

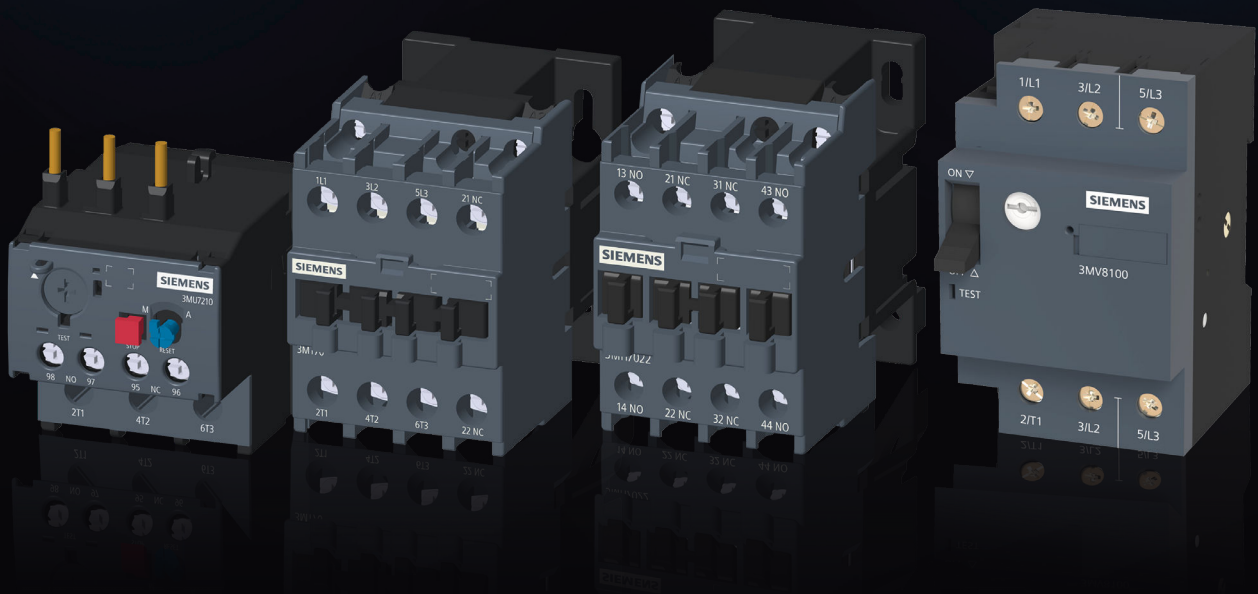
SIEMENS

SINOVA

3MH7, 3MT7, 3MU7 & 3MV8

Contactors, Overload Relays & Motor Starter Protectors

Reliable Control & Protection

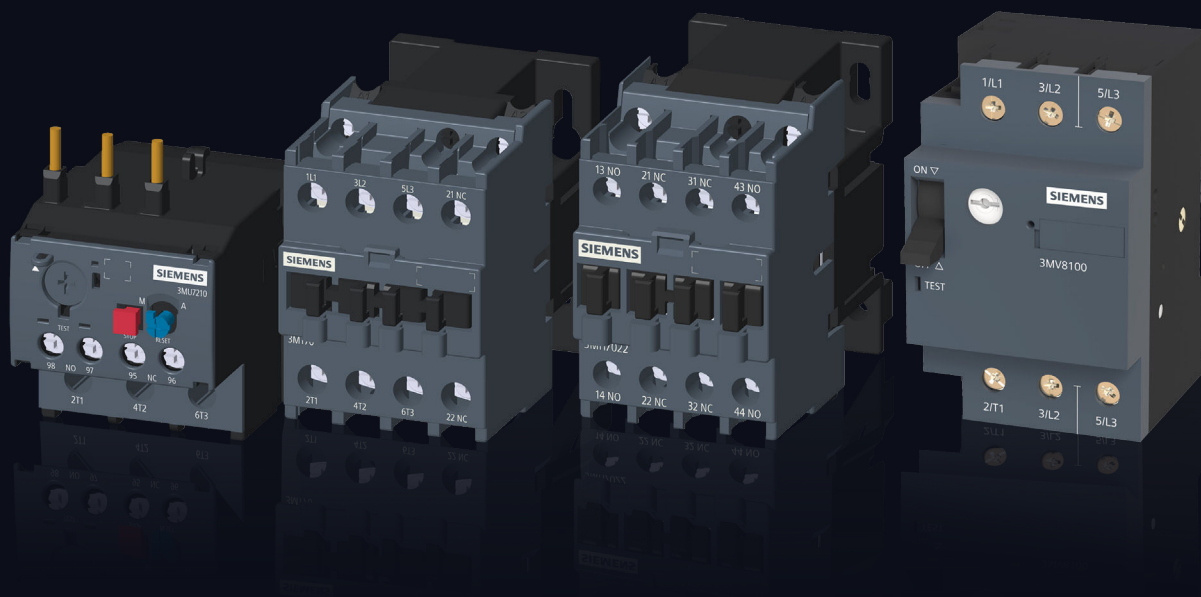


Overview

SINOVA 3MH7 Contactor Relays, 3MT7 Power Contactors, 3MU7 Thermal Overload Relays and 3MV8 Motor Starter Protectors 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 homogeneous design aesthetics and common accessories across the product range for 3MH7 Contactor Relays and for 3MT7 Power Contactors up to 400A .

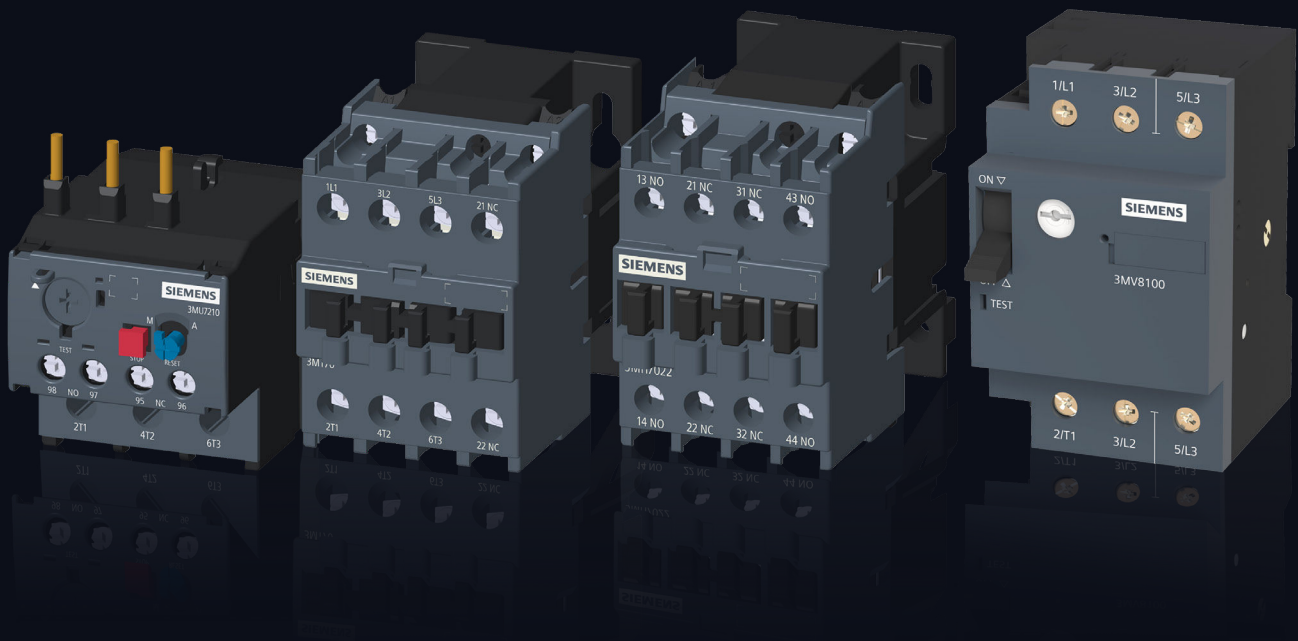




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Key Features



Flexible

Designed to allow for adaptation in many types of panel designs for your control and protection needs.



Reliable

Assuring motor protection with tested type-2 coordinated feeder solutions.



Homogenous Design

Homogenous design aesthetics and common accessories across the defined product ranges.



Safe

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

SINOVA 3MH7 Contactor Relays



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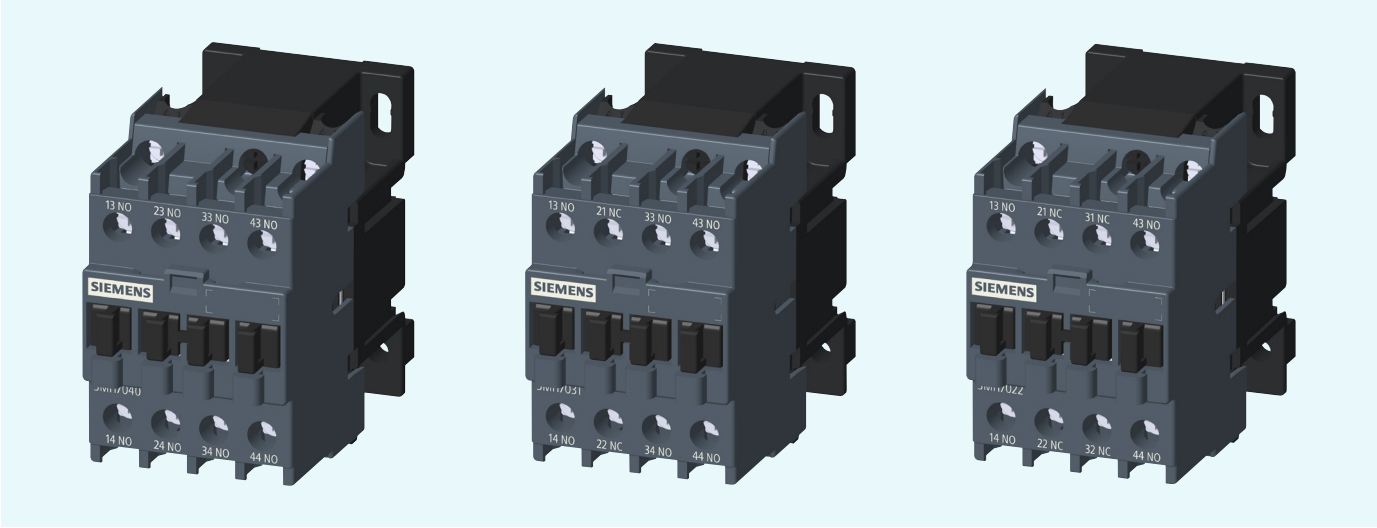
Wiring Diagram

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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

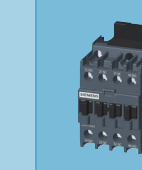
Product Version		Article number									
SINOVA Contactor Relays		3MH7	0	☐	☐	-	☐	☐	☐	☐	0
Number of NO contacts	e.g. 2 = 2 NO	2		2		1		A		P 0	
Number of NC contacts	e.g. 2 = 2 NC										
Type of electrical connection	1= Screw terminals										
Coil circuit	A= AC coil circuit										
Rated control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

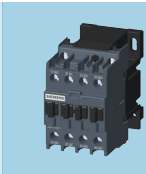
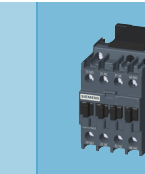
Technical Specifications

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 (AC)											
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



1 & 2 Pole Front
Auxiliary switches

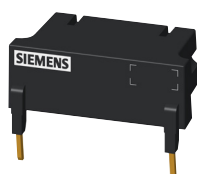


4 Pole Front
Auxiliary switches



Lateral
Auxiliary switches

Please refer page no. 40 for more information on accessories



Surge Suppressor

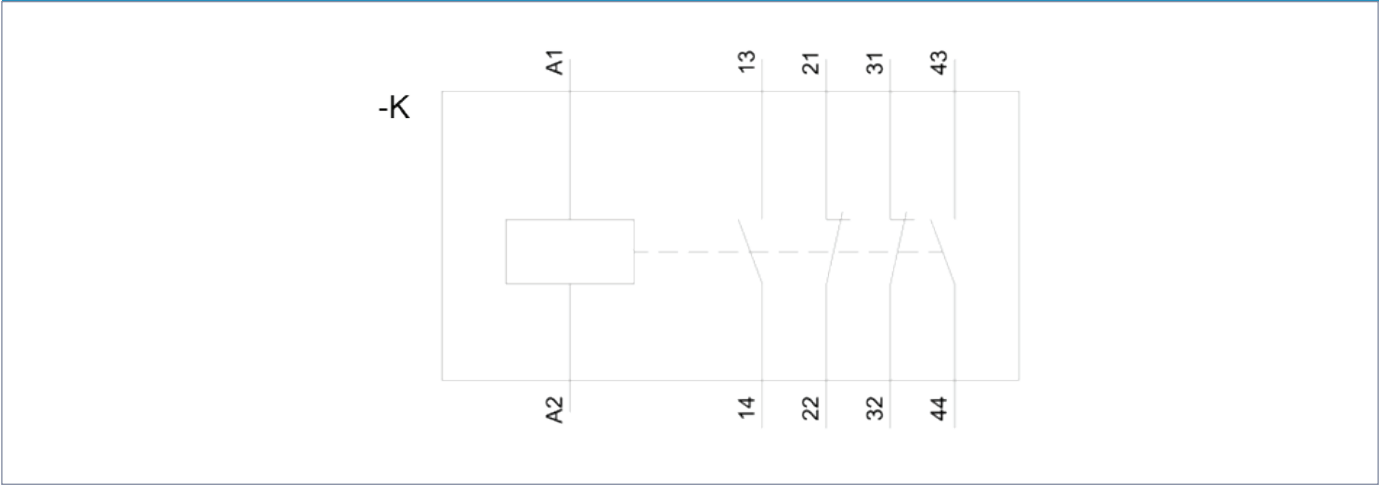


Spare Coil
3MT79000L..1

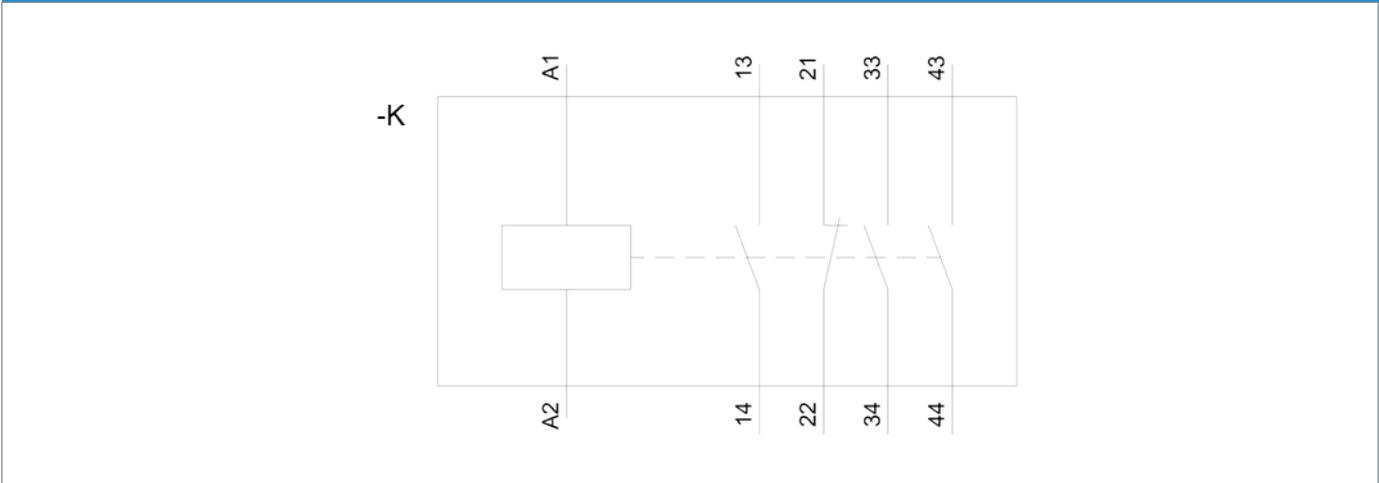
.. Please enter coil codes from table above

Wiring Diagram

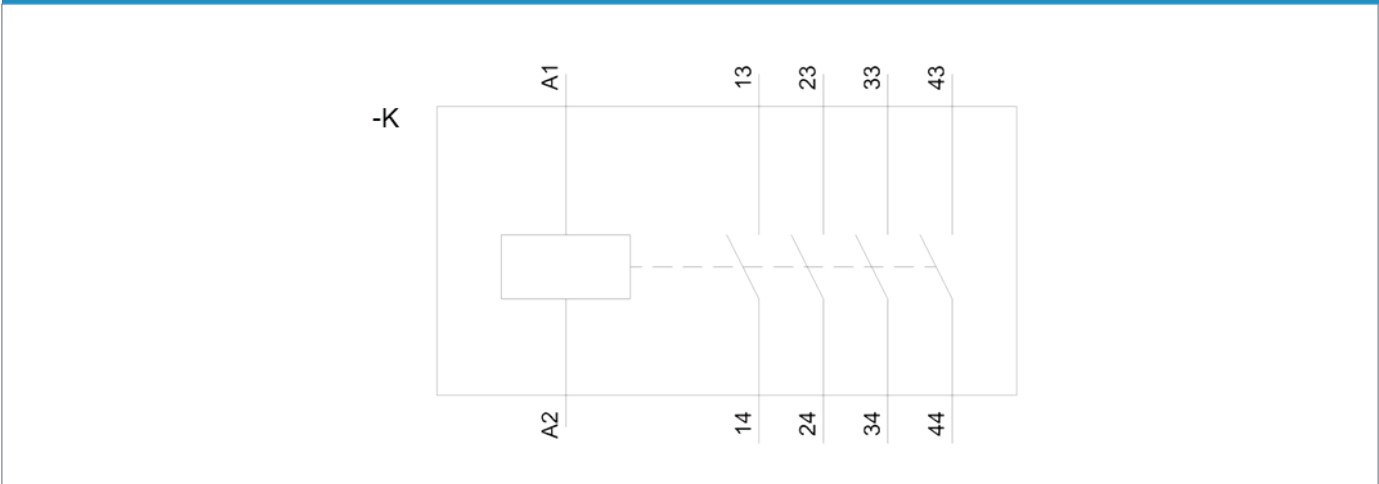
3MH7022 (2NO+2NC)



3MH7031 (3NO+1NC)

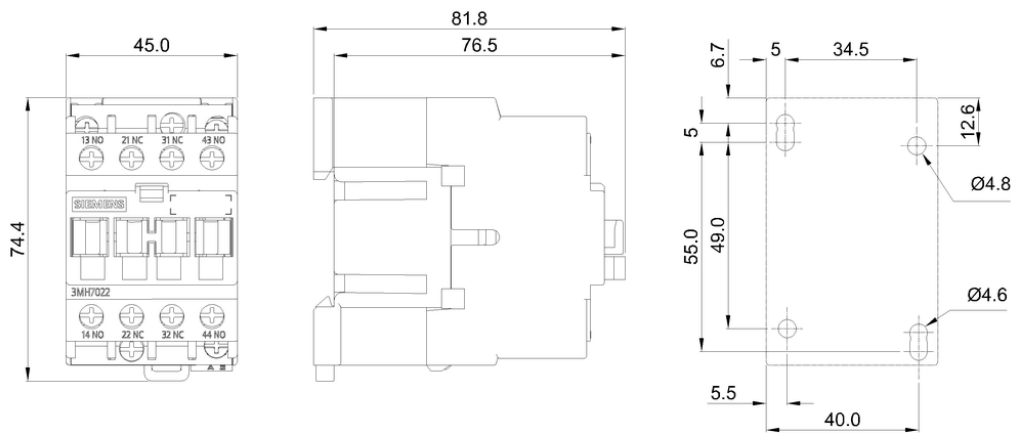


3MH7040 (4NO)

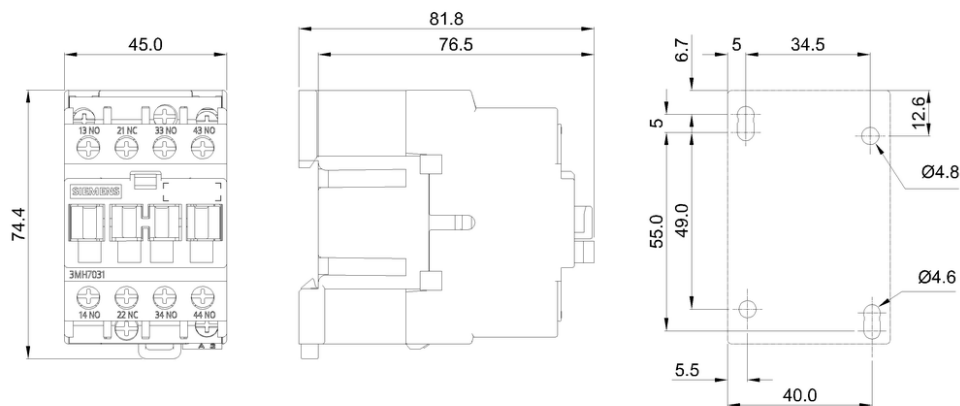


Dimension Drawing

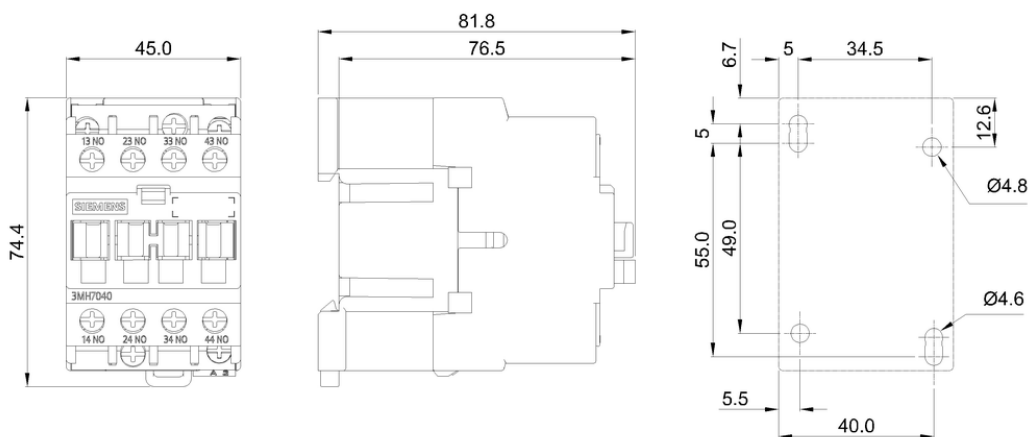
3MH7022 (2NO+2NC)



