

# Single Phase - General Purpose

## Single Phase Ventilated:

Series 35: .050 kVA - .750 kVA – Series 80: 1.0 kVA - 5.0 kVA

### Features



- **Series 35** has a **UL Class 105°C insulation system**
- **Series 80** has a **UL Class 180°C insulation system**
- **NEMA Type 3R**, wall mount enclosure suitable for indoor or outdoor use.
- **Multiple knockouts** provide convenient conduit entry and exit locations through the front access wiring compartment.
- **Ground studs** provided for bonding compatibility with both metallic and nonmetallic conduit.



## Single Phase Encapsulated:

Series 85 ISO-Shield: .250 kVA - 25 kVA

### Features



- **Electrostatic shield** between primary and secondary windings.
- **Epoxy-silica encapsulated** core and coil provides a transformer particularly well suited for harsh commercial and industrial applications.
- **UL Class 180°C insulation system**
- **NEMA Type 3R**
- **Multiple knockouts** provide convenient conduit entry.
- **Ground studs** provided for bonding compatibility.



## Single Phase Ventilated Cabinet Style:

Series 61 and 41 ISO-Shield: 7.5 kVA - 100 kVA

### Features



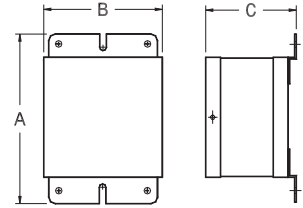
- **Electrostatic shield** between primary and secondary windings
- **Aluminum windings**
- **UL Class 220°C insulation system**
- **NEMA Type 3R**, ventilated, cabinet style, indoor.
- **No extra rainshields required for outdoor use.**
- **Vibration dampening pads** provide quiet operation.
- **Ground studs** provided for bonding compatibility.



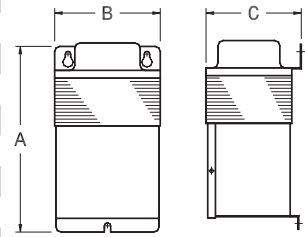
# Single Phase - General Purpose

**Primary Volts 240 X 480**  
**Secondary Volts 120 / 240**

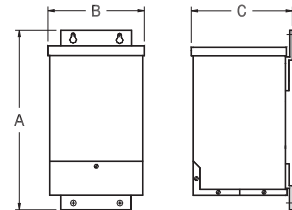
General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 12	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.050	35-1005	50/60	3.3	0	.2 / .1	.4 / .2	1	6.37	3.75	3.37	1
.100	35-1010	50/60	5	0	.4 / .2	.8 / .4	1	6.37	3.75	3.37	1
.150	35-1015	50/60	7	0	.6 / .3	1.2 / .6	1	7.00	4.00	3.63	2
.250	85-1020SH	50/60	14	0	1.0 / .52	2.0 / 1.0	4	12.00	4.87	5.25	3
.500	85-1025SH	50/60	18	0	2.0 / 1.0	4.1 / 2.0	4	12.00	4.87	5.25	3
.750	85-1030SH	50/60	22	0	3.1 / 1.6	6.2 / 3.1	4	12.00	4.87	5.25	3
1.0	85-1035SH	60	29	0	4.1 / 2.0	8.3 / 4.1	4	15.25	5.75	5.87	3
1.5	85-1040SH	60	37	0	6.2 / 3.1	12.5 / 6.2	4	15.25	5.75	5.87	3
2.0	85-1045SH	60	42	0	8.3 / 4.1	16.6 / 8.3	4	15.25	5.75	5.87	3
3.0	85-1050SH	60	62	0	12.5 / 6.2	25.0 / 12.5	4	15.25	8.25	7.87	3
3.0	85-1450SH	60	62	4	12.5 / 6.2	25.0 / 12.5	2	15.25	8.25	7.8	3
5.0	85-1055SH	60	102	0	20.8 / 10.4	41.6 / 20.8	4	15.25	8.25	7.87	3
5.0	85-1455SH	60	102	4	20.8 / 10.4	41.6 / 20.8	2	15.25	8.25	7.87	3
7.5	85-1060SH	60	131	0	31 / 15.6	62 / 31	4	15.75	14.25	8.75	4
7.5	85-1460SH	60	131	4	31 / 15.6	62 / 31	2	15.75	14.25	8.75	4
10	85-1065SH	60	152	0	41 / 20	83 / 41	4	15.75	14.25	8.75	4
10	85-1465SH	60	152	4	41 / 20	83 / 41	2	15.75	14.25	8.75	4
15	85-1070SH	60	270	0	62 / 31	125 / 62	4	19.38	17.56	11.50	4
15	85-1470SH	60	270	4	62 / 31	125 / 62	2	19.38	17.56	11.50	4
25	85-1075SH	60	300	0	104 / 52	208 / 104	4	19.38	17.56	11.50	4
25	85-1475SH	60	300	4	104 / 52	208 / 104	2	19.38	17.56	11.50	4



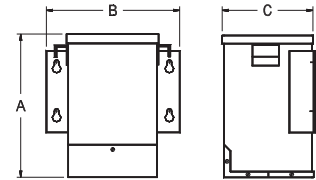
Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1



Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R



Outline Drawing 3  
Wall Mount - Encapsulated - NEMA Type 3R  
Note: 3 kVA & 5kVA 85 Series are also available in Outline Drawing 4 Configuration



Outline Drawing 4  
Wall Mount - Encapsulated - NEMA Type 3R

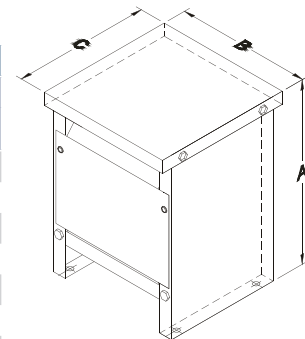
## Floor Mount, Cabinet Style Enclosure

7.5	61-1460SH	60	125	4	31 / 15.6	62 / 31	2	22.00	16.00	16.50	5
10	61-1465SH	60	133	4	41 / 20	83 / 41	2	22.00	16.00	16.50	5
Cabinet Style DOE 2016 Compliant											
15	41-1470SH*	60	185	4	62 / 31	125 / 62	2	23.50	18.63	18.50	5
25	41-1475SH*	60	281	4	104 / 52	208 / 104	2	30.13	21.63	19.50	5
37.5	41-1680SH*	60	384	6	156 / 78	312 / 156	3	32.00	27.00	26.25	5
50	41-1685SH*	60	445	6	208 / 104	416 / 208	3	32.00	27.00	26.25	5
75	41-1690SH*	60	663	6	312 / 156	625 / 312	3	41.00	34.00	26.75	5
100	41-1695SH*	60	732	6	416 / 208	833 / 416	3	41.00	34.00	26.75	5

\* Meets DOE requirements

**Primary Volts 240 X 480**  
**Secondary Volts 120 - Fused**

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 13	Height A	Width B	Depth C	Outline Dwg. Pg. 24
					Pri.	Sec.					
.100	35-2010	50/60	5	0	.4 / .2	.8	11	6.37	3.75	3.38	6
.150	35-2015	50/60	7	0	.6 / .3	1.2	11	7.00	4.00	3.63	7
.250	35-2020	50/60	11	0	1.0 / .52	2.0	11	7.50	4.50	4.00	7
.500	35-2025	50/60	20	0	2.0 / 1.0	4.1	11	9.16	5.38	4.56	7
.750	35-2030	50/60	29	0	3.1 / 1.6	6.2	11	10.75	5.50	4.75	7
1.0	80-2035	50/60	29	0	4.1 / 2.0	8.3	11	10.88	5.50	4.75	7
1.5	80-2040	50/60	37	0	6.2 / 3.1	12.5	11	10.19	6.50	5.66	7

