

IronHorse HMC Series Contactors


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Overview

The IronHorse HMC Series contactors feature advanced technology combined with straightforward design. They are ideal for situations where peripheral devices are used. These units offer an economical solution where compact size and easy connection are important.

Their sealed structure means that no arc flash is exposed.

These environmentally friendly products comply with international RoHS environmental standards.

The series includes multiple models in a number of different frames, as described in the table below. AF refers to the amp frame size. For example, 22AF indicates a 22 amp frame size.

See FAQ at AutomationDirect.com for the IEC utilization categories tables

Features

- Compact design
- DIN rail or screw mountable (up to 150AF)
- Overload relays can be directly mounted to contactors
- Finger-proof design
- Easy to combine with manual motor starters
- Wide range of accessories
- Conforms to IEC and UL standards



IronHorse HMC Series Contactors Selection Guide							
	22AF	40AF	65AF	100AF	150AF	225AF	400AF
							
	HMC-9 HMC-22	HMC-32 HMC-40	HMC-50 HMC-65	HMC-75 HMC-100	HMC-130 HMC-150	HMC-185 HMC-225	HMC-265 HMC-330 HMC-400
Rated Current (Amps)	9 12 18 22	32 40	50 65	75 85 100	130 150	185 225	265 330 400
Insulation Rating (Volts)	690	1000	1000	1000	1000	1000	1000

IronHorse HTOR Series Overload Relays Selection Guide							
	22AF	40AF	65AF	100AF	150AF	225AF	400AF
							
	HTOR32	HTOR2	HTOR63	HTOR95	HTOR150	HTOR225	HTOR400
Current Range (Amps)	0.1 - 40	0.1 - 40	34 - 65	54 - 100	80 - 150	100 - 240	160 - 400
Trip Class	10A	10A	10A	10A	10A	10A	10A

IronHorse HMC Series Contactors



HMC Series Contactor Catalog Number Sequence

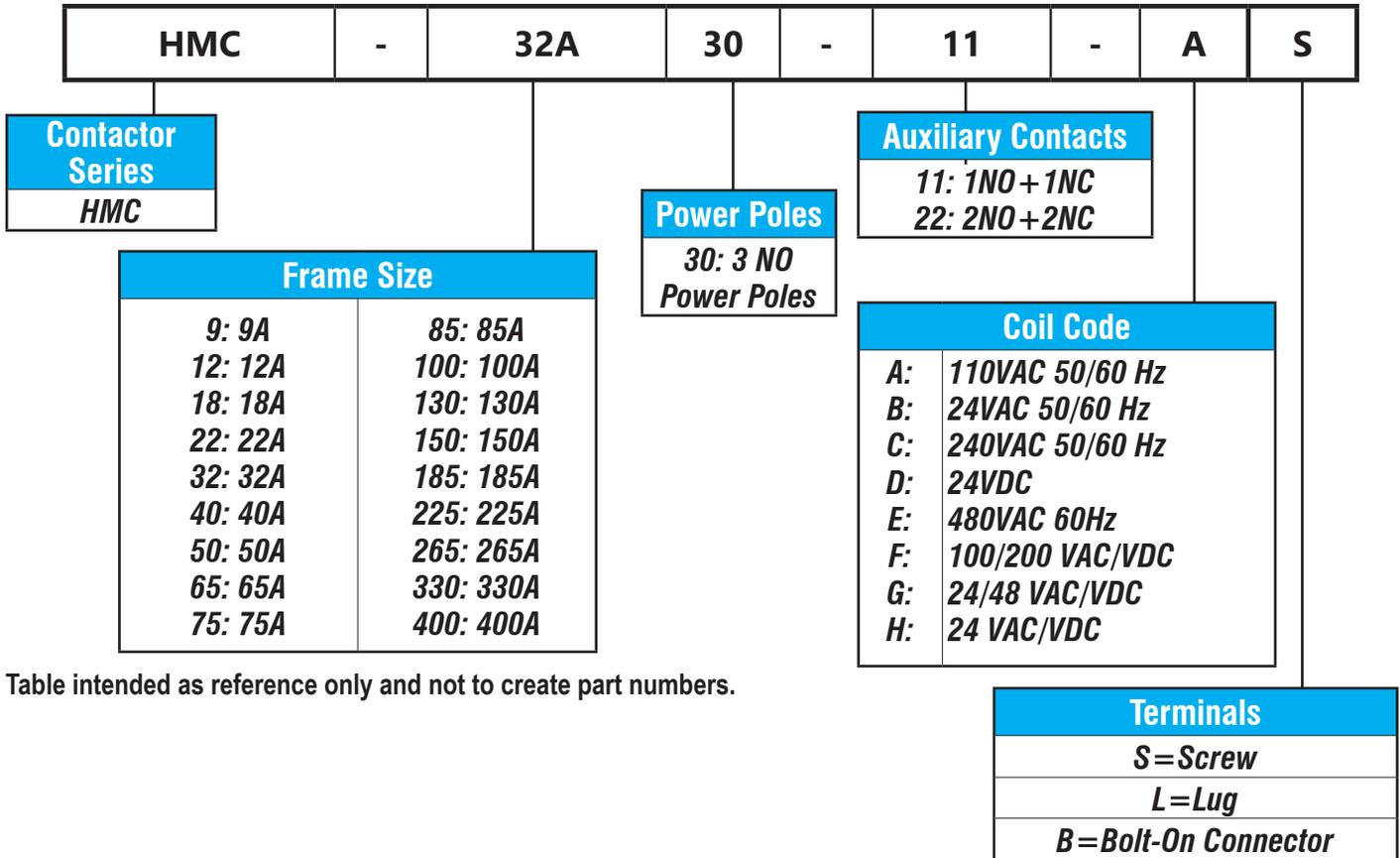
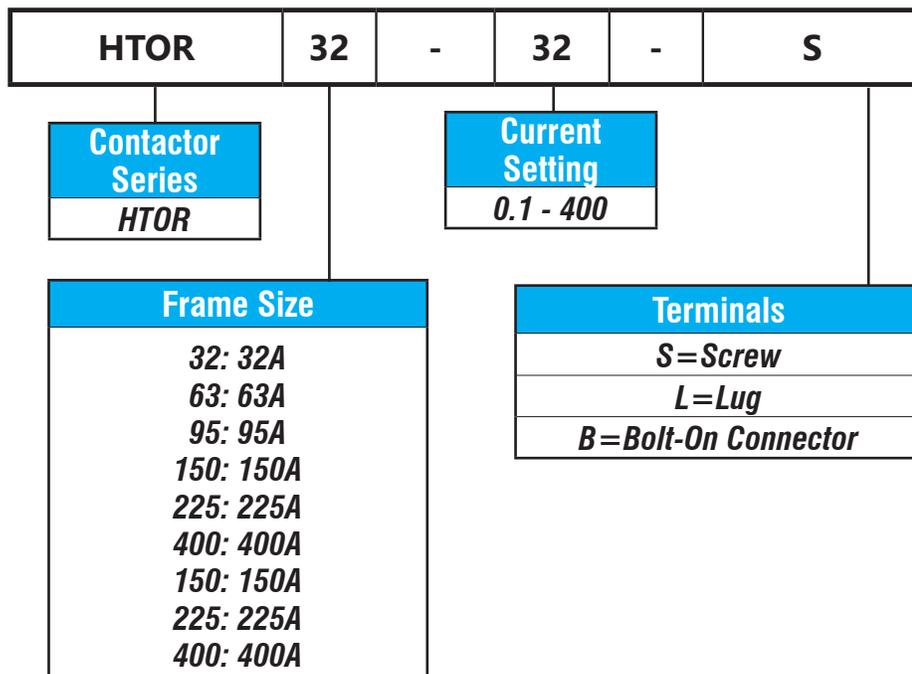


Table intended as reference only and not to create part numbers.

HTOR Series Thermal Overload Relay Catalog Number Sequence



IronHorse HMC Series Contactors (22AF)



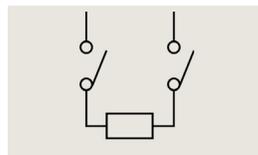
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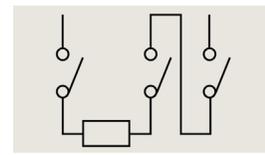
HMC-22B30-11-BS

Description

- 3-pole (NO) main contact
- Finger-proof design
- DIN rail or screw mountable
- AC or DC load ratings in different physical sizes
- Front/side mountable accessories available
- Direct-mountable overload relay
- 1NO/1NC auxiliary contact built-in
- Degree of protection: IP20



DC loads (2-pole)



DC loads (3-pole)

Certifications

CE(IEC), UL508, CCC

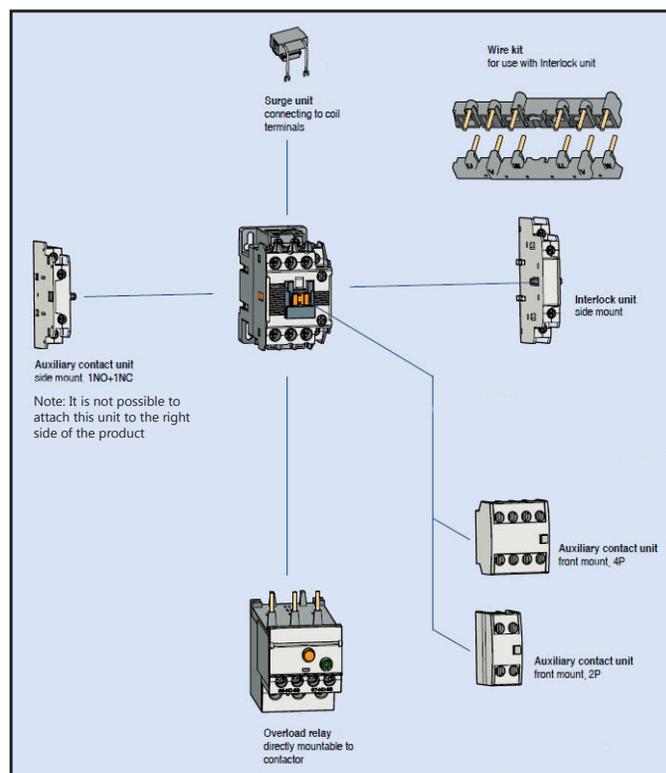
IronHorse HMC Series Three-Pole Contactors (22AF) Selection Guide

Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-9B30-11-BS	\$17.50	9	3 NO	24VAC	50/60 Hz	1 NO and 1 NC	PDF
HMC-9B30-11-AS	\$17.50			120VAC	50/60 Hz		PDF
HMC-9B30-11-CS	\$17.50			230VAC	50/60 Hz		PDF
HMC-9B30-11-ES	\$17.50			480VAC	60 Hz		PDF
HMC-12B30-11-BS	\$20.00	12		24VAC	50/60 Hz		PDF
HMC-12B30-11-AS	\$20.00			120VAC	50/60 Hz		PDF
HMC-12B30-11-CS	\$20.00			230VAC	50/60 Hz		PDF
HMC-12B30-11-ES	\$20.00			480VAC	60 Hz		PDF
HMC-18B30-11-BS	\$27.50	18		24VAC	50/60 Hz		PDF
HMC-18B30-11-AS	\$27.50			120VAC	50/60 Hz		PDF
HMC-18B30-11-CS	\$27.50			230VAC	50/60 Hz		PDF
HMC-18B30-11-ES	\$27.50			480VAC	60 Hz		PDF
HMC-22B30-11-BS	\$33.00	22		24VAC	50/60 Hz		PDF
HMC-22B30-11-AS	\$33.00			120VAC	50/60 Hz		PDF
HMC-22B30-11-CS	\$33.00			230VAC	50/60 Hz		PDF
HMC-22B30-11-ES	\$33.00			480VAC	60 Hz		PDF
HMC-9B30-11-DS	\$21.50	9		24VDC	-		PDF
HMC-12B30-11-DS	\$25.00	12		24VDC	-		PDF
HMC-18B30-11-DS	\$34.50	18		24VDC	-		PDF
HMC-22B30-11-DS	\$38.50	22		24VDC	-		PDF

