

Second Retransmission
Output Supplement – All Models

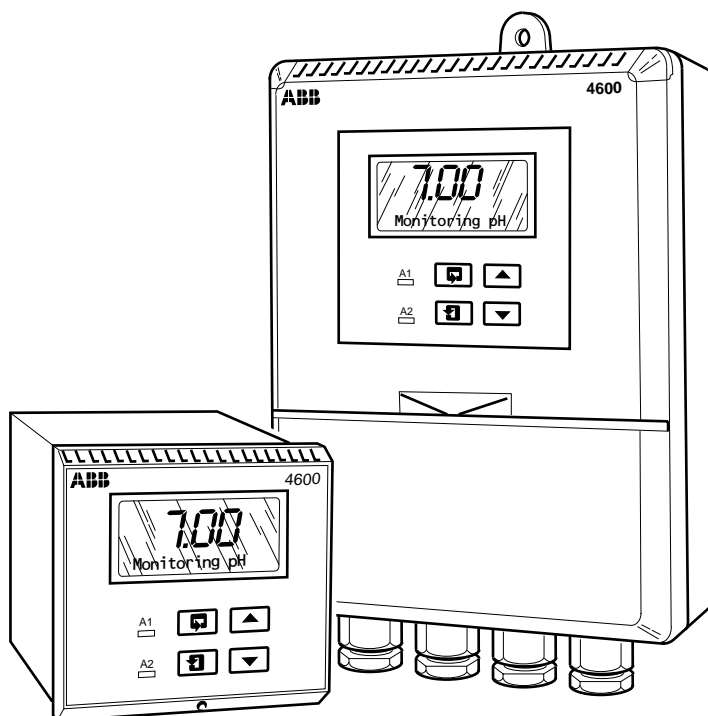


ABB INSTRUMENTATION

The Company

ABB Instrumentation is an established world force in the design and manufacture of instrumentation for industrial process control, flow measurement, gas and liquid analysis and environmental applications.

As a part of ABB, a world leader in process automation technology, we offer customers application expertise, service and support worldwide.

We are committed to teamwork, high quality manufacturing, advanced technology and unrivalled service and support.

The quality, accuracy and performance of the Company's products result from over 100 years experience, combined with a continuous program of innovative design and development to incorporate the latest technology.

The NAMAS Calibration Laboratory No. 0255 is just one of the ten flow calibration plants operated by the Company, and is indicative of ABB Instrumentation's dedication to quality and accuracy.

BS EN ISO 9001



St Neots, U.K. – Cert. No. Q5907
Stonehouse, U.K. – Cert. No. FM 21106

EN 29001 (ISO 9001)



Lenno, Italy – Cert. No. 9/90A



Stonehouse, U.K.

Use of Instructions



Warning.

An instruction that draws attention to the risk of injury or death.



Note.

Clarification of an instruction or additional information.



Caution.

An instruction that draws attention to the risk of damage to the product, process or surroundings.



Information.

Further reference for more detailed information or technical details.

Although **Warning** hazards are related to personal injury, and **Caution** hazards are associated with equipment or property damage, it must be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process system performance leading to personal injury or death. Therefore, comply fully with all **Warning** and **Caution** notices.

Information in this manual is intended only to assist our customers in the efficient operation of our equipment. Use of this manual for any other purpose is specifically prohibited and its contents are not to be reproduced in full or part without prior approval of Technical Communications Department, ABB Instrumentation.

Health and Safety

To ensure that our products are safe and without risk to health, the following points must be noted:

1. The relevant sections of these instructions must be read carefully before proceeding.
2. Warning labels on containers and packages must be observed.
3. Installation, operation, maintenance and servicing must only be carried out by suitably trained personnel and in accordance with the information given.
4. Normal safety precautions must be taken to avoid the possibility of an accident occurring when operating in conditions of high pressure and/or temperature.
5. Chemicals must be stored away from heat, protected from temperature extremes and powders kept dry. Normal safe handling procedures must be used.
6. When disposing of chemicals ensure that no two chemicals are mixed.