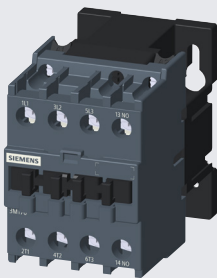
3MH7031 (3NO+1NC)



3MH7040 (4NO)



SINOVA 3MT7 3-Pole Power Contactors



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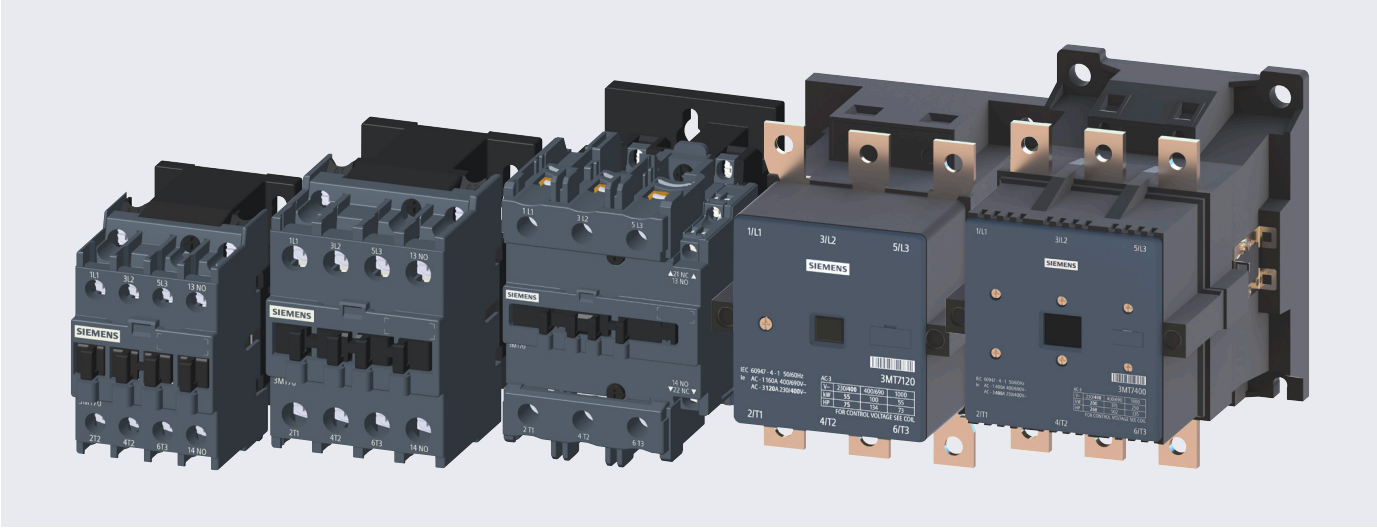
Wiring Diagram

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Dimension Drawing

Overview

The SINOVA 3MT7 3-Pole 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

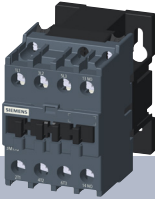
Overview of Ratings and Sizes

Size 0			
	6A	9A	12A

1NO or 1NC

Size 1		
	18A	22A

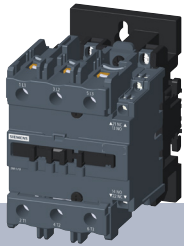
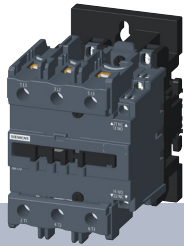
1NO or 1NC

Size 2				
	25A	32A	38A	40A

1NO or 1NC

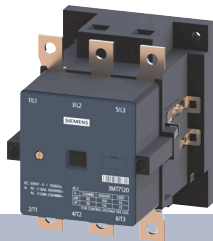
Size 3			
	40A	50A	65A

1NO + 1NC

Size 4		
	80A	95A

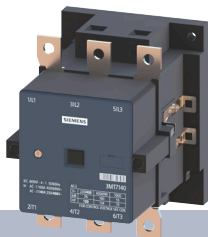
1NO + 1NC

Overview of Ratings and Sizes



Size 5

120A



140A



Size 6

170A



205A



Size 7

250A



300A



Size 8

400A

Technical Specifications

																																															
SINOVA 3MT7 3-Pole Power Contactors 6A to 95A																																															
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			3MT7095-4					
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																																									

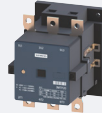
Technical Specifications

																					
SINOVA 3MT7 3-Pole Power Contactors 6A to 95A																					
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	3MT7095-4						
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																					
- 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 3MT7 3-Pole Power Contactors 6A to 95A																													
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	3MT7095-4														
Size		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														
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																											
Load rating with AC		1NO + 1NC																											
• 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																											

Technical Specifications

SINOVA 3MT7 3-Pole Power Contactors 120A to 400A									
Type			3MT7120	3MT7140	3MT7170	3MT7205	3MT7250	3MT7300	3MT7400
Size			5	5	6	6	7	7	8
General Data									
Dimension (W x H x D)									
Basic Unit	W	mm	120	120	135	135	150	150	160
	H	mm	150	150	180	180	205	205	204
	D	mm	152	152	185	185	198	198	222
Mounting position			22.5° Inclination forward and backward & 90° to right / 90° to left, in relation to normal vertical mounting plane i.e. coil terminals always on top side						
Rated insulation voltage Ui (pollution degree 3) Main circuit		V	1000						
Rated impulse withstand voltage U _{imp} Main circuit		kV	8						
Permissible ambient temperature									
During operation		°C	-5 ... +55						
During storage		°C	-25 ...+70						
Relative air humidity		%	10-95						
Degree of protection IP			IP00						
Installation altitude at height above sea level, maximum		m	2000						
Short-circuit protection									
Basic Unit									
• Fuse links, operational class gG									
- Type of coordination "1"		A	400	400	400	400	500	500	630
- Type of coordination "2"		A	200	250	250	250	400	400	500
Conductor cross-sections									
Main conductors									
Stranded wire with cable lug		mm ²	2x (50 ... 120 mm ²)	2x (50 ... 120 mm ²)	2x (50 ... 120 mm ²)	2x (50 ... 120 mm ²)	2x (70 ... 240 mm ²)	2x (70 ... 240 mm ²)	2x (70 ... 240 mm ²)
Finely stranded with cable lug		mm ²	2x (35 ... 95 mm ²)	2x (35 ... 95 mm ²)	2x (35 ... 95 mm ²)	2x (35 ... 95 mm ²)	2x (50 ... 240mm ²)	2x (50 ... 240mm ²)	2x (50 ... 240mm ²)
Terminal bar (max. width)		mm	2x(20x3) mm	2x(20x3) mm	2x(20x3) mm	2x(20x3) mm	2x(25x5) mm	2x(25x5) mm	2x(25x5) mm
Terminal screw			M8 x 25	M8 x 25	M8 x 25	M8 x 25	M10 x 30	M10 x 30	M10 x 30
Tightening torque		Nm	10 ... 14 Nm	10 ... 14 Nm	10 ... 14 Nm	10 ... 14 Nm	14 ... 24 Nm	14 ... 24 Nm	14 ... 24 Nm
Control									
Solenoid coil operating range									
• AC operation		at 50Hz	0.85 to 1.1 x Us						
		at 60Hz	0.85 to 1.1 x Us						

Technical Specifications

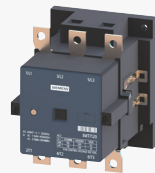
																	
SINOVA 3MT7 3-Pole Power Contactors 120A to 400A		3MT7120		3MT7140		3MT7170		3MT7205		3MT7250		3MT7300		3MT7400			
Power consumption of the solenoid coil (maximum)																	
• AC operation, 50 Hz																	
closing		VA / p.f.		550 / 0.45		910 / 0.38		1440 / 0.34		2450 / 0.21							
Closed		VA / p.f.		40 / 0.24		65 / 0.26		95 / 0.24		115 / 0.33							
• AC operation, 50/60 Hz																	
closing		VA / p.f.		660 / 0.45		1080 / 0.38		1780 / 0.32		3050 / 0.23							
Closed		VA / p.f.		56 / 0.24		80 / 0.27		122 / 0.23		165 / 0.29							
Operating times within operating range																	
• AC operation																	
- Closing delay		ms		22-37		25-40		25-40		25-40				25-40			
- Opening delay		ms		8-30		10-30		10-30		8-30				8-30			
Rated data for Main Contacts																	
Load rating with AC																	
Utilization category AC-1																	
Rated operational currents Ie 400V, 40°C		A		160		160		210		220		300		300		400	
Utilization categories AC-3																	
Rated operational currents Ie at 400V,		A		120		140		170		205		250		300		400	
Rated operational currents Ie at 690V,		A		110		110		170		170		250		250		400	
Rated Operating Power																	
operating power at AC-3 at 400 V		kW		55		75		90		110		132		160		200	
operating power at AC-3 at 690 V		kW		100		100		156		156		235		235		375	
Mechanical service life (in million)																	
Basic units		Operating Cycles		3													
Electrical service life AC-3 @400V(in million)		Operating Cycles		0.6													
Switching frequency in operating cycles/hour																	
No-load switching frequency		Cycles/h		5000		5000		5000		5000		3000		3000		3000	
Switching frequency AC-1		Cycles/h		800		800		800		750		800		750		700	
Switching frequency AC-3		Cycles/h		750		750		700		500		700		500		500	

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..

Note: .. pls enter coil voltage from "coil code" table on page no. 24

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 5 	120	55	160	-	-	3MT7120-5AA00-0A..
	140	75	160	-	-	3MT7140-5AA00-0A..
Size 6 	170	90	210	-	-	3MT7170-6AA00-0A..
	205	110	220	-	-	3MT7205-6AA00-0A..
Size 7 	250	132	300	-	-	3MT7250-7AA00-0A..
	300	160	300	-	-	3MT7300-7AA00-0A..
Size 8 	400	200	400	-	-	3MT7400-8AA00-0A..

Note: .. Please enter coil codes from table in next page

Selection and Ordering Information

Accessories



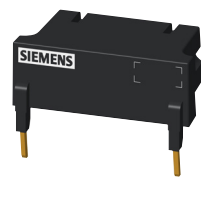
1 & 2 Pole Front
Auxiliary switches[#]



4 Pole Front
Auxiliary switches[#]



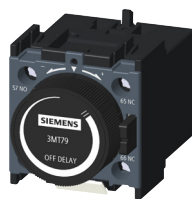
Lateral
Auxiliary switches



Surge Suppressor[#]



On Delay
Pneumatic timer[#]



Off Delay
Pneumatic timer[#]



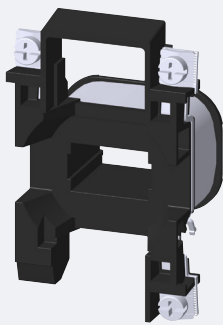
Mechanical Interlock



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
Size 5	3MT79000L..5
Size 6	3MT79000L..6
Size 7	3MT79000L..7
Size 8	3MT79000L..8

.. Please enter coil codes from table below

Coil Code(AC)												
	24V	36V	48V	110V	220V	230V	380V	400V	415V	165-273*	353-455V*	550V
50Hz	B0	G0 [#]	H0	F0	M0	P0	Q0	V0	R0	S0	T0	A5 [@]
50/60Hz	C2	G2 [#]	H2 [#]	F2	N2	L2	Q2	V2 [#]	R2 [#]	-	-	-

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

[#]not available for Size 5,6,7 & 8 contactors

[@]available only for Size 5,6,7 & 8 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

Spare Contact Kit

Main contact kits for Size 5,6,7,8 contactors (set of 6 fixed & 3 moving contacts)		
For Contactors	AC-3 rating	Article No.
3MT71205AA000A..	120A	3MT7912-0KA00
3MT71405AA000A..	140A	3MT7914-0KA00
3MT71706AA000A..	170A	3MT7917-0KA00
3MT72056AA000A..	205A	3MT7920-5KA00
3MT72507AA000A..	250A	3MT7925-0KA00
3MT73007AA000A..	300A	3MT7930-0KA00
3MT74008AA000A..	400A	3MT7940-0KA00

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. The coil is represented by a rectangle. The relay has six switch contacts: three normally open (NO) contacts and three common (C) contacts. The NO contacts are labeled 1 L1, 3 L2, and 5 L3. The C contacts are labeled 2 T1, 4 T2, and 6 T3. The common contacts are labeled 13 and 14. The switch contacts are shown in their open position. A dashed line connects the coil to the common contacts.

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. The coil is represented by a rectangle. The relay has six switch contacts: three normally closed (NC) contacts and three common (C) contacts. The NC contacts are labeled 1 L1, 3 L2, and 5 L3. The C contacts are labeled 2 T1, 4 T2, and 6 T3. The common contacts are labeled 21 and 22. The switch contacts are shown in their closed position. A dashed line connects the coil to the common contacts.

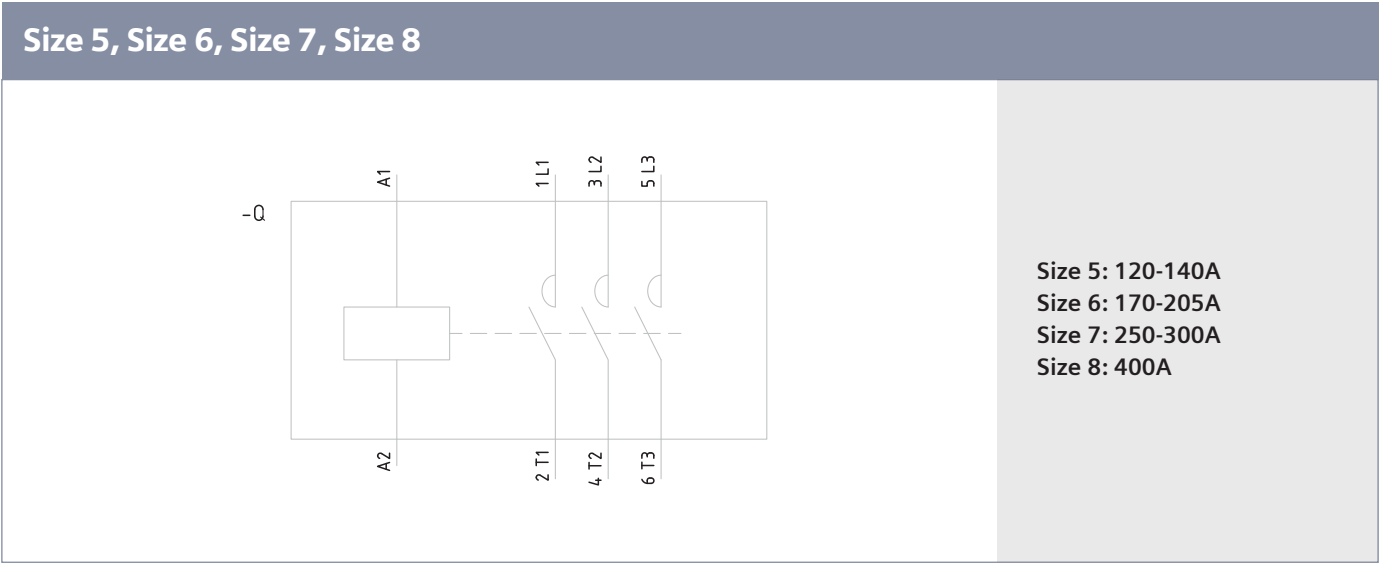
Size 0: 6A / 9A / 12A
Size 1: 18A / 22A
Size 2: 25A / 32A / 38A / 40A

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

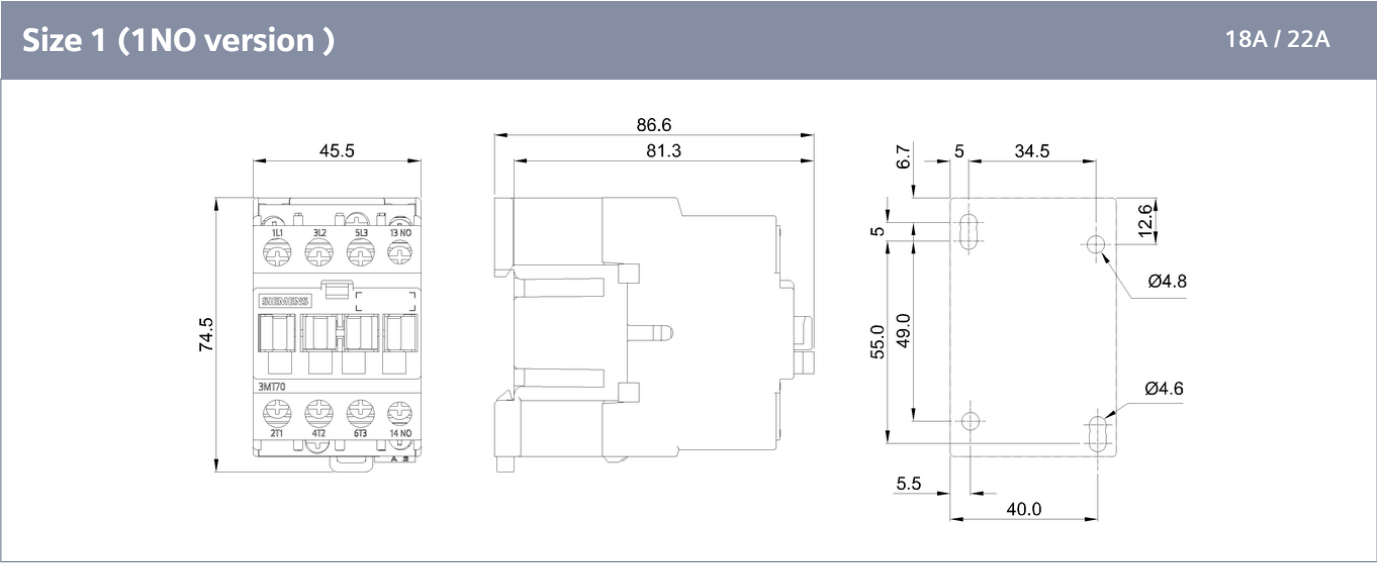
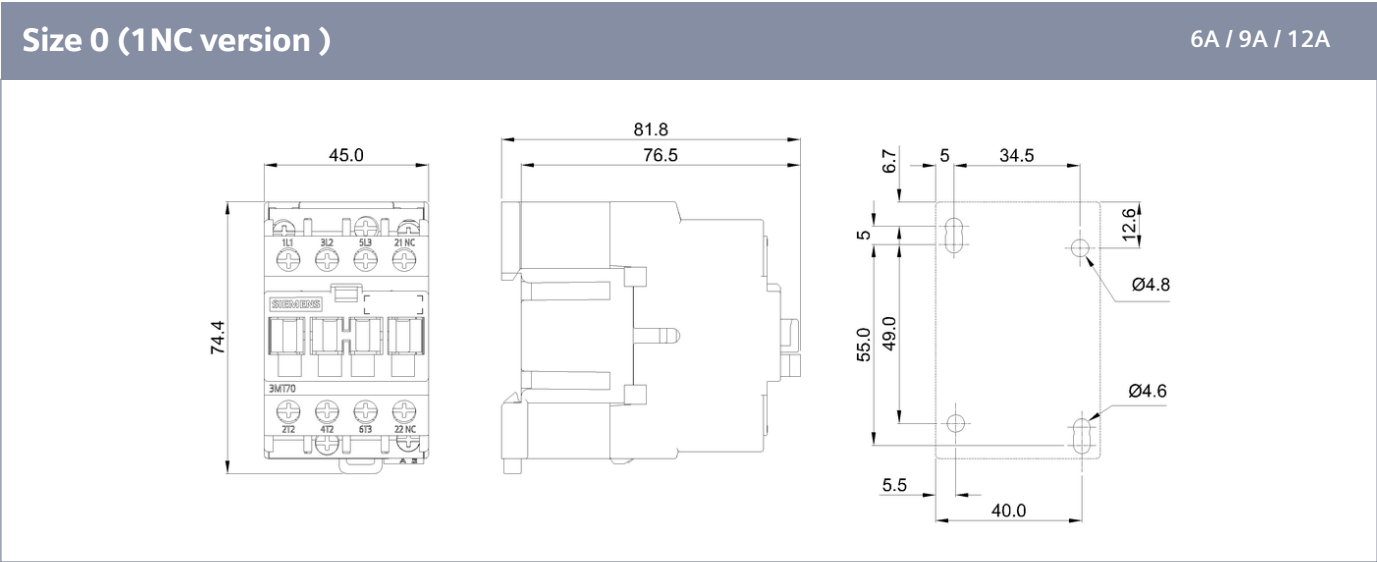
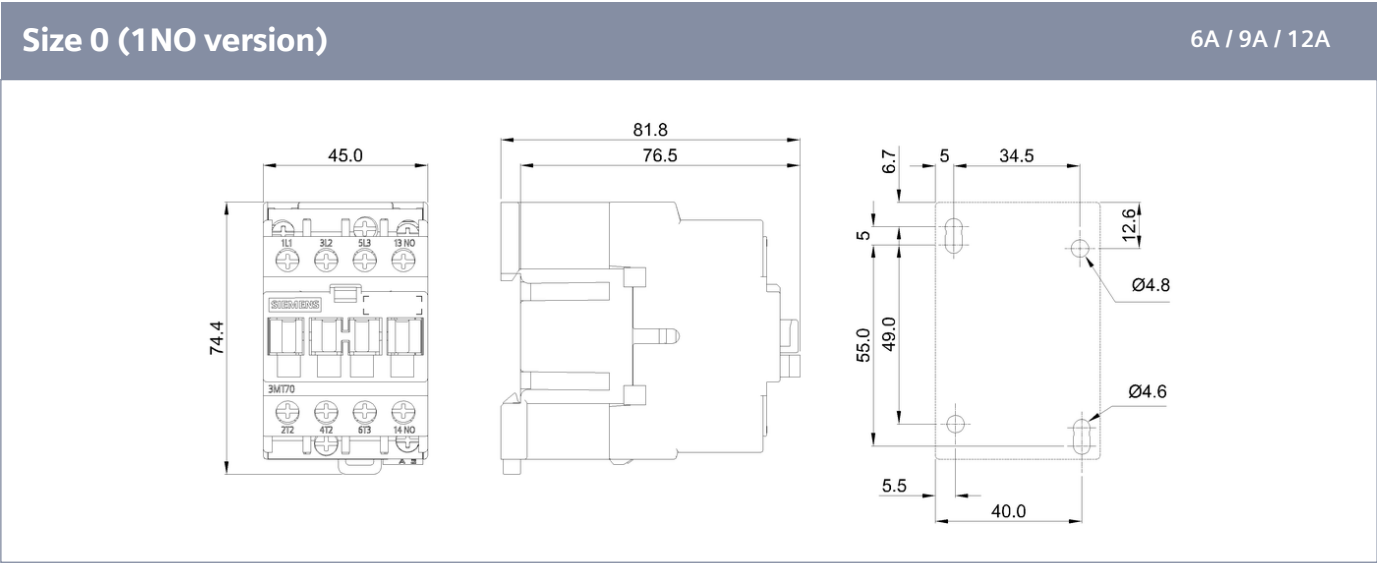
The diagram shows a relay with a coil connected between terminals A1 and A2. The coil is represented by a rectangle. The relay has six switch contacts: three normally open (NO) contacts and three normally closed (NC) contacts. The NO contacts are labeled 1 L1, 3 L2, and 5 L3. The NC contacts are labeled 13 and 21. The common contacts are labeled 2 T1, 4 T2, and 6 T3. The common contacts are labeled 14 and 22. The switch contacts are shown in their open position. A dashed line connects the coil to the common contacts.

