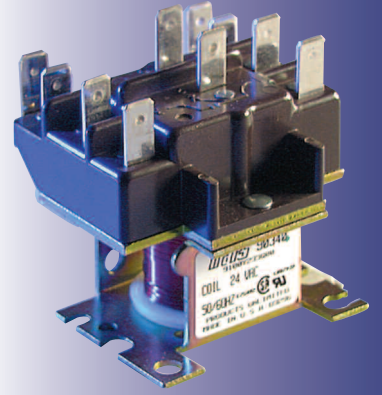


# MARS<sup>®</sup>

## Component Service & Installation

### CATALOG



COMPONENT



SERVICE & INSTALLATION



MARS2



airMARS

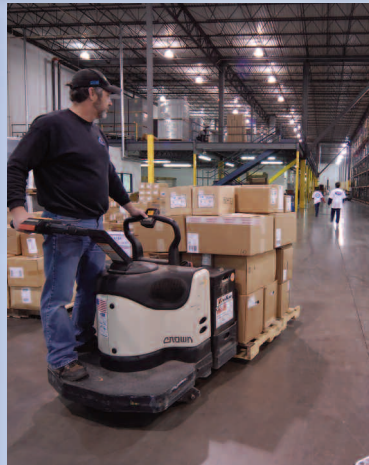


## The Leading Brands You Trust For...

- Quality
- Innovation
- Design
- Leadership



MARS has been serving the HVAC/R market since 1946 and is proud to present the most complete motor and accessory product offering to serve your needs. Our capabilities include:



- Consolidation - One Stop Shop
- Over 14,000 combinable products
- Industry leading brands
- Award winning distribution facilities
- +97% order fill rate
- Shipments within 24 hours
- Billing accuracy
- Sales coverage serving every customer location
- In-House Art Department for customer flexibility
- Bilingual Website
- Training Focused
- EDI capabilities



Thank you for your business !

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93369	SI-132	93812	SI-57	94262	AM-37	94352	AM-38	94440	AM-39
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93398	SI-131	94105	AM-37	94276	AM-37	94368	AM-38	94454	AM-39
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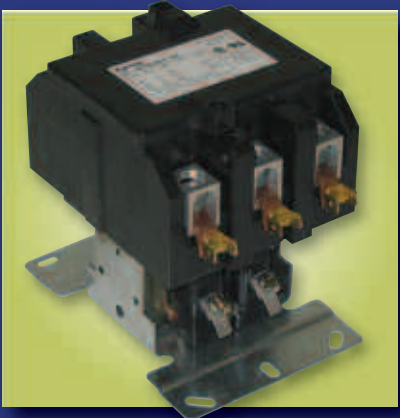
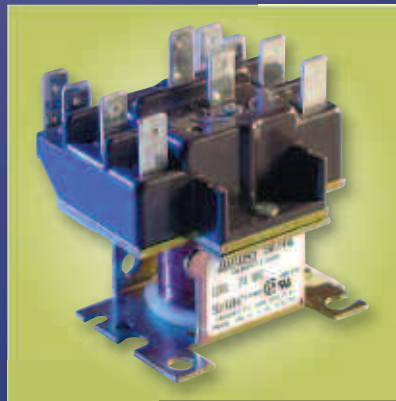
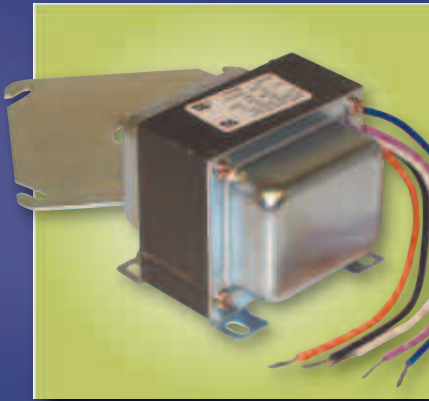


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# Motor Start Capacitors

MARS SERIES **110**



11002

## Electrolytic Capacitors for Motor Starting Applications

Start capacitor case dimensions chart. Capacitor accessories on page C9.

### MARS Blue Box™

#### Features:

- The largest assortment of replacements in the industry!
- Smallest dimensions for general replacements.
- Hermetically sealed black Bakelite case permanently protects the capacitor from oil, dirt, grease or moisture.
- New and improved terminal construction capable of withstanding increased heat. This terminal will generate less heat when applied under severe hot humid environment.

#### 110/125 Dual Voltage AC

MARS NO.	MICROFARAD Min - Max.	CASE SIZE
11002	21-25	1
11003	25-30	1
11004	30-36	1
11005	36-43	1
11006	43-56	1
11007	56-72	1
11008	72-88	1
11009	88-108	1
11010	108-130	1
11112	124-156	1
11011	130-156	1
11013	145-175	1
11014	161-193	1
11015	189-227	1
11016	200-240	1
11017	216-259	1
11018	233-292	1
11019	270-324	1
11020	300-360	1
11021	324-388	1
11022	340-408	2
11023	378-440	2
11024	400-480	2
11071	430-516	2
11025	460-552	2
11026	540-648	4
11027	590-708	4
11047	645-774	4
11028	708-850	4
11072	815-970	4
11029	829-995	4
11073	850-1020	4
11030	1000-1200	7
11074	1290-1548	7

#### 220/250 Dual Voltage AC

MARS NO.	MICROFARAD Min - Max.	CASE SIZE
11038	21-25	1
11039	25-30	1
11040	30-36	1
11041	36-43	1
11042	43-56	1
11043	56-72	1
11084	59-71	1
11137	64-77	4
11044	72-88	4
11045	88-108	4
11046	108-130	4
11148	124-156	4
11049	145-175	4
11050	161-193	6
11051	189-227	6
11052	216-259	6
11053	233-292	6
11054	270-324	6
11085	280-336	7
11086	320-384	7
11087	340-408	7
11088	378-455	7
11089	400-480	7
11090	430-516	7
11091	630-750	8

#### 330 Volts AC

MARS NO.	MICROFARAD Min - Max.	CASE SIZE
11055	21-25	2
11056	25-30	2
11057	30-36	2
11058	36-43	2
11059	43-56	4
11060	56-72	4
11160	64-77	4
11061	72-88	4
11062	88-108	4
11063	108-130	7
11064	130-156	7
11165	124-156	7
11092	135-162	7
11066	145-175	7
11067	161-193	7
11068	189-227	7
11069	216-259	7
11070	270-324	7
11093	300-360	7

#### 165 Volts AC

MARS NO.	MICROFARAD Min - Max.	CASE SIZE
11075	72-88	1
11076	88-108	1
11077	108-130	1
11031	124-149	1
11032	145-175	1
11033	161-193	1
11034	189-227	1
11078	216-259	4
11035	233-292	4
11036	270-324	4
11079	340-408	4
11080	378-455	4
11037	400-480	4
11081	540-648	4
11082	710-850	7
11083	810-972	7

MARS suggests applying a bleed resistor (MARS PN 93007) on start capacitors used in conjunction with starting relays

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.



# Turbo™ Products

MARS SERIES **121**



## The Turbo® 200 Family Products

Universal Run & Start Capacitor Replacement. Have the right capacitor for the job every time. The perfect solution for off hour emergency service calls.

Universal HardStart Replacement. One “2-Wire” Turbo® Easy-Start “4” Hardstart can replace any one of four compressor hardstart kits on the market.

