# SELEC

**PIC152A**
Operating Instructions

## SPECIFICATIONS

### DISPLAY
4-digit (7 segment LED) 0.5" height Display Messages:
"Sbr" - a) Appears when measurement exceeds display scaling range(9999) for signal inputs
b) When open sensor is detected. (Applicable for TC/RTD/-5 to 56mV)
"Sre" a) Appears when measurement is below display scaling range (-1999) for signal inputs.
B) Sensor reverse condition occurs. (Applicable for TC/RTD/mV)
Display alternating between PV and ALrM with LED of respective alarm flashing.
(Programmable annunciator option)
LED Status Annunciators - Alarm ON (2 nos)

### POWER
85 to 270V AC (AC : 50 or 60Hz), 4VA Max
24V DC, 4VA

### SETTINGS
Via three keys on front panel.

### MEMORY
Nonvolatile EEPROM retains all programmable parameters and values.

### MAIN SENSOR INPUT (Universal)
**Thermocouple inputs**
J : -200 to 750°C
K : -200 to 1350°C
T : -200 to 400°C
R : 0 to 1750°C
S : 0 to 1750°C
**RTD input (2 wire or 3 wire)**
PT100 : -100 to 850°C
**Signal inputs**
mV (linear) : - 5 to 56mV
Voltage : 0 - 10V DC
Current : 0 - 20mA DC

### INDICATION ACCURACY
TC Input : 0.25% of Span ±1°C (20min.Warmup)
R&S Input : 0.5% of Span ±2°C (20min.Warmup)
RTD Input : 0.1% of Span ±1°C
Signal input : 0.5% of FS

### ALARM OUTPUTS
2 nos : Relay output : 5A @ 250V AC or 24V DC
Alarm modes - Alarm High, Alarm Low, Band, Fault
Hysteresis - Programmable.
Annunciator - Programmable.
Reset Action - Programmable : automatic or latched.
Standby(Hold) - Programmable : enable or disable.

### SENSOR SUPPLY
24V DC supply to power the sensor (30mA)

### LINEAR DC OUTPUT
Re-transmission : 0 to 20mA / 4 to 20 mA or 0 to 10V / 0 to 5V (Programmable)
Update rate : 100msec.
Accuracy: 0.25% of FS

### ENVIRONMENTAL CONDITIONS
Operating Range : 0°C to 50°C
Storage Range : -20°C to 75°C
Humidity : 85% max.

### ISOLATION BREAKDOWN RATINGS
AC line with respect to all inputs and outputs : 2000 Volts. All other inputs and outputs with respect to relay contacts : 2000V AC

### CONNECTION
Wire clamping screw terminals

### WEIGHT
220 grams

## ⚠ SAFETY PRECAUTIONS

All safety related codifications ; symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not handled in a manner specified by the manufacturer it might impair the protection provided by the equipment.

⚠ **CAUTION :** Read complete instructions prior to installation and operation of the unit.

⚠ **CAUTION :** Risk of electric shock.

## WIRING GUIDELINES

⚠ **CAUTION :**
1. To prevent the risk of electric shock power supply to the equipment must be kept OFF while doing the wiring arrangement.
2. Wiring shall be done strictly according to the terminal layout with shortest connections. Confirm that all connections are correct.
3. Use lugged terminals to meet M3 screws.
4. To eliminate electromagnetic interference use of short wire with adequate ratings and twists of the same in equal size shall be made.
5. Cable used for connection to power source, must have a cross section of 1mm² or greater. These wires shall have insulation capacity made of at least 1.5KV.

### MAINTENANCE
1. The equipment should be cleaned regularly to avoid blockage of ventilating parts.
2. Clean the equipment with a clean soft cloth. Do not use Isopropyl alcohol or any other cleaning agent.

## INSTALLATION GUIDELINES

⚠ **CAUTION :**
1. This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
2. Conductors must not come in contact with the internal circuitry of the equipment or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between power source and supply terminals to facilitate power 'ON' or 'OFF' function. However this switch or breaker must be installed in a convenient position normally accessible to the operator.
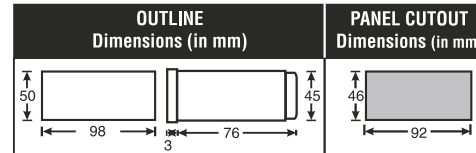
⚠ **CAUTION :**
1. The equipment shall not be installed in environmental conditions other than those mentioned in this manual.
2. Fuse Protection : The equipment does not have a built in-type fuse. Installation of external fuse of rating 275V AC/1Amp for electrical circuitry is highly recommended.

