

Type Approval Certificate Extension

This is to certify that Certificate No. 04/60004 (E1) for the undernoted products is extended and renumbered as shown.

PRODUCER	Valve Automation, Emerson Process Management
PLACE OF PRODUCTION	19200 NW Freeway Houston, Texas – 77065 USA
ALTERNATE PLACE OF PRODUCTION	Valve Automation (Tianjin) Co., Ltd., Emerson Process Management No. 15 Xing Wang Road, Wuqing Development Area, Tianjin 301700, P. R. China Emerson Process Management Hungary Kft.-Valve Automation Berényi u. 72-100 (Videoton Industrial Park, building number:230) Székesfehérvár 8000 HUNGARY
DESCRIPTION	Quarter turn, canted/ standard scotch yoke & hydraulic/ pneumatic actuators- double acting or spring return
TYPE	GC1, GC2, GC3, GC4, GC5, GC7, GC8 & GC10 * GH2, GH3, GH4, GH5, GH7, GH8 & GH10 GHC2, GHC3, GHC4, GHC5, GHC7, GHC8 & GHC 10 *Series GC1 to GC5 actuators only at China
APPLICATION	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)
Certificate No.	04/60004(E2)
Issue Date	6 Feb 2013
Expiry Date	5 Feb 2018
Sheet	1 of 3



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STANDARDS

Emerson Process Management - Company Standard EDOP2.1
IEC60529 - IP 66 & 67

SI 1996 No. 825

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

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 over rides 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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Sheet 2 of 3



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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 of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. 04/60004(E2) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remains as per the previous Certificate No 04/60004(E1) to which this extension should be attached.

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Sheet	3 of 3



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