If You Read Nothing Else Read This!

Follow these recommendations for a trouble free GEM Installation:

- **BE SURE** that the instrument mounting screws do not penetrate the instrument face by more than .125 inches or you will break the display. Panels come in different thickness, so the supplied screws may have to be shortened. Measure the length of screw which protrudes from the back side of the panel to be certain.

- Keep the **GEM** harness at least 1 inch away from the ignition harness, P-leads, and alternator wiring. (Some aircraft produce electrical noise which will give erratic indications on the **GEM**.)

- **BE SURE** that the instrument ground wire has a good low-resistance connection to the engine block. Improper grounding may cause erratic readings or do damage to the instrument.

- **TAKE CARE** when crimping the terminals on the end to the **GEM** harness. Test each crimp by tugging on it sharply. It is almost impossible to pull off a properly crimped terminal.

INSTALLING THE GRAPHIC ENGINE MONITOR

VERSION 2.2 Dwg. 8258 04/15/94

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Insight

Table of Contents

Installing the Gem

Unpacking the Graphic Engine Monitor

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

Installing the Instrument

The Graphic Engine Monitor mounts in a standard 2.25 inch instrument hole. The instrument configures itself automatically for 4 or 6 cylinder aircraft.

TO PREVENT INTERNAL DAMAGE, IT IS ABSOLUTELY ESSENTIAL THAT THE FOUR MOUNTING SCREWS NOT PENETRATE THE INSTRUMENT MORE THAN .125 INCHES.

Two lengths of mounting screws are provided with the instrument. The 1/4" screws will accommodate panel thicknesses of .100 – .125 inches and the 3/16" screws are for panels of .050 – .060 inch thickness. Cut or file the screws as necessary to fit other panel thickness. Failure to use the correct screw length will damage the instrument. Damage of this nature is not covered under the warranty. If an instrument hole is unavailable, find a location in clear view of the pilot that provides for the necessary clearance behind the panel for the instrument and wiring (*see Figures 5 and 11.4*). Using the information in *Figure 11.3* layout all the holes before drilling or punching the 2.25 inch diameter bezel hole. The switch button must not bind or touch the sides of the hole (No. 27) in the panel. Countersink the mounting holes with a 100 degree countersink.

Verify that the 6-32 flat head mounting screw will penetrate the Instrument bezel no more than .125 inches before installing.

Installing the Exhaust Gas Probes

The exhaust gas probe is designed to press fit into a hole in each exhaust stack and be secured with an integral stainless steel clamp. It is important that each probe is mounted a uniform distance from the exhaust stack flange. For normally aspirated engines a nominal distance of 2 to 3 inches from the flange is recommended. For turbocharge engines a nominal distance of 4 to 5 inches is recommended (*see Figure 14.2*). If the recommended distance is impractical because of obstructions, slip joints or bends in the exhaust system, position all the probes a uniform distance from the flange as space permits. If the EGT probe must be located closer to the flange than recommended, compensating for the resultant higher temperatures will be accomplished when the instrument is calibrated. If the probe must be positioned in a slip joint, the inner tube must have a clearance hole of at least 1/4" diameter to prevent it from shearing the probe. Be certain to locate all holes to allow straight-in insertion of the probe without bending or stressing the probe tip. Before drilling ensure that nothing interferes with the probe, clamp, clamp screw, or wire. Careful matching to probe position will provide best temperature readings.

Center punch and pilot drill each hole in the exhaust stack with a No. 31 drill then carefully ream the hole with a .125 inch drill. Take great care to drill perpendicular to the stack to prevent an elongated hole. A right angle drill extension may be necessary in some locations. The probe will press fit into a carefully drilled hole and make a tight seal. Tighten the clamp screw to a torque of 45 in/lbs.

Installing the Turbine Inlet Probe

There are two types of Turbine Inlet Temperature probes which can be used with The **GEM-603** instrument. The clamp-type 2871 is identical to the EGT probe except that the clamp diameter is larger. Locate and drill the probe hole as described in *Installing the Exhaust Gas Probes* and *see Figure 14.5* for the recommended location.

For aircraft with a threaded fitting welded on the turbine inlet, a screw-in type probe 2872 is used. This threaded fitting can be installed on any aircraft when a more permanent installation is desired, or when space for the clamp-type probe is limited. The Probe Mount 2872-4 fits in a 1/2 inch hole and should be welded by an approved exhaust repair facility. *See Figure 4.5* for the recommended location.

Installing the Cylinder Head Probes

There are three types of cylinder head temperature probes: Spring Probes (SP), Adapter Probes (AD), and Spark Plug Gasket Probes (G). The Spring Probes are equivalent to the old style Bayonet Probe and screw into threaded temperature wells in the cylinder head next to the lower spark plug. The Bayonet Adapter Probes screw directly into the temperature well and replace the standard bayonet adapter to allow simultaneous utilization to the factory installed Bayonet Probe. The Spark Plug Gasket Probe replaces the copper 18 mm diameter spark plug gasket.

Spring Probes

The probe bushing has a screwdriver slot to facilitate tightening in place and a drop of non-seizing lubricant on the threads before installation will help.

Most factory installed cylinder head temperature gauges utilize a threaded resistive type probe that occupies one of the temperature wells. This probe is not compatible with the thermocouple probes required for the Graphic Engine Monitor. A Gasket Probe must be use with the **GEM** on this cylinder to allow the factory CHT gauge to remain functional. If the factory CHT instrument has a Bayonet Probe, the Insight Adapter Probe should be used instead of the Gasket Probe.

