ISO 15848-1:2015
Helium Fugitive Emission Test Report

Performed for

A-T Controls, Inc.

www.a-tcontrols.com

2R200DAV Actuator with FKM Seals
Mounted to a 3 inch Class 150 Series F90 Ball Valve
Product Code: F90-F1-300/2R5D-XX

Project Number: 218159
Test Start Date: December 14, 2018

Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

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Fugitive Emission Test Data Sheet

Customer: A-T Controls, Inc **Date:** 12/14/2018

Project #: 218159

Valve Description: 2R200DAV actuator with FKM seals mounted to a 3" Series F90

Product Code: F90-F1-300/2R5D-XX

Sample Supplied by: Customer

Stem Diameter: 23.9 mm

Packing Nut Torque: 208 in*lbs

Test Conditions

Test Standard: ISO/FDIS 15848-1:2015 **Test Stand:** Yarmouth Stand 1

Tightness Class: BH **Allowable:** 4.25E-05 mbar l/sec

Test Media: 99% Helium

Endurance Class: CO3 2500 Mechanical Cycles

Temperature Class: 200C 4 Thermal Cycles

Pressure Class: ANSI 150 **Rating:** 285 psig @ambient 198 psig @high temp

Testing Method: Suck Through Method

Mounting Position: Stem and Bore Horizontal

Max. Allowable Bonnet Gasket Leakage: 50 PPMv by sniffing method

Leakage Device: Pfeiffer SmartTest HLT560

Cycling Rate: 1 cycle per 30 seconds

Test Data Summary - Stem Seal

Cycle Number	*Nom.Temp (C)*	*Static Stem Seal Leakage (mbar l/sec)*		*Packing Retorque See Notes*
		Avg.	*Max.*	
0	20	7.6E-07	7.7E-07	
50	20	8.0E-07	8.3E-07	
50	200	1.7E-06	1.7E-06	
100	200	1.5E-06	1.6E-06	
100	20	7.5E-07	8.2E-07	
150	20	1.1E-06	1.3E-06	
150	200	1.9E-06	2.1E-06	
200	200	1.8E-06	9.1E-07	
205	20	1.0E-06	1.1E-06	
1,000	20	2.1E-06	2.2E-06	
1,000	200	1.3E-06	1.4E-06	
1,500	200	1.3E-06	1.3E-06	
1,500	20	1.4E-06	1.5E-06	
2,000	20	1.8E-06	2.0E-06	
2,000	200	1.6E-06	1.8E-06	
2,500	200	1.0E-06	1.0E-06	
2,500	20	1.0E-06	1.1E-06	
Maximum Leakage:		**2.1E-06**	**2.2E-06**	
Maximum Allowable:		**4.25E-05**	**4.25E-05**	

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Test Data Summary - Body Seal

Cycle Number	*Nom.Temp (C)*	*Leakage - PPMv*	
		Avg.	*Max.*
0	20	1	1
205	20	42	43
1,500	20	33	34
2,500	20	30	30
Maximum Leakage:		**42**	**43**
Maximum Allowable:		**50**	**50**

Test Data Summary - Operating Actuator Pressure

Cycle Number	*Nom.Temp (C)*	*Operating Actuator Pressure (psig)*
0	20	11
2,500	20	17

Packing Retorque Notes:

Adjustment Number	*Static Leakage Readings before Tightening (mbar l/sec)*		*Before Adjustment Nut Torque (ft-lb)*	*After Adjustment Nut Torque (ft-lb)*	*Operating Actuator Pressure (psig)*	
	Avg.	*Max.*			*Before Adjustment*	*After Adjustment*
1						
2						
3						
	4.25E-05	**4.25E-05**	**<- Maximum Allowable Leakage**			

Nut Torque at End of Test:	12	*ft-lb*

Performance Class:

ISO FE BH - CO3 - SSA 0 - t200C - ANSI Class 150 - ISO 15848-1

Results

The valve met the requirements of the performance class stated above.

Certified By

Matthew J. Wasielewski, PE
President and Manager
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