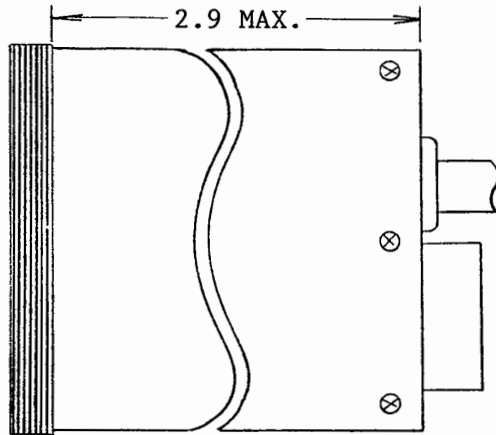
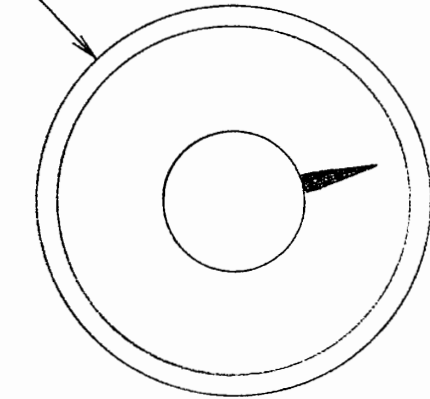
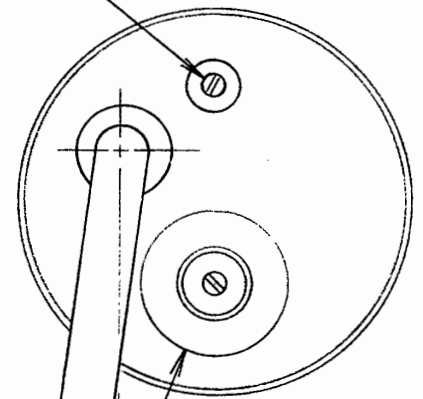


CASE PER MS33639, 2-INCH

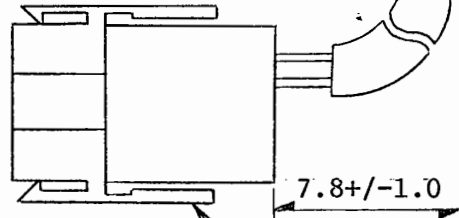


ZERO ADJUSTMENT SCREW



- 5, 14 OR 28 VDC - 1 -
- LIGHTING GROUND - 2 -
- NOT USED - 3 -

EXTERNAL WIRING



1/8-27 ANPT  
PER MIL-P-7105

REAR VIEW, TYP

CONNECTOR TO MATE WITH AMP  
207360-1 PLUG AND AMP 66105-3  
SOCKETS. (NOT APPLICABLE TO  
P/N 641( )C SERIES)

UNITED INSTRUMENTS, INC.		RANGE	LIGHTING
PART NO.	CODE NO.	(IN.Hg)	VDC
6411	D.54	10 to 40	28
6411A	D.55	10 to 40	14
6411B	D.56	10 to 40	5
6411C	D.57	10 to 40	-
<hr/>			
6411	D.58	10 to 50	28
6411A	D.59	10 to 50	14
6411B	D.60	10 to 50	5
6411C	D.61	10 to 50	-
<hr/>			
6412	D.62	10 to 75	28
6412A	D.63	10 to 75	14
6412B	D.64	10 to 75	5
6412C	D.65	10 to 75	-
<hr/>			
6414	D.66	10 to 35	28
6414A	D.67	10 to 35	14
6414B	D.68	10 to 35	5
6414C	D.69	10 to 35	-

THE SPECIFICATION SUPERCEDES UI6411-D39

						PREP. BY	<i>J. Inamoto</i>	9-1-87
						APPR. BY	<i>T. Kawana</i>	9-2-87
						CHECKER		
REV.	DATE	CHK.	REV.	DATE	CHK.	NAME	DATE	

UNITED INSTRUMENTS, INC.



3625 Comotara Avenue  
Wichita, Kansas 67226

TITLE:

INDICATOR - MANIFOLD PRESSURE,  
2-INCH

SPEC. NO:

