

FMX®

# MOTOR CONTROLS

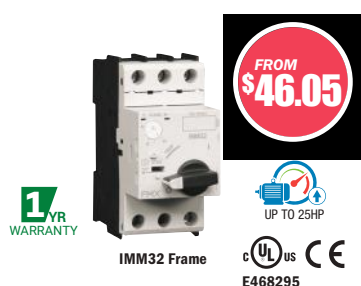
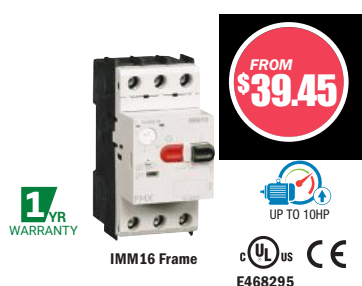


ENCLOSED MOTOR STARTERS

MANUAL MOTOR PROTECTORS

CONTACTORS &amp; OVERLOADS

## Manual Motor Protectors



### Features:

- High interrupt capacity up to 100kA (with optional current limiter)
- Din rail mounting
- Lockable handle (OFF position)
- IP20 finger safe terminals
- Class 10 thermal overload protection
- Trip test feature
- Phase loss protection
- Complies with IEC 60947-1 and IEC 60947-4-1, UL508 Listed (Manual motor controller)
- UL508 Listed (Combination motor controller starter) CSA C.22.2/14
- 18 month warranty

Part Number	Price	UL HP Ratings					Thermal Adjustable Range (A)	Short Circuit Current Rating (SCCR)		
		Single Phase	Three Phase					480V	600V	
		115V	230V	200V	230V	460V	575V			
<b>16 Amp Frame, Pushbutton Operator</b>										
IMM16-P16A	\$39.45	-	-	-	-	-	-	0.10 to 0.16	50kA	10kA
IMM16-P25A	\$39.45	-	-	-	-	-	-	0.16 to 0.25	50kA	10kA
IMM16-P40A	\$39.45	-	-	-	-	-	-	0.25 to 0.40	50kA	10kA
IMM16-P63A	\$39.45	-	-	-	-	-	-	0.40 to 0.63	50kA	10kA
IMM16-1P0A	\$39.45	-	-	-	-	-	1/2	0.63 to 1.0	50kA	10kA
IMM16-1P6A	\$39.45	-	1/10	-	-	3/4	3/4	1.0 to 1.6	50kA	10kA
IMM16-2P5A	\$39.45	-	1/6	1/2	1/2	1	1-1/2	1.6 to 2.5	50kA	10kA
IMM16-4P0A	\$39.45	1/8	1/3	3/4	3/4	2	3	2.5 to 4.0	50kA	10kA
IMM16-6P3A	\$39.45	1/4	1/2	1	1-1/2	3	5	4.0 to 6.3	50kA	10kA
IMM16-010A	\$42.15	1/2	1-1/2	2	3	5	7-1/2	6.3 to 10	50kA	5kA
IMM16-016A	\$42.15	1	2	3	5	10	10	10 to 16	30kA	5kA
<b>32 Amp Frame, Rotary Operator</b>										
IMM32-P16A	\$46.05	-	-	-	-	-	-	0.10 to 0.16	50kA	25kA
IMM32-P25A	\$48.70	-	-	-	-	-	-	0.16 to 0.25	50kA	25kA
IMM32-P40A	\$48.70	-	-	-	-	-	-	0.25 to 0.40	50kA	25kA
IMM32-P63A	\$48.70	-	-	-	-	-	1/4	0.40 to 0.63	50kA	25kA
IMM32-1P0A	\$48.70	-	-	-	-	1/2	1/2	0.63 to 1.0	50kA	25kA
IMM32-1P6A	\$50.00	-	1/10	1/4	1/3	3/4	1	1.0 to 1.6	50kA	25kA
IMM32-2P5A	\$50.00	-	1/6	1/2	1/2	1-1/2	1-1/2	1.6 to 2.5	50kA	25kA
IMM32-4P0A	\$52.70	1/8	1/3	3/4	3/4	1	2	2.5 to 4.0	50kA	25kA
IMM32-6P3A	\$52.70	1/4	3/4	1-1/2	1-1/2	5	5	4.0 to 6.3	50kA	25kA
IMM32-010A	\$52.70	1/2	1-1/2	3	3	7-1/2	10	6.3 to 10	50kA	25kA
IMM32-016A	\$52.70	1	3	5	5	10	15	10 to 16	50kA	25kA
IMM32-020A	\$59.15	1-1/2	3	5	7-1/2	15	20	16 to 20	50kA	25kA
IMM32-025A	\$63.15	2	3	7-1/2	7-1/2	15	20	20 to 25	50kA	25kA
IMM32-032A	\$63.15	-	5	10	10	20	25	25 to 32	42kA	25kA
IMM32-040A	\$77.55	-	5	10	15	25	-	32 to 40	20kA	-
<b>65 Amp Frame, Rotary Operator</b>										
IMM65-040A	\$149.95	3	7 1/2	-	15	25	40	32 to 40	35kA	10kA
IMM65-050A	\$149.95	-	10	15	15	30	40	40 to 50	35kA	10kA
IMM65-065A	\$149.95	5	10	20	20	50	60	50 to 65	35kA	10kA

ONLINE ORDERS  
**FREE SHIPPING** SMALL PACKAGES **\$149 MIN. / \$1750 MIN.** LTL FREIGHT

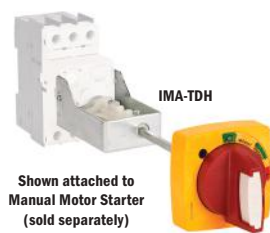
SEE INSIDE BACK COVER FOR MORE DETAILS

FactoryMation®

## IMA-TDH Through-the-door Handle

### Features:

- UL Type 1/IP55 & UL Type 4X/IP65
- Padlockable & Defeatable Rotary Handle
- Adjustable shafts
- Shows IMM position "I" (ON) or "O" (OFF)
- Available in Gray/Black or Red/Yellow



Shown attached to Manual Motor Starter (sold separately)



TYPE 1 / IP55  
&  
TYPE 4X / IP65  
PROTECTION



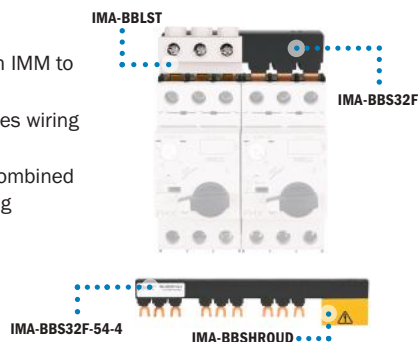
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Part Number	Price	Handle Color	Environmental Rating	Shaft Length	Applicable MMP
IMA-TDH32-130-B1	\$23.70	Gray/Black	TYPE 1 / IP55	5.12-6.10" (130-155mm)	IMM32
IMA-TDH32-130-Y1	\$23.70	Red/Yellow			
IMA-TDH32-130-B4X	\$31.60	Gray/Black	TYPE 4X / IP65		
IMA-TDH32-130-Y4X	\$31.60	Red/Yellow			
IMA-TDH32-330-B1	\$25.00	Gray/Black	TYPE 1 / IP55	12.99-13.98" (330-355mm)	IMM32
IMA-TDH32-330-Y1	\$25.00	Red/Yellow			
IMA-TDH32-330-B4X	\$34.15	Gray/Black	TYPE 4X / IP65		
IMA-TDH32-330-Y4X	\$34.15	Red/Yellow			
IMA-TDH65-130-B4X	\$31.60	Gray/Black	TYPE 4X / IP65	5.12-6.10" (130-155mm)	IMM65
IMA-TDH65-130-Y4X	\$31.60	Red/Yellow			
IMA-TDH65-330-B4X	\$34.15	Gray/Black	TYPE 4X / IP65	12.99-13.98" (330-355mm)	
IMA-TDH65-330-Y4X	\$34.15	Red/Yellow			

## IMM Bus Bars

### Features:

- For parallel connection with IMM to contactor power terminals
- Simplifies wiring and reduces wiring space
- Multiple bus bars can be combined providing total current rating
- Total maximum current rating 63A @ 690VAC



Part Number	Price	Description
IMA-BBS32F-45-2	\$10.65	45mm for 2 IMM16 or IMM32., 63A max. total
IMA-BBS32F-45-3	\$12.95	45mm for 3 IMM16 or IMM32., 63A max. total
IMA-BBS32F-45-4	\$14.95	45mm for 4 IMM16 or IMM32., 63A max. total
IMA-BBS32F-45-5	\$17.20	45mm for 5 IMM16 or IMM32., 63A max. total
IMA-BBS32F-54-2	\$11.20	54mm for 2 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-54-3	\$13.65	54mm for 3 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-54-4	\$15.80	54mm for 4 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-54-5	\$18.20	54mm for 5 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-63-2	\$11.70	54mm for 2 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBS32F-63-3	\$14.40	54mm for 3 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBS32F-63-4	\$17.20	54mm for 4 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBS32F-63-5	\$19.70	54mm for 5 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBSHROUD	\$2.75	Busbar Shroud for unused IMA-BBS32F & IMA-BBS54F terminals
IMA-BBLST	\$10.80	Incoming Power Terminal for Bus Bar System, 3-pole, IMM16 & IMM32

## Link Adapters

### Features:

- For electrical and mechanical direct connection between IMM and contactor
- Simplifies wiring and reduces wiring space



IMA-LNKADP-32F

Part Number	Price	Description
IMA-LNKADP-16F-16MC	\$9.25	For IMM16 + IMCxxx-07S to IMCxxx-16S
IMA-LNKADP-16F-25MC	\$9.25	For IMM16 + IMCxxx-25S
IMA-LNKADP-32F-16MC	\$9.25	For IMM32 + IMCxxx-07S to IMCxxx-16S
IMA-LNKADP-32F-25C	\$9.25	For IMM32 + ICxxx-09S to ICxxx-25S (IC contactor AC Coils Only)
IMA-LNKADP-32F-40C	\$9.25	For IMM32 + ICxxx-32S to ICxxx-40S (IC contactor AC Coils Only)

## Enclosed Disconnect Stations

### Features:

- Conveniently house manual motor protector in sealed enclosure
- Two cable entry knockouts top and bottom
- Includes neutral and ground terminals
- "Wide" model available to accommodate side mounting accessories