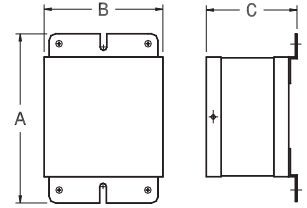


Outline Drawing 5  
Floor Mount - Ventilated - NEMA Type 3R

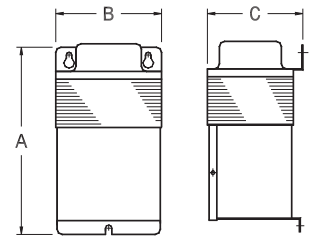
# Single Phase - General Purpose

## Primary Volts 208, Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap	Catalog Number	Hz	Wgt. Lbs	Taps	Maximum Amp		Conn Dia. Pg. 12	Height A	Width B	Depth C	Outline Dwg.
					Pri	Sec.					
.100	35-3010	50/60	5	0	.4	.8 / .4	5	6.37	3.75	3.37	1
.150	35-3015	50/60	7	0	.7	1.2 / .6	5	7.00	4.00	3.63	2
.250	85-3020SH	50/60	15	0	1.2	2.0 / 1.0	6	12.00	4.87	5.25	3
.500	85-3025SH	50/60	18	0	2.4	4.1 / 2.0	6	12.00	4.87	5.25	3
.750	85-3030SH	50/60	22	0	3.6	6.2 / 3.1	6	12.00	4.87	5.25	3
1.0	85-3035SH	60	29	0	4.8	8.3 / 4.1	6	15.25	5.75	5.87	3
1.5	85-3040SH	60	37	0	7.2	12.5 / 6.2	6	15.25	5.75	5.87	3
2.0	85-3045SH	60	44	0	9.6	16.6 / 8.3	6	15.25	5.75	5.87	3
3.0	85-3050SH	60	62	0	14.4	25.0 / 12.5	6	15.25	8.25	7.87	3
5.0	85-3055SH	60	89	0	24.0	41.6 / 20.8	6	15.25	8.25	7.87	3
7.5	85-3060SH	60	150	0	36	62 / 31	6	15.75	14.25	8.75	4
10	85-3065SH	60	165	0	48	83 / 41	6	15.75	14.25	8.75	4
15	85-3070SH	60	270	0	72	125 / 62	6	19.38	17.56	11.50	4
25	85-3075SH	60	300	0	120	208 / 104	6	19.38	17.56	11.50	4
<b>Cabinet Style DOE 2016 Compliant</b>											
15	41-3470SH*	60	150	4	72	125 / 62	7	23.50	18.63	18.50	5
25	41-3475SH*	60	232	4	120	208 / 104	7	30.13	21.63	19.50	5



Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1

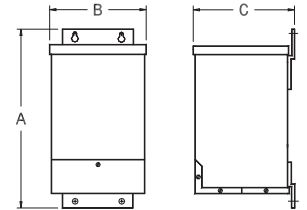


Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R

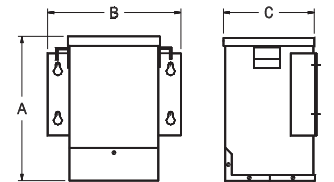
\* Meets DOE requirements

## Primary Volts 277, Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap	Catalog Number	Hz	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 13	Height A	Width B	Depth C	Outline Dwg.
					Pri	Sec					
.100	35-4010	50/60	5	0	.3	.8 / .4	8	6.37	3.75	3.37	1
.150	35-4015	50/60	7	0	.5	1.2 / .6	8	7.00	4.00	3.63	2
.250	85-4020SH	50/60	15	0	.9	2.0 / 1.0	9	12.00	4.87	5.25	3
.500	85-4025SH	50/60	18	0	1.8	4.1 / 2.0	9	12.00	4.87	5.25	3
.750	85-4030SH	50/60	22	0	2.7	6.2 / 3.1	9	12.00	4.87	5.25	3
1.0	85-4035SH	60	29	0	3.6	8.3 / 4.1	9	15.25	5.75	5.87	3
1.5	85-4040SH	60	37	0	5.4	12.5 / 6.2	9	15.25	5.75	5.87	3
2.0	85-4045SH	60	44	0	7.2	16.6 / 8.3	9	15.25	5.75	5.87	3
3.0	85-4050SH	60	62	0	10.8	25.0 / 12.5	9	15.25	8.25	7.87	3
5.0	85-4055SH	60	89	0	18	41.6 / 20.8	9	15.25	8.25	7.87	3
7.5	85-4060SH	60	150	0	27	62 / 31	9	15.75	14.25	8.75	4
10	85-4065SH	60	165	0	36	83 / 41	9	15.75	14.25	8.75	4
15	85-4070SH	60	270	0	54	125 / 62	9	19.38	17.56	11.50	4
25	85-4075SH	60	300	0	90	208 / 104	9	19.38	17.56	11.50	4
<b>Cabinet Style DOE 2016 Compliant</b>											
15	41-4470SH*	60	150	4	54	125 / 62	10	23.50	18.63	18.50	5
25	41-4475SH*	60	232	4	90	208 / 104	10	30.13	21.63	19.50	5

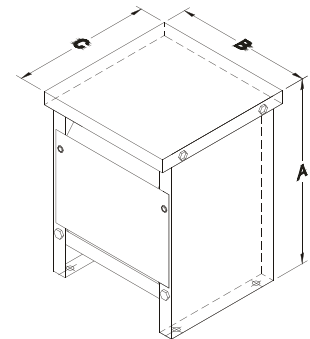


Outline Drawing 3  
Wall Mount - Encapsulated - NEMA Type 3R Note: 3 kVA & 5kVA 85 Series are also available in Outline Drawing 4 Configuration



Outline Drawing 4  
Wall Mount - Encapsulated - NEMA Type 3R

\* Meets DOE requirements



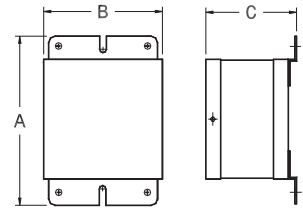
Outline Drawing 5  
Floor Mount - Ventilated - NEMA Type 3R

# Single Phase - General Purpose

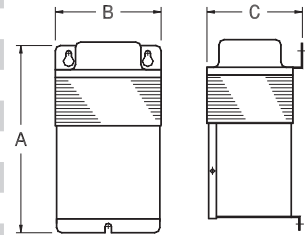
## Primary Volts 600 Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 14	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.100	35-5010	50/60	5	0	.1	.8 / .4	12	6.37	3.75	3.37	1
.150	35-5015	50/60	7	0	.2	1.2 / .6	12	7.00	4.00	3.63	2
.250	85-5020SH	50/60	15	0	.4	2.0 / 1.0	13	12	4.87	5.25	3
.500	85-5025SH	50/60	18	0	.8	4.1 / 2.0	13	12	4.87	5.25	3
.750	85-5030SH	50/60	22	0	1.2	6.2 / 3.1	13	12	4.87	5.25	3
1.0	85-5035SH	60	29	0	1.6	8.3 / 4.1	13	15.25	5.75	5.87	3
1.5	85-5040SH	60	37	0	2.5	12.5 / 6.2	13	15.25	5.75	5.87	3
2.0	85-5045SH	60	44	0	3.3	16.6 / 8.3	13	15.25	5.75	5.87	3
3.0	85-5050SH	60	62	0	5.0	25.0 / 12.5	13	15.25	8.25	7.87	3
5.0	85-5055SH	60	89	0	8.3	41.6 / 20.8	13	15.25	8.25	7.87	3
7.5	85-5060SH	60	150	0	12	62 / 31	13	15.75	14.25	8.75	4
10	85-5065SH	60	165	0	16	83 / 41	13	15.75	14.25	8.75	4
15	85-5470SH	60	150	4	25	125 / 62	14	19.38	17.56	11.50	4
25	85-5475SH	60	232	4	41.6	208 / 104	14	19.38	17.56	11.50	4
Cabinet Style DOE 2016 Compliant											
15	41-5470SH*	60	150	4	25	125 / 62	14	23.50	18.63	18.50	5
25	41-5475SH*	60	232	4	41.6	208 / 104	14	30.13	21.63	19.50	5
37.5	41-5480SH*	60	330	4	62	312 / 156	14	32.00	27.00	26.25	5
50	41-5485SH*	60	359	4	83	416 / 208	14	32.00	27.00	26.25	5
75	41-5490SH*	60	524	4	125	625 / 312	14	41.00	34.00	26.75	5
100	41-5495SH*	60	648	4	166	833 / 416	14	41.00	34.00	26.75	5

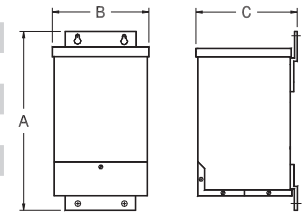
\* Meets DOE requirements



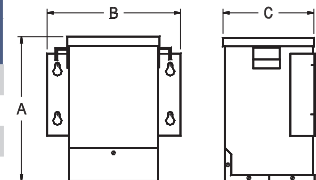
Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1



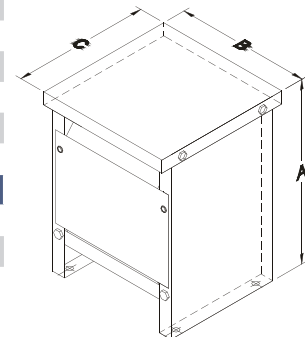
Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R



