



# TECHNICAL REPORT - MTBF -

No.RT304-E15146

製品名/ Product Name : FC6A Series Micro Smart

形番/ Part Number : FC6A-C\*\*\*\*\* (CPU module / All-in-one, CAN)  
FC6A-PH1 (HMI module)  
FC6A-EXM2 (Booster Module)  
FC6A-PC1/PC3 (Communication cartridge)  
FC6A-N\*\*\*,T\*\*\*,R\*\*\*,M\*\*\* (Expansion I/O Modules)  
FC6A-J\*\*\*,K\*\*\*,L\*\*\*,F\*\*\* (Functional Modules / Analog,PID)

定格/Rating: Rated Voltage 100V AC (AC Power)  
24V DC (DC Power)  
12V DC (DC Power)

適用規格/ Applicable Standards : MIL-HDBK-217F

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Subject: Calculating MTBF about following products, based on The Notice2 appendix A  
MIL-HDBK-217F

Environmental factor: G<sub>B</sub>  
Quality factor: MIL-SPEC or JAN rank Equivalency product.  
Ambient Temperature: 30°C

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承認/Approved by :



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## Failure Rate &amp; Fit &amp; MTBF

Part Number		FR/FIT/ MTBF	Ta=30°C
CPU module / All-in-one, CAN	FC6A-C40R1AE	FR	$12.629 \times 10^{-6}$
		MTBF	79,184h(9.0year)
	FC6A-C40R1CE	FR	$12.184 \times 10^{-6}$
		MTBF	82,073h(9.4year)
	FC6A-C40P1CE	FR	$14.473 \times 10^{-6}$
		MTBF	69,096h(7.9year)
	FC6A-C40K1CE	FR	$13.380 \times 10^{-6}$
		MTBF	74,738h(8.5year)
	FC6A-C40R1DE	FR	$12.092 \times 10^{-6}$
		MTBF	82,699h(9.4year)
	FC6A-C40P1DE	FR	$14.380 \times 10^{-6}$
		MTBF	69,539h(7.9year)
	FC6A-C40K1DE	FR	$13.288 \times 10^{-6}$
		MTBF	75,257h(8.6year)
	FC6B-C40R1A	FR	$11.005 \times 10^{-6}$
		MTBF	90,870h(10.4year)
	FC6B-C40R1C	FR	$10.635 \times 10^{-6}$
		MTBF	94,029h(10.7year)
	FC6B-C40P1C	FR	$12.923 \times 10^{-6}$
		MTBF	77,379h(8.8year)
	FC6B-C40K1C	FR	$11.831 \times 10^{-6}$
		MTBF	84,525h(9.6year)
	FC6A-C24R1AE	FR	$10.296 \times 10^{-6}$
		MTBF	97,381h(11.1year)
	FC6A-C24R1CE	FR	$10.001 \times 10^{-6}$
		MTBF	99,988h(11.4year)
	FC6A-C24P1CE	FR	$11.629 \times 10^{-6}$
		MTBF	85,991h(9.8year)
	FC6A-C24K1CE	FR	$10.867 \times 10^{-6}$
		MTBF	92,020h(10.5year)
	FC6B-C24R1A	FR	$8.777 \times 10^{-6}$
		MTBF	113,939h(13.0year)
	FC6B-C24R1C	FR	$8.473 \times 10^{-6}$
		MTBF	118,023h(13.5year)
	FC6B-C24P1C	FR	$10.101 \times 10^{-6}$
		MTBF	99,002h(11.3year)
	FC6B-C24K1C	FR	$9.339 \times 10^{-6}$
		MTBF	107,079h(12.2year)
	FC6A-C16R1AE	FR	$9.186 \times 10^{-6}$
		MTBF	108,861h(12.4year)
FC6A-C16R1CE	FR	$8.992 \times 10^{-6}$	
	MTBF	111,207h(12.7year)	
FC6A-C16P1CE	FR	$10.209 \times 10^{-6}$	
	MTBF	97.951h(11.2year)	
FC6A-C16K1CE	FR	$9.721 \times 10^{-6}$	
	MTBF	102,867h(11.7year)	
FC6B-C16R1A	FR	$7.393 \times 10^{-6}$	
	MTBF	135,266h(15.4year)	

