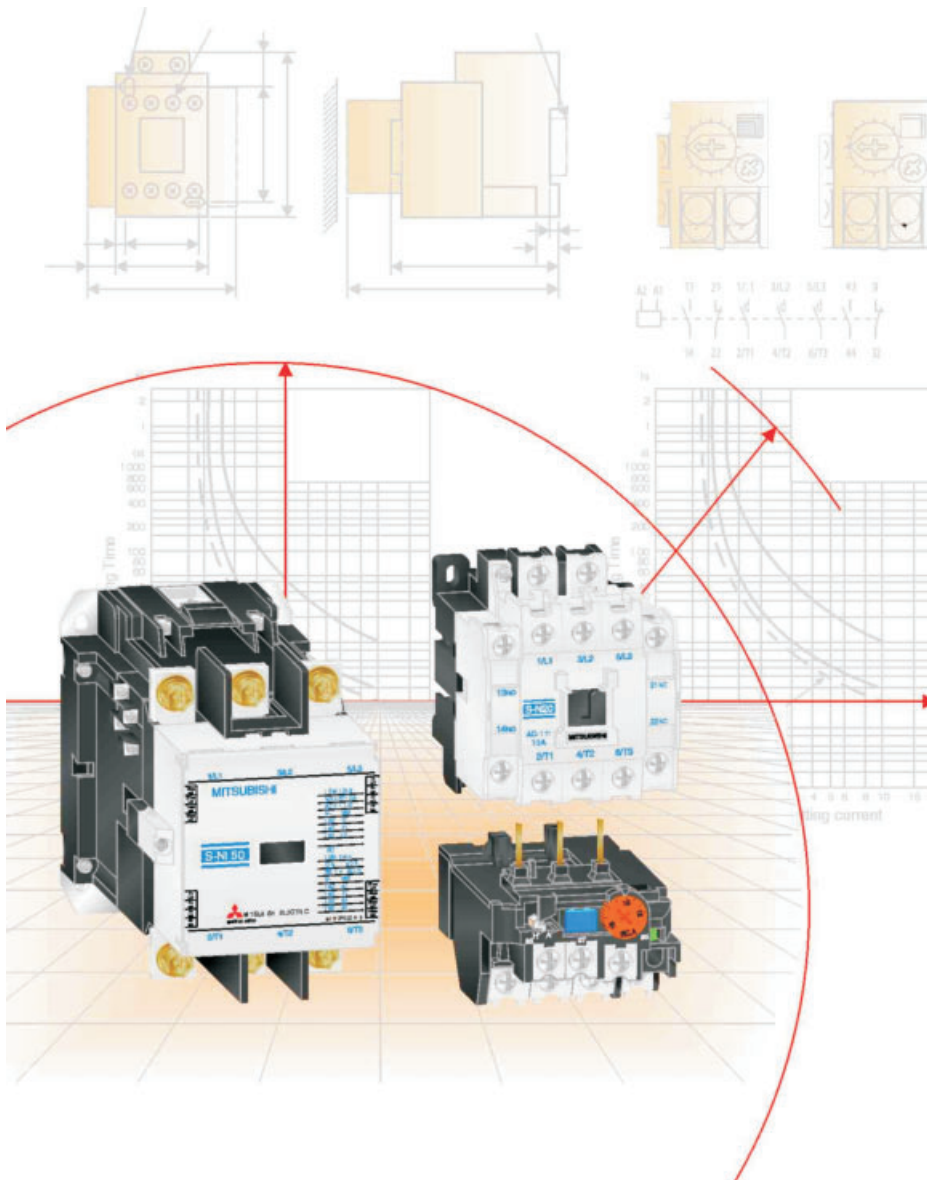


**Low Voltage  
Switchgears**  
**Magnetic  
Contactors**  
**Thermal  
Overload Relays**  
**Contactor Relays**

**MS-N**



**Technical Catalogue**

**2005**



### **MS-N Contactors**

#### **The Magnetic Contactors series MS-N from MITSUBISHI ELECTRIC:**

##### **Designed with ease of use in mind**

- ▶ *Easy mounting and wiring*
- ▶ *Easy inspection*
- ▶ *Built-in surge absorber*
- ▶ *Safety and speedy terminal functions*
- ▶ *Improvement of electromagnet*
- ▶ *International standard models*

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## Further Publications within the LVS, PLC and inverter range

### **Technical Catalogues**

#### ***SUPER AE Technical Catalogue***

Product catalogue for air circuit breakers from 1000 A to 6300 A rated current (art no. 62093)

#### ***WSS, PSS and Super Series Technical Catalogue***

Product catalogue for moulded case circuit breakers from 3 A to 1600 A rated current (art no. 133207)

#### ***PLC and Inverter Technical Catalogues***

Product catalogues for programmable logic controllers and frequency inverters (more details on request)

#### ***Technical catalogue Networks***

Product catalogue for Master and Slave modules as well as accessories for the use of programmable logic controllers in open networks and MELSEC networks

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### **Additional services**

You will find current information on updates, alterations, new items, and technical support on MITSUBISHI ELECTRIC's web pages ([www.mitsubishi-automation.com](http://www.mitsubishi-automation.com)).

The products section of the MITSUBISHI home site includes various documentations of the whole product range by MITSUBISHI ELECTRIC as well as the current version of this catalogue on hand. All manuals and catalogues can be downloaded.

The content is updated daily and to date is provided in German and English.

### **About this product catalogue**

This catalogue is periodically updated due to product range enlargement, technical changes or new or changed features.

Texts, figures and diagrams shown in this product catalogue are intended exclusively for explanation and assistance in planning and ordering the magnetic contactors, thermal overload relays and contactors of the MITSUBISHI MS-N series and the associated accessories.

Only the manuals supplied with the devices are relevant for installation, commissioning and handling of the contactors and the accessories. The information given in this documentation must be read before installation and commissioning of the devices.

Should questions arise with regard to the planning of devices described in this product catalogue, do not hesitate to contact MITSUBISHI ELECTRIC EUROPE B.V. in Ratingen (Germany) or one of its distributors (see cover page).

**OVERVIEW**

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**TERMINAL ASSIGNMENT AND DIMENSIONS**

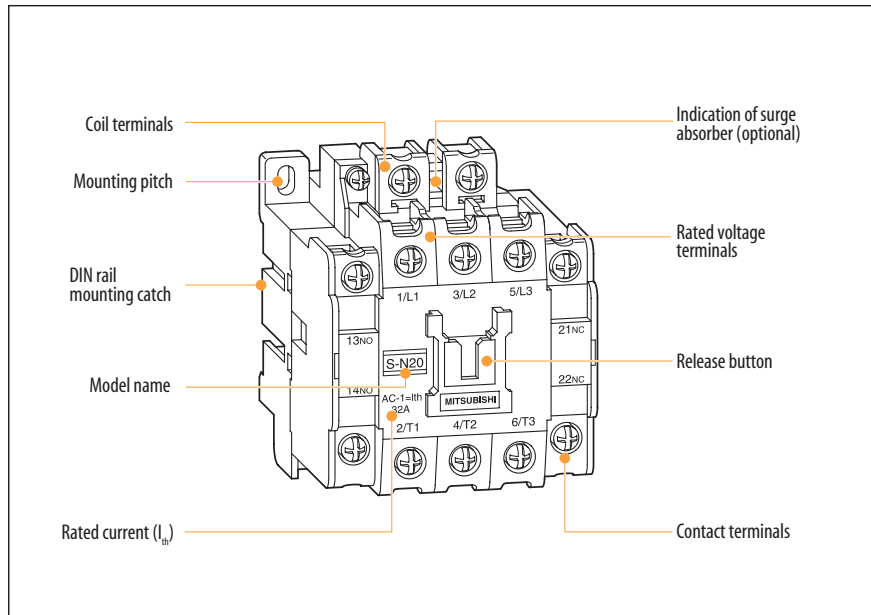
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## General purpose contactors

### Description of the contactors



### The main benefits:

- Easy mounting and wiring
- Easy inspection
- Built-in surge absorber
- Safety and speedy terminal functions
- Thermo plastic improves the barrier strength
- Coil boasts lower coil consumption
- Improvement of Electromagnet (DC electromagnet with AC operation)
- Less noise nor surge from coil
- Conform to IEC947-4-1, EN-Standards
- Mounting of the contactors is described on page 23.

### Handling of the contactors

S-N10CX to S-N65CX units can all be mounted on DIN rail (35 mm wide).

A variety of blocks and optional features are available including:

- Standard front clip-on auxiliary contact blocks (4-pole-type and 2-pole-type)
- Low-level signal front-clip-on auxiliary contact blocks
- Side clip-on auxiliary contact blocks

- Surge absorbers (varistor and CR models)
- Surge absorbers with LED operating indicators
- Mechanical interlocks

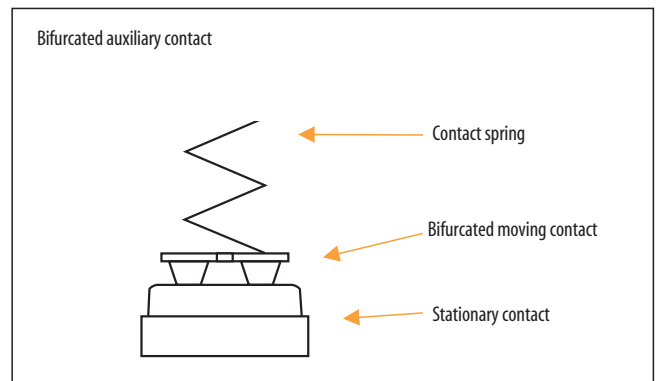
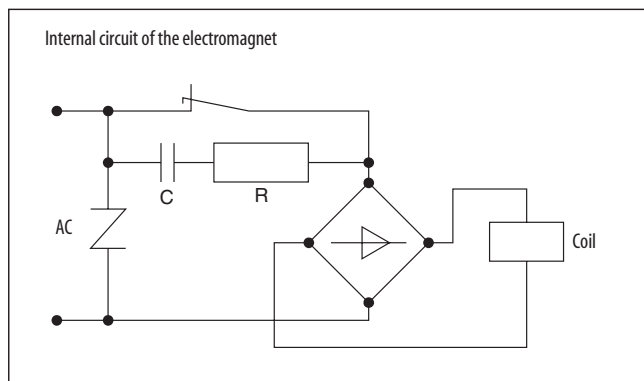
Compact arc quenching and magnet layout greatly reduces installation space.

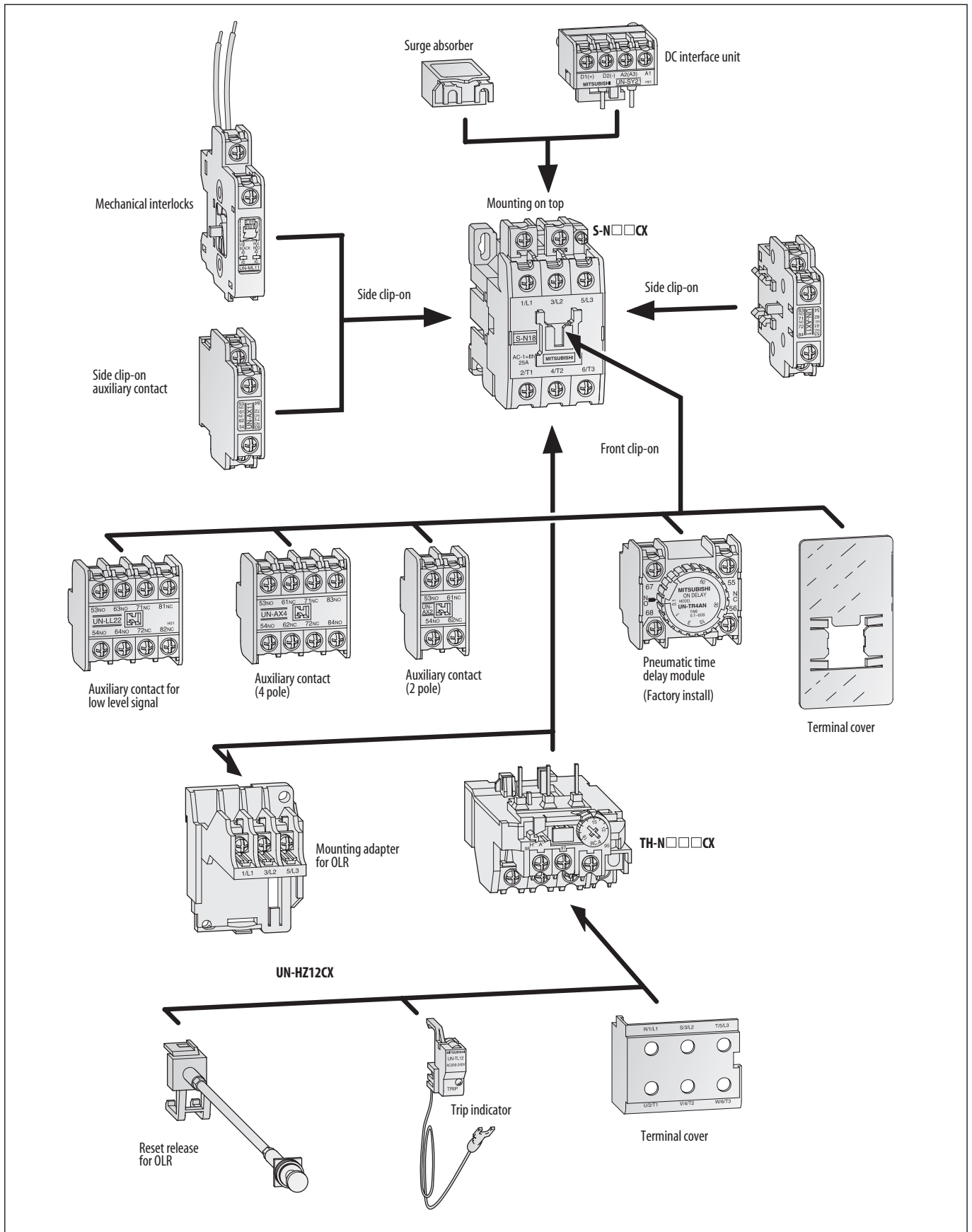
The coil rating is displayed in a location readily visible even after the unit is installed onto the panel.

Contacts are visible when the cover is removed, allowing them to be checked easily.

### Contactors coils have ultra-wide range of ratings

The number of coil types has been cut by two-thirds and there is no need to re-wire for different frequencies. The coil also withstands large voltage drops.



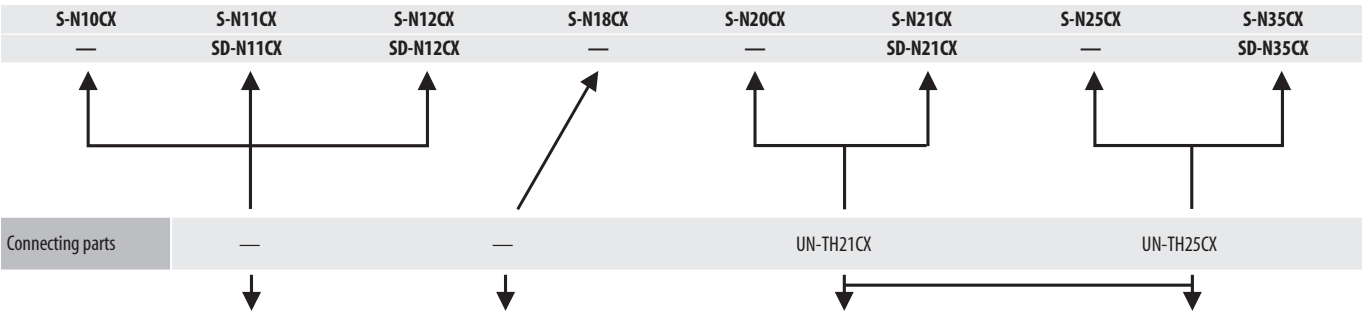
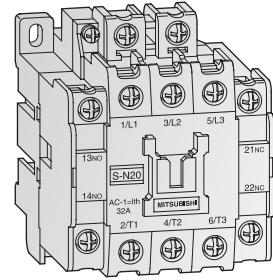
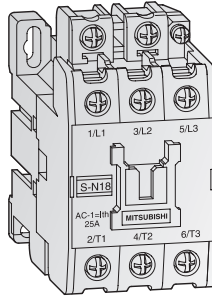
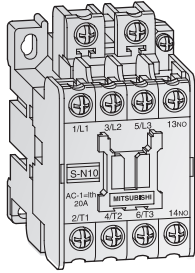


# OVERVIEW

BASICS

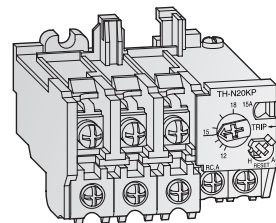
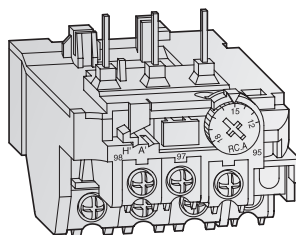
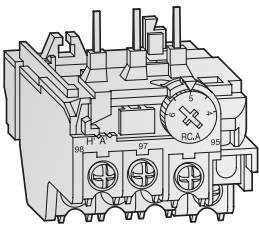
## Three-phase motor ratings IEC category AC3 for Contactors

Contactor	AC-operated	S-N10CX	S-N11CX	S-N12CX	S-N18CX	S-N20CX	S-N21CX	S-N25CX	S-N35CX
	DC-operated	—	SD-N11CX	SD-N12CX	—	—	SD-N21CX	—	SD-N35CX
AC 380–440 V	kW	4	5.5	5.5	7.5	11	11	15	18.5
Rated continuous current $I_{th}$	A	20	20	20	25	32	32	50	60
Auxiliary contacts (standard)		1 NO or 1 NC	1 NO or 1 NC	1 NO + 1 NC	—	1 NO + 1 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC



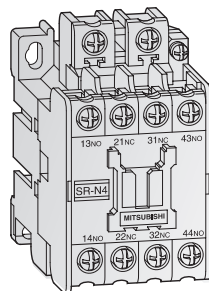
## Thermal Overload Relays

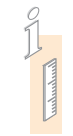
Type	TH-N12KPCX	TH-N18KPCX	TH-N20KPCX	TH-N20TAKPCX
Setting range	0.1 – 13 A	1 – 18 A	0.2 – 22 A	18 – 40 A



