



MANUAL

MS DO 27

DISSOLVED OXYGEN INDICATING CONTROLLER TRANSMITTER

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1. INTRODUCTION

Item Supplied :

1. Dissolved Oxygen Indicating Controller Transmitter MS DO 27
2. Manual
3. Calibration Certificate (Page No. 17 of manual).
4. Test / Warrantee Certificate (Page No. 19 of manual).

Inspection :

Check for mechanical damage due to possible improper handling during shipment. All claims for damage are to be made promptly to the shipper.

Device Identification :

The Model No. is mentioned on the front plate of the instrument. Terminal configuration mentioned on the inside of front plate, and Serial Number is mentioned at top side of instrument.

Warranty Terms :

The terms of this instrument that are warranted are described in the techno commercial offer. We will make any repairs that may become necessary during the warrantee term free of charge against manufacturing defects only.

Please contact us if this instrument requires any repair.

If the instrument is faulty, contact us with concrete details about the problem and the length of time it has been faulty, and state the model and serial number. We would appreciate the inclusion of images or additional information.

The results of our examination will determine whether the indicator will be repaired free of charge or on an at-cost basis

2. SAFETY INSTRUCTIONS

General Instructions :

This Dissolved Oxygen Indicating Controller Transmitter was carefully calibrated at the factory before shipment. When Dissolved Oxygen Indicating Controller Transmitter is delivered, visually check that no damage has occurred during transportation.

Read this Manual carefully and understand instructions provided herein.

In general, instruments from the manufacturer may only be installed, commissioned, operated and maintained by properly trained and authorized personnel.

Look at the ordering detail to ensure that the device is delivered according to your order. Check for the correct supply voltage printed on the inside of front plate.

Before powering up the instrument, consider the following:

1. Check if the supply voltage is correct.
2. Do not give power supply to any other terminal.

Storage Precautions :

Store the device in a dry, dust-free location.

Avoid continuous direct sunlight.

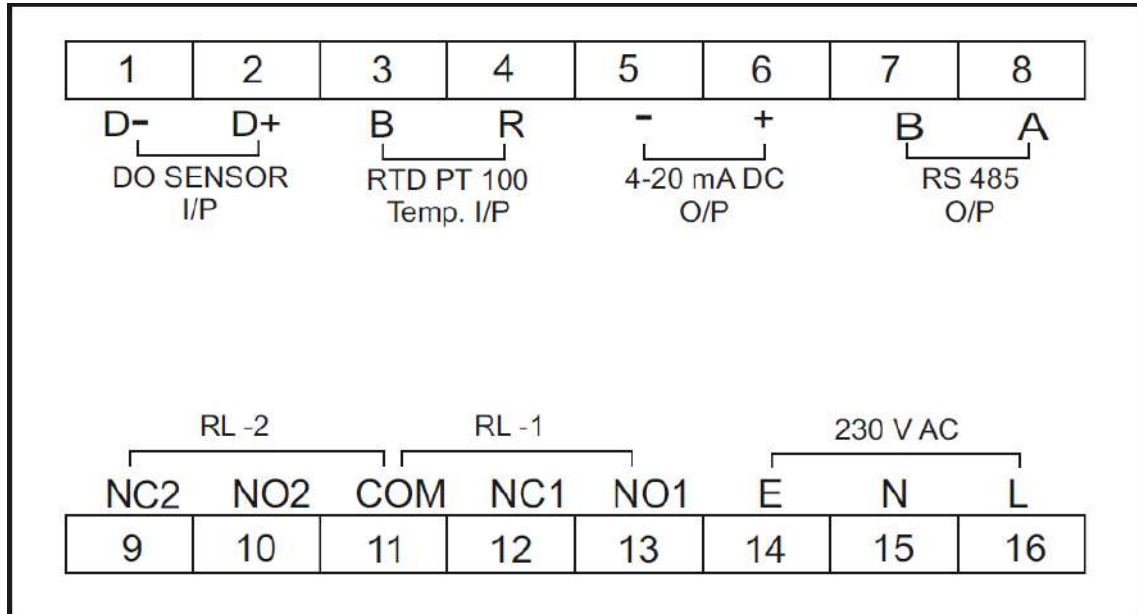
Store the device in its original packing.

