



### GENERAL DESIGN FEATURES

- ▶ Fully automated chemical injection metering package combining measurement, actuation and control using an integrated Positive Displacement Flow Meter (PDFM), Actuator, and Chemical Injection Metering Valve (CIMV)
- ▶ Chemical Injection Metering Valve (CIMV) incorporates the same pressure independent SkoFlo design that is field proven and tested in the harshest environments for over 30 years with over 20,000 valves in service.
- ▶ Positive Displacement Flow Meter (PDFM) developed by SkoFlo and deployed in subsea CIMVs since 2011 offers true volumetric flow measurement for reliable and accurate flow measurement down to 0.6 gallons per day.
- ▶ *Smaller footprint* architecture provides several important benefits:
  - ✓ Reduced cost
  - ✓ Reduced weight
  - ✓ Easily reconfigurable
- ▶ Minimal intervention, easy to install and maintain
- ▶ Reduces Platform Maintenance by eliminating system leak points from typical tubing and fittings
- ▶ High turndown ratio
- ▶ ATEX, IECEx, ETL Certified
- ▶ Optional downstream pressure sensor available for improved performance, diagnostics, and cost savings
- ▶ Highly accurate flow measurement of  $\pm 0.5\%$  of reading.
- ▶ Continuous Setpoint Regulation (CSR) – SF3 automatically adjusts set point if needed to maintain consistent and accurate chemical injection in the event of extreme temperature variations.
- ▶ Autonomous Flow Measurement (AFM) – SF3 can be programmed to take periodic flow readings as needed.
- ▶ Zero Flow Shutdown (ZFS) – If flow stops the valve will be shutdown to prevent excess pumping of fluids when the pumps come back on.

### SKOFLO BENEFITS

- ▶ 30-year experience, industry expert and solution provider
- ▶ Pressure Independent Valve Technology (PIVT)
- ▶ Significant chemical **OPEX** cost savings
- ▶ Unmatched flow delivery, accuracy, proven reliability



Product Specification  
Surface Integrated Topside Actuator, Valve and PDFM (SF3)

**FLOW CHARACTERISTICS**

Flow Range	0.6 to 600 GPD <sup>1</sup> (0.09 to 94 LPH)	25 to 1800 GPD <sup>2</sup> (3.94 to 284 LPH)
Measurement Accuracy	±0.5% of reading	

<sup>1</sup> Consult Factory for flow rate configuration

<sup>2</sup> Flows Above 1200GPD need to be identified prior to receiving an order

**DESIGN RATINGS**

Design Standards	IEC 60079-0, IEC 60079-1, UL1203, IEC 60529, UL61010-1		
Design Life	25 years		
Working Pressure Rating	5,000 psig (345 barg)	10,000 psig (690 barg)	15,000 psig (1034 barg)
Proof Test Pressure	7,500 psig (517 barg)	15,000 psig (1034 barg)	22,500 psig (1551 barg)
Operating Temperature Rating <sup>3</sup>	FFKM -15° to 59°C (5°F to 138°F)	FKM -20° to 59°C (-4° to 138°F)	EPDM -20° to 59°C (-4° to 138°F)
Storage Temperature Rating	-20° to 65°C (-4° to 150°F)		
Debris tolerance	SAE AS4059 Class 12B-F		
Weight	5,000 PSI - 88lb (40kg)	10,000 PSI - 93lb (42kg)	15,000 PSI - 93lb (42kg)
Process Connections <sup>4</sup>	Hydraulic	5000 psi - ¼" NPT	10000 & 15000 psi - ⅜" AE MP
	Electrical	½" NPT or M20x1.5	
Ingress Protection	IP66 (NEMA 4x)		

<sup>3</sup> Consult factory for additional temperature ratings

<sup>4</sup> Consult Factory for additional process connections.

**MATERIALS**

Chemically Wetted Material	NACE MR0175
Metallic Material Certification	EN 10204 Type 3.1 Certification
Non-metallic Seals <sup>5</sup>	FFKM, FKM and EPDM Seals offered (NORSOK M-710)

<sup>5</sup> Consult factory for special seals

**ELECTRICALS**

Electrical Connector	Terminal Block
Voltage Supply (2 options)	120 – 240 / 50 – 60Hz; 24 V DC ±4 V
Analog Inputs	4-20mA (Set flow rate and Minimum flow rate), 24 VDC
Power Consumption Max	Expected Wattage – 80W

**SOFTWARE**

Protocol <sup>6</sup>	Modbus RTU. HART v7.6
Baud rate	1200 – 57600
Communication Interface	TIA-485(-A)/EIA-485/RS-485

<sup>6</sup> Consult factory for additional communications protocols

**HAZARDOUS LOCATION RATINGS**

ATEX and IECEx	CE <sub>2575</sub> Ex II 2G Ex db IIB T6 Gb
NEC/CEC	Class 1, Division 1, Group C