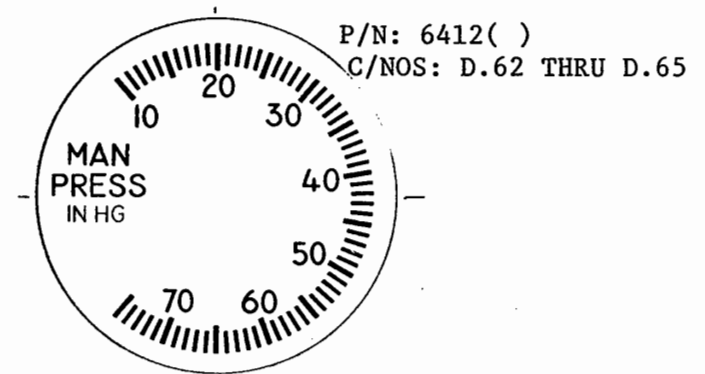
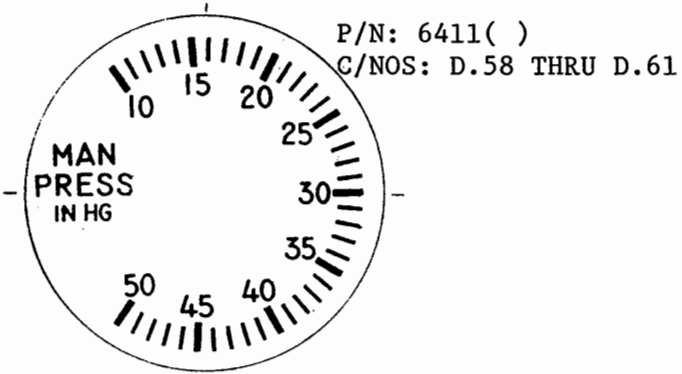
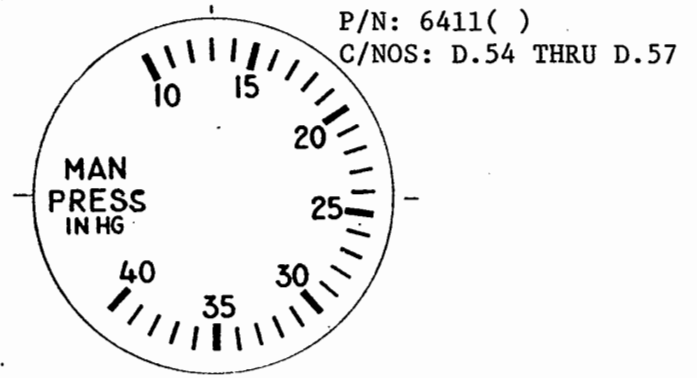
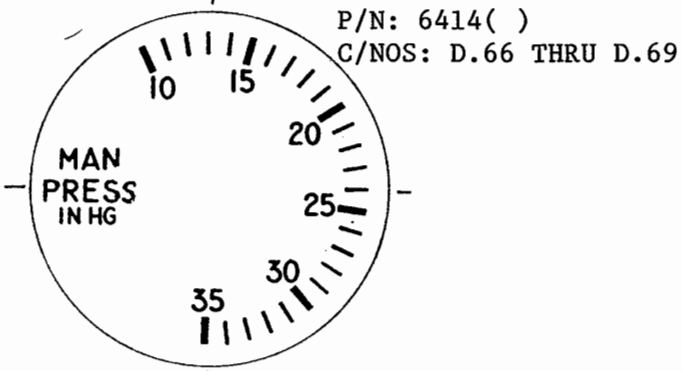
UI6411

ISSUE

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DIAL CONFIGURATION



UNITED INSTRUMENTS, INC.  
3625 COMOTARA AVENUE  
WICHITA, KANSAS 67226

**TITLE:**

INDICATOR - MANIFOLD PRESSURE,  
2-INCH

**SPEC. NO.**

UI6411

**ISSUE**

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1. GENERAL

- 1.1. PURPOSE: This specification defines standards of minimum performance and conditions under which these standards apply for the 6410 Series Manifold Pressure Indicator supplied by United Instruments, Inc.
- 1.2. DESCRIPTION: The 6410 Series Manifold Pressure Indicator is used on aircraft to indicate the absolute pressure of the aircraft engine intake manifold in inches of mercury absolute.
- 1.3. OPERATING LIMITS: Manifold Pressure Indicator operates when intake manifold is directly connected to the pressure port of the indicator. The maximum ranges of the indicators shall be as listed below.

P/N 6414: 10 to 35 Inches of Mercury, Absolute  
P/N 6411: 10 to 50 Inches of Mercury, Absolute  
P/N 6412: 10 to 75 Inches of Mercury, Absolute

- 1.4. WEIGHT: Weight shall not exceed 0.6 lbs.
- 1.5. DIAL AND POINTER: Dial and pointer shall be approximately as shown on page 1. Context and indicating portions shall be matte white on a dull black background.
- 1.6. DAMPENING: Each instrument shall be dampened to the degree necessary to prevent excessive pointer oscillation. The indicator shall be provided with a means for adjusting the dampening level. An adjusting screw in the manifold pressure port or similar accessible device is considered satisfactory.
- 1.7. LIGHTING: The indicator shall contain 5, 14, or 28 vdc commercial integral blue-white lighting, with a tunnel lighted configuration. (See Table on page 1).