IMA-ENCL-16FY

IMA-ENCL-32xx

Part Number	Price	Description
IMA-ENCL-16FY	\$21.10	Standard Disconnect Station with translucent membrane for IMM16, Red/Yellow, IP66
IMA-ENCL-32FB	\$23.70	Standard Disconnect Station for IMM32, Black, IP55
IMA-ENCL-32FY	\$23.70	Standard Disconnect Station for IMM32, Red/Yellow, IP55
IMA-ENCL-32FWB	\$26.35	Wide Disconnect Station for IMM32, Black, IP55
IMA-ENCL-32FWY	\$26.35	Wide Disconnect Station for IMM32, Red/Yellow, IP55

## Accessories



IMA-AUX-F11

IMA-ALARM-S02

IMA-CURLIM-32F

Part Number	Price	Description
<b>Auxiliary Contacts</b>		
IMA-AUX-F11	\$10.55	Front mount, 1 N.O./1 N.C., 250V max
IMA-AUX-S02	\$13.15	Left side mount, 2 N.C., 600V max
IMA-AUX-S11	\$13.15	Left side mount, 1 N.O./1 N.C., 600V max
IMA-AUX-S20	\$13.15	Left side mount, 2 N.O., 600V max
<b>Alarm &amp; Trip Signaling Switch</b>		
IMA-ALARM-S02	\$15.80	Left side mount, 1 N.O./1 N.C. for short-circuit signaling and 1 N.O./1 N.C. for overload signaling
<b>Shunt Release</b>		
IMA-SHR-AC24	\$22.40	Right side mount, 20-24V, 50/60Hz
IMA-SHR-AC127	\$22.40	Right side mount, 110V-127V, 50/60Hz
IMA-SHR-AC240	\$22.40	Right side mount, 200-240V, 50/60Hz
<b>Undervoltage Release</b>		
IMA-UVR-AC24	\$25.05	Right side mount, 24V, 50Hz/60Hz
IMA-UVR-AC120	\$22.40	Right side mount, 110V-120V, 50/60Hz
IMA-UVR-AC127	\$22.40	Right side mount, 110-115/127V, 50/60Hz
IMA-UVR-AC208	\$22.40	Right side mount, 208V, 60Hz
IMA-UVR-AC240	\$22.40	Right side mount, 240V, 60Hz
IMA-UVR-AC480	\$22.40	Right side mount, 2 N.O. Contacts, 400-415/480V, 50/60Hz
<b>Current Limiter</b>		
IMA-CURLIM-32F	\$40.75	Provides enhanced short-circuit interrupt rating: 100kA@480V for
<b>Mounting Adapters</b>		
IMA-MBDOL-32F	\$17.15	For DOL Starters, 45mm, use w/ IMM32 + IMCxxx-07S to IMCxxx-25S or ICxxx-09S to ICxxx-25S
IMA-MBREV-32F	\$22.35	For Reversing Starters, 90mm, use w/ IMM32 + (2) IMCxxx-07S to -25S or (2) ICxxx-09S to -25S
IMA-MBYDEL-32F	\$34.15	For Star-Delta Motor Starters, 90mm, use w/ IMM32 + (2) IMCxxx-07S to -25S or (2) ICxxx-09S to -25S
IMA-MNTTAB	\$1.30	Mounting tabs for (1) IMM16, IMM32 & IMM65 direct mount to any surface using screws, 2pc/pkg
<b>Scale Protection Cover</b>		
IMA-SDPC	\$3.95	For IMM16, IMM32 & IMM65 adjustment dial
<b>Incoming Power Terminals</b>		
IMA-TYPEE-32F	\$17.10	For IMM32
IMA-TYPEE-65F	\$32.85	For IMM65



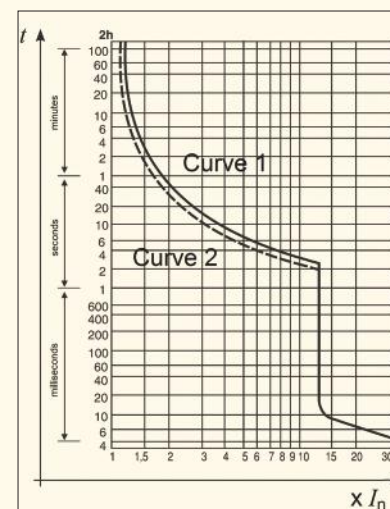
## General Specifications

General Specifications		IMM16	IMM32	IMM65
Standards		IEC 60947-1/60947-4-1, EN 60947-1 / EN 60947-4-1, UL508, CSA C.22.2/14		
Rated Insulation (Ui) & Operating (Ue) Voltage	[V]	UL/CSA: 600V, IEC 60947-1: 690V		
Rated Impulse Voltage	Acc. IEC60947-1 [kV]	6		
Rated Operating Frequency	[Hz]	50/60		
Overvoltage Category		III		
Phase Failure Sensitivity Protection		Yes		
Overload Protection Characteristics (x I <sub>n</sub> )	[A]	0.61 to 1		
Magnetic Release (x I <sub>n</sub> )	[A]	13		
Overload Trip Class		10		
Total Power Loss P <sub>v</sub>	At Rated Load Operating Temp [W]	6	6 (1.6A to 16A) / 8 (20A to 40A)	25
Utilization Category		A		
		IEC 60947-2 (Motor Protector)		
		IEC 60947-4-1 (Motor Starter)		
Lifespan		Mechanical: 100,000 ops., Electrical (le max.): 100,000 ops., Switching Rate (motor start) AC-3: 15 ops/hr		
Degree of Protection		IP20		
Resistance		Shock resistance: 15g/11ms, Vibration resistance: 10g/5 - 150Hz		
Screw Driver		Philips #2	Philips #2	Allen #4
Terminal Capacity		Solid - Stranded	1 or 2 conductors (18 to 12 AWG)	(see IMM Terminal Specs) (see IMM Terminal Specs)
Tightening Torque		[lb-in]	11 to 16 lb-in (1.2 to 1.7 Nm)	18 to 22 lb-in (2.0 to 2.5 Nm) 55 lb-in (6.2 Nm)
Ambient Temperature		Storage: -58 to 176 °F (-50 to 80 °C), Operating: -4 to 140 °F (-20 to 60 °C)		
Climatic Proofing		IEC 60068-2-3 / IEC 60068-2-30		
Altitude (Up to 6,600ft)		Altitude (Up to 6,600ft): Nominal values, Pollution degree: 3, Mounting position: Any		
Weight	[lb]	0.7	0.7	1.42
Warranty		1 year		

## IMM Terminal Specifications

Terminal Capacity IMM16/IMM32		Terminal Capacity IMM65	
<b>16 Amp Frame</b>	<b>32 Amp Frame</b>	<b>65 Amp Frame</b>	<b>A</b> <b>B</b>
<b>Drawing</b>	<b>(mm<sup>2</sup>)</b>	<b>(AWG)</b>	<b>1 Conductor on Lower Part Only</b> <b>2 Conductors, 1 on Upper Part (A) and 1 on Lower Part (B)</b>
	1 or 2 x (1 to 2.5) 1 or 2 x (2.5 to 6)	-	A
	-	1 or 2 x (14 to 10) 1 x (8)	B
	1 or 2 x (1 to 2.5) 1 or 2 x (2.5 to 6) 1 x (10)	1 or 2 x (14 to 10)	
<b>Terminal Type</b>			
Solid		12 to 2 AWG	16 to 2 AWG
Ferrule		12 to 2 AWG	16 to 2 AWG
Stranded		8 to 2 AWG	14 to 2 AWG
<b>Tightening Torque</b>		55 lb-in (6.2 Nm)	

## Trip Characteristics



### Average Curves

**Curve 1: 3 pole**

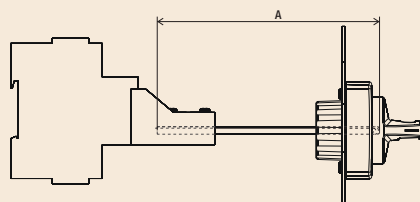
**Curve 2: Bipolar with phase loss sensitivity**

Tripping time as function of the current at cold condition. For warm condition (after submitted to the rated operational current - I<sub>e</sub>), the tripping times reduce to approximately 25%.

The characteristics of the magnetic trip are based on the upper value of the setting range for IMM16, IMM32 & IMM65.

## Extended Rotary Handle Dimensions

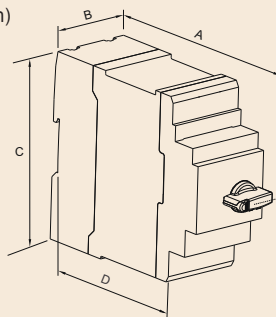
in(mm)



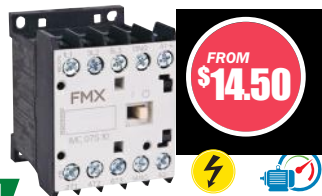
E-Handle Type	A		MMS Type
	Min	Max	
IMA-TDH32 (TYPE 1)	5.9	8.3 (148.6-210.6)	IMM32
IMA-TDH32 (TYPE 4X)	5.9	16.2 (148.6-410.6)	IMM32
IMA-TDH65 (TYPE 4X)	7.6	10.1 (193.6-255.6)	IMM65

## Manual Motor Protector Dimensions

in(mm)



Dimensions	in (mm)			
	A	B	C	D
IMM16	2.99 (76)	1.77 (45)	3.94 (100)	1.77 (45)
IMM32	3.86 (98)	1.77 (45)	3.82 (97)	1.77 (45)
IMM65	6.18 (157)	2.13 (54)	4.92 (125)	4.50 (114)



1 YEAR WARRANTY

16A Frame

7-25A 1/3HP-15HP



E468299 E108780

Features:

- 1/3HP to 15HP
- Surface or DIN rail mountable
- UL508 Listed
- Direct-mounting overloads
- RoHS compliant
- Auxiliary contacts standard (16A Frame)
- IEC 60947
- 2 year warranty

Optional Accessories Include:

- Additional auxiliary contact blocks
- Reverse mounting kits and interlocks
- Surge suppressors
- Direct mount to Manual Motor Starter (with optional adapter)