MARS NO.	DESCRIPTION	MICROFARAD
12100	Turbo® 200 mini	2.5 mfd - 12.5 mfd, 370V or 440V
12200	Turbo® 200	2.5 mfd - 67.5 mfd, 370V or 440V
12300	Turbo® 200 X	5.0 mfd -97.5 mfd, 370V or 440V
11200	Turbolytic™ 50 Universal Motor Start Capacitor	23 mfd -302 mfd, 125V to 330V
11100	Turbolytic™ JR	23 mfd -208 mfd, 125V to 330V
86150	<b>TurboMeter™</b> See the dual values develop simultaneously on the screen as you create the ratings needed.	
12400	Turbo® Easy-Start “4” Hardstart Universal Hardstart	Up to 1 ton 108-130 mfd 1 to 2 tons 189-227 mfd 2.5 to 3 tons 233-280 mfd 3.5 to 5 tons 270 to 324 mfd

## MARS Capacitor Tester

### Features:

- Easy to use
- 9V battery and test leads included
- Low battery indicator

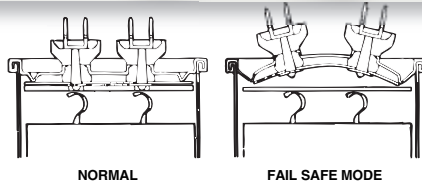
MARS NO.	RANGE	RESOLUTION	ACCURACY	TEST FREQUENCY
65746	200 pF	0, 1pF	± (0.5% rdg + 1 dgt + 0.5 pF)	
	2000 pF 20 nF 200 nF 2 nF	1 pF 10 pF 100 pF 1 nF	± (0.5% rdg +1 dgt)	820Hz
	20 µF	10 nF		82 Hz
	200 µF	100 nF	± (2.0% rdg. + 1dgt)	8.2 Hz
	2000 µF	1 µF		
	20 mF	10 µF	± (4.0% rdg. + 1dgt)	



# Motor Run Capacitors

MARS SERIES **120**

COMPONENT



PHYSICAL INTERRUPTER

## Single Section Run Capacitors

Capacitor accessories on page C9.

### Features:

- MARS offers the widest selection of ratings in the industry
- Non-PCB capacitors. Physical interrupter makes our capacitors safe
- Perfect for general replacements—smallest dimensions available
- UL and CSA listings available

Single Section 370 Volt Oval			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12002	2	A	1.500
12003	3	A	1.500
12004	4	A	1.500
12005	5	A	1.500
12006	6	A	1.500
12007	7.5	A	2.375
12008	10	A	2.625
12009	12.5	A	3.000
12010	15	A	3.750
12012	17.5	A	3.750
12014	20	C	2.375
12015	25	C	2.625
12017	30	C	2.625
12018	35	C	3.000
12021	40	C	3.750
12023	45	C	3.750
12025	50	C	3.750
12024	55	C	4.250
12087	60	C	4.750
12011	65	C	4.750
12089	70	C	4.750
12090	80	D	3.750

Single Section 370 Volt Round			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12092	2	M	2.000
12093	3	M	2.000
12094	4	M	2.000
12095	5	M	2.000
12096	6	M	2.000
12097	7.5	M	2.000
12098	10	M	2.000
12099	12.5	M	2.000
12210	15	M	2.375
12211	16	M	2.375
12212	17.5	M	2.375
12214	20	M	2.625
12215	25	M	3.000
12217	30	M	3.000
12218	35	M	3.750
12221	40	M	3.750
12223	45	N	3.375
12225	50	N	3.750
12226	55	N	3.750
12227	60	N	4.750
12128	65	N	4.750
12229	70	N	4.750
12199	80	N	4.750
12116	100	P	4.750

Single Section 440 Volt Oval			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12026	2	A	1.500
12019	2.5	A	1.500
12027	3	A	2.000
12028	4	A	2.000
12029	5	A	2.375
12030	6	A	2.375
12031	7.5	A	2.625
12032	10	A	3.750
12033	12.5	A	3.750
12034	15	C	2.375
12036	17.5	C	2.375
12037	20	C	2.625
12040	25	C	3.000
12041	30	C	3.750
12043	35	C	3.750
12045	40	C	4.750
12048	45	C	4.750
12049	50	C	4.750
12050	55	C	4.750
12051	60	D	3.750
12052	65	D	3.750
12130	70	D	3.750
12135	75	D	3.750
12140	80	D	4.750

Single Section 440 Volt Round			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12102	2	M	2.000
12103	3	M	2.000
12104	4	M	2.000
12105	5	M	2.000
12106	6	M	2.000
12107	7.5	M	2.000
12232	10	M	2.375
12233	12.5	M	2.375
12234	15	M	2.625
12236	17.5	M	2.750
12237	20	M	3.000
12240	25	M	3.750
12241	30	N	3.375
12243	35	N	3.750
12245	40	N	3.750
12248	45	N	4.750
12251	50	P	3.375
12252	55	P	3.750
12254	60	P	3.750
12258	70	P	4.750
12259	80	P	4.750
12068	90	P	4.750

Base Dimensions on p.C7

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.



# Motor Run Capacitors

MARS SERIES **120**



12141

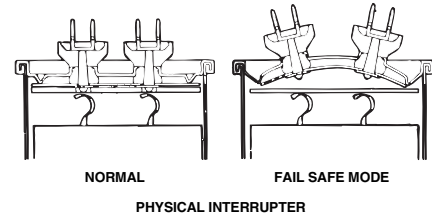
## Dual Section Motor Run Capacitors

Dual section run capacitors are used primarily to serve two microfarad applications. They can, however, by making various combinations of parallel connections, be used to obtain many other microfarad ratings.

Capacitor accessories on page C9.

### Features:

- MARS offers the widest selections of ratings in the industry
- Non-PCB capacitors.
- Physical interrupter makes our capacitors safe
- Perfect for general replacements—smallest dimensions available
- UL and CSA listings available



Dual Section 370 Volt Oval			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12141	15/3	C	2.625
12056	15/4	C	2.625
12057	15/5	C	2.625
12058	15/10	C	3.000
12059	17.5/4	C	2.375
12060	17.5/5	C	2.375
12061	20/3	C	2.625
12062	20/4	C	2.625
12063	20/5	C	2.625
12064	20/10	C	2.625
12164	20/15	C	4.750
12142	25/3	C	2.625
12065	25/4	C	2.625
12066	25/5	C	2.625
12143	25/7.5	C	2.625
12131	25/8	C	3.000
12167	25/10	C	3.000
12133	25/15	C	3.000
12144	30/3	C	3.000
12145	30/4	C	3.000
12069	30/5	C	3.000
12146	30/7.5	C	3.000
12147	30/10	C	3.375
12148	35/3	C	3.000
12071	35/4	C	3.750
12072	35/5	C	3.750
12149	35/7.5	C	3.000
12150	35/10	C	3.750
12151	40/3	C	3.750
12158	40/4	C	3.750
12171	40/5	C	3.750
12152	40/7.5	C	3.750
12134	40/10	C	3.750
12173	45/3	C	3.750
12174	45/5	C	3.750
12153	45/7.5	C	3.750
12136	45/10	C	4.750
12137	45/15	C	4.750
12138	50/5	C	4.750
12154	55/5	C	4.750
12155	55/7.5	C	4.750
12139	60/5	D	4.750
12156	60/7.5	C	4.750
12157	60/10	C	4.750
12159	65/5	D	4.750
12163	80/5	D	4.750
12123	80/7.5	D	4.750

