Powerful, umbilical and jumper monitoring solutions for the worldwide subsea oil and gas industry

C-scan
MONITORING DEVICES

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C-SCAN is designed to provide assurance to field installation engineers that their umbilical systems will meet the client requirements by checking electrical integrity immediately prior to connector make-up.

As subsea field umbilical arrays grow ever more complex then the integrity of the components becomes increasingly critical.

It is paramount that subsea electrical arrays are made up of umbilical cables & connectors that are known to be good. Unfortunately it is all too easy for jumper assemblies to be damaged in transit between factory floor and sea floor. Once the array is fully assembled and in place on the sea bed then fault finding becomes highly problematic and test via disconnection runs the very real risk of introducing further faults.

Possible faults could include;

- Manufacturing Errors & Design Flaws
- Transit Damage via Incident or Accident
- Incorrect Installation or Load Out
- Mechanical Damage (impact, vibration, crush, cut, abrasion, etc.)
- Hydrostatic Effects
- Water Leak or Pin Hole
- ROV Manipulator Damage
- Sea floor movement

The Zetechtics C-SCAN is a subsea battery powered electronics package that is fully integrated into the dummy plug normally fitted to the electrical connectors of subsea termination heads and jumper assemblies.

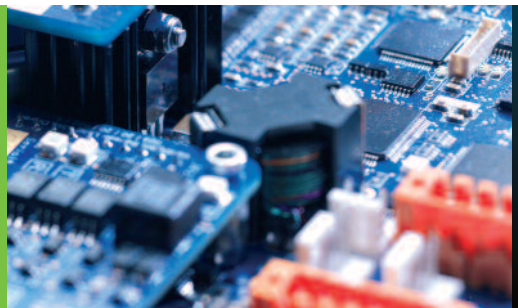
The C-SCAN is fitted like a normal protective dummy connector at the suppliers factory but lies dormant until the jumper or termination head is deployed to the sea bed. The C-SCAN will detect the arrival of any ROV via a light sensor and commences insulation & capacitance checks between all the electrical cores and the surrounding sea water. The worst case value is shown on the LED display, these values can be used to determine if any damage has occurred to the subsea component. The operator then makes up the connection in the normal way and can be sure that known good components are being assembled at every point in the process.

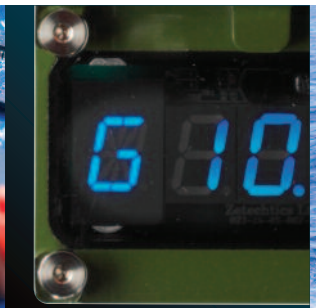
Benefits

- Finding one problem prior to connector make-up could save millions of dollars
- No plugs have to be removed to make electrical checks
- Reusable throughout field installation sequence.

Features

- Detects cable faults on subsea umbilicals and jumpers
- Replaces the normal dummy blanking plug
- 5-Digit LED displays worst case insulation resistance & shortest cable length
- Measures insulation resistance from 0Ω to 10GΩ to detect short circuit / shunt faults
- Capacitive measurement of cable length to detect open-circuit faults / cable breaks (lengths up to 30km).
- Ruggedized titanium enclosure rated to 3000msw
- Test between every conductor and to seawater
- 1 year of standby life before operation
- Activated by ROV lights
- Battery powered (rechargeable)
- Incorporates Self-test circuitry
- Protected inputs – fully isolated when in standby
- Fully user-programmable test settings via PC interface
- Last 100 tests are datalogged and can be recovered from unit after use
- International patent protected.





Jupiter™
SUBSEA CONTROL SYSTEMS

Subsea Control Systems

Zetechtics manufacture the award winning Jupiter Subsea Control Systems. The units, designed for remote subsea intervention control, are available in many variants to solve clients tooling control problems. The innovative Jupiter software runs on any PC and allows users to easily adapt the operation of the system to their particular requirements. Zetechtics offer unrivalled 24/7 support of the system and are regarded as the market leaders with the new Jupiter 2 system. There are well over 200 Jupiter systems operating Worldwide

Subsea Sensing Systems

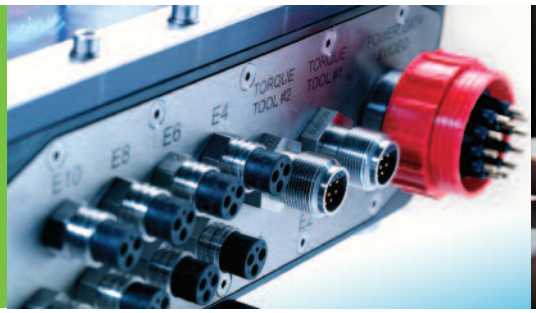
Zetechtics manufacture a wide range of battery powered subsea sensors that can be fitted to subsea equipment that do not need complex control systems. Sensors include accurate pressure gauge monitoring, valve actuation counters, simple on/off sensor state monitoring, etc. The sensors are designed to use as little battery power as possible and can stay dormant for months or even years before being awoken by ROV lighting.

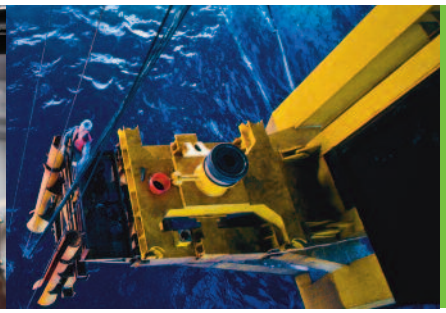
Subsea Torque Verification

Zetechtics manufacture a State of the Art Subsea Torque Verification System to allow operators & their clients to check the accuracy of torque tool settings whilst subsea potentially saving significant amounts by preventing accidental over torque on valve stems and obviating the requirement for lengthy retrievals to check torque tool settings on deck.

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2003

Zetechtics were awarded the Queens Award for Enterprise: Innovation in 2003 for the new developments within the Jupiter System.





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