



1 EC - TYPE EXAMINATION CERTIFICATE

**2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**

3 EC - Type Examination Certificate Number: Baseefa03ATEX0686X

4 Equipment or Protective System: Actuator Positioner Type IS200

5 Manufacturer: Orange Instruments Ltd

6 Address: Northampton, NN3 6XF

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 Baseefa (2001) Ltd. Notified body number 1180, 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 No. **03(C)0872**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + Amendments 1 & 2 EN 50020: 2002 EN 50284: 1999

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. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

⊕ II 1G EEx ia IIC T4 (-20°C ≤ Ta ≤ +60°C)

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

Baseefa (2001) Ltd. Customer Reference No. **1575**

Project File No. **03/0872**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

Baseefa (2001) Ltd.

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R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.



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Schedule

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Certificate Number Baseefa03ATEX0686X

15 Description of Equipment or Protective System

The Actuator Positioner Type IS200 is designed to provide control signals for a solenoid actuator, in response to a signal from a control unit in a non hazardous area, and to provide an optional actual position signal back to the control unit. It comprises electronic circuits on two printed circuit boards, contained in a plastic enclosure. On two opposite sides of the enclosure base are rows of screw terminals for field connections, and on the top surface of the enclosure are LED's, switches, push buttons and potentiometer adjustment screws. The assembly provides a degree of protection in excess of IP20.

Input and Output Parameters

Terminal 11 wrt 12 (main supply to the apparatus):

$$U_i = 28V, I_i = 200mA, P_i = 1.35W, C_i = 0 \text{ and } L_i = 0.$$

Terminal 20 wrt 21 (incoming command signal):

$$U_o = 28V, I_o = 7mA, U_i = 28V, P_i = 1.2W, C_i = 0 \text{ and } L_i = 0.$$

Terminal 18 wrt 19 (repeated position signal, nominal 0-5V):

$$U_o = 28V, I_o = 200mA, P_o = 1.35W, U_i = 28V, I_i = 10mA, P_i = 100mW, C_i = 33nF \text{ and } L_i = 0.$$

Terminal 22 wrt 24 (supply to passive feedback potentiometer):

$$U_o = 10.5V, I_o = 200mA, U_i = 0, C_i = 33nF \text{ and } L_i = 0.$$

Terminal 23 wrt 24 (either feedback signal from passive potentiometer, or 4-20mA feedback signal):

$$U_o = 28V, I_o = 7mA, U_i = 28V, P_i = 1.2W, C_i = 0 \text{ and } L_i = 0.$$

Terminals 12, 19, 21 and 24 (the 0V of the apparatus) are linked together within the apparatus.

For terminals 1 to 4 (or 6 to 9, or 13 to 16):

Terminals 3 & 4 (or 8 & 9, or 15 & 16) are for connection to a supply, and 1 & 2 (or 6 & 7, or 13 & 14) are for the corresponding load connected to that supply.

Hence for each group of terminals: $U_i = U_o = 28V, I_i = I_o = 200mA, P_i = P_o = 1.35W, C_i = C_o$ and $L_i = L_o$.

Terminal groups 1 to 4, 6 to 9 and 13 to 16 form three separate circuits which are galvanically isolated from each other and from the other circuits.

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17 Special Conditions for Safe Use

1. The apparatus housing is plastic which does not meet the conductivity requirements of EN 50284: 1999. Also the fixing screws on the top of the housing are connected to the 0V of the apparatus. Therefore the apparatus must be installed in an enclosure which is either metal not containing light metals, or is plastic meeting the conductivity requirements of EN 50284: 1999, and provides a degree of protection of at least IP20.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Issue	Date	Description
1357-015	D	9/1/2004	IS200 Actuator Positioner, General Assembly
1357-001	E	30/12/03	IS200 Intrinsically Safe Positioner, Circuit Diagram
1357-003	E	07/01/2004	Parts List, IS200 Positioner
1357-002	C	02/12/2003	Bottom PCB, Tracks
1357-016	C	26/11/2003	IS200 Actuator Positioner, PCB Layouts (Component Positions)



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
3 **Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa03ATEX0686X/2**

4 Equipment or Protective System: **Actuator Positioner Type IS200**

5 Manufacturer: **Orange Instruments Ltd**

6 Address: **Northampton, NN3 6XF**

7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa03ATEX0686X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

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

Baseefa Customer Reference No. **1575**

Project File No. **08/0126**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

A handwritten signature in black ink, appearing to read "R S Sinclair".

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa



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Schedule

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Certificate Number Baseefa03ATEX0686X/2

15 Description of the variation to the Equipment or Protective System

Variation 2.1

To permit changes to the circuit connected to terminals 18 and 19 to form a new unit known as IS200HART. For this unit C_i for terminals 18 and 19 is zero and the parameters for terminals 18 and 19 become as shown below:

$U_o = 28V$, $I_o = 200mA$, $P_o = 1.35W$, $U_i = 28V$, $I_i = 100mA$, $P_i = 1W$, $C_i = 0$ and $L_i = 0$.

Variation 2.2

To confirm that both the IS200 and the IS200HART are suitable for ambient temperatures down to $-40^{\circ}C$ instead of the $-20^{\circ}C$ shown originally, and comply with the requirements of EN60079-0:2006, EN60079-11:2007 and EN60079-26:2007, so they may now be marked Ex II 1 G Ga Ex ia IIC T4 ($-40^{\circ}C \leq T_a \leq +60^{\circ}C$).

Variation 2.3

To permit the IS200 to carry alternative name and company logo ACS604EEExia, Midland-ACS, and the IS200HART to carry alternative name and company logo ACS604EEExia HART, Midland-ACS.

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17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Issue	Date	Description
3374-003	C	31/03/2008	IS200HART Base Board P521 Circuit
3374-004	D	18/04/2008	IS200HART Modem Board Circuit
3374-007	B	28/02/2008	IS200HART Parts List, Main & Top Boards
3374-008	B	31/03/2008	IS200HART Parts List, Modem Board
3374-005	B	20/06/2008	IS200HART, P521 Main Board Layout
3374-006	D	20/06/2008	IS200HART, P520 Modem Board Layout
3374-011	C	20/06/2008	IS200HART Actuator Positioner Boards P500, P520, P521 Layouts
3374-010	C	20/06/2008	IS200HART Actuator Positioner General Assembly
1357-015	F	25/06/2008	IS200 Actuator Positioner General Assembly