

SIEMENS

SINOVA

3MH7, 3MT7 & 3MU7

Contactors and Overload Relays

Reliable Control & Protection



Overview

SINOVA 3MH7 Contactor Relays, 3MT7 Power Contactors and 3MU7 Thermal Overload Relays are a cost-efficient and reliable solution for a variety of control, switching and motor protection applications.

The comprehensive range is designed for all standard industrial and infrastructure applications.

The range comes with a homogeneous design aesthetics and common accessories across the product range for 3MH7 Contactor Relays and for 3MT7 Power Contactors up to 95A .

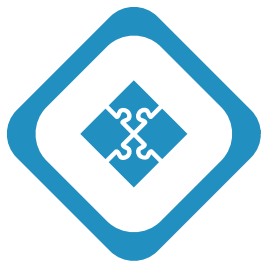




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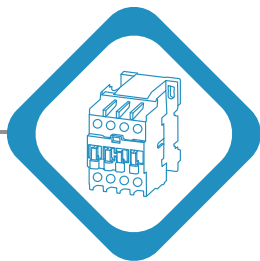
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Key features

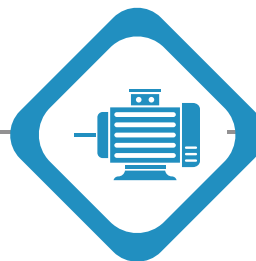


The Perfect Combination

Excellently crafted Contactors and Overload Relays with user friendly features and cost efficient solution for control and switching



Extensive accessories portfolio to suit every requirement



Reliable switching with tested Type-2 co-ordinated starter combination

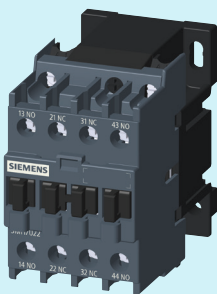


Safe and Reliable

Confirming to

- IEC 60947-4-1
- IEC 60947-5-1
- RoHS compliant
- CE Certified
- Type testing under CB scheme

3MH7 Contactor Relays



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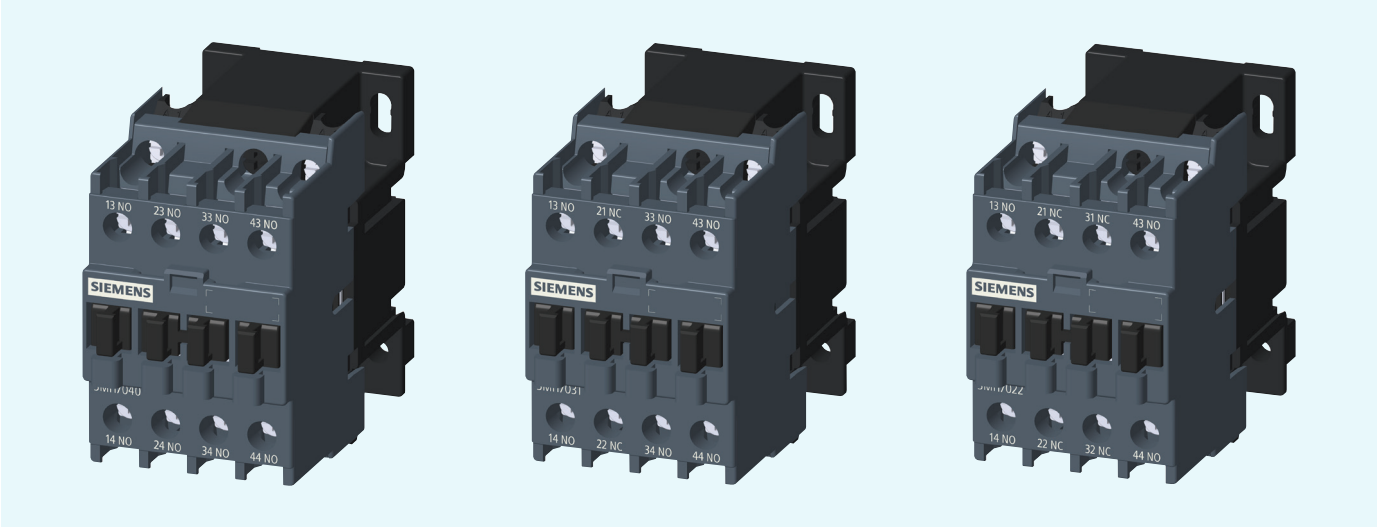
Wiring diagram

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Dimension drawing

Overview

SINOVA 3MH7 Contactor relays are the foremost solution for your control circuit needs. These Contactor relays are the cost-efficient and reliable choice of switching devices for controlling and signaling.

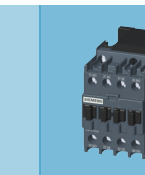


Article number scheme

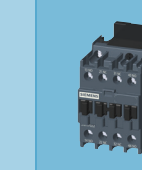
Product Version		Article number									
SINOVA Contactor relay		3MH7	0			-					0
Number of NO contacts			e.g. 2 = 2 NO		2						
Number of NC contacts			e.g. 2 = 2 NC		2						
Type of electrical connection		1= Screw terminals					1				
Coil circuit		A= AC coil circuit					A				
Rated control supply voltage		e.g. P0 = 230V AC, 50 Hz							P	0	
Example		3MH7	0	2	2	-	1	A	P	0	0

Note:
 The above scheme shows an overview of the product versions for understanding of the logic behind the article number
 For your orders refer to selection and ordering data

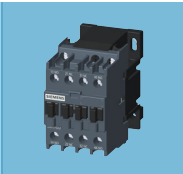
Technical Specifications

				
SINOVA Contactor relays				
Type		3MH7022	3MH7031	3MH7040
Size		0		
General data				
Dimension (W x H x D)				
• Basic unit	mm	45 x 74.4 x 81.8		
Mounting position		22.5° Inclination forward and Backward & 360° Rotation, in relation to normal vertical mounting plane		
Mechanical service life				
• Basic unit	Operating cycles	10,000,000		
• Basic unit with mounted auxiliary switch	Operating cycles	10,000,000		
Rated insulation voltage U_i (pollution degree 3)	V	1000		
Rated impulse withstand voltage U_{imp}	kV	6		
Permissible ambient temperature				
During operation	°C	-5 ... +55		
During storage	°C	-25 ... +70		
Relative air humidity	%	10 ... 95		
Degree of protection IP on the front		IP20		
Installation altitude at height above sea level, maximum	m	2000		
Short-circuit protection				
- With fuse links of operational class gG:	A	10		

Technical Specifications

				
SINOVA Contactor relays				
Type		3MH7022	3MH7031	3MH7040
Conductor cross-sections				
Auxiliary conductors and coil terminals				
Solid or stranded	mm ²	1 x (1.0 ... 4.0 mm ²); 2 x (1.0 ... 4.0 mm ²)		
Finely stranded with end sleeve	mm ²	1 x (1.0 ... 2.5 mm ²); 2 x (1.0 ... 1.5 mm ²)		
• Terminal screw		M3.5		
- Tightening torque	Nm	1.2		
Control				
Solenoid coil operating range				
• AC operation	at 50Hz	0.85 ... 1.1 x Us		
	at 60Hz	0.85 ... 1.1 x Us		
Power consumption of the solenoid coil				
• AC operation, 50 Hz				
- Closing	VA/p.f.	70 / 0.75		
- Closing	VA/p.f.	11 / 0.3		
• AC operation, 50 Hz wide band				
- Closing	VA/p.f.	90 / 0.75		
- Closing	VA/p.f.	15 / 0.3		
• AC operation, 50/60 Hz				
- Closing	VA/p.f.	80 / 0.75		
- Closing	VA/p.f.	12 / 0.3		
Operating times within operating range				
• AC operation				
- Closing delay	ms	7 ... 22		
- Opening delay	ms	5 ... 20		

Technical Specifications

SINOVA Contactor relays							
Type					3MH7022	3MH7031	3MH7040
Rated data of the auxiliary contacts							
Number of NO contacts					2	3	4
Number of NC contacts					2	1	0
Load rating with AC							
• Rated operational currents I_e							
- AC-12					A	10	
- AC-15 at rated operational voltage U_e					230V A	6	
					400V A	3	
					500V A	2	
					690V A	1	
• Load rating with DC (1 conducting path)							
- DC-12, at rated operational voltage U_e					24V A	6	
					110V A	3	
					220V A	1	
- DC-13, at rated operational voltage U_e					24V A	6	
					110V A	1	
					220V A	0.3	
					440V A	0.14	
					600V A	0.1	
Switching frequency							
operating cycles/hour							
• Rated operation for utilization category							
					AC-12/DC-12 1/h	800	
					AC-15 1/h	800	
					DC-13 1/h	800	
• No-load switching frequency					1/h	1800	

Selection and Ordering Information



Operational Current AC-15 at 230V AC	Contacts		Article No.
	NO	NC	
6A	4	0	3MH7040-1A..0
6A	3	1	3MH7031-1A..0
6A	2	2	3MH7022-1A..0

.. Please enter coil codes from table below

Coil Code											
Frequency	24V	36V	48V	110V	220V	230V	380V	400V	415V	165-273	353-455V
50Hz	B0	G0	H0	F0	M0	P0	Q0	V0	R0	S0	T0
50/60Hz	C2	G2	H2	F2	N2	L2	Q2	V2	R2	-	-

Accessories & Spares



1 & 2 Pole Front
Auxiliary switches

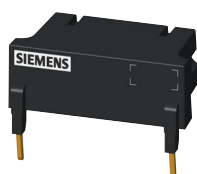


4 Pole Front
Auxiliary switches



Lateral
Auxiliary switches

Please refer page no. 40 for more information on accessories



Surge Suppressor

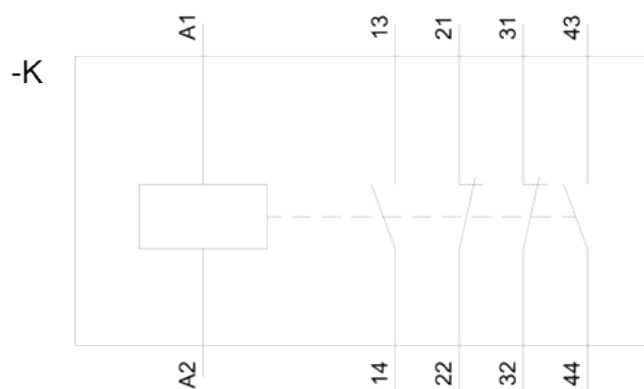


Spare Coil
3MT7900L..1

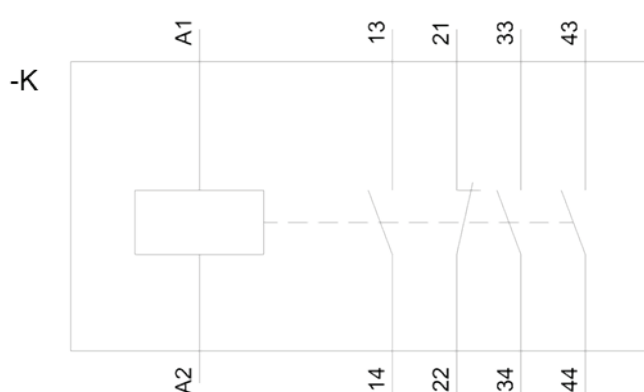
.. Please enter coil codes from table above

Wiring diagram

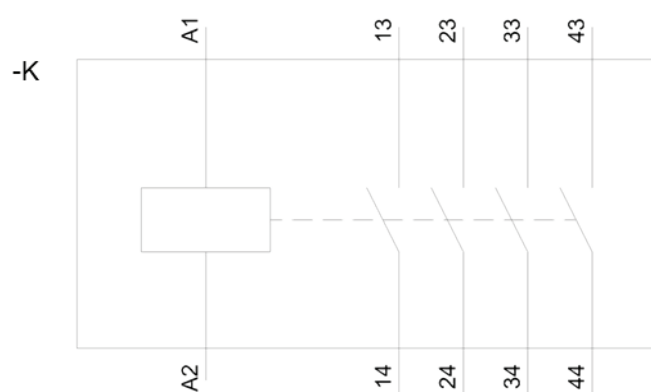
3MH7022 (2NO+2NC)



3MH7031 (3NO+1NC)

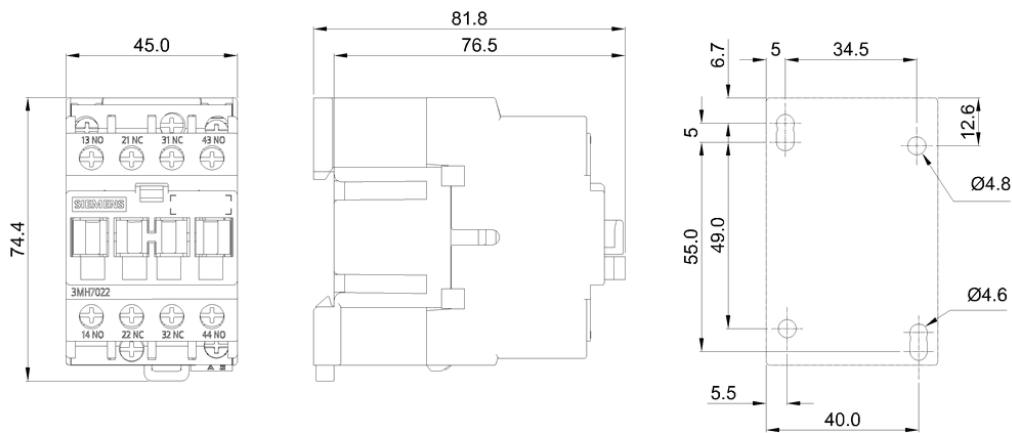


3MH7040 (4NO)

