

## Series 50 Industrial Control Transformers

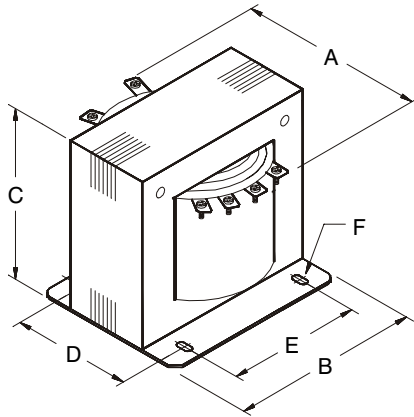
DONGAN ELECTRIC MANUFACTURING CO. • 2987 FRANKLIN • DETROIT, MI 48207  
 800.428.2626 • 313.567.8500 • FAX 313.567.8828 • www.dongan.com

Series 50 Industrial Control Transformers are designed to the highest NEMA and industrial standards. Series 50 offer compact designs for ease of installation in hundreds of control panel and automation applications.

All Series 50 transformers are UL approved and CSA certified.

Series 50 are available in both domestic and export voltage combinations. Other voltage, frequency and size requirements are readily manufactured by consulting the factory or your Dongan representative.

CE Marked, TÜV Licensed Industrial Control Transformers are featured on pgs. 82-83 in this section.



### Domestic Series:

## Features

- **UL Listed, File E3210.**
- **CSA Certified, File LR 560.**
- **All copper windings.**
- **All designs are rated 50 / 60 Hertz.**
- **Rugged coil mounted screw terminals.**
- **Primary fuse blocks and secondary fuse holders are available and are easily installed.**
- **Regulation characteristics equal or exceed the highest industry standards.**
- **Transformers .750 kVA and below employ a UL Class 105°C insulation system with 55°C temperature rise at a maximum ambient of 40°C.**
- **Transformers 1.0 kVA and above are designed with a UL Class 180°C insulation system with 115°C temperature rise at a maximum ambient of 40°C.**
- **Nonstandard designs are available by consulting the factory or your Dongan Representative.**

### Voltage Combinations:

Suffix	Primary	Secondary
-052	120 x 240	24
-053	240 x 480	120
-054	208	120
-056	600	120
-134	240 x 480	120 / 240

## SUFFIX -052, 50 / 60 HZ

Primary Volts 120 X 240, Secondary Volts 24

General Information			Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 120V / 240V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
						D	E	F					
.050	<b>50-0050-052</b>	3	3.00	3.00	2.50	2.00	2.50	.203 x .375	.42 / .21	BR-734-1	2.08	GLF 1¼	2.25
.075	<b>50-0075-052</b>	3	3.38	3.00	2.50	2.50	2.50	.203 x .375	.63 / .31	BR-734-1	3.13	GLF 1¼	3.2
.100	<b>50-0100-052</b>	4	3.38	3.38	2.81	2.38	2.81	.203 x .375	.83 / .42	BR-734-2	4.17	GLF 1¼	4.5
.150	<b>50-0150-052</b>	6	3.90	3.75	3.13	2.63	3.13	.203 x .375	1.25 / .63	BR-734-3	6.25	GLF 1¼	6.25
.200	<b>50-0200-052</b>	8	4.12	4.50	3.75	2.50	3.75	.203 x .375	1.67 / .83	BR-734-4	8.33	GLF 1¼	9
.250	<b>50-0250-052</b>	9	4.25	4.50	3.75	2.75	3.75	.203 x .375	2.08 / 1.04	BR-734-4	10.42	GLF 1¼	10
.300	<b>50-0300-052</b>	11	4.75	4.50	3.75	3.13	3.75	.203 x .375	2.50 / 1.25	BR-734-4	12.50	GLF 1¼	15
.375	<b>50-0375-052</b>	12	5.25	4.50	3.75	3.63	3.75	.203 x .375	3.13 / 1.56	BR-734-4	16.63	GLF 1¼	20
.500	<b>50-0500-052</b>	17	5.88	5.25	4.38	3.63	4.38	.281 x .562	4.17 / 2.08	BR-734-6	20.83	265 B	25
.750	<b>50-0750-052</b>	25	7.50	5.25	4.38	5.25	4.38	.281 x .562	6.25 / 3.13	BR-734-6	31.25	265 B	30
1.0	<b>50-1000-052</b>	26	7.50	5.25	4.38	5.25	4.38	.281 x .562	8.33 / 4.17	BR-734-6	41.67	--	--

# Series 50 Industrial Control Transformers

Export Series:

## Features

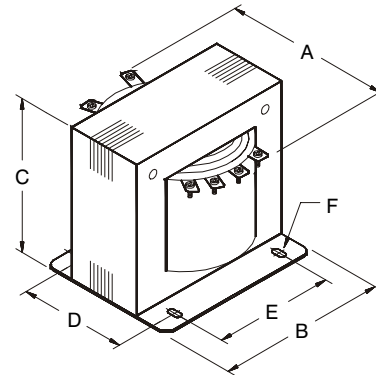
- **UL Listed, File E3210.**
- **CSA Certified, File LR 560.**
- All copper windings.
- All designs are rated 50 / 60 Hertz.
- Rugged coil mounted screw terminals.
- Primary fuse blocks and secondary fuse holders are available and are easily installed.
- Regulation characteristics equal or exceed the highest industry standards.
- Transformers .750 kVA and below employ a UL Class 105°C insulation system with 55°C temperature rise at a maximum ambient of 40°C.
- Transformers 1.0 kVA and above are designed with a UL Class 180°C insulation system with 115°C temperature rise at a maximum ambient of 40°C.
- Nonstandard designs are available by consulting the factory or your Dongan Representative.



Connection Diagrams may be found on Pg. 74

Note: Dimension C increases approximately 1 3/8" when Primary Fuse Kit BR-734-X is installed. Drawing is for dimensional purposes only. Actual terminal arrangements may vary.

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



### Voltage Combinations:

Suffix	Primary	Secondary
-058	220/380/415	95/115
-059	208 or 500	85/100/110
	220/380/440/550	91/110/120
	230/400/460/575	95/115/125
	240/416/480/600	99/120/130

## SUFFIX -053, 50 / 60 HZ

Primary Volts 240 X 480, 230 X 460, 220 X 440, Secondary Volts 120/115/110

General Information			Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 240V / 480V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	120 V Fuse Size
						D	E	F					
.050	50-0050-053	3	3.00	3.00	2.50	2.00	2.50	.203 x .375	.21 / .10	BR-734-1	.42	GLF 1¼	.5
.075	50-0075-053	3	3.38	3.00	2.50	2.50	2.50	.203 x .375	.31 / .16	BR-734-1	.63	GLF 1¼	.6
.100	50-0100-053	4	3.38	3.38	2.81	2.38	2.81	.203 x .375	.42 / .21	BR-734-2	.83	GLF 1¼	1
.150	50-0150-053	6	3.90	3.75	3.13	2.63	3.13	.203 x .375	.63 / .31	BR-734-3	1.25	GLF 1¼	1.25
.200	50-0200-053	8	4.12	4.50	3.75	2.50	3.75	.203 x .375	.83 / .42	BR-734-4	1.67	GLF 1¼	2
.250	50-0250-053	9	4.25	4.50	3.75	2.75	3.75	.203 x .375	1.04 / .52	BR-734-4	2.08	GLF 1¼	2.25
.300	50-0300-053	11	4.75	4.50	3.75	3.13	3.75	.203 x .375	1.25 / .63	BR-734-4	2.50	GLF 1¼	2.5
.375	50-0375-053	12	5.25	4.50	3.75	3.63	3.75	.203 x .375	1.56 / .78	BR-734-4	3.13	GLF 1¼	3.2
.500	50-0500-053	17	5.88	5.25	4.38	3.63	4.38	.281 x .562	2.08 / 1.04	BR-734-6	4.17	265 B	4.5
.750	50-0750-053	25	7.50	5.25	4.38	5.25	4.38	.281 x .562	3.13 / 1.56	BR-734-6	6.25	265 B	6.25
1.0	50-1000-053	26	7.50	5.25	4.38	5.25	4.38	.281 x .562	4.17 / 2.08	BR-734-6	8.33	265 B	9
1.5	50-1500-053	32	7.00	6.38	5.62	4.50	5.31	.312 x .625	6.25 / 3.13	BR-734-7	12.50	265 B	15
2.0	50-2000-053	38	7.62	6.38	5.62	5.00	5.31	.312 x .625	6.25 / 3.13	BR-734-7	16.67	265 B	20
3.0	50-3000-053	50	7.75	7.50	6.62	4.75	6.75	.312 x .625	12.50 / 6.25	BR-734-8	25.00	265 B	25
5.0	50-5000-053	70	10.25	7.50	6.62	6.88	6.75	.312 x .625	20.83 / 10.42	BR-734-8	41.67	--	--

