Emerson Drive Solutions
CONTROL TECHNIQUES
EMERSON MOTION CONTROL

Technical Note CTTN #112

The Technical Note is pertinent to the Unidrive Family

LIST OF HARDWARE FAULT TRIPS

Trap Functions.

The following functions are called by various hardware and software traps.

The PWM outputs are disabled and an error message is displayed as follows:

The drive display will show Hfxx

Large option module removed	**-**	**Hf82**
Power board code failure	**-**	**Hf83**
Current offset trim failure	**-**	**Hf84**
A to D failure (ES-CC step)	**-**	**Hf85**
Interrupt watchdog failure	**-**	**Hf86**
Internal ROM check error	**-**	**Hf87**
Watchdog failure	**-**	**Hf88**
Unused interrupts (NMI as source)	**-**	**Hf89**
Stack overflow	**-**	**Hf90**
Stack underflow	**-**	**Hf91**
Software error (undefined op code)	**-**	**Hf92**
(protection fault)	**-**	**Hf93**
(odd address word)	**-**	**Hf94**
(odd address inst.)	**-**	**Hf95**
(illegal ext bus)	**-**	**Hf96**
Level 1 noise	**-**	**Hf97**
Interrupt crash	**-**	**Hf98**
Level 1 crash	**-**	**Hf99**

Unidrive HF Trips

HF81 *Software Error (odd address word)*
HF83 *Power Board Code Failure*
HF84 *Current Offset Trim Failure*
HF85 *A to D failure (ES-CC step)*
HF86 *Interrupt Watchdog failure*
HF87 *Internal ROM check error*
HF88 *Watchdog Failure*
HF89 *Unused Interrupts (nmi as source)*
HF90 *Stack Overflow*
HF91 *Stack Underflow*
HF92 *Software Error (undefined op code)*
HF93 *Software Error (protection fault)*
HF94 *Software Error (odd address word)*
HF95 *Software Error (odd address inst.)*
HF96 *Software Error (illegal ext bus)*
HF97 *Level 1 Noise*
HF98 *Interrupt Crash*
HF99 *Level 1 Crash*

All of the above HF trips are cause by the failure of the UD90A control PCB (common to all Unidrives).

HF82 *Large option module removed*
The trip would be expected if one of the UD70 large option modules is removed while the Drive is powered up. If this trip occurs at any other time than the case above, then there is a problem with either the large option module or the UD90A control PCB.

HF83 *Power Board Code Failure*
This trip means that the UD90A control PCB could not recognise the power rating of the power PCB it is connected to.
On Unidrive Sizes 1 to 4, the trip is probably due to the power PCB in the Drive but a problem with the UD90A control PCB could also cause this trip.
On a Unidrive Size 5 the trip is cause by either UD99 PCB or the UD90A PCB. The interconnects between the PCBs could also cause this trip and should be checked.

HF84 *Current Offset Trim Failure*
This trip means there is a problem with the current feedback on the Drive.
On Unidrive Sizes 1 to 4, the trip is probably due to the power PCB in the Drive but a problem with the UD90A control PCB could also cause this trip.
On a Unidrive Size 5 the trip is cause by either UD99 PCB or the UD90A PCB. The interconnects between the PCBs could also cause this trip and should be checked.

HF88 *Watchdog Failure*
This trip can result from a Co-Processor. Try removing Co-Processor.