 TORUS	· Owner PROCESS DATASHEET, FCV-131 AND FCV-132 FLOW CONTROL VALVES	Document No.	PRO-DS-001		
		Revision / Date	A · September 29, 2026		
		Issue purpose	Issued for Review		
PROCESS · PROCESS DATASHEET, FCV-131 AND FCV-132 FLOW CONTROL VALVES					
Rev.	Date	Revision description	Prepared	Reviewed	Approved
A	2026-09-29	Issued for Review			

GENERAL

Item	Value	Item	Value
Tags	FCV-131 duty, FCV-132 standby	Service	Station flow control, pressure override
Fluid	Natural gas, MW 18.46 design	Line	1031 / 1032, NPS 12 with 12 x 8 reducers
Design pressure	1,440 psig	Design temperature	-20 to 150 °F
Maximum shutoff differential	1,440 psi	Control	FIC-131 with PIC-134 low select

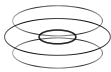
OPERATING CONDITIONS, CASES C1 TO C4

Condition	C1	C2	C3	C4
Flow, MMSCFD	120	90	10	120
Flow, lb/h	244,000	183,000	20,400	244,000
Inlet pressure, psig	1,143	1,046	1,000	1,093
Outlet pressure, psig	752	951	950	1,002
Inlet temperature, °F	67	70	60	120
Outlet temperature, °F	44	64	57	115
Inlet density, lb/ft ³	4.63	4.14	4.07	3.73
Isentropic exponent κ	1.400	1.374	1.370	1.351
Pressure drop ratio x	0.338	0.090	0.049	0.082
Required C_v	107	152	23	218
Travel, equal %, %	58	67	19	76
Noise at 1 m, dBA	85.6	72.4	51.3	75.2

OPERATING CONDITIONS, CASES C5 TO C7

Condition	C5	C6	C7	C4 dirty filter
Flow, MMSCFD	120	120	120	120
Flow, lb/h	244,000	244,000	261,000	244,000
Inlet pressure, psig	890	1,145	1,092	1,085
Outlet pressure, psig	752	752	852	1,002
Inlet temperature, °F	60	45	68	119
Outlet temperature, °F	51	18	52	115
Inlet density, lb/ft ³	3.55	5.08	4.88	3.71
Isentropic exponent κ	1.347	1.428	1.373	1.350
Pressure drop ratio x	0.153	0.339	0.217	0.076
Required C_v	188	101	134	228



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Condition	C5	C6	C7	C4 dirty filter	
Travel, equal %, %	73	57	64	78	
Noise at 1 m, dBA	79.8	84.6	81.4	74.6	

VALVE

Item	Value	Item	Value
Body	NPS 8 globe, cage-guided	Rating and ends	ASME Class 600 RF
Body material	A352 LCC, impact tested	Trim	3-stage multi-hole low-noise cage
Trim material	CoCr or 17-4 SS H1150	Characteristic	Equal percentage, 50:1
Rated C_v	About 550 (450 to 700 acceptable)	F_L / x_T	0.9 / 0.75
Required C_v range	23 to 228	Seat leakage	ANSI/FCI 70-2 Class IV
Noise limit	85 dBA at 1 m, IEC 60534-8-3	Predicted noise, worst case	85.6 dBA before insulation

ACTUATOR AND ACCESSORIES

Item	Value	Item	Value
Actuator	Electric modulating	Failure position	As-is, with handwheel
Full stroke	30 s or less	Position transmitter	ZT-131 / ZT-132
Acoustic insulation	Body and 10 ft downstream	Area classification	Class I Div 2 Group D

NOTES

- Sizing and noise per  PRO-CAL-006, Control Valve Sizing. The flow equation uses the isentropic exponent κ .
- The predicted level, 85.6 dBA, exceeds 85 dBA with the 0.375 in wall downstream pipe, so acoustic insulation is required. The vendor shall guarantee 85 dBA at 1 m with the insulation, calculated to IEC 60534-8-3 (2010).
- Rated C_v , F_L and x_T : Vendor to confirm (HOLD H-15).
- Process data only. The mechanical, instrument and electrical datasheets complete the purchase specification.
- Pressures are gauge unless stated. Standard conditions are 14.73 psia and 60 °F; local atmospheric pressure is 14.10 psia.
- Values marked HOLD H-15 are typical and shall be confirmed by the selected vendor.

