Wire Rope Isolators

Standard Wire Rope Isolators are comprised of stainless steel stranded cable threaded through aluminum alloy retaining bars that are mounted for effective shock and vibration isolation. With their corrosion resistant, all-metal construction, Enidine Wire Rope Isolators are environmentally stable, high-performance shock and vibration isolators that are unaffected by temperature extremes, chemicals, oils, ozone and abrasives.

Featuring a patented crimping pattern, versatile mounting options and a variety of sizes, these helical isolator products can help ensure that your systems can effectively meet performance requirements in Commercial, Industrial, and Defense industries, including MIL-STD-810, MIL-STD-167, MIL-S-901D, MIL-E-5400, STANAG-042, BV43-44 and DEF-STND 0755. For more information, please refer to our “Wire Rope Isolator Sizing Information” on pages 5-6 to assist you in selecting a model for your application.
Crimp Models (WR2 – WR8): E nidine’s patented crimp design lowers cost by using fewer mount bars when compared to the clamp design, no assembly hardware, and reduced assembly time.

Clamp Models (WR12 – WR40): E nidine’s clamp bar models are constructed by clamping the wire rope between two fastened mount bars.
Performance:

Stiffness (Kv or Ks):
Wire rope isolators exhibit non-linear stiffness behavior. Small deflections, usually associated with vibration isolation, will have a different spring rate than larger shock deflections. Enidine publishes typical vibration stiffness values (Kv), and average shock stiffness values (Ks) within the catalog. These values can be used with the provided equations listed on Page 6 to predict system performance. The stiffness values listed in the catalog are for full-loop versions. For reduced loop versions, ratio the stiffness by dividing the number of desired loops by the number of full loops.

Isolator Axes:

Wire rope isolators are multi-axis isolators. The diagram below includes load axis definitions and deflection considerations.

Damping:

Typically 5-15%, depending on size and input level. For specific damping considerations, please consult Enidine.

Mounting Orientation:

The diagrams below illustrate typical mounting orientations.

Stabilizers:

Stabilizers are used to control deflections of tall supported masses. Stabilizers are typically recommended when the height equals 2-times the width or depth dimension. In most applications, the quantity of stabilizers required are half as many as the base isolators, and selected one size softer than the base isolators.
Compact Wire Rope Isolators
CR Series

For the best in vibration isolation capabilities, choose Enidine’s Compact Wire Rope Isolators. Smaller than traditional wire ropes, these unique isolators provide cost-effective, simultaneous shock and vibration attenuation where package space is at a premium.

Enidine Compact Wire Rope Isolators feature an easy, single-point installation, which allows them to be installed in virtually any application. Their small size also permits the isolation of individual system components, making them ideal for use in sensitive equipment and electronics. Just as with our standard Enidine Wire Rope Isolators, Enidine Compact Wire Rope Isolators feature a patented, all-metal design and components that ensure maximum reliability, regardless of temperature or substrate requirement, and that can help meet MIL-SPecs similar to those of our Wire Rope Isolator series. Please refer to our “Compact Wire Rope Isolator Sizing Information” on pages 37-38 for more information.

If your application is outside the standard Compact Wire Rope Isolator product range, please consult the standard Wire Rope Isolator or HERM portions of this catalog. If a standard solution is still not available, Enidine engineers can design an isolator to suit your specifications.

For further information on Enidine Wire Rope, HERM and Compact Wire Rope Isolator products, technical assistance and pricing, please contact Enidine or your nearest authorized distributor. A list of Enidine distributors can be found by visiting our website at www.enidine.com.

U.S. Patents 6,290,217
6,244,579
Compact Wire Rope Isolators
CR Series

Overview

CR1 – CR3

CR4 – CR6

Crimp
Mounting Hole
Top Mounting Bar
Bottom Mounting Bar
Stainless Steel Cable

Crimp
Mounting Hole
Top Mounting Bar
Bottom Mounting Bar
Stainless Steel Cable
Compact Wire Rope Isolators
CR Series

Overview

Performance:
Stiffness (Kv or Ks):
Compact wire rope isolators exhibit non-linear stiffness behavior. Small deflections, usually associated with vibration isolation, will have a different spring rate than larger shock deflections. Enidine publishes typical vibration stiffness values (Kv), and average shock stiffness values (Ks) within the catalog. These values can be used with the provided equations listed on Page 38 to predict system performance.

