

CURVETECH®
SUBSEA
ELECTRONICS
& SENSORS



ENGINEERING
EXCELLENCE
UNDERWATER

MULTI-FUNCTION VALVE PACK CONTROLLER CARD

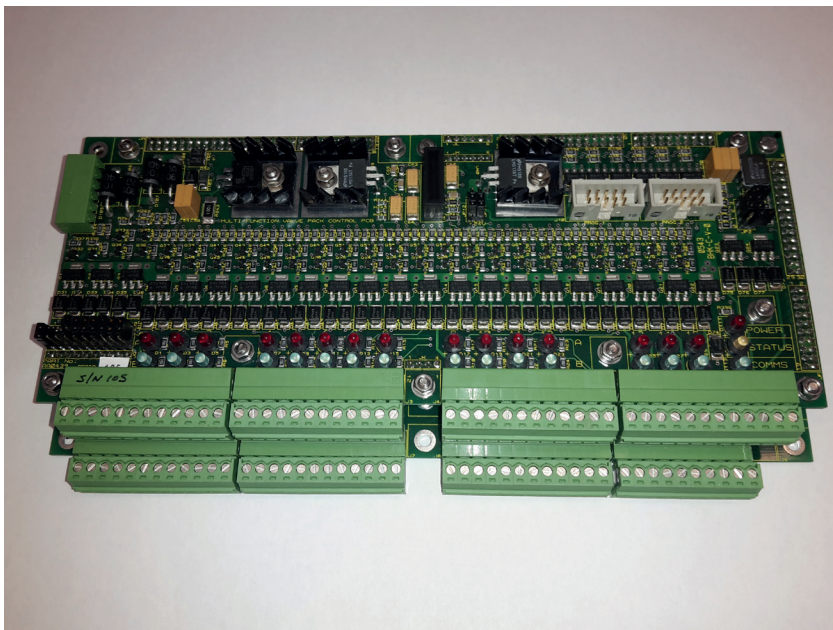
The SMD Curvetech® Multi-Function Valve Pack (MVP) controller card is a powerful and reliable control card designed for valve control use as part of a subsea control system. The MVP card can be used as a standalone valve controller or integrated as part of a valve pack control unit. Available in two configurations - lower resolution 0-100 step or a higher 0-255 step resolution - each version is capable of controlling up to 15 valve outputs and is designed for mounting in oil-filled compensated enclosures pressure rated up to 4000msw.

Remote control is possible via multidrop RS485 - the MVP is configured to act as a slave controller from a host control system. Up to 16 MVP cards can be addressed over an RS485 network.

The unit can be supplied with communications protocol documentation and National Instruments LabVIEW™ based demonstration software for ease of development and integration to third party control systems.

PHYSICAL IO CONFIGURATION

- 15 x 24V A/B Proportional valve controls
- 10 x Analogue Inputs (4-20mA or 0-10V)
- 1 x PT100 sensor external input
- 1 x Moisture sensor external input
- 2 x On-board sensors (Voltage and Temperature)



AF7843

MULTI-FUNCTION VALVE PACK CONTROLLER CARD

STANDARD MVP CARD SPECIFICATIONS

PART NUMBER	NO. OF OUTPUTS ¹	PWM RESOLUTION	NO. INPUTS ²	MOUNTING	CONNECTORS ³	STD. COMMS	BAUD RATE
AD7057 ⁶	15	0-255	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400
AA0439 ⁶	15	0-100	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400
AK1266 ⁷	15	0-255	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400
AK0674 ⁷	15	0-100	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400

¹ A or B output channels. Up to 1.5Amps per channel limited to power supply total capacity.

² Analogue Inputs can be jumper configured as either 0-10V or 4-20mA type.

³ Screw terminal type connectors.

