ALP 94-UNI

MEASUREMENT INSTRUMENTS

0 – 20 mA ANALOGUE INPUT

4 – 20 mA ANALOGUE INPUT

0 – 10 V ANALOGUE INPUT

POTANTIOMETRİC INPUT

USER MANUAL

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1. TECHNICAL FEATURES

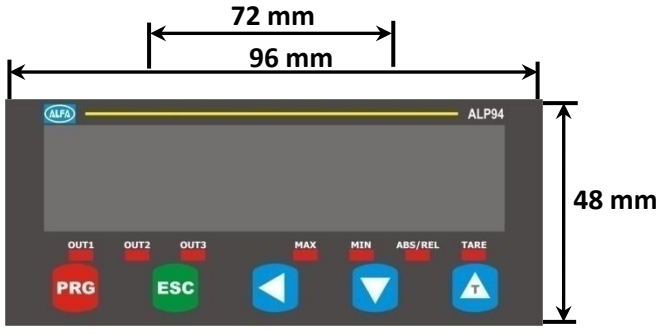
ELECTRICAL CHARACTERISTICS

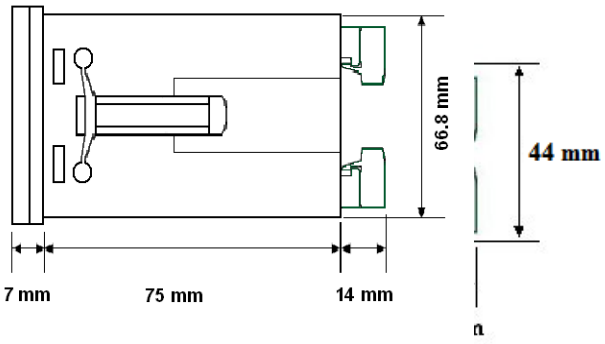
SUPPLY VOLTAGE	24 VAC/DC 50/60 Hz 85-265 VAC 50/60 Hz
POWER CONSUMPTION	7 VA / 5.6 W Max
SENSOR SUPPLY VOLTAGE	24 VDC 50 mA
CONNECTION	2,5 mm² screw-clemens
INPUTs (Analogue)	Potantiometer 0-10 V 4 – 20 mA 0 – 20 mA
OUTPUTs (Analogue)	0 – 10 V (Optional) 4 – 20 mA (Optional)
OUTPUTs (Contact)	2 terminals (Optional 4 terminals) 250 VAC 3A (For Resistive Load) Relay
Serial Communication	RS-232 (Optional)

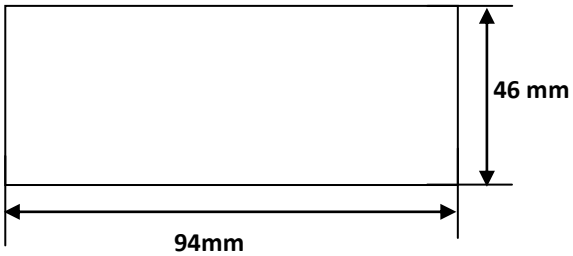
PHYSICAL CHARACTERISTICS

DIMENSIONS	96 x 48 x 88 mm
WEIGHT	300 gr.
MOUNTING	Upper and lower legs are fixed to the clipboard.
RELATIVE HUMIDITY	%80 up to 31 °C , %50 up to 40 °C
STORAGE TEMPERATURE	-10 UP TO 60 °C
OPERATING TEMPERATURE	0 UP TO 50 °C
PROTECTION CLASS	IP 60 Front Panel, IP 20 Back panel

