

M/S. MANIK ENGINEERS, PUNE.

INSTRUCTION MANUAL

8/16 CHANNEL DATALOGGER

Series 951- S

M/S. Manik Engineers, Pune.

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1. WHEN YOU RECEIVE THIS INSTRUMENT...

Thank you for purchasing the SUNSUI 951-S Temperature Scanner. Please read the instruction manual carefully and use instrument correctly.

MANIK ENGINEERS, PUNE. assumes no liability to any party for any loss or damage, direct or indirect, caused by the use or any unpredictable defect of the product.

Cleaning of the front panel should be limited to wiping lightly with a dry cloth.

CHECKING ACCESSORY ITEMS

Check that all of the following items are present.

- SERIES 951-S unit
- A pair of mounting bracket

2. INSTALLATION

2.1 Installation Location

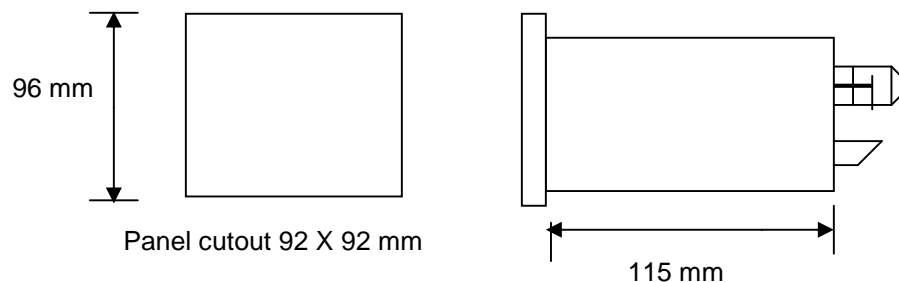
Install the instrument in a location that meets the following criteria.

- (1) Little or no mechanical vibration.
- (2) No corrosive gases.
- (3) Minimal temperature fluctuations and near normal temperature.
- (4) Not directly subject to radiant heat.
- (5) Not subject to strong electromagnetic field.
- (6) No direct exposure to water.

2.2 Installation procedure For 951-S unit

- (1) Loosen the clamp by rotating the clamping bolt in anti-clockwise.
- (2) Insert the rear of the instrument through the front of the prepared hole.
- (3) Hook the clamp on both sides in the slot. With the front flange of the instrument held tightly against the front of the panel, position the clamp.
- (4) Tighten the screws of both clamps equally. **DO NOT OVERTIGHTEN THESE SCREWS**, it will cause the clamp to slip.
- (5) Wire up the terminals as per wiring diagram

2.3 Mounting Dimensions



SERIES 951-S UNIT

3. WIRING

3.1 Wiring precautions

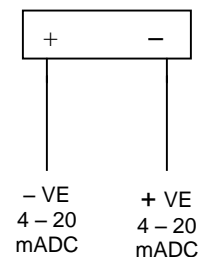
While wiring take the following precautions.

- (1) Field wiring to the instrument should be placed so as to avoid blocking the airflow, yet provide a suitable service loop to allow easy removal of unit with wiring attached.
- (2) Wires should be tied to maintain their order in the event they must be disconnected for any reason.
- (3) For connecting the wiring to the terminals, we recommend use of crimp terminal lugs with insulated sleeves.
- (4) Route the input circuit wiring away as possible from the power and ground circuits to avoid noise pickup.
- (5) Use proper-shielded wire to avoid electromagnetic interference.
- (6) Use of Auxiliary relay is recommended if load exceeds the output relay contact rating (230vac, 5A resistive load).
- (7) For using an inductive load such as Auxiliary relay on output relay contact, use a diode (for DC) or an RC filter (for AC) in parallel as a surge suppressor circuit.