When installing spring probes be sure you have correctly identified the temperature well. Some aircraft have fuel primer ports with the same thread.

Adapter Probes

The Adapter Probe replaces the original bayonet adapter. It has a screwdriver slot to facilitate tightening in place and placing a drop to non-seizing lubricant on the threads before installation will help. Once the Adapter Probe has been installed the original Bayonet Probe may be locked in place with a push and a twist

When the engine has the factory installed CHT gauge connected to a bayonet probe, the Adapter Probe replaces the existing adapter and is connected to the **GEM**. Therefore both instruments derive their CHT readings From the same temperature well. For this reason, use of the adapter probe is recommended over use of a Gasket Probe.

Spark Plug Gasket Probes

The Spark Plug Gasket Probe replaces the standard copper spark plug gasket on one spark plug in the cylinder. The plug chosen should be the one that provides the best correlation with the other temperature probes. For normally aspirated Lycoming engines use the upper plug. For normally

aspirated Continental engines use the lower plug. For turbocharged Lycoming and Continental engines use the upper plug. Allow enough wire length to move the probe to the other plug if necessary. The plug gasket should be removed and replaced by the gasket probe. This probe may be annealed for re-use just like a regular gasket providing a temperature to 1100 degrees Fahrenheit is not exceeded.

Wiring

The **Graphic Engine Monitor** is supplied with a factory assembled wiring harness configured for the correct number of cylinders. The harness connector contains a polarization pin that mates with a slot in the instrument printed circuit board. This prevents improper insertion of the connector. The instrument circuit board is supported during shipment by a small anti-static shipping restraint. Leave this restraint in place until the instrument is ready to be connected to the harness edge connector.

Unlike most other EGT & CHT Installations the probe wire length is not critical and should be trimmed to any length as required to fit each probe.

The Graphic Engine Monitor automatically accommodates both 14 and 28 volt electrical systems. Connect the power lead (red) to a separate 1 amp circuit breaker (or inline fuse) connected to the avionics power buss. The avionics master switch will then be used to turn off the instrument during engine startup. If the panel lacks an avionics master switch we recommend that one be installed or a separate switch provided to turn off the **GEM** during engine startup. No connection to the aircraft dimmer system is required because the instrument dims automatically with reductions in ambient light. *Refer to Figure 15.1* for wiring details.

Connect The ground wire (black, single conductor) directly to the engine block using a securely crimped ring terminal and a clean mounting point on the engine.

Many aircraft have terminal strips under the instrument panel that will appear to be connected to ground and will even measure to ground with an Ohmmeter. They may instead be connected to ground terminated loads such as landing lights or gear motors. When these loads are activated the voltage on this supposed ground will rise to full buss voltage (14 or 28V). Extensive instrument damage may result from improper grounding and is not covered under warranty.

EGT Probe Wiring

The temperature probes must be wired with the correct polarity. The EGT probes connect to the harness wires with the yellow jacket. The probe leads and harness wires are color coded (red and yellow) to facilitate correct polarity. Each wire is marked with the cylinder number. Slide the wire marker down the wire so it stays with the installation for trouble-shooting. Strip the wires according to *Figure 14.4* and terminate with the crimp-on ring terminals provided. Verify the quality of each crimp with a sharp pull on the wire. The terminal should be almost impossible to pull off when crimped correctly. Harness and probe wire colors should match *Figure 14.1* . Insulate and bundle as discussed below.

The ring terminals may be crimped with a "service type" tool however AMP part number #47386 is recommended. Be sure to test each crimp by pulling on the wire to ensure it won't come out. The most common installation problems are the result of poor quality terminations.

CHT Probe Wiring

The temperature probes must be wired with the correct polarity. The CHT probes connect to the harness wires with the black jacket. The probe leads and harness wires are color coded (red and white) to facilitate correct polarity. Each wire is marked with the cylinder number. Slide the wire marker down

the wire so it stays with the installation for trouble-shooting. Strip the wires according to *Figure 14.4* and terminate with the crimp-on ring terminals provided. Verify the quality of each crimp with a sharp pull on the wire. The terminal should be almost impossible to pull off when crimped correctly. Harness and probe wire colors should match (*See Figure 14.1*). Insulate and bundle as discussed below.

Routing the Wiring Harness

It is essential to match the cylinder numbers on all the probes to display the proper information to the pilot. The probe/harness connections should be insulated with the high temperature fiberglass sleeves provided and routed away from high temperature areas. (exhaust stacks, turbochargers etc.).

The probe wires must not be tied in with ignition, alternator or twin engine cabin heater ignition wires because of potential interference with temperature readings.

All wire should be bundled and tied with nylon wire ties or lacing cord and anchored to the airframe to prevent damage from vibration and wind buffeting. The probe wiring harness is made of special alloy stranded wire that must not be substituted or extended with normal copper wire. The power and ground wires are normal copper and no special restrictions apply.

When the installation is complete all wires should be secured using wire ties and carefully checked for interference, rubbing or chafing with flight control cables or other moving parts.