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

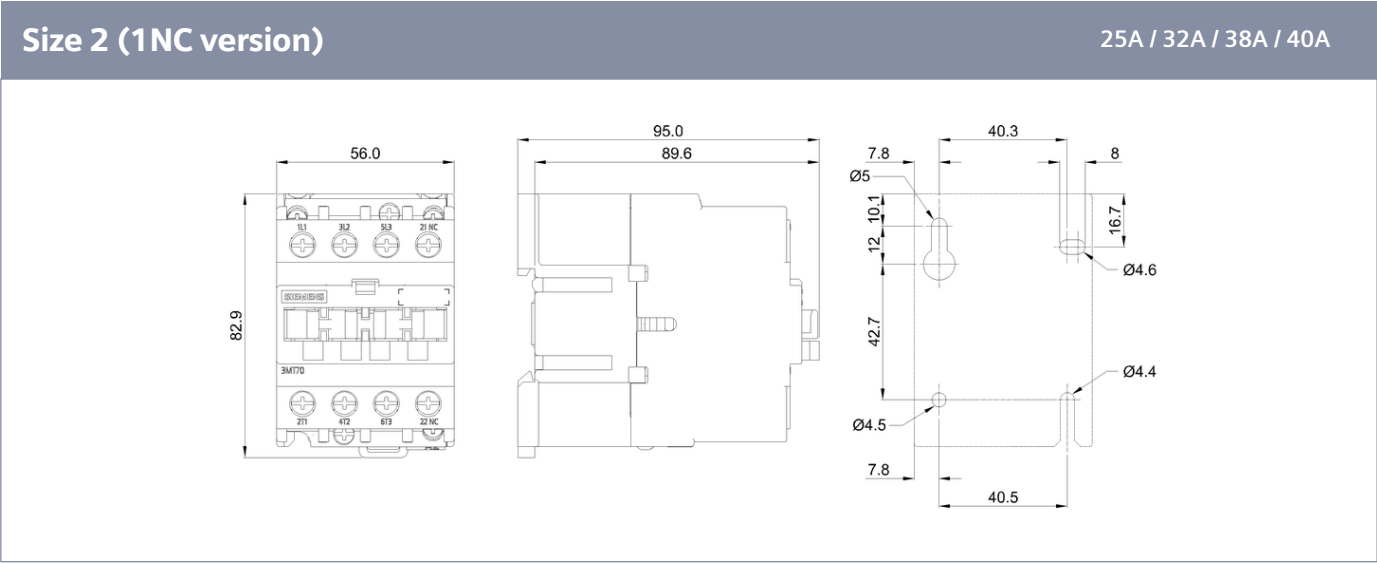
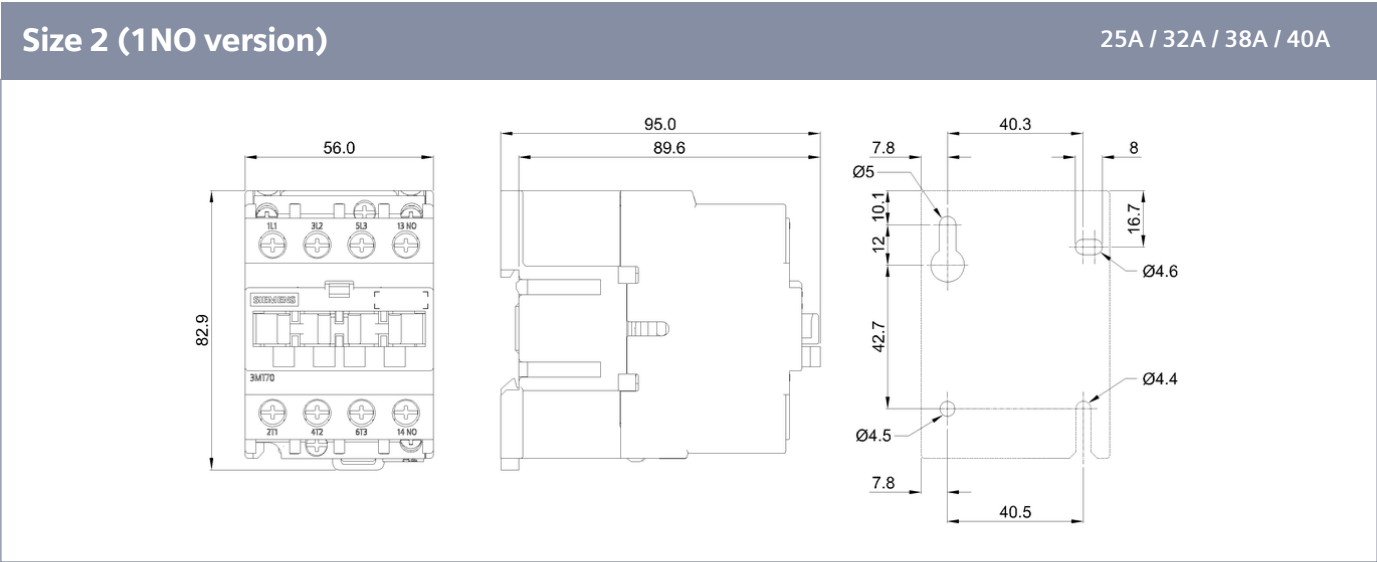
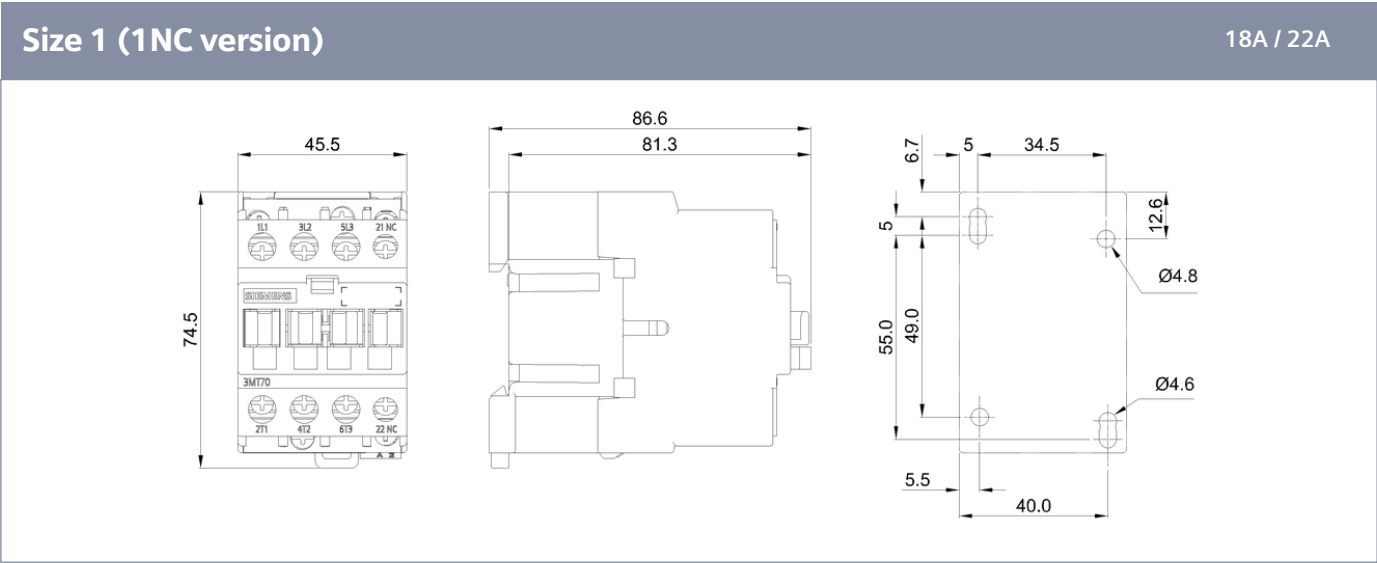
Wiring Diagram



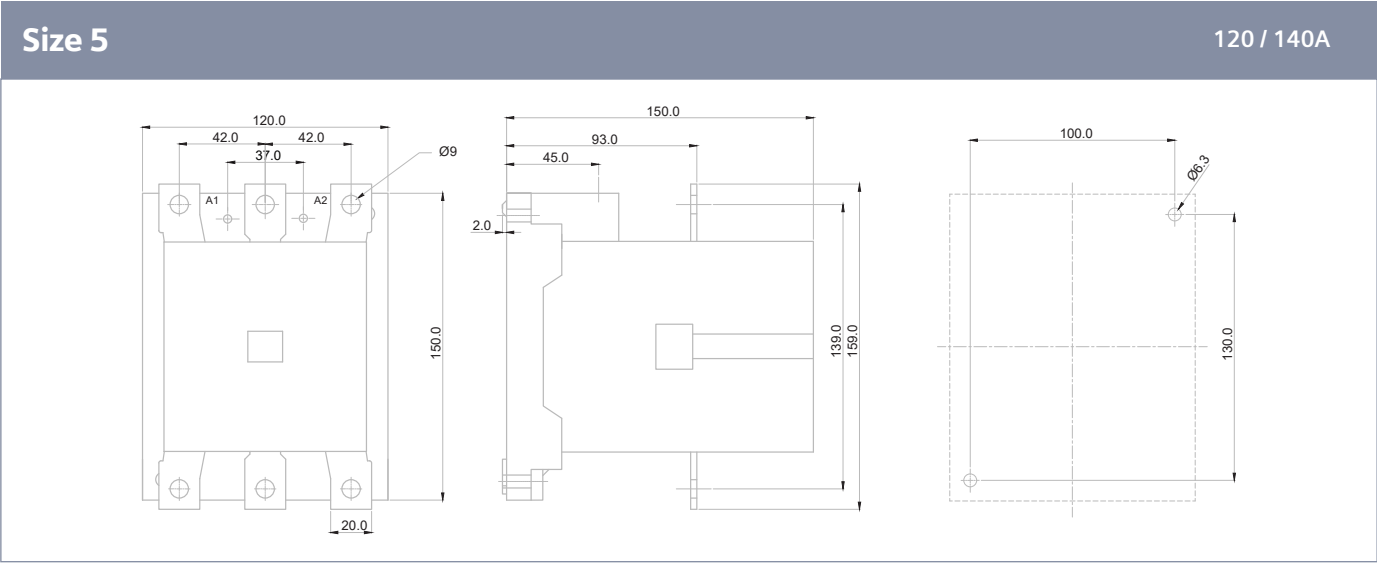
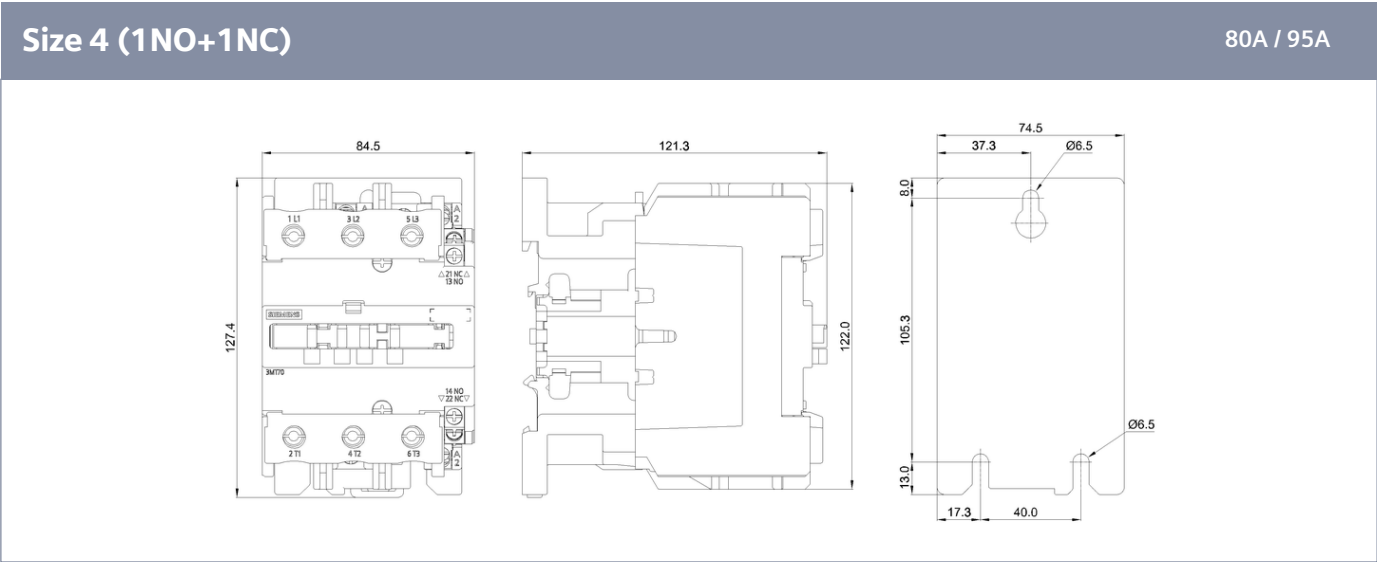
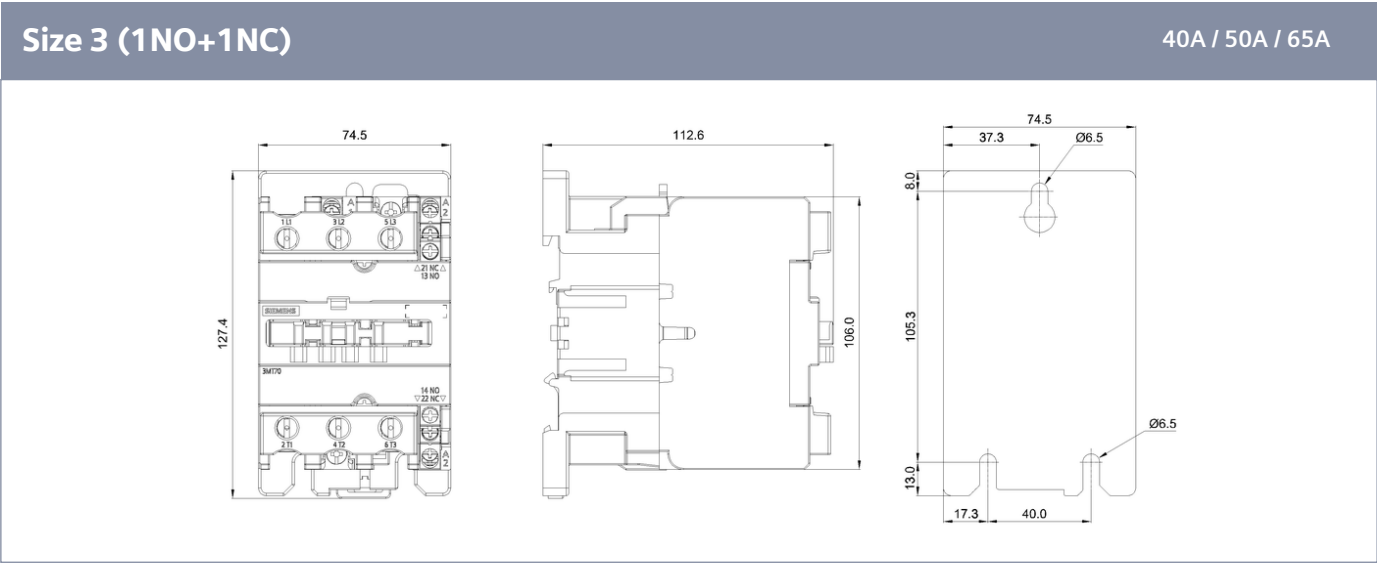
Dimension Drawing



