

- 94x48 mm dimensions
- 600 KHz reading speed
- 6 digit display
- Functional External Z input
- Functional HOLD input
- Quadrature mode up – down counting
- 2 or 4 couple contact relay output
- Set-1 can be set related with Set 2
- Optional factor value (between 0,00001 and 999999)
- Optional decimal point between 1. and 5. digits
- 5 VDC or 12 VDC encoder power supply
- 11 various output control mode
- OFFSET value is adjustable
- Password Protection

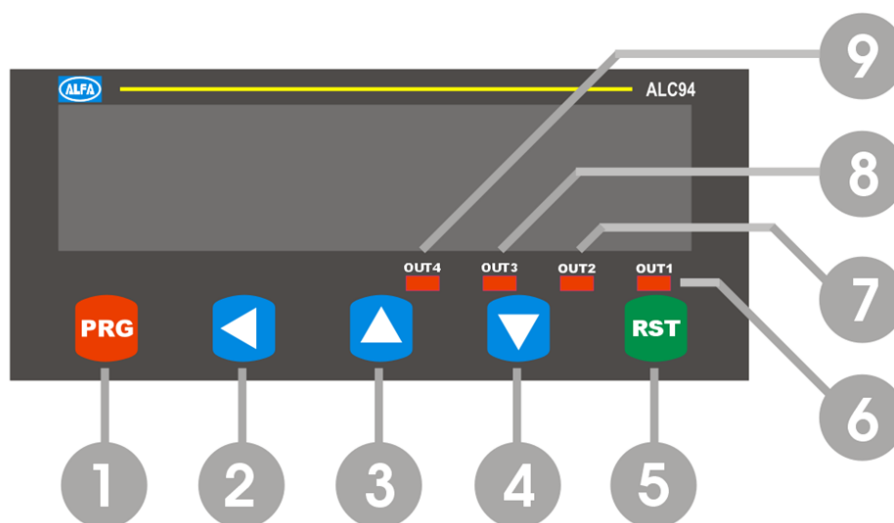


Housing	
Dimensions	96 x 48 x 88 mm
Display	Single Line , 6 Digits 14mm LED Display (RED color)
Display Range	-99999....999999
Weight	300 gram
Box	Suitable for flush-panel mounting
Relative Humidity	80% up to 31°C decreasing linearly 50% at 40°C.
Operating Temperature	0...50 ° C
Storage Temperature	-10...60 ° C
Protection Class	IP 60 front panel, IP 20 rear panel
Electrical Characteristics	
Power Supply	24V AC/DC 50/60 Hz.or 85-265 VAC 50/60 Hz.
Power Consumption	Max. 5,5VA - 4.4 W
Connections	2,5 mm ² screw-terminals connection
Inputs	
Counting Frequency	600 KHz (Quadrature mode)
Input Channels	A, B counting inputs; Z external reset input; external HOLD input
Z (Reset Input)	Selectable in Rise or Fall edge triggering (From software)
HOLD Input	Selectable in Rise or Fall edge triggering (From software)
Polarity Input	Programmable, npn or pnp for all inputs
Outputs	
Control Ooutput	4 Relay: 250 VAC, 3 A (for Resistive load) COM, NO and NC
Sensor Supply Output	5 VDC or 12 VDC, 100 mA
Digital Out	RS-232 Serial Interface

WARNINGS

1. Follow the instructions and read the manual before conection and using the device.
2. Check the power supply type before giving energy.
3. Mount the device to the panel robustly againts to the drops, vibration and shakings during utilization.
4. Make the sensor connections while the energy off. Never change the connections while the energy is on.
5. Keep Away from the high voltage.
6. Don't expose to the sunbeams and heating source directly in the utilization place.
7. ALC94 Industrial Control Device proper only for room conditions, don't use outer environment.
8. Clean the device only with a moist duster, never use water, thinner ect...
9. Adapt the relays to the given technical relay output values.
10. There is no part for replacing or repairing, please call the service in case a defect.

FRONT PANEL DESCRIPTION



Button Functions

In ALC94 device the buttons have two functions:

Programme Mode: Function for programming.