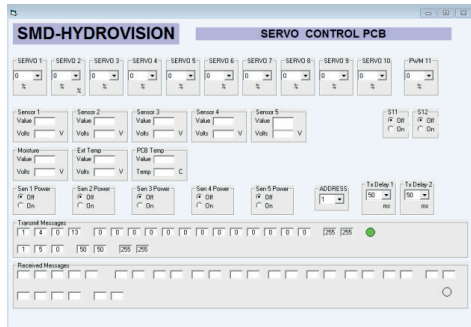
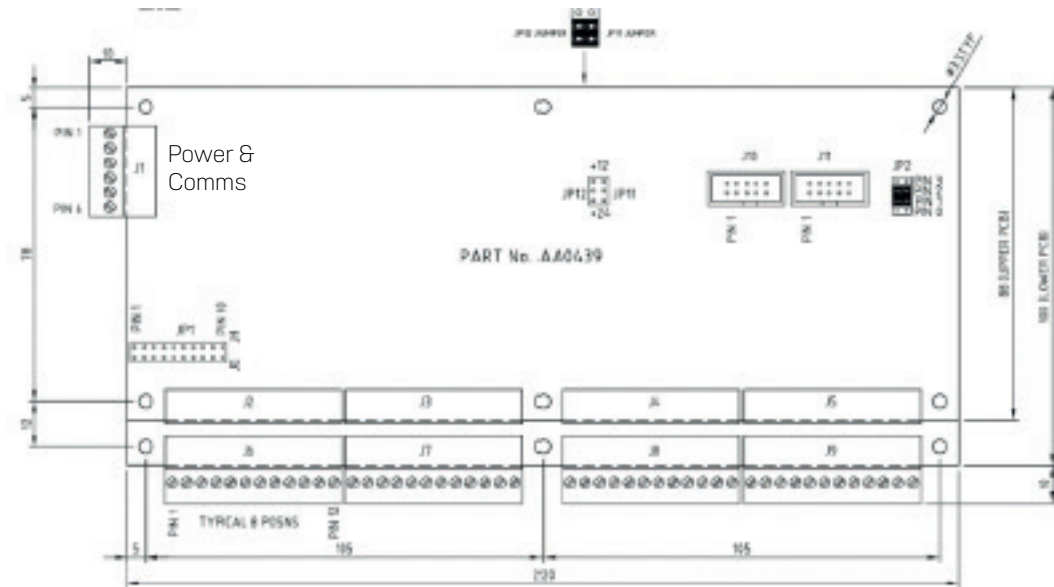
⁴ 24Volt DC power supply required.

⁵ Specifications are subject to change without prior notice. We accept no liability for any inaccuracy or printing errors.

⁶ Depth rated for nominal 3000msw operation.

⁷ Depth rated for up to 6000msw operation.

Mounting details



CONTACT US

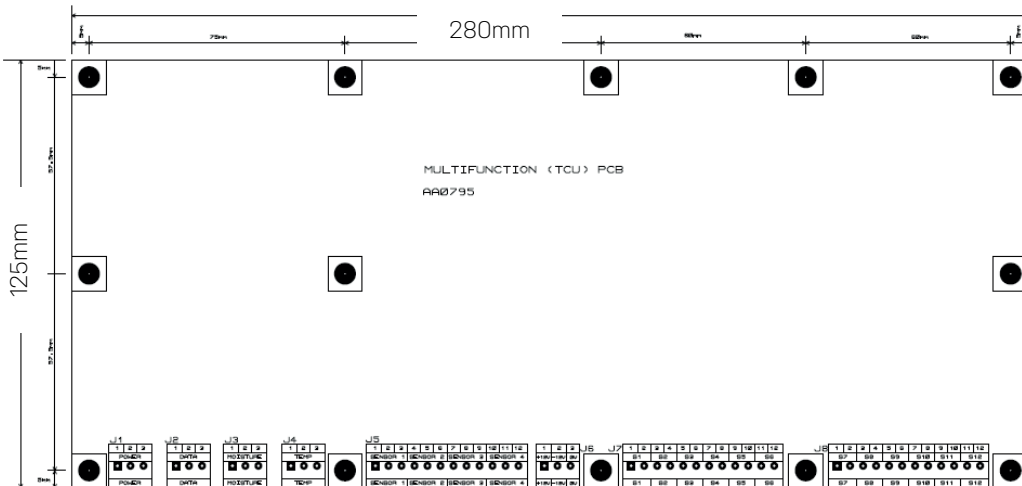
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MULTI-FUNCTION VALVE PACK CONTROLLER CARD