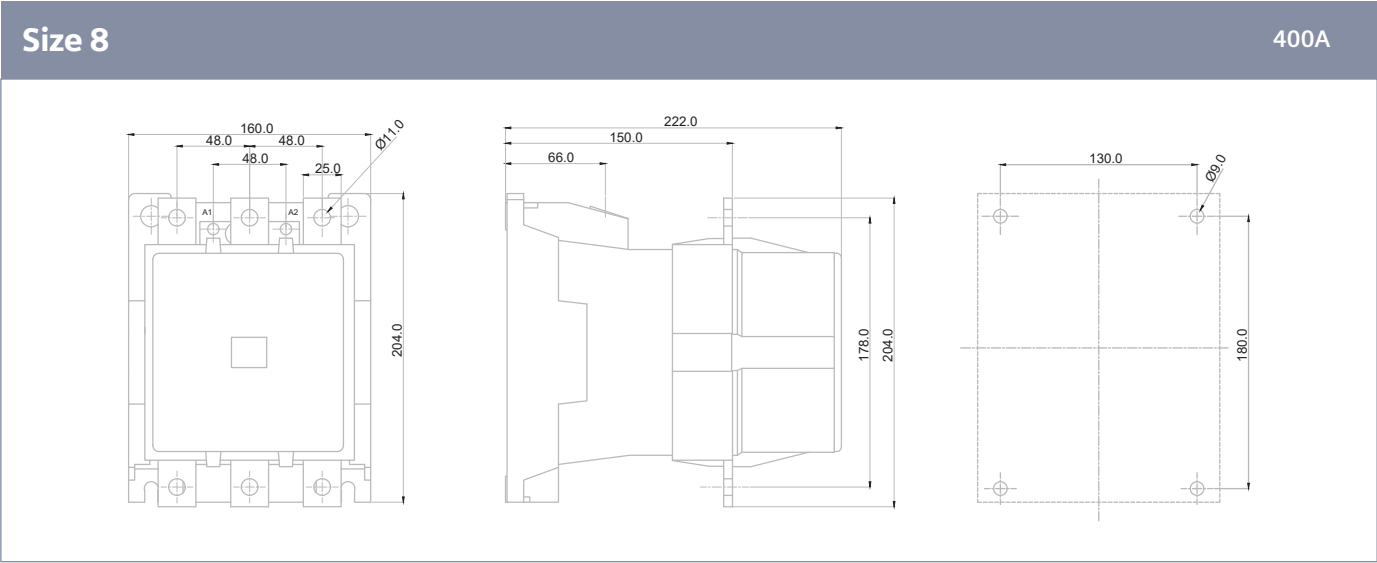
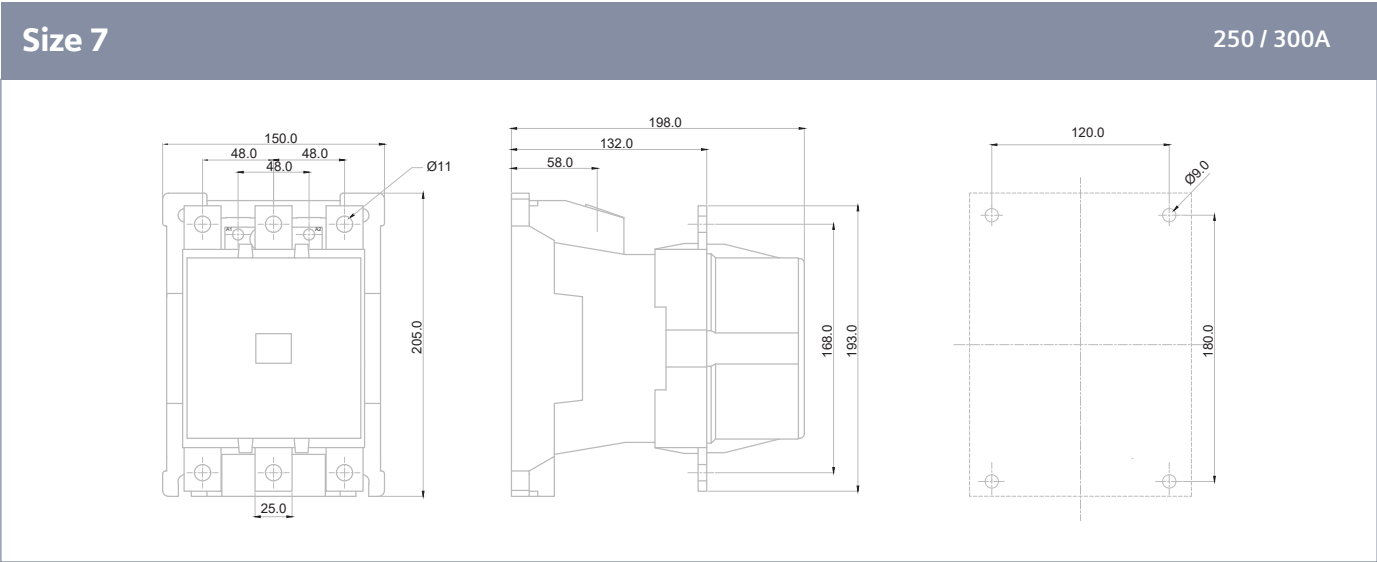
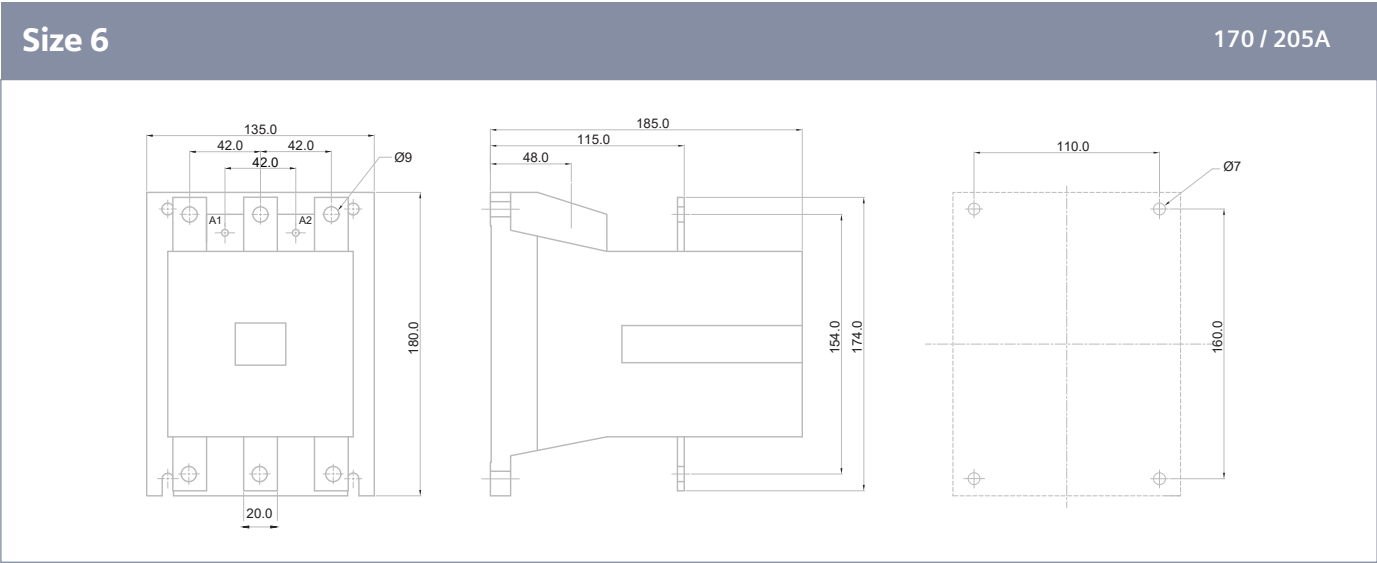
Dimension Drawing



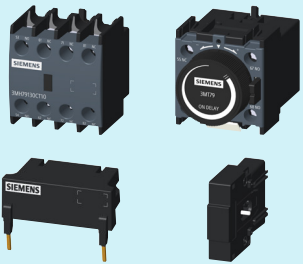
Dimension Drawing



Dimension Drawing



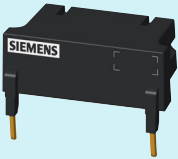
Accessories

	33	Selection and Ordering
	35	Wiring Diagram
	37	Dimension Drawing

Selection and Ordering Information

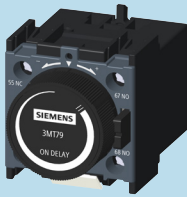
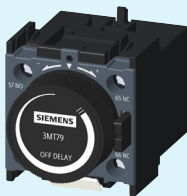
Accessories for Contactors

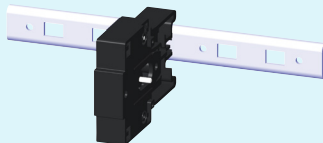
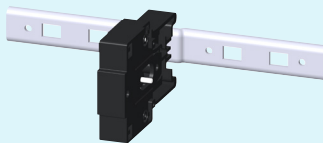
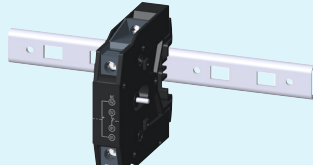
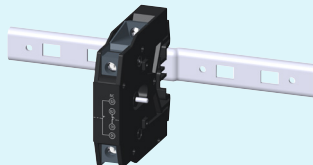
Auxiliary switches						
Compatible with 3MT7 three pole power contactor and 3MH7 contactor relay						
Product Picture	Number of auxiliary contacts		Mounting Position	Compatible contactor	Maximum mountable auxiliary switches	Article number
	NO	NC				
	1	-	Front	Size 0,1,2,3,4 and Contactor relay	1	3MH7910-0CT10
	-	1				3MH7901-0CT10
	2	-				3MH7920-0CT10
	1	1				3MH7911-0CT10
	-	2				3MH7902-0CT10
	4	-				3MH7940-0CT10
	3	1				3MH7931-0CT10
	2	2				3MH7922-0CT10
	1	3				3MH7913-0CT10
	-	4				3MH7904-0CT10
	2	-	First left or first right	Size 5,6,7,8	2	3MH7920-0CL10
	1	1				3MH7911-0CL10
	1	1	First left or first right		2	3MH79110CL21
			Second left or second right		2	3MH79110CL22

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

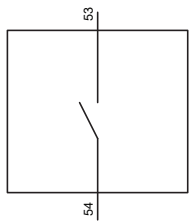
Accessories for Contactors

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

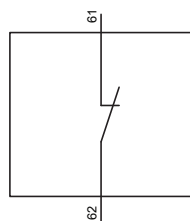
Interlock						
For 3MT7 three pole power contactors						
Mechanical Interlock	Suitable for Contactor Size 0, 1,2		Suitable for Contactor Size 3		Suitable for Contactor Size 4	
		3MT7900-1XM01		3MT7900-1XM02		3MT7900-1XM03
Electro- Mechanical Interlock	Suitable for Contactor Size 0, 1,2		Suitable for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

Wiring Diagram

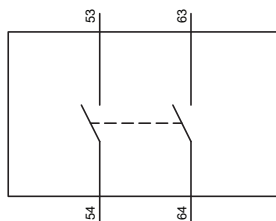
1 & 2 Pole Front Auxiliary switches



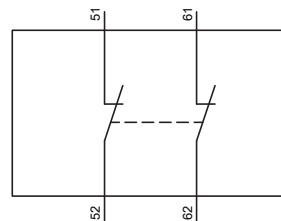
Single Pole 1NO



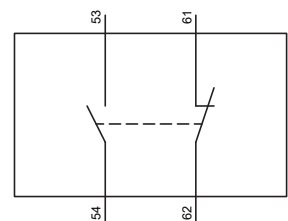
Single Pole 1NC



Two Pole 2NO

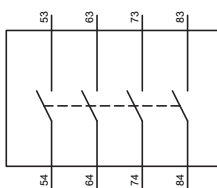


Two Pole 2NC

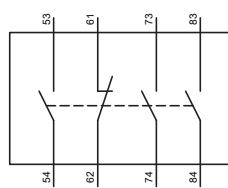


Two Pole 1NO + 1NC

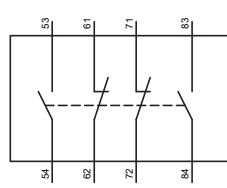
4 Pole Front Auxiliary switches



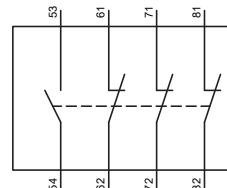
Four Pole 4NO



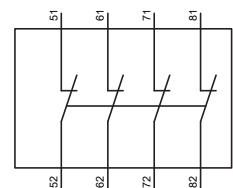
Four Pole 3NO+1NC



Four Pole 2NO+2NC

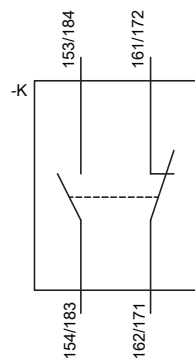


Four Pole 1NO+3NC

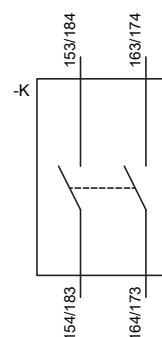


Four Pole 4NC

Lateral Auxiliary Switch



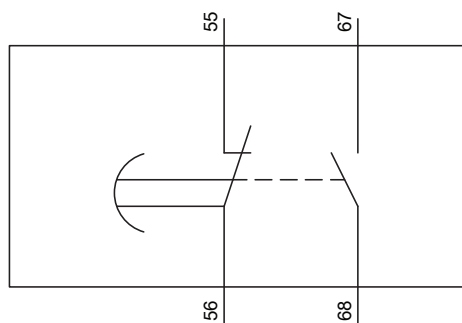
Two pole 1NO + 1NC



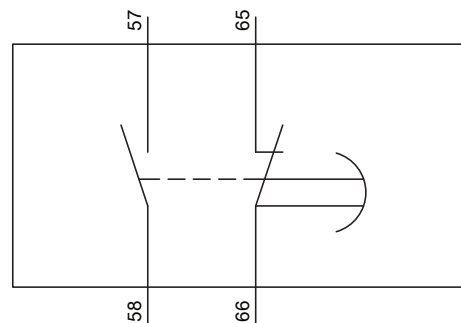
Two pole 2NO

Wiring Diagram

Pneumatic Timer

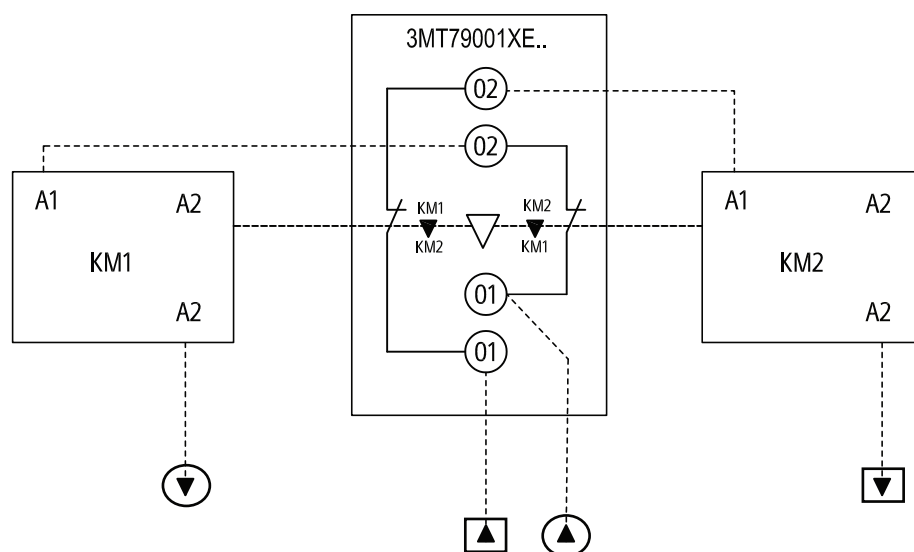
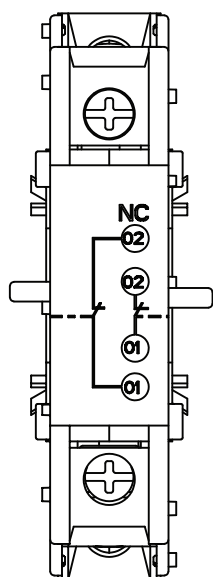


ON Delay timer

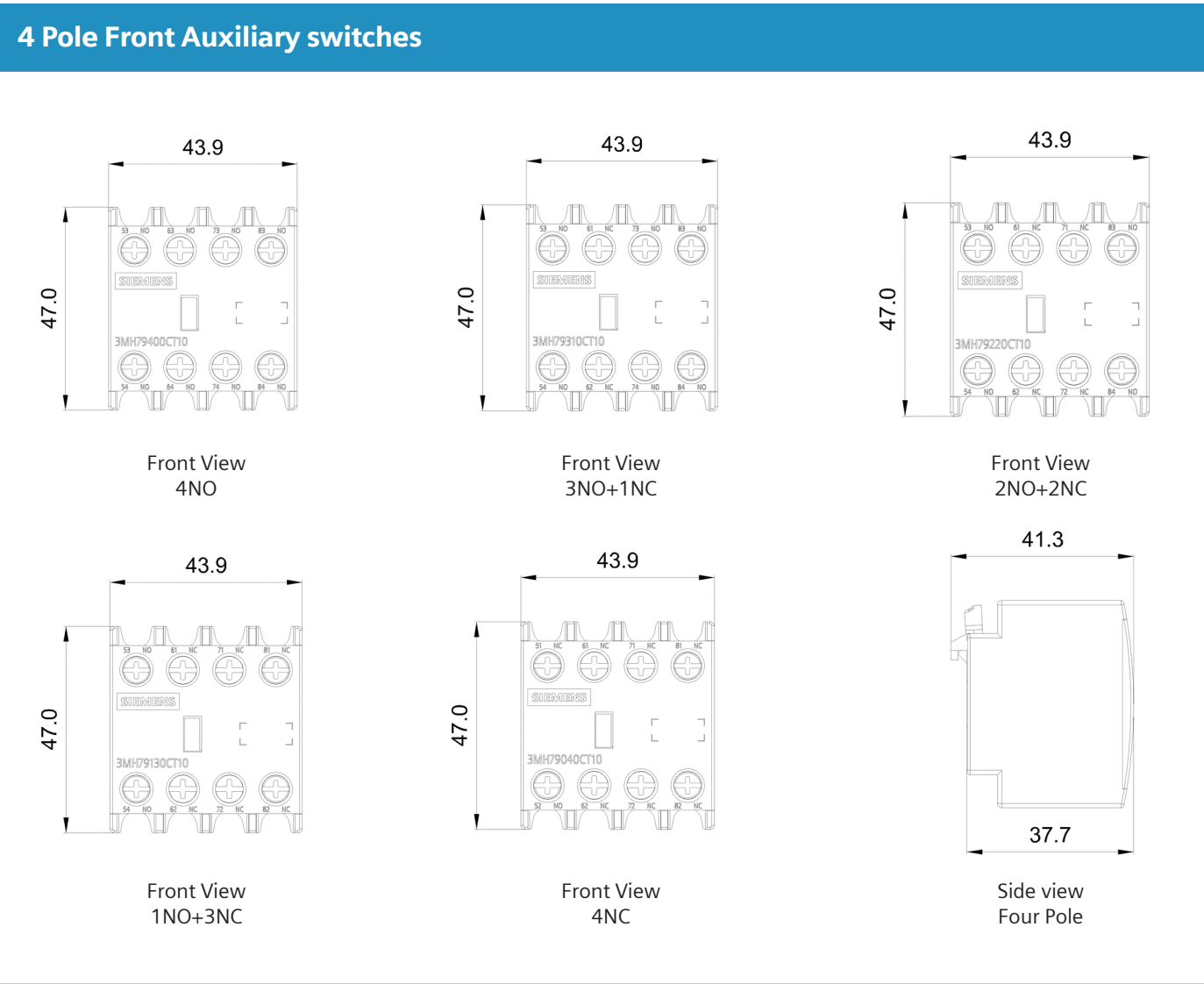
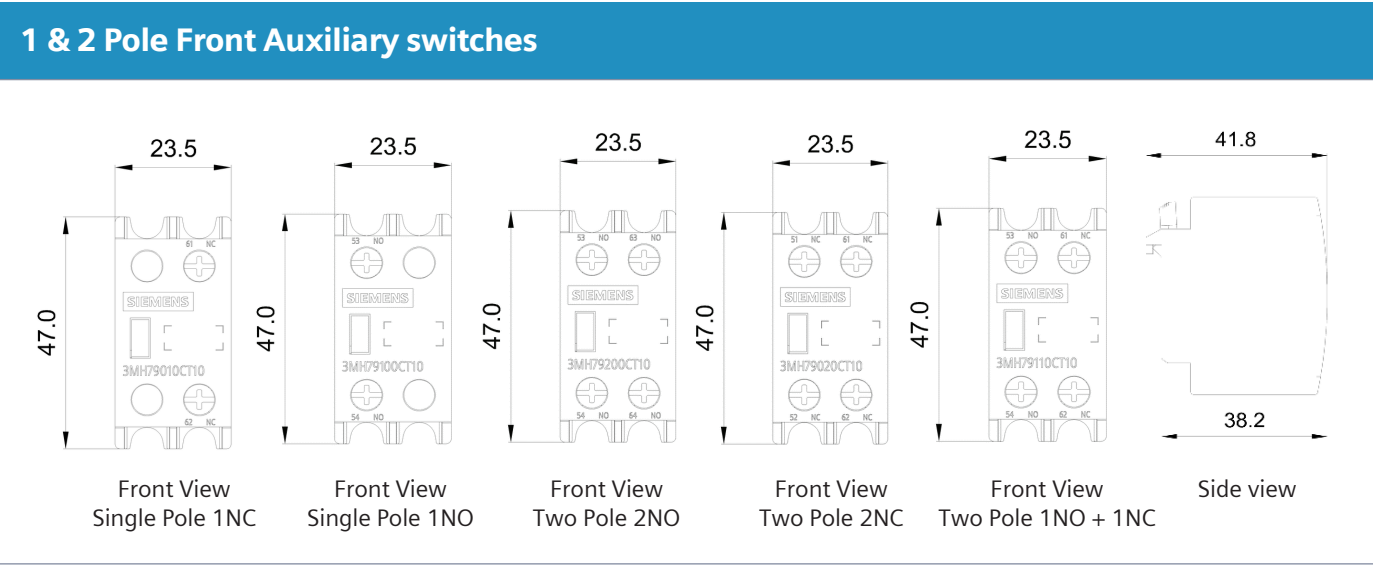