Safety advice concerning the use of the equipment described in this manual or any relevant hazard data sheets (where applicable) may be obtained from the Company address on the back cover, together with servicing and spares information.

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1 INTRODUCTION

This supplement provides additional information on the second retransmission output only, and is to be used in conjunction with the relevant 4600 series transmitter Operating Instructions below at the issue listed or later.

pH/Redox Transmitters 4630/35 and 4631/36	–	IM/4600–pH issue 10
Conductivity Transmitters 4620/25	–	IM/4600–CON issue 9
Conductivity Transmitters 4621/26	–	IM/4600–MEC issue 6
Conductivity Transmitters 4623/28	–	IM/4600–USP issue 2
Dissolved Oxygen Analyzers 4640/45 and 4642/47	–	IM/4600–DO issue 6
Low Level DO Analyzers 4641/46	–	IM/9437 issue 3
Turbidity Monitors 4670	–	IM/4670 issue 8

2 ELECTRICAL CONNECTIONS

This section contains additional wiring information for the second retransmission output and **must** be used in conjunction with the electrical connection details given in Section 4 of the relevant Operating Instructions – see page 1.



Warning. Before making any connections, ensure that the power supply, any high voltage-operated control circuits and high common mode voltages are switched off.

2.1 Wall-/Pipe-mounted Instrument Connections – Fig. 2.1

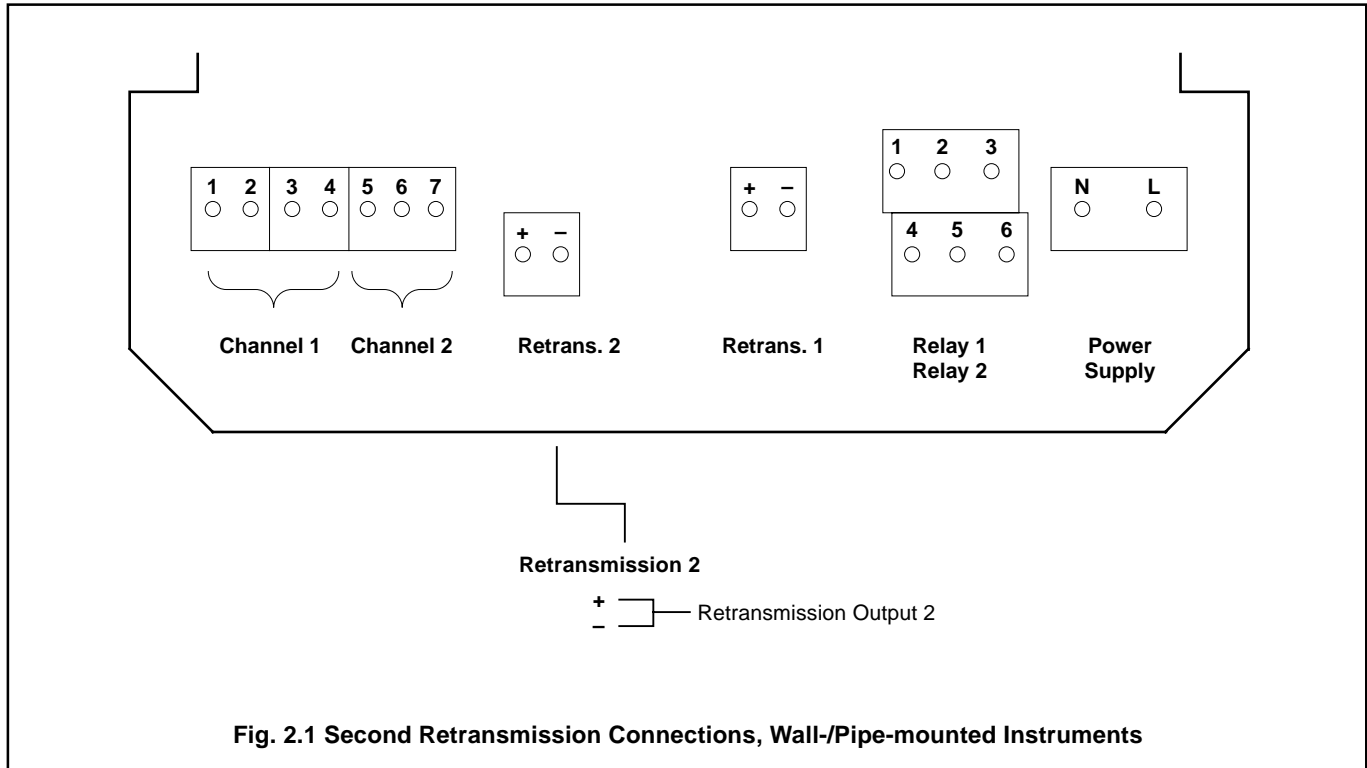
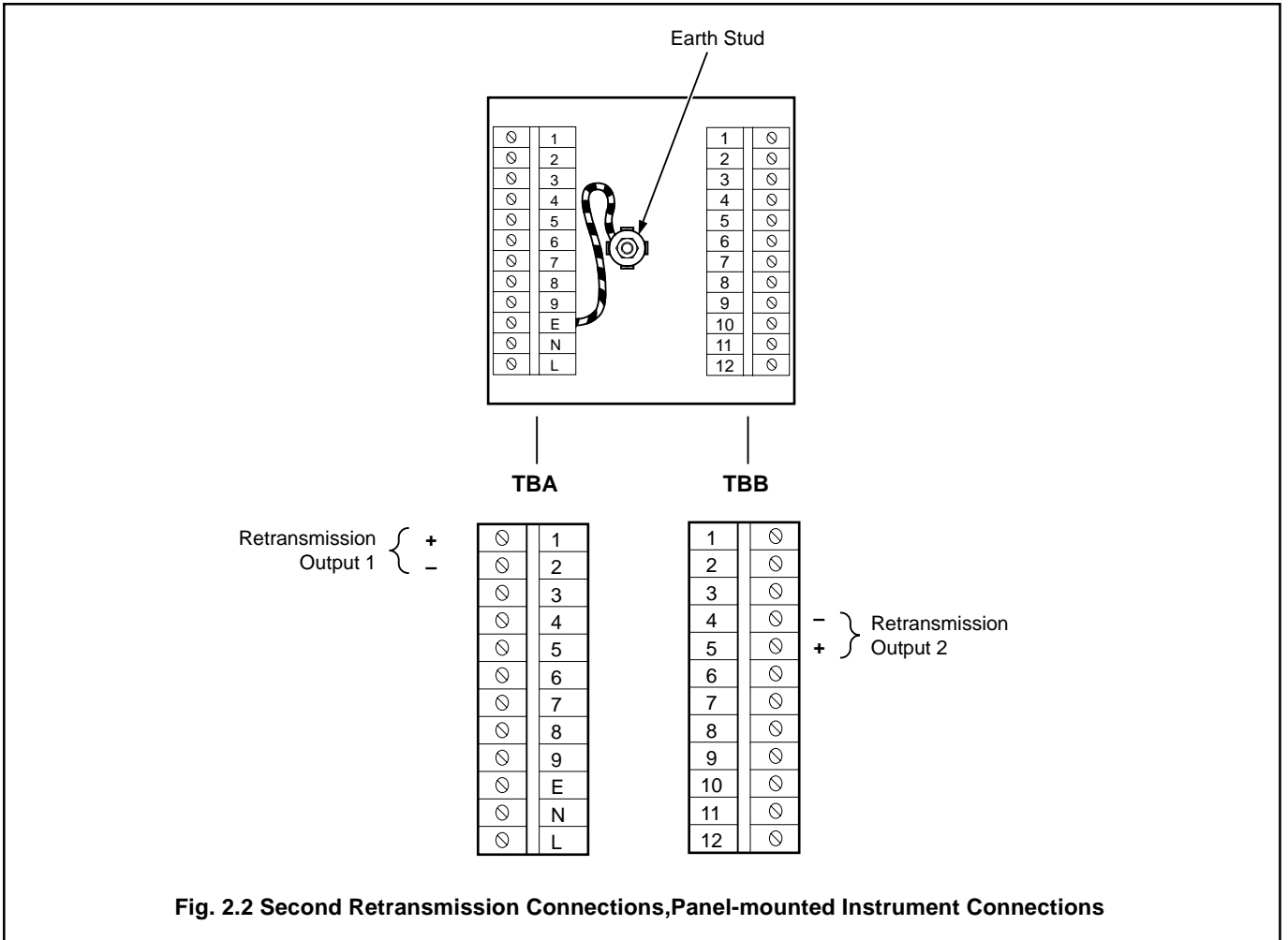