Base Dimensions on page C7

Dual Section 370 Volt Round			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12121	15/3	N	3.125
12122	15/4	N	3.125
12203	15/5	N	3.125
12204	15/10	N	3.125
12205	17.5/4	N	3.125
12206	17.5/5	N	3.125
12207	20/4	N	3.125
12260	20/5	N	3.125
12016	20/7.5	N	3.125
12208	20/10	N	3.125
12209	20/15	N	3.125
12242	25/3	N	3.125
12175	25/4	N	3.125
12261	25/5	N	3.125
12262	25/7.5	N	3.125
12213	25/10	N	3.125
12244	30/3	N	3.125
12263	30/4	N	3.125
12264	30/5	N	3.125
12224	30/7.5	N	3.125
12228	30/10	N	3.125
12039	30/15	N	3.875
12082	35/3	N	3.875
12231	35/4	N	3.125
12266	35/5	N	3.875
12235	35/7.5	N	3.125
12238	35/10	N	3.875
12074	40/3	N	3.875
12267	40/4	N	3.875
12178	40/5	N	3.875
12268	40/7.5	N	3.875
12246	40/10	N	3.875
12073	45/3	N	3.875
12247	45/4	N	3.875
12269	45/5	P	3.875
12249	45/7.5	N	3.875
12250	45/10	N	3.875
12075	50/3	P	3.125
12191	50/5	N	3.875
12192	50/7.5	P	3.125
12239	50/10	P	3.875
12193	55/5	N	4.75
12194	55/7.5	N	4.75
12067	55/10	N	4.75
12076	60/3	P	3.875
12195	60/5	P	3.875
12196	60/7.5	N	4.75
12265	60/10	P	3.125
12042	65/5	N	4.75
12053	70/5	P	3.875
12054	70/7.5	P	3.875
12055	70/10	P	3.875
12044	75/5	P	3.875
12046	75/7.5	P	3.875
12084	75/10	P	3.875
12197	80/5	P	3.875
12198	80/7.5	P	3.875
12201	80/10	P	3.875
12202	80/12.5	P	4.75
12129	85/5	P	4.75
12230	85/7.5	P	4.75
12222	85/10	P	4.75



# Motor Run Capacitors

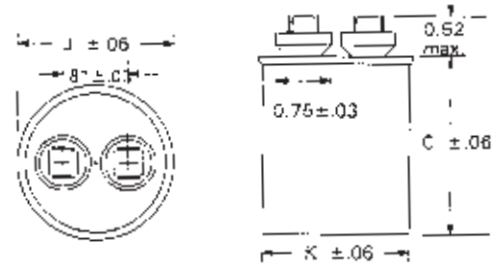
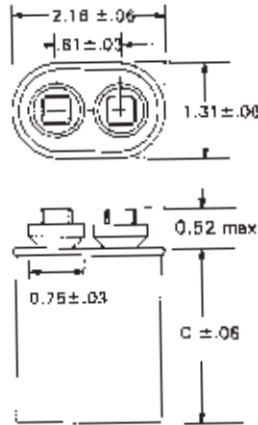
MARS SERIES **120**

COMPONENT

## Capacitor Base Dimensions



12165



Dual Section 440 Volt Oval			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12165	10/5	C	2.625
12170	10/10	C	2.625
12270	15/4	C	2.625
12271	15/5	C	2.625
12177	15/10	C	3.750
12180	20/5	C	2.625
12083	20/15	D	3.000
12184	25/5	D	3.000
12182	25/7.5	C	3.750
12183	25/10	C	3.750
12186	25/15	D	3.000
12181	30/4	C	3.750
12187	30/5	D	3.750
12038	30/7.5	C	3.750
12035	30/10	C	3.750
12085	35/3	C	4.750
12179	35/4	C	3.750
12185	35/5	C	4.750
12188	35/7.5	C	3.750
12176	35/8.5	C	3.750
12272	35/10	C	4.750
12080	40/3	C	4.750
12086	40/5	C	4.750
12189	40/7.5	C	4.750
12273	40/10	C	4.750
12190	45/5	D	4.750
12274	45/7.5	C	4.750
12108	50/5	D	4.750
12013	50/7.5	C	4.750
12275	55/5	D	4.750
12276	55/10	D	4.750
12109	60/5	D	4.750
12110	60/7.5	D	4.750
12101	65/10	D	4.750
12297	80/5	D	5.750
12298	80/7.5	D	5.750

Base Dimension Key - Oval			
KEY	DEPTH IN.	WIDTH IN.	DESCRIPTION
A	1.31	2.16	oval fan size
C	1.91	2.91	oval
D	1.97	3.66	oval

Base Dimension Key - Round		
KEY	DEPTH IN.	MOUNTING STRAP
M	1.75	93031
N	2.00	93032
P	2.50	93032

Dual Section 440 Volt Round			
MARS NO.	MICROFARAD	BASE	HEIGHT IN.
12111	10/5	N	3.125
12118	15/5	N	3.125
12356	15/10	N	3.125
12350	17.5/5	N	3.125
12115	20/5	N	3.125
12354	20/7.5	N	3.125
12351	20/10	N	3.875
12112	20/15	N	3.875
12353	25/3	N	3.875
12355	25/4	N	3.875
12278	25/5	N	3.875
12279	25/7.5	N	3.875
12113	25/10	N	3.625
12114	25/15	N	3.875
12126	30/3	N	3.875
12120	30/4	N	3.875
12281	30/5	N	3.875
12282	30/7.5	N	3.875
12352	30/10	N	4.750
12077	35/3	N	3.875
12070	35/4	N	3.875
12283	35/5	N	3.875
12119	35/6	N	4.750
12284	35/7.5	P	3.875
12091	35/10	N	4.750
12078	40/3	P	3.125
12285	40/4	P	3.125
12286	40/5	P	3.125
12220	40/6	N	4.750
12287	40/7.5	P	3.875
12088	40/10	N	4.750
12079	45/3	P	3.875
12219	45/4	N	3.750
12288	45/5	P	3.875
12127	45/6	N	4.750
12289	45/7.5	N	3.875
12172	45/10	P	3.875
12290	50/5	P	3.875
12291	50/7.5	P	3.875
12124	50/10	P	3.875
12253	50/12.5	P	3.875
12292	55/5	P	3.875
12293	55/7.5	P	3.875
12299	55/10	P	3.875
12160	60/3	P	4.750
12294	60/5	P	3.875
12295	60/7.5	P	3.875
12296	60/10	P	3.875
12161	60/12.5	P	4.750
12162	65/10	P	4.750
12255	70/5	P	4.750
12166	70/7.5	P	4.750
12169	70/10	P	4.750
12168	75/5	P	4.750
12125	75/7.5	P	4.750
12047	75/10	P	4.750
12257	80/5	P	4.875
12216	80/7.5	P	4.750
12117	80/10	P	4.750
12022	85/5	P	4.750
12020	85/7.5	P	4.750
12001	85/10	P	4.750



# Motor Run Capacitors

MARS SERIES **120/129**



## SINGLE SECTION RUN CAPACITORS

370 VOLT				
MFD	Oval MARS NO.	Round MARS NO.	Oval MARS2 NO.	Round MARS2 NO.
2	12002	12092	12902	12992
3	12003	12093	12903	12993
4	12004	12094	12904	12994
5	12005	12095	12905	12995
6	12006	12096	12906	12996
7.5	12007	12097	12907	12997
10	12008	12098	12908	12998
12.5	12009	12099	12909	12999
15	12010	12210	12910	12710
16		12211		12911
17.5	12012	12212	12912	12712
20	12014	12214	12914	12714
25	12015	12215	12915	12715
30	12017	12217	12917	12717
35	12018	12218	12918	12718
40	12021	12221	12921	12721
45	12023	12223	12923	12723
50	12025	12225	12925	12725
55	12024	12226	12924	12726
60	12087	12227	12987	12727
65	12011	12128	12988	12828
70	12089	12229	12989	12729
80	12090	12199	12990	12899
100		12116		12916

