



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0539

HCAI Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: Rypos, Inc.

Manufacturer's Technical Representative: Gerry Maynard

Mailing Address: 40 Kenwood Circle, Franklin, MA 02038

Telephone: (774) 233-1027

Email: gmaynard@rypos.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Emissions After-Treatments

Product Model Number: Various (see Certified Product Matrix)

General Description: Electrically regenerated diesel particulate filter and electronic control unit

Mounting Description: Rigid or Isolated, Base or Wall Mounted (See Certified Component Matrix)

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

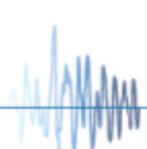
Contact Person: Galen Reid

Mailing Address: 5215 Hellyer Ave. Suite 210, San Jose, CA 95138

Telephone: (541) 604-7225

Email: greid@structint.com

Title: Director, TRU Compliance





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)**

Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.  
Name: Andrew Coughlin California License Number: S6082  
Mailing Address: 5215 Hellyer Ave, Suite 101, San Jose, CA 95138-1025  
Telephone: (415) 635-8461 Email: acoughlin@structint.com

**Certification Method**

GR-63-Core       ICC-ES AC156       IEEE 344       IEEE 693       NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: CLARK TESTING LABORATORY, INC.  
Contact Person: Suzanne Mazon  
Mailing Address: 1801 Route 51, Jefferson Hills PA 15025  
Telephone: (412) 387-1001 Email: smazon@clarktesting.com



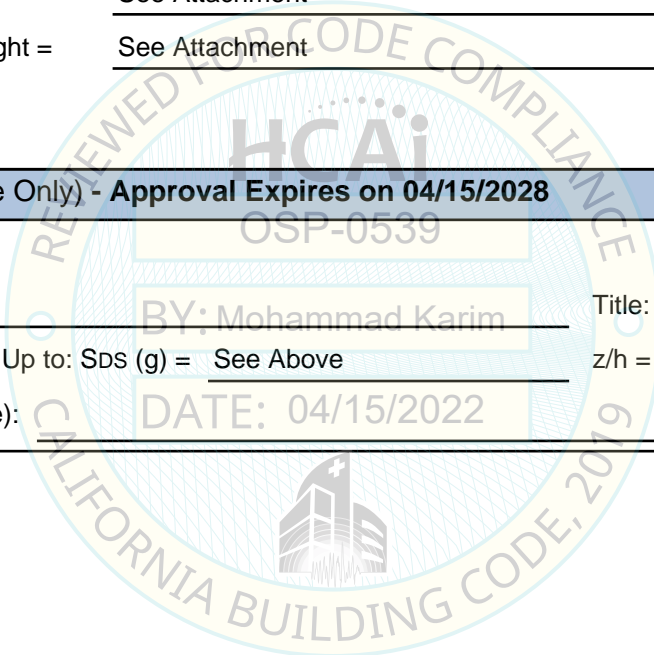


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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) =	1.44 Rigid; 4.50 Isolated (SDS = 2.0, z/h=1); 1.44 Rigid; 2.40 Isolated (SDS = 3.2, z/h=0)
SDS (Design spectral response acceleration at short period, g) =	2.0 (z/h = 1.0); 3.2 (z/h = 0.0)
$a_p$ (Amplification factor) =	Rigid: 1.0; Isolated 2.5
$R_p$ (Response modification factor) =	Rigid: 2.5; Isolated 2.0
$\Omega_0$ (System overstrength factor) =	2.0
$I_p$ (Importance factor) =	1.5
z/h (Height ratio factor) =	1 and 0
Natural frequencies (Hz) =	See Attachment
Overall dimensions and weight =	See Attachment

<b>HCAI Approval (For Office Use Only) - Approval Expires on 04/15/2028</b>			
Date:	<u>4/15/2022</u>		
Name:	<u>Mohammad Karim</u>	Title:	<u>Supervisor, Health Facilities</u>
Special Seismic Certification Valid Up to:	SDS (g) = <u>See Above</u>	z/h =	<u>See Above</u>
Condition of Approval (if applicable):	<u>DATE: 04/15/2022</u>		







# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units

UUT	Unit Description	Report Number	Testing Lab	Year Tested	ISO 17025 Accredited?	S <sub>DS</sub>	z/h	I <sub>p</sub>
1A	Filter Module (base mounted - isolated)	JID 17-01263 R3 (UUT 1)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
1B	Filter Module (base mounted - rigid)	JID 17-01263 R3 (UUT 4)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
2A	Filter Module (base mounted - isolated)	JID 17-01263 R3 (UUT 2)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
2B	Filter Module (base mounted - rigid)	JID 17-01263 R3 (UUT 3)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
3A	ECU Module (wall mounted - isolated)	JID 17-01263 R3 (UUT 5A)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
3B	ECU Module (wall mounted - rigid)	JID 17-01263 R3 (UUT 6A)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
4A	ECU Module (wall mounted - isolated)	JID 17-01263 R3 (UUT 5B)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
4B	ECU Module (wall mounted - rigid)	JID 17-01263 R3 (UUT 6B)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
5A	ECU Module (wall mounted - isolated)	JID 17-01263 R3 (UUT 5C)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
5B	ECU Module (wall mounted - rigid)	JID 17-01263 R3 (UUT 6C)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
6A	ECU Module (wall mounted - isolated)	JID 17-01263 R3 (UUT 5D)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5
6B	ECU Module (wall mounted - rigid)	JID 17-01263 R3 (UUT 6D)	Clark Testing	2018	Yes	2.0 3.2	1 0	1.5

**Notes:**

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 1A</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 960-0068 <b>Serial Number:</b> 1048973-1-18-1	

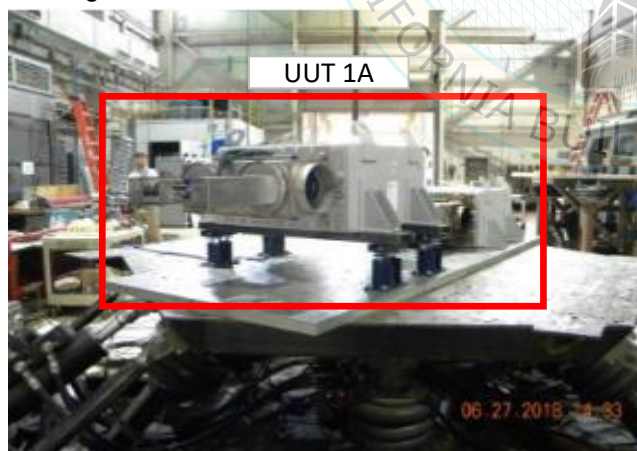
**Product Construction Summary:**  
Filter Module Housing: 0.25" thick A36 steel with zinc paint

**Options/Subcomponent Summary:**

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
812	63	33	21	3.06	2.41	4.83

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 1A was installed in a test housing that base mount-isolated. See installation drawing on the next page. Four (4) Mason SLRSO-B-450 isolators were used to mount the housing to the shake table. Each isolator was mounted to the shake table with four (4) 5/8" - 11 Grade 5 bolts with lock and flat washers torqued to 90ft-lbs. Four(4) 4"x4"x1.5 steel adaptor blocks were bolted to the top of each isolator with four(4) 1/2" -13 Grade 5 bolts, washers, and lock washers torqued to 75ft-lbs. Two C channels - C6X8.2 x 45.13" A36 Steel - were placed onto the top of the blocks. The module and C channel were mounted to the isolators with one(1) 1" - 8 Grade 8 bolts with washers and lock washers at each isolator. The 1"-8 bolts were torqued to 220 ft-lbs. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0