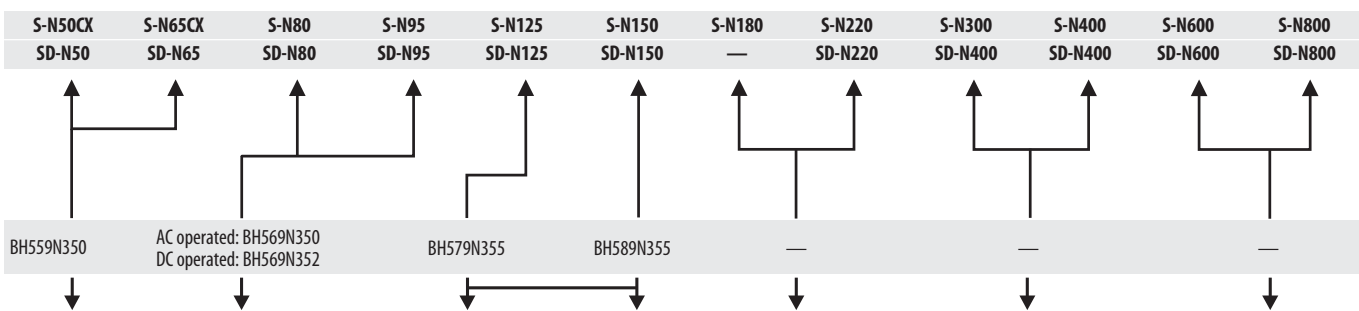
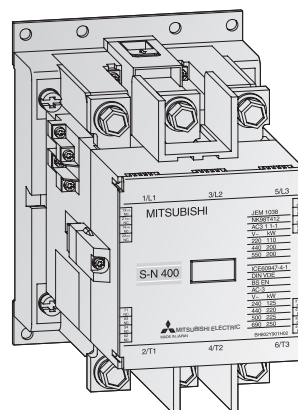
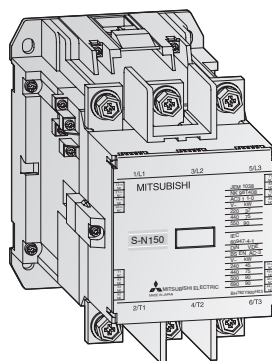
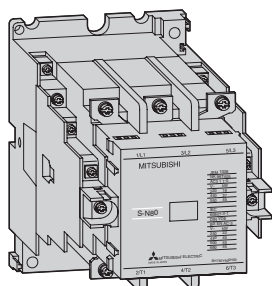
## Contactor Relays

AC-operated type	SR-N4CX 4A	SR-N4CX 3A1B	SR-N4CX 2A2B
Auxiliary contacts	4 NO	3 NO, 1 NC	2 NO, 2 NC

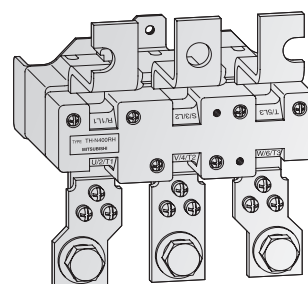
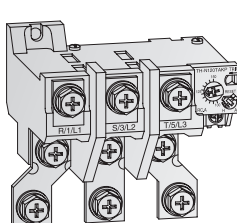
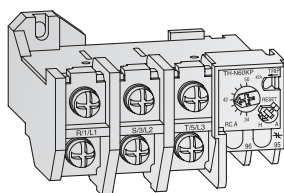




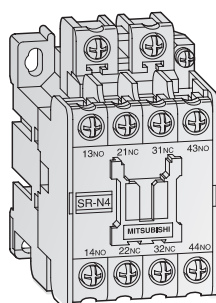
Three-phase motor ratings IEC category AC-3											
S-N50CX	S-N65CX	S-N80	S-N95	S-N125	S-N150	S-N180	S-N220	S-N300	S-N400	S-N600	S-N800
SD-N50	SD-N65	SD-N80	SD-N95	SD-N125	SD-N150	—	SD-N220	SD-N300	SD-N400	SD-N600	SD-N800
22	30	45	55	60	75	90	132	160	220	330	440
80	100	135	150	150	200	260	260	350	450	800	1000
2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC



Thermal Overload Relays						
TH-N60KPCX	TH-N60TAKP	TH-N120KP	TH-N120TAKP	TH-N220RHKP	TH-N400RHKP	TH-N600KP
12 – 65 A	54 – 105 A	34 – 100 A	85 – 150 A	65 – 250 A	85 – 400 A	200 – 800 A



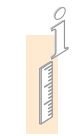
Contactor Relays			
AC operated type	SRD-N4CX 4A	SRD-N4CX 3A1B	SRD-N4CX 2A2B
Auxiliary contacts	4 NO	3 NO, 1 NC	2 NO, 2 NC





# CONTACTORS

BASICS



Specifications			S-N10CX AC□□□V1A	S-N10CX AC□□□V1B	S-N11CX AC□□□V1A	S-N11CX AC□□□V1B	S-N12CX AC□□□V	S-N18CX AC□□□V	S-N20CX AC□□□V	S-N21CX AC□□□V	S-N25CX AC□□□V	S-N35CX AC□□□V
<b>Rated data</b>												
Rated continuous current $I_{th}$	A		20	20	20	20	20	25	32	32	50	60
Rated motor capacity 3-phase Category AC-3	220–240 V	kW (A)	2.5 (11)	2.5 (11)	3.5 (13)	3.5 (13)	3.5 (13)	4.5 (18)	5.5 (22)	5.5 (22)	7.5 (30)	11 (40)
	380–440 V	kW (A)	4 (9)	4 (9)	5.5 (12)	5.5 (12)	5.5 (12)	7.5 (16)	11 (22)	11 (22)	15 (30)	18.5 (40)
	500	kW (A)	4 (7)	4 (7)	5.5 (9)	5.5 (9)	5.5 (9)	7.5 (13)	11 (17)	11 (17)	15 (24)	18.5 (32)
	690 V	kW (A)	4 (5)	4 (5)	5.5 (7)	5.5 (7)	5.5 (7)	7.5 (9)	7.5 (9)	7.5 (9)	11 (12)	15 (17)
Rated capacity for resistive loads 3ph, Category AC-1	220–240 V	kW (A)	7.5 (20)	7.5 (20)	7.5 (20)	7.5 (20)	7.5 (20)	9.5 (25)	12 (32)	12 (32)	18 (50)	20 (60)
	380–440 V	kW (A)	7 (11)	7 (11)	8.5 (13)	8.5 (13)	8.5 (13)	13 (20)	20 (32)	20 (32)	30 (50)	35 (60)
	500 V–550 V	kW (A)	7 (8)	7 (8)	9.5 (11)	9.5 (11)	9.5 (11)	13 (16)	25 (32)	25 (32)	40 (50)	50 (60)
	690 V	kW (A)	7 (6)	7 (6)	8 (8)	8 (8)	8 (8)	11 (10)	30 (32)	30 (32)	50 (50)	60 (60)
Rated capacity for jogging of AC motors 3-ph, Category AC-4 (electrical life is approx. 200,000 oper.)	220–240 V	kW	0.75	0.75	1.1	1.1	1.1	1.5	2.2	2.2	3	3.7
	380–440 V	kW	1.1	1.1	1.5	1.5	1.5	2.2	3.7	3.7	5.5	5.5
	500–550 V	kW	1.1	1.1	1.5	1.5	1.5	2.2	3.7	3.7	5.5	5.5
	690 V	kW	1.1	1.1	1.5	1.5	1.5	2.2	3.7	3.7	5.5	5.5
Max. current for AC-4 duty at 440 V	A	6	6	9	9	9	9	13	13	17	24	
Rated curr. for DC non-ind. loads, Category DC-1 100 oper./hour max. 500,000 oper.	48 V	A	10	10	12	12	12	12	20	20	25	35
	110 V	A	8	8	12	12	12	12	20	20	25	35
	220 V	A	8	8	12	12	12	12	20	20	22	30
Rated curr. for DC motors Category DC-2 & DC-4, 100 oper./hour max. 500,000 oper.	48 V	A	6	6	10	10	10	10	20	20	25	30
	110 V	A	4	4	8	8	8	8	15	15	20	20
	220 V	A	2	2	4	4	4	4	8	8	10	10
Rated capacity for 3-ph, capacitors, 15 oper./hour max. 100,000 oper. <sup>①</sup> (ambient temp.: 40 °C)	220–240 V	kvar	2.2	2.2	3	3	3	4	5.5	5.5	8.5	12
	380–440 V	kvar	3.3	3.3	4	4	4	6	10	10	14	20
	550 V	kvar	4	4	5	5	5	6	10	10	14	20
	690 V	kvar	3.3	3.3	4.5	4.5	4.5	5.5	10	10	14	20
Current; 3-ph, $\cos\Theta = 0.35, 240/440 V$	Making	A	110/110	110/110	130/120	130/120	130/120	180/180	220/220	220/220	300/300	400/400
	Breaking	A	100/72	100/72	120/100	120/100	120/100	180/130	220/220	220/220	300/240	400/320
Rated insulation voltage	V	690	690	690	690	690	690	690	690	690	690	690
<b>Electrical data</b>												
Coil consumption (at rated coil voltage)	Inrush	VA	60	60	60	60	60	60	90	90	110	110
	Sealed	VA	10	10	10	10	10	10	15	15	13	13
	Watts	W	3.5	3.5	3.5	3.5	3.5	3.5	5.3	5.3	5.3	5.3
Switching frequency	Category AC-1	oper./h	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
	Cat. AC2; AC-3	oper./h	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
	Category AC-4	oper./h	600	600	600	600	600	600	600	600	600	600
Operating time (at rated coil voltage)	Closing	ms	15	15	15	15	15	15	15	15	15	15
	Opening	ms	10	10	10	10	10	10	10	10	10	10
<b>Mechanical data</b>												
Electrical life (Category AC-3)	Oper. (million)		1	1	1	1	1	1	1	1	1	1
Mechanical life			10	10	10	10	10	10	10	10	10	10
Main terminal (contactor)	mm <sup>2</sup>		1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–6	1–6	1–6	2–16	2–16
Main terminal (overload relay)	mm <sup>2</sup>		1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–6	1–6	1–6	2–16	2–16
Control terminal	mm <sup>2</sup>		1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5
Busbar width	mm		—	—	—	—	—	—	—	—	—	—
Standard auxiliary contacts	NO		1	—	1	—	1 <sup>②</sup>	—	1	2	2	2
	NC		—	1	—	1	1 <sup>②</sup>	—	1	2	2	2
Weight	kg		0.3	0.3	0.3	0.3	0.32	0.33	0.4	0.4	0.52	0.52
Dimensions (WxHxD) <sup>③</sup>	mm		43 x 78 x 78	43 x 78 x 78	43 x 78 x 78	43 x 78 x 78	53 x 78 x 78	43 x 79 x 81	63 x 81 x 81	63 x 81 x 81	75 x 89 x 91	75 x 89 x 91
<b>Order information</b> <sup>④</sup>	Art. no.											
	AC2 4V		52566	52571	52576	52581	52586	57390	52591	52596	59365	59370
	AC4 8V		52567	52572	52577	52582	52587	57391	52592	52597	59366	59371
	AC1 0 0V		—	—	—	—	—	—	—	—	—	—
	AC1 2 0V		52568	52573	52578	52583	52588	57392	52593	52598	59367	59372
	AC2 0 0V		—	—	—	—	—	—	—	—	—	—
AC2 3 0V		52569	52574	52579	52584	52589	57393	52594	52599	59368	59373	
AC4 0 0V		52570	52575	52580	52585	52590	57394	52595	52600	59369	59374	

- ① Peak value of inrush current < 2000 % of the effective value for rated current of capacitors. Selection is invalid for the circuit of parallel capacitors which are controlled individually.
- ② Special with 2 NO and without NC; on request.
- ③ Dimensions please see page 36.
- ④ Voltage range please see page 12.
- ⑤ 660 A at ambient temperature 40–55 °C.
- ⑥ 800 A ambient temperature 40–55 °C.
- ⑦ Conductor size in parentheses indicate compression terminal style not for bare clamping



S-N50CX AC□□□V	S-N65CX AC□□□V	S-N80 AC□□□V	S-N95 AC□□□V	S-N125 AC□□□V	S-N150 AC□□□V	S-N180 AC□□□V	S-N220 AC□□□V	S-N300 AC□□□V	S-N400 AC□□□V	S-N600 AC□□□V	S-N800 AC□□□V
<b>Rated data</b>											
80	100	135	150	150	200	260	260	350	450	800 <sup>⑤</sup>	1000 <sup>⑥</sup>
15 (55)	18.5 (65)	22 (85)	30 (105)	37 (125)	45 (150)	55 (180)	75 (250)	90 (300)	125 (400)	190 (630)	220 (800)
22 (50)	30 (65)	45 (85)	55 (105)	60 (120)	75 (150)	90 (180)	132 (250)	160 (300)	220 (400)	330 (630)	440 (800)
25 (38)	37 (60)	45 (75)	55 (85)	60 (90)	90 (140)	110 (180)	132 (200)	160 (250)	225 (350)	330 (500)	500 (720)
22 (26)	30 (38)	45 (52)	55 (65)	60 (70)	90 (100)	110 (120)	132 (150)	200 (220)	250 (300)	330 (420)	500 (630)
30 (80)	35 (100)	50 (135)	55 (150)	55 (150)	75 (200)	95 (260)	95 (260)	130 (350)	170 (450)	250 (660)	300 (800)
50 (80)	65 (100)	85 (135)	90 (150)	90 (150)	130 (200)	170 (260)	170 (260)	230 (350)	290 (450)	430 (660)	530 (800)
65 (80)	85 (100)	110 (135)	120 (150)	120 (150)	170 (200)	220 (260)	220 (260)	300 (350)	380 (450)	570 (660)	700 (800)
80 (80)	100 (100)	135 (135)	150 (150)	150 (150)	200 (200)	260 (260)	260 (260)	350 (350)	450 (450)	660 (660)	900 (800)
5.5	7.5	7.5	11	15	18.5	22	22	37	45	65	75
7.5	11	15	18.5	22	30	37	45	60	75	110	130
7.5	11	15	18.5	22	37	45	55	60	90	130	130
7.5	11	15	18.5	22	30	50	55	75	90	130	150
32	47	62	75	90	110	150	180	220	300	400	630
50	65	80	93	120	150	180	220	300	400	630	800
50	65	80	93	100	150	180	220	300	400	630	800
40	50	60	70	80	150	180	220	300	300	630	800
35	40	60	90	90	130	180	220	280	280	630	630
30	35	50	80	80	120	150	150	200	200	630	630
12	15	20	50	50	80	100	100	150	150	630	630
20	20	35	35	38	50	60	60	95	115	190	190
40	40	60	60	65	80	120	120	150	200	350	350
30	35	48	60	65	80	150	150	200	250	350	350
30	40	50	60	65	80	150	150	200	200	400	400
550/460	650/620	850/850	1050/1050	1250/1250	1500/1500	1800/1800	2500/2500	3000/3000	4000/4000	6500/6500	8000/8000
550/460	650/620	800/750	930/930	1000/1000	1200/1200	1450/1450	2000/2000	2400/2400	3200/3200	5040/5040	6400/6400
690	690	690	690	690	690	1,000	1,000	1,000	1,000	1,000	1,000
<b>Electrical data</b>											
132	132	225	225	320	320	480	480	480	480	800	800
17	17	22	22	26	26	44	44	54	54	100	100
2.8	2.8	3.3	3.3	3.5	3.5	5	5	7.3	7.3	15	15
1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
600	600	600	300	300	300	300	300	300	300	300	300
25	25	27	27	25	27	30	30	35	35	65	65
53	53	75	75	85	85	100	100	120	120	75	75
<b>Mechanical data</b>											
1	1	1	1	1	1	1	1	1	0.5	0.5	0.5
5	5	5	5	5	5	5	5	5	5	5	5
2-25	2-25	2-50	(2-60) <sup>⑦</sup>	(6-70) <sup>⑦</sup>	(6-95) <sup>⑦</sup>	(10-120) <sup>⑦</sup>	(10-150) <sup>⑦</sup>	(25-240) <sup>⑦</sup>	(25-240) <sup>⑦</sup>	(70-325) <sup>⑦</sup>	(70-325) <sup>⑦</sup>
2-25	2-25	2-50	2-50	(6-70) <sup>⑦</sup>	(6-95) <sup>⑦</sup>	(10-120) <sup>⑦</sup>	(10-150) <sup>⑦</sup>	(25-240) <sup>⑦</sup>	(25-240) <sup>⑦</sup>	—	—
1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-4	1-4
—	—	15	15	15	20	25	25	30	30	35	35
2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2
1.1	1.1	1.8	1.8	2.5	3.2	5.5	5.5	9.5	9.5	27	27
88 x 106 x 106	88 x 106 x 106	100 x 124 x 127	100 x 124 x 127	100 x 150 x 136	120 x 160 x 145	138 x 204 x 174	138 x 204 x 174	163 x 243 x 195	163 x 243 x 195	290 x 310 x 234	290 x 310 x 234
113609	113633	113630	113645	113650	113654	—	—	—	—	—	—
113610	113636	113631	113646	—	—	—	—	—	—	—	—
113621	113611	113627	113642	113647	113651	113656	113659	113662	113665	113668	113672
—	—	—	—	—	—	—	—	—	—	—	—
113607	113632	113628	113643	113648	113652	113657	113660	113663	113666	113669	113673
—	—	—	—	—	—	—	—	—	—	—	—
113608	113635	113629	113644	113649	113653	113658	113661	113664	113667	113670	113674

For specifications of the standard auxiliary contacts refer to page 12.