Outline Drawing 3  
Wall Mount - Encapsulated - NEMA Type 3R Note: 3 kVA & 5kVA 85 Series are also available in Outline Drawing 4 Configuration



Outline Drawing 4  
Wall Mount - Encapsulated - NEMA Type 3R



Outline Drawing 5  
Floor Mount - Ventilated - NEMA Type 3R

## Primary Volts 120 / 240 Secondary Volts 120 / 240

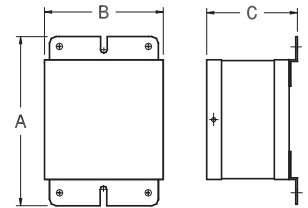
General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 14	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.100	35-6010	50/60	5	0	.8 / .4	.8 / .4	15	6.37	3.75	3.37	1
.150	35-6015	50/60	7	0	1.2 / .6	1.2 / .6	15	7.00	4.00	3.63	2
.250	85-6020SH	50/60	15	0	2.0 / 1.0	2.0 / 1.0	16	12	4.87	5.25	3
.500	85-6025SH	50/60	18	0	4.1 / 2.0	4.1 / 2.0	16	12	4.87	5.25	3
.750	85-6030SH	50/60	22	0	6.2 / 3.1	6.2 / 3.1	16	12	4.87	5.25	3
1.0	85-6035SH	60	29	0	8.3 / 4.1	8.3 / 4.1	16	15.25	5.75	5.87	3
1.5	85-6040SH	60	37	0	12.5 / 6.2	12.5 / 6.2	16	15.25	5.75	5.87	3
2.0	85-6045SH	60	44	0	16.6 / 8.3	16.6 / 8.3	16	15.25	5.75	5.87	3
3.0	85-6050SH	60	62	0	25.0 / 12.5	25.0 / 12.5	16	15.25	8.25	7.87	3
5.0	85-6055SH	60	89	0	41.6 / 20.8	41.6 / 20.8	16	15.25	8.25	7.87	3
7.5	85-6060SH	60	150	0	62 / 31	62 / 31	16	15.75	14.25	8.75	4
10	85-6065SH	60	165	0	83 / 41	83 / 41	16	15.75	14.25	8.75	4
Cabinet Style DOE 2016 Compliant											
15	41-6470SH*	60	150	4	125 / 62	125 / 62	17	23.50	18.63	18.50	5
25	41-6475SH*	60	232	4	208 / 104	208 / 104	17	30.13	21.63	19.50	5

\* Meets DOE requirements

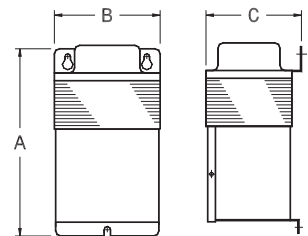
# Single Phase - General Purpose Ventilated

## Primary Volts 240 X 480 Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 12	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.050	35-1005	50/60	3.3	0	.2 / .1	.4 / .2	1	6.37	3.75	3.37	1
.100	35-1010	50/60	5	0	.4 / .2	.8 / .4	1	6.37	3.75	3.37	1
.150	35-1015	50/60	7	0	.6 / .3	1.2 / .6	1	7.00	4.00	3.63	2
.250	35-1020	50/60	11	0	1.0 / .52	2.0 / 1.0	1	7.50	4.63	4.00	2
.500	35-1025	50/60	20	0	2.0 / 1.0	4.1 / 2.0	1	9.25	5.50	4.75	2
.750	35-1030	50/60	28	0	3.1 / 1.6	6.2 / 3.1	1	10.88	5.50	4.75	2
1.0	80-1035	50/60	29	0	4.1 / 2.0	8.3 / 4.1	1	10.88	5.50	4.75	2
1.5	80-1040	50/60	37	0	6.2 / 3.1	12.5 / 6.2	1	10.63	6.63	5.88	2
2.0	80-1045	60	41	0	8.3 / 4.1	16.6 / 8.3	1	11.00	6.63	5.88	2
3.0	80-1050	60	53	0	12.5 / 6.2	25.0 / 12.5	1	10.88	7.69	6.88	2
5.0	80-1055	60	77	0	20.8 / 10.4	41.6 / 20.8	1	13.69	7.69	6.88	2



Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1



Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R

## Primary Volts 208 Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 12	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.100	35-3010	50/60	5	0	.4	.8 / .4	5	6.37	3.75	3.37	1
.150	35-3015	50/60	7	0	.7	1.2 / .6	5	7.00	4.00	3.63	2
.250	35-3020	50/60	11	0	1.2	2.0 / 1.0	5	7.50	4.63	4.00	2
.500	35-3025	50/60	20	0	2.4	4.1 / 2.0	5	9.25	5.50	4.75	2
.750	35-3030	50/60	28	0	3.6	6.2 / 3.1	5	10.88	5.50	4.75	2
1.0	80-3035	50/60	29	0	4.8	8.3 / 4.1	5	10.88	5.50	4.75	2
1.5	80-3040	50/60	37	0	7.2	12.5 / 6.2	5	10.63	6.63	5.88	2

## Primary Volts 277 Secondary Volts 120 / 240

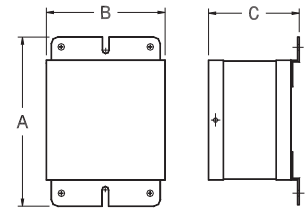
General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 13	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.100	35-4010	50/60	5	0	.3	.8 / .4	8	6.37	3.75	3.37	1
.150	35-4015	50/60	7	0	.5	1.2 / .6	8	7.00	4.00	3.63	2
.250	35-4020	50/60	11	0	.9	2.0 / 1.0	8	7.50	4.63	4.00	2
.500	35-4025	50/60	20	0	1.8	4.1 / 2.0	8	9.25	5.50	4.75	2
.750	35-4030	50/60	28	0	2.7	6.2 / 3.1	8	10.88	5.50	4.75	2
1.0	80-4035	50/60	29	0	3.6	8.3 / 4.1	8	10.88	5.50	4.75	2
1.5	80-4040	50/60	37	0	5.4	12.5 / 6.2	8	10.63	6.63	5.88	2

# Single Phase - General Purpose Ventilated

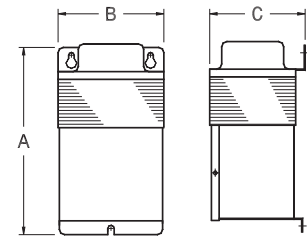
## Primary Volts 600

## Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 13	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.100	35-5010	50/60	5	0	.1	.8/.4	12	6.37	3.75	3.37	1
.150	35-5015	50/60	7	0	.2	1.2/.6	12	7.00	4.00	3.63	2
.250	35-5020	50/60	11	0	.4	2.0/1.0	12	7.50	4.63	4.00	2
.500	35-5025	50/60	20	0	.8	4.1/2.0	12	9.25	5.50	4.75	2
.750	35-5030	50/60	28	0	1.2	6.2/3.1	12	10.88	5.50	4.75	2
1.0	80-5035	50/60	29	0	1.6	8.3/4.1	12	10.88	5.50	4.75	2
1.5	80-5040	50/60	37	0	2.5	12.5/6.2	12	10.63	6.63	5.88	2



Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1



Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R

## Primary Volts 120 / 240

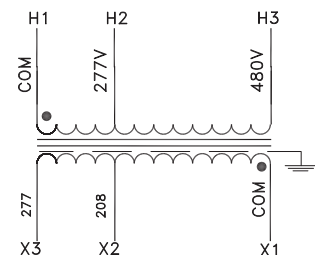
## Secondary Volts 120 / 240

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 14	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
.100	35-6010	50/60	5	0	.8/.4	.8/.4	15	6.37	3.75	3.37	1
.150	35-6015	50/60	7	0	1.2/.6	1.2/.6	15	7.00	4.00	3.63	2
.250	35-6020	50/60	11	0	2.0/1.0	2.0/1.0	15	7.50	4.63	4.00	2
.500	35-6025	50/60	20	0	4.1/2.0	4.1/2.0	15	9.25	5.50	4.75	2
.750	35-6030	50/60	28	0	6.2/3.1	6.2/3.1	15	10.88	5.50	4.75	2
1.0	80-6035	50/60	29	0	8.3/4.1	8.3/4.1	15	10.88	5.50	4.75	2
1.5	80-6040	50/60	37	0	12.5/6.2	12.5/6.2	15	10.63	6.63	5.88	2

