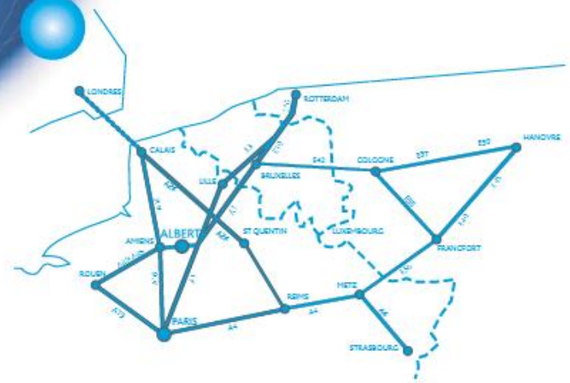
Douce Hydro

JARRET STRUCTURES



Douce-Hydro teams are working around the clock all over the world to provide technical assistance.

Present in France, the United States with its Detroit facility, in Germany with its sales office in Saarbrücken, and now in Romania with its manufacturing facility in the city of Cluj, Douce-Hydro has extended its international presence to cover all five continents whether your site be in Europe, North or South America, Asia, Africa... we offer a solution nearby.

Douce-Hydro is near Brussels, Amsterdam, Köln, Hannover, London...
Furthermore, the flight connections are very easy. Paris Charles-De-Gaulle International Airport is not so far away, about one hour with the highway.

Les équipes travaillent pour garantir une assistance technique 7j/7, dans le monde entier.

Implantée en France, aux Etats-Unis avec son usine de Detroit, en Allemagne, avec son bureau de ventes à Saarbrücken, et à présent également en Roumanie avec son usine de Cluj, Douce-Hydro a développé sa présence internationale sur les 5 continents : Europe, Amérique du Nord et du Sud, Asie, Afrique... la solution se doit d'être proche de vos usines.

Le siège social de Douce-Hydro se trouve à proximité de Bruxelles, Amsterdam, Cologne, Hanovre, Londres...
De plus, les dessertes aériennes y sont excellentes, les aéroports de Paris-Roissy et de Lille n'étant qu'à un peu plus d'une heure de route.

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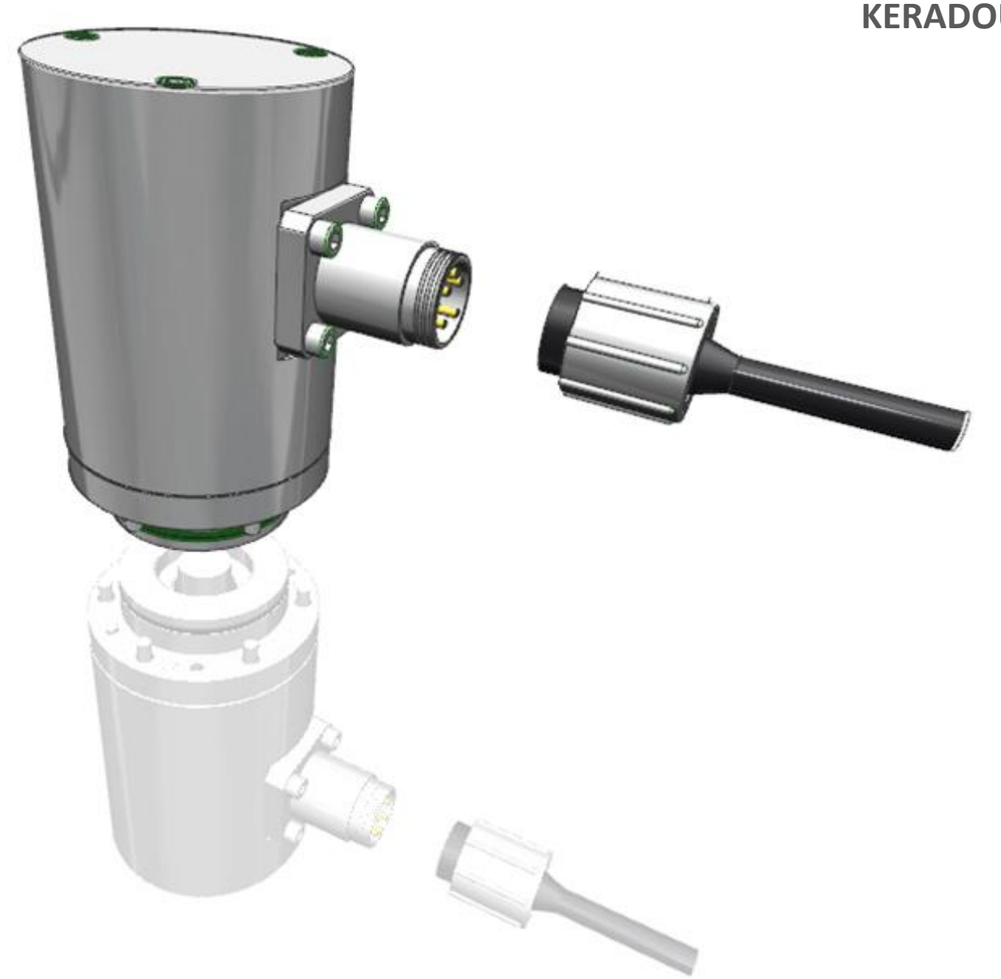
Douce Hydro

