



SECTION 11

ENCAPSULATED TRANSFORMERS FOR HARSH LOCATIONS

600 Volt Class, Encapsulated Single Phase and Three Phase

Description and Applications	202
Copper Single Phase NEMA 3R Features	202
Copper Single Phase Selection Tables	203
Copper Three Phase NEMA 3R Features	206
Copper Three Phase Selection Tables	207
Termination Details	253
Accessories - Enclosure Mounting Kits, Anti-Vibration Pads & Isolators ...	254

TRANSFORMERS FOR HARSH LOCATIONS

Hammond encapsulated transformers are designed specifically for installation in harsh environments where dust, moisture and corrosive contaminants are present. In these applications, standard dry type distribution transformers would not be acceptable as the windings and connection joints are exposed to the undesirable environment.

Encapsulated transformers are standard dry type general purpose distribution transformers encased in a electrical grade silica and epoxy, and totally enclosed in a heavy duty NEMA 3R style enclosure. All leads are brought out to a separate, front accessible termination compartment. All units are copper wound.

Typical applications of Hammond Encapsulated Transformers are: pulp and paper plants, steel mills, food processing plants, breweries, mines, marine and shipboard installations etc.

COPPER WOUND SINGLE PHASE FEATURES



FEATURE	.05 kVA to 1 kVA	1.5 to 37.5 kVA
UL Listed	File: E50394	File: E50394
CSA Certified	File: LR3902	File: LR3902
Frequency	60 Hz (50/60 Hz on units with 380V primary)	60 Hz (50/60 Hz on units with 380V primary)
Insulation System	130°C (80°C rise) standard on all units	180°C (115°C rise) standard on all units. Optional 130°C (80°C rise) available.
Electrostatic Shield	Optional on units up to .500 kVA. Standard on .750 kVA and 1 kVA units.	Standard on all units.
Encapsulation	All units are encapsulated with electrical grade silica sand and resin compounds.	All units are encapsulated with electrical grade silica sand and resin compounds.
Enclosure Type	Heavy Duty Encapsulated NEMA Type 3R (optional NEMA 4, 4X and 12 available)	Heavy Duty Encapsulated NEMA Type 3R (optional NEMA 4, 4X and 12 available)
Enclosure Finish	ANSI 61 Grey, UL50	ANSI 61 Grey, UL50
Termination	Front accessible separate high and low voltage lead wires or copper tabs.	Front accessible separate high and low voltage lead wires or copper tabs.
Conduit Knock-Outs	Standard side and rear knock-outs on all units.	Standard side and rear knock-outs on all units.
Impedance	Typically 2 to 5%.	Typically 2 to 5%.
Mounting	Standard Wall Mounting.	Standard Wall Mounting. Lifting ears provided on all units 5 kVA and up.

Other voltages not listed in this section are available upon request. Please contact customer service for details, price and availability.

COPPER WOUND, SINGLE PHASE, NEMA 3R STYLE ENCLOSURE

120 Primary Volts

120/240 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 238)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
0.05	QC05AECB	NQ0	3.75	5.25	7.25	6	W	SCD 4
0.10	QC10AECB	NQ0	3.75	5.25	7.25	7	W	SCD 4
0.15	QC15AECB	NQ0	3.75	5.25	7.25	8	W	SCD 4
0.20	QC20AECB	NQ1	4.50	5.75	7.25	11	W	SCD 4
0.25	QC25AECB	NQ1	4.50	5.75	7.25	13	W	SCD 4
0.35	QC35AECB	NQ1	4.50	5.75	7.25	14	W	SCD 4
0.50	QC50AECB	NQ2	5.00	4.75	9.25	15	W	SCD 4
0.75	QC75AEKB	NQ2	5.00	4.75	9.25	18	W	SCD 4
1	Q1C0AEKB	NQ3	5.88	5.50	10.00	22	W	SCD 4
1.5	Q1C5AEKF	NQ3	5.88	5.50	10.00	25	W	SCD 4
2	Q002AEKF	NQ4	7.00	6.50	11.25	40	W	SCD 4
3	Q003AEKF	NQ4	7.00	6.50	11.25	55	W	SCD 4
5	Q005AEKF	NQ5	10.00	7.75	17.25	90	W	SCD 4
7.5	Q007AEKF	NQ5	10.00	7.75	17.25	115	W	SCD 5
10	Q010AEKF	NQ6	12.25	9.25	20.88	165	W	SCD 5

For shielded units up to 0.50 kVA, replace the suffix "CB" with a "KB".