LIGHT CONTROLLER CARD

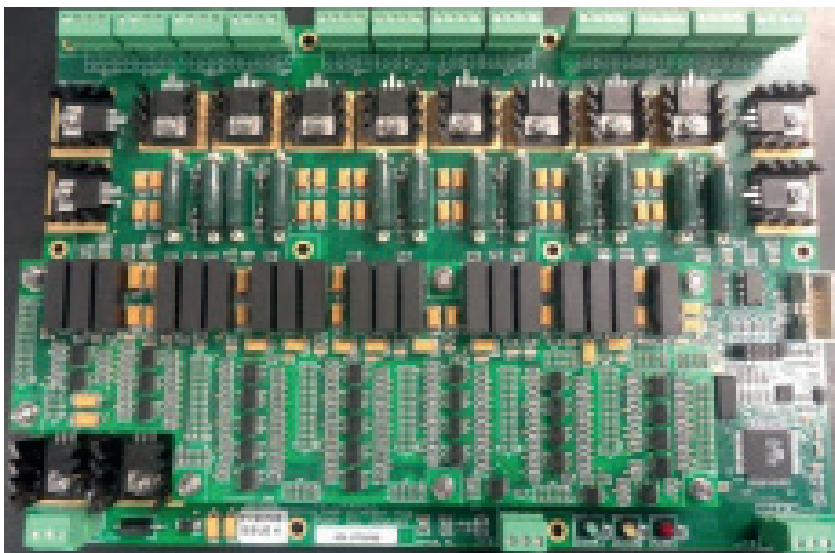
The SMD Curvetech® Light Controller (LC) card is a powerful and reliable control card designed for subsea light\lamp brightness control use as part of a subsea lighting control system. The LC card can be used as a standalone light controller or integrated as part of a complete subsea light control unit. Available in two configurations – 6+2-channel and 12+2-channel, and 3000msw or 6000msw depth ratings the LC cards are designed for mounting in oil-filled compensated enclosures.

Remote control is possible via multidrop RS485 - the LC card is configured to act as a slave controller from a host control system.

The unit can be supplied with communications protocol documentation and National Instruments LabVIEW™ based demonstration software for ease of development and integration to third party control systems.

PHYSICAL IO CONFIGURATION

- 6 or 12-Channel Light Dimmable Output versions available
- Additional 2-channel on/off outputs
- 2 Amps per channel at 110VAC
- 2 x On-board sensors (Moisture and Temperature)



LIGHT CONTROLLER CARD

STANDARD LIGHT CONTROL CARD SPECIFICATIONS

PART NUMBER	LIGHT CONTROL OUTPUTS¹	RESOLUTION RANGE	NO. ANALOGUE INPUTS²	MOUNTING	CONNECTORS³	STD. COMMS	BAUD RATE
AA1467⁶	6+2	0-255	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400
AA0607⁶	12+2	0-255	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400
AK0679⁷	6+2	0-255	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400
AK0676⁷	12+2	0-255	10	7x M3	Screw Terminals	RS485	9600 / 19200 / 38400

¹ Main 6\12-channels are dimmable controlled. Additional +2 channels are on\off light control only. Each channel is limited up to 2 Amps maximum per channel at nominal 110VAC.

² Analogue Inputs for moisture and temperature monitoring.

³ Screw terminal type connectors.

⁴ 12Volt DC power supply required.