OFF Delay timer

Electro-Mechanical Interlock

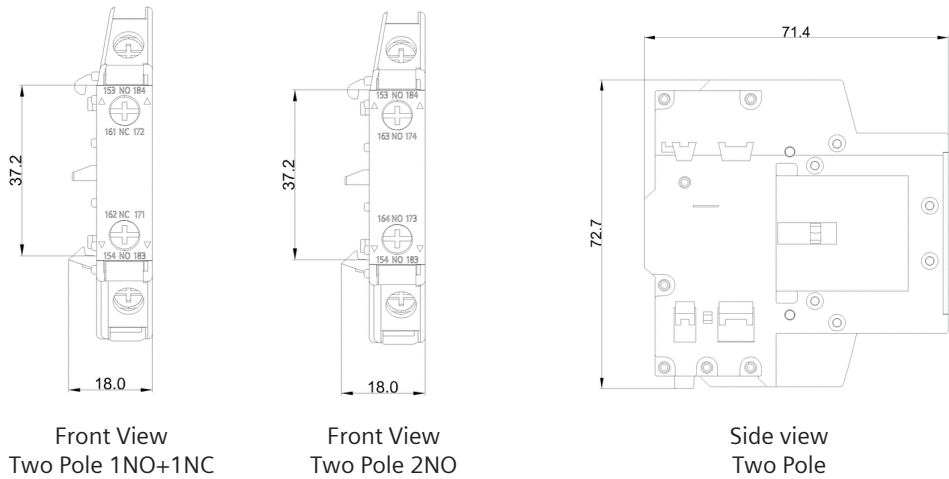


Dimension Drawing

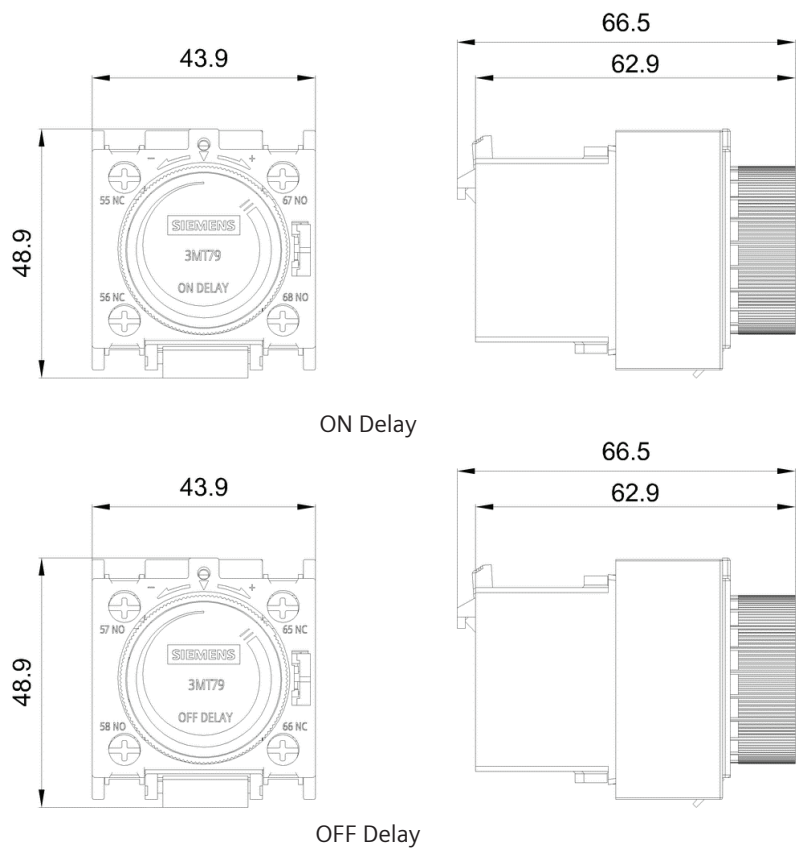


Dimension Drawing

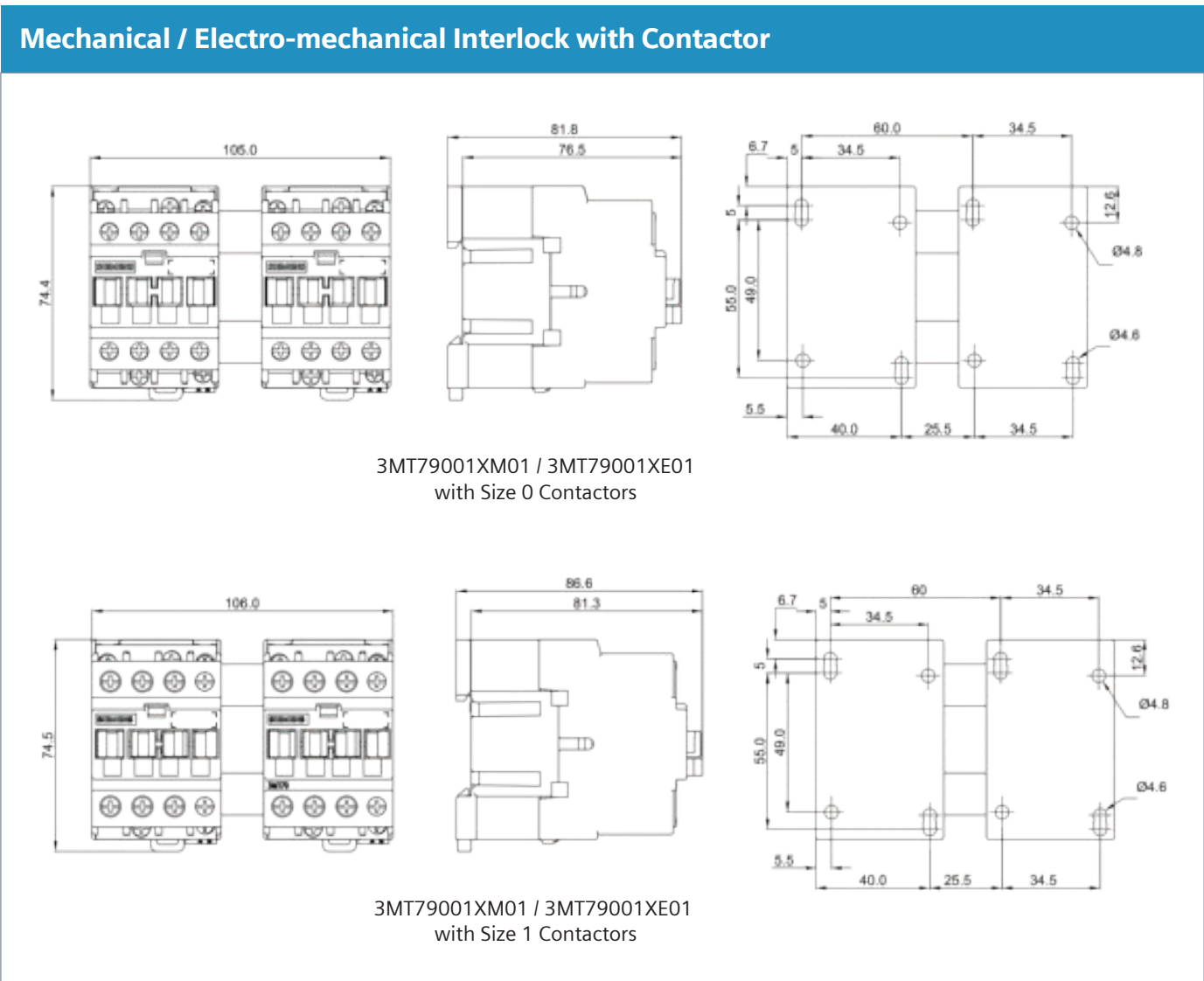
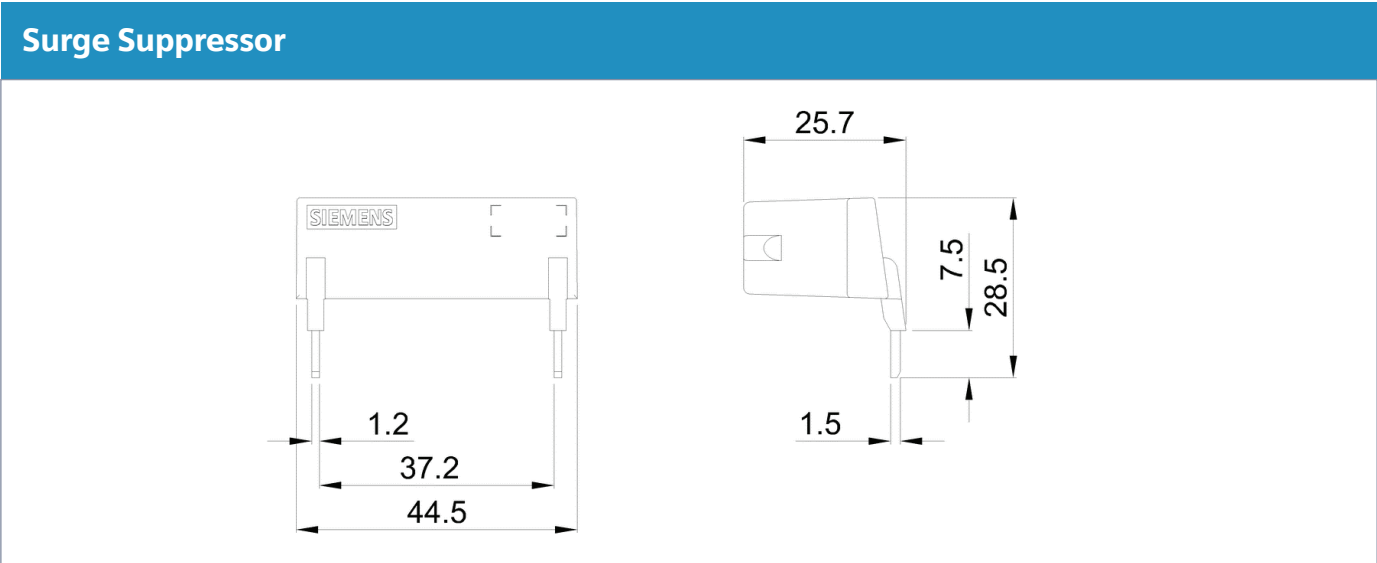
Lateral Auxiliary switches



Pneumatic Timer

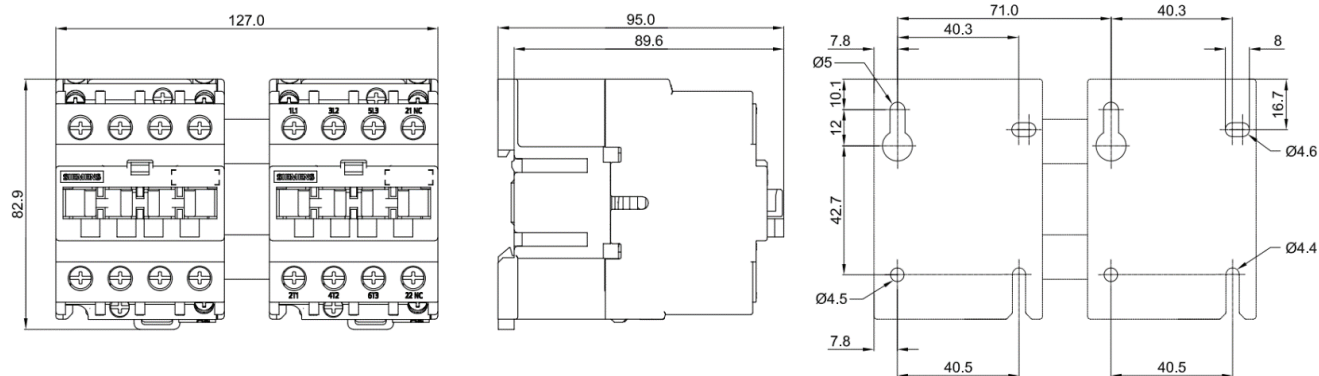


Dimension Drawing

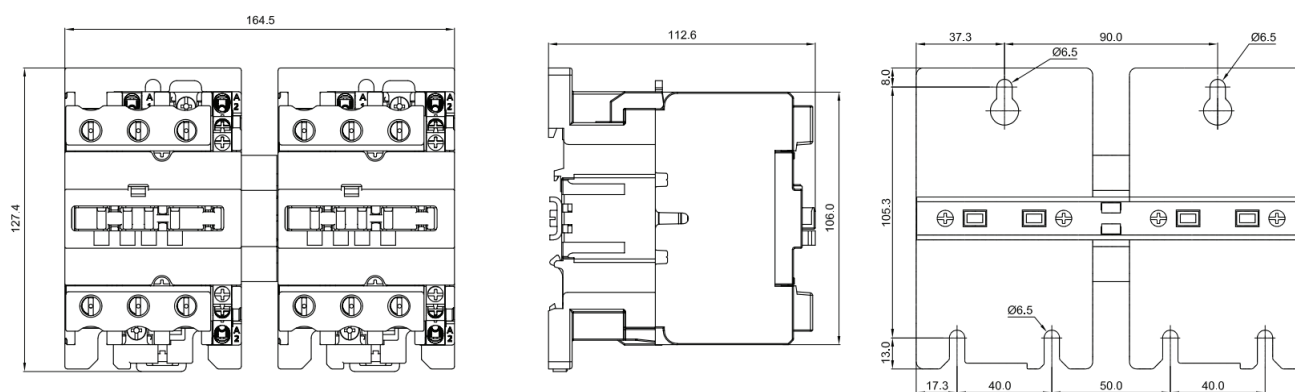


Dimension Drawing

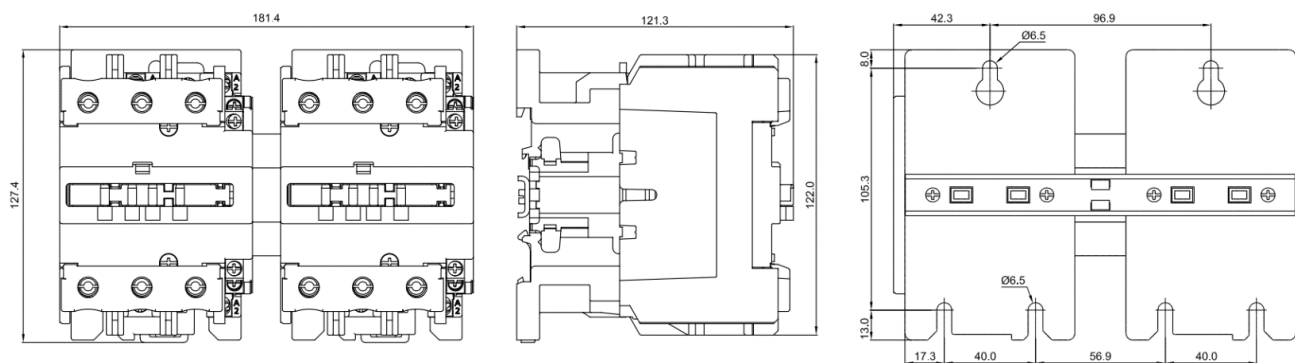
Mechanical / Electro-mechanical Interlock with Contactor



3MT79001XM01 / 3MT79001XE01
with Size 2 Contactors

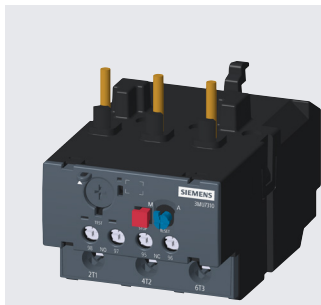


3MT79001XM02 / 3MT79001XE02
with Size 3 Contactors



3MT79001XM03 / 3MT79001XE03
with Size 4 Contactors

SINOVA 3MU7 Thermal Overload Relays



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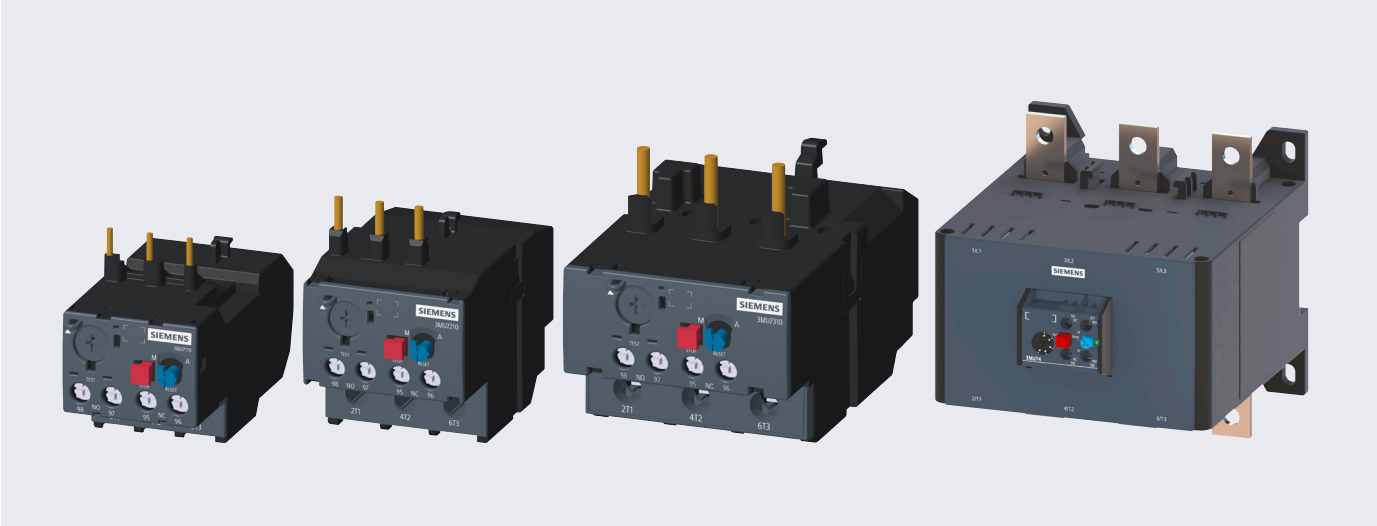
Wiring Diagram

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Dimension Drawing

Overview

SINOVA 3MU7 Thermal Overload Relays are designed for consistent motor protection in all standard applications. Coupled with the SINOVA 3MT7 3-Pole Power Contactors, they provide optimum control and protection for your motor feeders.



Article Number Scheme

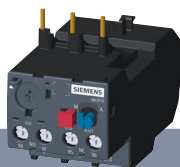
Product Version		Article number								
SINOVA Thermal Overload Relay		3MU7	☐	☐	☐	-	☐	☐	A	☐
Size	e.g. 0 = Size 1		1							
Class	10 = Class 10			1	0					
Setting range for overload release	e.g. 0A = 0.10-0.16A						0	A		
Installation type	e.g. 0 = mounting on contactor 1= independent mounting							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

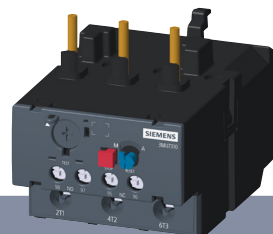
SINOVA Thermal Overload Relays & the matching SINOVA 3-Pole Power Contactors



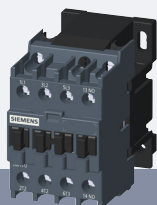
3MU71



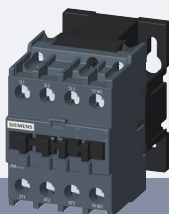
3MU72



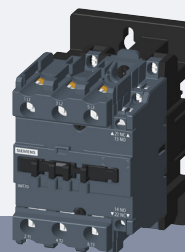
3MU73



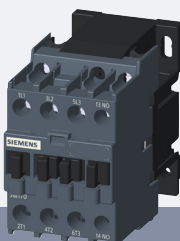
Size 0



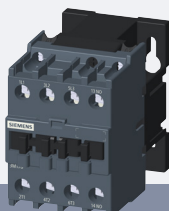
Size 2



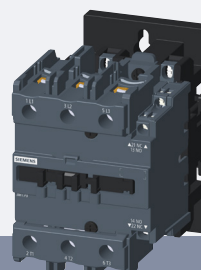
Size 3



Size 1



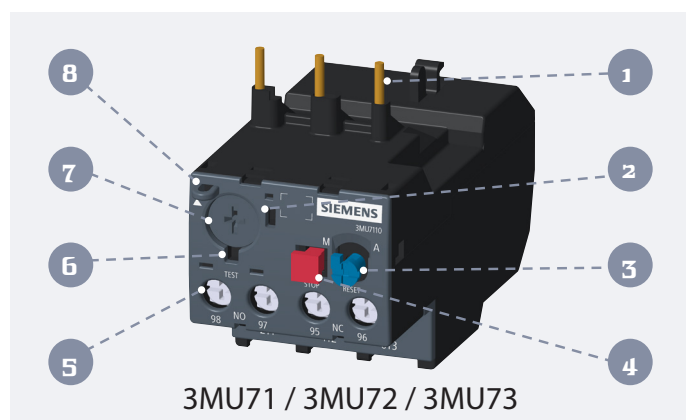
Size 2



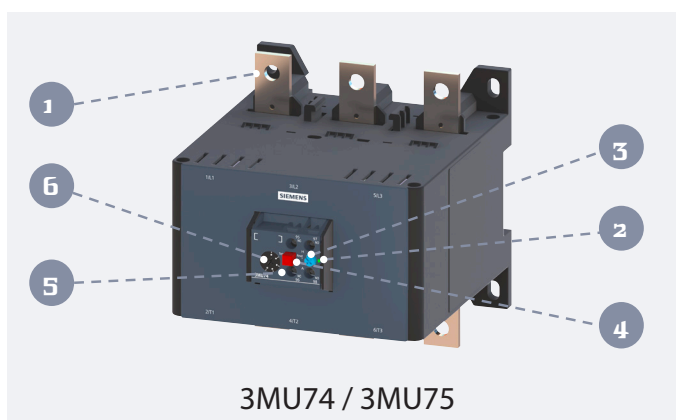
Size 4

Overview

Functions



- 1 Connection for mounting onto contactors
- 2 Relay Status
- 3 Selector switch for Auto / Manual reset and reset button
- 4 Stop button
- 5 Auxiliary circuit terminals
- 6 Test function
- 7 Motor current setting dial
- 8 Provision for fixing sealing cover



- 1 Terminals for cable / bar connection
- 2 Relay Status
- 3 Selector switch for Auto / Manual reset and reset button
- 4 Stop / test button
- 5 Auxiliary circuit terminals
- 6 Motor current setting dial

Protection

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

Application

The SINOVA 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. 3MU71 / 3MU72 / 3MU73 relays comply to tripping Class 10 and 3MU74 / 3MU75 relays comply to tripping class 10A as per IEC 60947-4-1. The SINOVA 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		Refer "Selection and ordering information" Refer Type-2 co-ordination charts		
• With fuse without contactor				
• With fuse with contactor				
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	mm ²	1 x (1.0 ... 4.0 mm ²)		
Finely stranded with end sleeve	mm ²	1 x (1.0 ... 4.0 mm ²)		
• Terminal screw		M3.5		
- Tightening torque	Nm	1.2		

