

# **CHECK WIRING HARNESS BEFORE INSTALLATION**

It's easier/cheaper to check and recheck all harness's and connections than repairing them later!

# **STRIKE FINDER**

## **INSTALLATION MANUAL**

**READ THESE INSTRUCTIONS  
COMPLETELY BEFORE PROCEEDING  
WITH INSTALLATION**

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### **IMPORTANT NOTICE:**

Effective on the date of this printing.

Installers are advised NOT to Top-Mount the Strike Finder sensor.

Contact Insight Instrument Corporation (905) 871-0733 if a top-mounted installation is being considered.

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## 1. System Description

The Insight Strike Finder model SF 2000 consists of a Display and a Sensor. The Display employs a digital signal processor which, among other components, processes and displays the signals detected by the Sensor. The Sensor contains sensitive circuitry to detect magnetic energy and convey the direction and magnitude of such energy to the Display for actual depiction to the pilot.

The Strike Finder was designed for approval under Federal Aviation Administration Technical Standard Order (TSO) C110a. The SF 2000 components were tested to meet or exceed environmental categories of Radio Technical Commission for Aeronautics (RTCA) D0-160B for operation to +55,000 feet in temperature ranges from -55°C to +70°C for the Sensor and from -20°C to +55°C for the Display. The Strike Finder may be installed in reciprocating engine or turbine powered, including turbojet, fixed and rotary-wing aircraft. The Display weighs only 1.2 lbs (0.54 Kg) and the low profile, elliptically shaped Sensor weighs 0.6 lbs. (0.27 Kg).

The SF 2000 Strike Finder system will operate from 10.5 Volts DC to 38 Volts DC and requires only 0.4 ampere at 27.5 Volts DC. The SF 2000 Display may be connected to the aircraft compass system or panel-mounted directional gyro, equipped with a “bootstrap” synchro. If installed with, and connected to provide heading orientation to the displayed strikes, the instrument also requires a low-power 26 Volts AC 400 Hz inverter source for reference synchronization. The Display may also be connected to a Bendix/King model KCS 55 or KCS 55A Compass System to provide synchronized heading response without the need for a bootstrap synchro or inverter source, thus providing a more convenient and economical means of obtaining display orientation. When heading is selected for orientation, the strike pixels will rotate with respect to heading changes for directional interpretation.

The heading function is selected automatically upon power application to the Strike Finder.

There are three types of Display bezels and three possible mounting configurations.

- 1) Display P/N 2000-021-009 mounts in a 3.125 inch round hole.
- 2) Display P/N 2000-021-026 has an integral mounting flange and mounts in a ATI3 octagonal hole from front to rear.
- 3) Display P/N 2000-021-027 has no mounting holes and fits an ATI3 octagonal hole and is supported by a clamp tray or clamp fixture.

The first configuration is ideal for use in an existing 3.125 inch round hole, or when a panel hole must be cut. In most cases, a round hole is easier to create than an ATI3 style, unless a punch kit is used to create a uniform mounting hole.

The second configuration is intended for use in an existing ATI3 instrument hole when front or rear flange mounting is desired.

The third configuration is best for the replacement of existing clamp mounted instruments. Note that a special Sensor, P/N 2000-024, is available for installation on jet aircraft.

## **2. Installation**

### **2.1 Unpacking the Strike Finder**

Carefully inspect the package for damage which may have occurred during shipment. If damage is found, save all the packaging so that a claim can be made against the carrier.

Before cutting any holes in the panel:

- 1) Consult the pilot/owner of the aircraft for acceptance of the planned location.
- 2) Carefully consider the Display and connector depth requirements and check for interference with aircraft structure and controls.
- 3) Plan wire routing to the Sensor, power bus, and compass system (if heading source is available).  
Refer to drawings included for detailed mounting dimensions.

### **2.2 Selecting the Strike Sensor Mounting Location**

A low noise mounting location for the Strike Sensor is crucial for proper operation.

The Strike Finder is more noise immune than other lightning detection systems but it still requires careful Sensor placement for correct operation. The following is a list of general guidelines for Sensor placement:

- 1) Sensor should be close to level in normal flight attitude.
- 2) Sensor should be spaced as far as practical from existing transmitting antennas.

- 3) Sensor should be as far away as possible from electromagnetic noise sources (i.e. strobe lights, inverters, servo motors, generator/alternator wiring, rotating beacons, flap/gear motors, etc.)
- 4) Contact Insight Instrument Corporation (905) 871-0733 for location advice.

Avoid mounting near components or appliances which draw high currents, especially if the load current surges. This includes most things except simple loads like pilot heat or incandescent lights. D.C. loads may cause high battery charging currents that cause A.C. current flow in the aircraft skin. A.C. loads that utilize airframe ground returns are notorious interference sources. To ensure that a quiet mounting location has been selected, before mounting and connecting the Sensor, the following procedure may be used: using a standard pre-terminated (per dwg. 2000-019 "no compass") cable, connect the Display to the Sensor, and the black and red power supply wires to an 11 to 30 VDC power source (the aircraft avionics bus is preferred). Ensure that the Display starts and runs normally (walking dot visible). Place the Display in Dealer Mode as described in section 2.9 below. Place the Sensor flat against the aircraft skin in the location chosen for mounting. Note the two-digit activity number in the lower left corner of the display. This number should remain constant and no dots should be plotting on the display. Note that this test should NOT be performed while thunderstorms are within range, since actual strike dots will be plotted on the display, and will also cause the activity numbers to increase. Using the aircraft battery, or ground auxiliary supply, switch on all avionics equipment, strobe lights, beacons, inverters, etc. Operate servo motors, flap motors, communications (transmit test), and radar equipment, while watching the activity number for changes in value. If continuous activity is noted, move the Sensor to a new location where activity ceases. Be thorough with this test, and operate all possible devices in their most noisy modes.

### **2.3 Mounting the Strike Sensor**

The Sensor must be mounted on the bottom of the aircraft fuselage, with an Installer-fabricated doubler plate of a thickness similar to the aircraft skin thickness, per standard practices found within FAA Advisory Circular 43.13-1A and 43.13-2A. It must be installed with the aircraft symbol pointing forward. Note that the Sensor is coated with a static dissipative coating and must not be painted, in order for the Strike Finder to perform properly in all environments.

In pressurized aircraft, any penetration of the pressure vessel must be sealed in accordance with standard practices. The Sensor should be mounted with the supplied gasket and sealed with non-corrosive RTV or Pro-Seal. The Sensor does not require the removal of aircraft exterior paint or bonding to the airframe except as provided by the mounting screws. Refer to drawings 200-004 and 2000-035 for mounting details.