208/240/277 Primary Volts

120/240 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 238)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
0.05	QC05YECB	NQ0	3.75	5.25	7.25	6	W	SCD 20
0.10	QC10YECB	NQ0	3.75	5.25	7.25	7	W	SCD 20
0.15	QC15YECB	NQ0	3.75	5.25	7.25	8	W	SCD 20
0.20	QC20YECB	NQ1	4.50	5.75	7.25	11	W	SCD 20
0.25	QC25YECB	NQ1	4.50	5.75	7.25	13	W	SCD 20
0.35	QC35YECB	NQ1	4.50	5.75	7.25	14	W	SCD 20
0.50	QC50YECB	NQ2	5.00	4.75	9.25	15	W	SCD 20
0.75	QC75YEKB	NQ2	5.00	4.75	9.25	18	W	SCD 20
1	Q1C0YEKB	NQ3	5.88	5.50	10.00	22	W	SCD 20
1.5	Q1C5YEKF	NQ3	5.88	5.50	10.00	25	W	SCD 20
2	Q002YEKF	NQ4	7.00	6.50	11.25	40	W	SCD 20
3	Q003YEKF	NQ4	7.00	6.50	11.25	55	W	SCD 20
5	Q005YEKF	NQ5	10.00	7.75	17.25	90	W	SCD 20
7.5	Q007YEKF	NQ5	10.00	7.75	17.25	115	W	SCD 6
10	Q010YEKF	NQ6	12.25	9.25	20.88	165	W	SCD 6

For shielded units up to 0.50 kVA, replace the suffix "CB" with a "KB".

347/380 Primary Volts

120/240 Secondary Volts

50/60 Hz

kVA	Catalog Number	Case Style (Page 238)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
0.05	QC05FECB	NQ0	3.75	5.25	7.25	6	W	SCD 53
0.10	QC10FECB	NQ0	3.75	5.25	7.25	7	W	SCD 53
0.15	QC15FECB	NQ0	3.75	5.25	7.25	8	W	SCD 53
0.20	QC20FECB	NQ1	4.50	5.75	7.25	11	W	SCD 53
0.25	QC25FECB	NQ1	4.50	5.75	7.25	13	W	SCD 53
0.35	QC35FECB	NQ1	4.50	5.75	7.25	14	W	SCD 53
0.50	QC50FECB	NQ2	5.00	4.75	9.25	15	W	SCD 53
0.75	QC75FEKB	NQ2	5.00	4.75	9.25	18	W	SCD 53
1	Q1C0FEKB	NQ3	5.88	5.50	10.00	22	W	SCD 53
1.5	Q1C5FEKF	NQ3	5.88	5.50	10.00	25	W	SCD 53
2	Q002FEKF	NQ4	7.00	6.50	11.25	40	W	SCD 53
3	Q003FEKF	NQ5	10.00	7.75	17.25	55	W	SCD 53
5	Q005FEKF	NQ5	10.00	7.75	17.25	90	W	SCD 53
7.5	Q007FEKF	NQ6	10.00	7.75	17.25	115	W	SCD 5
10	Q010FEKF	NQ6	12.25	9.25	20.88	165	W	SCD 5

For shielded units up to 0.50 kVA, replace the suffix "CB" with a "KB".

COPPER WOUND, SINGLE PHASE, NEMA 3R STYLE ENCLOSURE

240 X 480 Primary Volts

120/240 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 238)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
0.05	QC05LECB	NQ0	3.75	5.25	7.25	6	W	SCD 1
0.10	QC10LECB	NQ0	3.75	5.25	7.25	7	W	SCD 1
0.15	QC15LECB	NQ0	3.75	5.25	7.25	8	W	SCD 1
0.20	QC20LECB	NQ1	4.50	5.75	7.25	11	W	SCD 1
0.25	QC25LECB	NQ1	4.50	5.75	7.25	13	W	SCD 1
0.35	QC35LECB	NQ1	4.50	5.75	7.25	14	W	SCD 1
0.5	QC50LECB	NQ2	5.00	4.75	9.25	15	W	SCD 1
0.75	QC75LEKB	NQ2	5.00	4.75	9.25	18	W	SCD 1
1	Q1C0LEKB	NQ3	5.88	5.50	10.00	22	W	SCD 1
1.5	Q1C5LEKF	NQ3	5.88	5.50	10.00	25	W	SCD 1
2	Q002LEKF	NQ4	7.00	6.50	11.25	40	W	SCD 1
3	Q003LEKF	NQ4	7.00	6.50	11.25	55	W	SCD 1
5	Q005LEKF	NQ5	10.00	7.75	17.25	90	W	SCD 1
7.5	Q007LEKF	NQ5	10.00	7.75	17.25	115	W	SCD 19
10	Q010LEKF	NQ6	12.25	9.25	20.88	165	W	SCD 19
15	Q015LEKF	NQ6	12.25	9.25	20.88	225	W	SCD 19
25	Q025LEKF	NQ7	14.50	10.75	21.38	285	W	SCD 19
37.5	Q037LEKF	NQ8	14.50	10.75	27.38	410	W	SCD 19

For shielded units up to 0.50 kVA, replace the suffix "CB" with a "KB".