Storage temperature: 0 to 55°C.

3. TECHNICAL SPECIFICATIONS

| | |
|---------------------------------|--|
| Instrument Name | Dissolved Oxygen Indicating Controller Transmitter |
| Make | MicroSet |
| Model No | MS DO 27 |
| Type of Input | 1) DO Sensor through Terminal 1 & 2 2) RTD PT 100 Temp. Sensor through Terminal 3 & 4 |
| Supply | 230V AC, 50 Hz |
| Range of DO | 00.00 to 20.90 PPM |
| Output | 4-20 mA DC through Terminal 5 & 6 |
| Temperature Compensation | Manual / Auto through PT 100 Range 00.00 - 50.00 °C |
| Pressure Compensation | Manual Range 600 – 790 mmHg |
| Accuracy | 0.25 % of Full Scale |
| Calibration | 2 Point Calibration (ZERO and SPAN) |
| Display | 1 Inch 4 digit LED display |
| Response Time | < 1 Sec |
| Mounting | Weatherproof |
| Dimensions | 120 x 200 x 75 mm |

4. TERMINAL CONNECTONS :



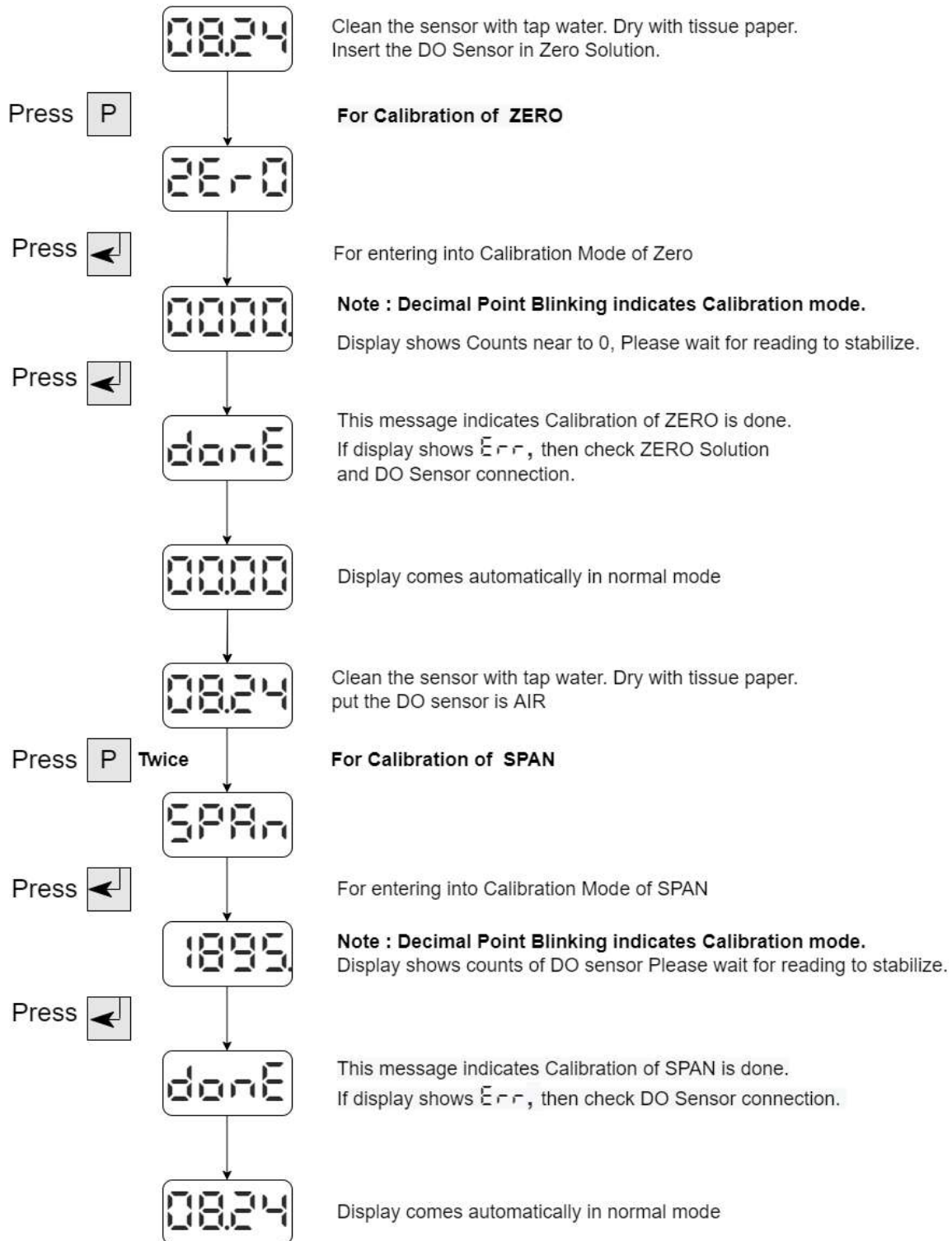
1. Connect Power Supply 230 V AC to Instrument at Terminal 16,15,14(L,N, E).
2. Connect DO Sensor to instrument at Terminal 1, 2 (D- , D+).
3. Connect RTD PT 100 Temperature Sensor (if required) to Terminals 3 & 4.
(Please connect RTD PT100 Temperature Sensor **AFTER** Calibration Procedure.)
4. Connect 4-20 mA DC output at Terminal 5, 6 (-, +).
5. Connect MODBUS RS485 (optional) output at Terminal 7, 8 (B, A).