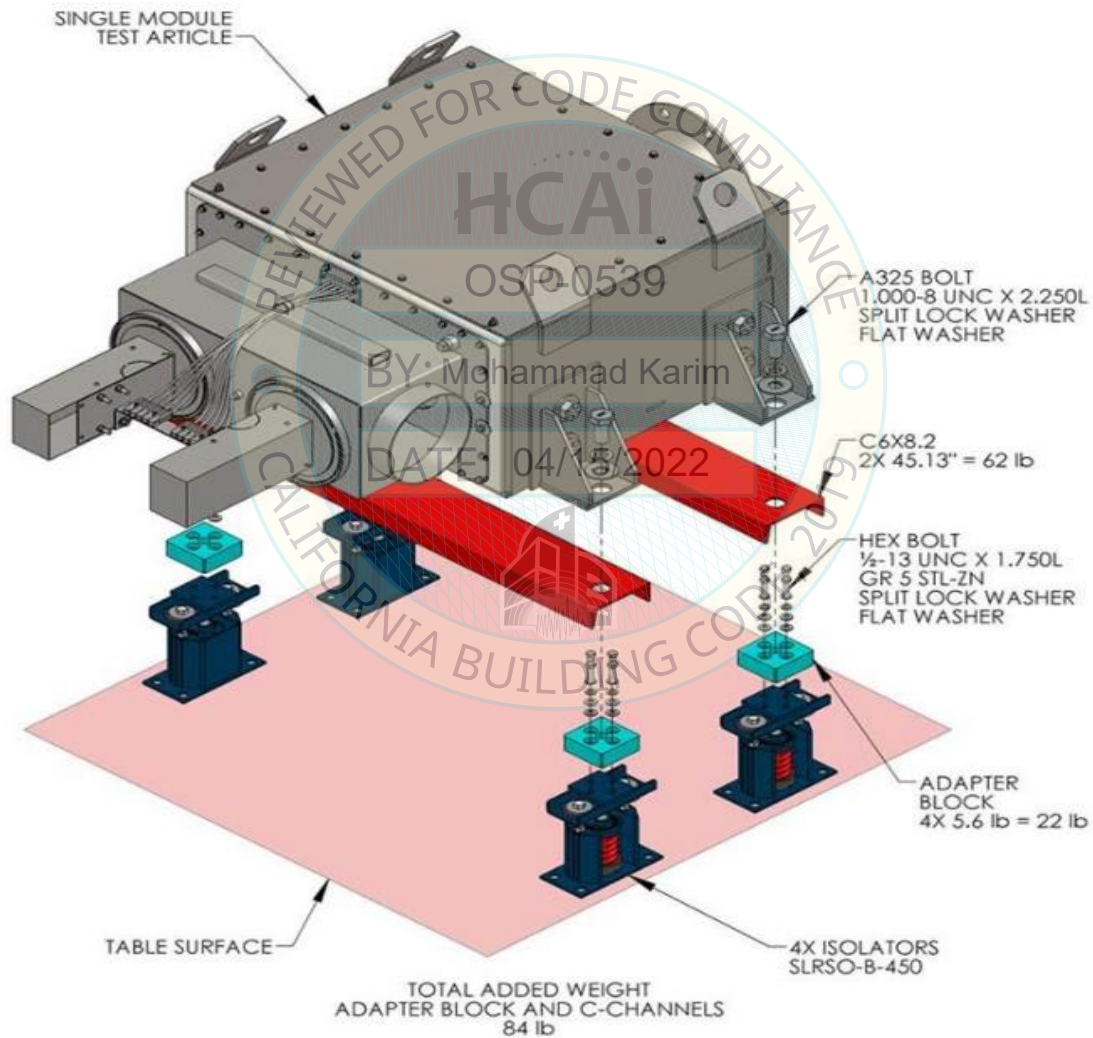


**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 960-0068

**UUT 1A**

**Serial Number:** 1048973-1-18-1

## Test Housing Mounting Details:





# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 960-0068

**UUT 1A**

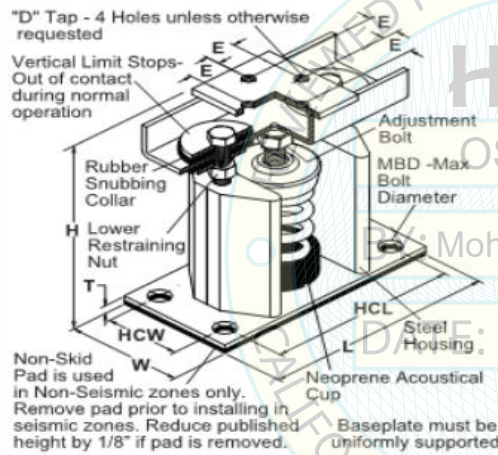
**Serial Number:** 1048973-1-18-1

**Isolators Details:**

**MASON INDUSTRIES, Inc.**  
 Manufacturers of Vibration Control Products  
 350 Rabro Drive Hauppauge, NY 11788  
 2101 W. Crescent Ave., Suite D Anaheim, CA 92801  
 631/348-0282 714/535-2727  
 FAX 631/348-0279 FAX 714/535-5738  
 Info@Mason-Ind.com Info@MasonAnaheim.com  
 www.Mason-Ind.com

JOB NAME \_\_\_\_\_  
 CUSTOMER \_\_\_\_\_  
 CUSTOMER P.O. \_\_\_\_\_  
 MASON M.I. \_\_\_\_\_  
 DWG. NO. \_\_\_\_\_

**SLRSO**  
 1" DEFLECTION  
 B, 1, 2 & 4  
 SERIES SPRING  
 MOUNTS



**TYPE SLRSO RATINGS**

Size	Rated Capacity (lb)	Rated Defl. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
SLRSO-B-115	115	2.00	57	12.2	Silver
SLRSO-B-150	150	2.00	75	9.3	Orange
SLRSO-B-280	280	1.60	174	5.0	Green
SLRSO-B-450	450	1.31	344	3.1	Red
SLRSO-B-750	750	1.12	670	1.9	White
SLRSO-B-1000	1000	1.00	1000	1.4	Blue
SLRSO-1-1000	1000	1.00	1000	4.4	Black
SLRSO-1-1350	1350	1.00	1350	3.3	Yellow
SLRSO-1-1750	1750	1.00	1750	2.5	Black*
SLRSO-1-2100	2100	1.00	2100	2.1	Yellow*
SLRSO-1-2385	2385	1.00	2385	1.9	Yellow**
SLRSO-1-2650	2650	1.00	2650	1.7	Red*
SLRSO-1-2935	2935	1.00	2935	1.5	Red**
SLRSO-2-3500	3500	1.00	3500	1.8	Black*
SLRSO-2-4200	4200	1.00	4200	1.5	Yellow*
SLRSO-2-4770	4770	1.00	4770	1.3	Yellow**
SLRSO-4-5400	5400	1.00	5400	2.0	Yellow
SLRSO-4-7000	7000	1.00	7000	1.6	Black*
SLRSO-4-8400	8400	1.00	8400	1.3	Yellow*
SLRSO-4-9540	9540	1.00	9540	1.2	Yellow**
SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

\* with RED inner spring \*\* with GREEN inner spring

**SPRING DATA**

Size	Spring OD	Free Height	Ratio K <sub>1</sub> /K <sub>2</sub>	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