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## SUFFIX -054, 50 / 60 HZ

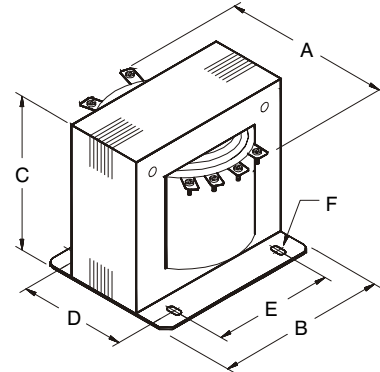
Primary Volts 208, Secondary Volts 120

General Information			Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 208V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
						D	E	F					
.050	50-0050-054	3	3.00	3.00	2.50	2.00	2.50	.203 x .375	.24	BR-734-1	.42	GLF 1¼	.4
.075	50-0075-054	3	3.38	3.00	2.50	2.50	2.50	.203 x .375	.36	BR-734-1	.63	GLF 1¼	.6
.100	50-0100-054	4	3.38	3.38	2.81	2.38	2.81	.203 x .375	.48	BR-734-2	.83	GLF 1¼	1
.150	50-0150-054	6	3.90	3.75	3.13	2.63	3.13	.203 x .375	.72	BR-734-3	1.25	GLF 1¼	1.25
.200	50-0200-054	8	4.12	4.50	3.75	2.50	3.75	.203 x .375	.96	BR-734-4	1.67	GLF 1¼	2
.250	50-0250-054	9	4.25	4.50	3.75	2.75	3.75	.203 x .375	1.20	BR-734-4	2.08	GLF 1¼	2.25
.300	50-0300-054	11	4.75	4.50	3.75	3.13	3.75	.203 x .375	1.44	BR-734-4	2.50	GLF 1¼	2.5
.375	50-0375-054	12	5.25	4.50	3.75	3.63	3.75	.203 x .375	1.80	BR-734-4	3.13	GLF 1¼	3.2
.500	50-0500-054	17	5.88	5.25	4.38	3.63	4.38	.281 x .562	2.40	BR-734-6	4.17	265 B	4.5
.750	50-0750-054	25	7.50	5.25	4.38	5.25	4.38	.281 x .562	3.61	BR-734-6	6.25	265 B	6.25
1.0	50-1000-054	26	7.50	5.25	4.38	5.25	4.38	.281 x .562	4.81	BR-734-6	8.33	265 B	9
1.5	50-1500-054	32	7.00	6.38	5.62	4.50	5.31	.312 x .625	7.21	BR-734-7	12.50	265 B	15
2.0	50-2000-054	38	7.62	6.38	5.62	5.00	5.31	.312 x .625	9.62	BR-734-7	16.67	265 B	20
3.0	50-3000-054	50	7.75	7.50	6.62	4.75	6.75	.312 x .625	14.42	BR-734-8	25.00	265 B	25

Connection Diagrams may be found on Pg. 74

Note: Dimension C increases approximately 1 3/8" when Primary Fuse Kit BR-734-X is installed. Drawing is for dimensional purposes only. Actual terminal arrangements may vary.

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



## SUFFIX -056, 50 / 60 HZ

Primary Volts 600/575/550, Secondary Volts 120/115/110

General Information			Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 600V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	120 V Fuse Size
						D	E	F					
.050	50-0050-056	3	3.00	3.00	2.50	2.00	2.50	.203 x .375	.08	BR-734-1	.42	GLF 1¼	.4
.075	50-0075-056	3	3.38	3.00	2.50	2.50	2.50	.203 x .375	.13	BR-734-1	.63	GLF 1¼	.6
.100	50-0100-056	4	3.38	3.38	2.81	2.38	2.81	.203 x .375	.17	BR-734-2	.83	GLF 1¼	1
.150	50-0150-056	6	3.90	3.75	3.13	2.63	3.13	.203 x .375	.25	BR-734-3	1.25	GLF 1¼	1.25
.200	50-0200-056	8	4.12	4.50	3.75	2.50	3.75	.203 x .375	.33	BR-734-4	1.67	GLF 1¼	2
.250	50-0250-056	9	4.25	4.50	3.75	2.75	3.75	.203 x .375	.42	BR-734-4	2.08	GLF 1¼	2.25
.300	50-0300-056	11	4.75	4.50	3.75	3.13	3.75	.203 x .375	.50	BR-734-4	2.50	GLF 1¼	2.5
.375	50-0375-056	12	5.25	4.50	3.75	3.63	3.75	.203 x .375	.63	BR-734-4	3.13	GLF 1¼	3.2
.500	50-0500-056	17	5.88	5.25	4.38	3.63	4.38	.281 x .562	.83	BR-734-6	4.17	265 B	4.5
.750	50-0750-056	25	7.50	5.25	4.38	5.25	4.38	.281 x .562	1.25	BR-734-6	6.25	265 B	6.25
1.0	50-1000-056	26	7.50	5.25	4.38	5.25	4.38	.281 x .562	1.67	BR-734-6	8.33	265 B	9
1.5	50-1500-056	32	7.00	6.38	5.62	4.50	5.31	.312 x .625	2.50	BR-734-7	12.50	265 B	15
2.0	50-2000-056	38	7.62	6.38	5.62	5.00	5.31	.312 x .625	3.33	BR-734-7	16.67	265 B	20
3.0	50-3000-056	50	7.75	7.50	6.62	4.75	6.75	.312 x .625	5.00	BR-734-8	25.00	265 B	25



# Series 50 Industrial Control Transformers

## SUFFIX -058, 50 / 60 HZ

Primary Volts 220 / 380 / 415, Secondary Volts 95 / 115

General Information			Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 220V / 380V / 415	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	115 V Fuse Size
						D	E	F					
.250	50-0250-058	11	4.81	4.50	3.75	3.38	3.75	.203 x .375	1.14 / .66 / .60	BR-734-4	2.17	GLF 1¼	2.25
.500	50-0500-058	22	6.63	5.25	4.38	4.60	4.38	.281 x .406	2.27 / 1.32 / 1.20	BR-734-6	4.35	265 B	4.5
.750	50-0750-058	23	7.38	5.75	4.25	4.38	4.94	.281 x .406	3.41 / 1.97 / 1.81	BR-734-5	6.52	265 B	7
1.0	50-1000-058	32	6.75	6.38	5.31	4.50	5.31	.312 x .625	4.55 / 2.63 / 2.41	BR-734-7	8.70	265 B	9
1.5	50-1500-058	41	6.25	7.50	6.25	4.00	6.75	.312 x .625	6.82 / 3.95 / 3.61	BR-734-8	13.04	265 B	15
2.0	50-2000-058	49	7.80	7.50	6.25	4.75	6.75	.312 x .625	9.09 / 5.26 / 4.82	BR-734-8	17.39	265 B	20
3.0	50-3000-058	75	9.88	7.50	6.25	4.62	6.75	.312 x .625	13.64 / 7.89 / 7.23	BR-734-8	26.09	265 B	30
5.0	50-5000-058	113	9.12	9.00	7.50	6.93	7.50	.437 x .750	22.73 / 13.16 / 12.05	BR-734-9	43.48	--	--

## SUFFIX -059, 50 / 60 HZ

Primary Volts 208/500  
220/380/440/550  
230/400/460/575  
240/416/480/600

Secondary Volts 85/100/110  
91/110/120  
95/115/125  
99/120/130

General Information			Dimensions (inches)						Primary	Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	120 V Fuse Size
						D	E	F				
.150	50-0150-059	11	4.57	5.25	4.38	2.63	4.38	.281 x .406	BR-734-6	1.25	265 B	1.25
.250	50-0250-059	15	5.25	5.25	4.38	3.38	4.38	.281 x .406	BR-734-6	2.08	265 B	2.25
.375	50-0375-059	18	6.25	5.75	4.25	3.44	4.94	.281 x .406	BR-734-5	3.13	265 B	3.2
.500	50-0500-059	22	6.68	5.75	4.25	4.38	4.94	.281 x .406	BR-734-5	4.17	265 B	4.5
.750	50-0750-059	32	6.75	6.38	5.31	4.63	5.31	.312 x .625	BR-734-7	6.25	265 B	6.25
1.0	50-1000-059	35	7.25	6.38	5.31	5.10	5.31	.312 x .625	BR-734-7	8.33	265 B	9
1.5	50-1500-059	53	8.63	7.50	6.25	5.38	6.75	.312 x .625	BR-734-8	12.5	265 B	15
2.0	50-2000-059	60	8.75	7.50	6.25	5.80	6.75	.312 x .625	BR-734-8	16.67	265 B	20
3.0	50-3000-059	74	10.25	7.50	6.25	6.88	6.75	.312 x .625	BR-734-8	25.00	265 B	25

## SUFFIX -134, 50 / 60 HZ

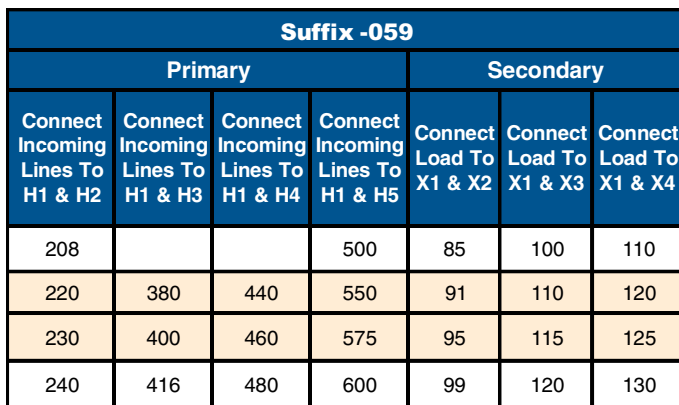
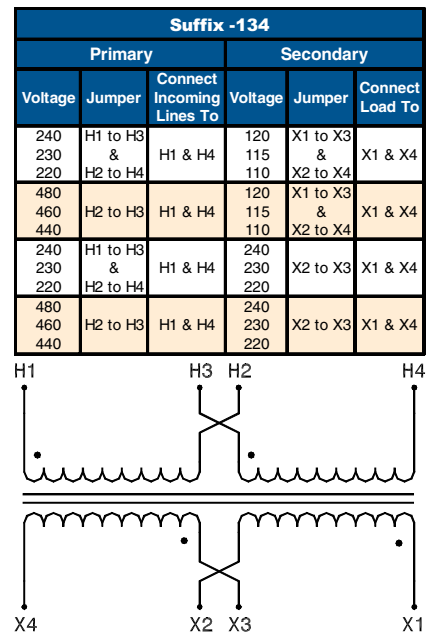
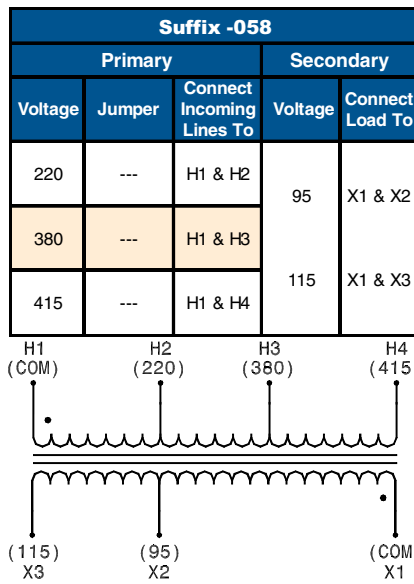
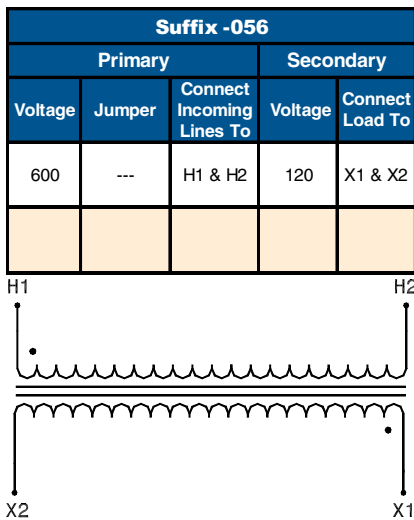
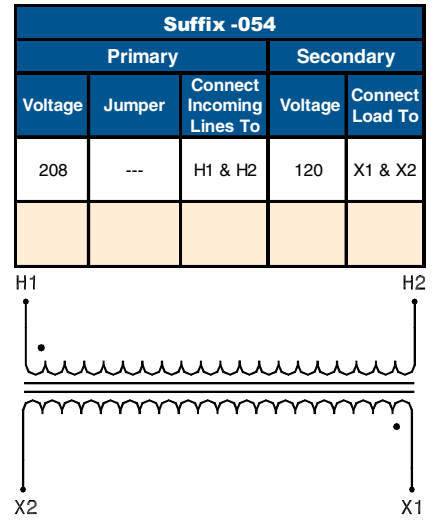
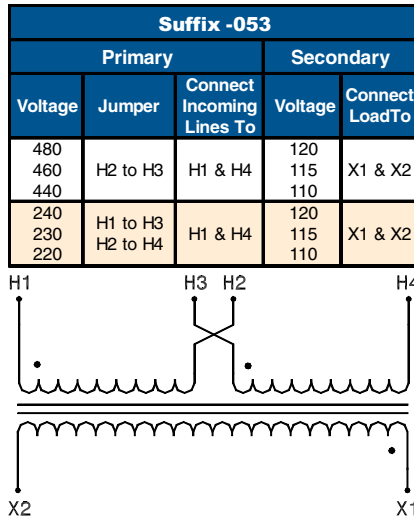
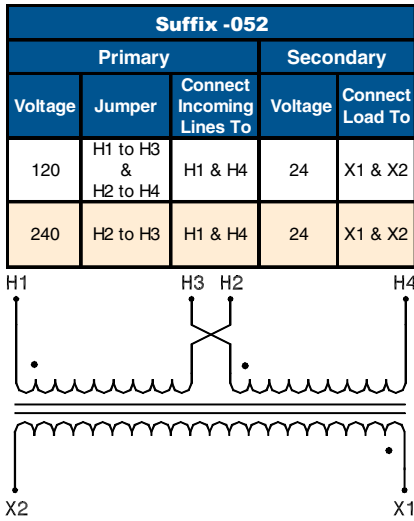
Primary Volts 240 X 480, 230 X 460, 220 X 440,  
Secondary Volts 120/240,115/230,110/220

