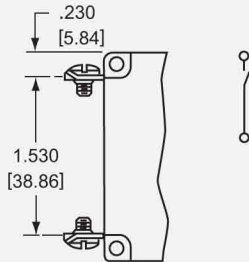
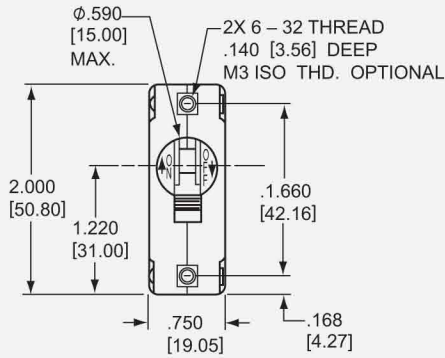
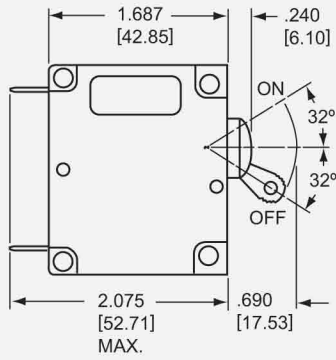
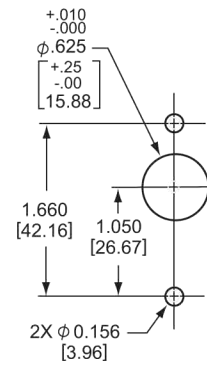


# SINGLE POLE CIRCUIT PROTECTOR



## Single Pole Mounting Detail



Note: Tolerance  $\pm$ .015 [.38] unless noted.  
 Dimensions in brackets [ ] are millimeters.  
 LEG Type Units Require Screw Terminals

## MULTI-POLE CIRCUIT PROTECTORS (IAG/IUG/IEG/CEG/LEG)

### Two Pole Protectors

An assembly consisting of two single pole units, having their trip mechanisms internally coupled and with a single toggle handle, forms the IEG11 with quick-connect D.I.N.-style terminals. Individual poles may differ in ratings, delays and internal connections. An auxiliary switch may be included in either or both poles, allowing you to mix SELV and hazardous voltages. Rugged screw-type terminals can be provided, in which case the designation would be IEG66. The IEGH offers a toggle handle for each pole. LEG type units are available only in one or two pole configurations.

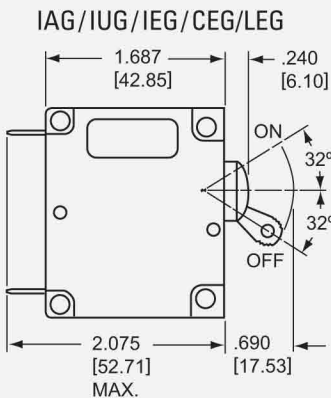
### Three Pole and Four Pole Protectors

The three pole construction consists of three single pole units assembled with an internal mechanical interlock which actuates

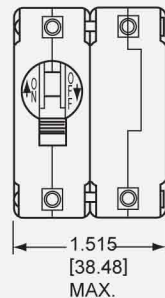
all units simultaneously. A single toggle handle operates all three poles for quick and convenient control, or if preferred, a handle per pole is available. The four pole construction consists of four single pole units assembled with an internal mechanical interlock which actuates all units simultaneously. A double toggle handle operates all four poles. The individual poles need not have identical characteristics and any series trip pole may have an auxiliary switch. If screw-type terminals are required, the breaker designation will be IEG666 for a three pole version and IEG6666 for a four pole version.

Protector poles are numbered consecutively when viewed from the terminal side, with the ON position up, starting with Pole #1 on the left side and proceeding to the right.