Checking the Installation

Verify the power and ground connections before applying power. Pin 15 is Gnd and pin S is +14V or +28V (*See Figure 15.1*). When power is first applied the instrument display should light the column numbers and appropriate EGT & CHT annunciators at low brightness and then the brightness will increase if necessary to match the ambient light level. The automatic dimming may be tested in bright ambient light by covering the entire face of the instrument with the palm to your hand for several seconds. The instrument will dim and then brighten when the hand is removed. It changes brightness in discrete steps slowly to prevent annoying flicker in response to rapid light level changes. Turn off power to the instrument and initiate test mode. *See Test Mode.*

Once the installation is complete check for possible interference with existing avionics by listening for audio interference on Com, Nav, DME, ADF etc. Interference is extremely unlikely. Reroute wiring away from affected instrument to eliminate interference or call **Insight** for assistance.

Bench Testing the Graphic Engine Monitor

It is impractical to bench test the instrument with the wiring harness provided. The unterminated probe wires will pick up stray signals that will prevent the instrument from initializing properly. The display will give erroneous indications if any.

Test Mode

The **Graphic Engine Monitor** has a diagnostic test pattern for use by the installer or pilot to check the instrument. To activate the test, hold the reset button while turning on electrical power to the instrument. Release the button after the instrument lights. Starting with column 1, each column will rise slowly to the top and then blank in succession. The test will terminate with column 6. The **GEM 603** TIT display will indicate 000. The random illumination of columns that may occur after the test pattern has completed has no significance. Turn off the **GEM** before engine start.

Flight Testing and Calibration

It is essential that the installation be flight tested and calibrated. The **Graphic Engine Monitor** is precalibrated for average aircraft and may require slight adjustment. The goal of calibration is to center the average peak EGT indication around the asterisk when the aircraft is operated at typical altitudes and power settings. It is also important that 12 or more bars indicate when the engine is leaned at the low end off the desired operational power range.

The instrument will thus indicate 1-3 EGT bars during idle, 4-8 bars during take-off and 12-16 bars when leaned for cruise.

Calibrating the GEM-602

For normally aspirated (non turbocharged) engines the average peak indication should be: centered about 1 bar higher than the asterisk at 3000 ft. altitude, centered at the asterisk at 6000 ft., and would be a bar or two below the asterisk at 12000 ft. The instrument may be calibrated with a jeweler's screwdriver through a small adjustment hole below the bezel ring on the front face of the instrument. The adjustment hole is intentionally hidden by the instrument panel and is accessed by removing the mounting screws and tilting the instrument. An access hole may be drilled to allow calibration from the panel if desired. Each clockwise turn of the calibration adjustment will increase the reading at cruise power setting about two bars. At idle power settings each clockwise turn will increase the reading about one bar.

Calibrating the GEM-603

Turbocharged engines have little or no altitude sensitivity over most of their operational range so the highest EGT indication should be centered at the asterisk at normal power settings. The **GEM-603** is calibrated similarly to the **GEM-602**, but has a different adjustment mechanism. It has a larger calibration hole above and left of the bezel ring. A one tenth inch blade common screwdriver is required for adjustment. The adjustment is actually a continuous rotation ten position rotary switch. Each clockwise click of the calibration adjustment will increase the reading one bar at cruise power settings. This adjustment affects the height of the EGT bars only. The turbine inlet digital display is unaffected and is permanently calibrated at the factory for best accuracy. Once the **GEM-603** is set up for a given aircraft no further adjustment is ever required. The adjustment hole is intentionally hidden by the panel and is accessed by removing the mounting screws and tilting the instrument. An access hole may be drilled to allow calibration from the panel if desired.

The pilot should consult the **GEM Pilot's Guide** for details on the use of the instrument.

Instrument Trouble-shooting Guide

The following is a summary of common symptoms and solutions to aid trouble-shooting. Should you have any questions or problems during installation or troubleshooting, don't hesitate to contact **Insight.**

Instrument doesn't light

- Turn on master, Avionics master.
- Verify power connections and polarity.
- Check circuit breaker or fuse.
- Check instrument harness connector, the mounting screws must be tight.

One or more columns or segments won't light

- Try test mode to check the display. If all columns and the number at the base of each column don't light the display has been damaged or is inoperative.
- Check the probe connections, the instrument will blank columns with poor EGT & CHT connections.
- Columns 5 & 6 shouldn't light on a 4 cylinder engine.

No EGT in one or more columns

- Visually check probe connections and polarity.
- Check for probe continuity at the instrument connector. The resistance of the lead wire is approximately 1 ohm/ft. Take extreme care to not damage the connector terminals with the meter probe.
- Swap probes to isolate fault to probe.
- Swap connections with known good probe to isolate the fault to the harness, terminal crimp, or instrument.

If an EGT probe is completely inoperative the CHT reading will appear as a single bright bar where the dark bar would normally occur.

No CHT in one or more columns

- Visually check probe connections and polarity.
- Check for probe and harness continuity at the instrument connector. The resistance of the lead wire is approximately 1 ohm/ft. Take extreme care to not damage the connector terminals with the meter probe.
- Swap probes to isolate fault to probe.
- Swap connections with known good probe to isolate the fault to the harness terminal crimp or instrument.

Instrument displays test pattern continuously

- The instrument reset button is stuck in. Check the button hole in the instrument panel for clearance. The reset button should move freely about 1/16" before resistance is felt.

Instrument goes out during engine start

- The instrument should not be turned on during engine start. Avionics master or separate power switch should be installed.