# CONTACTORS

BASICS

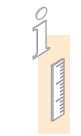


Specifications		SD-N11CX 1A DC24V	SD-N11CX 1B DC24V	SD-N12CX DC24V	SD-N21CX DC24V	SD-N35CX DC24V	SD-N50 DC24V	SD-N65 DC24V
<b>Rated data</b>								
Rated continuous current $I_{th}$	A	20	20	20	32	60	80	100
Rated motor capacity 3-phase Category AC-3	220–240 V	kW (A)	3.5 (13)	3.5 (13)	3.5 (13)	5.5 (22)	11 (40)	18.5 (65)
	380–440 V	kW (A)	5.5 (12)	5.5 (12)	5.5 (12)	11 (22)	18.5 (40)	30 (65)
	500–550 V	kW (A)	5.5 (9)	5.5 (9)	5.5 (9)	11 (17)	18.5 (32)	25 (38)
Rated capacity for resistive loads 3ph, category AC-1	690 V	kW (A)	5.5 (7)	5.5 (7)	5.5 (7)	7.5 (9)	15 (17)	22 (26)
	220–240 V	kW (A)	7.5 (20)	7.5 (20)	7.5 (20)	12 (32)	20 (60)	30 (80)
	380–440 V	kW (A)	8.5 (13)	8.5 (13)	8.5 (13)	20 (32)	35 (60)	50 (80)
Rated capacity for jogging of AC motors 3-ph, category AC-4 (electrical life is approx. 200,000 oper.)	500 V	kW (A)	9.5 (11)	9.5 (11)	9.5 (11)	25 (32)	50 (60)	65 (80)
	690 V	kW (A)	8 (8)	8 (8)	8 (8)	30 (32)	60 (60)	80 (80)
	220–240 V	kW	1.1	1.1	1.1	2.2	3.7	5.5
Max. current for AC-4 duty at 440 V	380–440 V	kW	1.5	1.5	1.5	3.7	5.5	7.5
	500–550 V	kW	1.5	1.5	1.5	3.7	5.5	7.5
	690 V	kW	1.5	1.5	1.5	3.7	5.5	7.5
Raed curr. for DC non-ind. loads, Category DC-1 100 oper./hour max. 500,000 oper.	48 V	A	9	9	9	13	24	32
	110 V	A	12	12	12	20	35	50
	220 V	A	12	12	12	20	30	40
Rated curr. for DC motors Category DC-2 & DC-4, 100 oper./hour max. 500,000 oper.	48 V	A	10	10	10	20	35	40
	110 V	A	8	8	8	15	20	30
	220 V	A	4	4	4	8	10	12
Rated capacity for 3-ph, capacitors, 15 oper./hour max. 100,000 oper. ①	220–240 V	kvar	3	3	3	5.5	12	17
	380–440 V	kvar	4	4	4	10	20	25
	550 V	kvar	5	5	5	10	20	30
Current; 3-ph, $\cos\Theta = 0.35$ ; 240/440 V	690 V	kvar	4.5	4.5	4.5	10	20	30
	Making	A	130/120	130/120	130/120	220/220	400/400	550/460
	Breaking	A	120/100	120/100	120/100	220/220	400/320	550/460
Rated insulation voltage	V	690	690	690	690	690	690	690
<b>Electrical data</b>								
Coil consumption (at rated coil voltage)	Inrush	VA	7	7	7	16	18	24
	Sealed	VA	7	7	7	16	18	24
Switching frequency	Category AC-1	oper./h	1,800	1,800	1,800	1,800	1,200	1,200
	Cat. AC2; AC3	oper./h	1,800	1,800	1,800	1,800	1,200	1,200
	Category AC-4	oper./h	600	600	600	600	600	600
Operating time (at rated coil voltage)	Closing	ms	45	45	45	33	50	57
	Opening	ms	10	10	10	12	13	15
<b>Mechanical data</b>								
Electrical life (Category AC-3)	Oper. (million)	1	1	1	1	1	1	1
Mechanical life	(million)	10	10	10	10	10	5	5
Main terminal (contactor)	mm <sup>2</sup>	1–2.5	1–2.5	1–2.5	1–6	2–16	2–25	2–25
Main terminal (overload relay)	mm <sup>2</sup>	1–2.5	1–2.5	1–2.5	1–6	2–16	2–25	2–25
Control terminal	mm <sup>2</sup>	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5
Busbar width	mm	—	—	—	—	—	—	—
Standard auxiliary contacts	NO	1	—	1 <sup>②</sup>	2	2	2	2
	NC	—	1	1 <sup>②</sup>	2	2	2	2
Weight	kg	0.62	0.62	0.64	0.72	0.85	2.1	2.1
Dimensions (W x H x D) ③	mm	43 x 78 x 110	43 x 78 x 110	53 x 78 x 110	63 x 81 x 113	75 x 89 x 123	88 x 110 x 133	88 x 110 x 133
<b>Order information</b> ⑦	Art. no.	52601	52602	52603	52604	58533	113675	113678

- ① Peak value of inrush current < 2000 % of the effective value for rated current of capacitors. Selection is invalid for the circuit of parallel capacitors which are controlled individually.
- ② Special with 2 NO and without NC; on request.
- ③ Dimensions please see page 36
- ④ 660 A at ambient temperature 40–55 °C.
- ⑤ 800 A ambient temperature 40–55 °C.
- ⑥ Conductor size in parentheses indicate compression terminal style not for bare clamping.
- ⑦ Other coil voltages on request (please see page 12)

SD-N80 DC24V	SD-N95 DC24V	SD-N125 D 24V	SD-N150 DC24V	SD-N220 DC24V	SD-N300 DC24V	SD-N400 DC24V	SD-N600 DC24V	SD-N800 DC24V
<b>Rated data</b>								
135	150	150	200	260	350	450	800 <sup>④</sup>	1000 <sup>⑤</sup>
22 (85)	30 (105)	37 (125)	45 (150)	75 (250)	90 (300)	125 (400)	190 (630)	220 (800)
45 (85)	55 (105)	60 (120)	75 (150)	132 (250)	160 (300)	220 (400)	330 (630)	440 (800)
45 (75)	55 (85)	60 (90)	90 (140)	132 (200)	160 (250)	225 (350)	330 (500)	500 (720)
45 (52)	55 (65)	60 (70)	90 (100)	132 (150)	200 (220)	250 (300)	330 (420)	500 (630)
50 (135)	55 (150)	55 (150)	75 (200)	95 (260)	130 (350)	170 (450)	250 (660)	300 (800)
85 (135)	90 (150)	90 (150)	130 (200)	170 (260)	230 (350)	290 (450)	430 (660)	530 (800)
110 (135)	120 (150)	120 (150)	170 (200)	220 (260)	300 (350)	380 (450)	570 (660)	700 (800)
135 (135)	150 (150)	150 (150)	200 (200)	260 (260)	350 (350)	450 (450)	660 (660)	900 (800)
7.5	11	15	18.5	22	37	45	65	75
15	18.5	22	30	45	60	75	110	130
15	18.5	22	37	55	60	90	130	150
15	18.5	22	30	55	75	90	130	150
62	75	90	110	180	220	300	400	630
80	93	120	150	220	300	400	630	800
80	93	100	150	220	300	400	630	800
60	70	80	150	220	300	300	630	800
60	90	90	130	220	280	280	630	630
50	80	80	120	150	200	200	630	630
20	50	50	80	100	150	150	630	630
24	30	38	50	60	95	115	190	190
40	55	65	80	120	150	200	350	350
48	60	65	80	150	200	250	350	350
50	60	65	80	150	200	200	400	400
850/850	1050/1050	1250/1250	1500/1500	2500/2500	3000/3000	4000/4000	6500/6500	8000/8000
800/750	930/930	1000/1000	1200/1200	2000/2000	2400/2400	3200/3200	5040/5040	6400/6400
690	690	690	690	1,000	1,000	1,000	1,000	1,000
<b>Electrical data</b>								
27	27	31	31	41	55	55	600	600
27	27	31	31	41	55	55	75	75
1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
600	300	300	300	300	300	300	300	300
75	75	125	135	145	175	175	105	105
18	18	22	37	40	55	55	80	80
<b>Mechanical data</b>								
1	1	1	1	1	1	0.5	0.5	0.5
5	5	5	5	5	5	5	5	5
2-50	(2-60) <sup>⑥</sup>	(6-70) <sup>⑥</sup>	(6-95) <sup>⑥</sup>	(10-150) <sup>⑥</sup>	(25-240) <sup>⑥</sup>	(25-240) <sup>⑥</sup>	(70-325) <sup>⑥</sup>	(70-325) <sup>⑥</sup>
2-50	2-50	(6-70) <sup>⑥</sup>	(6-95) <sup>⑥</sup>	(10-150) <sup>⑥</sup>	(25-240) <sup>⑥</sup>	(25-240) <sup>⑥</sup>	—	—
1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-2.5	1-4	1-4
—	—	15	20	25	30	30	35	35
2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2
3.3	3.3	4.3	4.3	7.5	13.5	13.5	28	28
100 x 134 x 158	100 x 134 x 158	100 x 150 x 161	120 x 160 x 170	138 x 204 x 200	163 x 243 x 220	163 x 243 x 220	375 x 310 x 234	375 x 310 x 234
113679	113681	113682	113683	113684	113686	113687	113688	on request

BASICS



## Specifications – standard auxiliary contacts

Rated data of auxiliary contacts			
Rated continuous current $I_{th}$	A	16	
Rated operating current			
Category AC-15	AC 110 V	A	6
	AC 230 V	A	5
	AC 500 V	A	3
	AC 660 V	A	1,5
Category DC-13	DC 24 V	A	5
	DC 48 V	A	3
	DC 110 V	A	1.2 (0.8 for UN-AX2CX, UN-AX4CX, UN-AX11CX)
	DC 220 V	A	0.2

For detailed description please see page 24.

## Environmental conditions

Environmental conditions for all contactors			
Ambient temperature	°C	-25 bis +55	
Ambient humidity	RH	45 bis 85 %	
Coil voltage tolerance		0.85 to 1.1 times rated coil voltage	
Vibration resistance	10–55 Hz	G	2
Shock resistance		G	5

## Coil ratings

### In case of special order:

The following tables show the devices which are additionally available. Please contact MITSUBISHI ELECTRIC for further information.

### AC rated voltage – S-N10CX to S-N35CX

Rating	Range 50 Hz	Range 60 Hz	Standard
AC 24 V	24	24	●
AC 48 V	48–50	48–50	●
AC 100 V	100	100–110	
AC 120 V	110–120	115–120	●
AC 127 V	125–127	127	
AC 200 V	200	200–220	
AC 220 V	208–220	220	
AC 230 V	220–240	230–240	●
AC 260 V	240–260	260–280	
AC 380 V	346–380	380	
AC 400 V	380–415	400–440	●
AC 440 V	415–440	460–480	
AC 500 V	500	500–550	

For detailed description of the types please see page 8 and 9.

### DC rated voltage – SD-N types

Rating	Range	Standard
DC 12 V	12	
DC 24 V	24	●
DC 48 V	48	
DC 100 V	100	
DC 110 V	110	
DC 125 V	120–125	
DC 200 V	200	
DC 220 V	220	

For detailed description of the types please see page 10/11.

### AC rated voltage – S-N50CX to S-N800

Ordering designation	50/60 Hz	Standard
AC 24 V <sup>①</sup>	24	
AC 48 V <sup>①</sup>	48–50	
<b>AC 100 V</b>	<b>100–127</b>	●
<b>AC 200 V</b>	<b>200–240</b>	●
AC 300 V	260–350	
<b>AC 400 V</b>	<b>380–440</b>	●
AC 500 V	460–550	

<sup>①</sup> Available for S-N50CX to S-N150 only.

For detailed description of the types please see page 9.

■ Performance of S-N series contactors

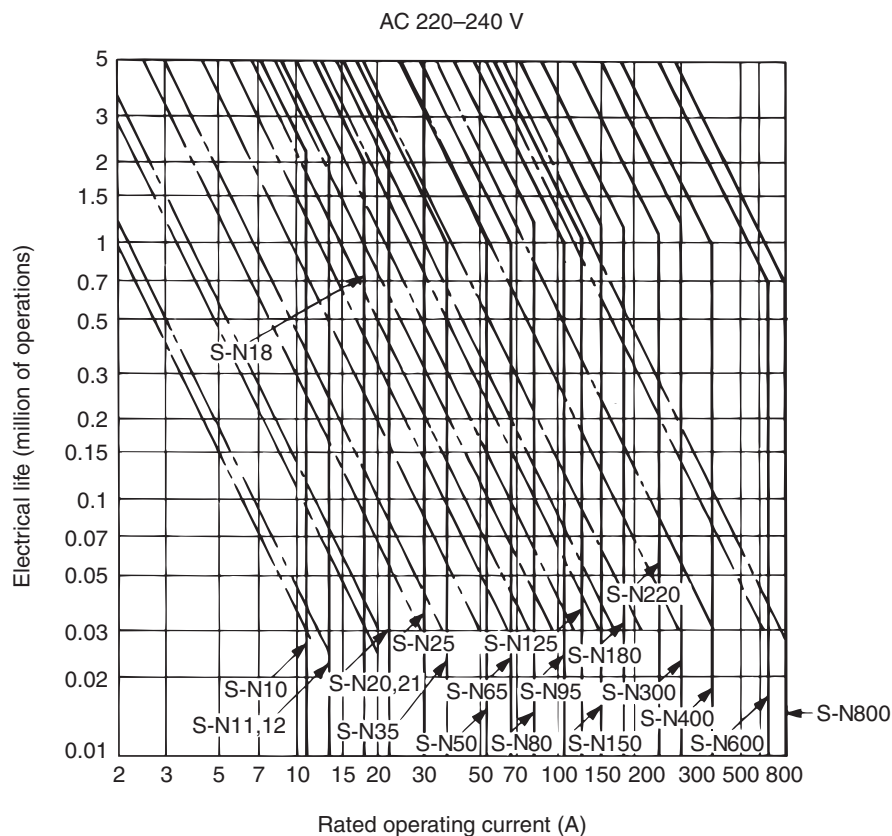
**Electrical life**

The electrical life of the main contacts of a contactor is determined mainly by the circuit-opening duty it will perform. The relationship between electrical life and rated current of MITSUBISHI contactors under normal and jogging duties of squirrel-cage motors is shown in the figures.

In the case of a mixture of normal and jogging duties, the expected contactor life can be determined as follows:

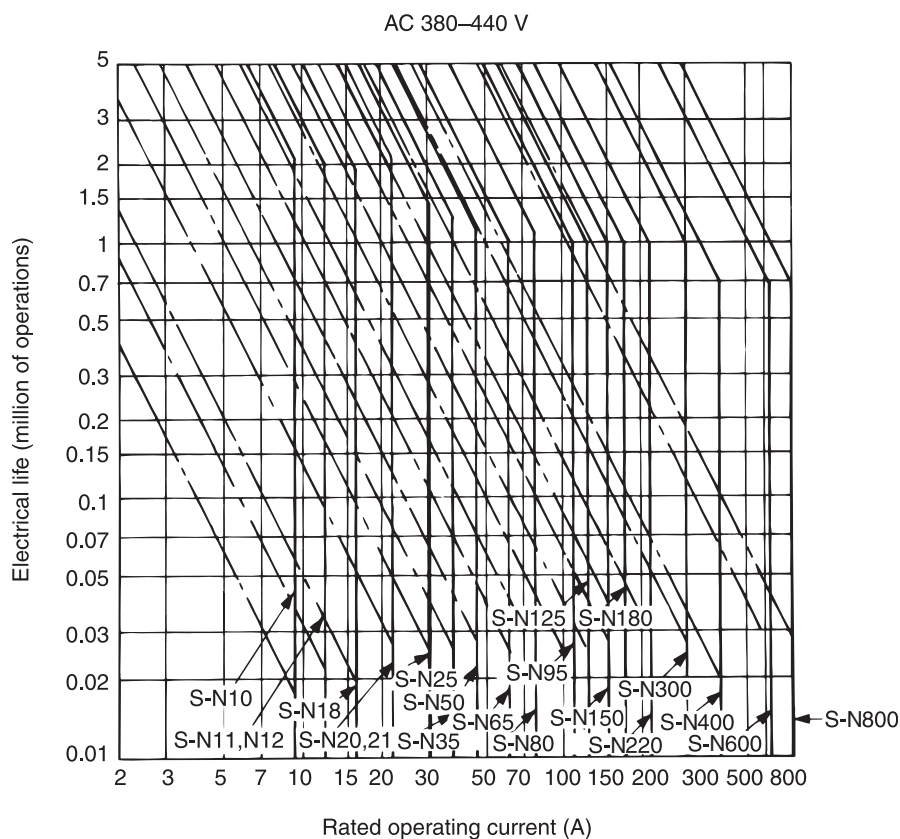
$$N = Nr/1 + \frac{\alpha}{100} (Nr/Ni - 1)$$

- N : Life in the case of  $\alpha$  % jogging duty
- Nr : Life in the case of normal duty
- Ni : Life in the case of 100 % jogging duty
- $\alpha$  : Percentage of jogging duty

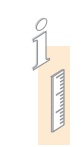


**Electrical life versus rated operating current**

- Normal duty, 6 le ON, 1e OFF, on-load factor 40 %, 1200 operations/hour (AC-3)
- Jogging duty, 6 le ON, 6 le OFF, on-load factor 7 %, 600 operations/hour (AC-4)-S-N10 to S-N300  
300 operations/hour (AC-4)-S-N400 to S-N600  
150 operations/hour (AC-4)-S-N800

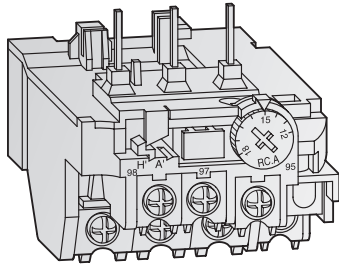


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## Thermal overload relays description

BASICS



TH-N18KPCX

### A selection of relays for optimum motor protection characteristics

The thermal relay line-up includes the phase failure protection type models (three-element relays).

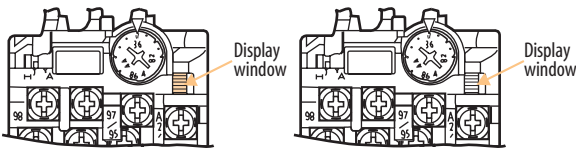
This array of protection characteristics allows you to choose the units suited to your motor protection needs.

#### Benefits:

- An operation indicator makes maintenance and inspection easy.
- 1 NO and 1 NC contact
- Rated current can be set easily
- Finger protection up to TH-N60KPCX
- Trip-free reset bar
- Convenient reset release (optional)

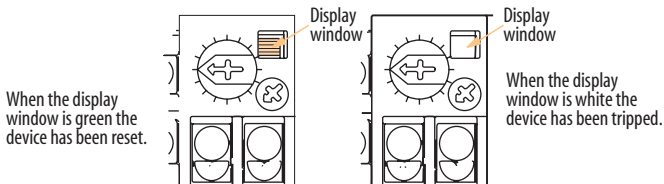
### Display

TH-N12KPCX, TH-N18KPCX



When the green of the display lever can be seen, the device has been reset.

TH-N20KPCX – TH-N600KP

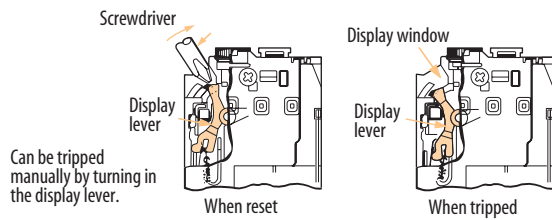


When the display window is green the device has been reset.

When the display window is white the device has been tripped.

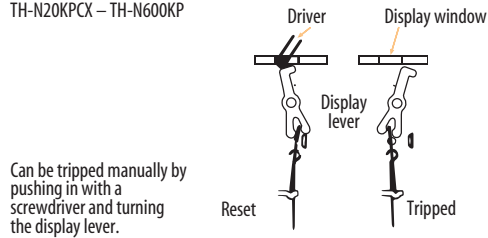
### External trip mechanism

TH-N12KPCX, TH-N18KPCX



Can be tripped manually by turning in the display lever.

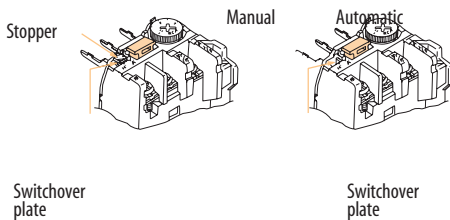
TH-N20KPCX – TH-N600KP



Can be tripped manually by pushing in with a screwdriver and turning the display lever.

### Switching between automatic and manual reset

TH-N12KPCX – TH-N18KPCX



Stopper  
Switchover plate

Manual

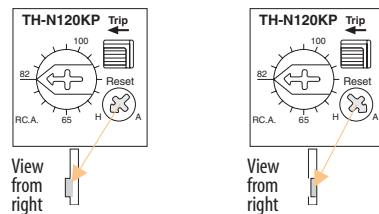
Automatic

Switchover plate

Switching from manual to automatic: Break the stopper off and then, slide the switchover plate to the right (to position "A") to immobilize the reset bar.