Operation Mode: Function for operating.

1. PROG Button (Programme Mode): To enter the MENU parameter and save the entered parameter.
2. LEFT Button (Programme Mode): To change the decimal parameter while entering the parameter value.
3. UP Button (Programme Mode): To transition in the MENU and increase the value of the selected parameter.
Operation Mode: To see the max measured value.
4. DOWN Button (Programme Mode): To transition in the MENU and increase the value of the selected parameter.
Operation Mode: To see the min. measured value.
5. RST Button (Programme Mode): To escape without saving the entered value.
Operation Mode: To reset the value on the display.
6. Out-1 output condition LED: Signs by Out-1 output relay gets power.
7. Out-2 output condition LED: Signs by Out-2 output relay gets power.
8. Out-3 output condition LED: Signs by Out-3 output relay gets power. (Optional)
9. Out-4 output condition LED: Signs by Out-4 output relay gets power. (Optional)

FRONT PANEL USAGE

Entering the value to numerical parameters:

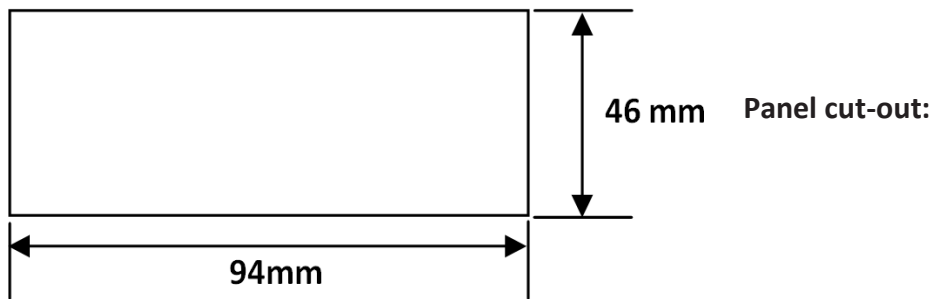
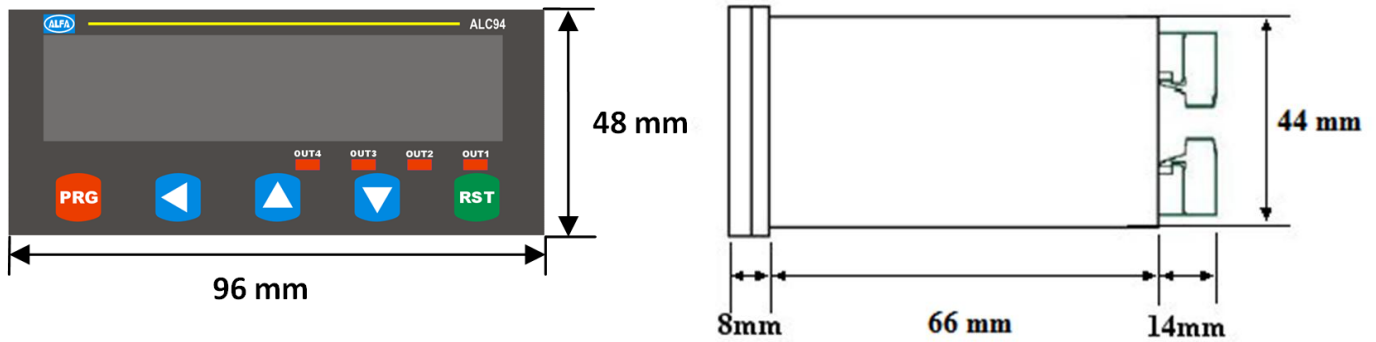
Press **PRG** + **RST** and enter the programme, the right hand digit will blink. Using the **DOWN** and **UP** it is selected the parameter which is requested to change its value, than press **PRG** again and save this value, it is showed next digit now. Finally, it is showed *P02 It IF*, using **DOWN** and **UP** and select the (+) positive or negative (-)
If you request return back without saving the value you should press **RST** button.