5. CALIBRATION PROCEDURE

Before starting Calibration Procedure, make sure Temperature is in Manual Mode at 25°C

(When RTD PT100 Temperature Sensor is NOT connected, Temperature is in Manual Mode)

CALIBRATION of DO SENSOR :

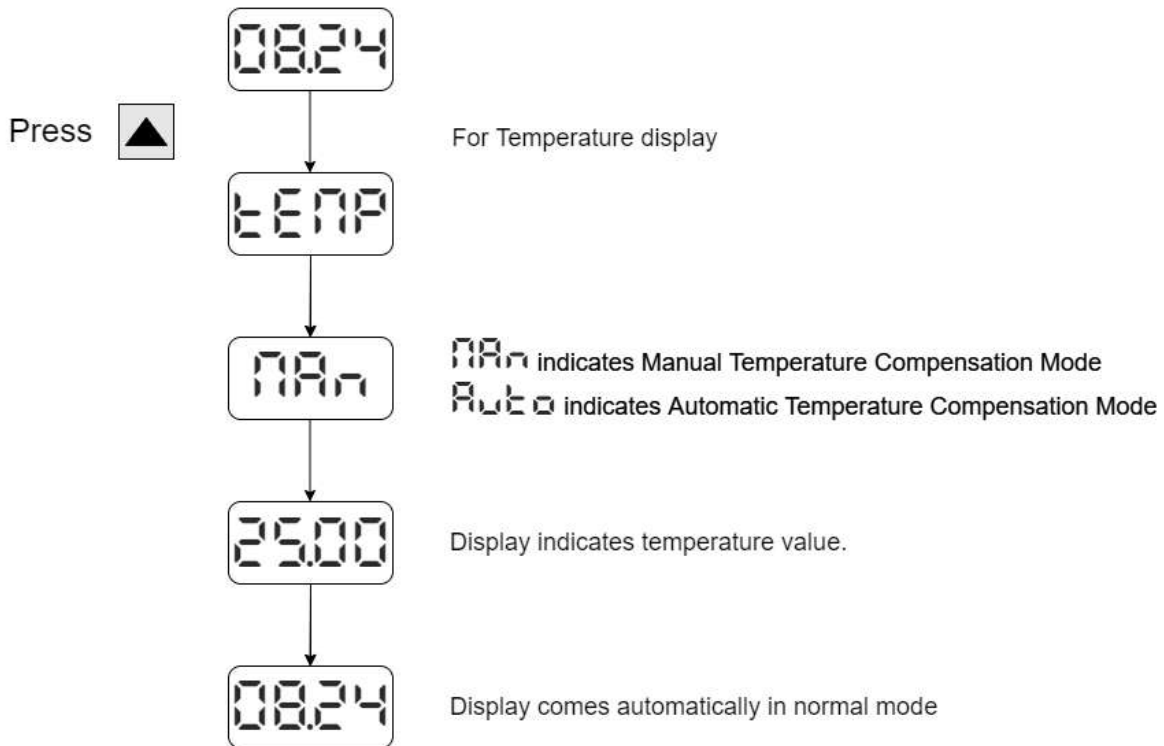


6. TEMPERATURE COMPENSATION

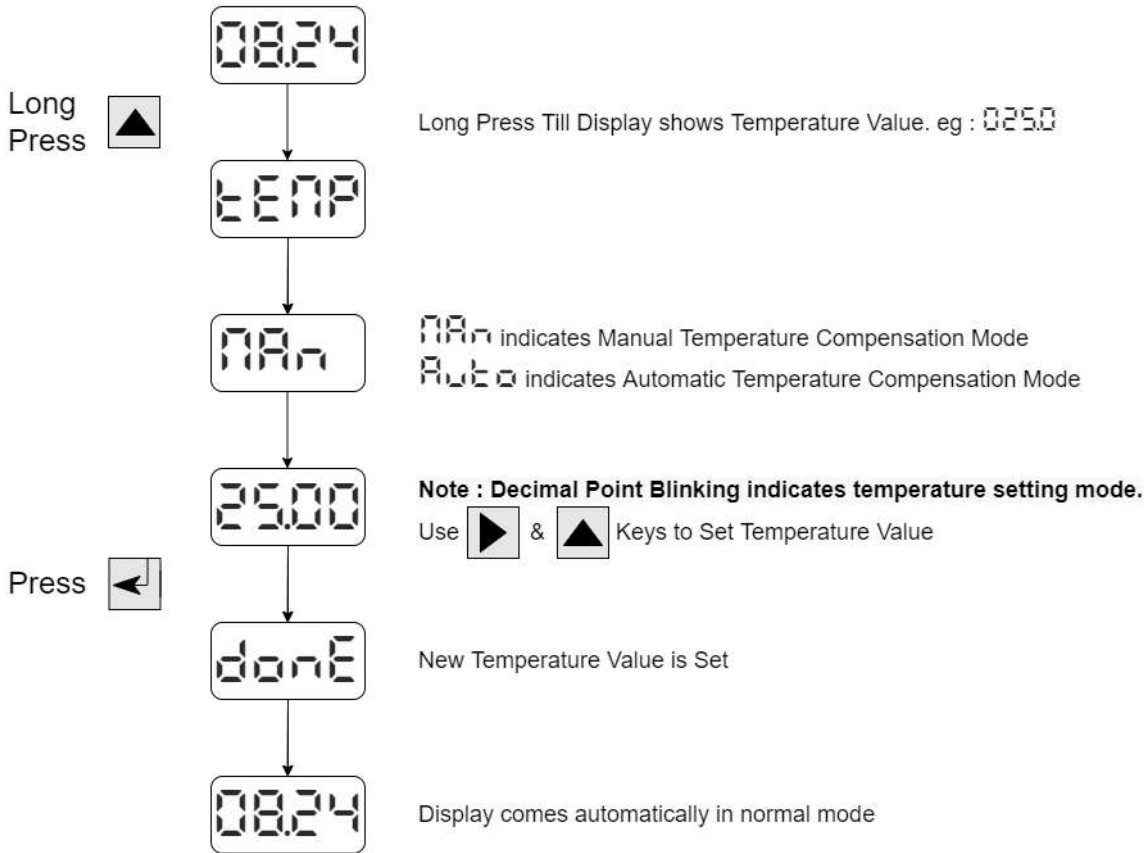
When RTD PT 100 Temperature Sensor **is Connected**, Dissolved Oxygen Indicating Controller Transmitter MS DO 27 W automatically goes in **Automatic Temperature Compensation Mode**.

When RTD PT 100 Temperature Sensor **is Not Connected**, Dissolved Oxygen Indicating Controller Transmitter MS DO 27 W is in **Manual Temperature Compensation Mode**.