## 2.4 Wiring

Do not, under any circumstance, use any cable other than the special Sensor cable (Insight P/N 900927) provided for Sensor to Display connections. If the length available is inadequate, do not splice or extend it; use only a continuous length. Cables of any length are available from Insight Avionics. Pay special attention to the shield connections. Connections are to be made in accordance with drawing 2000-019 using the following tools:

M22520/02-01 Crimp Tool	Mfg: Daniels
M22520/2-08 Positioner	Mfg: Daniels
91067-2 Insertion tool	Mfg: AMP

Power and ground connections should be made with wire no smaller than 20 gauge, as supplied. This wire may be substituted with any aircraft quality wire of appropriate size, if necessary. Power connection must be made through a trip-free resettable circuit breaker, rated at 2 amperes, to the avionics bus. The circuit breaker should have a “pull type” plunger to allow interruption of power to the Strike Finder, if required. If the aircraft does not have an avionics master switch, then a separate power switch should be installed to remove power to the Strike Finder during engine starts.

## 2.5 Selecting a Heading Source.

The Strike Finder benefits from connection to an external heading source. There are currently three possible configurations:

- 1) No heading source available.
- 2) Bendix/King KCS-55 or KCS-55A HSI system, with or without “bootstrap” synchro option.
- 3) Any HSI or Compass System with a synchro output which is excited with 26 Volts AC 400 Hz.

In any configuration some Display inputs must be terminated for correct operation. In aircraft where a Bendix/King KCS-55 or KCS-55A Compass System has the bootstrap synchro option, connection to the stepper outputs is still preferred. Connect to only one heading source, never both. Refer to drawing 2000-019 for details.

The ARINC standard power source for heading synchros is 26 Volts AC at 400 Hz (Sine wave output). The standard output from the synchro X & Y stator windings is 0-11.8 Volts RMS. In aircraft with a heading synchro, some form of 400 Hz excitation is usually available. The Display heading synchronization may function even if the excitation voltage is less, a different frequency, or a square wave output. However, the excitation source connected to the Strike Finder AC HI input must be the same as that connected to the synchro rotor (ie: synchronous). The Strike Finder will tolerate a wide variety of inputs and work with most systems. The synchro excitation input on the Display draws only 200 microamps of current and the X & Y inputs less than 5 microamps, so these functions may be wired in parallel with other loads without any effects.

## 2.6 Checking the Installation

Prior to connecting the Display or the Sensor, check the continuity of each and every connection. This formality is always worthwhile to prevent inadvertent failure or damage.

Prior to connecting the Display, verify the + 14 or +28 Volts D.C polarity and ground integrity. For installations with synchro heading systems, check the 400 Hz excitation level to be 26 Volts RMS, and the X & Y outputs to be in the 0-11.8 Volts (RMS) range (actual value is heading dependent). In some systems the excitation may be normally lower than 26 Volts AC. The Strike Finder will work with excitation levels as low as 10 Volts AC. If the excitation level is too low, the Strike Finder will just ignore the heading source.

Never connect or disconnect system components with the power applied. With the power removed, connect the display and sensor and apply power. The display should respond with a "Sunburst Test", followed by a display of the software revision number in the lower left corner of the Display for a few seconds. The center of the Display will depict the diagnostic status indicator "walking dot", if all self-diagnostic tests are successful. The diagnostic system runs at power-up, and once each minute, for as long as power is applied. It generates a magnetic impulse in the Sensor and tests the display extensively.

## 2.7 TSO Limitations

The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within TSO standards. If not within TSO standards, the article may be installed only if the applicant documents further evaluation for an acceptable installation, and it is approved by the Administrator of the Federal Aviation Administration, or other certifying agency.

## 2.8 Final Acceptance Testing

The following procedure should be used to determine correct operation of the Strike Finder system before release of the aircraft to the customer. Upon applying power to the Strike Finder, the technician should observe three sunburst display test sequences. Any missing display pixels should be noted and the factory advised for assistance. After the completion of the display test, the software revision number will appear in the lower left corner for a few seconds. The test status indicator or “walking dot” will appear at this time, if all tests are successful. Otherwise, a diagnostic failure code will appear in the lower left instead. The Strike Finder has extensive diagnostic capability built in. Its purpose is to test the instrument during manufacture, installation, and in flight. Following the completion of the sunburst test, a specially coded magnetic impulse sequence is generated in the Sensor, and analyzed by the instrument. Complete system response characteristics are measured. Only if the entire system performs within spec, will the test pass. If the test passes, it will be repeated indefinitely, at 1 minute intervals, to assure the pilot that the instrument continues to function. Should it fail, the test will be repeated several times each second, until it does pass. A pass condition is indicated by the “walking dot” in the center of the display. A failed test will remove the dot and show a diagnostic code in the lower left corner of the display. Because the test system uses a true magnetic impulse, it is possible for external signals or storms to interfere and cause momentary or continuous failures. During storm activity the instrument will sneak in a test between strikes, but continuous noise sources could cause the test to fail continually. Use the activity count in Dealer mode to identify continuous noise sources. Refer to the Troubleshooting section for a detailed description of the diagnostic codes.

## 2.9 Using Dealer Mode

The technician should further verify operation by placing the display in Dealer Mode. This is done as follows: Press and hold the left two buttons. Immediately press and hold the right two buttons. Hold all four until the “sunburst” sequence begins. Remove fingers. After a sequence of five “sunbursts”, the display will show two circles of test dots (8 dots on the inner circle, 6 dots on the outer circle). The dots are spaced at 45 degree angular intervals, and include the four cardinal points. The outer circle of dots must be located halfway between the inner and outer range rings. The inner circle of dots encompasses the “walking dot”, near the center of the display. Using the “range in” and “range out” buttons to change ranges, ensure that these dot circles are repeated on each of the 50, 100, 200 mile ranges. The dots zoom off scale on the 25 mile range. With dot circles plotted on the display, and aircraft gyro compass operating, bearing correction can be checked by rotating the aircraft, or the compass. The dot circle must rotate in the opposite direction to that of the plane, and by an equal amount. While in Dealer Mode, ensure that no continuous activity is being registered by the three digit activity number in the lower left corner. The Display may be returned to normal operation by pressing the two right buttons.