440 VOLT				
MFD	Oval MARS NO.	Round MARS NO.	Oval MARS2 NO.	Round MARS2 NO.
2	12026	12102	12926	12802
2.5	12019		12919	
3	12027	12103	12927	12803
4	12028	12104	12928	12804
5	12029	12105	12929	12805
6	12030	12106	12930	12806
7.5	12031	12107	12931	12807
10	12032	12232	12932	12732
12.5	12033	12233	12933	12733
15	12034	12234	12934	12734
17.5	12036	12236	12936	12736
20	12037	12237	12937	12737
25	12040	12240	12940	12740
30	12041	12241	12941	12741
35	12043	12243	12943	12743
40	12045	12245	12945	12745
45	12048	12248	12948	12748
50	12049	12251	12949	12751
55	12050	12252	12950	12752
60	12051	12254	12951	12754
65	12052		12952	
70	12130	12258	12830	12758
75	12135		12831	
80	12140	12259	12840	12759
90		12068		12868

## DUAL SECTION RUN CAPACITORS

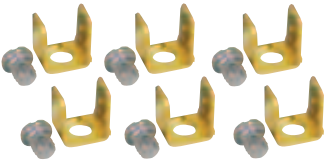






370 VOLT				
MFD	Oval MARS NO.	Round MARS NO.	Oval MARS2 NO.	Round MARS2 NO.
15/3	12141	12121	12841	12701
15/4	12056	12122	12956	12702
15/5	12057	12203	12957	12703
15/10	12058	12204	12958	12704
17.5/4	12059	12205	12959	12705
17.5/5	12060	12206	12960	12706
20/3	12061		12961	
20/4	12062	12207	12962	12707
20/5	12063	12260	12963	12760
20/7.5		12016		12716
20/10	12064	12208	12864	12708
20/15	12164	12209	12964	12709
25/3	12142	12242	12842	12711
25/4	12065	12175	12965	12875
25/5	12066	12261	12966	12761
25/7.5	12143	12262	12843	12762
25/8	12131		12832	
25/10	12167	12213	12867	12713
25/15	12133		12833	
30/3	12144	12244	12844	12720
30/4	12145	12263	12845	12763
30/5	12069	12264	12969	12764
30/7.5	12146	12224	12846	12724
30/10	12147	12228	12847	12728
30/15		12039		12939
35/3	12148	12082	12848	12730
35/4	12071	12231	12971	12731
35/5	12072	12266	12972	12766
35/7.5	12149	12235	12849	12735
35/10	12150	12238	12850	12738
40/3	12151	12074	12851	12739
40/4	12158	12267	12858	12767
40/5	12171	12178	12871	12878
40/7.5	12152	12268	12852	12768
40/10	12134	12246	12834	12746
45/3	12173	12073		12747
45/4		12247		12947
45/5	12174	12269	12874	12769
45/7.5	12153	12249	12853	12749
45/10	12136	12250	12836	12750
45/15	12137		12837	
50/3		12075		12753
50/5	12138	12191	12838	12755
50/7.5		12192		12825
50/10		12239		12757
55/5	12154	12193	12854	12893
55/7.5	12155	12194	12855	12894
55/10		12067		12967
60/3		12076		12976
60/5	12139	12195	12839	12895
60/7.5	12156	12196	12856	12896
60/10	12157	12265	12857	12865
65/5	12159	12042	12859	12742
70/5		12053		12953
70/7.5		12054		12954
70/10		12055		12955
75/5		12044		12744
75/7.5		12046		12946
75/10		12084		12984
80/5	12163	12197	12863	12897
80/7.5	12123	12198	12817	12819
80/10		12201		12824
80/12.5		12202		12722
85/5		12129		12829
85/7.5		12230		12756
85/10		12222		12922

## DUAL SECTION RUN CAPACITORS




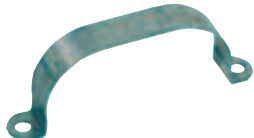




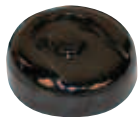
440 VOLT				
MFD	Oval MARS NO.	Round MARS NO.	Oval MARS2 NO.	Round MARS2 NO.
10/5	12165	12111	12765	12811
15/4	12270		12770	
15/5	12271	12118	12771	12818
15/10	12177	12356	12777	12656
17.5/5		12350		12650
20/5	12180	12115	12880	12780
20/7.5		12354		12654
20/10		12351		12651
20/15	12083	12112	12983	12812
25/3		12353		12653
25/4		12355		12655
25/5	12184	12278	12884	12778
25/7.5	12182	12279	12882	12779
25/10	12183	12113	12883	12813
25/15	12186	12114	12886	12814
30/3		12126		12826
30/4	12181	12120	12881	12820
30/5	12187	12281	12887	12781
30/7.5	12038	12282	12982	12782
30/10	12035	12352	12835	12652
35/3	12085	12077	12985	12977
35/4	12179	12070	12879	12870
35/5	12185	12283	12885	12783
35/6		12119		
35/7.5	12188	12284	12888	12784
35/8.5	12176		12876	
35/10	12272	12091	12772	12797
40/3	12080	12078	12877	12978
40/4		12285		12785
40/5	12086	12286	12986	12786
40/6		12220		12920
40/7.5	12189	12287	12889	12787
40/10	12273	12088	12773	12798
45/3		12079		12979
45/4		12219		12891
45/5	12190	12288	12890	12788
45/6		12127		12827
45/7.5	12274	12289	12774	12789
45/10		12172		12872
50/5	12108	12290	12808	12790
50/7.5	12013	12291	12913	12791
50/10		12124		12892
50/12.5		12253		12719
55/5	12275	12292	12775	12792
55/7.5		12293		12793
55/10	12276	12299	12822	12799
60/3		12160		12860
60/5	12109	12294	12809	12794
60/7.5	12110	12295	12776	12795
60/10		12296		12796
60/12.5		12161		12861
65/10	12101	12162	12810	12862
70/5		12255		12823
70/7.5		12166		12866
70/10		12169		12869
75/5		12168		12968
75/7.5		12125		12901
75/10		12047		12935
80/5	12297	12257	12815	12801
80/7.5	12298	12216	12898	12816
80/10		12117		12821
85/5		12022		12938
85/7.5		12020		12942
85/10		12001		12944



## Accessories for Relays and Capacitors

QC-6 Kit		
93001	For conversion of screw-type connections on relays	
QC-8 for 11001 Start Capacitor Kit		
93003	<ul style="list-style-type: none"> <li>- 9 pc 93007 2 watt (15,000 ohm) resistors</li> <li>- 32 pc push-on to screw-on connectors</li> <li>- 6 pc 93005 4-in jumpers with .25-in female spade connectors</li> </ul>	
6 Inch Jumper		
93006	- 6-in jumper with .25-in female spade connectors	
Resistor for Start Capacitors		
93007	- 2 watt (15,000 ohm) Resistors	
QC-13 for Start Capacitors		
93106	- 10 pc 2 watt (15,000 ohm) resistors with .25-in female spade connectors	
Snap on Terminals		
93029	<p><b>Sold in packs of 25 only</b></p> <ul style="list-style-type: none"> <li>- 25 pc snap-on terminals</li> <li>- Converts push-on type terminals to screw-on type</li> </ul>	
Snap-on Mounting Brackets for Motor Start Capacitors		
93026	2.75 in	
93027	3.38 in	
93028	4.38 in	

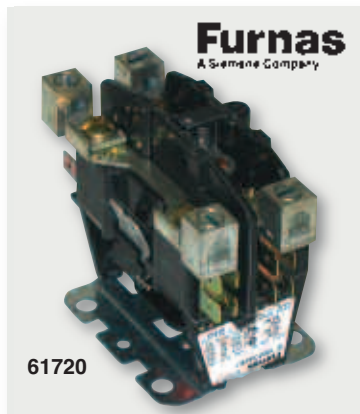
Case Dimensions*		
CASE SIZE	DIAMETER	LENGTH
1	1.44	2.75
2	1.44	3.38
4	1.81	3.38
5	1.81	4.38
6	2.06	3.38
7	2.06	4.38
8	2.56	4.38

