

FMX

INDUSTRIAL CONTROL PRODUCTS

MOTOR CONTROLS



c UL US CE

MANUAL MOTOR PROTECTORS



IMM16 FRAME



IMM32 FRAME



IMM65 FRAME

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

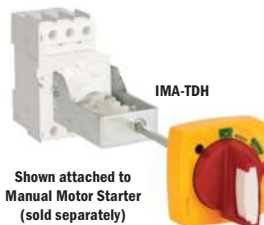
FEATURES

- High interrupt capacity up to 100kA (with optional current limiter)
- DIN rail mountable
- 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

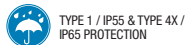
THROUGH-THE-DOOR HANDLES

FEATURES

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



Shown attached to Manual Motor Starter (sold separately)



Part Number	Handle Color	Environmental Rating	Shaft Length	Applicable MMP
IMA-TDH32-130-B1	Gray/Black	TYPE 1 / IP55	5.12-6.10" (130-155mm)	IMM32
IMA-TDH32-130-Y1	Red/Yellow			
IMA-TDH32-130-B4X	Gray/Black			
IMA-TDH32-130-Y4X	Red/Yellow	TYPE 4X / IP65	12.99-13.98" (330-355mm)	IMM32
IMA-TDH32-330-B1	Gray/Black			
IMA-TDH32-330-Y1	Red/Yellow			
IMA-TDH32-330-B4X	Gray/Black	TYPE 4X / IP65	5.12-6.10" (130-155mm)	IMM65
IMA-TDH32-330-Y4X	Red/Yellow			
IMA-TDH65-130-B4X	Gray/Black			
IMA-TDH65-130-Y4X	Red/Yellow	TYPE 4X / IP65	12.99-13.98" (330-355mm)	IMM65
IMA-TDH65-330-B4X	Gray/Black			
IMA-TDH65-330-Y4X	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	Description
IMA-BBS32F-45-2	45mm for 2 IMM16 or IMM32., 63A max. total
IMA-BBS32F-45-3	45mm for 3 IMM16 or IMM32., 63A max. total
IMA-BBS32F-45-4	45mm for 4 IMM16 or IMM32., 63A max. total
IMA-BBS32F-45-5	45mm for 5 IMM16 or IMM32., 63A max. total
IMA-BBS32F-54-2	54mm for 2 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-54-3	54mm for 3 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-54-4	54mm for 4 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-54-5	54mm for 5 IMM16 or IMM32 w/ side mount aux., 63A max. total
IMA-BBS32F-63-2	54mm for 2 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBS32F-63-3	54mm for 3 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBS32F-63-4	54mm for 4 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBS32F-63-5	54mm for 5 IMM16 or IMM32 with 2 side mounting aux contacts
IMA-BBSHROUD	Busbar Shroud for unused IMA-BBS32F & IMA-BBS54F terminals
IMA-BBLST	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



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



Part Number	Description
IMA-ENCL-16FY	Standard Disconnect Station with translucent membrane for IMM16, Red/Yellow, IP66
IMA-ENCL-32Fb	Standard Disconnect Station for IMM32, Black, IP55
IMA-ENCL-32FY	Standard Disconnect Station for IMM32, Red/Yellow, IP55
IMA-ENCL-32FWB	Wide Disconnect Station for IMM32, Black, IP55
IMA-ENCL-32FWY	Wide Disconnect Station for IMM32, Red/Yellow, IP55

ACCESSORIES












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

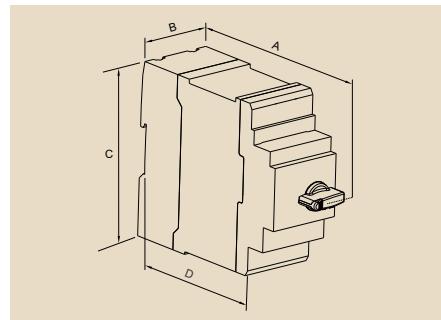
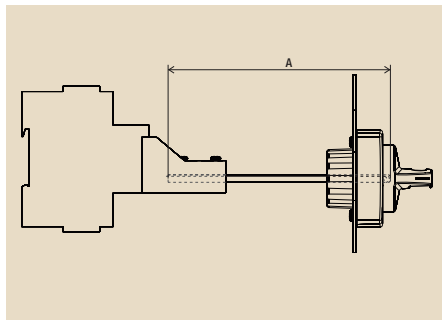
MANUAL MOTOR PROTECTOR SPECIFICATIONS

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 Iu)		[A]	0.61 to 1		
Magnetic Release (x Iu)		[A]	13		
Overload Trip Class			10		
Total Power Loss Pv	At Rated Load Operating Temp	[W]	6	6 (1.6A to 16A) / 8 (20A to 32A)	25
Utilization Category	IEC 60947-2 (Motor Protector)		A		
	IEC 60947-4-1 (Motor Starter)		AC-3		
Lifespan			Mechanical: 100,000 ops., Electrical (Ie max.): 100,000 ops., Switching Rate (motor start) AC-3: 15		
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)
Environmental Conditions	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		
					
16 Amp Frame	32 Amp Frame		65 Amp Frame	A	B
Drawing	(mm²)	(AWG)	1 Conductor on Lower Part Only	2 Conductors, 1 on Upper Part (A) and 1 on Lower Part (B)	
	1 or 2 x (1 to 2.5) 1 or 2 x (2.5 to 6)	-	12 to 2 AWG	16 to 2 AWG	16 to 2 AWG
	-	1 or 2 x (14 to 10) 1 x (8)	12 to 2 AWG	16 to 2 AWG	12 to 2 AWG
	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)	8 to 2 AWG	14 to 2 AWG	14 to 2 AWG
					
Tightening Torque			55 lb-in (6.2 Nm)		

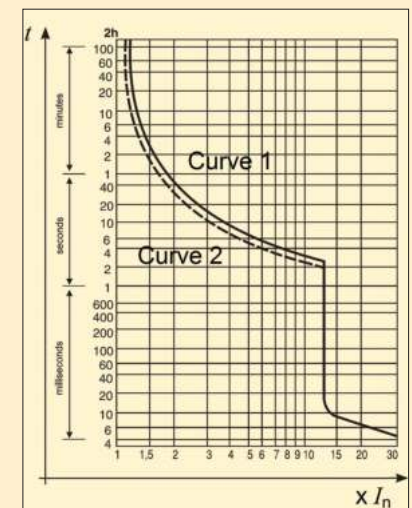
IMM DIMENSIONS



E-Handle Type	A Min-Max Inches (mm)	MMS Type
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

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)

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 - Ie), 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.

STANDARD CONTACTORS

STANDARD CONTACTORS (18A-105A)



18A Frame Size



25A Frame Size



40A Frame Size



80A Frame Size



105A Frame Size

Part Number	Aux. Contacts	UL HP Ratings (AC3 Motor Load)						Optional Overload Relay
		Single Phase		Three Phase				
		115V	230V	200V	230V	460V	575V	
18A Frame Size								
IC330-09S-10-▲	1 N.O.	0.75HP (9.8A)	1.5HP (10A)	3HP (11A)	3HP (9.6A)	5HP (7.6A)	7.5HP (9A)	IOL-25S
IC330-12S-10-▲	1 N.O.	0.75HP (13.8A)	2HP (12A)	3HP (11A)	3HP (9.6A)	7.5HP (11A)	10HP (11A)	IOL-25S
IC330-18S-10-▲	1 N.O.	1HP (16A)	3HP (17A)	5HP (17.5A)	5HP (15.2A)	10HP (14A)	15HP (17A)	IOL-25S
25A Frame Size								
IC330-25S-00-▲	-	2HP (24A)	5HP (28A)	7.5HP (25A)	7.5HP (22A)	15HP (21A)	15HP (17A)	IOL-25S
40A Frame Size								
IC330-32S-00-▲	-	3HP (34A)	5HP (28A)	10HP (32.2A)	10HP (28A)	20HP (27A)	25HP (27A)	IOL-25S IOL-40S
IC330-40S-00-▲	-	3HP (34A)	7.5HP (40A)	10HP (32.2A)	15HP (42A)	30HP (40A)	25HP (27A)	IOL-25S IOL-40S
80A Frame Size								
IC330-50S-00-▲	-	5HP (56A)	7.5HP (40A)	15HP (48.3A)	15HP (42A)	40HP (52A)	40HP (41A)	IOL-80S
IC330-65S-00-▲	-	5HP (56A)	10HP (50A)	20HP (62.1A)	20HP (54A)	50HP (65A)	50HP (52A)	IOL-80S
IC330-80S-00-▲	-	7.5HP (80A)	15HP (68A)	20HP (62.1A)	25HP (68A)	50HP (65A)	60HP (62A)	IOL-80S
105A Frame Size								
IC330-95S-00-▲	-	7.5HP (80A)	15HP (68A)	25HP (78.2A)	30HP (80A)	60HP (77A)	75HP (77A)	IOL-105S
IC330-105S-00-▲	-	10HP (100A)	20HP (88A)	30HP (92A)	40HP (104A)	75HP (96A)	75HP (77A)	IOL-105S

FEATURES

- DIN rail mountable up to 105A frame
- UL508 Listed
- UL and CE Certified
- IEC 60947

OPTIONAL ACCESSORIES

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

▲ COIL CODE SELECTION

Coil Code (▲)	Coil Voltage
AC24	24 VAC
AC120	110/120 VAC
AC240	208-240 VAC
AC480	400-415/480 VAC
AC600	500/600 VAC
DC24	24 VDC

STANDARD CONTACTORS (150A-300A)



150A Frame Size



Part Number	Aux. Contacts	UL HP Ratings (AC3 Motor Load)						Optional Overload Relay
		Single Phase		Three Phase				
		115V	230V	200V	230V	460V	575V	
150A Frame Size								
IC330-112L-22-▲	2 N.O./2 N.C.	-	-	40HP (120A)	50HP (130A)	100HP (124A)	100HP (99A)	IOL-150L
IC330-150L-22-▲	2 N.O./2 N.C.	-	-	50HP (150A)	60HP (154A)	125HP (156A)	150HP (144A)	IOL-150L
180A Frame Size								
IC330-180L-22-▲	2 N.O./2 N.C.	-	-	60HP (177A)	75HP (192A)	150HP (180A)	200HP (192A)	IOL-180L
300A Frame Size								
IC330-250L-22-▲	2 N.O./2 N.C.	-	-	75HP (221A)	100HP (248A)	200HP (240A)	250HP (242A)	IOL-300L
IC330-300L-22-▲	2 N.O./2 N.C.	-	-	100HP (285A)	125HP (312A)	250HP (302A)	350HP (336A)	IOL-300L

FEATURES

- UL508 Listed
- UL and CE Certified
- IEC 60947

OPTIONAL ACCESSORIES

- Auxiliary contact blocks
- Replacement coils

▲ COIL CODE SELECTION

Coil Code (▲)	Coil Voltage
AD28	24 - 28 VAC/DC
AD130	110 - 130 VAC/DC
AD250	208 - 250 VAC/DC
AD500	430 - 500 VAC/DC

STANDARD CONTACTOR ACCESSORIES

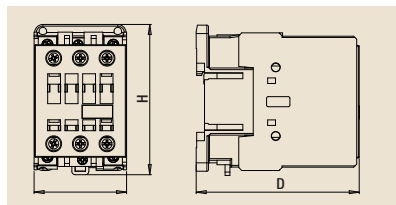


Part Number	Description
Auxiliary Contacts	
ICA-AUX-F10	Front Mount, 1NO, for ICxxx-09S to -105S contactors
ICA-AUX-F01	Front Mount, 1NC, for ICxxx-09S to -105S contactors
ICA-AUX-S11	Side Mount, 1NO/1NC for ICxxx-09S to ICxxx-300L contactors
ICA-AUX-S20	Side Mount, 2NO, for ICxxx-09S to ICxxx-300L contactors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

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

STANDARD 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

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						
Short Circuit Protection with Fuses							
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						

STANDARD CONTACTORS 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 (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	
Shock Resistance: 1/2 Sin Wave = 11ms	Contactor Open	(g)	8	8	8	8	7	7	6	6	6	6	
	Closed at Coil	(g)	12	12	12	12	12	12	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	
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 _s)	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 _s)	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.	(ms)	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.	(ms)	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 _s)	24V	120V	208 to 240V	480V	600V
	Voltage Rating (50Hz)	(U _s)	20V	110V	180 to 208V	400 to 415V	500V
Coil Code			-DC24	-DC28			
DC Coil Voltage Class	Voltage Rating	(U _s)	24V	24 to 28V	-	-	-
	Voltage Range	(x U _s)	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		
	Contactor Closed at Coil	(g)	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		
Shock Resistance (1/2 Sin Wave = 11ms)	Contactor Open	(g)	3	3	3	3		
	Contactor Closed at Coil	(g)	3	3	3	3		
Busbars (width x thickness)	(mm)	15x3	15x3	20x3	30x5	30x5		
Power Terminals Screw Driver		M6 Hex	M6 Hex	M6 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 _s)	0.6 to 0.75					
	Drop-out	(x U _s)	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.	(ms)	40 to 70		40 to 70		65 to 85	
	Coil De-energization-N.O.	(ms)	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 _s)	24 to 28V	110 to 130V	208 to 250V	430 to 500V
	Voltage Range	(x U _s)	0.8 to 1.1 (AC/DC)			