3-pole Contactors

Part Number		Price	Coil Voltage	UL HP Ratings (AC3 Motor Load)					Optional Overload Relay
1 N.O. Aux Contact	1 N.C. Aux Contact			Single Phase		Three Phase			
				115V	230V	230V	460V	575V	
<b>16A Frame Size</b>									
IMC330-07S-10-AC24	IMC330-07S-01-AC24	\$14.50	24VAC (60Hz)						
IMC330-07S-10-AC120	IMC330-07S-01-AC120	\$14.50	110/120VAC (50/60Hz)						
IMC330-07S-10-AC240	IMC330-07S-01-AC240	\$14.50	208-240VAC (60Hz)	1/3HP (7.2A)	3/4HP (9A)	1-1/2HP (7A)	5HP (7A)	5HP (9A)	IMOL-16S
IMC330-07S-10-AC480	IMC330-07S-01-AC480	\$14.50	400-415/480VAC						
IMC330-07S-10-DC12	-	\$14.50	12VDC						
IMC330-07S-10-DC24	IMC330-07S-01-DC24	\$14.50	24VDC						
IMC330-09S-10-AC24	-	\$15.80	24VAC (60Hz)						
IMC330-09S-10-AC120	-	\$15.80	110/120VAC (50/60Hz)						
IMC330-09S-10-AC240	-	\$15.80	208-240VAC (60Hz)	1/3 HP (9.8A)	1HP (12A)	3HP (9A)	5HP (9A)	7-1/2HP (11A)	IMOL-16S
IMC330-09S-10-AC480	-	\$15.80	400-415/480VAC (50/60Hz)						
IMC330-09S-10-DC12	-	\$15.80	12VDC						
IMC330-09S-10-DC24	-	\$15.80	24VDC						
IMC330-12S-10-AC24	-	\$17.10	24VAC (60Hz)						
IMC330-12S-10-AC120	-	\$17.10	110/120VAC (50/60Hz)						
IMC330-12S-10-AC240	-	\$17.10	208-240VAC (60Hz)	1/3HP (12.8A)	2HP (16A)	3HP (12A)	7-1/2HP (12A)	7-1/2HP (17A)	IMOL-16S
IMC330-12S-10-AC480	-	\$17.10	400-415/480VAC (50/60Hz)						
IMC330-12S-10-DC12	-	\$17.10	12VDC						
IMC330-12S-10-DC24	-	\$17.10	24VDC						
IMC330-16S-10-AC24	IMC330-16S-01-AC24	\$19.80	24VAC (60Hz)						
IMC330-16S-10-AC120	IMC330-16S-01-AC120	\$19.80	110/120VAC (50/60Hz)						
IMC330-16S-10-AC240	IMC330-16S-01-AC240	\$19.80	208-240VAC (60Hz)						
IMC330-16S-10-AC480	IMC330-16S-01-AC480	\$19.80	400-415/480VAC (50/60Hz)	1HP (16A)	2HP (17A)	5HP (16A)	10HP (16A)	10HP (17A)	IMOL-16S
IMC330-16S-10-DC12	-	\$19.80	12VDC						
IMC330-16S-10-DC24	IMC330-16S-01-DC24	\$19.80	24VDC						
IMC330-16S-10-DC110	-	\$19.80	110VDC						
<b>25A Frame Size (Aux contacts sold separately)</b>									
IMC330-25S-00-AC24	-	\$21.10	24VAC (60Hz)						
IMC330-25S-00-AC120	-	\$21.10	110/120VAC (50/60Hz)	1-1/2HP (22A)	3HP (25A)	7-1/2HP (22A)	15HP (22A)	15HP (27A)	IMOL-25S
IMC330-25S-00-AC240	-	\$21.10	208-240VAC (60Hz)						
IMC330-25S-00-AC480	-	\$21.10	400-415/480VAC (50/60Hz)						

Miniature Thermal Overload Relays

3-pole Overloads	2-pole Overloads	Price	Current Range	Applicable Contactor
IMOL-16S-P40	IMOLS-16S-P40	\$18.40	0.28-0.40A	IMCxxx-07S IMCxxx-09S IMCxxx-12S IMCxxx-16S
IMOL-16S-P63	IMOLS-16S-P63	\$18.40	0.40-0.63A	
IMOL-16S-P80	IMOLS-16S-P80	\$18.40	0.56-0.80A	
IMOL-16S-1P2	IMOLS-16S-1P2	\$18.40	0.80-1.2A	
IMOL-16S-1P8	IMOLS-16S-1P8	\$18.40	1.2-1.8A	
IMOL-16S-2P8	IMOLS-16S-2P8	\$18.40	1.8-2.8A	
IMOL-16S-4P0	IMOLS-16S-4P0	\$18.40	2.8-4.0A	
IMOL-16S-6P3	IMOLS-16S-6P3	\$18.40	4.0-6.3A	
IMOL-16S-8P0	IMOLS-16S-8P0	\$18.40	5.6-8.0A	
IMOL-16S-010	IMOLS-16S-010	\$18.40	7-10A	
IMOL-16S-012	IMOLS-16S-012	\$18.40	8-12.5A	IMCxxx-12S IMCxxx-16S
IMOL-16S-015	IMOLS-16S-015	\$18.40	10-15A	
IMOL-16S-017	IMOLS-16S-017	\$18.40	11-17A	IMCxxx-07S IMCxxx-09S IMCxxx-12S IMCxxx-16S
IMOL-25S-023	IMOLS-25S-023	\$19.70	15-23A	
IMOL-25S-032	IMOLS-25S-032	\$19.70	23-32A	

Link Adapters

Part Number	Price	Description
IMA-LNKADP-16F-16MC	\$9.25	For IMM16 + IMCxxx-07S to IMCxxx-16S
IMA-LNKADP-16F-25MC	\$9.25	For IMM16 + IMCxxx-25S
IMA-LNKADP-32F-16MC	\$9.25	For IMM32 + IMCxxx-07S to IMCxxx-16S



Mini Series Accessories

Part Number	Price	Description
<b>Auxiliary Contacts - 3 Pole</b>		
IMCA-AUX-316-F02	\$5.25	Front mount, 2 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-316-F04	\$9.25	Front mount, 4 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-316-F11	\$5.25	Front mount, 1 N.O./1 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-316-F20	\$5.25	Front mount, 2 N.O., IMCxxx-07S to -16S Contactors
IMCA-AUX-316-F22	\$9.25	Front mount, 2 N.O./ 2 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-316-F40	\$9.25	Front mount, 4 N.O., IMCxxx-07S to -16S Contactors
IMCA-AUX-325-F02	\$5.25	Front mount, 2 N.C., IMCxxx-25S Contactors
IMCA-AUX-325-F11	\$5.25	Front mount, 1 N.O./1 N.C., IMCxxx-25S Contactors
IMCA-AUX-325-F20	\$5.25	Front mount, 2 N.O., IMCxxx-25S Contactors
<b>Auxiliary Contacts - 4 Pole</b>		
IMCA-AUX-416-F02	\$5.25	Front mount, 2 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F04	\$9.25	Front mount, 4 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F11	\$5.25	Front mount, 1 N.O./1 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F13	\$9.25	Front mount, 1 N.O./3 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F20	\$5.25	Front mount, 2 N.O., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F22	\$9.25	Front mount, 2 N.O./ 2 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F31	\$9.25	Front mount, 3 N.O./1 N.C., IMCxxx-07S to -16S Contactors
IMCA-AUX-416-F40	\$9.25	Front mount, 4 N.O., IMCxxx-07S to -16S Contactors
<b>Latch Block</b>		
IMCA-LCHBLK-16F	\$3.95	For IMCxxx-07S to -16S Contactors
<b>Mechanical Interlock Block for Reversing Configuration</b>		
IMCA-MECINT-16F	\$3.95	For IMCxxx-07S to -16S, front mount
<b>Reverse Wire Kit for Reversing Starters</b>		
IMCA-REVKIT-16F	\$11.85	For IMCxxx-07S-01 to -16S-01 (N.C. aux. contactors only). Assemble IMOL-16S to -25S and IMM16 to 32
<b>Surge Suppressors</b>		
IMCA-DIODE-16F-DC600	\$3.95	Diode, Front Mount, 12-600VDC
IMCA-RCSURG-25F-AC127	\$3.95	RC, Front Mount, 50-127VAC, 50/60Hz
IMCA-RCSURG-25F-AC24	\$3.95	RC, Front Mount, 12-24VAC, 50/60Hz
IMCA-RCSURG-25F-AC250	\$3.95	RC, Front Mount, 130-250VAC, 50/60Hz
IMCA-RCSURG-25F-AC510	\$3.95	RC, Front Mount, 400-510VAC, 50/60Hz
IMCA-VARSURG-25F-AD127	\$3.95	Varistor, Front Mount, 50-127VAC / 60-180VDC
IMCA-VARSURG-25F-AD275	\$3.95	Varistor, Front Mount, 130-275VAC / 180-300VDC
IMCA-VARSURG-25F-AD380	\$3.95	Varistor, Front Mount, 277-380VAC / 300-510VDC
IMCA-VARSURG-25F-AD48	\$3.95	Varistor, Front Mount, 12-48VAC / 12-60VDC
IMCA-VARSURG-25F-AD510	\$3.95	Varistor, Front Mount, 400-510VAC 50-60Hz



