

RESISTANCES TERMOMETRS

OUT AIR TEMPERATURE

Oil Temperature

Fuel Temperature

Air Temperature

RESISTANCES TERMOMETERS

Remote temperature indicating systems on aircraft for oil temperature and fluid temperature for example involves the use of resistance bulbs as the sensor and a ratiometer type indicator. For piston engine cylinder head temperature it involves the use of a thermocouple and a moving coil type indicator.

The resistance bulb has resistance wire of nickel or platinum wound on an insulated former and sealed in a brass or stainless steel tube, which may be filled with an inert gas to assist heat transfer to the element. Whether nickel or platinum is used depends on the temperatures to be measured. Nickel can be used up to 300°C and platinum up to 600°C.

RESISTANCES TERMOMETRS

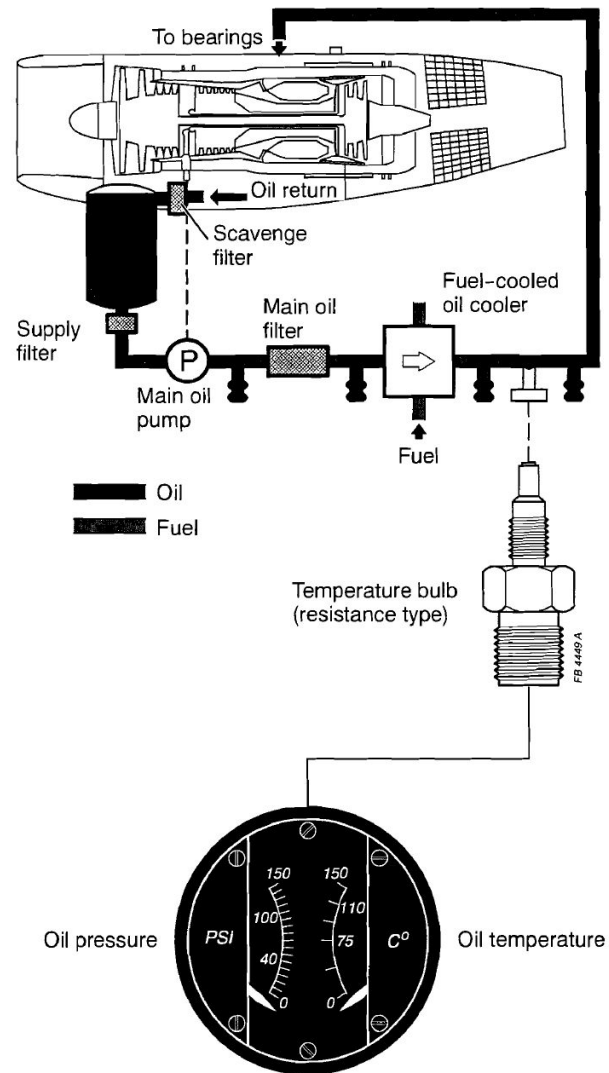


Figure 8 Oil Temperature Indicating System

RESISTANCES TERMOMETERS-Transducer

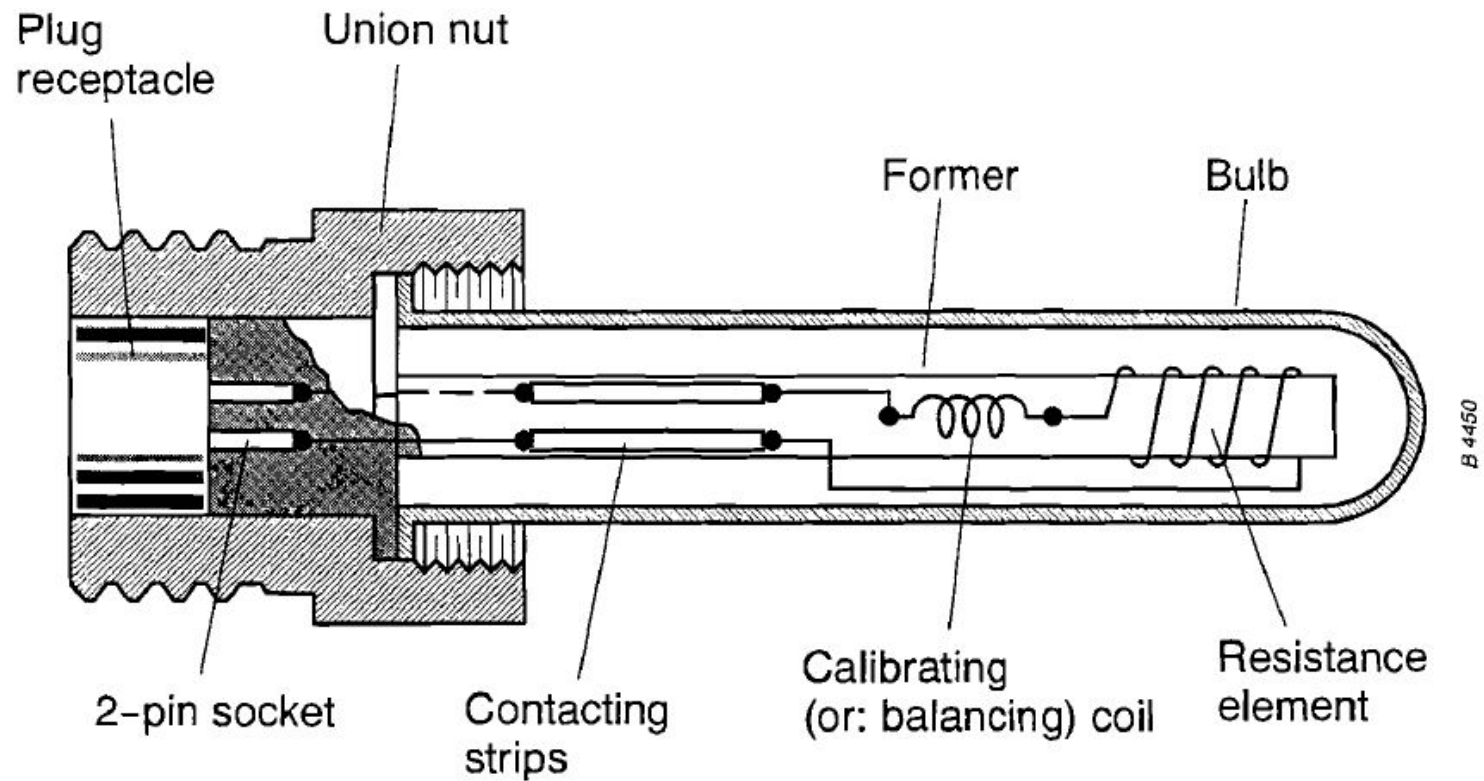
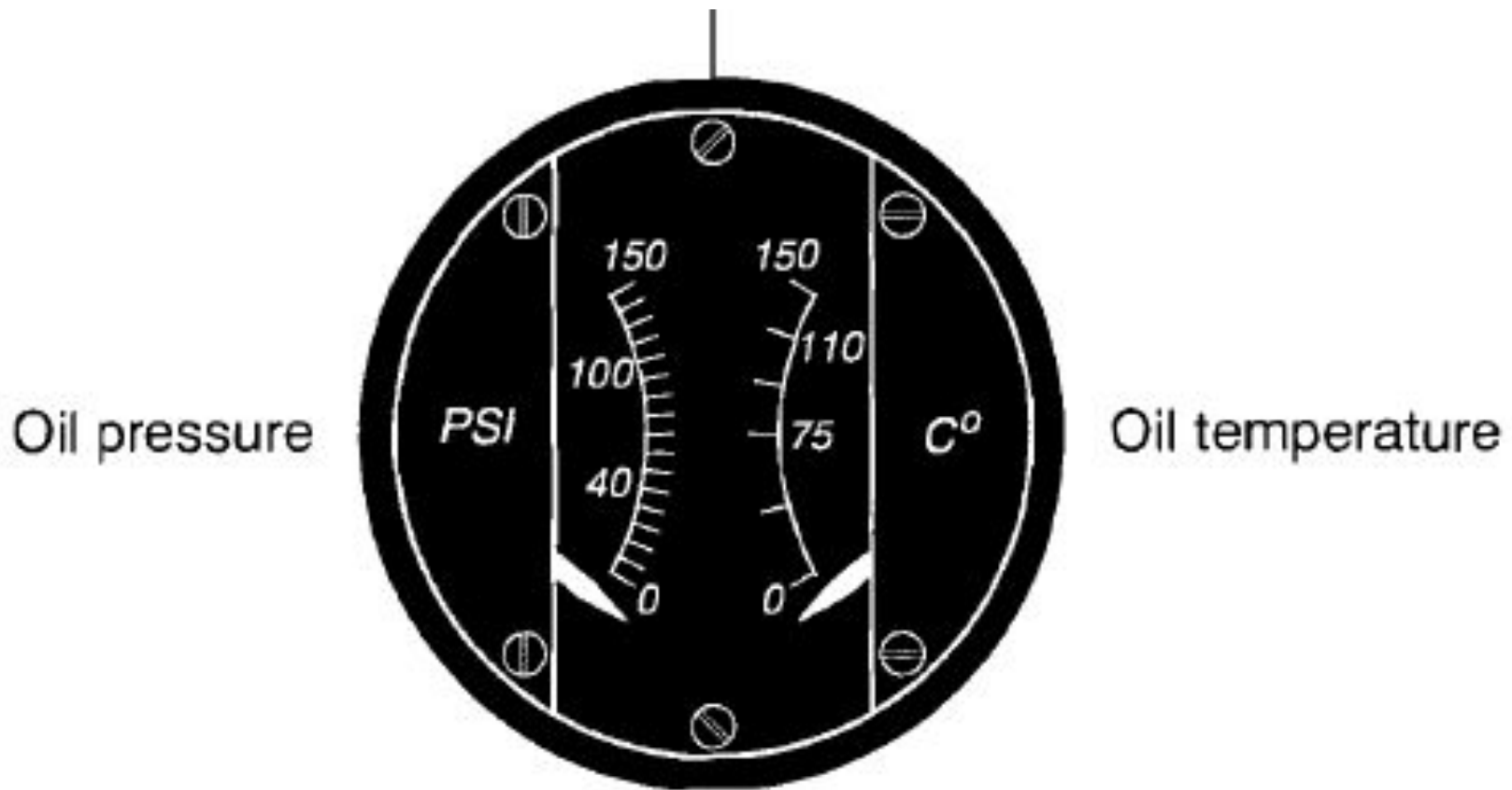
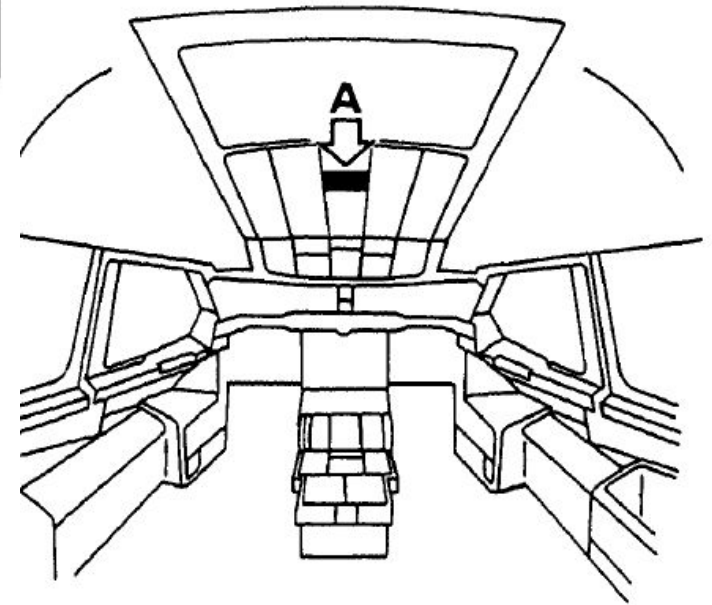
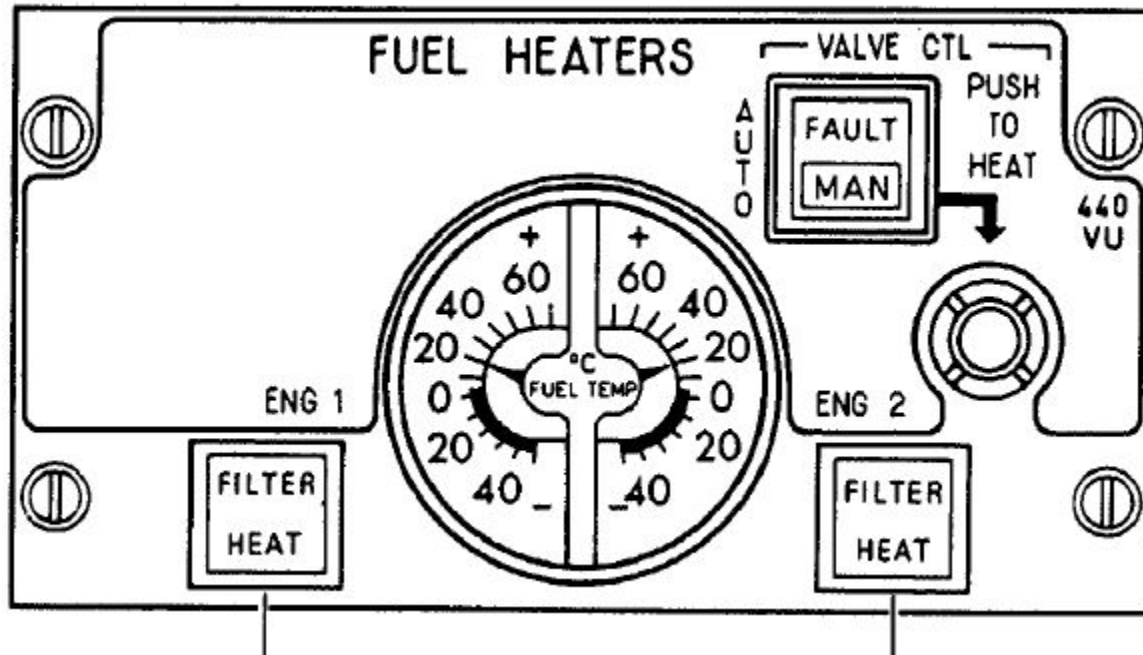