## Primary volts 277/480

## Secondary Volts 208/277

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia.	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
0.25	85-8020SH	50/60	15	0	0.9/.52	1.20/0.9	See. Dia. at Right	12	4.87	5.25	3
0.5	85-8025SH	50/60	18	0	1.8/1.04	2.4/1.8		12	4.87	5.25	3
0.75	85-8030SH	50/60	22	0	2.71/1.56	3.61/2.71		12	4.87	5.25	3
1	85-8035SH	60	29	0	3.61/2.08	4.81/3.61		15.25	5.75	5.87	3
1.5	85-8040SH	60	37	0	5.42/3.13	7.21/5.42		15.25	5.75	5.87	3
2	85-8045SH	60	44	0	7.22/4.17	9.62/7.22		15.25	5.75	5.87	3
3	85-8050SH	60	62	0	10.8/6.25	14.4/10.8		15.25	8.25	7.87	3
5	85-8055SH	60	89	0	18/10.42	24/18		15.25	8.25	7.87	3
7.5	85-8060SH	60	150	0	27/15.63	36.05/27		15.75	14.25	8.75	4
10	85-8065SH	60	165	0	36.1/20.83	48/36.1		15.75	14.25	8.75	4
15	85-8070SH	60	270	0	54.2/31.3	72.1/54.2		19.38	17.56	11.5	4

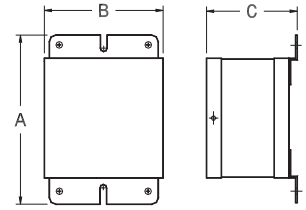


# Single Phase - General Purpose Ventilated

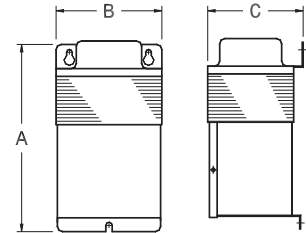
## PRIMARY VOLTS 240 X 480

## SECONDARY VOLTS 120/240 NEMA 4X 304 Stainless Steel

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia. Pg. 12	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
0.25	FP4X-1020SH	50/60	15	0	1.04/52	2.0/1.0	4	12	4.87	5.25	3
0.5	FP4X-1025SH	50/60	19	0	2.0/1.0	4.1/2.0	4	12	4.87	5.25	3
0.75	FP4X-1030SH	50/60	23	0	3.1/1.6	6.2/3.1	4	12	4.87	5.25	3
1	FP4X-1035SH	60	30	0	4.1/2.0	8.3/4.1	4	15.25	5.75	5.87	3
1.5	FP4X-1040SH	60	3	0	6.2/3.1	12.5/6.2	4	15.25	5.75	5.87	3
2	FP4X-1045SH	60	43	0	8.3/4.1	16.6/8.3	4	15.25	5.75	5.87	3
3	FP4X-1050SH	60	64	0	12.5/6.2	25/12.5	4	15.25	8.25	7.87	3
5	FP4X-1055SH	60	103	0	20.8/10.4	41.6/20.8	4	15.25	8.25	7.87	3
7.5	FP4X-1060SH	60	132	0	31/15.6	62/31	4	15.75	14.25	8.75	4
10	FP4X-1065SH	60	154	0	41/20	83/41	4	15.75	14.25	8.75	4
25	FP4X-1070SH	60	280	0	62/31	125/62	4	19.38	17.56	11.5	4



Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1



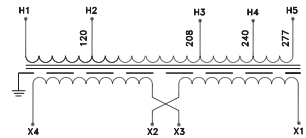
Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R

316 stainless available as special order

## PRIMARY VOLTS 120/208/240/277

## SECONDARY VOLTS 120/240

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia.	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
1.00	85-1-2915SH	60	23	0	8.3/3.6	8.3/4.1	See Dia. at Right	15.25	5.75	5.87	3
1.50	85-1.5-2915SH	60	30	0	12.5/5.4	12.5/6.3		15.25	5.75	5.87	3
2.00	85-2-2915SH	60	37	0	16.7/7.2	16.7/8.3		15.25	5.75	5.87	3
3.00	85-3-2915SH	60	55	0	25/10.8	25/12.5		15.25	8.25	7.87	3
5.00	85-5-2915SH	60	75	0	41.7/18	41.7/20.8		15.25	8.25	7.87	3
7.50	85-7.5-2915SH	60	105	0	62.5/27	62.5/31.3		15.75	14.25	8.75	4
10.00	85-10-2915SH	60	124	0	83.3/37	83.3/41.7		15.75	14.25	8.75	4
15.00	85-15-2915SH	60	170	0	125/54.1	125/62.5		19.38	17.56	11.5	4

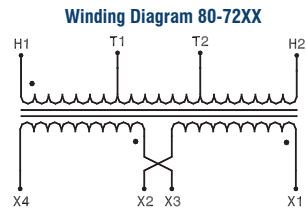


## Primary Volts 480,

## Secondary Volts 120 / 240

With 2 - 5% FCBN Taps

General Information				Winding Specifications				Dimensions			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Tap Code	Maximum Amps		Conn Dia.	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
1.0	80-7235	50/60	29	*	2.0	8.3 / 4.1	See Wind. Dia. at Right	10.88	5.50	4.75	2
1.5	80-7240	50/60	37	*	3.1	12.5 / 6.2		10.63	6.63	5.88	2
2.0	80-7245	60	41	*	4.1	16.6 / 8.3		11.00	6.63	5.88	2
3.0	80-7250	60	53	*	6.2	25.0 / 12.5		10.88	7.69	6.88	2
5.0	80-7255	60	77	*	10.4	41.6 / 20.8		13.69	7.69	6.88	2



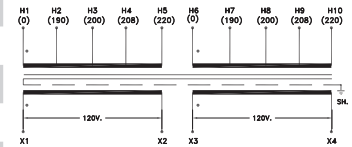
\* Tap Configuration for this series is: 2 - 5% FCBN

# Single Phase - General Purpose Ventilated

## EXPORT MODEL

### 190/200/208/220 X 380/400/416/440 TO 120/240

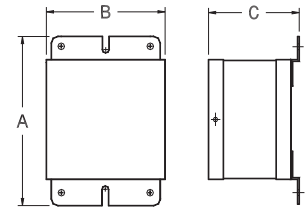
General Information				Winding Specifications			Dimensions				
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia.	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
1	ES-13200.406	50/60	60	0	5.26..2.27	8.33/4.1	See Dia. at Right	15.25	5.75	5.87	3
2	ES-13230.406	50/60	70	0	10.5/4.55	16.6/8.3		15.25	5.75	5.87	3
3	ES-13250.406	50/60	95	0	15.8..6.82	25/12.5		15.25	5.75	5.87	3
5	ES-13300.406	50/60	125	0	26.3..11.4	41.6/20.5		15.25	8.25	7.87	3
7.5	ES-13330.406	50/60	150	0	39.5..17	62.5/31		15.25	8.25	7.87	3
10	ES-13360.406	50/60	240	0	52.7/22.7	83.3/42		15.75	14.25	8.75	4
15	ES-13380.406	50/60	320	0	79..34	125/62.5		15.75	14.25	8.75	4
25	ES-13410.406	50/60	400	0	131.6..56.8	208.3/104		19.38	17.56	11.5	4



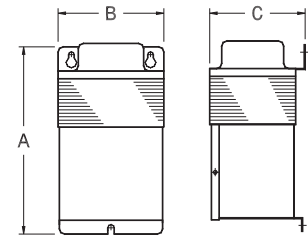
## EXPORT MODEL

### 190/200/208/220 X 380/400/416/440 TO 110/220

General Information				Winding Specifications			Dimensions				
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia.	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
1	ES-13200.344	50/60	60	0	5.26..2.27	9/4.5	See Dia. at Right	15.25	5.75	5.87	3
2	ES-13230.344	50/60	70	0	10.5/4.55	18.1/9		15.25	5.75	5.87	3
3	ES-13250.344	50/60	95	0	15.8..6.82	27.3/13.6		15.25	5.75	5.87	3
5	ES-13300.344	50/60	125	0	26.3..11.4	45.4/22.7		15.25	8.25	7.87	3
7.5	ES-13330.344	50/60	150	0	39.5..17	68.2/34		15.25	8.25	7.87	3
10	ES-13360.344	50/60	240	0	52.7/22.7	90.9/45.5		15.75	14.25	8.75	4
15	ES-13380.344	50/60	320	0	79..34	136.3/68.2		15.75	14.25	8.75	4
25	ES-13410.344	50/60	400	0	131.6..56.8	227.3/113.6		19.38	17.56	11.5	4



