EMKO

EZM-9930 96x96 DIN 1/4 Programmable Counter

EZM-9930 96 x 96 DIN 1/4
Universal Input Programmable Counter

- 6 digits Process (PV) and 6 digits Set (SV) Value Display
- Operation with 1 Set Value
- Reset , Pause and ChA-ChB Counting Inputs
- Operation with Automatic and Manual Reset
- NPN/PNP Type Operation
- INC , DEC , INC / INC , INC / DEC , UP / DOWN , x1 / x2 / x4 Counting with Phase Shifting Property in Counter Function
- Multiplication Coefficient and Decimal Point Position

ABOUT INSTRUCTION MANUAL

Instruction manual of EZM-9930 Programmable Counter consists of two main sections. Explanation of these sections are below. Also, there are other sections which include order information and technical specifications of the device. All titles and page numbers in instruction manual are in "**CONTENTS**" section. User can reach to any title with section number.

Installation:

In this section, physical dimensions of the device, panel mounting, electrical wiring, module mounting in the device, physical and electrical installation of the device to the system are explained.

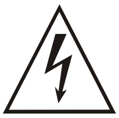
Operation and Parameters:

In this section, user interface of the device, how to access to the parameters, description of parameters are explained.

Also in these sections, there are warnings to prevent serious injury while doing the physical and electrical mounting or using the device.

Explanation of the symbols which are used in these sections are given below.

This symbol is used for safety warnings. User must pay attention to these warnings.



This symbol is used to determine the dangerous situations as a result of an electric shock. User must pay attention to these warnings definitely.

This symbol is used to determine the important notes about functions and usage of the device.

CONTENTS

EU DECLARATION OF CONFORMITY

Manufacturer's Name : EMKO ELEKTRONIK A.S.
Manufacturer's Address : DOSAB, Karanfil Sk., No:6,
16369 Bursa, TURKEY

The manufacturer hereby declares that the product:

Product Name : Programmable Counter

Type Number : EZM-9930

Product Category : Electrical equipment for measurement, control and laboratory use

Conforms to the following directives :

2006 / 95 / EC The Low Voltage Directive

2004 / 108 / EC The Electromagnetic Compatibility Directive

has been designed and manufactured to the following specifications:

EN 61000-6-4:2007 EMC Generic Emission Standard for Industrial Environments

EN 61000-6-2:2005 EMC Generic Immunity Standard for Industrial Environments

EN 61010-1:2001 Safety Requirements for electrical equipment for measurement, control and laboratory use

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When and Where Issued	**Authorized Signature**
16th October 2009	Name : Serpil YAKIN
Bursa-TURKEY	Position : Quality Manager

1.Preface

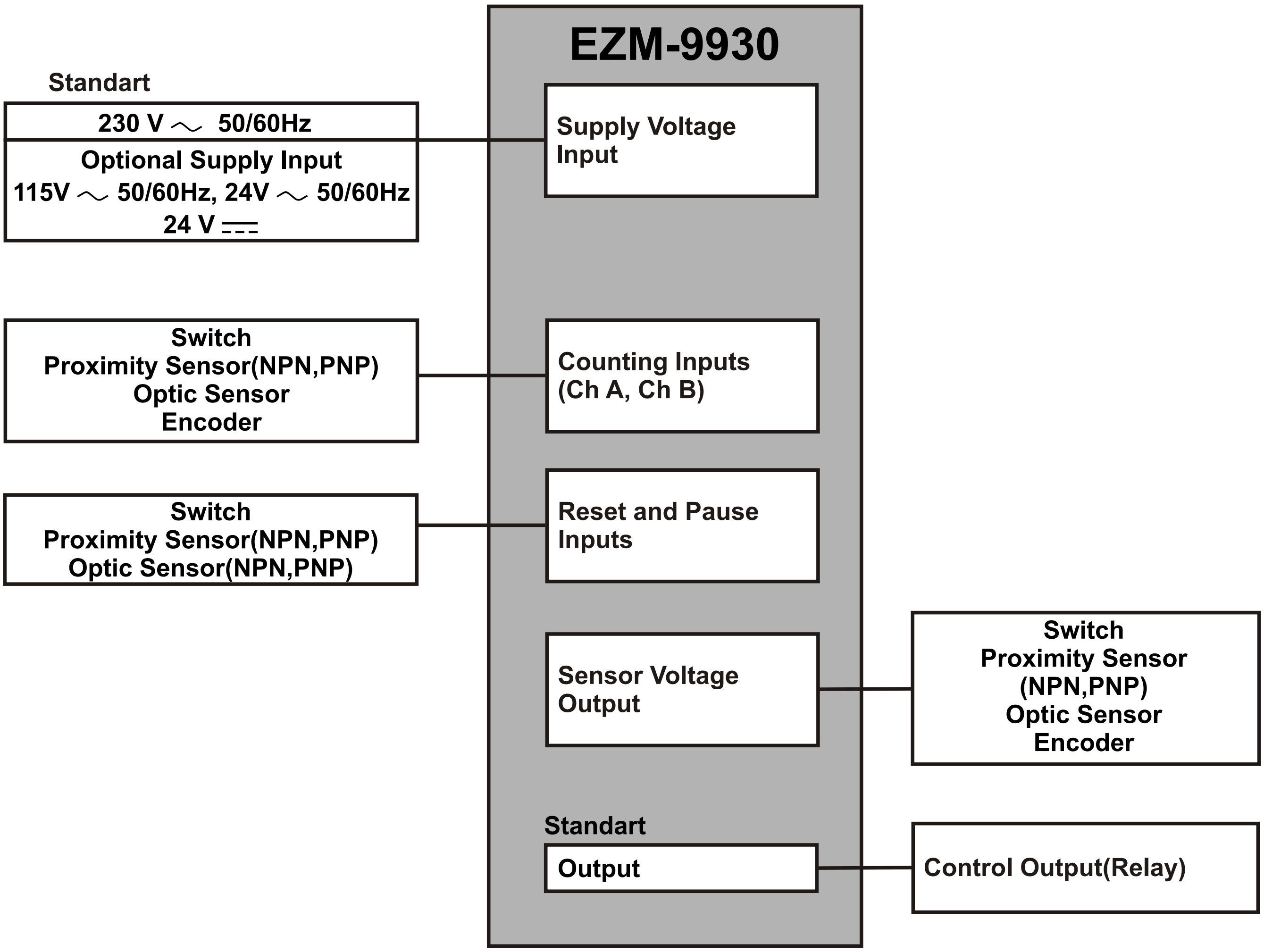
EZM Series Programmable Counter can be used in package machines, production and quality control rollers, in cutting and processing machine of glass, plastic, marble, sheet, iron, fabric all measuring and controlling of dimension, productivity, and can be adapted easily to all mechanical construction and automation system.

Some application fields which they are used are below:

Application Fields

Package machines,
Quality Control rollers,
Filling Systems,
Tool Benchs,
Measuring Dimension and Control Automation,
In Cutting and Processing machine of glass, plastic, marble, sheet, iron and fabric
Building Automation.
Production bands

1.1 General Specifications



1.2 Ordering Information

EZM-9930 (96x96 1/4 DIN)	A	BC	D	E	/	FG	HI	/	U	V	W	Z
		00	0	1	/	00	00	/	0	0	0	0

A	Supply Voltage
2	24 V ∼ (-%15;+%10) 50/60Hz or 24 V⎓ (-%15;+%10)
3	24 V ∼ (-%15;+%10) 50/60Hz
4	115 V ∼ (-%15;+%10) 50/60Hz
5	230V ∼ (-%15;+%10) 50/60Hz
9	Customer (Maximum 240V ∼ (-%15;+%10))50/60Hz

E	Output-1
1	Relay Output (5A @ 250 V ∼) Rezistive Load

All order information of EZM-9930 Programmable Counter are given on the table at left. User may form appropriate device configuration from information and codes that at the table and convert it to the ordering codes.

Supply voltage must be determined for your system.

Please fill the order code blanks according to your needs.

Please contact us, if your needs are out of the standards.

∼ Symbol means Vac
⎓ Symbol means Vdc
≂ Symbol means Vac and Vdc can be applied.

1.3 Warranty

EMKO Elektronik warrants that the equipment delivered is free from defects in material and workmanship. This warranty is provided for a period of two years. The warranty period starts from the delivery date. This warranty is in force if duty and responsibilities which are determined in warranty document and instruction manual performs by the customer completely.

1.4 Maintenance

Repairs should only be performed by trained and specialized personnel. Cut power to the device before accessing internal parts.
Do not clean the case with hydrocarbon-based solvents (Petrol, Trichlorethylene etc.). Use of these solvents can reduce the mechanical reliability of the device. Use a cloth dampened in ethyl alcohol or water to clean the external plastic case.

2.Installation

Before beginning installation of this product, please read the instruction manual and warnings below carefully.

In package ,
- One piece unit
- Two pieces mounting clamps
- One piece instruction manual

A visual inspection of this product for possible damage occured during shipment is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.

If there is danger of serious accident resulting from a failure or defect in this unit, power off the system and separate the electrical connection of the device from the system.

The unit is normally supplied without a power switch or a fuse. Use power switch and fuse as required.

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

Never attempt to disassemble, modify or repair this unit. Tampering with the unit may results in malfunction, electric shock or fire.

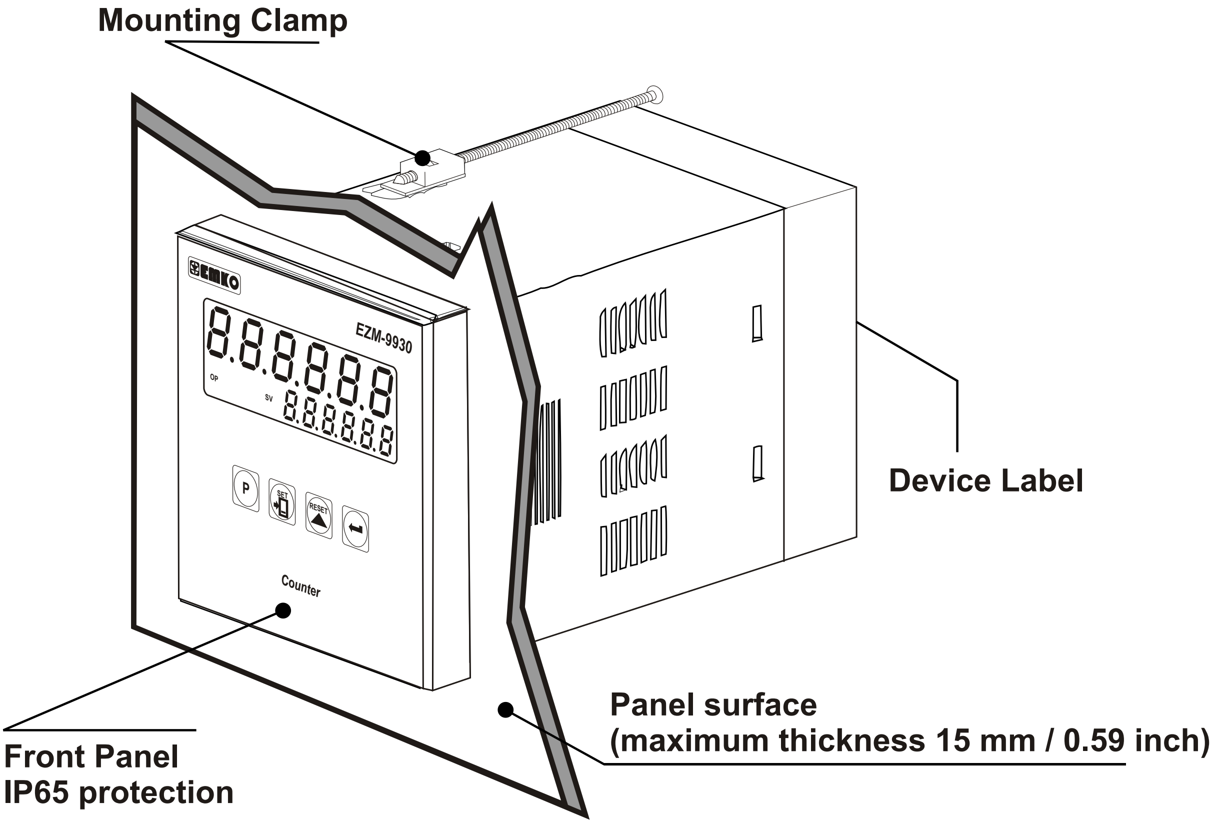
Do not use the unit in combustible or explosive gaseous atmospheres.

During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you must be careful.

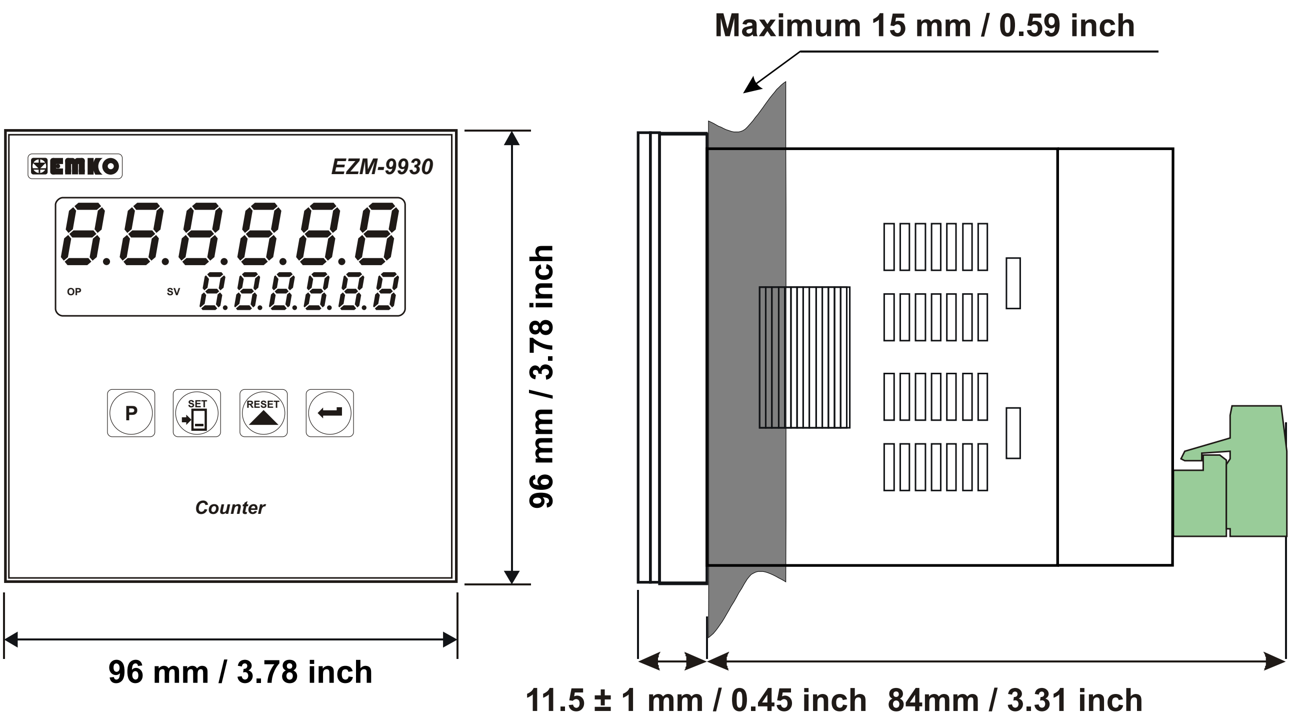
Montage of the product on a system must be done with it’s fixing clamps. Do not do the montage of the device with inappropriate fixing clamp. Be sure that device will not fall while doing the montage.

