



MANUAL

MS pH 9 BT

pH Blind TRANSMITTER

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1. INTRODUCTION

Item Supplied :

1. pH Blind Transmitter MS pH 9 BT
2. Manual
3. Calibration Certificate (Page No. 13 of manual)
4. Test / Warrantee Certificate (Page No.15 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 is mentioned on the inside of enclosure of the 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 pH Blind Transmitter was carefully calibrated at the factory before shipment. When pH Blind 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 back 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.

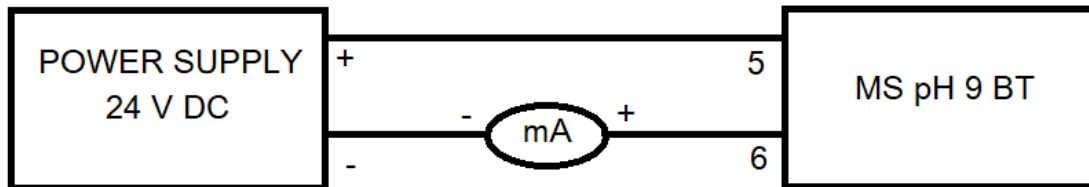
Storage temperature: 0 to 55°C.

3. TECHNICAL SPECIFICATIONS

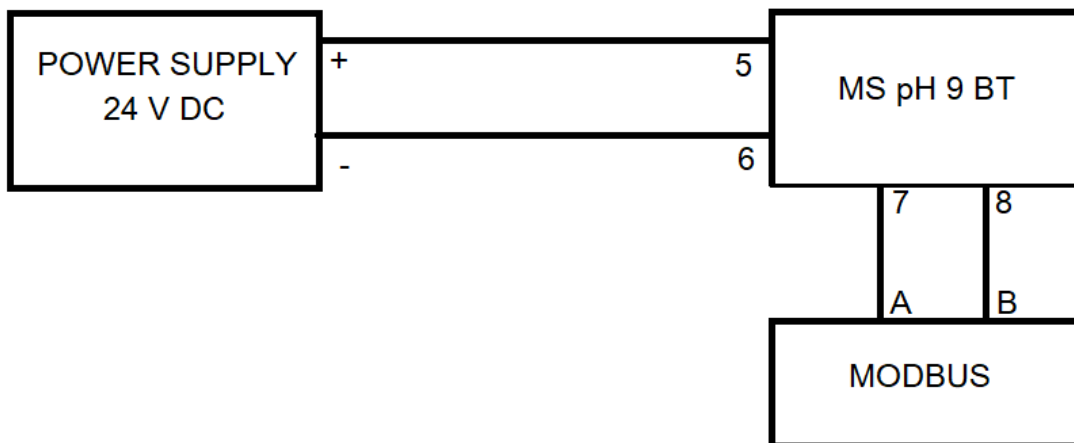
Instrument Name	pH Blind Transmitter
Make	MicroSet
Model No	MS pH 9 BT
Types of Input	1. pH Sensor through Terminals 1 & 2 2. RTD PT 100 Temp. Sensor through Terminals 3 & 4
Supply	24 VDC
Output	4-20 mA DC, MODBUS RS485 (Optional)
Temperature Compensation	Manual / Auto through PT 100 Range 0-100 °C
Accuracy	± 0.01 pH
Calibration	2 and 3 Point Calibration
Sensitivity	± 0.01 pH
Response Time	< 1 Sec
Mounting	Panel
Dimensions	100 x 100 x 60 mm

4. CONNECTION DIAGRAM

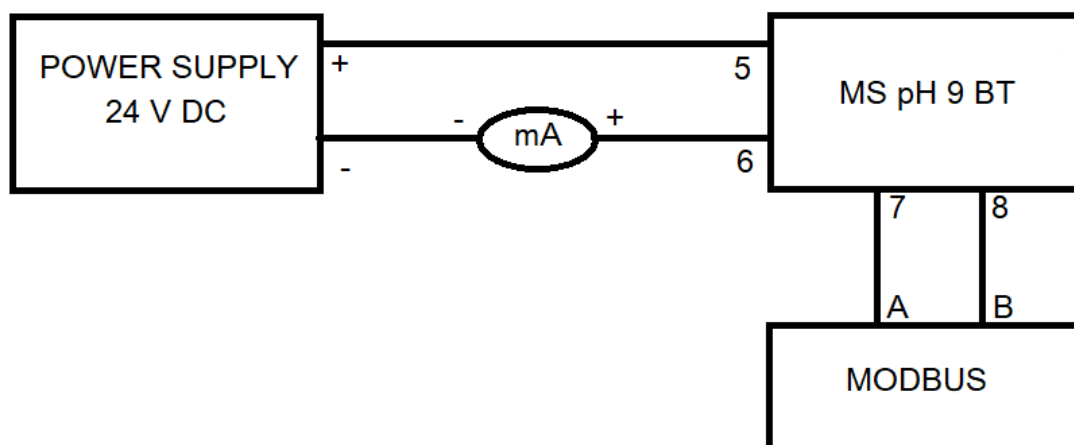
- 2 Wire Loop Connection :