Outline Drawing 1  
Wall Mount - Ventilated - NEMA Type 1



Outline Drawing 2  
Wall Mount - Ventilated - NEMA Type 3R

## EXPORT MODEL

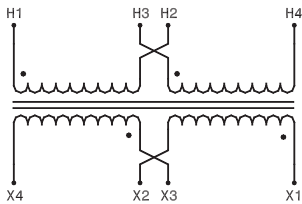
### 190/200/208/220 X 380/400/416/440/480 TO 120/240

General Information				Winding Specifications			Dimensions				
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Taps	Maximum Amps		Conn Dia.	Height A	Width B	Depth C	Outline Dwg.
					Pri.	Sec.					
1	ES-13200.498	50/60	60	0	5.26..2.27	8.33/4.1	See Dia. at Right	15.25	5.75	5.87	3
2	ES-13230.498	50/60	70	0	10.5/4.55	16.6/8.3		15.25	5.75	5.87	3
3	ES-13250.498	50/60	95	0	15.8..6.82	25/12.5		15.25	5.75	5.87	3
5	ES-13300.498	50/60	125	0	26.3..11.4	41.6/20.5		15.25	8.25	7.87	3
7.5	ES-13330.498	50/60	150	0	39.5..17	62.5/31		15.25	8.25	7.87	3
10	ES-13360.498	50/60	240	0	52.7/22.7	83.3/42		15.75	14.25	8.75	4
15	ES-13380.498	50/60	320	0	79..34	125/62.5		15.75	14.25	8.75	4
25	ES-13410.498	50/60	400	0	131.6..56.8	208.3/104		19.38	17.56	11.5	4

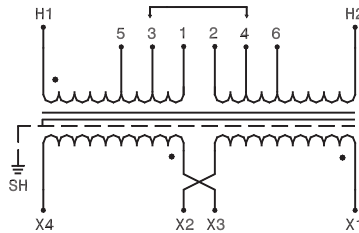


# Single Phase Connection Diagrams

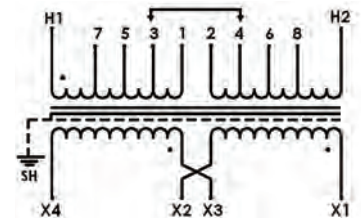
Dia. 1		Catalog Series 35-10XX & 80-10XX			
Tap Arrangement		None			
% High Voltage	High Voltage 240 X 480	Inter-Connect	Connect High Voltage Lines To		
100	240	H1 To H3 H2 To H4	H1H3 & H2H4		
100	480	H2 To H3	H1 & H4		
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To		
100	120	X1 To X3 X2 To X4	X1X3 & X2X4		
100	120 / 240	X2 To X3	X1 & X2X3 & X4		
100	240	X2 To X3	X1 & X4		



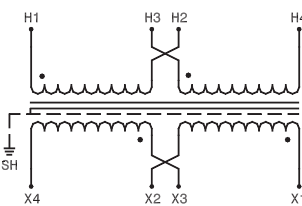
Dia. 2		Catalog Series 85-14XXSH & 61-14XXSH			
Tap Arrangement		2 - 2½ FCAN (Full Capacity Above Normal) 2 - 2½ FCBN (Full Capacity Below Normal)			
% High Voltage	High Voltage 240 X 480	Inter-Connect	Connect High Voltage Lines To		
105	252	H1 To 2 H2 To 1	H1 & H2		
100	240	H1 To 4 H2 To 3			
95	228	H1 To 6 H2 To 5			
105	504	1 To 2			
102.5	492	2 To 3			
100	480	3 To 4			
97.5	468	4 To 5			
95	456	5 To 6			
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To		
100	120	X1 To X3 X2 To X4	X1X3 & X2X4		
100	120 / 240	X2 To X3	X1 & X2X3 & X4		
100	240	X2 To X3	X1 & X4		



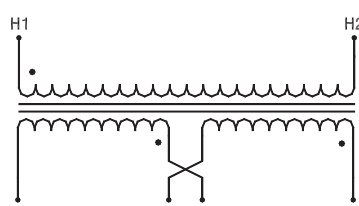
Dia. 3		Catalog Series 41-16XXSH			
Tap Arrangement		2 - 2½ FCAN (Full Capacity Above Normal) 4 - 2½ FCBN (Full Capacity Below Normal)			
% High Voltage	High Voltage 240 X 480	Inter-Connect	Connect High Voltage Lines To		
105	252	H1 To 2 H2 To 1	H1 & H2		
100	240	H1 To 4 H2 To 3			
95	228	H1 To 6 H2 To 5			
90	216	H1 To 8 H2 To 7			
105	504	1 To 2			
102.5	492	2 To 3			
100	480	3 To 4			
97.5	468	4 To 5			
95	456	5 To 6			
92.5	444	6 To 7			
90	432	7 To 8			
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To		
100	120	X1 To X3 X2 To X4	X1X3 & X2X4		
100	120 / 240	X2 To X3	X1 & X2X3 & X4		
100	240	X2 To X3	X1 & X4		



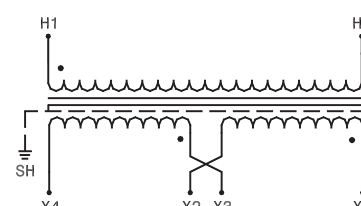
Dia. 4		Catalog Series 85-10XXSH FP4X			
Tap Arrangement		None			
% High Voltage	High Voltage 240 X 480	Inter-Connect	Connect High Voltage Lines To		
100	240	H1 To H3 H2 To H4	H1H3 & H2H4		
100	480	H2 To H3	H1 & H4		
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To		
100	120	X1 To X3 X2 To X4	X1X3 & X2X4		
100	120 / 240	X2 To X3	X1 & X2X3 & X4		
100	240	X2 To X3	X1 & X4		



Dia. 5		Catalog Series 35-30XX & 80-30XX			
Tap Arrangement		None			
% High Voltage	High Voltage 208	Inter-Connect	Connect High Voltage Lines To		
100	208	--	H1 & H2		
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To		
100	120	X1 To X3 X2 To X4	X1X3 & X2X4		
100	120 / 240	X2 To X3	X1 & X2X3 & X4		
100	240	X2 To X3	X1 & X4		

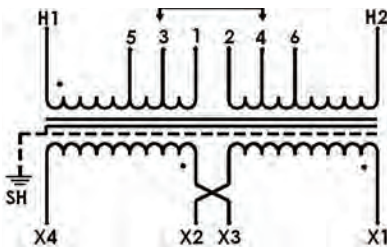


Dia. 6		Catalog Series 85-30XXSH			
Tap Arrangement		None			
% High Voltage	High Voltage 208	Inter-Connect	Connect High Voltage Lines To		
100	208	--	H1 & H2		
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To		
100	120	X1 To X3 X2 To X4	X1X3 & X2X4		
100	120 / 240	X2 To X3	X1 & X2X3 & X4		
100	240	X2 To X3	X1 & X4		

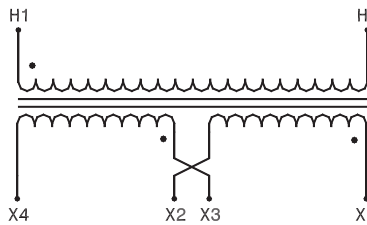


# Single Phase Connection Diagrams

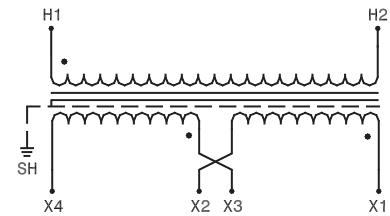
Dia. 7		Catalog Series 41-34XXSH		
Tap Arrangement	2-2½ % FCAN ( Full Capacity Above Normal) 2-2½ % FCBN ( Full Capacity Below Normal)			
% High Voltage	High Voltage	Inter-Connect	Connect High Voltage Lines To	
105	218	1 To 2	H1 & H2	
102.5	213	2 To 3		
100	208	3 To 4		
97.5	203	4 To 5		
95	198	5 To 6		
% Low Voltage	Low Voltage	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



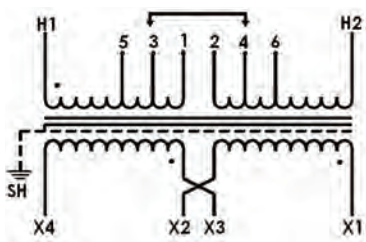
Dia. 8		Catalog Series 35-40XX & 80-40XX		
Tap Arrangement	None			
% High Voltage	High Voltage	Inter-Connect	Connect High Voltage Lines To	
100	277	--	H1 & H2	
% Low Voltage	Low Voltage	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