STANDARD OVERLOADS RELAYS



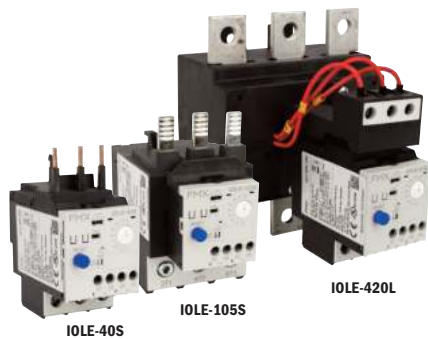
FEATURES

- 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 1 N.O. & 1 N.C. auxiliary contacts
- Trip class 10
- UL and CE Certified
- UL508 / IEC 60947

THERMAL OVERLOAD RELAYS



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



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)

ELECTRONIC OVERLOAD RELAYS



3-pole Electronic Overloads	Aux Contacts	Current Range	Applicable Contactors
IOLE-40S-002	1 N.O. / 1N.C.	0.4-2A	ICxxx-09S ICxxx-25S ICxxx-12S ICxxx-32S ICxxx-18S ICxxx-40S
IOLE-40S-008	1 N.O. / 1N.C.	1.6-8A	
IOLE-40S-025	1 N.O. / 1N.C.	5-25A	
IOLE-40S-040	1 N.O. / 1N.C.	8-40A	ICxxx-50S ICxxx-95S ICxxx-65S ICxxx-105S ICxxx-80S
IOLE-105S-056	1 N.O. / 1N.C.	14-56A	
IOLE-105S-112	1 N.O. / 1N.C.	28-112A	
IOLE-420L-250	1 N.O. / 1N.C.	50-250A	ICxxx-112L ICxxx-250L ICxxx-150L ICxxx-300L ICxxx-180L
IOLE-420L-420	1 N.O. / 1N.C.	85-420A	

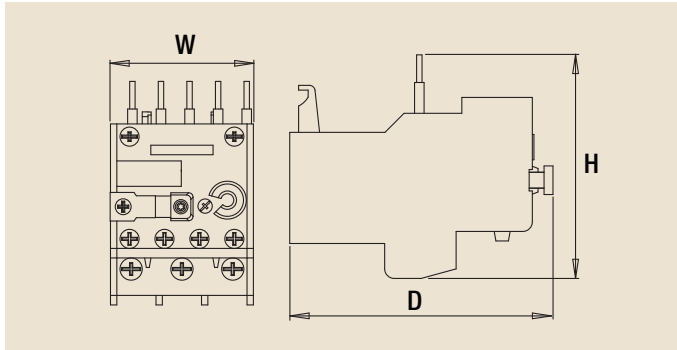
- Phase imbalance / phase loss protection
- Isolated 1N.O. & 1 N.C. auxiliary contacts
- Selectable trip class 10, 20, or 30
- UL and CE Certified
- UL508 / IEC 60947

THERMAL OVERLOAD ACCESSORIES

Part Number	Description
Separate Mount Block	
IHA-SMB-32F	For IOL-25S & IOLS-25S
IHA-SMB-50F	For IOL-40S & IOLS-40S
IHA-SMB-80F	For IOL-80S & IOLS-80S
IHA-SMB-105F	For IOL-105L
IHA-SMB-105S	For IOLE-105L
Lug Terminals	
IHA-LUGS-215	For IOL-300L-150 & IOL-300L-215, 3 pack
IHA-LUGS-420	For IOL-300L-310 & IOL-300L-420, 3 pack
IHA-LUGSPCR	Spacers for IHA-LUGS-215 & IHA-LUGS-420 (required for UL)

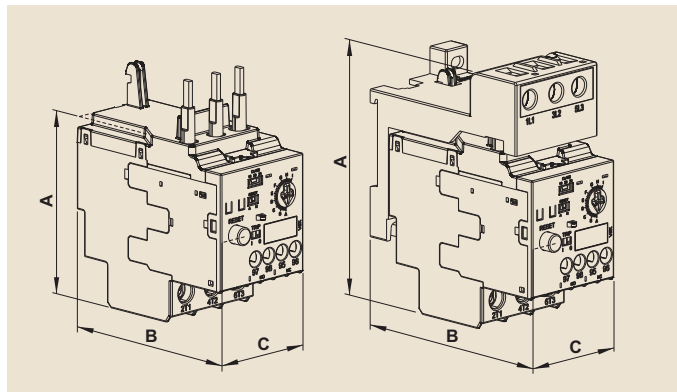


THERMAL OVERLOAD DIMENSIONS

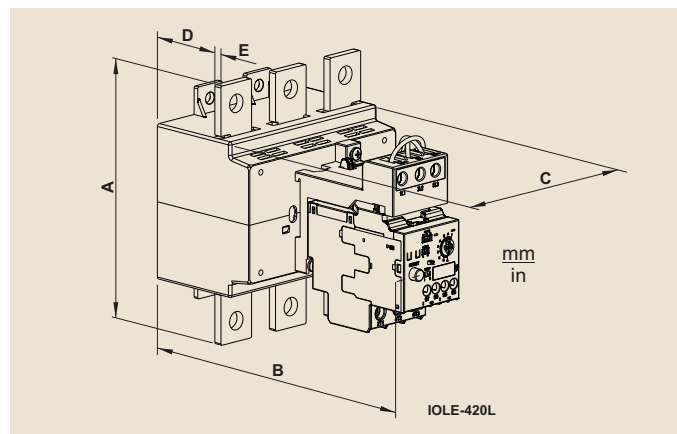


Overload	H		W		D	
	in	mm	in	mm	in	mm
IOL-25S	2.0	51.5	1.8	45	3.3	82.5
IOL-40S/-80S	3.0	76.0	2.0	50.0	4.2	106.0
IOL-105S	3.9	99.5	3.0	75.0	3.9	98.5
IOL-150L-097-LK	4.6	116.4	3.0	75.0	4.2	106.2
IOL-150L-112-LK	4.6	116.4	3.0	75.0	4.2	106.2
IOL-150L-150-LK	6.8	172.72	4.75	120.65	7.3	185.42
IOL-150L-215-LK	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

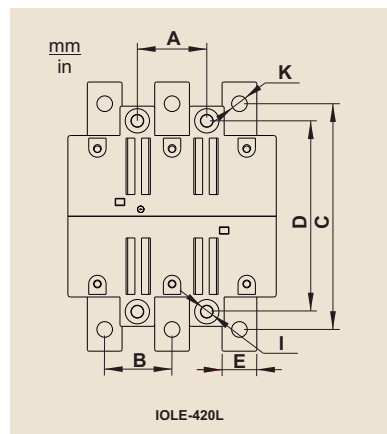
ELECTRONIC OVERLOAD DIMENSIONS



Overload	A		B		C	
	in	mm	in	mm	in	mm
IOLE-40S	2.88	73.2	3.31	84.1	1.76	44.8
IOLE-105S	3.22	81.9	4.41	112	2.6	66
IOLE-40S + IHA-SMB-32F	3.69	104.2	3.69	93.7	1.76	44.8
IOLE-105S + IHA-SMB-105S	4.1	116.4	4.77	121.1	2.95	75



Overload	A	B	C	D	E
IOLE-420L	155 6.10	166.4 6.55	120 4.72	44.5 1.75	5 0.2



Overload	A	B	C	D	E	F	G
IOLE-420L	40 1.57	44.5 1.75	130 5.12	109.9 4.33	25 0.98	7 0.27	11 0.43

THERMAL OVERLOAD SPECIFICATIONS

Overload			IOL-25S	IOL-40S/80S	IOL-105S/150L	IOL-300L
Number of Poles			3			
Rated Operation & Insulation Voltage	IEC 60947-4-1	[V]	690			1000
	UL; CSA	[V]	600			
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 (IEC 60068-2-27; 1/2 Sine Wave)		[g/ms]	10/11			
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)

ELECTRONIC OVERLOAD SPECIFICATIONS

Overloads			IOLE-40S	IOLE-105S
Number of Poles			3	
Rated operation & insulation voltage	IEC 60947-4-1	[V]	690	
	UL; CSA	[V]	600	
Rated impulse voltage		[kV]	6	
Tripping Class			Selectable 10, 20, or 30	
Phase Failure Sensitivity			YES	
Current	Direct		NO	
	Alternating	[Hz]	50/60	
Ambient temperature	Storage		-58 to 176°F (-50 to 80°C)	
	Operating		-4 to 140°F (-20 to 60°C)	
	Compensation		-4 to 140°F (-20 to 60°C)	
Pollution Degree			3	
Weight		[lb]	0.55 (-002 to -025) / 2 (-040)	2
Shock resistance (IEC 60068-2-27; 1/2 Sine wave)		[g/ms]	15/11	
Standards			IEC 60947-1 / 60947-4-1, UL 508; CSA C.22.2/14	
Power Terminals IP Rating			IP10	
Main Terminals Capacity			Cross/Slot Combination	Allen Head
Stranded / Solid (UL/CSA)		75°C, Cu Only	[AWG]	16 - 8 14 - 2
Tightening Torque			[lb-in]	15 53

Overloads			IOLE-420L	IOLE-840L
Number of Poles			3	
Rated operation & insulation voltage	IEC 60947-4-1	[V]	1000	
	UL; CSA	[V]	600	
Rated impulse voltage		[kV]	8	
Tripping Class			Selectable 10, 20, or 30	
Phase Failure Sensitivity			YES	
Current	Direct		NO	
	Alternating	[Hz]	50/60	
Ambient temperature	Storage		-58 to 176°F (-50 to 80°C)	
	Operating		-4 to 140°F (-20 to 60°C)	
	Compensation		-4 to 140°F (-20 to 60°C)	
Pollution Degree			3	
Weight		[lb]	5.55	9.15
Shock resistance (IEC 60068-2-27; 1/2 Sine wave)		[g/ms]	15/11	
Standards			IEC 60947-1 / 60947-4-1, UL 508; CSA C.22.2/14	
Power Terminals IP Rating			IP00	
Main Terminals Capacity			Slide Bar	
Stranded / Solid (UL/CSA)		75°C, Cu Only	[AWG]	25mm x 5mm x M10 maximum lug size 60mm x 10mm x M12 maximum lug size
Tightening Torque			[lb-in]	230

MINIATURE CONTACTORS & OVERLOADS



16A Frame



25A Frame

MINIATURE 3-POLE CONTACTORS (16A-25A)



Part Number		UL HP Ratings (AC3 Motor Load)					Optional Overload Relay
		Single Phase		Three Phase			
1 N.O. Aux Contact	1 N.C. Aux Contact	115V	230V	230V	460V	575V	
16A Frame Size							
IMC330-07S-10-▲	IMC330-07S-01-▲	1/3HP (7.2A)	3/4HP (9A)	1-1/2HP (7A)	5HP (7A)	5HP (9A)	IMOL-16S
IMC330-09S-10-▲	-	1/3 HP (9.8A)	1HP (12A)	3HP (9A)	5HP (9A)	7-1/2HP (11A)	IMOL-16S
IMC330-12S-10-▲	-	1/3HP (12.8A)	2HP (16A)	3HP (12A)	7-1/2HP (12A)	7-1/2HP (17A)	IMOL-16S
IMC330-16S-10-▲	IMC330-16S-01-▲	1HP (16A)	2HP (17A)	5HP (16A)	10HP (16A)	10HP (17A)	IMOL-16S
25A Frame Size (Aux contacts sold separately)							
IMC330-25S-00-▲		1-1/2HP (22A)	3HP (25A)	7-1/2HP (22A)	15HP (22A)	15HP (27A)	IMOL-25S



MINIATURE 4-POLE CONTACTORS (16A)

2 N.O. Power Poles 2 N.C. Power Poles		4 N.O. Power Poles	UL HP Ratings (AC3 Motor Load)				
			Single Phase		Three Phase		
			115V	230V	230V	460V	575V
16A Frame Size							
IMC422-07S-00-▲	IMC440-07S-00-▲		1/3HP (7.2A)	3/4HP (9A)	1-1/2HP (7A)	5HP (7A)	5HP (9A)
IMC422-09S-00-▲	IMC440-09S-00-▲		1/3 HP (9.8A)	1HP (12A)	3HP (9A)	5HP (9A)	7-1/2HP (11A)
IMC422-12S-00-▲	IMC440-12S-00-▲		1/3HP (12.8A)	2HP (16A)	3HP (12A)	7-1/2HP (12A)	7-1/2HP (17A)
IMC422-16S-00-▲	IMC440-16S-00-▲		1HP (16A)	2HP (17A)	5HP (16A)	10HP (16A)	10HP (17A)

FEATURES

- Surface or DIN rail mountable
- UL508 Listed
- 50/60Hz AC and DC coil versions available
- Direct-mounting overloads*
- Auxiliary contacts standard (16A Frame)
- RoHS compliant
- IEC 60947

OPTIONAL ACCESSORIES

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

▲ COIL CODE SELECTION

Coil Code (▲)	Coil Voltage
AC24	24 VAC
AC120	110/120 VAC
AC240	208-240 VAC
AC480	400-415/480 VAC
DC12	12 VDC
DC24	24 VDC
DC110	110 VDC



IMOL-16S

IMOLS-25S

FEATURES

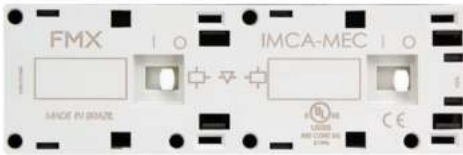
- Trip ranges from 0.28A to 32A
- Ambient compensated -4 to 140°F (-20 to 60°C)
- Selectable RESET button (auto or manual)
- Differential current / phase loss protection
- Isolated 1 N.O. & 1 N.C. auxiliary contacts
- Trip class 10
- UL and CE Certified
- UL508 / IEC 60947