For Temperature Display :



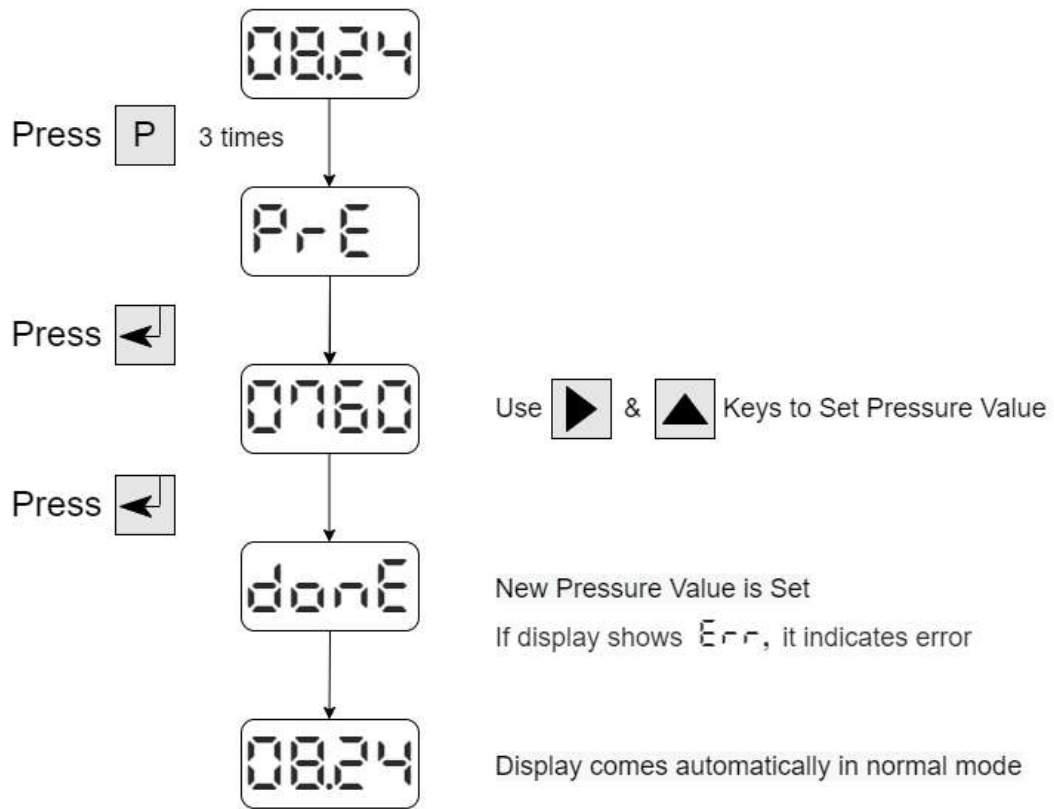
For Temperature Setting in Manual Mode :



