

# Simulator for Chemical Injection Throttle Valves

## CTV Simulator (CTV-S)

The new generation CTV simulator is recognized as one of the world's most advanced and is used to test through all CTV functionalities on a subsea control system.



### FEATURES

**Emulator functionality – enhanced valve simulation**

**Ideal for training and testing**

**UL and CE certified**

# Provides you with the most complete product line for subsea chemical injection

Since the first installation of our CTV i on the seabed in 1995, Oceaneering has focused on meeting customer requirements for a complete, advanced product portfolio. Through in-house development, a new generation of CTV simulator with enhanced features is now available.

Developed based on a commitment to delivering the highest quality and the easiest user interface for the customer, the simulator has the highest required certification through UL, C-UL and CE marking, to ensure compliance worldwide.

The simulator is designed to function on all Oceaneering® subsea remotely operated CTVs and is backwards compatible with previous generations. The new generation has a user-friendly screen and added features enable enhanced simulation and understanding of the behavior of valve types.

A single simulator can include 10 chemical throttle injection valve configurations to accurately emulate project specific applications. This enables the customer to test their subsea control system to the full extent.



Front View



Back View



Simulators with enhanced emulation capabilities



With front and back covers

## Technical Specification

Operating temperature	23 °F to 113 °F / -5 °C to 45 °C
Operating humidity	20% - 80% RH
Storage temperature	-4 °F to 158 °F / -20 °C to 70 °C
Storage humidity	20% - 80% RH
Weight	25 lb / 11.5 kg
Operating parameters for power adapter	100 - 240 V AC 50-60 Hz

Power consumption	20 watt (max)
Dimensions (L x W x H)	16.1 x 22.2 x 6.2 in / 40.9 x 56.4 x 15.7 cm
Communication protocol	CANBUS 443 and 401 Profibus DP Modbus RTU
Certifications	UL (USA) C-UL (Canada) CE (Europe)

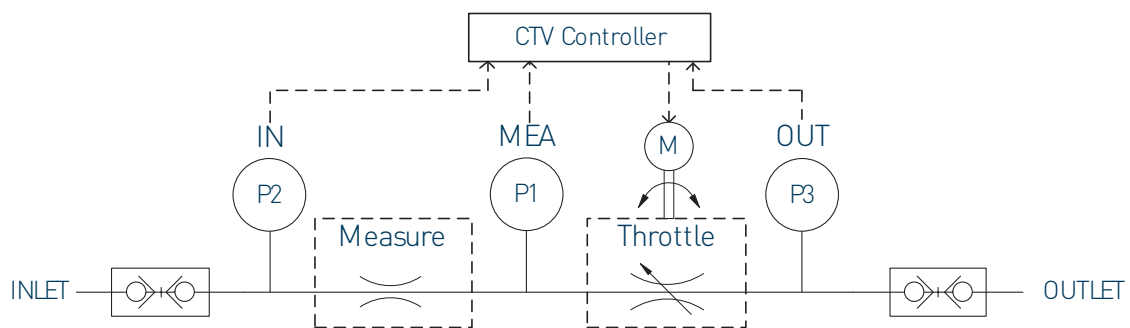
## Emulator functionality

Remotely operated subsea CTVs come in three types:

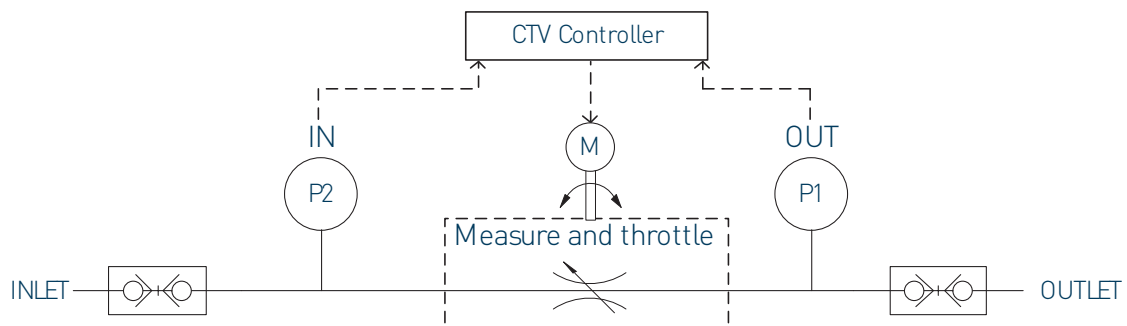
- » CTV – Low Flow
- » CTV – 15k Low and Medium Flow
- » CTV – High Flow

## Schematics of CTV types:

### CTV – Low Flow/Medium Flow Technology



### CTV - High Flow Technology



The emulator functionality for low flow and medium flow CTVs is based on an algorithm that ensures simulation of actual in-field behaviour. The MEA (P1) pressure is emulated based on the In/ Out position of the valve.

For project specific valves, new algorithms can be determined to match the required valve type. For emulation of the high flow valves, simply manipulate the upstream and downstream pressure to emulate the actual in-field behavior.



[oceaneering.com](http://oceaneering.com)