

# Test Report

## Nº B24-13-AF-e



### Test of degree of protection IP56

<b>TEST SAMPLE</b>	Electronic cylinder SALTO GEO
<b>MODEL</b>	G9E2130S30CSBDM y G2E2130S30CSBDM
<b>REQUESTED BY</b>	SALTO SYSTEMS, S.L.
<b>MANUFACTURER</b>	SALTO SYSTEMS, S.L. Arkotz 9 Pol. Lanbarren 20180 OIARTZUN (Gipuzkoa)
<b>STANDARD</b>	IEC 60529:1989+A1:1999
<b>RECEPTION DATE</b>	15th February 2013
<b>TEST DATE</b>	15th to 20th February 2013
<b>ISSUE DATE</b>	5th March 2013

**This document is a copy in pdf of the original Report, as requested by the client**

Test Chief	Head of Electrical Equipment Laboratory
 	
Endika Mendiola	Luis Martínez

\* The present report refers only and exclusively to the sample tested and at the moment and conditions in which the measurements were made.  
 \* The partial reproduction of the present document is categorically forbidden without the permission in writing of TECNALIA Research & Innovation

**ÍNDIX**

- 1. IDENTIFICATION AND CHARACTERISTICS OF TEST SAMPLE ..... 3
- 2. TEST FACILITIES ADDRESS ..... 3
- 3. TESTS PERFORMED. STANDARD ..... 3
- 4. PROTECTION AGAINST ACCESS TO HAZARDOUS AREAS, RESISTANCE AGAINST INGRESS OF FOREIGN PARTICLES AND DETRIMENTAL ENTRY OF WATER..... 3
  - 4.1. Protection against access to dangerous areas (IP5X) ..... 3
  - 4.2. Protection against access of foreign particles (IP5X category 2) ..... 4
  - 4.3. Protection against water (IPX6) for outdoor ..... 4

## 1. IDENTIFICATION AND CHARACTERISTICS OF TEST SAMPLE

Electronic cylinder SALTO GEO

Models: G9E2130S30CSBDM y G2E2130S30CSBDM

## 2. TEST FACILITIES ADDRESS

The performance of the tests were made in the TECNALIA's Laboratory allocated in Burtzeña-Barakaldo - Bizkaia- Spain.

## 3. TESTS PERFORMED. STANDARD

Tests for degree of protection IP56 against access to hazardous parts, against ingress of solid foreign objects and against water have been performed according to IEC 60529:1989+A1:1999 "Degrees of protection provided by enclosures (IP Code)".

A calculation of uncertainties for all measurements carried out is available.

## 4. PROTECTION AGAINST ACCESS TO HAZARDOUS AREAS, RESISTANCE AGAINST INGRESS OF FOREIGN PARTICLES AND DETRIMENTAL ENTRY OF WATER

### 4.1. Protection against access to dangerous areas (IP5X)

In order to meet the requirements according to the first characteristic figure 5, a test gauge of 1 mm Ø applied with a force of 1 N ± 10% shall not penetrate into the enclosure, and if penetrated the test gauge shall stop at a safe distance from hazardous parts.

Ambient air conditions: 15 °C – 45% HR – 1011 mbar.

RESULT. **CORRECT:** The test gauge does not penetrate into the enclosure.

#### 4.2. Protection against access of foreign particles (IP5X category 2)

The test sample was placed inside a suitable test chamber containing a suspension of the required quantity ( $2 \text{ kg/m}^3$ ) of talcum powder (this powder must pass through a square-mesh screen of  $50 \text{ }\mu\text{m}$  wire diameter and  $75 \text{ }\mu\text{m}$  mesh size).

The test time was 8 hours.

Ambient air conditions:  $15 \text{ }^\circ\text{C}$  – 45% HR – 1011 mbar.

RESULT: **CORRECT**. No powder deposit was observed inside the sample after the test.

#### 4.3. Protection against water (IPX6) for outdoor

Test is made by spraying the enclosure from all practicable directions for a test duration of 3 minutes and from a distance of 3 m. Applied water stream is as supplied from a standard nozzle (internal diameter 12,5 mm), with a water delivery rate of 100 l/min.

Ambient conditions:  $15 \text{ }^\circ\text{C}$  – 45% HR – 1011 mbar.

Water temperature:  $15 \text{ }^\circ\text{C}$ .

RESULT. **CORRECT**. No water entry is observed inside the sample.



**Test sample**



**Test sample**

**NOTE: The successfully tested degree of protection IP56 is also applicable over the following models.**

**i-Button** technology, models:

G2E1kxx, G2E2kxx, G2E3kxx, G2U1kxx, G2U2kxx, G2U3kxx, G2H1kxx, G2H2kxx, G2H3kxx,  
G2S1kxx, G2S2kxx, G2S3kxx, G2K1kxx, G2B1kxx, G2M1kxx, G2A1kxx

**Proximity** technology, models:

G7E1kxx, G7E2kxx, G7E3kxx, G7U1kxx, G7U2kxx, G7U3kxx, G7H1kxx, G7H2kxx, G7H3kxx,  
G7S1kxx, G7S2kxx, G7S3kxx, G7K1kxx, G7B1kxx, G7M1kxx, G7A1kxx  
G8E1kxx, G8E2kxx, G8E3kxx, G8U1kxx, G8U2kxx, G8U3kxx, G8H1kxx, G8H2kxx, G8H3kxx,  
G8S1kxx, G8S2kxx, G8S3kxx, G8K1kxx, G8B1kxx, G8M1kxx, G8A1kxx  
G9E1kxx, G9E2kxx, G9E3kxx, G9U1kxx, G9U2kxx, G9U3kxx, G9H1kxx, G9H2kxx, G9H3kxx,  
G9S1kxx, G9S2kxx, G9S3kxx, G9K1kxx, G9B1kxx, G9M1kxx, G9A1kxx  
GHE1kxx, GHE2kxx, GHE3kxx, GHU1kxx, GHU2kxx, GHU3kxx, GHH1kxx, GHH2kxx, GHH3kxx,  
GHS1kxx, GHS2kxx, GHS3kxx, GHK1kxx, GHB1kxx, GHM1kxx, GHA1kxx