Figure 9 Oil Temperature Transmitter and Indicator

RESISTANCES TERMOMETERS



RESISTANCES TERMOMETERS



RESISTANCES TERMOMETERS

OIL INDICATING 79-30

DESCRIPTION

ECAM System Page

1.Oil Temperature Indication

Flashes Green (Advisory) when Temp 140° C

Is amber when 155°C or 15min >140°C

2.Oil Pressure Indication

Color turns red (Warning) when Pressure <13
PSI

3.Oil Quantity Indication

Flashes Green (Advisory) when QTY < 4
Quarts

4.Oil Filter Clog

(White and Amber)Warning appears on the
Screen when the Engine
Scavenge Filter is Clogged

A320

RESISTANCES TERMOMETERS

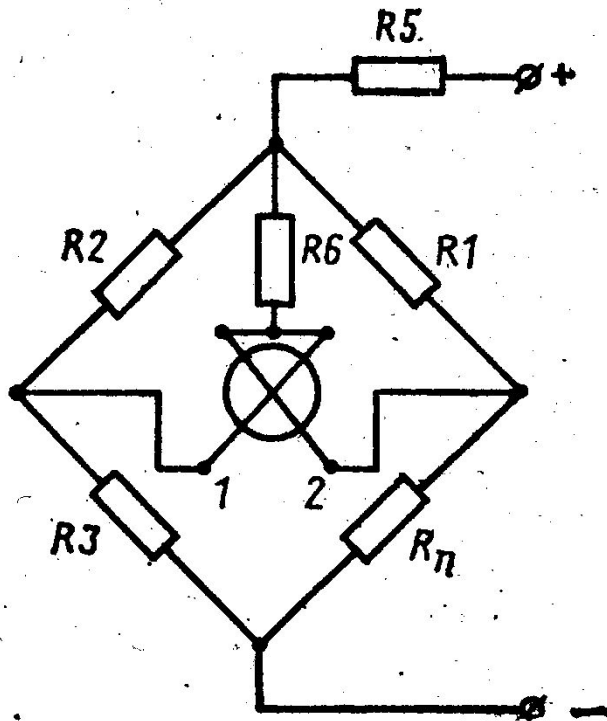


Рис. 105. Принципиальная электрическая схема термометра масла:

R_1, R_2, R_3, R_5, R_6 — резисторы манганиновых катушек; R_n — резистор приемника; 1 и 2 — рамки логометра

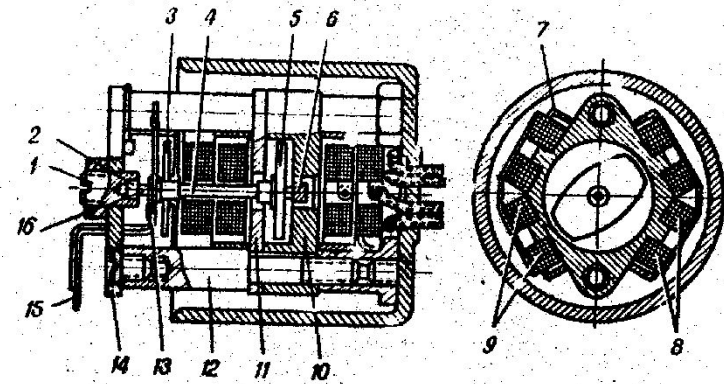


Рис. 4. Логометр

1—винт регулировочный; 2—подпятник; 3—возвращающий магнит; 4—ось; 5—магнит; 6—подпятник; 7—пластина; 8, 9—рамки; 10—успокоитель; 11—крышка; 12—стойка; 13—якорь с грузиками; 14—мостик; 15—стрелка; 16—шар

