Smart Valve Pack Controller

The smart valve pack controller is a 4000m ambient pressure rated module for controlling multiple hydraulic valves and monitoring sensors. It typically operates on rectified 28VDC and uses RS485 serial for communication. It can drive both proportional and switching solenoid coils; and can read voltage or current loop sensors. This is one of a range of "local" electronics boards.

The module is specifically designed for use in the ambient oil of ROV valve packs and subsea intervention tooling packages. Typical applications include:-

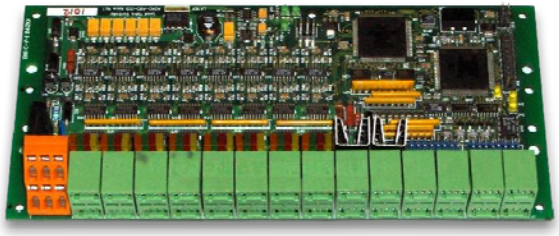
- General purpose serial controlled valve pack with associated sensors.
- Low cost open loop rate, variable rate or closed loop position control manipulator systems.
- Intervention tooling packages for subsea use
- Torque tool control systems.

One or more modules communicate with the operator's master system over a single RS485 bus. This can be through a fibre optic mux, umbilical twisted pair or can communicate directly with a subsea vehicle control system.

The module is designed typically to operate from a single nominal unregulated 28Vdc supply, removing the need for regulated dc supplies normally housed in pressure vessels.

Features

- General purpose Subsea Valve Controller
- Rated to 4000m ambient depth pressure
- 32 Valve drive channels
- Total of 16 sensor inputs
- Full remote diagnostics



Application examples: a multi-purpose ROV work-skid and torque tool valve pack

Specification

Module Supply Voltage Range:	Unregulated (or regulated) 24 to 50 Vdc
Module Power Capacity	
(Maximum Total):	16 Amps PCB current handling capacity
Valve Drives:	32 Channels (30 Proportional/On/Off + 2 On/Off) Each channel capable of 1.3A Max
Valve Current Measurement:	32 Individually Monitored Channels
Sensor Inputs:	8 Analogue Inputs 0-5V/4-20mA switch selectable 2 Water Leak Detectors 2 Platinum Resistance Thermometers 1 AC2626 Micro Current Input 4 Counters: 2 High Speed + 2 Low Speed Or 2 Directional quadrature phase encoded inputs Or 4 digital inputs
Sensed Board Temperature:	-40 ºC to +125 ºC Accuracy ±2 ºC
Communications:	Half Duplex RS485
Electrical Protection	
(Hardware/Software):	Valve drives current limited & short circuit protected Sensor supplies current limit & short circuit protected Module supply under-voltage & over voltage protected (Supply must be fitted with suitably rated fuse)
Loss of Communications State:	Standard setting: all valves off after 0.5 sec
In Oil Pressure:	6000 Psi (≈4000M Ambient Depth Pressure)
Suitable Compensation	
System Oil Types:	Transformer oil recommended but resistant to hydraulic oil
Operating Temperature:	-20 ºC to +50 ºC
Dimensions:	100 x 210 x 30mm

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