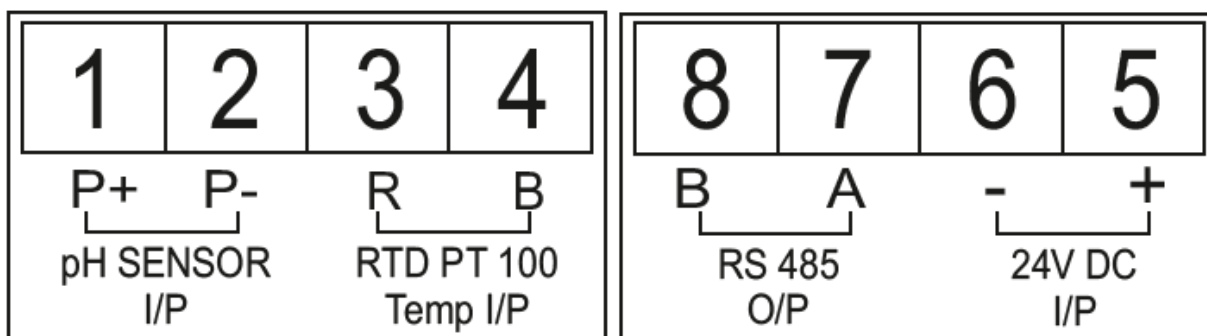
- RS485 Connection :



- 2 Wire Loop with RS485 Connection :



4. TERMINAL CONNECTONS



1. Connect Power Supply 24 V DC to Instrument at Terminals 5, 6 (+, -) or In LOOP for two wire as per connection details.
2. Connect pH Sensor to Instrument at Terminals 1, 2 (P+, P-).
3. Connect RTD PT 100 Temperature Sensor (if required) to Terminals 3 & 4.
(Please connect RTD PT100 Temperature Sensor **AFTER** Calibration Procedure.)
4. Connect RS485 RTU retransmission output at Terminal 7,8(A,B).

5. KEY DETAILS

Calibration Key

CAL

- This key is used for Enter into Calibration Mode

Calibration of 7.00

7

- This key is used to Complete the Calibration of pH 7.00

Calibration of 4.00

4

- This key is used to Complete the Calibration of pH 4.00

Calibration of 9.20

9.2

- This key is used to Complete the Calibration of pH 9.20.

6. 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)
Remove Protective cum storage cap of pH Sensor containing Storage Solution.

For 2 Point Calibration :

For Calibration of 7 pH

Clean the pH sensor with tap water. Dry with tissue paper.
Insert the pH Sensor in 7 pH Buffer Solution. Please wait for reading to stabilize.

Press 

For Entering into Calibration mode

NOTE : If CAL LED Blinking indicates Calibration Mode.

Press 

If NORM LED Blinks 3 Times, This message indicates Calibration of 7 pH is done.
If ERR LED Blinks 3 Times, This message Indicates Calibration Error. check 7 pH Buffer Solution and pH Sensor connection.

It comes automatically in normal mode and NORM LED ON

For Calibration of 4 pH

Clean the pH sensor with tap water. Dry with tissue paper.
Insert the pH Sensor in 4 pH Buffer Solution. Please wait for reading to stabilize.

Press 

For Entering into Calibration mode

NOTE : If CAL LED Blinking indicates Calibration Mode.

Press 

If NORM LED Blinks 3 Times, This message indicates Calibration of 4 pH is done.
If ERR LED Blinks 3 Times, This message Indicates Calibration Error. check 4 pH Buffer Solution and pH Sensor connection.


It comes automatically in normal mode and NORM LED ON

For 3 Point Calibration (If required) :

Follow Above Mentioned Procedure for Calibration of 7 pH and 4 pH. Then for 3rd Point Calibration as follows :

For Calibration of 9.2 pH

Clean the pH sensor with tap water. Dry with tissue paper.
Insert the pH Sensor in 9.2 pH Buffer Solution. Please wait for reading to stabilize.

Press 

For Entering into Calibration mode

NOTE : If CAL LED Blinking indicates Calibration Mode.

Press 

If NORM LED Blinks 3 Times, This message indicates Calibration of 9.2 pH is done.
If ERR LED Blinks 3 Times, This message Indicates Calibration Error. check 9.2 pH Buffer Solution and pH Sensor connection.

It comes automatically in normal mode and NORM LED ON

7. TEMPERATURE COMPENSATION

When RTD PT 100 Temperature Sensor **is Connected**, pH Blind Transmitter MS pH 9 BT automatically goes in **Automatic Temperature Compensation Mode**.

When RTD PT 100 Temperature Sensor **is Not Connected**, pH Blind Transmitter MS pH 9 BT is in **Manual Temperature Compensation Mode with 25 °C**.

8. MODBUS RS485 (Optional)

This pH Blind Transmitter MS pH 9 BT MODBUS communication is based on RS485 RTU. MODBUS communication output Transmits with following Specification,

Baud Rate	9600
Slave ID	1
Start Bit	1
Data Bit	8
Parity	NONE
Stop Bit	1



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 (24 VDC) 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 24 V DC at terminal block. 2. Loose connection on terminals.	1.Check 24 V DC power supply & rectify the fault. 2.Tight the terminal connections.

10. TEST / CALIBRATION CERTIFICATE

Calibration Date: __ __ / __ __ / 20 __ __

ITEM DETAILS

Name : pH Blind Transmitter

Make : MicroSet

Model : MS pH 9 BT

Serial No. : __ __ __ __ __

Input : ☐ pH Simulator

☐ pH Sensor Model : MS pH __ __ SN : __ __ __ __

READING

Standard Buffer Solution pH	Observed Reading Before Calibration pH	Observed Reading After Calibration pH	Observed Reading After Calibration mA
7.00			
4.00			

Calibrated By,

Seal

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	:	pH Blind Transmitter
Make	:	MicroSet
Model	:	MS pH 9 BT
Serial No.	:	— — — — —

For **MicroSet Instrumentation & Controls**

Seal

Authorized Signatory