II



RESISTANCES TERMOMETERS

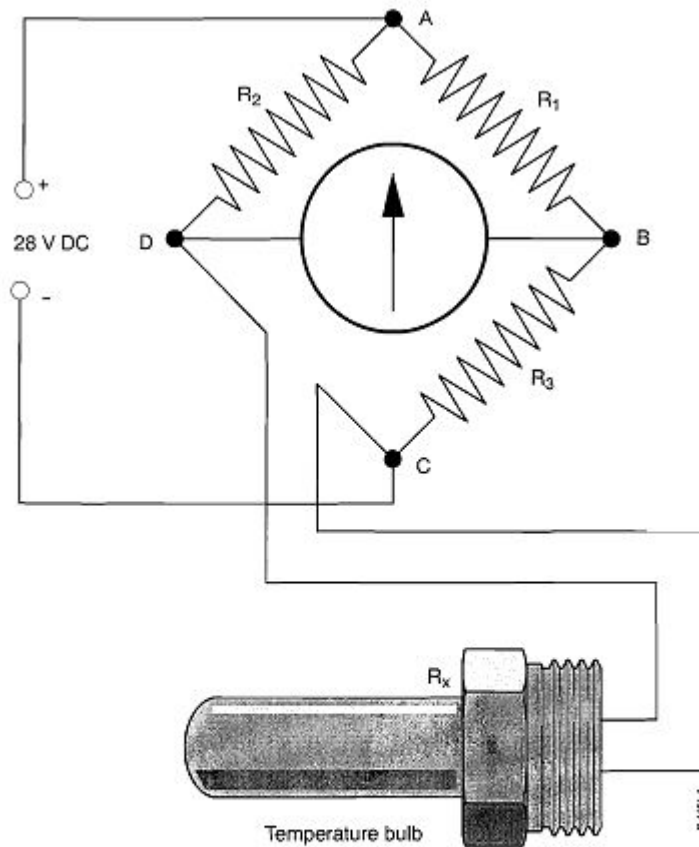


Figure 10 Electrical Oil Temperature Measuring Circuit

Термометр сопротивления

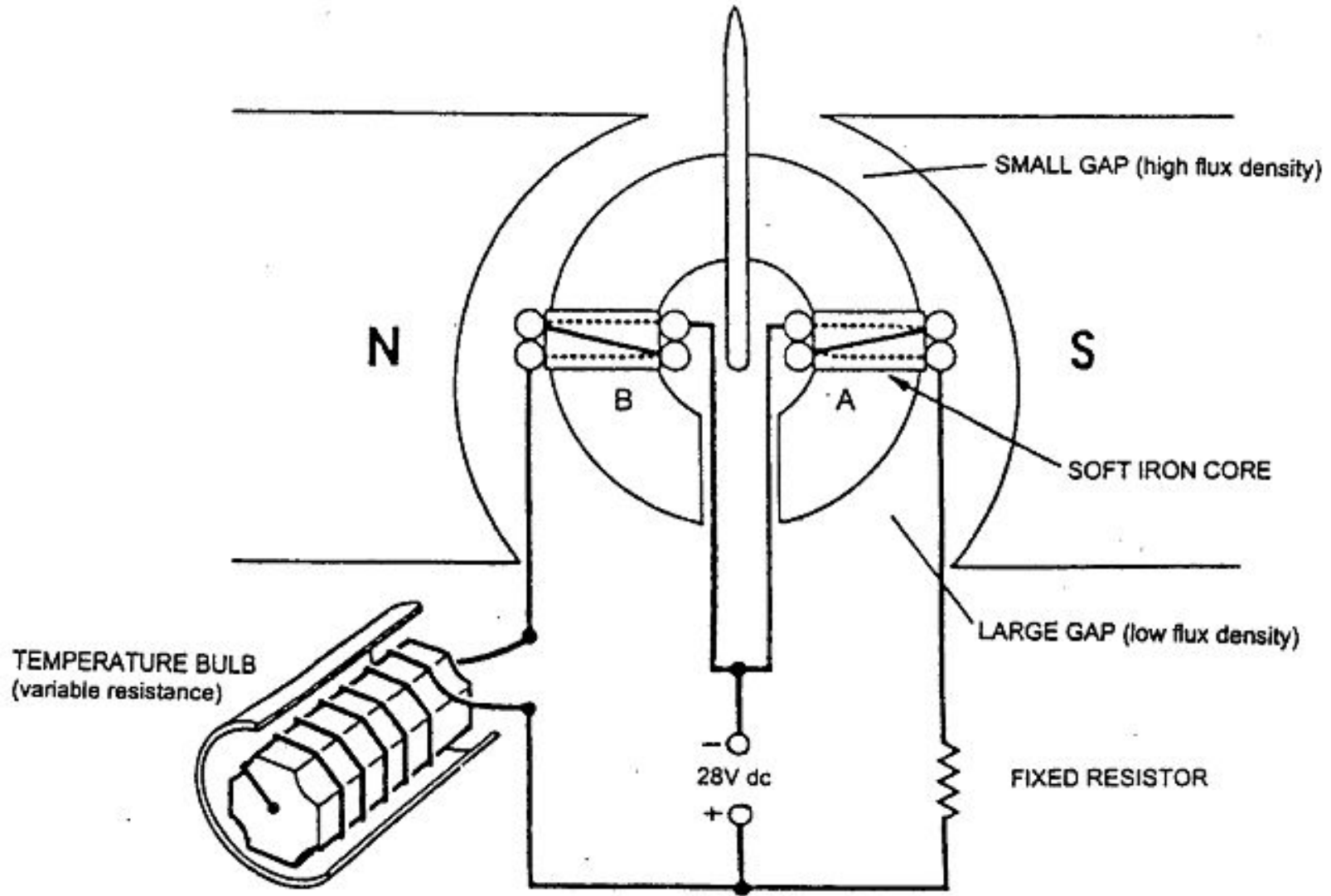


Fig. 37 DC RATIOMETER TYPE INDICATOR

Temperature Probe (Ref. Fig. 002)

The fuel temperature sensor is located at the top of the filter housing on the fuel pump unit. It is a resistance type probe, giving a continuous reading of fuel temperature to :

- the fuel temperature indicator on panel 440VU
- the right ECAM display unit (engine data) for both analog and digital presentation (not fed to the warning system).
- the automatic monitoring system controlling fuel heating (Ref. 73-15-00).

Fuel Temperature Indicator

The fuel temperature is continuously indicated on FUEL HEATERS panel 440VU and also on the right ECAM display unit under the engine page.

The display on panel 440VU is a dual indicator ranging from -50°C to $+70^{\circ}\text{C}$. The indicator features integral lighting.

The ECAM display unit is in the form of a vertical scale, range -50°C to $+100^{\circ}\text{C}$, with confirmatory digital display of the indicated fuel temperature.

. Electrical Circuit (Ref. Fig. 001)

The fuel temperature indicator on panel 440VU is supplied with 28VDC from busbar 104PP (106PP) via circuit breaker 1EM (2EM). Power supplies for the fuel temperature probes are routed through the indicator.