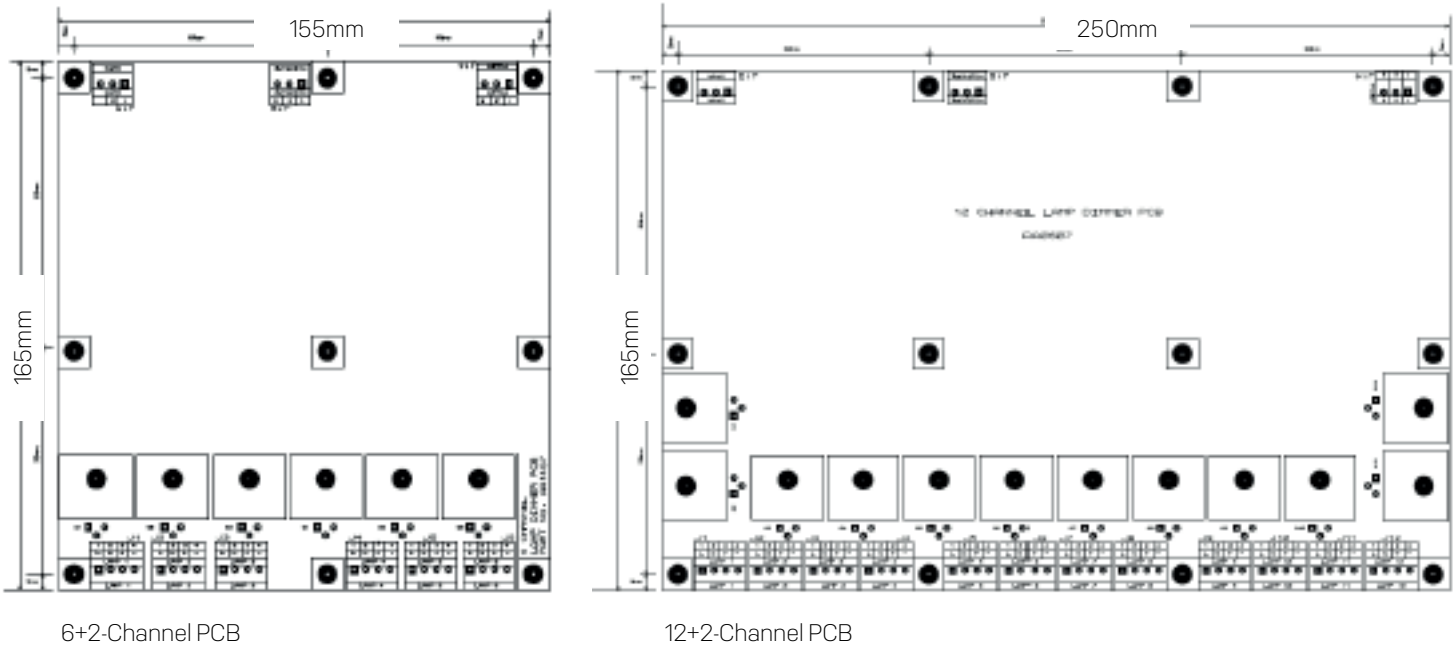
⁵ Specifications are subject to change without prior notice. We accept no liability for any inaccuracy or printing errors.

⁶ Depth rated for nominal 3000msw operation.

⁷ Depth rated for up to 6000msw operation.

LabVIEW™ is a Trade Mark of National Instruments Corporation

Mounting details



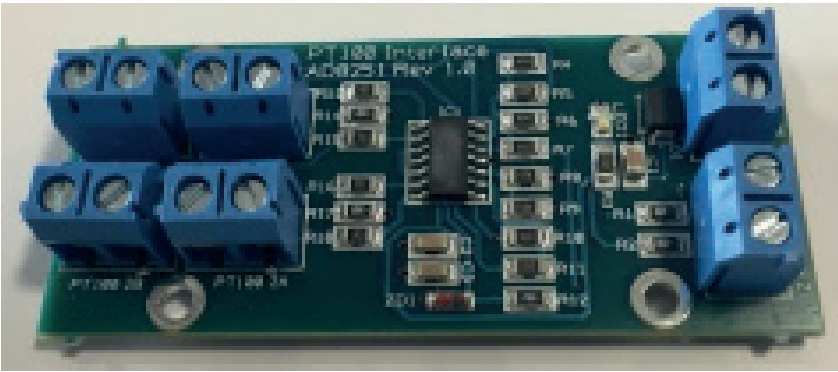
Images shown are not to scale - all dimensions in mm

Optional complete light control units are also available

SUBSEA ROTARY ENCODER

The SMD Curvetech® Subsea Rotary Encoder (SRE) is an incremental shaft encoder assembly designed for subsea encoder applications such as for subsea Tether Management Systems (TMS) and winches. The SRE uses a stainless steel marine grade housing and is supplied with mounting bracket for ease of installation. The SRE can also be supplied with a range of subsea connector options.