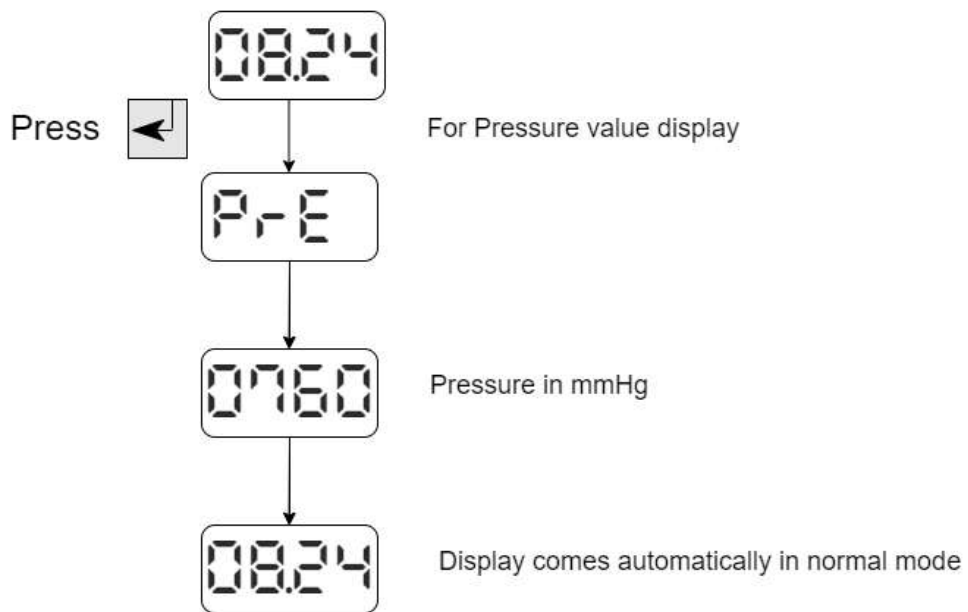
7 PRESSURE

Dissolved oxygen will **increase as pressure increases**. Generally Pressure is set at 760mmHg, but user can change it as per the requirement. Pressure value can be set in manual mode only. For setting and displaying pressure value please follow below instructions.

For Setting of Pressure :-



For Pressure Display :-



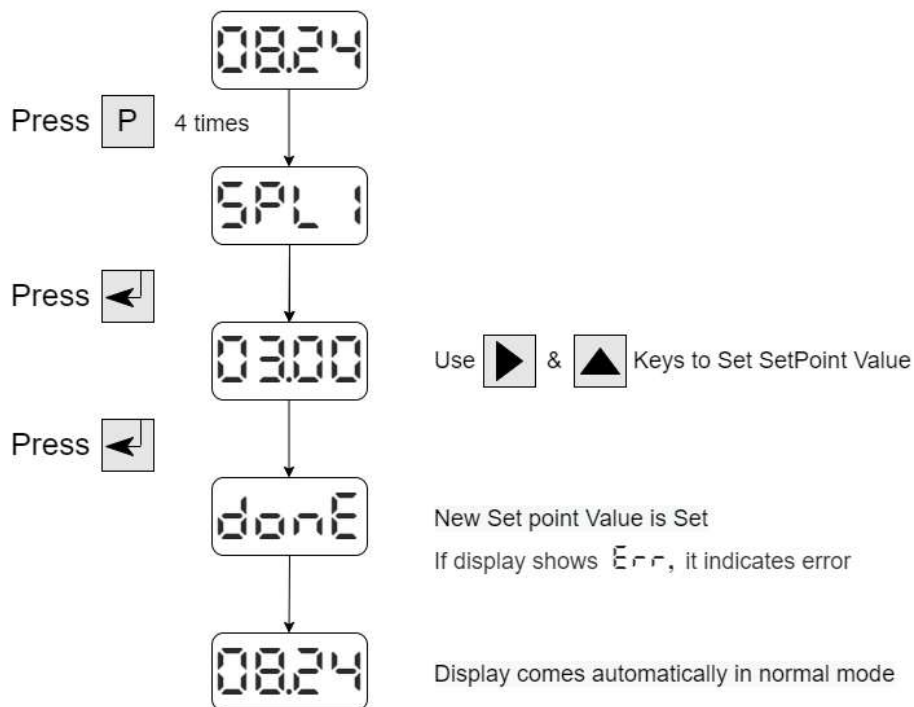
8 SETPOINT

1. You can use SPL1 & SPH1 for **Low range controlling of Dissolved Oxygen Value.**
If you enter SPL1 = 3.00 & SPH1 = 5.00,
Then in this case Relay will get ON when DO value goes below 3.00 PPM & Relay will get OFF when DO value goes above 5.00 PPM
2. You can use SPL2 & SPH2 for **High range controlling of Dissolved Oxygen Value.**
If you enter SPL2 = 7.00 & SPH1 = 10.00,
Then in this case Relay will get ON when DO value goes above 10.00 PPM & Relay will get OFF when DO value goes below 7.00 PPM

