

THREE POLE CONTACTORS				4 pole and N.C. Pole see page AEG 64					NEMA RATED			
Inductive Resistive	Size	Horse Power Ratings 3 Phase		ENCLOSED							Comparable NEMA HP	
				OPEN	NEMA 1 General Purpose	NEMA 4X Outdoor Dust Tight	NEMA 12 Dust Tight	NEMA 7 Hazard Area	NEMA 4 Metal			
10 A 16 A	M N I	200V	3 HP	LS07.10 -◇0 \$34	LS07.10 -◇1 \$60	LS07.10 -◇4X \$124	LS07.10 -◇12 \$126	-	-	LS07.10 -◇4 \$194		
		230V	3 HP									
16 A 20 A	00	200V	3 HP	LS4.10 -◇0 \$90	LS4.10 -◇1 \$116	LS4.10 -◇4X \$161	LS4.10 -◇12 \$163	-	-	LS4.10 -◇4 \$295	200 V	1.5 HP
		230V	3 HP								230 V	1.5 HP
16 A 20 A	00	460V	7.5 HP	-	-	-	-	-	-	-	460 V	2 HP
		600V	7.5 HP								600 V	2 HP
20 A (T) 25 A	0	200V	5 HP	LS7.10 -◇0 \$115	LS7.10 -◇1 \$141	LS7.10 -◇4X \$186	LS7.10 -◇12 \$188	-	-	LS7.10 -◇4 \$320	200 V	3 HP
		230V	5 HP								230 V	3 HP
20 A (T) 25 A	0	460V	10 HP	-	-	-	-	-	-	-	460 V	5 HP
		600V	10 HP								600 V	5 HP
27 A 30 A	0+	200V	5 HP	LS17.10 -◇0 \$130	LS17.10 -◇1 \$156	LS17.10 -◇4X \$201	LS17.10 -◇12 \$203	-	-	LS17.10 -◇4 \$335		
		230V	7.5 HP									
27 A 30 A	0+	460V	10 HP	-	-	-	-	-	-	-		
		600V	15 HP									
40 A (T)	1+	200V	7.5 HP	LS27.22▲ -◇0 \$145	LS27.22 -◇1 \$171	LS27.22 -◇4X \$216	LS27.22 -◇12 \$218	LS27.22	-	LS27.22 -◇4 \$350	200 V	7.5 HP
		230V	10 HP								230 V	7.5 HP
40 A (T)	1+	460V	15 HP	-	-	-	-	-	-	-	460 V	10 HP
		600V	20 HP								600 V	10 HP
55 A 62.5 A	1 <sup>3/4</sup>	200V	10 HP	LS37.22▲ -◇0 \$173	LS37.22 -◇1 \$222	LS37.22 -◇4X \$301	LS37.22 -◇12 \$337	LS37.22	-	LS37.22 -◇4 \$663		
		230V	10 HP									
55 A 62.5 A	1 <sup>3/4</sup>	460V	25 HP	-	-	-	-	-	-	-		
		600V	25 HP									
90 A 110 A	2	200V	15 HP	LS47.22 -◇0 \$240	LS47.22 -◇1 \$289	LS47.22 -◇4X \$376	LS47.22 -◇12 \$419	LS47.22	-	LS47.22 -◇4 \$705	200 V	10 HP
		230V	20 HP								230 V	15 HP
90 A 110 A	2	460V	40 HP	-	-	-	-	-	-	-	460 V	25 HP
		600V	50 HP								600 V	25 HP
100 A 150 A	2 <sup>1/2</sup>	200V	20 HP	LS57.22 -◇0 \$290	LS57.22 -◇1 \$339	LS57.22 -◇4X \$426	LS57.22 -◇12 \$469	LS57.22	-	LS57.22 -◇4 \$755		
		230V	25 HP									
100 A 150 A	2 <sup>1/2</sup>	460V	50 HP	-	-	-	-	-	-	-		
		600V	60 HP									

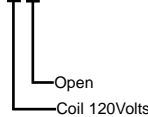
(T) Also Tungsten Rating to 277 Volt (UL)

◇ COIL VOLTAGE SUFFIX		
AC◇	60HZ	50HZ
-A	120V	110V
-C	208V/230V	220V
-E	480V	440V
-F	600V	550V
-D		380V
-G	24V	22V
-H	280V/277V	240V
DC◇	•	
-MTW	12VDC	
-NTW	24VDC	
-OTW	48VDC	•Price Addition for DC Coil.
-PTW	120VDC	
-RTW	220VDC	

### TYPICAL ORDER ITEM

#### 5HP 20A Contactor

LS4- AO



• **SW:** Single Winding D.C. Coil LS07.10, add \$10 list each. For single winding D.C. coils see page AEG 8.