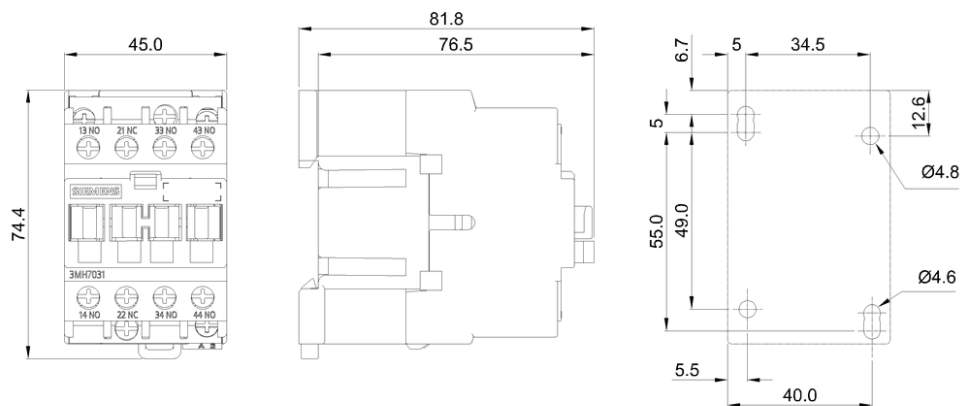


Dimension Drawing

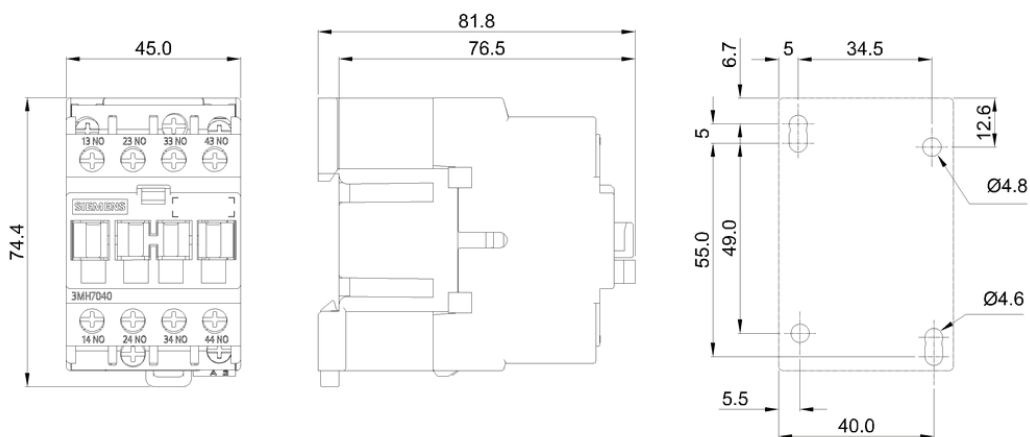
3MH7022 (2NO+2NC)



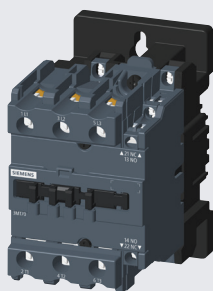
3MH7031 (3NO+1NC)



3MH7040 (4NO)



3MT7 Power Contactor



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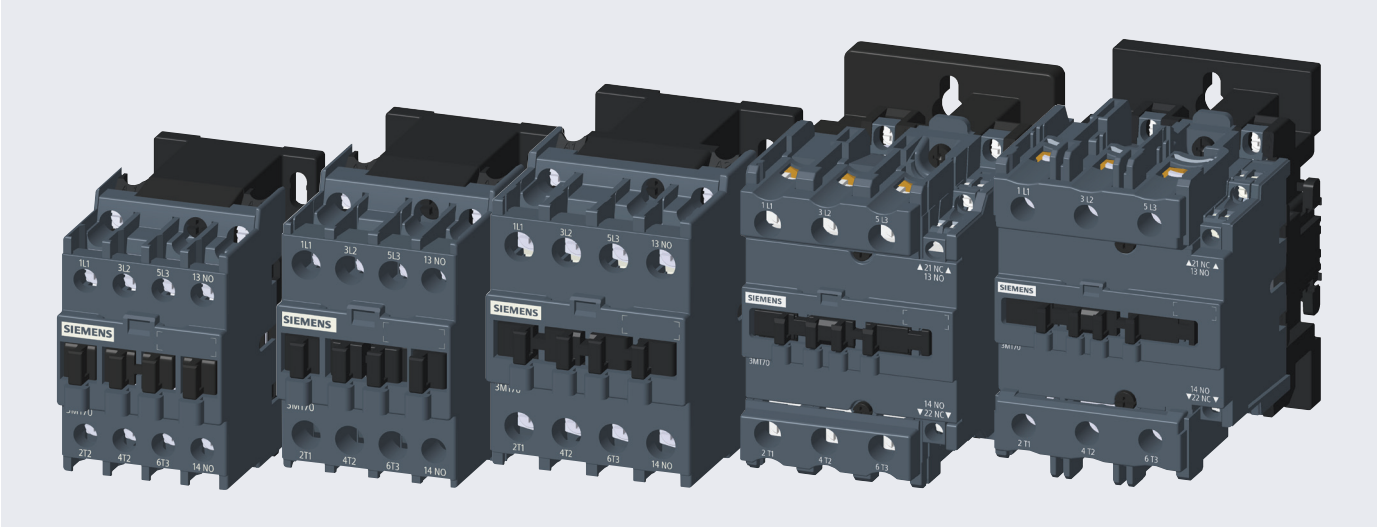
Wiring diagram

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Dimension drawing

Overview

The SINOVA 3MT7 Power Contactor range is a cost-efficient and reliable solution for a variety of switching applications. The comprehensive range of contactors provides optimum selection for industrial and infrastructure applications



Article number scheme

Product Version		Article number													
SINOVA 3 Pole Power Contactor	3MT7	☐	☐	☐	-	☐	A	☐	☐	☐	-	0			
AC-3 current rating at 415V	e.g. 012 = 12 A	0	1	2											
Size	e.g. 0 = Size 0					0									
Type of electrical connection	A= Screw terminals							A							
Number of NO contacts	e.g. 1 = 1 NO								1						
Number of NC contacts	e.g. 0 = 0 NC									0					
Coil circuit	A= AC coil circuit												A		
Rated control supply voltage	e.g. P0= 230V AC, 50 Hz													P	0
Example	3MT7	0	1	2	-	0	A	A	1	0	-	0	A	P	0

Note:
 The above scheme shows an overview of the product versions for understanding of the logic behind the article number
 For your orders refer to selection and ordering data

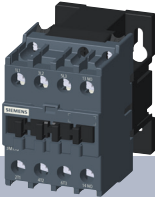
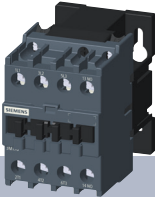
Overview of ratings and sizes

			
Size 0	6A	9A	12A

1NO or 1NC

		
Size 1	18A	22A

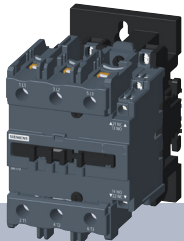
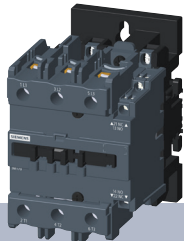
1NO or 1NC

				
Size 2	25A	32A	38A	40A

1NO or 1NC

			
Size 3	40A	50A	65A

1NO + 1NC

		
Size 4	80A	95A

1NO + 1NC

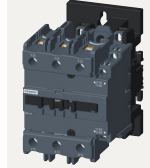
Technical Specifications

																																															
SINOVA Power Contactors 3 Pole																																															
Type			3MT7006-0			3MT7010-0			3MT7012-0			3MT7018-1			3MT7022-1			3MT7025-2			3MT7032-2			3MT7038-2			3MT7040-2			3MT7040-3			3MT7050-3			3MT7065-3			3MT7080-4			3MT095-4					
Size			0			0			0			1			1			2			2			2			2			3			3			3			4			4					
General data																																															
Dimension (W x H x D)																																															
• Basic unit			W			mm			45			45.5			56			74.5			84.5																										
			H			mm			74.4			74.5			82.9			127.4			127.4																										
			D			mm			81.8			86.6			95			112.6			121.3																										
Mounting position																																															
Rated insulation voltage U _i (pollution degree 3)																																															
• Main Circuit			V			1000																																									
• Auxiliary Circuit			V			1000																																									
Rated impulse withstand voltage U _{imp}																																															
• Main Circuit			kV			6																																									
• Auxiliary Circuit			kV			6																																									
Permissible ambient temperature																																															
During operation			°C			-5 ... +55																																									
During storage			°C			-25 ... +70																																									
Relative air humidity			%			10 ... 95																																									
Degree of protection IP on the front						IP20																																									
Installation altitude at height above sea level, maximum			m			2000																																									
Short-circuit protection																																															
Main circuit																																															
• Fuse links, operational class gG																																															
- Type of coordination "1"			A			32			32			32			40			40			50			50			63			63			80			100			100			160			160		
- Type of coordination "2"			A			25			25			25			32			32			40			40			50			50			63			80			80			125			125		
Auxiliary circuit																																															
• Fuse links, operational class gG			A			10																																									

Technical Specifications

																						
SINOVA Power Contactor																						
Type		3MT7006-0	3MT7010-0	3MT7012-0	3MT7018-1	3MT7022-1	3MT7025-2	3MT7032-2	3MT7038-2	3MT7040-2	3MT7040-3	3MT7050-3	3MT7065-3	3MT7080-4	3MT095-4							
Size		0	0	0	1	1	2	2	2	2	3	3	3	4	4							
Conductor cross-sections																						
Main conductors																						
Solid or stranded	mm²	1 x (1 ... 4 mm²); 2 x (1 ... 4 mm²)			1 x (1.5 ... 6 mm²); 2 x (1.5 ... 6 mm²)		1 x (1.5 ... 10 mm²); 2 x (1.5 ... 6 mm²)				1 x (2.5 ... 25 mm²); 2 x (2.5 ... 16 mm²)				1 x (4 ... 50 mm²); 2 x (4 ... 35 mm²)							
Finely stranded with end sleeve	mm²	1 x (1 ... 4 mm²); 2 x (1 ... 1.5 mm²)			1 x (1 ... 6 mm²); 2 x (1 ... 2.5 mm²)		1 x (1.5 ... 10 mm²); 2 x (1.5 ... 4 mm²)				1 x (2.5 ... 25 mm²); 2 x (2.5 ... 10 mm²)				1 x (4 ... 50 mm²); 2 x (4 ... 16 mm²)							
• Terminal screw - Tightening torque	Nm	M3.5 1.2			M3.5 1.7		M4 1.85				M8 5				M10 9							
Auxiliary conductors and coil terminals																						
Solid or stranded	mm²	1 x (1.0 ... 4.0 mm²); 2 x (1.0 ... 4.0 mm²)					1 x (1.5 ... 4.0 mm²); 2 x (1.5 ... 4.0 mm²)					1 x (1.0 ... 4.0 mm²); 2 x (1.0 ... 4.0 mm²)										
Finely stranded with end sleeve	mm²	1 x (1.0 ... 2.5 mm²); 2 x (1.0 ... 1.5 mm²)					1 x (1.5 ... 4.0 mm²); 2 x (1.5 ... 4.0 mm²)					1 x (1.0 ... 2.5 mm²); 2 x (1.0 ... 1.5 mm²)										
• Terminal screw - Tightening torque	Nm	M3.5 1.2					M4 1.85					M3.5 1.2										
Control																						
Solenoid coil operating range																						
• AC operation	at 50Hz at 60Hz	0.85 ... 1.1 x Us 0.85 ... 1.1 x Us																				
Power consumption of the solenoid coil (maximum)																						
• AC operation, 50 Hz																						
- Closing	VA/p.f.	70 / 0.75					100 / 0.75					230 / 0.75										
- Closed	VA/p.f.	11 / 0.3					15 / 0.3					44 / 0.3										
• AC operation, 50 Hz wide band																						
- Closing	VA/p.f.	90 / 0.75					120 / 0.75					-										
- Closed	VA/p.f.	15 / 0.3					15 / 0.3					-										
• AC operation, 50/60 Hz																						
- Closing	VA/p.f.	80 / 0.75					110 / 0.75					280 / 0.75										
- Closed	VA/p.f.	12 / 0.3					15 / 0.3					41 / 0.3										
Operating times within operating range																						
• AC operation, 50 Hz																						
- Closing delay	ms	9 ... 25					12 ... 27					17 ... 29					17 ... 38					
- Opening delay	ms	4 ... 15					5 ... 22					6 ... 15					5 ... 23					

Technical Specifications

															
SINOVA Power Contactor		3MT7006-0	3MT7010-0	3MT7012-0	3MT7018-1	3MT7022-1	3MT7025-2	3MT7032-2	3MT7038-2	3MT7040-2	3MT7040-3	3MT7050-3	3MT7065-3	3MT7080-4	3MT095-4
Type		0	0	0	1	1	2	2	2	2	3	3	3	4	4
Rated data for Main Contacts															
Load rating with AC															
• Utilization category AC-1															
- Rated operational currents I _e At 40 °C up to 690 V	A	25	25	25	32	32	40	40	50	50	60	80	80	125	125
Utilization categories AC-3															
- Rated operational currents I _e at 400V, 55 °C	A	6	9	12	18	22	25	32	38	40	40	50	65	80	95
- Rated operational currents I _e at 690V, 55 °C	A	4	5.2	6.7	10.4	12.8	13	16	18.2	18.2	24	24	32	47	47
Rated Operating Power															
• operating power at AC-3 at 400 V	kW	2.2	4	5.5	7.5	11	11	15	18.5	18.5	18.5	22	30	37	45
• operating power at AC-3 at 690 V	kW	3	5.5	5.5	7.5	11	11	15	15	15	22	22	30	45	45
Power loss per pole	W	2.5	2.5	2.5	3.1	3.1	3.6	5.2	5.2	5.2	5.4	7.4	6.4	13.7	13.7
Mechanical service life (in million)															
• Basic units	Operating Cycles	10	10	10	10	10	10	10	10	10	5	5	5	3	3
• Basic unit with mounted auxiliary switch	Operating Cycles	10	10	10	10	10	10	10	10	10	5	5	5	3	3
Electrical service life AC-3 @400V(in million)	Operating Cycles	1.4	1.4	1.4	1.2	1.2	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.7	0.7
Switching frequency in operating cycles/hour															
• No-load switching frequency	1/h	1800	1800	1800	1800	1800	1800	1800	1800	1800	1200	1200	1200	1200	1200
• Switching frequency AC-1	1/h	600	600	600	600	600	600	600	600	600	600	600	600	600	600
• Switching frequency AC-3	1/h	750	750	750	750	750	750	600	600	600	600	600	600	400	400
Rated data for Auxiliary Contacts															
Number of Auxiliary contacts		1NO or 1NC										1NO + 1NC			
Load rating with AC															
• Rated operational currents I _e															
- AC-12	690V A	10													
- AC-15 at rated operational voltage U _e	230V A	6													
	400V A	3													
	500V A	2													
	690V A	1													
• Load rating with DC (1 conducting path)															
- DC-12, at rated operational voltage U _e	24V A	6													
	110V A	3													
	220V A	1													
- DC-13, at rated operational voltage U _e	24V A	6													
	110V A	1													
	220V A	0.3													
	440V A	0.14													
	600V A	0.1													

Selection and Ordering Information

Size	Rated Data			Auxiliary contacts		Article No.
	AC-3 at 400V at 55°C	Ratings of three-phase motors at 50 Hz and 400V	AC-1 at 690V at 40°C			
	A	kW	A	NO	NC	
Size 0 	6	2.2	25	1	-	3MT7006-0AA10-0A..
	6	2.2	25	-	1	3MT7006-0AA01-0A..
	9	4	25	1	-	3MT7010-0AA10-0A..
	9	4	25	-	1	3MT7010-0AA01-0A..
	12	5.5	25	1	-	3MT7012-0AA10-0A..
	12	5.5	25	-	1	3MT7012-0AA01-0A..
Size 1 	18	7.5	32	1	-	3MT7018-1AA10-0A..
	18	7.5	32	-	1	3MT7018-1AA01-0A..
	22	11	32	1	-	3MT7022-1AA10-0A..
	22	11	32	-	1	3MT7022-1AA01-0A..
Size 2 	25	11	40	1	-	3MT7025-2AA10-0A..
	25	11	40	-	1	3MT7025-2AA01-0A..
	32	15	40	1	-	3MT7032-2AA10-0A..
	32	15	40	-	1	3MT7032-2AA01-0A..
	38	18.5	50	1	-	3MT7038-2AA10-0A..
	38	18.5	50	-	1	3MT7038-2AA01-0A..
	40	18.5	50	1	-	3MT7040-2AA10-0A..
	40	18.5	50	-	1	3MT7040-2AA01-0A..
Size 3 	40	18.5	60	1	1	3MT7040-3AA11-0A..
	50	22	80	1	1	3MT7050-3AA11-0A..
	65	30	80	1	1	3MT7065-3AA11-0A..
Size 4 	80	37	125	1	1	3MT7080-4AA11-0A..
	95	45	125	1	1	3MT7095-4AA11-0A..