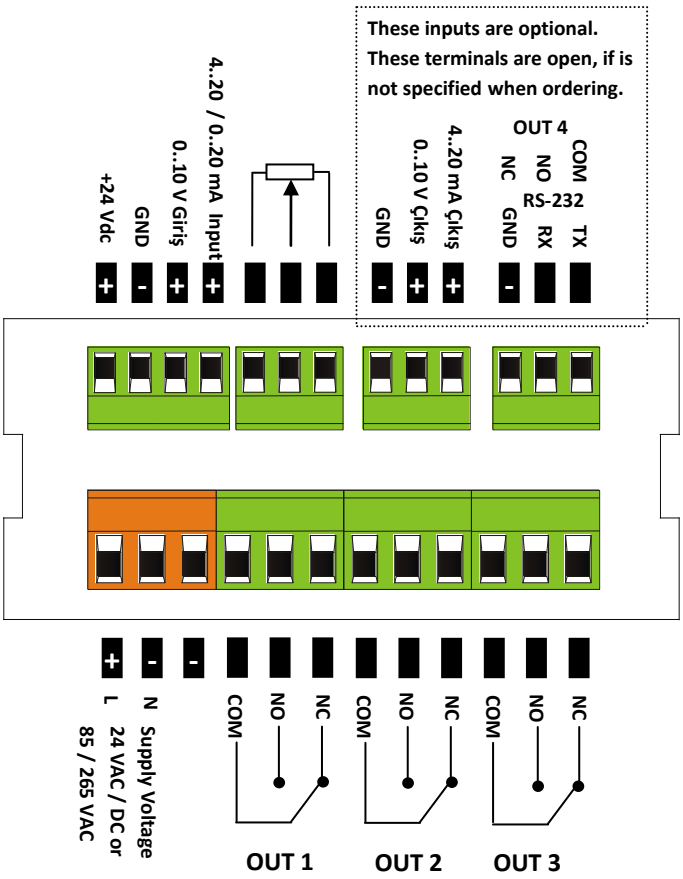
DIMENSIONS







2. CONNECTIONS



SAFETY WARNINGS

1. Follow the instructions and warnings in the user guide.

2. Please check the type of power supply before connects energy to the device.

3. Please the device mounted on panel against dangers of fall, snap, shake during working.

4. Make Sensor connections without enery on the device, do not connect in any way during operation.

5. Make sure that is shielded cables between device and sensor.

6. Do not leave the device exposed to a heat source (solar, heater etc.)

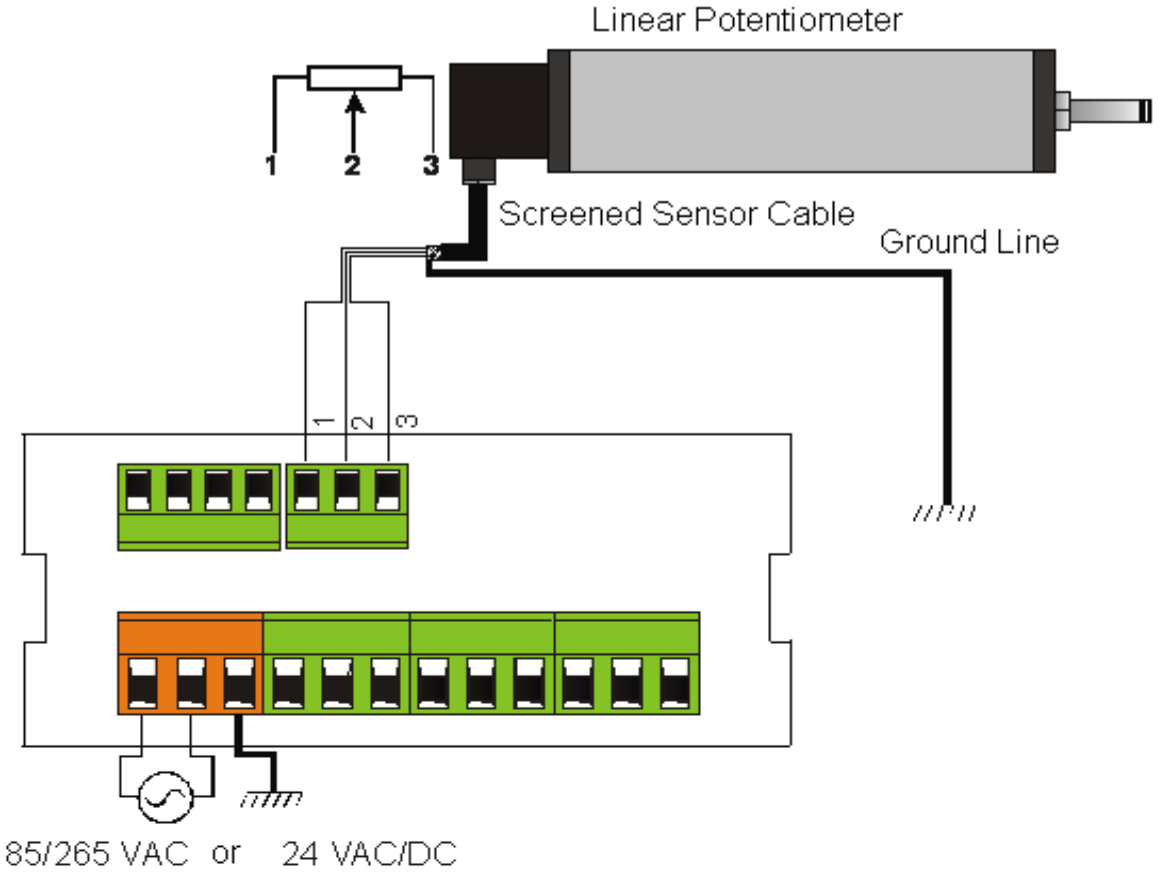
7. ALP94 industrial control device is not suitable for use in the external environment, Use only room conditions.

8. Wipe with a damp cloth to clean the device, do not use water, thinner etc.

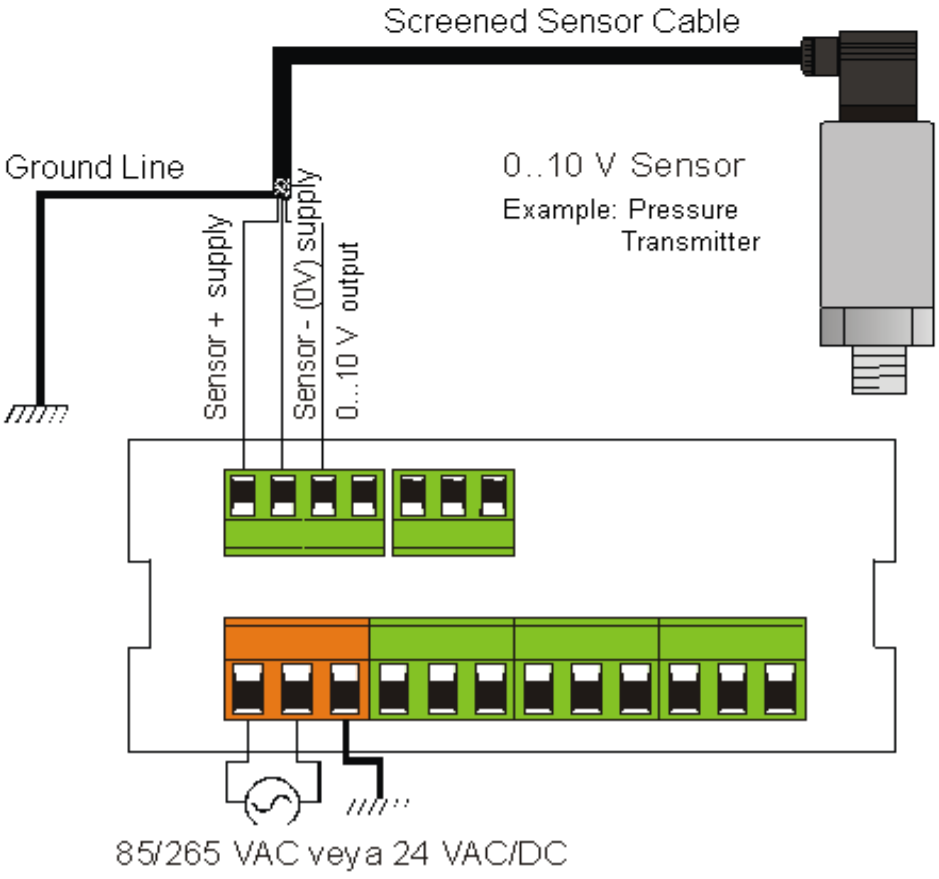
9. Comply with the limit values specified in the technical specifications for relay outputs.

10. The device can not be changed by the user in the event of a fault, Please contact our technical service in case of failure.