MINIATURE THERMAL OVERLOAD RELAYS

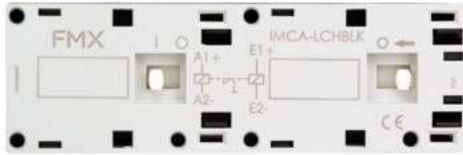


3-pole Overloads	2-pole Overloads	Current Range	Applicable Contactor
IMOL-16S-P40	IMOLS-16S-P40	0.28-0.40A	IMCxxx-07S IMCxxx-09S IMCxxx-12S IMCxxx-16S
IMOL-16S-P63	IMOLS-16S-P63	0.40-0.63A	
IMOL-16S-P80	IMOLS-16S-P80	0.56-0.80A	
IMOL-16S-1P2	IMOLS-16S-1P2	0.80-1.2A	
IMOL-16S-1P8	IMOLS-16S-1P8	1.2-1.8A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

MINI SERIES ACCESSORIES



IMCA-MECINT-16F



IMCA-LCHBLK-16F



IMCA-AUX-316-F11



IMCA-REVKIT-16F



IMCA-RCSURG



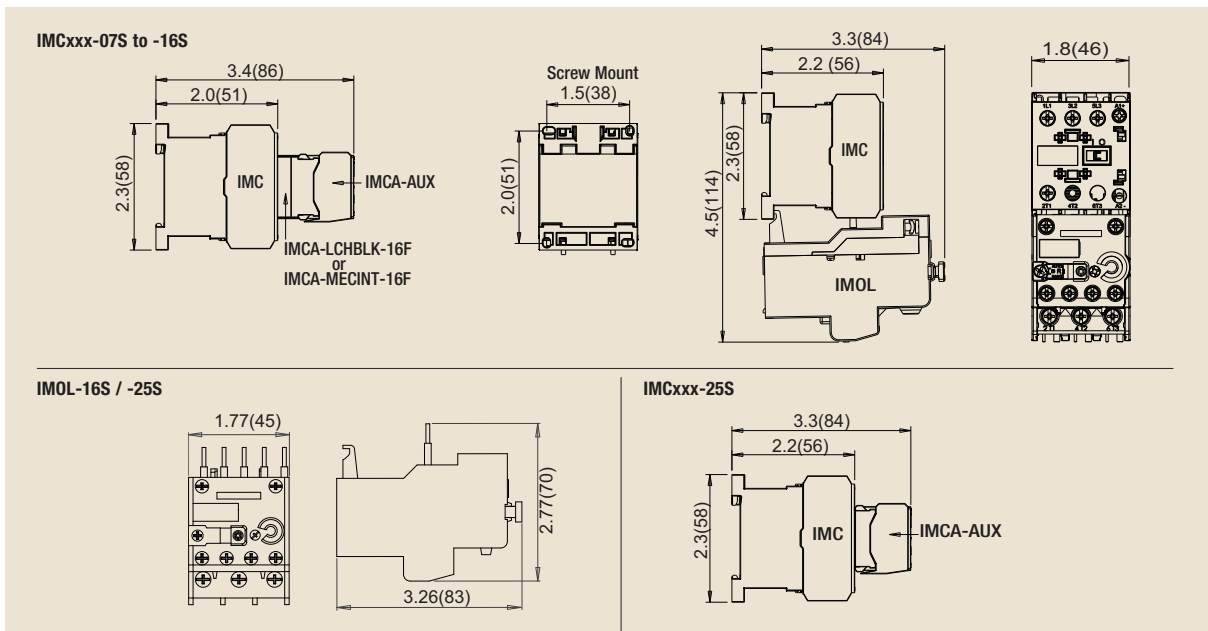
IMA-LNKADP-16F-16MC

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

LINK ADAPTORS

Part Number	Description
Link Adaptors	
IMA-LNKADP-16F-16MC	For IMM16 + IMCxxx-07S to IMCxxx-16S
IMA-LNKADP-16F-25MC	For IMM16 + IMCxxx-25S
IMA-LNKADP-32F-16MC	For IMM32 + IMCxxx-07S to IMCxxx-16S

MINIATURE CONTACTOR AND OVERLOAD DIMENSIONS



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	IEC60947-1	(V)	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)

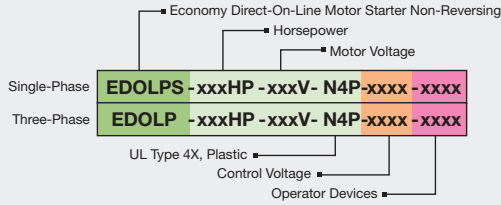
MINIATURE OVERLOAD RELAY SPECIFICATIONS

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

ECONOMY ENCLOSED DOL MOTOR STARTERS

FULL VOLTAGE MAGNETIC MOTOR STARTER

BUILD YOUR PART NUMBER



Most standard configurations are in stock for same day shipping



FEATURES

- UL Type 4X polymeric enclosure with standard size knockouts
- START/STOP models pre-wired for 3-wire control with through the cover overload RESET
- Class 10 overload relays - Class 10 direct heated bimetallic elements
- Adjustable trip current
- Ambient temperature compensation
- Phase-loss protection
- Selectable manual or automatic reset
- Electrically isolated N.O./N.C. auxiliary contacts
- UL508 Listed Assembly

NOTE 1

The actual FLA motor amps may vary from the HP values listed. Motor FLA found on the nameplate must be less than or equal to Starter FLA for proper motor protection.

Motor FLA ≤ Starter FL

NOTE 2

Adjustable Overload range exceeds Starter FLA rating. Do not adjust overload setting to exceed starter FLA rating.

Max. UL Ratings	Starter FLA ¹	Current Trip Range ²	Part Number	DIM
HP			EDOLPS-	
120V - Single Phase				
1/4	6.3	4.0-6.3A	0P2HP-120V-N4P	EP1
1/3	8.0	5.6-8.0A	0P3HP-120V-N4P	EP1
1/2	10	7.0-10A	0P5HP-120V-N4P	EP1
1/2	12.5	8-12.5A	0P5HH-120V-N4P	EP1
3/4	15	10-15A	0P7HP-120V-N4P	EP1
1	17	11-17	001HP-120V-N4P	EP1
1-1/2	23	15-23A	1P5HP-120V-N4P	EP1
2	24	22-32A*	002HP-120V-N4P	EP1
5	40	25-40A	005HP-120V-N4P	EP3
230V - Single Phase				
1/6	2.8	1.8-2.8A	0P1HP-230V-N4P	EP1
1/3	4.0	2.8-4.0A	0P3HP-230V-N4P	EP1
1/2	6.3	4.0-6.3A	0P5HP-230V-N4P	EP1
1	8.0	5.6-8.0A	001HP-230V-N4P	EP1
1-1/2	10	7-10A	1P5HP-230V-N4P	EP1
2	12.5	8.0-12.5A	002HP-230V-N4P	EP1
2	15	10-15A	002HH-230V-N4P	EP1
3	17	11-17A	003HP-230V-N4P	EP1
3	23	15-23	003HH-230V-N4P	EP1
5	28	22-32A*	005HP-230V-N4P	EP1
7-1/2	40	25-40A	007HP-230V-N4P	EP2

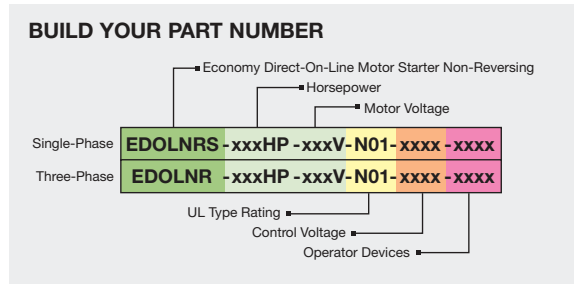
CONTROL/COIL VOLTAGE OPTIONS

Suffix	Description
-LINE	Motor Voltage and Control/Coil Voltages are internally connected
-X024	Externally supplied 24VAC Control/Coil Voltage
-X120	Externally supplied 120VAC Control/Coil Voltage
-X240	Externally supplied 208-240VAC Control/Coil
-X460	Externally supplied 460VAC Control/Coil Voltage



Max. UL Ratings	Starter FLA ¹	Current Trip Range ²	Part Number	DIM
HP			EDOLP-	
208V - Three Phase				
1/2	2.8	1.8-2.8A	0P5HP-208V-N4P	EP1
3/4	4.0	2.8-4.0A	0P7HP-208V-N4P	EP1
1	6.3	4.0-6.3A	001HP-208V-N4P	EP1
1-1/2	8.0	5.6-8.0A	1P5HP-208V-N4P	EP1
2	8.0	5.6-8.0A	002HP-208V-N4P	EP1
2	10	7-10A	002HH-208V-N4P	EP1
3	12.5	8.0-12.5A	003HP-208V-N4P	EP1
3	15	10-15A	003HH-208V-N4P	EP1
5	17	11-17A	005HP-208V-N4P	EP1
5	23	15-23A	005HH-208V-N4P	EP1
7-1/2	25	22-32A*	007HP-208V-N4P	EP1
10	40	25-40A	010HP-208V-N4P	EP3
15	50	32-50A	015HP-208V-N4P	EP3
15	57	40-57A	015HH-208V-N4P	EP3
20	62.1	50-63A*	020HP-208V-N4P	EP3
25	80	63-80A	025HP-208V-N4P	EP4
30	92	75-97A*	030HP-208V-N4P	EP4
230V - Three Phase				
1/2	2.8	1.8-2.8A	0P5HP-230V-N4P	EP1
3/4	4.0	2.8-4.0A	0P7HP-230V-N4P	EP1
1	6.3	4.0-6.3A	001HP-230V-N4P	EP1
1-1/2	6.3	4.0-6.3A	1P5HP-230V-N4P	EP1
2	8.0	5.6-8.0A	002HP-230V-N4P	EP1
3	10	7-10A	003HP-230V-N4P	EP1
3	12.5	8.0-12.5A	003HH-230V-N4P	EP1
5	15	10-15A	005HP-230V-N4P	EP1
5	17	11-17A	005HH-230V-N4P	EP1
7-1/2	22	15-23A*	007HP-230V-N4P	EP1
10	40	25-40A	010HP-230V-N4P	EP2
15	50	32-50A	015HP-230V-N4P	EP3
20	57	40-57A	020HP-230V-N4P	EP3
20	63	50-63A	020HH-230V-N4P	EP3
25	68	57-70A*	025HP-230V-N4P	EP3
30	80	63-80A	030HP-230V-N4P	EP4
30	97	75-97A	030HH-230V-N4P	EP4
40	104	90-112A*	040HP-230V-N4P	EP4
460V - Three Phase				
1/2	1.2	0.8-1.2A	0P5HP-460V-N4P	EP1
3/4	1.8	1.2-1.8A	0P7HP-460V-N4P	EP1
1	2.8	1.8-2.8A	001HP-460V-N4P	EP1
2	4.0	2.8-4.0A	002HP-460V-N4P	EP1
3	6.3	4.0-6.3A	003HP-460V-N4P	EP1
5	8.0	5.6-8.0A	005HP-460V-N4P	EP1
5	10	7-10A	005HH-460V-N4P	EP1
7-1/2	12.5	8.0-12.5A	007HP-460V-N4P	EP1
10	15	10-15A	010HP-460V-N4P	EP1
10	17	11-17A	010HH-460V-N4P	EP1
15	21	15-23A*	015HP-460V-N4P	EP1
20	40	25-40A	020HP-460V-N4P	EP2
30	50	32-50A	030HP-460V-N4P	EP3
40	57	40-57A	040HP-460V-N4P	EP3
40	63	50-63A	040HH-460V-N4P	EP3
50	65	57-70A*	050HP-460V-N4P	EP3
60	80	63-80A*	060HP-460V-N4P	EP4
75	96	75-97A*	075HP-460V-N4P	EP4

UL TYPE 1, NON-REVERSING



Most standard configurations are in stock for same day shipping



FEATURES

- DOL Motor Starters include contactor and thermal overload
 - Single-phase 120V and 230V input voltage models available, 1/3HP to 10HP
 - Three-phase 208V, 230V, and 460V input voltage models available, 1/2HP to 50HP
 - UL Type 1 listed enclosure
 - Mechanical reset standard
 - All components UL/CUL certified
- *Most standard models can ship within three business days.