Entering the value to string parameters:

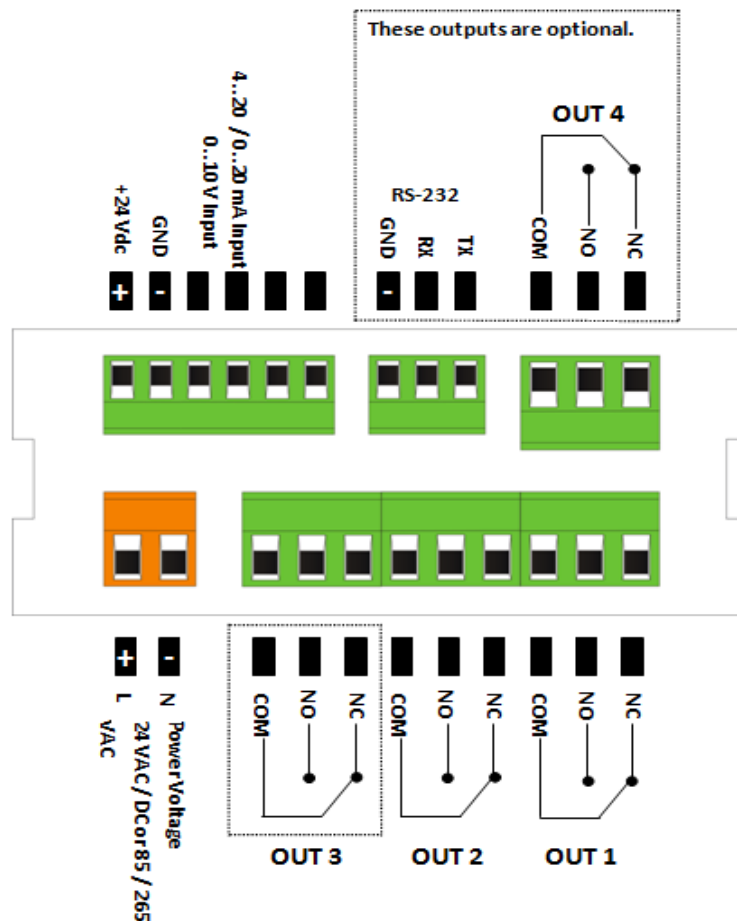
Press **PRG** and enter the programme, using the **DOWN** and **UP** select the parameter which you request to change its value, than press **PRG** again and save this value.

If you request return back without saving the value you should press **RST** button.

DIMENSION and PANEL CUT-OUT :

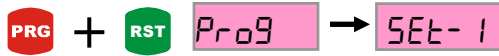


SOCKET CONNECTION



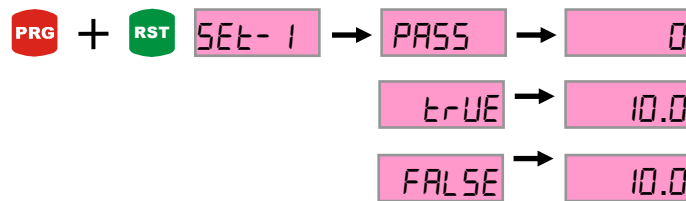
PROGRAMMING MENU

While the device is holding on operation mode to pass to programming mode press and hold on button and press button. Enter the menu after seeing "Prog" on the display. Prog is flashing and SEt- 1 menu on the display firstly.

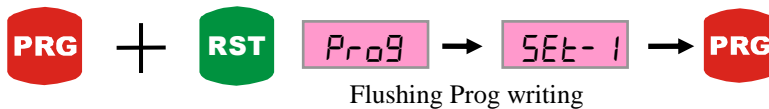


If the password is activated the device asks for password while changing the parameter values. If you enter wrong password the device gives FALSE message. You can enter the menu but you can't change the values. If you enter the right password the device gives TRUE message, you can change the values.

Enter the password.



Select the preferred menu by UP Down buttons. Press button to enter menu which you will change. To change the value press PRG again. Use UP DOWN buttons to change values. UP button for increase and DOWN button to decrease. To save the value press PRG.