It is your responsibility if this equipment is used in a manner not specified in this instruction manual.

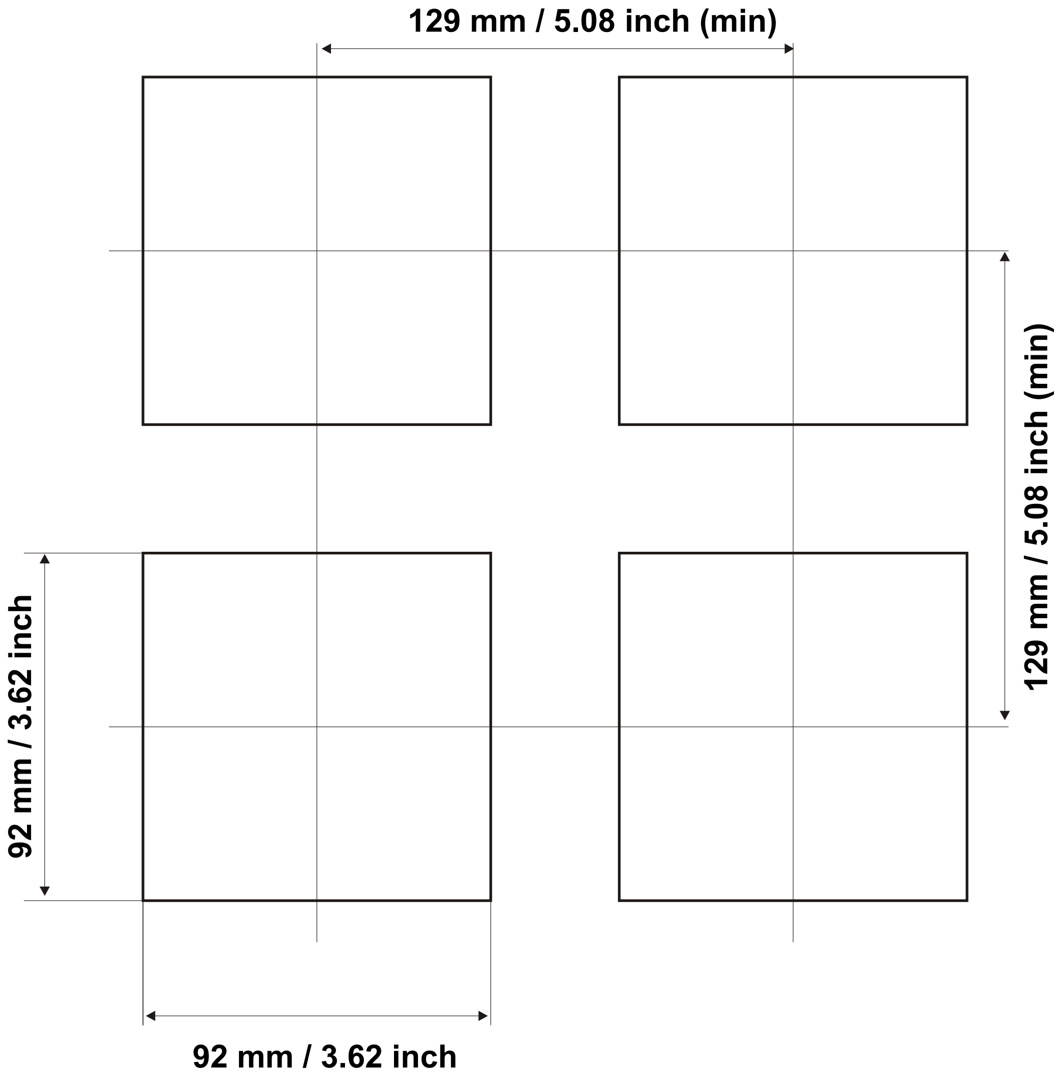
2.1 General Description



2.2 Dimentions



2.3 Panel Cut-out



2.4 Environmental Ratings

Operating Conditions

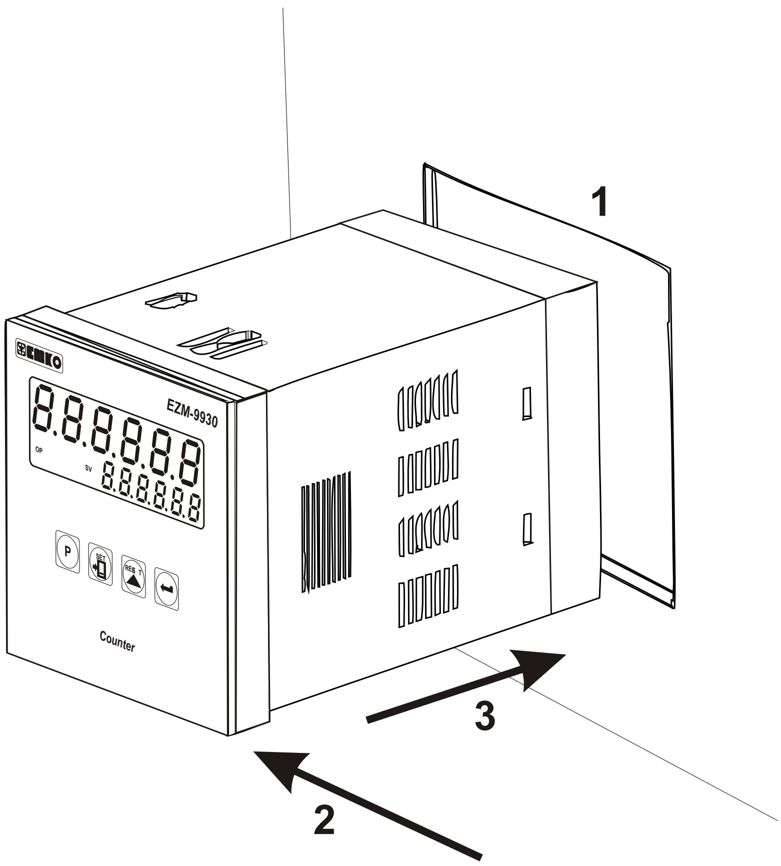
Operating Temperature **:** 0 to 50 °C

Max. Operating Humidity : 90% Rh (non-condensing)

Altitude **:** Up to 2000m.

Forbidden Conditions:
Corrosive atmosphere
Explosive atmosphere
Home applications (The unit is only for industrial applications)

2.5 Panel Mounting



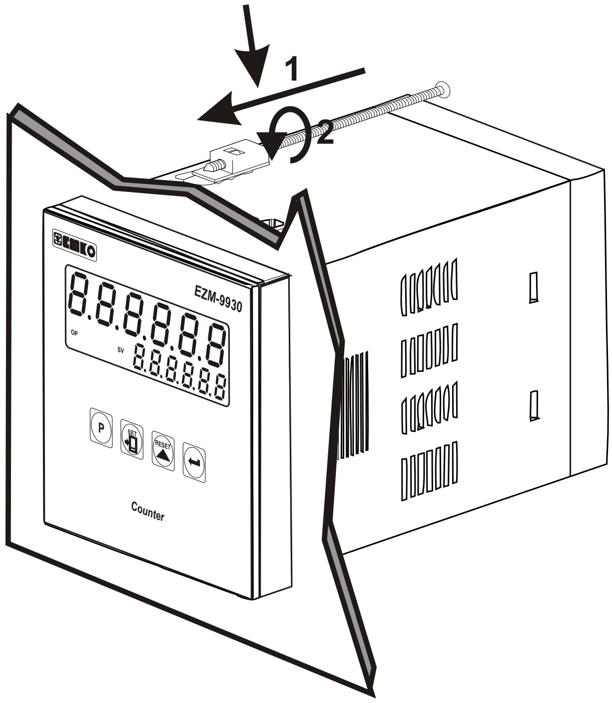
1-Before mounting the device in your panel, make sure that the cut-out is the right size.

2-Check front panel gasket position

3-Insert the device through the cut-out. If the mounting clamps are on the unit, put out them before inserting the unit to the panel.

During installation into a metal panel, care should be taken to avoid injury from metal burrs which might be present. The equipment can loosen from vibration and become dislodged if installation parts are not properly tightened. These precautions for the safety of the person who does the panel mounting.

2.6 Installation Fixing Clamp



The unit is designed for panel mounting.

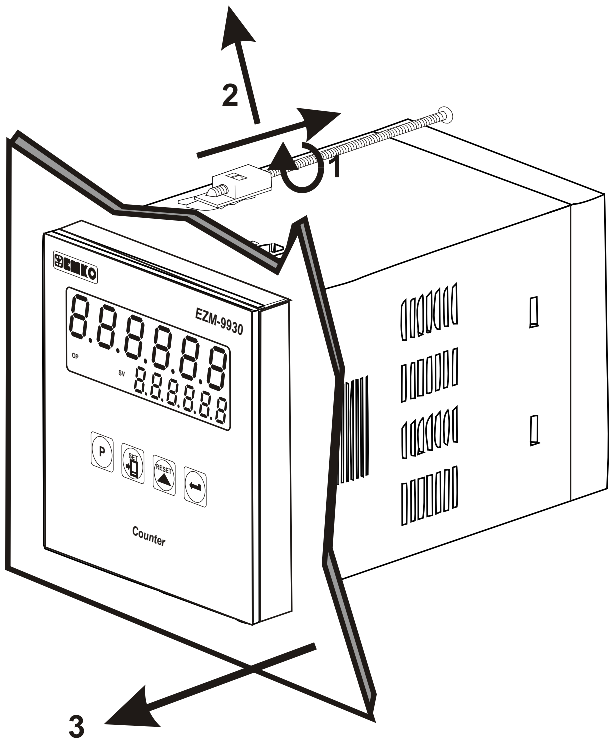
1-Insert the unit in the panel cut-out from the front side.

2- Insert the mounting clamps to the holes that located top and bottom sides of device and screw up the fixing screws until the unit completely immobile within the panel

Montage of the unit to a system must be done with it's own fixing clamps. Do not do the montage of the device with inappropriate fixing clamps. Be sure that device will not fall while doing the montage.

2.7 Removing from the Panel

Before starting to remove the unit from panel, power off the unit and the related system.



1-Loosen the screws.

2-Pull mounting clamps from top and bottom fixing sockets.

3-Pull the unit through the front side of the panel

3.Electrical Wirings

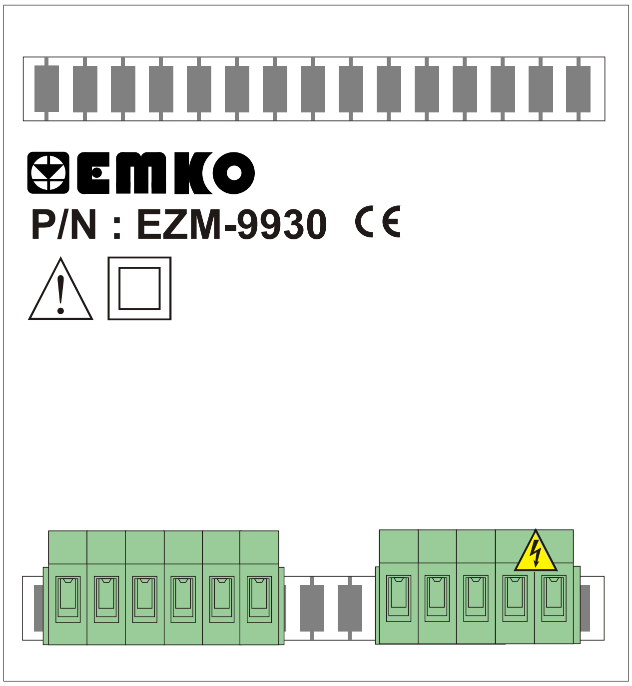
You must ensure that the device is correctly configured for your application. Incorrect configuration could result in damage to the process being controlled, and/or personal injury. It is your responsibility, as the installer, to ensure that the configuration is correct.
Parameters of the device has factory default values. These parameters must be set according to the system's needs.

Only qualified personnel and technicians should work on this equipment. This equipment contains internal circuits with voltage dangerous to human life. There is severe danger for human life in the case of unauthorized intervention.

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

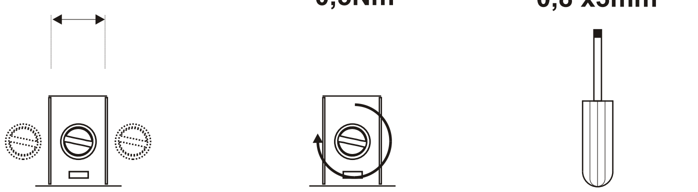
3.1 Terminal Layout and Connection Instructions