- DETAILS**
- 500 pulses per revolution
 - 12,000 RPM maximum speed
 - 50kHz maximum frequency
 - 3000m depth rated as standard, other depth ratings are available on request.



STANDARD PT100 CARD SPECIFICATIONS

PART NUMBER	NO. OF INPUTS ²	INPUT TYPE	NO. OF OUTPUTS ²	OUTPUT TYPE	MOUNTING	CONNECTOR
AD8251	2	PT100	2	Analogue 0-10VDC	4x M3	Screw Terminal

¹Analogue Inputs can be configured as either 2, 3, or 4-wire type.
²A or B temperature output channels. Software calibration required to convert 0-10VDC signal to temperature value.
³ 24Volt DC power supply required.
⁴ Specifications are subject to change without prior notice. We accept no liability for any inaccuracy or printing errors.

SUBSEA ROTARY ENCODER

The SMD Curvetech® PT100 Conditioning card is designed for temperature monitoring applications. The PT100 card can be used for standalone 0oC-100oC temperature sensor monitoring applications or as part of a control system diagnostic and monitoring. The PT100 card is capable of interfacing to 2x PT100 sensors and can handle 2, 3 or 4 wire sensors. Temperature calibration is via software control. Can be directly interfaced with SMD's range of subsea control units as part of an integrated control system.

DETAILS

- Converts PT100 temperature sensor resistance to 0-10V analogue signal.
- 2x PT100 Inputs (2 / 3 / 4-wire)
- 0oC-100oC range
- 24VDC power input with reverse polarity protection