.. Please enter coil codes from table below

Coil Code											
	24V	36V	48V	110V	220V	230V	380V	400V	415V	165-273*	353-455V*
50Hz	B0	G0	H0	F0	M0	P0	Q0	V0	R0	S0	T0
50/60Hz	C2	G2	H2	F2	N2	L2	Q2	V2	R2	-	-

Note: *T0 and S0 wide band coils are available upto Size 2 contactors

Selection and Ordering Information

Accessories



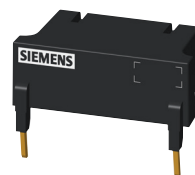
1 & 2 Pole Front
Auxiliary switches



4 Pole Front
Auxiliary switches



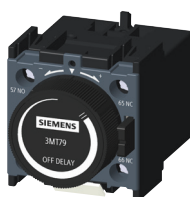
Lateral
Auxiliary switches



Surge Suppressor



On Delay
Pneumatic timer



Off Delay
Pneumatic timer



Mechanical Interlock



Electro-Mechanical
Interlock

Please refer Chapter no. 40 for more information on accessories

Spare Coils



3MT79000L..1

Size of Contactor	Article No.
Size 0 and Size 1	3MT79000L..1
Size 2	3MT79000L..2
Size 3 and Size 4	3MT79000L..3

.. Please enter coil codes from table below

Coil Code											
	24V	36V	48V	110V	220V	230V	380V	400V	415V	165-273*	353-455V*
50Hz	B0	G0	H0	F0	M0	P0	Q0	V0	R0	S0	T0
50/60Hz	C2	G2	H2	F2	N2	L2	Q2	V2	R2	-	-

Note : *T0 and S0 wide band coils are available upto Size 2 contactors

Selection and Ordering Information

Spares Top Housing

Size	AC-3 at 400V at 55°C	Ratings of three- phase motors at 50 Hz and 400V	AC-1 at 690V at 40°C	Auxiliary Contacts		Article No.
	A	kW	A	NO	NC	
Size 0 	6	2.2	25	1	-	3MT7906-0HA10
	6	2.2	25	-	1	3MT7906-0HA01
	9	4	25	1	-	3MT7910-0HA10
	9	4	25	-	1	3MT7910-0HA01
	12	5.5	25	1	-	3MT7912-0HA10
	12	5.5	25	-	1	3MT7912-0HA01
Size 1 	18	7.5	32	1	-	3MT7918-1HA10
	18	7.5	32	-	1	3MT7918-1HA01
	22	11	32	1	-	3MT7922-1HA10
	22	11	32	-	1	3MT7922-1HA01
Size 2 	25	11	40	1	-	3MT7925-2HA10
	25	11	40	-	1	3MT7925-2HA01
	32	15	40	1	-	3MT7932-2HA10
	32	15	40	-	1	3MT7932-2HA01
	38	18.5	50	1	-	3MT7938-2HA10
	38	18.5	50	-	1	3MT7938-2HA01
	40	18.5	50	1	-	3MT7940-2HA10
	40	18.5	50	-	1	3MT7940-2HA01
Size 3 	40	18.5	60	1	1	3MT7940-3HA11
	50	22	80	1	1	3MT7950-3HA11
	65	30	80	1	1	3MT7965-3HA11
Size 4 	80	37	125	1	1	3MT7980-4HA11
	95	45	125	1	1	3MT7995-4HA11

Wiring diagram

Size 0, Size 1, Size 2 (1 NO Version)

The diagram shows a relay with a coil connected between terminals A1 and A2. There are three sets of switch contacts. The first set consists of a normally closed (NC) contact labeled 1 L1 and a normally open (NO) contact labeled 2 T1. The second set consists of an NC contact labeled 3 L2 and an NO contact labeled 4 T2. The third set consists of an NC contact labeled 5 L3 and an NO contact labeled 6 T3. Additionally, there is a separate NO contact labeled 13 and a terminal labeled 14.

Size 0: 6A / 9A / 12A
Size 1: 18A / 22A
Size 2: 25A / 32A / 38A/ 40A

Size 0, Size 1, Size 2 (1 NC Version)

The diagram shows a relay with a coil connected between terminals A1 and A2. There are three sets of switch contacts. The first set consists of a normally open (NO) contact labeled 1 L1 and a normally closed (NC) contact labeled 2 T1. The second set consists of an NO contact labeled 3 L2 and an NC contact labeled 4 T2. The third set consists of an NO contact labeled 5 L3 and an NC contact labeled 6 T3. Additionally, there is a separate NC contact labeled 21 and a terminal labeled 22.

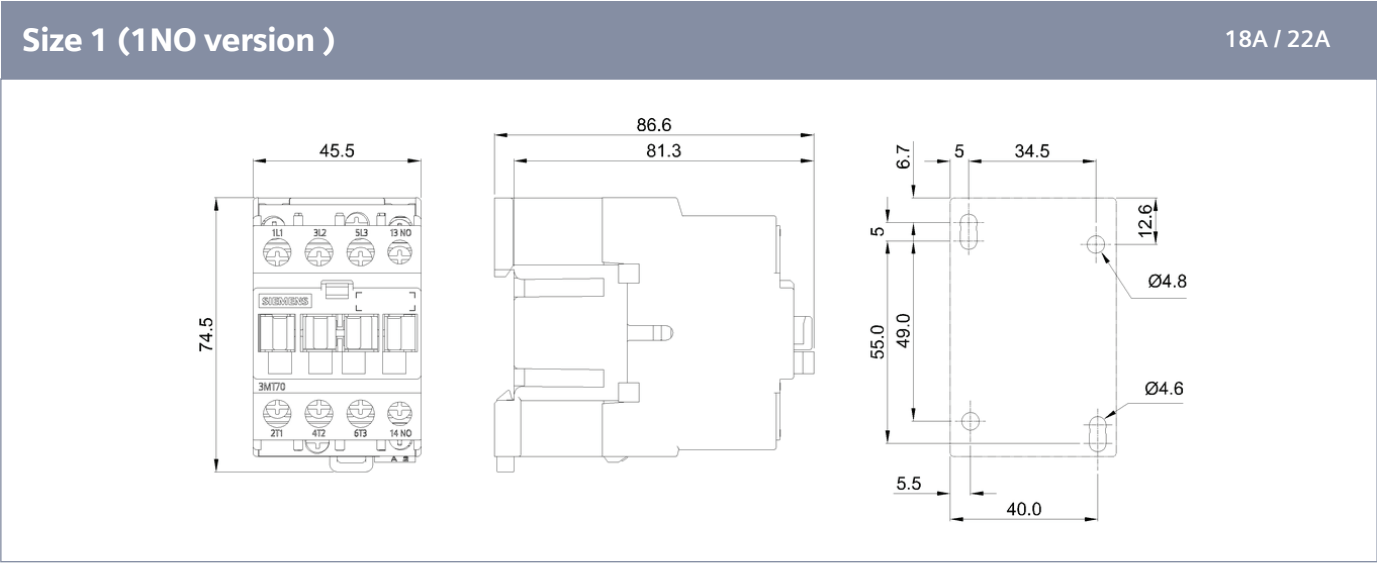
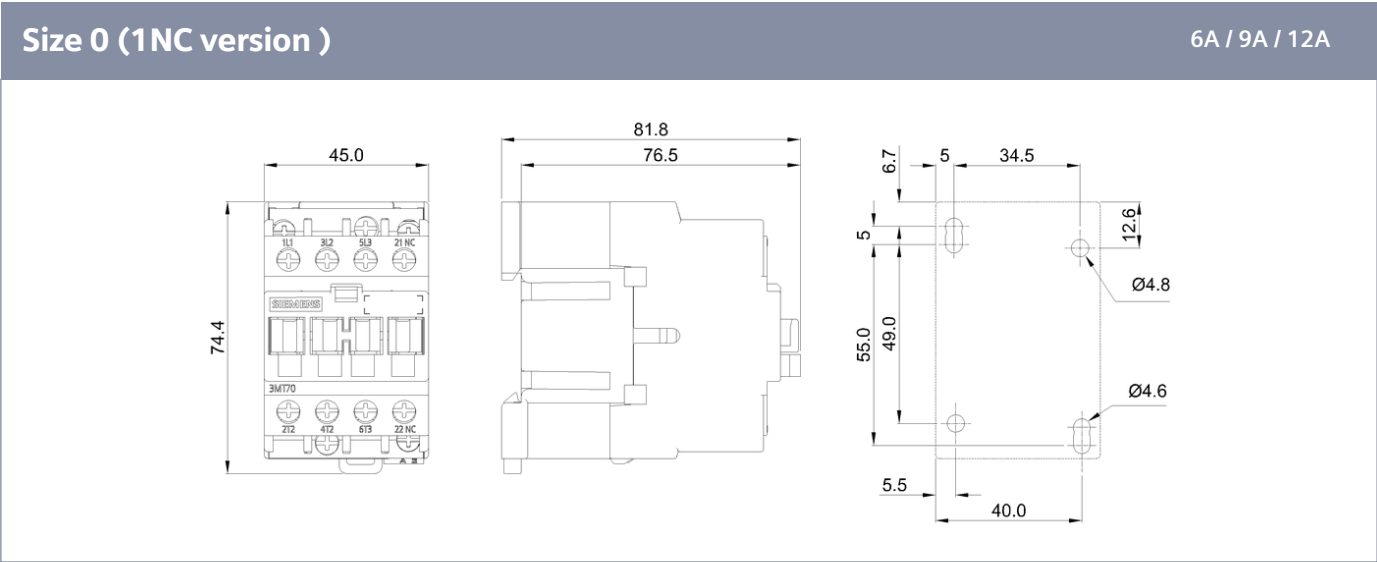
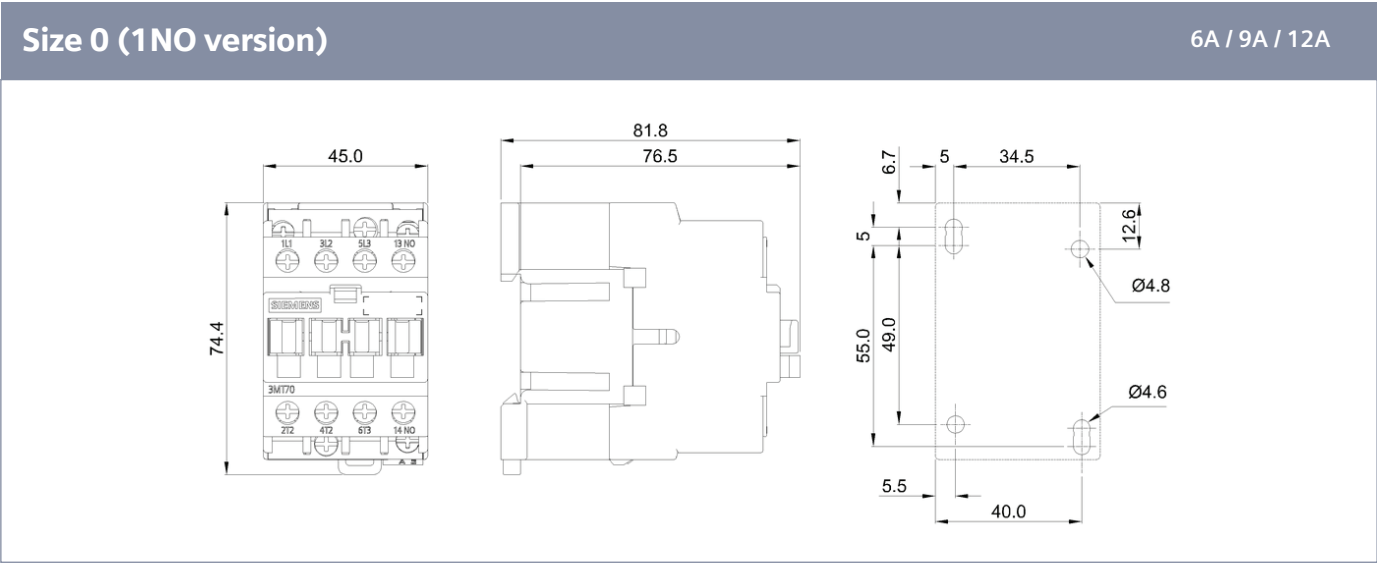
Size 0: 6A / 9A / 12A
Size 1: 18A / 22A
Size 2: 25A / 32A / 38A/ 40A

Size 3, Size 4 (1NO+1NC version)