Display is unstable

- Check operation on left & right mags, the temperature should rise slowly and may stabilize slightly or completely on one or the other mag. Single mag operation will pinpoint the problem to one ignition harness, unless both are faulty. Verity that the probe wires and **GEM** harness are isolated from the ignition harness. If necessary, repair or replace the faulty ignition harness to eliminate ignition related interference.
- Check ignition harness for proper shielding, ground, and loose spark plug caps. Check magnetos for proper grounding or evidence of arcing. Repair or replace ignition harness or ignition system components if necessary.
- Try operation with alternator off. Alternator related interference may indicate faulty commutator brushes and an impending alternator failure. Repair alternator as necessary. Re-route wires away from alternator wiring.
- Disconnect magneto P-leads one at a time. If this eliminates or reduces the problem, replace the P-lead.

A faulty Ignition harness will typically cause all EGT readings to "dance up and down". The **GEM** will detect this type of fault long before standard test methods, thus eliminating the potential of more serious problems.

Display is affected by radio transmissions

- Route probe and power wiring away from radios and antenna coax.
- Check radio rack connector for missing 50 ohm match. The 50 ohm match is a thick washer-like component part that is installed underneath the connector endcap. The endcap will have to be unsoldered to check for the match. This seemingly unimportant component is supplied with all connectors and is required for proper operation of the connector.
- Utilize shielded-twisted pair for power leads (*Contact **Insight** for details*).
- Utilize Push to Talk suppression kit (*Contact **Insight** for details*).

EGT Annunciator will not stay blinking

- Check for interference (*see Display is unstable*).
- Check for intermittent probe connections (*see No EGT and No CHT*).

No Columns blink during leaning

- The EGT calibration is too low (*See Flight Testing*).

EGT display is not uniform

- The EGT display for a fuel injected engine will typically vary a bar or two from perfectly uniform when leaned for cruise.
- Clean the fuel injection nozzles.
- Non-uniformity is normal in carbureted engines.
- All cylinders are measured by the same circuitry. It is almost impossible to not have identical calibration on all channels.
- A sudden or gradual reduction in the EGT reading (2 or more bars) can be symptomatic of several engine faults such as: exhaust leaks above the probe and poor compression due to bad rings, valves or valve guides. If a probe swap does not reveal a faulty probe, check for mechanical faults in the engine. Consult the **GEM Pilot's Guide** for more detailed engine diagnostic information.

All EGT readings too high

- Re-calibrate the instrument.
- Use DVM (digital voltmeter) to measure the difference between the instrument ground and engine block ground with engine running and battery charging. If the difference is greater than .2 Volt with the alternator charging remove the **GEM** ground and provide an extension directly to the engine block. If this fixes the problem, this confirms a ground fault between the engine and airframe which should be remedied.

Display goes full scale or blanks out erratically

- This can be symptomatic of an intermittent ground fault between engine and airframe. *See All EGT readings too high.*

Connector Signal Table

The following table identifies all connections to the **Graphic Engine Monitor** connector. For example Pin B is the positive polarity input for the EGT probe for cylinder number 1 (yellow wire) and Pin 2 is the corresponding negative input (red wire). Unfortunately thermocouple convention calls for red to be negative.