• **TW:** Two Winding D.C. Coil. Add \$25 list each, for sizes LS4 thru LS77. Add \$50 list each for sizes LS87 thru LS247.

**For Modifications & Field Kits  
See Page AEG 33.**

### ▶ TYPE 4X ENCLOSED STARTERS

Type 4X enclosed starters are UL/CSA Listed.

#### ▲ AUXILIARY CONTACTS

1 N.O. Standard LS07-LS17

2 N.O. + 2 N.C. Standard LS27-LS450K

**For Additional Auxiliaries, see page AEG 24.**

▲ **Option**, with no auxiliaries (supplied with Power Poles Only, without auxiliaries).

LS27.00 -\* 0 \$133 List

LS37.00 -\* 0 \$155 List

Inductive Resistive	Size	Horse Power Ratings 3 Phase		ENCLOSED						Comparable NEMA HP
				OPEN	NEMA 1 General Purpose	NEMA 4X ▶ Outdoor Dust Tight	NEMA 12 Dust Tight	NEMA 7 Hazard Area	NEMA 4 Metal	
110 A 150 A	3	200V	25 HP	LS77.22	LS77.22	LS77.22	LS77.22	LS77.22	LS77.22	200V 25 HP 230V 30 HP 460V 50 HP 600V 50 HP NEMA 3
		230V	30 HP							
		460V	60 HP							
		600V	75 HP							
LIST		\$380	\$461	\$539	\$591	Contact Factory	\$877			
110 A 150 A	3 1/2	200V	30 HP	LS87.22	LS87.22	LS87.22	LS87.22	LS87.22	LS87.22	
		230V	40 HP							
		460V	75 HP							
		600V	100 HP							
LIST		\$470	\$666	\$1,185	\$1,215	Contact Factory	\$1,685			
150 A 180 A	4	200V	40 HP	LS107.22	LS107.22	LS107.22	LS107.22	LS107.22	LS107.22	200V 40 HP 230V 50 HP 460V 100 HP 600V 100 HP NEMA 4
		230V	50 HP							
		460V	100 HP							
		600V	100 HP							
LIST		\$850	\$954	\$1,565	\$1,604	Contact Factory	\$1,865			
200 A 225 A	4 1/2	200V	60 HP	LS177.22	LS177.22	LS177.22	LS177.22	LS177.22	LS177.22	
		230V	75 HP							
		460V	150 HP							
		600V	200 HP							
LIST		\$1,164	\$1,476	\$1,996	\$2,126	Contact Factory	\$2,594			
320 A 350 A	5	200V	75 HP	LS247.22	LS247.22	LS247.22	LS247.22	LS247.22	LS247.22	200V 75 HP 230V 100 HP 460V 200 HP 600V 200 HP NEMA 5
		230V	100 HP							
		460V	200 HP							
		600V	250 HP							
LIST		\$1,564	\$1,876	\$2,296	\$2,426	Contact Factory	\$2,894			
500 A 600 A	5 1/2	200V	125 HP	LS220K.22	LS220K.22	LS220K.22	LS220K.22	LS220K.22	LS220K.22	
		230V	150 HP							
		460V	300 HP							
		600V	400 HP							
LIST		\$2,150	\$3,450	\$3,710	\$3,970	Contact Factory	\$5,738			
650 A 700 A	6	200V	150 HP	LS280K.22	LS280K.22	LS280K.22	LS280K.22	LS280K.22	LS280K.22	
		230V	200 HP							
		460V	400 HP							
		600V	500 HP							
LIST		\$3,100	\$4,400	\$4,660	\$4,920	Contact Factory	\$8,300			
810 A 1000 A	6 1/2	230V	250 HP	LS375K.22	LS375K.22					
		460V	500 HP							
		600V	600 HP							
		LIST								

**CONTACTORS**

## CONTACTORS ARE STOCK THROUGH 1250 AMPS

EXAMPLE OF DOLLAR SAVINGS WITH AEG CONTACTORS

### 30 Amp Power Auxiliary. (600 Volt)

See page AEG 24.