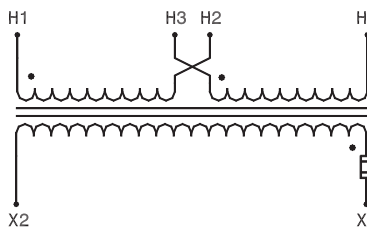
Dia. 9		Catalog Series 85-40XXSH		
Tap Arrangement	None			
% High Voltage	High Voltage	Inter-Connect	Connect High Voltage Lines To	
100	277	--	H1 & H2	
% Low Voltage	Low Voltage	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



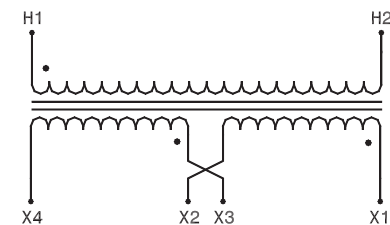
Dia. 10		Catalog Series 41-44XXSH		
Tap Arrangement	2-2½ % FCAN (Full Capacity Above Normal) 2-2½ % FCBN (Full Capacity Below Normal)			
% High Voltage	High Voltage	Inter-Connect	Connect High Voltage Lines To	
105	291	1 To 2	H1 & H2	
102.5	284	2 To 3		
100	277	3 To 4		
97.5	270	4 To 5		
95	263	5 To 6		
% Low Voltage	Low Voltage	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



Dia. 11		Catalog Series 35-20XX & 80-20XX		
Tap Arrangement	None			
% High Voltage	High Voltage	Inter-Connect	Connect High Voltage Lines To	
100	240	H1 To H3 H2 To H4	H1H3 & H2H4	
100	480	H2 To H3	H1 & H4	
% Low Voltage	Low Voltage	Inter-Connect	Connect Low Voltage Lines To	
100	120	-	X1 & X2	

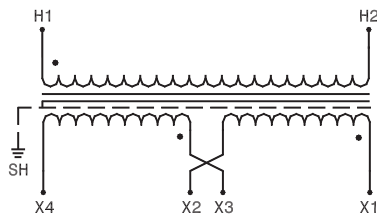


Dia. 12		Catalog Series 35-50XX & 80-50XX		
Tap Arrangement	None			
% High Voltage	High Voltage	Inter-Connect	Connect High Voltage Lines To	
100	600	--	H1 & H2	
% Low Voltage	Low Voltage	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	

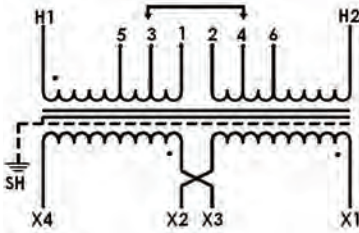


# Single Phase Connection Diagrams

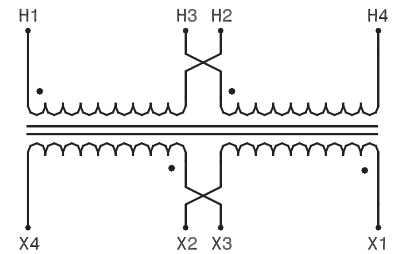
Dia. 13		Catalog Series 85-50XXSH		
Tap Arrangement	None			
% High Voltage	High Voltage 600	Inter-Connect	Connect High Voltage Lines To	
100	600	--	H1 & H2	
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



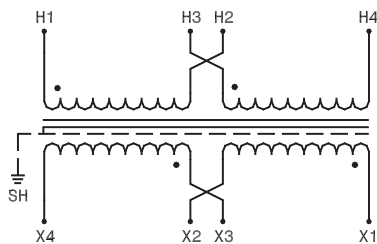
Dia. 14		Catalog Series 41-54XXSH		
Tap Arrangement	2-2½ % FCAN (Full Capacity Above Normal) 2-2½ % FCBN (Full Capacity Below Normal)			
% High Voltage	High Voltage 600	Inter-Connect	Connect High Voltage Lines To	
105	630	1 To 2	H1 & H2	
102.5	615	2 To 3		
100	600	3 To 4		
97.5	585	4 To 5		
95	570	5 To 6		
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



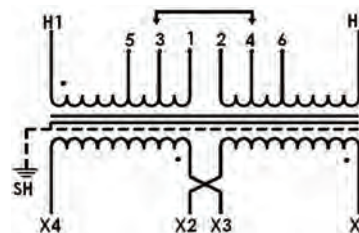
Dia. 15		Catalog Series 35-60XX & 80-60XX		
Tap Arrangement	None			
% High Voltage	High Voltage 120 X 240	Inter-Connect	Connect High Voltage Lines To	
100	120	H1 To H3 H2 To H4	H1H3 & H2H4	
100	240	H2 To H3	H1 & H4	
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



Dia. 16		Catalog Series 85-60XXSH		
Tap Arrangement	None			
% High Voltage	High Voltage 120 X 240	Inter-Connect	Connect High Voltage Lines To	
100	120	H1 To H3 H2 To H4	H1H3 & H2H4	
100	240	H2 To H3	H1 & H4	
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



Dia. 17		Catalog Series 41-64XXSH		
Tap Arrangement	2 - 2½ FCAN (Full Capacity Above Normal) 2 - 2½ FCBN (Full Capacity Below Normal)			
% High Voltage	High Voltage 120 X 240	Inter-Connect	Connect High Voltage Lines To	
105	126	H1 To 2 H2 To 1	H1 & H2	
100	120	H1 To 4 H2 To 3		
95	114	H1 To 6 H2 To 5		
105	252	1 To 2		
102.5	246	2 To 3		
100	240	3 To 4	H1 & H2	
97.5	234	4 To 5		
95	228	5 To 6		
% Low Voltage	Low Voltage 120 / 240	Inter-Connect	Connect Low Voltage Lines To	
100	120	X1 To X3 X2 To X4	X1X3 & X2X4	
100	120 / 240	X2 To X3	X1 & X2X3 & X4	
100	240	X2 To X3	X1 & X4	



# European Series CE Marked ES-11 Single Phase Transformers

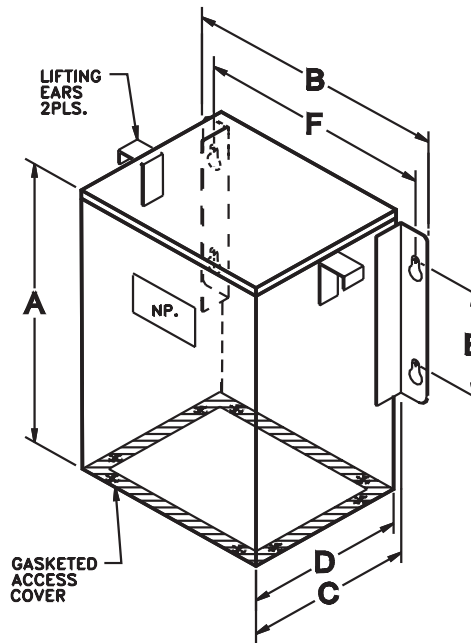
Series ES Single Phase Encapsulated Transformers are designed to comply with Domestic, North American, and European Union electrical and testing standards. Series ES are UL and Canadian UL Listed by Underwriters Labs. In addition, Series ES are CE Marked, and licensed by the German testing agency TÜV Rheinland under.

Series ES transformers are the answer to your export needs. With the voltage combinations listed below, and built in approvals, the ES Series provide no-nonsense solutions for equipment destined for the European Community of nations.

Dongan® provides finger safe terminals on all transformers.

The voltage combinations offered represent some of the most universally used. However, any combination of primary and secondary incorporating voltages of 600 volts and below is available on a short lead time, special order basis.

