

TEST REPORT No. 327060

Place and date of issue: Bellaria-Igea Marina - Italy, 31/07/2015

Customer: UCS ULTRAFLEX CONTROL SYSTEMS S.r.l. - Via XXV Aprile, 45 - 16012 BUSALLA (GE) - Italy

Date test requested: 29/06/2015

Order number and date: 67035, 29/06/2015

Date sample received: 30/06/2015

Date test effected: 30/06/2015

Purpose of test: resistance to heat of actuator for smoke and heat exhaust ventilators in accordance with standard UNI EN 12101-2:2004 clause 7.5

Test site: Istituto Giordano S.p.A. - Blocco 7 - Via Verga, 6 - 47043 Gatteo (FC) - Italy

Origin of sample: sampled and supplied by the Customer

Identification of sample received: n. 2015/1696/C

Sample name*

The test sample is a member of the product family called "Supermaster DC".

(*) according to that stated by the Customer.

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This test report consists of 9 sheets.

Sheet
1 of 9

Description of sample*

The test sample is an electric chain actuator for smoke and heat exhaust ventilators with the following specifications:

- voltage supply: 24 Vdc \pm 10 %;
- electronic connection: (3 wires) + 2 wires + signalling;
- operation: by polarity inversion;
- stroke: 1000 mm;
- force (in push action): 300 N;
- force (in pull action): 400 N;
- speed: \sim 20 mm/s;
- current absorption (with max load): 2 A;
- parallel connection: yes;
- limit stop: micro switches;
- safety stop: electronic;
- feedback: open/close;
- casing: silver anodized or painted aluminium.

The actuator move a ventilator consisting of an outward-opening bottom-hung window fitted in a vertical facade. The window has the following characteristics:

- window dimension: 1100 mm \times 700 mm;
- window materials: aluminium profiles and sheet-steel infill.

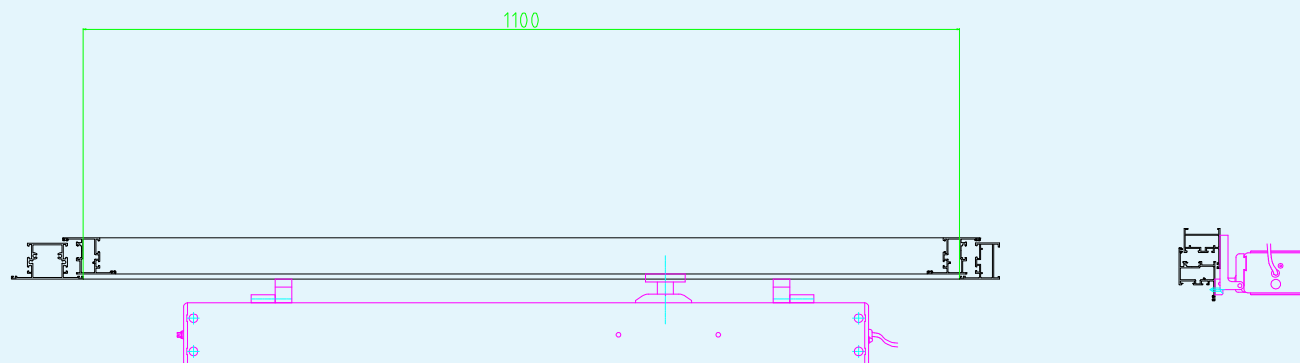
(*) according to that stated by the Customer.



Photo of the sample (inner side)



Photo of the sample (outer side)

SCHEMATICS DRAWINGS OF THE SAMPLE
(supplied by the customer)**Normative references**

Testing was carried out in accordance with the applicable requirements of standard UNI EN 12101-2:2004 dated 01/12/2004 "Sistemi per il controllo di fumo e calore - Parte 2: Specifiche per gli evacuatori naturali di fumo e calore" ("Smoke and heat control systems - Part 2: Specification for natural smoke and heat exhaust ventilators") - clause 7.5 "Resistenza al calore" ("Resistance to heat").