SINGLE PHASE

Max. UL Ratings		Current Trip Range	Part Number	UL Type 1
HP	FLA		EDOLNRS-	-N01 DIM
120V				
1/3	7.2	5.6–8.0A	0P3HP-120V	ED1
1/2	9.8	7.0–10A	0P5HP-120V	ED1
3/4	13.8	10–15A	0P7HP-120V	ED1
1	16	11–17A	001HP-120V	ED1
1-1/2	20	15–23A	1P5HP-120V	ED1
2	24	22–32A	002HP-120V	ED1
3	34	25–40A	003HP-120V	ED2
230V				
1/2	4.9	4.0–6.3A	0P5HP-230V	ED1
3/4	6.9	5.6–8.0A	0P7HP-230V	ED1
1	8	5.6–8.0A	001HP-230V	ED1
1-1/2	10	8.0–12.5A	1P5HP-230V	ED1
2	12	10–15A	002HP-230V	ED1
3	17	11–17A	003HP-230V	ED1
5	28	22–32A	005HP-230V	ED1
7-1/2	40	32–50A	007HP-230V	ED2
10	50	32–50A	010HP-230V	ED2

CONTROL/COIL VOLTAGE OPTIONS

Suffix	Description
-LINE	Motor Voltage and Control/Coil Voltages are internally connected
-X024	Externally supplied 24VAC Control/Coil Voltage
-X120	Externally supplied 120VAC Control/Coil Voltage
-X208	Externally supplied 208VAC Control/Coil Voltage
-X230	Externally supplied 230VAC Control/Coil Voltage
-X460	Externally supplied 460VAC Control/Coil Voltage

OPERATOR DEVICES

Suffix	Description
-RSET	Reset Pushbutton Only
-SSTR	Start/Stop and Reset Pushbuttons
-HOAP	Hand-Off-Auto Selector Switch and Reset Pushbutton
-STHR	Start/Stop, Hand-Off-Auto Selector Switch, and Reset Pushbutton



-SSTR -HOAP -STHR

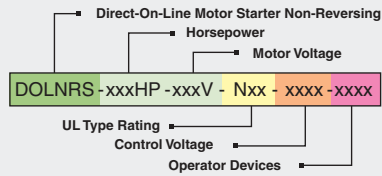
THREE-PHASE

Max. UL Ratings		Current Trip Range	Part Number	UL Type 1
HP	FLA		EDOLNR-	-N01 DIM
208V				
1/2	2.4	1.8–2.8A	0P5HP-208V	ED1
1	4.6	4.0–6.3A	001HP-208V	ED1
1-1/2	6.6	5.6–8.0A	1P5HP-208V	ED1
2	7.5	5.6–8.0A	002HP-208V	ED1
3	10.6	8.0–12.5A	003HP-208V	ED1
5	16.7	11–17A	005HP-208V	ED1
7-1/2	24.2	22–32A	007HP-208V	ED1
10	30.8	25–40A	010HP-208V	ED1
15	46.2	32–50A	015HP-208V	ED2
20	59.4	50–63A	020HP-208V	ED2
25	74.8	63–80A	025HP-208V	ED3
30	88	75–97A	030HP-208V	ED3
230V				
3/4	3.2	2.8–4.0A	0P7HP-230V	ED1
1	4.2	4.0–6.3A	001HP-230V	ED1
1-1/2	6.0	4.0–6.3A	1P5HP-230V	ED1
2	6.8	5.6–8.0A	002HP-230V	ED1
3	9.6	7.0–10A	003HP-230V	ED1
5	15.2	11–17A	005HP-230V	ED1
7-1/2	22	15–23A	007HP-230V	ED1
10	28	22–32A	010HP-230V	ED1
15	42	32–50A	015HP-230V	ED2
20	54	40–57A	020HP-230V	ED2
25	68	57–70A	025HP-230V	ED2
30	80	75–97A	030HP-230V	ED3
40	104	90–112A	040HP-230V	ED3
460V				
1/2	1.1	0.8–1.2A	0P5HP-460V	ED1
1	2.1	1.8–2.8A	001HP-460V	ED1
1-1/2	3.0	2.8–4.0A	1P5HP-460V	ED1
2	3.4	2.8–4.0A	002HP-460V	ED1
3	4.8	4.0–6.3A	003HP-460V	ED1
5	7.6	5.6–8.0A	005HP-460V	ED1
7-1/2	11	8.0–12.5A	007HP-460V	ED1
10	14	11–17A	010HP-460V	ED1
15	21	15–23A	015HP-460V	ED1
20	27	22–32A	020HP-460V	ED1
30	40	32–50A	030HP-460V	ED2
40	52	40–57A	040HP-460V	ED2
50	65	57–70A	050HP-460V	ED2
60	77	63–80A	060HP-460V	ED3
75	96	75–97A	075HP-460V	ED3

ENCLOSED DOL MOTOR STARTERS

DIRECT-ON-LINE, NON-REVERSING

BUILD YOUR PART NUMBER



Product shown in picture includes optional items.
Dimensional information is available on the last page of this section.

FEATURES

- DOL Motor Starters include contactor and thermal overload
 - Single-phase 120V and 230V input voltage models available, 1/6HP to 10HP
 - Hinged, UL Type rated enclosure
 - Mechanical reset standard
 - All components UL/CUL certified
- *Most standard models can ship within three business days.

120V, Single-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 4XSS
HP	FLA		DOLNRS-	-N04	-N4P	-NSS
				DIM	DIM	DIM
1/6	4.4	4.0-6.3A	0P1HP-120V	EN1	PC1	SS1
1/4	5.8	4.0-6.3A	0P2HP-120V	EN1	PC1	SS1
1/3	7.2	5.6-8.0A	0P3HP-120V	EN1	PC1	SS1
1/2	9.8	7.0-10A	0P5HP-120V	EN1	PC1	SS1
3/4	13.8	10-15A	0P7HP-120V	EN1	PC1	SS1
1	16	11-17A	001HP-120V	EN1	PC1	SS1
1-1/2	20	15-23A	1P5HP-120V	EN1	PC1	SS1
2	24	23-32A	002HP-120V	EN2	PC1	SS2
3	34	25-40A	003HP-120V	EN2	PC1	SS2
5	56	40-57A	005HP-120V	EN2	PC1	SS2

Options (select one of each)

Control/Coil Voltage	
Suffix	Description
-LINE	Motor Voltage and Control/Coil Voltages are internally connected
-X024	Externally supplied 24VAC Control/Coil Voltage
-X120	Externally supplied 120VAC Control/Coil Voltage

Operator Devices	
Suffix	Description
-RSET	Reset Pushbutton Only
-STSR	Start-Stop/Reset Pushbuttons
-HOAS	Hand-Off-Auto Selector Switch and Reset Pushbutton

230V, Single-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 4XSS
HP	FLA		DOLNRS-	-N04	-N4P	-NSS
				DIM	DIM	DIM
1/6	2.2	1.8-2.8A	0P1HP-230V	EN1	PC1	SS1
1/4	2.9	2.8-4.0A	0P2HP-230V	EN1	PC1	SS1
1/3	3.6	2.8-4.0A	0P3HP-230V	EN1	PC1	SS1
1/2	4.9	4.0-6.3A	0P5HP-230V	EN1	PC1	SS1
3/4	6.9	5.6-8.0A	0P7HP-230V	EN1	PC1	SS1
1	8.0	5.6-8.0A	001HP-230V	EN1	PC1	SS1
1-1/2	10	7.0-10A	1P5HP-230V	EN1	PC1	SS1
2	12	8.0-12.5A	002HP-230V	EN2	PC1	SS2
3	17	11-17A	003HP-230V	EN2	PC1	SS2
5	28	23-32A	005HP-230V	EN2	PC1	SS2
7-1/2	40	25-40A	007HP-230V	EN2	PC1	SS2
10	50	32-50A	010HP-230V	EN3	PC2	SS3

SELECTION QUESTIONS?

Our motor starters are custom-built to customer specifications. If you need assistance selecting a motor starter, contact FactoryMation Technical Support @ 1.800.972.0436

DIRECT-ON-LINE, NON-REVERSING

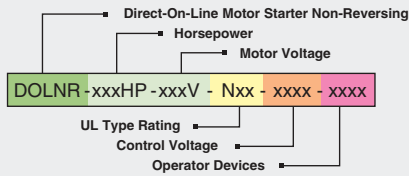


Product shown in picture includes optional items.
Dimensional information is available on the last page of this section.

FEATURES

- DOL Motor Starters include contactor and thermal overload
 - Three-phase 208V, 230V, and 460V input voltage models available, 1/2HP to 75HP
 - Hinged, UL Type-rated enclosure
 - Mechanical reset standard
 - All components UL/CUL certified
- *Most standard models can ship within three business days.

BUILD YOUR PART NUMBER



Options (select one of each)

Control/Coil Voltage	
Suffix	Description
-LINE	Motor Voltage and Control/Coil Voltages are internally connected
-X024	Externally supplied 24VAC Control/Coil Voltage
-X120	Externally supplied 120VAC Control/Coil Voltage
-X208	Externally supplied 208VAC Control/Coil Voltage
-X230	Externally supplied 230VAC Control/Coil Voltage

Operator Devices	
Suffix	Description
-RSET	Reset Pushbutton Only
-STSR	Start-Stop/Reset Pushbuttons
-HOAS	Hand-Off-Auto Selector Switch and Reset Pushbutton

208V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 4XSS
HP	FLA		DOLNR-	-N04	-N4P	-NSS
			DIM	DIM	DIM	DIM
1/2	2.4	1.8-2.8A	0P5HP-208V	EN1	PC1	SS1
3/4	3.5	2.8-4.0A	0P7HP-208V	EN1	PC1	SS1
1	4.6	4.0-6.3A	001HP-208V	EN1	PC1	SS1
1-1/2	6.6	5.6-8.0A	1P5HP-208V	EN1	PC1	SS1
2	7.5	5.6-8.0A	002HP-208V	EN1	PC1	SS1
3	10.6	8.0-12.5A	003HP-208V	EN1	PC1	SS1
5	16.7	11-17A	005HP-208V	EN1	PC1	SS1
7-1/2	24.2	23-32A	007HP-208V	EN1	PC1	SS1
10	30.8	25-40A	010HP-208V	EN2	PC1	SS2
15	46.2	32-50A	015HP-208V	EN2	PC1	SS2
20	59.4	50-63A	020HP-208V	EN2	PC1	SS2
25	74.8	63-80A	025HP-208V	EN3	PC1	SS2
30	88	75-97A	030HP-208V	EN3	PC2	SS3

230V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 4XSS
HP	FLA		DOLNR-	-N04	-N4P	-NSS
			DIM	DIM	DIM	DIM
1/2	2.2	1.8-2.8A	0P5HP-230V	EN1	PC1	SS1
3/4	3.2	2.8-4.0A	0P7HP-230V	EN1	PC1	SS1
1	4.2	4.0-6.3A	001HP-230V	EN1	PC1	SS1
1-1/2	6	4.0-6.3A	1P5HP-230V	EN1	PC1	SS1
2	6.8	5.6-8.0A	002HP-230V	EN1	PC1	SS1
3	9.6	7.0-10A	003HP-230V	EN1	PC1	SS1
5	15.2	11-17A	005HP-230V	EN1	PC1	SS1
7-1/2	22	15-23A	007HP-230V	EN1	PC1	SS1
10	28	25-40A	010HP-230V	EN2	PC1	SS2
15	42	32-50A	015HP-230V	EN2	PC1	SS2
20	54	40-57A	020HP-230V	EN2	PC1	SS2
25	68	57-70A	025HP-230V	EN3	PC1	SS2
30	80	63-80A	030HP-230V	EN3	PC2	SS3

460V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 4XSS
HP	FLA		DOLNR-	-N04	-N4P	-NSS
			DIM	DIM	DIM	DIM
1/2	1.1	0.8-1.2A	0P5HP-460V	EN1	PC1	SS1
3/4	1.6	1.2-1.8A	0P7HP-460V	EN1	PC1	SS1
1	2.1	1.8-2.8A	001HP-460V	EN1	PC1	SS1
1-1/2	3	2.8-4.0A	1P5HP-460V	EN1	PC1	SS1
2	3.4	2.8-4.0A	002HP-460V	EN1	PC1	SS1
3	4.8	4.0-6.3A	003HP-460V	EN1	PC1	SS1
5	7.6	5.6-8.0A	005HP-460V	EN1	PC1	SS1
7-1/2	11	8.0-12.5A	007HP-460V	EN1	PC1	SS1
10	14	10-15A	010HP-460V	EN1	PC1	SS1
15	21	15-23A	015HP-460V	EN1	PC1	SS1
20	27	25-40A	020HP-460V	EN1	PC1	SS1
25	34	25-40A	025HP-460V	EN2	PC1	SS2
30	40	25-40A	030HP-460V	EN2	PC1	SS2
40	52	40-57A	040HP-460V	EN2	PC1	SS2
50	65	57-70A	050HP-460V	EN2	PC1	SS2
60	77	63-80A	060HP-460V	EN3	PC2	SS3
75	96	75-97A	075HP-460V	EN3	PC2	SS3

ECONOMY COMBINATION MOTOR STARTERS

NON-REVERSING



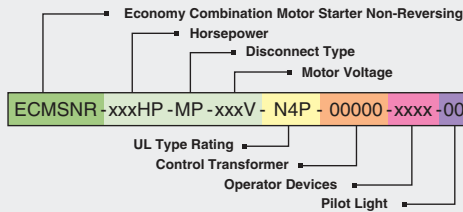
Dimensional information is available on the last page of this section.



FEATURES

- Manual Motor Starter with disconnect handle:
power disconnect + circuit protection
 - 208V, 230V, and 460V input voltage models up to 75HP
 - Enclosure choices that meet your application requirements
- *Most standard models can ship within three business days.

