

# IVP Torque Tool Control System

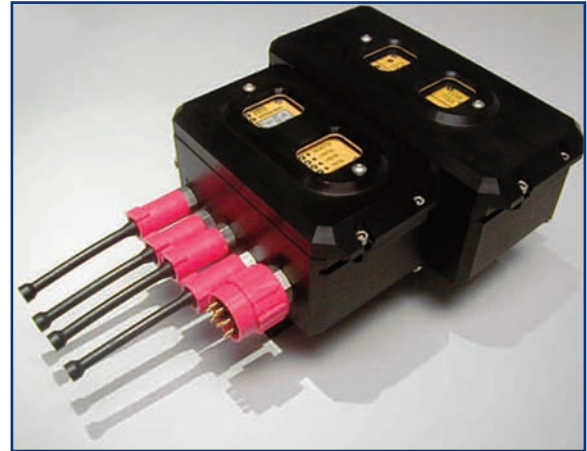
## Subsea Control System

### Features

- Proportional pressure and flow control
- Expandable to provide up to 11 additional Proportional Control Valves
- Fully automated calibration capability
- Manual calibration capability
- Comprehensive 'watchdog' system
- Real-time display of torque and turns count

### Applications

- Deep water torque tool operations
- Integrated tooling systems

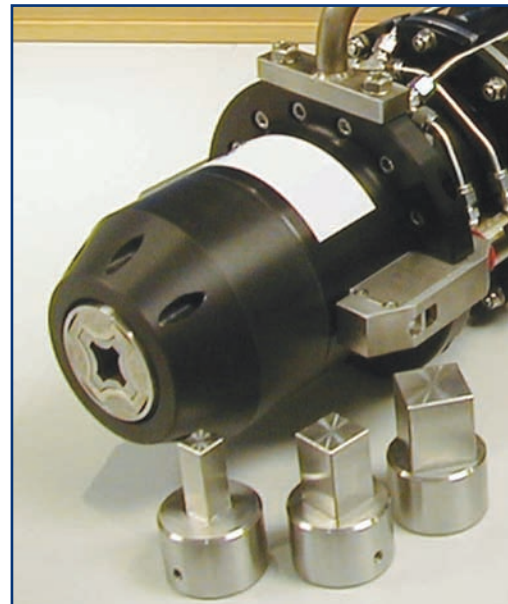


The Tritech Torque Tool Control System has been developed from the industry recognised Intelligent Valve Pack (IVP), manufactured to provide the offshore industry with a modular and proportional control system.

By utilising the IVP technology, Tritech have brought a system to the market that ensures torque tool operations are performed to the highest level. The fully integrated subsea unit can be controlled from the surface via a number of optional control units. The standard IVP controller is user configurable for use with the Torque Tool Control Module (TTC Module), therefore allowing current IVP owners to reduce their expenditure when upgrading to the IVP-TTC.

The IVP-TTC is easily expandable to provide additional proportional controls over and above the basic torque tool control functions.

The system can be interfaced to a number of torque tool analysers with RS232 outputs and will then carry out an automated calibration. Where no RS232 output is available, the IVP-TTC can still be calibrated by the user manually inputting the readings from the analyser. All information is logged and can be reviewed at a later time if required.



## Specifications

### Standard IVP-TTC Hydraulic Connections

- 1 x NG6 Proportional Pressure Valve
- 1 x Pressure Reducing Valve
- 2 x NUPRO Relief Valves

### Optional Hydraulic Connections

- 1-11 x NG3 or NG6 Proportional Pressure Valves
- 1-11 x Pressure Reducing Valves
- 1-11 x NUPRO Relief Valves

### Sensors

- TT Turns Count: (16 bit measurement resolution)
- Internal Pressure Sensor: TT Set Pressure > 250 bar (option)
- Strain Gauge Input: Torque applied to tool - (16 bit measurement resolution)

### Performance

- Electronic 100Hz Loop Control
- Hydraulic Working Pressure: 315 bar (max)
- Torque Tool Pressure: 11-200 bar
- Torque Tool Flow: 0-24 lpm (cw & ccw)

### Mechanical

- Pressure & Tank: 3/8" BSP
- Torque Tool: 3/8" BSP
- Solenoid: 1/8" BSP
- Fill & Drain: 3/8" BSP
- Vent: 1/8" NPT
- Material: 6082 Al Alloy Anodised

### Electrical

- Power: 24V unsmoothed DC (120W)
- Data: RS232/RS422 (for use with ROV Multiplexer), U-Interface (for use with 5.5km single twisted pair)

### Software Features

- Tool Nudge, Tool Direction Control, Emergency Stop, System Presets, Graphical Representations, Password Protection, Automatic Calibration, Alarm Control, Diagnostics Valve and Electronics Operation, Video Overlay