PRESET SET VALUES (Set)

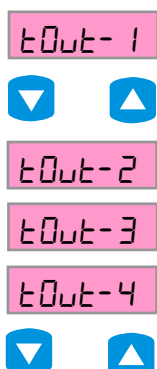
Set-1 Set-2 menus are used for presetting set values. (set-3 or set-4 are also used if they exist. Each menu controls an output. When the given set value reached the related relay is become activated and the LED of the relay signs. There are different output functions. There outputs will be described in OUTPUT MENU.

To enter the SET menu first enter the Programme menu. To enter the programme menu press and hold PRG button and press RST button. You will see the Set-1 menu. To find Set-2 Set-3 and Set-4 the UP DOWN buttons are used. To change the Set-1 value press PRG. You will see the present SET value on the display. When you press to PRG button again the last digit will flashing. You can set the intended value by using UP DOWN buttons. To pass to other digit press LEFT button. The digit will pass left for each LEFT button pressing. To change the point place POINT menu is used. This subject will describe in POINT MENU. After presetting the intended value press PRG to save the value. If you would like to leave without saving press RST button. You can change the other set values by this way.



Relay Output Menu (Output)

Output menu allows the different outputs regarding to set values. There are 11 different output types. The output types are exit in the graphics section. To select any output mode press and hold PRG and press reset button. You will be in programme mode. Find the OUTPUT MENU by using UP-Down buttons. Press to PRG button to see the menu. Press to PRG button again. The menu members will be flashing when you press to PRG again. You can select the MODE by using UP DOWN buttons and you



Relay Output Time (tout)

The relay activation time can be controlled by Tout menu. If the time is 0 (zero) there will be written HOLD on the display. It means the relay will be activated when the relay value is above the setted value. To enter output time press and hold PRG button and press to RST button. tout-1 tout-2 tout-3 tout-4 menus can be found by UP DOWN buttons. To display the Menus press PRG button. When you press to PRG button again the values will be flashing. The value can be set by UP DOWN buttons

HYS-dn



HYS-up



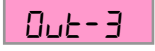
Setting Hysteresis (hys-up, hys-dn)

You may enter the hysteresis values by this menu. This menu is for blocking the relay flickers. After the value which is setted, relays activate contacts or reactivates the contacts. There will not be any action during hysteresis. So the negligible value should be entered. To change the hysteresis values Hys-up and Hys-dn menus are used. Hys-up values are active while pass over the set values, hys-dn values are active while drop below the set values. To set the hysteresis values press and hold Prg button and press Rst button. Find the menus hys-up and hys-dn by UP DOWN buttons. Press Prg button to flashing the first digit. Enter the value by UP DOWN buttons. To pass the other digit use LEFT button. Press Prg to save the value.

Out 1



Out-2



Out-3



Out-4



Const



nCLOSE



nOPEN

Relay Output Commands (out)

Out-1 ve out-2 out-3 out-4 menus specify the relay positions. In Nclose section relay will be passive when the set value is reached the will be active. In Nopen section the relay will be active and when the set value is reached it became passive

Setting Constant Factor

Const menu allows to set constant factor for displaying the different resolutioned sensor as intended values. You can determine display value for each edge or pulse. For example for 25 micron resolution sensor 0,0025 value will be seted in CONST menu. By this way when the sensor goes 25 mm you can see it as 25 on the display.

Menu if you press prg button you will see the setted value on the display. If you press to PRG button again the first digit will be flashing. You can change it by UP DOWN buttons. To pass to the other digit by LEFT button. After setting the intended value press to PRG button to save the value. To return to operation mode without saving the value press RST.

Point



Point Place Selection (Point)

The accuracy of the values on the display adjusted by this command. By changing the place of the point the accuracy of the value can be selected. Also the SET and HYSTERESYS manus poing place can be adjust by this command. To adjust the point menu press and hold PRG button and press to RST button. POINT menu can be found by UP DOWN buttons. In POINT Menu when you press to PRG button you can see the setted point position. Press to PRG button and the value will be flashing. By Up Down buttons you can select the point position. Pres PRG button to save the position

OFFSET



Setting Offset Value (offset)

If you press Rst button or if there is a signal Z input the device return to the setted offset value. If the offset is 0 (zero) when you press to Rst button you see 0 (zero) on the display. Press and hold Prg button and press Rst button. Find the Offset menu by UP DOWN buttons.