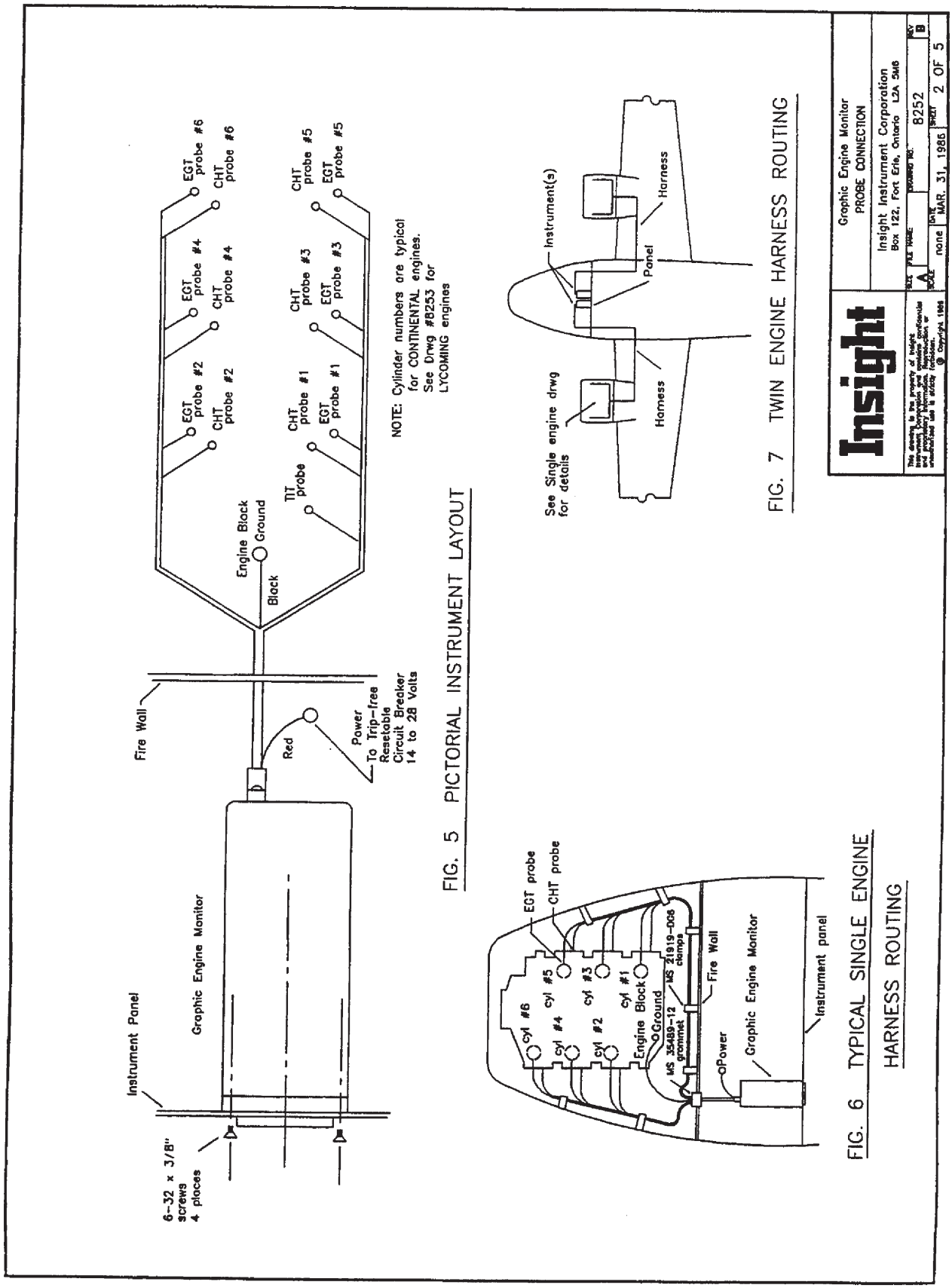
Pin No.	Signal (wire)	Pin No.	Signal (wire)
1	To (N.C.)	A	PTT (N.C.)
2	EGT 1 (red)	B	+EGT 1 (yellow)
3	EGT 2 (red)	C	+EGT 2 (yellow)
4	EGT 3 (red)	D	+EGT 3 (yellow)
5	EGT 4 (red)	E	+EGT 4 (yellow)
6	EGT 5 (red)	F	+EGT 5 (yellow)
7	EGT 6 (red)	H	+EGT 6 (yellow)
8	CHT 1 (red)	J	+CHT 1 (yellow)
9	CHT 2 (red)	K	+CHT 2 (white)
10	CHT 3 (red)	L	+CHT 3 (white)
11	CHT 4 (red)	M	+CHT 4 (white)
12	CHT 5 (red)	N	+CHT 5 (white)
13	CHT 6 (red)	P	+CHT 6 (white)
14	TIT (red)	R	+TIT (yellow)
15	GND (black)	S	+14V or +28V (red)

