CENTURY METERING SYSTEMS & CONTROLS
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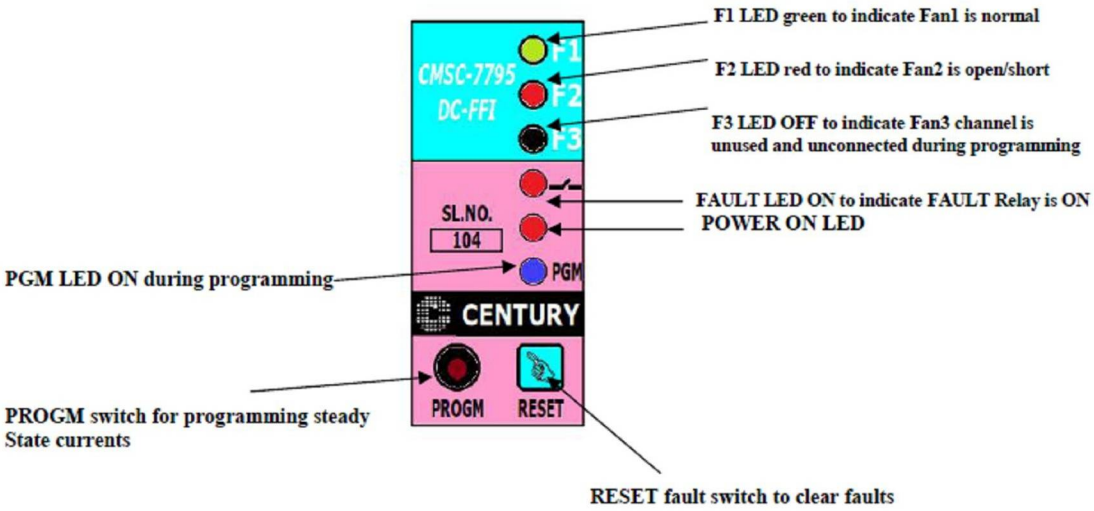
DC FAN FAILURE INDICATOR
Model No.CMSC-7795 version 3x



Introduction

The DC Fan Failure Indicator CMSC-7795 (version 3x) is a microcontroller based fan monitoring system. The unit monitors the statuses of all the fans connected to it to determine if they are running normally / OPEN CIRCUITED / SHORT CIRCUITED. The ratio of current consumed by each fan and the supply voltage is monitored and memorized at the steady state working condition. When a fault occurs (OPEN CIRCUIT / SHORT CIRCUIT), the change in the ratio in relation to the memorized steady state value is identified and indicated as a FAULT.

There can be a maximum of 3 fans in each of the 3 fan channels and thus the unit can monitor statuses of a maximum of 9 fans.

Features

Monitors OPEN circuit (wire disconnection or motor coil winding open) and SHORT circuit (internal short in the winding or short in the input terminals) conditions

- A key to program the steady state current
- A key to reset the fault indication after the fault is corrected
- 3 Bicolor LEDs to indicate fault status of individual fan
- 1 LED to indicate RELAY status
- 1 LED to indicate POWER ON
- A RELAY (potential free contact) to indicate FAULT

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Operating the equipment

Connect the power supply to the terminals marked as 24V+ and 24V- and connect the fans to the terminals marked F+ and F-. The potential free contacts (RELAY) are marked as NO, CO, NC.

Switch ON the power, power ON condition is indicated by POWER ON LED

After power ON, allow the fan(s) to run in steady state for 5-10 seconds. To program the steady state current of the load, press and hold PRGM REG tactile switch for about 3 seconds. The BLUE LED indicates the Acknowledge status for the load steady state current. On releasing the switch, the same LED starts blinking and later puts OFF after 4 seconds which indicates that the programming has been carried out successfully. Once the programming is done, the steady state current readings are memorized in non volatile memory of the unit. The LEDs corresponding to fans which are running normally will glow GREEN and LEDs corresponding to fan(s) which is OPEN CIRCUITED or SHORT CIRCUITED will turn RED. If the unit is programmed when one or more fans are disconnected, the corresponding fan LEDs will be put OFF.

Test Procedure:

To ensure module working function for fault condition like OPEN and SHORT circuit, the below procedure is carried out:

- OPEN CIRCUIT Condition: On disconnecting the fan, the FAULT relay gets turned ON and the RED LED corresponding to the disconnected fan goes ON. Reconnect the fan and on pressing the FAULT RESET tactile switch, the system will reset to the steady state condition.
- SHORT CIRCUIT Condition: After switching ON the fan, allow the fan to run for 5-10 seconds. Later stall the fan which results in the increase of current rapidly and this condition is indicated by the RED LED and FAULT RELAY. On pressing the FAULT RESET tactile switch and allowing the fan to run normally, the system will reset to the steady state condition and fan continues to run.

Note: The channel left unconnected during programming will be ignored by the system. The LED corresponding to the unconnected channel will be put OFF and any change in the current of this channel will not be taken into consideration until the unit is programmed again after connecting fan(s).