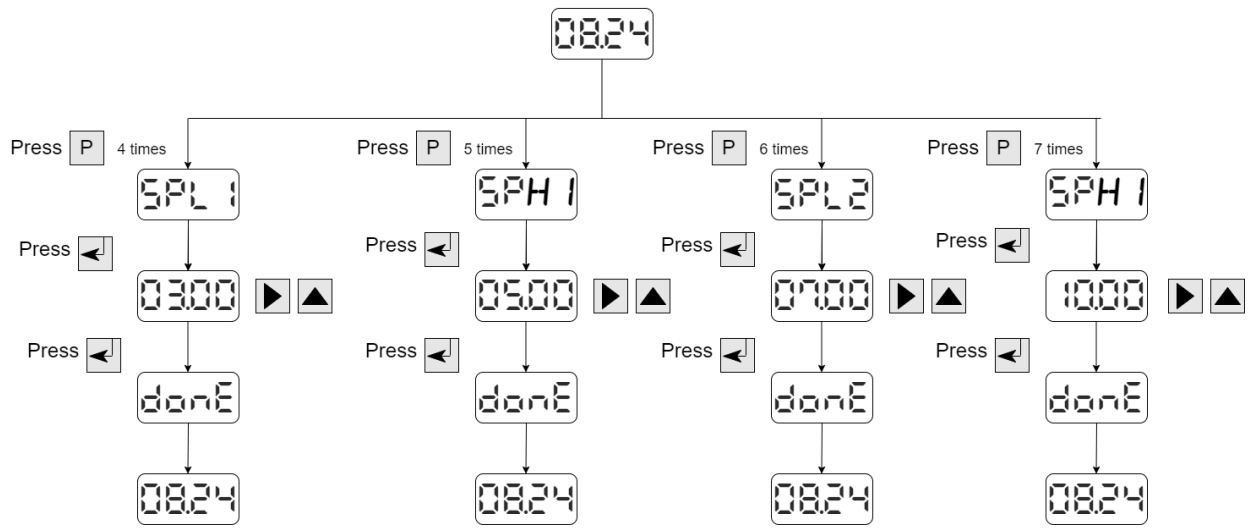
- **Denotations :**

| | | |
|------|---|------------------------|
| SPL1 | = | SetPoint Low for RL-1 |
| SPH1 | = | SetPoint High for RL-1 |
| SPL2 | = | SetPoint Low for RL-2 |
| SPH2 | = | SetPoint High for RL-2 |