22AF Contactors Description

Contactor Type		HMC-9B		HMC-12B		HMC-18B		HMC-22B		
		kW	A	kW	A	kW	A	kW	A	
AC Duty	AC3	200/240V	2.5	11	3.5	13	4.5	18	5.5	22
		380/440V	4	9	5.5	12	7.5	18	11	22
		500/550V	4	7	7.5	12	7.5	13	15	20
		690V	4	6	7.5	9	7.5	9	15	18
	AC4	200/240V	1.5	8	2.2	11	3.7	16	3.7	18
		380/440V	2.2	6	4	9	4	11	5.5	13
AC1		-	25	-	27	-	40	-	45	
DC1 Duty (L/R= 1ms)	2-pole in series	24V	-	10	-	12	-	18	-	20
		48V	-	10	-	12	-	18	-	20
		110V	-	6	-	10	-	13	-	15
	3-pole in series	24V	-	10	-	12	-	18	-	20
		48V	-	10	-	12	-	18	-	20
		110V	-	8	-	12	-	18	-	20
DC3,5 Duty (L/R= 15ms)	2-pole in series	24V	-	8	-	12	-	12	-	20
		48V	-	4	-	6	-	6	-	15
		110V	-	2.5	-	4	-	4	-	8
	3-pole in series	24V	-	8	-	12	-	12	-	20
		48V	-	6	-	10	-	10	-	20
		110V	-	4	-	8	-	8	-	15
Directly Mountable Overload Relay		HTOR-32								
Conductor Size (Solid, Stranded) 2 conductors max		AWG	16-10		16-8		14-8		14-8	
		mm ²	1.5-4		1.5-10		2.5-10		2.5-10	
Conductor Type		65/75°C CU wire only								

Accessories



Note: Observe polarity when wiring the control power cable

IronHorse HMC Series Contactors (40AF)



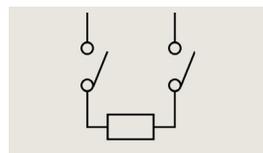
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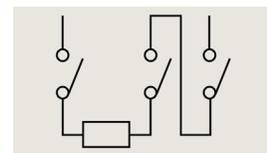
HMC-40A30-22-ES

Description

- 3-pole (NO) main contact
- Finger-proof design
- DIN rail or screw mountable
- AC or DC load ratings in different physical sizes
- Front/side mountable accessories available
- Direct-mountable overload relay
- 2NO/2NC auxiliary contact built-in
- Degree of protection: IP20



DC loads (2-pole)



DC loads (3-pole)

Certifications	
CE(IEC), UL508, CCC	

IronHorse HMC Series Three-Pole Contactors (40AF) Selection Guide

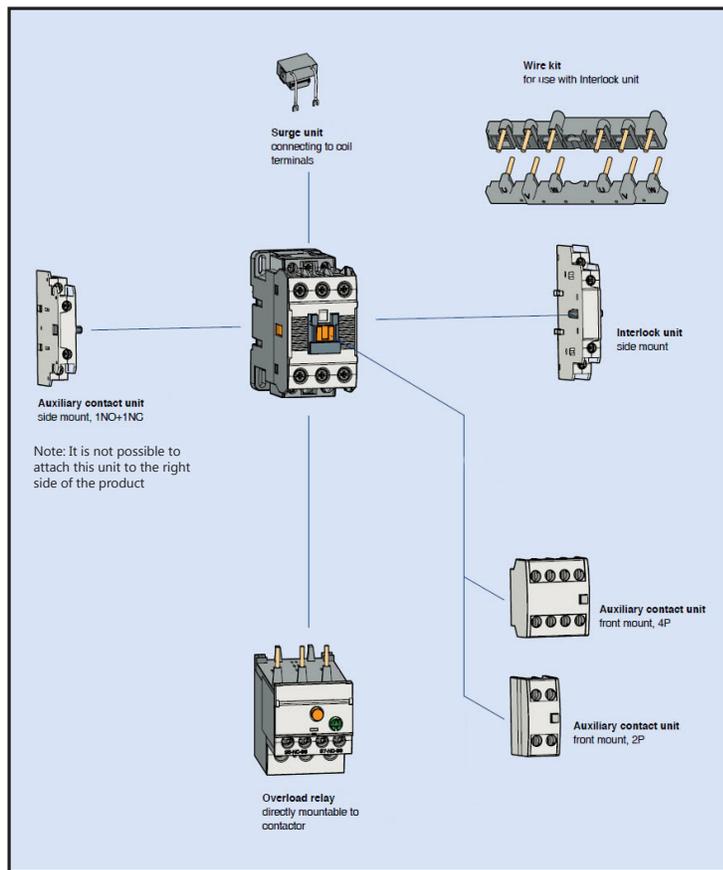
Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-32A30-22-BS	\$42.50	32	3 NO	24VAC	50/60 Hz	2 NO and 2 NC	PDF
HMC-32A30-22-AS	\$42.50			120VAC	50/60 Hz		PDF
HMC-32A30-22-CS	\$42.50			230VAC	50/60 Hz		PDF
HMC-32A30-22-ES	\$42.50			480VAC	60 Hz		PDF
HMC-40A30-22-BS	\$53.50	40		24VAC	50/60 Hz		PDF
HMC-40A30-22-AS	\$53.50			120VAC	50/60 Hz		PDF
HMC-40A30-22-CS	\$53.50			230VAC	50/60 Hz		PDF
HMC-40A30-22-ES	\$53.50			480VAC	60 Hz		PDF
HMC-32A30-22-DS	\$49.50	32		24VDC	-		PDF
HMC-40A30-22-DS	\$63.00	40		24VDC	-		PDF

40AF Contactors Description

Contactor Type		HMC-32A		HMC-40A		
		kW	A	kW	A	
AC Duty	AC3	200/240V	7.5	32	11	40
		380/440V	15	32	18.5	40
		500/550V	18.5	28	22	32
		690V	18.5	20	22	23
		1000V	22	17	22	17
	AC4	200/240V	4.5	20	5.5	25
		380/440V	7.5	17	11	24
	AC1	-	55	-	60	
DC1 Duty (L/R=1ms)	2-pole in series	24V	-	25	-	35
		48V	-	25	-	35
		110V	-	25	-	25
	3-pole in series	24V	-	25	-	35
		48V	-	25	-	35
		110V	-	25	-	35
DC3,5 Duty (L/R=15ms)	2-pole in series	24V	-	25	-	35
		48V	-	20	-	20
		110V	-	10	-	10
	3-pole in series	24V	-	25	-	35
		48V	-	25	-	30
		110V	-	20	-	20
Directly Mountable Overload Relay		HTOR-32				
Conductor Size (Solid, Stranded)		AWG	12-8	8-6		
Maximum number of conductors: 2		mm ²	2.5-10	10-16		
Conductor Type		65/75°C CU wire only				

Note: Observe polarity when wiring the control power cable

Accessories



IronHorse HMC Series Contactors (65AF)



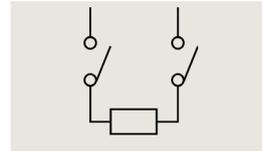
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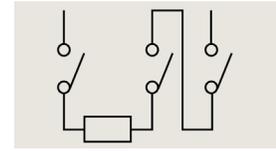
HMC-65A30-22-EL

Description

- 3-pole (NO) main contact
- Finger-proof design
- DIN rail or screw mountable
- AC or DC load ratings in different physical sizes
- Front/side mountable accessories available
- Direct-mountable overload relay
- 2NO/2NC auxiliary contact built-in
- Degree of protection: IP20



DC loads (2-pole)



DC loads (3-pole)

Certifications

CE(IEC), UL508, CCC

IronHorse HMC Series Three-Pole Contactors (65AF) Selection Guide

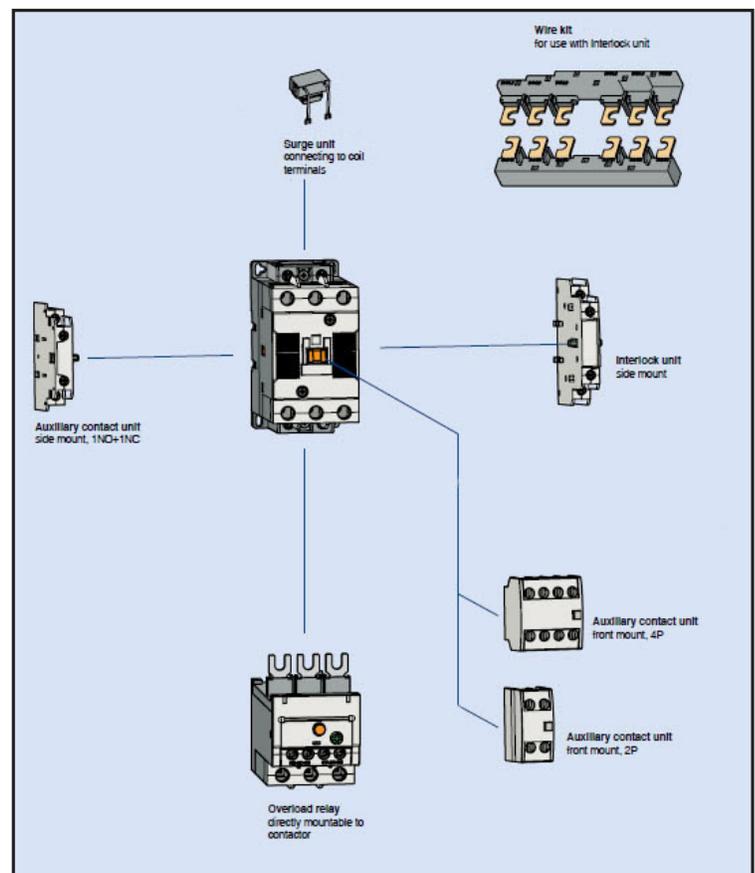
Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-50A30-22-BL	\$74.50	50	3 NO	24VAC	50/60 Hz	2 NO and 2 NC	PDF
HMC-50A30-22-AL	\$74.50			120VAC	50/60 Hz		PDF
HMC-50A30-22-CL	\$74.50			230VAC	50/60 Hz		PDF
HMC-50A30-22-EL	\$74.50			480VAC	60 Hz		PDF
HMC-65A30-22-BL	\$85.50	65		24VAC	50/60 Hz		PDF
HMC-65A30-22-AL	\$85.50			120VAC	50/60 Hz		PDF
HMC-65A30-22-CL	\$85.50			230VAC	50/60 Hz		PDF
HMC-65A30-22-EL	\$85.50			480VAC	60 Hz		PDF
HMC-50A30-22-DL	\$80.00	50		24VDC	-		PDF
HMC-65A30-22-DL	\$98.00	65		24VDC	-		PDF

65AF Contactors Description

Contactor Type		HMC-50A		HMC-65A		
		kW	A	kW	A	
AC Duty	AC3	200/240V	15	55	18.5	65
		380/440V	22	50	30	65
		500/550V	30	43	33	60
		690V	30	28	33	35
		1000V	30	23	30	23
	AC4	200/240V	7.5	35	11	50
		380/440V	15	32	22	47
	AC1	-	100	-	11	
DC1 Duty (L/R=1ms)	2-pole in series	24V	-	50	-	40
		48V	-	40	-	40
		110V	-	35	-	35
	3-pole in series	24V	-	50	-	65
		48V	-	50	-	65
		110V	-	50	-	65
DC3,5 Duty (L/R=15ms)	2-pole in series	24V	-	45	-	45
		48V	-	25	-	25
		110V	-	15	-	15
	3-pole in series	24V	-	50	-	50
		48V	-	35	-	35
		110V	-	30	-	30
Directly Mountable Overload Relay		HTOR-63				
Conductor Size (Solid, Stranded)		AWG	10-4	8-3		
Maximum number of conductors: 2		mm ²	6-25	10-35		
Conductor Type		65/75°C CU wire only				