3. Thermal dissipation of equipment is met through ventilation holes provided on chassis of equipment. Such ventilation holes shall not be obstructed else it can lead to a safety hazard.
4. The output terminals shall be strictly loaded to the manufacturer specified values/range.

## ⬛ MECHANICAL INSTALLATION

For installing the controller
1. Prepare the panel cutout with proper dimensions as shown

| OUTLINE Dimensions (in mm) | PANEL CUTOUT Dimensions (in mm) |
|---|---|
| 50 / 98 / 76 / 3 | 45 / 46 / 92 |

2. Remove clamp from the controller and push the controller into the panel cutout. Secure the controller in its place by pushing the clamp on rear side.
3. For proper sealing, tighten the screws evenly with required torque.

⚠ **CAUTION:**
The equipment in its installed state must not come in close proximity to any heating sources, caustic vapors, oils, steam, or other unwanted process by-products.
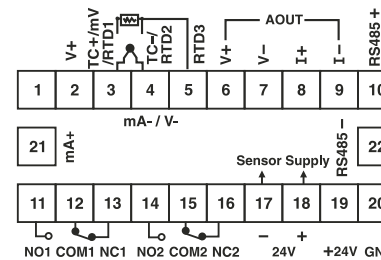
**EMC Guidelines:**
1. Use proper input power cables with shortest connections and twisted type.
2. Layout of connecting cables shall be away from any Internal EMI source.

## ⬛ TERMINAL CONNECTIONS

**1) 230V SUPPLY**
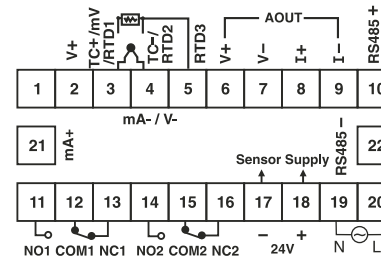


**2) 24V SUPPLY**



| TERMINAL | SYMBOL | DESCRIPTION |
|---|---|---|
| 2 | V+ | Signal I/P 0 to 10 V |
| 3 | TC+/RTD1/mV | Thermocouple I/P + |
| 4 | TC- /mA-/V-/RTD 2 | Thermocouple I/P - |
| 5 | RTD 3 | Terminal for 3wire RTD |
| 6 | V+(Aout) | Analog VTG O/P (+) |
| 7 | V-(Aout) | Analog VTG O/P (-) |
| 8 | I+(Aout) | Analog CURR O/P (+) |
| 9 | I-(Aout) | Analog CURR O/P (-) |
| 10 | RS485+ | RS485 Communication (+) |
| 11 | NO1 | NO of Relay 1 |
| 12 | COM1 | COM of Relay 1 |
| 13 | NC1 | NC of Relay 1 |
| 14 | NO2 | NO of Relay 2 |
| 15 | COM2 | COM of Relay 2 |
| 16 | NC2 | NC of Relay 2 |
| 17 | Sensor Supply (-) | -Ve of Sensor Supply |
| 18 | Sensor Supply (+) | +Ve of Sensor Supply |
| 19 | N | Neutral |
| 20 | L | Live |
| 21 | mA + | Signal input 0-20mA |
| 22 | RS485- | RS485 Communication (-) |

## ⬛ FRONT PANEL DESCRIPTION
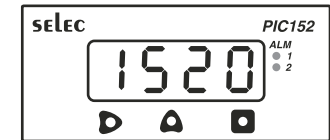


| Functions | Key press |
|---|---|
| To enter or exit program mode | ▷ Press for 3 seconds |
| To change levels. | △ Press Once |
| To increase or decrease the value of a particular function. | |
| To view next function. | ⬛ key once |

**NOTE :** The unit will autoexit program mode after 60 seconds of inactivity.

## PROGRAMMING OF LEVELS

### PROGRAMMING OF LEVEL 0

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| Press ▷ For 3 Sec | LUL.0 | |