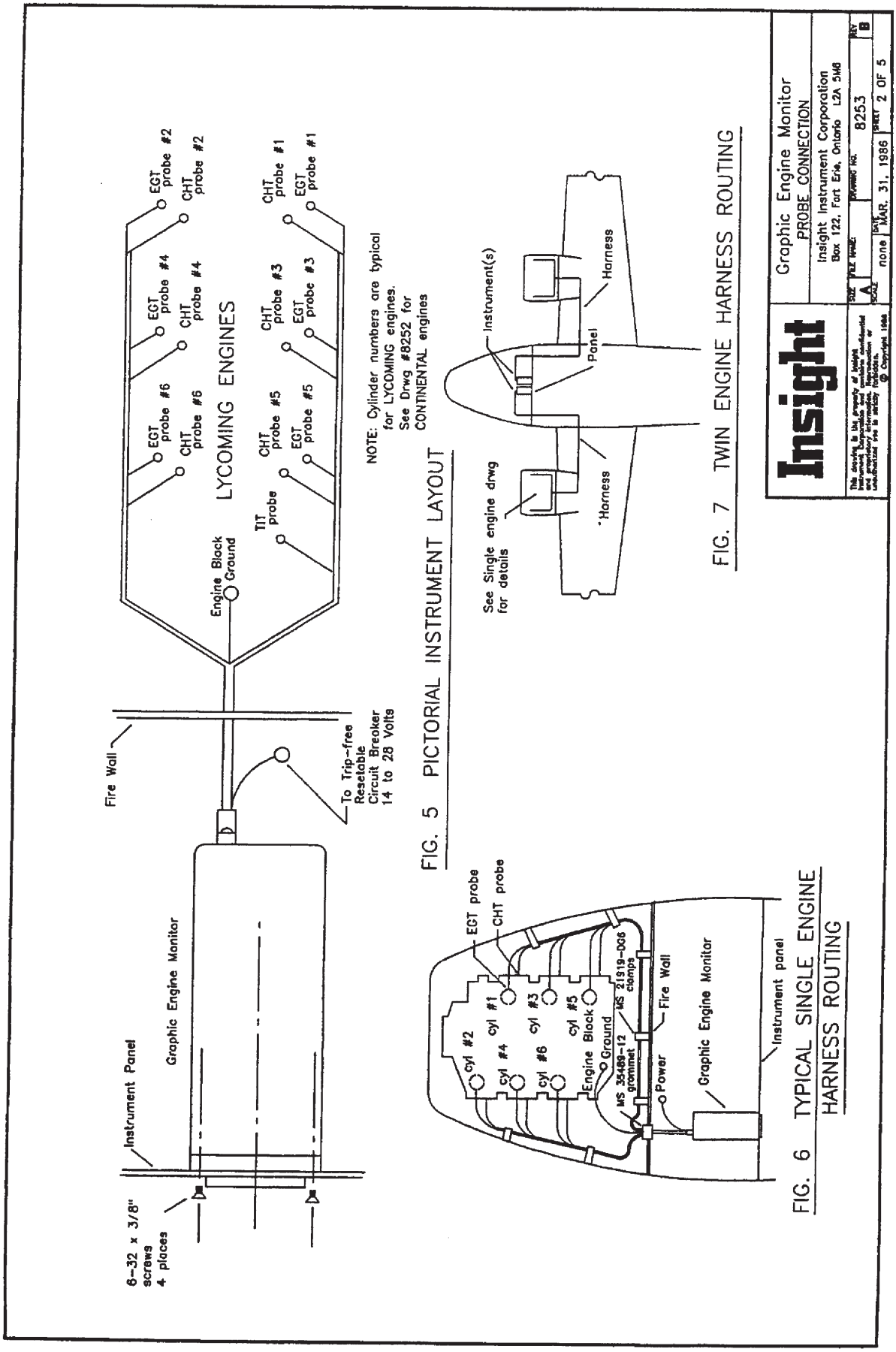
Weight & Balance Data

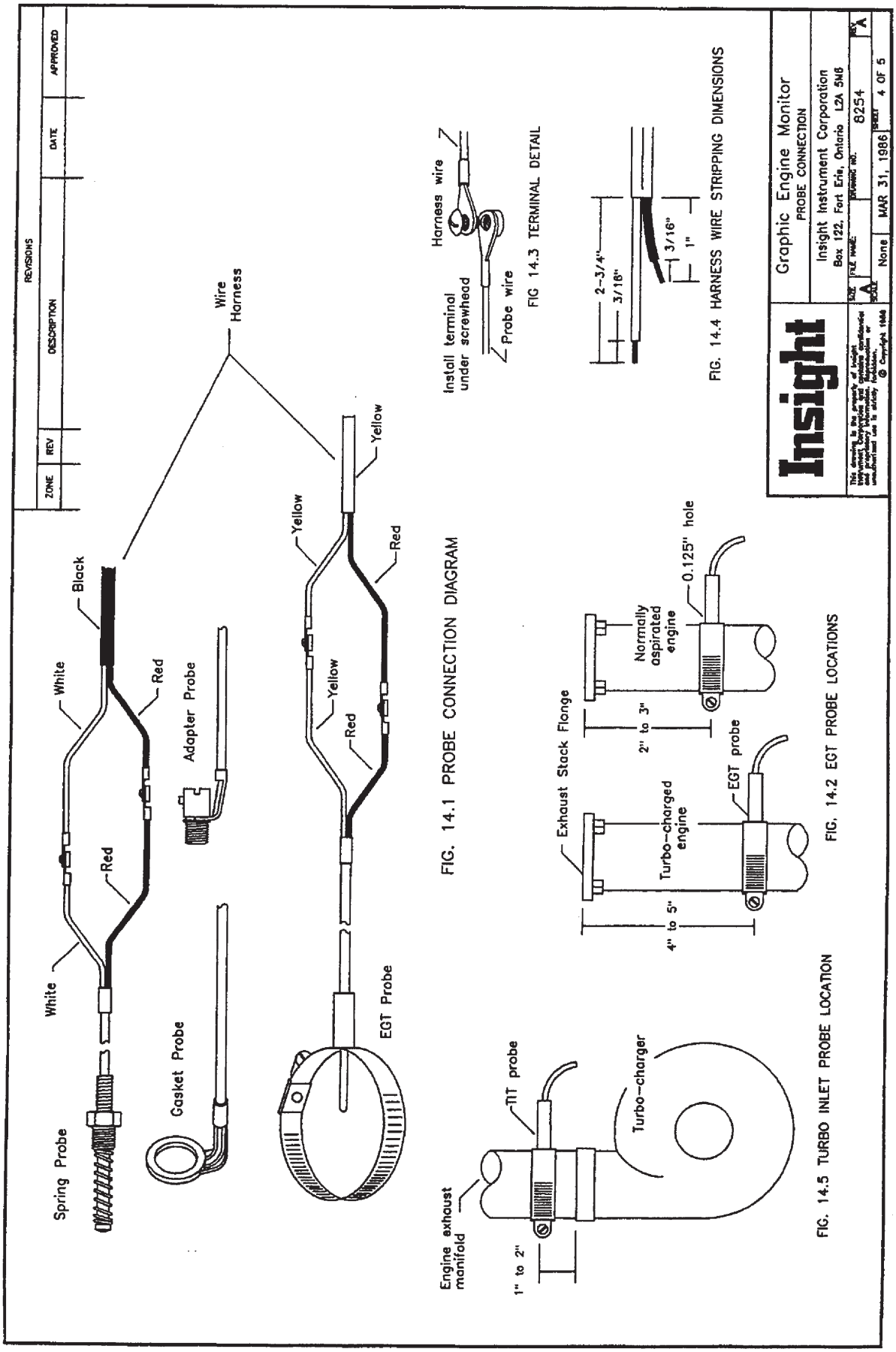
1	Instrument GEM-602 or 603	12 oz.
6	Clamp EGT probes	9 oz.
6	Spring CHT probes	6 oz.
6	Gasket CHT probes	4 oz.
1	Adapter probe	1 oz.
1	8 ft Wiring harness EGT & CHT	14 oz.
1	24 ft Wiring harness EGT & CHT	34 oz.