BUILD YOUR PART NUMBER



Options (select one of each)

Control Transformer	
Suffix	Description
-00000	None

Operator Devices	
Suffix	Description
-STSP	Start-Stop Pushbuttons
-HOAS	Hand-Off-Auto Selector Switch
-N024	No operators, 24VAC/60Hz Coil for remote op
-N120	No operators, 120VAC/60Hz Coil for remote op
-N208	No operators, 208VAC/60Hz Coil for remote op
-N230	No operators, 230VAC/60Hz Coil for remote op
-N460	No operators, 480VAC/60Hz Coil for remote op

Pilot Lights	
Suffix	Description
-00	None

208V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4X
HP	FLA		ECMSNR-	-N4P DIM
1/2	2.4	1.6-2.5A	0P5HP-MP-208V	PC1
3/4	3.5	2.5-4.0A	0P7HP-MP-208V	PC1
1	4.6	4.0-6.0A	001HP-MP-208V	PC1
1-1/2	6.6	6.3-10A	1P5HP-MP-208V	PC1
2	7.5	5.0-8.0A	002HP-MP-208V	PC1
3	10.6	9.0-13A	003HP-MP-208V	PC1
5	16.7	14-22A	005HP-MP-208V	PC1
7-1/2	24.2	18-26A	007HP-MP-208V	PC1
10	30.8	28-40A	010HP-MP-208V	PC1
15	46.2	34-50A	015HP-MP-208V	PC3
20	59.4	45-63A	020HP-MP-208V	PC3
25	74.8	70-90A	025HP-MP-208V	PC3
30	88	80-100A	030HP-MP-208V	PC3

230V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4X
HP	FLA		ECMSNR-	-N4P DIM
1/2	2.2	1.6-2.5A	0P5HP-MP-230V	PC1
3/4	3.2	2.5-4.0A	0P7HP-MP-230V	PC1
1	4.2	4.0-6.3A	001HP-MP-230V	PC1
1-1/2	6.0	4.0-6.0A	1P5HP-MP-230V	PC1
25	6.8	5.0-8.0A	002HP-MP-230V	PC1
3	9.6	6.0-10A	003HP-MP-230V	PC1
5	15.2	11-17A	005HP-MP-230V	PC1
7-1/2	22	14-22A	007HP-MP-230V	PC1
10	28	22-32A	010HP-MP-230V	PC1
15	42	34-50A	015HP-MP-230V	PC3
20	54	45-63A	020HP-MP-230V	PC3
25	68	55-75A	025HP-MP-230V	PC3
30	80	70-90A	030HP-MP-230V	PC3

460V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4X
HP	FLA		ECMSNR-	-N4P DIM
1/2	1.1	1.0-1.6A	0P5HP-MP-460V	PC1
1	2.1	1.6-2.5A	001HP-MP-460V	PC1
1-1/2	3	2.5-4.0A	1P5HP-MP-460V	PC1
2	3.4	2.5-4.0A	002HP-MP-460V	PC1
3	4.8	4.0-6.0A	003HP-MP-460V	PC1
5	7.6	5.0-8.0A	005HP-MP-460V	PC1
7-1/2	11	9.0-13A	007HP-MP-460V	PC1
10	14	11-17A	010HP-MP-460V	PC1
15	21	14-22A	015HP-MP-460V	PC1
20	27	22-32A	020HP-MP-460V	PC1
25	34	28-40A	025HP-MP-460V	PC1
30	40	34-50A	030HP-MP-460V	PC3
40	52	45-63A	040HP-MP-460V	PC3
50	65	55-75A	050HP-MP-460V	PC3
60	77	70-90A	060HP-MP-460V	PC3
75	96	80-100A	075HP-MP-460V	PC3

REVERSING

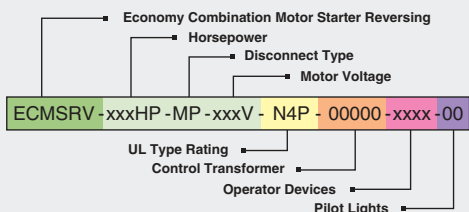


Dimensional information is available on the last page of this section.

FEATURES

- Manual Motor Starter with disconnect handle: power disconnect + circuit protection
 - 208V, 230V, and 460V input voltage models up to 75HP
 - Enclosure choices that meet your application requirements
- *Most standard models can ship within three business days.

BUILD YOUR PART NUMBER



Options (select one of each)

Control Transformer	
Suffix	Description
-00000	None

Operator Devices	
Suffix	Description
-FSRV	Forward-Stop-Reverse Pushbuttons
-FORV	Forward-Off-Reverse Selector Switch
-N024	No operators, 24VAC/60Hz Coil for remote op
-N120	No operators, 120VAC/60Hz Coil for remote op
-N208	No operators, 208VAC/60Hz Coil for remote op
-N230	No operators, 230VAC/60Hz Coil for remote op
-N460	No operators, 480VAC/60Hz Coil for remote op

Pilot Lights	
Suffix	Description
-00	None

208V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4X
HP	FLA		ECMSRV-	-N4P
1/2	2.4	1.6-2.5A	0P5HP-MP-208V	PC2
3/4	3.5	2.5-4.0A	0P7HP-MP-208V	PC2
1	4.6	4.0-6.0A	001HP-MP-208V	PC2
1-1/2	6.6	6.3-10A	1P5HP-MP-208V	PC2
2	7.5	5.0-8.0A	002HP-MP-208V	PC2
3	10.6	9.0-13A	003HP-MP-208V	PC2
5	16.7	14-22A	005HP-MP-208V	PC2
7-1/2	24.2	18-26A	007HP-MP-208V	PC2
10	30.8	28-40A	010HP-MP-208V	PC3
15	46.2	34-50A	015HP-MP-208V	PC3
20	59.4	45-63A	020HP-MP-208V	PC3
25	74.8	70-90A	025HP-MP-208V	PC3
30	88	80-100A	030HP-MP-208V	PC3

230V, Three-phase

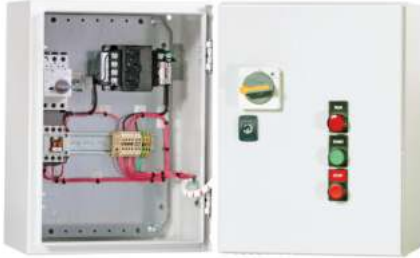
Max. UL Ratings		Current Trip Range	Part Number	UL Type 4X
HP	FLA		ECMSRV-	-N4P
1/2	2.2	1.6-2.5A	0P5HP-MP-230V	PC2
3/4	3.2	2.5-4.0A	0P7HP-MP-230V	PC2
1	6.0	4.0-6.3A	001HP-MP-230V	PC2
1-1/2	6.0	4.0-6.0A	1P5HP-MP-230V	PC2
2	6.8	5.0-8.0A	002HP-MP-230V	PC2
3	9.6	6.0-10A	003HP-MP-230V	PC2
5	15.2	11-17A	005HP-MP-230V	PC2
7-1/2	22	14-22A	007HP-MP-230V	PC2
10	28	22-32A	010HP-MP-230V	PC2
15	42	34-50A	015HP-MP-230V	PC3
20	54	45-63A	020HP-MP-230V	PC3
25	68	55-75A	025HP-MP-230V	PC3
30	80	70-90A	030HP-MP-230V	PC3

460V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4X
HP	FLA		ECMSRV-	-N4P
1/2	1.1	1.0-1.6A	0P5HP-MP-460V	PC2
1	2.1	1.6-2.5A	001HP-MP-460V	PC2
1-1/2	3.0	2.5-4.0A	1P5HP-MP-460V	PC2
2	3.4	2.5-4.0A	002HP-MP-460V	PC2
3	4.8	4.0-6.0A	003HP-MP-460V	PC2
5	7.6	5.0-8.0A	005HP-MP-460V	PC2
7-1/2	11	9.0-13A	007HP-MP-460V	PC2
10	14	11-17A	010HP-MP-460V	PC2
15	21	14-22A	015HP-MP-460V	PC2
20	27	22-32A	020HP-MP-460V	PC2
25	34	28-40A	025HP-MP-460V	PC3
30	40	34-50A	030HP-MP-460V	PC3
40	52	45-63A	040HP-MP-460V	PC3
50	65	55-75A	050HP-MP-460V	PC3
60	77	70-90A	060HP-MP-460V	PC3
75	96	80-100A	075HP-MP-460V	PC3

COMBINATION MOTOR STARTERS

NON-REVERSING



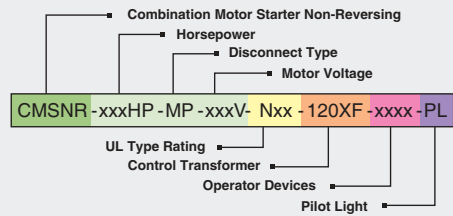
Dimensional information is available on the last page of this section.

FEATURES:

- Manual Motor Starter with disconnect handle: power disconnect + circuit protection
- 208V, 230V, and 460V input voltage models up to 75HP
- Enclosure choices that meet your application requirements

*Most standard models can ship within three business days.

BUILD YOUR PART NUMBER:



Options (select one of each)

Control Transformer	
Suffix	Description
-120XF	Primary same as input voltage, 120V Secondary

Operator Devices	
Suffix	Description
-STSP	Start-Stop Pushbuttons
-HOAS	Hand-Off-Auto Selector Switch

Pilot Lights	
Suffix	Description
-PL	Pilot light, RED, indicates when starter is ON

208V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 3R	UL Type 4XSS
HP	FLA			-N04	-N4X	-N3R	-NSS
			CMSNR-	DIM	DIM	DIM	DIM
1/2	2.4	1.6-2.5A	0P5HP-MP-208V	EL1	U1	R1	S1
3/4	3.5	2.5-4.0A	0P7HP-MP-208V	EL1	U1	R1	S1
1	4.6	4.0-6.0A	001HP-MP-208V	EL1	U1	R1	S1
1-1/2	6.6	6.3-10A	1P5HP-MP-208V	EL1	U1	R1	S1
2	7.5	5.0-8.0A	002HP-MP-208V	EL1	U1	R1	S1
3	10.6	9.0-13A	003HP-MP-208V	EL1	U1	R1	S1
5	16.7	14-22A	005HP-MP-208V	EL1	U1	R1	S1
7-1/2	24.2	18-26A	007HP-MP-208V	EL1	U1	R1	S1
10	30.2	28-40A	010HP-MP-208V	EL1	U1	R1	S1
15	46.2	34-50A	015HP-MP-208V	EL2	U2	R2	S2
20	59.4	45-63A	020HP-MP-208V	EL2	U2	R2	S2
25	74.8	70-90A	025HP-MP-208V	EL3	U3	R3	S3
30	88	80-100A	030HP-MP-208V	EL3	U3	R3	S3

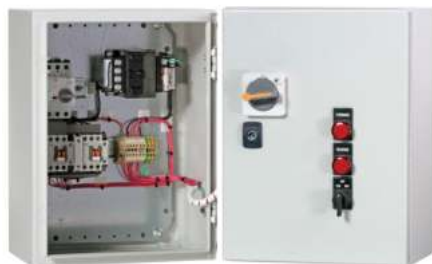
230V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 3R	UL Type 4XSS
HP	FLA			-N04	-N4X	-N3R	-NSS
			CMSNR-	DIM	DIM	DIM	DIM
1/2	2.2	1.6-2.5A	0P5HP-MP-230V	EL1	U1	R1	S1
3/4	3.2	2.5-4.0A	0P7HP-MP-230V	EL1	U1	R1	S1
1	4.2	4.0-6.3A	001HP-MP-230V	EL1	U1	R1	S1
1-1/2	6.0	4.0-6.0A	1P5HP-MP-230V	EL1	U1	R1	S1
2	6.8	5.0-8.0A	002HP-MP-230V	EL1	U1	R1	S1
3	9.6	6.0-10A	003HP-MP-230V	EL1	U1	R1	S1
5	15.2	11-17A	005HP-MP-230V	EL1	U1	R1	S1
7-1/2	22	14-22A	007HP-MP-230V	EL1	U1	R1	S1
10	28	22-32A	010HP-MP-230V	EL1	U1	R1	S1
15	42	34-50A	015HP-MP-230V	EL2	U2	R2	S2
20	54	45-63A	020HP-MP-230V	EL2	U2	R2	S2
25	68	55-75A	025HP-MP-230V	EL3	U3	R3	S3
30	80	70-90A	030HP-MP-230V	EL3	U3	R3	S3

460V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 3R	UL Type 4XSS
HP	FLA			-N04	-N4X	-N3R	-NSS
			CMSNR-	DIM	DIM	DIM	DIM
1/2	1.1	1.0-1.6A	0P5HP-MP-460V	EL1	U1	R1	S1
1	2.1	1.6-2.5A	001HP-MP-460V	EL1	U1	R1	S1
1-1/2	3	2.5-4.0A	1P5HP-MP-460V	EL1	U1	R1	S1
2	3.4	2.5-4.0A	002HP-MP-460V	EL1	U1	R1	S1
3	4.8	4.0-6.0A	003HP-MP-460V	EL1	U1	R1	S1
5	7.6	5.0-8.0A	005HP-MP-460V	EL1	U1	R1	S1
7-1/2	11	9.0-13A	007HP-MP-460V	EL1	U1	R1	S1
10	14	11-17A	010HP-MP-460V	EL1	U1	R1	S1
15	21	14-22A	015HP-MP-460V	EL1	U1	R1	S1
20	27	22-32A	020HP-MP-460V	EL1	U1	R1	S1
25	34	28-40A	025HP-MP-460V	EL2	U2	R2	S2
30	40	34-50A	030HP-MP-460V	EL2	U2	R2	S2
40	52	45-63A	040HP-MP-460V	EL2	U2	R2	S2
50	65	55-75A	050HP-MP-460V	EL3	U3	R3	S3
60	77	70-90A	060HP-MP-460V	EL3	U3	R3	S3
75	96	80-100A	075HP-MP-460V	EL3	U3	R3	S3

REVERSING



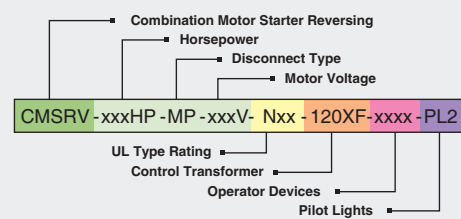
Dimensional information is available on the last page of this section.

FEATURES:

- Manual Motor Starter with disconnect handle: power disconnect + circuit protection
- 208V, 230V, and 460V input voltage models up to 75HP
- Enclosure choices that meet your application requirements

*Most standard models can ship within three business days.

