



水下化学药剂注入计量阀

水下化学药剂注入计量阀 (Chemical Injection Metering Valve, 以下简称CIMV) 是一款用于精确控制和计量注入水下生产系统的各类化学药剂 (如甲醇、乙二醇、防垢剂等) 的设备。通过精确控制输送到水下生产系统的化学药剂流量, 防止管线内产生水合物、结蜡、结垢等, 对保障水下生产系统的正常功能和长期稳定运行具有重要意义。开发了高流量、低流量两款CIMV, 利用具有自主知识产权的固定节流加可变节流的冗余计量技术, 并通过权威第三方挪威船级社 (DNV) 进行型式认证, 保证其在海底低温、内外高压、周期暗流振动和冲击等恶劣工况下, 可以满足30年的使用寿命和良好的计量精度。

技术指标

内容	低流量 (LF) CIMV技术指标	高流量 (HF) CIMV技术指标
型号	CIMV-1000L	CIMV-2000H
整机重量	74Kg(空气中) / 60Kg(水中)	120Kg(空气中) / 110Kg(水中)
计量范围	0.75L/h~120L/h (可扩展)	120L/h~6000L/h (可扩展)
设计压力	10000psi	
设计温度	-18°C~70°C	
设计水深	3000米	
设计寿命	30年	
测量精度	±3-5% F.S.	
极限流体环境	SAE AS4059 12B-F, 推荐优于SAE AS4059 10B-F	
适用药剂	乙二醇、甲醇、防垢剂、防蜡剂、防腐剂、消泡剂、防沥青质剂、破乳剂等	
供电	24VDC	
功率	≤12W	
通讯协议	Modbus RTU / CANopen	
第三方认证	挪威船级社 (DNV)	
设计参考规范	API 17Y、API 6A、API 17D、API 17F	

产品特点

- 可兼容目前已知所有常用的化学药剂
- 权威第三方认证
- 具有极高的量程比, 500: 1或者更高
- 具有自冲洗功能, 保证流道畅通

应用

- 控制并精确计量各种化学药剂的注入量
- 流动保障

应用效果

- 实现药剂按需精确注入、避免浪费
- 提高生产优化及流动保障效果
- 保障水下生产系统的长期可靠性和使用寿命

Chemical Injection Metering Valve

Chemical Injection Metering Valve (CIMV) is a device for the precise control and metering of various chemicals (such as methanol, MEG, scale inhibitors, etc.) injected into subsea production system. Precise control of the chemicals flow to subsea production system is crucial for preventing the formation of hydrates, wax, and scales in pipelines, which is vital for ensuring the normal function and long-term stable operation of subsea production system. Two versions of CIMV, high flow rate and low flow rate respectively, were developed utilizing redundant metering technologies that combines fixed and adjustable throttling, which is 100% intellectual property. The CIMVs have been qualified by the authoritative third-party DNV which guarantees 30 years service life and accurate metering precision under harsh conditions such as low temperatures at the seabed, high internal and external pressure, periodic dark current vibrations and shocks etc.

Applications

- Precise control and measurement of injected chemicals
- Flow assurance

Specifications

Items	Low-Flow CIMV	High-Flow CIMV
Model	CIMV-1000L	CIMV-2000H
Weight	74kg(air) / 60kg(water)	120kg(air) / 100kg(water)
Flow-rate Range	0.75 L/h to 120 L/h (can be extended)	120 L/h to 6000 L/h (can be extended)
Design Pressure	10000 psi	
Design Temperature	-18 ~ 70°C	
Water Depth	3000m	
Design Life	30 years	
Accuracy	±3% to ±5%F.S.	
Operating Environment	SAE AS4059 12B-F	
Power	24±4VDC	
Consumption	≤12W	
Protocol	Modbus RTU / CAN open	
Third party certification	DNV	
Design Code	API 6A、17D、17F、17Y	

Features

- Compatible with all known commonly used chemicals.
- Certified by authoritative third party (DNV).
- High turn-down ratio up to 500:1 or higher.
- Self-flushing feature to avoid any blocking.

Benefits

- Precise chemical injection as needed, avoiding waste.
- Enhances production optimization and flow assurance.
- Ensures long-term reliability and lifespan of subsea production system.

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