## 4-pole Contactors

2 NO Power Poles 2 NC Power Poles	Price	4 NO Power Poles	Price	Coil Voltage	UL HP Ratings (AC3 Motor Load)					
					Single Phase		Three Phase			
					115V	230V	230V	460V	575V	
<b>16A Frame Size</b>										
IMC422-07S-00-AC24	\$17.15	IMC440-07S-00-AC24	\$17.15	24VAC (60Hz)						
IMC422-07S-00-AC120	\$17.15	IMC440-07S-00-AC120	\$17.15	110/120VAC (50/60Hz)						
IMC422-07S-00-AC240	\$17.15	IMC440-07S-00-AC240	\$17.15	208-240VAC (60Hz)						
IMC422-07S-00-AC480	\$17.15	IMC440-07S-00-AC480	\$17.15	400-415/480VAC	1/3HP (7.2A)	3/4HP (9A)	1-1/2HP (7A)	5HP (7A)	5HP (9A)	
IMC422-07S-00-DC12	\$21.10	IMC440-07S-00-DC12	\$21.10	12VDC						
IMC422-07S-00-DC24	\$21.10	IMC440-07S-00-DC24	\$21.10	24VDC						
IMC422-07S-00-DC110	\$21.10	IMC440-07S-00-DC110	\$21.10	110VDC						
IMC422-09S-00-AC24	\$18.45	IMC440-09S-00-AC24	\$18.45	24VAC (60Hz)						
IMC422-09S-00-AC120	\$18.45	IMC440-09S-00-AC120	\$18.45	110/120VAC (50/60Hz)						
IMC422-09S-00-AC240	\$18.45	IMC440-09S-00-AC240	\$18.45	208-240VAC (60Hz)						
IMC422-09S-00-AC480	\$18.45	IMC440-09S-00-AC480	\$18.45	400-415/480VAC	1/3 HP (9.8A)	1HP (12A)	3HP (9A)	5HP (9A)	7-1/2HP (11A)	
IMC422-09S-00-DC12	\$22.35	IMC440-09S-00-DC12	\$22.35	12VDC						
IMC422-09S-00-DC24	\$22.35	IMC440-09S-00-DC24	\$22.35	24VDC						
IMC422-09S-00-DC110	\$22.35	IMC440-09S-00-DC110	\$22.35	110VDC						
IMC422-12S-00-AC24	\$18.40	IMC440-12S-00-AC24	\$18.40	24VAC (60Hz)						
IMC422-12S-00-AC120	\$18.40	IMC440-12S-00-AC120	\$18.40	110/120VAC (50/60Hz)						
IMC422-12S-00-AC240	\$18.40	IMC440-12S-00-AC240	\$18.40	208-240VAC (60Hz)						
IMC422-12S-00-AC480	\$18.40	IMC440-12S-00-AC480	\$18.40	400-415/480VAC	1/3HP (12.8A)	2HP (16A)	3HP (12A)	7-1/2HP (12A)	7-1/2HP (17A)	
IMC422-12S-00-DC12	\$25.05	IMC440-12S-00-DC12	\$25.05	12VDC						
IMC422-12S-00-DC24	\$25.05	IMC440-12S-00-DC24	\$25.05	24VDC						
IMC422-12S-00-DC110	\$25.05	IMC440-12S-00-DC110	\$25.05	110VDC						
IMC422-16S-00-AC24	\$25.00	IMC440-16S-00-AC24	\$25.00	24VAC (60Hz)						
IMC422-16S-00-AC120	\$25.00	IMC440-16S-00-AC120	\$25.00	110/120VAC (50/60Hz)						
IMC422-16S-00-AC240	\$25.00	IMC440-16S-00-AC240	\$25.00	208-240VAC (60Hz)						
IMC422-16S-00-AC480	\$25.00	IMC440-16S-00-AC480	\$25.00	400-415/480VAC	1HP (16A)	2HP (17A)	5HP (16A)	10HP (16A)	10HP (17A)	
IMC422-16S-00-DC12	\$27.65	IMC440-16S-00-DC12	\$27.65	12VDC						
IMC422-16S-00-DC24	\$27.65	IMC440-16S-00-DC24	\$27.65	24VDC						
IMC422-16S-00-DC110	\$27.65	IMC440-16S-00-DC110	\$27.65	110VDC						

### Features:

- 1/3HP to 10HP
- Surface or DIN rail mountable
- UL508 Listed
- 50/60Hz AC and DC coil versions available
- IEC 60947
- 2 year warranty

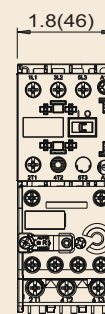
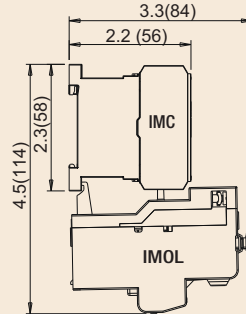
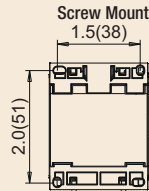
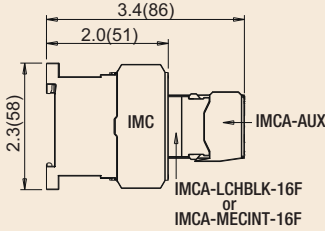
### Optional Accessories Include:

- Additional auxiliary contact blocks
- Reverse mounting kits and interlocks
- Surge suppressors

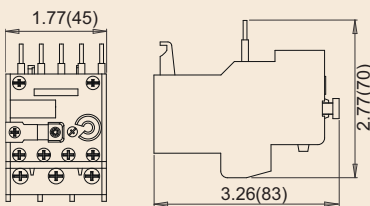
### Dimensions

in(mm)

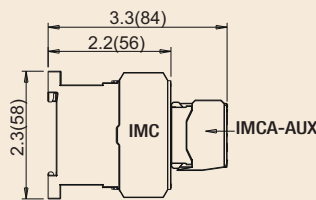
IMCxxx-07S to -16S



IMOL-16S / -25S



IMCxxx-25S



## Miniature Contactor Specifications

General Specifications			IMCxxx-07S	IMCxxx-09S	IMCxxx-12S	IMCxxx-16S	IMCxxx-25S
General Purpose Rating	(A)		18	20	22	22	32
Rated Operational Voltage	(V)		12 to 690				
Rated Insulation Voltage	(V)		UL/CSA: 600, IEC/VDE 0660: 690				
Rated Impulse Voltage	(V)	IEC60947-1	4000				
Rated Operating Frequency	(Hz)		25 to 400				
Degree of Protection			IP20				
Vibration Resistance (5 to 200Hz)	Contactor Open	(g)	2				
	Contactor Closed at Coil	(g)	4				
Mechanical Endurance		(Million ops)	10 (AC Coil) / 12 (DC Coil)				3 (AC Coil)
Electrical Endurance		(Million ops)	1.4	1.3	1.2	1	0.6
Shock Resistance (1/2 Sin Wave = 11ms)	Contactor Open	(g)	6	6	6	6	6
	Contactor Closed at Coil	(g)	10	10	10	10	10
Terminal Capacity	Main Contacts	(AWG)	1 or 2 x (18 to 12)	1 or 2 x (18 to 12)	1 or 2 x (18 to 12)	1 or 2 x (18 to 12)	1 or 2 x (18 to 10)
Screw Driver			Phillips #2	Phillips #2	Phillips #2	Phillips #2	Phillips #2
Tightening Torque		(lb-in)	10	10	10	10	13
Environmental Conditions	Ambient Temperature		Storage: -67 to 176 °F (-55 to 80 °C), Operating: -4 to 140 °F (-20 to 60 °C)				
	Climatic Withstand		According to IEC 60680-2				
	Pollution Degree		3				
	Mounting		35mm DIN-rail Acc. DIN EN 50 022				
Weight		(lb)	0.42	0.42	0.42	0.42	0.42
Control Circuit Ratings (AC/DC COIL)							
Standard Voltages			12 to 660 (60Hz)				
Coil Operating Limits	Monofrequency Coils (NO LOAD)	(V)	0.85 to 1.1				
	Pick-up	(V)	0.40 to 0.76 (AC-60Hz) / 0.40 to 0.70 (DC)				
	Drop-out	(V)	0.25 to 0.65 (AC-60Hz) / 0.15 to 0.40 (DC)				
Coil Consumption (Single coils)	Sealed	(VA)	2.5 to 3.5	2.5 to 3.5	2.5 to 3.5	2.5 to 3.5	10.8 to 13.2
	Inrush	(VA)	35	35	35	35	72
Power Factor	Closed	Cos Φ	0.28	0.28	0.28	0.28	0.32
	Opened	Cos Φ	0.85	0.85	0.85	0.85	0.93
Operating Time	Coil Energization - N.O.	(ms)	8 to 20 (AC-60Hz) / 10 to 20 (DC)				13 to 16 (AC-60Hz)
	Coil De-energization - N.O.	(ms)	5 to 15 (AC-60Hz) / 2 to 8 (DC)				13.5 to 17 (AC-60Hz)

## Miniature Overload Specifications

General Specifications			IMOL				
Standards			IEC 60947-1 / 60947-4-1, UL 508; CSA C.22.2/14; VDE 0660/102				
Number of Poles			3				
Rated Operation & Insulation Voltage	[V]		UL/CSA: 600, IEC 60947-4-1: 690				
Rated Impulse Voltage, Uimp	[kV]		6				
Tripping Class			10				
Phase Failure Sensitivity			Yes				
Current	Direct		Yes				
	Alternating	[Hz]	Up to 400				
Shock Resistance (IEC 60068-2-27; 1/2 sine wave)	[g/ms]		10/11				
Power Terminals IP Rating			IP10				
Main Terminals Capacity			Cross/Slotted Combination				
Stranded / Solid (UL/CSA)	[AWG]		14 - 6				
Tightening Torque	[lb-in]		20				
Environmental Conditions	Ambient Temperature		Storage: -58 to 176 °F (-50 to 80 °C), Operating: -4 to 158 °C (-20 to 70 °C)				
	Pollution Degree		3				
	Higher Value of Setting Range		3				
Weight		[lb]	0.33				
Auxiliary Contacts Specifications							
Front Auxiliary Contact			1 NO / 1 NC				
Rated Auxiliary Contacts	AC-14/15		24V:4A, 60V:3.5A, 125V:3A, 230V:2A, 400V:1.5A, 500V:0.5A, 690V:0.3A				
	DC-13/14		24V:1A, 60V:0.5A, 110V:0.25A, 220V:0.1A				
	UL/CSA		C600 ; R300				
Rated Thermal Current	[A]		6				
Short Circuit Protection (Time-delay Fuse )	[A]		6				
Auxiliary Terminals Capacity	[AWG]		16 - 12				
Tightening Torque	[lb-in]		13.3				



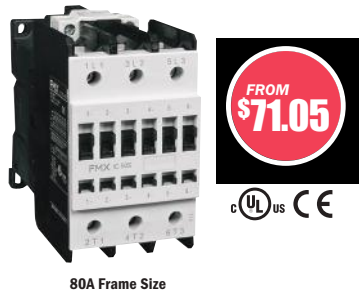


**Features:**

- 3/4HP to 75HP
- DIN rail mountable up to 105A frame
- UL508 Listed
- UL and CE Certified
- IEC 60947
- 2 year warranty

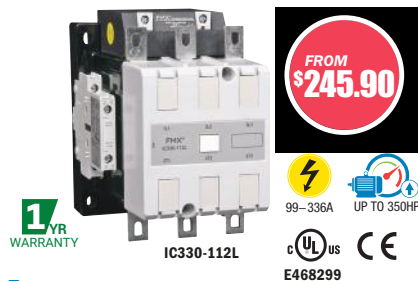
**Optional Accessories Include:**

- Additional auxiliary contact blocks
- Replacement coils
- Mechanical interlock blocks
- Link adapters for MMS
- Coil surge suppression
- Electronic modules