Индикатор температуры топлива

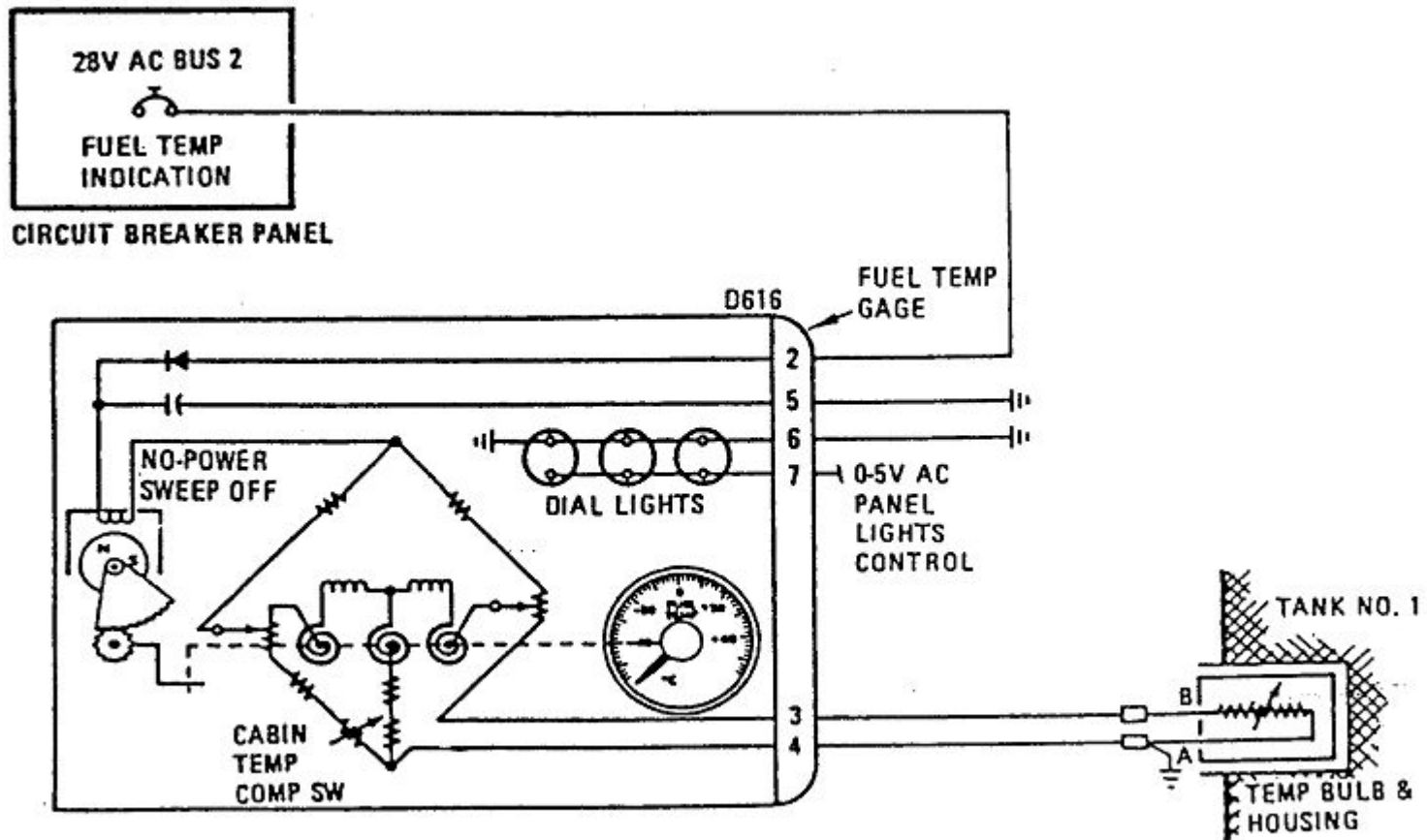


Fig. 38 FUEL TEMPERATURE INDICATION

Основной температурой среды является термодинамическая температура (символ T), единицей которой служит кельвин (символ K). В силу исторических причин термодинамическая температура может быть выражена также температурой Цельсия (символ t)

$$t = T - 273.15 \text{ K.} \quad (5.1)$$

Единицей для выражения температуры Цельсия является градус Цельсия (символ $^{\circ}\text{C}$), размер которого равен размеру кельвина.

70

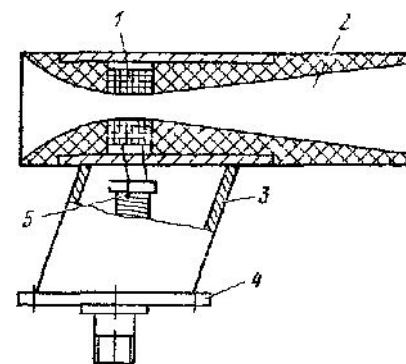
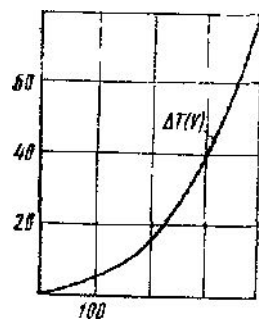


Рис 51 График зависимости превыше-

Рис 52 Приемник тем-
ния Л7' от скорости течения газа

Temperature Probe (Ref. Fig. 002)