BUILD YOUR PART NUMBER:



Options (select one of each)

Control Transformer	
Suffix	Description
-120XF	Primary same as input voltage, 120V Secondary

Operator Devices	
Suffix	Description
-FSRV	Forward-Stop-Reverse Pushbuttons
-FORV	Forward-Off-Reverse Selector Switch

Pilot Lights	
Suffix	Description
-PL2	Pilot lights, 1-FWD, 1-REV

208V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 3R	UL Type 4XSS
HP	FLA			CMSRV-	-N04	-N4X	-N3R
1/2	2.4	1.6-2.5A	OP5HP-MP-208V	EL1	U1	R1	S1
3/4	3.5	2.5-4.0A	OP7HP-MP-208V	EL1	U1	R1	S1
1	4.6	4.0-6.0A	001HP-MP-208V	EL1	U1	R1	S1
1-1/2	6.6	5.6-8.0A	1P5HP-MP-208V	EL1	U1	R1	S1
2	7.5	5.0-8.0A	002HP-MP-208V	EL1	U1	R1	S1
3	10.6	9.0-13A	003HP-MP-208V	EL1	U1	R1	S1
5	16.7	14-22A	005HP-MP-208V	EL1	U1	R1	S1
7-1/2	24.2	18-26A	007HP-MP-208V	EL1	U1	R1	S1
10	30.2	28-40A	010HP-MP-208V	EL1	U1	R1	S1
15	46.2	34-50A	015HP-MP-208V	EL2	U2	R2	S2
20	59.4	45-63A	020HP-MP-208V	EL2	U2	R2	S2
25	74.8	70-90A	025HP-MP-208V	EL3	U4	R3	S3
30	88	80-100A	030HP-MP-208V	EL3	U4	R3	S3

230V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 3R	UL Type 4XSS
HP	FLA			CMSRV-	-N04	-N4X	-N3R
1/2	2.2	1.6-2.5A	OP5HP-MP-230V	EL1	U1	R1	S1
3/4	3.2	2.5-4.0A	OP7HP-MP-230V	EL1	U1	R1	S1
1	4.2	4.0-6.3A	001HP-MP-230V	EL1	U1	R1	S1
1-1/2	6.0	4.0-6.0A	1P5HP-MP-230V	EL1	U1	R1	S1
2	6.8	5.0-8.0A	002HP-MP-230V	EL1	U1	R1	S1
3	9.6	6.0-10A	003HP-MP-230V	EL1	U1	R1	S1
5	15.2	11-17A	005HP-MP-230V	EL1	U1	R1	S1
7-1/2	22	14-22A	007HP-MP-230V	EL1	U1	R1	S1
10	28	22-32A	010HP-MP-230V	EL1	U1	R1	S1
15	42	34-50A	015HP-MP-230V	EL2	U2	R2	S2
20	54	45-63A	020HP-MP-230V	EL2	U2	R2	S2
25	68	55-75A	025HP-MP-230V	EL3	U4	R3	S3
30	80	70-90A	030HP-MP-230V	EL3	U4	R3	S3

460V, Three-phase

Max. UL Ratings		Current Trip Range	Part Number	UL Type 4/12	UL Type 4X	UL Type 3R	UL Type 4XSS
HP	FLA			CMSRV-	-N04	-N4X	-N3R
1/2	1.1	1.0-1.6A	OP5HP-MP-460V	EL1	U1	R1	S1
1	2.1	1.6-2.5A	001HP-MP-460V	EL1	U1	R1	S1
1-1/2	3	2.5-4.0A	1P5HP-MP-460V	EL1	U1	R1	S1
2	3.4	2.5-4.0A	002HP-MP-460V	EL1	U1	R1	S1
3	4.8	4.0-6.0A	003HP-MP-460V	EL1	U1	R1	S1
5	7.6	5.0-8.0A	005HP-MP-460V	EL1	U1	R1	S1
7-1/2	11	9.0-13A	007HP-MP-460V	EL1	U1	R1	S1
10	14	11-17A	010HP-MP-460V	EL1	U1	R1	S1
15	21	14-22A	015HP-MP-460V	EL1	U1	R1	S1
20	27	22-32A	020HP-MP-460V	EL1	U1	R1	S1
25	34	28-40A	025HP-MP-460V	EL1	U1	R1	S1
30	40	34-50A	030HP-MP-460V	EL2	U2	R2	S2
40	52	45-63A	040HP-MP-460V	EL2	U2	R2	S2
50	65	55-75A	050HP-MP-460V	EL3	U4	R3	S3
60	77	70-90A	060HP-MP-460V	EL3	U4	R3	S3
75	96	80-100A	075HP-MP-460V	EL3	U4	R3	S3

COMBINATION MOTOR STARTERS

THERMAL MAGNETIC CIRCUIT BREAKER, NON-REVERSING



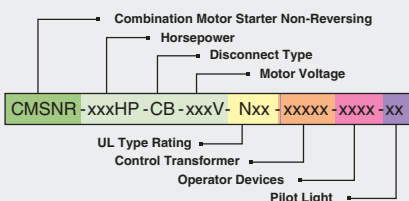
Dimensional information is available on the last page of this section.

FEATURES:

- MCCB with disconnect handle: power disconnect + circuit protection
- 208V, 230V, and 460V input voltage models up to 200HP
- Enclosure choices that meet your application requirements

*Built to order. Most standard models can ship within three business days.

BUILD YOUR PART NUMBER:



Options (select one of each)

Control Transformer	
Suffix	Description
-00000	None
-120XF	Primary same as input voltage, 120V Secondary

Operator Devices	
Suffix	Description
-STSP	Start-Stop Pushbuttons
-HOAS	Hand-Off-Auto Selector Switch
-N024	No operators, 24VAC/60Hz Coil for remote op
-N120	No operators, 120VAC/60Hz Coil for remote op
-N208	No operators, 208VAC/60Hz Coil for remote op
-N230	No operators, 230VAC/60Hz Coil for remote op
-N460	No operators, 480VAC/60Hz Coil for remote op

Pilot Lights	
Suffix	Description
-00	None
-PL	Pilot light, RED, indicates when starter is ON

208V, Three-phase

Max. UL Ratings		Current Trip Range	MCCB Amps	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSNR-	DIM	DIM	DIM	DIM
1/2	2.4	1.8-2.8A	15	0P5HP-CB-208V	F1	EL1	A1	R2
3/4	3.5	2.8-4.0A	15	0P7HP-CB-208V	F1	EL1	A1	R2
1	4.6	4.0-6.3A	15	001HP-CB-208V	F1	EL1	A1	R2
1-1/2	6.6	5.6-8.0A	15	1P5HP-CB-208V	F1	EL1	A1	R2
2	7.5	5.6-8.0A	15	002HP-CB-208V	F1	EL1	A1	R2
3	10.6	8.0-12.5A	15	003HP-CB-208V	F1	EL1	A1	R2
5	16.7	11-17A	30	005HP-CB-208V	F1	EL1	A1	R2
7-1/2	24.2	23-32A	40	007HP-CB-208V	F1	EL1	A1	R2
10	30.8	25-40A	40	010HP-CB-208V	F1	EL1	A1	R2
15	46.2	32-50A	60	015HP-CB-208V	F2	EL2	U2	R2
20	59.4	50-63A	80	020HP-CB-208V	F2	EL2	U2	R2
25	74.8	63-80A	100	025HP-CB-208V	F2	EL2	U2	R2
30	88	75-97A	125	030HP-CB-208V	F4	EL3	U3	R3
40	114	100-150A	175	040HP-CB-208V	F6	EL4	U5	R4
50	143	100-150A	200	050HP-CB-208V	F6	EL4	U5	R4
60	169	140-215A	250	060HP-CB-208V	F7	EL5	U6	R5

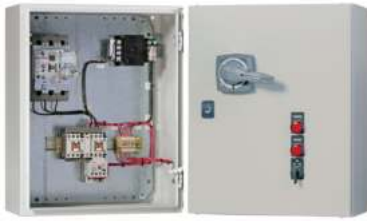
230V, Three-phase

Max. UL Ratings		Current Trip Range	MCCB Amps	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSNR-	DIM	DIM	DIM	DIM
1/2	2.0	1.8-2.8A	15	0P5HP-CB-230V	F1	EL1	A1	R2
3/4	3.2	2.8-4.0A	15	0P7HP-CB-230V	F1	EL1	A1	R2
1	4.2	4.0-6.3A	15	001HP-CB-230V	F1	EL1	A1	R2
1-1/2	6.0	4.0-6.3A	15	1P5HP-CB-230V	F1	EL1	A1	R2
2	6.8	5.6-8.0A	15	002HP-CB-230V	F1	EL1	A1	R2
3	9.6	7.0-10A	15	003HP-CB-230V	F1	EL1	A1	R2
5	15.2	11-17A	20	005HP-CB-230V	F1	EL1	A1	R2
7-1/2	22	15-23A	30	007HP-CB-230V	F1	EL1	A1	R2
10	28	25-40A	40	010HP-CB-230V	F1	EL1	A1	R2
15	42	32-50A	60	015HP-CB-230V	F1	EL1	A1	R2
20	54	40-57A	80	020HP-CB-230V	F2	EL2	U2	R2
25	68	57-70A	100	025HP-CB-230V	F2	EL2	U2	R2
30	80	63-80A	100	030HP-CB-230V	F2	EL2	U2	R2
40	104	90-112A	175	040HP-CB-230V	F4	EL3	U3	R3
50	130	100-150A	200	050HP-CB-230V	F6	EL4	U5	R4
60	154	140-215A	200	060HP-CB-230V	F6	EL4	U5	R4
75	192	140-215A	250	075HP-CB-230V	F7	EL5	U6	R5
100	248	200-310A	400	100HP-CB-230V	-	EL6	-	R6

460V, Three-phase

Max. UL Ratings		Current Trip Range	MCCB Amps	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSNR-	DIM	DIM	DIM	DIM
1/2	1.1	0.8-1.2A	15	0P5HP-CB-460V	F1	EL1	A1	R2
1	2.1	1.8-2.8A	15	001HP-CB-460V	F1	EL1	A1	R2
1-1/2	3	2.8-4.0A	15	1P5HP-CB-460V	F1	EL1	A1	R2
2	3.4	2.8-4.0A	15	002HP-CB-460V	F1	EL1	A1	R2
3	4.8	4.0-6.3A	15	003HP-CB-460V	F1	EL1	A1	R2
5	7.6	5.6-8.0A	15	005HP-CB-460V	F1	EL1	A1	R2
7-1/2	11	8.0-12.5A	15	007HP-CB-460V	F1	EL1	A1	R2
10	14	10-15A	20	010HP-CB-460V	F1	EL1	A1	R2
15	21	15-23A	30	015HP-CB-460V	F1	EL1	A1	R2
20	27	25-40A	40	020HP-CB-460V	F1	EL1	A1	R2
25	34	25-40A	50	025HP-CB-460V	F1	EL1	A1	R2
30	40	25-40A	60	030HP-CB-460V	F1	EL1	A1	R2
40	52	40-57A	80	040HP-CB-460V	F2	EL2	U2	R2
50	65	57-70A	100	050HP-CB-460V	F2	EL2	U2	R2
60	77	63-80A	100	060HP-CB-460V	F2	EL2	U2	R2
75	96	75-97A	125	075HP-CB-460V	F4	EL3	U3	R3
100	124	100-150A	175	100HP-CB-460V	F6	EL4	U5	R4
125	156	140-215A	200	125HP-CB-460V	F6	EL4	U5	R4
150	180	140-215A	250	150HP-CB-460V	F7	EL5	U6	R5
200	240	200-310A	300	200HP-CB-460V	-	EL6	-	R6

THERMAL MAGNETIC CIRCUIT BREAKER, REVERSING



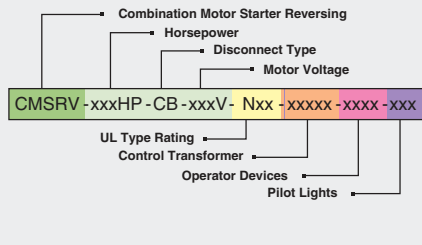
Dimensional information is available on the last page of this section.

FEATURES:

- MCCB with disconnect handle: power disconnect + circuit protection
- 208V, 230V, and 460V input voltage models up to 200HP
- Enclosure choices that meet your application requirements

*Built to order. Most standard models can ship within three business days.

