

FADEC ECU FAILSAFE FUNCTION.

All FADEC ECUs contain a failsafe function that will stop the engine in the event of loss of radio link or continued radio interference that masks the normal signal. The function allows the engine to continue to operate in the case of short glitches. The system works with PCM, PPM and IPD systems.

PPM systems.

In case of loss of radio link, corrupted or signal pulses outside the programmed window of operation, for the first 0.5 secs the FADEC will do nothing and keep the engine at its last valid setting. If during this time the radio link is recovered or signal pulse-width returns to within the programmed window, control is returned.

If after this 0.5secs the signal still is missing or bad, the FADEC will command the engine to "idle", and keep it at idle for a further 1.5secs. After this 1.5secs (total 0.5+1.5secs=2secs) the FADEC will command the engine to shutdown.

If the signal returns during this 2s, the FADEC will take this signal as good and reset the 2secs timer and engine control will return.

PCM/IPD systems.

The user should program the "failsafe" function of the radio to send a signal lower than the normal "stop" signal (ie if normal "stop" is -100%, then program the failsafe to output -125%).

When the receiver enters into "failsafe" mode, it will issue a signal to the FADEC of -125% that is outside the valid command window, (between STOP (-100%) and Full power (+100%) . In this case the FADEC will follow same procedure as described in PPM mode and shutdown the engine after 2s of failsafe. In this event the FADEC will record the cause of shutdown as a "Failsafe" shutdown.

If the failsafe setting is programmed on the TX to the same point as the "STOP" command, the system will act exactly the same, except that the FADEC will record in its memory that the cause of the last shutdown was "User-Off". This could make it more difficult to troubleshoot a in-flight shutdown.

This system allows the engine to fly through minor interruptions of signal or glitches, thus avoiding the engine shutting off unnecessarily, while maintaining the safety of automatic shutdown in cases of loss or corruption of radio link.

**IMPORTANT - ALWAYS PROGRAMME THE FAILSAFE TO SHUT OFF THE ENGINE.
NEVER FLY A TURBINE AIRCRAFT WITH THE FAILSAFE SET TO "HOLD".**

Wren Turbines Ltd
Unit 19, Century Park Network Centre
Manvers
Rotherham
S63 5DE
UK

Tel +44 1709 877439
Fax +44 1709 875935

www.wrenturbines.co.uk
email info@wrenturbines.co.uk