Test apparatus

The test was performed using a vertical furnace, identification code RSF004, with vertical wall provided with hole size 3 m × 1 m. The furnace is equipped with oil burners and temperature sensors type K thermocouple.

Test method.

The test is performed according to the Annex G of UNI EN 12101-2 on 3 actuator and 3 ventilator simultaneously. The 3 ventilators are included in a single subframe, with external dimensions 2900 mm × 800 mm. The subframe is inserted in the hole of size 3 m × 1 m of the masonry wall in vertical position. This report contains test results of the actuator “Supermaster DC” installed in the right position of the following drawing and photo.

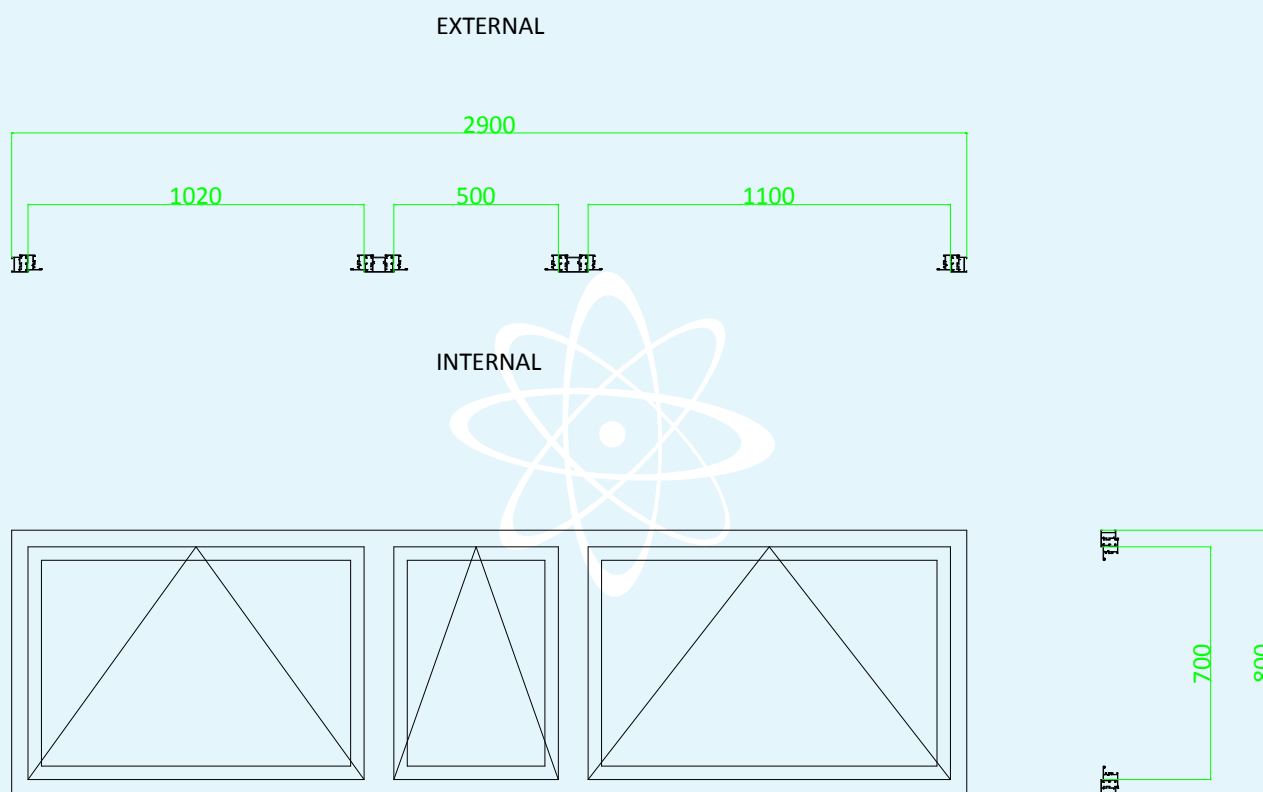
DRAWING OF THE TEST VENTILATORS



Photo of masonry with ventilators (internal view)

Test results

Test conditions and test results are set out hereafter in the form of tables and diagrams.