Switching from automatic to manual: Slide the switchover plate to the left (to position "H").

TH-N20KPCX – TH-N600KP



View from right

View from right

Switching from manual to automatic: Flip the stopper on the end of the reset bar down and then, after pushing it all the way in, rotate it counterclockwise 90° (to position "A").

Switching from automatic to manual: Rotate the reset bar 90° clockwise (to position "H") and the reset bar will pop out.

## Specifications

Specifications		TH-N12KPCX □□□ A	TH-N18KPCX □□□ A	TH-N20KPCX □□□ A <sup>①</sup>	TH-N20TAKPCX □□□ A	TH-N60KPCX □□□ A	TH-N60TAKP □□□ A	TH-N120KP □□□ A	TH-N120TAKP □□□ A	TH-N220RHKP □□□ A	TH-N400RHKP □□□ A	TH-N600KP □□□ A <sup>②</sup>		
<b>Rated data</b>														
Max. setting current	A	13	18	22	40	65	105	100	150	220	400	800		
Range of setting current	A	0.1–13	1–18	0.2–22	18–40	12–65	54–105	34–100	85–150	65–250	85–400	200–800		
Rated insulation voltage	V	690	690	690	690	690	690	690	690	1000	1000	690		
Auxiliary contacts	For all types: 1 NO + 1 NC													
Max. heater dissipation per current path	Min. setting	W	0.8	0.9	0.8	1.4	1.7	2.4	2.5	3.2	2.5	2.5		
	Max. setting	W	1.8	2.2	2.2	3.5	4.9	5.2	7.1	8.6	6.0	6.0		
<b>Rated operating current of auxiliary contacts</b>														
Category AC-15	NO contact	120 V	A	2	2	2	2	2	2	2	2	2		
		240 V	A	1	1	1	1	1	1	1	1	1		
		500 V	A	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
	NC contact	120 V	A	2	2	3	3	3	3	3	3	3		
		240 V	A	1	1	2	2	2	2	2	2	2		
		500 V	A	0.5	0.5	1	1	1	1	1	1	1		
Category DC-13	48 V	A	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
	110 V	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
	220 V	A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
<b>Sizes</b>														
Main terminal screw size	Line side	mm	—	—	M4	M4	M6	M6	M8	M8	—	—	M4	
	Load side	mm	M3.5	M4	M4	M5	M6	M6	M8	M8	M10	M12	M4	
Max. conductor size	Main	Line side	mm <sup>2</sup>	2.5 <sup>③</sup>	—	6	—	25	—	38	60	—	—	6
		Load side	mm <sup>2</sup>	2.5	6	6	16	25	38	38	60	70	240	6
	Busbar	Line side	mm	—	—	—	—	15	—	20	20	—	—	—
		Load side	mm	—	—	—	—	15	20	20	20	25	30	—
	Auxiliary contacts	mm <sup>2</sup>	2.5	2.5	4	4	4	4	4	4	4	4	4	
	Bimetal heating		Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Via CTs	Via CTs	Via CTs <sup>④</sup>	
Weight	kg	0.11	0.14	0.14	0.2	0.26	0.32	0.48	0.75	2.5	2.7	0.14		
Dimensions (WxHxD) <sup>④</sup>	mm	46 x 55 x 76.5	54 x 59 x 80	63 x 51 x 79	74 x 72 x 83.5	92 x 57 x 87	89 x 73.5 x 83.5	103 x 67 x 105	112 x 87 x 105	144 x 114 x 180	144 x 160 x 194	63 x 42 x 83.5		
<b>Order information</b>	Art. no.	See page 16 for order information												

- ① Specifications for the TH-N20HZKPCX (for stand-alone) are the same as for the TH-N20KPCX.
- ② Used with current transformer (to be supplied by the customer), for further information, see table on bottom of the page.
- ③ When used with UN-HZ12CX.
- ④ Dimensions please refer to pages 37/38.

## Selection guide of the current transformers for TH-N600KP

For the TH-N600KP the customer has to use a transformer with specifications as described in the following table.

Specifications		250	330	500	660
Heater designation	A				
Setting range	A	200 – 300		520 – 800	
Current transformer ratio		400 / 5A		1,000 / 5A	
Current transformer capacity		at least 15 VA		at least 15 VA	
Recommended MITSUBISHI current transformer model number	Cable	CW-15L 400/5A 15 VA		CW-15L 750/5A 15 VA	
	Bus bar	CW-15LM 400/5A 15 VA		CW-15LM 750/5A 15 VA	



# THERMAL OVERLOAD RELAYS

BASICS



Range (A)	Heater designation	TH-N12KPCX □□□ A	TH-N18KPCX □□□ A	TH-N20KPCX □□□ A	TH-N20HZKPCX □□□ A <sup>①</sup>	TH-N20TAKPCX □□□ A	TH-N60KPCX □□□ A	TH-N60TAKP □□□ A	TH-N120KP □□□ A	TH-N120TAKP □□□ A	TH-N220RHKP □□□ A	TH-N400RHKP □□□ A	TH-N600KP □□□ A <sup>②</sup>
0.10-0.16	0.12A	52637											
0.14-0.22	0.17A	52638											
0.20-0.32	0.24A	52639		52656	63996								
0.28-0.42	0.35A	52640		52657	63997								
0.40-0.60	0.5A	52644		52658	63998								
0.55-0.85	0.7A	52645		52659	63999								
0.70-1.10	0.9A	52646		52660	64000								
1.00-1.60	1.3A	52647	57378	52661	64002								
1.40-2.00	1.7A	52648	57379	52662	64003								
1.70-2.50	2.1A	52649	57380	52663	64004								
2.00-3.00	2.5A	52650	57381	52664	64006								
2.80-4.40	3.6A	52651	57382	52665	64007								
4.00-6.00	5A	52652	57383	52666	64008								
5.20-8.00	6.6A	52653	57384	52667	64009								
7.00-11.0	9A	52654	57386	52668	64010								
9.00-13.0	11A	52655 <sup>①</sup>	57388	52669	64011								
12.0-18.0	15A		57389	52671	64012		113709						
16.0-22.0	19A			52672 <sup>②</sup>	64015								
18.0-26.0	22A					59393	113710						
24.0-34.0	29A					59394	113711						
30.0-40.0	35A					59395 <sup>③</sup>	113712						
34.0-50.0	42A						113713		124425				
43.0-65.0	54A						113714		124426				
54.0-80.0	67A							113715	124427				
65.0-100	82A							113716 <sup>④</sup>	114428		124432		
85.0-105	95A							113717 <sup>④</sup>					
85.0-125	105A									124430	124433	124438	
100-150	125A									124431 <sup>⑤</sup>	124434	124439	
120-180	150A										124435	124440	
140-220	180A										124436 <sup>⑥</sup>	124441	
170-250	210A										124437 <sup>⑥</sup>		
200-300	250A											124442	on request
260-400	330A											124443 <sup>⑦</sup>	on request
400-600	500A												on request
520-800	660A												on request <sup>⑧</sup>

Contactors modified with thermal overload relays correspond to motorstarter combination<sup>⑨</sup>

Contactor	S-N10CX, S-N11CX, S-N12CX, SD-N11CX, SD-N12CX	S-N18CX	S-N20CX, S-N21CX, SD-N21CX	—	S-N25CX, S-N35CX, SD-N35CX	S-N50CX, S-N65CX, S-N80, S-N95, SD-N50, SD-N65, SD-N80, SD-N95	S-N80, S-N95, SD-N80, SD-N95	S-N125, S-N150, SD-N125, SD-N150	S-N125, S-N150, SD-N125, SD-N150	S-N180, S-N220, SD-N220	S-N300, S-N400, SD-N300, SD-N400	S-N600, S-N800, SD-N600, SD-N800
with connecting parts <sup>⑩</sup>			S-N25CX, S-N35CX, SD-N35CX	—	with UN-TH20n	with UN-TH25CX						

**Stand-alone**

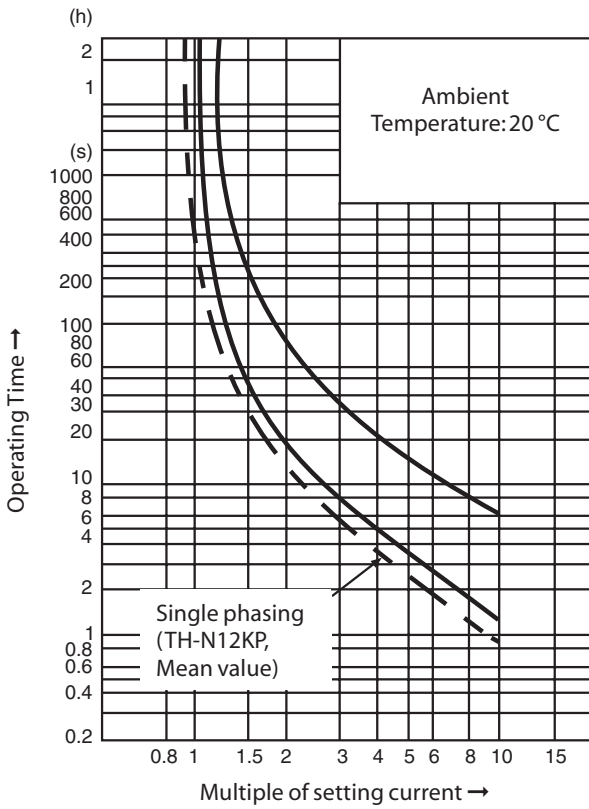
Stand-alone type <sup>⑩</sup>	●	—	—	◇	—	●	○	○	○	○	○	○
With connecting part	UN-HZ12CX	—	—	—	—	—	—	—	—	—	—	—

- ① Except for all S-N10.
- ② For all -N20 and all -N21 only.
- ③ For all -N35 only.
- ④ For all -N95 only.
- ⑤ For all -N150 only.
- ⑥ For all -N220 only.
- ⑦ For all -N400 only.
- ⑧ TH-N600KP must be used with the current transformers (to be supplied by the customer), see p. 15.
- ⑨ For all -N800 only.
- ⑩ For the standard operation it is important to use the thermal overload relay with one of the mentioned contactors and if necessary with a connecting part.
- ⑪ For further information, see accessories on page 30.
- ⑫ Stand-alone
- ⑬ ● Stand-alone with finger protection  
○ Stand-alone without finger protection  
◇ Stand-alone only  
— Stand-alone not possible
- ⑭ with finger protection

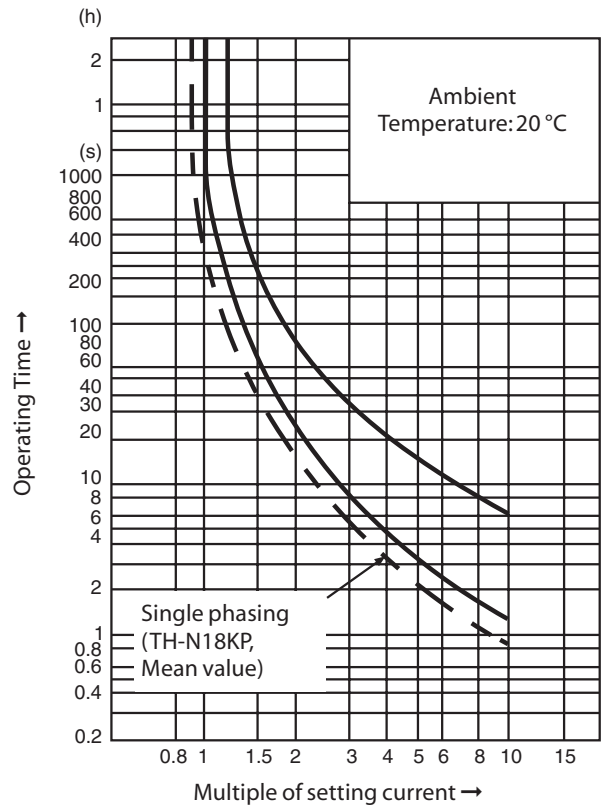
Range (A)	Heater designation	Max. fuse rating (AC 660 V) IEC 269-1 (A)			Standard wire size, (mm <sup>2</sup> ) recommended	Motor capacity (three phase 50/60 Hz, based on four poles) (kW)			
		aM	gG	gM		AC 220–240 V	AC 380 V	AC 400–440 V	AC 500 V
0.10–0.16	0.12A	0.5	0.5	—	2				
0.14–0.22	0.17A	0.5	1	—	2				
0.20–0.32	0.24A	1	2	—	2	0.03	0.06	0.06	0.09
0.28–0.42	0.35A	1	2	—	2	0.05	0.09	0.09	0.12
0.40–0.60	0.5A	1	2	—	2	0.06	0.12	0.12	0.18
0.55–0.85	0.7A	2	4	—	2	0.09	0.18	0.18	0.25
0.70–1.10	0.9A	2	4	—	2	0.12	0.25	0.25	0.37
1.00–1.60	1.3A	2	4	—	2	0.18	0.37	0.37; 0.55	0.55
1.40–2.00	1.7A	4	6	—	2	0.25	0.55	0.75	0.75
1.70–2.50	2.1A	4	6	—	2	0.37	0.75	—	1.1
2.00–3.00	2.5A	6	10	—	2	0.55	1.1	1.1	1.5
2.80–4.40	3.6A	6	10	—	2	0.75	1.5	1.5	2.2
4.00–6.00	5A	8	16	—	2	1.1	2.2	2.2	3
5.20–8.00	6.6A	12	20	—	2	1.5	3	3; 3.7	3.7
7.00–11.0	9A	12	20	—	2	2.2	3.7; 4	3; 3.7	5.5
9.00–13.0	11A	16	25	32M35	2	3	5.5	5.5	7.5
12.0–18.0	15A	20	32	32M50	3.5	3.7	7.5	7.5; 9	9
16.0–22.0	19A	25	40	32M63	3.5	5.5	11	11	11
18.0–26.0	22A	40	63	32M63	5.5	5.5	11	11	15
24.0–34.0	29A	50	80	63M80	8	7.5	15	15	18.5
30.0–40.0	35A	63	80	63M80	8	9	18.5	18.5	22
34.0–50.0	42A	63	100	100M100	14	11	22	22	30
43.0–65.0	54A	80	125	100M125	22	15	30	30	37
54.0–80.0	67A	100	160	100M160	22	18.5	37	37	45
65.0–100	82A	125	200	100M200	38	22	45	45	55
85.0–105	95A	—	200	100M200	38	30	55	55	—
85.0–125	105A	—	250	200M250	50	30	55	55	75
100–150	125A	—	250	200M250	60	37	75	75	90
120–180	150A	—	315	200M315	—	45	90	90	110
140–220	180A	—	400	—	—	55	110	110	132
170–250	210A	—	500	—	—	75	132	132	—
200–300	250A	—	630	—	—	75	132; 160	132; 160	160
260–400	330A	—	630	—	—	90; 110	200	200	220; 250
400–600	500A	—	800	—	—	132; 160	220; 250; 300	220; 250; 300	400
520–800	660A	—	1000	—	—	200; 220	400	400	500