600 Primary Volts

120/240 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 238)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
0.05	QC05PECB	NQ0	3.75	5.25	7.25	6	W	SCD 4
0.10	QC10PECB	NQ0	3.75	5.25	7.25	7	W	SCD 4
0.15	QC15PECB	NQ0	3.75	5.25	7.25	8	W	SCD 4
0.20	QC20PECB	NQ1	4.50	5.75	7.25	11	W	SCD 4
0.25	QC25PECB	NQ1	4.50	5.75	7.25	13	W	SCD 4
0.35	QC35PECB	NQ1	4.50	5.75	7.25	14	W	SCD 4
0.50	QC50PECB	NQ2	5.00	4.75	9.25	15	W	SCD 4
0.75	QC75PEKB	NQ2	5.00	4.75	9.25	18	W	SCD 4
1	Q1C0PEKB	NQ3	5.88	5.50	10.00	22	W	SCD 4
1.5	Q1C5PEKF	NQ3	5.88	5.50	10.00	25	W	SCD 4
2	Q002PEKF	NQ4	7.00	6.50	11.25	40	W	SCD 4
3	Q003PEKF	NQ4	7.00	6.50	11.25	55	W	SCD 4
5	Q005PEKF	NQ5	10.00	7.75	17.25	90	W	SCD 4
7.5	Q007PEKF	NQ5	10.00	7.75	17.25	115	W	SCD 6
10	Q010PEKF	NQ6	12.25	9.25	20.88	165	W	SCD 6
15	Q015PEKF	NQ6	12.25	9.25	20.88	225	W	SCD 6
25	Q025PEKF	NQ7	14.50	10.75	21.38	285	W	SCD 6
37.5	Q037PEKF	NQ8	14.50	10.75	27.38	410	W	SCD 6

For shielded units up to 0.50 kVA, replace the suffix "CB" with a "KB".

COPPER WOUND, SINGLE PHASE, NEMA 3R STYLE ENCLOSURE

Export Model

190/200/208/220 X 380/400/416/440 Primary Volts 120/240 Secondary Volts 50/60 Hz

kVA	Catalog Number	Case Style (Page 238)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
0.05	QC05XECB	NQ0	3.75	5.25	7.25	7	W	SCD 45
0.10	QC10XECB	NQ0	3.75	5.25	7.25	8	W	SCD 45
0.15	QC15XECB	NQ0	3.75	5.25	7.25	11	W	SCD 45
0.20	QC20XECB	NQ1	4.50	5.75	7.25	13	W	SCD 45
0.25	QC25XECB	NQ1	4.50	5.75	7.25	14	W	SCD 45
0.35	QC35XECB	NQ1	4.50	5.75	7.25	15	W	SCD 45
0.50	QC50XECB	NQ2	5.00	4.75	9.25	18	W	SCD 45
0.75	QC75XEKB	NQ2	5.00	4.75	9.25	20	W	SCD 45
1	Q1C0XEKB	NQ3	5.88	5.50	10.00	26	W	SCD 45
1.5	Q1C5XEKF	NQ3	5.88	5.50	10.00	32	W	SCD 45
2	Q002XEKF	NQ4	7.00	6.50	11.25	52	W	SCD 45
3	Q003XEKF	NQ5	10.00	7.75	17.25	65	W	SCD 46
5	Q005XEKF	NQ5	10.00	7.75	17.25	105	W	SCD 46
7.5	Q007XEKF	NQ6	12.25	9.25	20.88	145	W	SCD 46
10	Q010XEKF	NQ6	12.25	9.25	20.88	195	W	SCD 46

For shielded units up to 0.50 kVA, replace the suffix "CB" with a "KB".