**Press ⬛ key to select input sensor type**

Default setting : J

| | Display | | |
|---|---|---|---|
| | INP | for 1sec | **Input sensor selection** |
| | J | | J ( -200 to 750°C ) |
| Press △ | K | | K (-200 to 1350°C) |
| Press △ | t | | T (-200 to 400°C) |
| Press △ | R | | R (0 to 1750°C) |
| Press △ | S | | S (0 to 1750°C) |
| Press △ | P100 | | PT100 ( -100 to 850°C) |
| Press △ | mU | | mV (linear) -5 to 56mV |
| Press △ | UOLt | | 10V DC |
| Press △ | CURR | | 20mA DC |

# FUNCTIONS MENU

To change levels press △

**INPUT PARAMETERS** ( to scroll through functions press ● )

| | Input type | Temp. Unit | Resolution | Filter time constant | PV Bias | Display scaling (low) | Input scaling (low) | Display scaling (high) | Input scaling (high) | Reverse scaling | S.P. High limit | S.P. Low limit | Lock code | Reset |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LUL.0 | INP | UNIt | rESL | FtC | bIAS | d.SC.L | I.SC.L | d.SC.H | I.SC.H | rSCl | SPHL | SPLL | LOCK | rSt |

**ALARM MODULE ( ALARM 1 )** ( to scroll through functions ● )

| | Alarm high limit | Alarm low limit | Alarm hysteresis | Delay | Alarm mode | Latch | Hold | Alarm status | Alarm annunciator |
|---|---|---|---|---|---|---|---|---|---|
| LUL.1 | HA | LA | HYSt | dLY | ñodE | LtCH | HoLd | rLY | Ann |

**ALARM MODULE ( ALARM 2 )** ( to scroll through functions ● )

| | Alarm high limit | Alarm low limit | Alarm hysteresis | Delay | Alarm mode | Latch | Hold | Alarm status | Alarm annunciator |
|---|---|---|---|---|---|---|---|---|---|
| LUL.2 | HA | LA | HYSt | dLY | ñodE | LtCH | HoLd | rLY | Ann |

**ANALOG O/P MODULE** ( to scroll through functions ● )

| | Analog output type | Manual | Lower limit | Upper limit | Sensor error level | Analog output % |
|---|---|---|---|---|---|---|
| LUL.3 | tYPE | ñAnL | A-LO | A-HI | S.Err | PtAG |

***COMMUNICATION MODULE** ( to scroll through functions ● )

| | Address | Baud Rate | Parity |
|---|---|---|---|
| LUL.4 | Add | bAud | PArI |

**LOCK LEVEL** ( to scroll through functions ● )

| | ID | Lock Level 0 | Lock Level 1 | Lock Level 2 | Lock Level 3 |
|---|---|---|---|---|---|
| LUL.5 | Id | LЬ-0 | LЬ-1 | LЬ-2 | LЬ-3 |

☞ Appearance of all shaded menus dependent on selection of other parameters.
Refer programming for further details.
*-Applicable only for Communication models.

---

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|

**Press ● key to select Temperature unit**
Default setting : °C
NOTE : This parameter is not prompted if analog input is selected.

**Temperature Unit**
Display | UNIt | for 1 sec.
| °C | Value displayed in °C
Press △ | °F | Value displayed in °F

**Press ● key to select Resolution**
Default value : 1
NOTE : This parameter is not prompted if input is R, S type thermocouple.

**Resolution**
Display | rESL | for 1 sec.
| 1 | Range : 1 / 0.1 for TC / RTD
Press △ | 0.1 | 1 / 0.1 / 0.01 / 0.001 for AIN

**Press ● key to select Filter time constant**
Default value : 1sec.

**Filter time constant ***
Display | FtC | for 1 sec.
Press △ | 1 | Range : 1 to 99 sec.
to change value

---

**Press ● key to select PV bias**
Default value : 0.0

Display | bIAS | for 1 sec.  **PV bias ***
Press △ | 0.0 | Range :
to change value | 1)-20.0 to 20.0 ( For TC/RTD)
| 2)-20.0 to 20.0 ( For V/I/mV)
| Independent of Decimal Point

**Press ● key to select Display value scaling point1**
Default value : 0
NOTE : This parameter is not prompted if TC/RTD input types are selected

**Display value scaling point low (DSCL) ***
Display | d.SC.L | for 1sec
Press △ | 0 | Range : -1999 to DSCH
to change value | For AIN display as per decimal point selected.

