Monitoring and control system for 4 and 8 point mooring
Barges - Oil Riggs - Accommodation Platforms - Pipe Laying Vessels - Diving Vessels - Offshore Support Vessels

Length and Tension Monitoring
Graphic and numeric display of wire length and tension. Alarms on overload and if an anchor slips.

Anchor Position Display
Graphic display showing vessel and anchor positions.

Automatic Control
Automatic control of winch pull and speed to compensate for vessel movement, or to move vessel to new location.

Winch Control
Reliable and efficient control of all electric and hydraulic trawl winches.

iSPOOL
Computer controlled wire spooling can increase the life time of mooring wires by 50% or more.

User Friendly
Graphics and operations are developed together with experienced operators.

Data Logger
Simple access to historical data to let you monitor how a situation develops, or analyse previous recordings.

Hazardous Area
Sensors and activators available for Zone1 and Zone2 operation.
### ISYM Mooring Functions

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Tension Display
Graphic display of wire tension vectors and resulting force on vessel. Numeric readout of wire length and tension for each anchor.

Anchor Position
Graphic display of vessel and anchor positions. GPS input for vessel position. Anchor positions are entered manually or transmitted from nav system.

Anchor Tension
Graphic display of wire tension bars.

Data Recorder
All winch and navigation data are continuously recorded and stored in files. Recorded data can be played back on the iSYM screen.
Interface
iSYM measures wire length and tension and control winch speed and pull. iSYM includes simple and well arranged interface to most winch types.

iSYM can control following winches:
Hydraulic: Low Pressure, Medium Pressure, High Pressure
Electric: AC Motors, DC Motors

iSYM Winch Interface:
Sensors: Wire Length, Winch Speed, Wire Tension
Controls: Winch Speed, Winch Pull

Upgrading
The flexibility of the iSYM system makes it easy to upgrade existing load monitoring systems.

Existing sensors can be used if in good condition, or replaced if required.

There are also various solutions for readout stations locally by the winch, in the control room, or on the bridge.

iSYM has NMEA and Ethernet ports for easy interface to other systems on board.

Electronic Wire Spooling:
iSYM can be delivered with program for electronic wire spooling (iSPOOL). The spooling gear is computer controlled to get exact spooling even with varying wire diameter. You will save time spooling on the wires, and the wire life can be extended by more than 50%

The picture shows Aker Brattvaag Winch on board f/v Atlantic Enterprise. One winch with electronic spooling.

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Sensors for tension and length measurement
Various sensor configurations are possible:

Tension measurement:
- Load cell in fairlead
- Load cell in deflector sheave
- Load cell in winch foundation
- Load cell in winch brake
- Hydraulic pressure
- Electric motor current

Length measurement:
- Encoder or pickup on fairlead
- Encoder or Pickup on deflector sheave
- Encoder or pickup on winch drum