



CERTIFICATE NUMBER	21-2178473-PDA
EFFECTIVE DATE	29-Oct-2021
EXPIRY DATE	28-Oct-2026
ABS TECHNICAL OFFICE	Houston ESD - Piping

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

EMERSON AUTOMATION SOLUTIONS

located at

**19200 NORTHWEST FREEWAY, HOUSTON, TX, United States,
77065**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Actuator, Pneumatic and Hydraulic for Quarter-Turn Valves
Model: M, S, B, C & HP Series
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 28/Oct/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Soheni Haque, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Product: Actuator, Pneumatic and Hydraulic for Quarter-Turn Valves

Model: M, S, B, C & HP Series

Endorsements:

Intended Service:

For Operating Quarter-Turn Valves; Models M, S, and Models B, C, and HP Actuators with Epoxy Coating for Underwater (100 feet depth) and Splash Zone Service.

Description:

Actuators for Quarter-Turn Valves -

Model M-Pneumatic/Hydraulic (Water) Cylinder Actuators

Model M-Stainless Steel Construction

Model S-Pneumatic/Hydraulic (Water) Cylinder Actuators;

Model B-Pneumatic Cylinder Actuators;

Model HP- Hydraulic (Oil) Cylinder Actuators.

Model S-Stainless Steel Construction;

Model B-Ductile Iron/Stainless Steel Construction;

Model C-Ductile Iron/Carbon Steel Construction;

Model HP-Carbon Steel/Stainless Steel Construction;

Double Acting: S-xxxX-D000, M-xxxX-D000, B-xxxX-D000, C-xxxX-D000 & HPx-DA;

Single Acting with Spring Return: S-xxxX-S040/S060/S080, M-xxxX-S040/S060/S080, B-xxxX-S040/S060/S080, C-xxxX-S040/S060/S080 & HPx-xxxSR-xx.

Rating:

The actual valve break torque is not to exceed the manufacturer's recommended valve demand break torque shown in Morin Actuator Torque Ratings Tables as indicated on the attached PDF pages. For additional rating data and maximum allowable working pressures (MAWPs), see Morin Actuator Torque Ratings Tables on the attached PDF pages. Also, see manufacturer's catalogue and recommendations for actuator's performance data.

Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Model S- & M-: Service Temperature Range: (-) 20°F to 210°F; Model B & C-: Service Temperature: 0°F to 210°F;

Model HP-: Service Temperature Range: 0°F to 210°F.

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

1. For Class I & II Piping Pressure (see 4-6-1/5 and 4-6-1/Table 1 of the Marine Vessel Rules), copies of certified Mill Test Reports of the Materials entering into the construction of Hydraulic and Pneumatic Cylinder powered Actuators are to be made available to the Surveyor upon request. Ordinary Cast Iron or similar Materials (elongation less than 12%) are not to be used for Cylinder Actuators (see 4-6-7/3.5.5 and 4-6-7/5.3.3 of the Marine Vessel Rules);

2. For Class I & II Piping Pressure (see 4-6-1/5 and 4-6-1/Table 1 of the Marine Vessel Rules), Cylinders are to be subjected to a Hydrostatic Test Pressure of 1.5 times the MAWP for Steel Cylinders and 2 times the MAWP for Cast Iron and Nodular Iron Cylinder (4-6-7/3.5.5 and 4-6-7/5.3.3 of the Marine Vessel Rules).

3. Cylinder is to be affixed with a permanent nameplate or marking bearing the manufacturer's name or trademark and the maximum allowable working pressure and temperature (4-6-7/3.5.5 and 4-6-7/5.3.3 of the Marine Vessel Rules).