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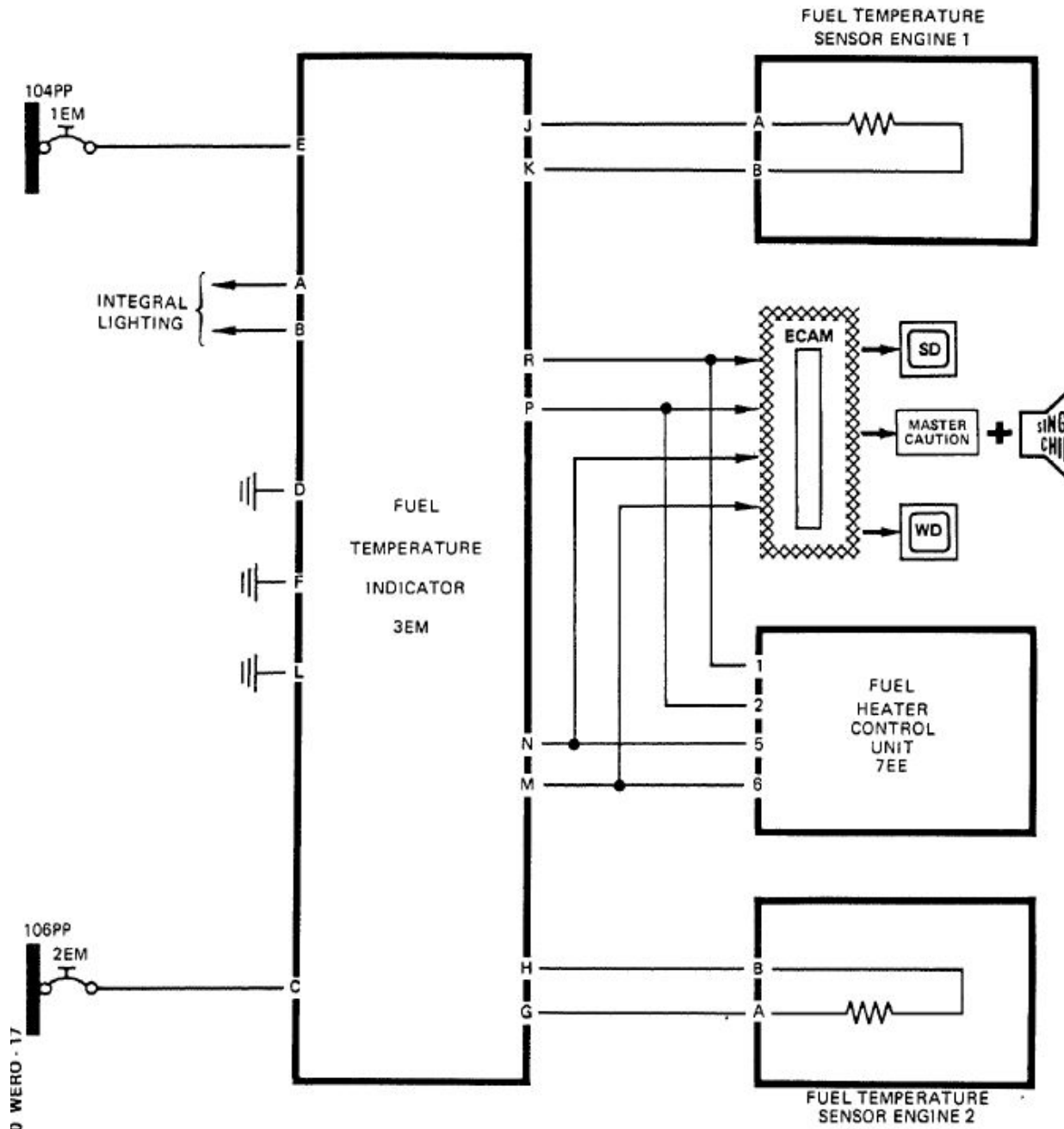
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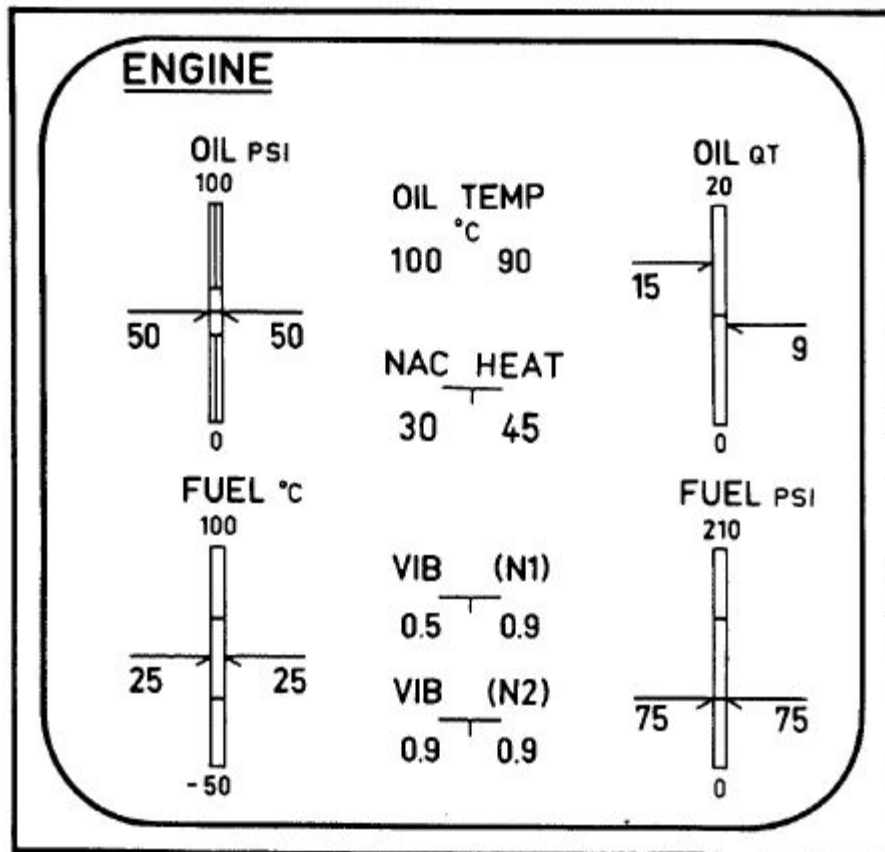
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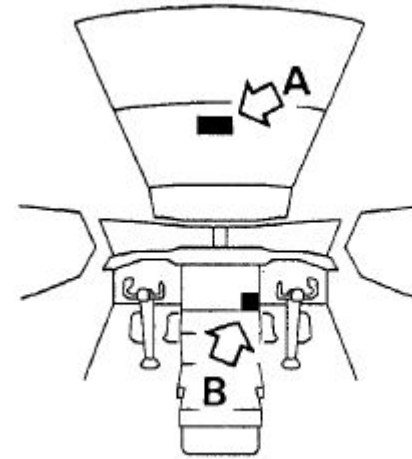
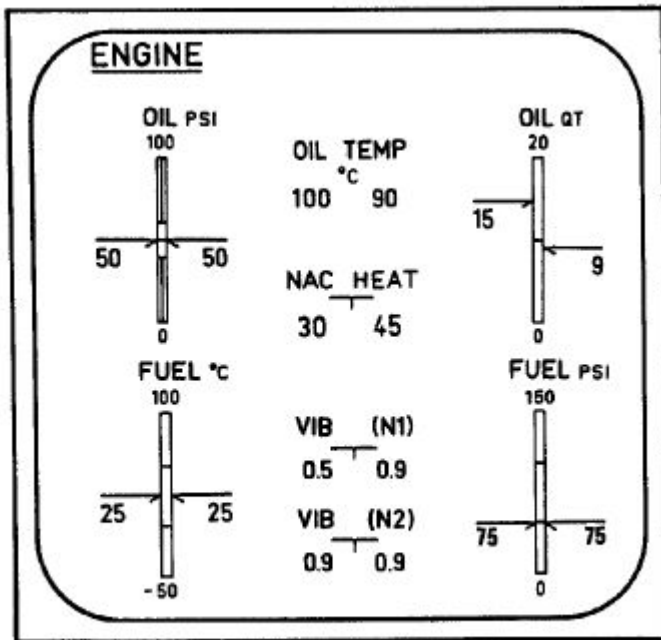
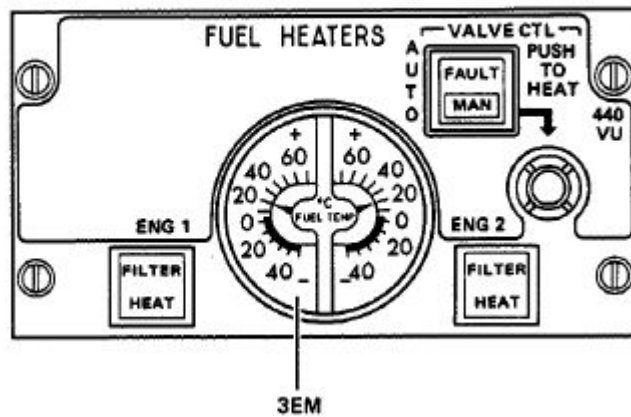