**TYPE SLRSO DIMENSIONS (inches)**

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
SLRSO-2	14	5 1/4	8 3/4	3/8	5/8	3 1/2	12 1/4	5/8	1 3/8
SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C spring, SLRSO-2 housing which contains two (2) C springs and SLRSO-4 which contains four (4) C springs.  
 All springs have an additional travel to solid equal to 50% of the rated deflection.  
 Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0

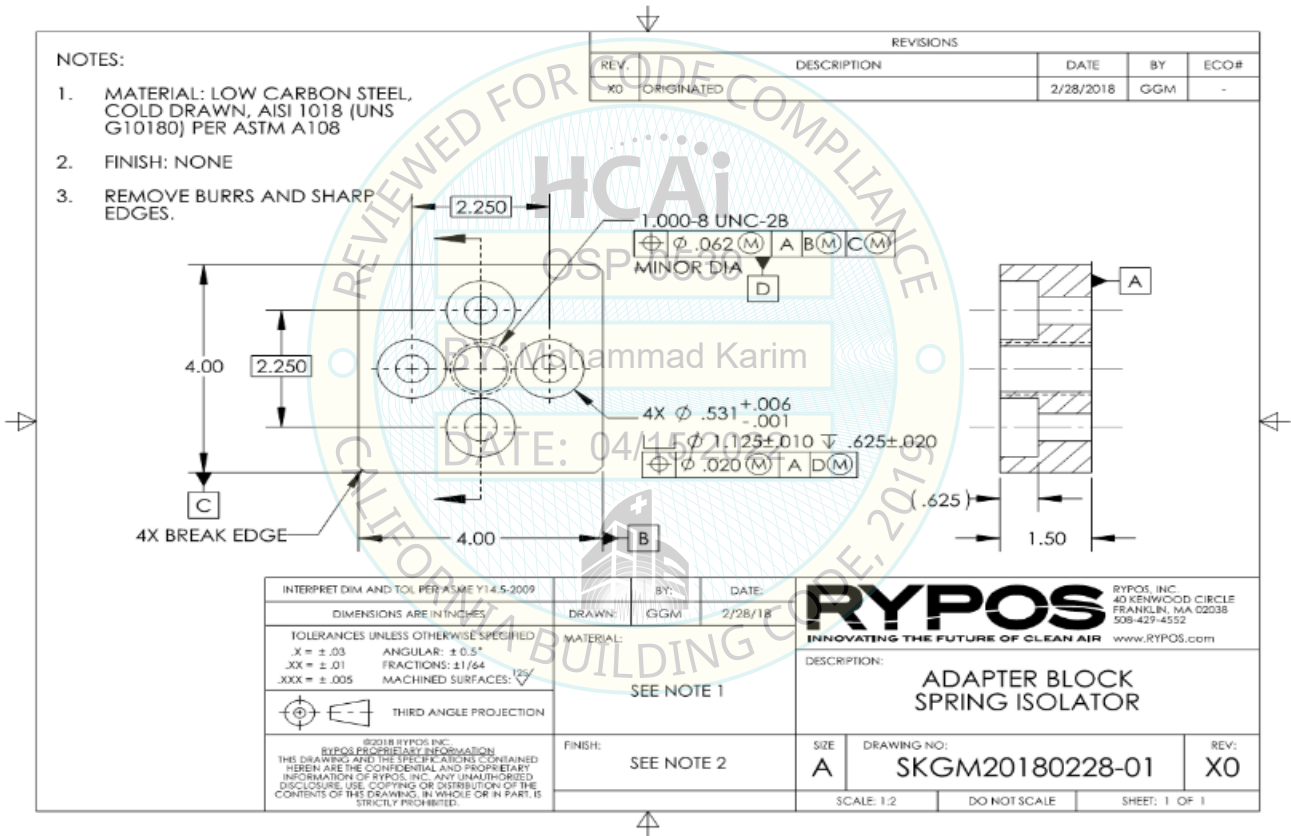


**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 960-0068

**UUT 1A**

**Serial Number:** 1048973-1-18-1

**Adapter Block for Spring Isolator Details:**



# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 1B</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 960-0068	
<b>Serial Number:</b> 1048973-1-18-1	

**Product Construction Summary:**  
Filter Module Housing: 0.25" thick A36 steel with zinc paint

**Options/Subcomponent Summary:**

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
812	63	33	21	18.4	15.5	>33.3

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ESAC156	2.0	1.0	1.5	3.20	2.40	2.13	0.85	
		3.2	0.0						

**Test Mounting Details:**



UUT 1B was installed in a test housing that was base mounted - rigid to the shake table with four(4) 1"-8 Grade 5 bolts with lock and flat washers  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 2A</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 960-0068	
<b>Serial Number:</b> 1048973-1-18-2	

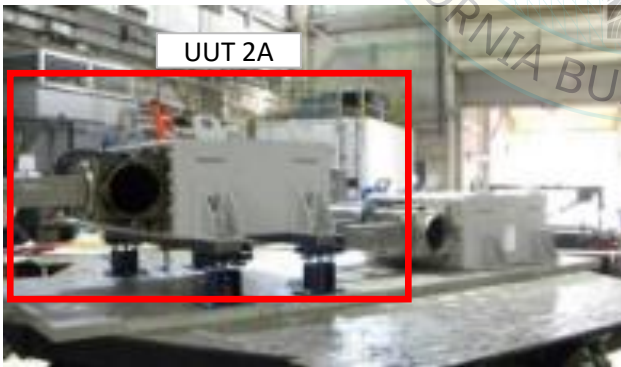
**Product Construction Summary:**  
Filter Module Housing: 0.25" thick A36 steel with zinc paint

**Options/Subcomponent Summary:**

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
814	63	33	21	2.39	2.09	5.17

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	2.13	0.85	
		3.2	0.0						

**Test Mounting Details:**



UUT 2A was installed in a test housing that base mount-isolated. See installation drawing on the next page. Four (4) Mason SLR50-B-450 isolators were used to mount the housing to the shake table. Each isolator was mounted to the shake table with four (4) 5/8" - 11 Grade 5 bolts with lock and flat washers torqued to 90ft-lbs. Four(4) 4"x4"x1.5 steel adaptor blocks were bolted to the top of each isolator with four(4) 1/2" -13 Grade 5 bolts, washers, and lock washers torqued to 75ft-lbs. Two C channels - C6X8.2 x 45.13" A36 Steel - were placed onto the top of the blocks. The module and C channel were mounted to the isolators with one(1) 1" - 8 Grade 8 bolts with washers and lock washers at each isolator. The 1"-8 bolts were torqued to 220 ft-lbs. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