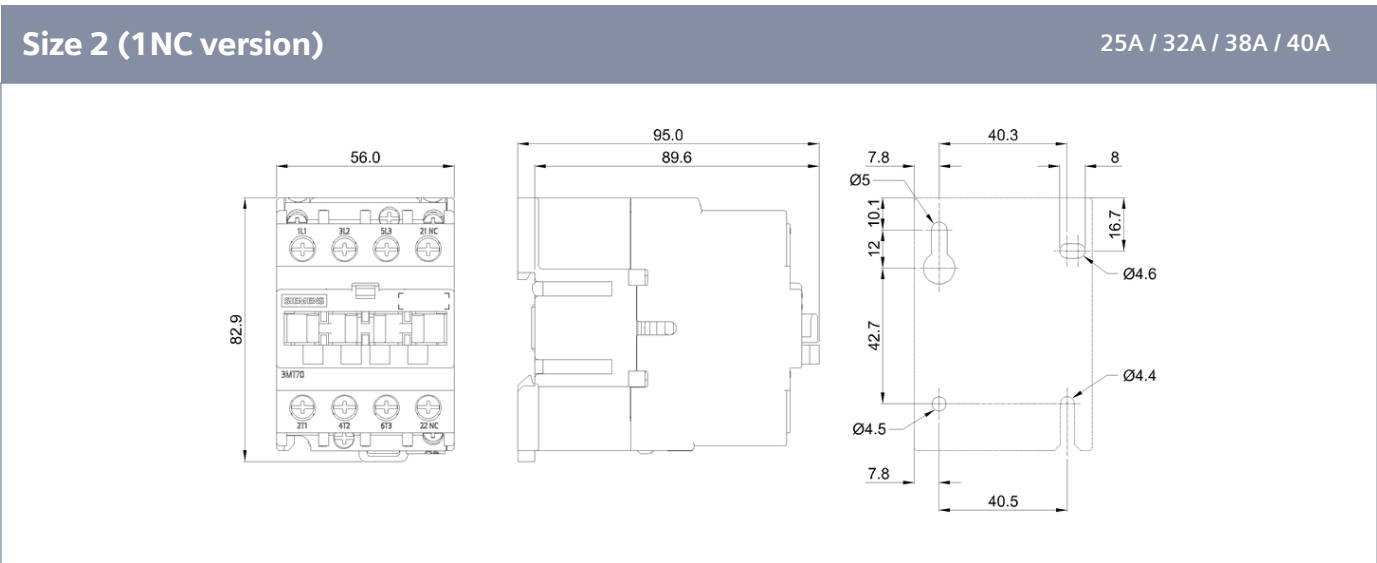
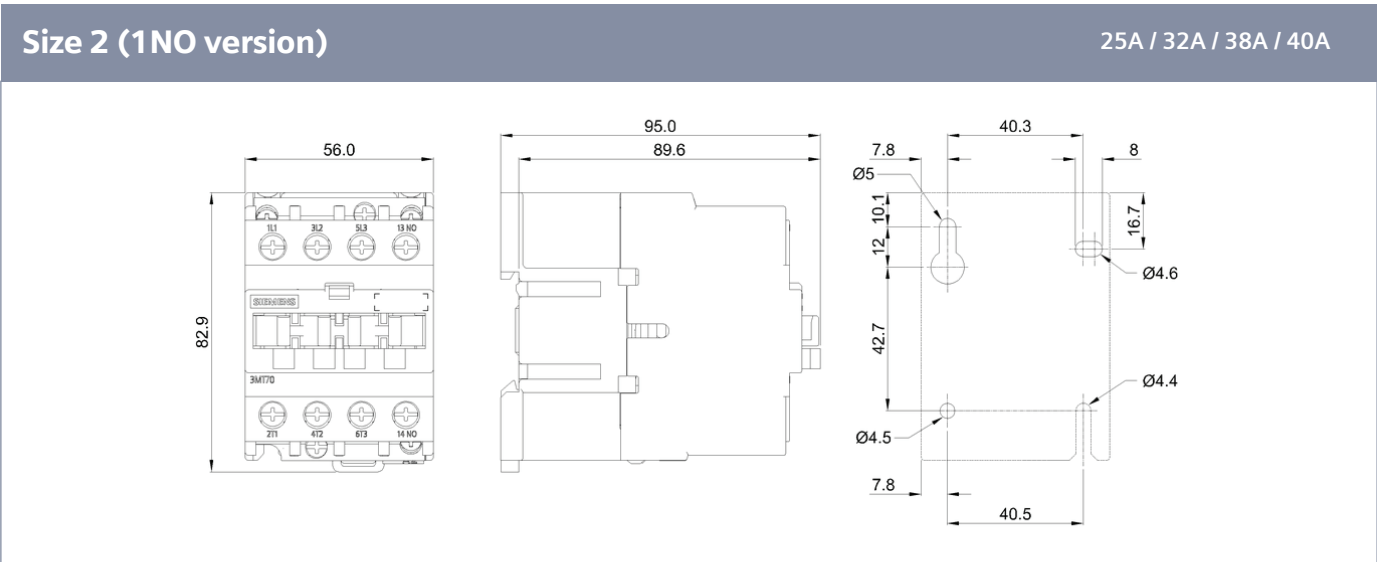
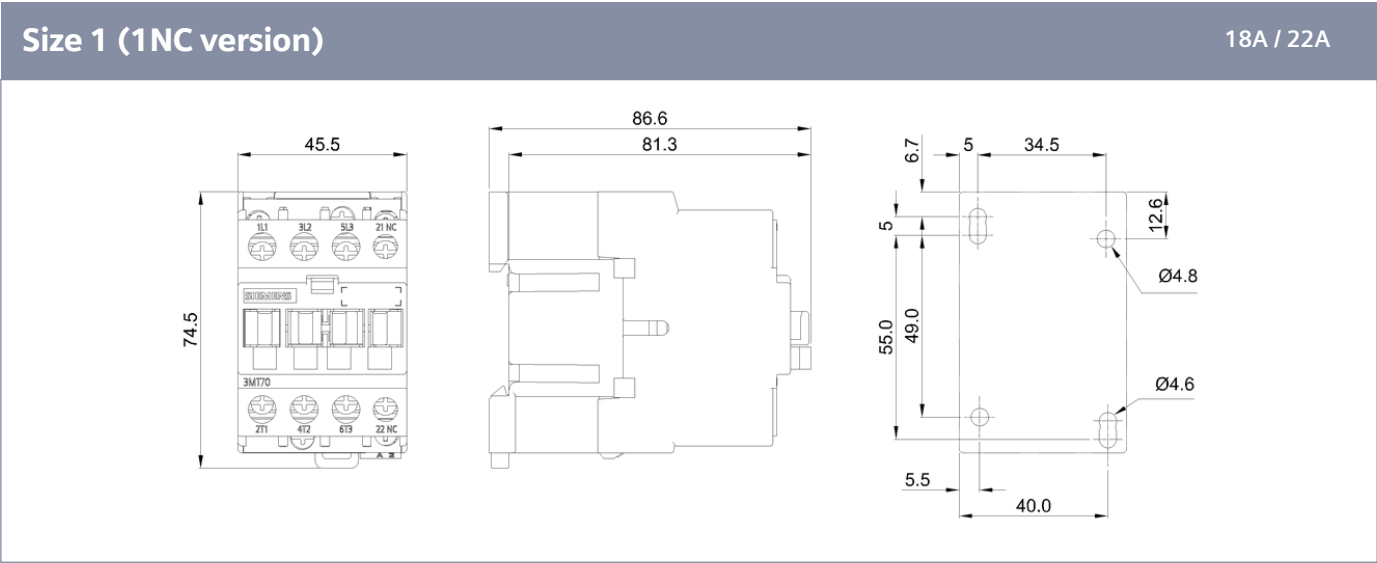
The diagram shows a relay with a coil connected between terminals A1 and A2. There are three sets of switch contacts. The first set consists of a normally open (NO) contact labeled 1 L1 and a normally closed (NC) contact labeled 2 T1. The second set consists of an NO contact labeled 3 L2 and an NC contact labeled 4 T2. The third set consists of an NO contact labeled 5 L3 and an NC contact labeled 6 T3. Additionally, there is a separate NO contact labeled 13, a terminal labeled 14, and another NO contact labeled 21 and terminal labeled 22.

Size 3: 40A / 50A / 65A
Size 4: 80A / 95A

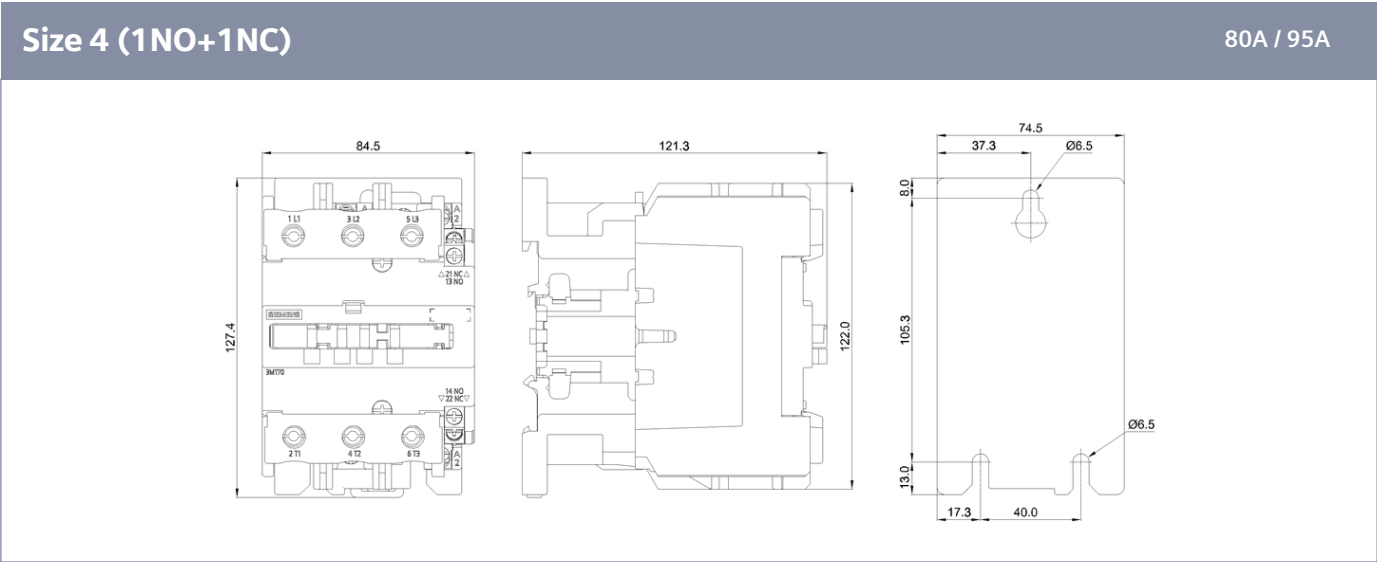
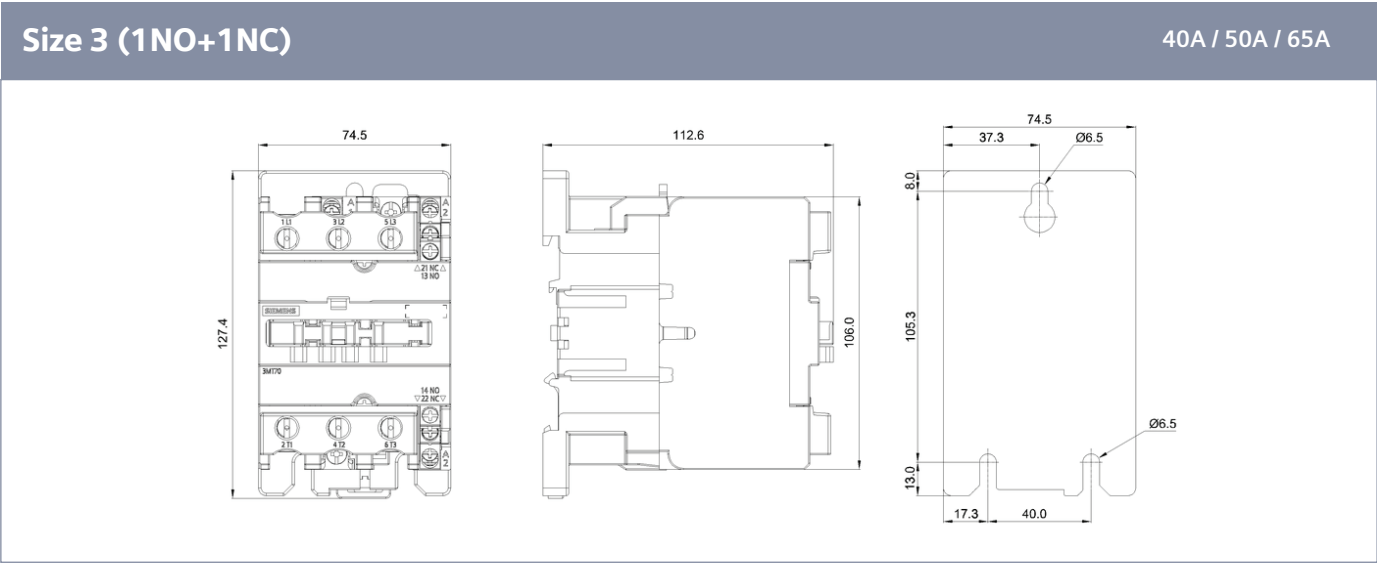
Dimension Drawing



Dimension Drawing



Dimension Drawing



3MU7 Thermal Overload Relays



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Overview

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Technical specification

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Selection and ordering

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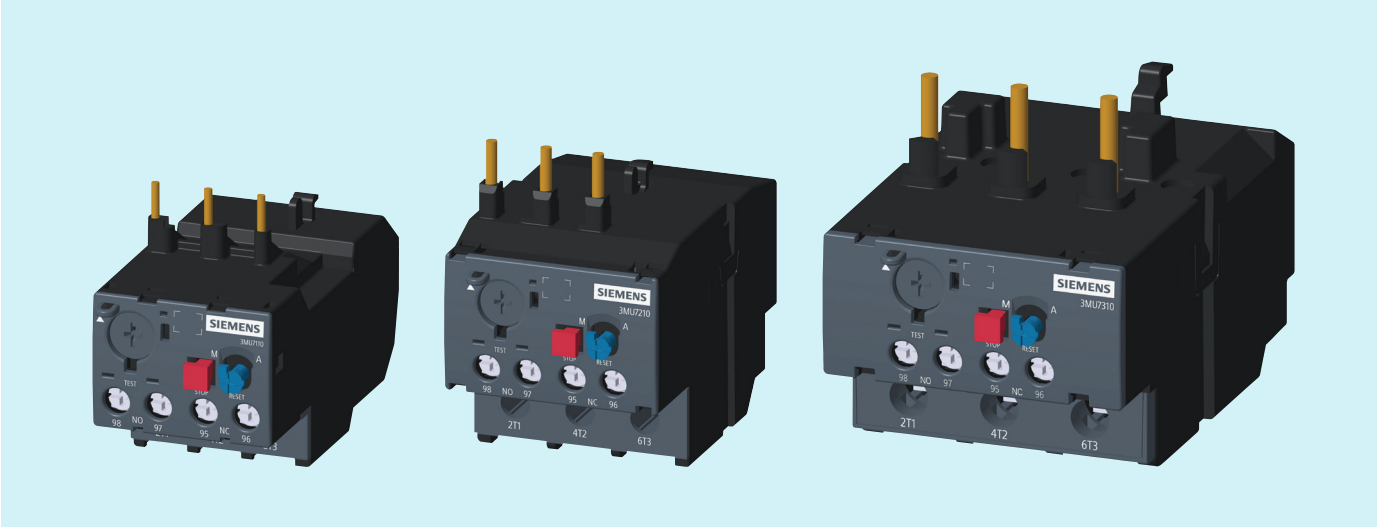
Wiring diagram

38

Dimension drawing

Overview

SINOVA 3MU7 Overload Relays are designed for consistent motor protection in all standard applications. Coupled with 3MT7 Power Contactor they provides optimum control and protection for you motor feeders.