FIDH Group

SMIK®: Integrated Measuring System in KERADOUCE®

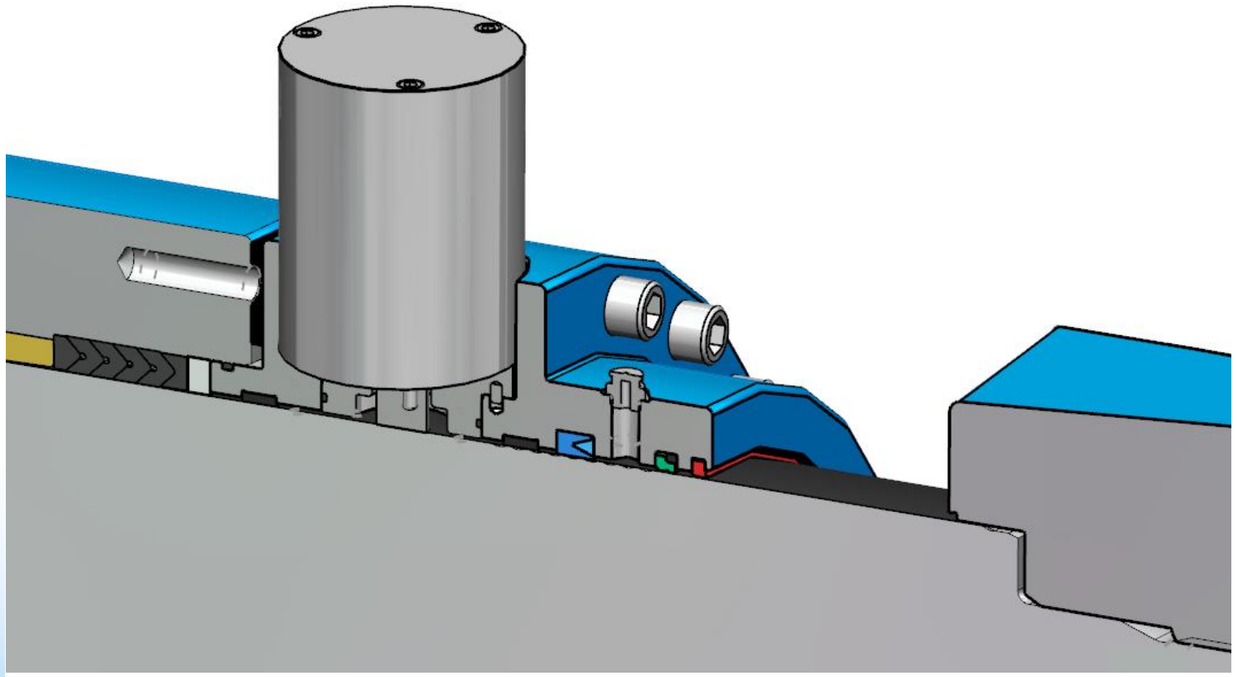


SMIK®: Integrated Measuring System in KERADOUCE®

This is a highly accurate position sensor used on the KERADOUCE® coating developed by Douce Hydro. KERADOUCE® coating is a multilayer coating, water resistant, very hard, electrically isolated, and resistant to corrosion. It used for submerged cylinders or for extreme environments.