Protector (boots) for Motor Run Capacitors		
93011	1 Hole Boot	
93012	2 Hole Boot	
93013	3 Hole Boot for Dual Section	
Wrap-Around Brackets for Motor Run Capacitors		
93014	<b>Oval</b> 1.94 x 2.78 for base A	
93015	<b>Oval</b> 1.97 x 2.94 for base C	
93116	<b>Oval</b> 2.25 x 3.66 for base D	
Mounting Brackets for Round Capacitors		
93031	- For 1.63 in and 1.75 in diam	
93032	- For 2.0 in diam	
93033	- For 2.50 in diam	
Bakelite End Caps for Motor Start Capacitors		
93018	- BEC-1 1.44 in	
93019	- BEC-2 1.81 in	
93020	- BEC-3 2.06 in	
93021	- BEC-4 2.56 in	
93022	For mounting OFF MOTOR. Leads on top side.	
93023	- BEC-1 1.44 in	
93024	- BEC-2 1.81 in	
93025	- BEC-3 2.06 in	
93025	- BEC-4 2.56 in	

\*Capacitors may be put in different case sizes occasionally, but will not be larger than those stated.

# Furnas/MARS 780 Definite Purpose Contactors

MARS SERIES **614**



## Class 45 w/Jumper 1 Pole 25-40 Amp Contactors

The Furnas Centurion 2000 Contactors offer a high new standard in definite purpose control. When used with an appropriate pilot device they can provide either low voltage protection or low voltage release. These controls have been designed with a low drop out voltage making them ideal for air conditioning, heating and refrigeration applications.

The Centurion 2000 was designed to be a tougher, more compact, more versatile and quieter contactor than ever before.

### Features:

- Compact size
- Interchangeable mounting
- Straight thru wiring
- Sems screws available on 25A, 30A and 40A
- Binding Head Screws optional on 40A
- Class H Coil Insulation on 25-60 amp
- Meets ARI-780, UL and CSA Standards

### 1 Pole with Jumper Wire, 25 – 40 Amps, Class 45

MARS NO.	FURNAS NO.	F.L.A.	LOCKED ROTOR AMPS				NON INDUCTIVE AMPS	COIL VOLTS
			240V	277V	480V	600V		
61315	45DG10AJA	25	150	150	100	80	35	24
61316	45DG10AFA							120
61317	45DG10AGA							240
61320	45EG10AJA	30	180	180	150	120	40	24
61720 <sup>1</sup>	45EG10AJAL <sup>1</sup>							24
61321	45EG10AFA							120
61322	45EG10AGA							240
61323	45EG10ALA							277
61330	45GG10AJA	40	180	180	150	120	50	24
61730 <sup>1</sup>	45GG10AJAL <sup>1</sup>	40	240	200	160	140	55	24

### 2 Pole, 20 – 40 Amps, Class 45

MARS NO.	FURNAS NO.	F.L.A.	LOCKED ROTOR AMPS				NON INDUCTIVE AMPS	COIL VOLTS
			240V	277V	480V	600V		
61335	45CG20AJ	20	-	120	100	80	30	24
61336	45CG20AF							120
61337	45CG20AG							240
61338	45CG20AL							277
61340	45DG20AJ	25	-	150	125	100	35	24
61341	45DG20AF							120
61342	45DG20AG							240
61343	45DG20AL							277
61345	45EG20AJ	30	-	180	135	110	40	24
61745 <sup>1</sup>	45EG20AJL <sup>1</sup>							24
61346	45EG20AF							120
61746 <sup>1</sup>	45EG20AFL <sup>1</sup>							120
61347	45EG20AG							240
61747 <sup>1</sup>	45EG20AGL <sup>1</sup>							240
61348	45EG20AL							277
61349	45EG20AH							480
61755 <sup>1</sup>	45GG20AJL <sup>1</sup>							40
61756 <sup>1</sup>	45GG20AFL <sup>1</sup>	120						
61757 <sup>1</sup>	45GG20AGL <sup>1</sup>	240						

### Coil Data

CLASS	POLES	F.L.A.	WATTS	VA (NOMINAL)		VOLTS (NOMINAL)	
				INBRUSH	SEALED	PICK-UP	DROP OUT
45	1-2	20 - 40	2.6	27	7.3	80%	50%

For Dimensions see page C14 - C16

<sup>1</sup> with Lug and QC



## Class 42 2, 3 and 4 Pole 25-60 Amp Contactors

The Furnas Centurion 2000 Contactors offer a high new standard in definite purpose control. When used with an appropriate pilot device they can provide either low voltage protection or low voltage release. These controls have been designed with a low drop out voltage making them ideal for air conditioning, heating and refrigeration applications.

The Centurion 2000 was designed to be a tougher, more compact, more versatile and quieter contactor than ever before.

### Features:

- Compact size
- Interchangeable mounting
- Straight thru wiring
- Sems screws available on 25A, 30A and 40 A
- Binding Head Screws optional on 40A
- Class H Coil Insulation on 25-60 amp
- Meets ARI-780, UL and CSA Standards

Class 42 contactors offer reliable full voltage control of Compressor Motors and Electric Heating Loads.

These contactors also feature an enclosed recessed push test button to prevent accidental operation. Close tolerance cross arm guidance system reduce chances of binding.

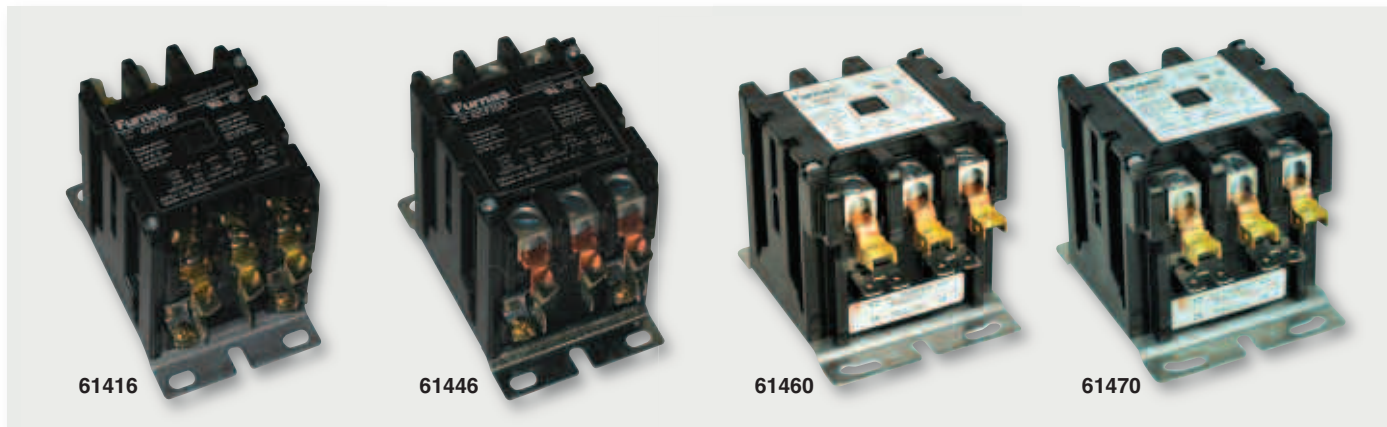
## 2 pole, 25-40 Amp, Class 42

MARS NO.	FURNAS NO.	F.L.A.	LOCKED ROTOR AMPS			NON INDUCTIVE AMPS	COIL VOLTS	HORSE POWER	
			240V	480V	600V			120V	240 V
61410	42AF15AJ	25	150	125	100	35	24	2	3
61411	42AF15AF						120	2	3
61412	42AF15AG						240	2	3
61425	42BF15AJ	30	180	150	120	40	24	2	5
61426	42BF15AF						120	2	5
61427	42BF15AG						240	2	5
61428	42BF15AL						277	2	5
61440	42CF15AJ	40	240	200	160	50	24	3	7.5
61441	42CF15AF						120	3	7.5
61442	42CF15AG						240	3	7.5

