Comparison between Prototype and proposed Control specifications

2020-05-05

Electronic Control specifications (preliminary)

1. Will use an off-shelf M18 battery (Milwaukee Electric Tool or other brands compatible with MET chargers)
2. Will provide a single pushbutton which will cycle from OFF to a number of fan speeds yet to be determined.
3. Will monitor Battery voltage and Fan amperage to determine the following conditions:
    a. Low Battery (verified by using the battery indicator build into the battery pack
    b. Possible Filter sealing issues or blockage.
4. Will begin modulating the fan between the selected speed and the maximum speed to indicate any of the fault conditions listed above.
5. Will remove power to the Fan connector within 5 seconds after the Fan is disconnected.
6. Will remove power to the Fan connector when the battery voltage drops below 14.5 volts.
7. Will be sealed to allow outer-surface cleaning

Five Prototype Manual Control boxes - 2020-05-04

- The only user control is a potentiometer which allows adjustment of the output voltage between two internal trim pot values. The initial minimum is set at 7.85v which has been determined by filter testing with a GDStime GDB1232Q2005 Blower.
- They provide crude battery discharge protection at >13.5 volts, where the minimum specified limit is 12.7 volts before battery damage starts to occur.
- The battery protection will cut power to the fan. However, the estimated run time from even the smallest available MET pack is close to 10 hours.
- These prototypes provide no user feedback for low battery or filter problems.
- These prototypes are NOT sealed and should only be wiped down with alcohol to remove contaminants.