**Contactors**

Part Number	Price	Coil Voltage	Aux. Contacts	UL HP Ratings (AC3 Motor Load)					Optional Overload Relay	
				Single Phase 115V	230V	Three Phase 230V		460V		575V
<b>18A Frame Size</b>										
IC330-09S-10-AC24	\$18.40	24VAC (60Hz)	1 N.O.							
IC330-09S-10-AC120	\$18.40	110/120VAC (50/60Hz)	1 N.O.							
IC330-09S-10-AC240	\$18.40	208 - 240VAC (60Hz)	1 N.O.							
IC330-09S-10-AC480	\$18.40	400 - 415/480VAC (50/60Hz)	1 N.O.	0.75HP (9.8A)	1.5HP (10A)	3HP (11A)	3HP (9.6A)	5HP (7.6A)	7.5HP (9A)	IOL-25S
IC330-09S-10-AC600	\$18.40	500/600VAC (50/60Hz)	1 N.O.							
IC330-09S-10-DC24	\$21.10	24VDC	1 N.O.							
IC330-09S-01-DC24	\$21.10	24VDC	1 N.C.							
IC330-12S-10-AC24	\$21.10	24VAC (60Hz)	1 N.O.							
IC330-12S-10-AC120	\$21.10	110/120VAC (50/60Hz)	1 N.O.							
IC330-12S-10-AC240	\$21.10	208 - 240VAC (60Hz)	1 N.O.							
IC330-12S-10-AC480	\$21.10	400 - 415/480VAC (50/60Hz)	1 N.O.	0.75HP (13.8A)	2HP (12A)	3HP (11A)	3HP (9.6A)	7.5HP (11A)	10HP (11A)	IOL-25S
IC330-12S-10-AC600	\$21.10	500/600VAC (50/60Hz)	1 N.O.							
IC330-12S-10-DC24	\$23.70	24VDC	1 N.O.							
IC330-12S-01-DC24	\$23.70	24VDC	1 N.C.							
IC330-18S-10-AC24	\$28.95	24VAC (60Hz)	1 N.O.							
IC330-18S-10-AC120	\$28.95	110/120VAC (50/60Hz)	1 N.O.							
IC330-18S-10-AC240	\$28.95	208 - 240VAC (60Hz)	1 N.O.							
IC330-18S-10-AC480	\$28.95	400 - 415/480VAC (50/60Hz)	1 N.O.	1HP (16A)	3HP (17A)	5HP (17.5A)	5HP (15.2A)	10HP (14A)	15HP (17A)	IOL-25S
IC330-18S-10-AC600	\$28.95	500/600VAC (50/60Hz)	1 N.O.							
IC330-18S-10-DC24	\$32.85	24VDC	1 N.O.							
IC330-18S-01-DC24	\$32.85	24VDC	1 N.C.							
<b>25A Frame Size</b>										
IC330-25S-00-AC24	\$31.65	24VAC (60Hz)	-							
IC330-25S-00-AC120	\$31.65	110/120VAC (50/60Hz)	-							
IC330-25S-00-AC240	\$31.65	208 - 240VAC (60Hz)	-	2HP (24A)	5HP (28A)	7.5HP (25A)	7.5HP (22A)	15HP (21A)	15HP (17A)	IOL-25S
IC330-25S-00-AC480	\$31.65	400 - 415/480VAC (50/60Hz)	-							
IC330-25S-00-DC24	\$36.80	24VDC	-							
<b>40A Frame Size</b>										
IC330-32S-00-AC24	\$40.75	24VAC (60Hz)	-							
IC330-32S-00-AC120	\$40.75	110/120VAC (50/60Hz)	-							
IC330-32S-00-AC240	\$40.75	208 - 240VAC (60Hz)	-	3HP (34A)	5HP (28A)	10HP (32.2A)	10HP (28A)	20HP (27A)	25HP (27A)	IOL-25S IOL-40S
IC330-32S-00-AC480	\$40.75	400 - 415/480VAC (50/60Hz)	-							
IC330-32S-00-DC28	\$47.35	24 - 28VDC	-							
IC330-40S-00-AC24	\$51.20	24VAC (60Hz)	-							
IC330-40S-00-AC120	\$51.20	110/120VAC (50/60Hz)	-							
IC330-40S-00-AC240	\$51.20	208 - 240VAC (60Hz)	-	3HP (34A)	7.5HP (40A)	10HP (32.2A)	15HP (42A)	30HP (40A)	25HP (27A)	IOL-25S IOL-40S
IC330-40S-00-AC480	\$51.20	400 - 415/480VAC (50/60Hz)	-							
IC330-40S-00-DC28	\$59.15	24 - 28VDC	-							
<b>80A Frame Size</b>										
IC330-50S-00-AC24	\$71.05	24VAC (60Hz)	-							
IC330-50S-00-AC120	\$71.05	110/120VAC (50/60Hz)	-							
IC330-50S-00-AC240	\$71.05	208 - 240VAC (60Hz)	-	5HP (56A)	7.5HP (40A)	15HP (48.3A)	15HP (42A)	40HP (52A)	40HP (41A)	IOL-80S
IC330-50S-00-AC480	\$71.05	400 - 415/480VAC (50/60Hz)	-							
IC330-50S-00-DC28	\$75.00	24 - 28VDC	-							
IC330-65S-00-AC24	\$81.60	24VAC (60Hz)	-							
IC330-65S-00-AC120	\$81.60	110/120VAC (50/60Hz)	-							
IC330-65S-00-AC240	\$81.60	208 - 240VAC (60Hz)	-	5HP (56A)	10HP (50A)	20HP (62.1A)	20HP (54A)	50HP (65A)	50HP (52A)	IOL-80S
IC330-65S-00-AC480	\$81.60	400 - 415/480VAC (50/60Hz)	-							
IC330-65S-00-DC28	\$81.55	24 - 28VDC	-							
IC330-80S-00-AC24	\$84.15	24VAC (60Hz)	-							
IC330-80S-00-AC120	\$84.15	110/120VAC (50/60Hz)	-							
IC330-80S-00-AC240	\$84.15	208 - 240VAC (60Hz)	-	7.5HP (80A)	15HP (68A)	20HP (62.1A)	25HP (68A)	50HP (65A)	60HP (62A)	IOL-80S
IC330-80S-00-AC480	\$84.15	400 - 415/480VAC (50/60Hz)	-							
IC330-80S-00-DC28	\$92.10	24 - 28VDC	-							
<b>105A Frame Size</b>										
IC330-95S-00-AC24	\$139.45	24VAC (60Hz)	-							
IC330-95S-00-AC120	\$139.45	110/120VAC (50/60Hz)	-							
IC330-95S-00-AC240	\$139.45	208 - 240VAC (60Hz)	-	7.5HP (80A)	15HP (68A)	25HP (78.2A)	30HP (80A)	60HP (77A)	75HP (77A)	IOL-105S
IC330-95S-00-AC480	\$139.45	400 - 415/480VAC (50/60Hz)	-							
IC330-95S-00-DC28	\$146.00	24 - 28VDC	-							
IC330-105S-00-AC24	\$152.60	24VAC (60Hz)	-							
IC330-105S-00-AC120	\$152.60	110/120VAC (50/60Hz)	-							
IC330-105S-00-AC240	\$152.60	208 - 240VAC (60Hz)	-	10HP (100A)	20HP (88A)	30HP (92A)	40HP (104A)	75HP (96A)	75HP (77A)	IOL-105S
IC330-105S-00-AC480	\$152.60	400 - 415/480VAC (50/60Hz)	-							
IC330-105S-00-DC28	\$172.25	24 - 28VDC	-							



## Features:

- Up to 350HP
- UL508 Listed
- UL and CE Certified
- IEC 60947
- 2 year warranty

## Optional Accessories Include:

- Auxiliary contact blocks
- Replacement coils

Part Number	Price	Coil Voltage	Aux. Contacts	UL HP Ratings (AC3 Motor Load)						Optional Overload Relay
				Single Phase		Three Phase				
				115V	230V	200V	230V	460V	575V	
<b>150A Frame Size</b>										
IC330-112L-22-AD28	\$245.90	24 - 28VAC/DC	2 N.O./2 N.C.							
IC330-112L-22-AD130	\$245.90	110 - 130VAC/DC	2 N.O./2 N.C.			40HP (120A)	50HP (130A)	100HP (124A)	100HP (99A)	IOL-150L
IC330-112L-22-AD250	\$245.90	208 - 250VAC/DC	2 N.O./2 N.C.							
IC330-112L-22-AD500	\$245.90	430 - 500VAC/DC	2 N.O./2 N.C.							
IC330-150L-22-AD28	\$286.75	24 - 28VAC/DC	2 N.O./2 N.C.							
IC330-150L-22-AD130	\$286.75	110 - 130VAC/DC	2 N.O./2 N.C.			50HP (150A)	60HP (154A)	125HP (156A)	150HP (144A)	IOL-150L
IC330-150L-22-AD250	\$286.75	208 - 250VAC/DC	2 N.O./2 N.C.							
IC330-150L-22-AD500	\$286.75	430 - 500VAC/DC	2 N.O./2 N.C.							
<b>180A Frame Size</b>										
IC330-180L-22-AD28	\$402.45	24 - 28VAC/DC	2 N.O./2 N.C.							
IC330-180L-22-AD130	\$402.45	110 - 130VAC/DC	2 N.O./2 N.C.			60HP (177A)	75HP (192A)	150HP (180A)	200HP (192A)	IOL-180L
IC330-180L-22-AD250	\$402.45	208 - 250VAC/DC	2 N.O./2 N.C.							
IC330-180L-22-AD500	\$402.45	430 - 500VAC/DC	2 N.O./2 N.C.							
<b>300A Frame Size</b>										
IC330-250L-22-AD28	\$570.70	24 - 28VAC/DC	2 N.O./2 N.C.							
IC330-250L-22-AD130	\$570.70	110 - 130VAC/DC	2 N.O./2 N.C.			75HP (221A)	100HP (248A)	200HP (240A)	250HP (242A)	IOL-300L
IC330-250L-22-AD250	\$570.70	208 - 250VAC/DC	2 N.O./2 N.C.							
IC330-250L-22-AD500	\$570.70	430 - 500VAC/DC	2 N.O./2 N.C.							
IC330-300L-22-AD28	\$593.10	24 - 28VAC/DC	2 N.O./2 N.C.							
IC330-300L-22-AD130	\$593.10	110 - 130VAC/DC	2 N.O./2 N.C.							
IC330-300L-22-AD250	\$593.10	208 - 250VAC/DC	2 N.O./2 N.C.			100HP (285A)	125HP (312A)	250HP (302A)	350HP (336A)	IOL-300L
IC330-300L-22-AD500	\$593.10	430 - 500VAC/DC	2 N.O./2 N.C.							