Fig. 2.1 Second Retransmission Connections, Wall-/Pipe-mounted Instruments

2.2 Panel-mounted Instrument Connections – Fig. 2.2



3 PROGRAMMING

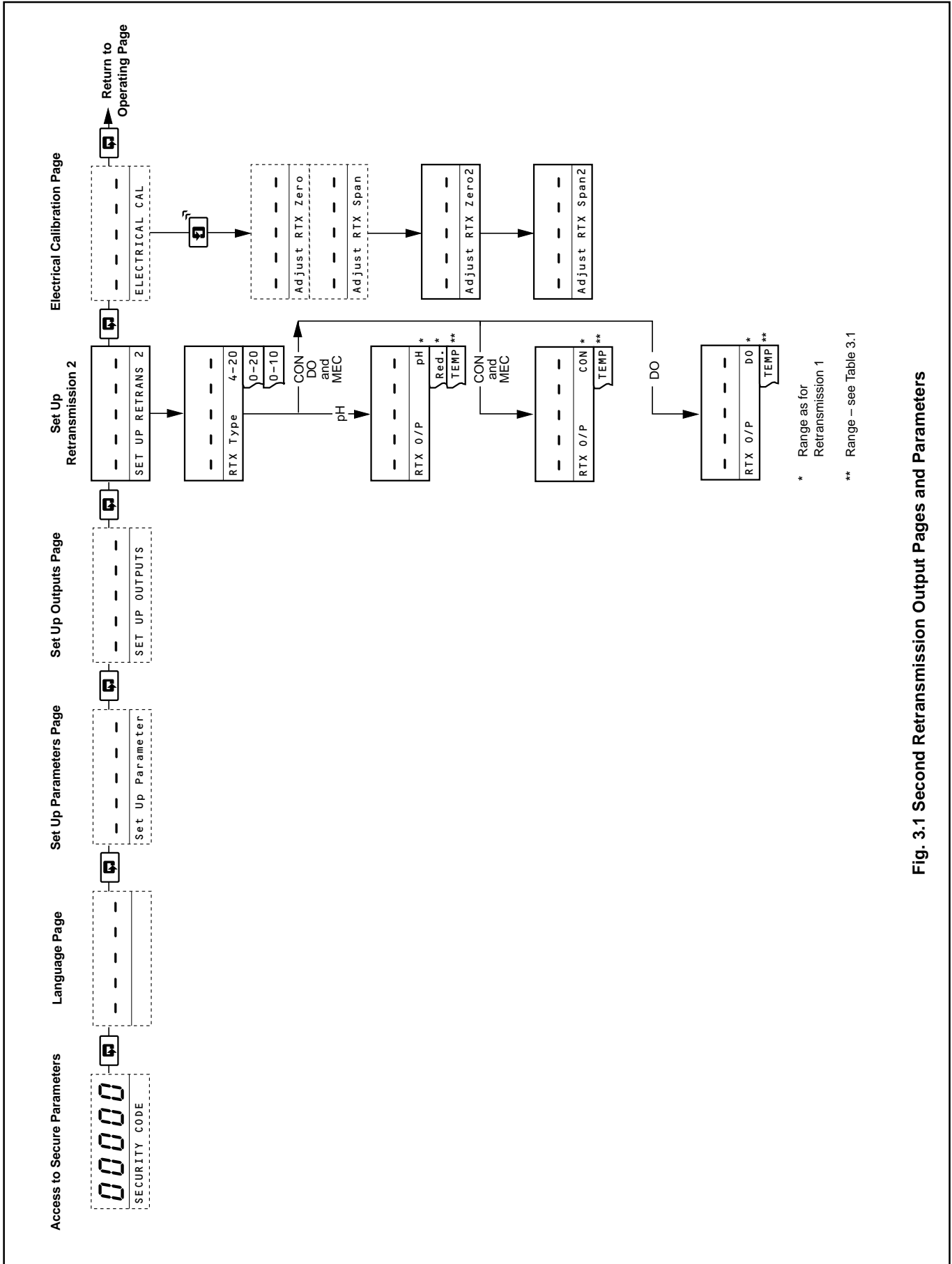
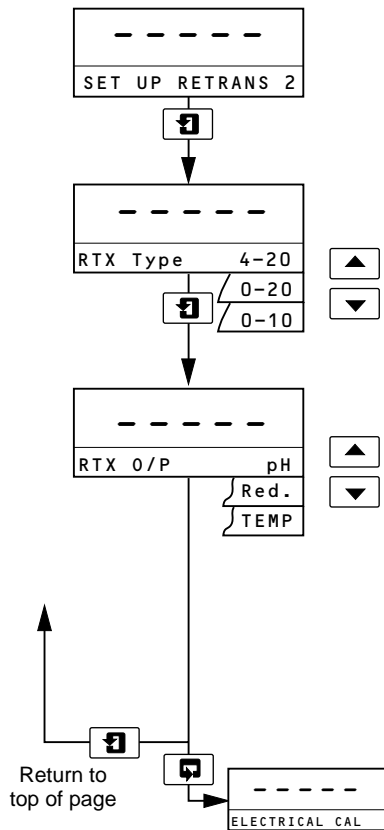