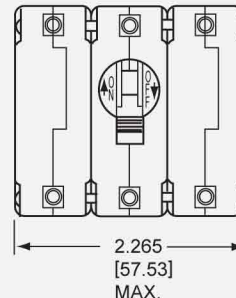
### IAG/IUG/IEG/CEG/LEG Multi-Pole Circuit Breakers



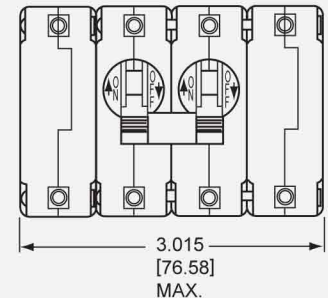
Two Pole\*



Three Pole\*

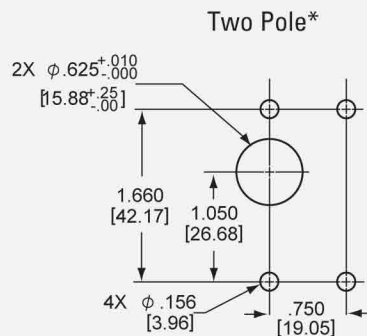
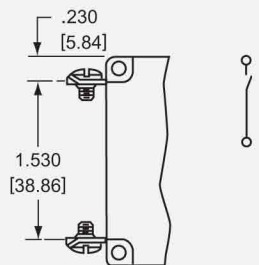


Four Pole\*

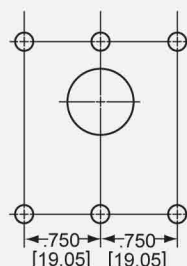


(Optional: Handle may be located in Pole 1 instead of Pole 2)

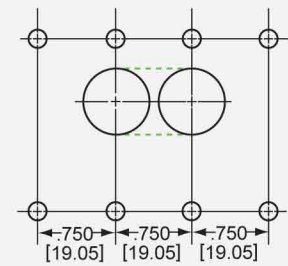
### LEG Type Units Require Screw Terminals



Three Pole\*



Four Pole\*



Panel Mounting Detail: Tolerance for Mtg.  $\pm .005$  [.13] unless noted.  
\*See Single Pole Mounting Detail for hole sizes and locations. LEG type units are only available in one or two poles.

Note: Tolerance  $\pm .015$  [.38] unless noted. Dimensions in brackets [ ] are millimeters.

### TYPICAL RESISTANCE / IMPEDANCE

Current Ratings (Amps)	Impedance		
	DC (ohms)	AC, 50/60Hz (ohms)	AC, 400Hz (ohms)
	51, 52, 53, 59	61, 62, 63, 69	41, 42, 43, 49
0.200	45.8	28.5	71.94
1.00	1.38	1.10	2.85
2.00	0.371	0.29	0.76
5.00	0.055	0.051	0.12
10.0	0.017	0.016	0.032
20.0	0.006	0.006	0.010
30.0	0.003	0.004	0.006
50.0	0.0019	0.0018	—

*DCR and Impedance based on 100% rated current applied and stabilized for a minimum of one hour. Tolerance .05-2.5 amperes ± 20%; 2.6 -20 amperes ± 25%, 21-50 amperes ± 50%. Consult factory for special values and for coil impedance of delays not shown.*

## OPERATING CHARACTERISTICS

### Inrush Pulse Tolerance

The following table provides a comparison of inrush pulse tolerance with and without the inertial delay feature for each of the 50/60Hz delays. Pulse tolerance is defined as a single pulse of half sine wave peak current amplitude of 8 milliseconds duration that will not trip the circuit breaker. The table at left provides a guide to determine if the inertia delay feature is required. Consult factory for further assistance.

INRUSH PULSE TOLERANCE	
Delay	Pulse Tolerance
61, 62, 63, 71, 72, 73	10 times rated current (approx)
61F, 62F, 63F, 71F, 72F, 73F	12 times rated current (approx)
64, 65, 66	25 times rated current (approx)