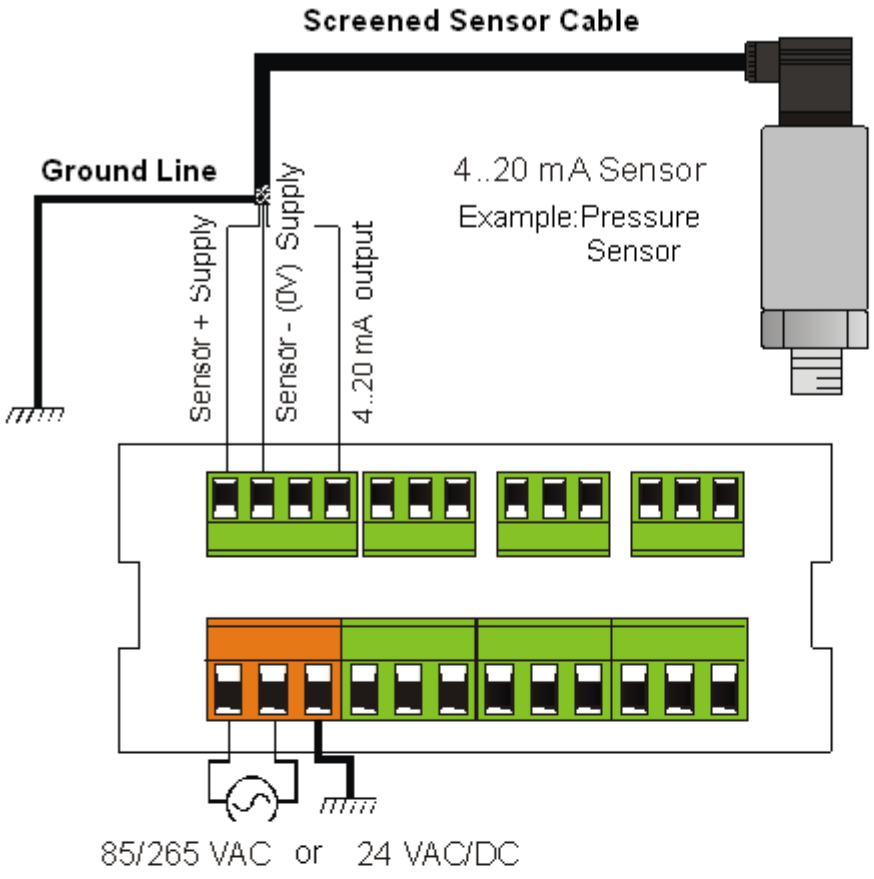
CONNECTION OF POTENTIOMETER



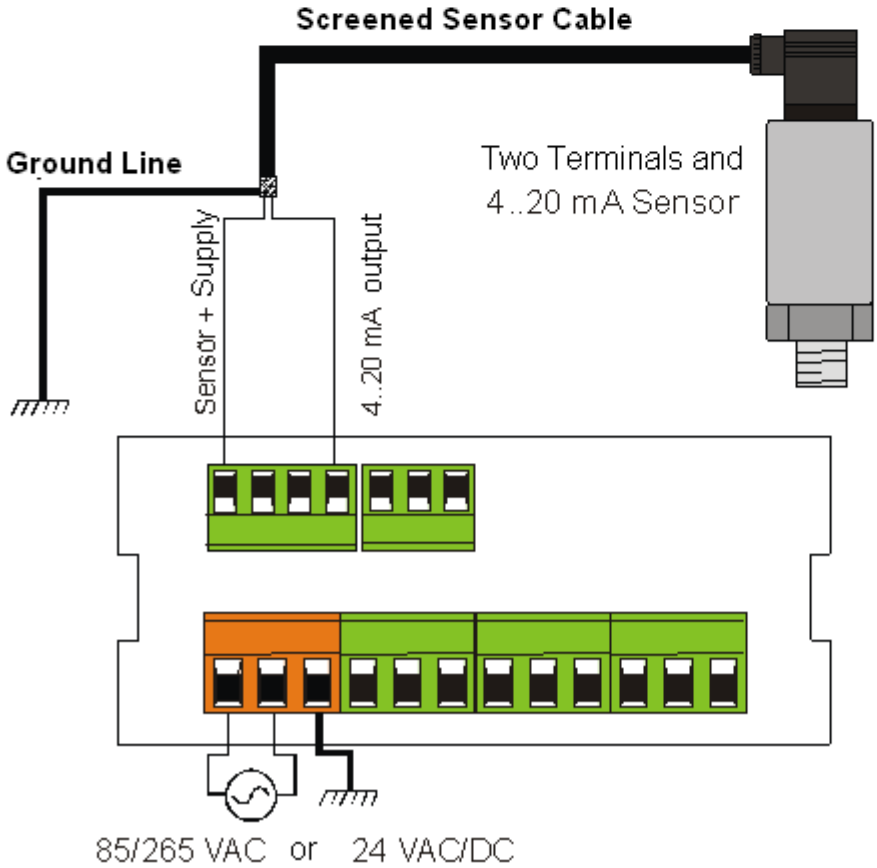
CONNECTION of 0...10V OUTPUT SENSOR



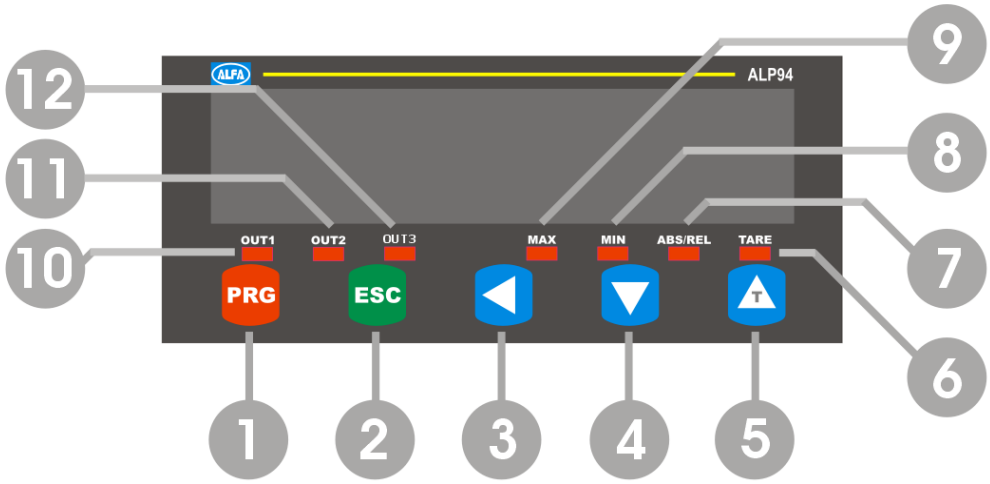
CONNECTION OF 4...20mA OUTPUT SENSOR



CONNECTION OF TWO TERMINALS and 4...20mA OUTPUT SENSOR



3. DESCRIPTION OF FRONT PANEL



3.1. Position LEDs and Button Functions

Button Functions

ALP94 device operates in 2 different modes:

Programming mode : Specifies the function used during programming.
Operating modu : Specifies the function used during operating.

