

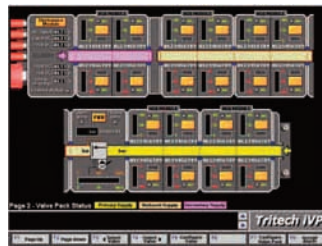
Intelligent Hydraulic Valve Pack Subsea Control System

Features

- Modular design: 2, 4, 6, 8, 10 or 12 valves per valve pack
- Proportional directional valves give flow control during operations without the need for fixed flow throttles
- Flexible hydraulic specification offering:
 - Proportional or fixed flow directional valves
 - Multiple pressure inputs, up to 315 bar
 - Pressure control stages
- Service line relief and pilot operated check valves
- Flexible control electronics and communications offering:
 - Embedded processors for instant boot-up and reliability
 - Integrated comms link over 5.5km of twisted pair
 - Software configurable mapping of console inputs to remote underwater outputs (valve pack or power pod)
- External sensors on both valve pack and power pod are supported (e.g. analogue, digital, CP, tacho)
- Integrated PC in console for display and user interface
- Video text overlay built into console
- System settings can be stored for configured operations
- Task specific settings can be saved and recalled
- Scaleable and upgradeable control system – from ‘dumb’ valve pack to complete control system
- Fully self contained system that does not rely upon the use of external computers

Applications

- ROVs requiring upgraded hydraulic capability
- All remotely operated hydraulic tooling
- Manifold, pipeline or other structures requiring hydraulic control, instrumentation and communications



Screen shots

A typical valve pack is made up of a number of two station directional modules to provide flow and pressure control for up to twelve bi-directional functions. In its simplest form, valves in the pack are operated by an existing ‘host’ control system (e.g. an existing ROV control pod) via an electrical module fitted to the valve pack. Diode steering boards can be added to reduce the number of ways in the valve pack electrical connector if bipolar host supplies are used. A valve pack fitted with an electronics module provides proportional power supplies and a communication link to the surface creating an intelligent valve pack. This allows the system to operate as a self-contained control system under the command of the topside console.

An optional basic power pod is available which provides a +24Vdc power supply for the intelligent valve pack from a 110Vac input.

Alternatively an intelligent power pod can be used to provide the +24Vdc to the valve pack as well as power, control and comms for sensors, video cameras, sonars, lights and electric pan and tilt units. The valve pack console at the surface is the operator interface for the intelligent valve pack and contains an embedded PC computer. The power pod console is a ‘slave’ to the valve pack console and provides the operator interface for the intelligent power pod.

The Tritech subsea control system and valve pack is an integrated and flexible family of products which enable operator control commands to be expressed at a remote location and data to be collected and transmitted for display or storage at a surface control console.

The system can be configured in a number of ways to suit users’ requirements and existing power and communication infrastructure.

Specifications

System

Depth Rating 3000msw

Simple Valve Pack (example spec.):

No. of valves 10 on/off control
 Optional P.O. check valves & pressure relief modules
 Flow control 20 manual fixed throttles
 Max. flow rate 15 lpm per valve
 Max. working pressure 315 barg
 Different pressure inputs available at each end.

Fixed pressure reducing stage

Max comp. Pressure: 1 barg
 Weight in air 26kg
 Weight in water 17kg

Intelligent Valve Pack (example spec.):

No. of valves 10 proportional
 Optional P.O. check valves & pressure relief modules
 Max. flow rate 8 lpm per valve
 Max. working pressure 315 barg
 Different pressure inputs available at each end.

Remotely controllable pressure reducing stage

Max comp. Pressure: 1 barg
 Weight in air 26kg
 Weight in water 17kg

Simple Power Pod:

Electrical input 90-135v ac 50-60Hz @ 5A
 Electrical output 24Vdc @ 14A
 Weight in air 6kg
 Weight in water 4kg

Intelligent Power Pod:

Electrical input 90-135v ac 50-60Hz @ 10A
 Valve Pack supply output 24Vdc @ 14A
 Video camera supplies 2 x 24V, focus & zoom
 2 x 24V with focus
 2 x 24V fixed focus

Lighting 4 x dimmable 500W 110V circuits
 Video switching 6 x 6 cross-point matrix
 Electrical pan & tilt outputs 3 @ 110Vac/24Vdc
 External sensors 6 (analogue, digital, CP etc)
 Weight in air 22kg
 Weight in water 14kg

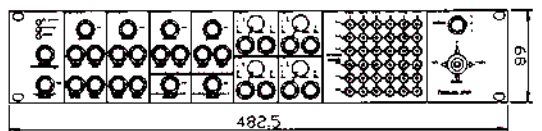
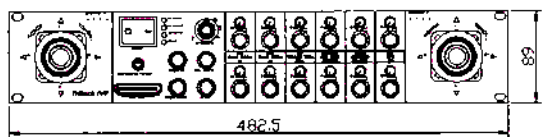
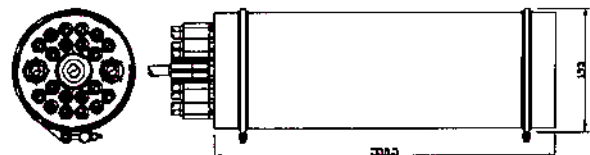
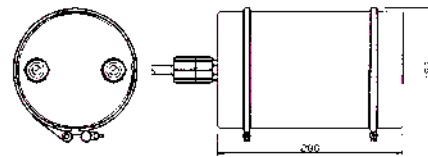
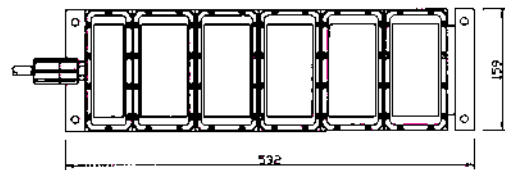
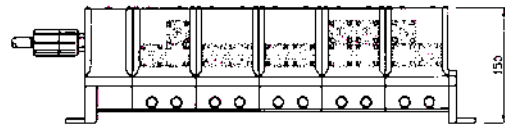
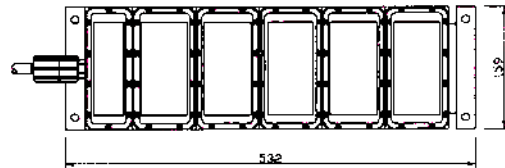
Valve Pack Console:

Joysticks 2 x 3-axis analogue
 Pushbuttons 12 configurable
 Potentiometers 1 single-turn per pushbutton
 Vernier multiturn for pressure control

Dimensions 19" wide x 2U high x 130mm deep

Power Pod Console:

Joystick 1 x 2-axis digital
 Pushbuttons for cameras, lights & video sw.
 Potentiometers 1 per lighting channel
 Dimensions 19" wide x 2U high x 100mm deep



All measurements in mm

All specifications are subject to change in line with Tritech's policy of continual product development.

Ref: EDS-IVP-001.6