



Interface Control Document

TC2158 Projector Unit



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TC2158 Projector Unit – Interface Control Document

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This document describes the interfaces between the Reson TC2158 Projector Unit and the vehicle on which it is housed.

It is provided to the Monterey Aquarium Research Institute in partial satisfaction of Milestone D, as defined in Section 3.4 of Attachment A (Scope of Supply) to the Purchase and Sale Agreement.



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1. Interface Between TC 2158 Projector Unit and the Ocean

Acoustic Interface

The TC 2158 200 kHz Projector Unit generates an acoustic signal in the water beneath the vehicle. The signal is coupled to the water through a polyurethane window. This signal has the following characteristics.

Table 1 – TC 2158 Projector Unit	
Vertical Plane Beamwidth (-3 dB)	1°
Horizontal Plane Beamwidth (-3 dB)	140
Maximum Sound Pressure Level	+220 dB re 1 μ Pa at 1 meter

Physical Interface to the Environment

The TC2158 Projector Unit interfaces with the ocean through a high density Polyurethane acoustic window affixed to a grade 2 Titanium base.

When mounted in the AUV, ROV or Towbody, the TC 2158 will successfully withstand exposure to 6,500 meter test depth (9,250 psi hydrostatic pressure). It will operate within specifications at depths to 6,000 meters (8540 psi).



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2. Interface Between TC 2158 Projector Unit and the Vehicle

Mechanical Interface

The TC 2158 Projector Unit is shown in Figure 1. It is cylindrical in shape with a flat base.. The cylinder diameter is 110 mm, as is the height. The TC2158 is 462 mm long. The weight in air is 13.0 ± 0.5 kg, and the weight in seawater is $8.0 \pm \text{TBR}$ kg .

The TC 2158 Projector Unit interfaces to the vehicle with four m8 x 10 mm screws located on a rectangular pattern 82 mm by 433 mm.

