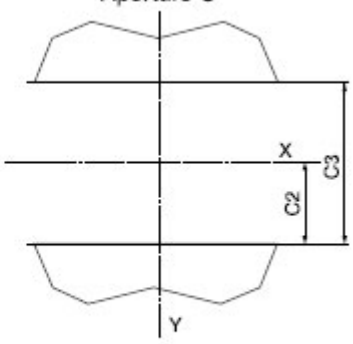
Aperture A



Aperture B



Aperture C



NS-100~630

mm	C	C1	C2	C3	G	G1	G4	G5	H	H1	H2
NS 100/160/250N/H/L	29	76	54	108	62.5	125	70	140	80.5	161	94
NS 400/630N/H/L	41.5	116	92.5	184	100	200	113.5	227	127.5	255	142.5

mm	H3	H4	H5	H6	H7	K	K1	K2	L	L1	L2	P1	P2	P4	P5
NS 100/160/250N/H/L	188	160.5	321	178.5	357	17.5	35	70	52.5	105	140	81	86	111*	83
NS 400/630N/H/L	285	240	480	237	474	22.5	45	90	70	140	185	95.5	110	168	107

mm	P6	R	R1	R2	R4	R5	φT	φT4	(Ue)
NS 100/160/250N/H/L	88	14.5	29	54	108	143	6	22	≤32
NS 400/630N/H/L	112	31.5	63	71.5	143	188	6	32	≤32