Note: Observe polarity when wiring the control power cable

Accessories



IronHorse HMC Series Contactors (100AF)



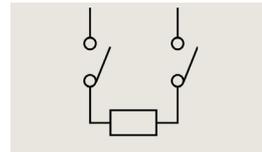
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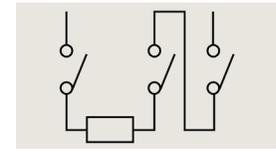
HMC-100A30-22-EL

Description

- 3-pole (NO) main contact
- Finger-proof design
- DIN rail or screw mountable
- AC or DC load ratings in different physical sizes
- Front/side mountable accessories available
- Direct-mountable overload relay
- 2NO/2NC auxiliary contact built-in
- Degree of protection: IP20



DC loads (2 pole)



DC loads (3 pole)

Certifications

CE(IEC), UL508, CCC

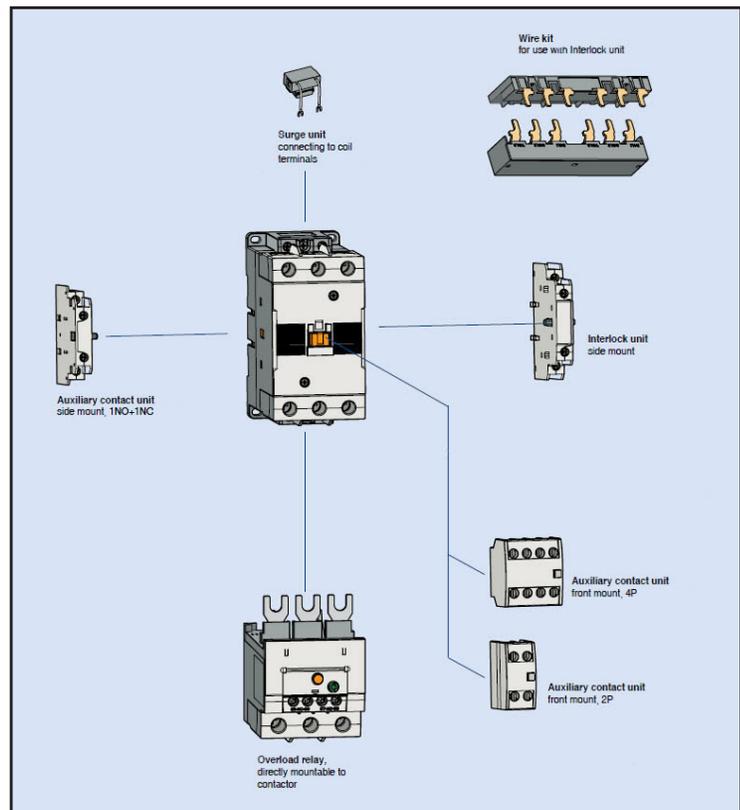
IronHorse HMC Series Three-Pole Contactors (100AF) Selection Guide

Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-75A30-22-BL	\$98.50	75	3 NO	24VAC	50/60 Hz	2 NO and 2 NC	PDF
HMC-75A30-22-AL	\$98.50			120VAC	50/60 Hz		PDF
HMC-75A30-22-CL	\$98.50			230VAC	50/60 Hz		PDF
HMC-75A30-22-EL	\$98.50			480VAC	60 Hz		PDF
HMC-85A30-22-BL	\$112.00	85		24VAC	50/60 Hz		PDF
HMC-85A30-22-AL	\$112.00			120VAC	50/60 Hz		PDF
HMC-85A30-22-CL	\$112.00			230VAC	50/60 Hz		PDF
HMC-85A30-22-EL	\$112.00			480VAC	60 Hz		PDF
HMC-100A30-22-BL	\$155.00	100		24VAC	50/60 Hz		PDF
HMC-100A30-22-AL	\$155.00			120VAC	50/60 Hz		PDF
HMC-100A30-22-CL	\$155.00			230VAC	50/60 Hz		PDF
HMC-100A30-22-EL	\$155.00			480VAC	60 Hz		PDF
HMC-75A30-22-DL	\$122.00	75		24VDC	-		PDF
HMC-85A30-22-DL	\$144.00	85		24VDC	-		PDF
HMC-100A30-22-DL	\$179.00	100		24VDC	-		PDF

100AF Contactors Description

Contactor Type		HMC-75A		HMC-85A		HMC-100A		
		kW	A	kW	A	kW	A	
AC Duty	AC3	200/240V	22	75	25	85	30	105
		380/440V	37	75	45	85	55	105
		500/550V	37	64	45	75	55	85
		690V	37	42	45	45	45	65
		1000V	37	28	37	28	37	28
	AC4	200/240V	13	55	15	65	19	80
	380/440V	25	52	30	62	37	75	
	AC1	-	12	-	135	-	160	
DC1 Duty (L/R= 1ms)	2-pole in series	24V	-	75	-	80	-	100
		48V	-	65	-	65	-	100
		110V	-	50	-	50	-	80
	3-pole in series	24V	-	75	-	80	-	100
		48V	-	75	-	80	-	100
		110V	-	75	-	80	-	100
DC3,5 Duty (L/R= 15ms)	2-pole in series	24V	-	65	-	65	-	100
		48V	-	40	-	40	-	60
		110V	-	20	-	20	-	40
	3-pole in series	24V	-	80	-	80	-	100
		48V	-	60	-	60	-	90
		110V	-	50	-	50	-	80
Directly Mountable Overload Relay		HTOR-95						
Conductor Size (Solid, Stranded)		AWG	8-2	8-0	8-00			
Maximum number of conductors: 2		mm ²	10-35	10-50	10-70			
Conductor Type		65/75°C CU wire only						

Accessories



Note: Observe polarity when wiring the control power cable

IronHorse HMC Series Contactors (150AF)



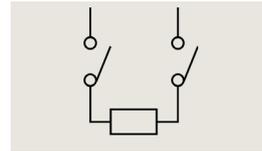
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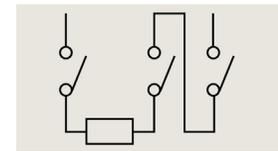
HMC-150A30-22-GL

Description

- 3-pole (NO) main contact
- Finger-proof design
- DIN rail or screw mountable
- AC or DC load ratings in different physical sizes
- Front/side mountable accessories available
- Direct-mountable overload relay
- 2NO/2NC auxiliary contact built-in
- Degree of protection: IP20



DC loads (2-pole)



DC loads (3-pole)

Certifications

CE(IEC), UL508, CCC

IronHorse HMC Series Three-Pole Contactors (150AF) Selection Guide

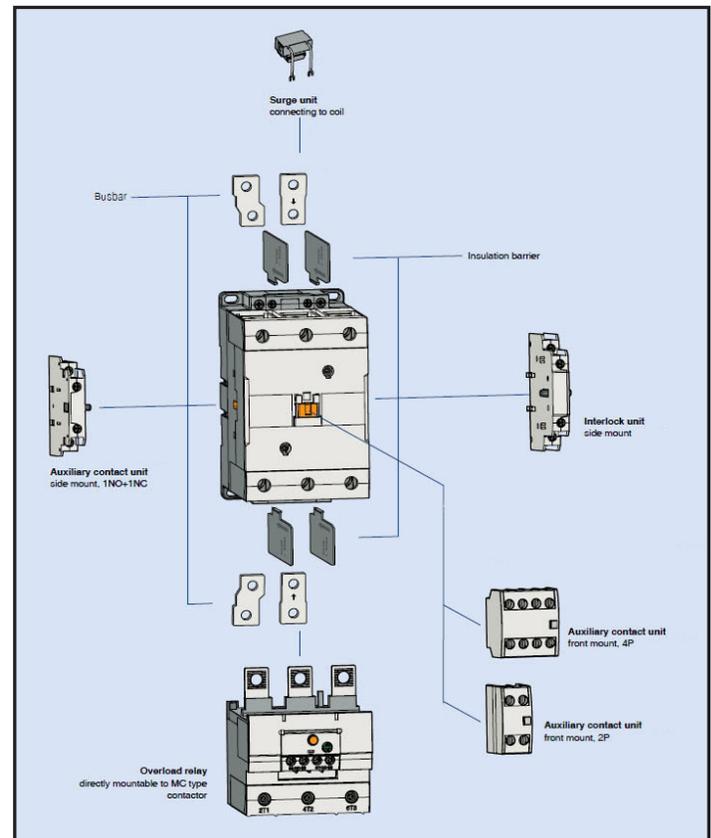
Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-130A30-22-DL	\$215.00	130	3 NO	24VDC	–	2 NO and 2 NC	PDF
HMC-150A30-22-DL	\$264.00	150		24VDC	–		PDF
HMC-130A30-22-FL	\$184.00	130		100-240 VAC / 100-200 VDC low consumption electronic	50/60 Hz		PDF
HMC-130A30-22-GL	\$184.00			24-48 VAC/24-48 VDC coil voltage, low consumption electronic			PDF
HMC-150A30-22-FL	\$236.00	150		100-240 VAC / 100-200 VDC low consumption electronic			PDF
HMC-150A30-22-GL	\$236.00			24-48VAC / 24-48 VDC coil voltage, low consumption electronic			PDF

150AF Contactors Description

Contactor Type		HMC-130A		HMC-150A		
		kW	A	kW	A	
AC Duty	AC3	200/240V	37	130	45	150
		380/440V	60	130	75	150
		500/550V	60	90	70	100
		690V	55	60	55	60
		1000V	75	50	75	50
	AC4	200/240V	22	93	30	120
		380/440V	45	90	55	110
	AC1		-	200	-	250
DC1 Duty (L/R=1ms)	2-pole in series	24V	-	120	-	150
		48V	-	100	-	120
		110V	-	80	-	100
	3-pole in series	24V	-	120	-	150
		48V	-	120	-	150
		110V	-	100	-	150
DC3,5 Duty (L/R=15ms)	2-pole in series	24V	-	120	-	150
		48V	-	60	-	100
		110V	-	40	-	80
	3-pole in series	24V	-	120	-	150
		48V	-	90	-	130
		110V	-	80	-	120
Directly Mountable Overload Relay		HTOR-150				
Conductor Size (Solid, Stranded)		AWG	3-00	3-4/0		
Maximum number of conductors: 2		mm ²	35-70	35-95		
Conductor Type		65/75°C CU wire only				

Note: Observe polarity when wiring the control power cable

Accessories



IronHorse HMC Series Contactors (225AF)



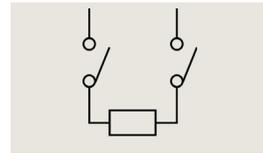
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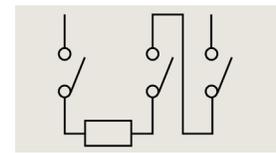
HMC-185A30-22-FB

Description

- 3-pole (NO) main contact
- Finger-proof design
- DIN rail or screw mountable
- AC or DC load ratings in different physical sizes
- Direct-mountable overload relay
- 2NO/2NC auxiliary contact built-in
- Degree of protection: IP00



DC loads (2-pole)



DC loads (3-pole)

Certifications

CE(IEC), UL508, CCC

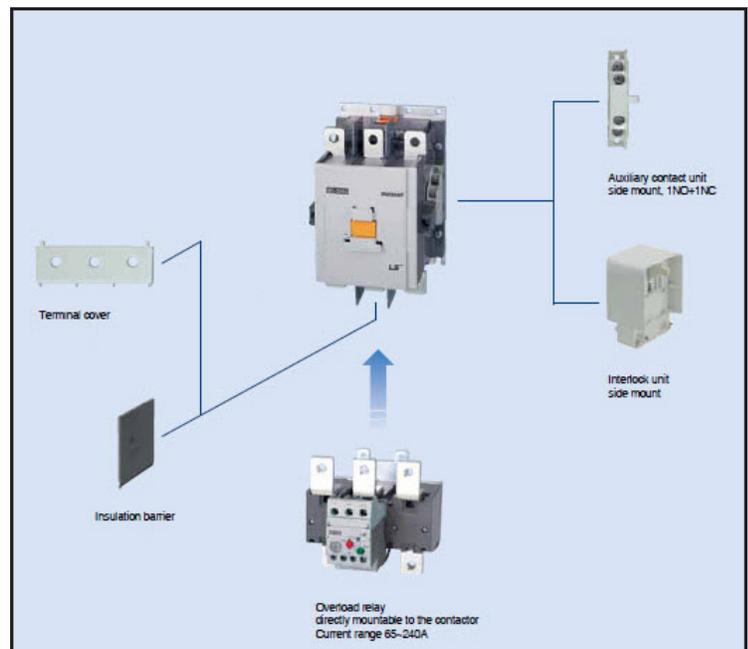
IronHorse HMC Series Three-Pole Contactors (225AF) Selection Guide

Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-185A30-22-FB	\$298.00	185	3 NO	100-240 VAC / 100-200 VDC low consumption electronic	50/60 Hz	2 NO and 2 NC	PDF
HMC-185A30-22-HB	\$298.00			24-25 VAC / 24 VDC low consumption electronic			PDF
HMC-225A30-22-FB	\$359.00	225		100-240 VAC / 100-200 VDC low consumption electronic			PDF
HMC-225A30-22-HB	\$359.00			24-25 VAC / 24 VDC low consumption electronic			PDF

225AF Contactors Description

Contactor Type		HMC-185A		HMC-225A		
		kW	A	kW	A	
AC Duty	AC3	200/240V	55	185	75	225
		380/440V	90	185	132	225
		500/550V	110	180	132	200
		690V	110	120	140	150
		1000V	132	90	132	90
	AC4	200/240V	37	150	45	180
		380/440V	75	150	90	180
	AC1	-	300	-	350	
DC1 Duty (L/R=1ms)	2-pole in series	24V	-	180	-	220
		48V	-	180	-	180
		110V	-	150	-	150
	3-pole in series	24V	-	180	-	220
		48V	-	180	-	220
		110V	-	180	-	220
DC3,5 Duty (L/R=15ms)	2-pole in series	24V	-	180	-	220
		48V	-	150	-	150
		110V	-	120	-	120
	3-pole in series	24V	-	180	-	220
		48V	-	180	-	220
		110V	-	150	-	150
Directly Mountable Overload Relay		HTOR-225				
Conductor Size (Solid, Stranded)		AWG	1-4/0	0-300		
Maximum number of conductors: 2		mm ²	50-95	50-150		
Conductor Type		75°C CU wire				

Accessories



IronHorse HMC Series Contactors (400AF)



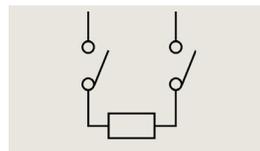
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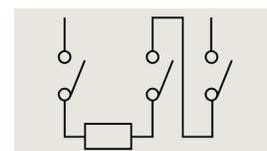
HMC-265A30-22-FB

Description

- 3-pole main contact
- AC/DC common use coil
- Wide coil operation voltage
- Screw mountable
- 2NO/2NC auxiliary contacts built-in
- Direct mountable overload relays
- Degree of protection: IP00



DC loads (2-pole)



DC loads (3-pole)

Certifications

CE(IEC), UL508, CCC

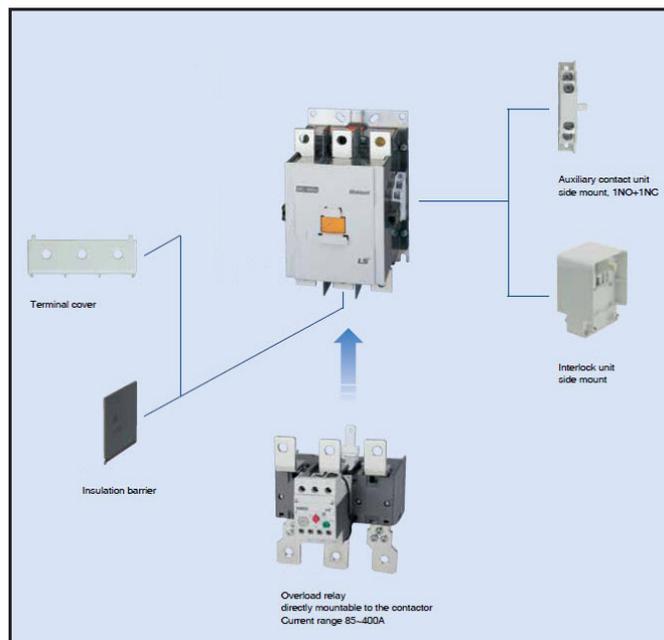
IronHorse HMC Series Three-Pole Contactors (400AF) Selection Guide

Part Number	Price	AC-3 Amps (380/440 V)	Main Contact Poles	Coil Voltage	Coil Frequency	Auxiliary Contacts	Drawings
HMC-265A30-22-FB	\$520.00	265	3 NO	100-240 VAC / 100-200 VDC low consumption electronic	50/60 Hz	2 NO and 2 NC	PDF
HMC-330A30-22-FB	\$590.00	330		100-240 VAC / 100-200 VDC low consumption electronic			PDF
HMC-400A30-22-FB	\$645.00	400		100-240 VAC / 100-200 VDC low consumption electronic			PDF

400AF Contactors Description

Contactor Type		HMC-265A		HMC-330A		HMC-400A		
		kW	A	kW	A	kW	A	
AC Duty	AC3	200/240V	80	265	90	330	125	400
		380/440V	147	265	160	330	200	400
		500/550V	147	225	160	28	225	350
		690V	160	185	200	220	250	300
	AC4	200/240V	50	200	55	220	75	300
		380/440V	102	200	110	220	150	300
AC1		-	400	-	500	-	520	
DC1 Duty (L/R= 1ms)	2-pole in series	24V	-	220	-	300	-	400
		48V	-	180	-	240	-	240
		110V	-	150	-	200	-	200
	3-pole in series	24V	-	220	-	300	-	400
		48V	-	220	-	300	-	400
		110V	-	220	-	300	-	400
DC3,5 Duty (L/R= 15ms)	2-pole in series	24V	-	220	-	300	-	400
		48V	-	150	-	200	-	200
		110V	-	120	-	150	-	150
	3-pole in series	24V	-	220	-	300	-	400
		48V	-	220	-	280	-	280
		110V	-	150	-	200	-	200
Directly Mountable Overload Relay		HTOR-400						
Conductor Size (Solid, Stranded)		AWG	3/0-500		4/0-500		350-700	
Maximum number of conductors: 2		mm ²	95-240		95-240		185-370	
Conductor Type		75°C CU wire only						

Accessories



IronHorse HMC Series Contactors



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HMC Series Three-Pole Contactors – Environmental	
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, K60947
Certifications	CE, UL, CCC
Rated Insulation Voltage U_i	1000V (6A-22A: 690V) (32A-800A: 1000V)
Rated Impulse Withstand Voltage U_{imp}	8kV (6A-22A: 6kV) (32A-800A: 8kV)
Degree of Protection	IP20 (Conforming to IEC60529)
Ambient Air Temperature	Storage: -30°C to 65°C [-22°F to 149°F]
	<p>Operation: -5°C to 55°C [23°F to 131°F] (AC Type) -5°C to 40°C [23°F to 104°F] (MT, DC Type) -25°C to 60°C [-13°F to 140°F] (MT refer to graph)</p> <p style="text-align: center;">Multiple overload current setting —↑</p> <p style="text-align: center;">Ambient temperature (°C) —→</p>
Operating Altitude	3000m [8900ft]
Operating Positions	
Shock Resistance (1/2 sine wave = 11ms)	Opened: 8G Closed: 10G
Vibration Resistance (Conforming to IEC68-2-6) (5 to 300 Hz)	Opened: 2G Closed: 4G
Flame Resistance	Conforming to UL 94:V0 Conforming to IEC 695-2-1: 960°C

IronHorse HMC Series Contactors

HMC Series Magnetic Contactors Specifications

Frame Size		22AF				40AF		65AF		100AF			150AF		225AF		400AF				
Type		HMC-9B	HMC-12B	HMC-18B	HMC-22B	HMC-32A	HMC-40A	HMC-50A	HMC-65A	HMC-75A	HMC-85A	HMC-100A	HMC-130A	HMC-150A	HMC-185A	HMC-225A	HMC-265A	HMC-330A	HMC-400A		
Screw Clamp Terminals		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
Lug Clamp Terminals								•	•	•	•	•	•	•	•	•					
Number of Poles		3																			
Rated Operational Voltage U_e		690V						1000V													
Rated Insulation Voltage U_j		690V						1000V													
Rated Frequency		50/60 Hz																			
Rated Impulse Withstand Voltage U_{imp}		6kV						8kV													
Maximum Operating Rate in Operating Cycles Per Hour (AC3)		1800 operations per hour						1200 operations per hour													
Mechanical Durability (millions of operations)		15				12						5						2.5			
Electrical Durability (millions of operations)		2.5				2						1						0.5			
Current and Power	AC1, Thermal Current	A	25	25	40	40	50	60	70	100	110	135	160	200	250	300	350	400	500	520	
		kW	2.5	3.5	4.5	5.5	7.5	11	15	18.5	22	25	30	37	45	55	75	80	90	125	
	AC3	200/240 V	A	11	13	18	22	32	40	55	65	75	85	105	130	150	185	225	265	330	400
			kW	4	5.5	7.5	11	15	18.5	22	30	37	45	55	60	75	90	132	147	160	200
	380/440 V	A	9	12	18	22	32	40	50	65	75	85	105	130	150	185	225	265	330	400	
		kW	4	7.5	7.5	15	18.5	22	30	33	37	45	55	60	70	110	132	147	160	225	
	500/550 V	A	7	12	13	20	28	32	43	60	64	75	85	90	100	180	200	225	250	350	
		kW	4	7.5	7.5	15	18.5	22	30	33	37	45	55	55	55	110	140	160	200	250	
	690V	A	6	9	9	18	20	23	28	35	42	45	65	60	60	120	150	185	220	300	
		kW	4	7.5	7.5	15	18.5	22	30	33	37	45	55	55	55	110	140	160	200	250	
1000V	A	-	-	-	-	22	22	30	30	37	37	37	75	75	132	132	147	147	147		
	kW	-	-	-	-	22	22	30	30	37	37	37	75	75	132	132	147	147	147		
Rated Short-Time Withstand Current (IEC 80947)	1s	A	250	280	300	400	600	700	1000	1050	1100	1200	1320	1350	1800	2000	2500	3500	4000	4600	
	10s	A	110	120	154	186	260	300	550	700	750	800	900	950	1200	1500	1700	2400	3000	4400	
	30s	A	70	80	100	130	160	160	330	380	400	450	500	700	800	1000	1200	1500	2500	2974	
	1min	A	61	61	84	90	100	100	250	270	300	350	400	550	600	800	1000	1100	1700	1846	
	3min	A	45	50	60	60	70	70	150	200	220	270	270	350	450	520	700	800	1000	1313	
	10min	A	30	30	40	50	55	55	90	120	140	170	180	200	300	350	500	600	620	760	
	≥10min	A	26	28	40	45	50	50	87	100	114	150	160	175	280	320	400	500	553	699	
UL Rating (50/60 Hz)	Continuous current	A	25	25	40	40	50	60	70	100	110	135	160	160	210	230	275	300	350	450	
	Single Phase	110-120 V	HP	0.5	0.75	1	2	2	3	5	5	7.5	10	10	15	15	15	-	-	-	
		220-240 V	HP	1.5	2	3	3	5	5	10	15	15	15	20	20	25	30	40	-	-	
	Three Phase	200-208 V	HP	2	3	7.5	7.5	7.5	15	20	25	25	30	30	40	40	60	60	75	100	
		220-240 V	HP	3	5	7.5	10	10	15	25	30	30	40	40	50	60	75	100	100	150	
		440-480 V	HP	5	7.5	10	15	20	30	40	50	50	60	75	75	100	125	150	200	300	
	550-600 V	HP	7.5	10	15	20	25	30	50	60	60	75	75	75	75	125	150	200	200	300	
NEMA Size		00	0	1		1P	2				3			4			5				
Weight	AC Control	kg [lb]	0.34 [0.75]			0.55 [1.21]		1.05 [2.31]		1.93 [4.25]			2.4 [5.29]		5.4 [11.91]		9.2 [20.28]				
	DC Control	kg [lb]	0.41 [0.90]			0.77 [1.70]		1.3 [2.87]		2.8 [6.17]											
Auxiliary (Standard)		1a1b						2a2b													
Auxiliary Side Mount		HMX1-AUX11-S												HMX3-AUX11-S							
Auxiliary Front Mount		HMX1-AUXxx-F																			

Note: Minimum conduct current of Auxiliary contactor is DC 17V, 5mA

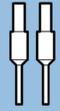
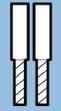
HMC Series Thermal Overload Relays Specifications

Type		HTOR-32	HTOR-32	HTOR-63	HTOR-95	HTOR-150	HTOR-225	HTOR-400	
Screw Clamp Terminals		•	•	•	•	•	•	•	
Lug Clamp Terminals				•	•	•	•		
Rated Operational Voltage U_e		690V							
Rated Insulation Voltage U_j		690V							
Rated Impulse Withstand Voltage U_{imp}		6kV							
Trip Class		10A							
Setting Range		0.1 - 40 A		0.1 - 40 A	42-65 A	70-100 A	80-150 A	100-240 A	160-400 A
Weight	kg [lb]	0.17 [0.37]		0.0.17 [0.37]	0.31-0.33 [0.68-0.73]	0.48-0.5 [1.06-1.10]	0.67 [1.48]	2.5 [5.51]	2.6 [5.73]

Note: The safety cover of magnetic contactor and thermal overload relay is optional.