Press Prg to see the menu. Press Prg to make flushing the values. Enter the value by UP Down buton and pres PRG to save the value.

Rst.btn



rESET



nonE

ZERO By Reset Button (Rst btn)

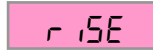
This menu is used for activating the RST buton on the front panel. In active condition in operation mode if you press RST button the displayed value is reseted or returned to the OFFSET values. To activate the RST button press and hold PRG button press RST button to turn to programme mode.

Find the Rst.btn menu by UP Down buttons. Press Prg button to display the menu contents. Press Prg button to make flashing the selections. There is options. RESET and ACTIVE. If you select RESET it will be active. If you select NONE it will be passive. Save the option by pressing Prg button

Rst.inp



rISE



rISE

Activating Hold Input (Hld.inp)

If you activate the Z input, you can reset the device by an external encoder Z signal or swtich . There is 3 options as rise, fall and none.

Activate the Z input and select which edges will be count. Rise or fall. If you don't use Z input select none option.

To activate the Z input press and hold Prg button. Find the Rst.inp menu by UP Down buttons. Press Prg to display the menu. Press Prg again. The options will be flashing. Select the option by UP Down buttons and press Prg button to save

Hld.inp

**Activating Hold Input (Hld.inp)**

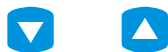
If the HOLD input is active the value on the display is frozen. Without cutting the signal in the HOLD input the device will not count when the HOLD input is active.

Hld.tYP

**Hold Type Selection (Hldtyp)**

To activate the Hold type press and hold Prg and press Rst button. Find Hld.typ menu by UP DOWN buttons. Press Prg to see the menu. Press Prg again to flashing the options. Select the option and press Prg button to save the setting

SnS.tYP



PRG



nPN

PNP

Selecting Sensor Type (NPN/PNP) (Sns.typ.)

The used sensor can be selected by this menu. According to output type of the sensor NPN vey PNP selection allows working with different sensors

Press and hold Prg button and press RST button.find Snstype menu by Up Dpwn buttons. Press Prg button to display the menu.Press Prg again to make flashing the options. Select the intended option by Up Down buttons and save the option by pressing Prg button

Cnt.tYP

**Edge Counting Option (Cnt.typ.)**

It is used for selecting the edge counting numbers of A, B signals of the encoder. Counting options are 1,2, or 4. If the incremental encoder is connected to see the value in pulse type select 1 . When a linear encoder connected to the device to make a high resolution measurement 4 option will be better (quadrature mode). To change the edge counting option, press and hold Prg button and press Rst button. Find the Cnt. Typ menu by UP DOWN buttons. Press Prg to see the menu. Pres Prg again to make flashing the options.

Change the options by UP DOWN buttons. Press Prg to save the selected option.

FAC.def



PRG



YES

no

PRG



PASS

454

Restoring Factory Settings (Fac.def.)

Factory menu used for restoring factory settings. All the settings will be changed by this menu.

So it will be beneficial to save the important settings. The device asks you for a password to return to factory settings. It is 454 To restore the factory settings press and hold Prg button and press Rst button. Find Fac.def menu by UP DOWN butons. Press Prg to see the options. There is YES and No options in the menu. Press Prg again to make flashing the options. If you press to yes option the device asks you the password. The password sets by UP Down buttons and use LEFT button to pass to other digits. Press Prg to save the return to the factory settings.

rEcord

**Recording When The Energy is OFF (Record)**

Factory menu used for restoring factory settings. All the settings will be changed by this menu. So it will be beneficial to save the important settings. The device asks you for a password to return to factory settings. It is 454. To restore the factory settings press and hold Prg button and press Rst button. Find Fac.def menu by UP DOWN butons. Press Prg to see the options. There is YES and No options in the menu. Press Prg again to make flashing the options. If you press to yes option the device asks you the password. The password sets by UP Down buttons and use LEFT button to pass to other digits. Press Prg to save the return to the factory settings.

