

MULTI-VALVE PACK ENHANCED VALVE CONTROL BOARD

The SMD Multi-Valve Pack Enhanced (MVPE) Control Board is a highly capable and versatile control unit designed to act as a distributed I/O hub on subsea systems. It's capable of driving upto 15 A/B hydraulic proportional or solenoid valves (ie. 30 channels) with adjustable dither to provide extremely fine hydraulic control of equipment.

The MVPE board is also a capable data collection system with 22 inputs designed to monitor sensors at the ROV's periphery such as compensators, reservoirs, proximity sensors, speed sensors and more. This dual functionality is beneficial in reducing harness congestion at the POD and facilitates in appearance and maintainability of the vehicle.

Designed to be operator and maintenance friendly, the board has visible indicators for visual diagnosis of faults, normally these are located to be visible to the operator through a clear window. When commissioning the vehicle it's also simple to isolate the valve driver outputs whilst still maintaining board control and communication providing a safe solution for personnel.

FEATURES

- 30 Valve Drive Channels to control upto 15 independent hydraulic valve stacks.
- 15 I/O channels for additional sensor inputs. Individually configurable 4-20mA or 0-10V inputs.
- Temperature inputs – PT100 (2 off)
- Encoder inputs (2 off)
- RS485 or RS232 multi-drop control via Modbus RTU.
- Separate control and field power supplies for safe start-up.
- Onboard DC-DC regeneration for smooth and steady Supply.
- Vibration resistant, Pheonix Connectors for simple board installation.
- On and off board environmental monitoring.



MVPE SPECIFICATION

GENERAL

Depth rating 6000 MSW
 Compatibility..... MINERAL OIL
 Operating Temperature -10°C to +60°C
 Storage Temperature -30°C to +60°C
 Size (LxWxH) w/out cover 220 x 100 x 38mm
 Size (LxWxH) with cover..... 252 x 110 x 40mm

STANDARD USES

- Main control and driver board in iHCU's for actuation of manipulators, hydraulic cylinders, torque tools and other ROV tooling.
- I/O for monitoring reservoir and compensator levels, wheel speeds and length out.

VARIANTS & SMD PART NUMBERS

- AJ7545 – Bare board
- AJ9823 – Board + cover (recommended)

ELECTRICAL OUTPUTS

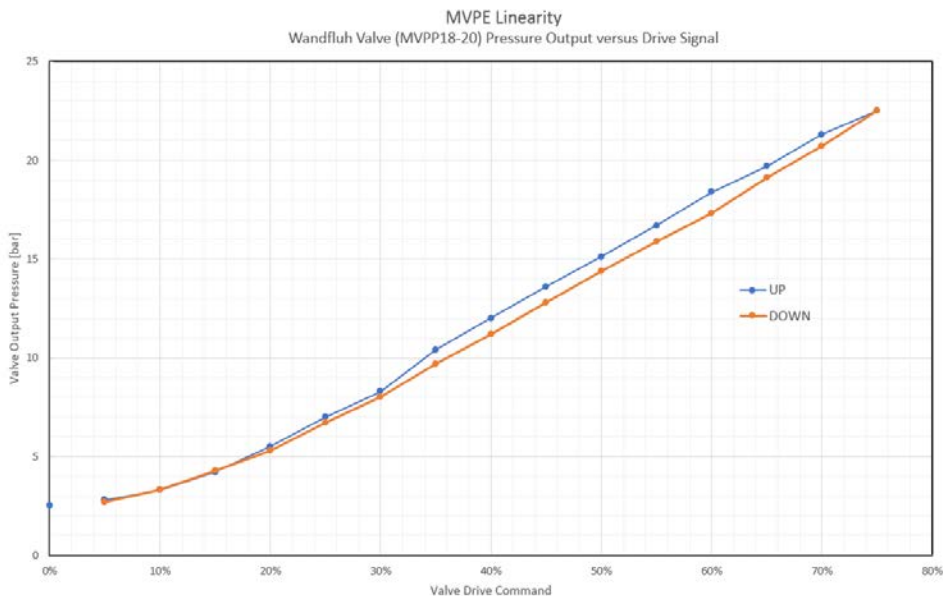
Valve Driver Outputs 15 A or B OUTPUTS
 Electrical24VDC UPTO 2.2 AMPS/CHANNEL
 Output ditherCONFIGURABLE
 Resolution 15 BIT

ELECTRICAL INTERFACES

Electrical Power (Control) 24VDC; 1AMP
 Electrical Power (Field)..... 24VDC
 Electrical InterfaceRS232 or RS485
 Electrical CommsModbus RTU

