

## MTTF values for Delcon SL- and GL- relays

December 2010

Input relays	MTTF		Expected life for products which have electrolytic capacitor.	
	[hours]	[years]	[hours]	[years]
SLI 12CR	4600000	525,1		
SLI 12CRI	4600000	525,1		
SLI 120CR	2700000	308,2	320000	36,5
SLI 120CH	2700000	308,2	320000	36,5
SLI 120CRI	2700000	308,2	320000	36,5
SLI 120CRP	2300000	262,6	170000	19,4
GLI 120CRP	2300000	262,6	170000	19,4
SLI 125CR	3100000	353,9		
SLI 125CH	3100000	353,9		
SLI 125CRI	3100000	353,9		
SLI 230CR	2500000	285,4	149000	17,0
SLI 230CH	2500000	285,4	149000	17,0
SLI 230CRI	2500000	285,4	149000	17,0
SLI 230CRR	2500000	285,4	149000	17,0
SLI 230CRP	2200000	251,1	113000	12,9
GLI 230CRP	2200000	251,1	113000	12,9
SLI 24CR	4600000	525,1		
GLI 24CR	4600000	525,1		
GLI 24CRB	4600000	525,1		
SLI 24CRF	4600000	525,1		
SLI 24CRL	4600000	525,1		
SLI 25CR	4100000	468,0	360000	41,1
SLI 25CRI	4100000	468,0	360000	41,1
SLI 250CR	2900000	331,1		
SLI 250CH	2900000	331,1		
SLI 250CRI	2900000	331,1		
SLI 380CRS	2500000	285,4	340000	38,8
SLI 48CR	4600000	525,1		
SLI 48CRI	4600000	525,1		
SLI 49CR	4000000	456,6	270000	30,8
SLI 49CRI	4000000	456,6	270000	30,8

Output relays	MTTF		Expected life for products which have electrolytic capacitor.	
	[hours]	[years]	[hours]	[years]
SLO A120TR	2300000	262,6	160000	18,3
SLO P120TR	2300000	262,6		
SLO A230TR	2100000	239,7	56000	6,4
SLO P230TR	2100000	239,7		

Output relays	MTTF	
	[hours]	[years]
SLO 12CR	1200000	137,0
SLO 12CRA	620000	70,8
SLO 12CRA4	620000	70,8
SLO 12CRX	300000	34,2
SLO 12TR	3200000	365,3
SLO 24CL	1200000	137,0
SLO 24CR	1200000	137,0
SLO 24CRA	620000	70,8
SLO 24CRA4	620000	70,8
SLO 24CRAA4	270000	30,8
SLO 24CRX	300000	34,2
SLO 24IRA	300000	34,2
SLO 24TL	3200000	365,3
SLO 24TR	3700000	422,4
SLO 24TRA	3700000	422,4
SLO 24TH	3200000	365,3
SLO 5CR	1200000	137,0
GLO 5CR	1200000	137,0
SLO 5CRA	620000	70,8
SLO 5CRX	300000	34,2
SLO 5IRA	300000	34,2
SLO 5TR	3200000	365,3
GLO 5TR	3200000	365,3
SLO 48CRA	590000	67,4
SLO 48CRA4	590000	67,4
SLO 48CRX	290000	33,1
SLO 120CRA	270000	30,8
SLO 120CRA4	270000	30,8
SLO 220CRA	230000	26,3
SLO 220CRA4	230000	26,3

Notes:

MTTF = Mean Time To Failure

MTBF = Mean Time Between Failures (includes repairing)

MTTF value can be used in practise for relays because repairing time is short.

MTTF value is used to predict the reliability of the system.

Expected life for relays depends on the life of the electrolytic capacitor or other components which have limited life.

MTTF values for input relays are calculated in conditions, which the relays are assembled in the mounting base side by side, all relays in on-state, the input voltage is nominal and ambient temperature is 25 °C.

MTTF values for output relays are calculated in conditions, which the relays are assembled in the mounting base side by side, all relays in on-state, the input voltage is nominal, the ambient temperature is 25 °C and the load is 50 % of maximum and resistive.

For GL-relays in the table are same values than is calculated for nearest SL-versions. The values can be used for calculations depending on how the GL-relays are assembled.

MTTF values are calculated adapting MIL-HDBK-217F standard.

GB (Ground, Benign)