Article number scheme

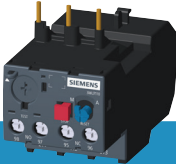
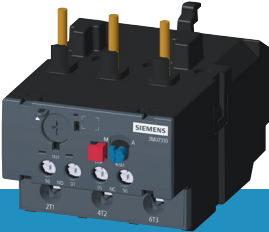
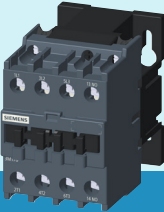
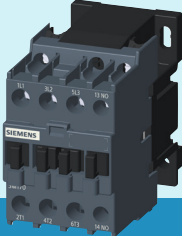
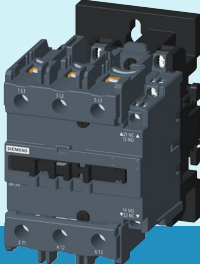
Product Version		Article number								
SINOVA Thermal Overload Relay		3MU7	☐	☐	☐	-	☐	☐	A	☐
Size	e.g. 0 = Size 1		1							
Class	10 = Class 10			1	0					
Setting range for overload release	e.g. 0A = 0.10-0.16A						0	A		
Installation type	e.g. 0 = mounting on contactor 1= independent mounting									0
Example		3MU7	1	1	0	-	0	A	A	0

Note:
The above scheme shows an overview of the product versions for understanding of the logic behind the article number

For your orders refer to selection and ordering data

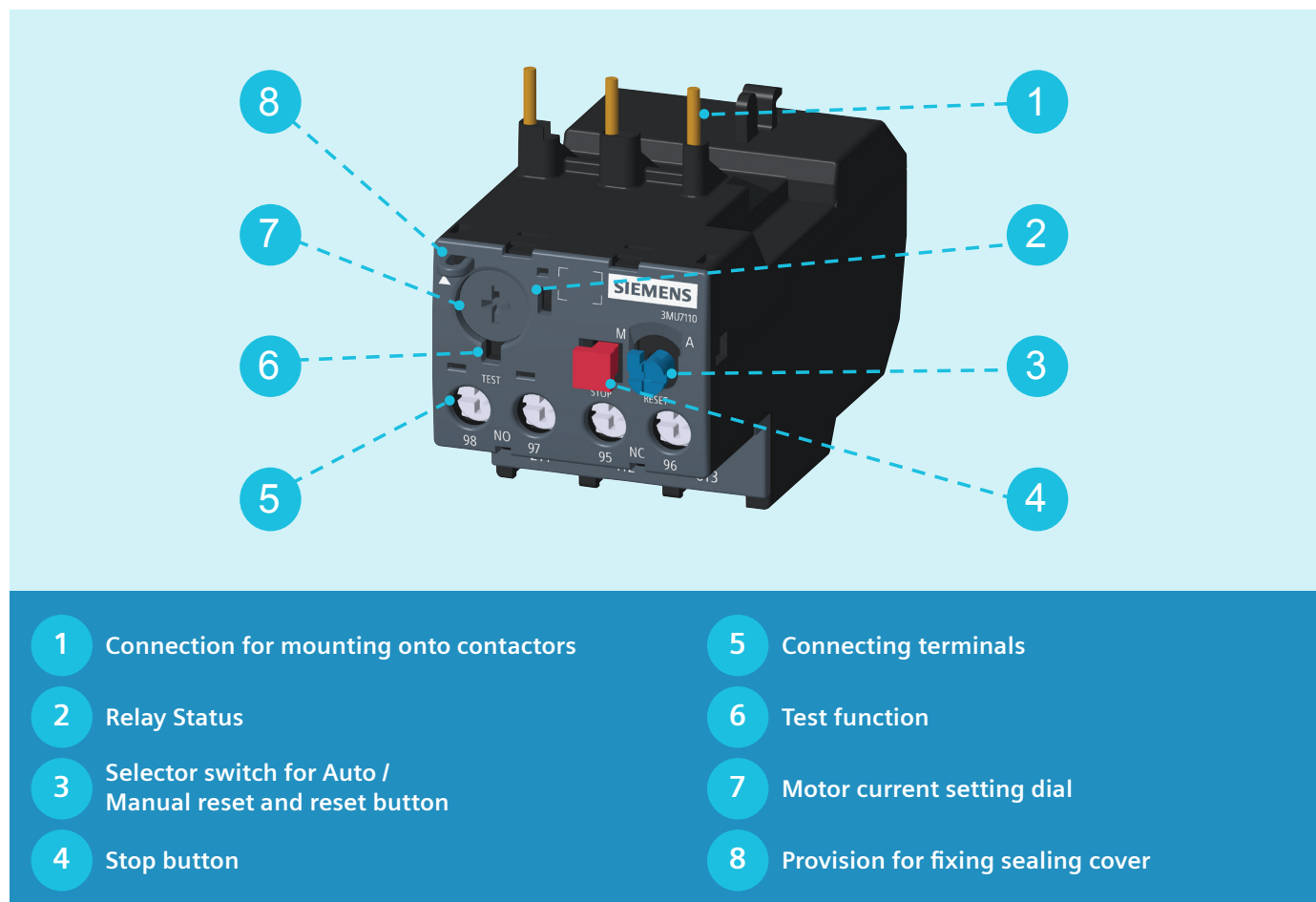
Overview

Overload relays and matching Contactors

		
3MU71	3MU72	3MU73
		
Size 0	Size 2	Size 3
		
Size 1		Size 4
		
Size 2		

Overview

Functions



Protections

- Tripping due to overload
- Tripping due to single phase failure

Application

The 3MU7 thermal overload relays are suitable for applications which require optimum inverse-time delayed protection of three-phase or single-phase AC motors. In case of single-phase motor all the conducting paths of relay must be connected in series. These relays comply to tripping requirement of trip Class 10 as per IEC 60947-4-1. 3MU7 thermal overload relays compensate ambient temperature in the range from -5 to +55°C according to IEC 60947-4-1.

Technical Specifications

				
SINOVA Thermal Overload Relays				
Type		3MU71	3MU72	3MU73
General data				
Dimension (W x H x D)				
• Basic unit	mm	44 x 63.6 x 91.8	54 x 76.1 x 92.4	70 x 79.2 x 115
Tripping in the event of		Overload, Single Phase Failure		
Trip Class acc. to IEC 60947-4-1		Class 10		
Reset		Manual and Remote reset		
Recovery		Minimum recovery time depends on the strength of the tripping current and characteristic		
Rated insulation voltage U_i (pollution degree 3)	V	690		
Rated impulse withstand voltage U_{imp}	Main circuit Aux circuit	kV kV	6 4	
Permissible ambient temperature				
During operation	°C	-5 ... +55		
During storage	°C	-25 ... +70		
Relative air humidity	%	10 ... 95		
Degree of protection IP on the front		IP20		
Installation altitude at height above sea level, maximum	m	2000		
Mounting position		22.5° Inclination forward and Backward & ± 90° Rotation, in relation to normal vertical mounting plane		
Type of Mounting		Direct mounting on contactor Or Stand-alone installation by screw fixing Or Snap-on mounting on standard mounting rail.		

Technical Specifications

				
SINOVA Thermal Overload Relays				
Type		3MU71	3MU72	3MU73
Main Circuit				
Rated operational voltage U _e	V	400/690 (L-N/L-L)		
Operating Frequency	Hz	50 / 60		
Current Setting	A	0.10 ... 0.16	23 ... 32	23 ... 32
		to	to	to
	A	17 ... 25	28 ... 36	80 ... 93
Power loss for rated current in hot state (maximum)	W	16.2	16.5	25.5
• Per pole (maximum)	W	5.4	5.5	8.5
Short-circuit protection				
• With fuse without contactor		Refer "Selection and ordering information"		
• With fuse with contactor		Refer Type-2 co-ordination charts		
Auxiliary Circuit				
Number of NO contacts		1		
Number of NC contacts		1		
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor		
Contact rating of the auxiliary contacts				
• AC-12 at 690V	A	5		
• AC-15 at rated operational voltage U _e				
- 24V	A	4.17		
- 48V	A	4.17		
- 110V	A	3.64		
- 220V	A	2.73		
- 380V	A	1.58		
- 600V	A	1		
- 690V	A	0.7		

Technical Specifications

SINOVA Thermal Overload Relays				
Type		3MU71	3MU72	3MU73
• DC-13, at rated operational voltage U _e (1 conducting path)				
- 24V	A	4.17		
- 48V	A	2.08		
- 110V	A	0.45		
- 220V	A	0.2		
- 440V	A	0.05		
Short-circuit protection of auxiliary circuit				
• With fuse links of operational class gG: A		10		
Conductor cross-sections				
Main conductors				
Solid or stranded	mm ²	1 x (1 ... 6 mm ²)	1 x (1.5 ... 10 mm ²)	1 x (4 ... 35 mm ²)
Finely stranded with end sleeve	mm ²	1x (1 ... 10 mm ²)	1x (1.5 ... 10 mm ²)	1x (2.5 ... 35 mm ²)
• Terminal screw		M4	M4	M10
- Tightening torque	Nm	1.85	2.5	9
Auxiliary conductors				
Solid or stranded	mm2	1 x (1.0 ... 4.0 mm ²)		
Finely stranded with end sleeve	mm2	1 x (1.0 ... 4.0 mm ²)		
• Terminal screw		M3.5		
- Tightening torque	Nm	1.2		

Selection and Ordering Information

Size	Trip class	Rated power three-phase motor at 400 V	Current setting value	Short-circuit protection with fuse, type of coordination "2" (operational class gG)	Suitable for contactor size	Article No.
		kW	A	A		
1	Class 10	0.04	0.10-0.16	2	0, 1, 2	3MU7110-0AA0
1	Class 10	0.06	0.16-0.25	2	0, 1, 2	3MU7110-0BA0
1	Class 10	0.09	0.25-0.40	2	0, 1, 2	3MU7110-0CA0
1	Class 10	0.18	0.40-0.63	2	0, 1, 2	3MU7110-0DA0
1	Class 10	0.25	0.63-1	4	0, 1, 2	3MU7110-0EA0
1	Class 10	0.55	1-1.6	4	0, 1, 2	3MU7110-0FA0
1	Class 10	0.75	1.25-2	6	0, 1, 2	3MU7110-0GA0
1	Class 10	0.75	1.6-2.5	6	0, 1, 2	3MU7110-0HA0
1	Class 10	1.5	2.5-4	10	0, 1, 2	3MU7110-0JA0
1	Class 10	2.2	4-6	16	0, 1, 2	3MU7110-0KA0
1	Class 10	3	5.5-8	20	0, 1, 2	3MU7110-0LA0
1	Class 10	4	7-10	20	0, 1, 2	3MU7110-0MA0
1	Class 10	5.5	9-13	25	0, 1, 2	3MU7110-0NA0
1	Class 10	7.5	12-18	32	1, 2	3MU7110-0PA0
1	Class 10	11	17-25	50	1, 2	3MU7110-0QA0
2	Class 10	15	23-32	63	2	3MU7210-1AA0
2	Class 10	18.5	28-36	63	2	3MU7210-1BA0
3	Class 10	15	23-32	63	3, 4	3MU7310-2AA0
3	Class 10	18.5	30-40	80	3, 4	3MU7310-2BA0
3	Class 10	22	37-50	80	3, 4	3MU7310-2CA0
3	Class 10	30	48-65	80	3, 4	3MU7310-2DA0
3	Class 10	37	55-70	125	4	3MU7310-2EA0
3	Class 10	37	63-80	125	4	3MU7310-2FA0
3	Class 10	45	80-93	125	4	3MU7310-2GA0

Accessories

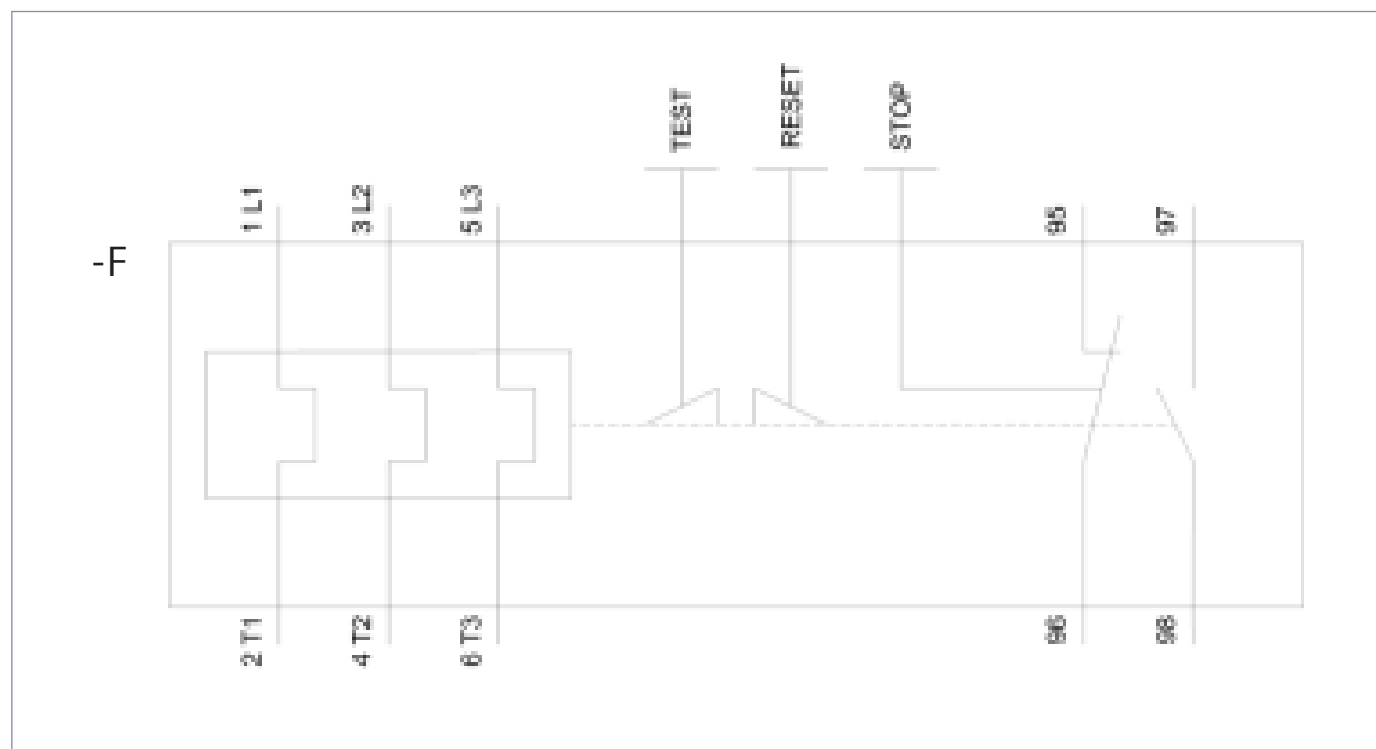


Overload relay frame	Article number
1	3MU7900-0MA10
2	3MU7900-0MA20
3	3MU7900-0MA30



Article number
3MU7900-0CA00 Suitable for relay size 1, 2, 3

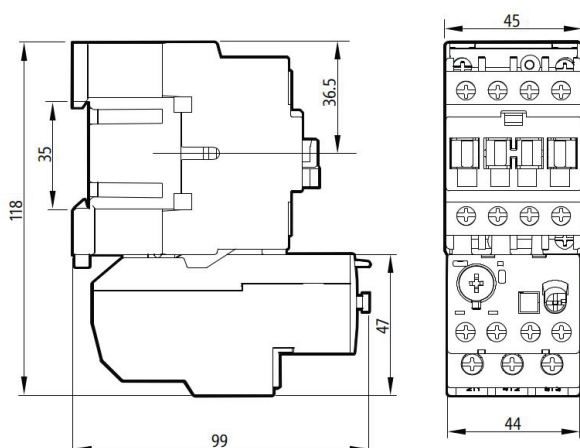
Wiring diagram



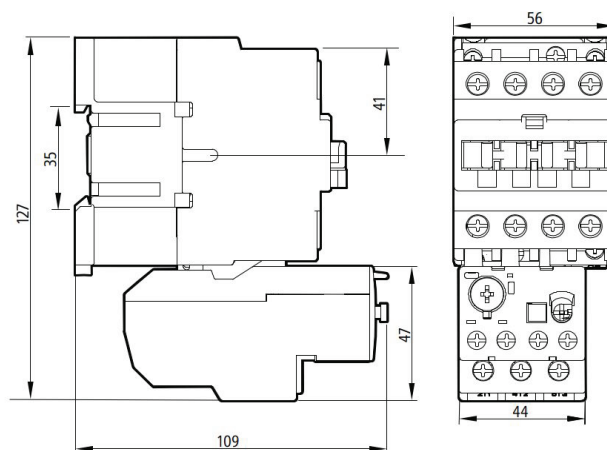
Dimension Drawing (with contactor)

3MU71 with Contactor

3MU71... + 3MT7006-0. to 3MT7022-1.