---

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|

**Press ● key to select input value scaling point 1**
Default value : 0.00
NOTE : This parameter is not prompted if TC/RTD input types are selected

**Input value scaling point low (ISCL) ***
Display | I.SC.L | for 1sec.
Press △ | 0.00 | Range : 0.0mA / -5mV / 0.0 V to ISCH
to change value | (default value changes as per analog input selected)

**Press ● key to select Display value scaling point 2**
Default value : 9999
NOTE : This parameter is not prompted if TC/RTD input types are selected

**Display value scaling point high (DSCH) ***
Display | d.SC.H | for 1sec.
Press △ | 9999 | Range : DSCL to 9999
to change value | For AIN display as per decimal point selected.

Note : * mark explained in the user guide.
AIN - Analog Input

---

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|

**Press ● key to select Input value scaling point 2**
Default value : 20.0mA
NOTE : This parameter is not prompted if TC/RTD input types are selected

**Input value scaling point high (ISCH) ***
Display | I.SC.H | for 1 sec.
Press △ | 20.00 | Range : ISCL to 20.00mA / 56mV / 10.00V
to change value | (default value changes as per analog input selected)

**Press ● key to select Reverse scaling**
Default setting : no
NOTE : This parameter is not prompted if TC/RTD input types are selected

**Reverse scaling***
Display | r.SC.L | for 1 sec.
| no | The display scaling point settings can be reversed by selecting Reverse
Press △ | YES | scaling as YES

**Press ● key to select Set point high limit**
Default value : 750°C

**Set point high limit (SPHL)**
Display | SPHL | for 1sec
Press △ | 750 | Range : SPLL to max. range of sensor
to change value | (for TC/RTD) SPLL to DPSH
| (for AIN) for AIN display as per decimal point selected.

---

**Press ● key to select Set point low limit**
Default value : -200°C

**Set point low limit (SPLL)**
Display | SPLL | for 1sec
Press △ | -200 | Range : min. range of sensor to SPHL
to change value | (for TC/RTD) DSCL to SPHL
| (for AIN) for AIN display as per decimal point selected.

**Press ● key to select Lock code**
Default setting : 0

**Lock code**
Display | LOCK | for 1sec
Press △ | 0 | Range : 0 to 9999
to change value
**Note:** This code is need in Level 5

**Press ● key to select Reset**
Default setting : no

**Reset**
Display | rSt | for 1sec
| no | All parameters set to factory setting
Press △ | YES |

NOTE : After altering the value of the input parameters press ● for change to actually take effect.

NOTE : **Programming steps for Level1** (Alarm1 module) **& Level2** (Alarm2 module) **is same.** Programming of level1 is shown.

## PROGRAMMING OF LEVEL 1

**Press + △ till Level 1 is displayed**

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| | LUL 1 | Parameters in this level can be set. |

**Press ● key to select Alarm high limit**
Default value : 750°C
NOTE : This parameter is not prompted if alarm mode is
OFF / FdA / FOA / LA

**Alarm high limit**
Display | HA | for 1sec
Press △ | 750 | Range : LA to SPHL
to change value | (BAND mode)
| SPLL to SPHL
| (HA mode)
| for AIN display as per decimal point selected.

**Press ● key to select Alarm low limit**
Default value : -200°C
NOTE : This parameter is not prompted if alarm mode is
OFF / FdA / FOA / LA

**Alarm low limit**
Display | LA | for 1sec
Press △ | -200 | Range : SPLL to HA
to change value | (BAND mode)
| SPLL to SPHL
| (LA mode)
| for AIN display as per decimal point selected.