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1. PROG Button Programming Mode: Used to save and enter menu parameter value.
2. ESC Button Programming Mode: Used to exit without saving to entered parameter value.
3. Left Button Programming Mode: Used to change the decimal place of parameter value.
4. UP BUTTON Programming Mode: Used to switch between the menus and increase the value of the selected parameter.
   Operating Mode: Used as Tare Button if Tare function is active.
5. DOWN Button Programming Mode: Used to switch between the menus and increase the value of the selected parameter.
   Operating Mode: Used to see min./max. Values.

Position LEDs

6. LED of TARE : On While Tare function is active.
7. ABSOLUTE/RELATIVE : On While entered Offset value.
8. MIN : On while pressed to down button for first time.
9. MAX : On while pressed to down button for second time
10. Out-1 output LED position: On while the power at Out-1.
11. Out-2 output LED position: On while the power at Out-2.
12. Out-3 output LED position: On while the power at Out-3.

3.2 Use of The Front Panel

1. **TARE FUNCTION:** At operating mode, Tare is active; Tare function will be active ahen pressed to up ( ) button. This while Tare LED is ON. If pressed to up button again, returns to its previous state.

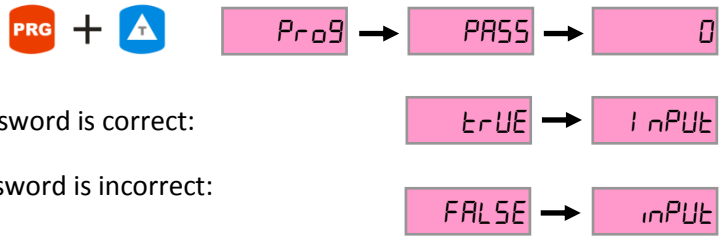
2. **Display of MAX. or MIN. Value:** At operating mode, min. LED is ON when pressed to down ( ) button and we can see minimum value on the screen. If pressed to down button again, max LED is ON and we can see maximum value on the screen. If you want to reset to this value, pressed to ESC (ESC) button. If pressed to down button fort he tird time, displayed the measured value on the screen.

4. DEVICE PROGRAMMING

Enter to the menu and Changing Parameters:

In order to switched to programming mode while device operating mode, pressed at the same time (PRG) buton and ( ) button. Firstly "I nPUt'' menu will appear on the screen.

If password protection is activated at device, password must be entered. If password is correct, true message is displayed on the bottom line and "I nPUt'' menu is appered. Also password is incorrect, "errP" is displayed and you can enter menu but you can not make changes to the settings.



1. Switch between program menus with Down ( ) and up ( ) buttons. PRG buton is entered into for the menu to be changed. Changes are saved with prg (PRG) buton. If you want to exit without saving to entered parameter value, pressed to esc (ESC) button and returned to main menu.

There are 4 main menu on the device:

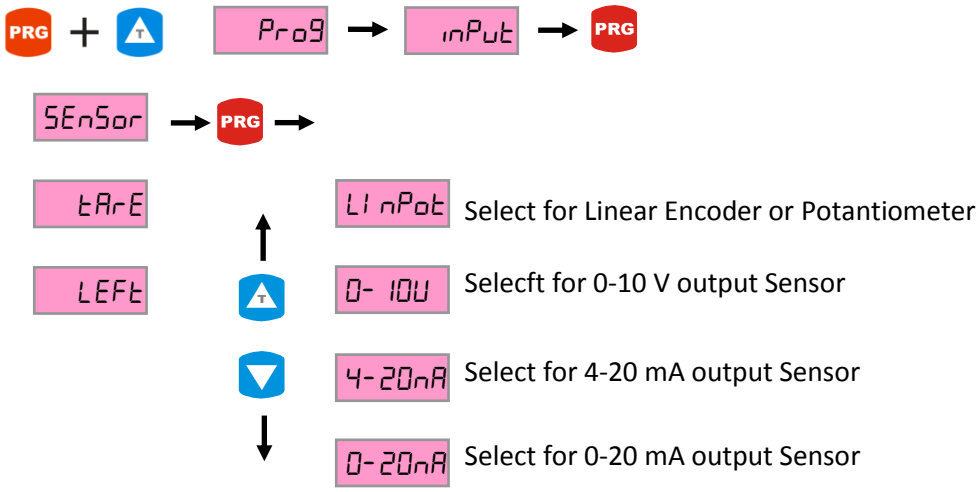
I nPut	: Used to input device settings for selection of sensors.
OutPut	: Used to changing the relay output.
CALI b	: Used to setting for scala value and calibration.
SECUrE	: Used to changing the security settings.

4.1. Input Menu

4.1.1. Sensor Selection *(Sensor)*

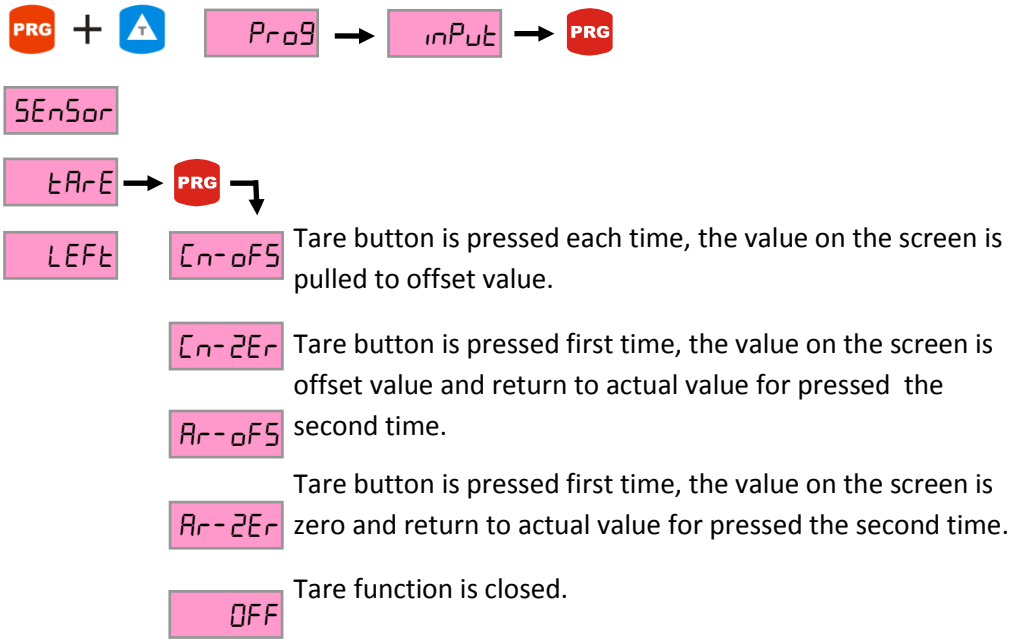
Sensor Type is selected through this menu. Please check the Connection Section for connections of sensor connection.

