

ISO 9001
REGISTERED

# Functional Safety SIL 3\* Capable Hydraulic Cylinders:

Available for H and MH Series Tie Rod Cylinders\*\*



Proven
Durability
for the
Toughest
Applications



**Certified reliability for safety applications.** 

- \* Per IEC 61508:

  "Functional Safety of
  Electrical/Electronic/
  Programmable Electronic
  Safety-related Systems"
- \*\* SIL 3 is an option and must be requested.
   Available on all standard H & MH Series Cylinders except pivot mount styles.

# **Hydraulic Cylinders**



# **SAFETY INTEGRITY LEVEL (SIL)**

A key factor defined and used in the IEC 61508 standard is Safety Integrity Level or "SIL". SIL offers an objective rating that represents how well a product development process prevents "Systematic" failures and how well a product's design offers resistance against "random" failures, given assumed operating conditions. In simpler terms, SIL is a measure of reliability of the product. IEC 61508 defines SIL in categories from 1 to 4, with 4 providing the highest level of reliability.

### CERTIFICATION

Series H and Series MH Cylinders\* have been assessed per the relevant requirements of IEC 61508:2010 Parts 1-7 and meets requirements providing a level of integrity to:

Systematic Capability: SC 3 (SIL 3 Capable)
Random Capability: Type A, Route 2h Device

See Safety Manual for additional details and restrictions.

\* Applies to all standard mounts except rotational mounts.

# **Information for Designers**

All required SIL 3 design information is found in our FMEDA Analysis Document and Safety Manual – both available through Milwaukee Cylinder Customer Service.



### LOOK FOR THE MARK

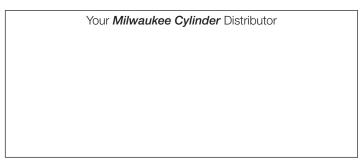
Milwaukee Cylinder marks all SIL 3 Option product with the SIL 3 Certification stamp.

### **3RD PARTY CERTIFICATION:**

Milwaukee Cylinder SIL 3 options has been certified by exida.

To achieve this certification, applicable Milwaukee Cylinder designs were subject to a detailed reliability analysis by *exida* experts. This analysis demonstrated the applicable product designs met the stringent SIL 3 requirements. In addition, Milwaukee Cylinder design, operations, and quality processes to be used in its SIL 3 products were audited by *exida* as part of the certification, and were found to meet the rigorous SIL 3 standards.

exida is a leading global supplier of functional safety products, services, and certifications. exida corporate offices are located in Sellersville, PA. www.exida.com









Due to manufacturing processes and product improvements, please check website for the latest updates of products.

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