

# HMC/HTOR INSTRUCTION MANUAL

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Thank you for purchasing our products. Our products are designed and manufactured for the toughest industrial applications and are backed by two years limited warranty from the date of delivery to purchaser. To ensure the best performance from your products, please review this manual before product installation and use.



**Warning**

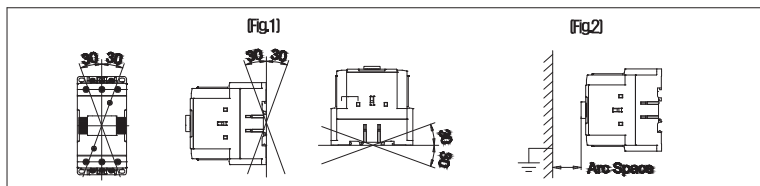
- 1) Before installation or inspection of contactors, overloads turn off disconnect and verify power has been removed.
- 2) Do not modify device.
- 3) Be sure to tighten terminal screws to specified torque. Loose terminal connection may result in fire.
- 4) Do not operate contactor with cover removed. An open arc-extinguishing chamber may result in electric shock and severe burns.
- 5) In the event of an overload trip, inspect system and remove the cause of the overload condition before re-applying power.
- 6) Installation, maintenance, and inspection should be performed by qualified personnel.
- 7) When disposing, treat products as industrial waste.

## Check point before Installation

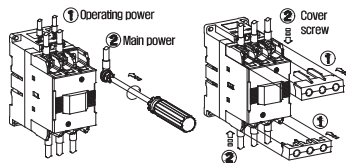
Please verify that the product ratings are correct for intended application.

## Installation Instruction

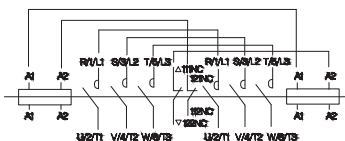
- 1) Install in environment free from excessive vibration and humidity.
- 2) Product may be installed in either a vertical or horizontal position. Up to 30° deviation is allowed. Consult Fig.1 for details.
- 3) Keep arc space (Fig.2) of 0.4 inches free of any objects for all contactor installations. (with the safety cover)



### SCREW TYPE



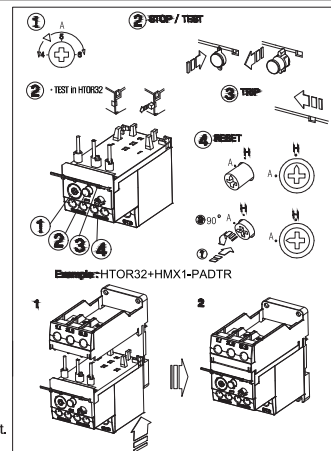
### Reversing contactor wiring diagram



## Thermal Overload Relay

- 1) Turn the current setting dial arrow to the appropriate amperage setting. For service factor other than 1.00, increase the current setting by the service factor percentage. HTOR relays may be set up to 20% higher than maximum motor rating.
- 2) Please rotate the current adjustment dial within the amp range scale.
- 3) Select either manual overload reset (H) or automatic reset (A) by depressing and rotating green button, so the arrow points to the desired mode. In manual mode reset the trip condition by pressing green button. Note: relay will only reset after sufficient cooling time has elapsed.
- 4) Test the overload by pulling the red button. Press the red button to open the N/C contacts (95-96)

	STOP	TEST/TRIP	RESET
NC 95-96			
NO 97-98			



## Reversing Contactors

- 1) When using contactors in a reversing operation use either the mechanical interlock HMX1-MI or if using an electrical interlock, we recommend use of a time delay relay to avoid a possible short circuit.
- 2) When using an electrical interlock, the residual charge in the motor windings must be dissipated before transitioning to avoid a line side short.
- 3) Comply with UL508A Section 33.4
  - a) Electrically interlocked coil via control circuitry; or
  - b) Mechanically interlocked by a device that complies with 33.1.3

## HMC Wire/Ferrule size and tightening torque (60/75°C Cu wire only)

FRAME	WIRE TYPE	[mm <sup>2</sup> / AWG / A]		[mm <sup>2</sup> / AWG]		[mm / Max]		TORQUE [Nm / lb-in]
		[mm <sup>2</sup> / AWG / A]	[mm <sup>2</sup> / AWG]	[mm <sup>2</sup> / AWG]	[mm / Max]	[mm / Max]		
HMC-22B		1-6 / 18-10 / 0.07-0.15	1-6 / 18-10	1-6 / 18-10	0.75-6 / 18-10	9.6	2.25 / 20	
HMC-40A		1-6 / 18-10 / 0.07-0.15	1-6 / 18-10	1-6 / 18-10	0.75-6 / 18-10	12.8	2.25-4 / 20-35	
HMC-65A		0.75-35 / 18-2 / 0.06-0.34 / 0.75-25 / 18-4 / 0.06-0.34	0.75-35 / 18-2	0.75-25 / 18-4	0.75-25 / 18-4	14	4 / 35	
HMC-100A		2.5-70 / 12-2.0 / 0.1-0.33 / 1.5-50 / 12-1.0 / 0.1-0.43	2.5-70 / 12-2.0	2.5-50 / 12-1.0	2.5-50 / 12-2.0	17	5.1 / 45	
HMC-150A		2.5-70 / 12-2.0 / 0.1-0.33 / 1.5-50 / 12-1.0 / 0.1-0.43	2.5-95 / 3-4.0	35-95 / 3-4.0	35-95 / 3-4.0	24.5	9.1 / 80	
COIL TER.		0.5-2.5 / 20-14 / 0.05-0.1	0.75-2.5 / 18-12			7.6	1.75 / 15	