General Input channels (4-20Ma or 0-10V) 15 OFF
 Sensor Supply capability UPTO 160AMP/CH
 Input Configurability 0-10V
 0-20mA
 DIGITAL PULL-UP (8-24V)
 Input Resolution 15 BIT + NOISE FILTER

Quadrature Encoder Inputs (upto 4kHz) 2 OFF
 External Strain Gauge Inputs 2 OFF
 External Temperature Inputs 2 OFF; 3 WIRE



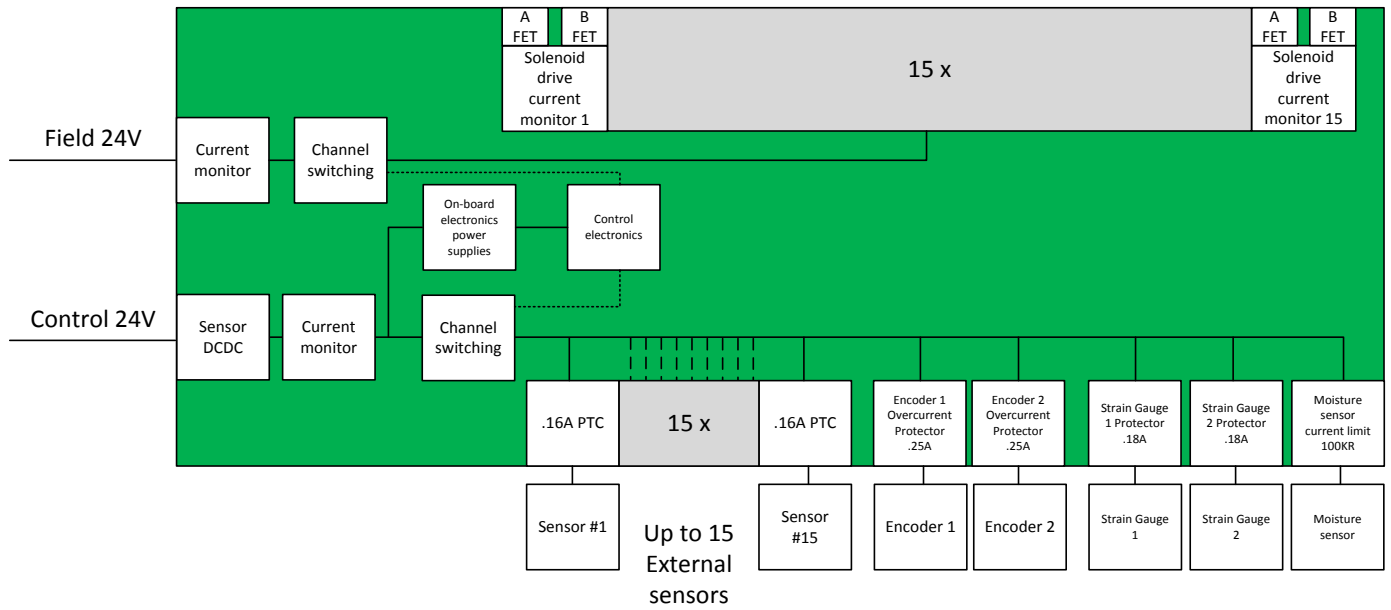


Figure 1 – Board I/O and Electrical Layout

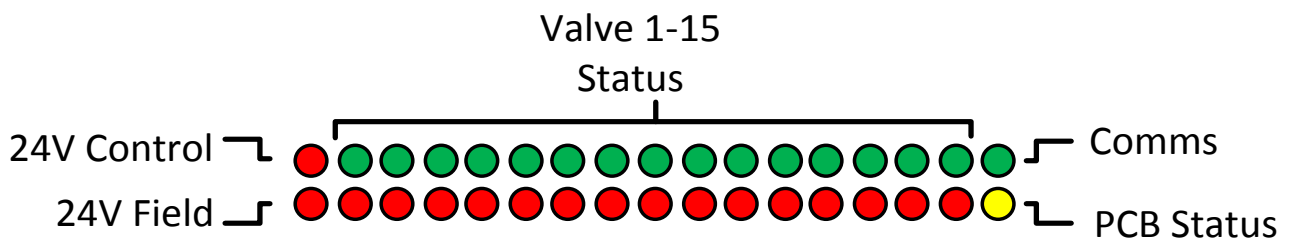


Figure 2 – On-board status indication