## 2.10 Ground and Flight Testing

While the aircraft is parked on the ramp, apply aircraft battery power to each of the aircraft accessories and electrical systems while observing the Strike Finder Display. Note any disturbances that result. Apply power to the avionics systems and observe any disturbances on the display, while operating the avionics to simulate a flight environment. Repeat the test with engines and other equipment running. Cycle the power on the Strike Finder by pulling the breaker and note any effects on aircraft equipment. This process should prove the Strike Finder installation to be free of objectionable interference. Repeat the tests in flight as practical to check actual conditions. The Strike Finder will perform on the ground but will work much better when airborne. Contact Insight to report any deficiencies, and for assistance, if needed.

In the absence of local (200nm) thunderstorm activity, a flight test would show nothing more than the walking dot test status indicator. In some aircraft, current surges in autopilot servos, or other high current devices, may put an occasional dot on the screen. Providing this activity is not continuous the Strike Finder's performance will be unaffected.

## 2.11 Troubleshooting

### 1) Display doesn't light.

Turn on aircraft master and/or avionics master.

Verify power and ground connections and polarity

Check circuit breaker.

Note: The Display is reverse-polarity protected, and contains a self-resetting fuse. If the fuse trips from overload or reverse polarity, it will require several seconds to reset itself.

### 2) Display "Sunburst Test" shows blank lines or blank pixels.

The Display has a driver or connection fault and should be returned to Insight for repair. A missing line, or missing pixel, represents a soft failure.

### 3) Heading synchronization is backwards.

Reverse connections to pins 17, 18 (SYX, SYY) on the Strike Finder if the heading source is a synchro, to reverse slaving direction. Reverse connections on pins 4, 16 (SC, SA) on the Strike Finder, if the heading source is a KCS-55 stepper.

#### **4) Heading synchronization doesn't work.**

When connecting to the KCS-55 stepper, note that SA & SC signals come from the bottom plug on the HSI, and that GND comes from the top plug on the HSI. Stepper signals should switch between about 0 and 12 V when the compass card is in motion. In some aircraft the stepper low level may not be close enough to 0V (0.5V is the max). In others, it may go below 0V (0V is the minimum). In either case, synchronization malfunction may result. These faults are usually indicative of ground loops in the HSI installation. Some are easily fixed by assuring that the KG-102, KI-525 and Strike Finder are all grounded to the same point, and only the same point. Others may require an opto-isolation module available from Insight at no charge. Instruments beyond serial number 1500 will not require the module.

Some heading synchros, when powered by a simple square wave 'peanut inverter', deliver very distorted signals that may cause erratic slaving. Usually, in these cases, some simple filtering of the inverter is all that is required. A simple RC (resistor & capacitor) filter will likely do. Try a 1K ohm 1W resistor in series with the inverter, and a 0.68 $\mu$ F nonpolarized capacitor across the inverter load. If the resulting voltage drop across the resistor is too large, then reduce it, as required, and increase the capacitor if required. The filter values are not very critical.

#### **5) Strobes, rotating beacons interfere.**

Strobes and Cessna omniflash beacons may be silenced by installing a Cessna A263 filter in the power line to the strobe or beacon.

Strobe systems with central power sources are notorious noise sources. You may disconnect one strobe at a time, to isolate the offending circuit. Route strobe cables as far as possible from the Strike Finder Sensor. Assure that strobe cable shields, if grounded to the airframe at all, are connected only at the power supply end. Do not allow any airframe ground connections at the light. Connections of the shield to the airframe at both ends will allow strobe currents to travel in the skin causing various problems.

#### **6) Diagnostic display X0, X1 or X2**

X channel bandwidth, gain or phase error. Check the wiring of XA and XB signals.

Possible problem in Display or Sensor (exchange with known good component).

**7) Diagnostic display Y0, Y1 or Y2**

Y channel bandwidth, gain or phase error. Check wiring of YA and YB signals.

Possible problem in Display or Sensor (exchange with known good component).

**8) Diagnostic display P**

Pulse failure. Check wiring of PF and TG signals.

Possible problem in Display or Sensor (exchange with known good component).

**9) Diagnostic display Z**

Zero response from Sensor.

Check the wiring of +8V, -8V, Gnd, PF, TG, XA, XB, YA, YB.

Possible problem in Display or Sensor (exchange with known good component).

**10) Diagnostic display B**

Non-volatile memory failure. Return Display to Insight for repair.

**11) Diagnostic display S**

Separation failure in test hardware. Return Display to Insight for Repair.

**12) Weight & Balance Data**

WEIGHT: Display / Processor: 1.3 lb. (0.58 kg.)

Sensor: 0.77 lb. (0.35 kg.)

Cable: 18 ft - 1.90 lb (0.86 kg.)

**INSIGHT INSTRUMENT CORPORATION STRIKE FINDER MODEL SF 2000  
 RTCA DO-160B ENVIRONMENTAL QUALIFICATION FORM**

**NOMENCLATURE: SF 2000 DISPLAY  
 PART NUMBER: 2000-021 ( ) TSO NUMBER: C110a  
 MANUFACTURER: INSIGHT INSTRUMENT CORPORATION**

Conditions	Section/Paragraph	Description of conducted tests
TEMPERATURE AND ALTITUDE	4.0	EQUIPMENT TESTED TO CATEGORY F1 (-20°C TO +55°C TO 55,000 MSL)
LOW TEMP OPERATING	4.5.1	EQUIPMENT TESTED TO TABLE 4-1
LOW TEMP SURVIVAL	4.5.1	EQUIPMENT TESTED TO TABLE 4-1
HIGH SHORT-TIME OP	4.5.2	EQUIPMENT TESTED TO TABLE 4-1
HIGH TEMP SURVIVAL	4.5.2	EQUIPMENT TESTED TO TABLE 4-1
HIGH TEMP OPERATING	4.5.3	EQUIPMENT TESTED TO TABLE 4-1
IN-FLIGHT COOLING LOSS	4.5.4	NOT REQUIRED FOR EQUIPMENT
ALTITUDE	4.6.1	EQUIPMENT TESTED TO TABLE 4-1
DECOMPRESSION	4.6.2	NOT REQUIRED FOR EQUIPMENT
OVERPRESSURE	4.6.3	NOT REQUIRED FOR EQUIPMENT
TEMPERATURE VARIATION	5.0	EQUIPMENT TESTED TO CATEGORY C
HUMIDITY	6.0	EQUIPMENT TESTED TO CATEGORY A
OPERATIONAL SHOCK	7.0	EQUIPMENT TESTED IAW PARA. 7.2.1
CRASH SAFETY	7.0	EQUIPMENT TESTED IAW PARA. 7.3.1
VIBRATION	8.0	EQUIPMENT TESTED TO CATS. P/K/S
EXPLOSION	9.0	EQUIPMENT IDENTIFIED AS 'X'
WATERPROOFNESS	10.0	EQUIPMENT IDENTIFIED AS 'X'
FLUIDS SUSCEPTIBILITY	11.0	EQUIPMENT IDENTIFIED AS 'X'
SAND AND DUST	12.0	EQUIPMENT IDENTIFIED AS 'X'
FUNGUS	13.0	EQUIPMENT IDENTIFIED AS 'X'
SALT SPRAY	14.0	EQUIPMENT IDENTIFIED AS 'X'
MAGNETIC EFFECT	15.0	EQUIPMENT TESTED TO CATEGORY Z
POWER INPUT	16.0	EQUIPMENT TESTED TO CATEGORY B
VOLTAGE SPIKE CONDUCTED	17.0	EQUIPMENT TESTED TO CATEGORY A
AUDIO FREQ CONDUCTED	18.0	EQUIPMENT TESTED TO CATEGORY B
INDUCED SIGNAL SUSCEPT	19.0	EQUIPMENT TESTED TO CATEGORY A
RADIO FREQ. SUSCEPT	20.0	EQUIPMENT TESTED TO CATEGORY A
RADIO FREQ. EMISSION	21.0	EQUIPMENT TESTED TO CATEGORY A