Fig. 3.1 Second Retransmission Output Pages and Parameters

3.1 4600 pH Transmitters

This section is applicable only to pH transmitters (Models 4630/4631 and 4635/4636).



Retransmission 2 Page header

Retransmission 2 Output Current Range

The retransmission 2 output can be selected from three mA current ranges to ensure compatibility with the peripheral device connected.

Select the retransmission output current range required.

Retransmission Output Assignment

The retransmission output can be assigned to monitor Temperature and either pH or Redox (dependent upon the probe type selected

– see *IM/4600-PH / Section 7.3 / Set Up Parameters Page*.

pH / Red . – range as for the Retransmission 1 Output.

TEMP – range as detailed in Table 3.1.

***** **Note.** If the sensor type is set to 'Red .', the 'TEMP' option is not available – see *IM/4600-PH / Section 7.3 / Set Up Parameters Page*.

Select the retransmission output required.

Advance to **Electrical Calibration Page**.

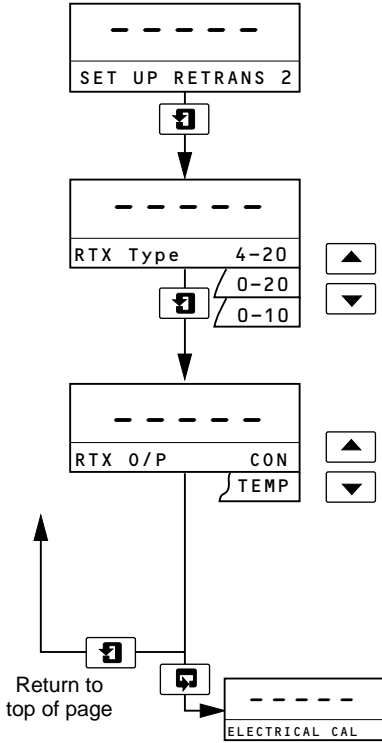
Instrument Type	Temp Retransmission Range
4620/4625 Conductivity 4623/4628 USP Conductivity	} 0 to 100°C
4630/4635 pH 4631/4636 pH Water Wash	
4640/4645 Dissolved Oxygen 4642/4647 DO Water Wash	} 0 to 40°C
4641/4646 Low Level DO	
4621/4626 Multi-electrode Conductivity	0 to 60°C
Units 0 to 250mS	0 to 100°C
250 to 500mS	0 to 50°C
HCl	0 to 50°C
H ₂ SO ₄	0 to 50°C
0 to 5% NaOH	0 to 100°C
5 to 8% NaOH	0 to 50°C