Technical Specifications

SINOVA Thermal Overload Relays				
Type			3MU74	3MU75
General data				
Dimension (W x H x D)				
• Basic unit	mm		147 x 157 x 173	
Tripping in the event of			Overload, Single Phase Failure	
Trip Class acc. to IEC 60947-4-1			Class 10A	
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		1000	
Rated impulse withstand voltage U_{imp}	Main circuit Aux circuit	kV kV	8 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			IP00	
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			Stand-alone installation by screw fixing	

Technical Specifications

					
SINOVA Thermal Overload Relays					
Type		3MU74		3MU75	
Main Circuit					
Rated operational voltage U _e		V	230 / 400 (L-N / L-L)		
Operating Frequency		Hz	50 / 60		
Current Setting		A	85-135 to 250-400	312-500	
Power loss for rated current in hot state (maximum)		W	33.6	45	
• Per pole (maximum)		W	11.2	15	
Short-circuit protection of main circuit					
• With fuse links of operational class gG without contactor:		A	Refer "Selection and ordering information"		
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	6		
• AC-15 at rated operational voltage U _e					
- 24V		A	2		
- 48V		A	1.25		
- 110V		A	1.25		
- 220V		A	1.15		
- 380V		A	1		
- 600V		A	0.3		
- 690V		A	0.3		

Technical Specifications

					
SINOVA Thermal Overload Relays					
Type		3MU74		3MU75	
• DC-13, at rated operational voltage U _e (1 conducting path)		6			
- 24V	A	1			
- 48V	A	0.4			
- 110V	A	0.22			
- 220V	A	0.1			
Short-circuit protection of auxiliary circuit					
• With fuse links of operational class at 690V gG: A		6			
Conductor cross-sections					
Main conductors		3MU7410-3AA1 / 3MU7410-3BA1	3MU7410-3CA1 / 3MU7410-3DA1 / 3MU7410-3EA1	3MU7510-4AA1	
Flexible cable with Lugs	mm ²	2 x (25 ... 95)	2 x (70 ... 240)	2 x (150 ... 240)	
Terminal bar (max. width)	mm	2 x 20 x 3	2 x 25 x 3	2 x 30 x 5	
• Terminal screw		M8	M10	M10	
- Tightening torque	Nm	10-14	14-24	14-24	
Auxiliary contacts – Assignment					
Solid or stranded	mm ²	2 x (1.0 ... 2.5 mm ²)			
Finely stranded with end sleeve	mm ²	2 x (0.75 ... 1.5 mm ²)			
• Terminal screw		M3.5			
- Tightening torque	Nm	0.8-1.2			

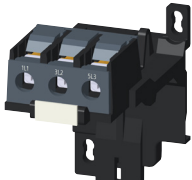
Selection and Ordering Information

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
	Class 10	0.06	0.16-0.25	2	0, 1, 2	3MU7110-0BA0
	Class 10	0.09	0.25-0.40	2	0, 1, 2	3MU7110-0CA0
	Class 10	0.18	0.40-0.63	2	0, 1, 2	3MU7110-0DA0
	Class 10	0.25	0.63-1	4	0, 1, 2	3MU7110-0EA0
	Class 10	0.55	1-1.6	4	0, 1, 2	3MU7110-0FA0
	Class 10	0.75	1.25-2	6	0, 1, 2	3MU7110-0GA0
	Class 10	0.75	1.6-2.5	6	0, 1, 2	3MU7110-0HA0
	Class 10	1.5	2.5-4	10	0, 1, 2	3MU7110-0JA0
	Class 10	2.2	4-6	16	0, 1, 2	3MU7110-0KA0
	Class 10	3	5.5-8	20	0, 1, 2	3MU7110-0LA0
	Class 10	4	7-10	20	0, 1, 2	3MU7110-0MA0
	Class 10	5.5	9-13	25	0, 1, 2	3MU7110-0NA0
	Class 10	7.5	12-18	32	1, 2	3MU7110-0PA0
	Class 10	11	17-25	50	1, 2	3MU7110-0QA0
2 	Class 10	15	23-32	63	2	3MU7210-1AA0
	Class 10	18.5	28-36	63	2	3MU7210-1BA0
3 	Class 10	15	23-32	63	3, 4	3MU7310-2AA0
	Class 10	18.5	30-40	80	3, 4	3MU7310-2BA0
	Class 10	22	37-50	80	3, 4	3MU7310-2CA0
	Class 10	30	48-65	80	3, 4	3MU7310-2DA0
	Class 10	37	55-70	125	4	3MU7310-2EA0
	Class 10	37	63-80	125	4	3MU7310-2FA0
	Class 10	45	80-93	125	4	3MU7310-2GA0

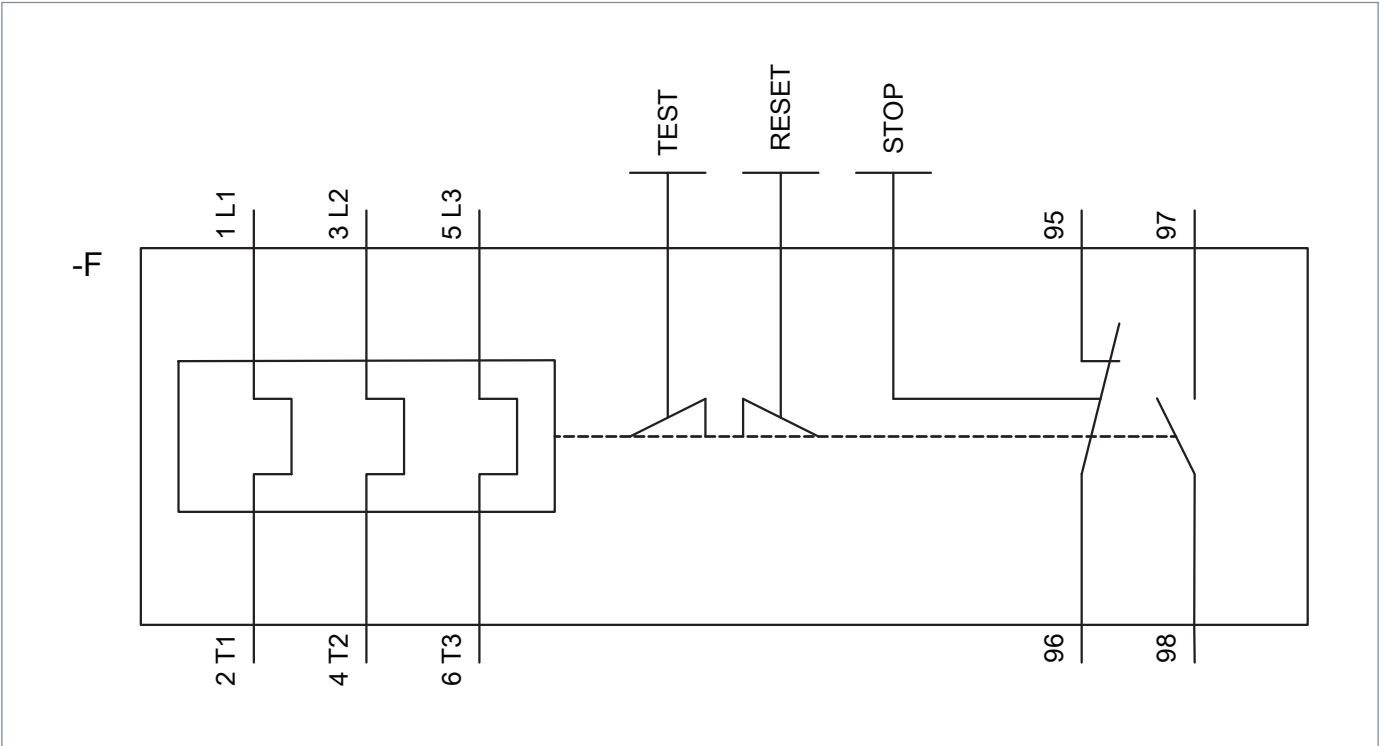
Selection and Ordering Information

Size	Trip class	Current setting value	Short-circuit protection without contactor with fuse, type of coordination "2" (operational class gG)	Mounting	Article No.
4 	Class 10A	85-135A	224	Screw mounting	3MU7410-3AA1
	Class 10A	115-180A	250	Screw mounting	3MU7410-3BA1
	Class 10A	160-250A	355	Screw mounting	3MU7410-3CA1
	Class 10A	200-320A	400	Screw mounting	3MU7410-3DA1
	Class 10A	250-400A	500	Screw mounting	3MU7410-3EA1
5 	Class 10A	312-500A	500	Screw mounting	3MU7510-4AA1

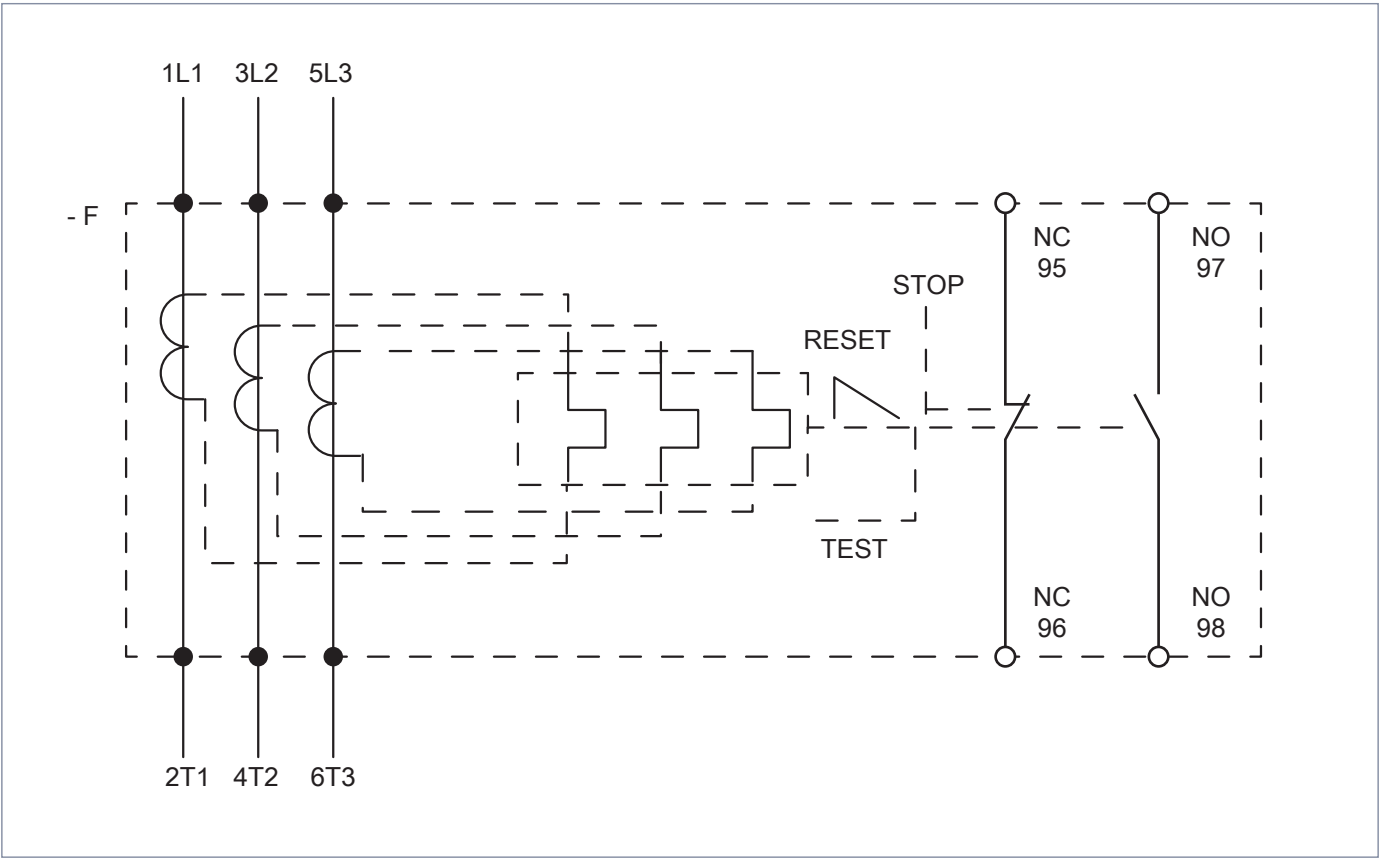
Accessories

Relay stand-alone installation kit	Overload relay size	Article number	Relay setting dial sealing cover	Article number
	1	3MU7900-0MA10		3MU7900-0CA00 Suitable for relay size 1, 2, 3
	2	3MU7900-0MA20		
	3	3MU7900-0MA30		

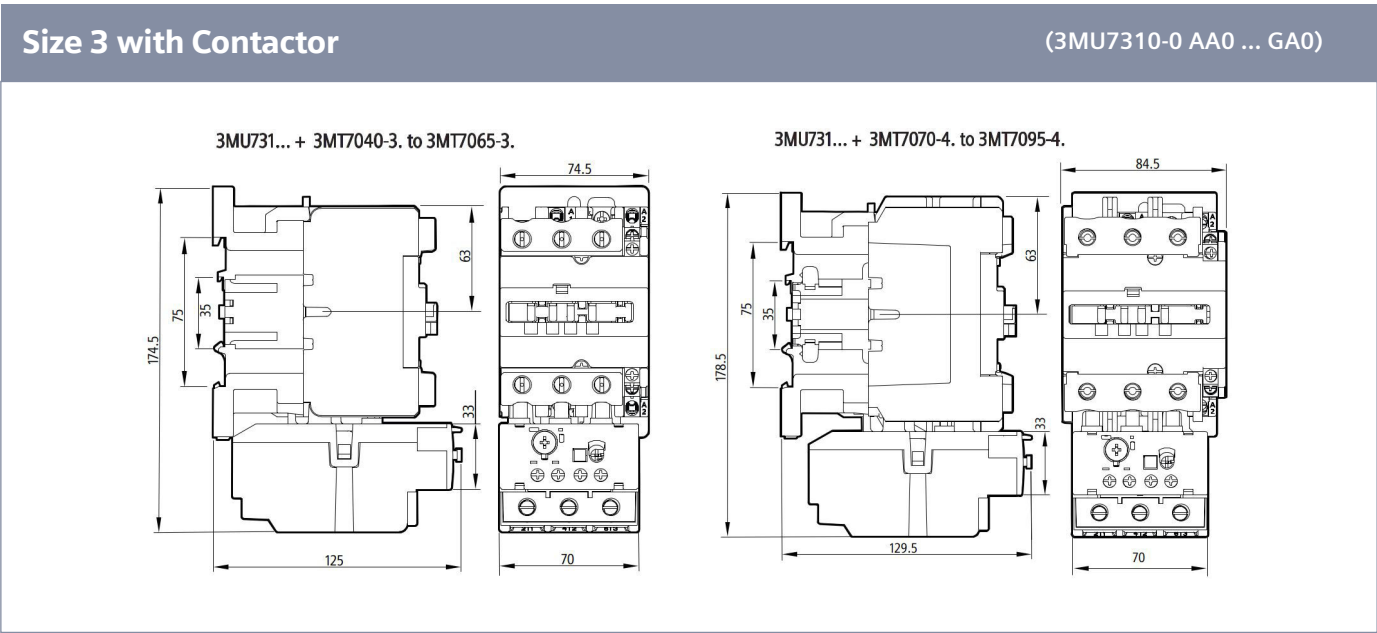
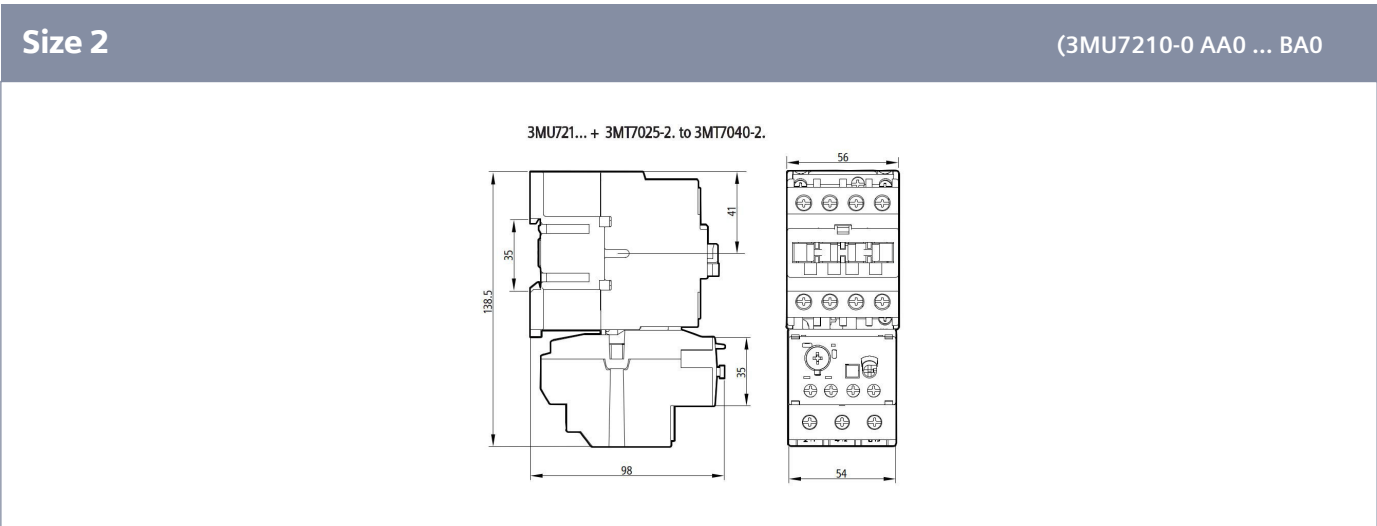
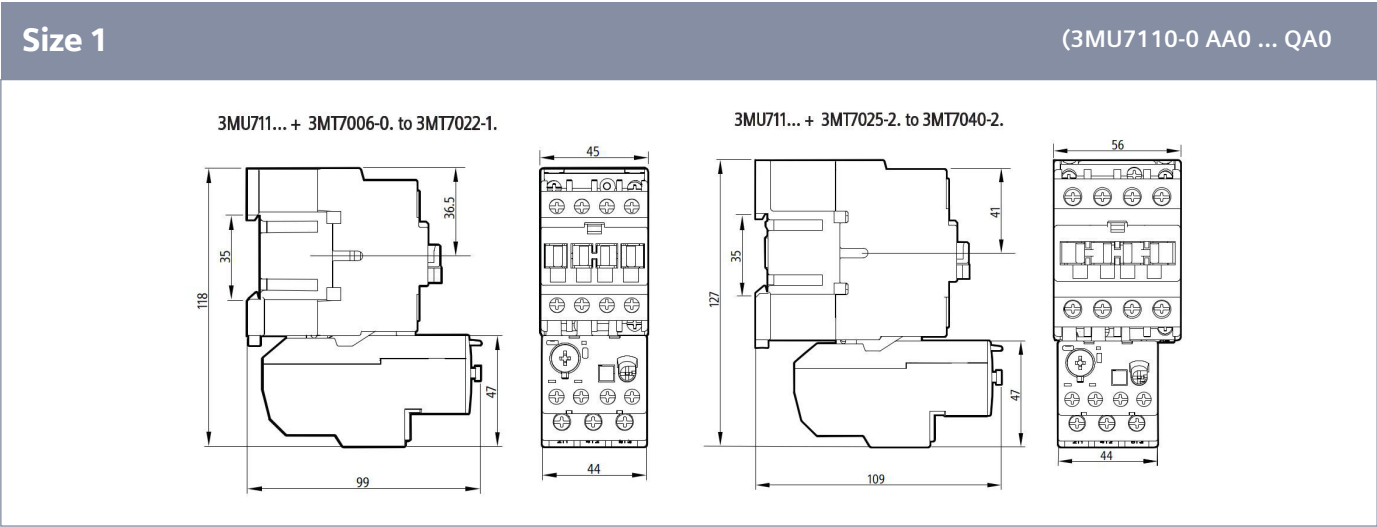
Wiring Diagram (3MU71 / 3MU72 / 3MU73)