**NEMA Type 3R- IP23 available**



**Series ES-11**  
Wall Mount - Encapsulated - NEMA Type 12 - IP54

General Information									
Pri. Volts	380/400/416/440 460/480/575	220/380/400/416	Dimensions (inches)						Weight (lbs)
Sec. Volts	110/115/120	120/240	A	B	C	Mounting			
kVA Cap.	Catalog Number	Catalog Number	A	B	C	D	E	F	Weight (lbs)
.250	ES-11130.326	ES-11130.359	10.50	10.00	6.62	6.12	4.00	8.50	35
.500	ES-11170.326	ES-11170.359	10.50	10.00	6.62	6.12	4.00	8.50	45
.750	ES-11190.326	ES-11190.359	10.50	10.00	6.62	6.12	4.00	8.50	55
1.0	ES-11200.326	ES-11200.359	12.00	10.81	7.19	6.69	6.00	9.13	75
1.5	ES-11210.326	ES-11210.359	14.00	14.00	9.25	8.75	8.00	12.00	90
2.0	ES-11230.326	ES-11230.359	14.00	14.00	9.25	8.75	8.00	12.00	110
3.0	ES-11250.326	ES-11250.359	14.00	14.00	9.25	8.75	8.00	12.00	120
5.0	ES-11300.326	ES-11300.359	14.00	14.38	10.00	9.50	8.00	12.38	150
7.5	ES-11330.326	ES-11330.359	15.00	18.00	12.50	12.00	8.00	16.00	165
10.0	ES-11360.326	ES-11360.359	15.00	18.00	12.50	12.00	8.00	16.00	190
15.0	ES-11380.326	ES-11380.359	15.00	18.00	12.50	12.00	8.00	16.00	270
25.0	ES-11410.326	ES-11410.359	18.00	21.00	15.00	14.50	8.00	19.00	350

# Single Phase Transformers

## Features

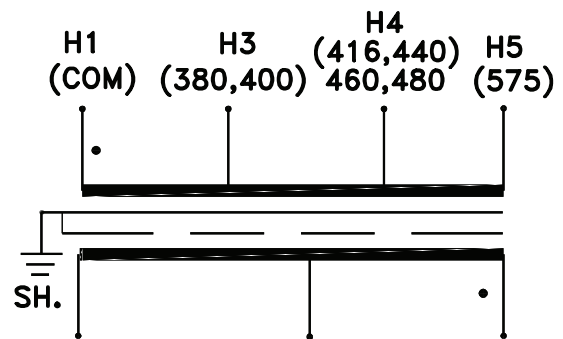
### Agency Compliance



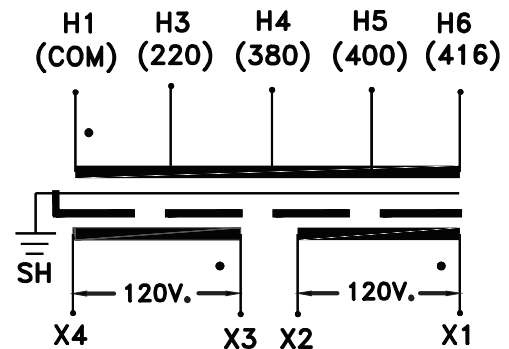
- NEMA Type 12, IP54 enclosure.
- IEC type finger safe terminals.
- 220°C (H) Insulation System.
- 50/60 Hertz.
- ES provided with an electrostatic shield.
- ES provided with protective earth (PE) terminal.



Suffix .326				
Primary Connections		Secondary Connections		
Pri. Voltage	Connect Incoming Lines To:	Sec. Voltage	Connect Load Lines To:	
380	H1 & H3	110	X1 & X3	
400	H1 & H3	115	X1 & X3	
416	H1 & H4	115	X1 & X4	
440	H1 & H4	120	X1 & X4	
460	H1 & H4	115	X1 & X3	
480	H1 & H4	120	X1 & X3	
575	H1 & H5	120	X1 & X4	



Suffix .359				
Primary Connections		Secondary Connections		
Pri. Voltage	Connect Incoming Lines To:	Sec. Voltage	Interconnect	Connect Load Lines To:
220	H1 & H3	120	X1 to X3 X2 to X4	X1 & X4
380	H1 & H4	240	X2 to X3	X1 & X4
400	H1 & H5	120/240	X2 to X3	X1 & X2X3 & X4
416	H1 & H6			



# Series 33 - Control Transformers

Series 33 Control Transformers are designed with a NEMA Type 1, indoor type enclosure and are fitted with 8" leads exiting through a 1/2" chase nipple. Dual mounting provisions are provided for both foot mount or direct knockout mount in point of use applications.

Typical applications include voltage reduction for solenoids, magnetic switches, control valves, as well as many other HVAC applications.

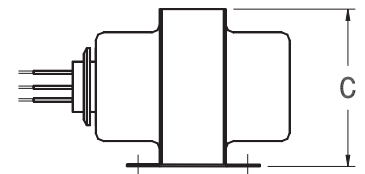
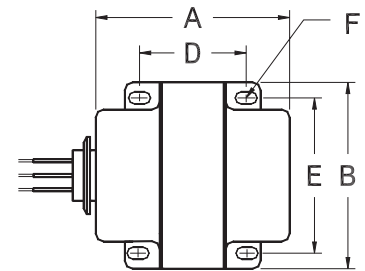
## Features



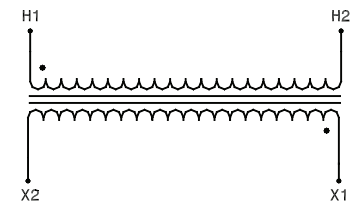
- NEMA Type 1.
- Available with manually resettable circuit breakers.
- Dual mounting capability.

General Information			Capacity		Dimensions					
kVA Cap.	Catalog Number	Wgt. Lbs	Maximum Amps		Height A	Width B	Depth C	Mounting		Slot Size F
			Pri.	Sec.				D	E	
Primary 240 Volts, Secondary Volts 120, 50 / 60 Hz										
.050	33-050-H	2.7	.20	.41	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-H	4	.41	.83	3.63	3.38	2.81	2.13	2.50	.188 x .375
Primary Volts, 240 x 480, Secondary Volts 24, 50 / 60 Hz										
.050	33-050-HLK	2.7	.20 / .10	2.08	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-HLK	4	.41 / .21	4.16	3.63	3.38	2.81	2.13	2.50	.188 x .375
Primary Volts 120, Secondary 24, 50 / 60 Hz										
.050	33-050-K	2.7	.41	2.08	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-K	4	.83	4.16	3.63	3.38	2.81	2.13	2.50	.188 x .375
Primary Volts 240 x 480, Secondary Volts 120, 50 / 60 Hz										
.050	33-050-PM	2.7	.20 / .10	.41	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-PM	4	.41 / .21	.83	3.63	3.38	2.81	2.13	2.50	.188 x .375
.150	33-150-PM	6	.62 / .31	1.25	4.00	3.75	3.13	2.38	3.25	.219 x .375
.250	33-250-PM	9	1.0 / .52	2.08	4.25	3.75	4.500	3.125	3.250	.219 x .438
Primary Volts 208, Secondary Volts, 120, 50 / 60 Hz										
.050	33-050-17	2.7	.24	.41	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-17	4	.48	.83	3.63	3.38	2.81	2.13	2.50	.188 x .375
Primary Volts 208, Secondary Volts 24, 50 / 60 Hz										
.050	33-050-18	2.7	.24	2.08	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-18	4	.48	4.16	3.63	3.38	2.81	2.13	2.50	.188 x .375
Primary Volts 277, Secondary Volts 24, 50 / 60 Hz										
.050	33-050-26	2.7	.18	2.08	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-26	4	.36	4.16	3.63	3.38	2.81	2.13	2.50	.188 x .375
Primary Volts 277, Secondary Volts 120, 50 / 60 Hz										
.050	33-050-82	2.7	.18	.41	3.19	3.00	2.50	1.69	2.50	.188 x .344
.100	33-100-82	4	.36	.83	3.63	3.38	2.81	2.13	2.50	.188 x .375

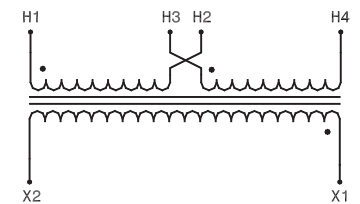
Dimensions & weights may change. Consult factory for certified drawings.



**SINGLE PRIMARY**



**DUAL PRIMARY**



# Series HL - Hazardous Location

Series HL - Hazardous Location Transformers are designed for applications where the possibility of a fire or explosion may result from sparks in environments containing high concentrations of dust, gases or other volatile substances.

Series HL transformer's wiring compartments are completely filled with electrical grade silica and resin, leaving no access to the core and coil or other internal components.

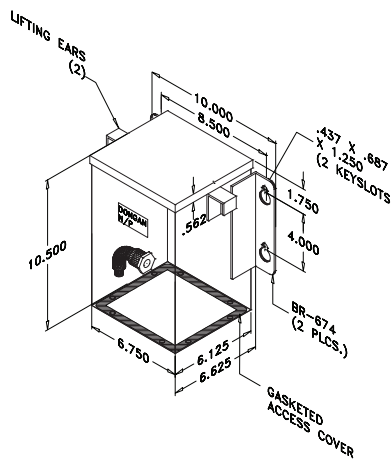
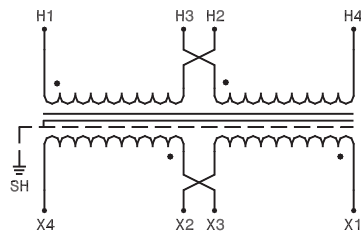
Note: all unused leads must be insulated in accordance with all applicable codes and standards.

