1 Scope

This standard provides general requirements for the development of specifications for electric actuators.

2 Purpose

The purpose of this standard is to provide a guide to assist the user in specifying electric valve actuators.

This standard is not intended to address the range of compact, light duty low torque electric actuators typically rated for less than 5.65 Nm (50 inch-lbs).

3 Definitions

For general definitions, refer to Annex A.

3.1 Actuator design categories

3.1.1 Versions

3.1.1.1 intrusive:
this version requires opening of the electrical enclosure for commissioning or troubleshooting activities such as setting of mechanical travel limit and torque switches, adjusting position feedback, and internal signal monitoring.

3.1.1.2 non-intrusive:
this version does not require opening of the electrical enclosure for commissioning or troubleshooting activities. Microprocessor-based controls, including status and diagnostics, are accessible externally to the actuator.

3.2 Actuator motion

3.2.1 part-turn:
an actuator which transmits torque to the valve for less than one revolution. It does not have to be capable of withstanding thrust. A combination of a multi-turn actuator plus a part-turn gearbox may be considered a part-turn actuator.

3.2.2 multi-turn:
an actuator which transmits torque to the valve/gearbox for at least one revolution. It may be capable of withstanding thrust. A combination of a multi-turn actuator plus a multi-turn gearbox may be considered a multi-turn actuator.

3.2.3 linear:
an actuator which transmits thrust to the valve for a defined linear stroke. A combination of a multi-turn actuator plus a linear drive may be considered a linear actuator.

4 Design requirements

4.1 General requirements

4.1.1 Actuator for linear motion type valves

Electric actuators shall include the electrical enclosure, electric motor, reduction gearing, valve stem drive nut/bushing, travel limiting devices, torque overload measurement device, control circuitry, gear case, and