Enter to input menu with pressed prg and up button. You see sensor menu firstly, pressed to prg button and entered to sensor menu. Select sensor type with up-down button and save with prg button. If you want to exit without saving the parameter value, pressed to esc button and returned to operating mode.



4.1.2. Reset Selection *(Tare)*

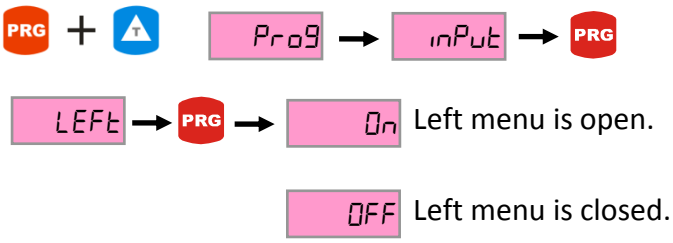
This menu allows resetting value on the display while Reset Selection (tare) is operating mode. In order to activate to reset selection, enter input menu with prg button. Find the Tare menu with up-down button. There are 4 different tare functions. Tare function is used at operating mode. Tare LED lights up while Tare function is active. Tare function selection is as follows.



4.1.3. Entering set value while password is active *(Left)*

Left menu allows to entered set values at operating mode without need to entered password, while password protection is active. While Left menu is active (on position), scroll to set menu directly at operating mode with left ( ) button. Therefore adjusted set values. Return to operating mode with ESC button. Privilege of Left menu, Even if password protection of device is active, enables to change the set values. In this way, other users can enter the set values without the need for a second password. Alsa LEft menu can be passive (off).

In order to select to Left menu, entered to programming menu. Input menu is entered with prg button and found LEft menu with up-down button. Displays the content of the menu with prg button. The desired selection is made with up-down button and saved it with prg button. Return to operating mode with Esc button.

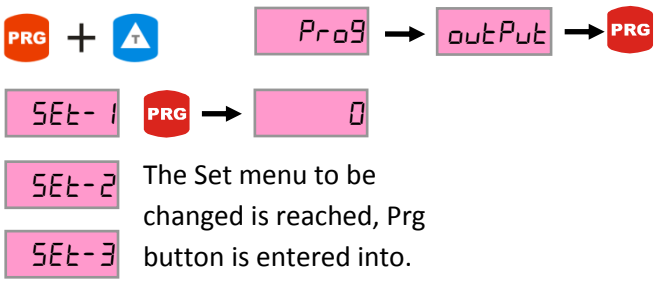


4.2. Output Menu

4.2.1. Entering Set Value *(Set)*

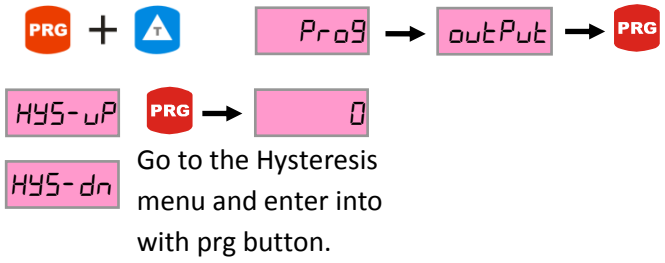
There are three set menus: set-1, set-2 and set-3. Each one menu controls to each one output. When entered setpoint is reached, related relay is active and related LED lights up (on). When relay is inactive, also Led goes out (off). Output function will be described in chapter of Type menu.

In order to entered Set menu, you should enter to programming menu. Input menu is entered with prg button as firstly and then found Output menu with up-down button. Set-1 menu will be displayed as firstly, and found Set-2 or Set-3 menu with up-down button. To change the contents of menu is pressed to prg button and displayed set value on the screen. If pressed the prg buton when coming the rightmost digits, adjusted to the desired value with up-down button. Shift to the left one digit each time with left button. Press to left button by the rightmost digit, this digit lights up. Position of point is adjusted with up-down button and saved it with prg button. If you want to exit without saving, pressed to esc button.