## Features

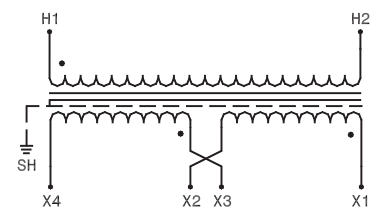
- **UL Recognized Component E100887**
- NEMA Type 12 indoor/outdoor enclosure.
- Primary and secondary leads are approximately 18 inches long.
- Consult factory for desired voltage combinations and VA sizes not listed.
- Stainless steel enclosures are also available.
- Electrostatic shield provided on all units.
- Class 1 Div II rated

General Information									
Pri. Volts	240 x 480	600	Dimensions (inches)				Mounting		Weight (lbs)
Sec. Volts	120 / 240	120 / 240							
	60 Hz	60 Hz							
kVA Cap.	Catalog Number	Catalog Number	Height A	Width B	Depth C	D	E		
.500	HL12-1025SH	HL12-5025SH	10.50	10.00	6.62	6.12	4.00	40	
.750	HL12-1030SH	HL12-5030SH	10.50	10.00	6.62	6.12	4.00	42	
1.0	HL12-1035SH	HL12-5035SH	10.50	10.00	6.62	6.12	4.00	45	
1.5	HL12-1040SH	HL12-5040SH	10.50	10.00	6.62	6.12	4.00	50	
2.0	HL12-1045SH	HL12-5045SH	12.00	10.81	7.19	6.69	6.00	75	
3.0	HL12-1050SH	HL12-5050SH	12.00	10.81	7.19	6.69	6.00	80	
5.0	HL12-1055SH	HL12-5055SH	14.00	14.00	9.25	8.75	8.00	140	
7.5	HL12-1060SH	HL12-5060SH	14.00	14.38	10.25	9.75	8.00	205	

### DUAL PRIMARY



### SINGLE PRIMARY



### Series HL

Wall Mount - Encapsulated - NEMA 12 - IP54

Dimensions & weights may change. Consult factory for certified drawings.



**DONGAN ELECTRIC INTRODUCES OUR NEW PRODUCT OFFERING**





## Class 2 transformers

The NEC defines a Class 2 circuit as that portion of the wiring system between the load side of a Class 2 power source and the connected equipment. Due to its power limitations, a Class 2 circuit is considered safe from a fire initiation standpoint and provides acceptable protection from electrical shock. These are typically low-current applications operating at 100VA or less and 30 volts or less. Some Class 2 circuits include air conditioning thermostats, garage door openers and sprinkler system controls. A Class 2 transformer is used to supply Class 2 circuits.



Class 2 transformers have a maximum VA rating of less than 100 VA with most being in the 10-40 VA range. Voltages are a maximum of 240 volts on the primary and these transformers can have multi-tap primary voltages. The secondary is typically 24 volts or less. All

class 2 transformers are limited by either the circuit safety device or their own design.

If a transformer is said to be **inherently** protected that indicates the transformer is designed in such a way as to protect itself and the load without the addition of any fuse. This is accomplished by designing the unit with high impedance. A **non-inherently** protected transformer is protected by an internal fuse or circuit breaker. In the instance of an internal fuse it is a one shot fail fuse, so once the fuse trips, the transformer is rendered inoperable. Smaller class 2 transformers of 50VA or less typically do not have fuses or circuit breakers with the circuit as the transformer is designed to prevent overload by failing before the circuit overheats. In essence the VA determines whether the transformer is inherently or non-inherently protected.

## Class 2 Transformer Applications

Class 2 transformers are used in many home and business settings. Common residential items include the power supply on a cordless phone, transformer on a plug-in coffee maker, laptops, the transformer for a plug-in toy and an antenna signal booster. A wall plug is sometimes referred to as a Wall Wort and is another example of a Class 2 transformer found in a business environment might include the power supply for a PBX phone switcher, bakery ovens or external landscape lighting. The market for these is OEM based.

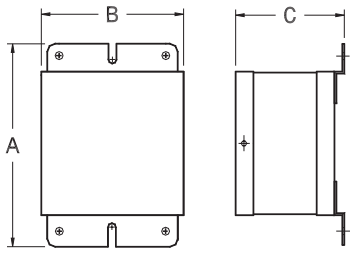
## UL

Class 2 transformers must be used in conjunction with Class II circuits. The maximum secondary output cannot exceed 30 alternate current voltage (VAC). The most common combination is 75 VA and 24 VAC. They are regulated by Underwriters Laboratories (UL) guidelines and can be either inherently or non-inherently limited. Dongan sells UL listed Class 2 transformers. However this file is much different that our typical Class 1 transformer file with UL. We must submit each new model for rigorous testing by UL and then that catalog number gets added into our file.

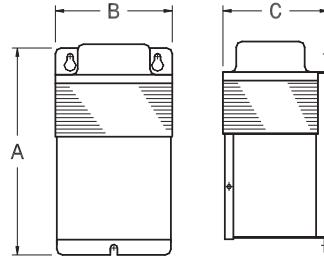
- Commercial Ovens
- Commercial and Industrial Air handling Equipment
- Low voltage lighting
- Irrigation Equipment
- Residential Furnaces
- Residential and Commercial Appliances
- Commercial Laundry Equipment
- Battery Chargers
- Vending Machines
- Espresso Machines
- Ice Cream machines



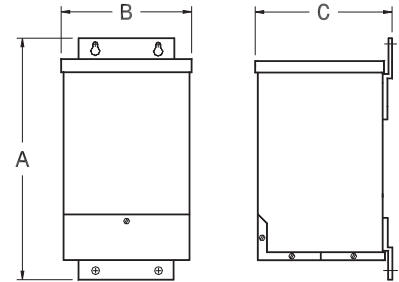
## Outline Drawings



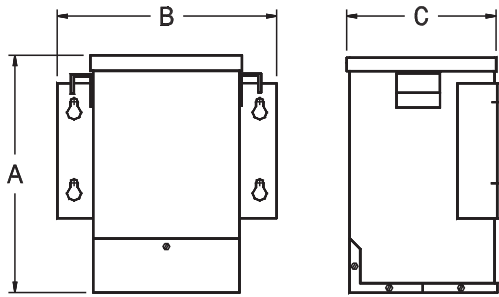
Outline Drawing 1 - Wall Mount



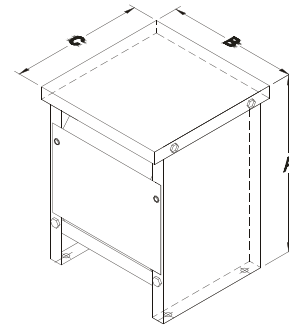
Outline Drawing 2 - Wall Mount



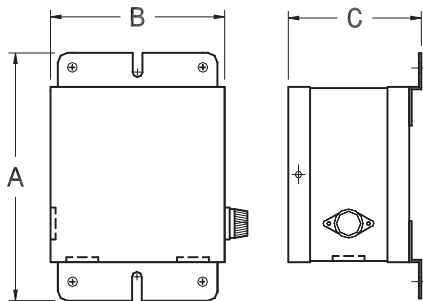
Outline Drawing 3 - Wall Mount



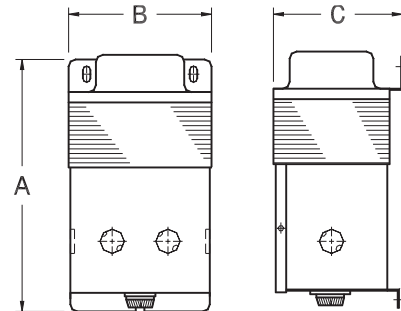
Outline Drawing 4 - Wall Mount



Outline Drawing 5 - Floor Mount



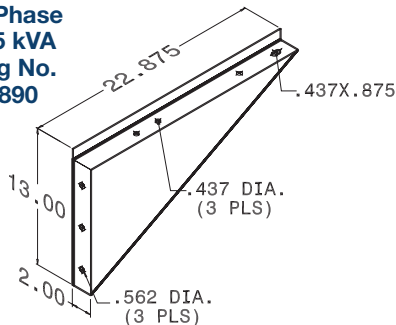
Outline Drawing 6 - Wall Mount



Outline Drawing 7 - Wall Mount

## Wall Mounting Brackets - Single Phase 7.5 kVA - 50 kVA

Single Phase  
7.5 - 25 kVA  
Catalog No.  
BR - 890



Single Phase  
37.5 - 50 kVA  
Catalog No.  
BR - 892