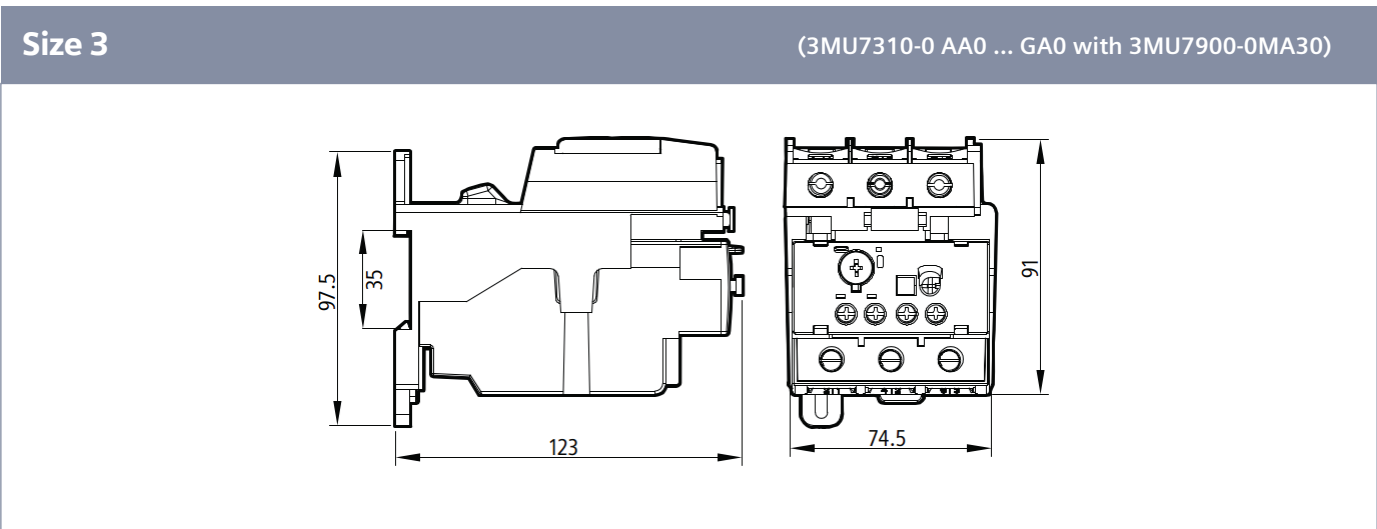
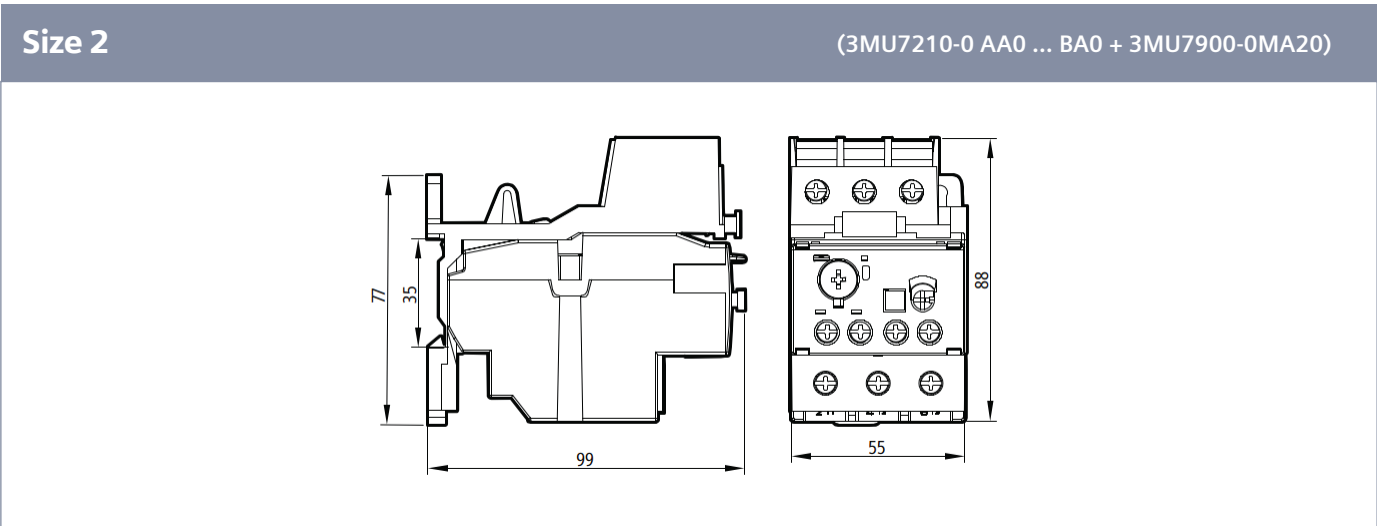
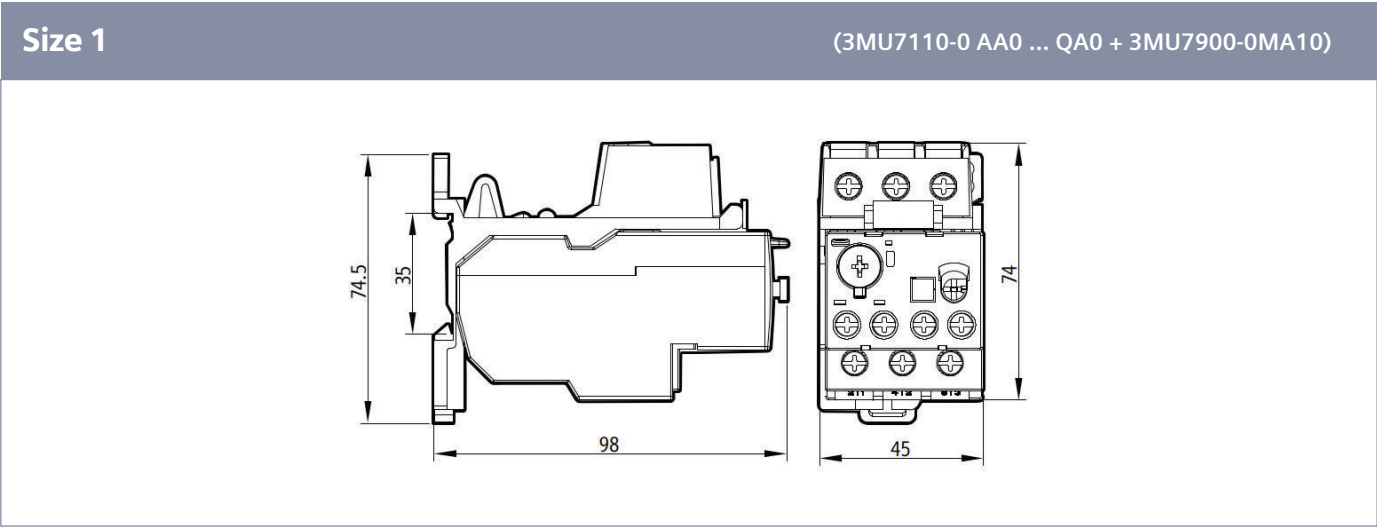
Wiring Diagram (3MU74 & 3MU75)



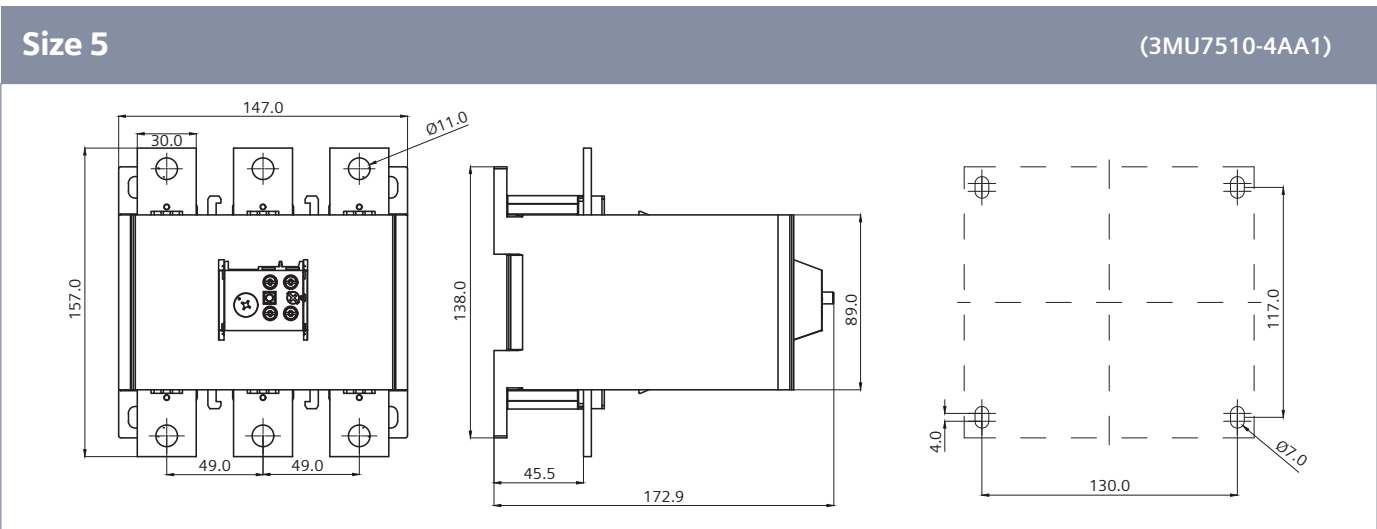
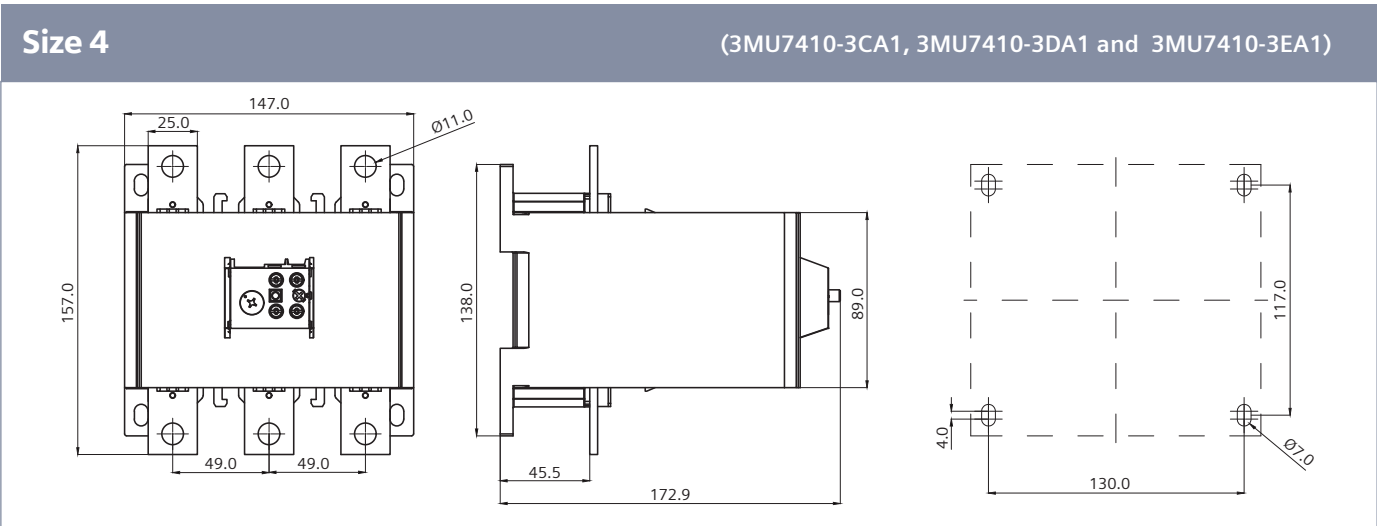
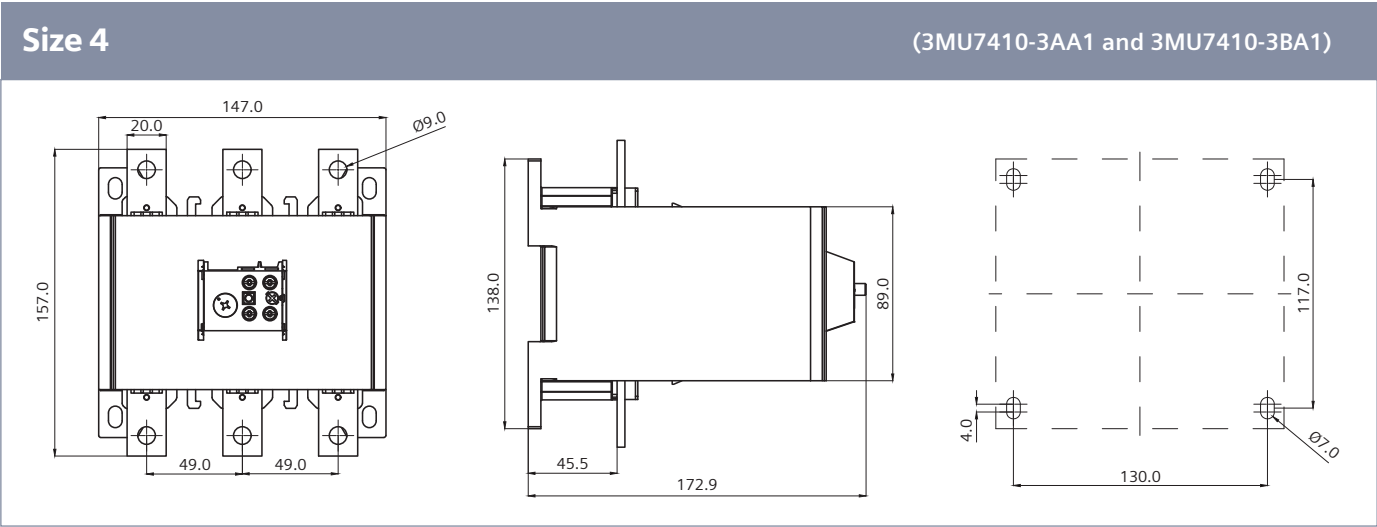
Dimension Drawing (with Contactor)



Dimension Drawing (with stand-alone installation kit)



Dimension Drawing (stand-alone)



SINOVA 3MV8 Motor Starter Protectors



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Overview

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Technical Parameter

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Selection and Ordering

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Wiring Diagram

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Dimension Drawing

Overview

The SINOVA 3MV8 Motor Starter Protectors is a cost-efficient and reliable solution for a motor starting and protection. These are available in 2 frame sizes upto 52A. These come with optional built-in 1NO+1NC aux contacts.



Article Number Scheme

Product Version		Article number						
Motor Starter Protector		3MV8	☐	00	-	☐	☐	00
Frame size		1 = Size 1 2 = Size 2		1				
Inbuilt Aux Contacts		0 = no inbuilt aux contact 1 = 1NO+1NC inbuilt aux contact				1		
Current setting		e. g. MJ= 2.4A ... 4A					MJ	
Example		3MV8	1	00	-	1	MJ	00

Note:
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.
For your orders, please use the article numbers quoted in the selection and ordering data.

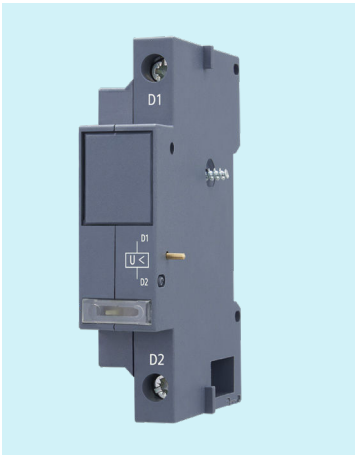
SINOVA 3MV8 Motor Starter Protectors



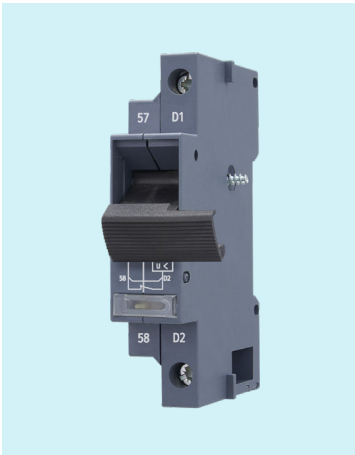
Shunt release



Short circuit fault indicator



Undervoltage release



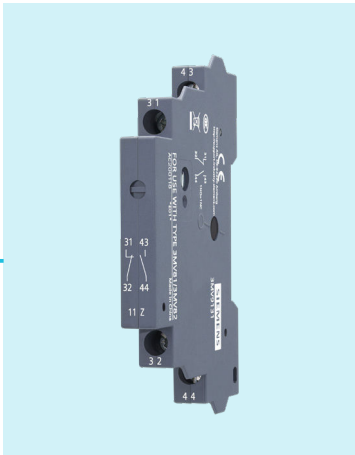
Undervoltage release
with lead action auxiliary contact



3MV81

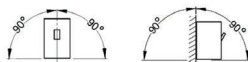


3MV82



Auxiliary switch

Technical Specifications

Motor Starter Protectors 3MV8					
Type		3MV81		3MV82	
General data					
Dimension					
• Basic unit	W	54		70	
	H	86		115	
	D	70		108.5	
mm					
Mounting position					
		90° Inclination forward, Backward, left and right			
Rated insulation voltage U_i (pollution degree 3)					
• Main Circuit	V	750			
Rated impulse withstand voltage U_{imp}					
• Main Circuit	kV	6			
Permissible ambient temperature					
During operation	°C	-20 ... +55			
During storage	°C	-50 ... +80			
Relative air humidity	%	10 ... 90			
Degree of protection IP on the front		IP20 (with wiring)			
Installation altitude at height above sea level, maximum		m		2000	
Rated data for Main Contacts					
Load rating with AC					
• Utilization category for circuit breaker as per IEC 60947-2 / EN60947-2		A			
• Utilization category for starter as per IEC 60947-4-1 / EN60947-4-1		AC-3			
Utilization categories AC-3					
- Rated operational currents I_e upto 690V, 55°C	A	25		52	
Power loss per pole	W	I_e (A)	P(W)	I_e (A)	P(W)
		0.6	5	2.4	8
		4	6	6	7
		6	7	25	14
		25	9	52	23
Mechanical service life					
• Basic units	Operating Cycles	100,000 ≤25A		30000 >25A	
Electrical service life AC-3 @400V	Operating Cycles	100,000 ≤25A		30000 >25A	
Switching frequency in operating cycles/hour					
• Switching frequency AC-3	1/h	25		25	

Technical Specifications

SINOVA 3MV8 Motor Starter Protectors				
Type			3MV81	3MV82
Rated data for Auxiliary Contacts				
Load rating with AC				
• Rated operational currents I_e				
- AC-15 at rated operational voltage U _e	230V	A	3	
	415V	A	1.5	
	500V	A	1	
• Load rating with DC (1 conducting path)				
- DC-13, at rated operational voltage U _e	24V	A	2.8	
	60V	A	0.7	
	220V	A	0.3	
Switching frequency				
• Rated operation for utilization category	AC-15/DC-13	1/h	25	
Short-circuit protection				
Auxiliary circuit				
• Back-up fuse (gL/Gg)		A	10	
• Miniature circuit-breaker		A	6	
Conductor cross-sections				
Main conductors				
Solid or stranded	mm ²		2 x (1 ... 6 mm ²)	1 x (1.5 ... 25 mm ²); 2 x (1.5 ... 16 mm ²); 1.5 ... 25 +1.5 ...10 mm ²
Finely stranded with end sleeve	mm ²		2 x (1 ... 4 mm ²)	1 x (1 ... 16 mm ²); 2 x (1 ... 10 mm ²); 1 ... 16 +1 ...6 mm ²
• Terminal screw			M4	M5
- Tightening torque	Nm		1 ... 1.5	2.5 ... 3
Auxiliary conductors and coil terminals				
Solid or stranded	mm ²		2 x (0.5 ... 2.5 mm ²);	2 x (0.5 ... 2.5 mm ²);
Finely stranded with end sleeve	mm ²		2 x (0.5 ... 2.5 mm ²);	2 x (0.5 ... 1.5 mm ²);
• Terminal screw			M3	M3
- Tightening torque	Nm		0.8...1.2	0.8...1.2

Technical Specifications

Rated short-circuit breaking capacity

Type	Rating	<= 240VAC			<= 415VAC			<= 440VAC			<= 500VAC			<= 690VAC		
		I _{cu} (kA)	I _{cs} (kA)	Fuse (gL/gG)	I _{cu} (kA)	I _{cs} (kA)	Fuse (gL/gG)	I _{cu} (kA)	I _{cs} (kA)	Fuse (gL/gG)	I _{cu} (kA)	I _{cs} (kA)	Fuse (gL/gG)	I _{cu} (kA)	I _{cs} (kA)	Fuse (gL/gG)
3MV81	<= 1A	100	100	•	100	100	•	100	100	•	100	100	•	100	100	•
	1.6A	100	100	•	100	100	•	100	100	•	100	100	•	2	2	20A
	2.4A	100	100	•	100	100	•	100	100	•	10	10	35A	2	2	35A
	3.2 & 4A	100	100	•	100	100	•	10	10	50A	3	3	50A	2	2	50A
	5 & 6A	100	100	•	100	100	•	5	5	63A	3	3	63A	2	2	63A
	8 & 10A	100	100	•	10	10	80A	5	5	80A	3	3	80A	2	2	80A
	13 & 16A	100	100	•	6	6	80A	5	5	80A	3	3	80A	2	2	80A
	20 & 25A	10	10	100A	6	6	80A	5	5	80A	3	3	80A	2	2	80A
3MV82	<= 2.4A	100	100	•	100	100	•	100	100	•	100	100	•	100	100	•
	4A	100	100	•	100	100	•	100	100	•	100	100	•	4	4	80A
	6A	100	100	•	100	100	•	100	100	•	100	50	•	4	4	100A
	10A	100	100	•	100	100	•	100	50	•	10	5	160A	4	4	125A
	16A	100	100	•	100	100	•	25	13	200A	10	5	160A	4	4	125A
	25A	100	100	•	100	50	•	25	13	200A	10	5	200A	4	4	160A
	32 & 52A	100	100	•	35	17	200A	25	13	200A	10	5	200A	4	4	160A

Note: "•" Indicates that no fuse is required, because the breaking capacity of the circuit breaker is not less than 100kA. When short circuit current at installation point exceeds the rated short circuit breaking capacity of the circuit breaker, the breaker must be protected by a back up fuse. The maximum rating of the back up fuse is given in the table for 100kA breaking capacity.