Max. 2.5mm / 0.098 inch
Wire Size:
14AWG/1mm²
Solid /Stranded

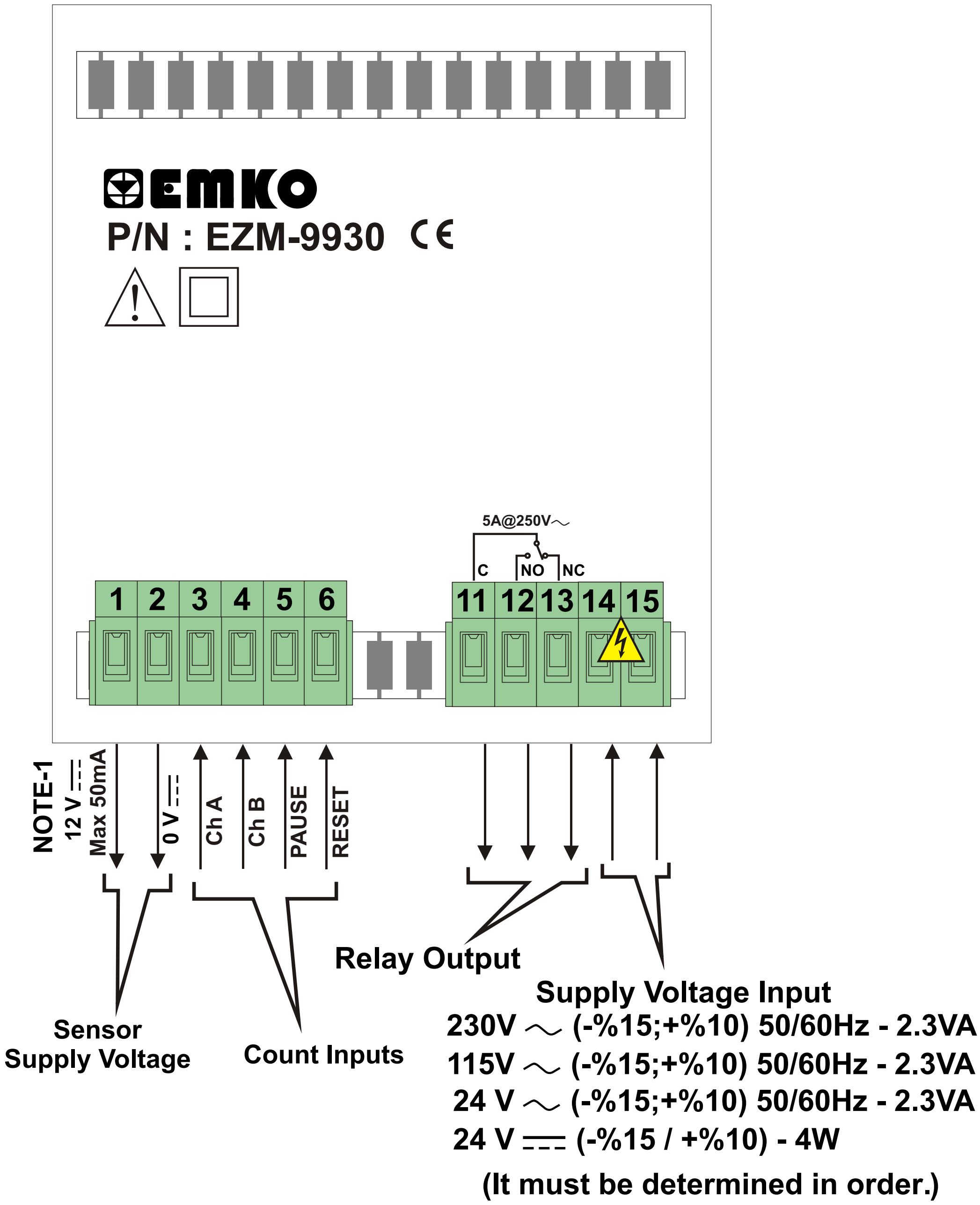
Torque
0,5Nm

Screw driver
0,8 x3mm



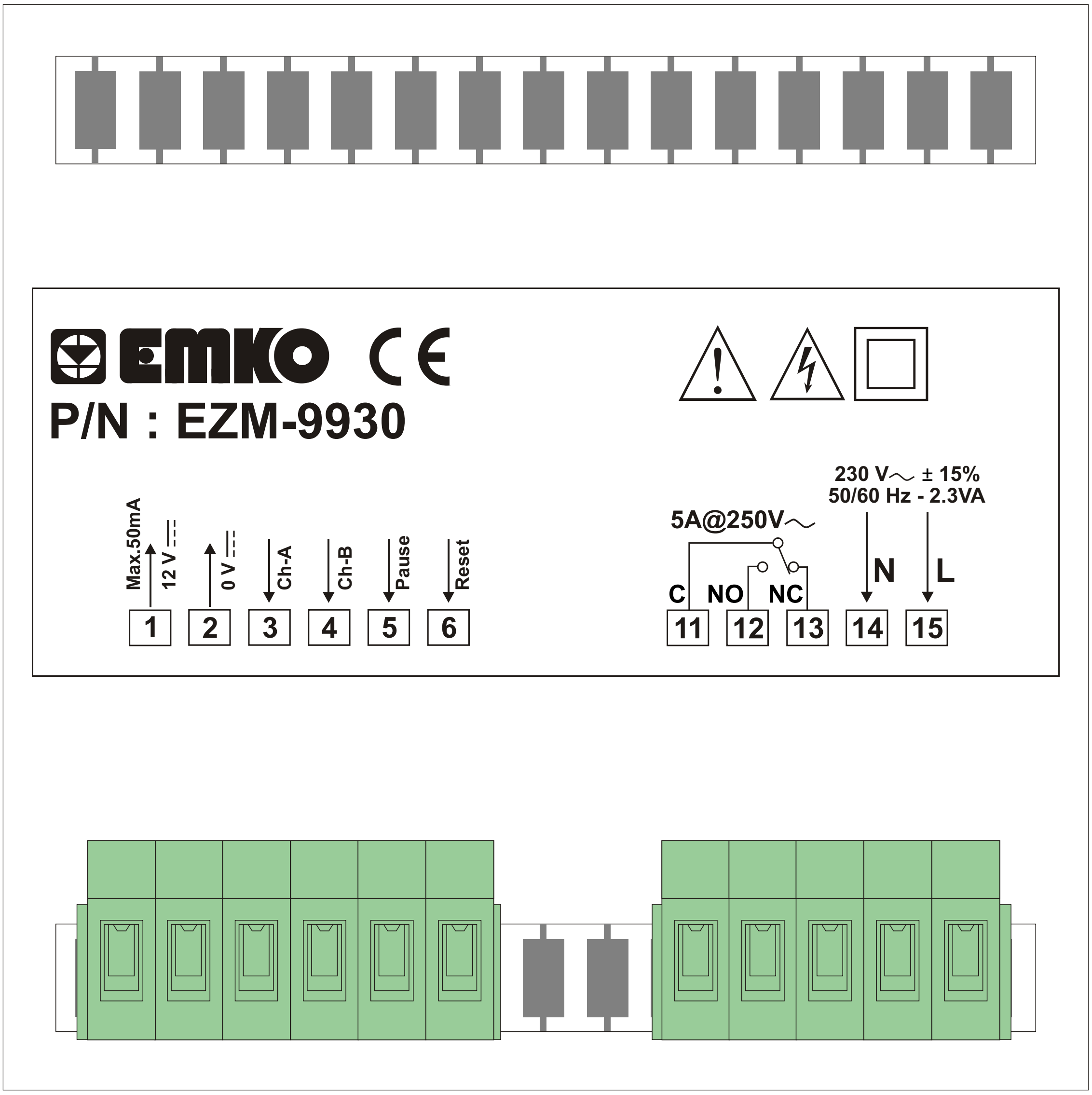
3.2 Electrical Wiring Diagram

Electrical wiring of the device must be the same as 'Electrical Wiring Diagram' below to prevent damage to the process being controlled and personnel injury.



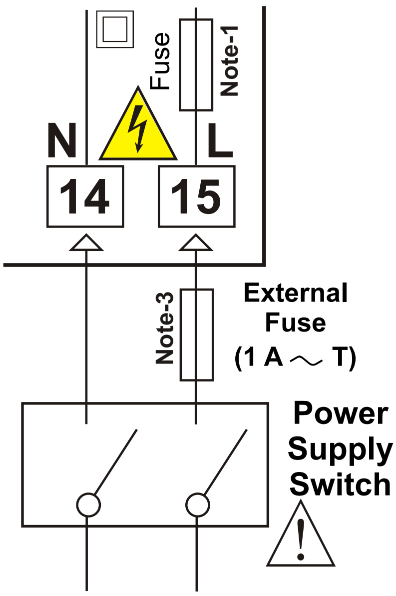
NOTE-1 : Sensor supply voltage: 12V ± 10%, 50 mA maximum with short circuit protection

3.3 View of Device Label



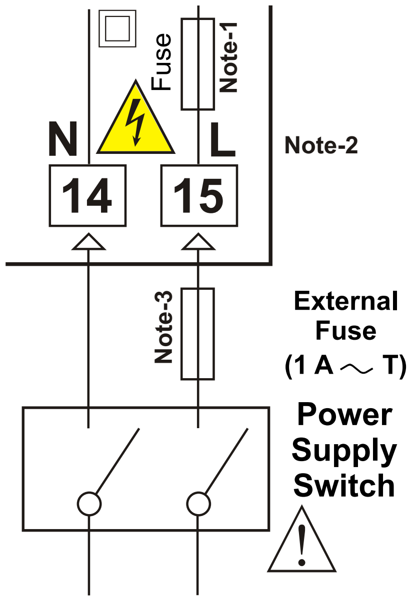
3.4 Connection of Device Supply Voltage Input

Connection of Universal Supply Voltage Input



Supply Voltage
115V~, 230 V ~
(-%15;+%10) 50/60 Hz

Connection of Universal Supply Voltage Input



Supply Voltage
24V ~ (-%15;+%10) 50/60Hz
or 24V⎓ (-%15;+%10)

Note-1 :
There is internal 33 R fusible flameproof resistor in 115V ~ 50/60 Hz and 230V~ 50/60 Hz
There is internal 4R7 fusible flameproof resistor in 24V ~ 50/60Hz

Note-2 : "L" is "+", "N" is "-" for 24V⎓ supply voltage.

Note-3 : External fuse is recommended

Make sure that the power supply voltage is the same indicated on the instrument.

Switch on the power supply only after that all the electrical connections have been completed.

Supply voltage range must be determined in order. While installing the unit, supply voltage range must be controlled and appropriate supply voltage must be applied to the unit. Controlling prevents damages in unit and system and possible accidents as a result of incorrect supply voltage.

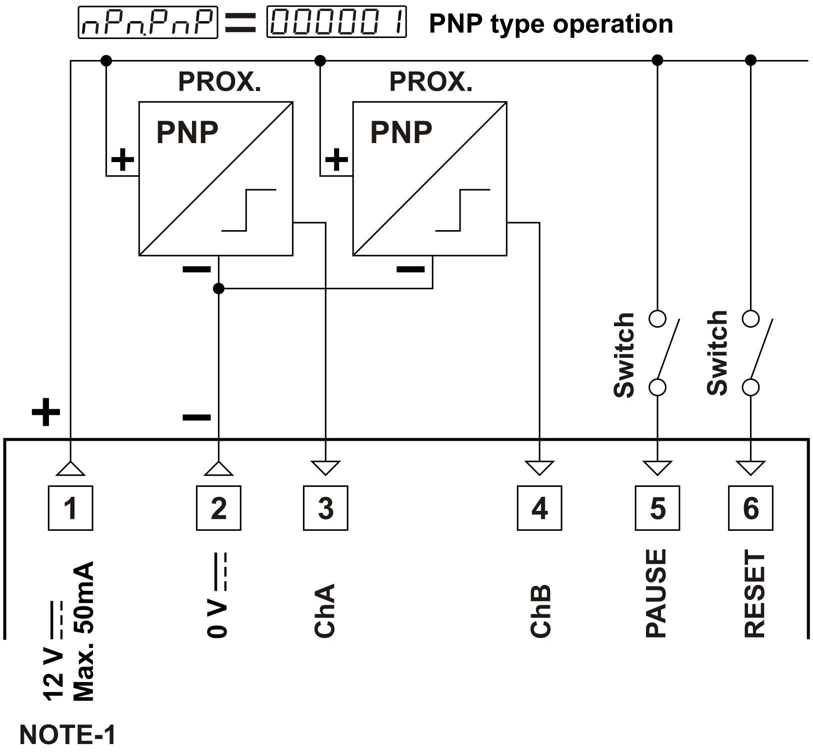
There is no power supply switch on the device. So a power supply switch must be added to the supply voltage input. In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument.Power supply switch shall be easily accessible by the user.

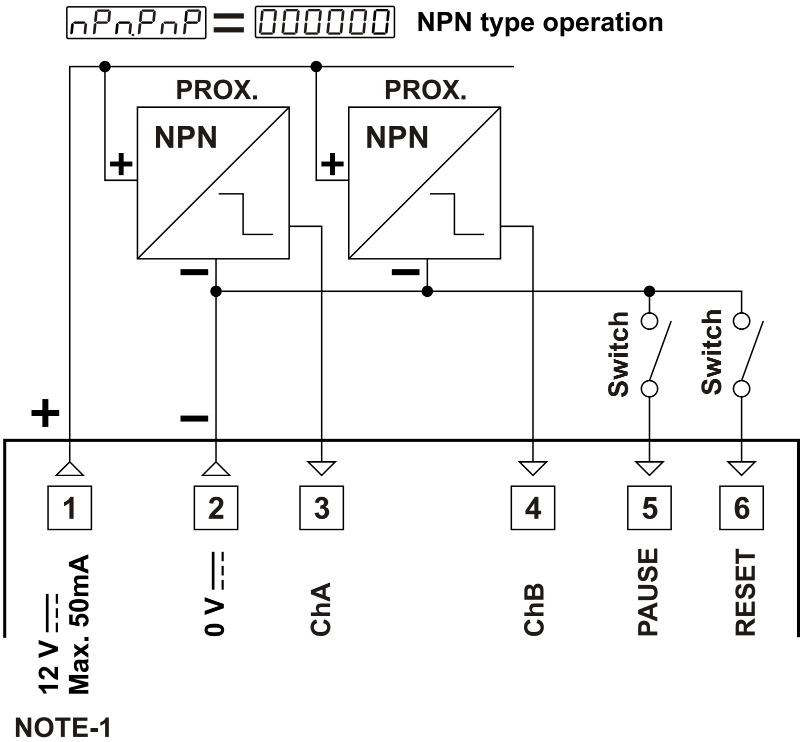
Power switch must be two poled for seperating phase and neutral. On/Off condition of power switch is very important in electrical connection. On/Off condition of power switch must be signed for preventing the wrong connection.

If an external fuse is used, it must be on phase connection in ~ supply input.