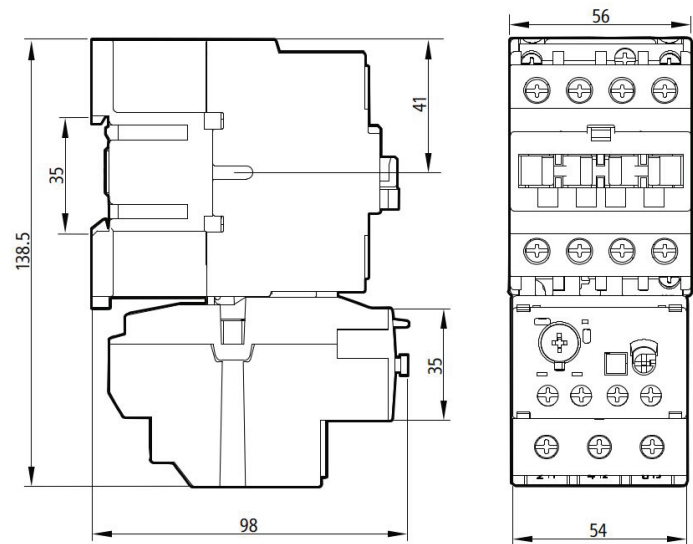
3MU71... + 3MT7025-2. to 3MT7040-2.



Dimension Drawing (with contactor)

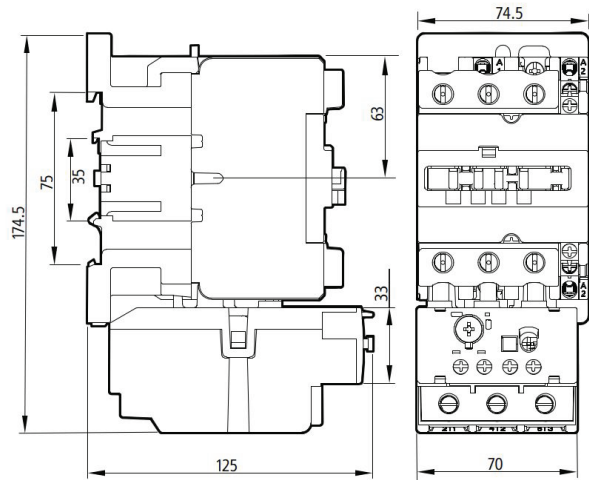
3MU72 with Contactor

3MU721... + 3MT7025-2. to 3MT7040-2.

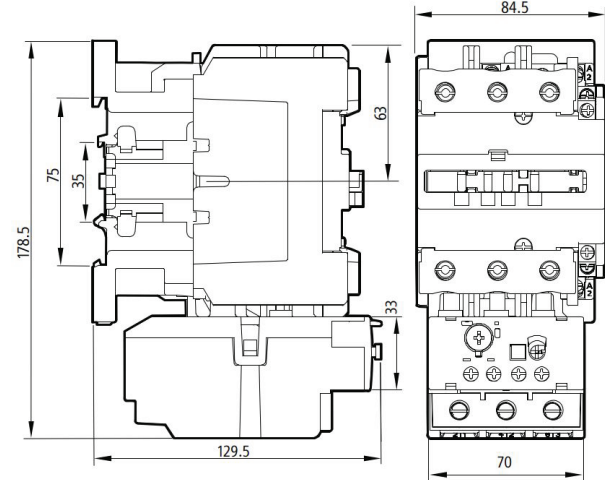


Size 3

3MU731... + 3MT7040-3. to 3MT7065-3.



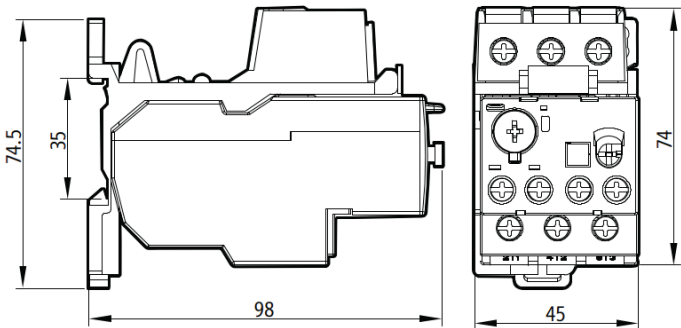
3MU731... + 3MT7070-4. to 3MT7095-4.



Dimension Drawing (with stand-alone installation kit)

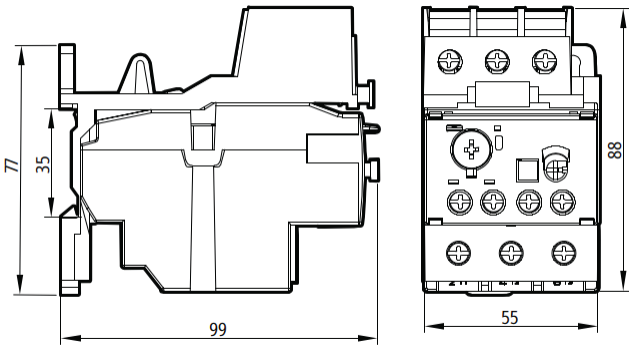
Size 1

(3MU7110-0 AA0 ... QA0 + 3MU7900-0MA10)



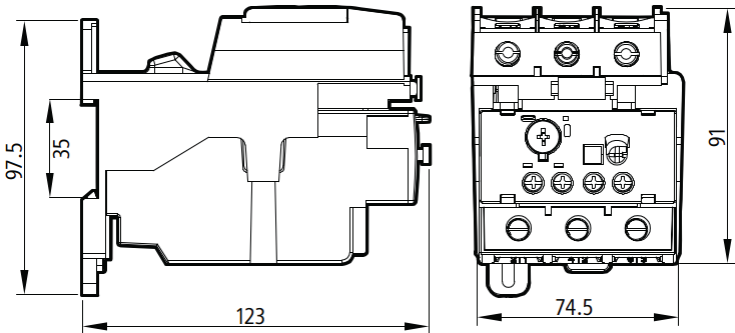
Size 2

(3MU7210-0 AA0 ... BA0 + 3MU7900-0MA20)

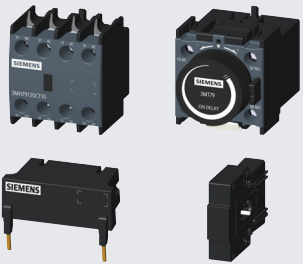


Size 3

(3MU7310-0 AA0 ... GA0 with 3MU7900-0MA30)

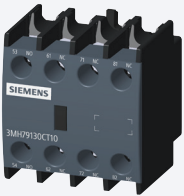


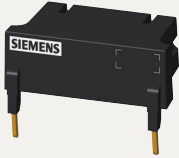
Accessories

	41	Selection and ordering
	43	Wiring Diagram
	45	Dimension drawing

Selection and Ordering Information

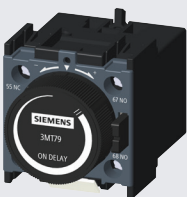
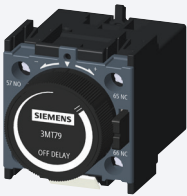
Accessories for Contactors

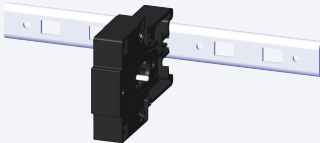
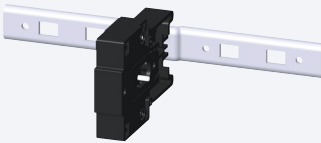
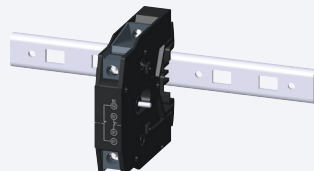
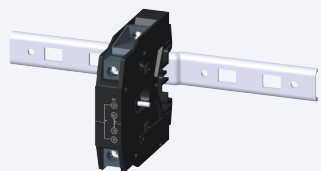
Auxiliary switches				
Compatible with 3MT7 three pole power contactor Size 0,1,2,3,4 and 3MH7 contactor relay				
Product Picture	Number of auxiliary contacts		Mounting Position	Article number
	NO	NC		
	1	-	Front	3MH7910-OCT10
	-	1		3MH7901-OCT10
	2	-		3MH7920-OCT10
	1	1		3MH7911-OCT10
	-	2		3MH7902-OCT10
	4	-		3MH7940-OCT10
	3	1		3MH7931-OCT10
	2	2		3MH7922-OCT10
	1	3		3MH7913-OCT10
	-	4		3MH7904-OCT10
	2	-	Lateral	3MH7920-OCL10
	1	1		3MH7911-OCL10

Surge Suppressor			
Compatible with 3MT7 three pole power contactor Size 0,1,2,3,4 and 3MH7 contactor relay			
Product Picture	Voltage	Mounting Position	Article number
	24-48V AC 50/60Hz	Clip on between A1-A2 coil terminals	3MT7900-1SC21
	110-240V AC 50/60Hz		3MT7900-1SL21
	380-440V AC 50/60Hz		3MT7900-1SV21

Selection and Ordering Information

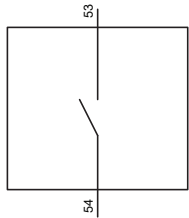
Accessories for Contactors

Pneumatic Timer						
Compatible with 3MT7 three pole power contactor Size 0,1,2,3,4						
Product Picture	Number of auxiliary contacts		Mounting Position	Function	Timing	Article number
	NO	NC			Seconds	
 	1	1	Top	On Delay	0.1-3	3MT7900-OPN10
					0.1-30	3MT7900-OPN20
					10-180	3MT7900-OPN30
				Off Delay	0.1-3	3MT7900-OPF10
					0.1-30	3MT7900-OPF20
					10-180	3MT7900-OPF30

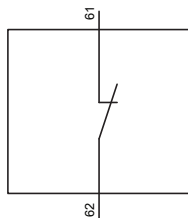
Interlock						
For 3MT7 three pole power contactors						
Mechanical Interlock	Suitable for Contactor Size 0, 1,2		Suitable for Contactor Size 3		Suitable for Contactor Size 4	
		3MT7900-1XM01		3MT7900-1XM02		3MT7900-1XM03
Electro- Mechanical Interlock	Suitable for Contactor Size 0, 1,2		Suitable for Contactor Size 3		Suitable for Contactor Size 4	
		3MT7900-1XE01		3MT7900-1XE02		3MT7900-1XE03

Wiring Diagram

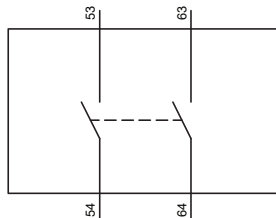
1 & 2 Pole Front Auxiliary switches



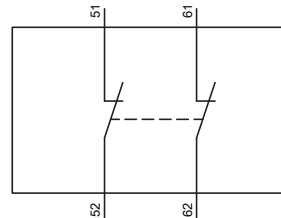
Single Pole 1NO



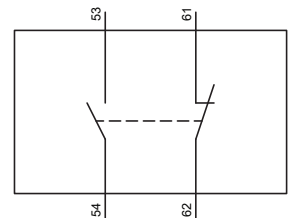
Single Pole 1NC



Two Pole 2NO

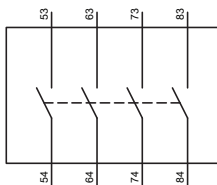


Two Pole 2NC

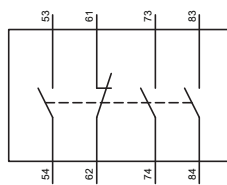


Two Pole 1NO + 1NC

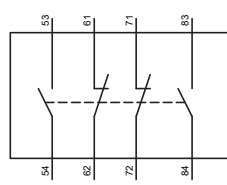
4 Pole Front Auxiliary switches



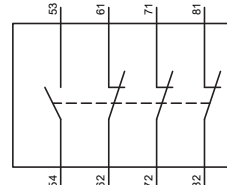
Four Pole 4NO



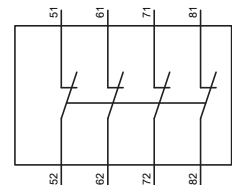
Four Pole 3NO+1NC



Four Pole 2NO+2NC

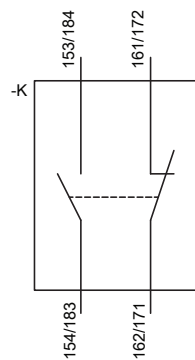


Four Pole 1NO+3NC

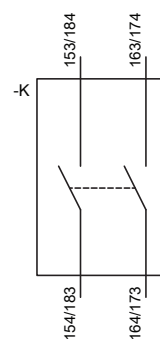


Four Pole 4NC

Lateral Auxiliary Switch



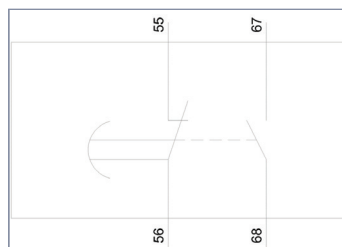
Two pole 2NO



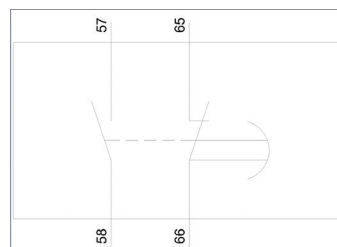
Two pole 1NO + 1NC

Wiring Diagram

Pneumatic Timer

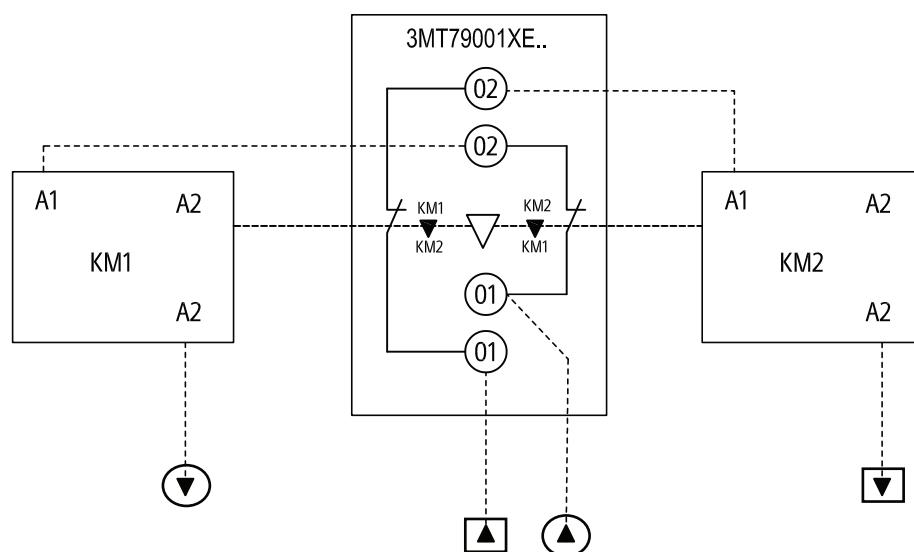
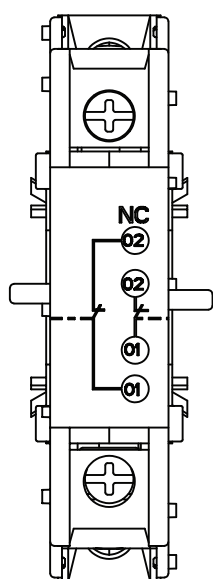