According to IEC60947-2, the relationship between the short-circuit breaking capacity and the minimum short-circuit making capacity under the corresponding power factor

Short circuit breaking capacity (A)	Power factor	Short-circuit making capacity (A)
$I \leq 3000$	0.9	$1.42 \times I$
$3000 < I \leq 4500$	0.8	$1.47 \times I$
$4500 < I \leq 6000$	0.7	$1.5 \times I$
$6000 < I \leq 10000$	0.5	$1.7 \times I$
$10000 < I \leq 20000$	0.3	$2.0 \times I$
$20000 < I \leq 50000$	0.25	$2.1 \times I$
$50000 < I$	0.2	$2.2 \times I$

Selection and Ordering Information | 3MV81



3MV8100-0..00

Rated Current (A)	Motor Power (kW)	Current setting for thermal overload (A)	Instantaneous trip (A)	Auxiliary contacts	Article No.
0.16	0.04	0.11 ~ 0.16	1.9	-	3MV8100-0MB00
0.24	0.06	0.16 ~ 0.24	2.9	-	3MV8100-0MC00
0.4	0.09/0.12	0.24 ~ 0.4	4.8	-	3MV8100-0MD00
0.6	0.12/0.18	0.4 ~ 0.6	7.2	-	3MV8100-0ME00
1	0.25	0.6 ~ 1	12	-	3MV8100-0MF00
1.6	0.37/0.55	1 ~ 1.6	19	-	3MV8100-0MG00
2.4	0.75	1.6 ~ 2.4	29	-	3MV8100-0MH00
3.2	1.1	2 ~ 3.2	38	-	3MV8100-0NH00
4	1.1/1.5	2.4 ~ 4	48	-	3MV8100-0MJ00
5	1.5/2.2	3.2 ~ 5	60	-	3MV8100-0NJ00
6	2.2	4 ~ 6	72	-	3MV8100-0MK00
8	3	5 ~ 8	96	-	3MV8100-0NK00
10	3/4	6 ~ 10	120	-	3MV8100-0ML00
13	4/5.5	8 ~ 13	156	-	3MV8100-0NL00
16	7.5	10 ~ 16	190	-	3MV8100-0MM00
20	7.5	14 ~ 20	240	-	3MV8100-0MN00
25	11	18 ~ 25	300	-	3MV8100-0MP00
0.16	0.04	0.11 ~ 0.16	1.9	1NO+1NC	3MV8100-1MB00
0.24	0.06	0.16 ~ 0.24	2.9	1NO+1NC	3MV8100-1MC00
0.4	0.09/0.12	0.24 ~ 0.4	4.8	1NO+1NC	3MV8100-1MD00
0.6	0.12/0.18	0.4 ~ 0.6	7.2	1NO+1NC	3MV8100-1ME00
1	0.25	0.6 ~ 1	12	1NO+1NC	3MV8100-1MF00
1.6	0.37/0.55	1 ~ 1.6	19	1NO+1NC	3MV8100-1MG00
2.4	0.75	1.6 ~ 2.4	29	1NO+1NC	3MV8100-1MH00
3.2	1.1	2 ~ 3.2	38	1NO+1NC	3MV8100-1NH00
4	1.1/1.5	2.4 ~ 4	48	1NO+1NC	3MV8100-1MJ00
5	1.5/2.2	3.2 ~ 5	60	1NO+1NC	3MV8100-1NJ00
6	2.2	4 ~ 6	72	1NO+1NC	3MV8100-1MK00
8	3	5 ~ 8	96	1NO+1NC	3MV8100-1NK00
10	3/4	6 ~ 10	120	1NO+1NC	3MV8100-1ML00
13	4/5.5	8 ~ 13	156	1NO+1NC	3MV8100-1NL00
16	7.5	10 ~ 16	190	1NO+1NC	3MV8100-1MM00
20	7.5	14 ~ 20	240	1NO+1NC	3MV8100-1MN00
25	11	18 ~ 25	300	1NO+1NC	3MV8100-1MP00

Selection and Ordering Information | 3MV82



3MV8200-1..00

Rated Current (A)	Motor Power (kW)	Current setting for thermal overload (A)	Instantaneous trip (A)	Auxiliary contacts	Article No.
1.6	0.37/0.55	1 ~ 1.6	19	-	3MV8200-0MG00
2.4	0.75	1.6 ~ 2.4	29	-	3MV8200-0MH00
4	1.1/1.5	2.4 ~ 4	48	-	3MV8200-0MJ00
6	2.2	4 ~ 6	72	-	3MV8200-0MK00
10	3/4	6 ~ 10	120	-	3MV8200-0ML00
16	5.5/7.5	10 ~ 16	190	-	3MV8200-0MM00
25	11	16 ~ 25	300	-	3MV8200-0MN00
32	15	22 ~ 32	380	-	3MV8200-0MP00
40	18.5	28 ~ 40	480	-	3MV8200-0MQ00
52	22	36 ~ 52	600	-	3MV8200-0MR00
1.6	0.37/0.55	1 ~ 1.6	19	1NO+1NC	3MV8200-1MG00
2.4	0.75	1.6 ~ 2.4	29	1NO+1NC	3MV8200-1MH00
4	1.1/1.5	2.4 ~ 4	48	1NO+1NC	3MV8200-1MJ00
6	2.2	4 ~ 6	72	1NO+1NC	3MV8200-1MK00
10	3/4	6 ~ 10	120	1NO+1NC	3MV8200-1ML00
16	5.5/7.5	10 ~ 16	190	1NO+1NC	3MV8200-1MM00
25	11	16 ~ 25	300	1NO+1NC	3MV8200-1MN00
32	15	22 ~ 32	380	1NO+1NC	3MV8200-1MP00
40	18.5	28 ~ 40	480	1NO+1NC	3MV8200-1MQ00
52	22	36 ~ 52	600	1NO+1NC	3MV8200-1MR00

Selection and Ordering Information

Accessories



Auxiliary Contact
3MV9131-3AA00



Short Circuit Fault Indicator
3MV9131-7AA00



Undervoltage release
3MV9132-0AB15



Undervoltage release
with lead action
auxiliary contacts
3MV9132-0AB35



Shunt Release
3MV9132-0AB55

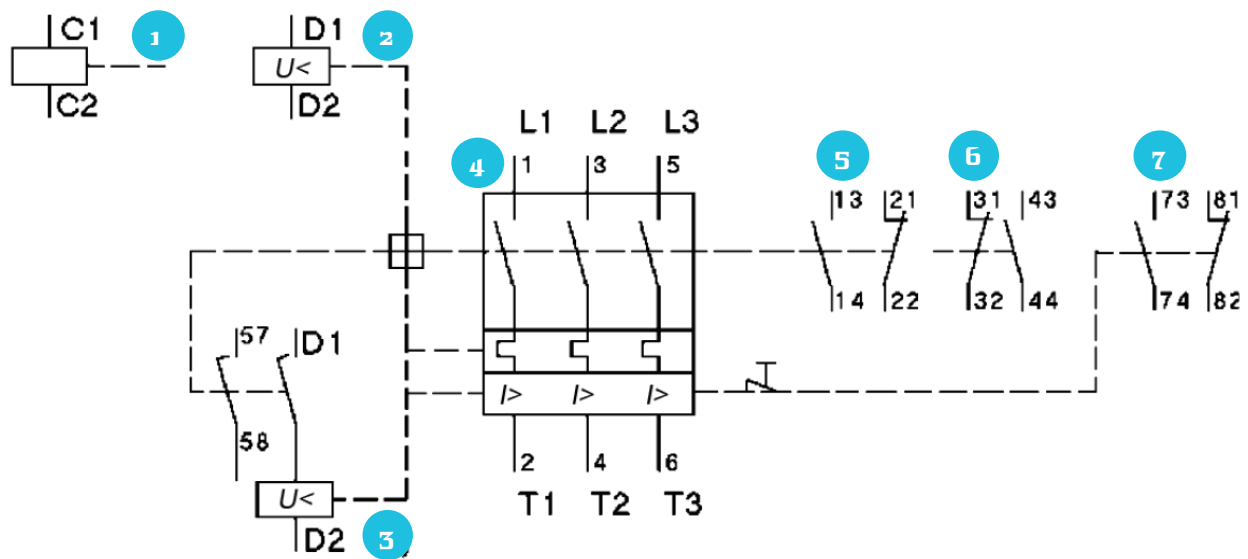
Type	Suitable for	Mounting	Auxiliary Contacts	Article No.
Auxiliary Contact	3MV81/ 3MV82	Right side	1NO+1NC	3MV9131-3AA00
Short Circuit Fault Indicator	3MV81/ 3MV82	Right side	1NO+1NC	3MV9131-7AA00

Type	Suitable for	Mounting	Auxiliary Contacts	Article No.
Undervoltage release	3MV81/ 3MV82	Left side	AC230V 50Hz	3MV9132-0AB15
			AC240V 50Hz	3MV9132-0AB25
			AC400V 50Hz	3MV9132-0AB17
			AC415V 50Hz	3MV9132-0AB18
			AC120V 60Hz	3MV9132-0AB23
			AC208V 60Hz	3MV9132-0AB24
			AC240V 60Hz	3MV9132-0AB26
Undervoltage release with lead action auxiliary contacts	3MV81/ 3MV82	Left side	AC230V 50Hz	3MV9132-0AB35
			AC240V 50Hz	3MV9132-0AB45
			AC400V 50Hz	3MV9132-0AB37
			AC415V 50Hz	3MV9132-0AB38
			AC120V 60Hz	3MV9132-0AB43
			AC208V 60Hz	3MV9132-0AB44
			AC240V 60Hz	3MV9132-0AB46
Shunt Release	3MV81/ 3MV82	Left side	AC24V 50Hz	3MV9132-0AB50
			AC230V 50Hz	3MV9132-0AB55
			AC240V 50Hz	3MV9132-0AB65
			AC400V 50Hz	3MV9132-0AB57
			AC415V 50Hz	3MV9132-0AB58
			AC120V 60Hz	3MV9132-0AB63
			AC208V 60Hz	3MV9132-0AB64
			DC24-60V	3MV9132-0AB66
			DC110-240V	3MV9132-0AB73

Note:

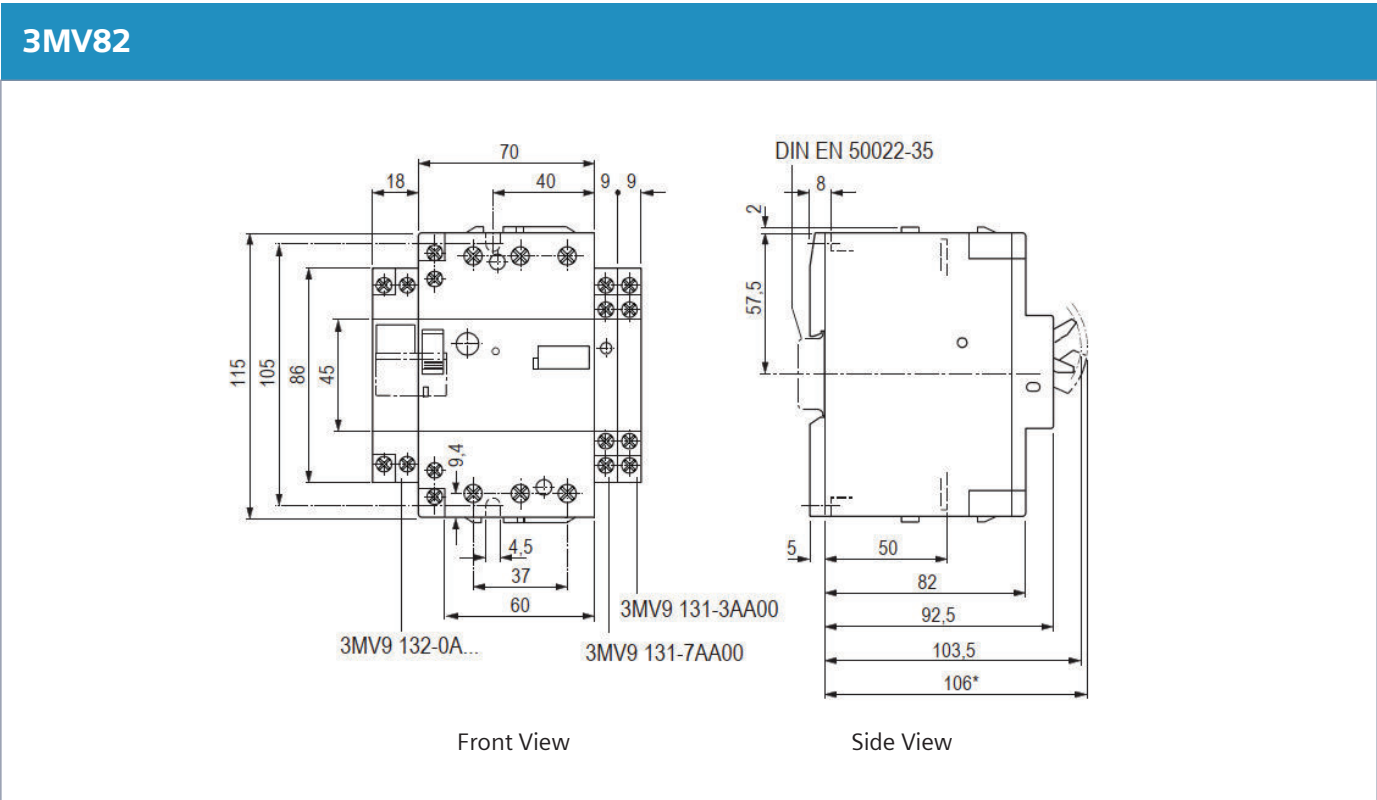
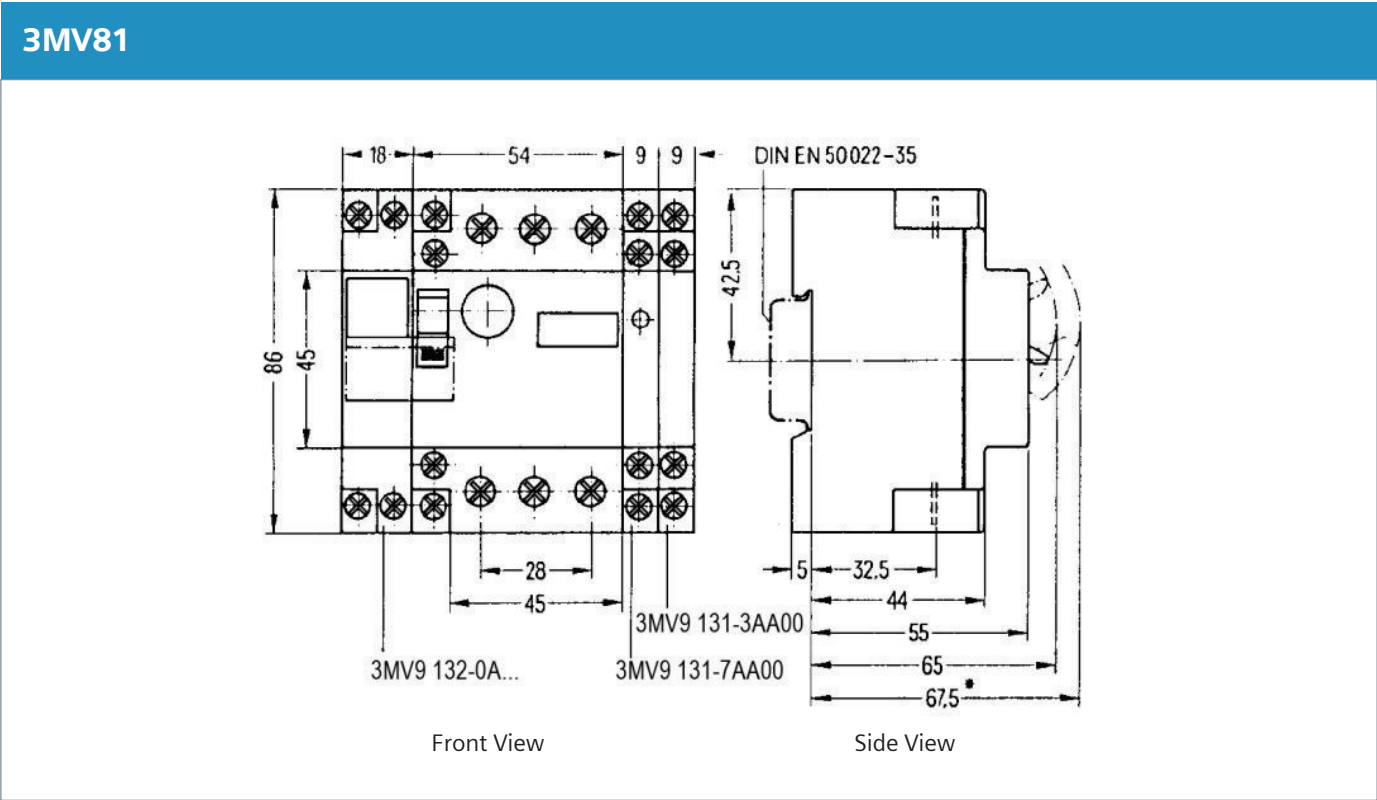
- (1) Auxiliary contacts and short-circuit fault indicators can be installed on the right side of the circuit breaker at the same time (the short-circuit fault indicators are installed on the inside first, and the auxiliary contacts are installed on the outside).
It is also possible to install only one auxiliary contact or only one short-circuit fault indicator;
- (2) Undervoltage release, undervoltage release with advance action auxiliary contact, and shunt release are all installed on the left side of the circuit breaker, but only one of the three can be installed at a time.

Wiring Diagram



- 1 Shunt release
- 2 Undervoltage release
- 3 Undervoltage release with lead
- 4 3MV8 Motor Starter Protector
- 5 Internal auxiliary contacts
- 6 Additional auxiliary contacts
- 7 Short circuit fault indicator

Dimension Drawing (with contactor)

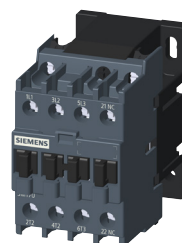
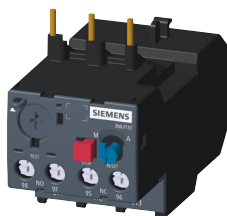


Type-2 Co-ordination Charts

69	DOL Fuse IE2 / IE3
70	Star Delta Fuse IE2 / IE3

Direct On-line (DOL) Starter for IE2 / IE3 Motors

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



SCPD 3NA Fuse

Bi-relay 3MU7

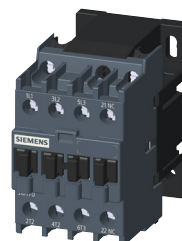
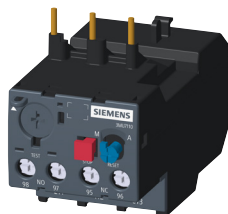
3MT7 Contactor

- 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	3NA7804	4	3MT70060AA...	6	3MU71100FA0	1-1.6
0.55	1.5	3NA7801	6	3MT70060AA...	6	3MU71100GA0	1.25-2
0.75	1.9	3NA7801	6	3MT70060AA...	6	3MU71100HA0	1.6-2.5
1.1	2.7	3NA7801	6	3MT70060AA...	6	3MU71100HA0 3MU71100JA0	1.6 - 2.5 (IE2) 2.5-4 (IE3)
1.5	3.6	3NA7803	10	3MT70060AA...	6	3MU71100JA0	2.5-4
2.2	5	3NA7805	16	3MT70100AA...	9	3MU71100KA0	4-6
3.7	7.8	3NA7807	20	3MT70120AA...	12	3MU71100MA0	7-10
5.5	11.5	3NA7810	25	3MT70181AA...	18	3MU71100NA0	9-13
7.5	15.5	3NA7817	40	3MT70252AA...	25	3MU71100PA0	12-18
11	22	3NA7820	50	3MT70382AA...	38	3MU71100QA0	17-25
15	29	3NA7822	63	3MT70382AA...	38	3MU72101AA0	23-32
18.5	35	3NA7824	80	3MT70503AA110...	50	3MU73102BA0	30-40
22	41	3NA7824	80	3MT70653AA110...	65	3MU73102CA0	37-50
30	55	3NA7830	100	3MT70704AA110...	70	3MU73102DA0	48-65
37	66	3NA7832	125	3MT70954AA110...	95	3MU73102EA0	55-70
45	80	3NA7836	160	3MT70954AA110...	95	3MU73102FA0 3MU73102GA0	63-80 (IE2) 80-93 (IE3)

Star Delta Starter for IE2 / IE3 Motors

Fuse protected selection type 2, 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 + Birelay (+ 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	3NA7803	10	3MT70100AA...	9	3MT70060AA...	6	3MU7110-0KA0	4-6
5.5	12	3NA7805	16	3MT70100AA...	9	3MT70100AA...	9	3MU7110-0LA0	5.5-8
7.5	16	3NA7807	20	3MT70120AA...	12	3MT70100AA...	9	3MU7110-0MA0	7-10
11	22	3NA7810	25	3MT70181AA...	18	3MT70120AA...	12	3MU7110-0PA0	12-18
15	29	3NA7812	32	3MT70221AA...	22	3MT70181AA...	18	3MU7110-0PA0	12-18
18.5	35	3NA7817	40	3MT70252AA...	25	3MT70181AA...	18	3MU7110-0QA0	17-25
22	41	3NA7820	50	3MT70382AA...	38	3MT70252AA...	25	3MU7210-1AA0	23-32
30	55	3NA7822	63	3MT70402AA...	40	3MT70382AA...	38	3MU7210-1BA0	28-36
37	66	3NA7824	80	3MT70503AA110...	50	3MT70382AA...	38	3MU7310-2CA0	37-50
45	80	3NA7830	100	3MT70704AA110...	70	3MT70503AA110...	50	3MU7310-2CA0	37-50
55	97	3NA7830	100	3MT70804AA110...	80	3MT70653AA110...	65	3MU7310-2DA0	48-65
75	132	3NA7836	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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