For Accessories and Dimensions see pages C-14 to C-16

# Furnas/MARS 780 Definite Purpose Contactors

MARS SERIES **614**



## 3 and 4 Pole, 25 – 60 Amp, Class 42

MARS NO.	FURNAS NO.	F.L.A.	LOCKED ROTOR AMPS			NON INDUCTIVE AMPS	COIL VOLTS	HORSE POWER			MARS NO.	FURNAS NO.
			240V	480V	600V			240V	480 V	600 V		
<b>3 POLE</b>											<b>4 POLE</b>	
61415	42AF35AJ	25	150	125	100	35	24	5	7.5	7.5	-	-
61416	42AF35AF						120	5	7.5	7.5	-	-
61417	42AF35AG						240	5	7.5	7.5	-	-
61430	42BF35AJ	30	180	150	120	40	24	7.5	10	10	61435	42BF25AJ
61431	42BF35AF						120	7.5	10	10	61436	42BF25AF
61432	42BF35AG						240	7.5	10	10	61437	42BF25AG
61433	42BF35AL						277	7.5	10	10	-	-
61434	42BF35AH						480	7.5	10	10	-	-
61445	42CF35AJ	40	240	200	160	50	24	10	15	15	61450	42CF25AJ
61446	42CF35AF						120	10	15	15	61451	42CF25AF
61447	42CF35AG						240	10	15	15	61452	42CF25AG
61448	42CF35AL						277	10	15	15	-	-
61449	42CF35AH						480	10	15	15	-	-
61460	42DF35AJ	50	300	250	200	63	24	15	30	30	-	-
61461	42DF35AF						120	15	30	30	-	-
61462	42DF35AG						240	15	30	30	-	-
61463	42DF35AL						277	15	30	30	-	-
61464	42DF35AH						480	15	30	30	-	-
61470	42EF35AJ	60	360	300	240	75	24	20	40	40	-	-
61471	42EF35AF						120	20	40	40	-	-
61472	42EF35AG						240	20	40	40	-	-

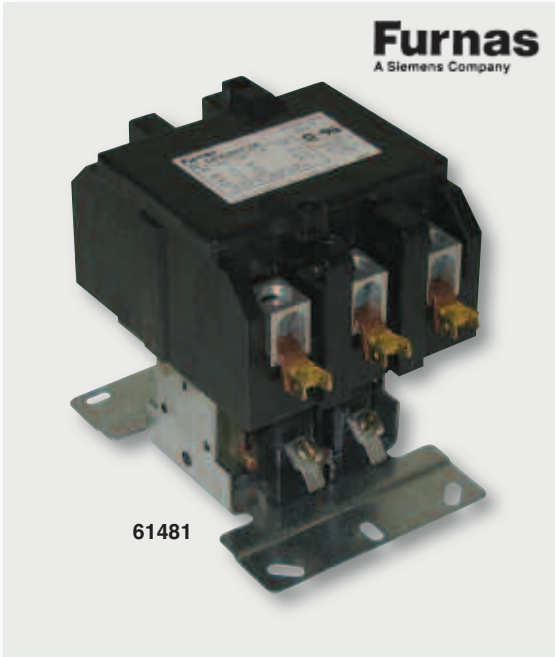
## Coil Data

CLASS	POLES	F.L.A.	WATTS	VA (NOMINAL)		VOLTS (NOMINAL)	
				INBRUSH	SEALED	PICK-UP	DROP OUT
42	2 - 3	25 - 40	2.5	52	6.2	80%	50%
42	4	25 - 40	4.2	91	15.6	80%	50%
42	2 - 3	50 - 60	4.2	91	15.6	80%	50%

For Accessories and Dimensions see pages C-14 to C-16

# Furnas/MARS 780 Definite Purpose Contactors

MARS SERIES **614**



## Class 42 3 Pole 75-150 Amp Contactors

The Furnas Centurion 2000 Contactors offer a high new standard in definite purpose control. When used with an appropriate pilot device they can provide either low voltage protection or low voltage release. These controls have been designed with a low drop out voltage making them ideal for air conditioning, heating and refrigeration applications.

The Centurion 2000 was designed to be a tougher, more compact, more versatile and quieter contactor than ever before.

### Features:

- Compact size
- Interchangeable mounting
- Straight thru wiring
- Encapsulated Coils in a moisture proof epoxy
- Meets ARI-780, UL and CSA Standards
- Class 42 contactors offer reliable full voltage control of Compressor Motors and Electric Heating Loads.

### 3 Pole, 75-150 Amp, Class 42

MARS NO.	FURNAS NO.	F.L.A.	LOCKED ROTOR AMPS			NON INDUCTIVE AMPS	COIL VOLTS
			240V	480V	600V		
<b>3 POLE</b>							
61480	42FE35AJ106	75	450	375	300	93	24
61481	42FE35AF106						120
61482	42FE35AG106						240
61483	42FE35AL106						277
61490	42GE35AJ106	90	540	450	360	120	24
61491	42GE35AF106						120
61492	42GE35AG106						240
61501	42HF35AF	120	720	600	480	150	120
61502	42HF35AG						240
61511	42IF35AF	150	900	750	600	160	120

### Coil Data

CLASS	POLES	F.L.A.	WATTS	VA (NOMINAL)		VOLTS (NOMINAL)	
				INBRUSH	SEALED	PICK-UP	DROP OUT
42	3	75 - 90	13.5	200	31	85%	53%
42	3	120	14	310	26	85%	50%

### Horse Power Rating for 3 Pole

	240 V	480 V	600 V
75 amp	25	40	40
90 amp	30	50	50

For Accessories and Dimensions see pages C-14 to C-16

# Furnas/MARS 780 Definite Purpose Contactors

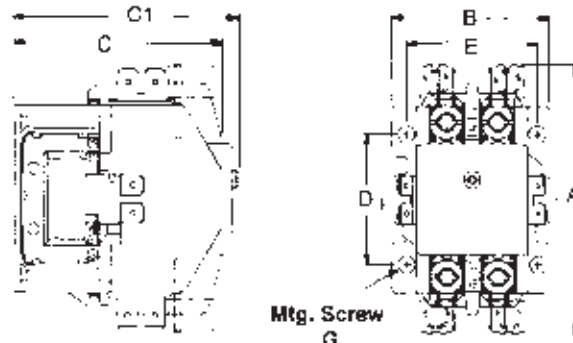
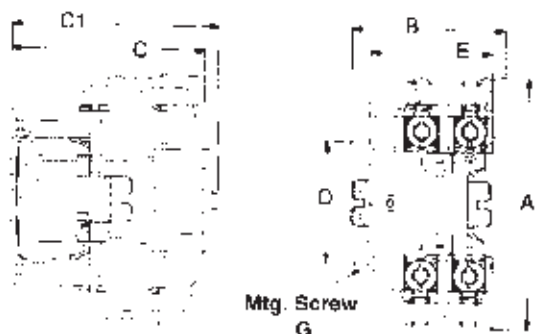
MARS SERIES **614**



