

```
/* SAS Gamma distribution example: two populations */
/* using log link function. Example is from the */
/* GENMOD documentation. */
```

```
options nocenter ls=72;
```

```
data A;
```

```
input lifetime@@ ;
```

```
mfg = 'A';
```

```
cards;
```

620	470	260	89	388
242	103	100	39	460
284	1285	218	393	106
158	152	477	403	103
69	158	818	947	399
1274	32	12	134	660
548	381	203	871	193
531	317	85	1410	250
41	1101	32	421	32
343	376	1512	1792	47
95	76	515	72	1585
253	6	860	89	1055
537	101	385	176	11
565	164	16	1267	352
160	195	1279	356	751
500	803	560	151	24
689	1119	1733	2194	763
555	14	45	776	1

```
;
```

```
data B;
```

```
input lifetime@@ ;
```

```
mfg = 'B';
```

```
cards;
```

1747	945	12	1453	14
150	20	41	35	69
195	89	1090	1868	294
96	618	44	142	892
1307	310	230	30	403
860	23	406	1054	1935
561	348	130	13	230
250	317	304	79	1793
536	12	9	256	201
733	510	660	122	27
273	1231	182	289	667
761	1096	43	44	87
405	998	1409	61	278
407	113	25	940	28

```

848  41  646  575  219
303  304  38  195  1061
174  377  388  10  246
323  198  234  39  308
55   729  813  1216 1618
539  6   1566  459  946
764  794  35   181  147
116  141  19   380  609
546
;

```

```

data lifdat;
  set A B;

proc genmod data = lifdat;
  class mfg;
  model lifetime = mfg / dist=gamma
                    link=log
                    type3;

proc genmod data = lifdat;
  model lifetime = / dist=gamma
                    link=log
                    lrci;

run;

```

The GENMOD Procedure

Model Information

Data Set	WORK.LIFDAT
Distribution	Gamma
Link Function	Log
Dependent Variable	lifetime
Observations Used	201

Class Level Information

Class	Levels	Values
mfg	2	A B

Criteria For Assessing Goodness Of Fit

Criterion	DF	Value	Value/DF
Deviance	199	287.0591	1.4425
Scaled Deviance	199	237.5335	1.1936
Pearson Chi-Square	199	211.6870	1.0638
Scaled Pearson X2	199	175.1652	0.8802
Log Likelihood		-1432.4177	

Algorithm converged.

Analysis Of Parameter Estimates

Parameter	DF	Estimate	Standard Error	Wald	95% Confidence Limits	Chi-Square
Intercept	1	6.1302	0.1043	5.9257	6.3347	3451.61
mfg	A 1	0.0199	0.1559	-0.2857	0.3255	0.02
mfg	B 0	0.0000	0.0000	0.0000	0.0000	.

Analysis Of Parameter Estimates

Parameter	Pr > ChiSq
Intercept	<.0001
mfg A	0.8985
mfg B	.

The GENMOD Procedure

Analysis Of Parameter Estimates

Parameter	DF	Estimate	Standard Error	Wald	95% Confidence Limits	Chi-Square
Scale	1	0.8275	0.0714	0.6987	0.9800	

Analysis Of Parameter Estimates

Parameter Pr > ChiSq

Scale

NOTE: The scale parameter was estimated by maximum likelihood.

LR Statistics For Type 3 Analysis

Source	DF	Chi-Square	Pr > ChiSq
mfg	1	0.02	0.8985

The GENMOD Procedure

Model Information

Data Set WORK.LIFDAT
Distribution Gamma
Link Function Log
Dependent Variable lifetime
Observations Used 201

Criteria For Assessing Goodness Of Fit

Criterion	DF	Value	Value/DF
Deviance	200	287.0788	1.4354
Scaled Deviance	200	237.5353	1.1877
Pearson Chi-Square	200	211.6476	1.0582
Scaled Pearson X2	200	175.1219	0.8756
Log Likelihood		-1432.4258	

Algorithm converged.

Analysis Of Parameter Estimates

Parameter	DF	Estimate	Standard Error	Likelihood Ratio		Chi-Square
				95% Confidence Limits		
Intercept	1	6.1391	0.0775	5.9904	6.2956	6268.10
Scale	1	0.8274	0.0714	0.6959	0.9762	

Analysis Of Parameter Estimates

Parameter Pr > ChiSq
Intercept <.0001
Scale

NOTE: The scale parameter was estimated by maximum likelihood.