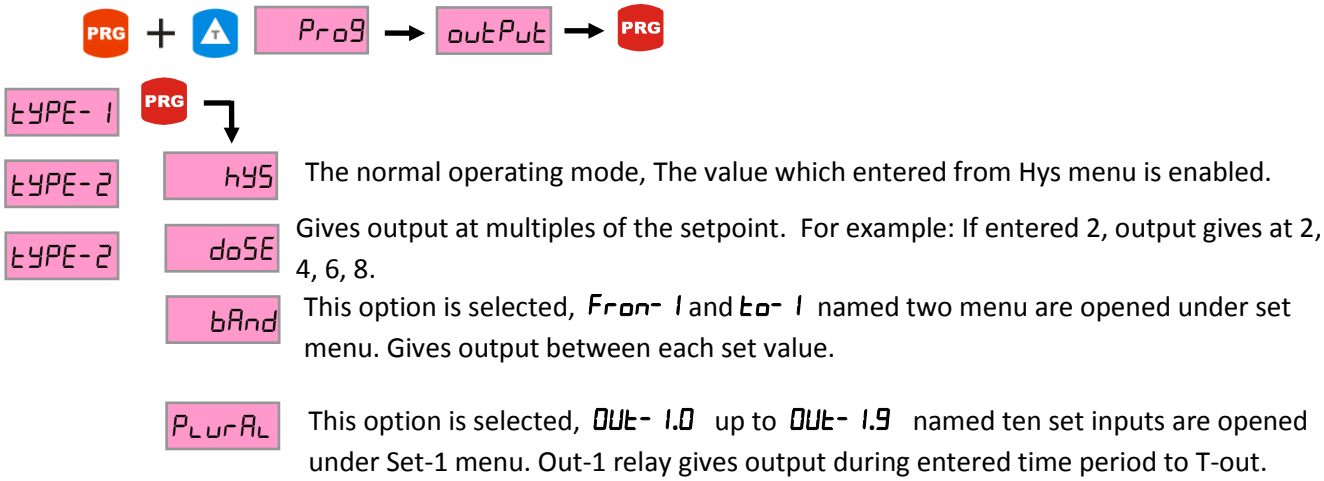
4.2.2. ENTERING OF HYSTERESIS *(Hys)*

Hysteresis value (Hys) can be entered using this menu to device. Hysteresis value's purpose is preventing from vibration of relay contacts when device reaches the set point. For example: If Set-1 value is 15.00, Relay-1 will be active when the value on the screen reaches 15.00. Assuming waiting at this position for the tunning machine, the value on the display is constantly changing because of vibration, noise, voltage fluctuation. Due to these factors, the relay position will be change as active or inactive. Hysteresis value which varying in amount to the value on the screen is entered, Vibration of relay contacts disapear.
There are two hys menu: Hys-up and Hys-dn. Hys-up allows pulling contacts up to the value of comes out on the set value. Hys-dn allows to leaving contacts up to the value of below of the set value. . In order to enter Hysteresis value, should be entered programming mode with prg buton and found Output menu. Found Hys-up ve Hys-dn menus with up-down button. The value into menu is displayed when pressed to Prg button and the righmost digit lights up when pressed again. Set to the desired value with up-down button. Shift to the left one digit with left button. The point lights up after the rightmost. Set the sensitivity of the point and save it with prg button.



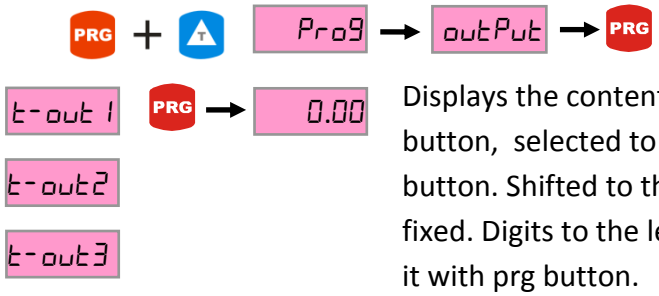
4.2.3. Relay Output Mode *(Type)*

Type menu provides different relay outputs according to the set entered values. There are three modes: type-1, type-2 and type-3. There are all the same modes, but Type-1 menu has "plural" option for an additional. In order to select mode, enter to program menu. Found Output menu with up-down button. Found in order of Type-1, Type-2 and Type-3 with up-down button. Displays the contents of the menu is pressed to prg button, selected to desired mode with uo-down button.



4.2.4. Enterin Relay Output Time *(T-out)*

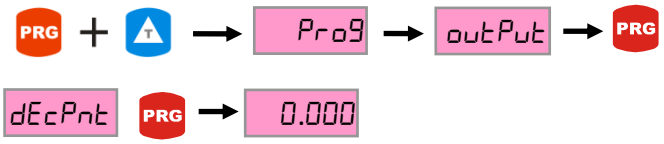
T-out menu allows time of the relay to be active after the value on the screen reaches to set value. In order to determine delay time, entered to programming menu then found output menu with up-down button and entered into with prg button. Found in order of Type-1, Type-2 and Type-3 with up-down button. Displays the contents of the menu is pressed to prg button, select to desired mode with uo-down button. Shifted to the left one digit with left button and saved it with prg button. Enter 10ms as sensitivity of the point.



Displays the contents of the menu is pressed to prg button, selected to desired mode with uo-down button. Shifted to the left one digit and the point is fixed. Digits to the left of the point is in seconds. Saved it with prg button.

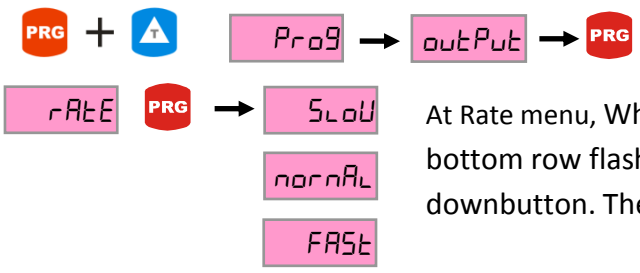
4.2.5. Selection of Point Position *(Decpnt)*

Resolution of the value shown on the display is set here. This change is done by changing positon of the point on the screen. In order to changed position of the point, pressed to prg button at operating mode and found output menu with up-down button and entered into with prg button. The point is flashing when pressed again to prg button; you can set position of the point with up-down buton. Then you can save them with prg button. Return to operating mode with rst button.



4.2.6. Screen Refresh Rate *(Rate)*

Screen Refresh Rate is set by this menu. If “speedy” is selected, values on the screen are changed quickly. If you don’t want to shake on the screen, “slow” should be selected. In order to change to screen refresh rate, entered programming menu and found rate menu with up-down button. When pressed prg button, choise of bottom row flashes and set the choice with up-downbutton. Then save with prg button.



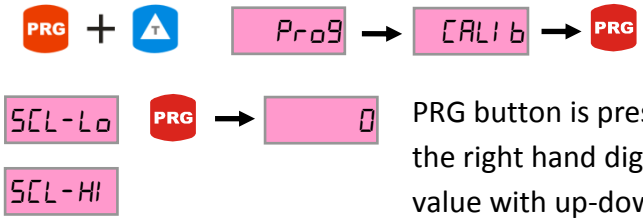
At Rate menu, When pressed prg button, choise of bottom row flashes and set the choice with up-downbutton. Then saved with prg button.

4.3. Calib Menu

4.3.1. Entering of Scale Value *(SCL-Lo / SCL-HI)*

Scale menu provides to determine the value shown in the display at minimum and maximum positions of sensor. For Example; this provides that a potantiometer is shown 0 or others value at minimum position, stroke lenght or others value at maximum position. Likewise, this situation also applies to the pressure transmitter. There are two parameter inputs at scale menu: Scl-Lo ve Scl-Hı. Scl-Lo provides to entering of minimum value, Scl-Hı also provides to entering of maximum value.

In order to entered scale value, firstly entered to programming menu and found S-Lo and S-Hı menus with up-down button. When pressed prg button, choise of bottom row flashes and set desired value with up-down button. When pressed to Prg button, moves to the left in a digit. Then you can save them. As each menu is set in this way.



