

## USCAR Non-Integrated Refueling Canister Only System Isolation Valve Design and Functional Recommendations

Disclaimer: These recommendations are to provide guidance and give an understanding to the valve manufacture on the design of an isolation valve used in Non-Integrated Refueling Canister Only systems. Valve Manufacturers should seek OEM specifications for all details due to regulation, customer and market changes.

ID	Design Parameter	Specification / Procedure	Details / Acceptance Criteria	Recommendations
1.0	Preferred Mounting	< 8mm Bolt hole diameter	Two Bosses / Integrated Grommets	
2.0	Port Options	SAE J2044	Both ports SAE J2044 16mm, "F" dimension recommended 9.5mm.	Utilize insert in production tooling to accommodate multiple end form types
3.0	Electrical Connector	USCAR 064-S-002-1-Z02		Multiple connector orientations are recommended to simplify packaging
4.0	Component Mass		< 600g	Target only
	<b>Function</b>		<b>Details</b>	<b>Recommendation</b>
5.0	Permeation			
	Housing (Valve Energized)	OEM Specific	< 1.0 mg/24 hr Max, E10	
	Internal (past seal(s))	OEM Specific	< 1.0 mg/24 hr Max, E10	
6.0	Housing Pressure leak	USCAR xxxxx	Meet 15 micron virtual leak	Tested on both ends
7.0	Valve Seat leakage			
	Pressure		< 1.0sccm @ 35kPa, 0C to 90C component temp	
	Vacuum		< 1.0sccm @ -8kPa, 0C to 90C component temp	
8.0	Flow Restriction			
	Refueling Direction	See Sketch for setup	78LPM @ 0.25kPa	
	Pressure Relief Direction	See Sketch for setup	70LPM @ 0.34kPa	
9.0	Corrosion Resistance, External	SAE J2334	Part orientation should represent vehicle packaging.	This test should be considered for prescreening purposes only
10.0	Power Consumption			
	Resistance		25 - 30 ohm @ 20+D55C, 12VDC	Target Only
	Current Draw		< 0.5 Amps @ 12 VDC	Target Only
	Minimum on time		30 minutes (0C to 90C)	Target Only
11.0	Mechanical Relief			
11.1	Set Point			
	Pressure		Adjustable, Max 55kpa	Target Only
	Vacuum		Adjustable, Min -16 kPa	Target Only
11.2	Flow			
	Pressure		> 5slpm @ 3kPa above set point & > 30slpm @ 7kPa above set point	Based on estimated vapor generation rates @ 105F
	Vacuum		> 5slpm @ 3kPa below set point & > 30slpm @ 7kPa below set point	Cooling rates? -10F = 1.3 psi over 5 seconds = ~
11.3	Life Cycles			
	Pressure	Full Stroke	> 10,950 cycles	Based on once a day x 15yr x S.F. of 2
	Vacuum	Full Stroke	> 90,000 cycles	Based on 3 times a day x 15yr x S.F. of 2
12.0	Operating noise	OEM Specific	OEM Specific	< x dbA (valve will operate w/veh on & off. Meas taken inside & outside vehicle)
13.0	Fuel Resistance	SAE J1681	OEM Specific	Supplier should follow OEM local procedure to obtain fuel resistance acceptance
14.0	Open / Close Time	OEM Specific	OEM Specific	Depends on system design / architecture
15.0	Durability	OEM Specific	Range: 1 mil to 4mil cycles	Depends on system design / architecture
16.0	EMC	TBD	TBD	