



DynAmp

Technical Bulletin

NO. 730

TOPIC: PERIODIC MAINTENANCE RECOMMENDATIONS FOR MODELS 4, 7, 12, 17 CXM SYSTEMS.

File TEC730b

Every 3 Months, it is recommended that after the metering system is installed and operating correctly, it be checked in the following manner months or whenever there is reason to suspect improper operation.

A. Channel Voltage Check - Voltmeter

1. Using a dc voltmeter, read and record the channel voltages as directed in the instruction manual under the topic of "Magnetic Centering." There is a handy page attached to these instructions giving the proper terminal numbers and providing a convenient place to record this information. Record also the line current at the time the channel voltages are read. Each voltage read should meet the following criteria:
 - a. The channel voltage should be greater than 5 volts. A voltage below 5 volts could be caused by bus ripple currents. Voltages above 5 volts generally are caused by proper operation of the channel amplifier.
 - b. The channel voltage should be less than 30 volts dc. If the voltage is greater than this, there is danger that the feedback coils will overheat and be destroyed. Voltages greater than this may also be indicative of errors in the measurements caused by a channel operating beyond its dynamic range. The maximum voltage capability of a CXM channel is between 42 and 50 V dc. Large voltages are caused by improper positioning on the bus or by circuit malfunctions.
 - c. The channel voltages should be in line with previous recorded values. The channel voltage is directly related to the bus current and to the temperature of the feedback coils in the head.

B. Oscilloscope check of channel output waveshapes

Using a direct coupled scope, the wave shape found at the same terminals where the channel voltages were measured should be as in figure 1 below.

Note that there is one pulse every 16.7 milliseconds.

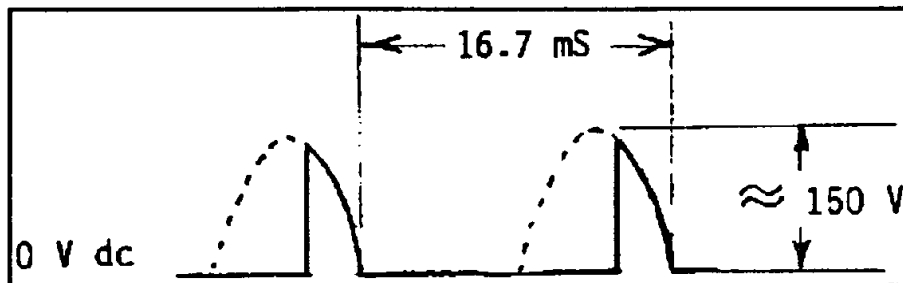


Figure 1

Particularly look for the following waveshape, as it is indicative of malfunctions in the circuitry.

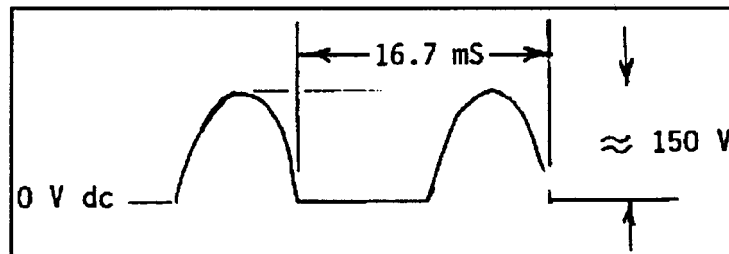


Figure 2

C. Oscilloscope check of sensor output signals

The sensor output signals can be measured on the TS1 terminal strip of the meter unit. To determine the proper terminal numbers, consult the table below. We can see that the channel 1 sensor signal can be found from terminal TS1-1 to TS1-2.

HALL SIGNAL TERMINALS

CHANNEL	FROM	TO
1	TS1-1	TS1-2
2	TS1-3	TS1-4
3	TS1-5	TS1-6
4	TS1-7	TS1-8

These signals are normally non-sinusoidal, and dissimilarities from channel to channel are normal.

These channels have two Hall plates in series and usually have a total signal that is less than 40 millivolts peak to peak. Individual sensor signals in these channels are not available at the terminal strip.

Every 6 Months visually inspect the measuring head and cables and all signal converters components and PC boards for physical damage and evidence of overheating.

Every 2 Years check the electrolytic capacitors for seals that have been popped (degassed) or leaking electrolytic fluid. Replace them is necessary.

SERIES CXM CHANNEL VOLTAGE MEASUREMENTS
 SERIAL NO. _____

CHANNEL #	NEGATIVE LEAD ON	POSITIVE LEAD ON	RANGE	INITIAL DATE _____	DATE	DATE	DATE	DATE
1	TS1-18	TS1-11	3V TO 30V					
2	TS1-18	TS1-12	3V TO 30V					
3	TS1-18	TS1-13	3V TO 30V					
4	TS1-18	TS1-14	3V TO 30V					
BUS CURRENT								