

British Approvals Service for Electrical  
Equipment in Flammable Atmospheres



## Certificate of Conformity

BAS No. Ex 96D2494

- 1
- 2
- 3 This certificate is issued for the electrical apparatus:  
**pH/ORP TRANSMITTER MODEL 3081**
- 4 Manufactured and submitted for certification by:  
**ROSEMOUNT ANALYTICAL INC  
of Irvine, California 92714-5018, USA**
- 5 This electrical apparatus and any acceptable variation thereto is specified in the Schedule to this Certificate and the documents therein referred to.
- 6 BASEEFA being an Approved Certification Body in accordance with Article 14 of the Council Directive of the European Communities of 18 December 1975 (76/117/EEC) certifies that the apparatus has been found to comply with harmonised European Standards:  
**EN50 014 (1977) + Amendments 1 to 5  
EN50 020 (1977) + Amendments 1 to 5**

and has successfully met the examination and test requirements recorded in confidential Report number:  
**95(C)0184 dated 7 April 1997**

- 7 The apparatus marking shall include the code:  
**EEx ia IIC T4 (T<sub>amb</sub> = 65°C)      EEx ia IIC T5 (T<sub>amb</sub> = 40°C)**
- 8 The manufacturer of the electrical apparatus referred to in this certificate, has the responsibility to ensure that the apparatus conforms to the specification laid down in the Schedule to this certificate and has satisfied routine verifications and tests specified therein.
- 9 This apparatus may be marked with the Distinctive Community Mark specified in Annex II to the Council Directive of 16 January 1984 (Doc 84/47/EEC). A facsimile of this mark is printed on sheet 1 of this certificate.

File No: EECS 0911/02/015

Sheet 1 of 5

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. Representation of equipment as "Certified" is valid only when the number of this certificate is given on the relevant EECS Manufacturing Licence or Verification Certificate.



**I M CLEARE  
DIRECTOR  
10 April 1997**



Registration Number  
020  
The use of the Accreditation  
Mark indicates accreditation in  
respect of those activities  
covered by the accreditation  
certificate number 020.



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

British Approvals Service for Electrical  
Equipment in Flammable Atmospheres



*Schedule*

**Certificate of Conformity BAS No. Ex 96D2494**

#### **APPARATUS DESCRIPTION**

The **pH/ORP Transmitter Model 3081** is designed to measure the pH/ORP properties, and temperature, of liquid solutions. It converts inputs from external sensors into a galvanically isolated 4-20mA loop signal.

The Transmitter comprises an electronic assembly of three printed circuit boards; Analog Board, CPU Board and the Display Board. The electronic assembly is housed in a cylindrical enclosure made from a machined metal casting. The enclosure has a central partition forming two compartments. Both compartments are fitted with screw-on covers. One compartment houses the terminals for external connections and the other houses the electronic assembly and is fitted with a glass display cover.

The pH/ORP Transmitter Model 81 is a variant to the Model 3081, using identical circuits but having different terminal designations. The electronic assembly in the Model 81 uses identical CPU and Display Boards, however the Analog Board is made to an alternative design.

The Model 81 is housed in an alternative enclosure which is also made from a machined casting. The front face of the enclosure forms a door with a plastic display window. The electronic assembly is mounted to the door behind the window and is enclosed within a metal RFI/EMI shield. External connections are made through gland entries at the bottom of the enclosure, to the terminals on the electronic assembly.

#### **Input Parameters**

Model 3081, Terminals TB1 connections 14, 15 & 16

Model 81, Terminals TB2 connections 3, 4 & 5

$U_i = 30V$

$I_i = 200mA$

$P_i = 0.9W$



**Certificate of Conformity BAS No. Ex 96D2494**

**Output Parameters**

Model 3081, Terminals TB1 connections 1 to 13

Model 81, Terminals TB1 connections 1 to 12 and TB2 connection 1

$$U_o = 13.44V$$

$$I_o = 170mA$$

$$P_o = 0.6W$$

$$C_i = 0.012\mu F$$

**Load Parameters**

The Capacitance and the Inductance of the load at the sensor terminals must not exceed the following values:-

Group	Capacitance $\mu F$	Inductance mH
II C	0.83	0.8
II B	5.2	2.4
II A	18.9	6.4

The  $C_i = 0.012\mu F$  has been taken into account in the above capacitance values.

