



Solutions - Service - Support

**High Resolution - *Stack Heading*  
and *Electrical Riser Angle* System**  
SH-ERA



Zupt delivers operationally aware inertial technologies to improve the productivity associated with high cost operations for oil and gas exploration and field development. These capabilities are offered and supported worldwide.

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# High Resolution - Stack Heading and Electrical Riser Angle System

Many installed Electrical Riser Angle systems fail to deliver the level of resolution needed to allow precise positioning of the surface vessel with respect to the seafloor installed stack to eliminate wear. **This combined stack heading and ERA system is the first system to provide a cost effective solution based on state of the art inertial navigation sensors.** The **SH-ERA** system does not use magnetic sensors for heading or attitude and as such can provide very high resolution heading and attitude data deployment after deployment with no loss of accuracy.

The **SH-ERA** system can be retrofitted into existing BOP mux control systems, consumes little power and the data formats can be modified to mimic many existing systems. The subsea packaging has been designed to fit into a very small volume.

An explosion proof housed (EEX-d) option is available for a surface return angle sensor mounting below the drill floor.

Part Numbers: SH-ERA Options include connectors, mounting brackets and explosion proof housing

**SH-ERA** is a fully integrated system and includes:

- High-performance inertial sensors
- Simple user interface software
- I-O hardware with multiple output options
- Stack Heading, stack attitude, riser attitude output configurable up to 10Hz
- Data logging capability
- Audit trail for operator history logging

**SH-ERA** delivers both high resolution data as well as high update rate. SH-ERA can directly interface to the DP desk to provide reliable, high update rate differential data.

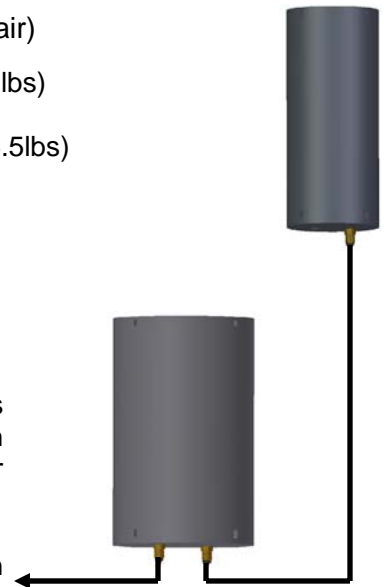
- Stack heading** accuracy +/- **0.4°** (Secant Lat)
- Stack attitude data +/- 0.03°
- Riser attitude data +/- 0.03°
- Differential** (flex joint) data +/- **0.05°**

Input options include an interface to the vessels gyro to automatically compensate for the difference between the vessel heading and the stack heading.

	Diameter	Height	Weight (air)
Riser Unit	120mm(4.75")	245mm (9.75")	6kg (13.2lbs)
Stack Unit	180mm (7.0")	245mm (9.75")	7.5kg (16.5lbs)
Pressure rating	4,000m (13,000fsw)		
Power	20W at 24Vdc. Stack unit powers riser unit		
Communications	RS232/RS422/RS485 - current loop,		

Housings dimensions and weights shown above are for 4,000m rated stainless subsea housings. Both the stack and riser units are mounted vertically with connectors facing down. Connector options are Seacon Brantner PBOF or Subconn metal shell series.

Both the stack and riser systems contain state of the art inertial acceleration and rotational rate sensors—providing optimal angle and heading data.



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