

# IDLV Pressure Transducer

Indian Space Research Organisation (ISRO) at its Liquid Propulsion Systems Centre has developed a novel IDLV Pressure Transducer, which will find wide industrial and commercial applications.

## Principle of Operation

The IDLV stands for Integral diaphragm type pressure transducer, which is an absolute pressure sensor that is space qualified. The transducer has the unique characteristic like high accuracy output, rugged construction and hermetic sealing.

It has 5 fabricated parts and is especially suited for high volume production due to ease of fabrication and assembly. It has a machined diaphragm made of stainless steel for 0-30 bar to 0-500 bar pressure ranges. Four foil strain gauges are bonded on the diaphragm to measure the strain developed in it. The diaphragm is specially cryo treated to ensure high long term stability. In order to reduce power consumption 1000Ω strain gauges are selected.

Another advantage of this transducer is that it can be customized to operate in any range from 30 bar to 500 bar. Additionally, any damage to the sensing element will be contained within the sensor thus avoiding any sort of catastrophic damage in the system.

## Advantages & Salient Features

- Any range from 30 to 500 bar can be custom designed and manufactured.
- Compatible with corrosive & Harsh fluid environments

- Fully Stainless Steel Constructed
- E.B Welded and hermetically sealed
- Low Cost
- High Accuracy
- Rugged
- Shock 50grms
- Vibration resistance upto 30grms
- High Dynamic response

## Application

- Space
- Defense
- Oceanography
- Atomic energy
- Oil and gas industry
- Automobilen
- R & D laboratories
- Biomedical engineering
- Mining safety etc.,
- Process industries



## Specifications

Range in bar	30, 50, 70, 100, 200, 300, 330 & 500 Bar (currently manufactured ranges).
Safe overload (Proof Pressure)	2 times operating pressure for all ranges
Secondary Containment Pressure	Upto 800 Bar
Nominal Excitation	10 V DC nominal
FSO for 10 V Excitation	20 mV + mV
Temperature drift of zero and FSO	$< \pm 2.0 \times 10^{-4} / \text{FSO} / ^\circ\text{C}$
Non linearity + Hysterisis	$< \pm 0.5 \% \text{ FSO}$
Sensitivity	$2 \pm 0.1 \text{ mV/V}$
Dimension / Mass	$\Phi 25 \times 72 \text{ mm} / 105 \text{ gms.}$
Electrical interface	Multi-pin hermetically sealed connector

## Technology Transfer from ISRO

ISRO is willing to offer the knowhow of this technology to suitable entrepreneurs / industries in India. Capable manufacturing industries interested in acquiring this knowhow may write with details of their present activities, requirements and plans for implementation, infrastructure and technical expertise available with them, their own market assessment, if any, and plans for diversification to the address given below: