

SIL Safety Manual for Type OSE Slam Shut Valve

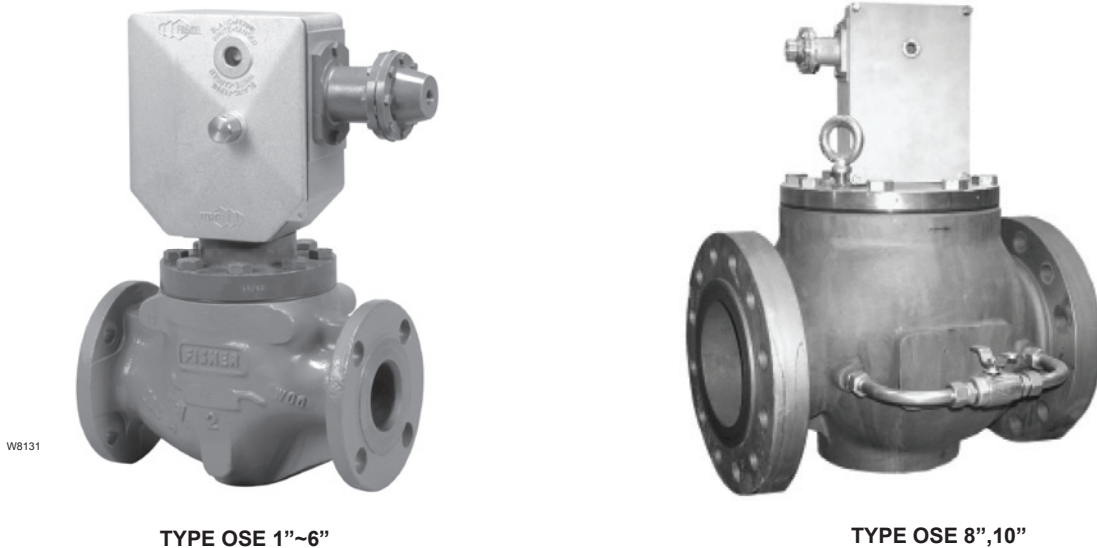


Figure 1. Type OSE Slam-Shut Valve

Purpose

This safety manual provides information necessary to design, install, verify and maintain a Safety Instrumented Function (SIF) utilizing the Type OSE slam shut valve.

Introduction

This manual provides necessary requirements for meeting the IEC 61508 or IEC 61511 functional safety standards.

Terms and Abbreviations

Safety: Freedom from unacceptable risk of harm.

Functional Safety: The ability of a system to carry out the actions necessary to achieve or maintain a defined safe state for the equipment / machinery / plant / apparatus under control of the system.

Basic Safety: The equipment must be designed and manufactured such that it protects against risk of injury to persons by electrical shock and other hazards and against resulting fire and explosion. The protection must be effective under all conditions of the nominal operation and under single fault condition.

Safety Assessment: The investigation to arrive at a judgment, based on the facts, of the safety achieved by safety-related systems.

Fail-Safe State: State where valve actuator is de-energized and spring is extended.

Fail Safe: Failure that causes the valve to go to the defined fail-safe state without a demand from the process.

Fail Dangerous: Failure that does not respond to a demand from the process (i.e. being unable to go to the defined fail-safe state).

Fail Dangerous Undetected: Failure that is dangerous and that is not being diagnosed by automatic stroke testing.

Fail Dangerous Detected: Failure that is dangerous and is detected by automatic stroke testing.

Fail Annunciation Undetected: Failure that does not cause a false trip or prevent the safety function but does cause loss of an automatic diagnostic and is not detected by another diagnostic.

Fail Annunciation Detected: Failure that does not cause a false trip or prevent the safety function but does cause loss of an automatic diagnostic or false diagnostic indication.