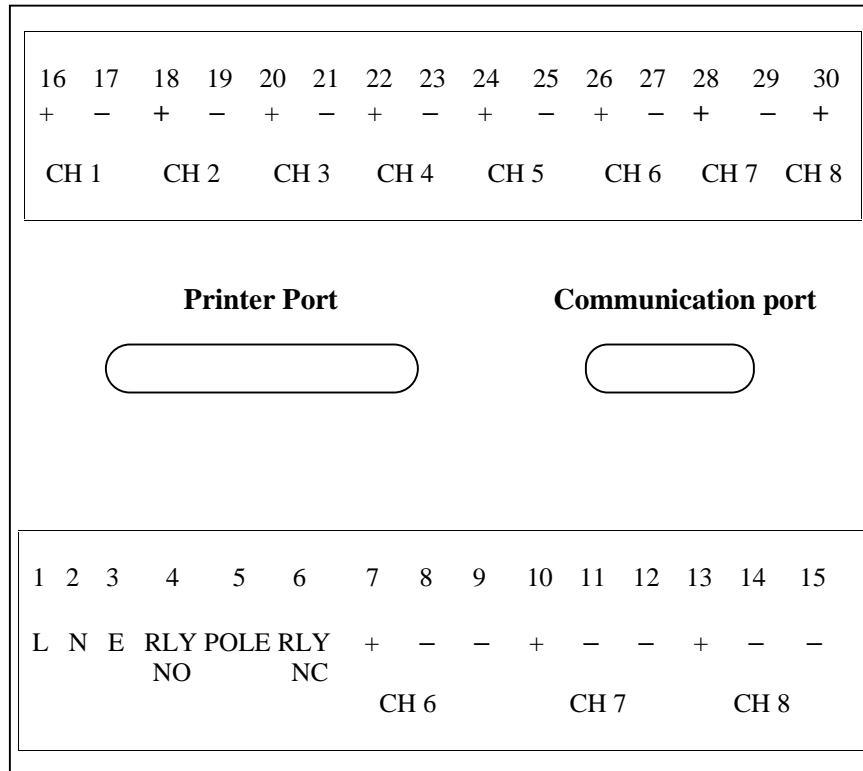
3.2 Wiring diagram

FOR SERIES 951-S

Terminal No.	Description	Terminal No.	Description
1	230 VAC + NEUTRAL – GROUND	1	+ VE
2		2	– VE
3		3	+ VE
4		4	– VE
5		5	+ VE
6		6	– VE
7		7	+ VE
8		8	– VE
9		9	+ VE
10		10	– VE
11		11	+ VE
12		12	– VE
13		13	+ VE
14		14	– VE
15		15	+ VE



MAIN UNIT BACK CONNCTOR



4. FRONT PANEL FEATURES

KEY	FUNCTION
SET	Used to call individual operating parameters in sequence.
UP	Used to increase the displayed value either set point or any operating parameter.
DN	Used to decrease the displayed value either set point or any operating parameter although when one of these UP & DN keys is pressed the numeric value increments or decrements in units of one, holding the key continuously causes the rate of change to increase.
ENT	Enters numeric values & changes.

DISPLAY	FUNCTION
PV	Display the measured value. Also display the parameter set symbol while programming.
CH NO	Display the channel no of which the measured value is being displayed. Display the parameter value while programming.
HI	Lights when HI Alarm relay is ON.
LO	Lights when LOW Alarm relay is ON.
MN	Lights when MANUAL mode is selected.

5. OPERATING PARAMETER SETTING

The controller unit has two major display modes, Normal display mode & Operating parameter display mode. In normal display mode the measured value is displayed. In parameter setting mode, the setting mode can be achieved by pressing SET key. In this mode the display shows the setting parameter symbol on the left & setting parameter numeric value on right side of display.

5.1 Setting Scan time

Menu used to set the scan time, duration between displays of two successive channel data. Range 5 to 60 sec maximum. From the operating parameter setting mode, press SET key several times to display "SCAN". Press ENT key. The top display (PV) shows the presetted value. The bottom display shows the parameter "St". Use the \wedge & \vee keys to set the desired digit value (Scan time). Range : 5 to 60 sec. Press the ENT key. This completes the setting.

5.3 Selecting AUTO mode

In AUTO mode the input signals are scanned for set scan time and its value is displayed with its channel no on display. To select AUTO mode, press SET key several times to display "AUTO". Press ENT key. After selecting AUTO mode, Lamp M gets OFF (if it is on). The unit always works in AUTO mode when power is switched ON.