For 4 pole and N.C. Pole Contactors, thru 1250 Amp, see "K" Contactors section.

50 HP 460 VOLT LOAD

EEC PART# LS57

COMPETITOR NEMA SIZE 3

**DOLLAR SAVINGS**

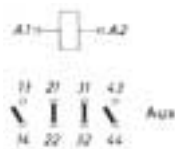
\$290.00 LIST

\$600.00 LIST

**\$310.00 LIST**

### AUXILIARIES SUPPLIED AS STANDARD

1 NO	2 NO / 2 NC
LS07.10	LS27.22
LS4.10	LS37.22
LS7.10	LS47-LS247.22
LS17.10	LS220K-LS375K.22



### POSITIVE GUIDED VERSIONS AVAILABLE WITH 2 NO / 2NC AUX. FOR SAFETY CIRCUITS

P/N	LIST
LS4.22-*	\$115.00
LS7.22-*	\$125.00
LS17.22-*	\$135.00
LS27.22-*	\$145.00
LS37.22-*	\$173.00
LS47.22-*	\$240.00

Use Suffix -PG at end of part number.

For more information See Page AEG 9.

For Additional Auxiliaries See Page AEG 24.



## International Ratings

Type		LS07	LS4	LS7	LS17	LS27	LS37	
<b>Rated insulation voltage</b> $U_i$ , VDE 0110 IGr C	~V	380	660	660	660	660	660	
<b>Mechanical lifespan</b>								
a.c. operated	x10 <sup>6</sup> ops	4	10	10	10	10	10	
d.c. operated	x10 <sup>6</sup> ops	10	15 <sup>2)</sup>	15 <sup>2)</sup>	15 <sup>2)</sup>	-	15 <sup>2)</sup>	
<b>AC-1 Duty</b>	Power rating $P_N$	kW	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	
Related current $I_{th}$ = Rated operating current $I_e$	A	16 <sup>6)</sup>	20	25	32	40	50	
Minimum cable cross sections with full rating	mm <sup>2</sup>	2,5	2,5	4	4	6	10	
Permissible practical switching frequency	ops/hr.	50	50	50	50	50	50	
Rated operating current at 1000 ops/hr.	A	10 <sup>9)</sup>	20	20	25	30	40	
<b>AC-3 Duty</b>	Motor rating $P_N$	kW	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	
Rated current $I_e$ up to 3~440V	A	7,3 <sup>5)</sup> (380V)	9,5	12	16	23	32	
Permissible switching frequency at $P_N$ and continuous operation	ops/hr.	300	1000	1000	750	750	750	
<b>AC-4 Duty</b>	Motor Rating $P_N$	kW	-	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	
Rated current $I_e$ with realistic contact lifespan up to 3~440V	A	-	3,7	5,3	7,3	9,3	16	
Permissible switching frequency	ops/hr.	-	250	250	250	250	250	
Highest permissible loading at 380V 3~	$P_N/I_e$ kW/A	-	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	s.p. 1/2	
<b>Capacitor switching capacity with Single switching/Parallel operation<sup>10)</sup></b>								
3~230V	kvar	-	2,5/2,5	3/3	3/3	7/7	10 /12 <sup>9)</sup>	
3~400V	kvar	-	4/4	5/5	5/5	13/13	16,7/16,7 <sup>9)</sup>	
3~525V	kvar	-	4/4	6/5	6/5	17/13	25 /25 <sup>9)</sup>	
3~690V	kvar	-	4/4	6/5	6/5	17/13	19 /16,7 <sup>9)</sup>	
<b>Permissible D.C. loading, with 3 poles connected in series</b>								
Rated current at								
<b>DC-1 Duty</b> (resistive load)	∴ 24... 220V $I_e$	A	10	20	25	32	40	50
<b>DC-2...DC-5 Duty</b> (shunt and series wound motors)								
L/R • 15 ms)	∴ 24... 110V $I_e$	A	-	20	25	32	40	50
