




## EC-TYPE EXAMINATION CERTIFICATE

**Equipment or Protective System Intended for use  
in Potentially explosive atmospheres  
Directive 94/9/EC**

- 1
- 2
- 3 EC-Type Examination Certificate Number : **BAS98ATEX2168X**
- 4 Equipment or Protective System: **A TYPE EM6 SOLENOID**
- 5 Manufacturer: **ASCO JOUCOMATIC LTD**
- 6 Address: **2 Pit Hey Place, West Pimbo, Skelmersdale, Lancashire, WN8 9PG**
- 7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- 8 The Electrical Equipment Certification Service, notified body number 600 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential Report N°
- 98(C)0433 dated 6 July 1998**
- 9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN50 014: 1997 PAS 022: 1997 EN50 028: 1987**  
except in respect of those requirements listed at item 18 of the Schedule.
- 10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- 11 This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.
- 12 The marking of the equipment or protective system shall include the following:-
-  **II 2 G EEx m II T3 Ambient range -40°C to +40°C See Schedule**
- This certificate may only be reproduced in its entirety and without any change, schedule included.

File No: EECS 0080/03/007

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.



**Electrical Equipment Certification Service**  
Health and Safety Executive  
Harpur Hill, Buxton, Derbyshire. SK17 9JN. United Kingdom  
Tel: 01298 28000 Fax: 01298 28244



**I M CLEARE**  
DIRECTOR  
8 July 1998



## Schedule

### EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX2168X

#### 15 Description of Equipment or Protective System

A Type EM6 Solenoid comprises a coil of polyurethane/polyamide enamelled copper wire wound on a polyphenylene sulphide bobbin. The coil is mounted within a mild steel yoke assembly. The electrical supply to the solenoid is via an integral cable supported by a cable gland mounted on the yoke assembly.

The cable has an earth conductor that is terminated on the yoke assembly using a ring terminal and rivet or screw. A barrier pad of 'Nomex' paper is wrapped round the coil to provide electrical insulation to the other cable conductors, one of which is wrapped and soldered to one end of a thermal fuse device with opening temperature  $164^{\circ}\text{C}$  or  $165 \pm 3^{\circ}\text{C}$ . The other end of the thermal fuse is connected to the coil with the joints being soldered and wrapped.

The whole assembly is encapsulated in Hysol Type MH6-0504 mineral filled glass fibre reinforced epoxy moulding compound.

The solenoids are designed for various voltages and wattages selected from the range listed below:-

| Watts       | Voltage                  | Max. ambient °C | T Class |
|-------------|--------------------------|-----------------|---------|
| up to 3.55W | up to 440V a.c. 50/60 Hz | 65              | T3      |
| 3.55W-9W    | up to 440V a.c. 50/60 Hz | 65              | T3      |
| up to 9.7W  | up to 240V d.c           | 40              | T5      |
|             |                          | 65              | T4      |
| 9.7W-15.3W  | up to 240V d.c.          | 40              | T4      |

#### VARIATION ONE

An increase in dimensions to form the EMXX solenoids which are selected from the range listed below:

| Watts       | Voltage         | Max. ambient °C | T Class |
|-------------|-----------------|-----------------|---------|
| up to 4.05W | up to 440V a.c. | 65              | T3      |
| 4.05W-9.25W | up to 440V a.c. | 65              | T3      |
| up to 11.2W | up to 240V d.c  | 65              | T4      |
| 11.2W-19.7W | up to 240V d.c. | 40              | T4      |



13

## Schedule

14

### EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX2168X

#### VARIATION TWO

A reduction in overall dimensions to form the EM5 solenoids which are selected from the range listed below:

| Watts      | Voltage         | Max. ambient °C | T Class |
|------------|-----------------|-----------------|---------|
| up to 2.5W | up to 440V a.c. | 40              | T4      |
| 2.5W-4W    | up to 440V a.c. | 65              | T3      |
| 4W-10W     | up to 440V d.c. | 40              | T3      |
| up to 3.5W | up to 240V d.c. | 40              | T5      |
| up to 3.5W | up to 240V d.c. | 60              | T4      |
| 3.5W-6.9W  | up to 240V d.c. | 40              | T3      |
| 6.9W-22.0W | up to 240V d.c. | 40              | T3      |

16

#### Report Nos.

98(C)0433 dated 6 July 1998

17

#### Special Conditions For Safe Use

1. The solenoid shall be connected to a supply protected by fuses capable of interrupting a prospective short circuit current of 4000A.
2. Solenoids with normally be supplied with an electrostatic warning label. However, for operators specifically used within petrol pump dispenser enclosures no label is fitted.
3. For solenoid operators fitted to valves used in vapour recovery systems where a Zone 0 exists within the valve and pipework, the solenoid operators or valves fitted with solenoid operators must be subject to the routine test in accordance with PAS 022: 1997 Clause 4.8 Annex 1 using air as test media and a test pressure of 15 bar (+0.1), (-0). The pipework is limited to a maximum diameter of 15mm with pipe runs not exceeding 3m in length.
4. The integral cable shall be suitably terminated when installed.



13

## Schedule

14

EC-TYPE EXAMINATION CERTIFICATE N° BAS98ATEX2168X

18

### Essential Health and Safety Requirements

| Essential Health & Safety Requirements not covered by Standards listed at (9) |   |                           |
|---|---|---------------------------|
| ESR   | Subject                                 | Compliance: Report clause |
| 1.0.4   | Surrounding area conditions             | 4.1.1.0.4                 |
| 1.0.6   | Instructions                            | 4.1.1.0.6                 |
| 1.1.2   | Constructional materials not to degrade | 4.1.1.1.2                 |
| 1.3.4   | Frictional overheating                  | 4.1.1.3.4                 |
| 1.4.2   | Attack by aggressive substances         | 4.1.1.4.2                 |

19

### DRAWINGS

| Number     | Sheet | Issue | Date    | Description                            |
|------------|-------|-------|---------|--|
| HV 118611  |       | R     | 25.6.98 | EM6 coil detail                        |
| HVA 118466 |       | H     | 29.6.98 | EM6 general assembly                   |
| HVA 118231 |       | H     | 24.6.98 | EMXX general assembly                  |
| HV 118610  |       | Q     | 25.6.98 | EMXX coil detail                       |
| HVA 129657 |       | F     | 25.6.98 | EM5 coil detail                        |
| HVA 129682 |       | D     | 25.6.98 | EM5 general arrangement                |
| *FV 122459 |       | F     | 1.7.98  | Cable insert                           |
| *FV-129491 |       | C     | 1.7.98  | Thermal fuse                           |
| *FV-122289 |       | C     | 1.7.98  | Thermal fuse                           |
| *GV-108864 |       | S     | 26.6.98 | Cable                                  |
| GV-142270  |       | -     | 13.5.98 | EM5 label (Approval)                   |
| GV-142271  |       | -     | 13.5.98 | EM6 and EMXX label (Approval)          |
| *FV-135845 |       | -     | 1.7.98  | Cable insert                           |
| *GV-135003 |       | B     | 1.7.98  | EM5 label (valve information)          |
| GV-129131  |       | A     | 1.7.98  | EM6 and EMXX label (valve information) |
| *GV-135004 |       | B     | 1.7.98  | Warning label                          |

\* Drawings common to BAS98ATEX2167X

This certificate may only be reproduced in its entirety and without any change, schedule included.

BASEEFA List Keywords

2SOLENOI