## Column 1

**Press ▣ key to select Alarm hysteresis.**

Default value: 1.0

NOTE : This parameter is not prompted if alarm mode is `OFF` / `FdR` / `FOR`

| | | |
|---|---|---|
| Display | `HYSt` | for 1sec |
| Press △ to change value | `1.0` | Range: 0.1 to 99.9 °C (for TC/RTD) 1 to 999 (for analog input) for AIN display as per decimal point selected. |

**Press ▣ key to select Delay.**

Default setting : `0.0`

| | | |
|---|---|---|
| Display | `dLY` | for 1sec |
| Press △ to change value | `0.0` | Range :0.0 to 99.59 min:sec |

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|

**Press ▣ key to select Alarm mode.**

Default setting : `HR`

In **level 2** default setting is `LR`

**Alarm mode ***

| | | |
|---|---|---|
| Display | `mOdE` | for 1sec |
| | `OFF` | Alarm off |
| Press △ | `HR` | High Alarm |
| Press △ | `LR` | Low Alarm |
| Press △ | `bRnd` | Band Alarm |
| Press △ | `FOR` | Fail Output Alarm |

**Press ▣ key to select Alarm latch status.**

Default setting : `OFF`

NOTE : This parameter is not prompted when alarm mode is `OFF`

**Latch alarm ***

| | | |
|---|---|---|
| Display | `LtCH` | for 1 sec. |
| Press △ | `OFF` | When latch is ON Alarm status will be preserved at any process condition. |
| | `On` | |

**Press ▣ key to select Alarm hold status.**

Default setting : `OFF`

NOTE : This parameter is not prompted if alarm mode is `OFF`

**Hold Alarm ***

| | | |
|---|---|---|
| Display | `HOLd` | for 1 sec. |
| Press △ | `OFF` | Used to avoid alarm at power ON. Alarm is enabled only after the process value has reached the set point. |
| | `On` | |

## Column 2

**Press ▣ key to select Relay status for alarm1.**

Default setting : `En`

NOTE : This parameter is not prompted when alarm mode is `OFF`

**Relay status for Alarm1**

| | | |
|---|---|---|
| Display | `rLY` | for 1 sec. |
| | `En` | Relay Energized. |
| Press △ | `dEn` | Relay De - energized |

**Press △ key to select Alarm annunciator.**

Default setting : `OFF`

NOTE : This parameter is not prompted if alarm mode is `OFF`

**Alarm annunciator ***

| | | |
|---|---|---|
| Display | `Ann` | for 1 sec. |
| | `OFF` | `OFF` No annunciator |
| Press △ | `LEd` | `LEd` LED of alarm1 blinks at the rate of 0.2sec |
| Press △ | `dSP` | `dSP` LED blinking ; display flashing b/w PV and message (ALRM) at 1 sec. |

NOTE : Applicable only if Analog output is available.

---

### PROGRAMMING OF LEVEL 3

**Press △ till Level 3 is displayed**

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| | `LUL.3` | Parameters in this level can be set. |

**Press ▣ key to select Analog output type.**

Default setting : `10U`

**Type**

| | | |
|---|---|---|
| Display | `tYPE` | for 1sec Used to set analog o/p type |
| | `10U` | V Output:- 0 to 10V |
| Press △ | `5U` | V Output:- 0 to 5V |
| Press △ | `0mR` | I Output:- 0 to 20mA |
| Press △ | `4mR` | I Output:- 4 to 20mA |

**Press △ key to select Manual.**

Default setting : `OFF`

**Manual**

| | | |
|---|---|---|
| Display | `mRnL` | for 1sec |
| | `OFF` | Used to set manual output On / Off. |
| Press △ | `On` | |

## Column 3

**Press ▣ key to select Analog low scaling point**

Default value : -9999

NOTE : This parameter is prompted only if manual is `OFF`

**Low scaling point**

| | | |
|---|---|---|
| Display | `R-LO` | for 1sec |
| Press △ to change value | `-1999` | Programmable from -1999 to 9999. Fixed 1°C resolution for TC / RTD. For AIN display as per decimal point selected. |

**Press ▣ key to select Analog high scaling point**

Default value : 9999

NOTE : This parameter is prompted only if manual is `OFF`

**High scaling point**

| | | |
|---|---|---|
| Display | `R-HI` | for 1 sec. |
| Press △ to change value | `9999` | Programmable from -1999 to 9999 Fixed 1°C resolution for TC / RTD. For AIN display as per decimal point selected. |

**Press ▣ key to select Sensor error level**

Default setting : `HIGH`

**Sensor error level**

| | | |
|---|---|---|
| Display | `S.Err` | for 1 sec. |
| | `HIGH` | Incase of sensor failure the output can be set to high or low value of range. |
| Press △ | `LOY` | |