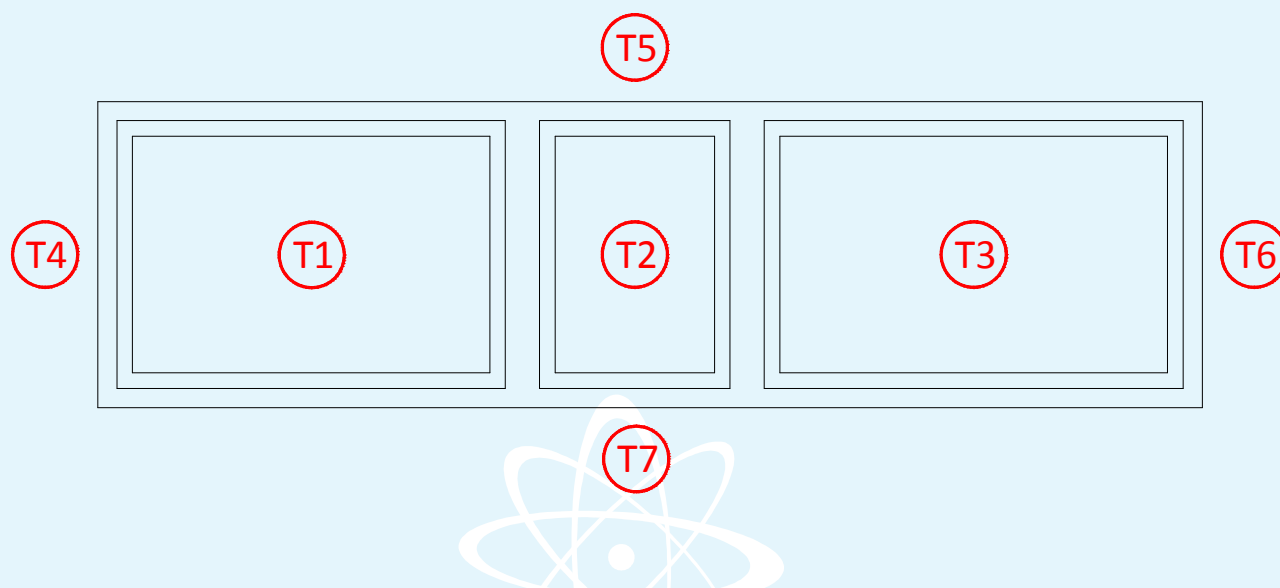
| Resistance to heat (in accordance with clause 7.5 of standard UNI EN 12101-2) | |
|--|-----------------------------------|
| Ventilator “B” classification | B 300 |
| Furnace heating system | No. 4 oil-fired burner |
| Dimensions of the tested ventilator | B = 1100 mm L = 700 mm |
| Brief description of ventilator mock-up construction materials | Aluminium frame, sheet-steel flap |
| Ventilator mock-up installation type and anchoring assembly | |
| The ventilator mock-up was connected to the actuator by chain without limit arms | |