IronHorse HMC Series Contactors Connections


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HMC Series Three-Pole Contactors – Connections									
	Main Terminal Size								Torque
		AWG / mm ²						mm [in] (max)	lb·in [N·m]
HMC-9B		M4	18-10 / 1-4	18-10 / 1-4	18-10 / 1-4			9.6 [0.38]	20 [2.25]
HMC-12B			16-10 / 1.5-6	16-10 / 1.5-6	16-10 / 1.5-6				
HMC-18B			16-10 / 1.5-6	16-10 / 1.5-6	16-10 / 1.5-6				
HMC-22B			14-8 / 2.5-10	14-8 / 2.5-10	14-8 / 2.5-10				
HMC-32A		M5	–	12-6 / 2.5-16	12-6 / 2.5-16			12.8 [0.50]	35 [4]
HMC-40A			–	12-6 / 2.5-16	12-6 / 2.5-16				
HMC-50A		M6	–	10-3 / 4-35	10-3 / 4-35			14 [0.55]	35 [4]
HMC-65A			–	10-2 / 4-35	10-2 / 4-35				
HMC-75A		M8	–	10-1 / 6-50	10-1 / 6-50			17 [0.67]	45 [5.1]
HMC-85A			–	10-1/0 / 6-50	10-1/0 / 6-50				
HMC-100A			–	10-2/0 / 6-70	10-2/0 / 6-70				
HMC-130A		M8	–	8-3/0 / 10-95	8-3/0 / 10-95			24 [0.94]	80 [9.1]
HMC-150A			–	8-250kcmil / 10-120	8-250kcmil / 10-120				
HMC-185A		M10	–	3-350kcmil / 35-185	3-350kcmil / 35-185			25 [0.98]	130 [14.7]
HMC-225A			–	3-400kcmil / 35-185	3-400kcmil / 35-185				
HMC-265A		M12	–	2-500kcmil / 35-240	2-500kcmil / 35-240			30 [1.18]	200 [22.6]
HMC-330A			–	2-250kcmil.x2 / 35-150x2	2-250kcmil.x2 / 35-150x2				
HMC-400A			–	2-350kcmil.x2 / 35-185x2	2-350kcmil.x2 / 35-185x2				

IronHorse HMC Series Contactors

Control Coil Characteristics


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HMC Series Three-Pole Contactors – AC and DC Control Coil Characteristics											
Frame Size		22AF		40AF		65AF		100AF		150AF (A)	
Type		HMC-9B HMC-12B HMC-18B HMC-22B		HMC-32A HMC-40A		HMC-50A HMC-65A HMD-30A		HMC-75A HMC-85A HMC-100A HMD-60A HMD-100A		HMC-130A HMC-150A	
AC Coil											
Control Voltage (U_C)		50Hz	(V)	24, 120, 230						24/48, 100-240/100-220	
		60Hz	(V)	24, 120, 200, 230, 480							
Voltage Limit (U_C)		85 - 110 %									
Coil Consumption at 20°C [68°F]											
220VAC		Inrush	(VA)	70	90	110	240	320			
60Hz		Holding	(VA)	9	9	13	17	10			
Heat Dissipation			(W)	2.3	2.7	2.8	5.4	4.5			
Operating Time		Closing	(ms)	15 - 30	15 - 30	15 - 30	15 - 30	70			
		Opening	(ms)	4 - 19	4 - 19	4 - 19	10 - 30	70			
DC Coil											
Control Voltage (U_C)		24									
Voltage Limit (U_C)		85 - 110 %									
Coil Consumption at 20°C [68°F]											
24VDC		Inrush	(W)	6	9	9	18	213			
		Holding	(W)	6	9	9	18	7.5			
Time Constant (L/R)			(ms)	28	28	65	75	–			
Operating Time		Closing	(ms)	40 - 70*	50 - 65	50 - 65	100 - 120	70 - 80			
		Opening	(ms)	4 - 19	4 - 19	4 - 19	10 - 25	60 - 70			

Note: Either semi-electronic coil (A) or electronic coil (B) can be chosen for HMC-130A and HMC-150A.

* The operating time can increase up to 80ms when re-energizing after maintaining the ON state.

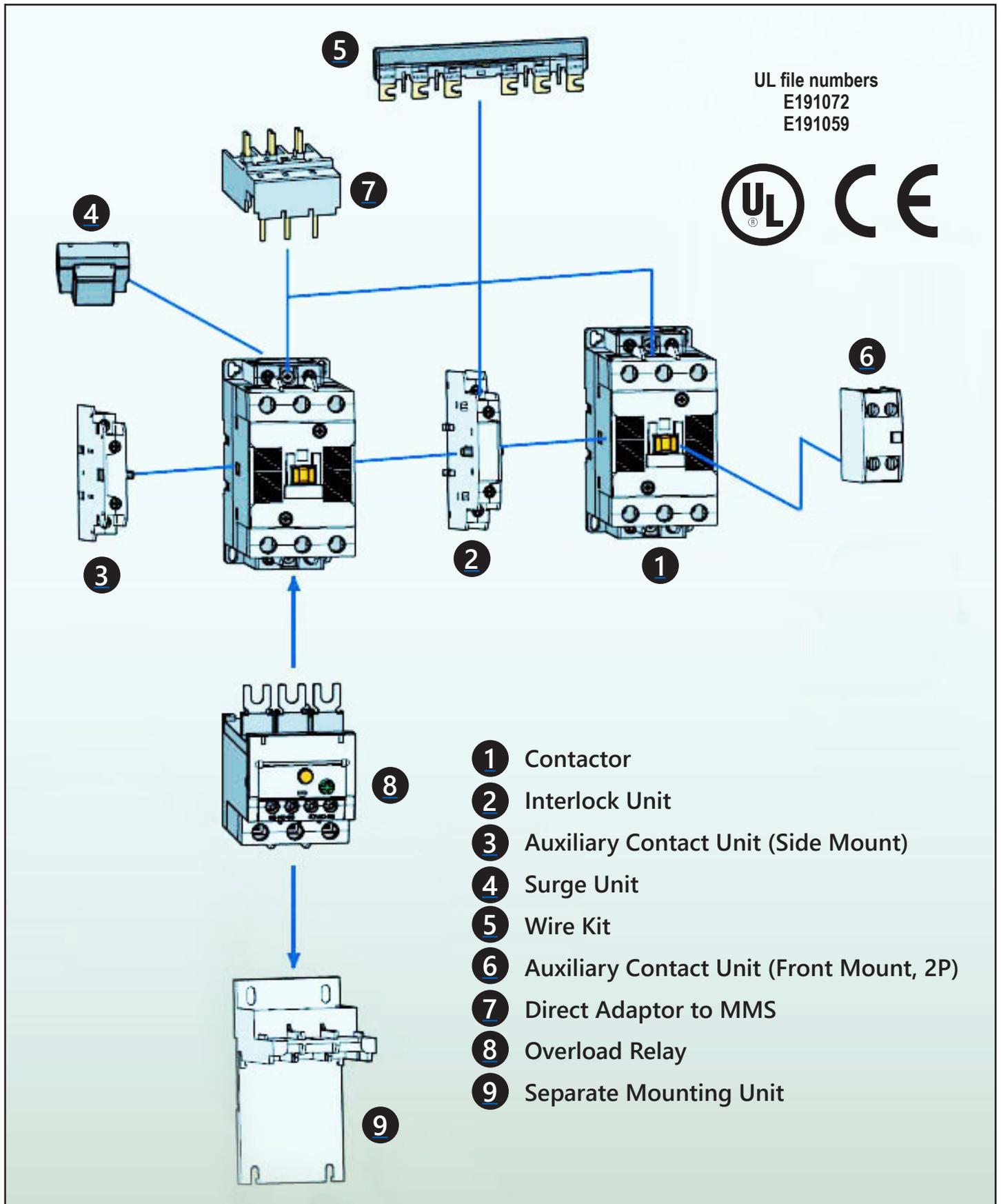
HMC Series Three-Pole Contactors – AC/DC Common Coil Characteristics ¹							
Frame Size		150AF (B)		225AF		400AF	
Type		HMC-130A HMC-150A		HMC-185A HMC-225A		HMC-265A HMC-330A HMC-400A	
AC/DC Common Coil							
Control Voltage (U_C)		AC/DC	(V)	24/48		24/24	
		AC/DC	(V)			–	
		AC/DC	(V)	100-240/100-220			
		AC	(V)	–		–	
		AC	(V)	–		–	
		AC	(V)	–		–	
Voltage Limit (U_C)		85 - 110 % ¹					
Coil Consumption at 20°C [68°F]							
220VAC		Inrush	(VA)	320	380	571	
50/60 Hz		Holding	(VA)	10	11.6	14	
Heat Dissipation			(W)	4.5	4.7	5	
Operating Time		Closing	(ms)	70	70	55	
		Opening	(ms)	70	70	55	

Note 1: Either semi-electronic coil (A) or electronic coil (B) can be chosen for HMC-130A and HMC-150A

IronHorse HMC Series Contactors Accessories



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IronHorse HMC Series Contactors Auxiliary Contact Units



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HMX1-AUX11-S



HMX1-AUX11-F



HMX1-AUX40-F



HMX3-AUX11-S



HMX2-TMC-CR



HMX1-PBR-CR

IronHorse HMC Series Three-Pole Contactors Accessories Selection Guide			
Part Number	Price	Description	Drawing
<u>HMX1-AUX11-S</u>	\$6.00	IronHorse field installable auxiliary contact, left or right side mount, (1) NO/(1) NC contact, 10A @600 VAC/5A @ 600 VDC, screw terminal. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-AUX11-F</u>	\$6.00	IronHorse field installable auxiliary contact, front mount, (1) NO/(1) NC contact, 10A @600 VAC/2.5A @ 600 VDC, screw terminal. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-AUX40-F</u>	\$10.50	IronHorse field installable auxiliary contact, front mount, (4) NO contacts, 10A @600 VAC/2.5A @ 600 VDC, screw terminal. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-AUX04-F</u>	\$10.50	IronHorse field installable auxiliary contact, front mount, (4) NC contacts, 10A @600 VAC/2.5A @ 600 VDC, screw terminal. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-AUX13-F</u>	\$10.50	IronHorse field installable auxiliary contact, front mount, (1) NO/(3) NC contacts, 10A @600 VAC/2.5A @ 600 VDC, screw terminal. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-AUX31-F</u>	\$10.50	IronHorse field installable auxiliary contact, front mount, (3) NO/(1) NC contact(s), 10A @600 VAC/2.5A @ 600 VDC, screw terminal. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX3-AUX11-S</u>	\$7.00	IronHorse field installable auxiliary contact, left or right side mount, (1) NO/(1) NC contacts, 10A @600 VAC/2.5A @ 600 VDC, screw terminal. For use with HMC-185 to HMC-400 contactors.	<u>PDF</u>
<u>HMX1-TMC-CR</u>	\$8.50	IronHorse terminal shroud, line and load side, 3-pole. Package of 2. For use with HMC-185 and HMC-225 contactors.	<u>PDF</u>
<u>HMX2-TMC-CR</u>	\$12.00	IronHorse terminal shroud, line and load side, 3-pole. Package of 2. For use with HMC-265 to HMC-400 contactors.	<u>PDF</u>
<u>HMX1-PBR-CR</u>	\$3.00	IronHorse phase barrier, package of 4. For use with HMC-185 to HMC-400 contactors.	<u>PDF</u>