SMIK®sensor is a contactless, precision sensor detecting the information engraved on the surface of the rod. It will provide the exact position of the cylinder rod, velocity and acceleration

It is based on the magneto-resistive sensors and the measurement is performed without contacts.



Technical data

General Conditions
Use Temperature: - 40°C < T° < + 120°C
Humidity: 100%
Environment: Marine atmosphere, submerged application
Speed: < 2 m/s
Stroke of the hydraulic cylinder: < 26 m

Characteristics of the Measuring System
Precision: ± 2 mm
Linearity: < 1 mm
Hysterisis: ± 0,05
Temperature: ± 0,025 mm/°C
Protection: IP 68

Dimensions
Outside Diameter of SMIK 100 mm, Height 120 mm

Electronics
Supply : 10 to 30 VDC

Output Signal : Square wave, short circuit-prood
Cable length : < 400 m
Type counter: Contactless measurement, magnetic measurement principle

Others
Subsea connector: Connection JAEGER type IP 68

Options
Atex
Subsea

Application areas

The Integrated Measuring System in KERADOUCE® is used on a wide variety of large hydraulic cylinders. Many industries depend greatly on accurate piston rod positioning. Application areas in which SMIK® is often used are:

Water applications (Dam, sluice gate, Hydro Power)
Marine Harbour
Dredging applications
Offshore Rig and vessels
Marine ship
Civil applications, bridge…
Tunnel machine
Steel & Aluminium industry
….

Presentation

The Integrated Measuring System in KERADOUCE® is highly unified incremental position measuring system for use on hydraulic cylinders with our coatings KERADOUCE®. The piston rod is specially machined below the piston rod coatings to create code, the machining create a variation in the magnetic field from the sensors inside the SMIK®.

The sensors measure the magnetic field and its variations resulting in precise measurements with accuracy of less than 1 millimeter & linearity < 1 mm.

General informations

The sensor is delivered, assembled on the hydraulic cylinder; it is initialized and tested during the test of the hydraulic cylinder and supplied with the connector and cable (on demand)

The SMIK® sensor can be linked to a compatible PC or to an automat through its square-wave output. Its protocol of dialogue allows a compatibility with many systems.

The numeric signal of the SMIK® sensor includes the following information:
- Position
- Velocity
- Acceleration

Moreover, the SMIK® sensor provides the following feedback:
- Status of the initialization of the sensor (yes or no)
- Validity of the initial position (yes or no)
- Validity of detection working (or not)
- Validity of the reading coherence of position (or not)
- Incident of electric supply (or not)
- State of reading (or waiting)
- Current learning (or not)

When commissioning the SMIK® sensor, the sensor answers to the request of the automat automat, by sending the following information:
- Defect of supply
- Position 0 unknown
- Sensor non initialized

In this case, a learning must be done by moving the rod of the hydraulic cylinder during about 10 seconds, then do a resetting to 0 (for example, when the hydraulic cylinder is at the end of its stroke).
This position 0 is possible at any position of the rod of the hydraulic cylinder.
The SMIK® sensor is then ready to be used.

After an electrical power outage, the SMIK® sensor provide the following information:
- Signal of supply defect
- Last detected position at the moment of the supply defect.

Then it is only necessary to do a resetting to 0 of the sensor.

The SMIK sensor, at the means of a precision loss, disposes also of an analogical output of the position signal (2 square signals moved of 90°). This output can be treated through a set type counter.

Moreover, this sensor has a very good reliability as there is no mechanic contact between the rod and the sensor, it detects the moving of the rod without touching it, so there is neither wear on the rod not even on the SMIK® sensor.