Table 3.1 Temperature Ranges

...3 PROGRAMMING

3.2 4600 Conductivity Transmitters

This section is applicable only to Conductivity transmitters (Models 4620/4625, 4623/4628 and 4621/4626).



Retransmission 2 Page header

Retransmission 2 Output Current Range

The retransmission 2 output can be selected from three mA current ranges to ensure compatibility with the peripheral device connected.

Select the retransmission output current range required.

Retransmission Output Assignment

The retransmission output can be assigned to monitor Temperature or Conductivity.

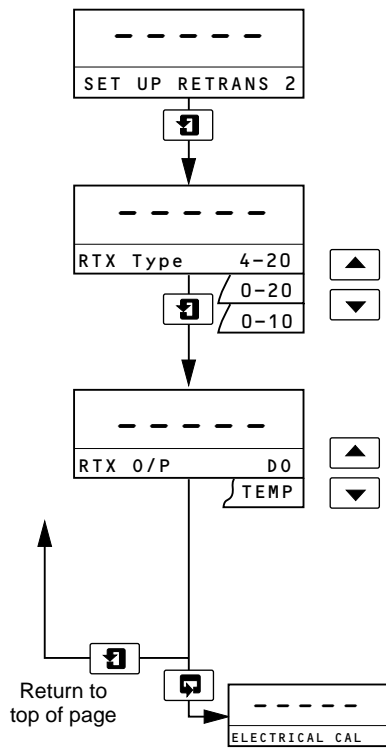
CON – range as for the Retransmission 1 Output.
TEMP – range as detailed in Table 3.1.

Select the retransmission output required.

Advance to **Electrical Calibration Page**.

3.3 4600 Dissolved Oxygen Transmitters

This section is applicable only to Dissolved Oxygen transmitters (Models 4640/4645, 4641/4646 and 4642/47).



Retransmission 2 Page header

Retransmission 2 Output Current Range

The retransmission 2 output can be selected from three mA current ranges to ensure compatibility with the peripheral device connected.

Select the retransmission output current range required.

Retransmission Output Assignment

The retransmission output can be assigned to monitor Temperature or DO.

- DO – range as for the Retransmission 1 Output.
- TEMP – range as detailed in Table 3.1.

Select the retransmission output required.

Advance to **Electrical Calibration Page**.

4 CALIBRATION

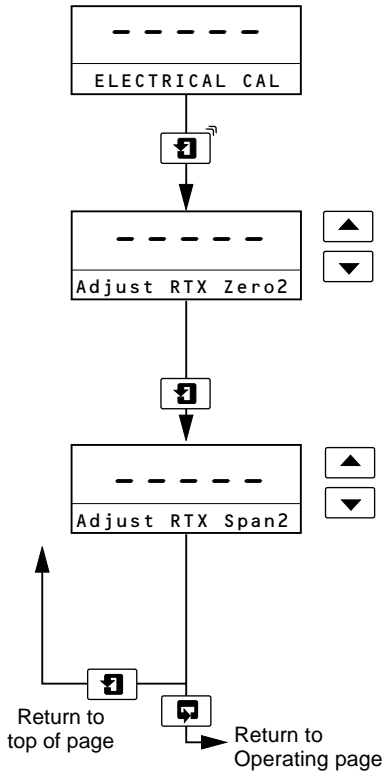
***** **Note.** The instrument is calibrated at the Company prior to despatch and an electrical calibration should be carried out only if its accuracy is suspect.

4.1 Preparation

Connect test equipment and carry out preparation as detailed in the relevant instrument Operating Instructions – see page 1.

