SAFE 128
Avionics Cooling Fan
With Fault Detection

1.1 INTRODUCTION
This sheet describes the installation of the SAFE 128 avionics cooling fan with fault detection output. It is intended for use by FAA certified repair stations to install the SAFE 128 and includes both mechanical and electrical installation information. The installer should insure that the SAFE 128 is operating according to its intended function.

1.1 PRODUCT DESCRIPTION
The SAFE 128 is an avionics cooling fan that provides an operating indication. When the fan is normally operating, this output is at low impedance. The output goes to high impedance whenever the RPM of the motor drops below a preset threshold, signaling the connected avionics of the reduction in cooling from the SAFE 128.

1.2 TECHNICAL CHARACTERISTICS
1.2.1 PHYSICAL CHARACTERISTICS
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>2.36”</td>
</tr>
<tr>
<td>Height</td>
<td>2.87”</td>
</tr>
<tr>
<td>Depth</td>
<td>1.44” (inc. pins)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.25 lb</td>
</tr>
</tbody>
</table>

1.2.2 OPERATIONAL CHARACTERISTICS
<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>22-31Vdc</td>
</tr>
<tr>
<td>Current</td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>.100 Amps Nominal</td>
</tr>
<tr>
<td>Start-up</td>
<td>&lt;.250 Amps</td>
</tr>
<tr>
<td>Air Flow (No Load)</td>
<td>20 CFM (10CFM @ .08” H2O)</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-20 to +55 °C</td>
</tr>
<tr>
<td>Max Operating Altitude</td>
<td>55,000 Feet</td>
</tr>
</tbody>
</table>

1.2.3 CERTIFICATION
FAA-PMA PQ0894SW Diamond DA40
DO 160D [F1]BAA[S2R2(B2,M)][XXXXXXXZBAZA[XX][M][XXX][XX]XX

SANDIA aerospace
Albuquerque, New Mexico
www.sandia.aero
2.0 INSTALLATION PROCEDURES

2.1 GENERAL
The SAFE 128 is supplied with a mounting connector and four contacts. Only three contacts are required and the spare one is provided in case one is destroyed during installation. The SAFE 128 is also shipped with a mating connector attached to the unit itself. This is to protect the pins during transit. This connector can be discarded once the unit is received or may be retained to cover the pin in case a return shipment to the factory is necessary. The SAFE 128 is mounted with four (4) number 6 or 8 screws.

2.2 EQUIPMENT REQUIRED
2.2.1 Supplied
SAFE 128 System
Includes:
- SAFE 128 Fan 305468-00
- Installation Kit 305477-00
- Mating Connector 305479-03
- Mating Pins 305478

2.2.1 REQUIRED BUT NOT SUPPLIED
Four (4) Number 6-32, 8-32 or equivalent mounting screws

2.3 MOUNTING
The SAFE 128 mounts with four number (4) 6-32 or 8-32 or equivalent machine screws. Be sure to observe the direction of airflow.

2.4 ELECTRICAL
The SAFE 128 operates on 28Vdc. It will provide a low on Fan Fail (center pin) of the connector when operating normally. When airflow drops to 60% of nominal, as determined by fan RPM, Fan Fail will output a high. An external pull-up is required. Power to the SAFE 128 can be supplied from the aircraft buss or from the unit to be cooled if an output is available. If connected to the aircraft buss, the SAFE 128 should be protected by a .5 amp fuse or breaker.

2.5 CALIBRATION
No calibration of the SAFE 128 is required. The unit can be tested by slowing the fan manually and observing a high present on the Fan Fail pin. Allow the fan to return to normal speed and observe a low on the Fan Fail pin.

2.6 CONTINUED AIRWORTHINESS
Maintenence of the SAFE 128 is on condition only. No scheduled maintenance is required.