Temperature sensors

No. 7 sensors type K thermocouple

Position of thermocouples

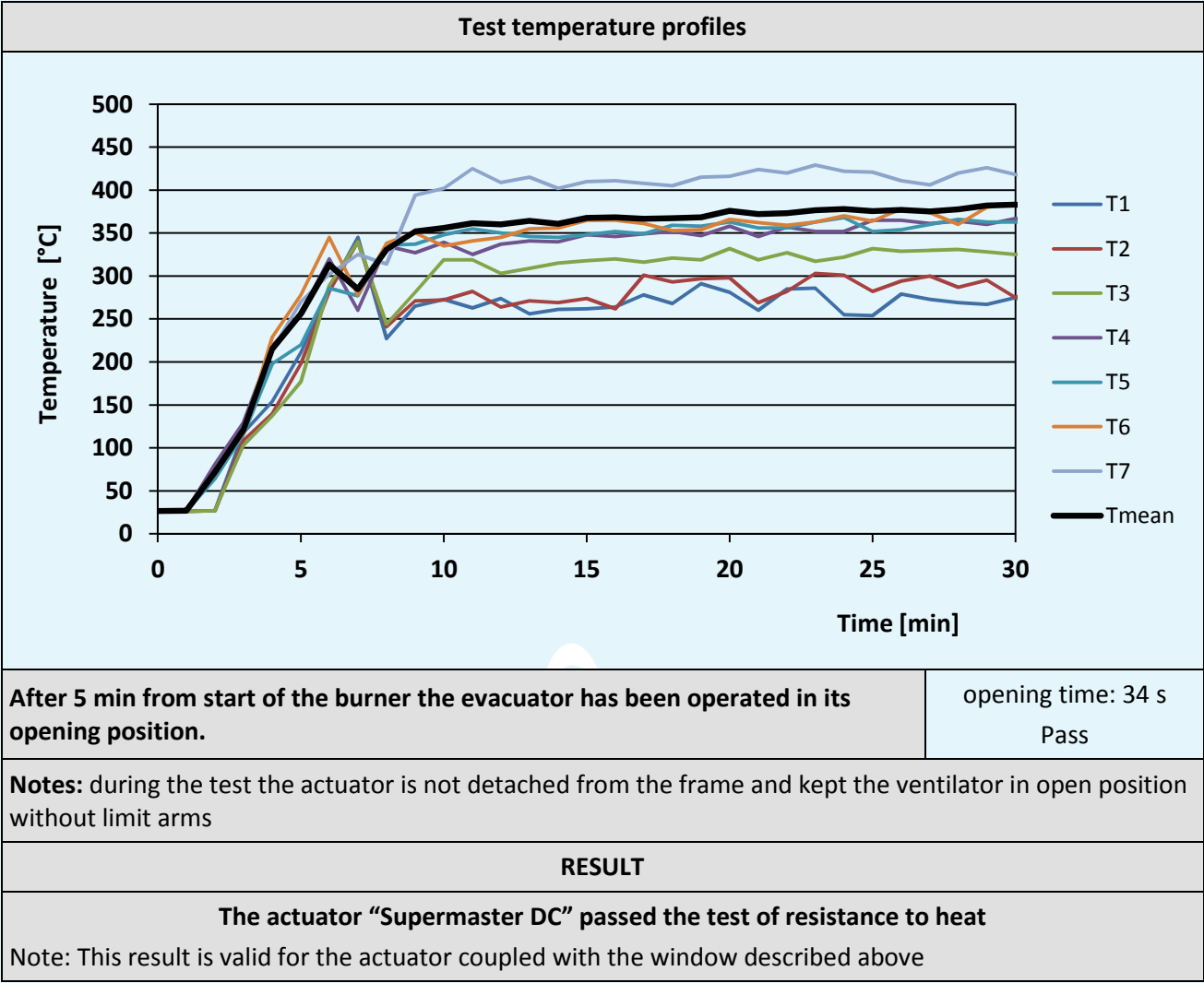
The thermocouples are positioned in accordance with standard UNI EN 12101-2 at 0,1 m from the masonry and 0,1 m from the projection of the ventilators locating hole. No. 3 thermocouples are positioned at the center of each ventilator, as shown in the following diagram (external view):

**Temperature change over time**

| Time [min] | T ₁ [°C] | T ₂ [°C] | T ₃ [°C] | T ₄ [°C] | T ₅ [°C] | T ₆ [°C] | T ₇ [°C] | T _{mean} [°C] |
|---------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------|
| 0 | 26 | 26 | 26 | 26 | 26 | 27 | 27 | 27 |
| 5 | 211 | 198 | 177 | 256 | 220 | 278 | 270 | 256 |
| 10 | 273 | 272 | 319 | 339 | 348 | 335 | 402 | 356 |
| 20 | 281 | 298 | 332 | 358 | 363 | 366 | 416 | 376 |
| 30 | 275 | 275 | 325 | 367 | 363 | 384 | 418 | 383 |

T_{mean} is the average temperature of the perimeter sensors T₄, T₅, T₆ and T₇.