4.2 Electrical Calibration Page

This section contains calibration details for the second retransmission output only – see the relevant instrument Operating Instructions for the full calibration procedure.



Electrical Calibration Page Header

Press the **[F1]** key to select the 'Adjust RTX Zero2' frame.

Adjust Retransmission Zero 2

Using the **[↓]** and **[↑]** keys, adjust the milliammeter reading to 4mA.

***** **Note.** The retransmission range selected in Section 3 does not affect the reading.

Advance to the next parameter.

Adjust Retransmission Span 2

Using the **[↓]** and **[↑]** keys, adjust the milliammeter reading to 20mA.

***** **Note.** The retransmission range selected in Section 3 does not affect the reading.

Return to the **Operating Page**.

PRODUCTS & CUSTOMER SUPPORT

A Comprehensive Instrumentation Range

Analytical Instrumentation

- **Transmitters**
On-line pH, conductivity, and dissolved oxygen transmitters and associated sensing systems.
- **Sensors**
pH, redox, selective ion, conductivity and dissolved oxygen.
- **Laboratory Instrumentation**
pH and dissolved oxygen meters and associated sensors.
- **Water Analyzers**
For water quality monitoring in environmental, power generation and general industrial applications including: pH, conductivity, ammonia, nitrate, phosphate, silica, sodium, chloride, fluoride, dissolved oxygen and hydrazine.
- **Gas Analyzers**
Zirconia, katharometers, hydrogen purity and purge-gas monitors, thermal conductivity.

Controllers & Recorders

- **Controllers**
Digital display, electronic, pneumatic. Discrete single-loop and multi-loop controllers which can be linked to a common display station, process computer or personal computer.
- **Recorders**
Circular and strip-chart types (single and multi-point) for temperature, pressure, flow and many other process measurements.

Electronic Transmitters

- **Smart & Analog Transmitters**
For draft, differential, gauge and absolute pressure measurement. Also, liquid level and temperature.
- **I to P Converters and Field Indicators**

Flow Metering

- **Magnetic Flowmeters**
Electromagnetic, insertion type probes and watermeters.
- **Turbine Flowmeters**
- **Wedge Flow Elements**
- **Mass Flow Meters**
Transmitters, sensors, controllers and batch/display units.

Level Control

- **Submersible, Capacitance & Conductivity.**

Pneumatic Instrumentation

- **Transmitters**
- **Indicating Controllers**
- **Recording Controllers**

Customer Support

ABB Instrumentation provides a comprehensive after sales service via a Worldwide Service Organization. Contact one of the following offices for details on your nearest Service and Repair Centre.

United Kingdom

ABB Instrumentation Limited
Tel: +44 (0)1480 475321
Fax: +44 (0)1480 470787

United States of America

ABB Automation Inc.
Instrumentation Division
Tel: +1 215-674-6000
Fax: +1 215-674-7183

Italy

ABB Instrumentation SpA
Tel: +39 (0) 344 58111
Fax: +39 (0) 344 58278

Client Warranty

Prior to installation, the equipment referred to in this manual must be stored in a clean, dry environment, in accordance with the Company's published specification. Periodic checks must be made on the equipment's condition.

In the event of a failure under warranty, the following documentation must be provided as substantiation:

1. A listing evidencing process operation and alarm logs at time of failure.
2. Copies of operating and maintenance records relating to the alleged faulty unit.



The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

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ABB Instrumentation Ltd

St. Neots
Cams.
England, PE19 3EU
Tel: +44 (0) 1480 475321
Fax: +44 (0) 1480 217948

**ABB Instrumentation Ltd
Analytical & Flow Group**

Stonehouse, Glos.
England, GL10 3TA
Tel: +44 (0) 1453 826661
Fax: +44 (0) 1453 827856

**ABB Automation Inc.
Instrumentation Division**

125 E. County Line Road
Warminster, PA 18974 USA
Tel: +1 215-674-6000
Fax: +1 215-674-7183

ABB Instrumentation SpA

22016 Lenno
Como
Italy
Tel: +39 (0) 344 58111
Fax: +39 (0) 344 58278