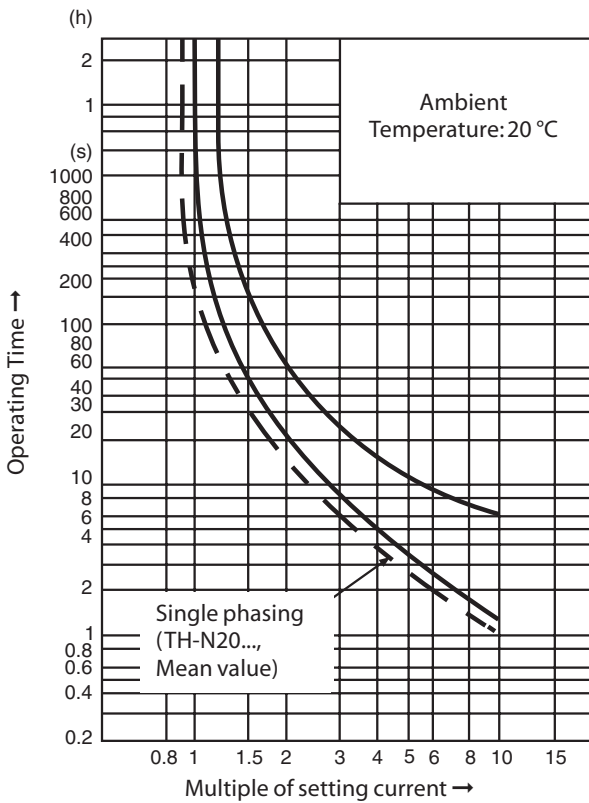
**TH-N12KP**



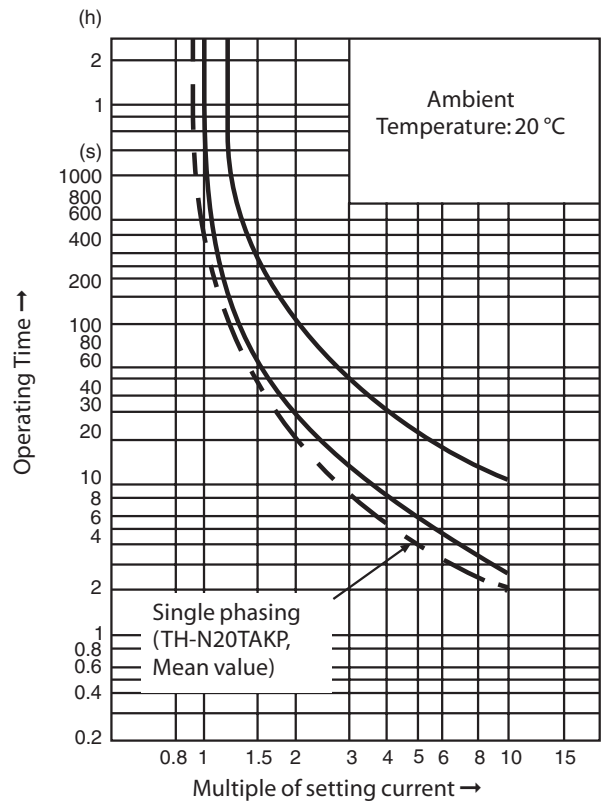
**TH-N18KP**



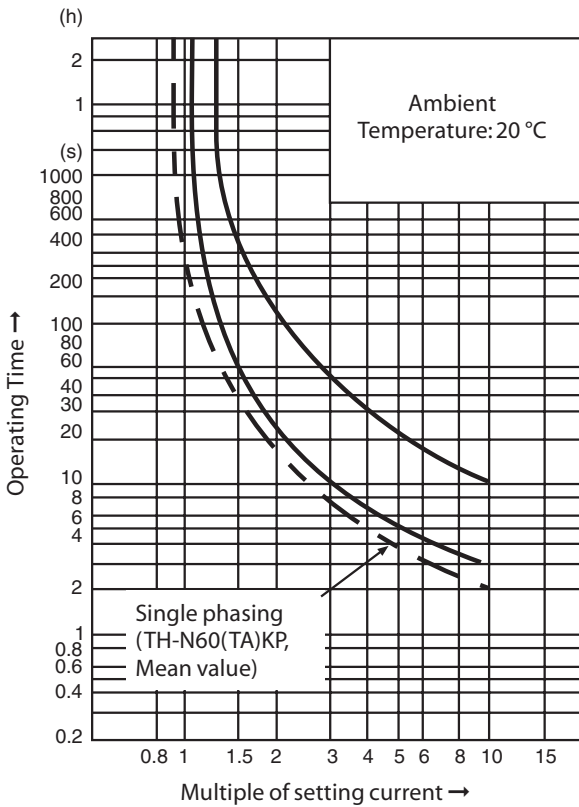
**TH-N20KP, TH-N20HZKP**



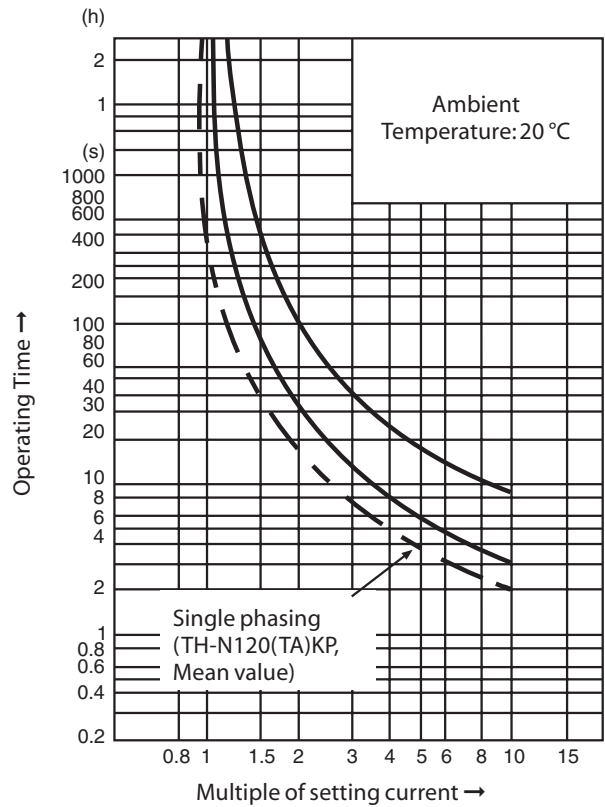
**TH-N20TAKP**



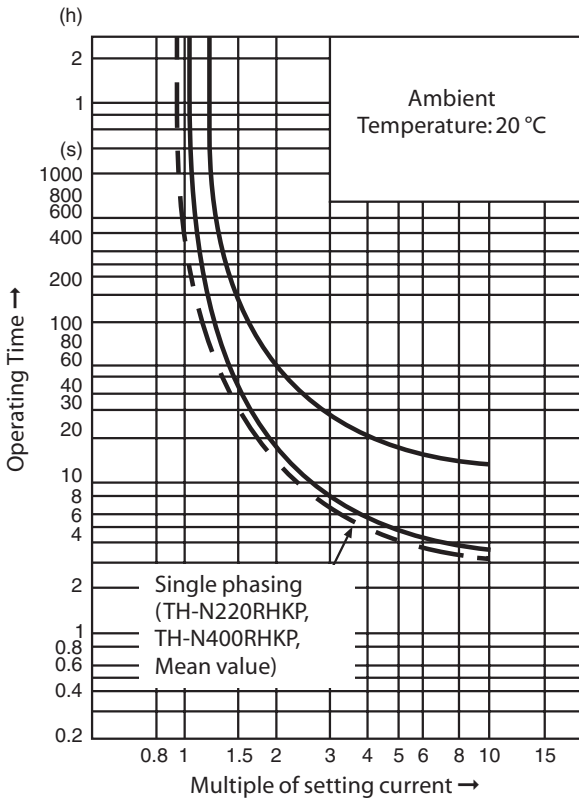
TH-N60KP, TH-N60TAKP



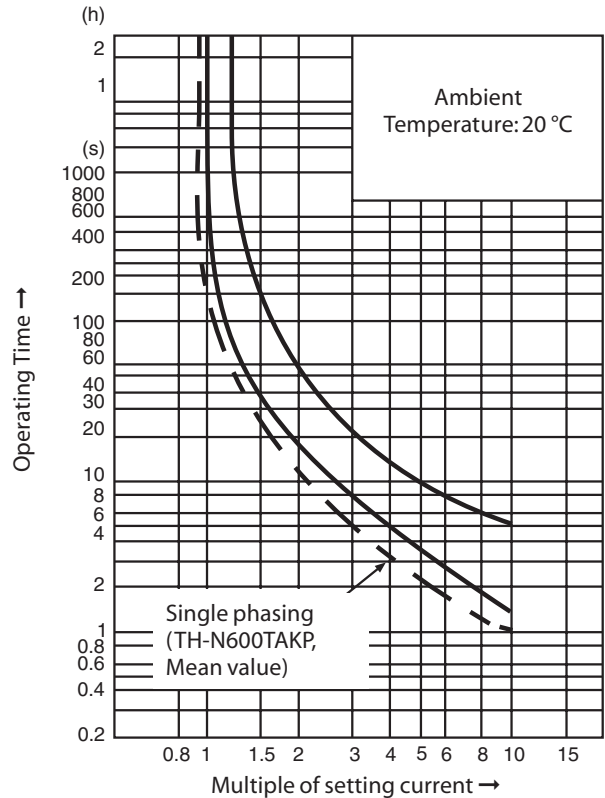
TH-N120KP, TH-N120TAKP



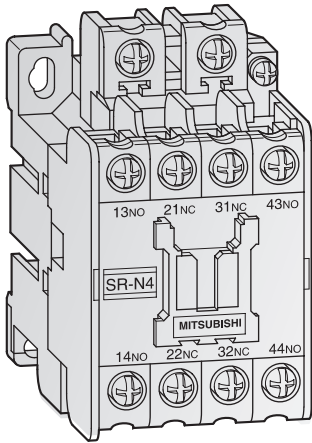
TH-N220RHKP, TH-N400RHKP



TH-N600KP



■ Contactor relay features



Contactor relays are designed for use in low voltage control circuit applications.

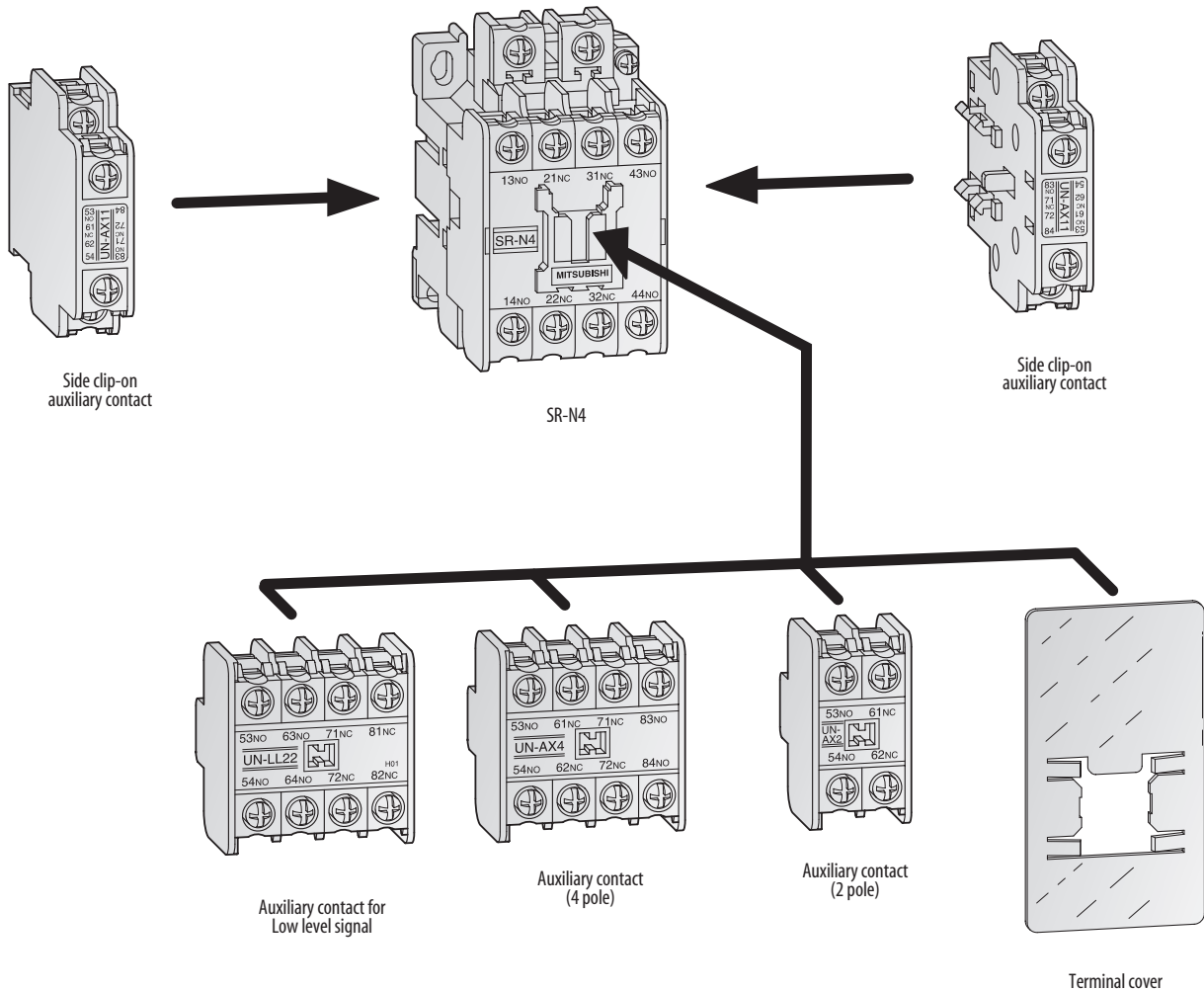
**Benefits:**

- High reliability: By adopting bifurcated moving contacts and by improving the shape of the contacts, contact performance has been made more reliable than ever.
- Different types as: Standard, big capacity or overlap contact
- Various contact arrangement
- Long life
- Mountable on 35 mm DIN rails
- Dust-proof construction
- Easily visible coil ratings
- Easy wiring (self-rising terminal screws)
- Various accessories common with the series S-N contactors (front and side clip-on type additional auxiliary contact blocks, surge absorbers)
- Finger protected types are available (DIN 57106/VDE 0106 Part 100) (Suffix "CX")

Our standard contactor relay version is with **4** auxiliary contacts.

With side clip-on or front clip-on a number of **max. 8 auxiliary contacts** is possible.

Type of auxiliary contact	Symbol	Code
Normally open	NO $\equiv$	A
Normally closed	NC $\equiv$	B



Specifications

Specifications	SR-N4CX AC□□□V4A	SR-N4CX AC□□□V3A1B	SR-N4CX AC□□□V2A2B	SRD-N4CX DC24V4A	SRD-N4CX DC24V3A1B	SRD-N4CX DC24V2A2B
<b>Contact arrangement</b>						
Contact arrangement	4 NO	3 NO + 1 NC	2 NO + 2 NC	4 NO	3 NO + 1 NC	2 NO + 2 NC
<b>Rated data</b>						
Rated insulation voltage	V 690	690	690	690	690	690
Rated continuous current I <sub>th</sub>	A 16	16	16	16	16	16
Rated operating current; Category AC-15 (coil load)	110 V	A 6	6	6	6	6
	230 V	A 5	5	5	5	5
	440 V	A 3	3	3	3	3
	550 V	A 3	3	3	3	3
Rated operating current; Category AC-12 (coil load)	110 V	A 16	16	16	16	16
	230 V	A 12	12	12	12	12
	440 V	A 5	5	5	5	5
	550 V	A 5	5	5	5	5
Rated operating current; Category DC-13 (large coil load)	24 V	A 5	5	5	5	5
	48 V	A 3	3	3	3	3
	110 V	A 0.8 (2) <sup>①</sup>	0.8 (2) <sup>①</sup>	0.8 (2) <sup>①</sup>	0.8 (2) <sup>①</sup>	0.8 (2) <sup>①</sup>
	220 V	A 0.2 (0.8) <sup>①</sup>	0.2 (0.8) <sup>①</sup>	0.2 (0.8) <sup>①</sup>	0.2 (0.8) <sup>①</sup>	0.2 (0.8) <sup>①</sup>
Rated operating current; Category DC-14	24 V	A 8	8	8	8	8
	48 V	A 3	3	3	3	3
	110 V	A 2 (4) <sup>①</sup>	2 (4) <sup>①</sup>	2 (4) <sup>①</sup>	2 (4) <sup>①</sup>	2 (4) <sup>①</sup>
	220 V	A 0.4 (1) <sup>①</sup>	0.4 (1) <sup>①</sup>	0.4 (1) <sup>①</sup>	0.4 (1) <sup>①</sup>	0.4 (1) <sup>①</sup>
Rated operating current; Category DC-12 (resistive load)	24 V	A 10	10	10	10	10
	48 V	A 8	8	8	8	8
	110 V	A 5 (8) <sup>①</sup>	5 (8) <sup>①</sup>	5 (8) <sup>①</sup>	5 (8) <sup>①</sup>	5 (8) <sup>①</sup>
	220 V	A 1 (3) <sup>①</sup>	1 (3) <sup>①</sup>	1 (3) <sup>①</sup>	1 (3) <sup>①</sup>	1 (3) <sup>①</sup>
<b>Electrical data</b>						
Coil consumption (at rated coil voltage)	Inrush	VA 60	60	60	—	—
	Sealed	VA 10	10	10	—	—
	Watts	W 3	3	3	7	7
Switching frequency	oper./h	1,800	1,800	1,800	1,800	1,800
Operating time (average)	Making	ms 15	15	15	50	50
	Breaking	ms 10	10	10	10	10
<b>Mechanical data</b>						
Electrical life	Oper. (million)	0.5	0.5	0.5	0.5	0.5
Mechanical life		10	10	10	10	10
Conductor size	mm <sup>2</sup>	1–2.5	1–2.5	1–2.5	1–2.5	1–2.5
Weight	kg	0.3	0.3	0.3	0.62	0.62
Dimensions (WxHxD) <sup>②</sup>	mm	43 x 78 x 78	43 x 78 x 78	43 x 78 x 78	43 x 78 x 110	43 x 78 x 110
<b>Order information</b>	AC24V	Art. no.	52607	52612	52617	—
	AC48V		52608	52613	52618	—
	AC120V		52609	52614	52619	—
	AC230V		52610	52615	52620	—
	AC400V		52611	52616	52621	—
<b>Order information</b>	DC24V	Art. no.	—	—	52622	52623
						52624

① Parenthesized rated operating current is for switching the load in 2-pole series connection.

② Dimensions please see page 36.



## ■ Environmental conditions

BASICS

Environmental conditions for all contactor relays			
Ambient temperature	°C	-25 bis +55	
Ambient humidity	RH	45 bis 85 %	
Coil voltage tolerance		0.85 to 1.1 times rated coil voltage	
Vibration resistance	10–55 Hz	G	2
Shock resistance		G	5

## ■ Coil ratings

### In case of special order:

The following tables show the devices which are additionally available. Please contact MITSUBISHI ELECTRIC for further information.

#### AC rated voltage (for SR-N)

50 Hz	60 Hz	Ordering designation	Standard
24	24	AC 24 V	●
48–50	48–50	AC 48 V	●
100	100–110	AC 100 V	
110–120	115–120	AC 120 V	●
125–127	127	AC 127 V	
200	200–220	AC 200 V	
208–220	220	AC 220 V	
220–240	230–240	AC 230 V	●
240–260	260–280	AC 260 V	
346–380	380	AC 380 V	
380–415	400–440	AC 400 V	●
415–440	460–480	AC 440 V	
500	500–550	AC 500 V	

For detailed description of the types please see page 21.

#### DC rated voltage (for SRD-N)

	Ordering designation	Standard
24	AC 24 V	●
48	AC 48 V	
100	AC 100 V	
110	AC 120 V	
120–125	AC 127 V	
200	AC 200 V	
220	AC 220 V	

For detailed description of the types please see page 21.



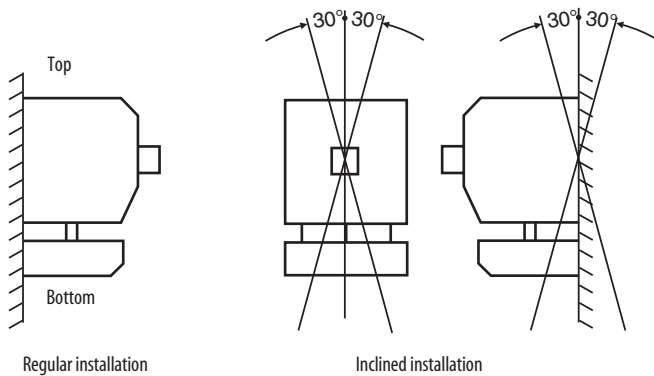
**■ Mounting**

**Mounting attitude of contactors and contactor relays**

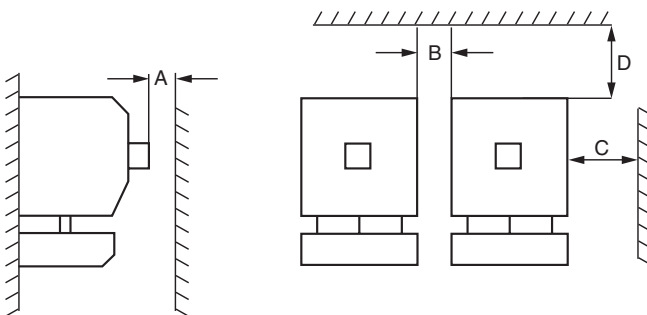
The construction and characteristics of contactors and contactor relays require that they be installed at the correct attitude. This attitude should not be changed, as the operating characteristics will be affected.

To assure proper performance, MITSUBISHI contactors and contactor relays should be mounted on a vertical supporting surface with the line terminals upwards and the load terminals downwards. The supporting surface may have a maximum inclination of 30° from the vertical in any direction.

Instruction in detail also for horizontal installation on request.



**Minimal gaps for installation of contactor and contactor relays**



Frame size	A	B	C	D
S-N10CX	5	5	10	15
S-N11CX, S-N12CX	5	5	10	15
S-N18CX	5	5	10	15
S-N20CX, S-N21CX	5	5	10	15
S-N25CX, S-N35CX	5	5	10	15
S-N50CX, S-N65CX	5	10	10	25
S-N80, S-N95	10	10	16	25
S-N125	10	12	16	25
S-N150	10	12	16	30
S-N180, S-N220	10	12	16	50
S-N300, S-N400	10	12	16	90
S-N600, S-N800	10	15	20	90

All dimensions in mm

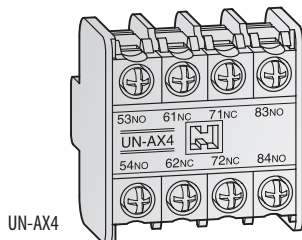
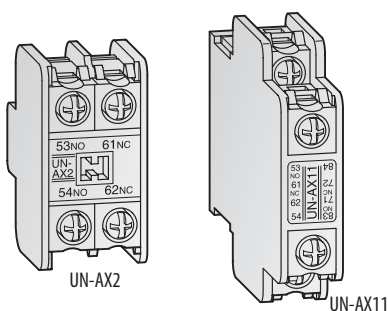
## Auxiliary contact blocks

### Application

All contactors can be extended by additional contacts which are available as a compact module.