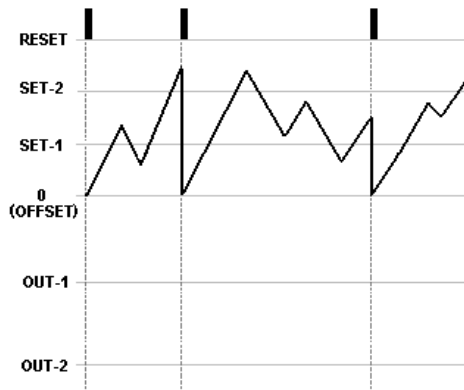
Protec

**Password Protection (Protec)**

Factory menu used for restoring factory settings. All the settings will be changed by this menu. So it will be beneficial to save the important settings. The device asks you for a password to return to factory settings. It is 454. To restore the factory settings press and hold Prg button and press Rst button. Find Fac.def menu by UP DOWN butons. Press Prg to see the options. There is YES and No options in the menu. Press Prg again to make flashing the options. If you press to yes option the device asks you the password. The password sets by UP Down buttons and use LEFT button to pass to other digits. Press Prg to save the return to the factory settings.

OUTPUTS

Output - 0:



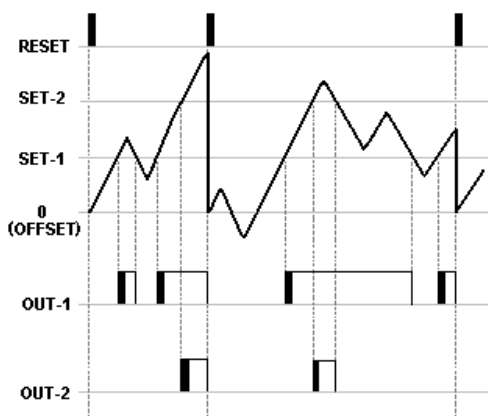
If outmode is selected equal to "0" the outputs don't run.

NOTE:

It must be following conditions for all Output modes;

$$\text{OFFSET} \leq \text{SET-1} \leq \text{SET-2}$$

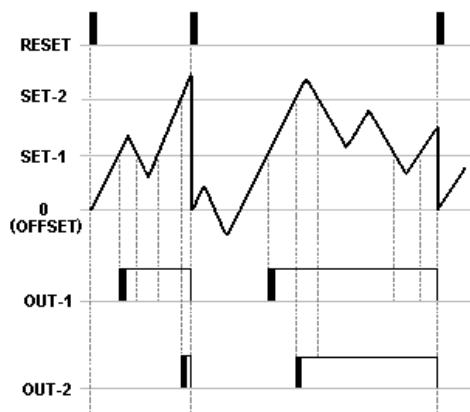
Output-1:



When the counting value reaches to Set-1 value, Out-1 turn ON and also reaches Set-2 value, Out-2 turn ON. Out-1 and Out-2 keeps on state in following condition:

$$\begin{aligned} \text{Counting Value} &\geq \text{Set-1} \\ \text{Counting Value} &\geq \text{Set-2} \end{aligned}$$

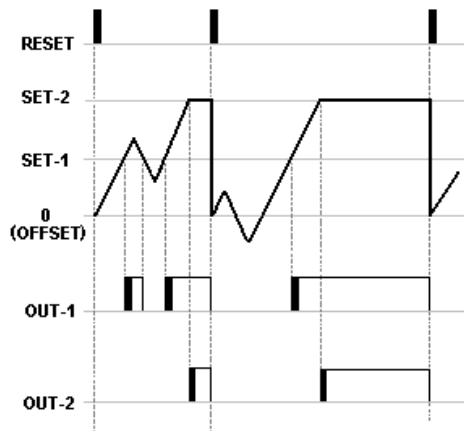
Output-2:



When the counting value reaches to Set-1, the OUT-1 turn on and also reaches to Set-2, the OUT-2 turn on. Even if the decrease down the Set values, the Outputs don't turn off.