3.5 Counting Input Connection

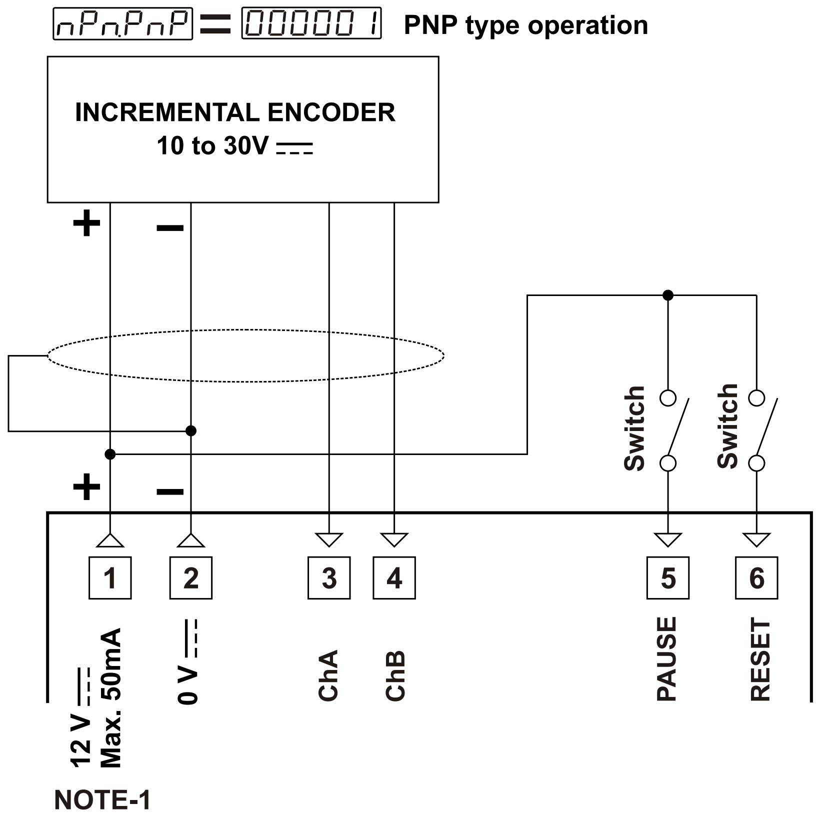
3.5.1 Proximity & Switch Connection

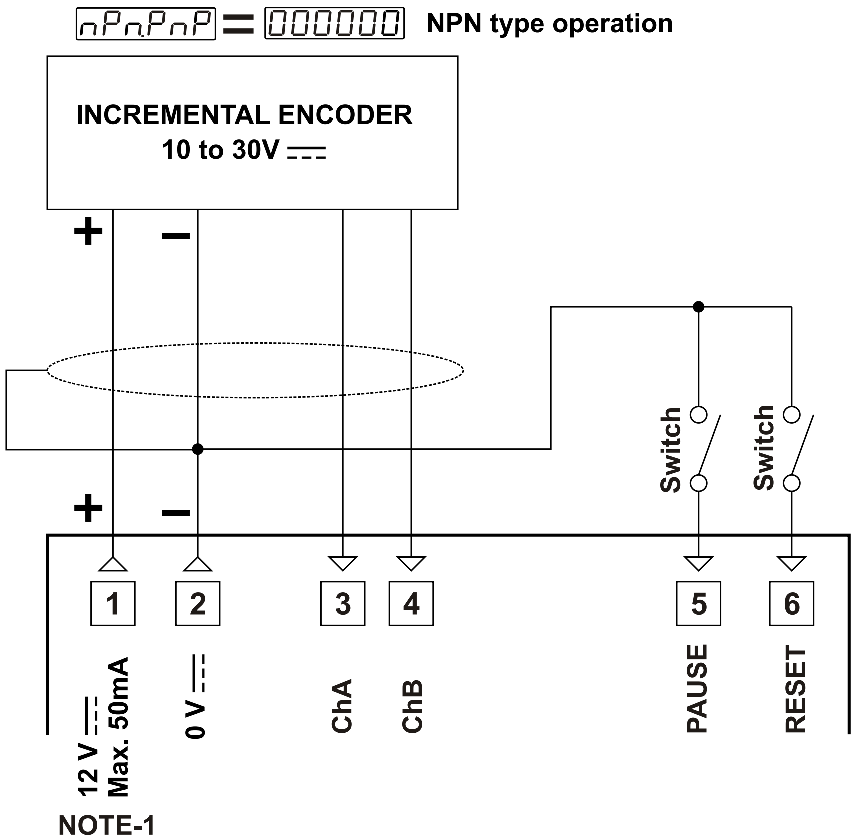




NOTE-1 : Sensor supply voltage: 12V⎓ ± 10%, 50 mA maximum with short circuit protection

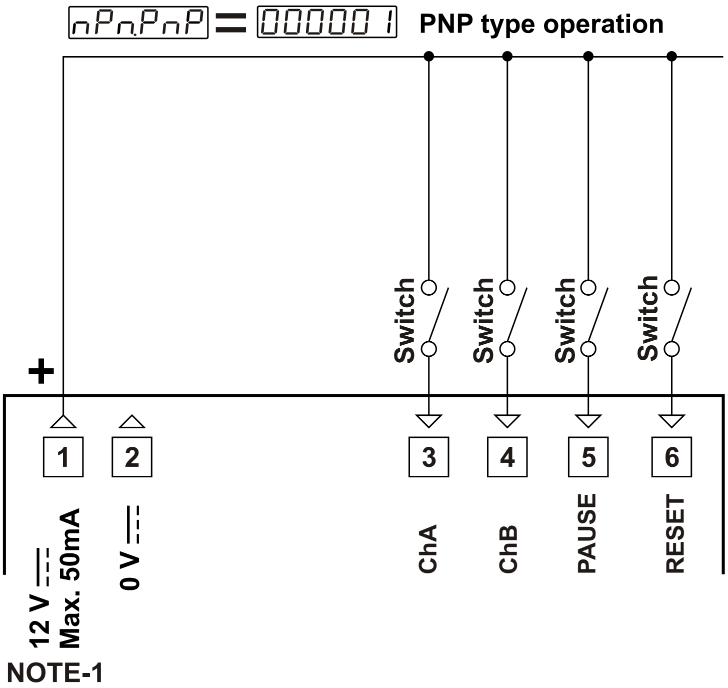
3.5.2 Incremental Encoder & Switch Connection

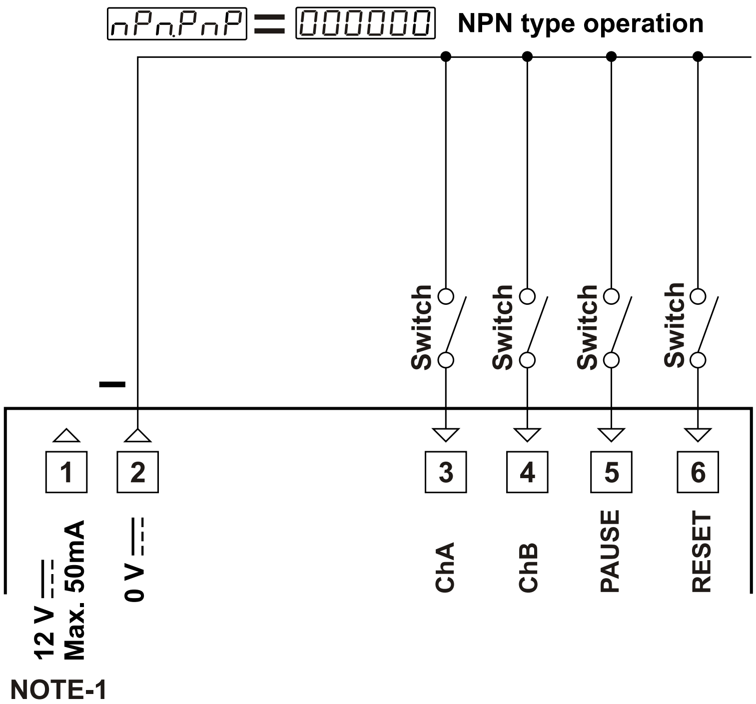




NOTE-1 : Sensor supply voltage: 12V⎓ ± 10%, 50 mA maximum with short circuit protection

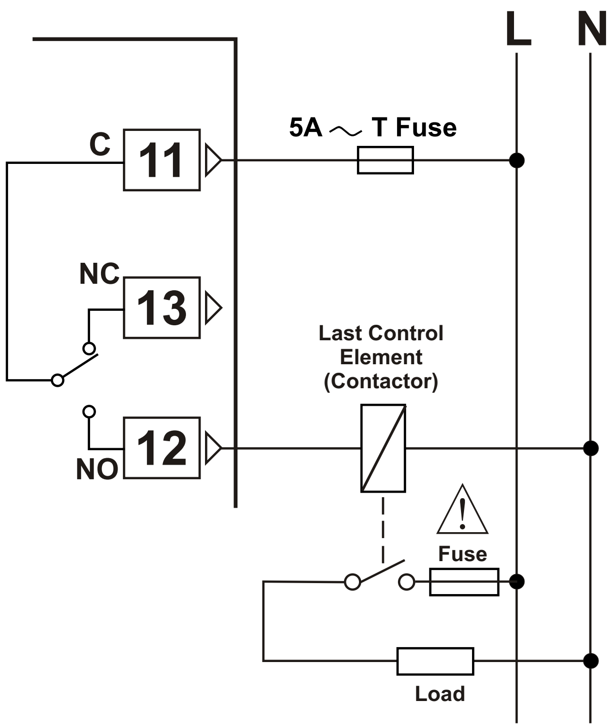
3.5.3 Switch Connection





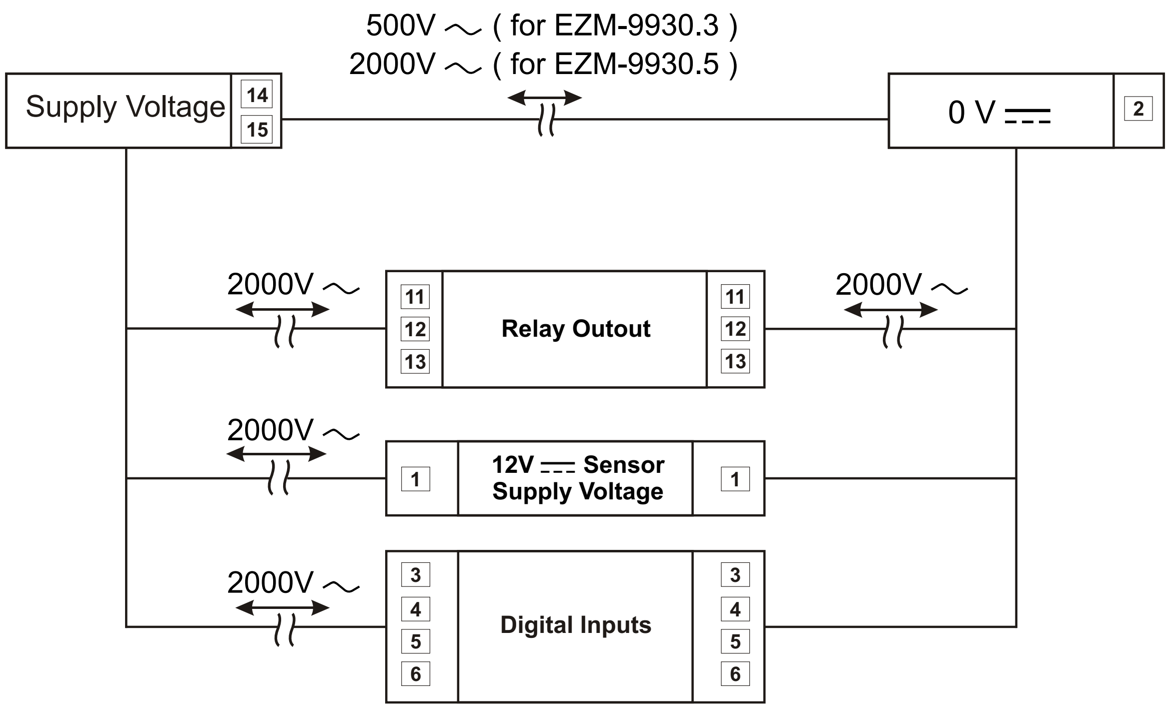
NOTE-1 : Sensor supply voltage: 12V⎓ ± 10%, 50 mA maximum with short circuit protection

3.6 Relay Output Wiring Diagram



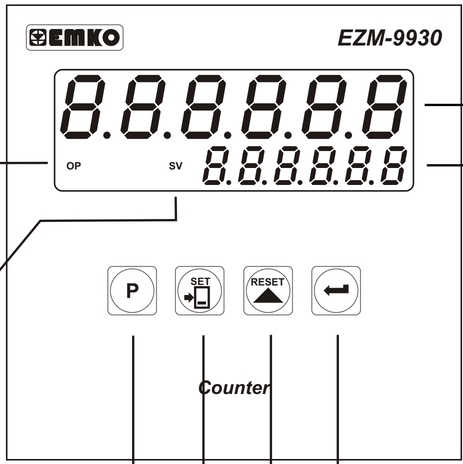
Fuses must be selected according to the applications.

3.7 Galvanic Isolation Test Results of EZM-9930 Programmable Counter



4.Definition of Front Panel and Accessing to the Set Parameters

4.1 Definition of Front Panel



Displays Actual Value and Name of Program Parameter

Displays SET and Parameter Value

Led indication of output is active

Led indication of SV:SET value

PROG Button is Used for accessing to the Program Parameters

ENTER Button is used for saving all changes to memory and accessing to the parameters.

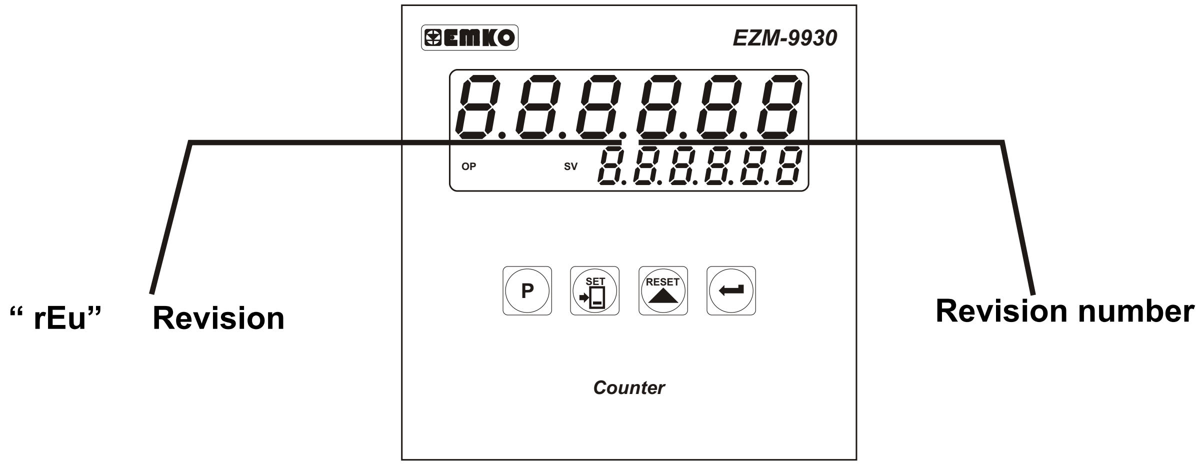
SHIFTING Button is used for Changing the cursor position in Programming mode and entering the SET Value.

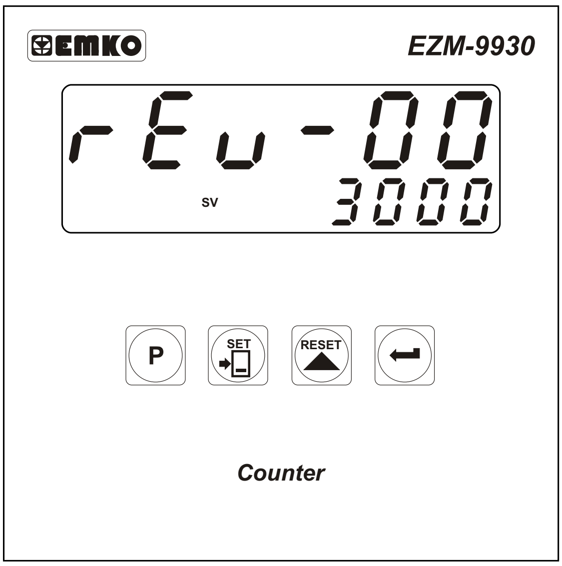
RESET and INCREMENT Button is used to Reset the Actual Value or increment the digit value that is selected by SHIFTING Button.

4.2 Power On Observation of EZM - 9930 Programmable Counter and Software Revision on the Display

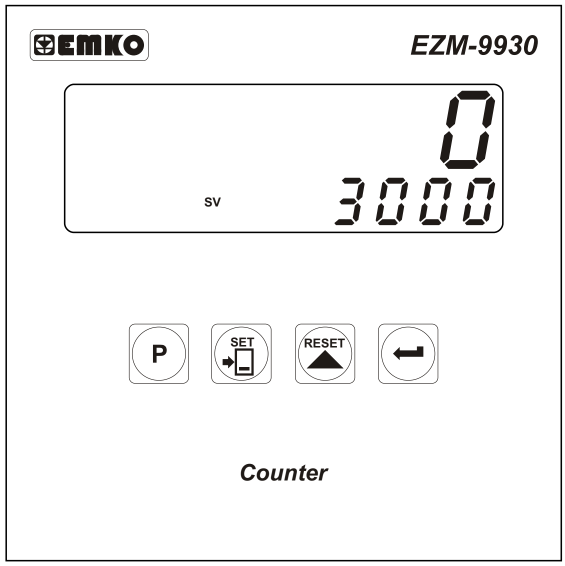
When power is applied to the device, software revision number of the controller is momentarily illuminated on actual value display. Then operation screen is observed.