## HTOR Wire size and tightening torque (60/75°C Cu wire only)

Wire size [mm <sup>2</sup> / AWG]				Torque [Nm / lb-in]			
HTOR32	HTOR63	HTOR95	HTOR150	HTOR32	HTOR63	HTOR95	HTOR150
1-10 / 18-8	1-16 / 18-6	1-35 / 18-3	10-50 / 8-0	2.25 / 20	4 / 35	6 / 53	9.1 / 80

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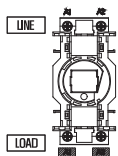
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## PRODUCT RATING

Contactor		HMC-9B	HMC-12B	HMC-18B	HMC-22B	HMC-32A	HMC-40A	HMC-50A	HMC-65A	HMC-75A	HMC-95A	HMC-100A	HMC-130A	HMC-150A			
Thermal Overload		HTOR32				HTOR63			HTOR95			HTOR150					
K050947 KW/ALAC31	AC240V	2.5/11	3.5/13	4.5/18	5.5/25	7.5/32	11/40	15/55	18.5/65	22/75	25/85	30/105	37/130	45/150			
	AC440V	4/9	5.5/12	7.5/18	11/22	15/32	18.5/35	22/50	30/65	37/75	45/85	55/105	60/130	75/150			
UL508 3/Hp	AC240V	3	5	7.5	10	10	15	25	30	30	40	40	40	50			
	AC480V	5	7.5	10	15	20	30	40	50	50	60	75	75	100			
	AC600V	7.5	10	15	20	25	30	50	50	60	75	75	75	75			
NEMA Size		00	0	1	1	1P	2	2	2	2	3	3	3	4			
Short circuit current rating		Ik < 5KA						Ik < 10KA									
Short Circuit Protection		Suitable for use on a circuit capable of delivering not more than Ik RMS symmetrical Amperes, 600 volts maximum when protected by (HMC-9B-150A, HTOR32, 63, 95, 150) Class R fuses or inverse-time circuit breaker.															
Coil Consumption	Inrush Holding	AC 230V 50/60Hz	70VA				90VA			110VA			240VA			110VA	
		DC 24V	9VA				9VA			13W			17W			18W	
	Inrush Holding	AC 230V 50/60Hz	6W				9W			9W			18W			280W	
		DC 24V	6W				9W			9W			18W			7.5W	



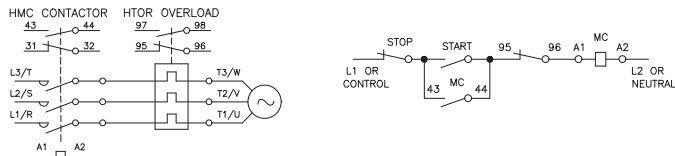
Operating wire connection

Do not Connect Line A1 to Load A1 or Line A2 to Load A2.

### Drilling Dimension (L X H)

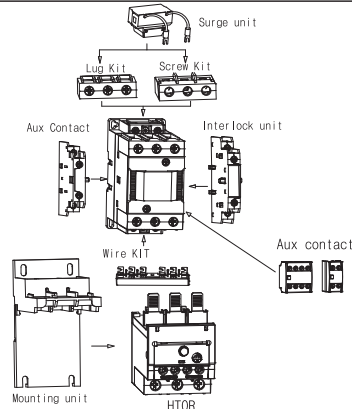
HMC-9B-22B	(M4) 33.5-35x49.5-65
HMC-32A,40A	(M4) 30x60-75
HMC-50A,65A	(M4) 41-47x92-100
HMC-75A-100A	(M4) 55-60x130
HMC-130A,150A	(M4) 73-83x148

### Wiring Schematic

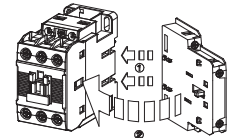


## HMC-9B,12B,18B,22B,32A,40A,50A,65A,75A,85A,100A,130A,150A

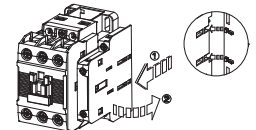
### ACCESSORIES



### AUXILIARY CONTACT

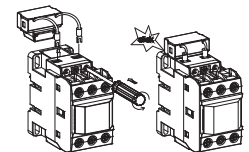


After lifting adhesion, assemble the hole of crossbar exactly.

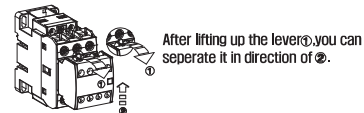


After lifting up the upper piece, you can separate it to push outer side.

### SURGE UNIT



### AUXILIARY CONTACT



After lifting up the lever, you can separate it in direction of arrow.

## MAXIMUM COMBINATION OF CONTACT UNITS

		HMC-9B-22B (Max. 3NO3NC)			HMC-32A-150A (Max. 4NO4NC)				
		HMX1-AUX11-F + HMX1-AUX11-S x 1EA (1EA on left side)			HMX1-AUX11-F + HMX1-AUX11-S x 2EA (1EA on one side)				
		HMX1-AUX11-S (1EA on left side)			HMX1-AUX11-S x 4EA (2EA on one side) - For AC Coil				
Type	Appearance	Pole	Composition (NO)	(NC)	Contact arrangement				Mount
HMX1-AUX11-S		2	1	1					Side
HMX1-AUX11-F		2	1	1					Front
HMX1-AUX11-F		4	4	-					Front
			3	1					
			1	3					
			-	4					