



Member of the FM Global Group

Approval Standard for Low Water Level Limit Controls for Boilers

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Foreword

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For examining equipment, materials and services, Approval Standards:

- a) must be useful to the ends of property conservation by preventing, limiting or not causing damage under the conditions stated by the Approval listing; and
- b) must be readily identifiable.

Continuance of Approval and listing depends on compliance with the Approval Agreement, satisfactory performance in the field, on successful re-examinations of equipment, materials, and services as appropriate, and on periodic follow-up audits of the manufacturing facility.

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1. INTRODUCTION

1.1 Purpose

- 1.1.1 This standard states FM Approval criteria for low water level limit controls for boilers.
- 1.1.2 FM Approval criteria may include, but are not limited to, performance requirements, marking requirements, examination of manufacturing facility(ies), audit of quality assurance procedures, and a follow-up program.

1.2 Scope

- 1.2.1 This Standard sets performance requirements for low water level controls used on boilers and feedwater vessels to protect against abnormal (below minimum safe) water level. They are intended to operate electrical contacts to provide an alarm and burner shutdown in the event of loss of primary water level. Low water level conditions may result in boiler destruction by overheating.
- 1.2.2 A high pressure low water level limit control is a device consisting of a sensor, alarm, and trip functions for use at an operating pressure of 250 psi (1725 kPa) or greater. A typical application of this control is its installation on a steam drum to sense drop in water level below the normal operating water level.
- 1.2.3 A low pressure low water level limit control is generally similar to the high pressure control except for lower maximum operating pressure. It may incorporate a time delay(s) which is activated when the water drops to the trip point before shutting off boiler firing.
- 1.2.4 The requirements of this Standard shall be used to measure and describe the performance of low water level limit controls in response to exposure from heat, pressure, etc., under controlled laboratory conditions. The results of these controlled exposures shall not be used to describe or appraise actual exposure conditions, since such conditions will vary widely.

1.3 Basis for Requirements

- 1.3.1 The requirements of this Standard are based on experience, research and testing, and/or the standards of other organizations. The advice of manufacturers, users, trade associations, jurisdictions and/or loss control specialists was also considered.
- 1.3.2 The requirements of this Standard reflect tests and practices used to examine characteristics of low water level limit controls for the purpose of obtaining FM Approval. Low water level limit controls having characteristics not anticipated by this Standard may be Approved if performance equal, or superior, to that required by this Standard is demonstrated, or if the intent of the Standard is met. Alternatively, low water level limit controls which meet all of the requirements identified in this Standard may not be Approved if other conditions which adversely affect performance exist or if the intent of this Standard is not met.