COPPER WOUND THREE PHASE FEATURES



FEATURE	2 to 45 kVA
UL Listed	File: E50394
CSA Certified	File: LR3902
Frequency	60 Hz
Insulation System	180°C (115°C rise) Optional 130°C (80°C rise) available.
Electrostatic Shield	Optional on all units.
Encapsulation	All units are encapsulated with electrical grade silica sand and resin compounds.
Enclosure Type	Heavy Duty Encapsulated NEMA Type 3R (optional NEMA 4, 4X and 12 available)
Enclosure Finish	ANSI 61 Grey, UL50
Termination	Front accessible separate high and low voltage lead wires or copper tabs.
Conduit Knock-Outs	Standard on all units.
Impedance	Typically 2 to 5%.
Mounting	Standard Wall Mounting Lifting ears provided on all units 5 kVA and up.

***Other voltages not listed in this section are available upon request.
Please contact customer service for details, price and availability.***



COPPER WOUND, THREE PHASE, NEMA 3R STYLE ENCLOSURE

208 Delta Primary Volts

208Y/120 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002BBCF	L3	12.5	6	16.5	80	W	SCD 7
3	P003BBCF	L3	12.5	6	16.5	100	W	SCD 7
6	P006BBCF	L4	16.5	6	19	190	W	SCD 7

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

240 Delta Primary Volts

208Y/120 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002DBCF	L3	12.5	6	16.5	80	W	SCD 7
3	P003DBCF	L3	12.5	6	16.5	100	W	SCD 7
6	P006DBCF	L4	16.5	6	19	190	W	SCD 7

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

480 Delta Primary Volts

208Y/120 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002KBCF	L3	12.5	6	16.5	80	W	SCD 7
3	P003KBCF	L3	12.5	6	16.5	100	W	SCD 7
6	P006KBCF	L4	16.5	6	19	190	W	SCD 7
9	P009KBCF	G1	17.44	7.00	21.50	275	W	SCD 32
15	P015KBCF	G2	17.44	8.50	21.50	300	W	SCD 32
30	P030KBCF	G3	19.44	9.50	26.50	575	W	SCD 21
45	P045KBCF	G4	22.94	10.25	30.00	750	W	SCD 21

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

480 Delta Primary Volts

240D Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002KDCF	L3	12.5	6	16.5	80	W	SCD 11
3	P003KDCF	L3	12.5	6	16.5	100	W	SCD 11
6	P006KDCF	L4	16.5	6	19	190	W	SCD 11
9	P009KDCF	G1	17.44	7.00	21.50	275	W	SCD 12
15	P015KDCF	G2	17.44	8.50	21.50	300	W	SCD 12
30	P030KDCF	G3	19.44	9.50	26.50	575	W	SCD 29
45	P045KDCF	G4	22.94	10.25	30.00	750	W	SCD 29

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

COPPER WOUND, THREE PHASE, NEMA 3R STYLE ENCLOSURE

480 Delta Primary Volts

480Y/277 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002KKCF	L3	12.5	6	16.5	80	W	SCD 7
3	P003KKCF	L3	12.5	6	16.5	100	W	SCD 7
6	P006KKCF	L4	16.5	6	19	190	W	SCD 7

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

600 Delta Primary Volts

208Y/120 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002PBCF	L3	12.5	6	16.5	80	W	SCD 7
3	P003PBCF	L3	12.5	6	16.5	100	W	SCD 7
6	P006PBCF	L4	16.5	6	19	190	W	SCD 7
9	P009PBCF	G1	17.44	7.00	21.50	275	W	SCD 9
15	P015PBCF	G2	17.44	8.50	21.50	300	W	SCD 9
30	P030PBCF	G3	19.44	9.50	26.50	575	W	SCD 9
45	P045PBCF	G4	22.94	10.25	30.00	750	W	SCD 9

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

600Y Primary Volts

240D Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002PDCF	L3	12.5	6	16.5	80	W	SCD 16
3	P003PDCF	L3	12.5	6	16.5	100	W	SCD 16
6	P006PDCF	L4	16.5	6	19	180	W	SCD 16
9	P009PDCF	G1	17.44	7.00	21.50	275	W	SCD 17
15	P015PDCF	G2	17.44	8.50	21.50	300	W	SCD 17
30	P030PDCF	G3	19.44	9.50	26.50	575	W	SCD 17
45	P045PDCF	G4	22.94	10.25	30.00	750	W	SCD 17

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.

600 Delta Primary Volts

480Y/277 Secondary Volts

60 Hz

kVA	Catalog Number	Case Style (Page 234)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall	Wiring Diagram (Pages 239-252)
			Width	Depth	Height			
2	P002PKCF	L3	12.5	6	16.5	80	W	SCD 7
3	P003PKCF	L3	12.5	6	16.5	100	W	SCD 7
6	P006PKCF	L4	16.5	6	19	180	W	SCD 7

For shielded units, please replace the suffix "C" with a 'K' on the above part numbers.