**Press ▣ key to select Analog output %.**

Default setting : `0.0`

NOTE : This parameter is prompted only if manual is `On`

**Analog output %**

| | | |
|---|---|---|
| Display | `PtRG` | for 1 sec. |
| Press △ to change value | `0.0` | Programmable from 0.0 to 100.0 |

---

### PROGRAMMING OF LEVEL 4

**Press ▣ till Level 4 is displayed**

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| | `LUL.4` | Parameters in this level can be set. |

## Column 4

**Press ▣ key to select Address**

Default Value : `001`

**Address**

| | | |
|---|---|---|
| Display | `Add` | |
| Press △ to change value | `247` | Programmable from 0 to 247. |

**Press ▣ key to select Baud rate**

Default Value : `9600`

**Baud rate**

| | | |
|---|---|---|
| Display | `bRUd` | |
| Press △ to change value | `9600` | Programmable from 2400 to 115k |

**Press ▣ key to select Parity.**

Default setting : `None`

**Parity**

| | | |
|---|---|---|
| Display | `nOnE` | for 1sec |
| Press △ | `Odd` | for odd parity |
| Press △ | `EUEn` | for even parity |

---

### PROGRAMMING OF LEVEL 5

**Press △ till Level 5 is displayed**

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|

**Press ▣ key to select Address**

Default Value : `001`

**ID**

| | | |
|---|---|---|
| Display | `Id` | for 1sec |
| Press △ key to change value | `0000` | Programmable from 0000 to 9999 |

**Note:** This ID should match with the lock code set in Level 0.

**Press key to select Level lock**

Default Value : `Full`

| | | |
|---|---|---|
| Display | `LU-0` | for 1sec |
| Press △ key | `FULL` | for select full mode |
| Press △ key | `rEAd` | To select Read only mode |
| Press △ key | `LOCU` | To lock the level. |
| Display | `LU-1` | for 1sec |
| Press △ key | `FULL` | for select full mode |
| Press △ key | `rEAd` | To select Read only mode |
| Press △ key | `LOCU` | To lock the level. |

**Note:** Programming steps are same for LK-2, LK-3 and LK-4.

## ALARM MODES

High Alarm:
The alarm is turned ON when PV rises above a preset value.

Low Alarm:
The alarm is turned ON when PV falls below a preset value.

Band Alarm:
The alarm is turned ON when PV rises above or falls below a preset value.

Fail Output Alarm:
The alarm is turned ON in case of :
    a) measurement value exceeds range
    b)Sensor reverse condition(applicable for TC/RTD).

Latch Alarm:
This function is used to latch the alarm. When activated, the alarm is latched until it is acknowledged manually, even though the alarm condition may have disappeared.

Hold Alarm:
When hold is selected, in any alarm mode, it prevents an alarm signal on power-up. The alarm is enabled only if the process temperature is within alarm range.

**Alarm display options :**
(1) Press the ▷ key to view the status of alarm1
(2) Press the △ key to view the status of alarm2

**Only the alarms that are active can be viewed.**
    Alarm status (e.g : of alarm 1) will be displayed as follows:
    LA-1 for low alarm, HA-1 for high alarm,
    FO-1 for Fail output alarm.
(3) Press ▣ to acknowledge the particular alarm
    (Alarm will be acknowledged only if latch ON).

## FILTER TIME CONSTANT :
    The filter is an adaptive digital filter that discriminates between measurement noise and actual process changes. If the signal is varying too greatly due to measurement noise, increase the filter value. If the fastest controller response is needed, decrease the filter value.

## BIAS :
This value offsets the indicator's PV display value by the entered amount. This is useful in applications in which the sensor cannot provide the actual temperature signal due to mounting constraints, inaccuracy etc.

## SCALING FOR ANALOG INPUT :
    To scale the controller, two scaling points are necessary. Each scaling point has a coordinate pair of Display Values and Input Values. It is recommended that the two scaling points be at the low and high ends of the input signal being measured. Process value scaling will be linear between and continue past the entered points to thelimits of the input range.

---

(Factory settings example will display 0.0 at 0mA input and display 9999 at 20.00mA input.) Reverse acting indication can be accomplished by setting reverse scaling parameter as YES. In this case referring the above eg. For 0.00mA input the display will show 9999 and 20.00mA input the display will show 0.0.