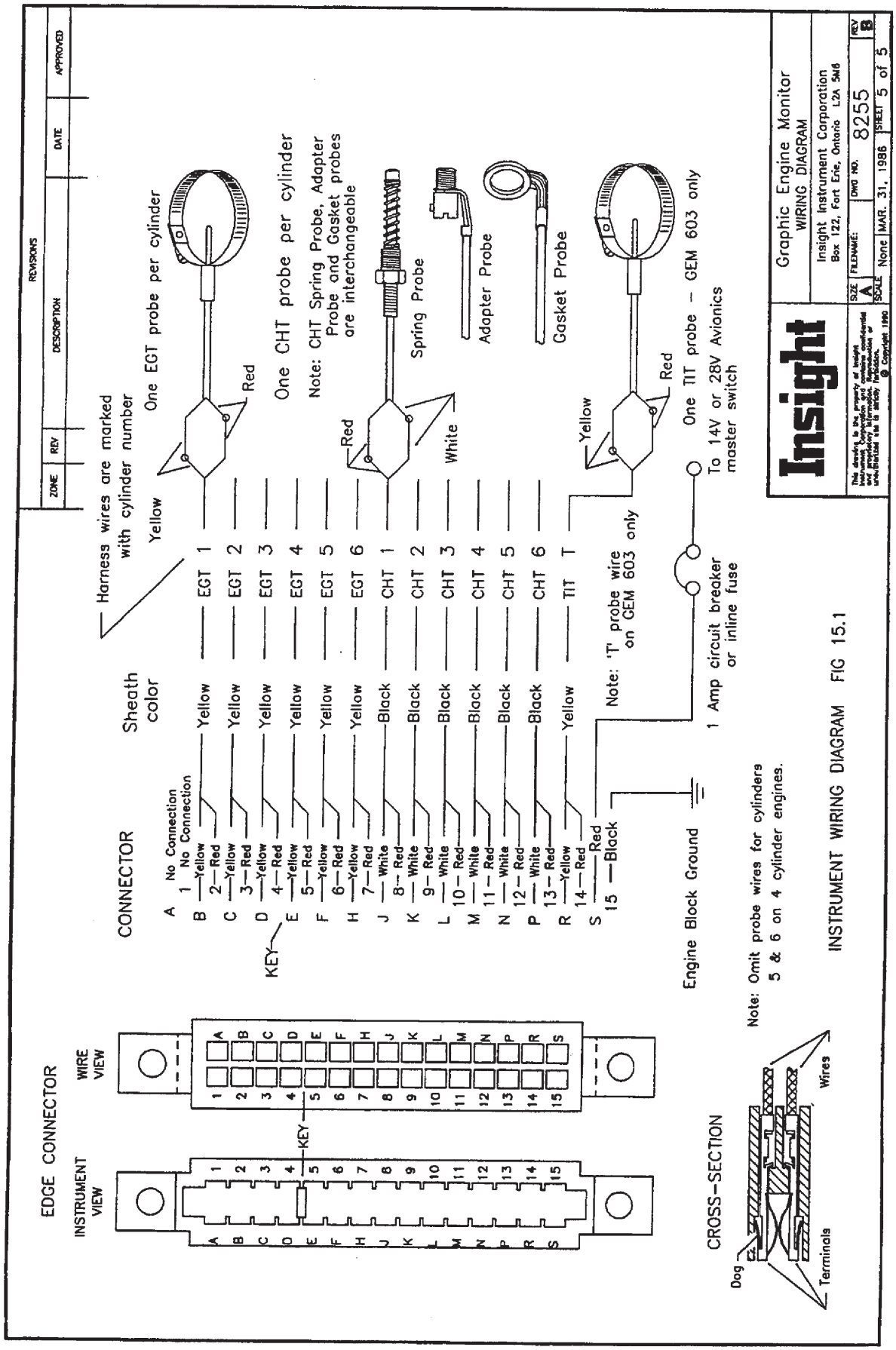
Bill of Materials

Part Description and No.		GEM Installation Kit No.													
		1241	1242	1243	1261	1262	1263	1264	1265	1266	1267	1341	1342	1361	1362
Engine Monitor	GEM602	1	2		1	2	1								
	GEM603			1				1	2	2	1	1	2	1	2
EGT Probe	2870	4	8	4	6	12	6	6	12	12	6	4	8	6	12
CHT Spring Probe	2852	3	6	3	5	10	5	5	10	10	5	3	6	5	10
CHT Gasket Probe	2853	1	2		1	2	1			2		1	2	1	2
CHT Adapter Probe	2855			1				1	2		1				
TIT Clamp Probe	2871			1								1	2	1	2
TIT Boss Probe	2872							1							
Sleeve/Terminal Pkg.	281060				1	2	1								
	28106T							1	2	2	1			1	2
	281040	1	2												
	28104T			1								1	2		
Installation Pkg.	8258	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Harness	320840	1													
	320860				1										
	321060						1								
	322440		2												
	322460					2									
	330840											1			
	330860													1	
	331060										1				
	331440			1											
	331460							1							
	332440												2		
	332460														2
	333060								2						
	333560									2					