## Contactor Accessories

Part Number	Price	Description
<b>Auxiliary Contacts</b>		
ICA-AUX-F10	\$3.95	Front Mount, 1NO, for ICxxx-09S to -105S contactors
ICA-AUX-F01	\$3.95	Front Mount, 1NC, for ICxxx-09S to -105S contactors
ICA-AUX-S11	\$7.85	Side Mount, 1NO/1NC for ICxxx-09S to ICxxx-300L contactors
ICA-AUX-S20	\$7.85	Side Mount, 2NO, for ICxxx-09S to ICxxx-300L contactors
ICA-AUX-S11X	\$7.85	Side Mount, 2nd Block, 1NO/1NC, for ICxxx-09S to ICxxx-300L contactors
ICA-AUX-S20X	\$7.85	Side Mount, 2nd Block, 2NO, for ICxxx-09S to ICxxx-300L contactors
<b>Mechanical Interlock Blocks</b>		
ICA-MECINT02-105F	\$14.50	Side mount between two ICxxx-09S to ICxxx-105S contactors
ICA-MECINT00-300F	\$28.95	Side mount between two ICxxx-112L to ICxxx-300L contactors w/ the same frame size
<b>Link Adapters (Electrical and Mechanical Direct Connection)</b>		
IMA-LNKADP-32F-25C	\$9.25	For IMM32 + ICxxx-09S to ICxxx-25S (IC contactor AC Coils Only)
IMA-LNKADP-32F-40C	\$9.25	For IMM32 + ICxxx-32S to ICxxx-40S (IC contactor AC Coils Only)
<b>Lug Terminals</b>		
ICA-LUGS-150F	\$26.35	FMX Lugs for ICxxx-112L to ICxxx-150L, 300 MCM to 6 AWG wire size, 3 pack
ICA-LUGS-180F	\$31.15	FMX Lugs for ICxxx-180L, 300 MCM to 6 AWG wire size, 3 pack
ICA-LUGS-300F	\$48.50	FMX Lugs for ICxxx-250S to ICxxx-300L, 300 MCM to 6 AWG wire size, 3 pack
<b>Surge Suppressors</b>		
ICA-VARSURG-105F-AC510	\$7.85	Varistor, ICxxx-09S to ICxxx-105S, 400 to 510VAC
ICA-RCSURG-40F-AC48	\$10.55	RC, ICxxx-09S to ICxxx-40S, 24 to 48VAC
ICA-RCSURG-40F-AC127	\$10.55	RC, ICxxx-09S to ICxxx-40S, 50 to 127VAC
ICA-RCSURG-40F-AC250	\$10.55	RC, ICxxx-09S to ICxxx-40S, 130 to 250VAC
ICA-RCSURG-105F-AC48	\$10.55	RC, ICxxx-50S to ICxxx-105S, 24 to 48VAC
ICA-RCSURG-105F-AC127	\$10.55	RC, ICxxx-50S to ICxxx-105S, 50 to 127VAC
ICA-RCSURG-105F-AC250	\$10.55	RC, ICxxx-50S to ICxxx-105S, 130 to 250VAC
ICA-RCSURG-250F-AC48	\$10.55	RC, ICxxx-112L to ICxxx-250L, 24 to 48VAC
ICA-RCSURG-250F-AC250	\$10.55	RC, ICxxx-112L to ICxxx-250L, 50 to 250VAC
ICA-DIODE-25F-DC600	\$10.55	Diode, ICxxx-09S to ICxxx-25S, 12 to 600VDC

Part Number	Price	Description
<b>Replacement Contactor Coils</b>		
ICR-COIL-25F-AC24	\$11.80	ICxxx-09 to ICxxx-25, 24VAC, 60Hz
ICR-COIL-25F-AC120	\$11.80	ICxxx-09 to ICxxx-25, 110/120VAC, 50/60Hz
ICR-COIL-25F-AC240	\$11.80	ICxxx-09 to ICxxx-25, 208-240VAC, 60Hz
ICR-COIL-25F-AC480	\$11.80	ICxxx-09 to ICxxx-25, 400-415/480VAC, 50/60Hz
ICR-COIL-25F-AC600	\$11.80	ICxxx-09 to ICxxx-25, 500/600VAC, 50/60Hz
ICR-COIL-25F-DC24	\$18.40	ICxxx-09 to ICxxx-25, 24VDC
ICR-COIL-40F-AC24	\$13.15	ICxxx-32 to ICxxx-40, 24VAC, 60Hz
ICR-COIL-40F-AC120	\$13.15	ICxxx-32 to ICxxx-40, 110/120VAC, 50/60Hz
ICR-COIL-40F-AC240	\$13.15	ICxxx-32 to ICxxx-40, 208-240VAC, 60Hz
ICR-COIL-40F-AC480	\$13.15	ICxxx-32 to ICxxx-40, 400-415/480VAC, 50/60Hz
ICR-COIL-40F-AC600	\$13.15	ICxxx-32 to ICxxx-40, 500/600VAC, 50/60Hz
ICR-COIL-40F-DC24	\$21.10	ICxxx-32 to ICxxx-40, 24VDC
ICR-COIL-40F-DF240	\$13.15	ICxxx-32 to ICxxx-40, 208/240VAC, 50/60Hz
ICR-COIL-105F-AC120	\$18.40	ICxxx-50 to ICxxx-105, 110/120VAC, 50/60Hz
ICR-COIL-105F-AC240	\$18.40	ICxxx-50 to ICxxx-105, 208-240VAC, 60Hz
ICR-COIL-105F-AC480	\$18.40	ICxxx-50 to ICxxx-105, 400-415/480VAC, 50/60Hz
ICR-COIL-105F-AC600	\$18.40	ICxxx-50 to ICxxx-105, 500/600VAC, 50/60Hz
ICR-COIL-105F-DC24	\$27.65	ICxxx-50 to ICxxx-105, 24VDC
<b>Replacement Contactor Coils 150-300A Frame</b>		
ICR-COIL-150F-AD28*	\$26.35	ICxxx-112 to ICxxx-150, 24-28VAC/DC*Use w/ICR-EMOD-300F-AD28*
ICR-COIL-150F-AD130*	\$26.35	ICxxx-112 to ICxxx-150,110-130VAC/DC*Use w/ICR-EMOD-300F-AD130*
ICR-COIL-150F-AD250*	\$26.35	ICxxx-112 to ICxxx-150, 208-250VAC/DC*Use w/ICR-EMOD-300F-AD250*
ICR-COIL-150F-AD500*	\$26.35	ICxxx-112 to ICxxx-150, 430-500VAC/DC*Use w/ICR-EMOD-300F-AD500*
ICR-COIL-180F-AD28*	\$34.25	ICxxx-180L, 24-28VAC/DC*Use w/ICR-EMOD-300F-AD28*
ICR-COIL-180F-AD130*	\$34.25	ICxxx-180L,110-130VAC/DC*Use w/ICR-EMOD-300F-AD130*
ICR-COIL-180F-AD250*	\$34.25	ICxxx-180L, 208-250VAC/DC*Use w/ICR-EMOD-300F-AD250*
ICR-COIL-180F-AD500*	\$34.25	ICxxx-180L, 430-500VAC/DC*Use w/ICR-EMOD-300F-AD500*
ICR-COIL-300F-AD28*	\$43.40	ICxxx-250 to ICxxx-300, 24-28VAC/DC*Use w/ICR-EMOD-300F-AD28*
ICR-COIL-300F-AD130*	\$43.40	ICxxx-250 to ICxxx-300,110-130VAC/DC*Use w/ICR-EMOD-300F-AD130*
ICR-COIL-300F-AD250*	\$43.40	ICxxx-250 to ICxxx-300, 208-250VAC/DC*Use w/ICR-EMOD-300F-AD250*
ICR-COIL-300F-AD500*	\$43.40	ICxxx-250 to ICxxx-300, 430-500VAC/DC*Use w/ICR-EMOD-300F-AD500*
<b>Replacement Electronic Modules</b>		
ICR-EMOD-300F-AD28*	\$93.40	ICxxx-112 to ICxxx-300, 24-28VAC/DC*Use w/ICR-COIL-xxxx-AD28*
ICR-EMOD-300F-AD130*	\$93.40	ICxxx-112 to ICxxx-300,110-130VAC/DC*Use w/ICR-COIL-xxxx-AD130*
ICR-EMOD-300F-AD250*	\$93.40	ICxxx-112 to ICxxx-300, 208-250VAC/DC*Use w/ICR-COIL-xxxx-AD250*
ICR-EMOD-300F-AD500*	\$93.40	ICxxx-112 to ICxxx-300, 430-500VAC/DC*Use w/ICR-COIL-xxxx-AD500*

\*Replacement Coils 112A and above must be paired with an Electronic Module



ICA-AUX-F10

ICA-AUX-S11

IMA-LNKADP-32F

Lug Terminals

Surge Suppressor



## Thermal Overload Relays

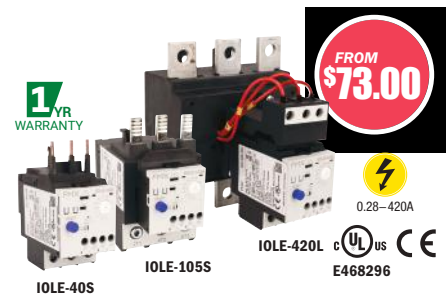


### Features:

- Trip ranges from 0.28A to 420A
- Separate mount adapter available (through IOL-105S)
- Ambient compensated -4 to 140°F (-20 to 60°C)
- Selectable RESET button (auto or manual)
- Differential current / phase loss protection
- Isolated 1N.O. & 1N.C. auxiliary contacts
- Trip class 10
- UL and CE Certified
- UL508 / IEC 60947
- 2 year warranty