**REMARKS:**

1. TESTS DESCRIBED IN SECTIONS 4 (EXCEPT 4.6.1), 5 AND 6 WERE CONDUCTED BY ASSOCIATED TESTING LABORATORIES, WAYNE, NEW JERSEY. TEST REPORT NO. T-28247-001 IS ON FILE AT INSIGHT INSTRUMENT CORPORATION.

2. TESTS DESCRIBED IN SECTIONS 6.1, 7, 8, 15, 16, 17, 18, 19, 20 AND 21 WERE CONDUCTED BY INSIGHT INSTRUMENT CORPORATION WHERE REPORT NUMBERS 2004-021, 2007-021, 2008-021, 2015-021.

**INSIGHT INSTRUMENT CORPORATION STRIKE FINDER MODEL SF 2000  
 RTCA DO-160B  
 ENVIRONMENTAL QUALIFICATION FORM**

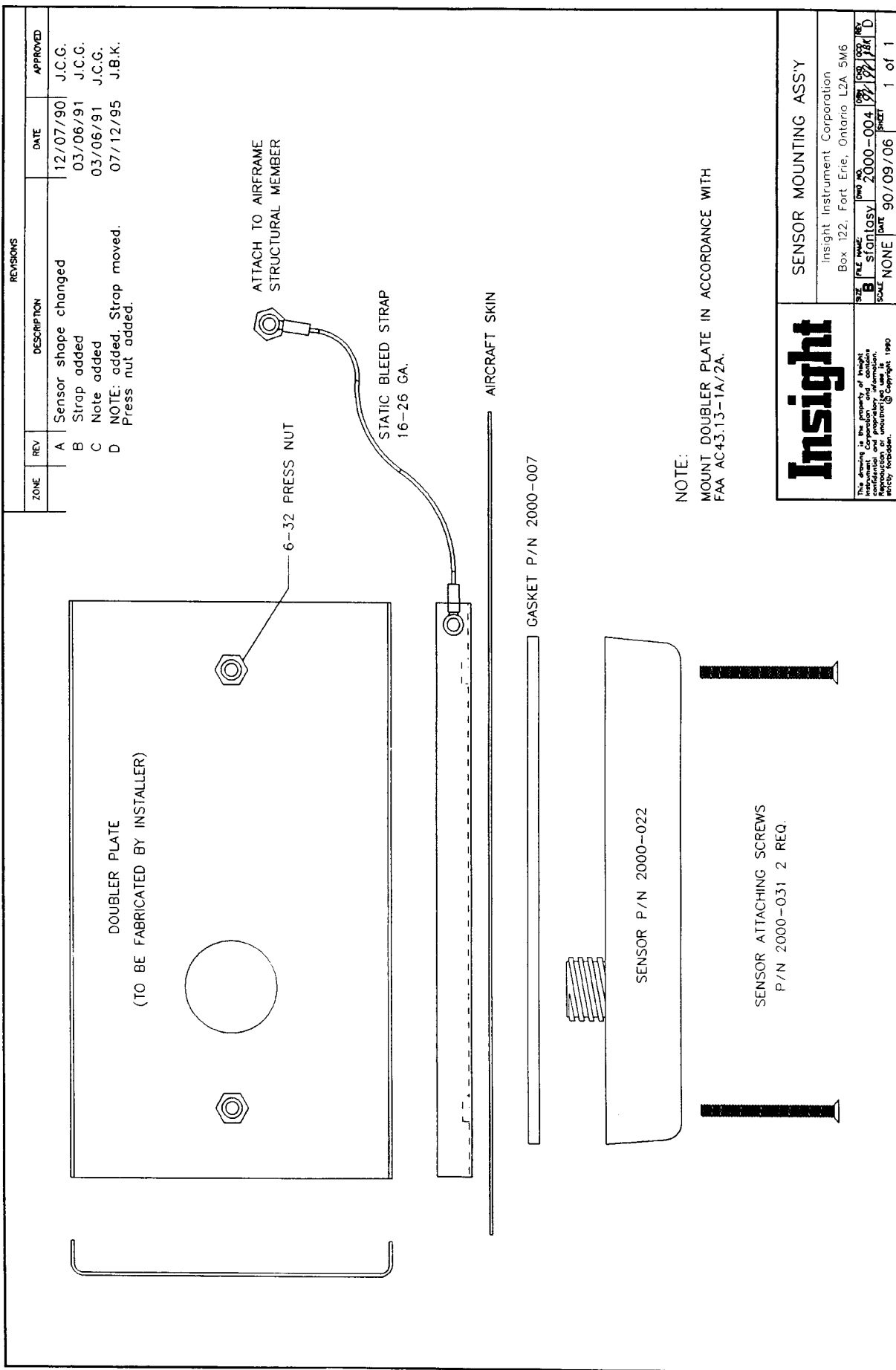
**NOMENCLATURE: SF 2000 SENSOR  
 PART NUMBER: 2000-022 ( ) TSO NUMBER: C110a  
 MANUFACTURER: INSIGHT INSTRUMENT CORPORATION**