Notes/Drawing/Documentation:

Drawing No. 0343/PED/ROT/PRJ11091519/1, EU CERTIFICATE OF CONFORMITY, Revision: -, Pages: -

Drawing No. 1027739864943, EAC DECLARATION OF CONFORMITY CUTR010 MORIN B C S HP, Revision: -, Pages: -

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Tier: 2 - PDA Issued

Drawing No. 81458-2010-CE-USA-DNV, Certificate DNV-GL Morin series A, B, C, HP, SHP and S Actuators, Revision: 4, Pages: -

Drawing No. B Series Drawings, B SERIES DRAWINGS, Revision: -, Pages: -

Drawing No. C Series Drawings, C SERIES DRAWINGS, Revision: -, Pages: -

Drawing No. Correspondence, Correspondence - Email new certificates, Revision: -, Pages: -

Drawing No. Correspondence, PDA Revalidation Application, Revision: -, Pages: -

Drawing No. HP Series Drawings, HP SERIES DRAWINGS, Revision: -, Pages: -

Drawing No. I-202-IT/Q-18 0045, CERTIFICATE OF CONFORMITY MODULE K, Revision: -, Pages: -

Drawing No. M - S Series Drawings, M - S SERIES DRAWINGS, Revision: -, Pages: -

Drawing No. MOR 1204064 C001, PRODUCT CERTIFICATE APPROVALS SIL3 IEC61508:2010, EXIDA, 2019, Revision: 3.1, Pages: -

Drawing No. MORTB0303, Actuator Torque Ratings Series A / B / C / S / HP, Revision: -, Pages: -

Drawing No. PDS-02-01-98-3050-EN, Bettis M Series - Stainless Steel Actuators (Metric) Product Data Sheet, Revision: 1, Pages: -

Drawing No. PDS-02-01-98-3051-EN, Bettis M Series - Stainless Steel Actuators (Imperial) Product Data Sheet, Revision: 1, Pages: -

Drawing No. RU 0264459, EAC CERTIFICATE OF COMPLIANCE CUTR012 MORIN A B C S HP, Revision: -, Pages: -

Drawing No. THERMAL SHOCK TEST, THERMAL SHOCK ACTUATOR TEST, MORIN TYCO INT LTD CIA, Revision: -, Pages: -

Drawing No. TR-0049, MORIN 023 AND 135 ACTUATOR LOW TEMPERATURE EVALUATION, MORIN TYCO INT LTD CIA, Revision: 1, Pages: -

Drawing No. VCTDS-02667-US 15/04, DS MORIN S SERIES PNEUMATIC ACTUATOR (IMPERIAL) PRODUCT DATA SHEET, Revision: -, Pages: -

Drawing No. VCTDS-02667-US 17/09, DS MORIN S SERIES PNEUMATIC ACTUATOR (METRIC) PRODUCT DATA SHEET, Revision: -, Pages: -

Drawing No. VCTDS-03193-US 15/01, DS MORIN HP SERIES PNEUMATIC ACTUATOR PRODUCT DATA SHEET, Revision: -, Pages: -

Drawing No. VCTDS-08437-EN 20/01, DS MORIN B and C SERIES PNEUMATIC ACTUATORS (Metric) PRODUCT DATA SHEET, Revision: -, Pages: -

Drawing No. VCTDS-08438-EN 20/08, DS MORIN B and C SERIES PNEUMATIC ACTUATORS (Imperial) PRODUCT DATA SHEET, Revision: -, Pages: -

Terms of Validity:

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STANDARDS

ABS Rules:

The Rules for Conditions of Classification, 2021 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2021 Rules for Building and Classing Marine Vessels Rules: 2-3-13, 4-6-2/3.1.6, 4-6-1/5 & Table 1, 4-6-7/3.5.5, 4-6-

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7/5.3.3

The Rules for Conditions of Classification, Offshore Units and Structures, 2021 Mobile Offshore Units 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2021 Rules for Building and Classing Mobile Offshore Units: 4-2-1/3.7, 4-2-1/9.1, 4-2-2/19, 4-2-6/3

National:

2021 ASME BPVC Section VIII Division 1 and Section II Part D

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA