

HOOK LOAD (hydraulic)



Barrier
Amplifier



Encoder
Interface



Pressure transmitter for monitoring the hook load

- **Current hook load / drill string weight**
- **Weight on bit**

Parameter Specifications

- **Measuring range** Depending on rig specification – normally 0 – 100 bar
- **System accuracy** $\leq 1\%$ of full scale
- **System resolution** 0.1 bar

Principle of Operation

A diaphragm separates a micro-machined silicon sensor with temperature compensation from the pressure medium. Silicon oil serves as pressure transmitter. An integrated amplifier converts the output test current, which is proportional to the pressure density, into a corresponding DC signal (4 – 20 mA).

Maintenance

Once the system is set up and calibrated, generally no maintenance will be required.

Visual routine checks (daily) shall include the observation of possible leaks in the sensor hydraulic system.

Data Processing

The powerful DMS software records, visualizes and displays data on different locations on the well site.

The DMS submits the setting of individual alarms for “High” and “Low” limits.

Technical Specifications

SENSOR

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Type or model: ▪ Certified for hazardous area: ▪ Certificate of conformity: ▪ Operating temperature range: ▪ Supply voltage: | <p>Pressure transmitter</p> <p>Intrinsically safe to EEx ia IIC T4</p> <p>BASEEFA No. Ex-89.C.2251</p> <p>-20°C ... +80°C</p> <p>24 V DC</p> |
| <ul style="list-style-type: none"> ▪ Installation point : | <p>Connected to the load cell of the hook load indicator at the deadline anchor (process connection e.g. 1/4" NPT HANSEN)</p> |

Evaluation Unit

- | | Transmitter / Repeater Unit | Ex-Barrier Amplifier with BUS System |
|---|--|---|
| <ul style="list-style-type: none"> ▪ Type or model ▪ Certificate of conformity: ▪ Signal output : ▪ Supply voltage: ▪ Bus System: ▪ Installation: | <p>Isolating amplifier - inputs EEx ia IIC</p> <p>BASEEFA No. Ex-90.C.2358X</p> <p>4 – 20 mA</p> <p>24 V DC</p> <p>Not applicable</p> <p>Logging unit; connected to 19-inch frame (DMS rack)</p> | <p>Barrier Amplifier - EEx ia IIC</p> <p>TÜV 99 ATEX 1499 X</p> <p>4 – 20 mA</p> <p>24 V DC</p> <p>Not applicable</p> |