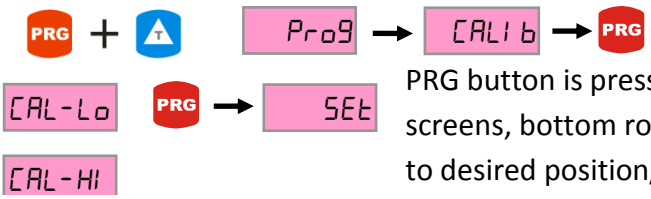
PRG button is pressed, the bottom line value of the right hand digit flashes and set to desired value with up-down button. Digit is moved to the left in a digit and saved with prg button.

Example for enterin of Scale Value; In order to Range of 700Bar pressure transmitter is seen as between 0-700Bar on the secreen, Scl-Lo is entered 0, Scl-HI is entered 700.

4.3.2. Manuel Calibration *(CaL-Lo /CaL-HI)*

Manuel calibration menu allows providing the starting and ending positions/values of sensor. This menu is consisting of Cal-LO and Cal-HI menus. Cal-LO menu provides to entered minimum position/value, Cal-HI menu also entered maximum position/value. Cal-LO menu sets the potentiometer is in the closed position and also Cal-HI menu sets in the opened position. For pressure transmitter, introduced part of 0Bar by Cal-LO menu and also introduced to maximum bar or span value by Cal-HI menu.

In order to activate Manuel Calibration, enter to programming menu firstly. Find Calib menu with up-down button and entered into with prg button. Found in order of ScL menu, then CaL-Lo ve CaL-HI. In order to define sensor to device, the sensor get the minimum position/value and then pressed to PRG button at Cal-LO menu.Bottom row menu content flashes. Position is set fully and saved it with prg button. This position/value is defined as minimum in the device. The same procedure is done for Cal-HI menu. Then return to operating mode with ESC button.



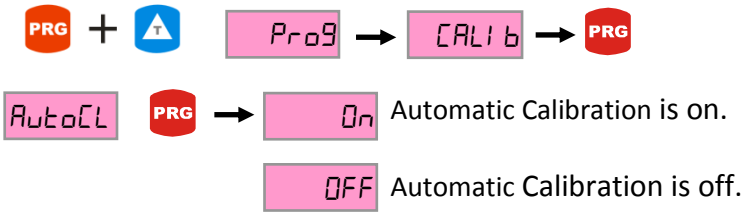
PRG button is pressed at Cal-LO or Cal-HI screens, bottom row menu content flashes. Set to desired position/value and saved with prg

Not: : If Calib is active, C-LO and C-HI menus are invisible. For this reason Calib menu should be at off position

4.3.3. Automatic Calibration *(AutoCL)*

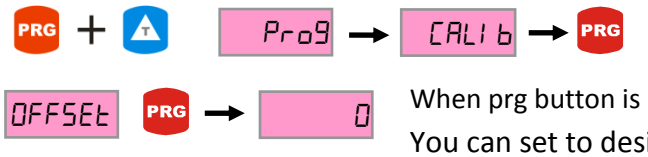
Automatic Calibration menu calibrate to 0-10 V, 4-20 mA, 0-20 mA inputs automatically. Therefore measurements can be made without the need to manually calibrate. When AutoCL menu is active, Cal-Lo ve Cal-HI are invisible. But the most accurate method, the connected sensor is calibrated manually. Because tolerances of each sensors are different and they do not give same output at same positions/values. For Example, A pressure transmitter can not give 0 V output at 0 Bar or give 9.99V - 10.02V output instead of 10V at maximum bar. This may cause an error in the measurement in the slightest.

In order to activate the automatic calibration, enter to programming menu firstly. Found AutoCL menu with up-down button and PRG button is pressed, bottom row menu content flashes. Selected to on (active) or off (inactive) with up-down button and saved selection with prg button. Then return to operating mode with ESC button.



4.3.4. Entering Offset Value *(Offset)*

Offset value can be entered using this menu to device. Cn-ofs veya Cn-Zer in the Tare menu are selected, the value on the screen is returned to ofset value when pressed to tare button. In order to adjust the offset value, entered to programming menu then found calib menu with up-down button and entered into with prg button. Found ofset menu with up-down button and displays the contents of offset menu. The right-most digit flashes when pressed again to prg button, you can set to desired value with up-down buton. Shifted to the left one digit with left button, the point flashes after from the most-left digit, adjusted point position with up-down button. Save all setting with prg button.

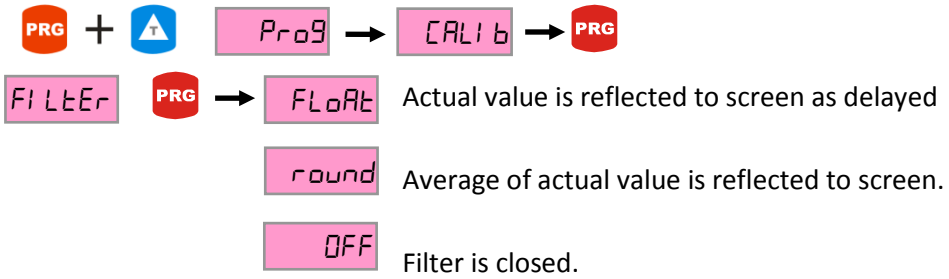


When prg button is pressed, the right-most digit flashes. You can set to desired value with up-down button. Shifted to the left one digit with left button and saved all setting with prg button.

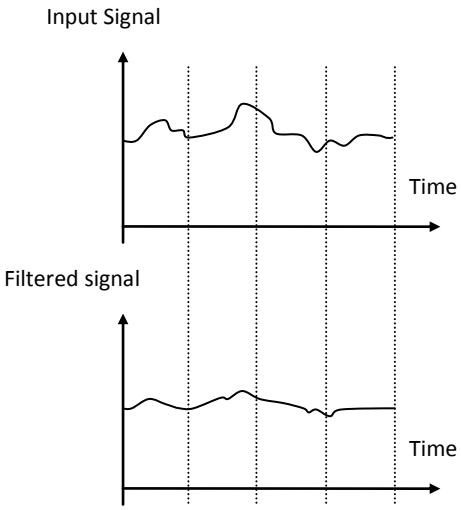
4.3.5. Blocking of the screen flicker *(Filter)*

This menu allows the value on the screen remain fixed as much as possible. Filter menu is used to prevent flicker on the screen, therefore this is taken avarage of values. For this reason, the value shown on the screen may not be the exactly current value and may be a slight delay. This may also result in relay outputs of moving applications is active early. Relays will be energized according to the actual value.