	>∴ 110... 220V $I_e$	A	-	4	6	8	10	16
Permissible switching frequency (DC-1 ... DC-5)	ops/hr.	50	50	50	50	50	50	
<b>Auxiliary switch</b>	Rated insul. voltage $U_i$ VDE 0110 ~V	380	660	660	660	660	660	
	Continuous current $I_{th}$ A	16 <sup>6)</sup>	20	20	20	20	20	
<b>AC-11 Duty</b> (a.c.)	Rated current $I_e$ up to ~ 220V A	6	10	10	10	10	10	
	at ~ 380V A	4	6	6	6	6	6	
	at ~ 500V A	-	4	4	4	4	4	
	at ~ 660V A	-	2	2	2	2	2	
<b>DC-11 Duty</b> (d.c.)	Rated current $I_e$ at ∴ 24V A	2,5(10/8 <sup>8)</sup> )	16	16	16	16	16	
	at ∴ 60V A	1,2(5)	4	4	4	4	4	
Values based upon 3 poles connected in a series	at ∴ 110V A	0,7(3)	1,5	1,5	1,5	1,5	1,5	
	at ∴ 220V A	0,36(1,5)	0,5	0,5	0,5	0,5	0,5	
<b>Short-circuit protection.</b> Highest rated fuse (gL) A		16	16	16	16	16	16	
<b>Normal Control Transformer (VA)</b>	Optional/Standard		25/50	25/50	25/50	50	50	
<b>Operating coil (Standard) A.C. operated</b>								
<b>Power consumption (Voltage tolerance 0,75 ... 1, 1 <math>U_s</math>)</b>								
	Closing $P_{AS}$ VA	16	55	55	55	67	67	
	cos $\varphi$	0,88	0,71	0,71	0,71	0,72	0,72	
	Holding $P_{HS}$ VA	4,9	10	10	10	10,5	10,5	
	cos $\varphi$	0,45	0,27	0,27	0,27	0,27	0,27	
<b>DC operated</b>								
<b>Power consumption at 1,0 <math>U_s</math></b>	Closing $P_A$ W	2,4 <sup>7)</sup>	6,5 130	6,5 <sup>12)</sup> 130	6,5 130	- 170	8 170	
<b>(Voltage tolerance 0,85 ... 1,1 <math>U_s</math>)<sup>7)</sup></b>	Holding $P_H$ W	2,4 <sup>7)</sup>	6,5 3,2	6,5 <sup>12)</sup> 3,2	6,5 3,2	- 3,5	8 3,5	
	<b>*SW, Single Winding DC Coil. (**TW, Two Winding DC Coil</b>							
<b>Switching times at 1,0 <math>U_s</math> (standard coil<sup>8)</sup>)</b>								
A.C. Operated	closing delay ms	9 ... 30	10 ... 25	10 ... 25	10 ... 25	10 ... 25	10 ... 25	
	opening delay ms	5 ... 25	5 ... 16	5 ... 16	5 ... 16	5 ... 16	5 ... 16	
D.C. Operated	closing delay ms	10 ... 35	45 ... 80	45 ... 80	45 ... 80	-	45 ... 80	
	opening delay ms	2 ... 8	10 ... 30	10 ... 30 <sup>12)</sup>	10 ... 30	-	10 ... 30	

See AEG Technical Bulletin for more complete technical data and definitions.

1) Type LS 7 C: 220/380, 500/600V 3-5/10/12,5 kVar, see page 1/12. 2) as LS37 however  $P_N$  (AC 3) 500V, 3~: 15 kW. 3)  $P_N$  (AC 3) 220V/380V/500V/600V, 3~: 3 kW/5,5 kW/5,5 kW 4) as LS27, s. S. 1/2 5) as LS7, s. S. 1/2 6) Pin terminal AC 1: 8A; AC 3: 220V/380V, 3~: 0,75 kW/1,1 kW,  $I_e = 2,8A$

7) Type LS07: Voltage tolerance 8 ... 1,2  $U_c$ , at 24V~: 1,2 W, with voltage tolerance 0,8 ... 1,7  $U_c$  8) These are typical values and some variation can be expected

9) 220V: 12A 10) 220V: 21A 11) ( ) = Values for contactors without economy resistor (reduced power consumption). Closing delay 50 ... 85 ms, opening delay 20 ... 35 ms