The auxiliary contacts are simple and safe to extend by means of front or side clips.

When ordering please check that the auxiliary contact fits for your magnetic contactor.



Type of auxiliary contact	Symbol	Code
Normally open	NO $\hat{=}$	A
Normally closed	NC $\hat{=}$	B

### Auxiliary contact blocks for S-N10CX to S-N65CX, SR-N4CX, SRD-N4CX

Specifications	UN-AX2CX 2A	UN-AX2CX 1A1B	UN-AX2CX 2B	UN-AX4CX 4A	UN-AX4CX 2A2B	UN-AX4CX 3A1B	UN-AX11CX	UN-LL22CX	
Contactors, Contactor relays	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, S-N50CX, S-N65CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SD-N50CX, SD-N65CX, SR-N4CX, SRD-N4CX	
Remarks	Low level signal (DC 5 V; 5 mA)								
Contact arrangement	2 NO	1 NO+ 1 NC	2 NC	4 NO	2 NO+ 2 NC	3 NO+1 NC	1 NO+ 1 NC	1 NO+ 1 NC <sup>①</sup>	
Clip-on type	Front <sup>②③</sup>	Front <sup>②③</sup>	Front <sup>②③</sup>	Front <sup>②③</sup>	Front <sup>②③</sup>	Front <sup>②③</sup>	Seite <sup>②④</sup>	Front <sup>②③</sup>	
Rated cont. curr. I <sub>b</sub>	A 16	16	16	16	16	16	16	1	
Rated insulation voltage	V 690	690	690	690	690	690	690	250	
Category AC-15 (coil load)	AC 110 V A 6	6	6	6	6	6	6	AC 240 V; 20 mA;	
	AC 230 V A 5	5	5	5	5	5	5	(cos φ ≥ 0.95);	
	AC 440 V A 3	3	3	3	3	3	3	DC 48 V;	
Category DC-13 (large coil load)	DC 48 V A 3	3	3	3	3	3	3	100 mA;	
	DC 110 V A 0.8	0.8	0.8	0.8	0.8	0.8	0.8	(L/R ≤ 1 ms);	
	DC 220 V A 0.2	0.2	0.2	0.2	0.2	0.2	0.2	Min. oper. curr. DC 5 V; 5 mA	
Mechanical life	oper. 10 mill.	10 mill.	10 mill.	10 mill.	10 mill.	10 mill.	10 mill.	2.5 mill.	
Electrical life	oper. 0.5 mill.	0.5 mill.	0.5 mill.	0.5 mill.	0.5 mill.	0.5 mill.	0.5 mill.	0.5 mill.	
Switching frequency	opr./hour	For all types: 1.800							
Perm. amb. temperature	°C	For all types: -25 to +55							
Perm. amb. humidity	RH	For all types: 45 % to 85 %							
Conductor size	mm <sup>2</sup>	For all types: 1.0 to 2.5							
<b>Order information</b>	Art. no.	52625	52626	52627	52628	52629	52630	52631	52632

① Contact reliability may be decreased if it is operated more than 1 million operations.

② Front clip-on and side clip-on should not be mounted both.

③ Maximum 1 piece of auxiliary contact block can be mounted on a Contactor/Relay.

④ Maximum 2 pieces of auxiliary contact blocks can be mounted on a Contactor/Relay.

**Auxiliary contact blocks**

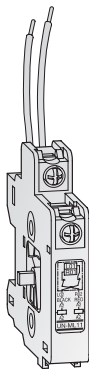
**Auxiliary contact blocks for S-N80 to S-N800**

Specifications	UN-AX80		UN-AX150		UN-AX600	
Contactors	S-N80, S-N95, S-N125, SD-N80, SD-N95, SD-N125		S-N150, S-N180, S-N220, S-N300, S-N400, SD-N150, SD-N180, SD-N220, SD-N300, SD-N400		S-N600, S-N800, SD-N600, SD-N800	
Contact arrangement	1 NO + 1 NC		1 NO + 1 NC		2 NO + 2 NC	
Clip-on type	Side		Side		Side	
Rated cont. curr. I <sub>n</sub>	A 16		16		16	
Rated insulation voltage	V 690		690		690	
Category AC-15 (Coil load)	AC 110 V	A 6	6		6	
	AC 230 V	A 5	5		5	
	AC 440 V	A 3	3		3	
Category DC-13 (large coil load)	DC 48 V	A 3	3		3	
	DC 110 V	A 0.8	0.8		0.8	
	DC 220 V	A 0.2	0.2		0.2	
Mechanical life	oper.	10 mill.	10 mill.		10 mill.	
Electrical life	oper.	0.5 mill.	0.5 mill.		0.5 mill.	
Switching frequency	opr./hour	For all types: 1,800				
Perm. amb. temperature	°C	For all types: -25 to +55				
Perm. amb. humidity	RH	For all types: 45 % to 85 %				
Conductor size	mm <sup>2</sup>	For all types: 1.0 to 2.5				
<b>Order information</b>	Art. no.	113691	113702		113703	

Maximum 2 pieces of auxiliary contact blocks can be mounted on a Contactor/Relay.

**Mechanical interlocks**

UN-ML11CX



**Application**

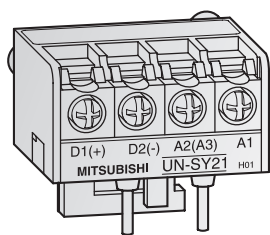
Two contactors are safely and simply secured against one another through mechanical interlocking.

The mechanical interlocks are simple and safe to mount by means of side clips.

On UN-ML11CX the relevant interlock status can also be obtained through an electric query.

Specifications	UN-ML11CX	UN-ML21	UN-ML80	UN-ML150	UN-ML220	
Contactors	S-N10CX, S-N11CX, SD-N11CX	S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SD-N21CX, SD-N35CX, S-N50CX, S-N65CX, SD-N50, SD-N65	S-N80, S-N95, S-N125, SD-N80, SD-N95, SD-N125	S-N150, SD-N150	S-N180, S-N220, S-N300, S-N400, SD-N220, SD-N300, SD-N400	
<b>Order information</b>	Art. no.	52633	52634	124294	125991	124293

## DC interface modules



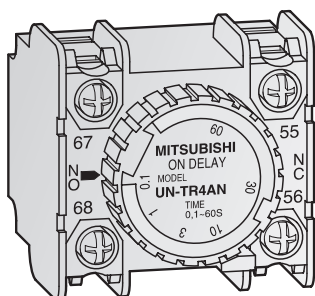
### Application

Despite the low current requirements of our contactors and contactor relays, a number of PLC types with transistor outlets only allow direct control via the DC interface module.

In accordance to the used contactor it can be mounted directly on the contactor or on a separate location.

Specifications	UN-SY21CX	UN-SY22CX	UN-SY31	UN-SY32	UN-SY11	UN-SY12
Contactor	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SR-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SR-N4CX	S-N50CX, S-N65CX	S-N50CX, S-N65CX	S-N80, S-N95, S-N125, S-N150, S-N180, S-N220, S-N300, S-N400	S-N80, S-N95, S-N125, S-N150, S-N180, S-N220, S-N300, S-N400
Output	Solid state	Relay	Solid state	Relay	Solid state	Relay
Mounting to contactor	Direct	Direct	Direct	Direct	Separate	Separate
<b>Order information</b>	Art. no. 52635	52636	on request	on request	on request	on request

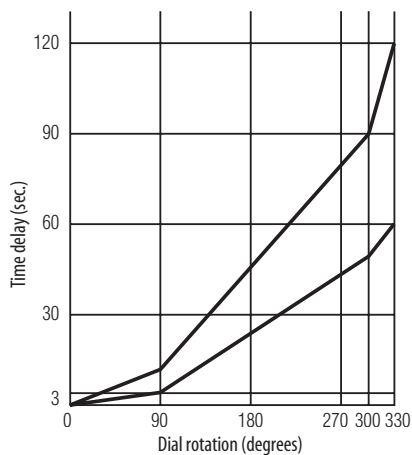
## Pneumatic time delay module



### Application

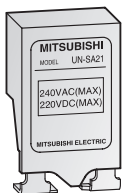
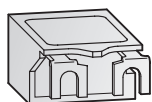
The pneumatic time delay modules are designed for attachment for the front clip on to the series S-N-contactors and SR-N contactor relays.

For contact arrangement see page 34.  
For outline dimensions see page 37.  
For environmental conditions see also p. 22.



Specifications	UN-TR4ANCX
Adjustable delay time range	s 0.1 to 60
Rated cont. curr. $I_{th}$	10
Rated oper. current Category AC-15	AC 110 V A 5
	AC 230 V A 3
	AC 440 V A 1
Rated oper. current Category AC-12	AC 110 V A 6
	AC 230 V A 4
	AC 440 V A 1.5
Rated operating current Category DC-13	DC 24 V A 1
	DC 48 V A 0.5
	DC 110 V A 0.3
Rated operating current Category DC-12	DC 220 V A 0.15
	DC 24 V A 2
	DC 48 V A 1
Rated operating current Category DC-12	DC 110 V A 0.6
	DC 220 V A 0.3
Rated insulation voltage VAC	660
Mechanical life / electrical life	1 million operations / 1 million operations
Repeat accuracy %	±10
Min. pause time ms	500
Permissible ambient temperature	-5 °C to +55 °C
Conductor size	1.0 to 2.5
Contactor	AC-operated S-N10CX, S-N11CX, S-N18CX, SR-N4CX
	DC-operated SD-N11CX, SRD-N4CX
Type of delay	ON delay
Weight kg	0.06
Dimensions (WxHxD) mm	45 x 42 x 45
<b>Order information</b>	Art. no. 54160

**Surge absorbers**



**Application**

Surge absorbers serve the purpose of avoiding currency surges when coils are switched off.

They can be mounted safely and easily behind the terminal strips.

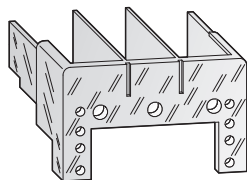
Contactors and relays with built-in surge absorbers, varistor-type are available on your request.

For S-N50 up to S-N800 the surge absorber are implemented as standard.

Specifications	UN-SA21 AC□□□V	UN-SA22 AC□□□V	UN-SA23 AC□□□V	UN-SA25 AC□□□V	UN-SA13 DC□□□V	UN-SA721 AC□□□V	UN-SA722 AC□□□V	UN-SA725 AC□□□V	UN-SA713 DC□□□V
Contactors	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SR-N4CX, SRD-N4CX	S-N10CX, S-N11CX, S-N12CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SR-N4CX	S-N10CX, S-N11CX, S-N18CX, S-N20CX, S-N21CX, S-N25CX, S-N35CX, SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SR-N4CX, SRD-N4CX	SD-N11CX, SD-N12CX, SD-N21CX, SD-N35CX, SRD-N4CX	SD-N50 SD-N65	SD-N50 SD-N65	SD-N50 SD-N65	SD-N50 SD-N65
Voltage range	for AC(2 0 0)V AC 24–240 V, DC 24–220 V	for AC(2 0 0)V AC 50–240 V, DC 60–220 V	for AC(2 0 0)V AC 24–240 V	for AC(0 4 8)V AC 24–50 V, DC 24–60 V	for DC(2 0 0)V DC 24–220 V	for AC(0 4 8)V DC 24–60 V	for AC(1 0 0)V DC 24–125 V	for AC(0 4 8)V DC 24–60 V	for DC(2 0 0)V DC 24–220 V
Varistor	●	—	—	—	—	●	—	—	—
Varistor with operating indicator (LED)	—	●	—	—	—	—	●	—	—
Varistor and CR	—	—	—	●	—	—	—	●	—
CR	—	—	●	—	●	—	—	—	●
Order information	Art. no.								
	AC(0 4 8)V	—	—	—	on request	—	on request	—	on request
	AC(1 0 0)V	—	—	—	—	—	on request	on request	on request
	AC(2 0 0)V	52605	on request	56152	70340	—	on request	on request	on request
AC(4 0 0)V	52606	—	—	—	—	—	—	—	
DC(2 0 0)V	—	—	—	—	on request	—	—	—	on request

NOTE: For other voltage ranges please contact MITSUBISHI ELECTRIC.

**Terminal covers**



**Application**

The terminal covers warrant protection against contacts being accidentally touched.

These covers are to retrofit contactors which do not have a terminal cover (like types without “CX” designation).

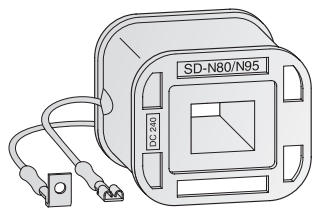
Specifications	UN-CZ501 <sup>①</sup>	UN-CZ800 <sup>①</sup>	UN-CZ1250 <sup>①</sup>	UN-CZ1500 <sup>①</sup>	UN-CZ2200 <sup>①</sup>	UN-CZ3000 <sup>①</sup>
Contactors	SD-N50/N65	S-N80/N95, SD-N80/N95	S-N125, SD-N125	S-N150, SD-N150	S-N180/N220, SD-N220	S-N300/N400, SD-N300/N400
Order information	Art. no. 127116	113704	113705	113706	113707	113708

① 2 pcs. are required for one contactor .

Specifications	UN-CZ501 <sup>②</sup>	UN-CZ801 <sup>②</sup>	UN-CZ1251 <sup>②</sup>	UN-CZ1501 <sup>②</sup>	UN-CZ2201 <sup>②</sup>	UN-CZ3001 <sup>②</sup>
Contactors and Thermal Overheat Relay	SD-N50/N65, TH-N	SD-N80/N95, TH-N	SD-N125, TH-N	SD-N150, TH-N	SD-N180/N220, TH-N	SD-N300/N400, TH-N
Order information	Art. no. 127117	125994	125995	125996	125997	125998

② This part is only for the load side (1 piece). For the line side one UN-CZ□□0 is required.

## Replacement coils



### Application

If, for technical or logistic reasons, a coil needs to be replaced, then this can be done fast and safely, as it involves very simple operations.

When ordering please check for the right voltage classification.

Changing procedure is done for

- S-N10 to S-N95, SD-N11 to SD-N95, SR-N4 and SRD-N4 by loosening a number of screws
- S-N125 to S-N800, SD-N125 to SD-N800 by replacing the coil cartridge.

### AC-operated coils

Specifications	S-N11-COIL AC□□□V	S-N21-COIL AC□□□V	S-N35-COIL AC□□□V	S-N50-COIL AC□□□V	S-N80-COIL AC□□□V	S-N125-COIL AC□□□V	S-N180-COIL AC□□□V	S-N300-COIL AC□□□V	S-N600-COIL AC□□□V		
Contactors	S-N10CX, S-N11CX, S-N12CX, S-N18CX, SR-N4CX	S-N20CX, S-N21CX	S-N25CX, S-N35CX	S-N50CX, S-N65CX	S-N80, S-N95	S-N125, S-N150	S-N180, S-N220	S-N300, S-N400	S-N600, S-N800		
Weight	kg	0.06	0.08	0.08	0.27	0.6	0.46	0.6	0.9	2.0	
Order information	Art. no.	AC214V	56756	56719	59376	125881	125888	125895	—	—	
		AC48V	56757	56720	59377	125885	125892	125899	—	—	
		AC100V	56758	56721	59378	125878	125886	125893	125900	125915	125920
		AC120V	56759	56722	59380	—	—	—	—	—	—
		AC127V	56760	56724	59381	—	—	—	—	—	—
		AC200V	56679	56725	59382	125880	125887	125894	125901	125916	125921
		AC220V	56680	56726	59383	—	—	—	—	—	—
		AC230V	56713	56727	59384	—	—	—	—	—	—
		AC260V	56714	56728	59385	—	—	—	—	—	—
		AC300V	on request	on request	on request	125882	125889	125896	125912	125917	125922
		AC380V	56715	56729	59386	—	—	—	—	—	—
		AC400V	56716	56730	59387	125883	125890	125897	125913	125918	125923
		AC440V	56717	56731	59388	—	—	—	—	—	—
AC500V	56718	56732	59389	125884	125891	125898	125914	125919	125924		

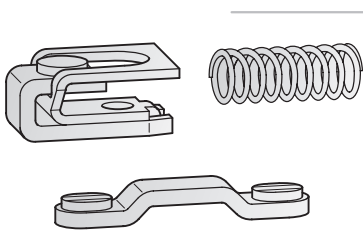
For information about the voltage range refer to page 12

NOTE: For other voltage ranges please contact MITSUBISHI ELECTRIC.

### DC-operated coils

Specifications	SD-N11-COIL DC□□□V	SD-N21-COIL DC□□□V	SD-N35-COIL DC□□□V	SD-N50-COIL DC□□□V	SD-N80-COIL DC□□□V	SD-N125-COIL DC□□□V	SD-N220-COIL DC□□□V	SD-N300-COIL DC□□□V	SD-N600-COIL DC□□□V		
Contactors	SD-N11CX, SD-N12CX, SRD-N4CX	SD-N21CX	SD-N35CX	SD-N50, SD-N65	SD-N80, SD-N95	SD-N125, SD-N150	SD-N220	SD-N300, SD-N400	SD-N600, SD-N800		
Weight	kg	0.23	0.24	0.23	0.8	0.6	0.9	1.4	2.0	6.0	
Order information	Art. no.	DC12V	56733	56741	61984	—	—	—	—	—	
		DC24V	56734	56742	61985	125930	125937	125945	125952	125959	125966
		DC48V	56735	56743	61986	125931	125938	125946	125953	125960	125967
		DC100V	56736	56744	61987	125925	125932	125939	125947	125954	125961
		DC110V	56737	56746	61988	125926	125933	125940	125948	125955	125962
		DC125V	56738	56749	61989	125927	125934	125941	125949	125956	125963
		DC200V	56739	56751	61990	125928	125935	125943	125950	125957	125964
		DC220V	56740	56753	61991	125929	125936	125944	125951	125958	125965

**Replacement contact kits**



**Application**

If used correctly, the contact kit does not need replacing during the lifetime stated in the documentation. However, should this still be required, then it can be done fast and without any problems, as it involves no more than a few simple operations.

The kits consist of 3 moving contacts and 6 stationary contacts.