When power on, view of the screen is shown below:





Software Revision

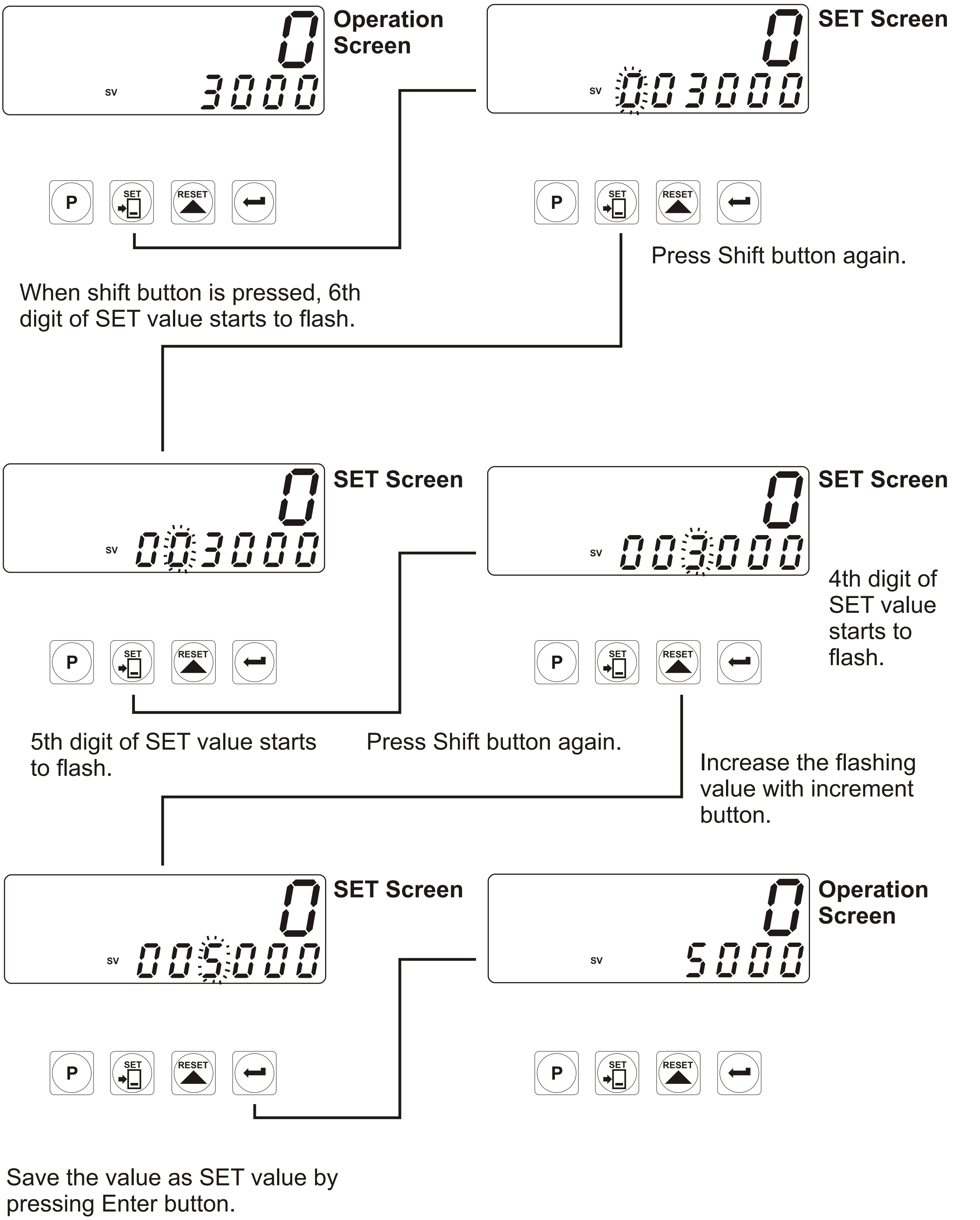


Main screen is shown.

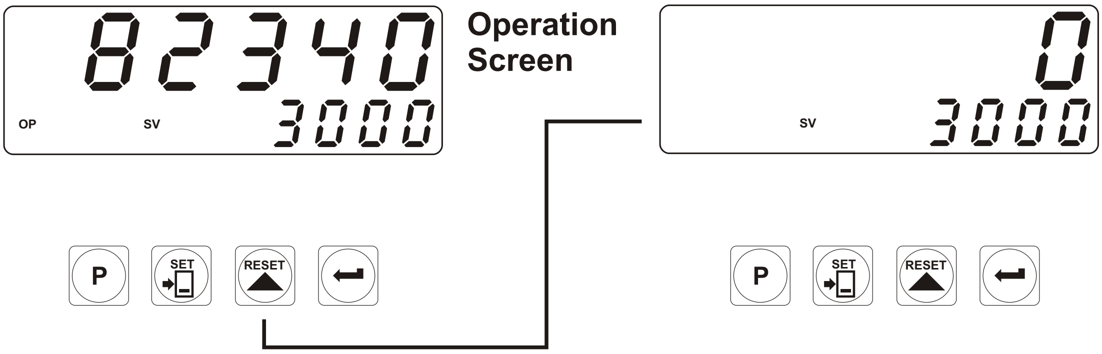
If there is an unexpected situation while opening the device, power off the device and inform a qualified personnel.

4.3 Adjustment of SET Value

Changing SET Value



4.4 Resetting the Count Value



Operation Screen

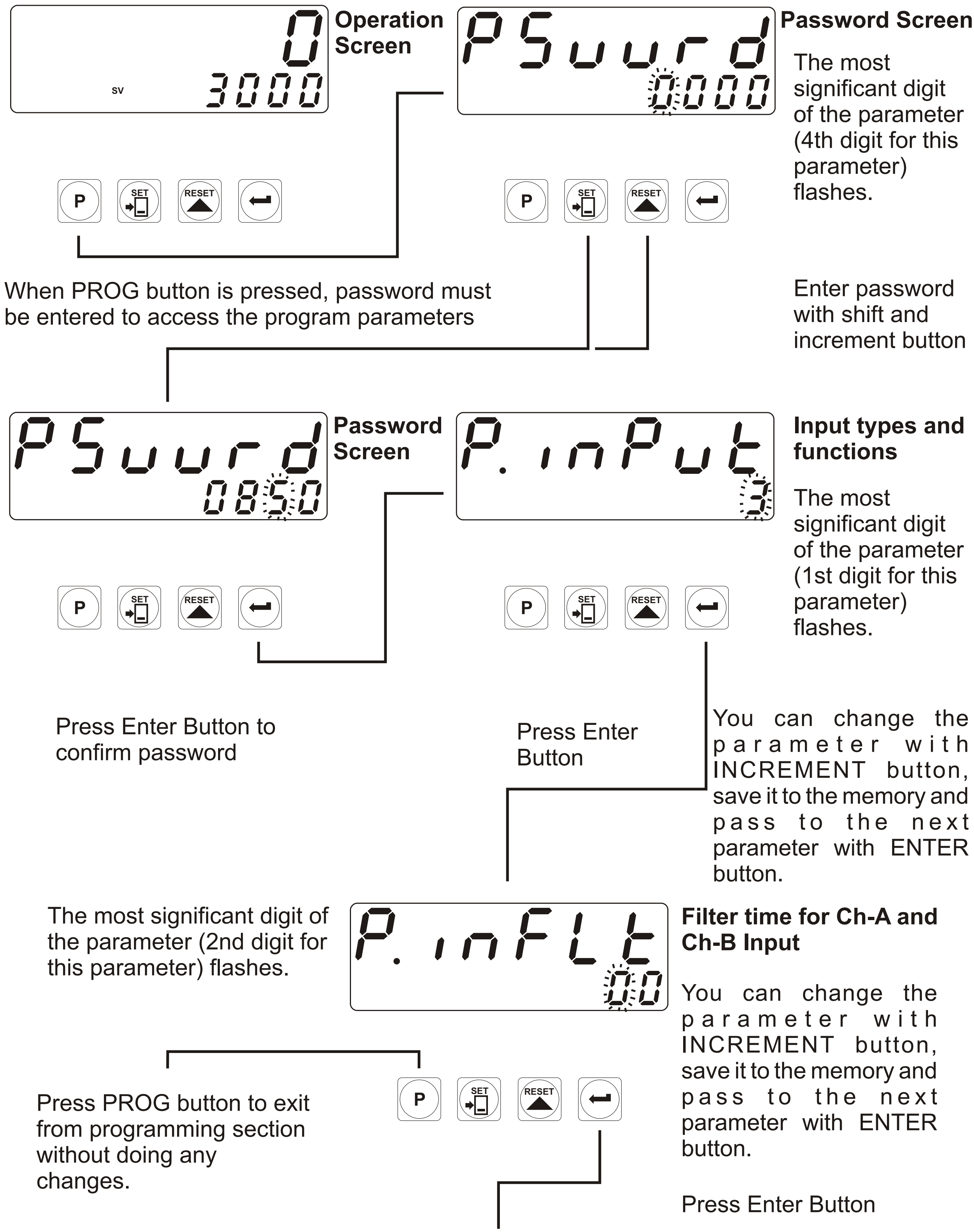
Operation Screen

When RESET button is pressed, Actual Value becomes the Reset-Offset Value.

RESET operation can be realized by Reset button or applying signal to the RESET input. These two operations are named MANUAL RESET in parameters section.
At the end of MANUAL RESET operation, if dirEct = 000000 then Count Value becomes Reset Offset Value.
If dirEct = 000001 and r.oFSEt = 000000 then Count Value becomes SET value. If dirEct = 000001 and r.oFSEt ≠ 000000 then count value becomes Reset Offset Value.

4.5 Accessing to the Program Parameters

In this section Accessing to the Program parameters process is shown.
For details on parameters refer to PROGRAM PARAMETERS section.

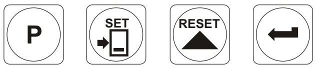


The most significant digit of the parameter (2nd digit for this parameter) flashes.

Filter time for Reset and Pause Input

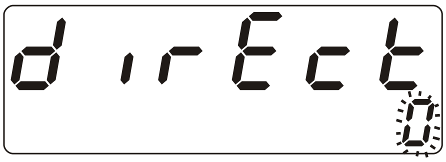
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

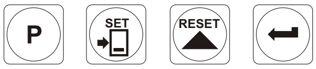
The most significant digit of the parameter (1st digit for this parameter) flashes.



Direction of the counting

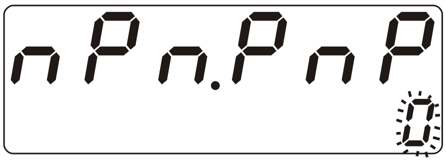
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

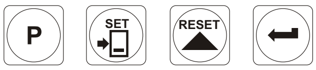
The most significant digit of the parameter (1st digit for this parameter) flashes.



Sensor type selection

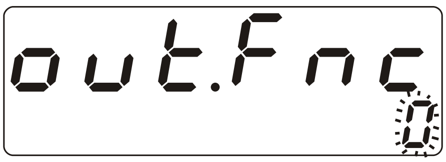
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

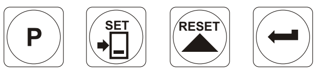
The most significant digit of the parameter (1st digit for this parameter) flashes.



Output Functions

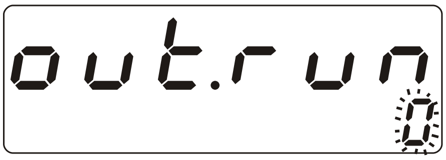
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

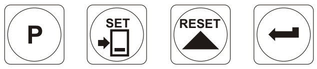
The most significant digit of the parameter (1st digit for this parameter) flashes.



Output Run Type

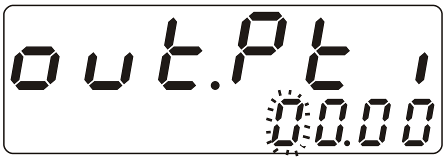
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

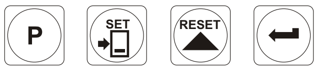
The most significant digit of the parameter (4th digit for this parameter) flashes.



Output Pulse Time

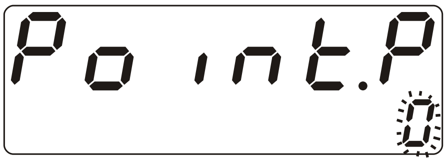
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

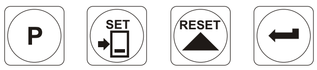
The most significant digit of the parameter (1st digit for this parameter) flashes.



Point Position

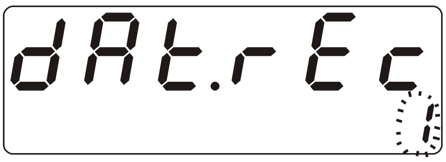
You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

Press PROG button to exit from programming section without doing any changes.



Press Enter Button

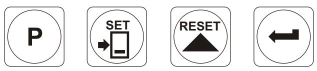
The most significant digit of the parameter (1st digit for this parameter) flashes.



Data Record

You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

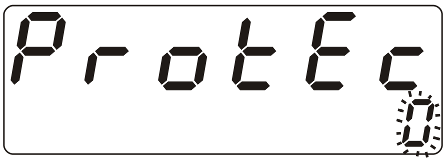
Press PROG button to exit from programming section without doing any changes.



Press Enter Button

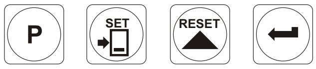
Reset and Set Protection

The most significant digit of the parameter (1st digit for this parameter) flashes.



You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

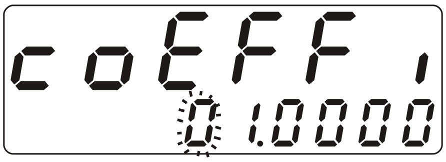
Press PROG button to exit from programming section without doing any changes.



Press Enter Button

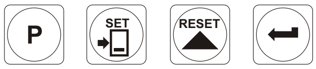
Multiplication Coefficient

The most significant digit of the parameter (6th digit for this parameter) flashes.



You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

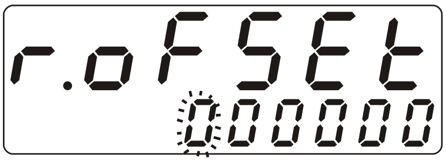
Press PROG button to exit from programming section without doing any changes.



Press Enter Button

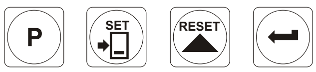
Reset Offset

The most significant digit of the parameter (6th digit for this parameter) flashes.



You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

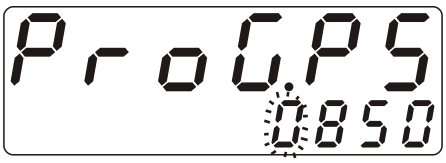
Press PROG button to exit from programming section without doing any changes.