Type		LS47	LS57	LS77	LS87	LS107	LS177	LS247
<b>Rated insulation voltage</b> $U_i$ , VDE 0110 IGr C	-V	1000	1000	1000	1000	1000	1000	1000
<b>Mechanical lifespan</b>								
a.c. operated	x10 <sup>6</sup> ops	10	10	10	10	10	10	10
d.c. operated	x10 <sup>6</sup> ops	3	3	3	3	3	3	3
<b>AC-1 Duty</b>	Power rating $P_N$ kW	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3
Related current $I_{th}$ = Rated operating current $I_e$	A	90	100	110	110	180	225	350
Minimum cable cross sections with full rating	mm <sup>2</sup>	25	35	35	35	70	120	2x30x4
Permissible practical switching frequency	ops/hr.	50	50	50	50	50	50	50
Rated operating current at 1000 ops/hr.	A	80	90	100	100	160	200	300
<b>AC-3 Duty</b>	Motor rating $P_N$ kW	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3
Rated current $I_e$ up to 3~440V	A	46	63	75	87	110	180	250
Permissible switching frequency at $P_N$ and continuous operation	ops/hr.	276	378	500	500	500	500	500
<b>AC-4 Duty</b>	Motor Rating $P_N$ kW	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3
Rated current $I_e$ with realistic contact lifespan up to 3~440V	A	23	32	37	46	63	73	110
Permissible switching frequency	ops/hr.	250	250	250	250	250	250	250
Highest permissible loading at 380V 3~	$P_N/I_e$ kW/A	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3	s.p. 1/3
<b>Capacitor switching capacity with Single switching/Parallel operation<sup>10)</sup></b>								
3~230V	kvar	17/17	24/24	24/24	28/28	35/35	58/45	87/66
3~400V	kvar	30/30	40/40	40/40	50/50	60/60	100/75	150/115
3~525V	kvar	35/35	50/50	50/50	50/50	80/66	130/90	190/145
3~690V	kvar	40/30	40/40	40/40	40/40	60/60	100/75	150/115
<b>Permissible D.C. loading, with 3 poles connected in series</b>								
Rated current at								
<b>DC-1 Duty</b> (resistive load)	∞ ... 24... 220V $I_e$ A	90	100	110	110	180	225	350
<b>DC-2...DC-5 Duty</b> (shunt and series wound motors L/R • 15 ms)	∞ ... 24... 110V $I_e$ A	90	100	110	110	180	225	350
	> ∞ ... 110... 220V $I_e$ A	25	32	40	40	80	150	200
Permissible switching frequency (DC-1 ... DC-5)	ops/hr.	50	50	50	50	50	50	50
<b>Auxiliary switch</b>	Rated insul. voltage $U_i$ VDE 0110 -V	1000	1000	1000	1000	1000	1000	1000
	Continuous current $I_{th}$ A	20	20	20	20	20	20	20
<b>AC-11 Duty</b> (a.c.)	Rated current $I_e$ up to ~ 220V A	10	10	10	10	10	10	10
	at ~ 380V A	8	8	8	8	8	8	8
	at ~ 500V A	6	6	6	6	6	6	6
	at ~ 660V A	6	6	6	6	6	6	6
<b>DC-11 Duty</b> (d.c.)	Rated current $I_e$ at ∞ ... 24V A	10	10	10	10	10	10	10
	at ∞ ... 60V A	4	4	4	4	4	4	4
Values based upon 3 poles connected in a series	at ∞ ... 110V A	2	2	2	2	2	2	2
	at ∞ ... 220V A	1	1	1	1	1	1	1
<b>Short-circuit protection.</b> Highest rated fuse (gL) A		20	20	20	20	20	20	20
<b>Control Transformer (VA)</b>	Optional/Standard	75/100	75/100	75/100	75/100	100	150	250
<b>Operating coil (Standard) A.C. operated</b>								
<b>Power consumption (Voltage tolerance 0.75 ... 1, 1 <math>U_s</math>)</b>								
	Closing $P_{AS}$ VA	260	260	260	260	420	740	960
	cos $\varphi$	0,53	0,53	0,53	0,53	0,53	0,42	0,26
	Holding $P_{HS}$ VA	26	26	26	26	36	50	70
	cos $\varphi$	0,23	0,23	0,23	0,23	0,23	0,26	0,38
<b>DC operated (**)</b>								
<b>Power consumption</b> at 1,0 $U_s$	Closing $P_A$ W	170	170	170	170	280	430	400
<b>(Voltage tolerance 0,85 ... 1,1 <math>U_s</math>)</b>	Holding $P_H$ W	4	4	4	4	4	5	6,5
<b>(**)TW, Two Winding DC Coil</b>								
<b>Switching times at 1,0 <math>U_s</math> (standard coil)<sup>8)</sup></b>								
A.C. Operated	closing delay ms	15 ... 35	15 ... 35	15 ... 35	15 ... 35	30 ... 60	30 ... 60	35 ... 60
	opening delay ms	6 ... 20	6 ... 20	6 ... 20	6 ... 20	10 ... 26	10 ... 26	12 ... 26
D.C. Operated	closing delay ms	20 ... 45	20 ... 45	20 ... 45	20 ... 45	50 ... 70	50 ... 70	50 ... 70
	opening delay ms	10 ... 30	10 ... 30	10 ... 30	10 ... 30	15 ... 35	15 ... 35	15 ... 35

