



To whom it may concern

December 2018

Subject: System reliability data for VM600 Protection & Condition Monitoring

Dear Customer,

The VM600 is a flexible, configurable system, which is assembled from generic modules and cards. The actual configuration varies widely throughout different applications; hence Meggitt refrains from providing 'global reliability data' for the 'entire system'. Instead, reliability data is provided for individual components/modules of the VM600 System.

In terms of underlying calculations, failure rate as been determined by using the followings two different estimates.

Empirical estimate – Failure Rate and MTBF is based on actual deliveries, accumulated operating hours, and failures in service encountered in the field. $FR = \text{Number of Failures} / \text{Total Operating Time}$.

Statistical estimate – in addition to Empirical estimates, Failure Rate and MTBF has been estimated by using the Chi-Square statistic at 2 (number of failure +1) degrees of freedom and a Confidence Factor of 60%.

The table presented hereafter with the reliability calculations is based on the actual deliveries, total operating time, and number of functional failure until 2017.



Component	Total operating time [hours]**	Nbr of functional failure (do not include NFF and mishandling)	FR / MTBF calculated with χ^2 distribution with P=0.6		
			FR [hours ⁻¹]	MTBF [hours]	MTBF [years]
ABE 04x	5.75E+07	16.0	3.08E-07	3.24E+06	370
RPS 6U	9.55E+07	97.0	1.05E-06	9.54E+05	109
MPC 4	2.61E+08	607.0	2.35E-06	4.26E+05	49
IOC 4T	2.52E+08	250.0	1.01E-06	9.89E+05	113
AMC 8	2.13E+07	31.0	1.56E-06	6.43E+05	73
IOC 8T	2.19E+07	80.0	3.80E-06	2.63E+05	30
CMC 16	3.60E+07	128.0	3.65E-06	2.74E+05	31
IOC 16T	3.35E+07	73.0	2.26E-06	4.42E+05	50
XMV16/XMC16	9.88E+06	17.0	1.90E-06	5.27E+05	60
XIO16T	9.88E+06	30.0	3.25E-06	3.08E+05	35
CPU-M	4.79E+07	161.0	3.44E-06	2.90E+05	33
IOC-N	4.51E+07	11.0	2.78E-07	3.60E+06	410
RLC 16	4.99E+07	13.0	2.93E-07	3.41E+06	390

** Total operating time as been reduced voluntarily by 20% considering the equivalent number of devices as not operating (i.e. Spare parts etc.)

Yours faithfully

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