Press Enter Button

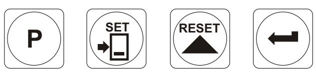
Program Password

The most significant digit of the parameter (4th digit for this parameter) flashes.

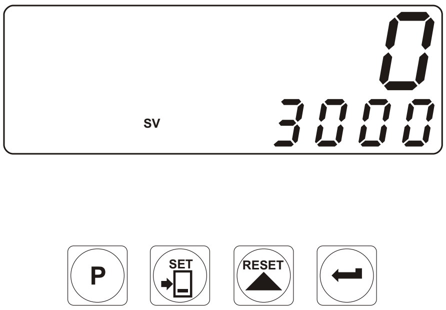


You can change the parameter with INCREMENT button, save it to the memory and pass to the next parameter with ENTER button.

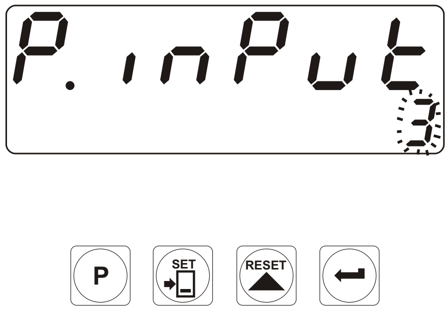
Press PROG button to exit from programming section without doing any changes.



Press Enter Button



Operation Screen

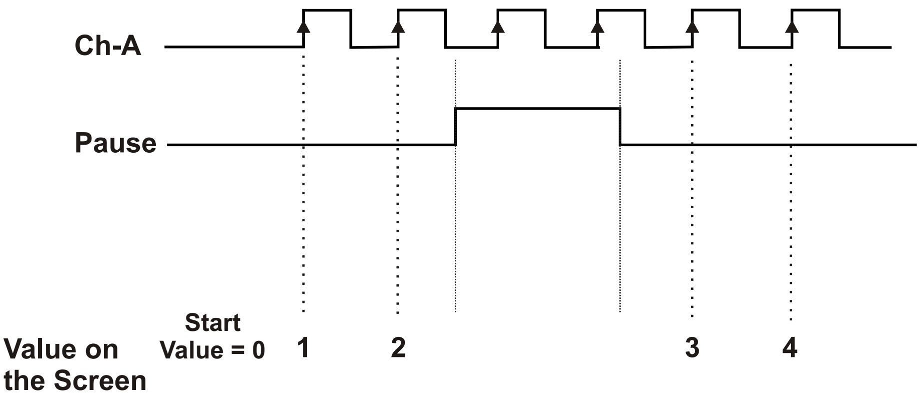


Input types and functions

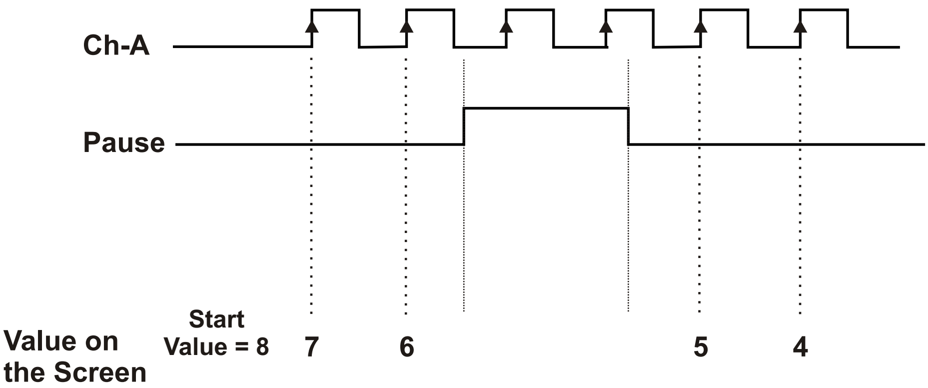
Continue to press ENTER button for scanning all parameters.

P. inPut — Input types and Functions

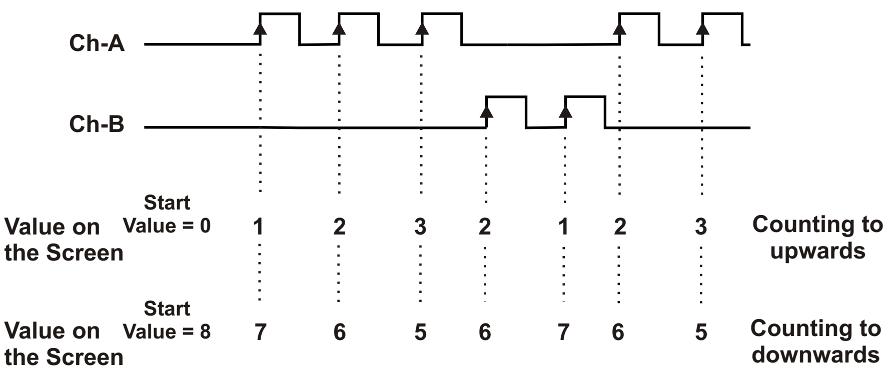
000000 Upcount on rising edge of Ch-A input



000001 Downcount on rising edge of Ch-A input.

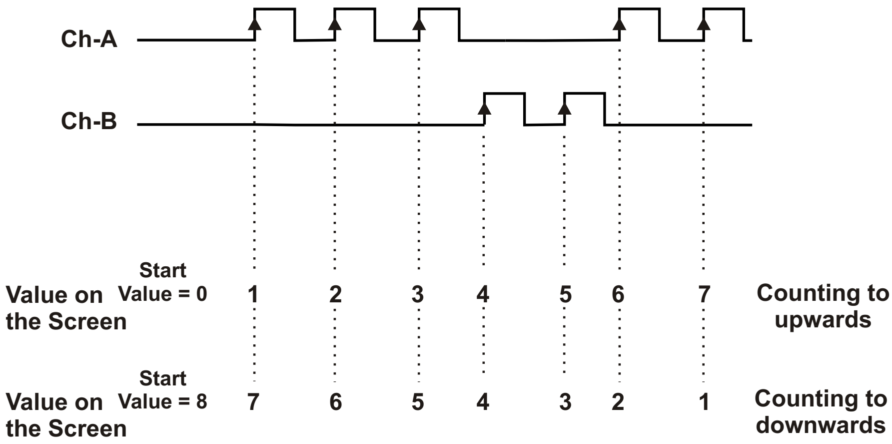


000002 Upcount on rising edge of Ch-A input.
Downcount on rising edge of Ch-B input.



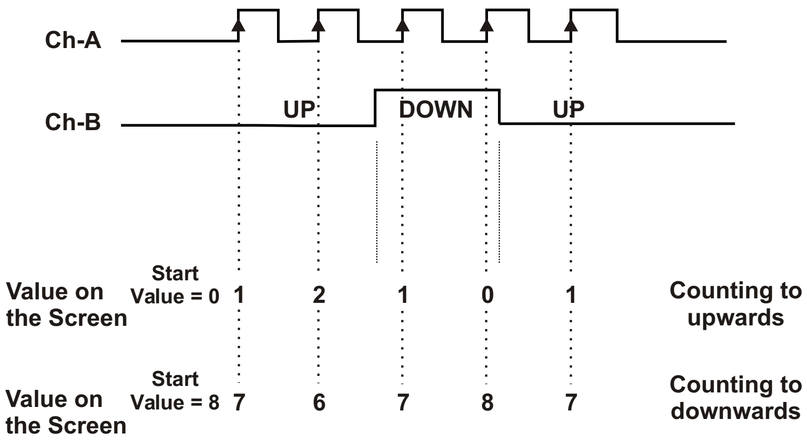
000003

Upcount on rising edge of Ch-A input
Upcount on rising edge of Ch-B input



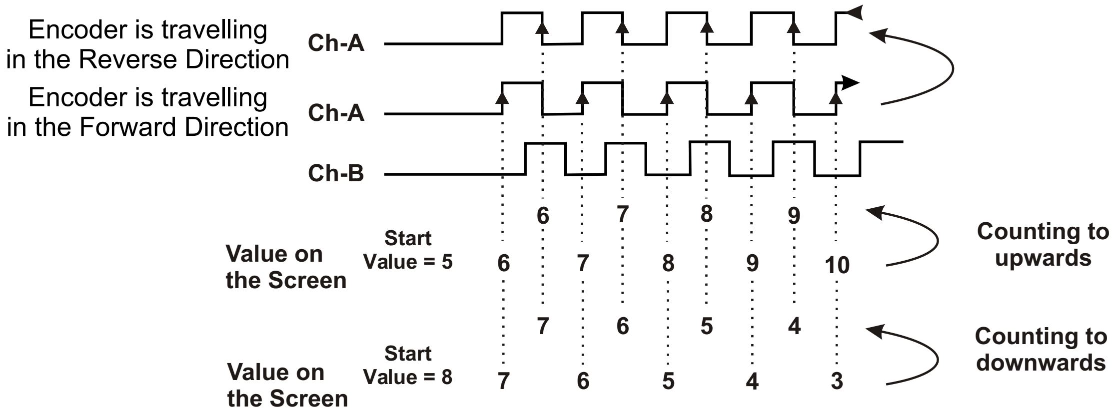
000004

Upcount on rising edge of Ch-A input when Ch-B is at 0
Downcount on rising edge of Ch-A when Ch-B is at 1

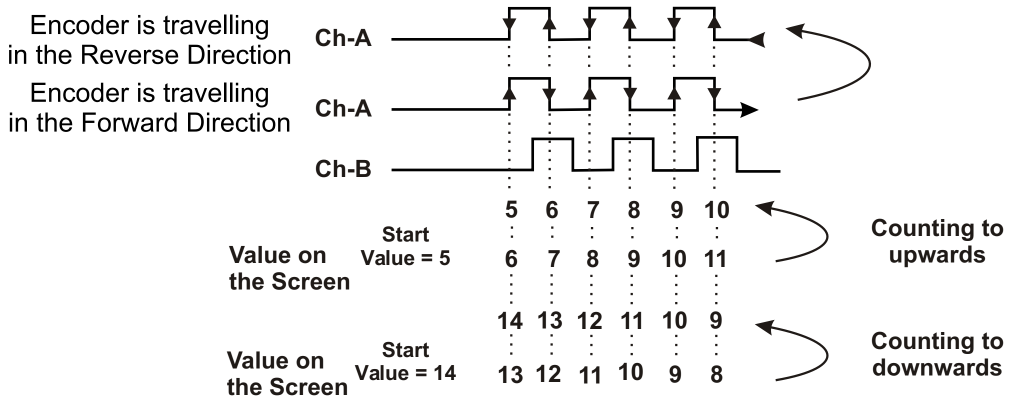


000005

x1 Phase Shifting (for incremental encoders)
Upcount on rising edge of Ch-A input when Ch-B is at 0
Downcount on rising edge of Ch-A input when Ch-B is at 1

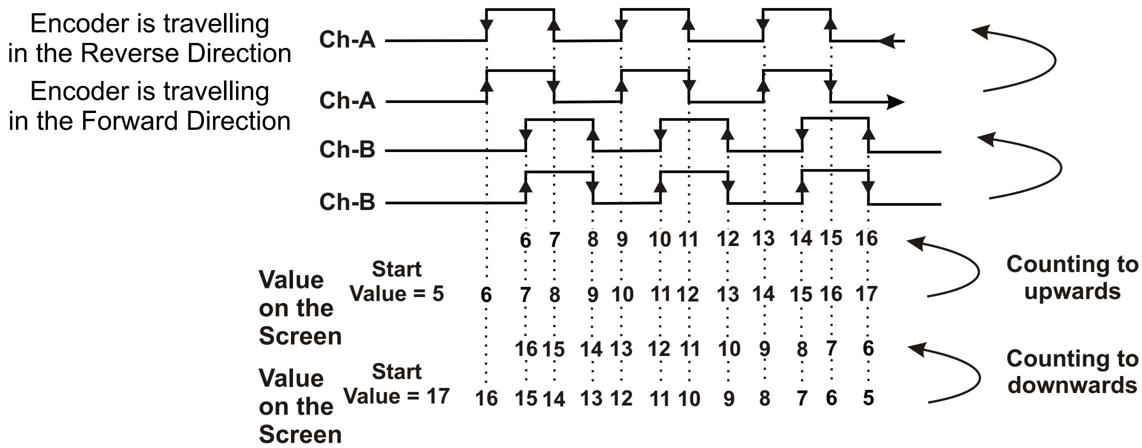


x2 Phase Shifting (for incremental encoders)
Upcount on rising edge of Ch-A when Ch-B is at 0
Downcount on rising edge of Ch-A when Ch-B is at 1
Upcount on falling edge of Ch-A when Ch-B is at 1
Downcount on falling edge of Ch-A when Ch-B is at 0



x4 Phase Shifting (for incremental encoders)
Upcount on rising edge of Ch-A when Ch-B is at 0
Downcount on falling edge of Ch-A when Ch-B is at 0
Downcount on rising edge of Ch-A when Ch-B is at 1
Upcount on falling edge of Ch-A when Ch-B is at 1

Downcount on rising edge of Ch-B when Ch-A is at 0
Upcount on falling edge of Ch-B when Ch-A is at 0
Upcount on rising edge of Ch-B when Ch-A is at 1
Downcount on falling edge of Ch-B when Ch-A is at 1



P. inFLt **Filter time for Ch-A and Ch-B Inputs**

It is used to protect against the electrical contact debounce or the signal that is less than the determined pulse time.
It can be adjusted from 0 to 50 milisecond.

If Input types and Functions parameter; is entered 000005 , 000006 or 000007 then, pulse time for Ch-A and Ch-B Input parameter P. inFLt can not be accessed

r.P.FLt **Filter time for Reset and Pause Inputs**

It is used to protect against the electrical contact debounce or the signal that is less than the determined pulse time.
It can be adjusted from 2 to 50 milisecond.

dirEct **Direction of Counting**

000000 Upcount. (0 --> Preset)

000001 Downcount. (Preset --> 0)

Input types and Functions parameter P. inPut is 000000 or 000001 then Direction of Counting parameter dirEct can not be accessed.

nPn.PnP **Sensor Type Selection**

000000 NPN type sensor selected

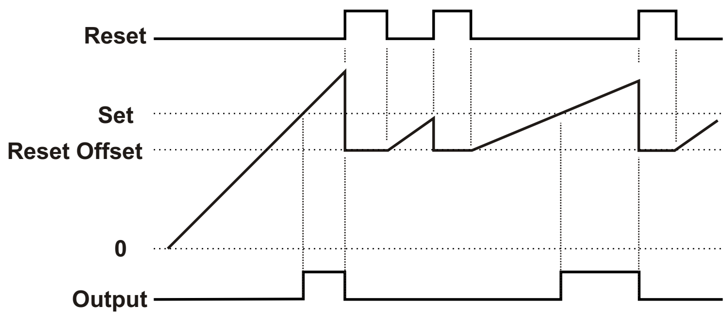
000001 PNP type sensor selected

out.Fnc Output Functions

out.Fnc = 000000

Manual Reset-1.
Device continues to count till manual reset is applied.
(Output PulseTime out.Pt 1 is not considered)

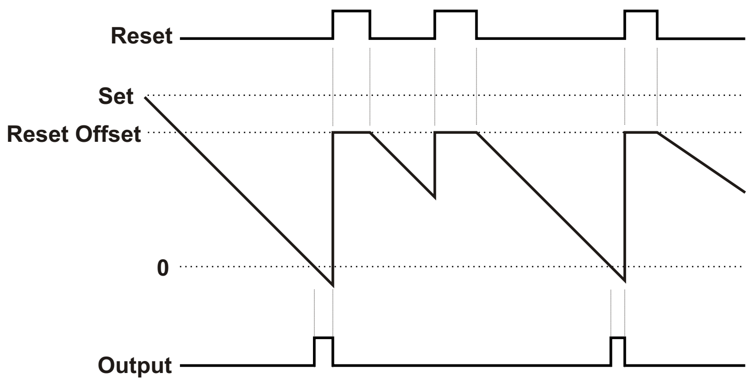
Count direction : 0 --> P (Upcounting) direct = 000000



out.Pt 1 ≠ 000000 Or
out.Pt 1 = 000000

When count value reaches the Set Value, Output Position is changed. Counting process continues over the SET value. Output Pulse Time is not considered. Process counts, until manual reset happens. When Manual Reset happens, count value becomes Reset Offset value.