Only if the RESET comes, the outputs turns off.

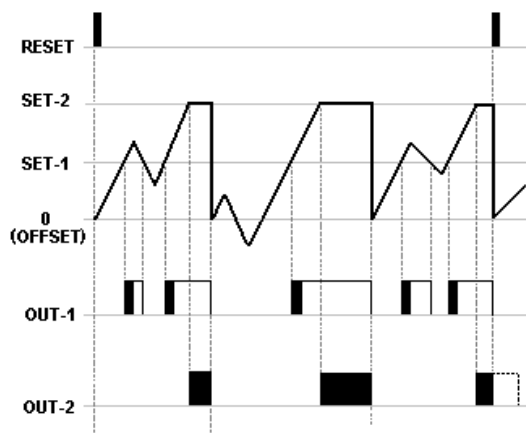
Output-3:



When the counting value reaches to Set-1, the OUT-1 turn on and if decrease under to Set-1 it's turn off. When the counting value reaches to Set-2, the OUT-2 turn on and the counting value is held (namely it doesn't count).

If the RESET comes, the outputs turns off.

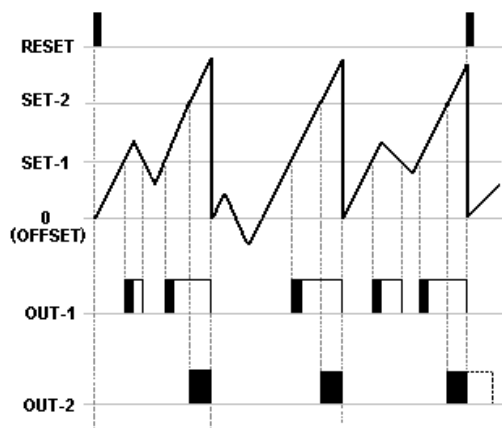
Output-4:



It is Autoreset mode. In this mode OUT-1 depend on the OUT-2. It should be enter the TOUT-2 is time and the TOUT-1 is HOLD. Namely, when the counting value reaches to Set-1, the OUT-1 turn on and if decrease under to Set-1 it's turn off. When the counting value reaches to Set-2, the OUT-2 turn on and the counting value is held.

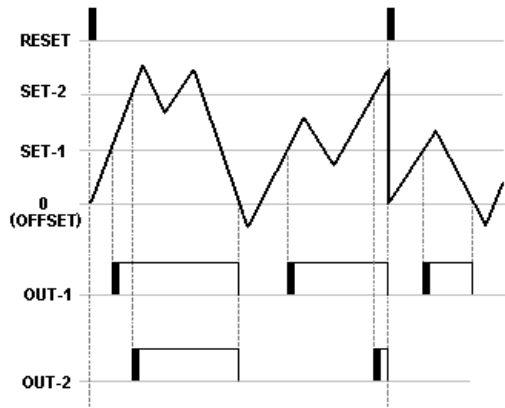
The counting value and outputs will be auto-reseted in the end of the TOUT-2 time.

Output-5:



It is also Autoreset mode same as Output-4
The difference is the counting value isn't held, namely after reached to Set-2, the instrument continue to count.

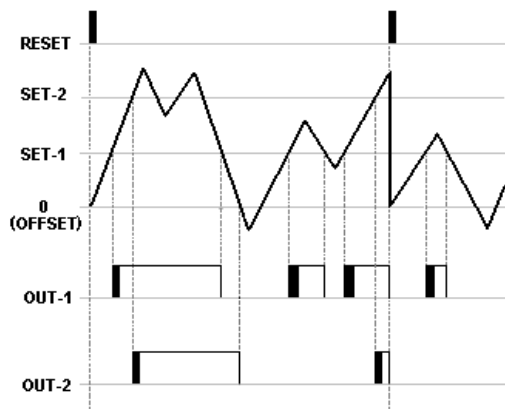
Output-6:



When the counting value reaches to Set-1, the OUT-1 turn on and also reaches to Set-2, the OUT-2 turn on. Even if the decrease down the Set values, the Outputs don't turn off unless the counting value reach to OFFEST value.

