

# Complex Molding of Sensor Probe Housing to Survive Potentially Explosive Environments

## Teledyne Impulse-PDM

Interconnect

### Background

The customer had designed and proven the technology for a sensing probe and needed to be able to make the probe work in an environment that could range from 1000m subsea to a potentially explosive splash zone.

### What were the project challenges?

In order for the sensing probe to work effectively there were some areas of molding that had to be kept to a thickness of 2mm.

The molding needed to be extremely complex to provide all of the features to both position the sensing probe parts and provide location points for mounting.

A material had to be sourced with a Relative Thermal Index figure that would allow the probe to be used in a potentially explosive atmosphere.

### Product:

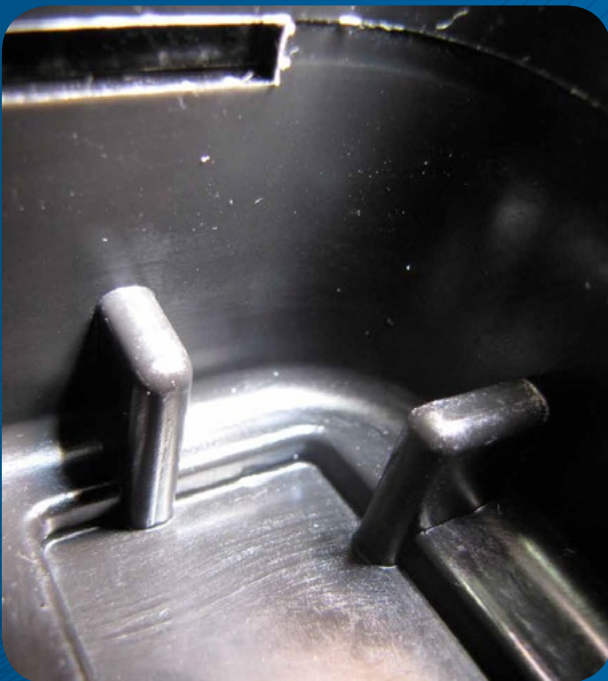
Encapsulation and Molding

### Application:

Sensor Probes

### Client:

GE Oil & Gas



Extremely tight mold tolerances were designed and executed to create a safe housing for the sensor probe



## Complex Molding of Sensor Probe Housing to Survive Potentially Explosive Environments *CONTINUED*

### What were the innovative technical solutions available to the project team?

- Sourcing and working with a new polyurethane material
- Development of a vacuum molding technique that would enable consistent production of complex mouldings
- Sizing of the mold to accommodate differing shrink ratios at different points in the molding due to differing wall thicknesses

### What was the final engineered technical solution?

A completely encapsulated sensor probe which could be easily mounted in its final destination by the customer using the molded features.

### What were the benefits of selecting this particular approach/solution compared with the others proposed?

Working with PDM provided the customer with a means of converting their own proven technology into a product that could be used in a harsh subsea environment.

### Customer Quotes on Solution

“We originally contacted PDM Neptec with regard to supply of Wet-Mate Connectors. On understanding their full scope of capabilities we embarked upon a product development program where we could take full advantage of PDM’s offshore pedigree and knowledge in a fully collaborative design and development program. The resultant fully molded and potted Sensor Assembly met both the subsea environment requirements and that required to enable correct operation of the Sensor.”

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### Highlight:

- Teledyne Impulse-PDM has the capability to design intricate mold tooling to accommodate complex underwater applications.

### Contact IMPULSE-PDM for product information:



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