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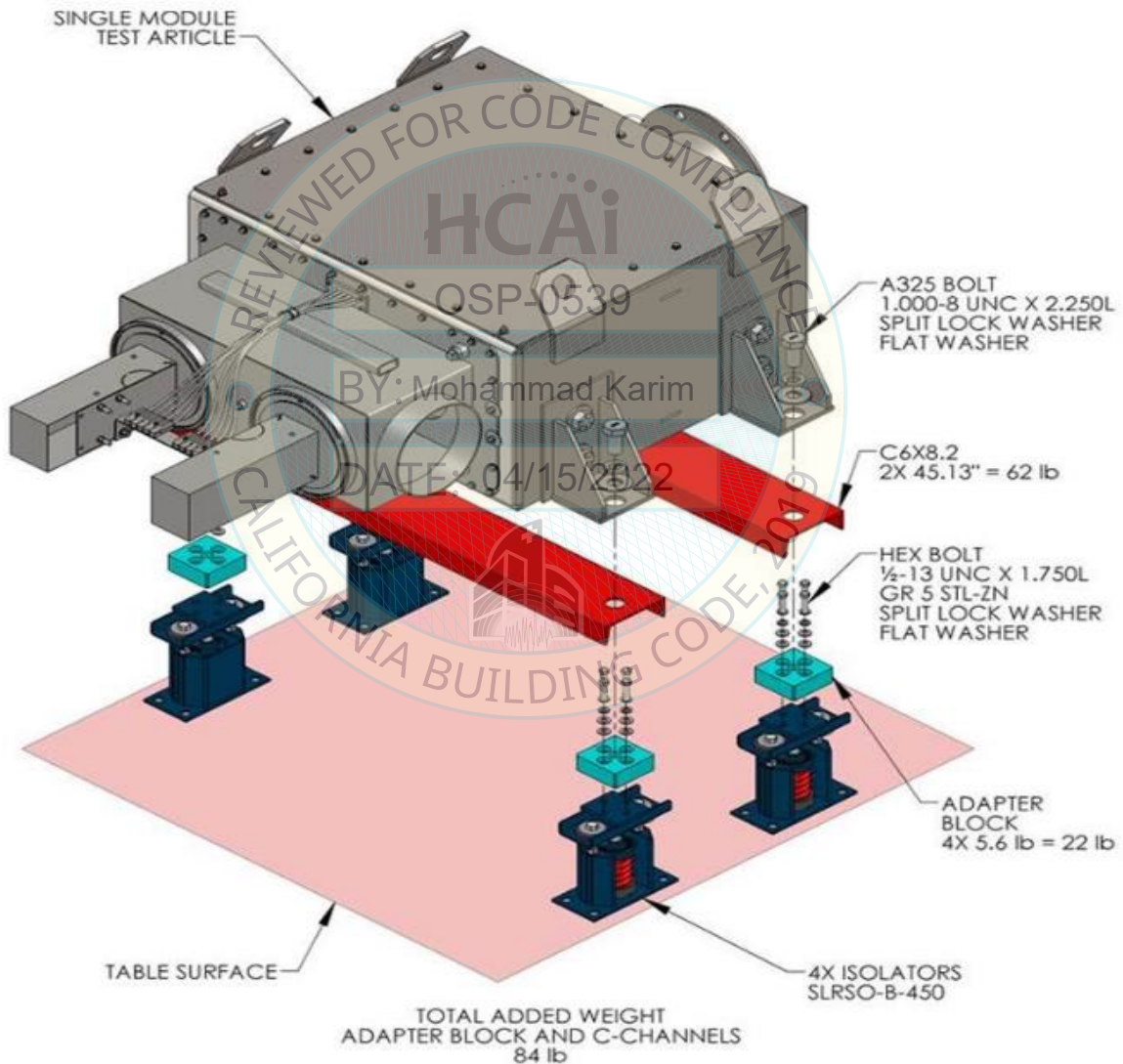


**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 960-0068

**Serial Number:** 1048973-1-18-2

**UUT 2A**

## Test Housing Mounting Details:



# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 960-0068

**UUT 2A**

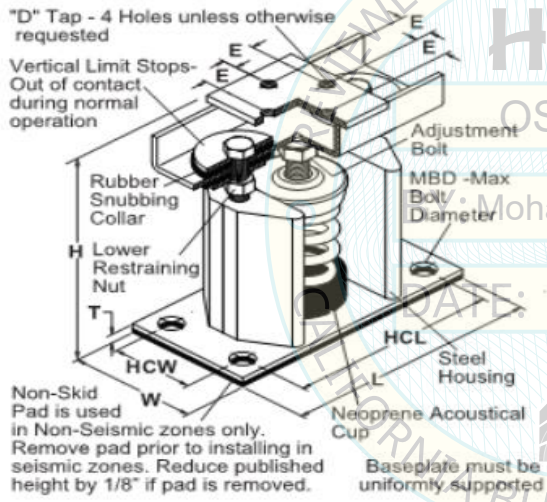
**Serial Number:** 1048973-1-18-2

**Isolators Details:**

**MASON INDUSTRIES, Inc.**  
 Manufacturers of Vibration Control Products  
 350 Rabro Drive Hauppauge, NY 11788  
 2101 W. Crescent Ave., Suite D Anaheim, CA 92801  
 631/348-0282 FAX 631/348-0279  
 714/535-2727 FAX 714/535-6738  
 Info@Mason-Ind.com www.Mason-Ind.com  
 Info@MasonAnaheim.com

JOB NAME \_\_\_\_\_  
 CUSTOMER \_\_\_\_\_  
 CUSTOMER P.O. \_\_\_\_\_  
 MASON M.I. \_\_\_\_\_  
 DWG. NO. \_\_\_\_\_

**SLRSO**  
 1" DEFLECTION  
 B, 1, 2 & 4  
 SERIES SPRING  
 MOUNTS



Size	Rated Capacity (lb)	Rated Defl. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
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SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

**SPRING DATA**

Size	Spring OD	Free Height	Ratio K <sub>1</sub> /K <sub>2</sub>	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

\* with RED inner spring \*\* with GREEN inner spring

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C spring, SLRSO-2 housing which contains two (2) C springs and SLRSO-4 which contains four (4) C springs.

**TYPE SLRSO DIMENSIONS (inches)**

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
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SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

All springs have an additional travel to solid equal to 50% of the rated deflection.

Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.

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2200167-CR-001-R0

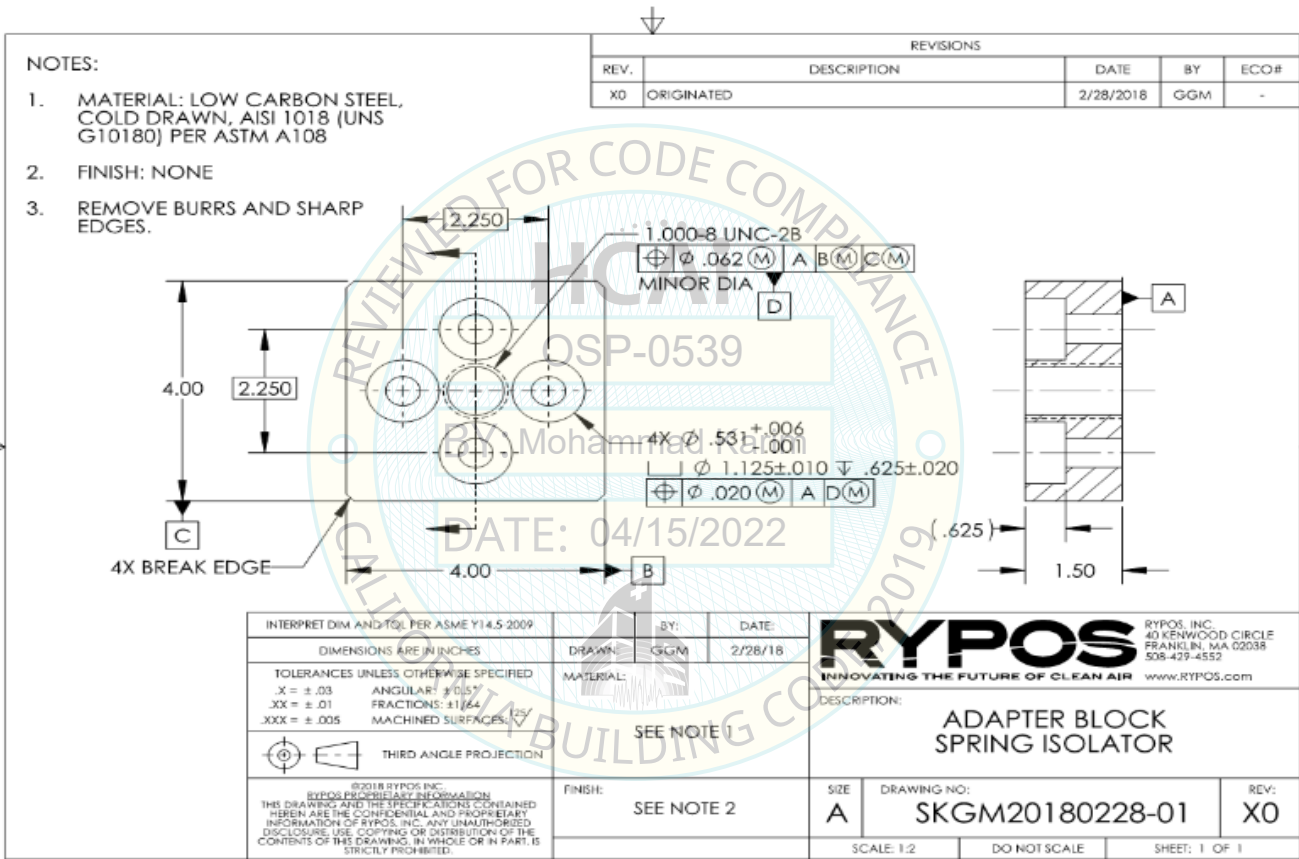


**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 960-0068

**UUT 2A**

**Serial Number:** 1048973-1-18-2

**Adapter Block for Spring Isolator Details:**



# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 2B</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 960-0068 <b>Serial Number:</b> 1048973-1-18-2	

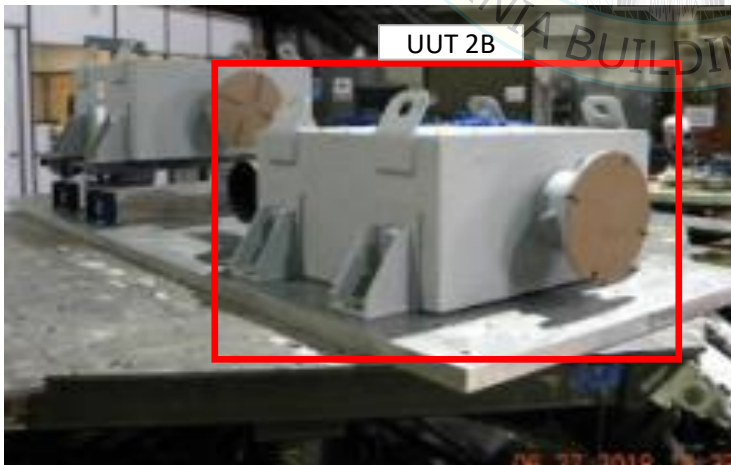
**Product Construction Summary:**  
Filter Module Housing: 0.25" thick A36 steel with zinc paint

**Options/Subcomponent Summary:**

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
814	63	33	21	17.8	15.3	>33.3

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	2.13	0.85	
		3.2	0.0						

**Test Mounting Details:**



UUT 2B was installed in a test housing that was base mounted - rigid to the shake table with four(4) 1"-8 Grade 5 bolts with lock and flat washers  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.



# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 3A</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-00 <b>Serial Number:</b> 18069014	

**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Surface Mount Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 3A was installed onto a mounting frame and the secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts torqued to 25ft-lbs. The wall fixture was mounted to four(4) Mason SLRSO-B-450 isolators using four(4) 1/2" - 13 Grade 5 bolts, washers, and lock washers. Each isolator was mounted to the shake table with four(4) 5/8" - 11 Grade 5 bolts with lock and flat washers, for a total of sixteen(16) 5/8" - 11 Grade 5 bolts.  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 970-0022-00-00 **Serial Number:** 18069014

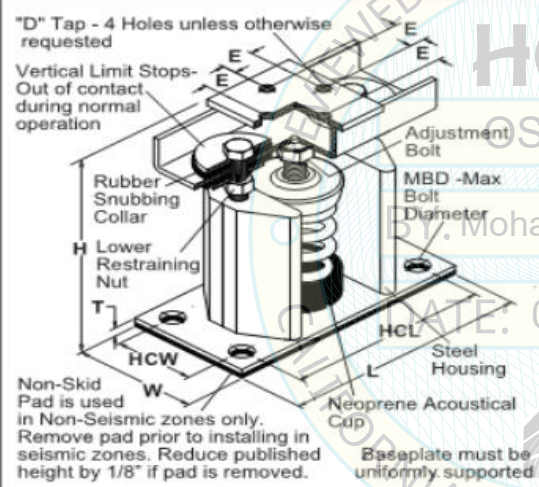
**UUT 3A**

**Isolator Details:**

**MASON INDUSTRIES, Inc.**  
 Manufacturers of Vibration Control Products  
 350 Rabro Drive 2101 W. Crescent Ave., Suite D  
 Hauppauge, NY 11788 Anaheim, CA 92801  
 631/348-0282 714/535-2727  
 FAX 631/348-0279 FAX 714/535-5738  
 info@Mason-Ind.com Info@MasonAnaheim.com  
 www.Mason-Ind.com

JOB NAME \_\_\_\_\_  
 CUSTOMER \_\_\_\_\_  
 CUSTOMER P.O. \_\_\_\_\_  
 MASON M.I. \_\_\_\_\_  
 DWG. NO. \_\_\_\_\_

**SLRSO**  
 1" DEFLECTION  
 B, 1, 2 & 4  
 SERIES SPRING  
 MOUNTS



Size	Rated Capacity (lb)	Rated Def. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
SLRSO-B-115	115	2.00	57	12.2	Silver
SLRSO-B-150	150	2.00	75	9.3	Orange
SLRSO-B-280	280	1.60	174	5.0	Green
<b>SLRSO-B-450</b>	<b>450</b>	<b>1.31</b>	<b>344</b>	<b>3.1</b>	<b>Red</b>
SLRSO-B-750	750	1.12	670	1.9	White
SLRSO-B-1000	1000	1.00	1000	1.4	Blue
SLRSO-1-1000	1000	1.00	1000	4.4	Black
SLRSO-1-1350	1350	1.00	1350	3.3	Yellow
SLRSO-1-1750	1750	1.00	1750	2.5	Black*
SLRSO-1-2100	2100	1.00	2100	2.1	Yellow*
SLRSO-1-2385	2385	1.00	2385	1.9	Yellow**
SLRSO-1-2650	2650	1.00	2650	1.7	Red*
SLRSO-1-2935	2935	1.00	2935	1.5	Red**
SLRSO-2-3500	3500	1.00	3500	1.8	Black*
SLRSO-2-4200	4200	1.00	4200	1.5	Yellow*
SLRSO-2-4770	4770	1.00	4770	1.3	Yellow**
SLRSO-4-5400	5400	1.00	5400	2.0	Yellow
SLRSO-4-7000	7000	1.00	7000	1.6	Black*
SLRSO-4-8400	8400	1.00	8400	1.3	Yellow*
SLRSO-4-9540	9540	1.00	9540	1.2	Yellow**
SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

**SPRING DATA**

Size	Spring OD	Free Height	Ratio K <sub>v</sub> /K <sub>s</sub>	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

\* with RED inner spring \*\* with GREEN inner spring

**TYPE SLRSO DIMENSIONS (inches)**

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
SLRSO-2	14	5 1/4	8 3/4	3/8	5/8	3 1/2	12 1/4	5/8	1 3/8
SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C spring, SLRSO-2 housing which contains two (2) C springs and SLRSO-4 which contains four (4) C springs.