EGT probe #6
CHT probe #6
EGT probe #4
CHT probe #4
EGT probe #2
CHT probe #2
CHT probe #5
EGT probe #5
CHT probe #3
EGT probe #3
CHT probe #1
EGT probe #1
TIT probe
Engine Block Ground
Black
Red
Fire Wall
Power To Trip-free Resetable Circuit Breaker 14 to 28 Volts
NOTE: Cylinder numbers are typical for CONTINENTAL engines. See Drwg #8253 for LYCOMING engines
Instrument Panel
Graphic Engine Monitor
6-32 x 3/8" screws 4 places
FIG. 5 PICTORIAL INSTRUMENT LAYOUT
Instrument(s)
Panel
Harness
Harness
See Single engine drwg for details
FIG. 7 TWIN ENGINE HARNESS ROUTING
EGT probe
CHT probe
cyl #6
cyl #5
cyl #4
cyl #3
cyl #2
cyl #1
Engine Block
Ground
MS 21919-D08 clamps
MS 35489-12 grommet
Fire Wall
Power
Graphic Engine Monitor
Instrument panel
FIG. 6 TYPICAL SINGLE ENGINE HARNESS ROUTING
Insight
Graphic Engine Monitor
PROBE CONNECTION
Insight Instrument Corporation
Box 122, Fort Erie, Ontario L2A 5M6
8252
B
none
MAR. 31, 1986
2 OF 5


LYCOMING ENGINES
EGT probe #2
CHT probe #2
EGT probe #4
CHT probe #4
EGT probe #6
CHT probe #6
CHT probe #1
EGT probe #1
CHT probe #3
EGT probe #3
CHT probe #5
EGT probe #5
TIT probe
Engine Block Ground
NOTE: Cylinder numbers are typical for LYCOMING engines. See Drwg #8252 for CONTINENTAL engines
Fire Wall
To Trip-free Resetable Circuit Breaker 14 to 28 Volts
Instrument Panel
Graphic Engine Monitor
6-32 x 3/8" screws 4 places
FIG. 5 PICTORIAL INSTRUMENT LAYOUT
Instrument(s)
Panel
Harness
Harness
See Single engine drwg for details
FIG. 7 TWIN ENGINE HARNESS ROUTING
EGT probe
CHT probe
cyl #2
cyl #1
cyl #4
cyl #3
cyl #6
cyl #5
Engine Block Ground
MS 21919-DG6 clamps
MS 35489-12 grommet
Power
Fire Wall
Graphic Engine Monitor
Instrument panel
FIG. 6 TYPICAL SINGLE ENGINE HARNESS ROUTING
Insight
Graphic Engine Monitor
PROBE CONNECTION
Insight Instrument Corporation
Box 122, Fort Erie, Ontario L2A 5M6
SIZE A
FILE NAME
DRAWING NO. 8253
REV B
SCALE none
DATE MAR. 31, 1986
SHEET 2 OF 5


REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
Wire Harness
Black
White
Red
Spring Probe
Gasket Probe
Adapter Probe
Yellow
Red
EGT Probe
FIG. 14.1 PROBE CONNECTION DIAGRAM
Harness wire
Install terminal under screwhead
Probe wire
FIG 14.3 TERMINAL DETAIL
2-3/4"
3/16"
3/16"
1"
FIG. 14.4 HARNESS WIRE STRIPPING DIMENSIONS
Engine exhaust manifold
NT probe
Turbo-charger
1" to 2"
FIG. 14.5 TURBO INLET PROBE LOCATION
Exhaust Stack Flange
Normally aspirated engine
0.125" hole
2" to 3"
Turbo-charged engine
EGT probe
4" to 5"
FIG. 14.2 EGT PROBE LOCATIONS
Insight
Graphic Engine Monitor
PROBE CONNECTION
Insight Instrument Corporation
Box 122, Fort Erie, Ontario L2A 5M8
SIZE A
FILE NAME
DRAWING NO. 8254
REV A
SCALE None
DATE MAR 31, 1986
SHEET 4 OF 5


REVISIONS
ZONE
REV
DESCRIPTION
DATE
APPROVED
Harness wires are marked with cylinder number
One EGT probe per cylinder
Yellow
Red
One CHT probe per cylinder
Note: CHT Spring Probe, Adapter Probe and Gasket probes are interchangeable
Red
White
Spring Probe
Adapter Probe
Gasket Probe
Yellow
Red
One TIT probe – GEM 603 only
To 14V or 28V Avionics master switch
1 Amp circuit breaker or inline fuse
Note: 'T' probe wire on GEM 603 only
Engine Block Ground
CONNECTOR
Sheath color
A No Connection
1 No Connection
B 2 Yellow EGT 1
C 3 Yellow EGT 2
D 4 Red EGT 3
E 5 Yellow EGT 4
F 6 Red EGT 5
H 7 Yellow EGT 6
J 8 Red Black CHT 1
K 9 Red Black CHT 2
L 10 Red White Black CHT 3
M 11 Red White Black CHT 4
N 12 Red White Black CHT 5
P 13 Red White Black CHT 6
R 14 Red Yellow TIT T
S 15 Black Red
KEY
EDGE CONNECTOR
INSTRUMENT VIEW
WIRE VIEW
KEY
CROSS-SECTION
Dog
Terminals
Wires
Note: Omit probe wires for cylinders 5 & 6 on 4 cylinder engines.
INSTRUMENT WIRING DIAGRAM FIG 15.1
Insight
Graphic Engine Monitor
WIRING DIAGRAM
Insight Instrument Corporation
Box 122, Fort Erie, Ontario L2A 5M6
SIZE A
FILENAME:
DWG NO. 8255
REV B
SCALE None
MAR. 31, 1986
SHEET 5 of 5
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