General Information			Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 240V / 480V	Pri. Fuse Kit	Sec. Max. Amps 120V / 240V	Sec. Fuse Kit	120 V Fuse Size
						D	E	F					
.050	50-0050-134	3	3.00	3.00	2.50	2.00	2.50	.203 x .375	.21 / .10	BR-734-1	.42 / .21	GLF 1¼	.5
.075	50-0075-134	3	3.38	3.00	2.50	2.50	2.50	.203 x .375	.31 / .16	BR-734-1	.63 / .31	GLF 1¼	.6
.100	50-0100-134	4	3.38	3.38	2.81	2.38	2.81	.203 x .375	.42 / .21	BR-734-2	.83 / .42	GLF 1¼	1
.150	50-0150-134	6	3.90	3.75	3.13	2.63	3.13	.203 x .375	.63 / .31	BR-734-3	1.25 / .63	GLF 1¼	1.25
.200	50-0200-134	8	4.12	4.50	3.75	2.50	3.75	.203 x .375	.83 / .42	BR-734-4	1.67 / .83	GLF 1¼	2
.250	50-0250-134	9	4.25	4.50	3.75	2.75	3.75	.203 x .375	1.04 / .52	BR-734-4	2.08 / 1.04	GLF 1¼	2.25
.300	50-0300-134	11	4.75	4.50	3.75	3.13	3.75	.203 x .375	1.25 / .63	BR-734-4	2.50 / 1.25	GLF 1¼	2.5
.375	50-0375-134	12	5.25	4.50	3.75	3.63	3.75	.203 x .375	1.56 / .78	BR-734-4	3.13 / 1.56	GLF 1¼	3.2
.500	50-0500-134	17	5.88	5.25	4.38	3.63	4.38	.281 x .562	2.08 / 1.04	BR-734-6	4.17 / 2.08	265 B	4.5
.750	50-0750-134	25	7.50	5.25	4.38	5.25	4.38	.281 x .562	3.13 / 1.56	BR-734-6	6.25 / 3.13	265 B	6.25
1.0	50-1000-134	26	7.50	5.25	4.38	5.25	4.38	.281 x .562	4.17 / 2.08	BR-734-6	8.33 / 4.17	265 B	9
1.5	50-1500-134	32	7.00	6.38	5.62	4.50	5.31	.312 x .625	6.25 / 3.13	BR-734-7	12.50 / 6.25	265 B	15
2.0	50-2000-134	38	7.62	6.38	5.62	5.00	5.31	.312 x .625	6.25 / 3.13	BR-734-7	16.67 / 8.33	265 B	20
3.0	50-3000-134	50	7.75	7.50	6.62	4.75	6.75	.312 x .625	12.50 / 6.25	BR-734-8	25.00 / 12.50	265 B	25

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# Series 50 Industrial Control Transformers Connection Diagrams

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## Series 50 Industrial Control Transformers

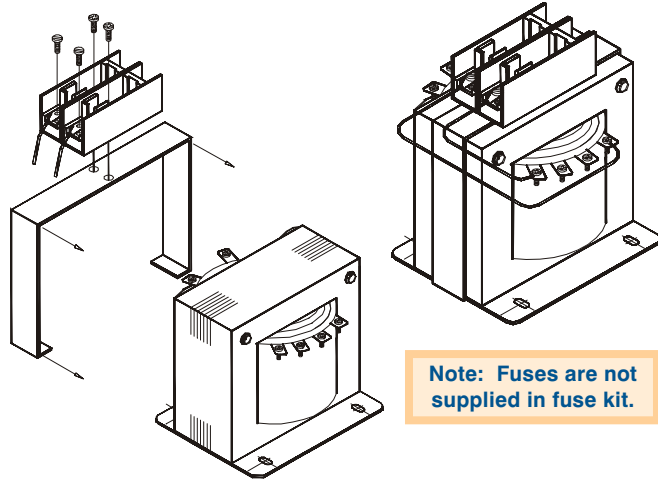
### SERIES 50 PRIMARY FUSE KIT

#### Fuse Kit BR-734

- Meets UL 508
- Meets NEC Article 450
- Uses Class CC Fuses

##### Installation Procedure

- Loosen bolts holding transformer to the panel backplate.
- Slide the BR-734 bracket over the transformer.
- Retighten mounting bolts.
- Connect the fuse holder leads to the transformer terminals with the jumper leads furnished.



Note: Fuses are not supplied in fuse kit.

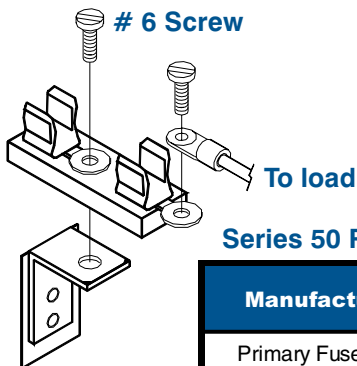
### SERIES 50 SECONDARY FUSE KITS

#### Fuse Kit GLF 1¼

- Meets UL 508
- Meets NEC Article 450
- Uses ¼" x 1¼" Fuses

##### Installation Procedure

- Remove #6 screw in the transformer terminal to be fused.
- Fasten GLF 1¼ fuse holder to transformer terminal with the longer #6 screw provided, as shown in the diagram.
- Connect the load lead to the terminal provided on the GLF 1¼ fuse holder.



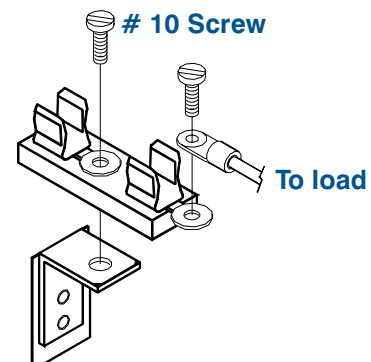
Note: Fuses are not supplied in fuse kit.

#### Fuse Kit 265B

- Meets UL 508
- Meets NEC Article 450
- Uses 13/32" x 1½" Fuses

##### Installation Procedure

- Remove #10 screw in the transformer terminal to be fused.
- Fasten 265B fuse holder to transformer terminal with the longer #10 screw provided, as shown in the diagram.
- Connect the load lead to the terminal provided on the 265B fuse holder.



#### Series 50 Recommended Fuse Type By Manufacturer

Manufacturer	Bussman	Gould	Littlefuse
Primary Fuse Type	FNQ-R	ATQR / ATDR	KLDR / CCRM
Secondary Fuse Type Fuse Holder 265-B	FNM / FNQ (250V) (500V)	TRM / ATQ (250V) (500V)	FLM / FLQ (250V) (500V)
Secondary Fuse Type Fuse Holder GLF-1¼	MDQ (250V)	GDL (250V)	3AB (250V)

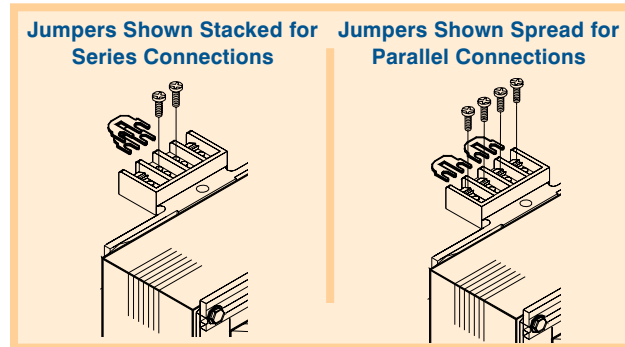
## Series HC Industrial Control Transformers

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Series HC Industrial Control Transformers feature a molded, barrier type terminal board for easy connections of both line and load as well as various fusing kits for both primary and secondary. In addition, Series HC offer convenient jumper clips for series/parallel connections. These features allow the designer to simplify control panel fusing designs and minimize transformer installation time and cost.