ON Delay timer

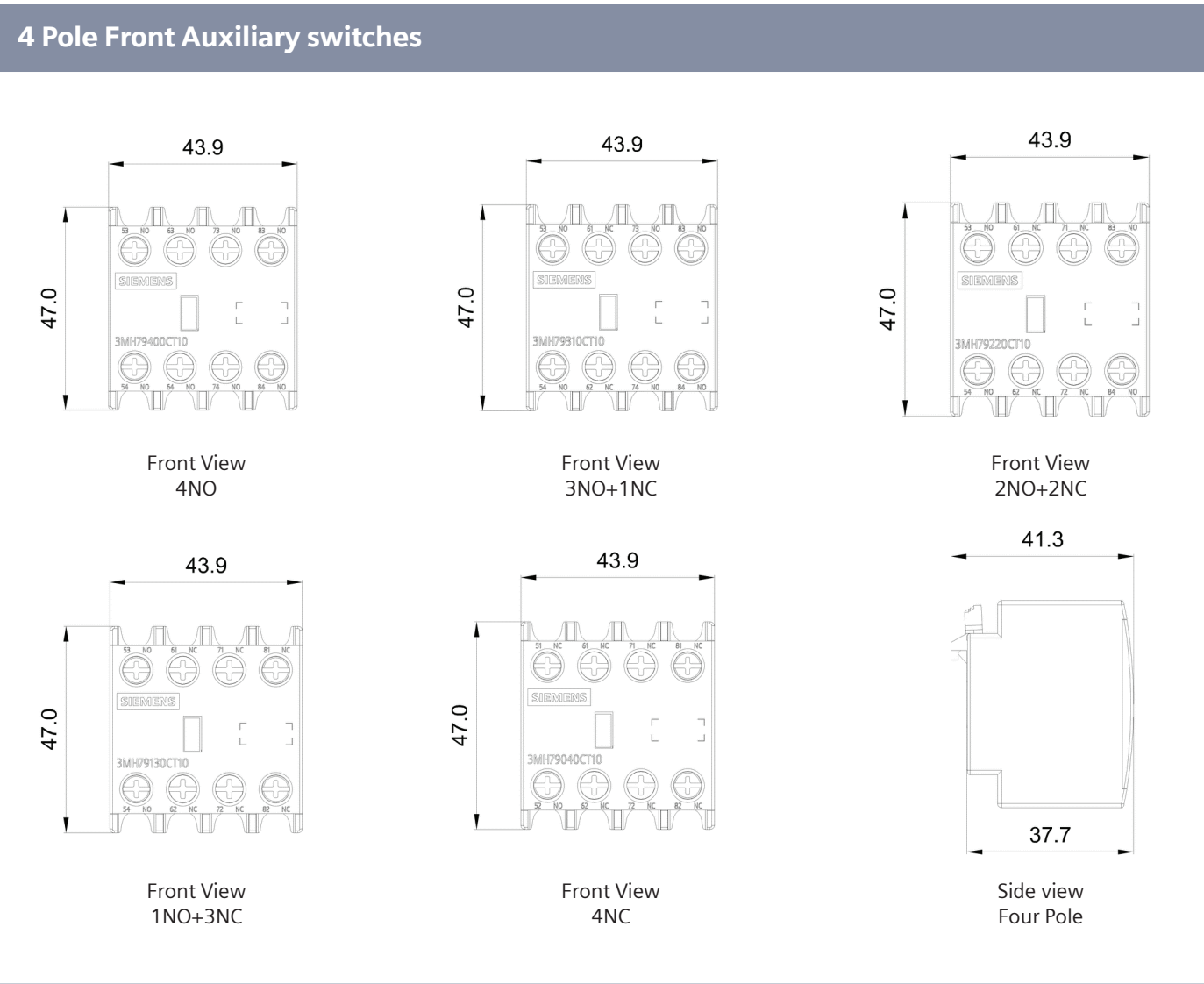
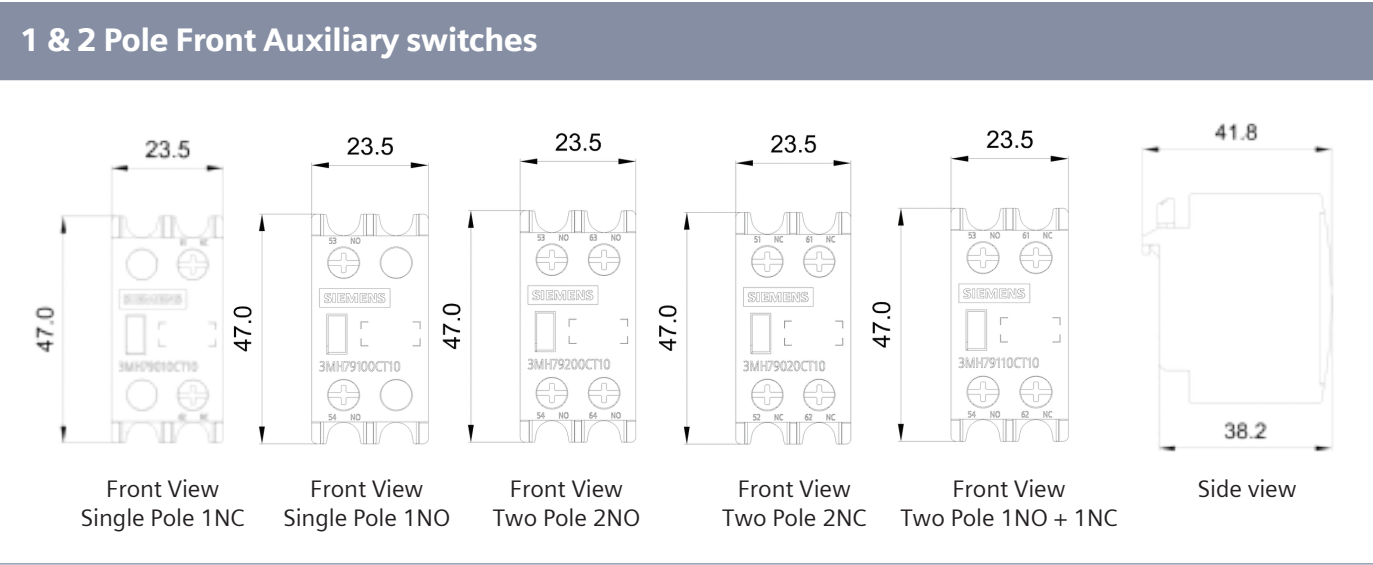


