



Uni Polar Stepper Actuator

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1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. This standard establishes the component performance, design, testing, and manufacturing and acceptance requirements for Uni Polar Stepper. The Uni Polar Stepper components supplied to this specification shall meet all requirements defined herein unless specifically waived in writing by GM's Lead Engineer. Components that do not meet the requirements specified herein are subject to rejection.

1.2 Applicability. The stepper motor actuator is supplied as a complete device with integrated gearbox and 6-pin connector header in a plastic housing.

The stepper motor actuator is used for positioning without process feedback (open-loop control). Depending on the motor-parameters the drive shaft motion is adjustable in a fixed angle steps by using a pulsed control signal. The number of impulses (steps) is proportional to the angle motion.

The stepper motor actuator housing has 3 fixation points. It needs to be screwed on mounting bosses on the outside of the HVAC units. The drive shaft is straight plugged in the door bearings.

1.3 Remarks. Not applicable.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

FMVSS 302	SAE J1344	SAE J1351	SAE/USCAR-2
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2.2 GM Standards/Specifications.

GMW3059	GMW3191	GMW14270	GMW15760
GMW3091	GMW3205	GMW14573	GMW15862
GMW3097	GMW3232	GMW14780	GMW16331
GMW3103	GMW3235	GMW14872	GMW16880
GMW3116	GMW3259	GMW15010	GMW17625
GMW3172	GMW3600	GMW15049	

2.3 Additional References.

Appendix Q - Global A Electrical Interface Requirements

GM Serviceability Guidelines

GM1829 Analysis/Development/Validation Plan & Report

CG1859 HVAC front air flow module SSTs

CG2990

CG3044

CG3796

3 Requirements

The Uni Polar Stepper actuator will meet or exceed **all** requirements stated in this specification. If a supplier has any concerns about meeting any of the requirements as stated herein, they must note those concerns in all quotes or proposals to GM. All exceptions to the content of this specification shall be clearly stated, in bold print, at the front of the quote or proposal, and must reference the exact section number of the exception.

3.1 Physical Requirements.

3.1.1 Color. Color of all Uni Polar Stepper external surfaces visible after installation into the HVAC module (except part number label) shall be black.

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