Sensors T₁, T₂ and T₃ at the center of the ventilators are used for information only.



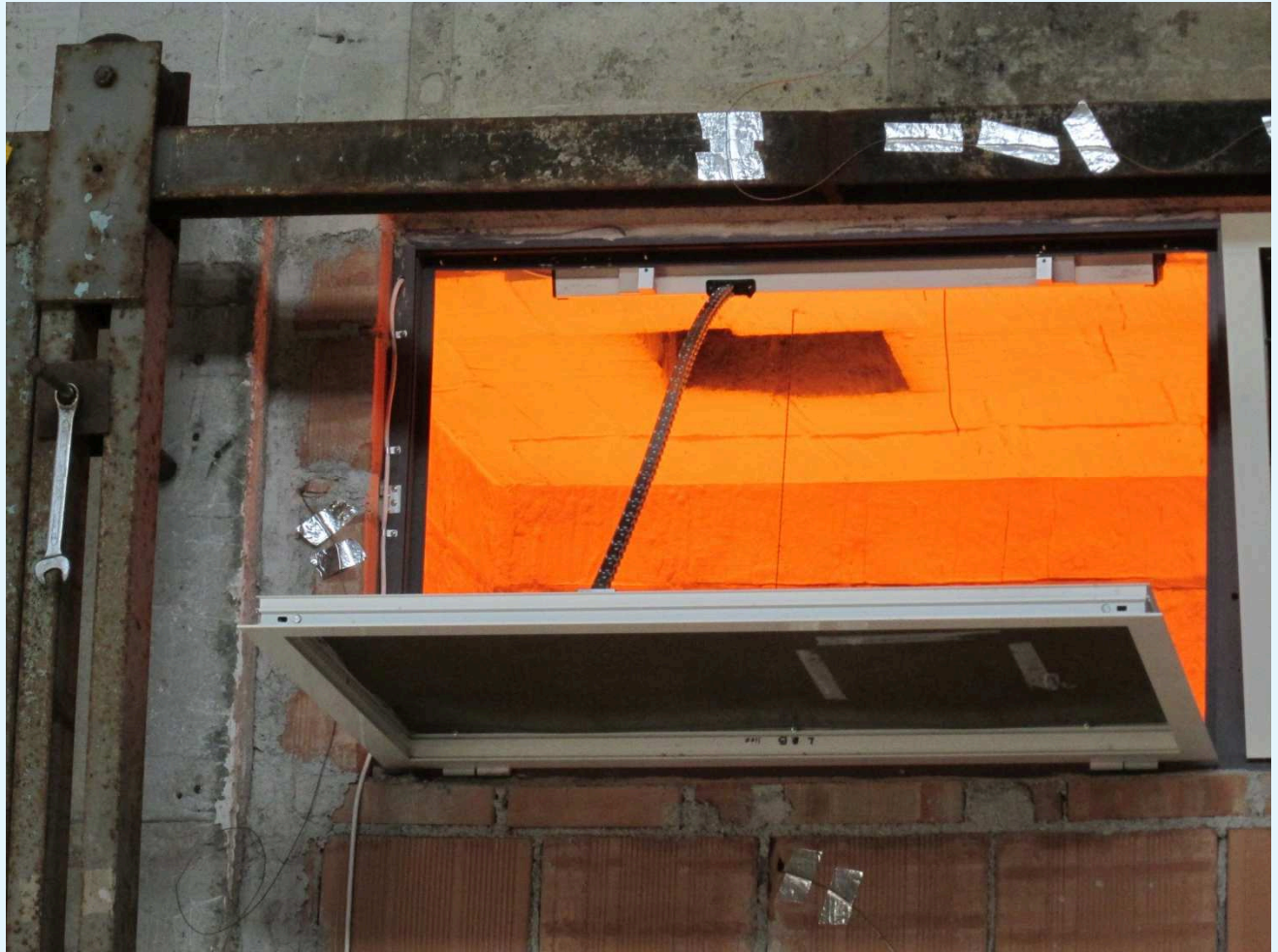


Photo of the sample during test

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