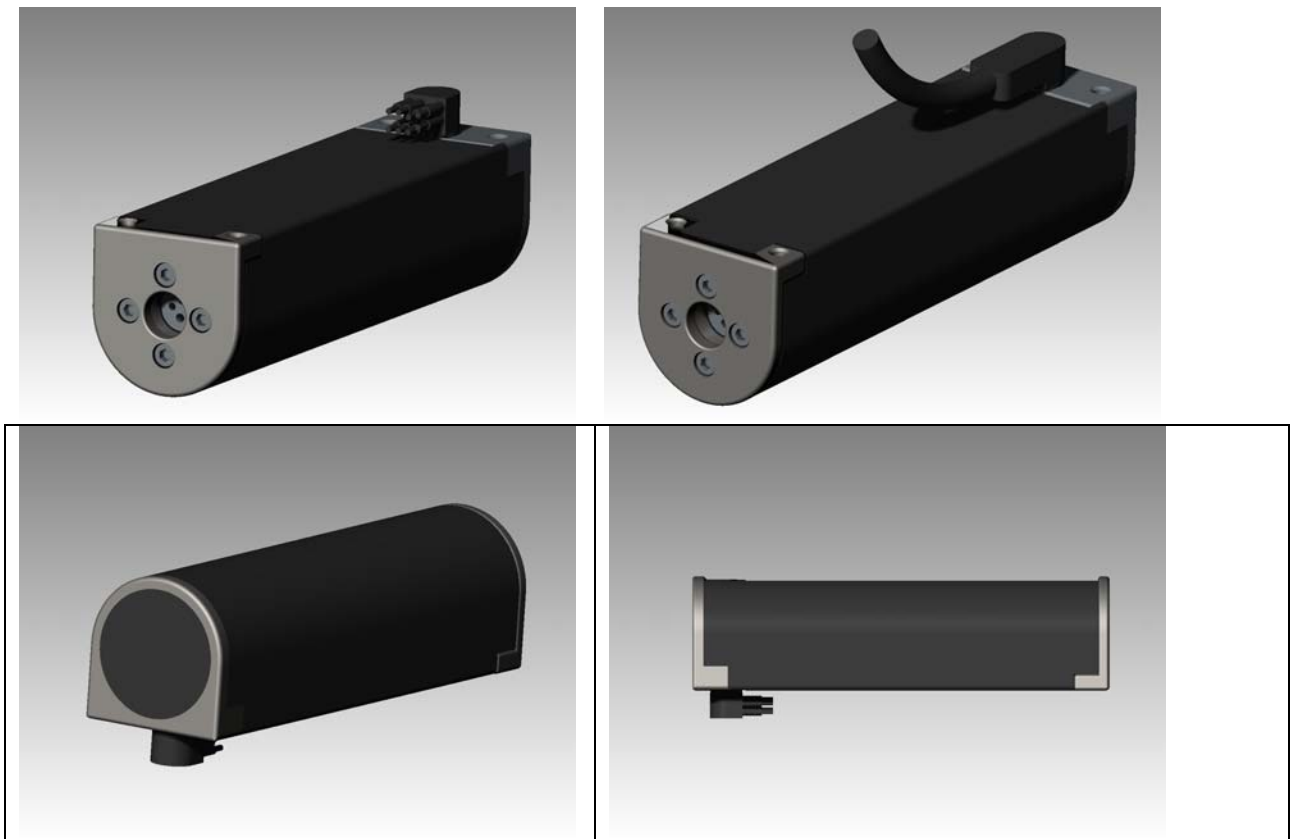


Figure 1 - TC 2158 Projector Unit

Upper right hand view shows normal orientation of Projector Unit and connector



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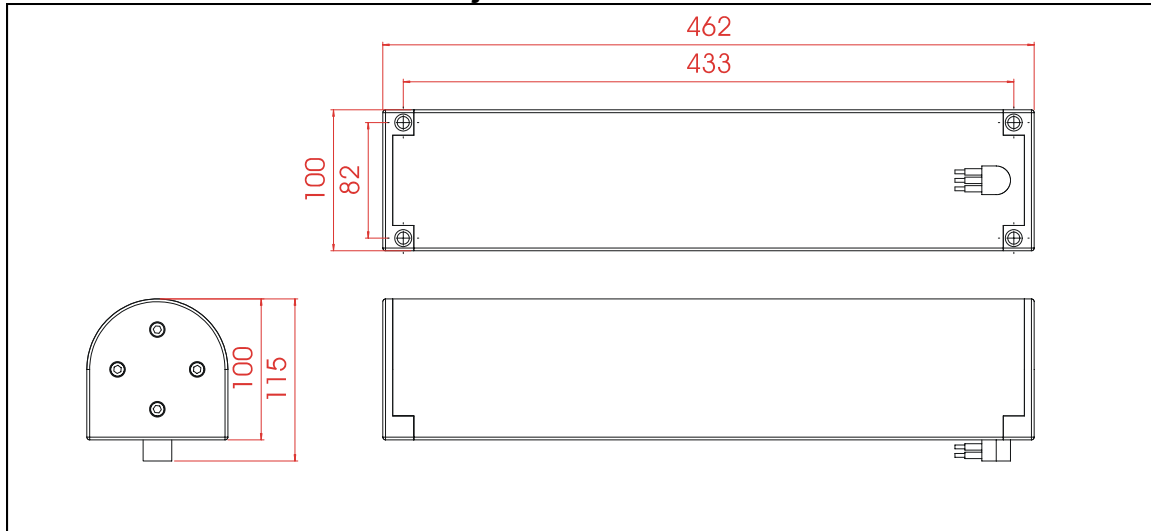


Figure 2. Outline dimensions for TC2158 Projector Unit

Electrical Interface

The TC2158 Projector Unit interfaces electrically to the LCU or ICPU through a single TBD long cable (Reson, Inc. Dwg. No. 11393-X, where X denotes the cable length), as shown in Figure 3. At the Projector Unit end of the cable, is a female 8-pin connector. (Impulse Model LPMIL-8-FS). At the end of the cable that interfaces with the ICPU Pressure Housing, there is a male connector (Impulse Model MCIL-8-MP). The maximum allowable length for this cable is 3 meters. This is an internal interface between two RESON-supplied items.

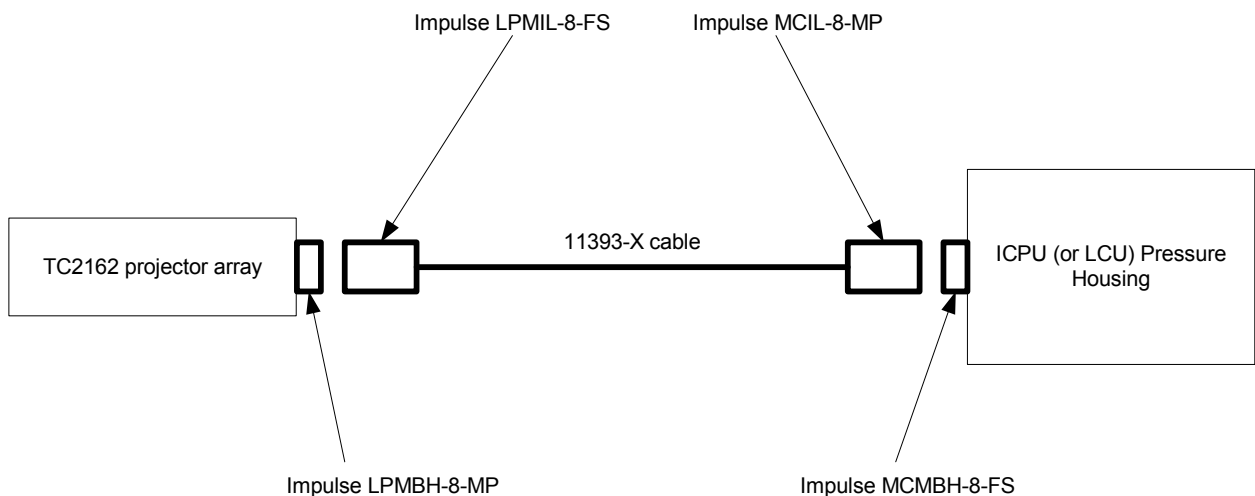


Figure 3 – TC2158 to LCU/ICPU Electrical Interface

(An ICPU is used for an AUV. An LCU is used for an ROV, Towbody or Surface Ship)