**NOTE :** This change will not be visible in the programming menu.



| | |
|---|---|
| ISC.L | = 0.00 |
| DSC.L | = 0.0 |
| RSCL | = no |
| ISC.H | = 20.00 |
| DSC.H | = 9999 |
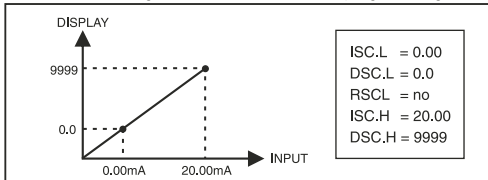
## SETTING FOR MANUAL OUTPUT MODE :

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|

Eg. For 0-10V if constant 5V output Voltage is desired then setting for manual output :

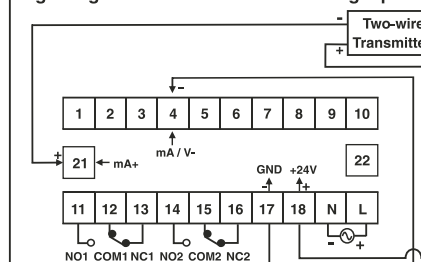| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| Press ▷ key to enter into mode. | | |
| Press △ key till | `LUL.3` | |
| Press ▣ | `tYPE` | display |
| Press △ | `10U` | (for Selection of voltage/Current) |
| Press ▣ | `mAnL` | display |
| Press △ | `On` | (Selection for manual output mode) |
| Press ▣ | `PALo` | |
| Press △ | `50.0` | Adjust the display to 50.0 to get 5V at output |

## SETTING FOR RETRANSMISSION MODE

**Eg. : 1) For Temperature Input :**
    Input : RTD Input
    Retransmission output : 0 - 20 mA
    Desired output : 0mA at 0°C, 20mA at 400°C
    Settings :

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| Press ▷ | `LUL.0` | |
| Press ▣ | `InP` | |
| Using △ | `P100` | Select the Input type as RTD |
| Press ▣ till | `LUL.0` | is displayed |
| Press △ till | `LUL.3` | is displayed |
| Press ▣ | `tYPE` | display momentarily |
| Press △ | `OnA` | Select Analog output type |
| Press ▣ | `mAnL` | display momentarily |
| and then display | `OFF` | (Selection for retransmission mode) |
| Press ▣ | `A-LO` | |
| Press △ | `0` | Adjust the display to 0 |
| Press ▣ | `A-Hi` | |

---

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| Press △<br>Press ▣ | `400` | Adjust the display to 400 |

**Eg. : 2) For analog Input (0-10V):**
Retransmission output : 4 - 20 mA
Desired output : 4mA at 0V ; 20mA at 10V
Input Scaling   : 0V - 0 ; 10V - 400
Settings :

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| Press ▷ | `LUL.0` | |
| Press ▣ | `InP` | |
| Using △ | `UOLt` | Select the Input type as voltage |
| Press ▣ until | `d.SC.L` | is displayed |
| Using △ | `0` | Adjust the display to 0 |
| Press ▣ | `I.SC.L` | |
| Press △ | `0.00` | Adjust the display to 0 |
| Press ▣ | `d.SC.H` | |
| Press △ | `400` | Adjust the display to 400 |
| Press ▣ | `I.SC.H` | |
| Press △ | `10.0` | Adjust the display to 10 |

**Note :** By default the display will be 10.00 for 0-10V Input
Press △
Setting for Retransmission :

| KEY PRESS | DISPLAY | DESCRIPTION |
|---|---|---|
| Press △ till | `LUL.3` | |
| Press ▣ | `tYPE` | display momentarily |
| Press △ | `4mA` | Select Analog output type |
| Press ▣ | `mAnL` | displays momentarily |
| and then display | `OFF` | |
| Press ▣ | `A-LO` | |
| Press ▷ | `0` | Adjust the display to 0 |
| Press ▣ | `A-Hi` | |
| Press ▷ | `400` | Adjust the display to 400 |
| Press ▣ | | |

## CONNECTION WITH 2-WIRE TRANSMITTER

**Connection with Internal 24V DC supply :**
**Eg : To give 0-20mA/4-20mA DC analog input**



---