### PERCENTAGE OF RATED CURRENT VS TRIP TIME IN SECONDS

Delay	100%	125%	150%	200%	400%	600%	800%	1000%
41	No Trip	May Trip	.500 to 8.0	.150 to 1.9	.020 to .40	.006 to .25	.004 to .1	.004 to .05
42	No Trip	May Trip	5 to 70	2.2 to 25	.40 to 5.0	.012 to 2	.006 to .2	.006 to .15
43	No Trip	May Trip	35 to 350	12 to 120	1.5 to 20	.012 to 2.2	.01 to .22	.01 to .1
49	No Trip	May Trip	.100 Max	.050 Max	.020 Max	.020 Max	.020 Max	.020 Max
51*	No Trip	.500 to 6.5	.300 to 3.0	.100 to 1.2	.031 to .500	.011 to .25	.004 to .1	.004 to .08
52*	No Trip	2 to 60	1.8 to 30	1 to 10	.15 to 2.0	.015 to 1	.008 to .5	.006 to .1
53*	No Trip	80 to 700	40 to 400	15 to 150	2 to 20	.015 to 9	.015 to .55	.012 to .2
59*	No Trip	.120 Max	.100 Max	.050 Max	.022 Max	.017 Max	.017 Max	.017 Max
61*	No Trip	.700 to 12	.35 to 7.0	.130 to 3.0	.030 to 1	.015 to .3	.01 to .15	.008 to .1
62*	No Trip	10 to 120	6 to 60	2 to 20	.2 to 3.0	.015 to 2	.015 to .8	.01 to .25
63*	No Trip	50 to 700	30 to 400	10 to 150	1.5 to 20	.015 to 10	.013 to .85	.013 to .5
64	No Trip	.7 to 12	.35 to 7	.13 to 3	.030 to 1	.017 to .3	.01 to .16	.008 to .1
65	No Trip	10 to 120	6 to 60	2 to 20	.2 to 3	.02 to 2	.017 to .76	.01 to .6
66	No Trip	50 to 700	30 to 400	10 to 150	1.5 to 20	.4 to 10	.014 to 5	.014 to 3
69*	No Trip	.120 Max	.100 Max	.050 Max	.022 Max	.017 Max	.017 Max	.017 Max
71**	No Trip	.440 to 10	.300 to 7	.100 to 3.0	.03 to 1	.012 to .3	.004 to .15	.004 to .1
72**	No Trip	1.8 to 100	1.7 to 60	1 to 20	.15 to 3	.015 to 2	.008 to .79	.006 to .28
73**	No Trip	50 to 600	30 to 400	10 to 150	1.8 to 20	.015 to 10	.015 to .88	.011 to .50
79**	No Trip	.120 Max	.100 Max	.050 Max	.023 Max	.016 Max	.015 Max	.015 Max

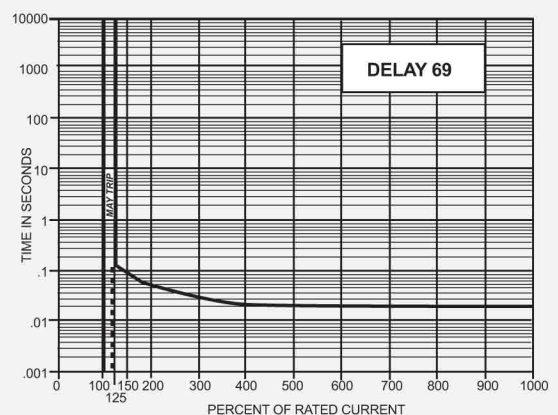
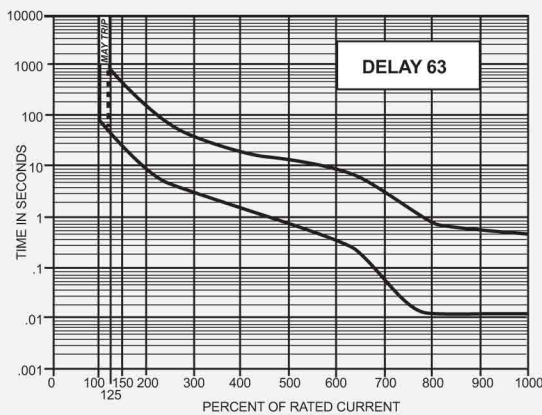
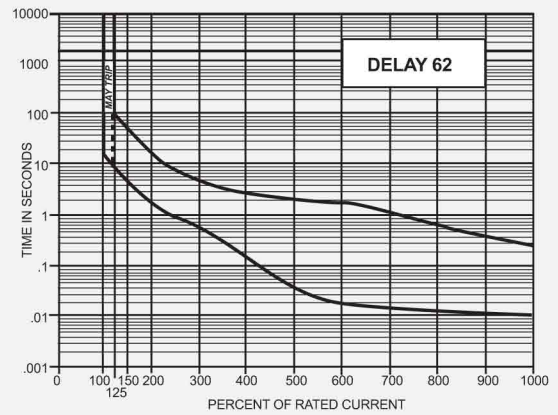
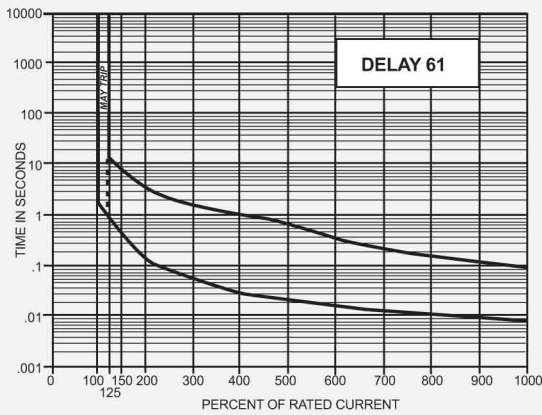
\*CEG type units are available only with 51, 52, 53 and 59 delays LEG type units are available only with 61, 62, 63 and 69 delays