BUILD YOUR PART NUMBER:



Options (select one of each)

Control Transformer	
Suffix	Description
-00000	None
-120XF	Primary same as input voltage, 120V Secondary

Operator Devices	
Suffix	Description
-FSRV	Forward-Stop-Reverse Pushbuttons
-FORV	Forward-Off-Reverse Selector Switch
-N024	No operators, 24VAC/60Hz coil for remote op
-N120	No operators, 120VAC/60Hz coil for remote op
-N208	No operators, 208VAC/60Hz Coil for remote op
-N230	No operators, 230VAC/60Hz coil for remote op
-N460	No operators, 480VAC/60Hz coil for remote op

Pilot Lights	
Suffix	Description
-00	None
-PL2	Pilot lights, 1-FWD, 1-REV

208V, Three-phase

Max. UL Ratings		Current Trip Range	MCCB Amps	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSRV-	DIM	DIM	DIM	DIM
1/2	2.4	1.8-2.8A	15	0P5HP-CB-208V	F2	EL2	A1	R2
3/4	3.5	2.8-4.0A	15	0P7HP-CB-208V	F2	EL2	A1	R2
1	4.6	4.0-6.3A	15	001HP-CB-208V	F2	EL2	A1	R2
1-1/2	6.6	5.6-8.0A	15	1P5HP-CB-208V	F2	EL2	A1	R2
2	7.5	5.6-8.0A	15	002HP-CB-208V	F2	EL2	A1	R2
3	10.6	8.0-12.5A	15	003HP-CB-208V	F2	EL2	A1	R2
5	16.7	11-17A	30	005HP-CB-208V	F2	EL2	A1	R2
7-1/2	24.2	23-32A	40	007HP-CB-208V	F2	EL2	A1	R2
10	30.8	25-40A	40	010HP-CB-208V	F2	EL2	A1	R2
15	46.2	32-50A	60	015HP-CB-208V	F2	EL2	U3	R2
20	59.4	50-63A	80	020HP-CB-208V	F2	EL2	U3	R2
25	74.8	63-80A	100	025HP-CB-208V	F2W	EL2W	U4	R3
30	88	75-97A	125	030HP-CB-208V	F6	EL4	U5	R4
40	114	100-150A	175	040HP-CB-208V	F6	EL4	U5	R4
50	143	100-150A	200	050HP-CB-208V	F7	EL5	U6	R5
60	169	140-215A	250	060HP-CB-208V	-	EL6	-	-

230V, Three-phase

Max. UL Ratings		Current Trip Range	MCCB Amps	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSRV-	DIM	DIM	DIM	DIM
1/2	2.2	1.8-2.8A	15	0P5HP-CB-230V	F2	EL2	A1	R2
3/4	3.2	2.8-4.0A	15	0P7HP-CB-230V	F2	EL2	A1	R2
1	4.2	4.0-6.3A	15	001HP-CB-230V	F2	EL2	A1	R2
1-1/2	6.0	4.0-6.3A	15	1P5HP-CB-230V	F2	EL2	A1	R2
2	6.8	5.6-8.0A	15	002HP-CB-230V	F2	EL2	A1	R2
3	9.6	7.0-10A	15	003HP-CB-230V	F2	EL2	A1	R2
5	15.2	11-17A	20	005HP-CB-230V	F2	EL2	A1	R2
7-1/2	22	15-23A	30	007HP-CB-230V	F2	EL2	A1	R2
10	28	25-40A	40	010HP-CB-230V	F2	EL2	A1	R2
15	42	32-50A	60	015HP-CB-230V	F2	EL2	U3	R2
20	54	40-57A	80	020HP-CB-230V	F2	EL2	U3	R2
25	68	57-70A	100	025HP-CB-230V	F2W	EL2W	U4	R3
30	80	63-80A	100	030HP-CB-230V	F2W	EL2W	U4	R3
40	104	90-112A	175	040HP-CB-230V	F6	EL4	U5	R4
50	130	100-150A	200	050HP-CB-230V	F7	EL5	U6	R5
60	154	140-215A	200	060HP-CB-230V	F7	EL5	U6	R5
75	192	140-215A	250	075HP-CB-230V	-	EL6	-	-
100	248	200-310A	400	100HP-CB-230V	-	EL6	-	-

460V, Three-phase

Max. UL Ratings		Current Trip Range	MCCB Amps	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSRV-	DIM	DIM	DIM	DIM
1/2	1.1	0.8-1.2A	15	0P5HP-CB-460V	F2	EL2	A1	R2
1	2.1	1.8-2.8A	15	001HP-CB-460V	F2	EL2	A1	R2
1-1/2	3	2.8-4.0A	15	1P5HP-CB-460V	F2	EL2	A1	R2
2	3.4	2.8-4.0A	15	002HP-CB-460V	F2	EL2	A1	R2
3	4.8	4.0-6.3A	15	003HP-CB-460V	F2	EL2	A1	R2
5	7.6	5.6-8.0A	15	005HP-CB-460V	F2	EL2	A1	R2
7-1/2	11	8.0-12.5A	15	007HP-CB-460V	F2	EL2	A1	R2
10	14	10-15A	20	010HP-CB-460V	F2	EL2	A1	R2
15	21	15-23A	30	015HP-CB-460V	F2	EL2	A1	R2
20	27	25-40A	40	020HP-CB-460V	F2	EL2	A1	R2
25	34	25-40A	50	025HP-CB-460V	F2	EL2	A1	R2
30	40	25-40A	60	030HP-CB-460V	F2	EL2	U3	R2
40	52	40-57A	80	040HP-CB-460V	F2	EL2	U3	R2
50	65	57-70A	100	050HP-CB-460V	F2W	EL2W	U4	R3
60	77	63-80A	100	060HP-CB-460V	F2W	EL2W	U4	R3
75	96	75-97A	125	075HP-CB-460V	F6	EL4	U5	R4
100	124	100-150A	175	100HP-CB-460V	F7	EL5	U6	R5
125	156	140-215A	200	125HP-CB-460V	F7	EL5	U6	R5
150	180	140-215A	250	150HP-CB-460V	-	EL6	-	-
200	240	200-310A	300	200HP-CB-460V	-	EL6	-	-

COMBINATION MOTOR STARTERS

FUSIBLE DISCONNECT, NON-REVERSING

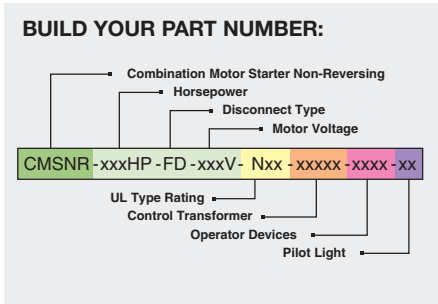


Dimensional information is available on the last page of this section.

FEATURES:

- Fusible disconnect: power disconnect + circuit protection
- Disconnects accept J-type fuses (power fuses not provided)
- 208V, 230V, and 460V input voltage models up to 200HP
- Enclosure choices that meet your application requirements

*Built to order. Most standard models can ship within three business days.



Options (select one of each)

Control Transformer	
Suffix	Description
-00000	None
-120XF	Primary same as input voltage, 120V Secondary

Operator Devices	
Suffix	Description
-STSP	Start-Stop Pushbuttons
-HOAS	Hand-Off-Auto Selector Switch
-N024	No operators, 24VAC/60Hz Coil for remote op
-N120	No operators, 120VAC/60Hz Coil for remote op
-N208	No operators, 208VAC/60Hz Coil for remote op
-N230	No operators, 230VAC/60Hz Coil for remote op
-N460	No operators, 480VAC/60Hz Coil for remote op

Pilot Lights	
Suffix	Description
-00	None
-PL	Pilot light, RED, indicates when starter is ON

208V, Three-phase

Max. UL Ratings		Current Trip Range	Discon. Rating	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
					DIM	DIM	DIM	DIM
1/2	2.4	1.8-2.8A	30	0P5HP-FD-208V	F1	EL1W	A1	R2
3/4	3.5	2.8-4.0A	30	0P7HP-FD-208V	F1	EL1W	A1	R2
1	4.6	4.0-6.3A	30	001HP-FD-208V	F1	EL1W	A1	R2
1-1/2	6.6	5.6-8.0A	30	1P5HP-FD-208V	F1	EL1W	A1	R2
2	7.5	5.6-8.0A	30	002HP-FD-208V	F1	EL1W	A1	R2
3	10.6	8.0-12.5A	30	003HP-FD-208V	F1	EL1W	A1	R2
5	16.7	11-17A	30	005HP-FD-208V	F1	EL1W	A1	R2
7-1/2	24.2	23-32A	60	007HP-FD-208V	F1	EL1W	A1	R2
10	30.8	25-40A	60	010HP-FD-208V	F1	EL1W	A1	R2
15	46.2	32-50A	60	015HP-FD-208V	F4	EL3	U3	R3
20	59.4	50-63A	100	020HP-FD-208V	F4	EL3	U3	R3
25	74.8	63-80A	100	025HP-FD-208V	F6	EL4	U5	R4
40	114	100-150A	200	040HP-FD-208V	F6	EL4	U5	R4
50	143	100-150A	200	050HP-FD-208V	F7	EL5	U6	R5
60	169	140-215A	400	060HP-FD-208V	F7	EL5	U6	R5
75	211	140-215A	400	075HP-FD-208V	-	EL6	-	-

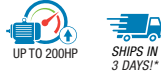
230V, Three-phase

Max. UL Ratings		Current Trip Range	Discon. Rating	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
					DIM	DIM	DIM	DIM
1/2	2.2	1.8-2.8A	30	0P5HP-FD-230V	F1	EL1W	A1	R2
3/4	3.2	2.8-4.0A	30	0P7HP-FD-230V	F1	EL1W	A1	R2
1	4.2	4.0-6.3A	30	001HP-FD-230V	F1	EL1W	A1	R2
1-1/2	6.0	4.0-6.3A	30	1P5HP-FD-230V	F1	EL1W	A1	R2
2	6.8	5.6-8.0A	30	002HP-FD-230V	F1	EL1W	A1	R2
3	9.6	7.0-10A	30	003HP-FD-230V	F1	EL1W	A1	R2
5	15.2	11-17A	30	005HP-FD-230V	F1	EL1W	A1	R2
7-1/2	22	15-23A	60	007HP-FD-230V	F1	EL1W	A1	R2
10	28	25-40A	60	010HP-FD-230V	F1	EL1W	A1	R2
15	42	32-50A	100	015HP-FD-230V	F4	EL3	U3	R3
20	54	40-57A	100	020HP-FD-230V	F4	EL3	U3	R3
25	68	57-70A	200	025HP-FD-230V	F4	EL3	U3	R3
30	80	63-80A	200	030HP-FD-230V	F6	EL4	U5	R4
40	104	90-112A	200	040HP-FD-230V	F6	EL4	U5	R4
50	130	100-150A	200	050HP-FD-230V	F6	EL4	U5	R4
60	154	140-215A	400	060HP-FD-230V	F7	EL5	U6	R5
75	192	140-215A	400	075HP-FD-230V	F7	EL5	U6	R5
100	248	200-310A	400	100HP-FD-230V	-	EL6	-	-

460V, Three-phase

Max. UL Ratings		Current Trip Range	Discon. Rating	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
					DIM	DIM	DIM	DIM
1/2	1.1	0.8-1.2A	30	0P5HP-FD-460V	F1	EL1W	A1	R2
1	2.1	1.8-2.8A	30	001HP-FD-460V	F1	EL1W	A1	R2
1-1/2	3	2.8-4.0A	30	1P5HP-FD-460V	F1	EL1W	A1	R2
2	3.4	2.8-4.0A	30	002HP-FD-460V	F1	EL1W	A1	R2
3	4.8	4.0-6.3A	30	003HP-FD-460V	F1	EL1W	A1	R2
5	7.6	5.6-8.0A	30	005HP-FD-460V	F1	EL1W	A1	R2
7-1/2	11	8.0-12.5A	30	007HP-FD-460V	F1	EL1W	A1	R2
10	14	10-15A	30	010HP-FD-460V	F1	EL1W	A1	R2
15	21	15-23A	30	015HP-FD-460V	F1	EL1W	A1	R2
20	27	25-40A	60	020HP-FD-460V	F1	EL3	A1	R2
25	34	25-40A	60	025HP-FD-460V	F1	EL3	U3	R2
30	40	25-40A	60	030HP-FD-460V	F4	EL3	U2	R3
40	52	40-57A	60	040HP-FD-460V	F4	EL2	U3	R3
50	65	57-70A	100	050HP-FD-460V	F4	EL2	U3	R3
60	77	63-80A	100	060HP-FD-460V	F6	EL4	U5	R4
75	96	75-97A	100	075HP-FD-460V	F6	EL4	U5	R4
100	124	100-150A	200	100HP-FD-460V	F6	EL4	U5	R4
150	180	140-215A	400	150HP-FD-460V	F7	EL5	U6	R5
200	240	200-310A	400	200HP-FD-460V	-	EL6	-	-

FUSIBLE DISCONNECT, REVERSING



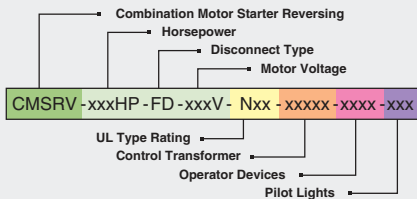
Dimensional information is available on the last page of this section.

FEATURES:

- Fusible disconnect: power disconnect + circuit protection
- Disconnects accept J-type fuses (power fuses not provided)
- 208V, 230V, and 460V input voltage models up to 200HP
- Enclosure choices that meet your application requirements

*Built to order. Most standard models can ship within three business days.