8) These are typical values, and some variation can be expected

11) No potential separation

**P<sub>N</sub>** - Rated Power

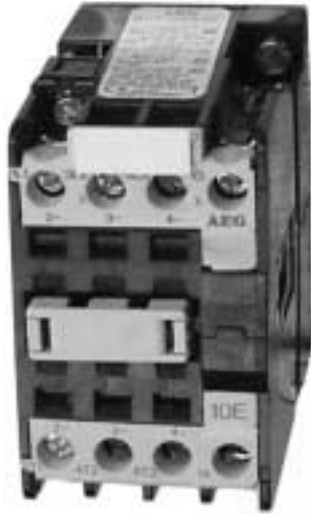
See AEG "K" Contactors, for larger Sizes and 4-Pole Contactors to 1,250 Amp.

CONTACTORS

## Space Saving Dimensions

## Type LS7 Contactor with 3 Auxiliary Contacts

CONTACTORS



### 3 Pole Contactor Dimensions

#### OVERALL DIMENSIONS (Inches Approximate)

Dimensions	LS07	LS4	LS7	LS17	LS27	LS37	LS47	LS57	LS77 LS87	LS107	LS177	LS247	LS220/280K
<b>SIZE</b>	<b>MINI</b>	<b>00</b>	<b>00</b>	<b>0</b>	<b>1</b>	<b>1<sup>3/4</sup></b>	<b>2</b>	<b>2<sup>1/2</sup></b>	<b>3</b>	<b>3<sup>1/2</sup></b>	<b>4<sup>1/2</sup></b>	<b>5</b>	<b>5<sup>1/2</sup></b>
Height	1.54	3.07	3.07	3.07	3.35	3.4	4.8	4.8	4.8	5.91	7.09	7.9	8.6
Width	1.77	1.77	1.77	1.77	1.77	2.0	3.5	3.5	3.5	4.72	5.31	5.7	7.2
Depth *	1.65	2.90	2.90	2.90	4.29	4.73	5.0	5.0	5.0	6.06	6.77	7.7	9.
Depth **		3.93	3.93	3.93	3.22	3.62							
Depth ▲ DC (SW Coils)		4.4	4.4	4.4		5.2							
Depth ▲▲		3.75	3.75	3.75		4.3							

\* Depth with top deck auxiliary set. (Includes DC - TW Coils) \*\*Unit with no auxiliary (.00).  
 ▲ = with top deck aux. (DC Single Winding) ▲▲ = No top mount Aux.

#### MOUNTING DIMENSIONS (Inches Approximate)

Mounting Hole	y,z	w,y	w,y	w,y	w,y	w,y	y,w	y,w	y,w	z,y,z	x,y,z	z,y,z	z,y,z
d	1.4	1.38	1.38	1.38	1.38	1.38	3.1	3.1	3.1	3.94	4.33	4.7	3.9
d1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.39	0.49	0.5	1.5
e		2.36	2.36	2.36	2.95	2.95	4.3	4.3	4.3	5.12	6.30	7.1	7.9
e1		0.3	0.3	0.3	.2	.22	.26	.26	.26	0.39	0.39	0.4	0.6