Conditions	Section/Paragraph	Description of conducted tests
TEMPERATURE AND ALTITUDE	4.0	EQUIPMENT TESTED TO CATEGORY F2 (-55°C TO +70°C TO 55,000 MSL)
LOW TEMP OPERATING	4.5.1	EQUIPMENT TESTED TO TABLE 4-1
LOW TEMP SURVIVAL	4.5.1	EQUIPMENT TESTED TO F1
HIGH SHORT-TIME OPERATING	4.5.2	EQUIPMENT TESTED TO TABLE 4-1
HIGH TEMPERATURE SURVIVAL	4.5.2	EQUIPMENT TESTED TO TABLE 4-1
HIGH TEMPERATURE OPERATING	4.5.3	EQUIPMENT TESTED TO TABLE 4-1
IN-FLIGHT LOSS OF COOLING	4.5.4	NOT REQUIRED FOR EQUIPMENT
ALTITUDE	4.6.1	EQUIPMENT TESTED TO TABLE 4-1
DECOMPRESSION	4.6.2	NOT REQUIRED FOR EQUIPMENT
OVERPRESSURE	4.6.3	NOT REQUIRED FOR EQUIPMENT
TEMPERATURE VARIATION	5.0	EQUIPMENT TESTED TO CATEGORY A
HUMIDITY	6.0	EQUIPMENT TESTED TO CATEGORY C
OPERATIONAL SHOCK	7.0	EQUIPMENT TESTED IAW PARA. 7.2.1
CRASH SAFETY	7.0	EQUIPMENT TESTED IAW PARA. 7.3.1
VIBRATION	8.0	EQUIPMENT TESTED TO Y 3/4/J/L/M
EXPLOSION	9.0	EQUIPMENT IDENTIFIED AS 'X'
WATERPROOFNESS	10.0	EQUIPMENT TESTED TO CATEGORY S
FLUIDS SUSCEPTIBILITY	11.0	EQUIPMENT TESTED TO CATEGORY F
SAND AND DUST	12.0	EQUIPMENT TESTED TO CATEGORY D
FUNGUS	13.0	EQUIPMENT IDENTIFIED AS 'X'
SALT SPRAY	14.0	EQUIPMENT TESTED TO CATEGORY S
MAGNETIC EFFECT	15.0	EQUIPMENT TESTED TO CATEGORY Z
POWER INPUT	16.0	EQUIPMENT TESTED TO CATEGORY B
VOLTAGE SPIKE CONDUCTED	17.0	EQUIPMENT TESTED TO CATEGORY A
AUDIO FREQ CONDUCTED	18.0	EQUIPMENT TESTED TO CATEGORY B
INDUCED SIGNAL SUSCEPT	19.0	EQUIPMENT TESTED TO CATEGORY A
RADIO FREQ. SUSCEPT	20.0	EQUIPMENT TESTED TO CATEGORY A
RADIO FREQ. EMISSION	21.0	EQUIPMENT TESTED TO CATEGORY A

**REMARKS:**

1. TESTS DESCRIBED IN SECTIONS 4 (EXCEPT 4.6.1), 5, 6, 10, 11, 12, AND 14 WERE CONDUCTED BY ASSOCIATED TESTING LABORATORIES, WAYNE, NEW JERSEY. TEST REPORT NO. T-28247-002 IS ON FILE AT INSIGHT INSTRUMENT CORPORATION.

2. TESTS DESCRIBED IN SECTIONS 4.6.1, 7, 8, 15, 16, 17, 18, 19, 20 AND 21 WERE CONDUCTED BY INSIGHT INSTRUMENT CORPORATION WHERE REPORT NUMBERS 2004-022, 2007-022, 2008-022, 2015-022, 2016-022, 2017-022, 2018-022, 2019-022, 2020-022, AND 2021-022 ARE ON FILE.

