

## IR900 Infra-red Controller User Handbook

### Manufacturer and Approvals Details

The IR900 is manufactured and maintained solely by:

Orange Instruments Limited  
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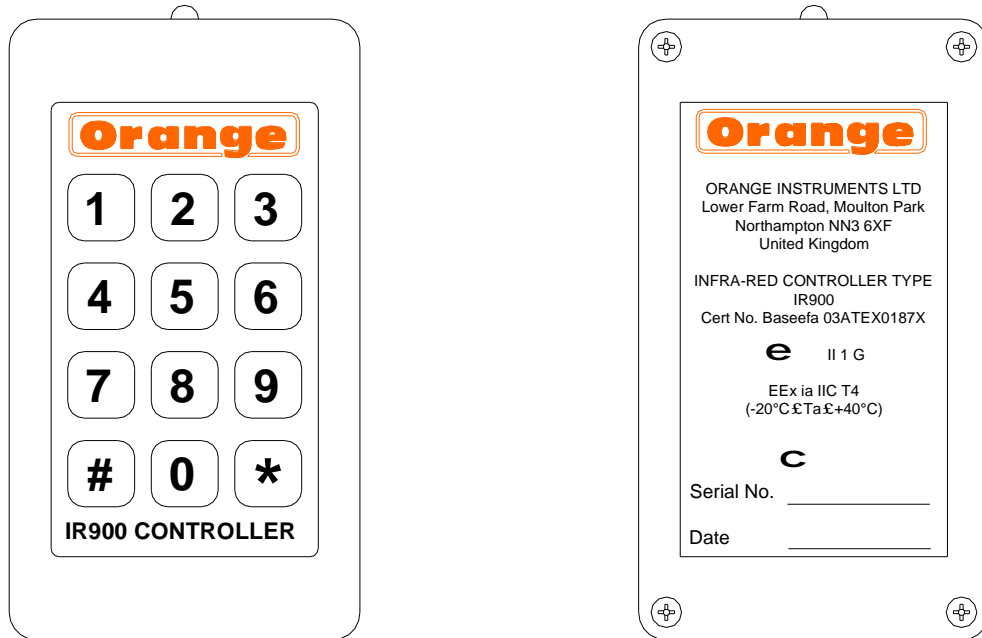
The IR900 has the following specific approvals

Name and Type	INFRA-RED CONTROLLER TYPE IR900
Certificate Number	Baseefa 03ATEX0187X
Specific Marking of Explosion Protection	EEx ia IIC T4 (-20°C [ Ta [ +40°C)
ATEX Directive Marking	<b>E II 1 G</b>
Notified body	Baseefa (2001) 1180

### General Description

The IR900 handheld infra red controller is designed for use with a series of actuator positioners and other equipment produced by Orange Instruments Limited. It can be used freely within a hazardous area to calibrate and configure these instruments via a window in their flameproof enclosures without having to purge the area of hazardous gases or liquids.

Full details of this interactive use of the IR900 are described in the individual positioner handbooks.



### Zone of Operation

The IR900 is an intrinsically safe device approved for operation in the following environment according to Specific Marking of explosion protection:

**EEx ia IIC T4 (-20°C [ Ta [ +40°C)** Ta = ambient temperature

*IEC CENELEC*

*North America*

Zone 0 – continuous hazard present.

Division 1

Gas Group – IIC (hydrogen, acetylene, carbon disulphide)

Class 1A (Hydrogen)  
Class 1B (acetylene)

Surface temperature – T4 135°C – Ambient temperature -20°C to +40°C

### Physical Description

Size – 63mm wide, 113mm high, 31mm deep

Weight – 0.25kg

Enclosure – die cast aluminium, nylon coated

Switch membrane – polyester

Equipment rating – IP40

### First Time Use

The IR900 is supplied fully tested with a battery pack fitted, ready for immediate use.

### Normal Use

The top end of the IR900 (with the projecting IR emitter) should be aimed at the window in the flameproof enclosure housing the equipment to be controlled. Changes in state of indicators behind the window will show correct reception of the IR pulse train from the IR900.

The IR900 should be used within 2 metre of the window and it might be necessary to temporarily shade the window under intense ambient light conditions.

### Maintenance

The outside of the enclosure can be cleaned using a damp cloth. Do not use solvents.

Do not unscrew the four enclosure retaining screw when a hazard is present.

Apart from battery changes there are no user serviceable parts within the IR900. Suspected faulty units must be returned to the Manufacturers.

### Changing the Battery Pack

The battery pack will last for at least 3 years with normal use. Replacement at 2 years is recommended.

*The following work MUST be carried out in a SAFE environment with no hazard present.*

- 1) Have the replacement pack to hand.
- 2) Remove the four posi head screws securing the enclosure back.
- 3) Remove the enclosure back exposing the battery pack and printed circuit board.
- 4) Remove the old battery pack and unplug from printed circuit.
- 5) Plug in new battery pack noting the polarising tab on the circuit board connector.
- 6) Replace enclosure back and secure with the four screws.
- 7) Dispose of the old battery pack (manganese) according to local environmental regulations.

**Specification**

Size	63mm wide, 113mm high, 31mm deep
Enclosure	die cast aluminium, nylon coated
Switch membrane	polyester
Enclosure retainers	4 screws M3 x 10 posi countersunk
Weight	0.25kg
Equipment rating	IP40
Quiescent current	26mA (no key pressed)
Running current	400mA (key pressed)
Infra red wavelength	940nm
Radiated Intensity	15.4mW/sr
Battery Pack terminal voltage	9V nominal
Battery Pack size	52mm long x 28mm wide x 19.5mm deep
Battery Pack connection	Polarised 0.1" 2-way free socket
Battery weight	0.1kg

**EC Declaration of Conformity**



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 Orange Instruments Limited  
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*Notified body*  
 Baseefa  
 Rockhead Business Park  
 Staden Lane, Buxton  
 Derbyshire SK17 9RZ  
 United Kingdom

Signed  
 Anthony G. McCormick  
 ATEX Manager  
 Orange Instruments

*Harmonised Standards*  
 EN 50014 A1 A2: 1997  
 EN 50020: 2002  
  
*Other Standards*  
 EN 50284: 1999

*Equipment description*  
 Infra-Red Controller Type IR900  
 e II 1 G EEx ia IIC T4  
 (-20°C£Ta£+40°C)