SUBSEA ROTARY ENCODER

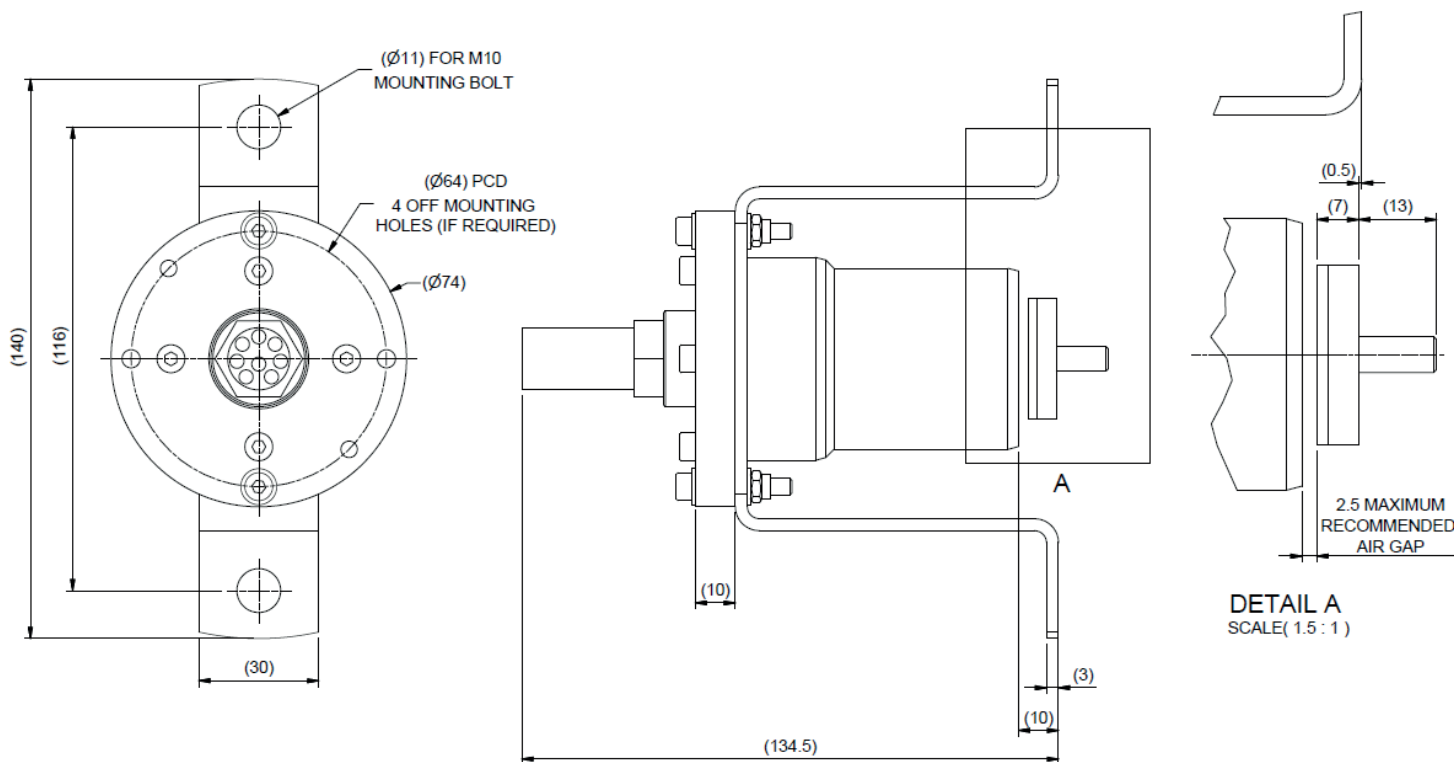
STANDARD PT100 CARD SPECIFICATIONS

PART NUMBER	RESOLUTION ¹	MAX. SPEED	MAX. FREQUENCY	TEMPERATURE RANGE	MOUNTING BRACKET	POWER SUPPLY ²	CONNECTOR
AJ9493	500PPR	12,000 RPM	50 kHz	-25°C - +85°C	2x M10 on 116mm pitch	24VDC, <60mA	Impulse

¹A and B quadrature output signals. Output load must be >800Ω. Short circuit protection must be included on the host controller otherwise a short circuit will damage the encoder.

² Unit draws no more than 60mA current with 24VDC power supply.

³ Specifications are subject to change without prior notice. We accept no liability for any inaccuracy or printing errors.



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SUBSEA PROXIMITY SENSOR

The SMD Curvetech® Subsea Proximity Sensor (SPS) is an inductive proximity PNP normally open proximity sensor designed for subsea applications. The SPS is housed in a marine grade stainless steel housing can be supplied with a range of subsea connector options and cable lengths.

- DETAILS**
- PNP Normally open sensor
 - 2000Hz maximum frequency
 - 500 BAR Pressure Rated
 - 3000m depth rated as standard, other depth ratings are available on request.



STANDARD PT100 CARD SPECIFICATIONS

PART NUMBER	SENSING DISTANCE (IN AIR) ¹	TYPE	SWITCHING FREQUENCY	TEMPERATURE RANGE	MOUNTING	POWER SUPPLY	CONNECTOR ²
AC3994	1.5mm	Inductive PNP Normally Open	2 kHz	-25°C - +85°C	M12 thread	24VDC, 200mA	Impulse

¹ Sensing distance measured in air.

² Sensor supplied as standard with 2m length harness, other harness lengths available on request. Pin 1=+24VDC, Pin2=Signal and Pin 3=0V

³ Specifications are subject to change without prior notice. We accept no liability for any inaccuracy or printing errors.

VACUUM PORT

The SMD Curvetech® Vacuum Port assembly provides the facility to test seal integrity of subsea enclosures prior to launch. Ensuring subsea pressure vessel o-ring seals are correctly seated prior to diving is crucial in maintaining subsea vehicle up-time. The inclusion of a vacuum port on any POD allows field operators to test seal integrity prior to launch of the vehicle preventing costly mistakes and potential damage to internal equipment. The SMD Curvetech® vacuum port is designed for single man operation allowing a vacuum to be easily formed inside the pressure vessel and maintained on closure of the valve.