3-pole Overloads	2-pole Overloads	Price	Aux Contacts	Current Range	Applicable Contactor
IOL-25S-P40	IOLS-25S-P40	\$23.70	1 N.O. / 1N.C.	0.28-040A	
IOL-25S-P63	IOLS-25S-P63	\$23.70	1 N.O. / 1N.C.	0.40-0.63A	
IOL-25S-P80	IOLS-25S-P80	\$23.70	1 N.O. / 1N.C.	0.56-0.8A	
IOL-25S-1P2	IOLS-25S-1P2	\$23.70	1 N.O. / 1N.C.	0.8-1.2A	ICxxx-09S ICxxx-12S ICxxx-18S ICxxx-25S
IOL-25S-1P8	IOLS-25S-1P8	\$23.70	1 N.O. / 1N.C.	1.2-1.8A	
IOL-25S-2P8	IOLS-25S-2P8	\$23.70	1 N.O. / 1N.C.	1.8-2.8A	
IOL-25S-4P0	IOLS-25S-4P0	\$23.70	1 N.O. / 1N.C.	2.8-4.0A	
IOL-25S-6P3	IOLS-25S-6P3	\$23.70	1 N.O. / 1N.C.	4.0-6.3A	
IOL-25S-8P0	IOLS-25S-8P0	\$23.70	1 N.O. / 1N.C.	5.6-8.0A	
IOL-25S-010	IOLS-25S-010	\$23.70	1 N.O. / 1N.C.	7-10A	ICxxx-09S ICxxx-12S ICxxx-18S ICxxx-25S ICxxx-32S ICxxx-40S
IOL-25S-012	IOLS-25S-012	\$23.70	1 N.O. / 1N.C.	8-12.5A	
IOL-25S-015	IOLS-25S-015	\$23.70	1 N.O. / 1N.C.	10-15A	
IOL-25S-017	IOLS-25S-017	\$23.70	1 N.O. / 1N.C.	11-17A	
IOL-25S-023	IOLS-25S-023	\$23.70	1 N.O. / 1N.C.	15-23A	
IOL-25S-032	IOLS-25S-032	\$23.70	1 N.O. / 1N.C.	22-32A	
IOL-40S-040	IOLS-40S-040	\$43.40	1 N.O. / 1N.C.	25-40A	ICxxx-32S ICxxx-40S
IOL-40S-050	IOLS-40S-050	\$43.40	1 N.O. / 1N.C.	32-50A	
IOL-80S-040	IOLS-80S-040	\$48.70	1 N.O. / 1N.C.	25-40A	
IOL-80S-050	IOLS-80S-050	\$48.70	1 N.O. / 1N.C.	32-50A	
IOL-80S-057	IOLS-80S-057	\$48.70	1 N.O. / 1N.C.	40-57A	ICxxx-50S ICxxx-65S ICxxx-80S
IOL-80S-063	IOLS-80S-063	\$48.70	1 N.O. / 1N.C.	50-63A	
IOL-80S-070	IOLS-80S-070	\$52.55	1 N.O. / 1N.C.	57-70A	
IOL-80S-080	IOLS-80S-080	\$52.55	1 N.O. / 1N.C.	63-80A	
IOL-105S-080	-	\$71.00	1 N.O. / 1N.C.	63-80A	
IOL-105S-097	-	\$71.00	1 N.O. / 1N.C.	75-97A	ICxxx-95S ICxxx-105S
IOL-105S-112	-	\$71.00	1 N.O. / 1N.C.	90-112A	
IOL-150L-097-LK	-	\$135.45	1 N.O. / 1N.C.	75-97A	
IOL-150L-112-LK	-	\$135.45	1 N.O. / 1N.C.	90-112A	ICxxx-112L ICxxx-150L
IOL-150L-150-LK	-	\$173.85	1 N.O. / 1N.C.	100-150A	
IOL-150L-215-LK	-	\$176.50	1 N.O. / 1N.C.	140-215A	
IOL-180L-150-LK	-	\$173.85	1 N.O. / 1N.C.	100-150A	ICxxx-180L
IOL-180L-215-LK	-	\$173.85	1 N.O. / 1N.C.	140-215A	
IOL-300L-150-LK	-	\$195.00	1 N.O. / 1N.C.	100-150A	
IOL-300L-215-LK	-	\$195.00	1 N.O. / 1N.C.	140-215A	ICxxx-250L ICxxx-300L
IOL-300L-310-LK	-	\$235.75	1 N.O. / 1N.C.	200-310A	
IOL-300L-420-LK	-	\$235.75	1 N.O. / 1N.C.	275-420A	

## Electronic Overload Relays



3-pole Electronic Overloads	Price	Aux Contacts	Current Range	Applicable Contactors
IOLE-40S-002	\$73.00	1 N.O. / 1N.C.	0.4-2A	
IOLE-40S-008	\$81.80	1 N.O. / 1N.C.	1.6-8A	ICxxx-09S ICxxx-25S ICxxx-12S ICxxx-32S ICxxx-18S ICxxx-40S
IOLE-40S-025	\$93.50	1 N.O. / 1N.C.	5-25A	
IOLE-40S-040	\$110.05	1 N.O. / 1N.C.	8-40A	
IOLE-105S-056	\$129.20	1 N.O. / 1N.C.	14-56A	ICxxx-50S ICxxx-95S ICxxx-65S ICxxx-105S ICxxx-80S
IOLE-105S-112	\$174.55	1 N.O. / 1N.C.	28-112A	
IOLE-420L-250-150LK	\$322.50	1 N.O. / 1N.C.		ICxxx-112L, ICxxx-150L
IOLE-420L-250-180LK	\$319.90	1 N.O. / 1N.C.	50-250A	ICxxx-180L
IOLE-420L-250-300LK	\$340.80	1 N.O. / 1N.C.		ICxxx-250L, ICxxx-300L
IOLE-420L-420-150LK	\$417.50	1 N.O. / 1N.C.		ICxxx-112L, ICxxx-150L
IOLE-420L-420-180LK	\$414.85	1 N.O. / 1N.C.	85-420A	ICxxx-180L
IOLE-420L-420-300LK	\$435.75	1 N.O. / 1N.C.		ICxxx-250L, ICxxx-300L

### Features:

- Trip ranges from 0.4A to 420A
- Wide trip adjustment range for a reduction in inventory space
- Separate mount adapter available (through IOLE-105S)
- Ambient compensated -4 to 140°F (-20 to 60°C)
- Selectable RESET button (auto or manual)
- Phase imbalance / phase loss protection
- Isolated 1N.O. & 1N.C. auxiliary contacts
- Selectable trip class 10, 20, or 30
- UL and CE Certified
- UL508 / IEC 60947
- 2 year warranty

## Overload Accessories

Part Number	Price	Description
<b>Separate Mount Block</b>		
IHA-SMB-32F	\$7.85	For IOL-25S & IOLS-25S
IHA-SMB-50F	\$10.55	For IOL-40S & IOLS-40S
IHA-SMB-80F	\$10.55	For IOL-80S & IOLS-80S
IHA-SMB-105F	\$13.15	For IOL-105L
IHA-SMB-105S	\$26.90	For IOLE-105L
<b>Lug Terminals</b>		
IHA-LUGS-215	\$23.25	For IOL-300L-150 & IOL-300L-215, 3 pack
IHA-LUGS-420	\$48.60	For IOL-300L-310 & IOL-300L-420, 3 pack
IHA-LUGSPCR	\$5.25	Spacers for IHA-LUGS-215 & IHA-LUGS-420 (required for UL)



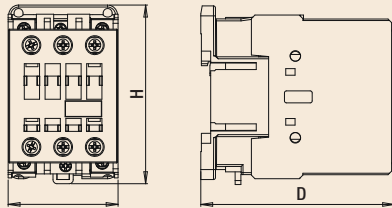
Separate Mount Block



Lug Terminals

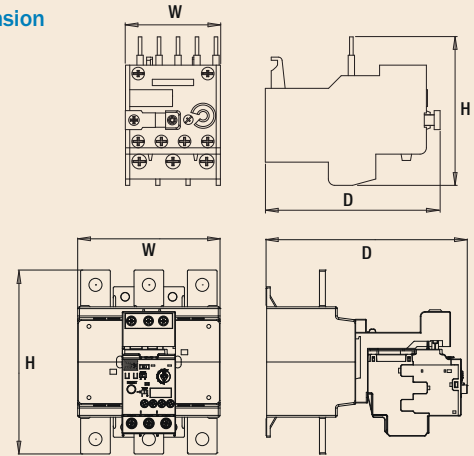
### Contactor Dimension Legend

in(mm)



### Overload Dimension Legend

in(mm)



## Contactor Dimensions

Contactor Frame Size	H		W		D	
	in	mm	in	mm	in	mm
18A (AC)	3.189	81.0	1.772	45.0	3.362	85.4
18A (DC)	3.189	81.0	1.772	45.0	4.547	115.5
25A (AC)	3.189	81.0	1.772	45.0	3.425	87.0
25A (DC)	3.189	81.0	1.772	45.0	4.606	117.0
40A (AC)	3.524	89.5	2.165	55.5	3.852	97.9
40A (DC)	3.524	89.5	2.165	55.5	4.640	117.9
80A (AC/DC)	4.58	116.3	2.60	66.0	4.53	115.0
105A (AC/DC)	4.58	116.3	2.97	75.4	4.97	126.2
150A (AC/DC)	6.3	160.0	4.8	121.5	5.7	145.0
180A (AC/DC)	7.2	183.0	5.5	139.0	6.7	170.0
300A (AC/DC)	7.8	198.0	5.8	147.5	7.1	181.0

## Overload Dimensions

Overload	H		W		D	
	in	mm	in	mm	in	mm
IOL-25S	2.0	51.5	1.8	45	3.3	82.5
IOL-40S/-80S	3.0	76.0	2.0	50.0	4.2	106.0
IOL-105S	3.9	99.5	3.0	75.0	3.9	98.5
IOL-150L-097-LK IOL-150L-112-LK	4.6	116.4	3.0	75.0	4.2	106.2
IOL-150L-150-LK IOL-150L-215-LK	6.8	172.72	4.75	120.65	7.3	185.42
IOL-180L	6.8	172.72	4.75	120.65	7.3	185.42
IOL-300L	6.8	172.72	4.75	120.65	7.3	185.42
IOL-40S	2.9	73.2	1.8	44.8	3.3	84.1
IOLE-105S	3.2	81.9	2.6	66	4.4	112
IOLE-420L	6.1	155	4.7	120	6.7	169.6