BUILD YOUR PART NUMBER:



Options (select one of each)

Control Transformer	
Suffix	Description
-0000	None
-120XF	Primary same as input voltage, 120V Secondary

Operator Devices	
Suffix	Description
-FSRV	Forward-Stop-Reverse Pushbuttons
-FORV	Forward-Off-Reverse Selector Switch
-N024	No operators, 24VAC/60Hz coil for remote op
-N120	No operators, 120VAC/60Hz coil for remote op
-N208	No operators, 208VAC/60Hz Coil for remote op
-N230	No operators, 230VAC/60Hz coil for remote op
-N460	No operators, 480VAC/60Hz coil for remote op

Pilot Lights	
Suffix	Description
-00	None
-PL2	Pilot lights, 1-FWD, 1-REV

208V, Three-phase

Max. UL Ratings		Current Trip Range	Discon. Rating	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSRV-	DIM	DIM	DIM	DIM
1/2	2.4	1.8-2.8A	30	0P5HP-FD-208V	F1	EL1W	A1	R2
3/4	3.5	2.8-4.0A	30	0P7HP-FD-208V	F1	EL1W	A1	R2
1	4.6	4.0-6.3A	30	001HP-FD-208V	F1	EL1W	A1	R2
1-1/2	6.6	5.6-8.0A	30	1P5HP-FD-208V	F1	EL1W	A1	R2
2	7.5	5.6-8.0A	30	002HP-FD-208V	F1	EL1W	A1	R2
3	10.6	8.0-12.5A	30	003HP-FD-208V	F1	EL1W	A1	R2
5	16.7	11-17A	30	005HP-FD-208V	F1	EL1W	A1	R2
7-1/2	24.2	23-32A	60	007HP-FD-208V	F1	EL1W	A1	R2
10	30.8	25-40A	60	010HP-FD-208V	F1	EL1W	A1	R2
15	46.2	32-50A	60	015HP-FD-208V	F4	EL3	U3	R3
20	59.4	50-63A	100	020HP-FD-208V	F4	EL3	U3	R3
25	74.8	63-80A	100	025HP-FD-208V	F6	EL4	U5	R4
40	114	100-150A	200	040HP-FD-208V	-	EL5	U6	R5
50	143	100-150A	200	050HP-FD-208V	-	EL6	U6	-
60	169	140-215A	400	060HP-FD-208V	-	EL6	-	-
75	211	140-215A	400	075HP-FD-208V	-	EL6	-	-

230V, Three-phase

Max. UL Ratings		Current Trip Range	Discon. Rating	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSRV-	DIM	DIM	DIM	DIM
1/2	2.2	1.8-2.8A	30	0P5HP-FD-230V	F1	EL1W	A1	R2
3/4	3.2	2.8-4.0A	30	0P7HP-FD-230V	F1	EL1W	A1	R2
1	4.2	4.0-6.3A	30	001HP-FD-230V	F1	EL1W	A1	R2
1-1/2	6.0	4.0-6.3A	30	1P5HP-FD-230V	F1	EL1W	A1	R2
2	6.8	5.6-8.0A	30	002HP-FD-230V	F1	EL1W	A1	R2
3	9.6	7.0-10A	30	003HP-FD-230V	F1	EL1W	A1	R2
5	15.2	11-17A	30	005HP-FD-230V	F1	EL1W	A1	R2
7-1/2	22	15-23A	60	007HP-FD-230V	F1	EL1W	A1	R2
10	28	25-40A	60	010HP-FD-230V	F1	EL1W	A1	R2
15	42	32-50A	100	015HP-FD-230V	F4	EL3	U3	R3
20	54	40-57A	100	020HP-FD-230V	F4	EL3	U3	R3
25	68	57-70A	200	025HP-FD-230V	F4	EL3	U3	R3
30	80	63-80A	200	030HP-FD-230V	F6	EL4	U5	R4
40	104	90-112A	200	040HP-FD-230V	F7	EL5	U6	R5
50	130	100-150A	200	050HP-FD-230V	F7	EL5	U6	R5
60	154	140-215A	400	060HP-FD-230V	-	EL6	-	-
75	192	140-215A	400	075HP-FD-230V	-	EL6	-	-
100	248	200-310A	400	100HP-FD-230V	-	EL6	-	-

460V, Three-phase

Max. UL Ratings		Current Trip Range	Discon. Rating	Part Number	UL Type 1	UL Type 4/12	UL Type 4X	UL Type 3R
HP	FLA				-N01	-N04	-N4X	-N3R
				CMSRV-	DIM	DIM	DIM	DIM
1/2	1.1	0.8-1.2A	30	0P5HP-FD-460V	F1	EL1W	A1	R2
1	2.1	1.8-2.8A	30	001HP-FD-460V	F1	EL1W	A1	R2
1-1/2	3	2.8-4.0A	30	1P5HP-FD-460V	F1	EL1W	A1	R2
2	3.4	2.8-4.0A	30	002HP-FD-460V	F1	EL1W	A1	R2
3	4.8	4.8-6.3A	30	003HP-FD-460V	F1	EL1W	A1	R2
5	7.6	5.6-8.0A	30	005HP-FD-460V	F1	EL1W	A1	R2
7-1/2	11	8.0-12.5A	30	007HP-FD-460V	F1	EL1W	A1	R2
10	14	10-15A	30	010HP-FD-460V	F1	EL1W	A1	R2
15	21	15-23A	30	015HP-FD-460V	F1	EL1W	A1	R2
20	27	25-40A	60	020HP-FD-460V	F1	EL1W	A1	R2
25	34	25-40A	60	025HP-FD-460V	F1	EL1W	A1	R2
30	40	25-40A	60	030HP-FD-460V	F1	EL1W	A1	R2
40	52	40-57A	100	040HP-FD-460V	F4	EL3	U3	R3
50	65	57-70A	100	050HP-FD-460V	F4	EL3	U3	R3
60	77	63-80A	100	060HP-FD-460V	F6	EL4	U5	R4
75	96	75-97A	100	075HP-FD-460V	F7	EL5	U6	R5
100	124	100-150A	200	100HP-FD-460V	F7	EL5	U6	R5
150	180	140-215A	400	150HP-FD-460V	-	EL6	-	-
200	240	200-310A	400	200HP-FD-460V	-	EL6	-	-

COMBINATION SOFT STARTERS



Dimensional information is available on the last page of this section.

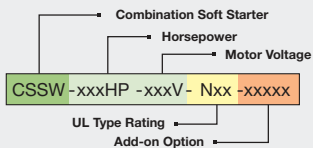
FEATURES:

- 5 to 1200 HP
- 230 or 460VAC
- UL Type 1/12, 3R, 4 (optional rain shield)
- MCCB with through door disconnect, standard
- Start/Stop Pushbuttons, standard
- Control transformer, standard
- Optional door mounted keypad and pilot lights
- Optional AC3 bypass, includes:
 - Contactor
 - Overload
 - HOA switch

Delivery: Combination soft starters typically ship within 1-2 weeks after receipt of order

Add-on Options	
Suffix	Description
-AC3	AC3 Bypass
-KPD	Door Mounted Keypad
-PL2	Run/Fault Pilot Lights

BUILD YOUR PART NUMBER:



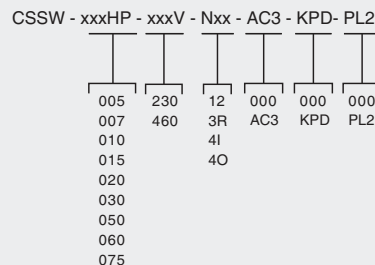
230VAC

Part Number	Max HP	FLA	UL Type 1/12 (-N12)	UL Type 3R (-N3R)	UL Type 4 Indoor (-N4I)	UL Type 4 Outdoor* (-N4O)
			DIM	DIM	DIM	DIM
SSW07 Soft Start in Wall-mount Enclosure						
CSSW-005HP-230V	5	15.2	SA	SA	SA	SA
CSSW-007HP-230V	7.5	22	SA	SA	SA	SA
CSSW-010HP-230V	10	28	SA	SA	SA	SA
CSSW-015HP-230V	15	42	SB	SB	SB	SB
CSSW-020HP-230V	20	54	SB	SB	SB	SB
CSSW-030HP-230V	30	80	SB	SB	SB	SB
CSSW-050HP-230V	50	130	SC	SC	SD	SD
CSSW-060HP-230V	60	154	SC	SC	SD	SD
CSSW-075HP-230V	75	192	SC	SC	SD	SD
SSW06 Soft Start in Free Standing Floor-mount Enclosure						
CSSW-100HP-230V	100	248	SE	SE	SE	SE
CSSW-125HP-230V	125	312	SE	SE	SE	SE
CSSW-150HP-230V	150	360	SE	SE	SE	SE

460VAC

Part Number	Max HP	FLA	UL Type1/12 (-N12)	UL Type 3R (-N3R)	UL Type 4 Indoor (-N4I)	UL Type 4 Outdoor* (-N4O)
			DIM	DIM	DIM	DIM
SSW07 Soft Start in Wall-mount Enclosure						
CSSW-012HP-460V	12.5	17	SA	SA	SA	SA
CSSW-015HP-460V	15	21	SA	SA	SA	SA
CSSW-020HP-460V	20	27	SA	SA	SA	SA
CSSW-030HP-460V	30	40	SB	SB	SB	SB
CSSW-050HP-460V	50	65	SB	SB	SB	SB
CSSW-060HP-460V	60	77	SB	SB	SB	SB
CSSW-100HP-460V	100	124	SC	SC	SD	SD
CSSW-125HP-460V	125	156	SC	SC	SD	SD
CSSW-150HP-460V	150	180	SC	SC	SD	SD
SSW06 Soft Start in Free Standing Floor-mount Enclosure						
CSSW-200HP-460V	200	240	SE	SE	SE	SE
CSSW-250HP-460V	250	302	SE	SE	SE	SE
CSSW-300HP-460V	300	361	SE	SE	SE	SE
CSSW-350HP-460V	350	414	SE	SE	SE	SE
CSSW-400HP-460V	400	477	SE	SE	SE	SE
CSSW-500HP-460V	500	590	SF	SF	-	-
CSSW-550HP-460V	550	670	SF	SF	-	-
CSSW-700HP-460V	700	800	SF	SF	-	-
CSSW-800HP-460V	800	950	SG	SG	-	-
CSSW-900HP-460V	900	1100	SG	SG	-	-
CSSW-1200HP-460V	1200	1400	SG	SG	-	-

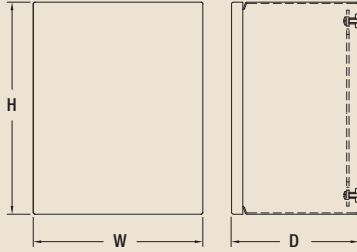
QUICK SELECTION GUIDE:



CUSTOM MOTOR STARTER ENCLOSURE DIMENSIONS

Dimension Legend

inches



Note: Dimensions occasionally will vary according to enclosure availability. If enclosure dimensions are critical for your application, ask for that information and we will provide it on the approval document.

Enclosure Dimensions

DIM	H x W x D (Inches)
SA	20 x 16 x 8
SB	24 x 20 x 12
SC	40 x 32 x 12
SD	48 x 30 x 10
SE	72 x 72 x 18
SF	90 x 72 x 20
SG	86 x 112 x 20

DOL Motor Starters

UL Type 1 (N01)

DIM	H	W	D
ED1	9.5	5.5	5.0
ED2	13.0	7.5	5.6
ED3	17.8	9.5	6.7

UL Type 4/12 (N04)

DIM	H	W	D
EN1	9.84	7.87	6.10
EN2	11.81	9.84	8.27
EN3	15.75	11.81	8.27

UL Type 4/12 enclosures are manufactured of mild steel and powder coated with RAL 7035 finish.

UL Type 4X Non-metallic (N4P)

DIM	H	W	D
PC1	11.81	7.87	7.87
PC2	17.72	13.78	7.87
EP1	7.3	4.1	4.4
EP2	8.3	4.7	5.0
EP3	11.0	7.1	5.6
EP4	14.2	9.9	6.6

UL Type 4X Stainless Steel (NSS)

DIM	H	W	D
SS1	10	8	6
SS2	12	10	8
SS3	14	12	8

UL Type 4X Stainless Steel enclosures are manufactured of 304 stainless steel with #4 brushed finish.

Combination Motor Starters

UL Type 1 (N01)

DIM	H	W	D
F1	16	16	8
F2	20	16	8
F2W	20	20	8
F3	24	20	8
F4	24	20	10
F5	30	24	8
F6	30	24	12
F7	36	30	12

UL Type 1 enclosures are manufactured of phosphatized carbon steel and powder coated ANSI-61 gray.

UL Type 3R (N3R)

DIM	H	W	D
R1	16	12	8
R2	20	16	8
R3	24	20	12
R4	30	24	12
R5	36	30	12
R6	42	30	12

UL Type 3R enclosures are manufactured of phosphatized carbon steel and powder coated ANSI-61 gray.

UL Type 4X Fiberglass (N4X)

DIM	H	W	D
U1	16.34	12.4	6.69
A1	16	14	8
U2	20.28	16.34	9.06
U3	24.21	16.34	9.06
U4	28.94	21.06	10.63
U5	32.87	25	11.81
U6	40.75	32.87	11.81

UL Type 4X enclosures are manufactured of fiberglass reinforced polyester.

UL Type 4/12 (N04)

DIM	H	W	D
EL1	15.75	11.81	8.27
EL1W	15.75	15.75	8.27
EL2	19.69	15.75	8.27
EL2W	19.69	19.69	8.27
EL3	23.62	19.69	11.81
EL4	31.5	23.62	11.81
EL5	39.37	31.5	11.81
EL6	47.24	31.5	11.81

UL Type 4/12 enclosures are manufactured of mild steel and powder coated with RAL 7035 finish.

UL Type 4X Polyester (N4P)

DIM	H	W	D
PC1	11.81	7.87	7.87
PC2	17.72	13.78	7.87
PC3	23.62	19.69	9.84

UL Type 4X Polyester enclosures are manufactured of high impact UV protected polyester.

UL Type 4X Stainless Steel (NSS)

DIM	H	W	D
S1	15.75	11.81	8.27
S2	19.69	15.75	8.27
S3	23.62	23.62	11.81

UL Type 4X Stainless Steel enclosures are manufactured of 304 stainless steel with 240S grained finish.

FMX INDUSTRIAL CONTROL PRODUCTS



When you see the FMX brand on a product it means you can be assured of high quality and competitive pricing. FMX products are sourced directly from some of the best manufacturers in the world. The direct relationships with these manufacturing partners enable FactoryMation to offer FMX products at an incredible price point with no compromise to specifications, function, or quality you expect from industrial control products.

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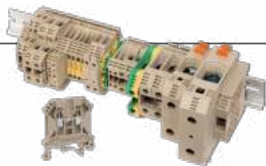
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