All springs have an additional travel to solid equal to 50% of the rated deflection.

Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.

# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 3B</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-00 <b>Serial Number:</b> 18069014	

**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Surface Mount Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 3B was installed onto a mounting frame and secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts, washers, and lock washers. The fixture was wall mounted - rigid to the shake table with four(4) 1"-8 bolts, torqued to 220ft-lbs. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 4A</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-00 <b>Serial Number:</b> 18069013	

**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Surface Mount Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	2.13	0.85	
		3.2	0.0						

**Test Mounting Details:**



UUT 4A was installed onto a mounting frame and the secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts torqued to 25ft-lbs. The wall fixture was mounted to four(4) Mason SLRSO-B-450 isolators using four(4) 1/2" - 13 Grade 5 bolts, washers, and lock washers. Each isolator was mounted to the shake table with four(4) 5/8" - 11 Grade 5 bolts with lock and flat washers, for a total of sixteen(16) 5/8" - 11 Grade 5 bolts.  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 970-0022-00-00 **Serial Number:** 18069013

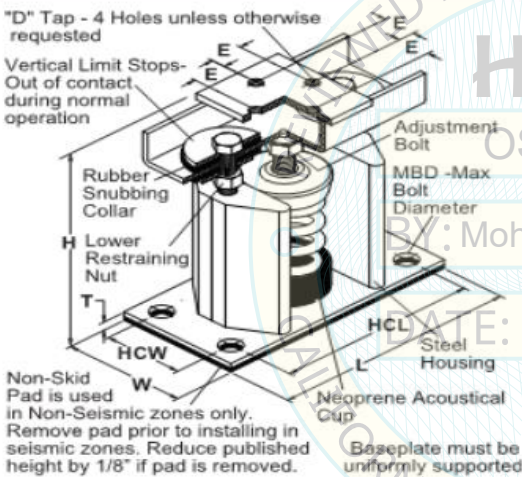
**UUT 4A**

**Isolator Details:**

**MASON INDUSTRIES, Inc.**  
 Manufacturers of Vibration Control Products  
 350 Rabro Drive 2101 W. Crescent Ave., Suite D  
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 Info@Mason-Ind.com Info@MasonAnaheim.com  
 www.Mason-Ind.com

JOB NAME \_\_\_\_\_  
 CUSTOMER \_\_\_\_\_  
 CUSTOMER P.O. \_\_\_\_\_  
 MASON M.I. \_\_\_\_\_  
 DWG. NO. \_\_\_\_\_

**SLRSO**  
 1" DEFLECTION  
 B, 1, 2 & 4  
 SERIES SPRING  
 MOUNTS



**TYPE SLRSO RATINGS**

Size	Rated Capacity (lb)	Rated Def. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
SLRSO-B-115	115	2.00	57	12.2	Silver
SLRSO-B-150	150	2.00	75	9.3	Orange
SLRSO-B-280	280	1.60	174	5.0	Green
<b>SLRSO-B-450</b>	<b>450</b>	<b>1.31</b>	<b>344</b>	<b>3.1</b>	<b>Red</b>
SLRSO-B-750	750	1.12	670	1.9	White
SLRSO-B-1000	1000	1.00	1000	1.4	Blue
SLRSO-1-1000	1000	1.00	1000	4.4	Black
SLRSO-1-1350	1350	1.00	1350	3.3	Yellow
SLRSO-1-1750	1750	1.00	1750	2.5	Black*
SLRSO-1-2100	2100	1.00	2100	2.1	Yellow*
SLRSO-1-2385	2385	1.00	2385	1.9	Yellow**
SLRSO-1-2650	2650	1.00	2650	1.7	Red*
SLRSO-1-2935	2935	1.00	2935	1.5	Red**
SLRSO-2-3500	3500	1.00	3500	1.8	Black*
SLRSO-2-4200	4200	1.00	4200	1.5	Yellow*
SLRSO-2-4770	4770	1.00	4770	1.3	Yellow**
SLRSO-4-5400	5400	1.00	5400	2.0	Yellow
SLRSO-4-7000	7000	1.00	7000	1.6	Black*
SLRSO-4-8400	8400	1.00	8400	1.3	Yellow*
SLRSO-4-9540	9540	1.00	9540	1.2	Yellow**
SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

**SPRING DATA**

Size	Spring OD	Free Height	Ratio K <sub>1</sub> /K <sub>2</sub>	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

\* with RED inner spring \*\* with GREEN inner spring

**TYPE SLRSO DIMENSIONS (inches)**

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
SLRSO-2	14	5 1/4	8 3/4	3/8	5/8	3 1/2	12 1/4	5/8	1 3/8
SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C spring, SLRSO-2 housing which contains two (2) C springs and SLRSO-4 which contains four (4) C springs.

All springs have an additional travel to solid equal to 50% of the rated deflection.

Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.

# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 4B</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-00	
<b>Serial Number:</b> 18069013	

**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Surface Mount Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 4B was installed onto a mounting frame and secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts, washers, and lock washers. The fixture was wall mounted - rigid to the shake table with four(4) 1"-8 bolts, torqued to 220ft-lbs. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 5A</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-01 <b>Serial Number:</b> 16369668	

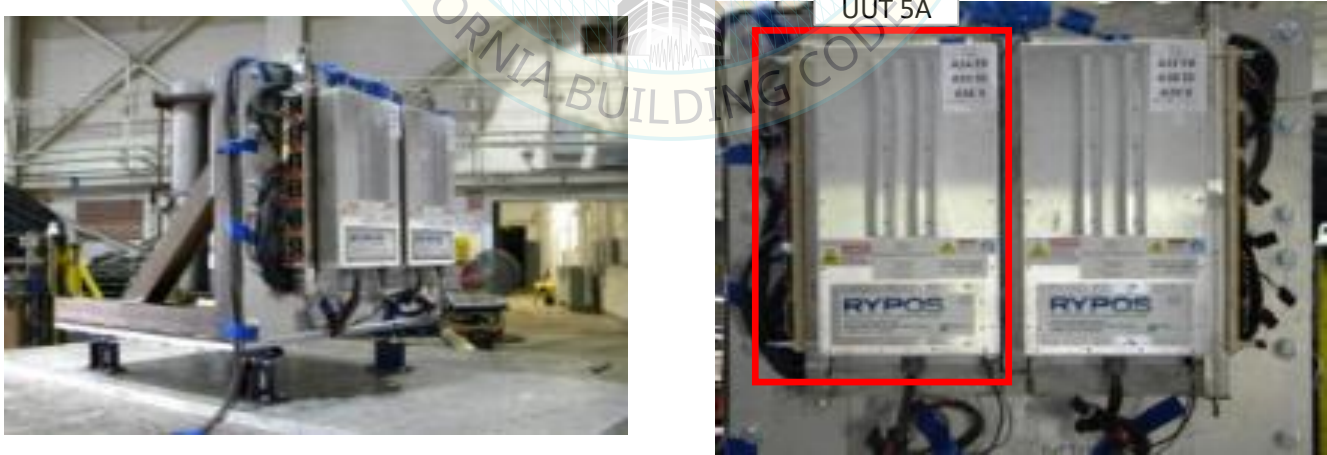
**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Through-Hole Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 5A was installed onto a mounting frame and the secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts torqued to 25ft-lbs. The wall fixture was mounted to four(4) Mason SLRSO-B-450 isolators using four(4) 1/2" - 13 Grade 5 bolts, washers, and lock washers. Each isolator was mounted to the shake table with four(4) 5/8" - 11 Grade 5 bolts with lock and flat washers, for a total of sixteen(16) 5/8" - 11 Grade 5 bolts.  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 970-0022-00-01

