Certificate No: LR2126203TA
Issue Date: 14/12/2020
Expiry Date: 13/12/2025

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**Emerson Process Management Valve Automation**
Address	19200 Northwest Freeway, Houston, TX, 77065, United States
Place of Production	Emerson Process Management Valve Automation(Tianjin) Co.,Ltd. NO.15 Xing Wang Road Wuqing DevelopmentArea, Area, Tianjin, 301700, China
Type	Actuators
Description	Quarter turn, canted/ standard scotch yoke & hydraulic/ pneumatic actuators- double acting or spring return GC1, GC2, GC3, GC4, GC5, GC7, GC8 & GC10 GH2, GH3, GH4, GH5, GH7, GH8 & GH10 GHC2, GHC3, GHC4, GHC5, GHC7, GHC8 & GHC 10
Trade Name	GC, GH and GHC Series
Application	Industrial , fixed or mobile offshore use. To drive quarter turn valves to open or closed position using air or hydraulic pressure in both directions (double acting) or air or hydraulic pressure in one direction (spring return).
Specified Standard	Emerson Process Management - Company Standard EOP 01 Rev 5 IEC60529 - IP 66 & 67 SI 1996 No. 825 and

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Gopal Nair

Americas Design Appraisal Manager to
Lloyd's Register Quality Assurance Inc
A member of the Lloyd's Register group

1330 Enclave Parkway, Houston, Texas, 77077,
United States

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SI 1996 No. 913

Ratings

GC Hydraulic - Spring Return (SR) or Double Acting (DA)
Operating Pressure 500 to 5000 psig
Torque output hydraulic DA - 1259 to 3544170 in-lbs
Torque output spring return (SR) - 5672 to 2286935
GC Pneumatic - Spring Return (SR) or Double Acting (DA)
Operating Pressure 40 to 200 psig
Torque output pneumatic DA- 4196 to 3591347 in-lbs
Torque output pneumatic SR- 5672 to 2753007 in-lbs
GH Pneumatic - Spring Return (SR)
Operating Pressure 40 to 200 psig
Torque output pneumatic 7772 to 3726658 in-lbs
Spring Torque 10318 to 1705468 in-lbs
GHC Pneumatic - Spring Return (SR)
Operating Pressure 50 to 189 psig
Torque output pneumatic 7253 to 1765791 in-lbs
Spring output 10231 to 779636 in-lbs

Additional Tests

Testing in accordance with Lloyd's Register TA procedure for Actuators

Other Conditions

1. For applications on ESD valves the following are the limitations:-

(i) The actuators are to be fire proofed to the same rating of the valves and are to be protected against explosion or impact.
(ii) The actuators are to be spring return self closing type.
(iii) Suitable local controls are to be provided at the installation to release the pneumatic supply air inlet for local closing of the spring return actuators.
(iv) The manual overrides are not to be provided.
(v) The evaluation of the leakage rate of the valve is not part of the actuator approval and is to be verified by the owner/operator.

2. This type approval may contribute to the requirement of a Verification Scheme established by a Duty Holder SI 1996 No. 825 and SI 1996 No. 913

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This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Quality Assurance Inc of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document LR2126203TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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