\*\*135% minimum trip point for delays 71, 72, 73 and 79

## DELAY CURVES (IAG/IUG/IEG/CEG/LEG)

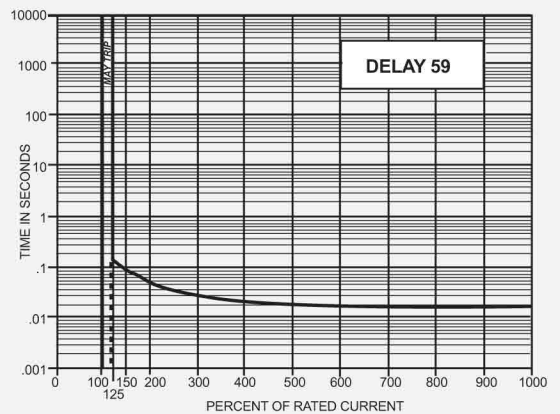
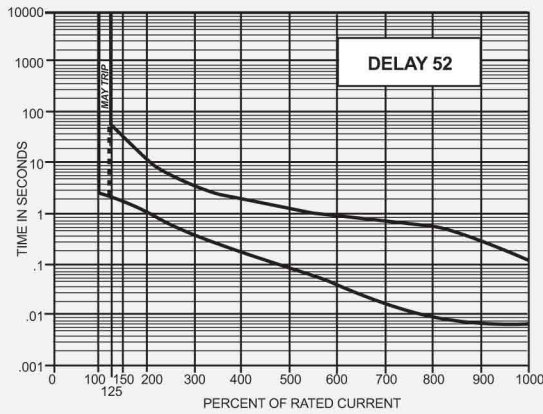
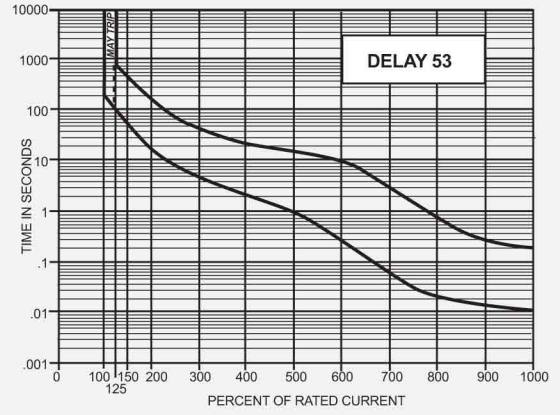
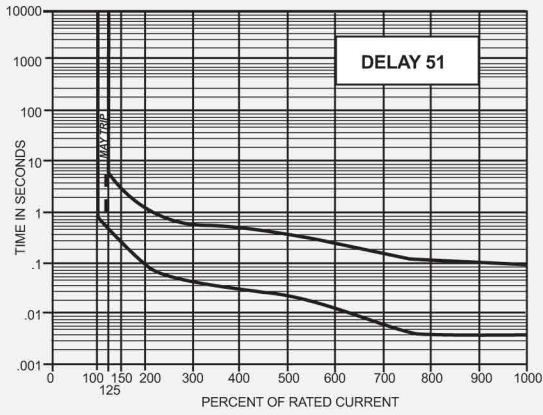
### 400Hz, DC, 50/60Hz Delay Curves (typ)

A choice of delays is offered for DC, 50/60Hz and 400Hz applications. Delays 49, 59 and 69 provide fast acting, instantaneous trip and are often used to protect sensitive electronic equipment (not recommended where known inrush exists). Delays 41, 51 and 61 have a short delay for general purpose applications. Delays 42, 52 and 62 are long enough to start certain types of motors and most transformer and capacitor loads. Delays 43, 53 and 63 are long delays for special motor applications at 400Hz, DC and 60Hz. CEG type units are only available in 51, 52, 53 and 59 delay curves. LEG type units are only available in 61, 62, 63 and 69 delay curves.



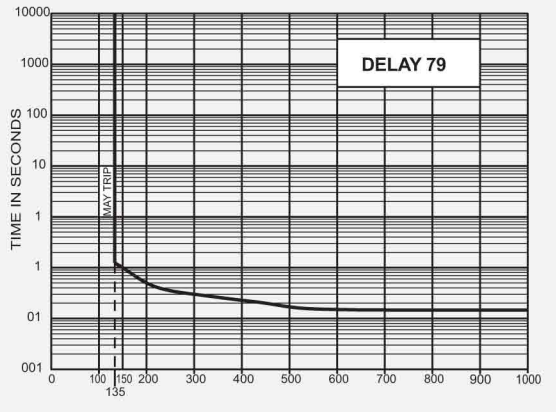
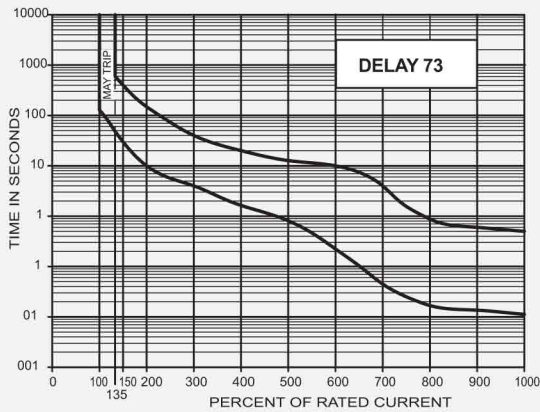
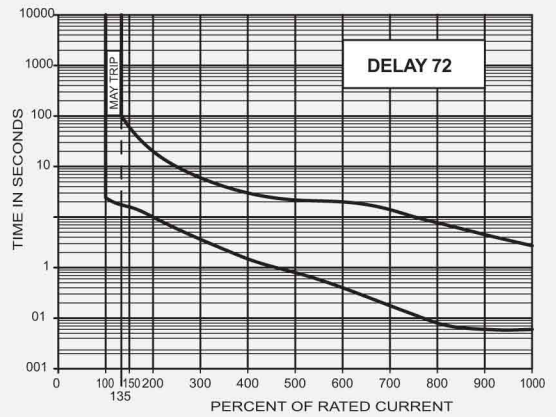
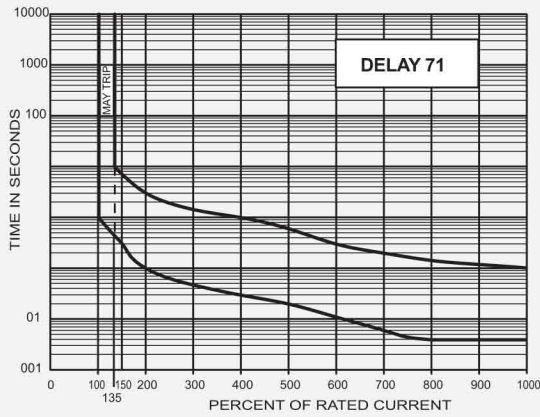
# DELAY CURVES (IAG/IUG/IEG/CEG)

## DC Delay Curves (typ)



## DELAY CURVES (IAG/IUG/IEG)

Multi-frequency - DC, 50/60Hz Delay Curves (typ)



## DELAY CURVES (IAG/IUG/IEG)

### 400Hz Delay Curves (typ)