Series suffix -4100 and -4400 are conveniently shipped with both primary and secondary fuse holders installed, allowing further cost reduction to the OEM.

All Series HC transformers are UL approved and CSA certified. CE Marked, TÜV Licensed Industrial Control Transformers are featured on pgs. 82 - 83 in this section.



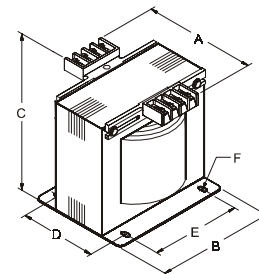
Series HC are shipped with Jumper Clips connected in series.

## Features

- **UL Listed, File E3210.**
- **CSA Certified, File LR 560.**
- **All copper windings.**
- **Core mounted, barrier type terminal strips.**
- **Series/parallel jumper clips provided.**
- **Secondary fuse kits (FKS) furnished.**
- **Primary fuse kits (FKP2)** are available and are easily installed.
- **Regulation characteristics** equal or exceed the highest industry standards.
- **Grain oriented, silicon steel cores minimize core losses.**
- **Transformers .050 kVA to .150 kVA employ a UL Class 180°C insulation system** with 55°C temperature rise at a maximum ambient of 40°C.
- **Transformers .250 kVA and above are designed with a UL Class 180°C insulation system** with 115°C temperature rise at a maximum ambient of 40°C.
- **Nonstandard designs are available** by consulting the factory or your Dongan Representative.

### Voltage Combinations:

Suffix	Primary	Secondary
-41	240 x 480	120
-44	208 / 240 / 480	120
-46	600	120
-47	240 / 480 / 600	120



Outline Drawing  
HC Suffix -41,-44,-46,-47

## SUFFIX -41

Primary Volts 240 X 480, 230 X 460, 220 X 440, Secondary Volts 120/115/110

General Information				Dimensions (inches)						Primary			Secondary		
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 240V / 480V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size	
							D	E	F						
.050	HC-0050-41	50/60	3.0	4.75	3.00	3.25	2.00	2.50	.203 x .375	.21 / .10	FKP2	.42	Included	.5	
.075	HC-0075-41	50/60	4.0	5.25	3.00	3.25	2.50	2.50	.203 x .375	.31 / .16	FKP2	.63	Included	.6	
.100	HC-0100-41	50/60	5.0	5.62	3.00	3.25	2.87	2.50	.203 x .375	.42 / .21	FKP2	.83	Included	1	
.150	HC-0150-41	50/60	7.0	5.25	3.75	3.75	2.62	3.13	.203 x .375	.63 / .31	FKP2	1.25	Included	1.25	
.250	HC-0250-41	50/60	8.5	5.62	3.75	3.75	2.87	3.13	.203 x .375	1.04 / .52	FKP2	2.08	Included	2.25	
.300	HC-0300-41	50/60	9.5	6.00	3.75	3.75	3.25	3.13	.203 x .375	1.25 / .63	FKP2	2.50	Included	2.5	
.375	HC-0375-41	50/60	10.0	5.50	4.50	4.30	2.80	3.80	.203 x .375	1.56 / .78	FKP2	3.13	Included	3.2	
.500	HC-0500-41	50/60	11.5	6.00	4.50	4.25	3.25	3.75	.203 x .375	2.08 / 1.04	FKP2	4.17	Included	4.5	
.750	HC-0750-41	50/60	15.5	6.87	4.50	4.25	4.12	3.75	.203 x .375	3.12 / 1.56	FKP2	6.25	Included	6.25	
1.0	HC-1000-41	60	19.0	6.50	5.25	4.87	3.87	4.37	.281 x .562	4.16 / 2.08	FKP2	8.33	Included	9	
1.5	HC-1500-41	60	27.0	7.87	5.25	4.87	5.12	4.37	.281 x .562	6.25 / 3.12	FKP2	12.50	Included	15	
2.0	HC-2000-41	60	31.5	9.12	5.25	4.87	6.4	4.37	.281 x .562	8.33 / 4.16	FKP2	16.67	Included	20	

# Series HC Industrial Control Transformers

## SUFFIX -4100 & -4400

### Features

- **UL Listed, File E3210.**
- **CSA Certified, File LR 560.**
- Series -4100, and -4400: **Factory Pre-Connected Primary & Secondary Fusing**
- All copper windings.
- Core mounted, barrier type terminal strips.
- Series/parallel jumper clips provided on -4100.
- Dual primary fuse holder and single secondary fuse holder are factory assembled for added convenience.
- Regulation characteristics equal or exceed the highest industry standards.

- Grain oriented, silicon steel cores minimize core losses.
- Transformers .050 kVA to .150 kVA employ a UL Class 180°C insulation system with 55°C temperature rise at a maximum ambient of 40°C.
- Transformers .250 kVA and above are designed with a UL Class 180°C insulation system with 115°C temperature rise at a maximum ambient of 40°C.
- Nonstandard designs are available by consulting the factory or your Dongan Representative.

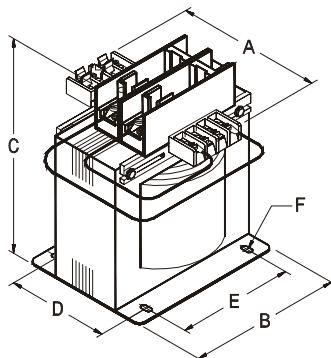
#### Voltage Combinations:

Suffix	Primary	Secondary
-4100	240 x 480	120
-4400	208 / 240 / 480	120

## SUFFIX -4100 WITH PRE-CONNECTED DUAL PRIMARY FUSE BLOCKS & SECONDARY FUSE HOLDER

Primary Volts 240 X 480, 230 X 460, 220 X 440,  
Secondary Volts 120/115/110

General Information				Dimensions (inches)						Primary		Secondary		
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 240V / 480V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
							D	E	F					
.050	HC-0050-4100	50/60	3.0	4.75	3.00	4.25	2.00	2.50	.203 x .375	.21 / .10	Installed	.42	Included	.5
.075	HC-0075-4100	50/60	4.0	5.25	3.00	4.25	2.50	2.50	.203 x .375	.31 / .16	Installed	.63	Included	.6
.100	HC-0100-4100	50/60	5.0	5.62	3.00	4.25	2.87	2.50	.203 x .375	.42 / .21	Installed	.83	Included	1
.150	HC-0150-4100	50/60	7.0	5.25	3.75	4.75	2.62	3.13	.203 x .375	.63 / .31	Installed	1.25	Included	1.25
.250	HC-0250-4100	50/60	8.5	5.62	3.75	4.75	2.87	3.13	.203 x .375	1.04 / .52	Installed	2.08	Included	2.25
.300	HC-0300-4100	50/60	9.5	6.00	3.75	4.75	2.87	3.13	.203 x .375	1.25 / .63	Installed	2.50	Included	2.5
.375	HC-0375-4100	50/60	10.0	5.30	4.50	5.30	2.80	3.80	.203 x .375	1.56 / .78	Installed	3.13	Included	3.2
.500	HC-0500-4100	50/60	11.5	6.00	4.50	5.25	3.25	3.75	.203 x .375	2.08 / 1.04	Installed	4.17	Included	4.5
.750	HC-0750-4100	50/60	15.5	6.87	4.50	5.25	4.12	3.75	.203 x .375	3.12 / 1.56	Installed	6.25	Included	6.25
1.0	HC-1000-4100	60	19.0	6.50	5.25	5.87	3.87	4.37	.281 x .562	4.16 / 2.08	Installed	8.33	Included	9
1.5	HC-1500-4100	60	27.0	7.87	5.25	5.87	5.12	4.37	.281 x .562	6.25 / 3.12	Installed	12.50	Included	15
2.0	HC-2000-4100	60	31.5	9.12	5.25	5.87	6.43	4.37	.281 x .562	8.33 / 4.16	Installed	16.67	Included	20