2. ENVIRONMENTAL CONDITIONS

2.1. TEMPERATURE:

Operating: -30°C to +60°C  
Storing: -65°C to +71°C

2.2. HUMIDITY: 0% to 95% at 32°C

2.3. VIBRATION:

<u>Frequency (CPS)</u>	<u>Max. Double Amplitude</u>	<u>Max. Acceleration</u>
5 to 50	0.02 Inch	1.5 g
50 to 500	---	0.5 g

2.4. ALTITUDE: All instruments shall function and shall not be adversely affected when subjected to a pressure and temperature range equivalent to -1,000 to 40,000 feet standard altitude, per NACA Report Number 1235.

UNITED INSTRUMENTS, INC  
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3. STANDARD TEST CONDITIONS

- 3.1. ATMOSPHERIC CONDITIONS: Unless otherwise specified, all tests required by this specification shall be conducted at an atmospheric pressure of approximately 29.92 inches of mercury and at an ambient temperature of approximately 25°C and at a relative humidity of not greater than 85 percent.
- 3.2. VIBRATION (TO MINIMIZE FRICTION): Unless otherwise specified, all tests for performance shall be conducted with the instrument subjected to a vibration of 0.002 to 0.005 inch double amplitude at a frequency of 1500 to 2000 cycles per minute. The term double amplitude as used herein, indicates the total displacement from positive maximum to negative maximum.
- 3.3. POSITION: Unless otherwise specified, all tests shall be conducted with the instrument in its normal operating position.

4. INDIVIDUAL PERFORMANCE REQUIREMENTS

- 4.1. SCALE ERRORS: The instruments shall be tested for scale errors, by subjecting the instrument to the pressure required to produce the test points first with the pressure increasing, then with the pressure decreasing. With the pressures increasing, the pressure shall be brought up to, but shall not exceed the pressure specified to give the desired reading; and with the pressure decreasing, the pressure shall be brought down to, but shall not fall below the pressure specified to give the desired reading. The scale errors at room temperature shall not exceed tolerances listed in Table I.
- 4.2. FRICTION: The instrument shall be tested for friction at each test point. The pressure shall be so increased as to bring the pointer of the instrument approximately to the desired reading and then held constant while two readings are taken, the first before the instrument is tapped and the second after the instrument is tapped. The difference between any such reading is the friction error and shall not exceed 0.3 in.Hg.
- 4.3. POSITION ERROR: With sufficient pressure applied to obtain a reading of 30 in.Hg, instrument shall be held in each of several different positions. The change in the reading of the instrument with change in position from the normal test position shall not exceed 0.25 in.Hg.
- 4.4. LEAKAGE: With pressure applied to produce 10 in. Hg reading, the connection tubing shall then be sealed at a point within 2 inches of the pressure connection. During a period of 1 minute the change in reading shall not exceed 0.25 in. Hg.
- 4.5. DAMPENING: A pressure equivalent to 10 inches of mercury shall be applied to the instrument when this pressure is suddenly released, the time for the pointer to travel from 10 inches of mercury to 25 in.Hg shall be 2.0+/-1.0 seconds.

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- 4.6. ALTITUDE COMPENSATION: After applying sufficient pressure to establish a reading of 30 in.Hg with the case of the indicator exposed to room ambient pressure, the indicator case shall be brought to a pressure equivalent to 15,000 feet. After tapping, the indicator reading shall not have varied more than 0.5 in.Hg.
- 4.7. LIGHTING: Apply the specified lighting voltage (Refer to Table on page 1). Assure that all lamps are operating forming an even distribution of light over the dial.
5. ENVIRONMENTAL CONDITIONS:
- 5.1. TEMPERATURE: Operating a temperature of -30°C to +60°C, the scale error shall not exceed twice the values specified in Table I.
- 5.2. VIBRATION: Pointer oscillation or deviation during vibration scan specified in paragraph 2.3 shall not exceed .03 inch band of oscillation or +/- .3 in. Hg deviation, whichever is larger.
- 5.3. PRESSURE EXTREMES: The indicator shall not be adversely affected by exposure to pressures to 2 in.Hg absolute and 10 in.Hg in excess of the full scale reading.

TABLE I  
MANIFOLD PRESSURE

<u>PRESSURE</u> <u>(IN.HG ABS.)</u>	<u>TOLERANCE</u> <u>(+/- IN.HG)</u>	<u>PRESSURE</u> <u>(IN.HG ABS.)</u>	<u>TOLERANCE</u> <u>(+/- IN.Hg)</u>
30	.3	40	.3
25	.4	45	.3
20	.4	50	.4
15	.5	55	.4
10	.6	60	.4
20	.4	65	.5
30	.3	70	.6
35	.3	75	.6

UNITED INSTRUEMNTS, INC. 3625 COMOTARA AVENUE WICHITA, KANSAS 67226	TITLE:  INDICATOR - MANIFOLD PRESSURE, 2-INCH	SPEC. NO.  UI6411	ISSUE  _____
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