



# Salamander Quad Pro

## User Manual Appendix

Features introduced in firmware versions 1.0 – 1.3

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### 1.0 'Staggered delay' and firmware release numbering introduced

Reliable ignition requires a proper air to fuel mixture at the **Hot Surface Ignitor (HSI)**. Multi-can bursts release a sub-optimally large amount of fuel. A short single-can burst preceding the main blast ensures proper ignition when an order to fire from multiple cans is received. The length of the 'staggered delay' after which the remaining cans join in can be adjusted in 'tEC' options:

'F-0'	0ms (feature disabled)
'F-1'	44ms (default)
'F-2'	68ms
'F-3'	90ms
'F-4'	112ms

Firmware version is viewable at the end of 'tEC' options – '**rEL**' followed by '**X-X**' indicating the release number.

### 1.1 Sanity check introduced to DMX channels selected

For safety reasons the machine will ignore DMX entirely if the HSI channel is set up to also be a fire channel.

### 1.2 Removed DMX data filter on HSI channel

DMX data filter ensures a channel is interpreted as "down" if the values received are inconsistent. This is a safety feature applied to fire channels preventing unintentional firing due to noisy DMX. HSI is excluded from this feature to ensure an accidental nudge to this channel does not disarm the machine mid-show, which would pose the need of waiting the full duration of HSI safety delay to re-enable.

### 1.3 Fire orders while not armed cause 'dEr' (DMX error)

If fire order is received while not in 'rdy' state, the machine will become disabled (HSI powered down, firing not possible) and display '**dEr**' (DMX error). This is to ensure accidental firing due to plugging the machine into DMX with all values raised is not possible – HSI delay has to be respected, fire order must be intentional and requires an input **after** machine is ready.

When fire order disappears the machine is re-enabled – HSI can be powered back on and HSI delay can begin from the start.

Note that the machine can cycle between HSI delay and '**dEr**' indefinitely if the HSI delay continues to be disrespected.