Outline Drawing  
HC Suffix -4100, -4400

Connection Diagrams may be found on  
Pg. 80





# Series HC Industrial Control Transformers

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## SUFFIX -44

Primary Volts 208/240/480, Secondary Volts 120

General Information			Dimensions (inches)						Primary		Secondary			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 208/240V/480V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
							D	E	F					
.050	HC-0050-44	50/60	3.0	5.00	3.00	3.25	2.25	2.50	.203 x .375	.24 / .21 / .10	FKP2	.42	Included	.5
.075	HC-0075-44	50/60	4.0	5.62	3.00	3.25	2.87	2.50	.203 x .375	.36 / .31 / .16	FKP2	.63	Included	.6
.100	HC-0100-44	50/60	5.5	5.25	3.75	3.75	2.50	3.13	.203 x .375	.48 / .42 / .21	FKP2	.83	Included	1
.150	HC-0150-44	50/60	7.5	6.12	3.75	3.75	3.31	3.12	.203 x .375	.72 / .63 / .31	FKP2	1.25	Included	1.25
.250	HC-0250-44	50/60	8.5	5.25	4.50	4.30	2.50	3.75	.203 x .375	1.21 / 1.04 / .52	FKP2	2.08	Included	2.25
.300	HC-0300-44	50/60	10.5	6.00	4.50	4.30	3.25	3.75	.203 x .375	1.4 / 1.25 / .63	FKP2	2.50	Included	2.5
.375	HC-0375-44	50/60	11.5	6.00	4.50	4.30	3.25	3.75	.203 x .375	1.8 / 1.56 / .78	FKP2	3.13	Included	3.2
.500	HC-0500-44	50/60	13.5	6.50	4.50	4.30	3.75	3.75	.203 x .375	2.4 / 2.08 / 1.04	FKP2	4.17	Included	4.5
.750	HC-0750-44	50/60	18.5	6.50	5.25	4.87	3.75	4.37	.203 x .375	3.6 / 3.12 / 1.56	FKP2	6.25	Included	6.25
1.0	HC-1000-44	60	20.0	6.75	5.25	4.87	4.00	4.37	.281 x .562	4.8 / 4.16 / 2.08	FKP2	8.33	Included	9
1.5	HC-1500-44	60	29.5	8.50	5.25	4.87	5.87	4.37	.281 x .562	7.2 / 6.25 / 3.12	FKP2	12.50	Included	15
2.0	HC-2000-44	60	32.0	8.50	4.25	6.25	5.93	3.43	.281 x .562	9.6 / 4.17 / 4.16	FKP2	16.67	Included	20

## SUFFIX -4400

With Pre-Connected Dual Primary Fuse Blocks & Secondary Fuse Holder\*

Primary Volts 208/240/480, Secondary Volts 120

General Information			Dimensions (inches)						Primary		Secondary			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 208/240V/480V	Pri. Fuse Kit*	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
							D	E	F					
.050	HC-0050-4400	50/60	3.0	5.00	3.00	4.25	2.25	2.50	.203 x .375	.24 / .21 / .10	Installed	.42	Included	.5
.075	HC-0075-4400	50/60	4.0	5.62	3.00	4.25	2.87	2.50	.203 x .375	.36 / .31 / .16	Installed	.63	Included	.6
.100	HC-0100-4400	50/60	5.5	5.25	3.75	4.75	2.50	3.12	.203 x .375	.48 / .42 / .21	Installed	.83	Included	1
.150	HC-0150-4400	50/60	7.5	6.12	3.75	4.75	3.31	3.12	.203 x .375	.72 / .63 / .31	Installed	1.25	Included	1.25
.250	HC-0250-4400	50/60	8.5	5.25	4.50	5.50	2.50	3.75	.203 x .375	1.21 / 1.04 / .52	Installed	2.08	Included	2.25
.300	HC-0300-4400	50/60	9.5	6.00	4.50	5.50	3.25	3.75	.203 x .375	1.4 / 1.25 / .63	Installed	2.50	Included	2.5
.375	HC-0375-4400	50/60	11.5	6.00	4.50	5.50	3.25	3.75	.203 x .375	1.8 / 1.56 / .78	Installed	3.13	Included	3.2
.500	HC-0500-4400	50/60	13.5	6.50	4.50	5.50	3.75	3.75	.203 x .375	2.4 / 2.08 / 1.04	Installed	4.17	Included	4.5
.750	HC-0750-4400	50/60	18.5	6.50	5.25	6.25	3.75	4.37	.203 x .375	3.6 / 3.12 / 1.56	Installed	6.25	Included	6.25
1.0	HC-1000-4400	60	20.0	6.75	5.25	6.25	4.00	4.37	.281 x .562	4.8 / 4.16 / 2.08	Installed	8.33	Included	9
1.5	HC-1500-4400	60	29.5	8.50	5.25	6.25	5.87	4.37	.281 x .562	7.2 / 6.25 / 3.12	Installed	12.50	Included	15
2.0	HC-2000-4400	60	32.0	8.50	4.25	6.25	5.93	3.43	.281 x .562	9.6 / 4.17 / 4.16	Installed	16.67	Included	20

\*Fuse block is factory preconnected on 480 volt terminals.

## SUFFIX -46

Primary Volts 600/575/550, Secondary Volts 120/115/110

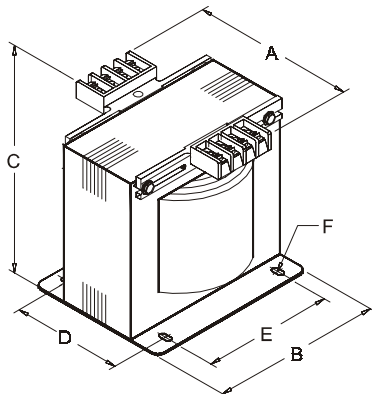
General Information			Dimensions (inches)						Primary		Secondary			
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 600V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
							D	E	F					
.050	HC-0050-46	50/60	3.0	4.75	3.00	3.25	2.00	2.50	.203 x .375	.08	FKP2	.42	Included	.5
.075	HC-0075-46	50/60	4.0	5.25	3.00	3.25	2.50	2.50	.203 x .375	.13	FKP2	.63	Included	.6
.100	HC-0100-46	50/60	5.0	5.62	3.00	3.25	2.87	2.50	.203 x .375	.17	FKP2	.83	Included	1
.150	HC-0150-46	50/60	7.0	5.25	3.75	3.75	2.62	3.13	.203 x .375	.25	FKP2	1.25	Included	1.25
.250	HC-0250-46	50/60	8.5	5.62	3.75	3.75	2.87	3.13	.203 x .375	.42	FKP2	2.08	Included	2.25
.300	HC-0300-46	50/60	9.5	6.00	3.75	3.75	3.25	3.13	.203 x .375	.50	FKP2	2.50	Included	2.5
.375	HC-0375-46	50/60	10.0	5.30	4.50	4.30	2.80	3.80	.203 x .375	.63	FKP2	3.13	Included	3.2
.500	HC-0500-46	50/60	11.5	6.00	4.50	4.25	3.25	3.75	.203 x .375	.83	FKP2	4.17	Included	4.5
.750	HC-0750-46	50/60	15.5	6.87	4.50	4.25	4.12	3.75	.203 x .375	1.3	FKP2	6.25	Included	6.25
1.0	HC-1000-46	60	19.0	6.50	5.25	4.87	3.87	4.37	.281 x .562	1.7	FKP2	8.33	Included	9
1.5	HC-1500-46	60	27.0	7.87	5.25	4.87	5.12	4.37	.281 x .562	2.5	FKP2	12.50	Included	15
2.0	HC-2000-46	60	31.5	9.12	5.25	4.87	6.43	4.37	.281 x .562	3.3	FKP2	16.67	Included	20