## Overload Specifications

Overload	IOL-25S	IOL-40S/80S	IOL-105S/150L	IOL-300L	
Number of Poles	3				
Rated Operation & Insulation Voltage	[V]	690 IEC 60947-4-1		1000 IEC 60947-4-1	
	[V]	600 UL; CSA			
Rated Impulse Voltage	[kV]	6		8	
Tripping Class	10				
Phase Failure Sensitivity	YES				
Current	Direct	YES		NO	
	Alternating [Hz]	Up to 400		50/60	
Ambient Temperature	Storage	-58 to 176 °F (-50 to 80 °C)			
	Operating	-4 to 158 °F (-20 to 70 °C)			
Pollution Degree	3				
Current Heat Loss	[W]	3	5.5	5.5	15
Weight	[lb]	0.32	0.68	1.00/1.45	3.95
Shock Resistance	[g/ms]	10/11 (IEC 60068-2-27; 1/2 Sine Wave)			
Standards	IEC 60947-1 / 60947-4-1, UL 508; CSA C.22.2/14; VDE 0660/102				
Power Terminals IP Rating	IP10		IP00		
Main Terminals Capacity	Cross/Slotted Combination		Allen Head	Slide Bar	
Stranded / Solid (UL/CSA) 75 °C, Cu Only	[AWG]	14 - 6	18 - 2	8 - 1/0	8 - 1/0
Tightening Torque	[lb-in]	20	35	53	141 (100-215A) 230 (200-420A)

## Auxiliary Contact Specifications

Auxiliary Contact Ratings							
Rated Insulation Voltage (V)	UL/CSA: 600, IEC/VDE 0660: 1000						
Rated Operating Voltage (V)	UL/CSA: 600, IEC/VDE 0660: 690						
Rated Thermal Current (A)	20						
<b>Short Circuit Protection with Fuses</b>							
IEC 60947-5-1 (A)	10						
Min. Switching Capacity (V/mA)	17/5						
Electrical Endurance (ops)	1 million						
Mechanical Endurance (ops)	10 million						
Non-Overlap Time (ms)	1.5						
Insulation Resistance (MΩ)	>10						
Operational Voltage AC-15	110-127V	220-240V	380-400V	415-450V	500V	660-690V	
Rated Operating Current (A)	10	10	6	5	4	2	
Pilot Duty Rating	A600						
Making Capacity (A)	250						
Breaking Capacity (A)	250						
Operational Voltage DC-13	24V	48V	110V	220V	440V	-	
Rated Operating Current (A)	6	4	2	0.7	0.7		
Pilot Duty Rating	P600						
Making Capacity (A)	250						
Breaking Capacity (A)	2						



## Contactor Specifications

Contactor Frame		ICxxx-09S	ICxxx-12S	ICxxx-18S	ICxxx-25S	ICxxx-32S	ICxxx-40S	ICxxx-50S	ICxxx-65S	ICxxx-80S	ICxxx-95S	ICxxx-105S	
Rated Insulation Voltage		(V) UL/CSA: 600, IEC/VDE 0660: 1000											
Rated Impulse Voltage IEC60947-1		(kV) 6 6 6 6 6 6 8 8 8 8 8											
Rated Operating Frequency		(Hz) 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400											
Degree of Protection	Main Terminals	IP20	IP20	IP20	IP10	IP10	IP10	IP10	IP10	IP10	IP10	IP10	
	Coil Terminals	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	
	Auxiliary Terminals	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	
Vibration Resistance (5 to 200Hz)	Contactor Open	(g) 3	3	3	4.5	7	7	4.5	4.5	4.5	5	5	
	Contactor Closed at Coil	(g) 6	6	6	5	9	9	9	9	9	7	7	
Mechanical Endurance	AC Coil (DC Coil)	(Million ops) 10 (12)	10 (12)	10 (12)	10 (12)	10 (12)	10 (12)	10 (10)	10 (10)	10 (10)	10 (10)	10 (10)	
	Electrical Endurance	AC-3 (Million ops) 1.5	1.5	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	
Shock Resistance: (1/2 Sin Wave = 11ms)	Contactor Open	(g) 8	8	8	8	7	7	6	6	6	6	6	
	Contactor Closed at Coil	(g) 12	12	12	12	12	12	10	10	10	10	10	
Terminal Capacity	Stranded/Solid (UL/CSA)	(AWG) 1 or 2 (14-10)	1 or 2 (14-10)	1 or 2 (14-10)	1 or 2 (14-8)	14-8	14-8	14-1/0	14-1/0	14-1/0	10-1/0	10-1/0	
Power Terminals Screw Driver		Philips #2	Philips #2	Philips #2	Philips #2	Philips #2	Philips #2	4mm Allen	4mm Allen	4mm Allen	4mm Allen	4mm Allen	
Tightening Torque		(lb-in) 15	15	15	16	22	22	40	40	40	60	60	
Environmental Conditions	Ambient Temperature	Storage: -67 to 176°F (-55 to 80°C), Operating (IEC) -13 to 131°F (-25 to 55°C)											
	Climatic Withstand	According to IEC 60680-2											
	Pollution Degree	3											
	Mounting	35mm DIN-rail Acc. DIN EN 50 022											
Weight	(lbs)	0.79	0.79	0.79	0.86	1.37	1.43	2.66	2.68	2.69	3.36	3.32	
Warranty		1.5 years											
Coil Operating Limits	Pick-up (x U <sub>s</sub> )	0.4 to 0.76 (AC) / 0.4 to 0.7 (DC)				0.5 to 0.76 (AC) / 0.7 to 0.8 (DC)			0.5 to 0.76 (AC) / 0.7 to 0.8 (DC)				
	Drop-out (x U <sub>s</sub> )	0.25 to 0.65 (AC) / 0.15 to 0.4 (DC)				0.3 to 0.65 (AC) / 0.4 to 0.6 (DC)			0.25 to 0.6 (AC) / 0.4 to 0.6 (DC)				
Coil Consumption (Single Coils)	Sealed	5.5 to 9.3VA (AC) / 3.8 to 9W (DC)				9.5 to 12.5VA (AC) / 6W (DC)			16.8 to 25VA (AC) / 6.5W (DC)				
	Inrush	70.0VA (AC) / 3.8 to 9W (DC)				115VA (AC) / 240W (DC)			295VA (AC) / 340W (DC)				
Heat Loss	(W)	2.6			4.3			8.0					
Power Factor	Sealed Cos Φ	0.28			0.34			0.32					
	Inrush Cos Φ	0.85			0.69			0.54					
Operating Time	Coil Energization-N.O.	8 to 20 (AC) / 35 to 45 (DC)				10 to 19 (AC) / 50 to 60 (DC)			10 to 30 (AC) / 50 to 60 (DC)				
	Coil De-energization-N.O.	6 to 13 (AC) / 7 to 12 (DC)				5 to 25 (AC) / 55 to 60 (DC)			9 to 15 (AC) / 55 to 60 (DC)				

Control Circuit Ratings		-AC24	-AC120	-AC240	-AC480	-AC600
Coil Code						
AC Coil Voltage Class	Voltage Rating (60Hz) (U <sub>s</sub> )	24V	120V	208 to 240V	480V	600V
	Voltage Rating (50Hz) (U <sub>s</sub> )	20V	110V	180 to 208V	400 to 415V	500V
Coil Code		-DC24	-DC28			
DC Coil Voltage Class	Voltage Rating (U <sub>s</sub> )	24V	24 to 28V			
Voltage Range (x U <sub>s</sub> )		0.8 to 1.1 (AC/DC)				

Contactor Frame		ICxxx-112L	ICxxx-150L	ICxxx-180L	ICxxx-250L	ICxxx-300L
Rated Insulation Voltage		(V) UL/CSA: 600, IEC/VDE 0660: 1000				
Rated Impulse Voltage IEC60947-1		(kV) 8 8 8 8 8				
Rated Operating Frequency		(Hz) 25 to 400 25 to 400 25 to 400 25 to 400 25 to 400				
Degree of Protection	Main Terminals	IP00	IP00	IP00	IP00	IP00
	Coil Terminals	IP20	IP20	IP20	IP20	IP20
	Auxiliary Terminals	IP20	IP20	IP20	IP20	IP20
Vibration Resistance (5 to 200Hz)	Contactor Open	(g) 4	4	4	4	4
	Contactor Closed at Coil	(g) 4	4	4	4	4
Mechanical Endurance	(Million ops)	10	10	10	10	10
Electrical Endurance	AC-3 (Million ops)	1.0	1.0	1.0	1.0	1.0
Shock Resistance (1/2 Sin Wave = 11ms)	Contactor Open	(g) 3	3	3	3	3
	Contactor Closed at Coil	(g) 3	3	3	3	3
Busbars (width x thickness)		(mm) 15x3	15x3	20x3	30x5	30x5
Power Terminals Screw Driver		M6 Hex	M6 Hex	M8 Hex	M10 Hex	M10 Hex
Tightening Torque		(lb-in) 47.8 - 53.1	47.8 - 53.1	123.9 - 141.6	203.6 - 230.1	203.6 - 230.1
Environmental Conditions	Ambient Temperature	Storage: -67 to 176°F (-55 to 80°C), Operating (IEC) -13 to 131°F (-25 to 55°C)				
	Climatic Withstand	According to IEC 60680-2				
	Pollution Degree	3				
	Mounting	Screw to panel				
Weight	(lbs)	6.83	7.05	11	15.1	14.8
Warranty		1.5 years				
Coil Operating Limits	Pick-up (x U <sub>s</sub> )	0.6 to 0.75				
	Drop-out (x U <sub>s</sub> )	0.4 to 0.6				
Coil Consumption (Single Coils)	Sealed	16.3VA (AC) / 12.5W (DC)		21.5VA (AC) / 12.5W (DC)		35.2VA (AC) / 12.5W (DC)
	Inrush	322VA (AC) / 415W (DC)		426VA (AC) / 375W (DC)		518VA (AC) / 380W (DC)
Heat Loss	(W)	4.2		5.8		9.2
Power Factor	Sealed Cos Φ	0.26		0.27		0.26
	Inrush Cos Φ	0.71		0.68		0.73
Operating Time	Coil Energization-N.O.	40 to 70		40 to 70		65 to 85
	Coil De-energization-N.O.	50 to 70		55 to 75		40 to 65

Control Circuit Ratings		-AD28	-AD130	-AD250	-AD500
Coil Code					
AC/DC Coil Voltage Class	Voltage Rating (50/60Hz) (U <sub>s</sub> )	24 to 28V	110 to 130V	208 to 250V	430 to 500V
Voltage Range (x U <sub>s</sub> )		0.8 to 1.1 (AC/DC)			