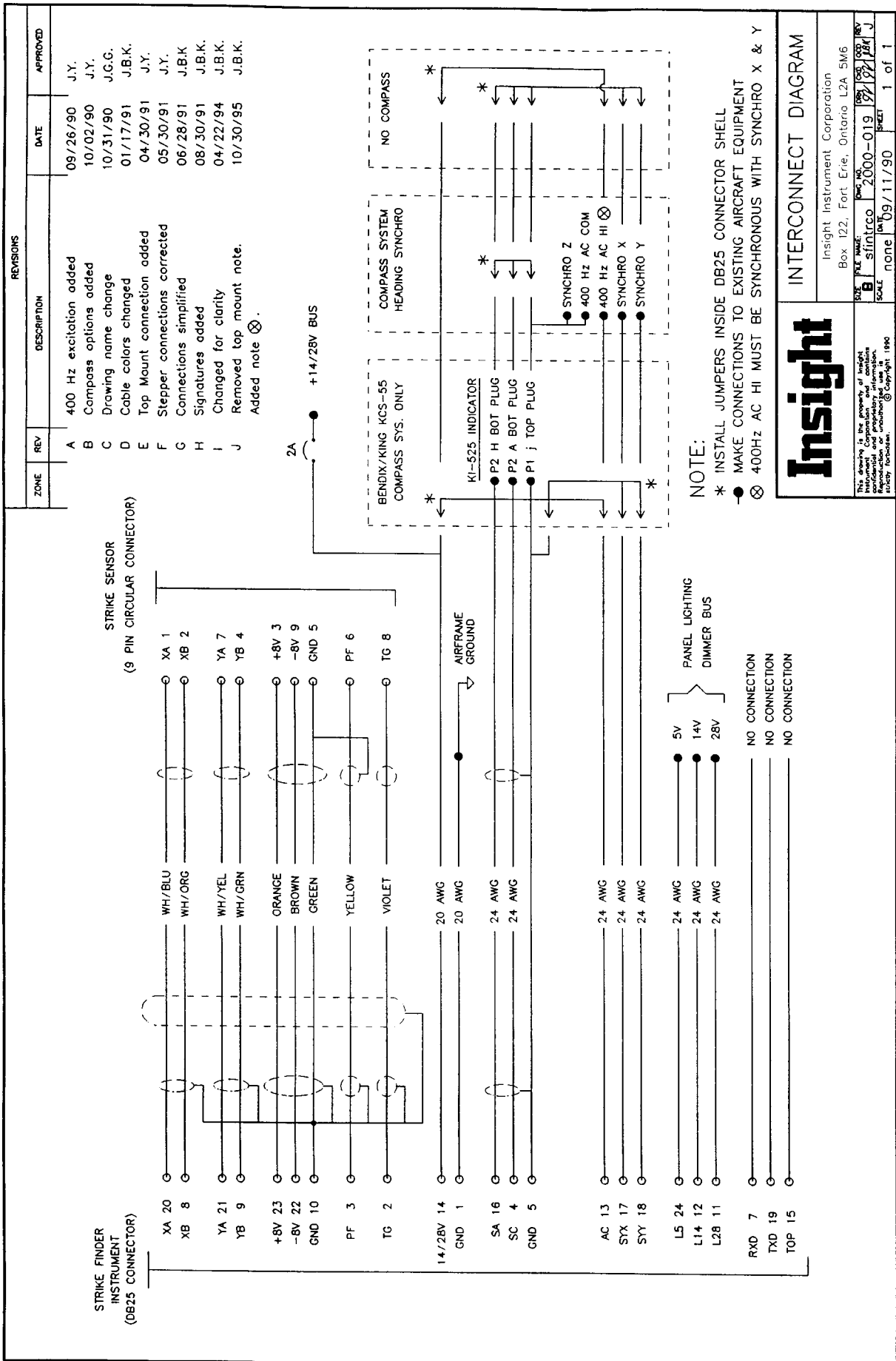


NOTE:  
 MOUNT DOUBLER PLATE IN ACCORDANCE WITH  
 FAA AC43.13-1A/2A.

**Insight**

SENSOR MOUNTING ASS'Y	
Insight Instrument Corporation Box 122, Fort Erie, Ontario L2A 5M6	
SIZE	INS NO.
B	2000-004
FILE NAME	DATE
stangisy	97/09/18
SCALE	SHEET
NONE	90/09/06 1 of 1

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**Insight**

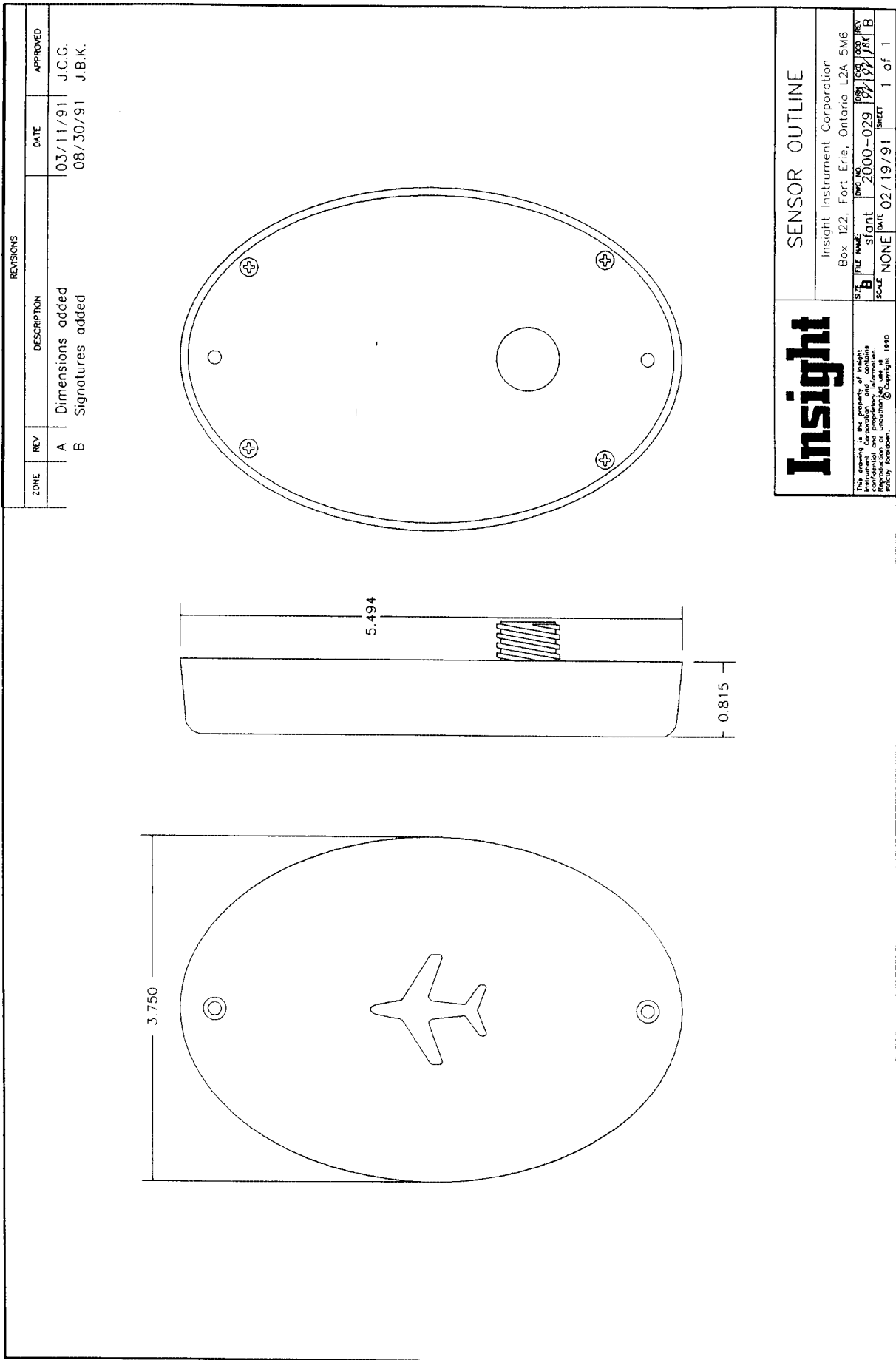
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Insight Instrument Corporation  
 Box 122, Fort Erie, Ontario L2A 5M6