# Series HC Industrial Control Transformers

## SUFFIX -47

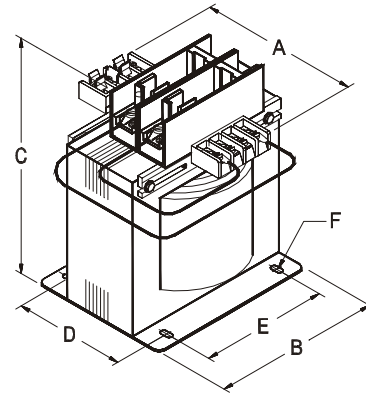
Primary Volts 240/480/600, Secondary Volts 120

General Information			Dimensions (inches)						Primary			Secondary		
kVA Cap.	Catalog Number	Hz.	Wgt. Lbs	Height A	Width B	Depth C	Mounting			Pri. Max. Amps 240/480/600V	Pri. Fuse Kit	Sec. Max. Amps	Sec. Fuse Kit	Sec. Fuse Size
							D	E	F					
.050	HC-0050-47	50/60	3.0	5.00	3.00	3.25	2.25	2.50	.203 x .375	.21 / .10 / .08	FKP2	.42	Included	.5
.075	HC-0075-47	50/60	4.0	5.62	3.00	3.25	2.87	2.50	.203 x .375	.31 / .16 / .13	FKP2	.63	Included	.6
.100	HC-0100-47	50/60	5.5	5.25	3.75	3.75	2.50	3.12	.203 x .375	.42 / .21 / .17	FKP2	.83	Included	1
.150	HC-0150-47	50/60	7.5	6.12	3.75	3.75	3.31	3.12	.203 x .375	.63 / .31 / .25	FKP2	1.25	Included	1.25
.250	HC-0250-47	50/60	8.5	5.25	4.50	4.30	2.50	3.75	.203 x .375	1.0 / .52 / .42	FKP2	2.08	Included	2.25
.300	HC-0300-47	50/60	10.5	6.00	4.50	4.30	3.25	3.75	.203 x .375	1.25 / .63 / .50	FKP2	2.50	Included	2.5
.375	HC-0375-47	50/60	11.5	6.00	4.50	4.30	3.25	3.75	.203 x .375	1.6 / .78 / .63	FKP2	3.13	Included	3.2
.500	HC-0500-47	50/60	13.5	6.50	4.50	4.30	3.75	3.75	.203 x .375	2.1 / 1.0 / .83	FKP2	4.17	Included	4.5
.750	HC-0750-47	50/60	18.5	6.50	5.25	4.87	3.75	4.37	.203 x .375	3.1 / 1.6 / 1.3	FKP2	6.25	Included	6.25
1.0	HC-1000-47	60	20.0	6.75	5.25	4.87	4.00	4.37	.281 x .562	4.2 / 2.1 / 1.7	FKP2	8.33	Included	9
1.5	HC-1500-47	60	29.5	8.50	5.25	4.87	5.87	4.37	.281 x .562	6.3 / 3.1 / 2.5	FKP2	12.50	Included	15
2.0	HC-2000-47	60	32.0	8.50	4.25	6.25	5.93	3.43	.281 x .562	8.3 / 4.2 / 3.3	FKP2	16.67	Included	20



Outline Drawing  
HC Suffix -41, -44, -46, -47

Connection Diagrams may be found on Pg. 80



Outline Drawing  
HC Suffix -4100, -4400

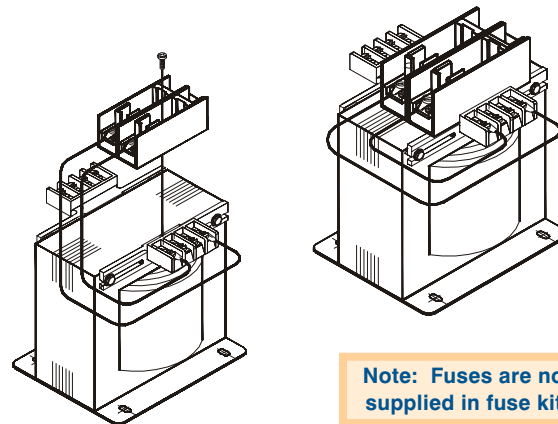
## SERIES HC PRIMARY FUSE KIT

### Fuse Kit FKP2

- Meets UL 508
- Meets NEC® Article 450
- Uses Class CC Fuses

#### Installation Procedure

- Locate the mounting hole in the terminal block of primary side of transformer.
- Fasten FKP2 fuse holder to primary side of transformer terminal block with the screw provided.
- Connect the fuse holder leads to the transformer terminals with the jumper leads furnished.



Note: Fuses are not supplied in fuse kit.

#### Series HC Recommended Fuse Type By Manufacturer

Manufacturer	Bussman	Gould	Littlefuse
Primary Fuse Type	FNQ-R	ATQR / ATDR	KLDR / CCRM
Secondary Fuse Type	FNM / FNQ (250V) (500V)	TRM / ATQ (250V) (500V)	FLM / FLQ (250V) (500V)

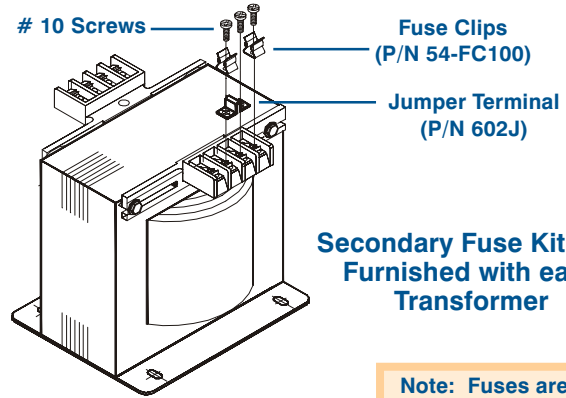
DONGAN ELECTRIC MANUFACTURING CO. • 2987 FRANKLIN • DETROIT, MI 48207  
 800.428.2626 • 313.567.8500 • Fax 313.567.8828 • www.dongan.com