Counting direction : P --> 0 (Downcounting) direct = 000001

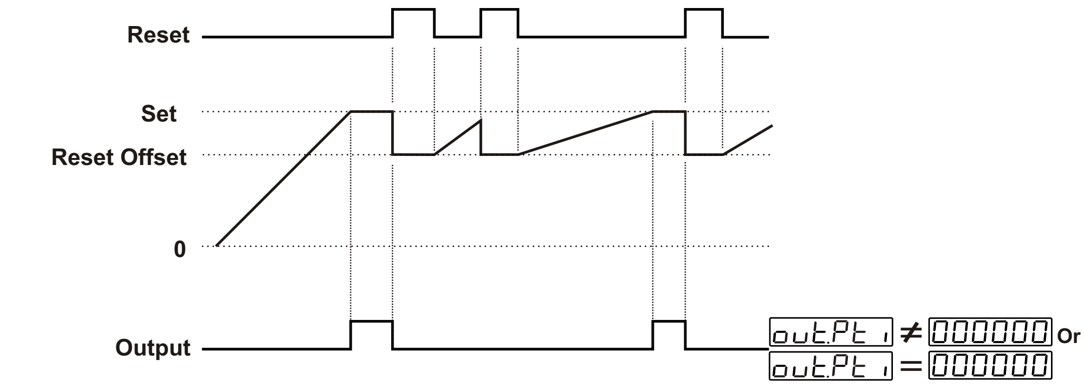


out.Pt 1 ≠ 000000 Or
out.Pt 1 = 000000

When count value reaches the 0, Output Position is changed. Counting process continues under the 0 value. Output Pulse Time is not considered. Process counts, until manual reset happens. When Manual Reset happens; if r.oFSEt = 000000 count value becomes SET value, if r.oFSEt ≠ 000000 then count value becomes Reset Offset value.

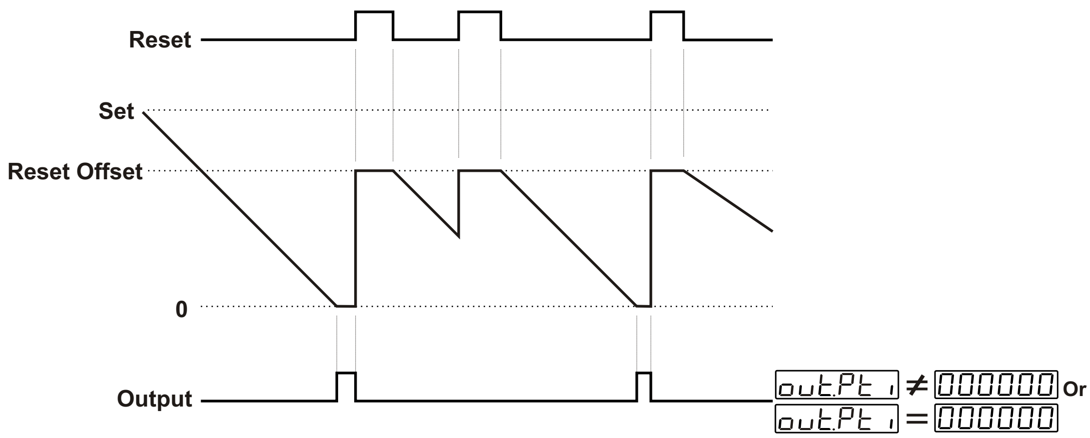
out.Fnc = 000001 **Manual Reset-2.**
(Output pulse Time out.Pt1 is not considered)

Counting direction : 0 --> P (Upcounting) direct = 000000



When count value reaches the Set Value, Output Position is changed. Counting process is not continue over the SET value. Output Pulse Time is not considered. Process counts, until manual reset happens. When Manual Reset happens, count value becomes Reset Offset value.

Counting direction : P --> 0 (Downcounting) direct = 000001

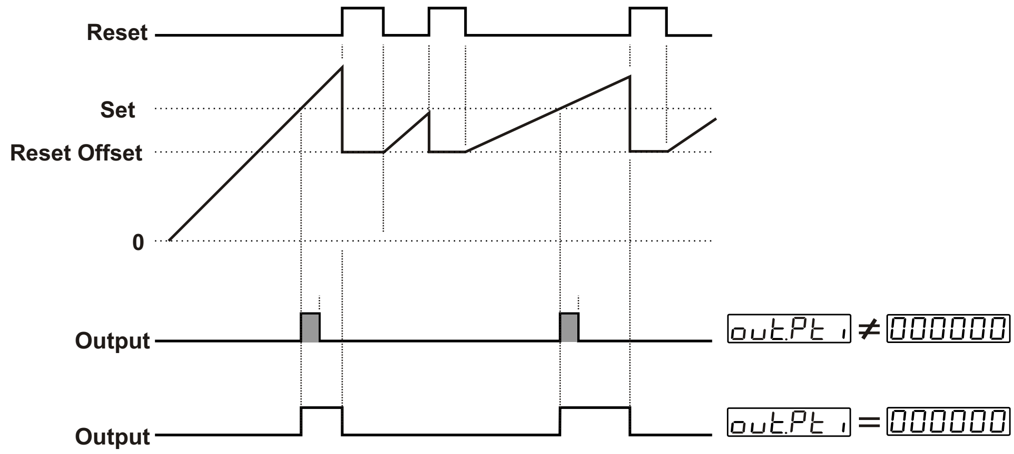


When count value reaches the 0, Output Position is changed. Counting process is not continue under the 0 value. Output Pulse Time is not considered. Process counts, until manual reset happens. When Manual Reset happens; if r.oFSEt = 000000 , then count value becomes SET value, if r.oFSEt ≠ 000000 , then count value becomes Reset Offset value.

outFnc = 000002

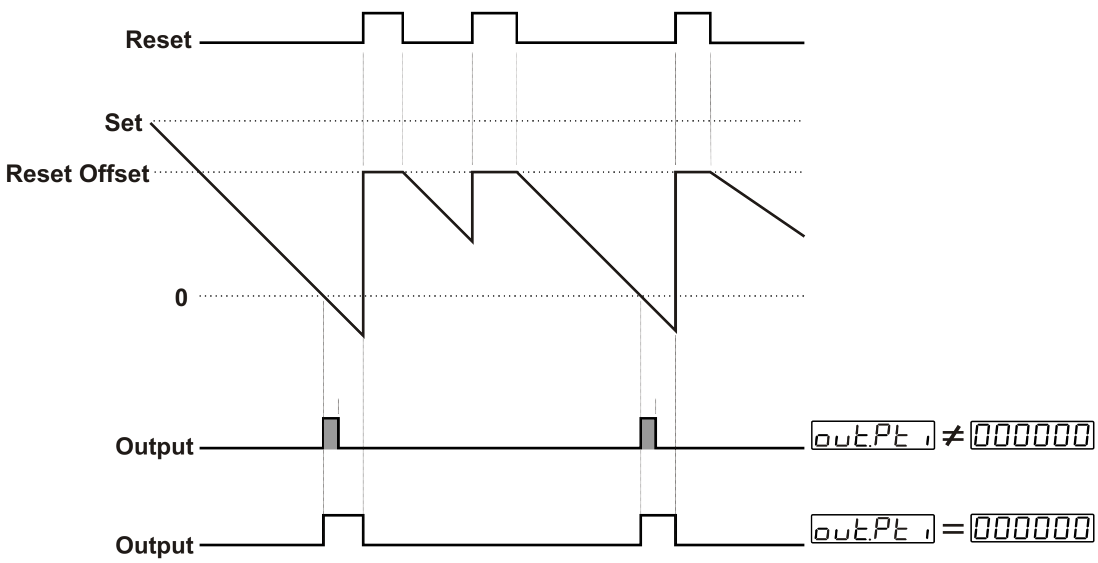
Manual Reset-3.
Device continues to count till manual reset is applied.
(Output Pulse Time outPt1 is considered.)

Counting direction : 0 --> P (Upcounting) direct = 000000



When count value reaches the Set Value, Output Position is changed. If Output Pulse time outPt1 is not 0, then Output Position is changed at the end of the Pulse time. If outPt1 = 000000 then Output Position has not change until Manual Reset happens. Counting process continues over the SET value.
When Manual Reset happens, count value becomes Reset Offset value.

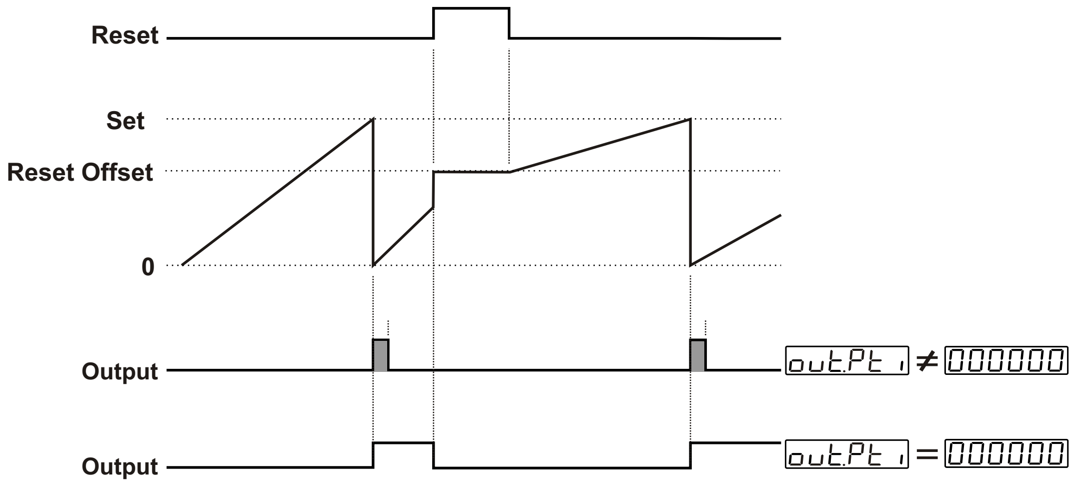
Counting direction : P --> 0 (Downcounting) direct = 000001



When count value reaches the 0 Value, Output Position is changed. If Output Pulse time outPt1 is not 0, then Output Position is changed at the end of the Pulse time. If outPt1 = 000000, then Output Position has not change until Manual Reset happens. Counting process continues under the 0 value.
When Manual Reset happens; if r.oFSEt = 000000 , then count value becomes SET value, if r.oFSEt ≠ 000000, then count value becomes Reset Offset value.

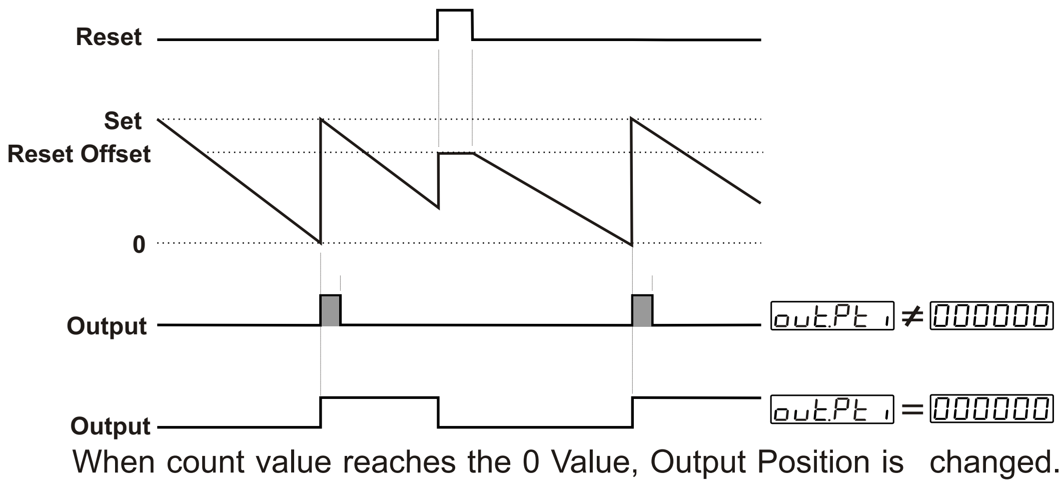
out.Fnc = 000003 Automatic Reset-1

Counting direction : 0 --> P (Upcounting) dirEct = 000000



When count value reaches the Set Value, Output Position is changed. Actual value is reset automatically. Counting starts upcounting from 0 value. If Output Pulse time out.Pt1 is not 0, then Output Position is changed at the end of the Pulse time. If Pulse time out.Pt1 = 000000 then Output Position has not changed until Manuel Reset happens. When Manual Reset happens, count value becomes Reset Offset value.

Counting direction : P --> 0 (Downcounting) dirEct = 000001

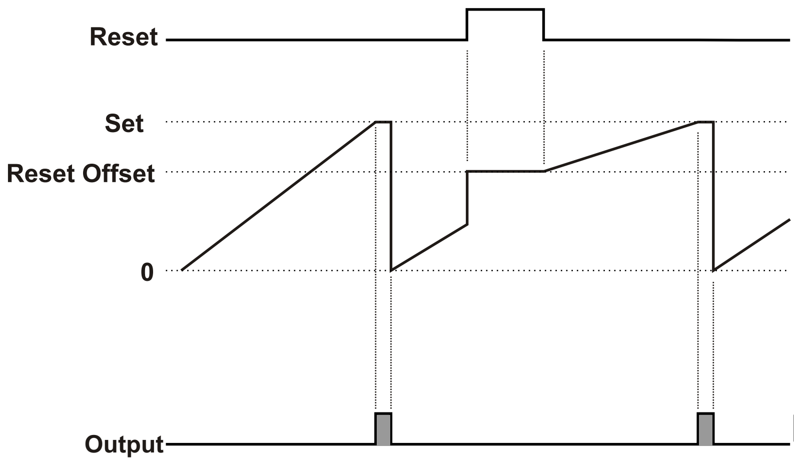


When count value reaches the 0 Value, Output Position is changed. Actual value is reset automatically. Counting starts downcounting from Set value. If Output Pulse time out.Pt1 is not 0, then Output Position is changed at the end of the Pulse time. If Pulse time out.Pt1 = 000000 then Output Position has not changed until Manuel Reset happens. When Manual Reset happens; if r.oFSEt = 000000 , then count value becomes SETvalue, if r.oFSEt ≠ 000000, then count value becomes Reset Offset value.

