

Technical Data for TapcoEnpro SMART VALVE CONTROLLER (SVC)™



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Standard Specifications (Contact TapcoEnpro for available options)

General Specifications	
Dimensions (Enclosure)	16.5-inch W x 28.5-inch T x 11-inch D (419 mm x 724 mm x 279 mm)
Weight	165 lbs (74.8 kg)
Mounting Methods	Wall Mount (Standard) Pole Mount (with Optional Kit) Free Stand (with Optional Stand)
Ambient Temperature Range ¹	-40°F to 158°F (-40°C to 70°C)
Humidity Range	0-95% Non-Condensing
Ingress Protection	IP66
Hazardous Area (UL / CSA)	UL/CSA Approved for Class 1, Groups B, C & D; Class II, Groups E, F & G; Class III, Enclosures Type 3R, 3 & 4.
Hazardous Area (ATEX)	Zone 2, IIC, T4

Input Power Requirements	
Nominal Input Voltage Range ²	100 VAC - 240 VAC (-15% / +10%)
AC Frequency Range	45 Hz - 65 Hz
Nominal Power Consumption	67 Watts
Current Consumption	1.0 A (120 VAC) / - 0.5 A (230 VAC)
Recommended Breaker for Input Protection ³	B Curve, 6 Amp

Performance	
Control loop execution ⁴	10,000 Hz nominal
Analog Resolution	15 Bit + sign
EMC	IEC 61000 - 4 Sec 2, 3, and 4
Dual processor capability ⁵	Hot Swappable Processor Configuration
Data Logging ⁶	Dual Speed - 10 samples per second & 1 sample per second

I / O		
AI / AO TOTAL	12 AI / 3 AO	
Default Analog Inputs ⁷	Smart Purge Process Pressure	
	Pump 1 Pressure	
	Pump 2 Pressure	
	Reservoir Temperature	
	Reservoir Level	
	Filter Differential Pressure	
	Opening Pressure	
	Closing Pressure	

I / O (Continued)		
	Main Accumulator Pressure	
	Emergency Accumulator Pressure	
	ESD Pilot Pressure	
	LIP Pilot Pressure	
Analog Output	Active actuator position as used by the position control routine.	4-20 mA passive. Loop power from receiving end. Individually Isolated. Voltage range: 15 -28 V nominal.
	2-Analog Servo Valve Driver outputs	2 independent servo-valve driver outputs. Bi-directional current mode nominal capability to 100 mA. Compliance to 12vdc
Special Analog Inputs	LDT 1 ⁸	
	LDT 2 ⁸	
	LDT 3 ⁸	
DI / DO TOTAL 12 DI / 12 DO		
Discrete Inputs	Two groups, 6 used for potential free contacts 6 for externally applied 24 VDC power	
	ESD Test Valve (Test Mode) Engaged ⁹	
	Handwheel Engaged ⁹	
	Valve Closed Limit Switch ⁹	
	Pump 1 Auto / Hand ⁹	
	Pump 2 Auto / Hand ⁹	
	Pump KL Auto / Hand ⁹	
	ESD Command Input 1 (monitoring) ¹⁰	
	ESD Command Input 2 (monitoring) ¹⁰	
	ESD Command Input 3 (monitoring) ¹⁰	
	ESD Test Valve (Test Mode) Engaged ¹⁰	
	Spare ¹⁰	
	Auto Mode enabled by DCS Lock-in-Place ¹⁰	
Discrete Relay Outputs ¹¹	12 Discrete outputs. Individually isolated SPDT relays, 2A at 24 VDC	
	Loss of Command	
	Loss of Feedback	
	Common Trouble	
	Loss of Tracking	
	LIP	
	Pump 1 Run	
	Pump 2 Run	
	Res High Temp	
	Res Low Level	
	ESD Accumulator Low Pressure	
	Main Accumulator Low Pressure	
	Filter Diff High Pressure	

Communications		
Data Communications	2 Modbus Ports	
	(1) Modbus RTU (RS-485) Slave	One port is slave only, 2nd port can be slave or master. RS-485 2 wire, selectable node address, baud rate and parity bit. Interface is available for MODBUS TC/IP via ethernet "copper" or fiber-optic media.
	(2) Modbus RTU (RS-485) Master	

Notes:

1. -40°F ambient temperature rating with enclosure heater. All controllers installed in environments with temperatures below 5°F (-15°C) have an enclosure heater to protect the equipment (display) during a cold start-up.
2. Two instrument power inputs are provided, one for each of the redundant internal power supplies. 125 VDC available, consult factory.
3. For each of the two power inputs. Recommend that at least one is from a UPS source.
4. Position Control Loop. Other loops are variable.
5. Allows for processor replacement while still online in the event of a failure.
6. Two speed data logging via SD card. High speed for position loop values. Normal speed for HPU monitoring and other less critical functions.
7. 4-20 mA nominal. 2 wire with loop power supplied by SVC.
8. Configurable as 4 wire for power and position signal (4-20 mA) or 6 wire SSI for Power, Clock and Data. Transmitter power is protected.
9. 2-wire potential free contact device in the field.
10. 2-wire external power applied, 24 VDC nominal.
11. One form C contact set

Smart Valve Controller™

- One of the true digital controllers for FCCU and Flexi-Coker (slide, butterfly and plug valves)
- Rugged Compact Design for On-Skid or Field mounting to reduce installation costs
- Microsecond response rate for precise control and valve positioning
- Simplex Processor (Standard)
- Redundant Hot Swappable Processors (Option)
- Redundant Power Supplies
- Configurable for 1oo1, 1oo2, or 2oo3 valve position transmitters
- Built-in diagnostics for ease of maintenance and preventive maintenance
- On-board data logging
- Event history logging/Advanced health monitoring
- Modbus communications
- Configurable for valve specific operation
- Operator Friendly Graphic User Interface
- User interface-based set-up and calibration (no special tools or software required)
- Back-up Calibration/Set-up import and export functions via removable storage device
- Meets and or exceeds all requirements and specifications of licensors, industry standards and best practices