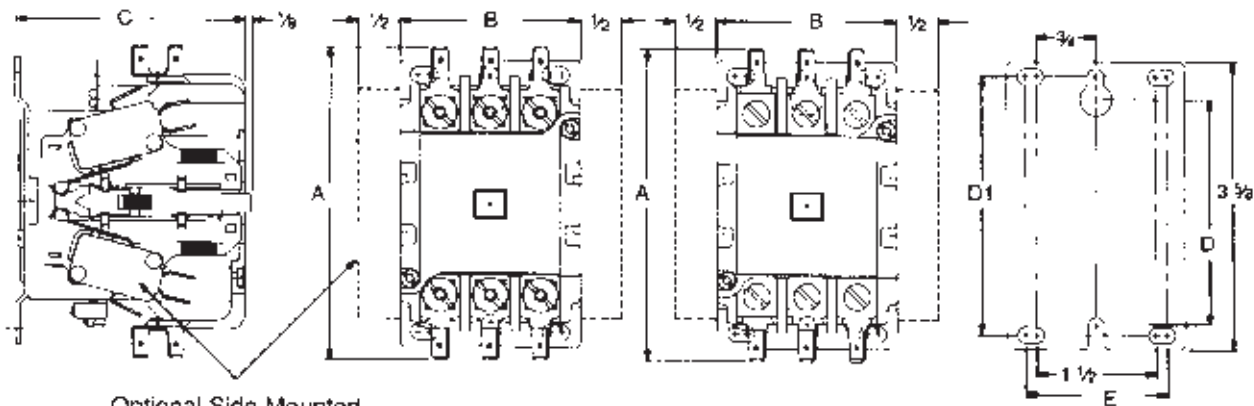
## Renewal Parts and Accessories

20-40A 1 Pole

20-40A 2 Pole



25-40A 3 Pole



Optional Side Mounted  
Auxiliary Interlocks

MARS NO.	SIZE F.L.A.	POLES	OUTLINE DIMENSIONS				MTG DIMENSIONS			MTG SCREW G	MAX WIRE SIZE
			A	B	C	C1	D	D1	E		
61310-61334, 61720-61734	20-40	1	3-3/8	2-1/16	2-5/8	2-13/16	1-5/8	-	1-5/8	10	10
61335-61359, 61745-61759	20-40	2	3-3/8	2	2-11/16	2-27/32	1-5/8	-	1-5/8	10	10
61415-61419, 61434	25-30	3	3-31/32	2-1/4	2-7/8	-	3-1/8	3-1/4	1 13/16	10	8
61445-61449	40	3	3-31/32	2-1/4	2-7/8	-	3-1/8	3-1/4	1 13/16	10	2

# Furnas/MARS 780 Definite Purpose Contactors

MARS SERIES **614**

COMPONENT



## Renewal Parts and Accessories

### Snap-On Side Mounted Auxiliary Interlocks – Class 42 Contactors

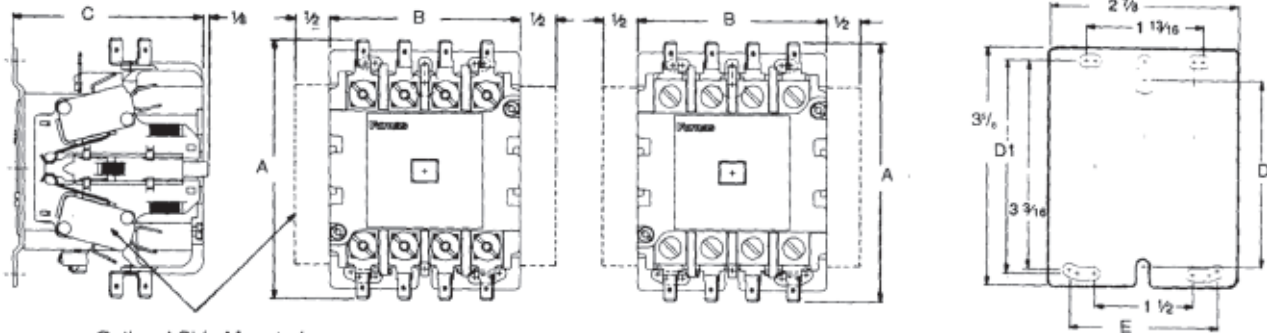
MARS NO.	FURNAS NO.	INTERLOCK CONTACTS	CONTACTOR F.L.A.	USED ON MARS NO.
61610	49ACRO	1 NO		
61611	49ACRC	1 NC		
61612	49ACR6	1 NO – 1 NC		
61613	49ACR7	2 NO	25 - 60	61410 - 61474
61614	49ACR8	2 NC		
61615	49D36098001	SPDT		
61616	49D36098003	DPDT		
61617	49CE42SPDT	SPDT		
61618	49D22125001	1 NO	75 - 90	61475 – 61494
61619	49D22125002	1 NC		

# Furnas/MARS 780 Definite Purpose Contactors

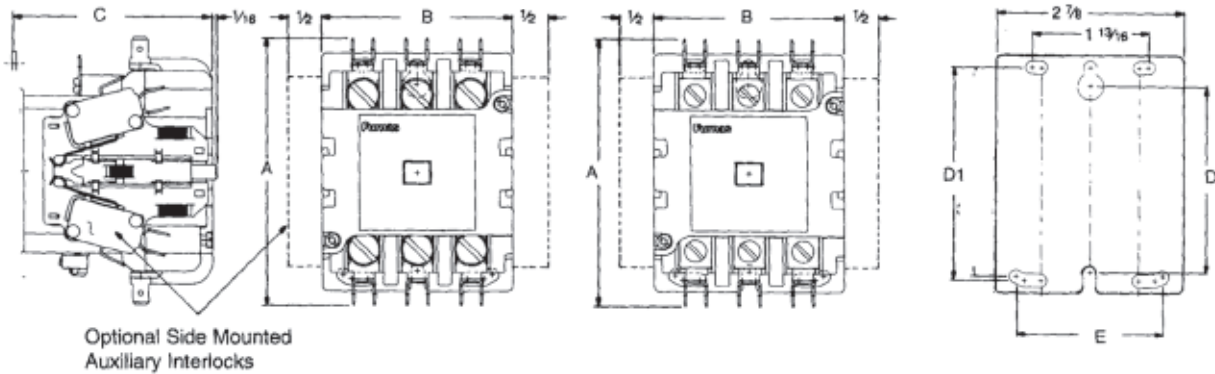
MARS SERIES **614**



25-40A 4 Pole

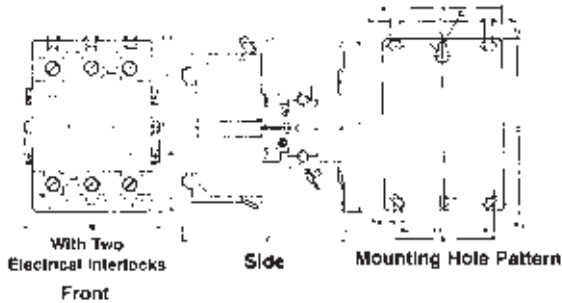


50A, 60A 3 Pole

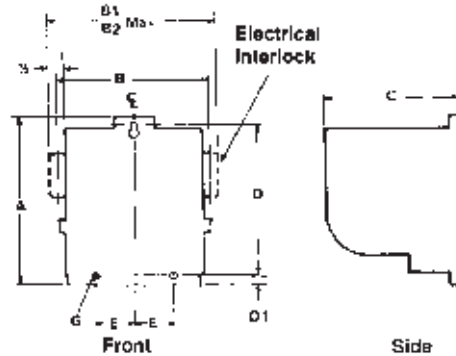


MARS NO.	SIZE F.L.A.	POLES	OUTLINE DIMENSIONS			MTG DIMENSIONS			MTG SCREW G	MAX WIRE SIZE
			A	B	C	D	D1	E		
61420-61424, 61435-61439	25-30	4	3-31/32	2-7/8	2-7/8	3-1/8	3-1/4	2-1/4	10	8
61450-61454	40	4	3-31/32	2-7/8	2-7/8	3-1/8	3-1/4	2-1/4	10	2
61460-61464, 61470-61474	50-60	3	4-1/16	2-7/8	3-1/16	3-1/8	3-1/4	2-1/4	10	2