FILE NAME: 2000-019  
 DRAWING NO: 09/11/90  
 SCALE: none

INTERCONNECT DIAGRAM

1 of 1



**Insight**

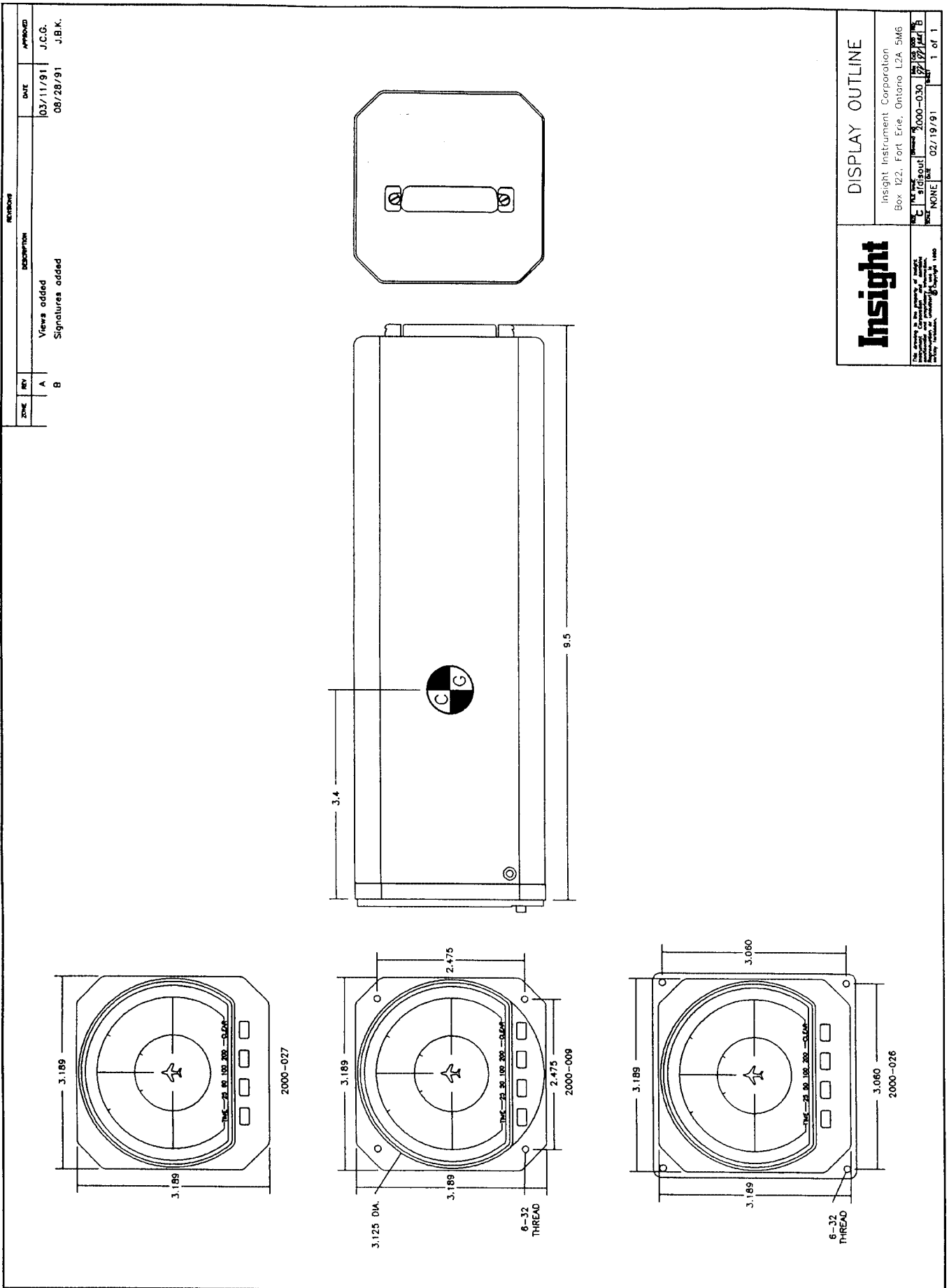
**SENSOR OUTLINE**

Insight Instrument Corporation  
 Box 122, Fort Erie, Ontario L2A 5M6

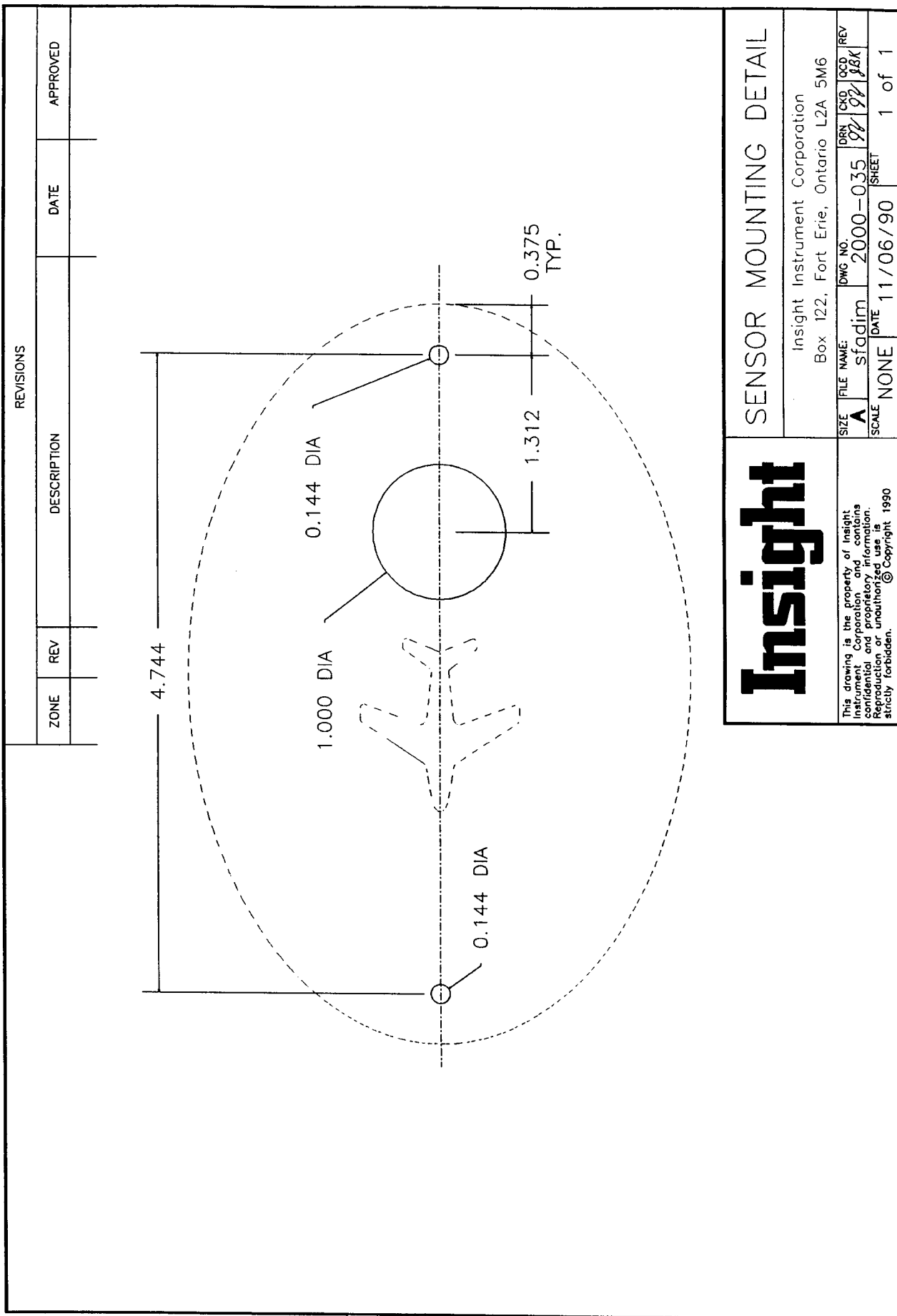
ST	B	FILE NAME	DWG NO	REV	DATE	SHEET
		sfant	2000-029	02	02/19/91	1 of 1
SCALE		NONE		DATE		SHEET