**DRAWINGS**

<u>Number</u>	<u>Sheet</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
40308113		D	2.26.97	General assembly - Model 3081
9241199-00	1	A	3.3.97	Label - Model 3081
40308102		H	2.26.97	External wiring - Model 3081
40008114		C	2.26.97	General assembly - Model 81
23540-00/02	1	F	2.26.97	Front panel assembly - Model 81
9241258-00		A	3.3.97	Label - Model 81
40008103		C	2.26.97	External wiring - Model 81



**Certificate of Conformity BAS No. Ex 96D2494**

<u>Number</u>	<u>Sheet</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
2400277	1 & 2	AB	2.26.97	Circuit, Analog - Model 3081
23577-00		AB	8.20.96	PCB assembly, Analog - Model 3081
33368-00		F	2.26.97	PCB details, Analog - Model 3081
33368-00		E	8.19.96	PCB top silk screen, Analog - Model 3081
33368-00		E	8.19.96	PCB track comp side, Analog - Model 3081
33368-00		E	8.19.96	PCB ground plane, Analog - Model 3081
33368-00		E	8.19.96	PCB signal track internal layer, Analog - Model 3081
33368-00		E	8.19.96	PCB track solder side, Analog - Model 3081
33368-00		E	8.19.96	PCB bottom silk screen, Analog - Model 3081
2400292	1 & 2	AB	2.26.97	Circuit, Analog Board - Model 81
23637-00	1 & 2	AB	8.20.96	PCB assembly, Analog Board - Model 81
33422-00		D	2.26.97	PCB details, Analog Board - Model 81
33422-00		C ✓	8.19.96	PCB top silk screen, Analog - Model 81
33422-00		C ✓	8.19.96	PCB track comp side, Analog - Model 81
33422-00		C ✓	8.19.96	PCB ground plane, Analog - Model 81
33422-00		C ✓	8.19.96	PCB power plane, Analog - Model 81
33422-00		C ✓	8.19.96	PCB track solder side, Analog - Model 81
33422-00		C ✓	8.19.96	PCB bottom silk screen, Analog - Model 81
2400295	1 & 2	AB	2.26.97	Circuit, CPU
23641-00/01		AB	8.20.96	PCB assembly, CPU
33427-00		D	2.26.97	PCB details, CPU
33427-00		C	8.19.96	PCB top silk screen, CPU
33427-00		C	8.19.96	PCB track comp side, CPU
33427-00		C	8.19.96	PCB ground plane, CPU

British Approvals Service for Electrical  
Equipment in Flammable Atmospheres



## Schedule

Certificate of Conformity BAS No. Ex 96D2494

<u>Number</u>	<u>Sheet</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
33427-00		C	8.19.96	PCB power plane, CPU
33427-00		C	8.19.96	PCB track solder side, CPU
33427-00		C	8.19.96	PCB bottom silk screen, CPU
2400293		AB	2.26.97	Circuit, Display
23638-00		AB	2.26.97	PCB assembly, Display
33423-00		D	2.26.97	PCB details, Display
33423-00		C	8.19.96	PCB top silk screen, Display
33423-00		C	8.19.96	PCB track comp side, Display
33423-00		C	8.19.96	PCB ground plane, Display
33423-00		C	8.19.96	PCB track internal layer, Display
33423-00		C	8.19.96	PCB track solder side, Display
33423-00		C	8.19.96	PCB bottom silk screen, Display
9080125	1 & 2	E	2.26.97	Transformer
9030295	1 to 5	B	6.27.96	Optocoupler

BASEEFA List Keywords

2PHMEASU