[CPU module / All-in-one, CAN]	FC6B-C16R1C	FR	$7.111 \times 10^{-6}$
		MTBF	140,625h(16.1year)
	FC6B-C16P1C	FR	$8.328 \times 10^{-6}$
		MTBF	120,077h(13.7year)
	FC6B-C16K1C	FR	$7.840 \times 10^{-6}$
		MTBF	127,549h(14.6year)
	FC6A-C40R1AEJ	FR	$12.349 \times 10^{-6}$
		MTBF	80,981h(8.2year)
	FC6A-C40R1CEJ	FR	$11.617 \times 10^{-6}$
		MTBF	86,082h(9.8year)
	FC6A-C40P1CEJ	FR	$14.670 \times 10^{-6}$
		MTBF	68,166h(year)
	FC6A-C40K1CEJ	FR	$13.825 \times 10^{-6}$
		MTBF	72,332h(8.3year)
	FC6A-C40R1DEJ	FR	$11.768 \times 10^{-6}$
		MTBF	84,978h(9.7year)
FC6A-C40P1DEJ	FR	$14.821 \times 10^{-6}$	
	MTBF	67,471h(7.7year)	
FC6A-C40K1DEJ	FR	$13.976 \times 10^{-6}$	
	MTBF	71,550h(8.2year)	
HMI module	FC6A – PH1	FR	$5.487 \times 10^{-6}$
		MTBF	182,247h(20.8year)
Booster Module	FC6A – EXM2	FR	$1.586 \times 10^{-6}$
		MTBF	630,684h(72.0year)
Communication cartridge	FC6A – PC1	FR	$0.862 \times 10^{-6}$
		MTBF	1,159,555h(132.4year)
	FC6A – PC3	FR	$0.771 \times 10^{-6}$
		MTBF	1,296,412h(148.0year)
Expansion I/O Modules (Digital IO module)	FC6A-N08B1 & N08B4	FR	$2.168 \times 10^{-6}$
		MTBF	461,313h(52.7year)
	FC6A-N16B1 & N16B4	FR	$3.296 \times 10^{-6}$
		MTBF	303,366h(34.6year)
	FC6A-N16B3	FR	$3.179 \times 10^{-6}$
		MTBF	314,520h(35.9year)
	FC6A-N32B3	FR	$5.478 \times 10^{-6}$
		MTBF	182,562h(20.8year)
	FC6A-R081 & R084	FR	$2.601 \times 10^{-6}$
		MTBF	384,534h(43.9year)
	FC6A-R161 & R164	FR	$2.841 \times 10^{-6}$
		MTBF	351,960h(40.2year)
	FC6A-T08K1 & T08K4	FR	$2.540 \times 10^{-6}$
		MTBF	393,716h(44.9year)
FC6A-T16K1 & T16K4	FR	$4.031 \times 10^{-6}$	
	MTBF	248,057h(28.3year)	

[Expansion I/O Modules (Digital IO module)]	FC6A-T16K3	FR	$3.634 \times 10^{-6}$
		MTBF	275,189h(31.4year)
	FC6A-T32K3	FR	$7.118 \times 10^{-6}$
		MTBF	140,493h(16.0year)
	FC6A-T08P1 & T08P4	FR	$2.294 \times 10^{-6}$
		MTBF	435,862h(49.8year)
	FC6A-T16P1 & T16P4	FR	$3.431 \times 10^{-6}$
		MTBF	291,460h(33.3year)
	FC6A-T16P3	FR	$3.570 \times 10^{-6}$
		MTBF	280,135h(32.0year)
	FC6A-T32P3	FR	$5.725 \times 10^{-6}$
		MTBF	174,663h(19.9year)
	FC6A-M08BR1 & M08BR4	FR	$2.176 \times 10^{-6}$
		MTBF	459,472h(52.5year)
FC6A-M24BR1 & M24BR4	FR	$4.288 \times 10^{-6}$	
	MTBF	233,187h(26.6year)	
TM3XTYS4	FR	$4.278 \times 10^{-6}$	
	MTBF	233,741h(26.7year)	
FC6A-N08A11 & N08A14	FR	$3.595 \times 10^{-6}$	
	MTBF	278,192h(31.8year)	
Functional Modules (Analog,PID)	FC6A-J2C1	FR	$2.936 \times 10^{-6}$
		MTBF	340,638h(38.9year)
	FC6A-J4A1	FR	$3.652 \times 10^{-6}$
		MTBF	273,855h(31.3year)
	FC6A-J8A1	FR	$6.000 \times 10^{-6}$
		MTBF	166,670h(19.0year)
	FC6A-K4A1	FR	$2.929 \times 10^{-6}$
		MTBF	341,417h(39.0year)
	FC6A-K4A1	FR	$3.659 \times 10^{-6}$
		MTBF	273,271h(31.2year)
	FC6A-L06A1	FR	$6.755 \times 10^{-6}$
		MTBF	148,037h(16.9year)
	FC6A-L03CN1	FR	$4.712 \times 10^{-6}$
		MTBF	212,208h(24.2year)
	FC6A-J4CN1	FR	$5.345 \times 10^{-6}$
		MTBF	187,099h(21.4year)
	FC6A-J8CU1	FR	$3.608 \times 10^{-6}$
		MTBF	277,167h(31.6year)
	FC6A-F2M1	FR	$6.654 \times 10^{-6}$
		MTBF	150,287h(17.2year)
FC6A-F2MR1	FR	$5.971 \times 10^{-6}$	
	MTBF	167,472h(19.1year)	

FR (Failure Rate)

MTBF (Mean Time Between Failure)