



TYPE APPROVAL CERTIFICATE

This is to certify that the mechanical endurance of the

24/924CE Series Miniature Safety Limit Switch

manufactured by

Honeywell International Inc

315 East Stephenson Street,
Freeport, Illinois,
IL61032,
USA.

has been assessed by Sira Certification Service.

The reliability data herein is certified subject to the
stated conditions and scope in this certificate.

Certification Manager:

A handwritten signature in blue ink that reads "W Thomas".

W Thomas

Date of Original Certification: 28 July 2010

Date of re-issue: 03 July 2015

This certificate may only be reproduced in its entirety without any change.

Product description and scope of certification

The 24CE series and 924CE series are very small limit switches intended for small doors and apertures in industrial machinery. The 24CE series is CE certified and fitted with European approved cable; the 924CE series is CE certified and fitted with UL recognized cable. The switch is fitted with up to 2 pairs of switching contacts (available in several configurations). The switch is actuated via a plunger and is enclosed in a painted die cast enclosure. The scope of certification is for the mechanical endurance against the tests specified below.

Safety function(s)

The safety function of the certified device is to open the normally closed (NC) contacts on actuation of the switch.

Identification of certified equipment

This certificate applies to all devices defined in the following manufacturer's assembly drawings:

ASSY-CE-272, TYPE E, REV 8, 28-FEB-08
 24 CE SERIES CHART 1, TYPE I, REV 16, 17-APR-2015
 24 CE SERIES CHART 2, TYPE I, REV 10, 17-APR-2015
 24 CE SERIES CHART 3, TYPE I, REV 4, 09-OCT-2014
 924 CE SERIES CHART 1, TYPE I, REV 17, 05-JUN-06
 924 CE SERIES CHART 2, TYPE I, REV 9, 27-FEB-08

Mechanical endurance reliability data

The following reliability data has been established by test.

24CE X-XXX and 924CE X-XXXX ^[2]	
Mean Cycles To Failure ^[1]	> 10 ⁶ cycles with Single Sided Confidence Limit of 100% ^[3]
B _{10d} ^[4]	2 x 10 ⁶ cycles ^[4]

^[1] 'Failure' is defined as a failure to meet the acceptance criteria in the test plan (below).

^[2] For 'X-XXX' and 'X-XXXX', refer to manufacturer's drawings stated above for details of product variant.

^[3] Tests were time-truncated at the number of cycles per switch shown in the test plan below.

^[4] The mean cycles until 10% of test samples fail dangerously has been established by test under no load conditions.

Notes: the data in the table above indicates a statistical probability of failure (Mean Cycles To Failure) based on endurance testing a number of samples under specified conditions (see below). The figures therefore cannot be used to guarantee the lifetime of a particular device.

Mechanical endurance test plan

The devices were installed in accordance with the manufacturer's user instructions and tested in accordance with the following test plan.

No. of test samples:	20
No. of test cycles per switch:	2,000,000
Rate of test cycles:	120 cycles per minute
Monitoring Loads:	None
Acceptance Criteria:	<ol style="list-style-type: none"> 1. No failure of NC contacts to open; 2. Dielectric Voltage Withstand: 1,500VAC checked after every 500,000 cycles, up to a total of 2,000,000 cycles.

Conditions of Certification

The manufacturer of the certified equipment shall observe the following conditions of certification:

1. This Type Approval Certificate is valid only for products which are identical with the products assessed in Sira report number R56A18220A and conform to the assembly drawings referred to in this certificate. The manufacturer is responsible for ensuring that on-going production provides identical products.

General Notes

1. This certificate is based upon an assessment of the certified equipment described in Sira Test & Certification confidential assessment report number R56A18220A.
2. This Certificate and the Sira Certification Mark are subject to the 'Regulations Applicable to the Holders of Sira Certificates'.
3. This document remains the property of Sira and shall be returned when requested by the company.