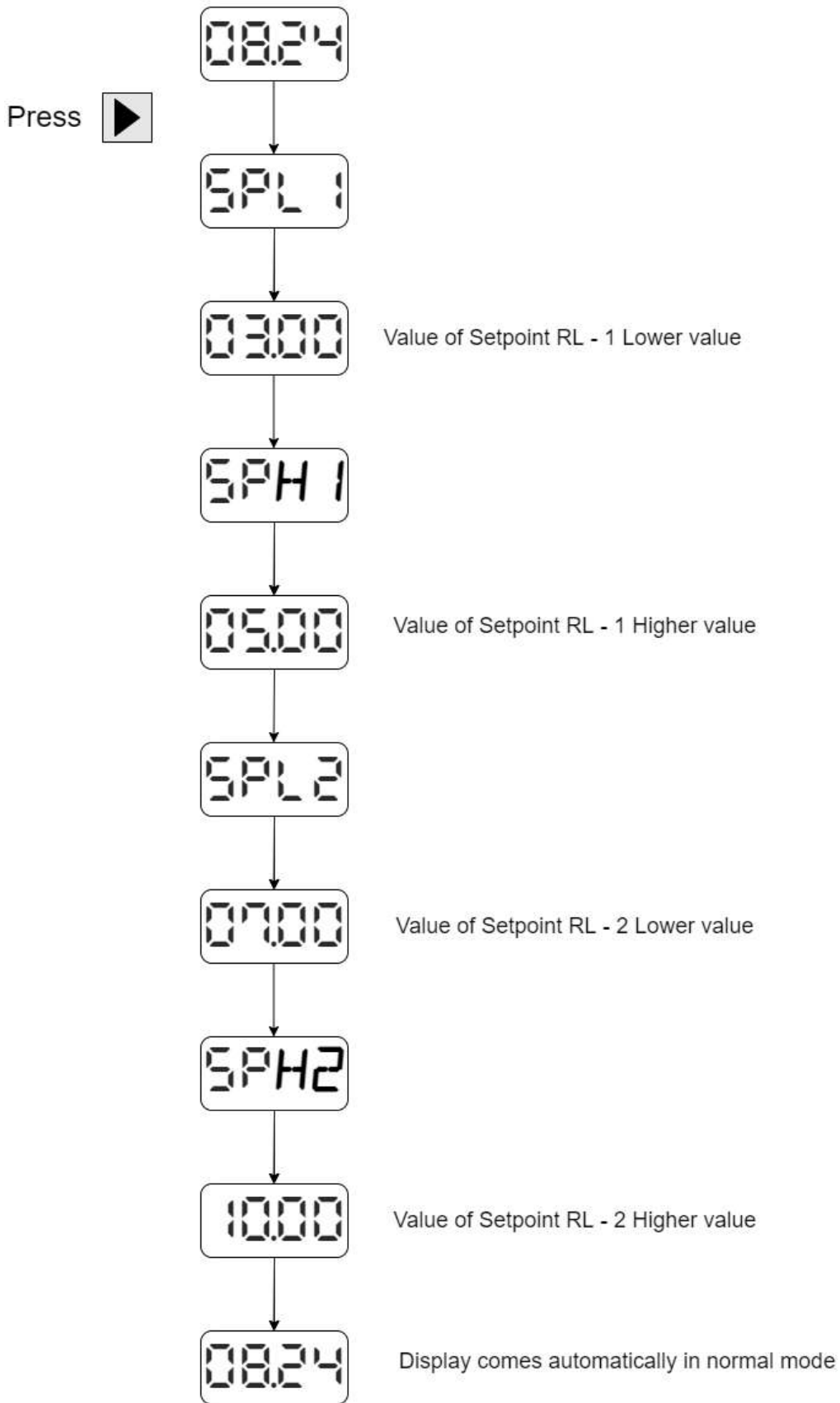
For Setting of Set points :-



Similarly for setting of set points please refer below flow chart :



For Setpoint Display :





9. SAFETY WARNING

1. Read Manual carefully and understand instructions & directions provided in this manual.
2. Installation, connections, commissioning and service shall be carried out by only qualified and authorized person.
3. To protect instrument from any external hazards, customer should take necessary care while preparing site ready before installation.
4. Ensure proper supply voltage (230 VAC) with proper polarity to the instruments, before Powering ON instrument.

TROUBLE SHOOTING PROCEDURE

| SYMPTOMS | CAUSE OF FAILURE | ACTION TO BE TAKEN |
|-----------------------|---|---|
| No display indication | 1. Absence of 230 V AC at terminals. 2. Loose connection on terminals. | 1. Check 230 V AC power supply & rectify the fault. 2. Tight the terminal connections. |

10. TEST / CALIBRATION CERTIFICATE

Calibration Date: ___ / ___ / 20__ .

ITEM DETAILS

Name : Dissolved Oxygen Indicating Controller Transmitter

Make : MicroSet

Model : MS DO 27

Serial No. : _____

Input : _____

READING :

| Standard Used | Observed Reading Before Calibration of DO | Observed Reading After Calibration of DO | Observed Reading After Calibration of DO in mA |
|---------------|---|--|--|
| | | | |
| | | | |

RELAY TESTING _____

Calibrated By,

11. WARRANTY CERTIFICATE

MicroSet warrants each instrument to be free from defects in material & workmanship. This obligation to servicing or part returned to the company for that purpose & making good any parts thereof which shall be within warranty period, returned to the company under a written intimation & which to the company's satisfaction to be found defective. The company reserves the right to decide the workplace for the repair work. The freight for defective material will have to be borne by the buyer, & the transit risk for such material will rest with the buyer.

The warranty is applicable only if the instrument is used within its specification.

THIS WARRANTY IS VALID UP TO 12 months from date of Tax Invoice (Sensors Carry No Warranty since Consumables)

ITEM DETAILS

Name : Dissolved Oxygen Indicating Controller Transmitter
Make : MicroSet
Model : MS DO 27
Serial No. : _____ .

For **MicroSet Instrumentation & Controls**

Authorized Signatory

Seal