

# RETRIEVABLE METHANOL INJECTION THROTTLE VALVE

DATASHEET  
CTV-M



# Retrievable Methanol Injection Throttle Valve (CTV-M)

- Remote operable
- Subsea retrievable
- Simple and rugged design
- For injection of methanol
- Field proven

## Basic Technical Specification

Fluids	
Types	Methanol
Flow rate range	0,5 to 11 liters/min (0.13 to 2.9 gal/min)
Viscosity	Approx. 0,94 cSt at seabed temperature
Design Viscosity	1 cSt +/-10% at 1 atm
Density	800 kg/m <sup>3</sup> (50 lb / foot <sup>3</sup> )
Basic design data	
Maximum working pressure	690 bar (10.000 psi)
Proof test pressure	1035 bar (15.000 psi)
Ambient pressure	250 bar (3.626 psi)
Operating pressure across CTVM max/min	200 bar / 60 bar (2.900 psi / 145 psi)
Design temperature	-10 to +70 °C (14 °F to 158 °F)
Operating temperature subsea	-5 to +40 °C (23 °F to 104 °F)
Storage temperature	-20 to +50 °C (-4 °F to 122 °F)
Minimum flow at 100 bar diff. Pressure	0,5 litre/min (0.13 gal/min)
Flow ratio	Up to 10:1
Contamination	Recommended cleanliness better than SAE AS4059 Class 8B-F. No particles larger than 450 micron
Dimensions	See CTV-M assembly drawing
Weight	Approx. 46 kg dry / 38 kg submerged (102 lbs / 84 lbs)
Materials of construction	
External	Super Duplex SAF 2507
Wetted parts	AISI 316, Super Duplex SAF 2507, Al.Bronze EN 1982-CC333G-GC, AISI440B, TuNi
Seals	PTFE, NBR, POM C
Operation	
Control	Electrical remote operated
Drive	Stepper motor with planetary gear
Time for full travel	Approx. 20 minutes
ROV interface	D-Handle, T-bar Handle, Fish tail-Handle, API 17D
Installation torque ROV	Min / Max - 100 / 200 Nm (73 to 147 ft/lbs)
Electrical motor safety margin	CTVM will operate at 25% above max. operating diff. pressure 200 bar (2.900 psi)
Flow Meter	
Type	Absolute pressure transducers at each end of a fixed restriction. Second transducer measures the downstream pressure
Measuring accuracy	Better than +/- 10 % of full scale flow range
Restriction	Integrated in CTV
Position Indication	
Type	Calculation of position based on stepper motor drive pulses
Electrical Interfaces	
Connection	Tronic Digitron 4-pin MCE connector
Wires	Flying leads, 4 off (all 20 AWG)
Power	24 VDC +/- 4V, 12W nominal when actuator operating, typically 3W idling
Controller protocol	MODbus RTU, CANbus or Profibus DP
Controller signals, communication standard	IEC Standard RS485 (2 wires)
Hydraulic Interfaces	
Connection	National 1/4" metal/soft seal coupler
Receptacle	
Material	AISI 316
Dimensions	280 x 280 x 905 mm. (11"x11"x35.6") [See Receptacle house Assembly Drawing]
Weight	Approx. 59 kg dry / 52,5 kg submerged (130 lbs / 116 lbs)