

ETM-40US NOISE FILTERING

Many of the applications for the ETM-40US temperature monitor involve application to engines that are not up to current standards of electrical noise reduction methods. As with automobiles that started using onboard microprocessors (computers) in the mid 70's, the requirement for "resistor" spark plugs is now mandatory on today's engines with state of the art electronics for monitoring and control. Further noise reduction methods include proper installation and grounding of the ignition system, proper routing of on-engine wiring to eliminate noise being superimposed on the thermocouple wiring, the recommended use of ungrounded thermocouples, the mandatory use of resistor plugs, and in the worst cases, resistor spark plug leads.

In addition to the above requirements, a further enhancement to the ETM may help to make the worst applications operate without noise induced faults. A modification to the operating firmware has been incorporated into the production of the ETM starting with S/N 1147. This firmware adds an enhancement which is a programmable filter "rejection" value, and forces the sensed "noise spike" to be present for numerous scan cycles to be considered a true temperature fault. Noise spikes can occur from various causes on the low voltage (0-50 mV) thermocouple inputs, and are usually not very often and not always repeatable. Forcing the measured value to accept this "spike" numerous times in a row to be acknowledged helps to filter out these unwanted and "false" thermocouple inputs. Setting this value at "4" for example would require the erroneous signal to be present four times in a row during the scan cycle to be acknowledged as a true temperature increase that is valid.

Upgrade to the newer firmware can be installed into the ETM at the Altronic factory at no charge except shipping costs if application problems persist after other traditional noise reduction methods do not work.

Once updated, there is a new entry found in the **UNITS, AUTO, FILT** setup that adds **FILTER REJECT**, and can be set from 1 to 10. Setting to the default of **##** turns this filter **OFF**.