



Case Study

Custom-built Armrest Control Panel. *For Ship-board Lifting and Drilling Equipment.*

Every operation at the controls must be quick and secure, and good tactile feedback is essential. *That's why Huisman chose EAO to design arm-rest panels for their drilling ship.*

In addition to robust control units, Huisman was looking for ergonomic design that would make operation user-friendly. Human factors engineering was critical.

“The IP65 provides protection against spills from drinks and other liquids while the ship is at sea, sometimes in unstable waters.”

Company Profile

Customer
Huisman

Market
Lifting and Machinery

Application
Control unit for ship-board drilling equipment

EAO Series
Series 70



The panels include a trackball and membrane keypad for easy operation.



EAO's Series 70 switches are used behind the membrane for better levels of tactile feedback.

Business Challenge

Huisman is a global operating company that designs and manufactures heavy construction equipment for the leading international on- and off-shore companies. Huisman builds, tests, and delivers stand-alone and highly engineered and integrated systems that include cranes, deep water pipelay systems, drilling packages, floating cranes, and other innovative technologies.

The Noble Globe Trotter was designed in-house as a self-propelled drill ship with a DP-3 classification. The ship is a new, unconventional design suitable for both marine drilling riser and pressure drilling riser for worldwide operation. Unlike competitive ship designs, the Noble Globe Trotter offers the same performance as competitive ships at half the size. Because the ship is smaller, it requires less power for station keeping and thrust. The Noble Globe Trotter has two cabins, each with two chairs. Each chair has two of the EAO control units. Using touch screens, operators can see the equipment at work during the drilling process.

Huisman was looking at a control unit solution that provided switches on both sides of the armrest. The units are required to meet the rough environment of the control cabin while providing precision control. The controls needed to be shock and vandal-proof, as well as watertight to IP65 standards. The IP65 provides protection against spills from coffee and other liquids while the ship is at sea in sometimes unstable waters and the drill is under operation.

In addition to robust control units, Huisman was looking for ergonomic design that would make operation user-friendly. Every operation at the controls must be quick and secure, and good tactile feedback is essential. The panel must also be brightly illuminated during the day and dimmable for night operation.

Solution

EAO worked with Huisman engineers to create the HMI System control units that would meet the needs of the ship's crew. Starting with Huisman's design criteria, EAO created a switch control panel and separate joystick and trackball design that would fit within the tight confines of the armrest.

EAO focused on the ergonomics of the operator controls and designed the panels to include a trackball and membrane keypad in one panel, for easier operation with controls at the operator's fingertips. These controls are often actuated by memory of location and feel, as the operator's eyes cannot leave the application while in process. Therefore, the overall design and

When sitting at the control unit, the operator has immediate access to everything necessary to control the drilling unit. That's great ergonomic design.

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EAO control panels provide accurate control of the drilling unit.

HMI Components to a range of markets including machinery and automation, public transport, automotive design, special purpose and heavy-duty vehicles, as well as many others that involve an interaction between humans and machines. EAO is here to make this interaction innovative, intuitive and reliable.

EAO's components and systems undergo rigorous testing to assure reliability, repeatability, and long service life. EAO is ISO 9001, ISO 14001, IRIS, and ISO/TS 16949 certified for automotive and other industry requirements.

integrated components must be intuitive and user friendly in order to avoid operational errors and user fatigue.

Drawing on its wide range of HMI Components, EAO was able to make the most of available space. Series 70 switches were used to provide controllable illumination and good tactile feedback. The switches are also IP65 rated. A front panel with a fully customized top/front foil was installed for protection of the switches. An optical trackball with no moving parts sits behind the panel to guarantee watertight IP 65 protection with accurate trackball control.

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Results

The EAO control panels deliver the following benefits for Huisman:

- Accurate control of the drilling unit
- Protection against possible liquid spills
- Ergonomic design for ease-of-use
- Fingertip control with good tactile feedback
- Easily viewed switches in daylight, twilight, and night operation

It's important to work with an HMI expert who can address all the human factors, technical and commercial considerations of a complex HMI development project.

EAO is a global partner and manufacturer of HMI Systems and