



**2 1/4 and 3 1/8" AIRSPEED INDICATOR
UMA# T16-21X-XXXX and T16-31X-XXXX
Meets: TSO C2d specifications**

Limitations:

For B1 controlled temperature environment up to 25,000 ft.
Maximum operating temperature -55 to +85 °C
Not for use on turbojet aircraft, or helicopters.

For all UMA Airspeed Indicators with internal Electroluminescence Light:
- Indicator installation position shall be limited to pilots side of panel only.
- Caution must be taken when positioning indicator so that instrument light shall not be allowed to shine in pilots eyes, which could obstruct pilots night vision.

Installation Instructions:

- 1.) Mount gauge in instrument panel at the desired position. Consider previous limitations if instrument has internal lighting.
- 2.) The pitot tube's opening should be facing forward or into the relative wind so that it measures ram pressure effects. The static port simply measures outside atmospheric pressure. Refer to aircraft owners manual for correct installation.
- 3.) Connect pitot line tube to the differential pressure port (designated P) on back of instrument.
- 4.) The remaining port (designated S) should be connected to static line vented to atmospheric pressure. Refer to Diagram One on back of page.
- 5.) For Instruments with Electroluminescence internal lighting, connect (2) violet (*or blue*) wires to output of UMA EL Invertor (PN:10-700-XX).
- 6.) Instrument should meet airworthy standards once a year, if not instrument should be sent for repair to a FAA certified repair shop.

SPECIFICATIONS:

Description: Type A- direct reading self-contained, pressure actuated Airspeed Indicator, which is built to meet or exceed AS 8019 (*Issued 3-30-81*) standards as per TSO-C2d.

Appearance: Case, Bezel and dial background are matte black.
Identification lettering is Blue.
Markings are matte white.
Pointer is matte white with black hub and counterweight.

Case: Meets F.A.A. Spec. # FR 25.853
Material: G.E. Valox 420 SEO.

Scale Error: ± 5 from 20 - 60 MPH
± 4 from 70 - 90 MPH
± 3 from 100 - 180 MPH
± 6 from 200 - 400 MPH

Friction/Position Error: ±4 from 20 - 200 MPH
±6 from 210 - 350 MPH

Lines - Size: 1/4" 0.028 - 0.035" wall thickness

Normal Operating Temp: -20 to +55 °C

Weight: 6.9 O.Z. - 2 1/4" 8.6 O.Z. - 3 1/8"

Troubleshooting Inaccurate Readings:

- 1.) Pointer not reading zero when plane is at rest.
 - a. Wind blowing into Pitot - static tube.
 - b. Water in connection tubes.
 - c. Instrument in need of re-calibration.
- 2.) Instrument reading is lower than normal.
 - a. Attention not given to the change in reading with altitude.
(Higher altitude thinner air thus lowers reading.)
 - b. Pitot-static tube bent or damaged.
 - c. Pitot-static tube not positioned correctly on aircraft.
 - d. Connection tubing not airtight.
 - e. Instrument case not airtight.
 - f. Instrument in need of re-calibration.
- 3.) Instrument reading higher than normal.
 - a. Connecting tubing not airtight.
 - b. Instrument case not airtight.
 - c. Instrument in need of re-calibration.

Warranty

UMA, Inc. warrants all products to be free from defects in material and workmanship under normal use and operation. UMA does not warrant any product which has been damaged as the result of accident, abuse, negligence, improper operational voltage, lightning, fire, flood, or other acts of nature. Any indication that the unit has been opened can void warranty. Under no circumstances shall UMA be liable for any loss or damage, direct, consequential or incidental, arising from the use of or inability to use this product.

This warranty is limited to the repair or replacement, at the manufacturer's option, of any product or part thereof, which has been returned to UMA within the specified warranty period, and which after examination shall disclose to the customer service department's satisfaction that the product is defective. Transportation to the factory or authorized service center must be prepaid; the product after repair or replacement will be returned at the expense of the dealer or end customer. This warranty does not apply to any product or integral part thereof, which has been altered or serviced by other than the manufacturer or authorized service center.

The warranty period is twelve (12) months to the user.

This warranty supersedes all other warranties either expressed or implied and shall be governed and executed under the laws of the Commonwealth of Virginia, U.S.A.

Diagram One