OFF Delay timer

Electro-Mechanical Interlock

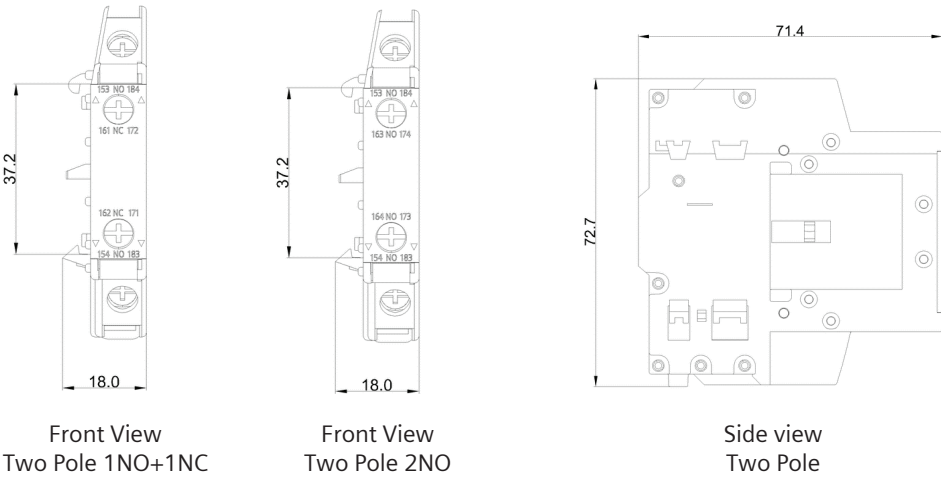


Dimension Drawing

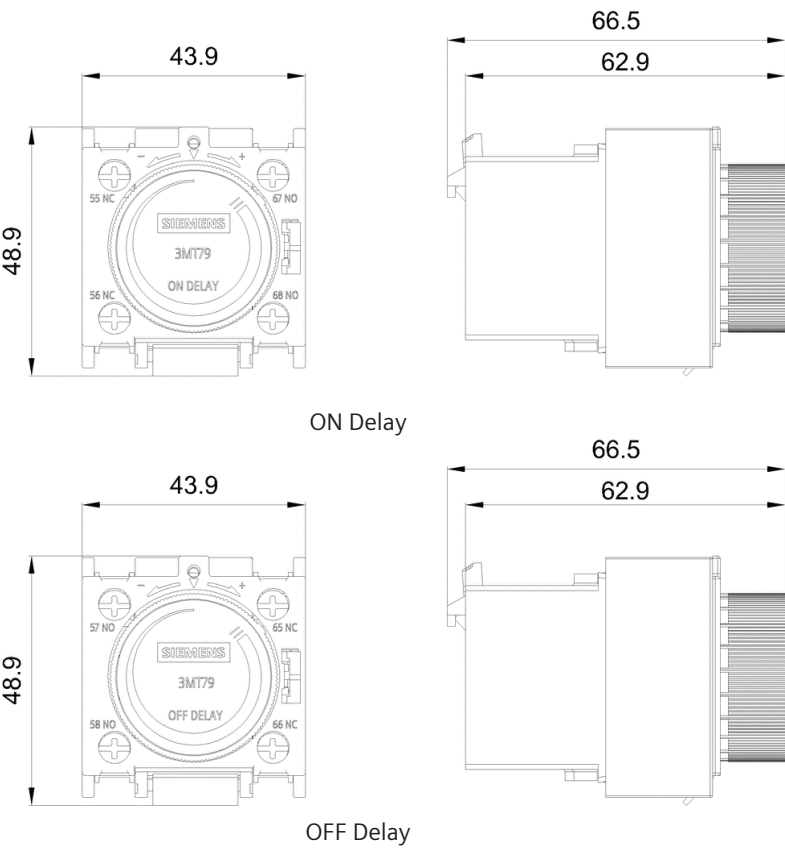


Dimension Drawing

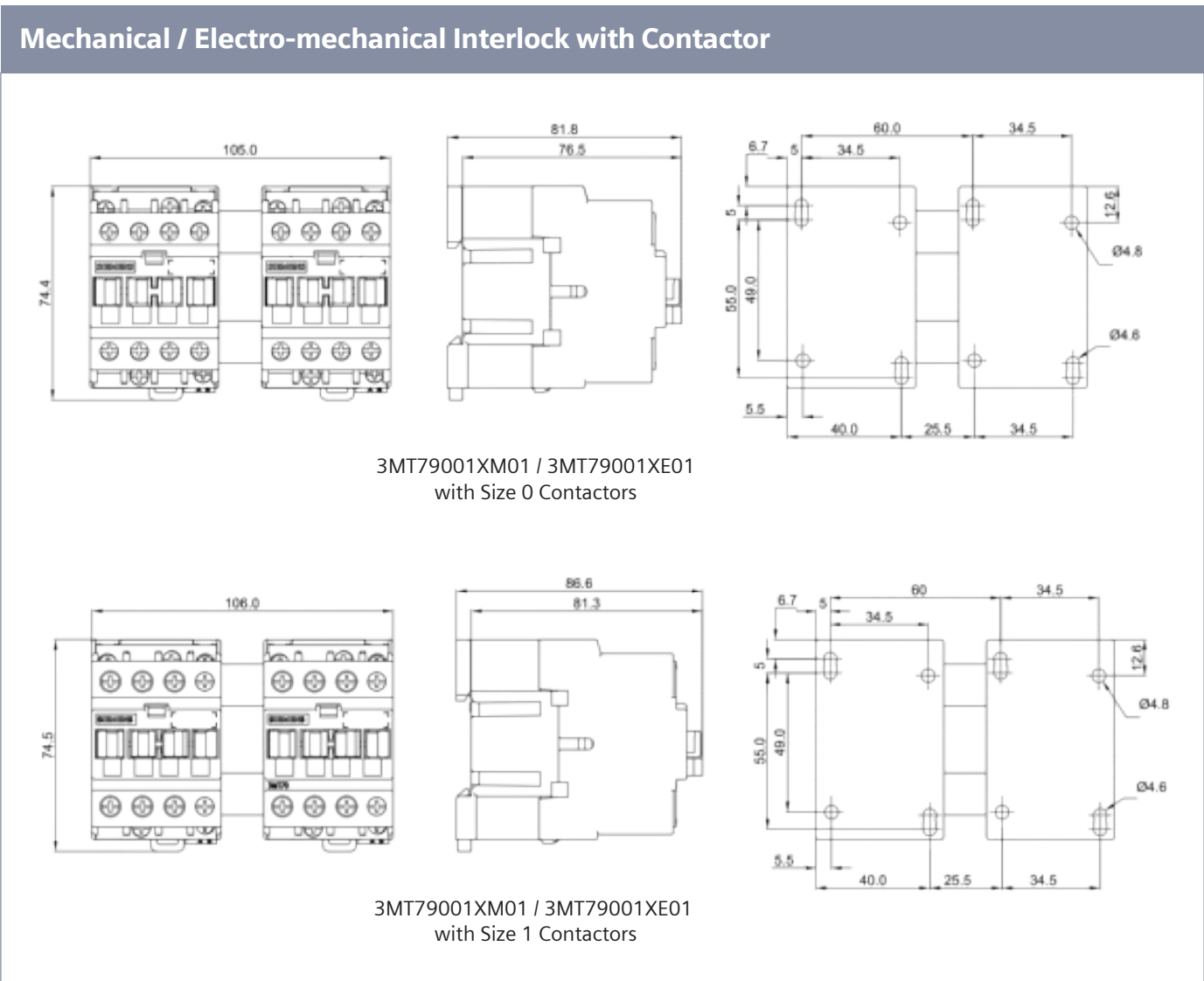
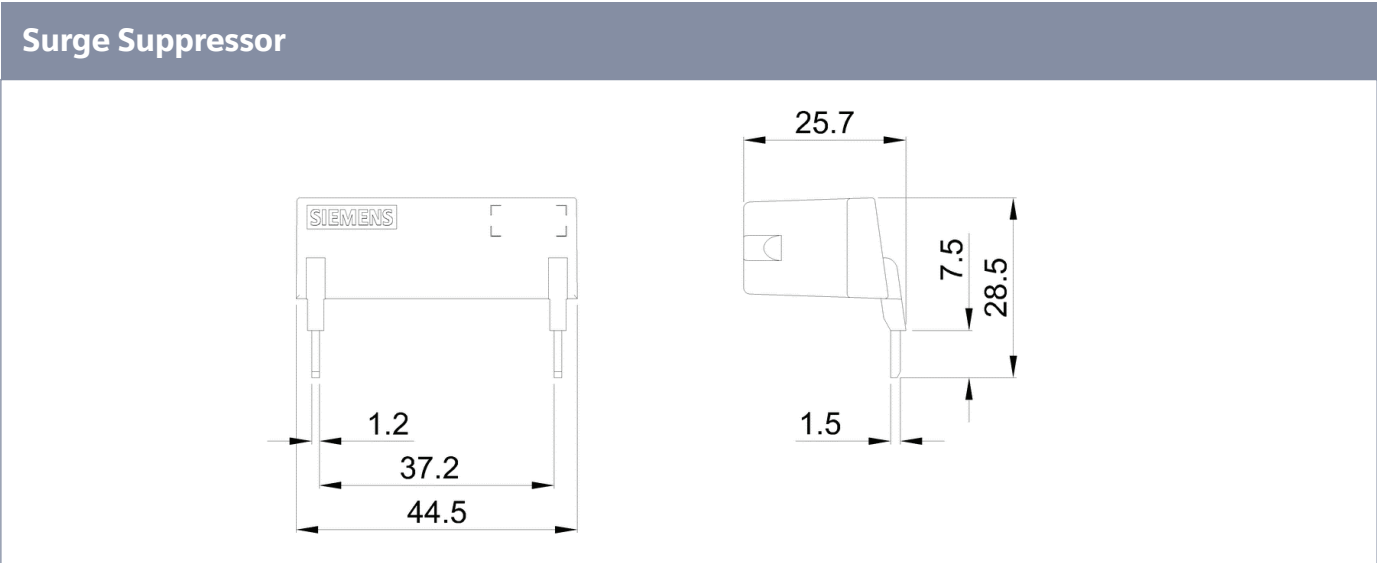
Lateral Auxiliary switches



Pneumatic Timer

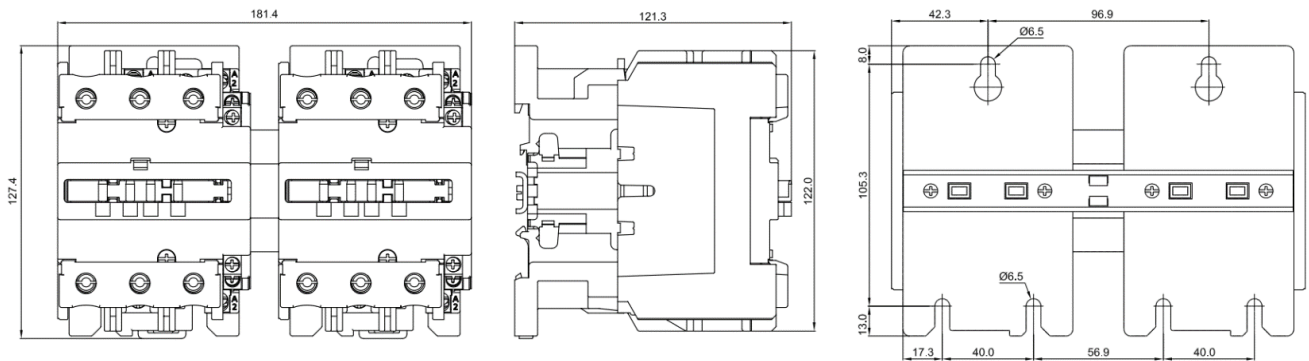
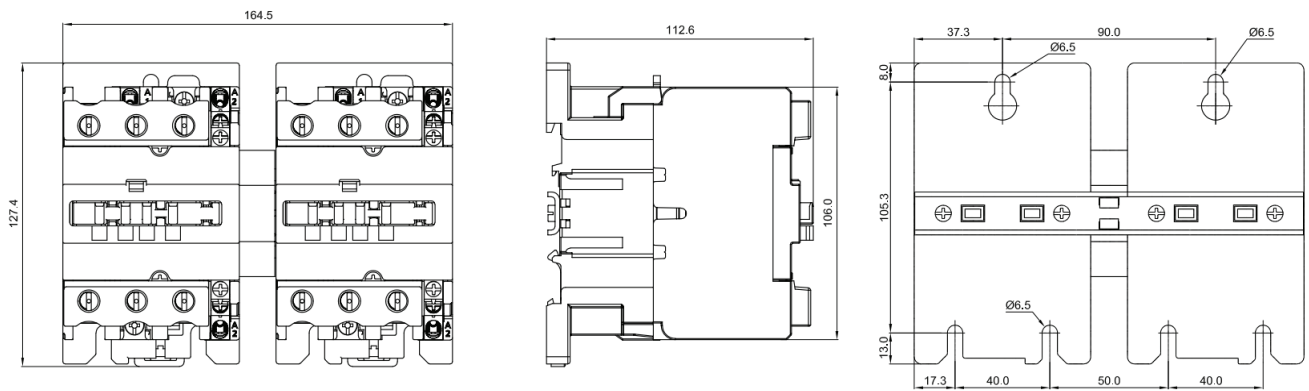
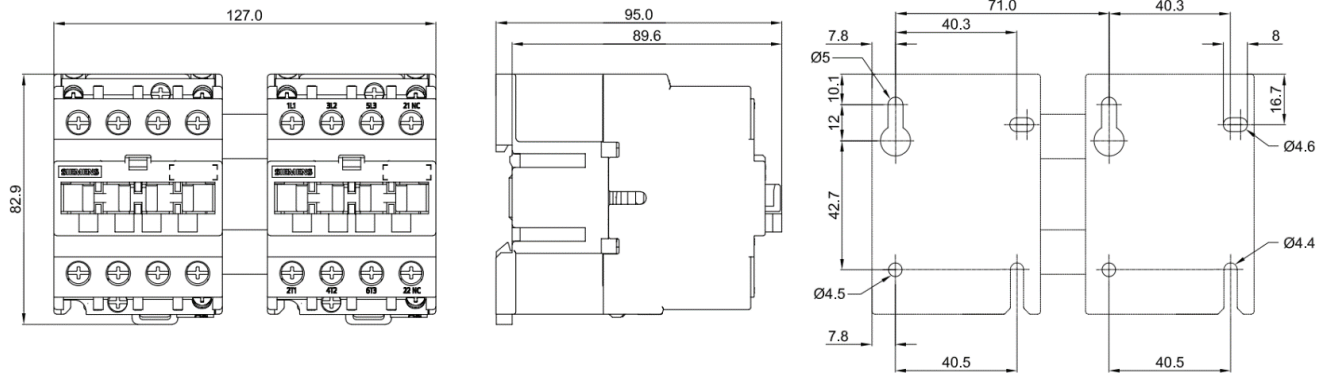


Dimension Drawing



Dimension Drawing

Mechanical / Electro-mechanical Interlock with Contactor

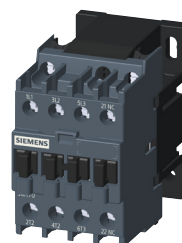
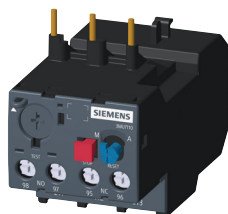


Type-2 Co-ordination Charts

50	DOL Fuse IE2 / IE3
51	Star Delta Fuse IE2 / IE3

Direct on-line (DOL) starter for IE2 / IE3 motors

Fuse protected selection type 2, I_q = 50kA, IEC:60947-4-1
(3NA with 3MT7 & 3MU7)



SCPD 3NA Fuse

Bi-relay 3MU7

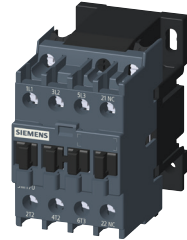
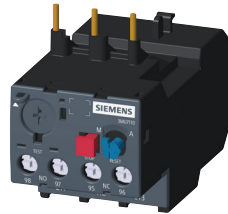
3MT7 Contactor

- The selection is valid only for complete Siemens combinations i.e. DIN Fuse + Contactor + Bi-relay (+ timer).
- In case this combination is changed to accommodate another brand/rating of DIN Fuse/Contactor/BMR, it shall be the responsibility of the person making such a change to assure type 2 performance.
- Selection is for normal starting conditions (class 10 feeder). (For heavy starting applications e.g. ID/FD fans, reciprocating compressor, ball mills etc., please consult Siemens.)
- All fuses are DIN HRC type.
- Tested Type 2 combinations

Motor rating		Fuse		Contactor		Bi-relay	
kW @400 / 415V, 50Hz	I _L (A)	Type	Rating (A)	Type	Rating (A)	Type	Relay setting range (A)
0.37	1.1	3NA78040RC	4	3MT70060AA...	6	3MU71100FA0	1-1.6
0.55	1.5	3NA78010RC	6	3MT70060AA...	6	3MU71100GA0	1.25-2
0.75	1.9	3NA78010RC	6	3MT70060AA...	6	3MU71100HA0	1.6-2.5
1.1	2.7	3NA78010RC	6	3MT70060AA...	6	3MU71100HA0 3MU71100JA0	1.6 - 2.5 (IE2) 2.5-4 (IE3)
1.5	3.6	3NA78030RC	10	3MT70060AA...	6	3MU71100JA0	2.5-4
2.2	5	3NA78050RC	16	3MT70100AA...	9	3MU71100KA0	4-6
3.7	7.8	3NA78070RC	20	3MT70120AA...	12	3MU71100MA0	7-10
5.5	11.5	3NA78100RC	25	3MT70181AA...	18	3MU71100NA0	9-13
7.5	15.5	3NA78170RC	40	3MT70252AA...	25	3MU71100PA0	12-18
11	22	3NA78200RC	50	3MT70382AA...	38	3MU71100QA0	17-25
15	29	3NA78220RC	63	3MT70382AA...	38	3MU72101AA0	23-32
18.5	35	3NA78240RC	80	3MT70503AA110...	50	3MU73102BA0	30-40
22	41	3NA78240RC	80	3MT70653AA110...	65	3MU73102CA0	37-50
30	55	3NA78300RC	100	3MT70704AA110...	70	3MU73102DA0	48-65
37	66	3NA78320RC	125	3MT70954AA110...	95	3MU73102EA0	55-70
45	80	3NA78360RC	160	3MT70954AA110...	95	3MU73102FA0 3MU73102GA0	63-80 (IE2) 80-93 (IE3)

Star Delta starter for IE2 / IE3 motors

Fuse protected selection type 2, I_q = 50kA, IEC:60947-4-1
(3NA with 3MT7 & 3MU7)



SCPD 3NA Fuse

Bi-relay 3MU7

3MT7 Contactor

- The selection is valid only for complete Siemens combinations i.e. DIN Fuse + Contactor + Bi-relay (+ timer).
- In case this combination is changed to accommodate another brand/rating of DIN Fuse/Contactor/BMR, it shall be the responsibility of the person making such a change to assure type 2 performance.
- Selection is for normal starting conditions (class 10 feeder). (For heavy starting applications e.g. ID/FD fans, reciprocating compressor, ball mills etc., please consult Siemens.)
- The electronic star-delta timer type 3RP should be used in star-delta feeders
- All fuses are DIN HRC type.
- Tested Type 2 combinations

Motor rating		Fuse		Contactor Line / Delta		Contactor Star		Bi-relay	
kW @400 / 415V, 50Hz	I _L (A)	Type	Rating (A)	Type	Rating (A)	Type	Rating (A)	Rating (A)	Relay setting range (A)
3.7	8	3NA78030RC	10	3MT70100AA...	9	3MT70060AA...	6	3MU7110-0KA0	4-6
5.5	12	3NA78050RC	16	3MT70100AA...	9	3MT70100AA...	9	3MU7110-0LA0	5.5-8
7.5	16	3NA78070RC	20	3MT70120AA...	12	3MT70100AA...	9	3MU7110-0MA0	7-10
11	22	3NA78100RC	25	3MT70181AA...	18	3MT70120AA...	12	3MU7110-0PA0	12-18
15	29	3NA78120	32	3MT70221AA...	22	3MT70181AA...	18	3MU7110-0PA0	12-18
18.5	35	3NA78170RC	40	3MT70252AA...	25	3MT70181AA...	18	3MU7110-0QA0	17-25
22	41	3NA78200RC	50	3MT70382AA...	38	3MT70252AA...	25	3MU7210-1AA0	23-32
30	55	3NA78220RC	63	3MT70402AA...	40	3MT70382AA...	38	3MU7210-1BA0	28-36
37	66	3NA78240RC	80	3MT70503AA110...	50	3MT70382AA...	38	3MU7310-2CA0	37-50
45	80	3NA78300RC	100	3MT70704AA110...	70	3MT70503AA110...	50	3MU7310-2CA0	37-50
55	97	3NA78300RC	100	3MT70804AA110...	80	3MT70653AA110...	65	3MU7310-2DA0	48-65
75	132	3NA78360RC	160	3MT70954AA110...	95	3MT70804AA110...	80	3MU7310-2FA0	63-80

The SINOVA range of products are ideal for infrastructure, buildings, utilities and industrial applications. It packs full features for cost-efficient power distribution, switching and control that is both reliable and safe. The portfolio also features comprehensive product ranges that are designed for a variety of applications, giving users Siemens trusted quality. Simply Efficient, this is the SINOVA way.

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