OPTOI

OPTICAL POSITION SENSORS

The future of optical technology
for precise position measurement

SINGLE POSITION

OIS21 - Optical single position sensor
OIS21 is a patented smart optical device, which is usually combined with a hydraulic steering cylinder. The main application is on rough terrain machines, to detect when the wheels are correctly aligned. The alignment occurs when the sensor detects a different refraction index zone, which is marked on the hydraulic cylinder.

OIS25 - Optical single position sensor with diagnostic
OIS25 is a patented smart optical device, which is usually combined with a hydraulic steering cylinder. The main application is on rough terrain machines,to detect when the wheels are correctly aligned. The particularity of this serie is that it provides diagnostic functions to auto detect possible sensor's failures. At bootup the OIS25 collects information about the functioning of the sensing elements, logic unit and output stage.

OIS27 - Redundant single position sensor
This patented smart optical device offers, in the same package of OIS21, a fully redundant sensor being able to ensure higher reliability performances.

OIS29 - Miniaturized optical single position sensor
This particular serie is a miniaturized version of the OIS21 sensor and it is studied to fit in hydraulic cylinders with reduced dimensions.

ABSOLUTE POSITION

OIS22 - Optical absolute position sensor
In order to know continuously the absolute position of the rodin a cylinder (oleodynamic cylinders application for example), Optoi developed a reflective sensor, based on smart optical technology. The patented platform is based on high power logic and output stage, optical emitters and receivers, combined to a robust bar code's type, which is located on the rod of the cylinder. The bar code is made according to more than 15 years of experience in the automotive machines for industrial and agricultural market.

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OVERVIEW

The Optical sensors technology leads to reach economic advantages due to discontinuous use of stainless steel tubes, as well as achieve high performance levels, accuracy and reliability. The sensors include a smart algorithm with several functions in order to increase system life cycle, reliability and safety. It is an embedded plug-in technology, that includes smart electronics, also available in miniaturized and redundant versions.

APPLICATION

Single position
- Steering machines
- Surface cleaning machines
- Rough terrain machines
- Road building machines
- Construction machines
- Agricultural machines
- Logistic machines
- Loaders
- Tilt cylinders
- Multiple position control
- Small cylinders control
- Gearboxes

Continuous position
- Steering cylinders position control
- Lift cylinders position control
- Tilt cylinders position control

  made for
  - Satellite driven machines
  - Agricultural machines
  - Rough terrain machines
  - Handlers, forestry machines

FEATURES

- High input voltage range
- High temperature range
- High current output
- Meets ISO 7637 normative, including pulse 5 "load dump"
- MTTF > 120 years
- Inversion of polarity protection
- Overload protection
- Smart interface and smart algorithm
- Compliant to RoHS European Directive
- Designed for earth moving environment
- Customizable on different parameters

OPTIONAL

- Fully redundant version available
- Diagnostic functions onboard
- Small size, - 60%

OPTICAL SINGLE POSITION SENSOR

Mod.	Type	Power supply (V)	Output current (mA)	Output type
OIS21	Optical single position sensor	7V - 30V	700 mA	PNP
OIS25	Optical single position sensor with diagnostic	7V - 30V	150 mA	PNP
OIS27	Redundant single position sensor	7V - 15V	50 mA	PNP
OIS29	Miniaturized optical single position sensor	8V - 15V	20 mA	PNP

OPTICAL ABSOLUTE POSITION SENSORS

Mod.	Type	Power supply (V)	Output load (kΩ)	Output type (V)
OIS22-0545	Optical absolute position sensor	8V - 30V	> 20 kΩ	Analog 0,5 - 4,5 V
OIS22-4505	Optical absolute position sensor	8V - 30V	> 20 kΩ	Analog 4,5 - 0,5 V