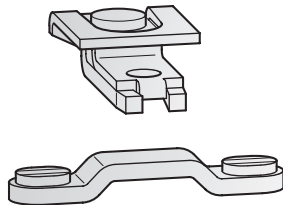


**Main contact kit**

Specifications	BH-719N300	BH-729N300	BH-739N300	BH-749N300	BH-749N301	BH-749N303	BH-759N300	BH-759N302	BH-759N301	BH-759N303	BH-769N300	
Contactors	S-N10CX, S-N11CX, S-N12CX, SD-N11CX, SD-N12CX	S-N18CX	S-N20CX, S-N21CX, SD-N21CX	S-N25CX	S-N35CX	SD-N35CX	S-N50CX	SD-N50	S-N65CX	SD-N65	S-N80	
Weight	kg	0.03	0.05	0.05	0.07	0.07	0.07	0.11	0.11	0.11	0.11	0.1
Order information	Art. no.	56754	59390	56755	59391	59392	62053	125971	125973	125975	125976	125977



Specifications	BH-769N301	BH-769N303	BH-779N300	BH-779N301	BH-789N300	BH-799N300	BH-799N301	BH-609N300	BH-609N301	BH-619N300	BH-619N301	
Contactors	S-N95	SD-N95	S-N125	SD-N125	S-N150, SD-N150	S-N180	S-N220, SD-N220	S-N300, SD-N300	S-N400, SD-N400	S-N600, SD-N600	S-N800, SD-N800	
Weight	kg	0.1	0.1	0.1	0.2	0.4	0.4	0.8	0.8	2.5	2.5	
Order information	Art. no.	125979	125980	125981	125982	125983	125984	125985	125986	125987	125988	125989



**Application**

If used correctly, the bifurcated moving contact warrants a maximum of contact safety and the longest possible lifetime.

Nevertheless, auxiliary contacts can be replaced safely and without any problems.

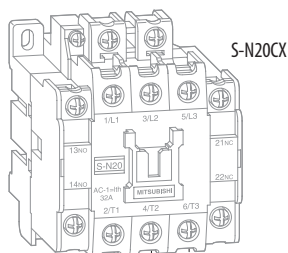
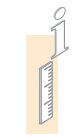
**Auxiliary contact kit**

Specifications	BH719N310	BH719N311	BH729N310	BH739N310	BH739N311	BH539N315	BH579N312	UN-AX150	UN-AX600	
Contactors	S-N10CX, S-N11CX, SD-N11CX	S-N10CX, S-N11CX, SD-N11CX	S-N12CX, SD-N12CX	S-N20CX	S-N21CX, S-N25CX, S-N35CX, SD-N21CX, SD-N35CX	S-N50CX to S-N95, SD-N50 to SD-N95	S-N125, SD-N125	S-N150 to S-N400, SD-N150 to SD-N400	S-N600, S-N800, SD-N600, SD-N800	
Kit contents	Bifurcated moving contacts	1	1	2	2	4	4	4	—	—
Stationary contacts	2	2	4	4	8	8	8	—	—	
Contact block	—	—	—	—	—	—	—	1	1	
Contact arrangement	1 NO	1 NC	1 NO, 1 NC	1 NO, 1 NC	2 NO, 2 NC	2 NO, 2 NC	2 NO + 2 NC	1 NO + 1 NC	2 NO + 2 NC	
Weight	kg	0.01	0.01	0.02	0.02	0.03	0.02	0.02	0.04	0.1
Order information	Art. no.	on request	on request	on request	on request	on request	on request	on request	113702	113703



**Connecting parts for contactors to thermal overload relays**

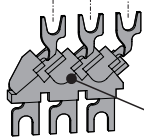
BASICS



**Application**

For connection between the contactor and the thermal overload relay.

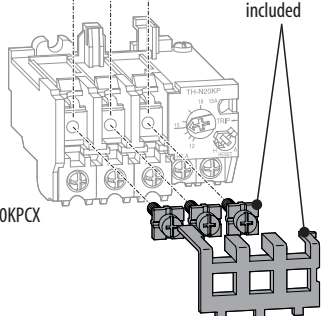
Connecting bars and mounting plate are included in the OLR of TH-N220RHKP and TH-N400RHKP for S-N180, S-N220, SD-N220, S-N300, SD-N300, S-N400, SD-N400.



UN-TH21CX screws and cover included

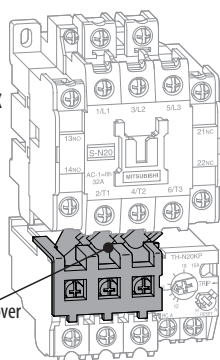
Contactor and relay mounted with connecting bar kit

TH-N20KPCX



S-N20CX

UN-TH21CX screws and cover included

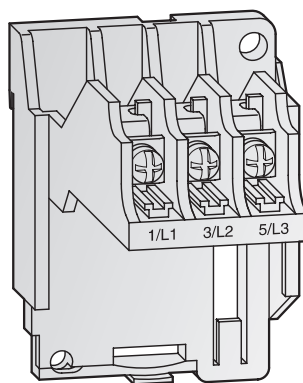


TH-N20KPCX

**Connecting bar kit**

Specifications	UN-TH21CX	UN-TH25CX	BH559N350	BH569N350	BH569N352	BH579N355	BH589N355
Contactors	S-N20CX, S-N21CX, SD-N21CX	S-N25CX, S-N35CX, SD-N25CX, SD-N35CX	S-N50CX, SD-N50, S-N65CX, SD-N65	S-N80, S-N95	SD-N80, SD-N95	S-N125, SD-N125	S-N150, SD-N150
Thermal overload relay	TH-N20KPCX	TH-N20KPCX, TH-N20TAKPCX	TH-N60KPCX	TH-N60KPCX, TH-N60TAKP	TH-N60KPCX, TH-N60TAKP	TH-N120KP, TH-N120TAKP	TH-N120KP, TH-N120TAKP
Weight	kg 0.02	0.02	0.02	0.04	0.04	0.36	0.36
<b>Order information</b>	Art. no. 141108	63695	126000	126001	126002	126003	126004

**Separate mounting adapter**



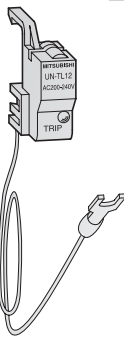
UN-HZ12CX

**Application**

For the stand-alone application the thermal overload relay TH-N12KPCX must be use with the separate mounting adapter UN-HZ12CX.

Specifications	UN-HZ12CX
Thermal overload relays	TH-N12KPCX
<b>Order information</b>	Art. Nr. 52673

**■ Trip indicator**



**Application**

An LED lights up to help you find and identify a thermal overload relay that has been actuated.

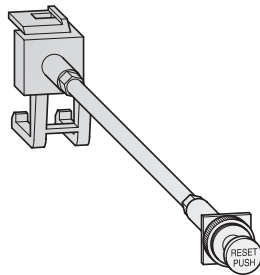
The trip indicator consist of a cable (length approx. 100 mm) and an indication module which can be mounted separate from the conductor.

BASICS



Specifications	UN-TL15 DC 24 V	UN-TL15 AC 100 V	UN-TL15 AC 200 V	UN-TL20 DC 24 V	UN-TL20 AC 100 V	UN-TL20 AC 200 V	UN-TL60 DC 24 V	UN-TL60 AC 100 V	UN-TL60 AC 200 V
Thermal overload relay	TH-N12KPCX, TH-N18KPCX	TH-N12KPCX, TH-N18KPCX	TH-N12KPCX, TH-N18KPCX	TH-N20KPCX, TH-N20TAKPCX	TH-N20KPCX, TH-N20TAKPCX	TH-N20KPCX, TH-N20TAKPCX	TH-N60KP to TH-N600KP	TH-N60KP to TH-N600KP	TH-N60KP to TH-N600KP
Voltage	V AC 24 / DC 24	AC 100–127	AC 200–240	AC 24 / DC 24	AC 100–127	AC 200–240	AC 24 / DC 24	AC 100–127	AC 200–240
<b>Order information</b>	Art. no.	on request	on request	on request	on request	on request	on request	on request	on request

**■ Reset release**



**Application**

The reset release allows you to reset the actuated thermal overload relay safely and without any problems while the cabinet door or drawout is shut.

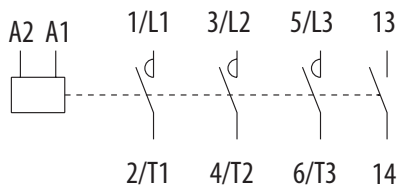
It has to be mounted directly on the thermal overload relay.

1

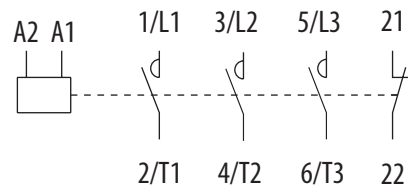
Specifications	UN-RR205	UN-RR405	UN-RR555	UN-RR705	UN-RR200	UN-RR400
Thermal overload relay	TH-N12KPCX TH-N18KPCX	TH-N12KPCX, TH-N18KPCX	TH-N12KPCX, TH-N18KPCX	TH-N12KPCX, TH-N18KPCX	TH-N20KPCX, TH-N20TAKPCX	TH-N20KPCX, TH-N20TAKPCX
Length	mm 200	400	550	700	200	400
<b>Order information</b>	Art. no.	52675	52676	52677	52678	52679

Specifications	UN-RR550	UN-RR700	UN-RR206	UA-RR400	UN-RR556	UN-RR706
Thermal overload relay	TH-N20KPCX, TH-N20TAKPCX	TH-N20KPCX TH-N20TAKPCX	TH-N60KP to TH-N600KP	TH-N60KP to TH-N600KP	TH-N60KP to TH-N600KP	TH-N60KP to TH-N600KP
Length	mm 550	700	200	400	550	700
<b>Order information</b>	Art.no.	52681	52682	on request	on request	on request

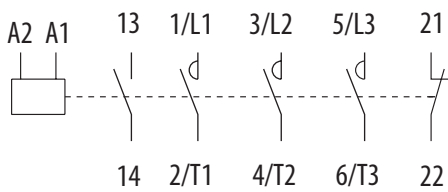
■ **S-N10CX1A, S-N11CX1A, SD-N11CX1A**



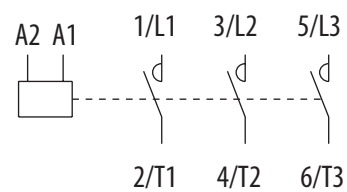
■ **S-N10CX1B, S-N11CX1B, SD-N11CX1B**



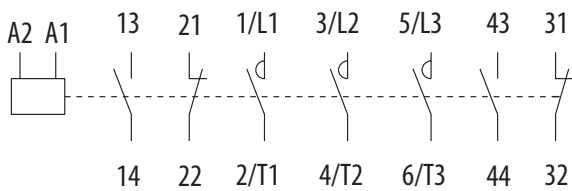
■ **S-N12CX, S-N20CX, SD-N12CX**



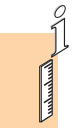
■ **S-N18CX**



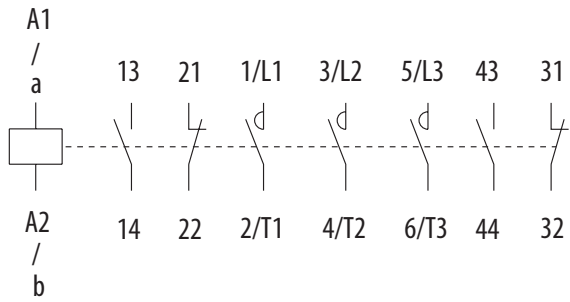
■ **S-N21CX, S-N25CX, S-N35CX,  
SD-N21CX, SD-N35CX**



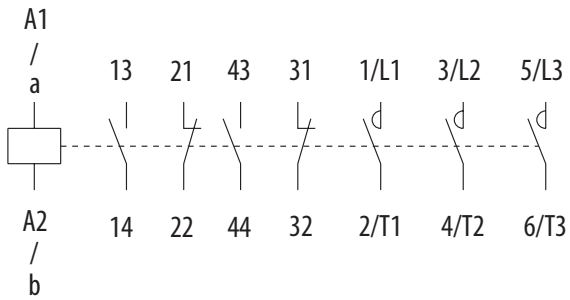
BASICS



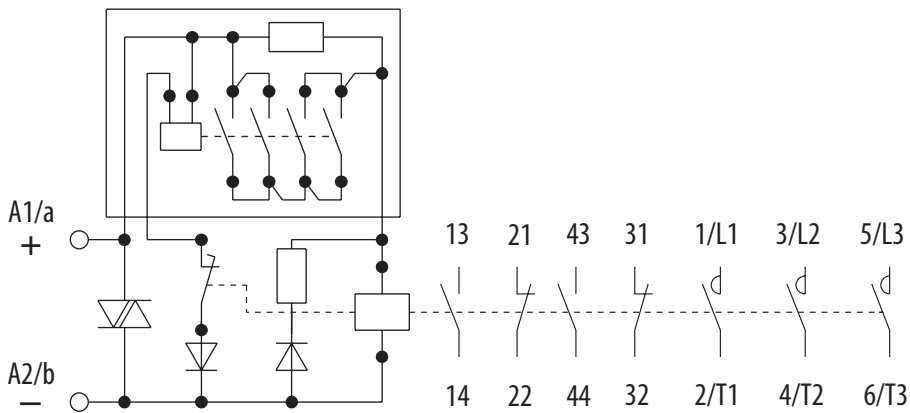
■ S-N50CX to S-N400, SD-N50 to SD-N400



■ S-N600, S-N800



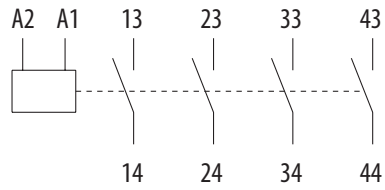
■ SD-N600, SD-N800



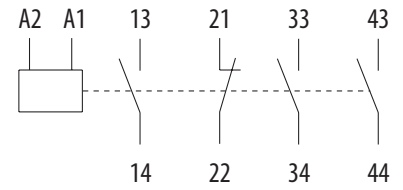
## ■ Contactor relays with standard contacts

BASICS

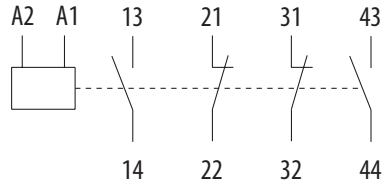
SR-N4CX ... 4A,  
SRD-N4CX ... 4A



SR-N4CX ... 3A1B,  
SRD-N4CX ... 3A1B



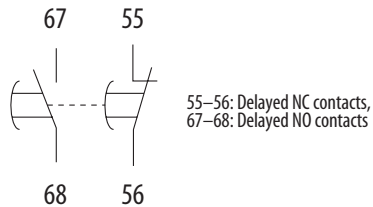
SR-N4CX ... 2A2B,  
SRD-N4CX ... 2A2B



Type of auxiliary contact	Symbol	Code
Normally open	NO $\hat{=}$	A
Normally closed	NC $\hat{=}$	B

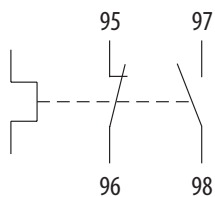
## ■ Pneumatic time delay module

UN-TR4ANCX

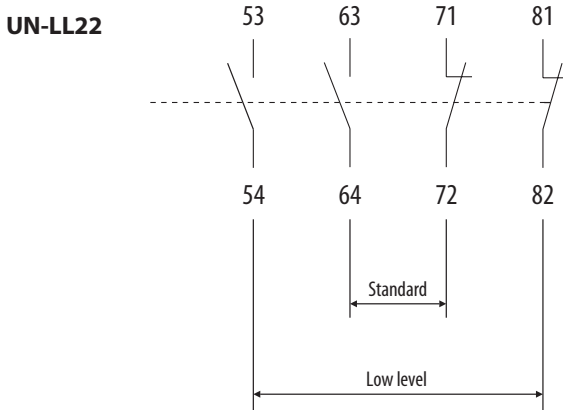
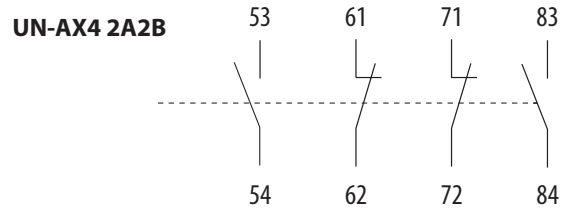
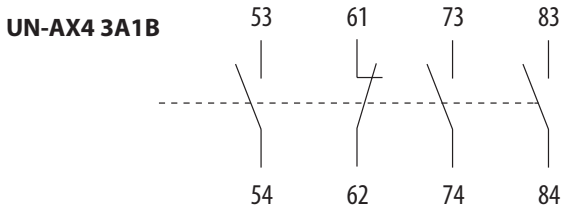
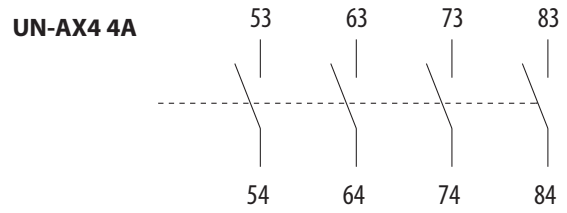
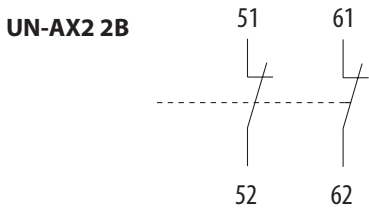
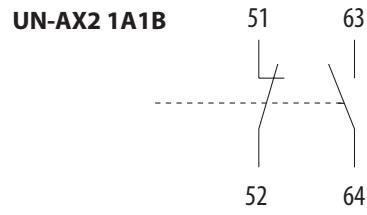
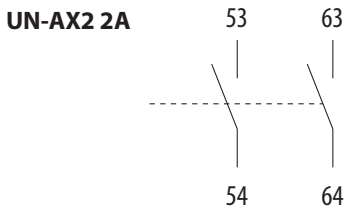


## ■ Thermal overload relays

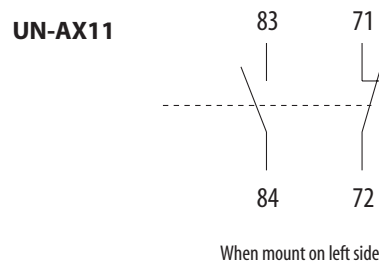
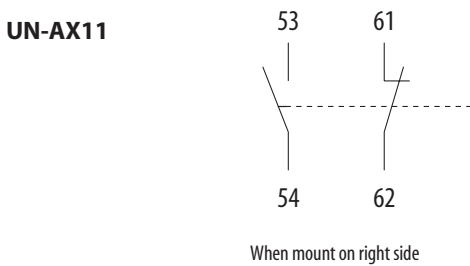
For all types