**Serial Number:** 16369668

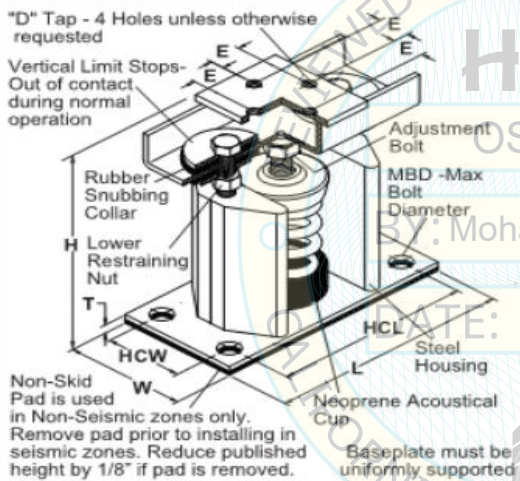
**UUT 5A**

**Isolator Details:**

**MASON INDUSTRIES, Inc.**  
Manufacturers of Vibration Control Products  
350 Rabro Drive Hauppauge, NY 11788  
2101 W. Crescent Ave., Suite D Anaheim, CA 92801  
631/348-0282 FAX 631/348-0279  
Info@Mason-Ind.com www.Mason-Ind.com  
714/535-2727 FAX 714/535-5738  
Info@MasonAnahaim.com

**JOB NAME** \_\_\_\_\_  
**CUSTOMER** \_\_\_\_\_  
**CUSTOMER P.O.** \_\_\_\_\_  
**MASON M.I.** \_\_\_\_\_  
**DWG. NO.** \_\_\_\_\_

**SLRSO**  
1" DEFLECTION  
B, 1, 2 & 4  
SERIES SPRING  
MOUNTS



**TYPE SLRSO RATINGS**

Size	Rated Capacity (lb)	Rated Defl. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
SLRSO-B-115	115	2.00	57	12.2	Silver
SLRSO-B-150	150	2.00	75	9.3	Orange
SLRSO-B-280	280	1.60	174	5.0	Green
SLRSO-B-450	450	1.31	344	3.1	Red
SLRSO-B-750	750	1.12	670	1.9	White
SLRSO-B-1000	1000	1.00	1000	1.4	Blue
SLRSO-1-1000	1000	1.00	1000	4.4	Black
SLRSO-1-1350	1350	1.00	1350	3.3	Yellow
SLRSO-1-1750	1750	1.00	1750	2.5	Black*
SLRSO-1-2100	2100	1.00	2100	2.1	Yellow*
SLRSO-1-2385	2385	1.00	2385	1.9	Yellow**
SLRSO-1-2650	2650	1.00	2650	1.7	Red*
SLRSO-1-2935	2935	1.00	2935	1.5	Red**
SLRSO-2-3500	3500	1.00	3500	1.8	Black*
SLRSO-2-4200	4200	1.00	4200	1.5	Yellow*
SLRSO-2-4770	4770	1.00	4770	1.3	Yellow**
SLRSO-4-5400	5400	1.00	5400	2.0	Yellow
SLRSO-4-7000	7000	1.00	7000	1.6	Black*
SLRSO-4-8400	8400	1.00	8400	1.3	Yellow*
SLRSO-4-9540	9540	1.00	9540	1.2	Yellow**
SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

\* with RED inner spring \*\* with GREEN inner spring

**SPRING DATA**

Size	Spring OD	Free Height	Ratio K <sub>1</sub> /K <sub>2</sub>	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

**TYPE SLRSO DIMENSIONS (Inches)**

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
SLRSO-2	14	5 1/4	8 3/4	3/8	5/8	3 1/2	12 1/4	5/8	1 3/8
SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C spring. SLRSO-2 housing which contains two (2) C springs and SLRSO-4 which contains four (4) C springs.

All springs have an additional travel to solid equal to 50% of the rated deflection.

Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.



# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 5B</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-01 <b>Serial Number:</b> 16369668	

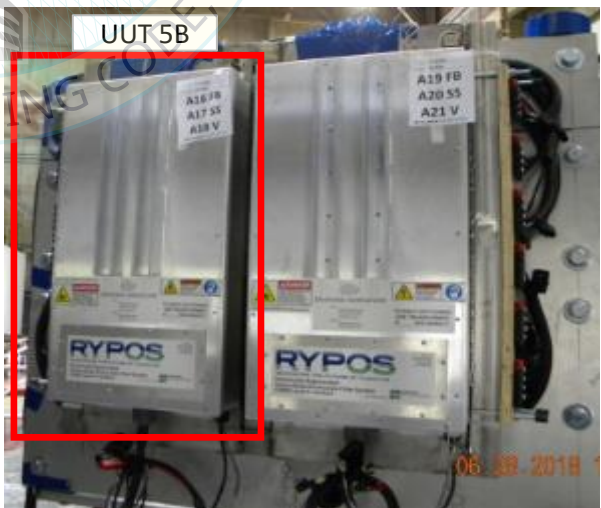
**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Surface Mount Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 5B was installed onto a mounting frame and secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts, washers, and lock washers. The fixture was wall mounted - rigid to the shake table with four(4) 1"-8 bolts, torqued to 220ft-lbs. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 6A</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-01 <b>Serial Number:</b> 16459739	

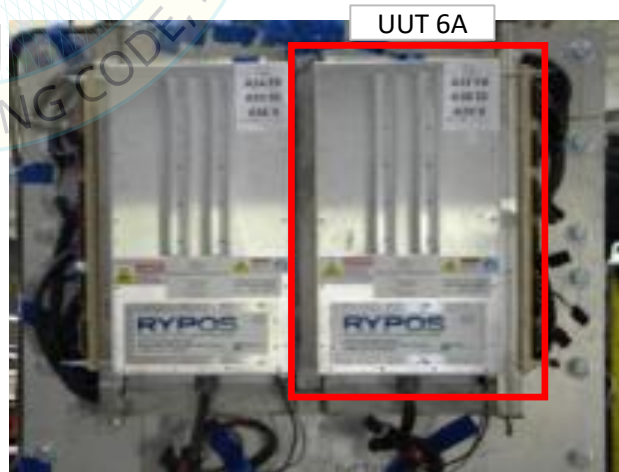
**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Through-Hole Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 6A was installed onto a mounting frame and the secured to the test fixture with sixteen(16) 5/16" - 18 Grade 8 bolts torqued to 25ft-lbs. The wall fixture was mounted to four(4) Mason SLRSO-B-450 isolators using four(4) 1/2" - 13 Grade 5 bolts, washers, and lock washers. Each isolator was mounted to the shake table with four(4) 5/8" - 11 Grade 5 bolts with lock and flat washers, for a total of sixteen(16) 5/8" - 11 Grade 5 bolts.  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.