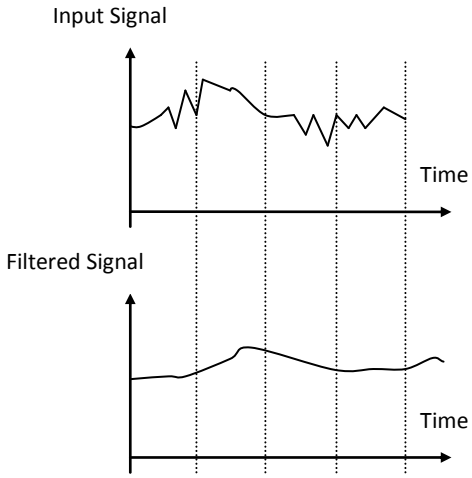
In order to activate the Filter menu, entered to programming menu. Found the calib menu with up-down button and entered into with prg button. Found the fitler menu with uo-down button. Content of menu flashes when pressed to prg button, selection is made with up-dpwn button and saved with prg button. Return operating mode with Esc button.



Signal correction for Round Type Filter



Signal correction for Float Type Filter

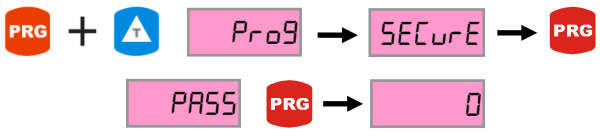


4.4. Secure Menu

4.4.1. Entering Password *(Protec, Pass)*

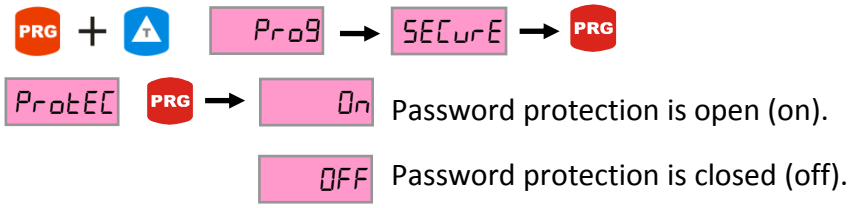
This menu allows creating the device password and on-offing the generated passcode. The Password is created and activate at Protec menu. Default password is 456 and if password protection is active, the password is requested for entered to menu.

In order to entered password to device, firstly entered to programming menu. Find Secure menu with up-down button and entered into with prg button. Founs pass menu with up-down button and entered into. The right-most digit flashes when pressed again to prg button, you can set to desired value with up-down buton. . Shift to the left one digit with left button. Save all settings with prg button.



When prg button is pressed, the right-most digit flashes. You can set to desired value with up-down button. Shifted to the left one digit with left button and saved all setting with prg button

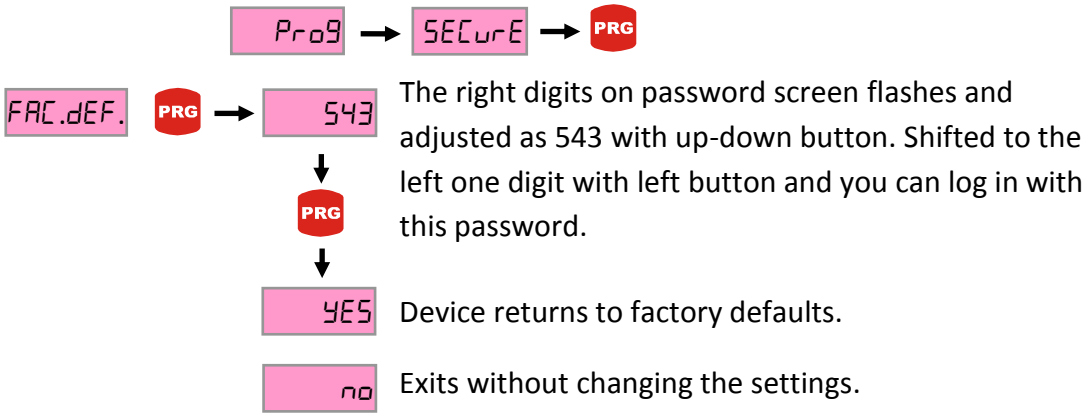
In order to open or close the password, firstly entered to programming menu. Found Secure menu with up-down button and entered into with prg button. Found protect menu with up-down button and enter into with prg button. Content of menu flashes when pressed again to prg button and selected open (on) or closed (off) for password protection. Save all settings with prg button.



4.4.2. Return to Factory Defaults *(Fac.Def.)*

Fac.Def. menu enables to return the first fabrication settings of device. So device can be re-program. At this situated, all device setting will change and for this reason important settings should be saved previously.

In order to activate to Fac.def. menu, firstly entered to programming menu. Found Secure menu with up-down button and entered into with prg button. Found fac.def. menu with up-down. The password is requested when pressed to prg button, this password is 543. If you enter wrong password, you will see “error” message on the screen. Used to up-down button for enter the password, shifted to the left one digit with left button. Enter the password with prg button. If password is correct, “yes” or “no” named messages appears on screen. If selected “Yes”, the device will restart and return to faxtory defaults. If selectedv “No”, exits without doing anything.



5. DATA PROTOCOL

Parameters of ALP-94 RS-232 are as belows. There are no settings on the device. Communication is one-way towards the terminal device to the receiver.

Data's format : RS232 EOL (16bit data + EOL)

Baud rate **:** 57600bps

Data bits **:** 8

Stop bits **:** 1

Parity **:** none

6. ERROR MESSAGES

OuEr. "999999" message is displayed on the screen, when value is too high. Scale or format value can be minimized.

UndEr. "999999" message is displayed on the screen, when value is too small. Scale or format value can be minimized.

AdcErr Analog input section of the device is defective. The measurement can not be made. Product should be given to authorized service

5. CERTIFICATE OF WARRANTY

Product : **ALP 94 UNI**

85/265 VAC	☐	24 VAC/DC	☐
0-10V Output	☐	4-20mA Output	☐
RS-232	☐	4 Relay	☐

Serial No: ……

This product is guaranteed for two years against manufacturing defects.
Conditions out of the warranty:

- Mechanical damage
- Shipping damage
- Users error

Other situations are covered by the manufacturer's warranty.

Signature and Stamp

Atek

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