CERTIFICATE

Issued to:
Applicant:
Robertshaw S.r.l.
Via Giacomo Matteotti, 62
Cinisello, Balsamo
Milan 20092, Italy

Manufacturer/Licensee:
Robertshaw S.r.l.
Via Giacomo Matteotti, 62
Cinisello, Balsamo
Milan 20092, Italy

Product(s) : programme controllers
Trade name(s) : INVENSYS, RANCO, ROBERTSHAW
Type(s)/model(s) : EC Series

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
- a type test according to the standard EN 60730-1:2011
- an inspection of the production location according to CENELEC Operational Document CIG 021
- a certification agreement with the number 2174212

DEKRA hereby grants the right to use the ENEC KEMA-KEUR certification mark.

The ENEC KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the ENEC KEMA-KEUR certification agreement and under the conditions of the ENEC KEMA-KEUR certification agreement.

This certificate is issued on: 15 January 2015 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 2176048.09

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

H.R.M. Barends
Certification Manager

ACCREDITED BY THE
DUTCH ACCREDITATION
COUNCIL

PRODUCTS
RvA C 001

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SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	programme controller
trade names	:	INVENSYS, RANCO, ROBERTSHAW
types	:	EC series
type of control	:	incorporated
rated currents	:	see nomenclature breakdown
rated voltages	:	- contact 250 V~ - motor 220-240 V~ - thermo-stop magnet 220 V~ - thermo-stop magnet 240 V~
purpose of control	:	motorized program switch
circuit to be controlled	:	resistor and motor
temperature limit	:	T70 and T85
type of disconnection	:	- full disconnection for push-pull - micro disconnection for relays - micro interruption for all other contacts
type of action	:	- 1A for push-pull contact - 1B for relays - 1C for all other contacts
pollution degree	:	3
frequency of operation	:	see nomenclature breakdown
class	:	for class I appliances
degree of protection against moisture	:	IP00
insulating material	:	tracking resistant (400 V)
material group	:	II
terminals	:	tab terminals (6,3 x 0,8 mm)
description	:	body of thermoplastic material and metal
markings	:	are shown on the body and partly given on seperate data sheets

Additional information

Nomenclature breakdown:

Type of load declared for each terminal and circuit:

Description	Circuit	Load	V	Cycles
Push-pull contacts: Full disconnection	A	16(4) A	250 V	10.000
Contacts of the cam: Micro-interruption				
- Lateral contacts only for main cam	B1	16(4) A	250 V	30.000
	B2	14 A	250 V	75.000
- For main cam or for reversing cam	C1	4(4) A	250 V	50.000
	C2	2,5(2,5) A	250 V	250.000
Auxiliary contacts for main or reversing contacts				
- with center off position : High-position	D1 D2	1(1) A	250 V	250.000
Low-position	E1	2,5(2,5) A	250 V	250.000
- without center off position: High-position	E2	2,5(2,5) A	250 V	50.000
Low-position		4(4) A	250 V	50.000

Nomenclature breakdown for the series

1)	2)	3)	4)	5)	6)	7)	8)	9)	10)
EC	XXXX.X	a	YY	240V	~	50-60Hz	R	SS	TT

1) basic series type.
2) unique type reference number (from 0001.01 to 999.99).
3) client edition number (a to z).
4) Invensys modification number (0-99).
5) motor voltage.
6) symbol for AC current only.
7) motor frequency.
8) place of manufacturer code (Belluno = 6, Qingdao = C, Caxias = 16)
9) last two digits of year of manufacture.
10) week of manufacture (1-52)

Variants within the scope of the approval

1) the timer may have printed circuits with tracks having the following rated current;
   12A - 10A - 8A - 5A - 4A - 1A.
   the connection to the printed circuit may be made by connectors for rating values; 1A - 4A - 5A and by receptacles for rating values; 8A - 10A and 12A.

2) the timers may have printed circuit with brush contacts for low voltages with rated current 100mA/250V

3) single-phase synchronous motor, model SM10 may be co-axial or lateral to the cams. This motor, depending on the application required, exists in the following versions; winding class of insulation F or H:
   T85, 220 - 240 V~ 50-60 Hz
   T85, 230 V~ 50-60 Hz
   T70, 220 - 240 V~ 50-60 Hz

4) the control may be equipped with a thermostop function, the parameters of which are:
   T70, 240 V~, T85, 220 V~

5) EC-Hybrid version is possible, composed of three types:
   - with lateral motor SM10
   - with coaxial motor SM10

"Hybrid" is defined as a timer without a timing system and without a reversing cam, where the motor is directly connected via a gear train to the main cam. The control of the motor is made from and outside source to the timer.

6) the timer may be equipped with specific connectors and specific lateral contact.

7) the control may be equipped with a "Rast 5" terminal (5 mm Pitch group connector) or “Rast 2,5” with IDC connection.

8) Version Ec6… with alternative design of lateral contact mechanism.
   Contact pressure is ensured by a spring.

9) version EC 2... is intended to electronic washing machine and consist of:
   - SM 10 motor: connected by IDC connector or with 2 springs in pressure between motor and PCB.
   - PCB: Used as selector, each step identifies a position with 32 resistors 0,165 Vdc signal (maxi 4,67 Vdc) The PCB is fitted with a circuit intended to the motor (220-240 V~).

10) each and every one of the above variations and combinations therof is assigned a particular reference under the "Unique Version Index" and a corresponding drawing on a per version basis is established (see unique type referencing system).

Additional tests according to Clause 30 of the EN 60335-1:2012 are performed with positive results:
Resistance to heat and fire: Insulation material around connections within an area of 3.0 mm.
- Glow-wire test 750°C; no flame
- Glow-wire test 850°C; flame, if any, extinguished within 30 seconds after removal the glow-wire

TESTS

Test requirements
EN 60730-1:2011

Test result
The test results are laid down in DEKRA test file 2176048.09.

Remarks
This certificate replaces our certificate 2167767.01 dated January 31, 2014 and is also based on the results of that certificate.

Conclusion
The examination proved that all test requirements were met.

Tested by : E. Stoel
Checked by : M. Poelman

Factory locations
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