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<b>Insight</b>	DISPLAY OUTLINE
Insight Instrument Corporation Box 122, Fort Erie, Ontario L2A 5M6	
C sigout 2000-030 02/19/91	NONE 02/19/91
1 of 1	



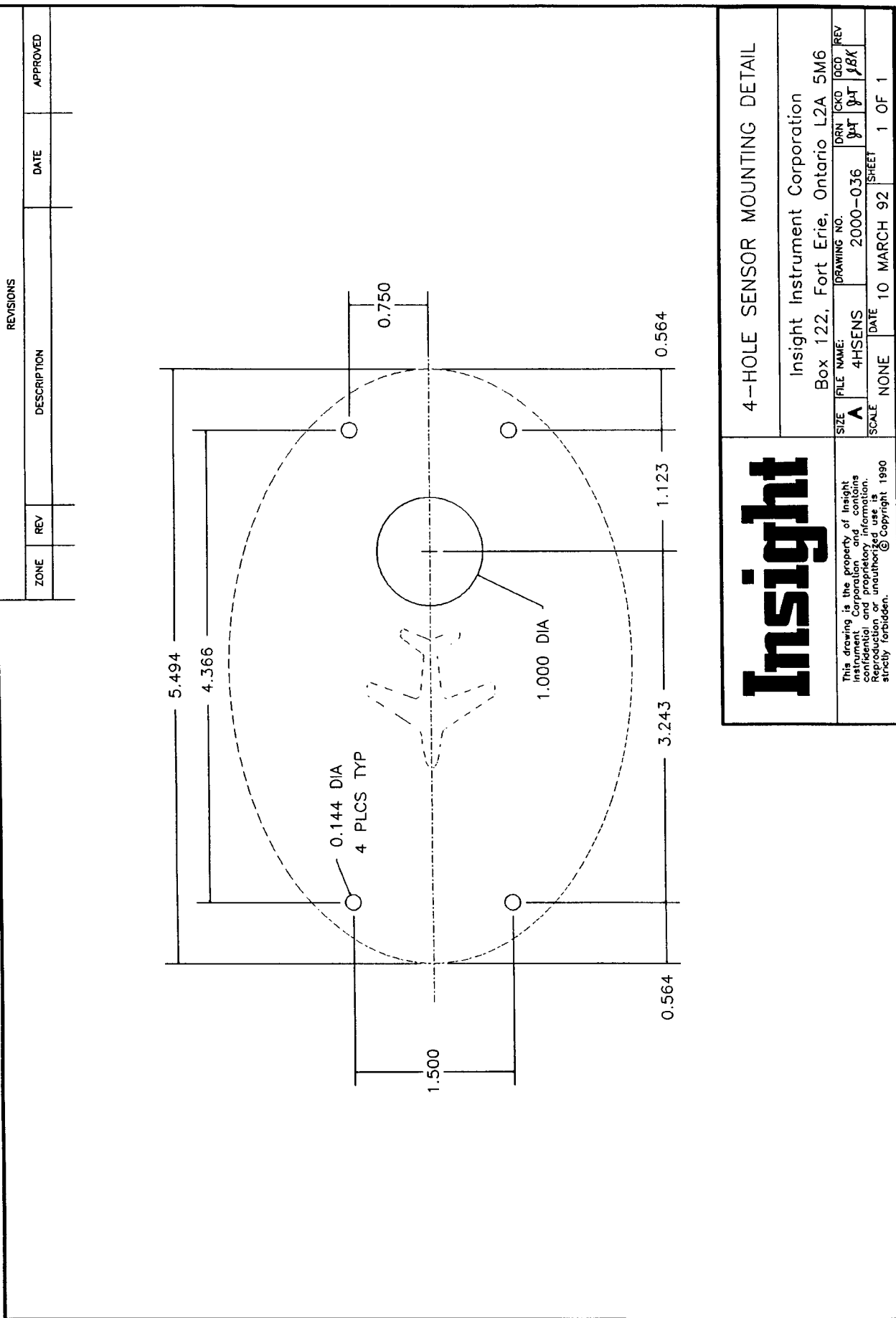
## Insight

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### SENSOR MOUNTING DETAIL

Insight Instrument Corporation  
 Box 122, Fort Erie, Ontario L2A 5M6

SIZE	FILE NAME:	DWG NO.	DRN	CKD	QCD	REV
A	sfadim	2000-035	92	92	92	92
SCALE	NONE	DATE	11/06/90		SHEET	1 of 1



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## 4-HOLE SENSOR MOUNTING DETAIL

Insight Instrument Corporation

Box 122, Fort Erie, Ontario L2A 5M6

SIZE	FILE NAME:	DRAWING NO.	DRN	CKD	REV
A	4HSENS	2000-036	YAT	YAT	YBK
SCALE	NONE	DATE	10 MARCH 92	SHEET	1 OF 1

REVISIONS			
ZONE	REV	DESCRIPTION	DATE

0.140 DIA  
TYP. 2/4

3.140 DIA

2.475

3.060

3.060

0.090 R  
TYP. 8

0.140 DIA  
TYP. 4

3.210

3.920

**NOTES:**

- 1) All dimensions in inches.
- 2) Tolerances +/- 0.005 U.O.S.

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**DISPLAY MOUNTING DETAIL**

Insight Instrument Corporation  
 Box 122, Fort Erie, Ontario L2A 5M6

SIZE	FILE NAME	DWG NO	DRN	CKD	QCD	REV
A	sfoledm	2000-040	98	98	98	98
SCALE	NONE	DATE	02/06/91	SHEET	1 of 1	