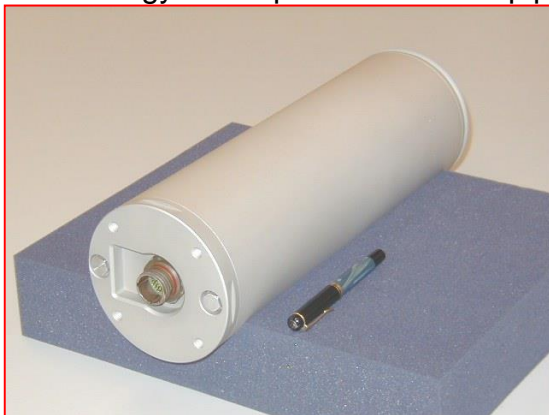


# iPST-FMS-E

## Inertial Measuring System for Surveying Pipelines (Pipeline Surveying Tool)

For maintenance purposes pipelines have to be checked on a regular basis with the help of inspection tools searching for damage such as deformation, corrosion or leaks. During this inspection it is especially important to determine the exact location of the inspection tools in the pipeline, as this can significantly reduce the scope of necessary repairs. Imprecise location of the damage can make it necessary to clear a large area of the pipeline, resulting in much greater repair costs.

With the help of Inertial Navigation Technology the position of a pipeline



inspection tool in a pipeline can be exactly determined. To achieve this, the inspection tool is coupled with a inertial Pipeline Surveying Tool (iPST) consisting of three gyroscopes, three accelerometers, odometers and an electronic device for signal processing. The gyroscopes are used to determine attitude and heading of the iPST. The accelerometers and the odometers are used to determine the translational motions. All data are processed using a filter which also permits additionally

available external aiding information for data processing.

The iPST-FMS contains fiber optical gyros of class 1 deg/hr. The diameter and length depends on the environmental conditions. The accelerometers used have 5 g range and 10  $\mu$ g resolution.

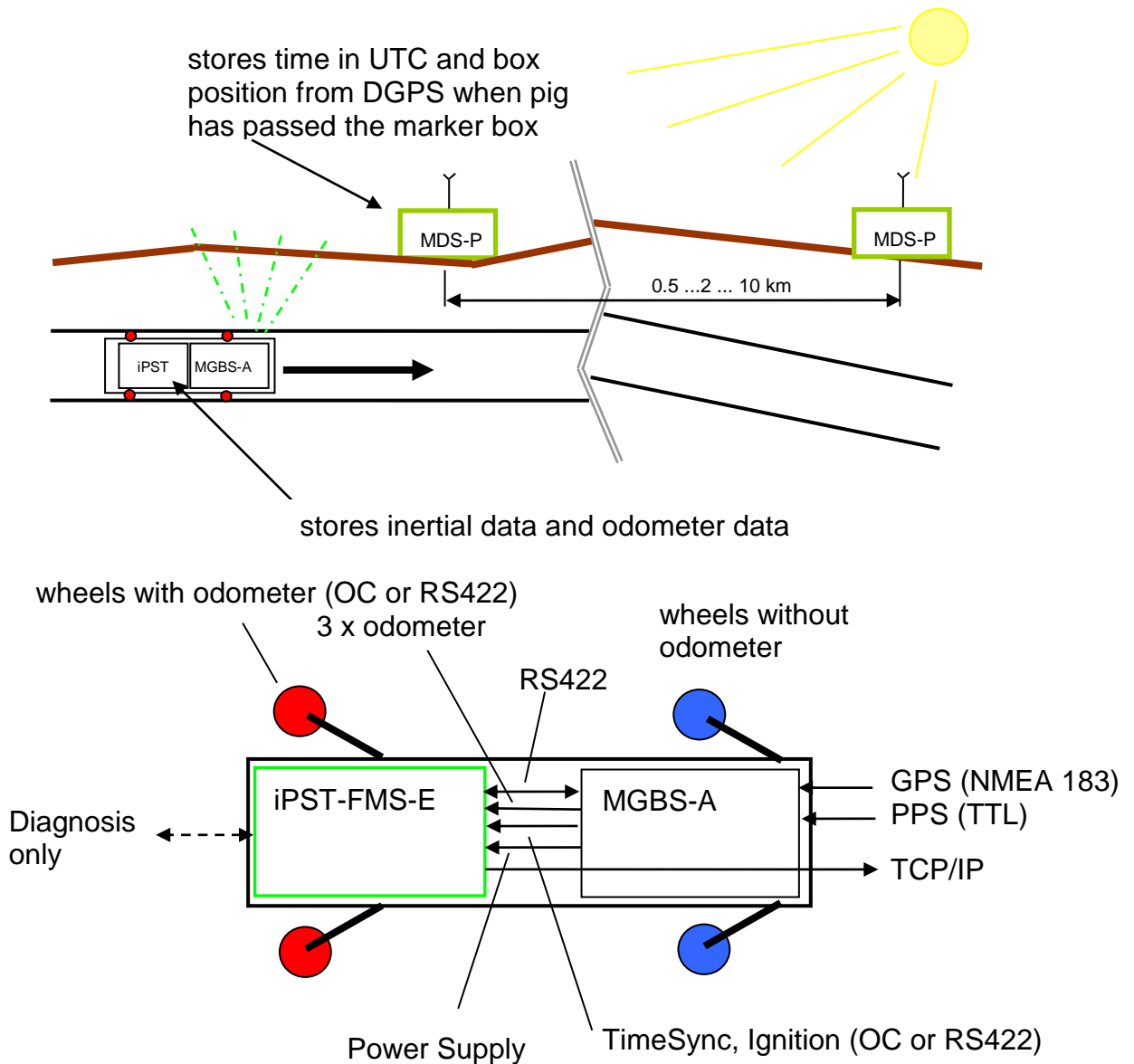
Because of their modular construction the systems can be adapted to the specific requirements of each customer.

#### Technical Data (brief):

iPST-FMS-E with three fiber optic gyroscopes (range +/- 400 deg/s, bias 1°/h, ARW  $0.1^\circ/\sqrt{h}$ , 300 ppm) and three servo accelerometers (range +/- 5 g, resolution 10  $\mu$ g, bias 2 mg / 1  $\sigma$ ). Size:  $\varnothing$  120 mm, L $\approx$ 380 mm (other housing optionally available).

#### Further features:

- connection for up to 3 odometers,
- internal data storage for up to 4 GByte available.
- accuracy: < 1...2 m over 1...2 km aiding.
- postproc calculation of navigation results



Should you have any detailed questions concerning your application or requirements in inertial reference systems for pipeline surveying or borehole navigation, please do not hesitate to contact us.

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