Optional kits can be supplied to allow a vacuum to be pulled using a standard air supply or alternatively from a 110V electric supply.

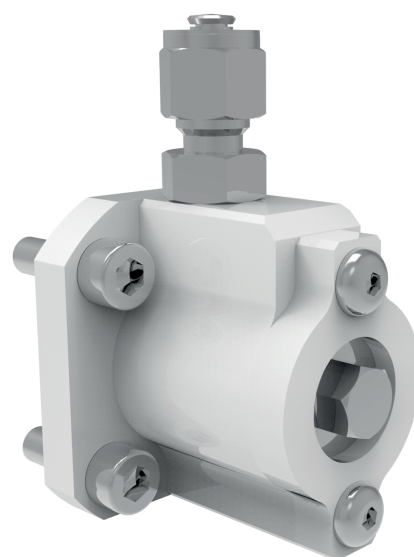
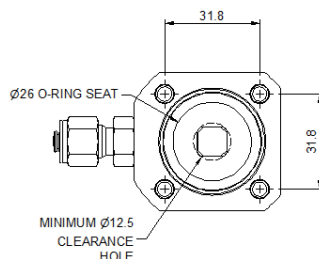
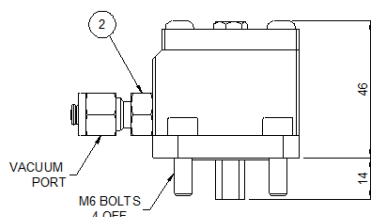
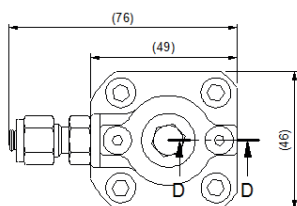
DETAILS

- Compact design package
- 3000m rated
- All stainless steel robust design
- Simple vacuum closure for deck operations
- Optional pneumatic (or electric) vacuum pulling kits available



ACCESSORIES

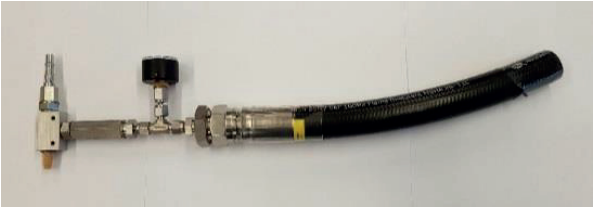
PART NUMBER	DESCRIPTION
AH7433	Pneumatic Vacuum Kit
TBC	Electric Vacuum Kit (110V)



SUBSEA POWER SUPPLY UNIT

The SMD Curvetech® Subsea Power Supply Unit (SPSU) provides 15VDC and 24VDC power supply outputs from an input 110VAC supply. Typically used as part of a subsea instrumentation or control system the SPSU provides additional power supplies for use with 3rd party equipment. Utilising state-of-the-art power supply modules the standard configuration unit includes 1x 15VDC and 1x 24VDC power supplies (e.g. for use with responders/transponders, sensors and other instrumentation) but voltage ranges between 1.5VDC to 58VDC up to 1200W are possible – contact SMD for special requirements. The SPSU includes 2x output ports for ease of wiring and each output connector includes a signal connection and return line for use with 3rd party equipment signals (e.g. for use with Kongsberg or Sonardyne responders/transponders). Housed in a 4000m rated pressure vessel the unit includes an SMD vacuum port and Burton connectors as standard. Other connector types are available on request.

- DETAILS**
- Compact robust design package
 - 4000m rated
 - Aluminium housing
 - Simple vacuum closure for deck operations
 - 110VAC Input Supply
 - Standard Outputs 15VDC @30 Amps & 24VDC @10 Amps – other voltages are available on request
 - 2x Output Port Connections



ACCESSORIES

PART NUMBER	DESCRIPTION
AH7433	Pneumatic Vacuum Kit
TBC	Electric Vacuum Kit (110V)