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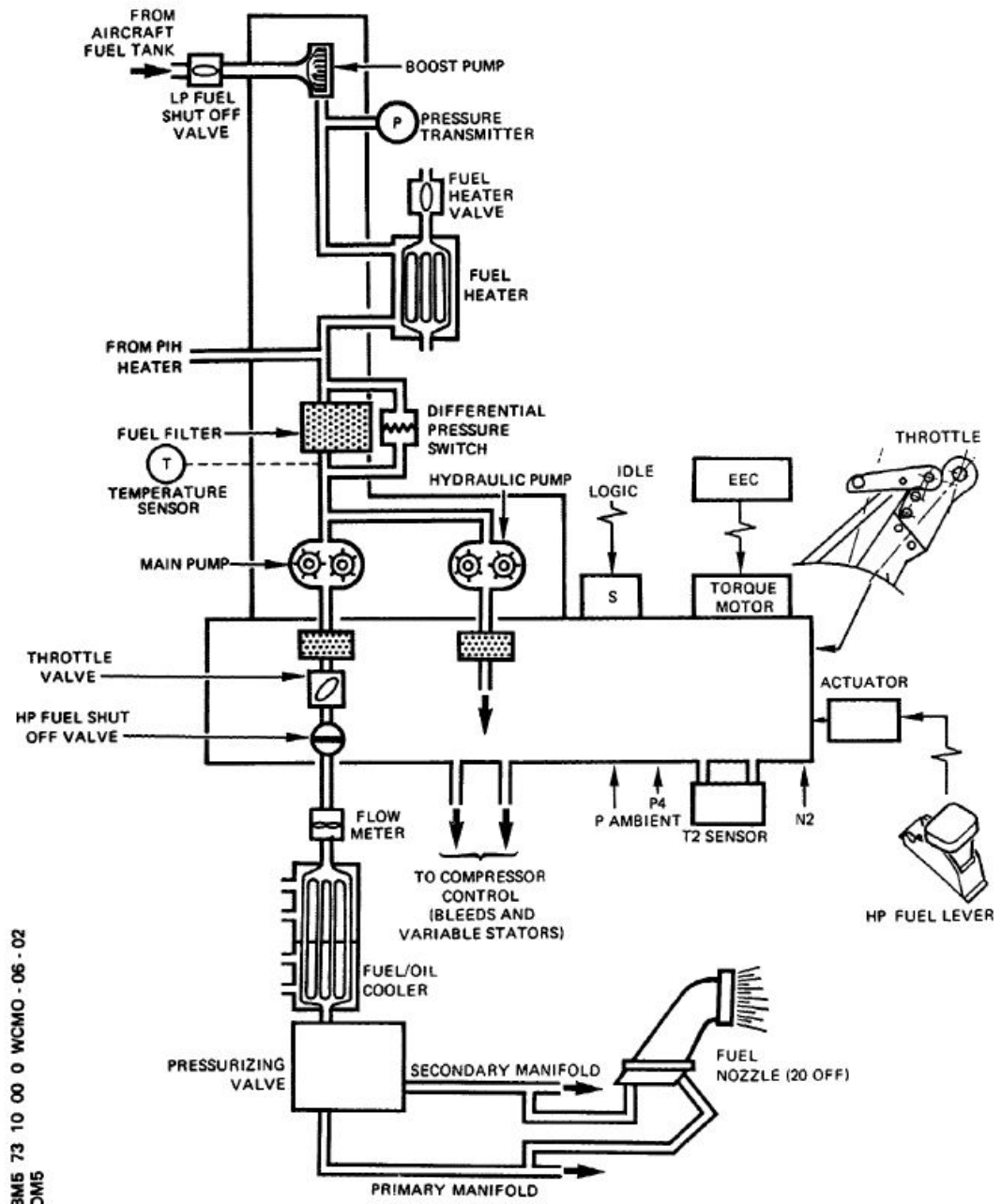
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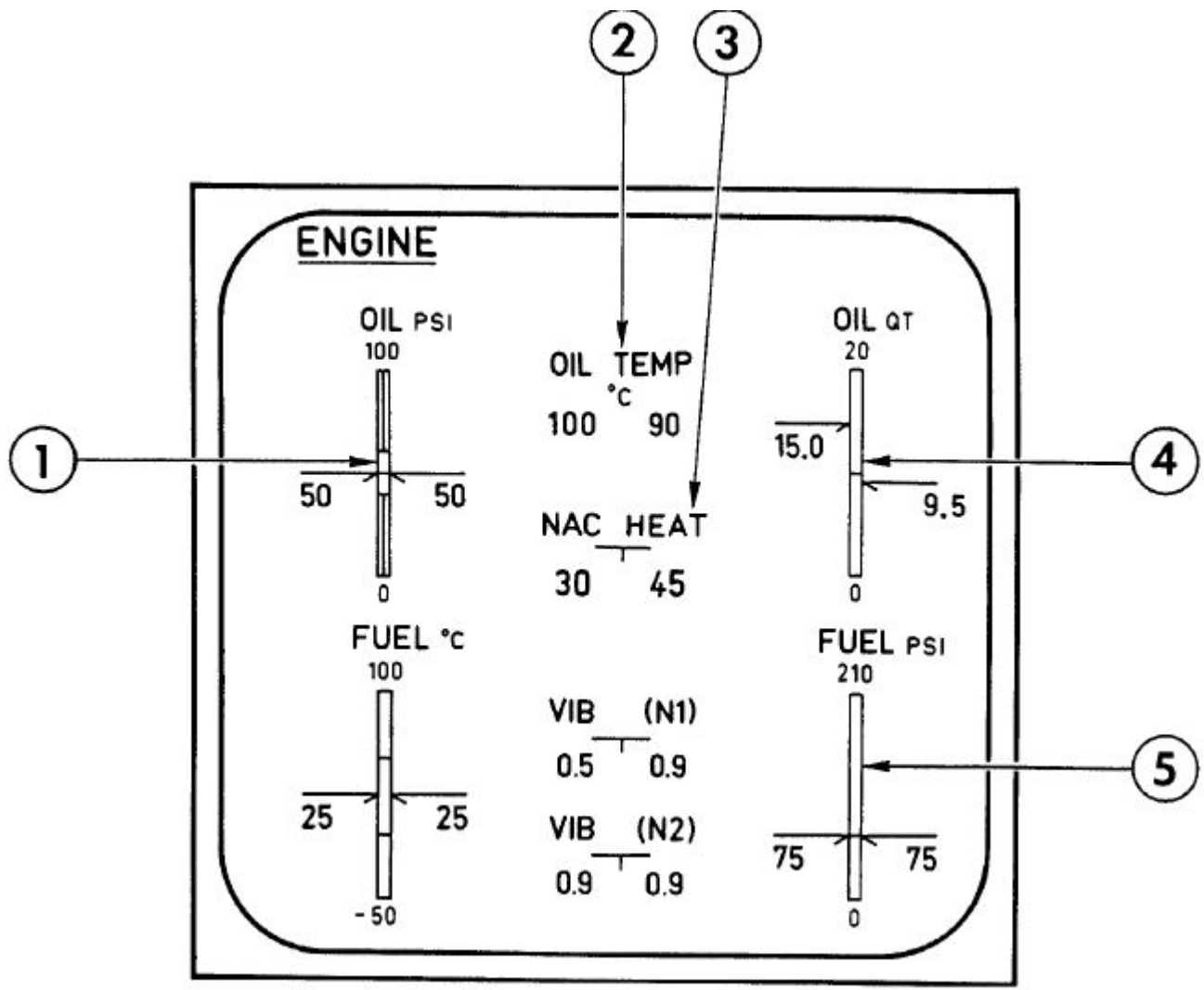
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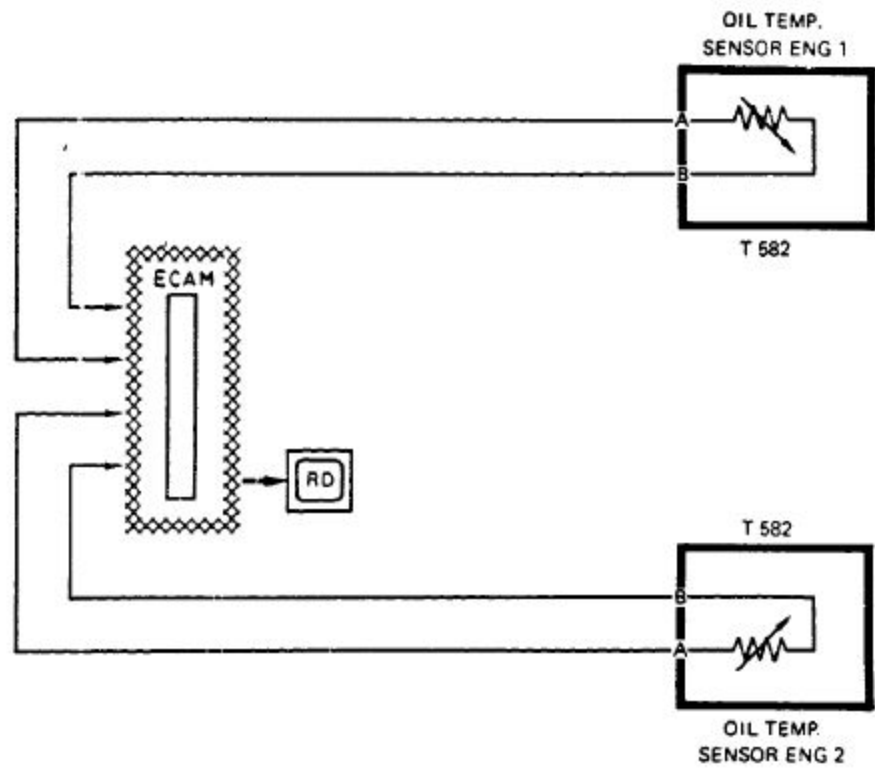
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DM5