5.4 Selecting Manual Mode

In MANUAL mode the each input channel value can be observed one by one by key press. The Top display (PV) shows the input signal value with the bottom display showing channel no. To select MANUAL mode, press SET key several times to display "MAN". Press ENT key. The Top (PV) display shows the display input signal value. The bottom display shows the channel no of which the value is being displayed on PV. Press UP or DN key to advance the channel no. Thus each channel data can be observed one by one. Select the AUTO mode from main menu to terminate this mode. After selecting MANUAL mode, Lamp M gets ON. The unit always works in AUTO mode when power is switched ON.

5.5 Selecting skip Mode

Each channel can be made ON or OFF independently. Press SET key several times to display "SKIP". Press ENT key. The top display shows the status of the first channel and bottom display will show channel no. It can be made ON or OFF With UP & DN keys. Press ENT key. The top display shows the status of the second channel and bottom display will show channel no. It can be made ON or OFF With UP & DN keys. Press ENT key. Similarly the remaining channels can be made ON or OFF. To terminate this mode in between, press SET key.

5.6 Setting the calibration

Each channel can be calibrated individually by this mode. From the operating parameter setting mode, press SET key several times to come "CAL" on the display. Press ENT key. The Lower display will show the "CH" and the upper display will show the channel no. Set the desired channel no by UP & DN (\wedge & \vee)keys and press ENT key. Now set the value for that particular channel whose error you want to eliminate. By default keep the value 0.0 for all channels

5.7 Setting Loc code

This feature is provided for prevention of programmed data against any unauthorized changes. The selection of menu is not possible till you enter correct password. From the operating parameter setting mode, press "SET" key several times to display "LOC". Press ENT key. The Top display shows the password value while the bottom display shows the "L". Use the \wedge & \vee keys to set the desired digit value (password). Press the ENT key.

5.8 Setting alarm value

This feature allows user to set the high and low limits for the process value for each and every individual channel. Press, "SET" key several times to display "SETH". Press ENT key. The Lower display will show the channel No. and the upper display will show the value already which is already set. Set the desired value of high limit by UP & DN (\wedge & \vee) keys and press ENT key.

Same procedure should be followed for the Set low limit for lower limit menu is "SETL"

The common really is given for all channels at the back panel really terminal are available.

5.9 Setting input.

Two types of inputs can be connected to the logger. One is 3 wire PT-100 and another is 4-20 mADC. Press, "SET" key several times to display "STYP". Press ENT key. The Lower display will show the channel No. and the upper display will show the input selected. The input can be set to desired value by UP & DN keys. Press ENT key. Set the value 0 on upper display to set the 4-20 mADC input and set value as 1 for selecting PT-100 input. For each channel input can be selected.

5.10 Setting range.

For 4 to 20 mADC one can set the range as per the requirement. The maximum possible range is 400.0. User can set the different range for each channel as requirement. But the range selection can be done for 4-20 mADC input only. PT – 100 Input has fixed range -100 to $+350^{\circ}\text{C}$. Press, "SET" key several times to display "SENG". Press ENT key. The Lower display will show the channel No. and the upper display will show the range selected. Range can be set to desired value by UP & DN keys (\wedge & \vee).& Press ENT key.

6. CALIBRATION

For calibrating the 951S instrument, first insure that you are having a properly calibrated CALIBRATOR.

Adjust 20 MADC at the input of the 951-S unit and adjust 100 with the help of the potentiometer R which is located on the left side of the 951-S.

7. MAINTENANCE

Basic troubleshooting procedure

The following questions should be asked & appropriate action is to be taken to the negative answers. All major corrective action can be accomplished by replacing the basic unit. No special tools are required except screwdriver & multimeter.

- 1) When you switching ON the unit check whether the display is showing anything? If yes then go for step 2 & if not check for the power input connections, check whether the unit is getting proper supply at proper terminals. Connecting the supply to the wrong terminals may dam-age the unit permanently.
- 2) Check, is the display showing actual value properly. If yes follow step 3,if not check the sensor input, check whether the sensor or input is connected at proper terminals in proper way (+ve & -ve polarity). If sensor is open or not connected then "SOPEN" will appear on display.
- 3) After connecting the sensor if the actual value shown is not proper then check the calibration is correct according to the calibration constant table.

In case if fault developed other than the above mentioned contact **MANIK ENGINEERS,PUNE**.