

Cable Pull Emergency Stop Switches

1. GENERAL:

1.1 PURPOSE AND SCOPE

To provide functional, performance, and installation requirements for Cable Operated Safety Switches (hereinafter switch) for industrial applications at Ford Motor Company (hereinafter the Company) operations located worldwide.

Deviations from this Standard are permitted only upon written waiver by the requisitioning activity.

1.2 MANDATORY AND PREFERRED ITEMS

Mandatory requirements of this Standard are characterized by the use of the word "shall".

Preferred items are characterized by the use of the word "should".

1.3 DEFINITIONS

- 1.3.1 The normal operating condition of the switch is defined as "not-tripped". In this condition, the normally open contacts are held closed and the normally closed contacts are held open. When the switch is "tripped", these contacts shall change state simultaneously.
- 1.3.2 The terms: Cable, Rope, Pull Cord, and Tripwire are used interchangeably and are all understood to be a coated cable. This cable shall be a minimum of 3mm in diameter, 19-strand, aircraft type, and corrosion resistant, steel cable with bright Red plastic coating. Maximum elongation shall not exceed 0.7mm/m.

2. REFERENCE STANDARDS

Whenever a specific Standard is referenced, it shall be the latest revision, unless otherwise specified.

2.1 Ford Motor Company Manufacturing Standard EX1 Supplemental Requirements to SAE HS-1738.

2.2 INDUSTRY STANDARDS:

2.2.1 UL 508, Industrial Control Equipment.

2.2.2 CSA C22.2-14-M91, Industrial Control Equipment.

2.2.3 BSI BS PD 5304, Safe Use of Machinery.

2.2.4 SAE HS-1738, Electrical Standard for Industrial Machinery - Supplement to NFPA 79.

2.2.5 IEC 60204-1, Safety of Machinery, Electrical Equipment of Machines Part 1: General Requirements.

2.2.6 IEC 60068-2-6, Environmental Testing - Test Fc and Guidance: Vibration (Sinusoidal).

2.2.7 IEC 60947-5-1, Low Voltage Switchgear and Controlgear for Control Circuit Devices and Switching Elements - Electromechanical Control Circuit Devices.

2.2.8 IEC EN 418, Safety of Machinery - Emergency Stop Equipment, Functional Aspects - Principles for Design.

2.2.9 IEC EN 50013, Low Voltage Switchgear and Controlgear for Industrial use Terminal Marking and Distinctive Number for Particular Control Switches.

2.2.10 IEC EN 954-1, Safety of Machinery - Safety Related Parts of Control Systems - General Principles for Design.

2.2.11 DIN EN 616, Continuous Handling Equipment and Systems; Common Safety Requirements for Design, Manufacturing, Erection and Commissioning Stages.

2.2.12 OSHA 29-CFR-1910, Occupational Safety and Health Standards.

2.3 CONFORMANCE

2.3.1 All materials and components supplied to this Standard shall be equivalent in all respects to material upon which approval was originally granted. Any deviations from this Standard,