Isolator Axes:
Compact wire rope isolators are multi-axis isolators. The diagram below includes load axis definitions and deflection considerations.

Damping:
Typically 5-15%, depending on size and input level. For specific damping considerations, please consult Enidine.

Mounting Orientation:
The diagrams below illustrate typical mounting orientations.

Stabilizers:
Stabilizers are used to control deflections of tall supported masses. Stabilizers are typically recommended when the height equals 2-times the width or depth dimension. In most applications, the quantity of stabilizers required are half as many as the base isolators, and selected one size softer than the base isolators.

Materials and Finishes:
Standard:
- Wire Rope: 302/304 Stainless Steel
- Mount Bars: 6061-T6 Aluminum, Chemical Conversion Coated per MIL-C-5541, Class 1A
- Threads: Tapped

Optional:
- Mount Bars: 6061-T6 Aluminum, Anodized per MIL-A-8625, Type II, Class 1
- 302/304 Stainless Steel per ASTM A276, Passivated

Special:
Consult Enidine

Isolator Options:
Mounting:
Enidine offers a full range of mounting combinations of thru-hole, countersunk, and threaded bars.
All configurations are available in either Imperial or Metric styles. Add an “M” after the mounting option for Metric. Some models have reduced mounting options available due to limited fastener installation space.
Consult Enidine if a preferred mounting configuration is not listed.

Bellmouth:
The bellmouth feature includes mount bars with radii manufactured into the wire rope hole edges. This option is recommended for high fatigue applications. Compact rope models (CR1 – CR6) include this feature as the standard.
The HERM isolator incorporates the use of a traditional Enidine helical wire rope isolator encased in a proprietary elastomeric compound. The stainless steel cable of the mount provides for a rugged construction, while the elastomer provides additional damping and stiffness. This unique design results in a fail safe mount with a higher stiffness and energy absorption capacity.

The mount is readily scalable and performance easily tuned by varying the wire diameter, loop size, number of loops and elastomeric properties. The HERM isolator has proven particularly strong in low natural frequency “soft deck” applications of 12-16 Hz, reducing output G’s to below 15G’s. Its sealed nature of construction also provides for easy NBC washdown. Since the mounting size of the HERM isolator is virtually identical to that of standard wire rope isolators used in many shipboard applications, equipment upgrades are both simple and seamless with drop-in replacement capability.
HERM (High Energy Rope Mount)
HR6-HR40 Series

HERM Features:
- Lowest profile design for a 14 Hz deck solution
- A variety of material combinations available
- Mounting identical to traditional Wire Rope Isolators
- Readily "tunable" to meet a wide range of natural frequencies
- Greater load carrying capability

HERM Benefits:
- Easy retrofit on fielded equipment
- Fewer mounts required to support a given load
- Smaller "footprint" than other mounts
- Compatible with NBC wash down requirements
- Improved noise attenuation compared to standard Wire Rope Isolators
HERM (High Energy Rope Mount)

HR Series

Overview

Performance:
Stiffness (Kv or Ks):
HERM’s exhibit non-linear stiffness behavior. Small deflections, usually associated with vibration isolation, will have a different spring rate than larger shock deflections. Enidine publishes typical vibration stiffness values (Kv), and average shock stiffness values (Ks) within the catalog. These values can be used with the provided equations listed on Page 54 to predict system performance.

Isolator Axes:
HERM are multi-axis isolators. The diagram below includes load axis definitions and deflection considerations.

Damping:
Typically 15-25%, depending on size and input level. For specific damping considerations, please consult Enidine.

Mounting Orientation:
The diagrams below illustrate typical mounting orientations.

Stabilizers:
Stabilizers are used to control deflections of tall supported masses. Stabilizers are typically recommended when the height equals 2-times the width or depth dimension.