75A, 90A 3 Pole



120A, 150A 3 Pole



MARS NO.	SIZE F.L.A.	OUTLINE DIMENSIONS				MTG DIMENSIONS			MTG SCREW G	MAX WIRE SIZE
		A	B	B1	C	D	D1	E		
61475-61479, 61480-61484	75	5-3/16	4	-	4-3/4	4-5/8	-	2-7/8	10	1/0
61485-61489, 61490-61494	90	5-3/16	4	-	4-3/4	4-5/8	-	2-7/8	10	1/0
61495-61499, 61500-61504	120	6-1/8	5-1/8	5-1/4	5-1/16	5-5/8	1/4	3/4	1/4	000

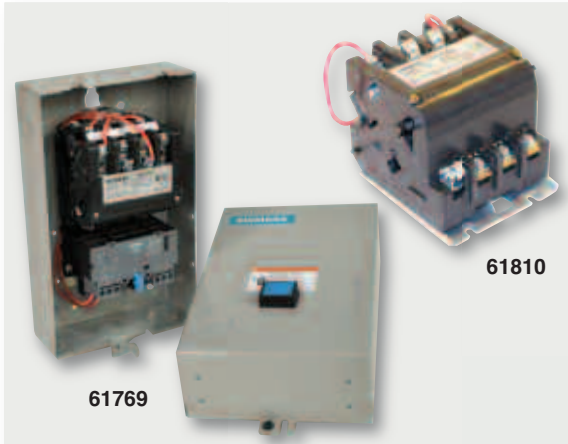
Dimensions for reference, not for construction.



# Furnas NEMA Contactors & Starters

MARS SERIES **617**

COMPONENT



## Application:

NEMA heavy duty contactors and starters are designed for across the line starting of 3 phase motors. Typical applications include cooling towers, refrigeration equipment, and commercial HVAC. NEMA contactors provide the switching (on/off) function. NEMA starters consist of a NEMA contactor with the addition of motor protection via a solid state overload relay which includes phase loss protection.

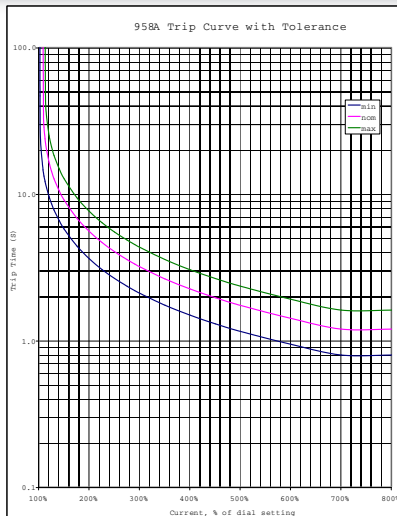
## Standard NEMA Contactor Features:

- **Rugged Industrial Design**  
Epoxy encapsulated coil seals out moisture, promotes heat transfer, and resists electrical, mechanical, and thermal stresses. The 45 degree wedge action contacts reduce tracking and provide faster arc quenching. The resulting self-cleaning and reduced contact bounce mean cooler operation and longer life for the large silver cadmium oxide contacts
- **Dual Voltage Coils**  
120/240 VAC is standard  
24 VAC and 240/480 VAC are available as accessories

- **Easy Coil Access**  
Top mounted coil requires no tools to change

## Standard NEMA Starter Features:

- **NEMA Contactor**
- **True Phase Loss Protection**  
Trips within 3 seconds and is self protected from short circuits
- **High Accuracy** +/- 2% repeat trip accuracy
- **Self Powered** Requires no hard wiring or separate power source
- **Heaterless Construction**  
Minimizes energy costs. Does not require the use of complicated heater charts. Simply set the dial on the overload relay to the motor F.L.A.
- **Overload trip class 20**



## NEMA Starters

MARS NO.	SIEMENS NO.	NEMA SIZE	AMP RATING	HORSEPOWER			OVERLOAD RANGE	COIL VOLTAGE	ENCLOSURE
				200V	230V	460V			
61769	14BUB32BA	0	9	1/2	3/4	1-1/2	.75-3A	120/240	NEMA 1
61770	14CUC32BA	0	18	2	2	5	2.5-10A	120/240	NEMA 1
61771	14CUD32BA	0	18	3	3	-	9-18A	120/240	NEMA 1
61772	14DUC32BA	1	27	2	2	5	2.5-10A	120/240	NEMA 1
61773	14DUD32AA	1	27	3	3	10	9-18A	120/240	Not Included
61774	14DUD32BA	1	27	3	3	10	9-18A	120/240	NEMA 1
61775	14DUE32AA	1	27	7-1/2	7-1/2	-	13-27A	120/240	Not Included
61776	14DUE32BA	1	27	7-1/2	7-1/2	-	13-27A	120/240	NEMA 1
61779	14FUF32AA	2	45	-	-	15	13-27A	120/240	Not Included
61780	14FUF32BA	2	45	10	15	25	22-45A	120/240	NEMA 1
61781	14FUF32AA	2	45	10	15	25	22-45A	120/240	Not Included
61782	14HUG32BA	3	90	25	30	50	45-90A	120/240	NEMA 1
61783	14HUG32AA	3	90	25	30	50	45-90A	120/240	Not Included

## NEMA Contactors

MARS NO.	SIEMENS NO.	NEMA SIZE	AMP RATING	HORSEPOWER			COIL VOLTAGE	ENCLOSURE
				200V	230V	460V		
61810	40CP32AA	0	18	3	3	5	120/240	Not Included
61811	40DP32AA	1	27	7-1/2	7-1/2	10	120/240	Not Included
61812	40EP32AA	1-3/4	40	10	10	15	120/240	Not Included
61813	40FP32AA	2	45	10	15	25	120/240	Not Included
61815	40HP32AA	3	90	25	30	50	120/240	Not Included



# Furnas NEMA Contactors & Starters

MARS SERIES **617**



## Parts & Accessories for Starters & Contactors

MARS NO.	SIEMENS NO.	DESCRIPTION	NEMA SIZE
61652	75D73070J	Coil 24VAC	0-2
61650	75D73070A	Coil 120/240V	0-2
61653	75D73070C	Coil 240/480V	0-2
61654	75D73070D	Coil 208V	0-2.5
61655	75D73251C	Coil 240/480V	3
61656	75CF14	Replacement Contact Kits*	0
61657	75DF14	Replacement Contact Kits*	1
61658	75FP14	Replacement Contact Kits*	2
61659	49AB10	N.O. Auxiliary Contact	0-3
61660	49AB01	N.C. Auxiliary Contact	0-3
61671	49SBBIX637	NEMA 1 Hand-Off Auto Kit	—

\* Replacement contacts are sold in kits that will re-build 1 power pole.  
For Example: Use (3) 75DF14 contact kits to re-build a 3 pole device.

## Solid State Overload Relays

MARS NO.	SIEMENS NO.	OVERLOAD RANGE	ENCLOSURE
61795	3UB81134AB2	.25-1A	Not Included
61796	3UB81134BB2	.75-3A	Not Included
61798	3UB81234DW2	9-18A	Not Included
61800	48ASGM20	20-40A	Not Included
61801	3UB81334FW2	13-27A	Not Included