If the RESET comes, the outputs turns off.

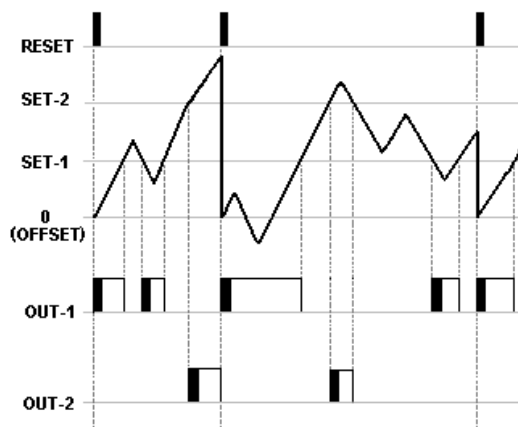
Output-7:



When the counting value reaches to Set-1, the OUT-1 turn on and if it decrease under the Set-1 OUT-1 turns off . When the counting value reaches to Set-2, the OUT-2 turn on. Even if the decrease down the Set values, Out-2 doesn't turn off unless the counting value reach to OFFEST value.

If the RESET comes, the outputs turns off.

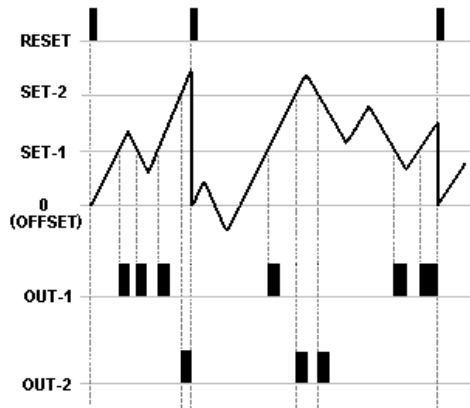
Output-8:



The OUT-1 keeps on until the counting value reaches to SET-1. When the counting value reaches to SET-1, OUT-1 turns off and when it reaches to Set-2, OUT-2 turns on.

If the RESET comes, the outputs turns off.

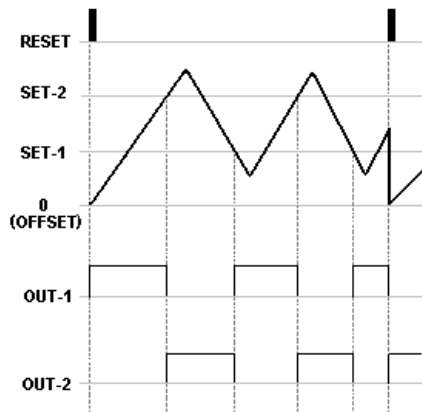
Output-9:



In this mode it should be enter the value to TOUT times. The Out-1 keeps on during the TOUT-1 time in every pass of the counting value at Set-1. The state of Set-1 is same as the Set-2.

If the RESET comes, the outputs turns off.

Output-10:



In this mode it should be selected the TOUT parameters as HOLD.

The OUT-1 keeps on until the counting value reaches to SET-2. When the counting value reaches to SET-2, OUT-1 turns off and OUT-2 turns on.

When the counting value increase and reaches reaches to Set-1, OUT-2 turns off and OUT-1 turns on.

If the RESET comes, the counting value becomes the Offset.

ERROR MESSAGES

SC.OuEr If the value is very high (999999) is written.

SC.undr If the value is very low (-999999) is written

DATA PROTOCOL

ALC77 RS-232 parameters are as follows. There is setting on the devices. Is one way communications device to the receiving terminal

Data format: RS232 EOL [16bit data + EOL (End of line character)]

Baud rate: 57600 bps

Data bits: 8

Stop bits: 1

Parity: none

ATEK SENSOR TECHNOLOGY A.G.

Cevizli Mahallesi Bagdat Caddesi Guven Sokak No:11 - ISTANBUL - TURKEY

Tel : +90 216 457 19 31 PBX Fax : +90 216 457 19 30

Web : www.ateksensor.com e-mail : info@ateksensor.com