## Fuse Kit FKS

- Meets UL 508
- Meets NEC® Article 450
- Uses 13/32" x 1 1/2" Fuses

### Installation Procedure

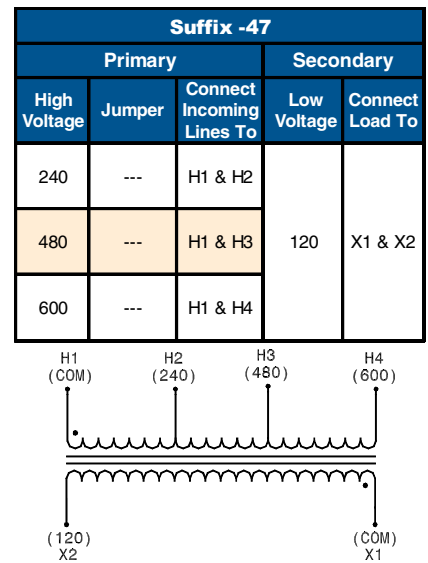
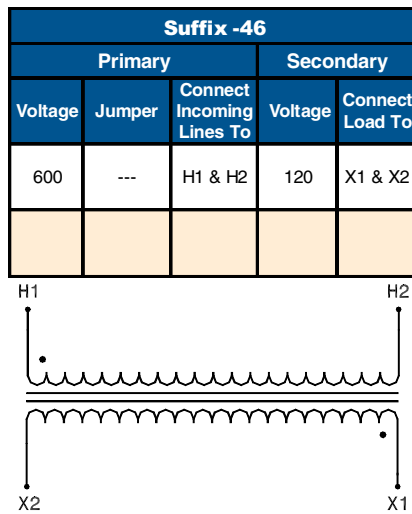
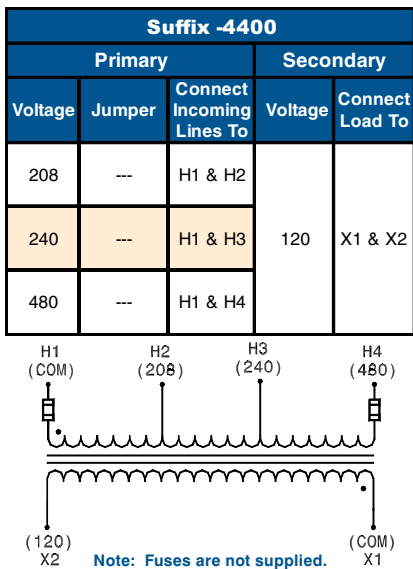
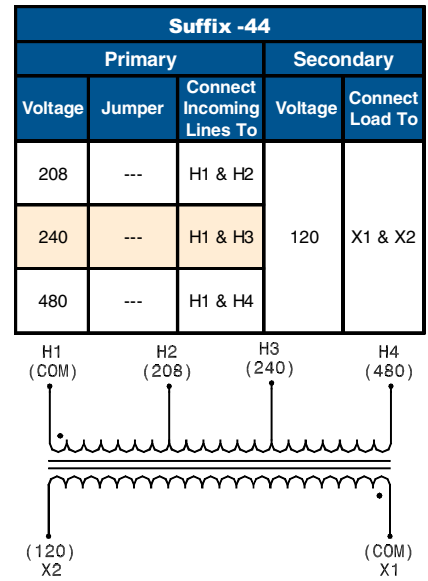
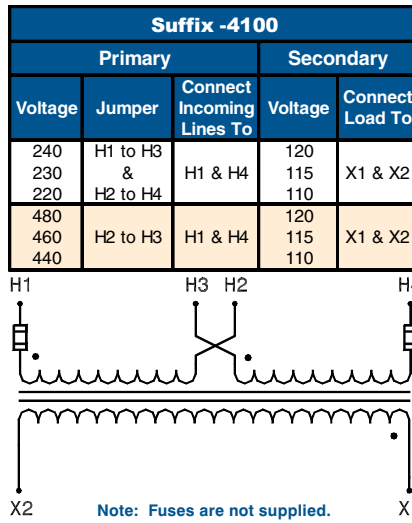
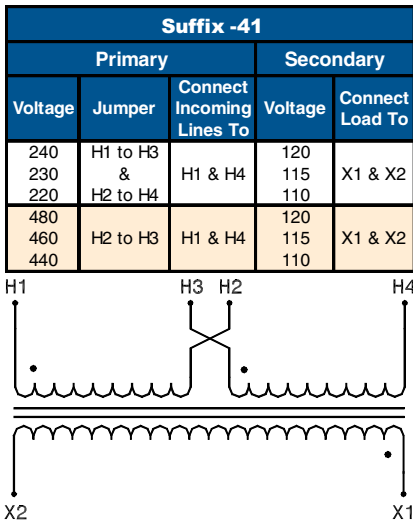
- To fuse terminal X1, remove #10 screws in terminals X1, XF, and unmarked terminal slot.
- Fasten fuse clip to transformer terminal X1 using #10 screw.
- Fasten #10 screw through Fuse Clip, and Jumper Terminal and into unmarked terminal slot.
- Fasten #10 screw through Jumper Terminal and into terminal XF.
- Connect load to terminals X2 and XF.



**Secondary Fuse Kit FKS  
Furnished with each  
Transformer**

**Note: Fuses are not supplied in fuse kit.**

## SERIES HC CONNECTION DIAGRAMS



## Control Circuit Overcurrent Protection

Current North American Standards specify overcurrent protection on all control circuit transformers. These standards include the US *National Electric Code*®, UL 508, and the Canadian Electrical Code. Specified overcurrent protection may be accomplished by one of two options.

Primary Current (amps)	Overcurrent Protection Rating
Less than 2	300% maximum
2 to 9	167% maximum
9 or more	125% of rated primary current (or next higher standard rating)

Option 1: Provide primary overcurrent protection based on the parameters below.

Option 2: Provide both primary and secondary overcurrent protection. When this option is followed, the primary overcurrent device should be rated at no more than 250% of rated primary current and the secondary overcurrent device at no more than 125% of rated secondary current.

Option 2 is the preferred method of overcurrent protection, as it minimizes nuisance trips due to start-up inrush.

In either method, it is recommended that Class CC, time delay primary fuses be used in order to help prevent nuisance trips.

## SERIES 50 AND SERIES HC PRIMARY FUSE SIZE TABLE

Values listed in the table below are sized per option 1 above. Select the next higher fuse size if the fuse values shown do not correspond with standard fuse sizes.

Dongan recommends you refer to the current version of the *National Electrical Code*® and/or applicable local codes for further information on your specific application.

Fuse Size Table													
Primary Voltage													
kVA Cap.	120	208	230	240	277	380	416	440	460	480	550	575	600
.050	1.25	.8	.7	.7	.5	.4	.4	.3	.3	.3	.3	.3	.25
.075	1.8	1.0	1.0	1.0	.8	.6	.6	.5	.5	.4	.4	.4	.4
.100	2.5	1.5	1.25	1.25	1.0	.8	.8	.6	.6	.6	.6	.5	.5
.150	3.5	2.0	2.0	2.0	1.6	1.0	1.0	1.0	1.0	1.0	.8	.8	.8
.200	5.0	3.0	2.5	2.5	2.0	1.6	1.5	1.4	1.25	1.25	1.0	1.0	1.0
.250	3.5	3.5	3.2	3.2	2.5	2.0	1.8	1.6	1.6	1.5	1.25	1.25	1.25
.300	4.5	4.5	4.0	4.0	3.2	2.25	2.25	2.0	2.0	1.8	1.6	1.6	1.5
.375	5.6	5.6	5.0	4.5	4.0	3.0	2.8	2.5	2.5	2.25	2.0	2.0	1.8
.500	7.0	4.0	3.5	3.5	5.6	4.0	3.5	3.5	3.2	3.0	2.8	2.5	2.5
.750	12.0	6.0	5.5	5.0	4.5	5.0	5.6	5.0	5.0	4.5	4.0	3.5	4.0
1.0	15.0	8.0	7.5	7.0	6.0	4.5	4.0	4.0	3.5	3.5	5.0	5.0	5.0
1.5	17.5	12.0	12.0	12.0	9.0	6.25	6.0	5.6	5.0	5.0	4.5	4.0	4.0
2.0	25.0	15.0	15.0	15.0	12.0	9.0	8.0	7.5	7.0	7.0	6.0	6.0	6.0
3.0	30.0	20.0	17.5	17.5	15.0	15.0	12.0	12.0	12.0	10.0	9.0	9.0	8.0
5.0	---	30.0	30.0	30	25	20.0	20.0	15.0	15.0	15.0	12.0	15.0	15.0