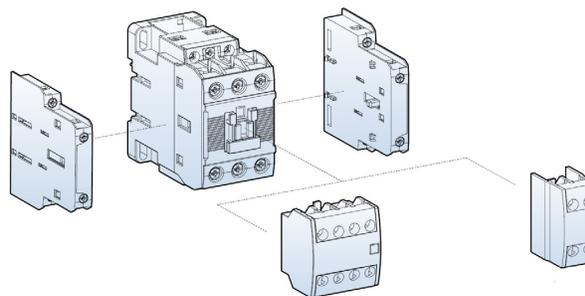
IronHorse HMC Series Contactors Auxiliary Contact Units (HMC-9 to HMC-150)



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- 2- and 4-pole
- Side and front mountable
- For use with HMC-9B to HMC-150A contactors
- Auxiliary contacts meet the requirements for mirror contacts in IEC 60947-4-1, Annex F.

(A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.)



IronHorse HMC Series Three-Pole Contactors Accessories Specifications

Part Number	Appearance	Poles	Composition		Contact Arrangement	Mounting	Weight (g [oz])
			NO	NC			
<u>HMX1-AUX11-S</u>		2	1	1		Side	53 [1.87]
<u>HMX1-AUX11-F</u>		2	2 1 -	- 1 2	<p>2a</p>	Front	28 [0.99]
<u>HMX1-AUX40-F</u>		4	4	-	<p>4a 3a1b</p>	Front	50 [1.76]
<u>HMX1-AUX31-F</u>			3	1			
<u>HMX1-AUX13-F</u>			1	3			
<u>HMX1-AUX04-F</u>			-	4			
					<p>1a3b 4b</p>		

Maximum Combination of Contact Units

HMC-9B - 22B (Max 3a3b)	HMC-32A-150A (Max 4a4b)
AUX40-F – AUX04-F (on front) + AUX11-S x 1 ea (1ea on left side)	AUX40-F, AUX31-F, AUX13-F, AUX04-F (on front) + AUX11-S x 2 ea (1 ea on both sides)
AUX11-F (on front) + HMX1-AUX11-S x 1 ea (1 ea on one side)	AUX11-F (on front) + AUX11-S x 2 ea (1 ea on both sides)
AUX11-S x 1 ea (1 ea on left side)	AUX11-S x 4 ea (2 ea on both sides) *For AC coil
HMC-9B-22B DC Type can be installed up to 2a2b	-

* To use HMX1-AUX11-S, HMC-9B-22B Type is available on left side only

IronHorse HMC Series Contactors Auxiliary Contact Units (HMC-185A to HMC-400A)



- 2-pole
- Side mountable
- For use with HMC-185A to HMC-400A contactors
- Auxiliary contacts meet the requirements for mirror contacts in IEC 60947-4-1, Annex F.

(A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.)



IronHorse HMC Series Three-Pole Contactors Accessories Specifications							
Part Number	Appearance	Poles	Composition		Contact Arrangement	Mounting	Weight (g [oz])
			NO	NC			
<u>HMX3-AUX11-S</u>		2	1	1		Side	53 [1.87]



HMX3-AUX11-S

Maximum Combination of Contact Units
<i>HMC185 to HMC400 (Max 4a4b)</i>
<u>HMX3-AUX11-S (2 per side, max)</u>

IronHorse HMC Series Contactors Auxiliary Contact Units

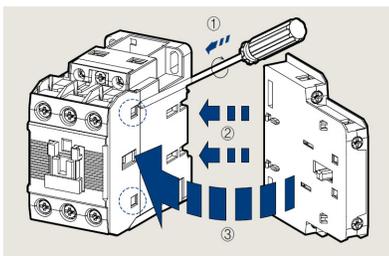


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Iron Horse HMC Series Contactors Specifications				
		<u>HMX1-AUX11-S</u>	<u>HMX1-AUX11-F</u> <u>HMX1-AUX40-F</u> <u>HMX1-AUX31-F</u> <u>HMX1-AUX13-F</u> <u>HMX1-AUX04-F</u>	<u>HMX3-AUX11-S</u>
Rated Operation Voltage (U_e)		600V		
Rated Insulation Voltage (U_i)		600V		
Rated Impulse Withstand Voltage (U_{imp})		8kV	6kV	
Rated Frequency		50/60 Hz		
Contact Sensibility	AC15 Duty (A600)	120V	6A	
		240V	3A	
		380V	1.9 A	
		480V	1.5 A	
		500V	1.4 A	
		600V	1.2 A	
DC13 Duty (Q600)	HMX1-AUX11-S (P600)	125V	1.1 A	0.55 A
		250V	0.55 A	0.27 A
		400V	0.31 A	0.15 A
		500V	0.27 A	0.13 A
		600V	0.2 A	0.1 A
Rated Short-Time Withstand Current		1s	100A	100A
		0.5 s	125A	120A
		0.1 s	145A	140A
Electrical Lifetime (millions of operations)	AC15 Duty	220V	0.25	0.25
		440V	0.25	0.25
	DC13 Duty	220V	0.25	0.25
		440V	0.25	0.25
Maximum Operating Cycles Per Hour		1800	1800	1200
Conductor Size (Solid, Stranded) (Max number of conductors: 2)	AWG	18-10	18-10	18-10
	mm²	1-2.5	1-2.5	1-2.5

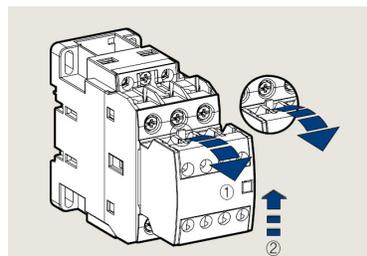
Installation

Side Installation



To install side mounting unit, first remove the indicated parts in the circle as shown in the illustration. Then fit each part as shown. To separate, push forward and pull.

Front Installation



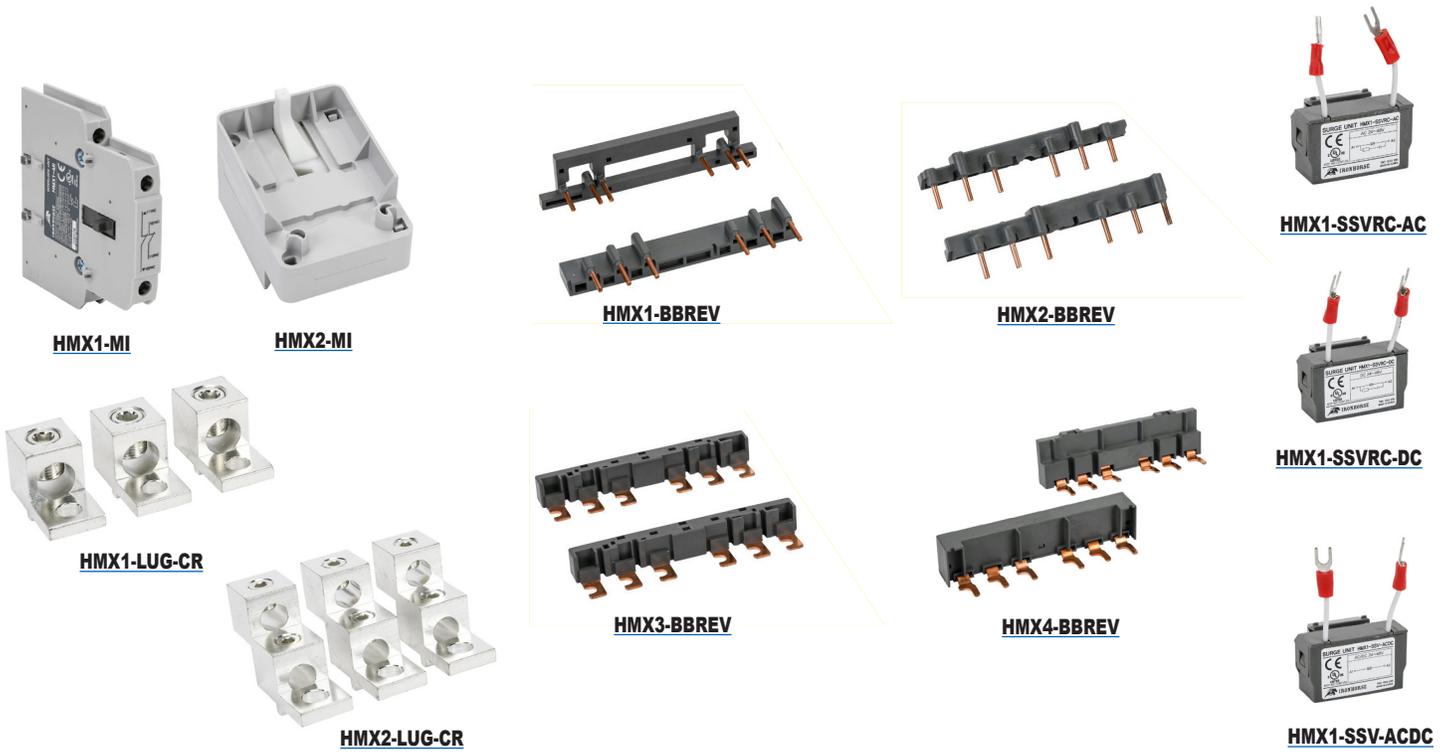
To install front mounting unit, fit it onto the upper part of the front of the contactor and push it down. To separate, pull the lever of the unit and push the unit upward.

