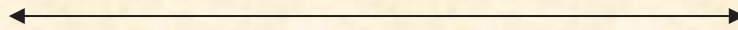


ISO 15848-1:2015
Helium Fugitive Emission Test Report

Performed for

A-T Controls, Inc.

www.a-tcontrols.com



1" F88C-Series API-607 6th Edition Firesafe, Class 600,
3-Piece, Carbon Steel BV Threaded Ends, Full Port,
F05/F07 B.C., W/RTFE Seats
Product Code: F88C-TH-0100-XXX

Project Number: 220231
Test Start Date: July 9, 2020



Performed by

YARMOUTH RESEARCH AND TECHNOLOGY, LLC

434 Walnut Hill Road
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Yarmouth Research and Technology, LLC

Fugitive Emission Test Certificate ISO 15848-1: 2015

Certificate Number: 220231A

Test Start Date: 7/8/2020

Test End Date: 7/13/2020

Customer Information

Customer: A-T Controls, Inc.

Web Address: www.a-tcontrols.com

Manufacturer Location: 9955 International Blvd. Cincinnati, OH 45246

Valve Information

Valve Description: 1" F88C-Series API-607 6th Edition Firesafe, Class 600, 3-Piece, Carbon Steel
BV Threaded Ends, Full Port, F05/F07 B.C., WRTFE Seats

Product Code: F88C-TH-0100-XXX

Body Material: ASTM A216 Grade WCB

Body Seal: Graphite

Stem Material: ASTM A276 316SST

Stem Seal: Graphite

Tightness Class: CH

Stem Diameter: 14.2 mm

Test Fluid: Helium

Valve Size: 1 inch

Endurance Class: CO3

Valve Pressure Class: ANSI 600

Temperature Class: RT

Number of Packing Adjustments: 0

Test Results

Performance Class: ISO 15848-BH-CO3-SSA0-t(RT)-ANSI Class 600

This certificate refers to the above mentioned product. This is to certify that the test specimen provided is in conformity with the standard mentioned above. This certificate does not imply assessment of the production of the product. Qualification of similar valves to the tested valve shall be done in accordance with section 8 of the test specification.

Certified By



Matthew J. Wasielewski, PE
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Yarmouth Research and Technology, LLC

Fugitive Emission Test Data Sheet

Customer: A-T Controls, Inc.

Date: 7/8/2020

Project #: 220231

Valve Description: 1" F88C-Series API-607 6th Edition Firesafe, Class 600, 3-Piece, Carbon Steel BV Threaded Ends, Full Port, F05/F07 B.C., W/RTFE Seats

Product Code: F88C-TH-0100-XXX

Sample Supplied by: Customer

Stem Diameter: 14.2 mm

Packing Nut Torque: 130 in-lb

Test Conditions

Test Standard: ISO/FDIS 15848-1:2015

Test Stand: Yarmouth Stand 1

Tightness Class: CH

Allowable: 2.5E-03 mbar l/sec

Test Media: 99% Helium

Endurance Class: CO3 2500 Mechanical Cycles

Temperature Class: RT

Pressure Class: ANSI 600

Rating: 1440 psig @ambient

Testing Method: Suck Through Method

Mounting Position: Stem and Bore Horizontal

Max. Allowable Body Seal 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	8.1E-07	8.3E-07	
50	20	1.0E-06	1.2E-06	
100	20	8.3E-07	9.2E-07	
150	20	3.3E-06	5.3E-06	
205	20	1.6E-06	2.1E-06	
1,000	20	1.2E-06	1.6E-06	
1,500	20	1.8E-06	2.3E-06	
2,000	20	2.5E-06	2.6E-06	
2,500	20	7.7E-07	7.9E-07	
Maximum Leakage:		3.3E-06	5.3E-06	
Maximum Allowable:		2.5E-03	2.5E-03	

Yarmouth Research and Technology, LLC

Test Data Summary - Body Seal

Leak Path	Cycle Number	Nom. Temp - (C)	Pressure (psig)	Leakage (PPMv)	
				Avg.	Max.
Body Seal A	0	20	1440	0	0
Body Seal B	0	20	1440	0	0
Body Seal A	205	20	1440	3	5
Body Seal B	205	20	1440	2	4
Body Seal A	1500	20	1440	1	1
Body Seal B	1500	20	1440	1	1
Body Seal A	2500	20	1440	0	0
Body Seal B	2500	20	1440	0	0

Test Data Summary - Operating Actuator Pressure

Cycle Number	Nom. Temp (C)	Operating Actuator Pressure (psig)	
		Opening	Closing
0	20	19	19
2,500	20	23	20

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						
	2.5E-03	2.5E-03	<- Maximum Allowable Leakage			

Performance Class:

ISO FE CH - CO3 - SSA 0 - t(RT) - ANSI Class 600 - ISO 15848-1

Results

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

Certified By



Matthew J. Wasielewski, PE
 President and Manager
 Yarmouth Research and Technology, LLC