# UNIT UNDER TEST (UUT) SUMMARY SHEET

2200167-CR-001-R0



**Manufacturer:** Rypos, Inc.  
**Model Line:** Filter Module and Electronic Control Units  
**Model Number:** 970-0022-00-01 **Serial Number:** 16459739

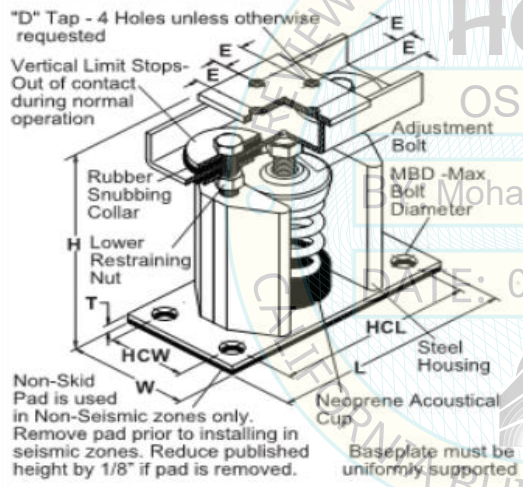
**UUT 6A**

**Isolator Details:**

**MASON INDUSTRIES, Inc.**  
 Manufacturers of Vibration Control Products  
 350 Rabro Drive Hauppauge, NY 11788  
 2101 W. Crescent Ave., Suite D Anaheim, CA 92801  
 631/348-0282 714/535-2727  
 FAX 631/348-0279 FAX 714/535-5738  
 Info@Mason-Ind.com Info@MasonAnaheim.com  
 www.Mason-Ind.com

JOB NAME \_\_\_\_\_  
 CUSTOMER \_\_\_\_\_  
 CUSTOMER P.O. \_\_\_\_\_  
 MASON M.I. \_\_\_\_\_  
 DWG. NO. \_\_\_\_\_

**SLRSO**  
 1" DEFLECTION  
 B, 1, 2 & 4  
 SERIES SPRING  
 MOUNTS



Size	Rated Capacity (lb)	Rated Defl. (in)	Spring Constant (lb/in)	Max. Horiz. Housing G Rating	Spring Color
SLRSO-B-65	65	2.10	31	21.6	Brown
SLRSO-B-85	85	2.10	40	16.5	Wht/Blk
SLRSO-B-115	115	2.00	57	12.2	Silver
SLRSO-B-150	150	2.00	75	9.3	Orange
SLRSO-B-280	280	1.60	174	5.0	Green
SLRSO-B-450	450	1.31	344	3.1	Red
SLRSO-B-750	750	1.12	670	1.9	White
SLRSO-B-1000	1000	1.00	1000	1.4	Blue
SLRSO-1-1000	1000	1.00	1000	4.4	Black
SLRSO-1-1350	1350	1.00	1350	3.3	Yellow
SLRSO-1-1750	1750	1.00	1750	2.5	Black*
SLRSO-1-2100	2100	1.00	2100	2.1	Yellow*
SLRSO-1-2385	2385	1.00	2385	1.9	Yellow**
SLRSO-1-2650	2650	1.00	2650	1.7	Red*
SLRSO-1-2935	2935	1.00	2935	1.5	Red**
SLRSO-2-3500	3500	1.00	3500	1.8	Black*
SLRSO-2-4200	4200	1.00	4200	1.5	Yellow*
SLRSO-2-4770	4770	1.00	4770	1.3	Yellow**
SLRSO-4-5400	5400	1.00	5400	2.0	Yellow
SLRSO-4-7000	7000	1.00	7000	1.6	Black*
SLRSO-4-8400	8400	1.00	8400	1.3	Yellow*
SLRSO-4-9540	9540	1.00	9540	1.2	Yellow**
SLRSO-4-10600	10600	1.00	10600	1.1	Red*
SLRSO-4-11740	11740	1.00	11740	0.9	Red**

**SPRING DATA**

Size	Spring OD	Free Height	Ratio K <sub>v</sub> /K <sub>y</sub>	Ratio OD/OH
B	2 3/8	4	0.70-0.80	0.80 - 1.25
C	2 7/8	4 1/8	0.90-1.10	0.92

\* with RED inner spring \*\* with GREEN inner spring

Illustration shows SLRSO-B housing which contains one (1) B spring. Not shown is SLRSO-1 housing which contains one (1) C spring. SLRSO-2 housing which contains two (2) C springs and SLRSO-4 which contains four (4) C springs.

**TYPE SLRSO DIMENSIONS (inches)**

Size	L	W	H	T	MBD	HCW	HCL	D	E
SLRSO-B	8 1/2	4 1/4	8 3/4	3/8	5/8	2 3/4	7	1/2	1 1/8
SLRSO-1	9 1/2	5 1/4	8 3/4	3/8	5/8	3 1/2	7 1/2	5/8	1 3/8
SLRSO-2	14	5 1/4	8 3/4	3/8	5/8	3 1/2	12 1/4	5/8	1 3/8
SLRSO-4	13 3/4	8	8 3/4	3/8	3/4	6 1/4	11	7/8	1 3/8

All springs have an additional travel to solid equal to 50% of the rated deflection.

Housing load ratings expressed in G's are based on tests with bolted connections to steel top and bottom.

# UNIT UNDER TEST (UUT) SUMMARY SHEET



2200167-CR-001-R0

<b>Manufacturer:</b> Rypos, Inc.	<b>UUT 6B</b>
<b>Model Line:</b> Filter Module and Electronic Control Units	
<b>Model Number:</b> 970-0022-00-01 <b>Serial Number:</b> 16459739	

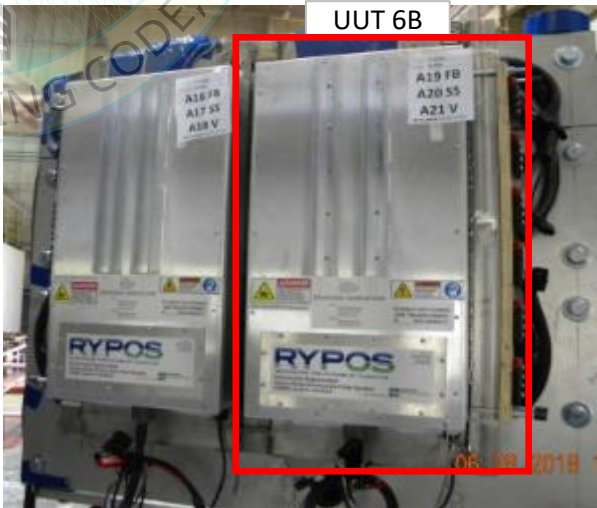
**Product Construction Summary:**  
ECU Enclosure: 0.090" thick aluminum alloy (5052-H32)

**Options/Subcomponent Summary:**  
PCB (Surface Mount Technology Version)

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
60	7.0	14.2	28.3	N/A	N/A	N/A

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2019	ICC-ES AC156	2.0 3.2	1.0 0.0	1.5	3.20	2.40	2.13	0.85	

**Test Mounting Details:**



UUT 6B was installed onto a mounting frame and secured to the test fixture with sixteen (16) 5/16" - 18 Grade 8 bolts, washers, and lock washers. The fixture was wall mounted - rigid to the shake table with four (4) 1"-8 bolts, torqued to 220ft-lbs. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.