IronHorse HMC Series Contactors Accessories

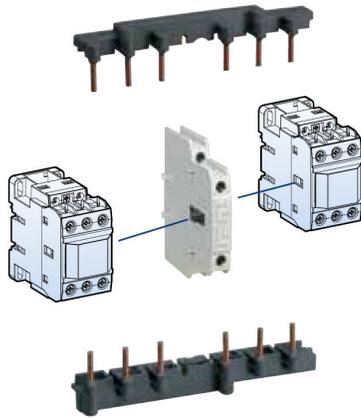


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IronHorse HMC Series Contactors Accessories Selection Guide			
Part Number	Price	Description	Drawing
<u>HMX1-MI</u>	\$11.25	IronHorse mechanical interlock, side mount. For use with HMC-9 to HMC-150 contactors. Allows for mechanical connection of two contactors to prevent both from being pulled in at the same time.	<u>PDF</u>
<u>HMX2-MI</u>	\$33.00	IronHorse mechanical interlock, side mount. For use with HMC-185 to HMC-400 contactors. Allows for mechanical connection of two contactors to prevent both from being pulled in at the same time.	<u>PDF</u>
<u>HMX1-BBREV</u>	\$12.00	IronHorse reversing connection kit, for use with HMC-9 to HMC-22 contactors, includes line and loadside connection bars.	<u>PDF</u>
<u>HMX2-BBREV</u>	\$12.00	IronHorse reversing connection kit, for use with HMC-32 and HMC-40 contactors, includes line and loadside connection bars.	<u>PDF</u>
<u>HMX3-BBREV</u>	\$18.00	IronHorse reversing connection kit, for use with HMC-50 and HMC-65 Contactors, includes line and loadside connection bars.	<u>PDF</u>
<u>HMX4-BBREV</u>	\$38.00	IronHorse reversing connection kit, for use with HMC-75 to HMC-100 contactors, includes line and loadside connection bars.	<u>PDF</u>
<u>HMX1-LUG-CR</u>	\$33.00	IronHorse box type wiring lug, line or load mount, 1 opening, #1 AWG-300 MCM wire(s). Package of 3. For use with HMC-185 and HMC-225 contactors.	<u>PDF</u>
<u>HMX2-LUG-CR</u>	\$65.00	IronHorse box type wiring lug, line or load mount, 2 openings, #3 AWG-4/0 MCM wire(s). Package of 3. For use with HMC-265 to HMC-400 contactors.	<u>PDF</u>
<u>HMX1-SSVRC-AC</u>	\$8.50	IronHorse surge suppressor, varistor-resistor-capacitor, 24-48 VAC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX2-SSVRC-AC</u>	\$8.50	IronHorse surge suppressor, varistor-resistor-capacitor, 100-125 VAC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX3-SSVRC-AC</u>	\$8.50	IronHorse surge suppressor, varistor-resistor-capacitor, 200-240 VAC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-SSVRC-DC</u>	\$8.50	IronHorse surge suppressor, varistor-resistor-capacitor, 24-48 VDC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX1-SSV-ACDC</u>	\$7.00	IronHorse surge suppressor, varistor, 24-48 VAC/VDC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX2-SSV-ACDC</u>	\$7.00	IronHorse surge suppressor, varistor, 100-125 VAC/VDC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>
<u>HMX3-SSV-ACDC</u>	\$7.00	IronHorse surge suppressor, varistor, 200-240 VAC/VDC. For use with HMC-9 to HMC-150 contactors.	<u>PDF</u>



IronHorse HMC Series Contactors Accessories



Interlocks

Component parts for assembly by customer

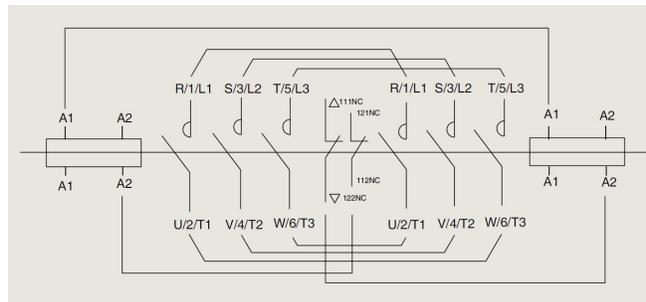
HMX1-MI is a mechanical interlock unit which provides 2 NC contacts for use in electrical interlocking. [HMX1-BBREV](#) is used for making a reversing circuit between two contactors.

Component parts are for assembly by customer.

IronHorse Interlock Units for Contactors						
Contactor Type	Pole	Wire Kit		Interlock Unit		Auxiliary Contacts
		Type	Weight (kg [oz])	Type	Weight (kg [oz])	
HMC-9A - 22B	3P	HMX1-BBREV	0.04 [1.41]	HMX1-MI	0.06 [2.12]	2 NC
HMC-32A - 40A		HMX2-BBREV	0.05 [1.76]			
HMC-50A - 65A		HMX3-BBREV	0.12 [4.23]			
HMC-75A - 100A		HMX4-BBREV	0.33 [11.64]			
HMC-130A - 150A		-	-			



Interlock Contact Ratings			
Rated Operation Voltage		600V	
Rated Insulation Voltage		600V	
Rated Frequency		50/60 Hz	
Rated Thermal Current		15A	
Rated Operation Current	AC15 duty (A600)	120V	6A
		240V	3A
		380V	1.9 A
		480V	1.5 A
		500V	1.4 A
	600V	1.2 A	
	DC13 duty (Q300)	125V	0.55 A
250V		0.27 A	



Typical circuit diagram for reversing contactor assembly (HMC-9B - HMC-150A)

IronHorse HMC Series Contactors Accessories



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Surge Unit

Surge units are easily installed on the contactor and absorb contactor coil surges.

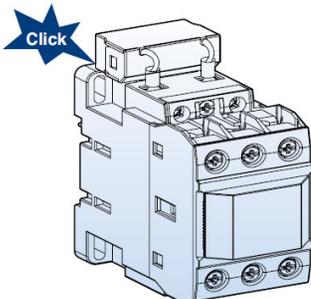
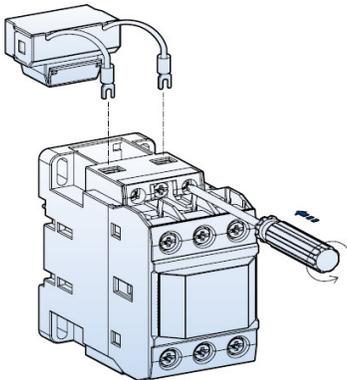
- Rated operation voltage (U_e): AC 24-440V / DC 24-125 V
- Rated insulation voltage (U_i): 1000V
- Rated impulse withstand voltage (U_{imp}): 8kV
- Degree of protection: IP20



HMX Type
(HMX1-SSVRC-AC shown)

Surge Unit Selection Guide							
Type	Circuit Type	Rated Voltage		Internal Elements Specifications			Contactor
				V	R	C	
HMX1-SSVRC-AC	Varistor + RC	AC	24-48 V	120V	100Ω	0.1 uF	3 pole HMC-9B-150A
HMX2-SSVRC-AC			100-125 V	270V	100Ω	0.1 uF	
HMX3-SSVRC-AC			200-240 V	470V	100Ω	0.1 uF	
HMX1-SSV-ACDC	Varistor	AC/DC common	24-48 V	120V	-	-	
HMX2-SSV-ACDC			100-125 V	270V	-	-	
HMX3-SSV-ACDC			200 - 240 V	470V	-	-	

Surge Unit Installation



Connect the lead wires to the coil terminals of the contactor first. Then insert the body into the mounting space of the contactor, as shown above.

Effects of Adding a Surge Unit		
Without Surge Unit	With Varistor Unit	with RC Varistor Unit
<p>Surge voltage may appear when the coil is de-energized and may lead to incorrect operation or damage to the circuit.</p>	<p>Varistor has the effect of cutting down the peak voltage.</p>	<p>Varistor has the effect of cutting down the peak voltage and the high frequency wave.</p>

IronHorse HMC Series Contactors Accessories



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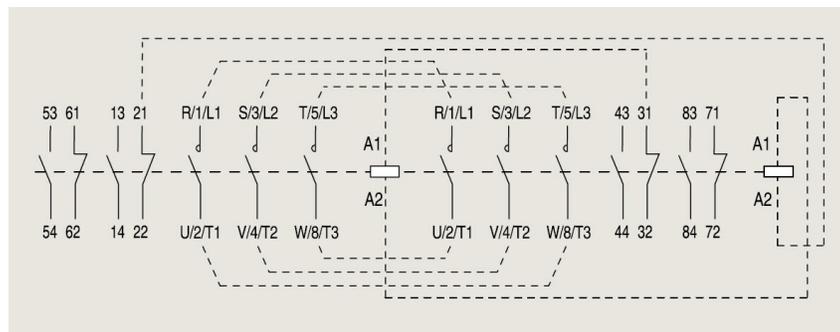
Interlock Unit

Mechanical interlock units do not include electrical contacts for electrical interlocking. Use the auxiliary contacts on the sides of the contactors for that purpose.



HMC-185A30-22-FB

Interlock Unit Specifications			
Contactor Type	Number of Poles	Interlock Unit	
		Type	Weight (kg [oz])
HMC-185A	3	HMX2-MI	0.09 [3.17]
HMC-225A			
HMC-265A			
HMC-330A			
HMC-400A			



Typical circuit diagram for reversing contactor assembly

IronHorse HTOR Series Overload Relays



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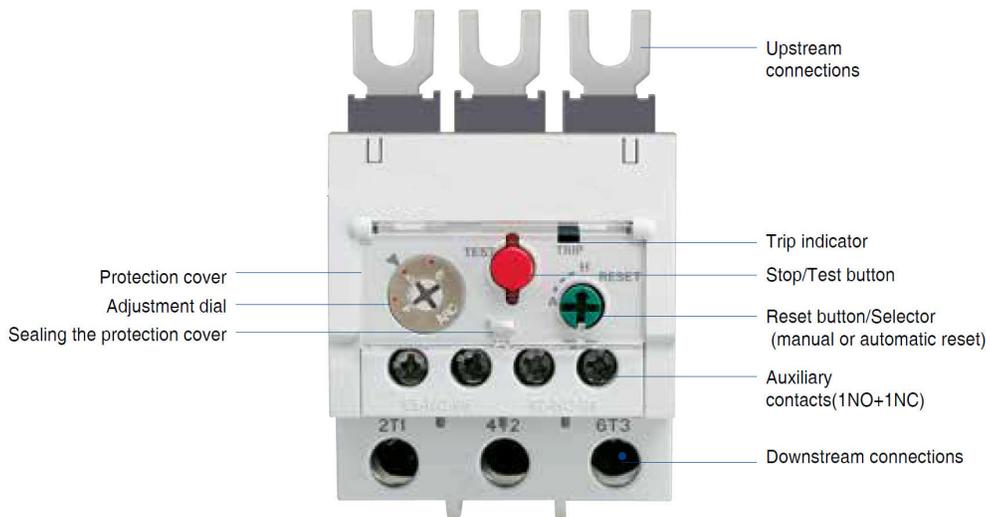
Type HTOR bimetal-style overload relays are designed to protect AC circuits and motors against overloads, phase failure, long starting times, and prolonged stalling of the motor.

Protection Type – Differential: 3 pole-3 bimetal (heater) and trip class 10A

UL file numbers
E191072



Front Configuration



HTOR32	HTOR63	HTOR95
 <p data-bbox="162 1661 373 1686"><u>HTOR32-18-S</u> shown</p>	 <p data-bbox="506 1661 717 1686"><u>HTOR63-65-L</u> shown</p>	 <p data-bbox="847 1661 1058 1686"><u>HTOR95-95-L</u> shown</p>

IronHorse HTOR Series Overload Relays


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IronHorse HTOR Series Overload Relays Selection Guide