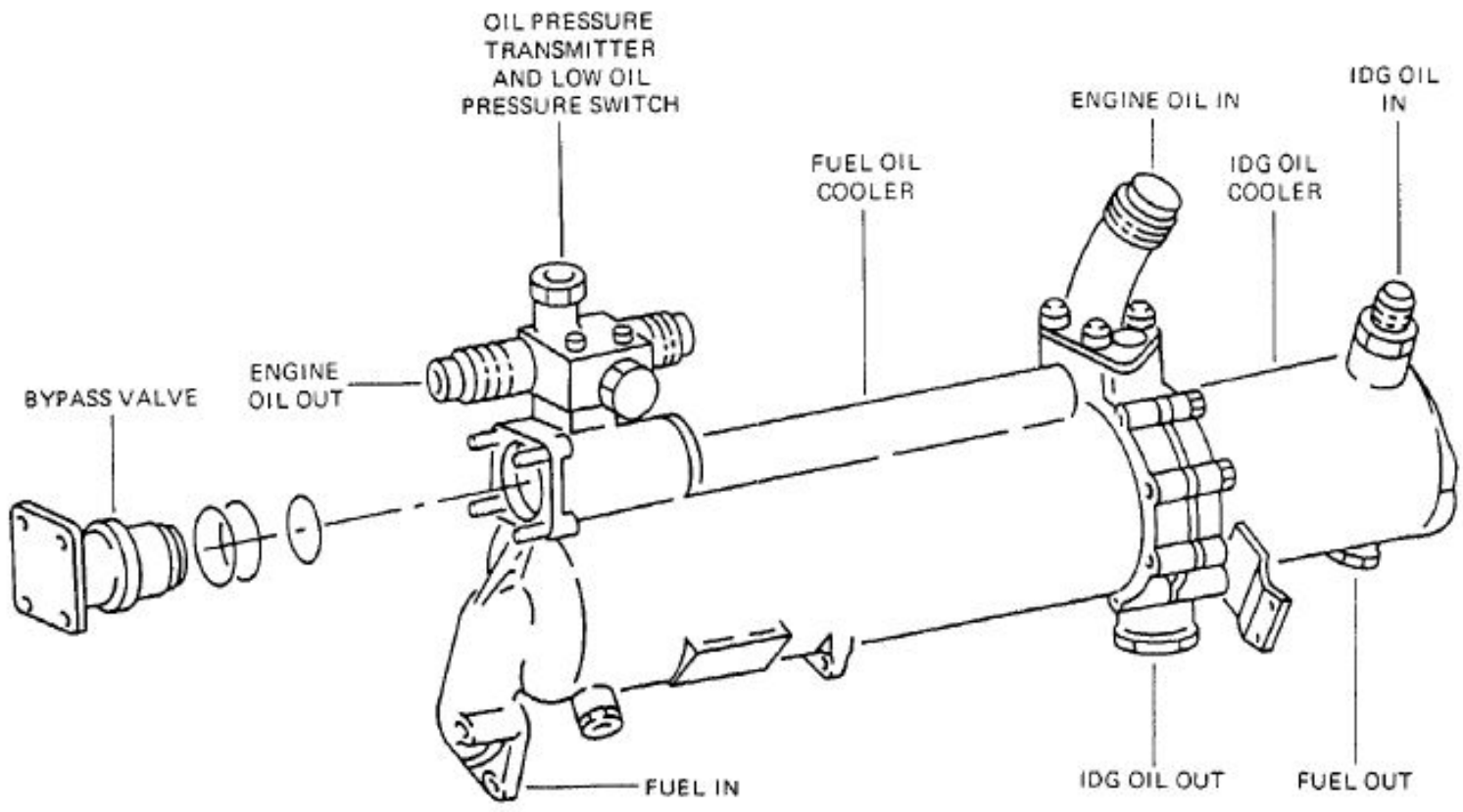


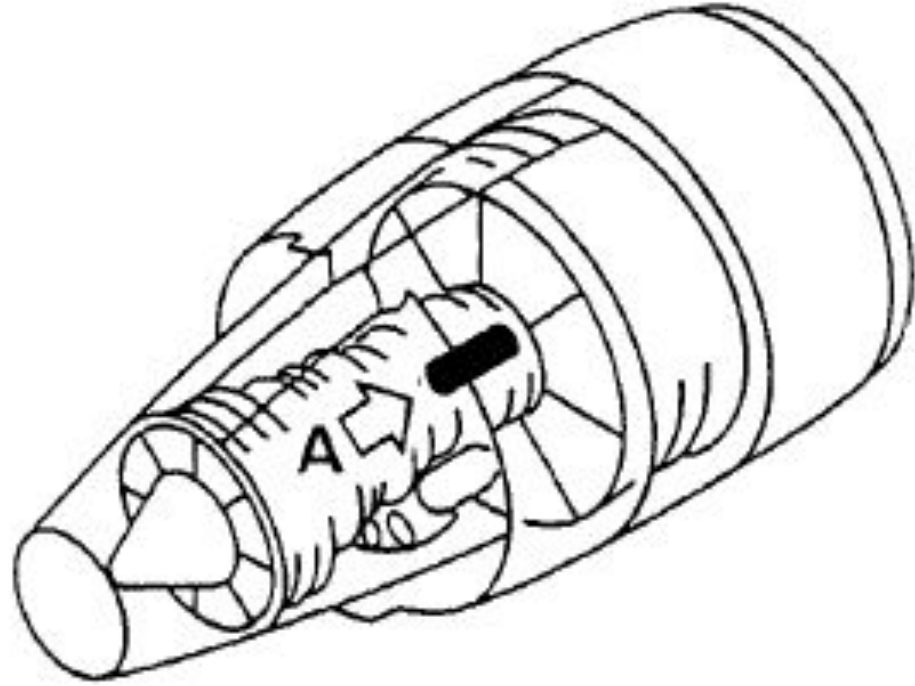


- 1 — OIL PRESSURE (G)
FLASHES WHEN $P \leq 38$ PSI
(A) WHEN $P \geq 60$ PSI OR ≤ 35 PSI.
- 2 — OIL TEMPERATURE (G)
FLASHES WHEN $t \geq 140^\circ$ C
(A) WHEN $t \geq 163^\circ$ C
- 3 — NACELLE TEMPERATURE (G)
FLASHES WHEN $t \geq 70^\circ$ C
- 4 — OIL QUANTITY (G)
FLASHES WHEN QUANTITY ≤ 4 QTS
- 5 — FUEL PRESSURE
NO ADVISORY



A





A