■ Front clip-on types



■ Side clip-on types



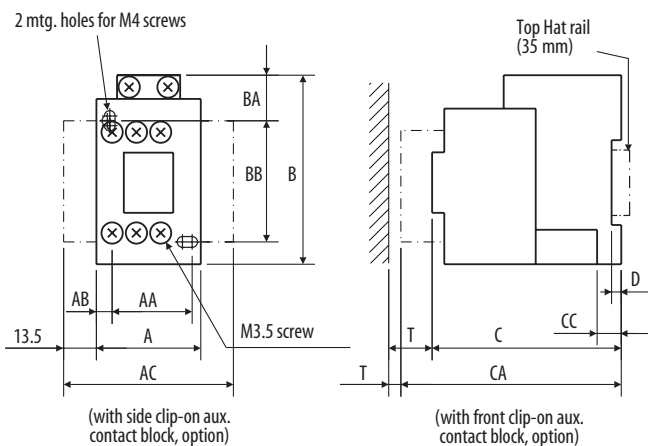
BASICS



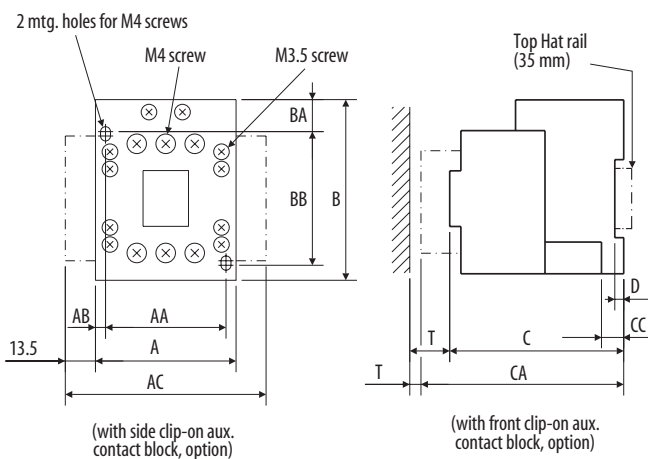
# TERMINAL ASSIGNMENT & DIMENSIONS

## ■ Contactors

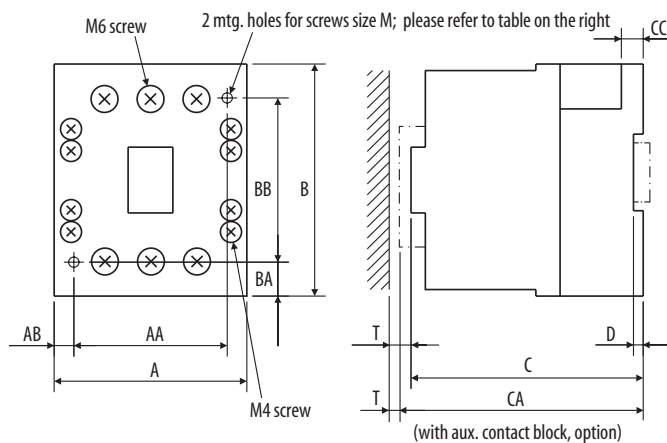
BASICS



Type	A	B	C	AA	AB	AC	BA	BB	CC	CA	D	T
S-N10CX	43	78	78	35	4.5	70	19	50	10	106	4	5
S-N11CX	43	78	78	35	4.5	70	19	50	10	106	4	5
S-N12CX	53	78	78	40	4.5	—	19	50	10	106	4	5
S-N18CX	43	79	81	30	6	—	13	60	10	109	4	5
SD-N11CX	43	78	110	35	4.5	70	19	50	10	138	4	5
SD-N12CX	53	78	110	40	4.5	—	19	50	10	138	4	5



Type	A	B	C	AA	AB	AC	BA	BB	CC	CA	D	T
S-N20CX	63	81	81	54	4.5	90	14	60	6.5	109	4	5
S-N21CX	63	81	81	54	4.5	90	14	60	6.5	109	4	5
S-N25CX	75	89	91	65	5	102	13	70	6.5	119	4	5
S-N35CX	75	89	91	65	5	102	13	70	6.5	119	4	5
SD-N21CX	63	81	113	54	4.5	90	14	60	6.5	141	4	5
SD-N35CX	75	89	123	65	5	102	13	70	6.5	151	4	5



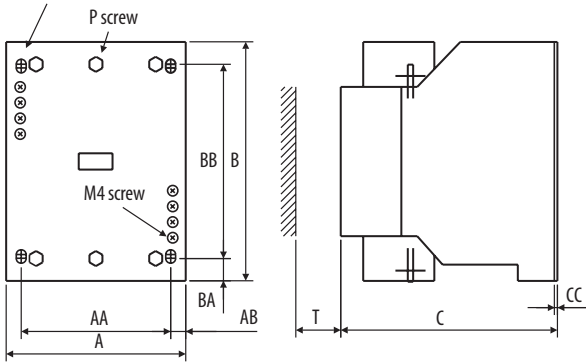
Type	A	B	C	AA	AB	BA	BB	CC	CA	D	M	T
S-N50CX	88	106	106	70	9	15.5	75	10	135	4.5	M4	5
S-N65CX	88	106	106	70	9	15.5	75	10	135	4.5	M4	5
S-N80	100	124	127	80	10	7	110	12	—	—	M5	10
S-N95	100	124	127	80	10	7	110	12	—	—	M5	10
SD-N50	88	110	133	70	9	15.5	75	10	—	—	M4	5
SD-N65	88	110	133	70	9	15.5	75	10	—	—	M4	5
SD-N80	100	134	158	80	10	7	110	12	—	—	M5	10
SD-K95	100	134	158	80	10	7	110	12	—	—	M5	10

All dimensions in mm



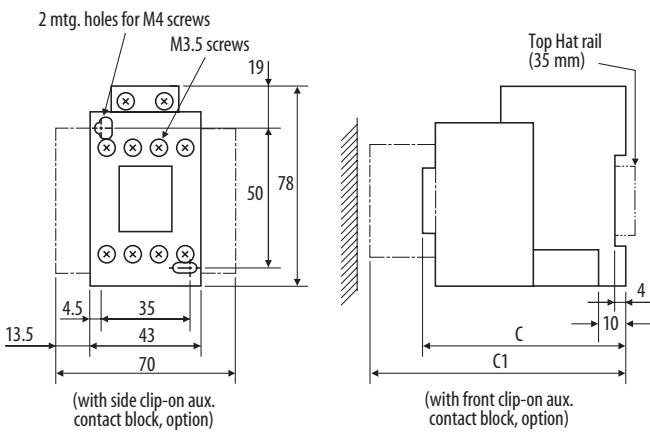
**■ Contactors**

4 mtg. holes for screws size M; please refer to table on the right



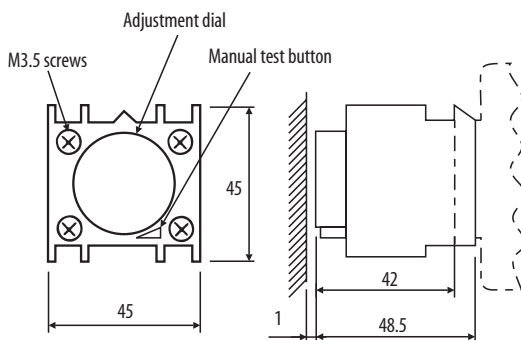
Type	A	B	C	AA	AB	BB	BA	CC	M	P	T
S-N125	100	150	136	90	5	125	12.5	1.6	M4	M8	10
S-N150	120	160	145	100	10	125	17.5	1.6	M5	M8	10
S-N180	138	204	174	120	9	190	7	1.6	M6	M10	10
S-N220	138	204	174	120	9	190	7	1.6	M6	M10	10
S-N300	163	243	195	145	9	225	9	2.3	M8	M12	10
S-N400	163	243	195	145	9	225	9	2.3	M8	M12	10
S-N600	290	310	234	250	20	250	30	10.5	M10	M16	10
S-N800	290	310	234	250	20	250	30	10.5	M10	M16	10
SD-N125	100	150	161	90	5	125	12.5	1.6	M4	M8	10
SD-N150	120	160	170	100	10	125	17.5	1.6	M5	M8	10
SD-N220	138	204	200	120	9	190	7	2.0	M6	M10	10
SD-N300	163	243	220	145	9	225	9	2.3	M8	M12	10
SD-N400	163	243	220	145	9	225	9	2.3	M8	M12	10
SD-N600	375	310	234	250	20	250	30	10.5	M10	M16	10
SD-N800	375	310	234	250	20	250	30	10.5	M10	M16	10

**■ Contactor relays SR-N4CX, SRD-N4CX**



Type	C	C1
SR-N4	78	106
SRD-N4	110	138

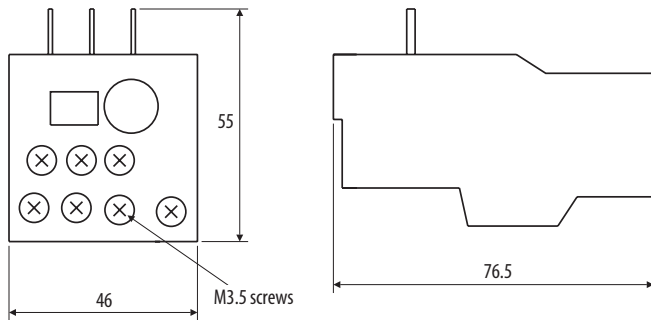
**■ Pneumatic time delay module UN-TR4ANCX**



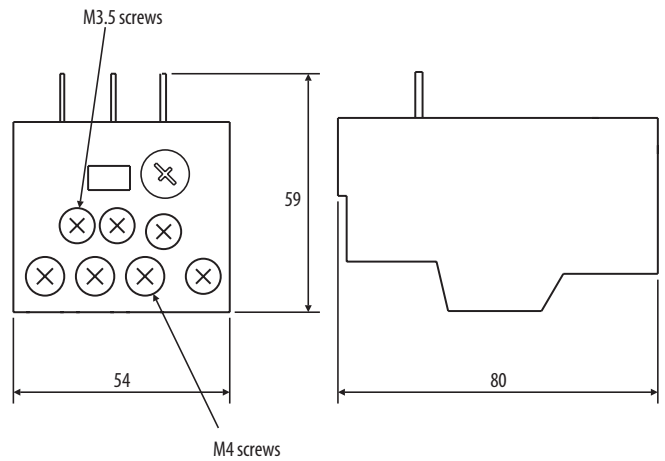
All dimensions in mm

# TERMINAL ASSIGNMENT & DIMENSIONS

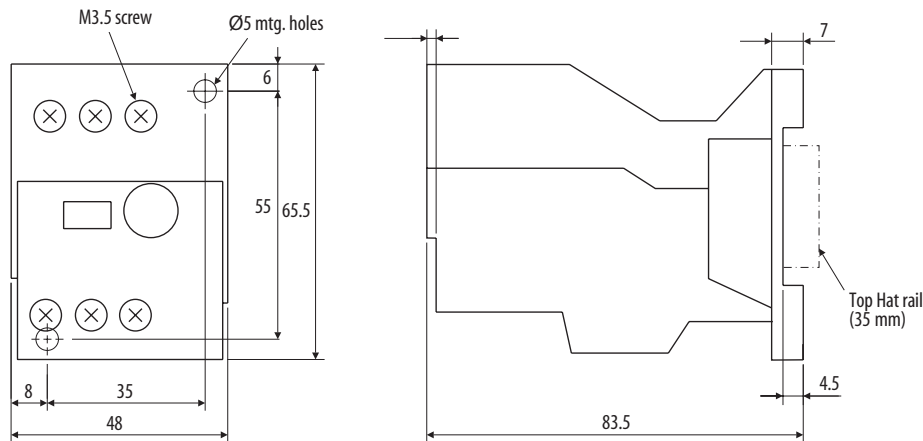
## TH-N12KPCX



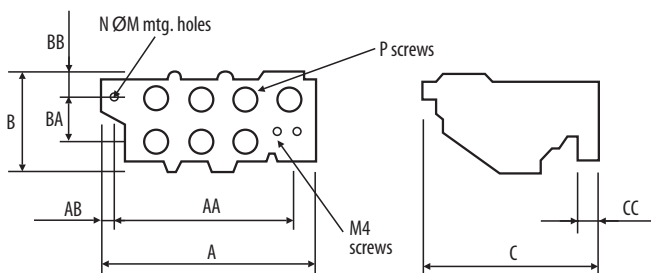
## TH-N18KPCX



## TH-N12KPCX with UN-HZ12CX (stand-alone)



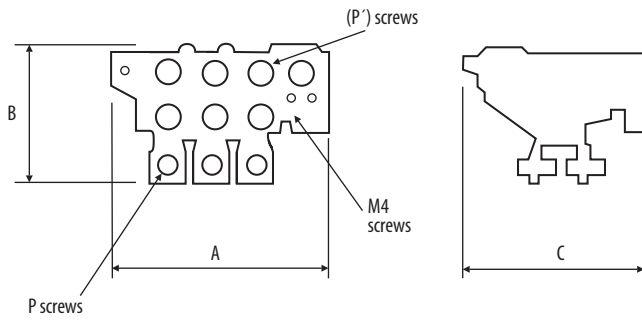
## TH-N20KPCX, TH-N20HZKPCX, TH-N60KPCX, TH-N120KP, TH-N600KP



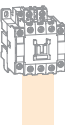
Type	A	B	C	AA	AB	BA	BB	CC	N	M	P
TH-N20KPCX	63	51	79	19	15	33	8.5	7	2	4.5	M4
TH-N20HZKPCX	63	51	79	19	15	33	8.5	7	2	4.5	M4
TH-N60KPCX	92	57	87	70	11	45	6	9	2	4.5	M6
TH-N120KP	103	67	105	75	14	50	6	10	2	6	M8
TH-N600KP	63	42	83.5	19	14	33	2	7	2	4.5	M4

All dimensions in mm

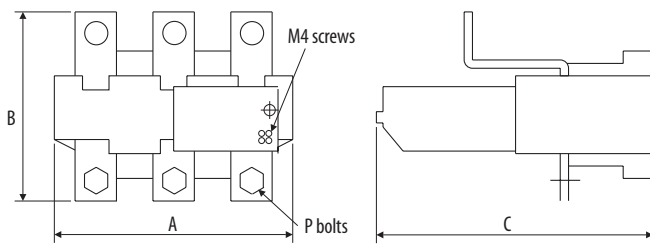
■ **TH-N20TAKPCX, TH-N60TAKP, TH-N120TAKP**



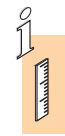
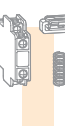
Type	A	B	C	P	P'
TH-N20TAKPCX	74	72	83.5	M5	M4
TH-N60TAKP	89	73.5	83.5	M6	M6
TH-N120TAKP	112	87	105	M8	M8



■ **TH-N220RHKP, TH-N400RHKP**



Type	A	B	C	P
TH-N220RHKP	144	114	180	M10
TH-N400RHKP	144	160	194	M12



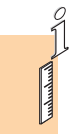
All dimensions in mm


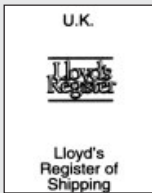



## International Standards

MITSUBISHI magnetic contactors are designed to conform to the relevant IEC recommendations and standards.  
Conformity to the following:

- International: IEC947-4-1
- Europe: EN60947-4-1
- Germany: VDE0660
- USA: NEMA-ICS

BASICS



Standards					
	USA / Canada	Marinal approvals			
Symbol					

Contactors *	USA / Canada		U.K.	France	Korea	Japan
S-N10CX	●	●	●	●	●	●
S-N11CX	●	●	●	●	●	●
S-N12CX	●	●	●	●	●	●
S-N18CX	●	●	●	●	●	●
S-N20CX	●	●	●	●	●	●
S-N21CX	●	●	●	●	●	●
S-N25CX	●	●	●	●	●	●
S-N35CX	●	●	●	●	●	●
S-N50CX	○	●	①	●	●	●
S-N65CX	○	●	①	●	●	●
S-N80	○	●	①	●	●	●
S-N95	○	●	①	●	●	●
S-N125	○	●	①	●	●	●
S-N150	○	●	①	●	●	●
S-N180	○	●	①	●	—	●
S-N220	○	●	①	●	●	●
S-N300	○	●	①	●	●	●
S-N400	○	●	①	●	●	●
S-N600	○	●	①	●	—	●
S-N800	○	○	①	●	—	●

Thermal overload relays	USA / Canada		U.K.	France	Korea	Japan
TH-N12KPCX	○	●	●	●	—	—
TH-N18KPCX	○	●	●	●	—	—
TH-N20KPCX	○	●	●	●	—	—
TH-N20TAKPCX	○	●	●	●	—	—
TH-N60KPCX	○	●	①	●	—	—
TH-N60TAKP	○	●	①	●	—	—
TH-N120KP	○	●	①	●	—	—
TH-N120TAKP	○	●	①	●	—	—
TH-N220RHKP	○	●	①	●	—	—
TH-N400RHKP	○	●	①	●	—	—
TH-N600KP	—	—	—	—	—	—

Contactors relays	USA / Canada		U.K.	France	Korea	Japan
SR-N4CX	●	●	●	●	—	—
SRD-N4CX	●	●	●	●	—	—

● Standard model is certified    ○ Certified models are available    — Certification not yet applied    ① Under application  
\* DC contactors on request

■ Ratings of   and  certified models

Specifications		S-N10CX	S-N11CX S-N12CX	S-N18CX	S-N20CX S-N21CX	S-N25CX	S-N35CX	S-N50CX	S-N65CX	S-N80
<b>Contactor (open)</b>										
Continuous current open	A	13	20	30	30	35	40	80	95	100
Horsepower rating Single phase	120 V	HP 1/2	1/2	1	1	2	2	3	3	5
	240 V	HP 1-1/2	1-1/2	3	3	3	5	7-1/2	10	15
Horsepower rating Three phases	208 V	HP 3	3	5	5	7-1/2	10	15	15	20
	240 V	HP 3	3	5	5	7-1/2	10	15	20	25
	480 V	HP 5	7-1/2	10	10	15	20	30	40	50
	600 V	HP 5	7-1/2	10	10	15	20	30	40	50

<b>Max. rating of short circuit protection device</b>										
Fuse class K5	A	30	30	70	70	100	125	250	250	300
Circuit breaker	A	—	—	—	—	100	125	—	—	300

\* UL listed and CSA certified types for N50 to N800 require suffix letters "UL", f.e. S-N65UL.

Specifications		S-N95	S-N125	S-N150	S-N180	S-N220	S-N300	S-N400	S-N600	S-N800
<b>Contactor (open)</b>										
Cont. current open	A	100	125	150	220	220	300	400	680	910
Horsepower rating Single phase	120 V	HP 7-1/2	10	15	15	15	—	—	—	—
	240 V	HP 15	20	25	30	40	—	—	—	—
Horsepower rating Three phases	208 V	HP 25	40	40	60	60	100	125	150	250
	240 V	HP 30	40	50	60	75	100	150	200	300
	480 V	HP 60	75	100	125	150	200	300	400	600
	600 V	HP 60	75	100	125	150	200	300	400	600

<b>Max. rating of short circuit protection device</b>										
Fuse class K5	A	225	350	350	500	500	600	500 <sup>①</sup>	800 <sup>②</sup>	1200 <sup>②</sup>
Circuit breaker	A	225	350	350	500	500	600	1000	—	—

\* UL listed and CSA certified types for N50 to N800 require suffix letters "UL", f.e. S-N65UL.

① Time delay fuse. ② Class L fuse.



# ORDER FORM

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**Order information**

Pos.	Number	Item (type)	Art. no.	Description	Remarks

Notes for ordering:  
 For your order please exclusively use the item names and order numbers (art. no.) specified in this catalogue.

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TH-N120KP .....	15
TH-N120TAKP .....	15
TH-N220RHKP .....	15
TH-N400RHKP .....	15
TH-N600KP .....	15

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