Part Number	Price	Description	Drawing
HTOR32-0.16-S	\$22.00	IronHorse thermal overload relay, 0.10-0.16A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-0.25-S	\$22.00	IronHorse thermal overload relay, 0.16-0.25A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-0.40-S	\$22.00	IronHorse thermal overload relay, 0.25-0.40A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-0.63-S	\$22.00	IronHorse thermal overload relay, 0.40-0.63A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-1-S	\$22.00	IronHorse thermal overload relay, 0.63-1A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-1.6-S	\$22.00	IronHorse thermal overload relay, 1-1.6A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-2.5-S	\$22.00	IronHorse thermal overload relay, 1.6-2.5A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-4-S	\$22.00	IronHorse thermal overload relay, 2.5-4A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-6-S	\$22.00	IronHorse thermal overload relay, 4-6A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-8-S	\$22.00	IronHorse thermal overload relay, 5-8A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-10-S	\$22.00	IronHorse thermal overload relay, 7-10A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-13-S	\$22.00	IronHorse thermal overload relay, 9-13A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-18-S	\$22.00	IronHorse thermal overload relay, 12-18A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-22-S	\$22.00	IronHorse thermal overload relay, 16-22A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-25-S	\$22.00	IronHorse thermal overload relay, 18-25A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-32-S	\$22.00	IronHorse thermal overload relay, 22-32A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR32-40-S	\$22.00	IronHorse thermal overload relay, 28-40A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-9 to HMC-40 contactors.	PDF
HTOR63-50-L	\$44.00	IronHorse thermal overload relay, 34-50A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-50 and HMC-65 contactors.	PDF
HTOR63-65-L	\$44.00	IronHorse thermal overload relay, 45-65A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-50 and HMC-65 contactors.	PDF
HTOR95-75-L	\$64.00	IronHorse thermal overload relay, 54-75A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-75 to HMC-100 contactors.	PDF
HTOR95-85-L	\$64.00	IronHorse thermal overload relay, 63-85A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-75 to HMC-100 contactors.	PDF
HTOR95-95-L	\$64.00	IronHorse thermal overload relay, 70-95A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-75 to HMC-100 contactors.	PDF
HTOR95-100-L	\$64.00	IronHorse thermal overload relay, 80-100A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-75 to HMC-100 contactors.	PDF
HTOR150-105-L	\$121.00	IronHorse thermal overload relay, 80-105A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-130 and HMC-150 contactors.	PDF
HTOR150-130-L	\$121.00	IronHorse thermal overload relay, 95-130A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-130 and HMC-150 contactors.	PDF
HTOR150-150-L	\$121.00	IronHorse thermal overload relay, 110-150A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-185 and HMC-225 contactors.	PDF
HTOR225-160-B	\$182.00	IronHorse thermal overload relay, 100-160A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-185 and HMC-225 contactors.	PDF
HTOR225-185-B	\$182.00	IronHorse thermal overload relay, 120-185A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-185 and HMC-225 contactors.	PDF
HTOR225-240-B	\$182.00	IronHorse thermal overload relay, 160-240A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-185 and HMC-225 contactors.	PDF
HTOR400-240-B	\$223.00	IronHorse thermal overload relay, 160-240A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-265 to HMC-400 contactors.	PDF
HTOR400-330-B	\$223.00	IronHorse thermal overload relay, 200-330A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-265 to HMC-400 contactors.	PDF
HTOR400-400-B	\$223.00	IronHorse thermal overload relay, 260-400A adjustable, bi-metallic, direct mount power connection(s). For use with HMC-265 to HMC-400 contactors.	PDF

IronHorse HTOR Series Overload Relays


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IronHorse HTOR Series Environment and Auxiliary Circuit Characteristics			
Environment			
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1		
Certifications	CE, CSA, UL, CCC		
Rated Operation Voltage	Max. 690V		
Rated Insulation Voltage	690V		
Rated Frequency	50/60 Hz		
Degree of Protection (Conforming to IEC 60 529)	IP 20		
Ambient Air Temperature	Storage	-30°C to +65°C [-22°F to 149°F]	
	Operation	-25°C to +60°C [-13°F to 140°F]	
Mounting Position	Vertical plane		
Shock Resistance (Conforming to IEC 68-2-7)	15gn - 11ms		
Vibration Resistance (Conforming to IEC68-2-6)	6G		
Insulation Strength (Conforming to IEC 255-5)	6kV		
Rated Impulse Withstand Voltage (Conforming to IEC 801-5)	6kV		
Auxiliary Contacts Characteristics			
Composition	1 NO + 1 NC		
Rated Thermal Current	5A		
Rated Operation Current	AC15 Duty (C600)	120V	1.5 A
		240V	0.75 A
		380V	0.47 A
		480V	0.375 A
		500V	0.35 A
		600V	0.3 A
	DC13 Duty (R300)	120V	0.22 A
		240V	0.1 A
Connecting Conductor	18AWG /1mm ²		
Connection to Screw Clamp Terminals	65/75°C Cu wire		


HTOR150-150-L

HTOR225-240-B

HTOR400-400-B

IronHorse HTOR Series Overload Relays


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IronHorse HTOR Series Thermal Overload Relays Specifications

Frame Size		40AF	65AF	100AF
Trip Class		10A	10A	10A
Differential Protection		Yes	Yes	Yes
Terminals	Main Upstream	Screw clamp	Lug clamp	Lug clamp
	Main Downstream	Screw clamp	Lug clamp	Lug clamp
	Auxiliary	Screw clamp	Screw clamp	Screw clamp
Number of Poles		3	3	3
Rated Operational Voltage (U_e)		690V	690V	690V
Rated Insulation Voltage (U_i)		Up to 690V	Up to 690V	Up to 690V
Rated Impulse Voltage (U_{imp})		6kV	6kV	6kV
Degree of protection (IEC 60 529)		IP 20	IP 20	IP 20
Temperature Compensation ($^{\circ}$ C)		-5 to +40 $^{\circ}$ C [23 to +40 $^{\circ}$ F]	-5 to +40 $^{\circ}$ C [23 to +40 $^{\circ}$ F]	-5 to +40 $^{\circ}$ C [23 to +40 $^{\circ}$ F]
Functions	Trip Indicating	•	•	•
	Stop	•	•	•
	Test	•	•	•
	Manual/Automatic Reset	•	•	•
Setting Range		0.1-40 A	34-65 A	54-100A

Nominal Current Rating	Wire Size		40AF	65AF	100AF
	mm ²	AWG			
0.14	1	18	0.1-0.16	-	-
0.21			0.16-0.25	-	-
0.33			0.25-0.4	-	-
0.52			0.4-0.63	-	-
0.82			0.63-1	-	-
1.3			1-1.6	-	-
2.1			1.6-2.5	-	-
3.3			2.5-4	-	-
5			4-6	-	-
6.5			5-8	-	-
7.5	1-1.5	18-16	6-9	-	-
8.5			7-10	-	-
11	1.5-2.5	16-14	9-13	-	-
15	2.5	14-12	12-18	-	-
19	2.5-4	12-10	16-22	-	-
21.5			18-25	-	-
27	4-6	10	22-32	-	-
30	4-10	10-8	-	-	-
34	6-10	10-8	28-40	-	-
42	10	8	-	34-50	-
54			-	45-65	-
65	16-25	6-4	-	-	54-75
74			-	-	63-85
83	25-35	4-3	-	-	70-95
90			-	-	80-100
Applied Contactors			HMC-9B, 12B, 18B, 22B, 32A, 40A	HMC-50A, 65A	HMC-75A, 85A, 100A
Separate Mounting Unit			HMX1-PADT-OR	HMX2-PADT-OR	HMX3-PADT-OR

Note: Lug types are available for the main terminals of 65AF, 100AF and 150AF relays. Other AF relays provide screw clamp types only.

IronHorse HTOR Series Overload Relays


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IronHorse HTOR Series Thermal Overload Relays Specifications (continued)				
Frame Size		150AF	225AF	400AF
Trip Class		10A	10A	10A
Differential Protection		Yes	Yes	Yes
Terminals	Main Upstream	Lug clamp	Screw clamp	Screw clamp
	Main Downstream	Lug clamp	Screw clamp	Screw clamp
	Auxiliary	Screw clamp	Screw clamp	Screw clamp
Number of Poles		3	3	3
Rated Operational Voltage (U_e)		690V	690V	690V
Rated Insulation Voltage (U_i)		690V	690V	690V
Rated Impulse Voltage (U_{imp})		6kV	6kV	6kV
Degree of protection (IEC 60 529)		IP 20	IP 20	IP 20
Temperature Compensation (°C)		-5°C to +40°C [23°F to 104°F]	-5°C to +40°C [23°F to 104°F]	-5°C to +40°C [23°F to 104°F]
Functions	Trip Indicating	•	•	•
	Stop	•	•	•
	Test	•	•	•
	Manual/Automatic Reset	•	•	•
Setting Range		80-150 A	100-240 A	160-400 A

Nominal Current Rating	Wire Size		150AF	225AF	400AF
	mm ²	AWG			
42	10	8	-	-	-
55	16	6	-	-	-
65	25	4	-	-	-
74	25	4	-	-	-
80	35	3	-	-	-
93	35	2	-	-	-
107	50	1	80-150	-	-
113	50	1	95-130	-	-
130	50	0	110-150	-	-
130	70	00	-	100-160	-
153	95	000	-	120-185	-
200	120	250	-	160-240	160-240
265	185	350	-	-	200-330
350	240	500	-	-	260-400
515	185x2n	350x2n	-	-	-
660	240x2n	300x3n	-	-	-
Applied Contactors			HMC-130A, 150A	HMC-185A, 225A	HMC-265A, 330A, 400A
Separate Mounting Unit			HMX4-PADT-OR	-	-

Note: Lug types are available for the main terminals of 65AF, 100AF and 150AF relays. Other AF relays provide screw clamp types only.

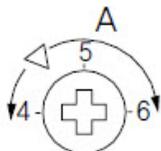
IronHorse HTOR Series Overload Relays



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Overload Relay Operation

Adjustment Dial



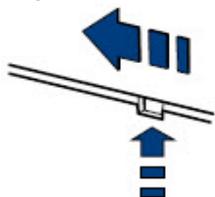
Before adjusting the dial open the protection cover. Current setting can be done easily by using (+) or (-) driver. Do not rotate the dial out of the setting range.

Stop/Test Button



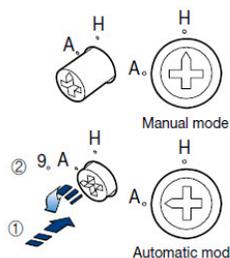
The STOP function is executed by pushing the button, which causes the next sequence. In case of operation test, pull this button.

Trip Indicator



If relay is tripped, the indicator comes out.

Reset Button/Selector



Using a driver, the reset mode can be set. In case of Manual mode (H), push the button to reset relay.

To change to Automatic mode (A) from Manual mode, push the button and rotate as shown in diagram.

Auxiliary Contact Operation

Terminal no.	Normal	STOP	TEST/TRIP	RESET
NC 95-96				
NO 97-98				

IronHorse HTOR Series Overload Relays Accessories



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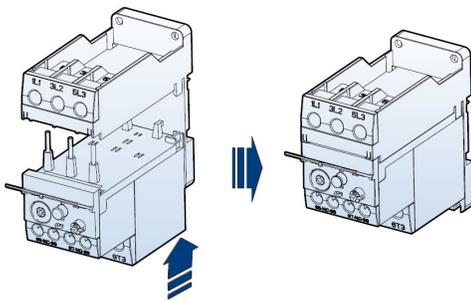
Mounting Adapters

These mounting units are used to mount the relays separately from contactors. If a relay is combined with a unit, it can be mounted on DIN rail or on a panel using screws.

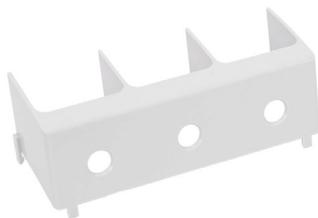


HMX1-PADT-OR

IronHorse HTOR Series Overload Relays 35mm DIN Rail/Panel Mount Adapter Selection Guide			
Part Number	Price	Description	Drawing
HMX1-PADT-OR	\$6.50	IronHorse 35mm DIN rail/panel mount adapter, for use with HTOR32 thermal overload relays.	PDF
HMX2-PADT-OR	\$8.50	IronHorse 35mm DIN rail/panel mount adapter, for use with HTOR63 thermal overload relays.	PDF
HMX3-PADT-OR	\$10.50	IronHorse 35mm DIN rail/panel mount adapter, for use with HTOR95 thermal overload relays.	PDF
HMX4-PADT-OR	\$18.00	IronHorse 35mm DIN rail/panel mount adapter, for use with HTOR150 thermal overload relays.	PDF
HMX1-TMC-OR	\$5.75	IronHorse terminal shroud, load side, 3-pole. For use with HTOR225 thermal overload relays.	PDF
HMX2-TMC-OR	\$7.25	IronHorse terminal shroud, load side, 3-pole. For use with HTOR400 thermal overload relays.	NA



IronHorse HTOR Series Overload Relays Mounting Adapters		
Relay	Unit	
	Adapter	Weight (g [oz])
HTOR32	HMX1-PADT-OR	68 [2.40]
HTOR63	HMX2-PADT-OR	134 [4.73]
HTOR95	HMX3-PADT-OR	230 [8.11]
HTOR150	HMX4-PADT-OR	284 [10.02]



HMX1-TMC-OR

IronHorse HTOR Series Overload Relays Terminal Cover Units	
Relay	Quantity
HMX1-TMC-OR	1 piece
HMX2-TMC-OR	