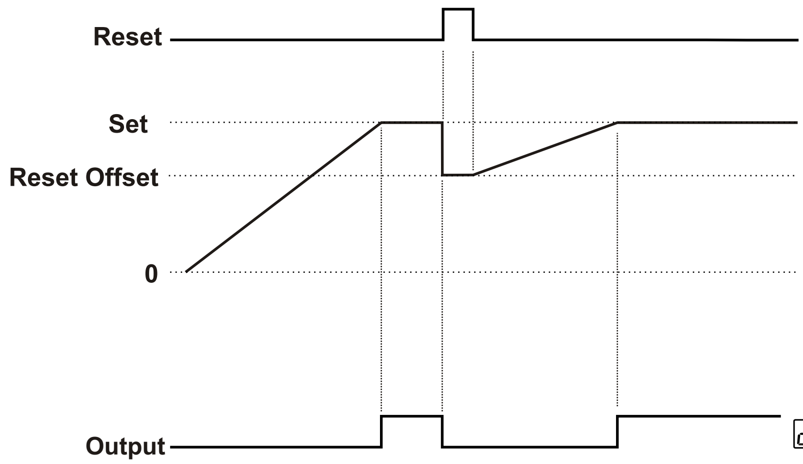
If output functions parameter out.Fnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.

out.Fnc = 000004   Automatic Reset-2

Counting direction : 0 --> P (Upcounting)   direct = 000000



out.Pt1 ≠ 000000

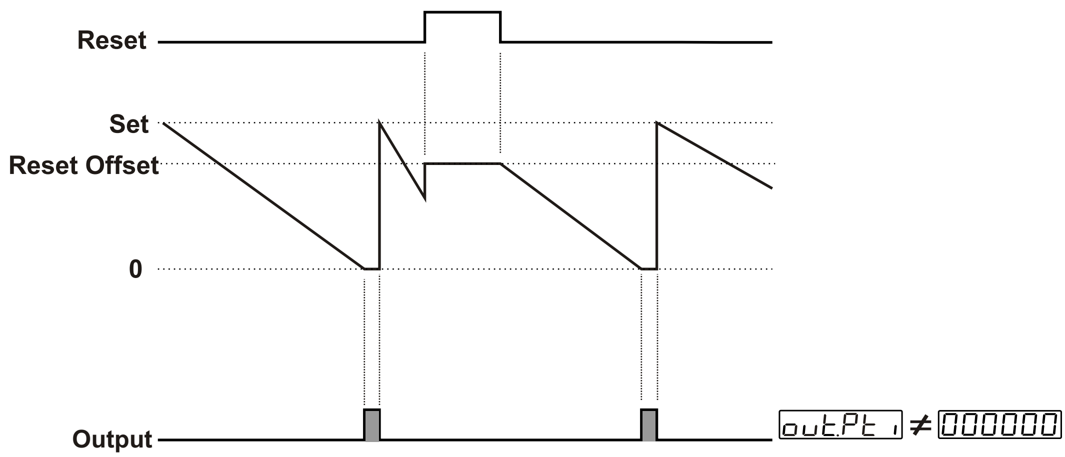


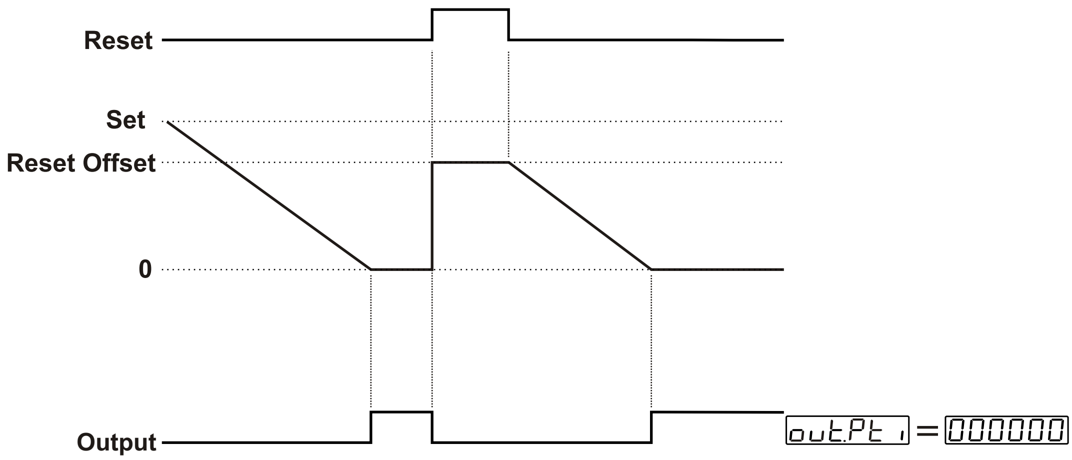
out.Pt1 = 000000

When count value reaches the Set Value, Output Position is changed. If Output Pulse time out.Pt1 is not 0, then Output Position is changed the old position at the end of the Pulse time. Actual value is reset and counting starts from 0 value at the end of the Output Pulse time.
If output pulse time out.Pt1 = 000000 then, output position has not change until Manual Reset happens. Actual counting value stops at SET value. Counting process is not continue over the SET value.
When Manual Reset happens, count value becomes Reset Offset value.

If output functions parameter out.Fnc is selected Automatic Reset (000003, 000004, 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.

Counting direction : P --> 0 (Downcounting) dirEct = 000001



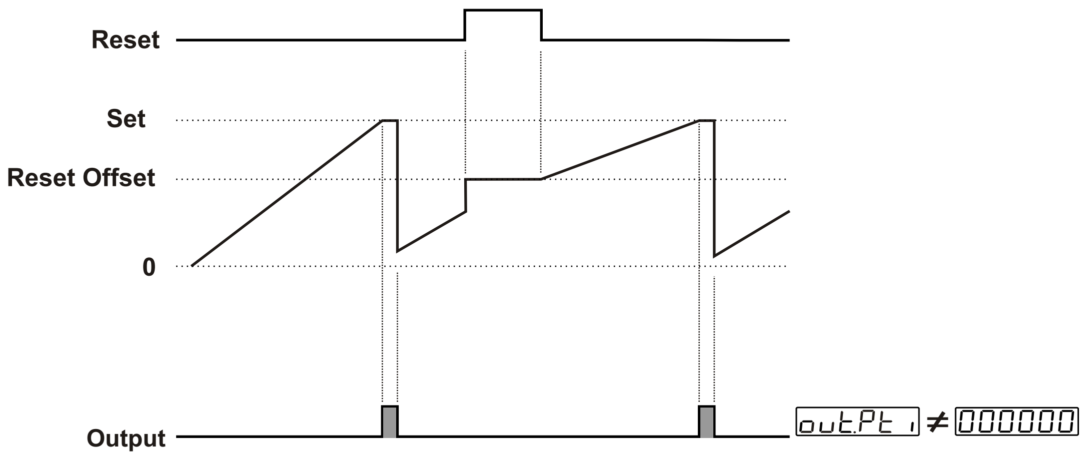


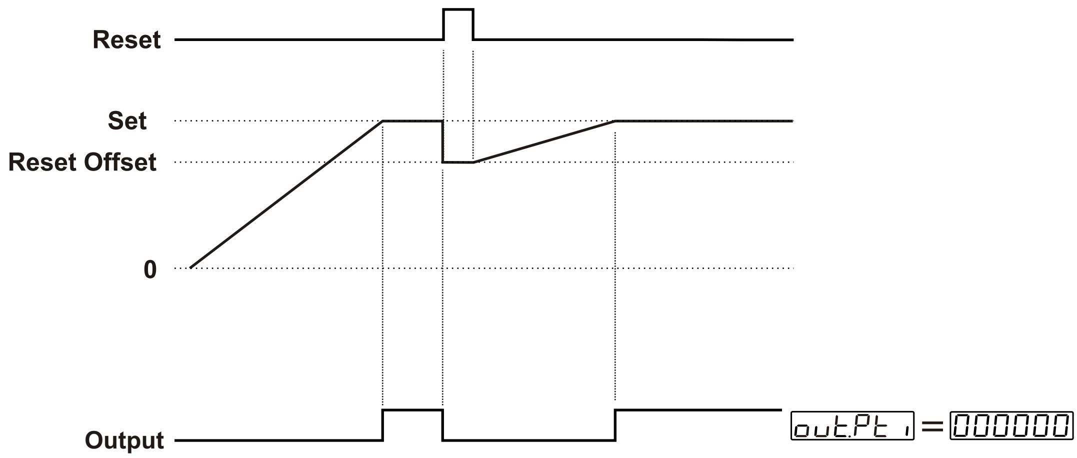
When count value reaches the 0 Value, Output Position is changed. If Output Pulse time out.Pt1 is not 0, then Output Position is changed the old position at the end of the Pulse time. Actual value is reset and counting starts from SET value at the end of the Output Pulse time.
If output pulse time out.Pt1 = 000000 , then output position has not change until Manual Reset happens. Actual counting value stops at SET value. Counting process is not continue under the 0 value.
When Manual Reset happens, if r.oFSEt = 000000, then count value becomes SET value. If r.oFSEt ≠ 000000 , then count value becomes Reset Offset value.

If output functions parameter out.Fnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.

out.Fnc = 000005 **Automatic Reset-3**

Counting direction : 0 --> P (Upcounting) direct = 000000



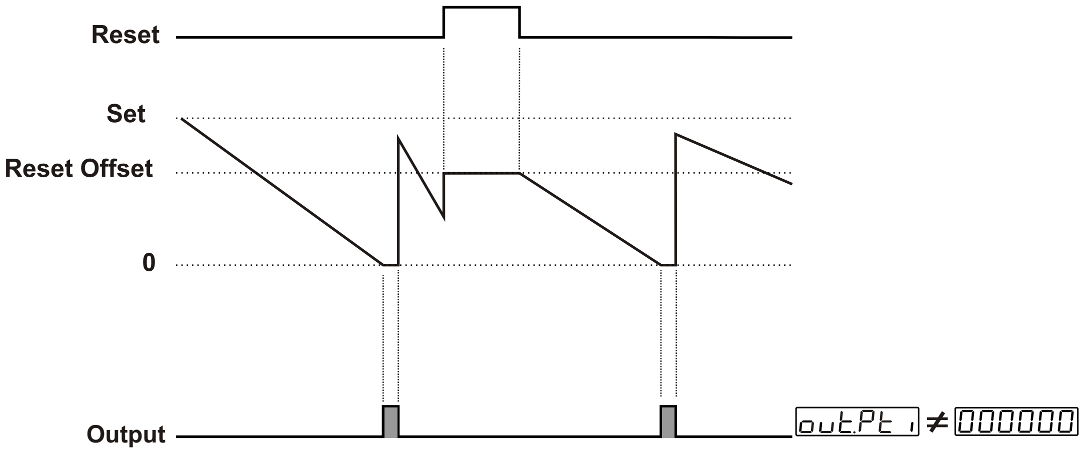


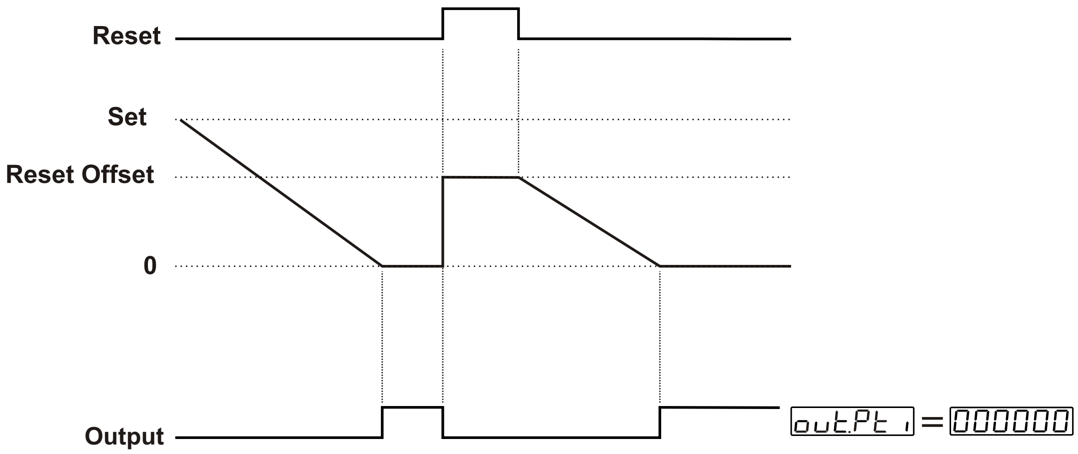
When count value reaches the SET Value, Output Position is changed. If Output Pulse time out.Pt1 is not 0, then Output Position is changed the old position at the end of the Pulse time. Count value starts counting from 0 value. But SET value is observed in actual value display. Real counting value is shown on Actual value screen at the end of the Output pulse time. If out.Pt1 = 000000 ,then output position has not changed until Manual Reset happens. Counting process has not continue over SET value.

When Manual Reset happens, count value becomes Reset Offset value.

If output functions parameter out.Fnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.

Counting direction : P --> 0 (Downcounting) dirEct = 000001





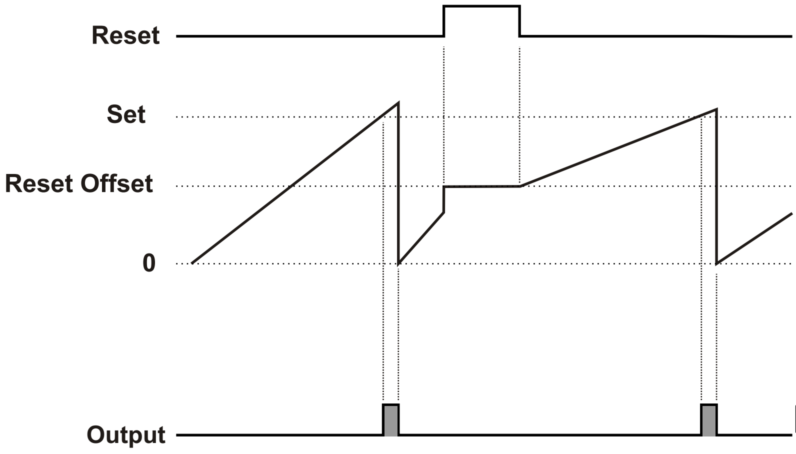
When count value reaches the 0 Value, Output Position is changed. If Output Pulse time outPt1 is not 0, then Output Position is changed the old position at the end of the Pulse time. Count value starts counting from SET value. But 0 value is observed in actual value display. Real counting value is shown on Actual value screen at the end of the Output pulse time. If outPt1 = 000000 ,then output position has not changed until Manual Reset happens. Counting process has not continue over 0 value.

When Manual Reset happens, if r.oFSEt = 000000 , then count value becomes SET value. If r.oFSEt ≠ 000000 ,then count value becomes Reset Offset value.

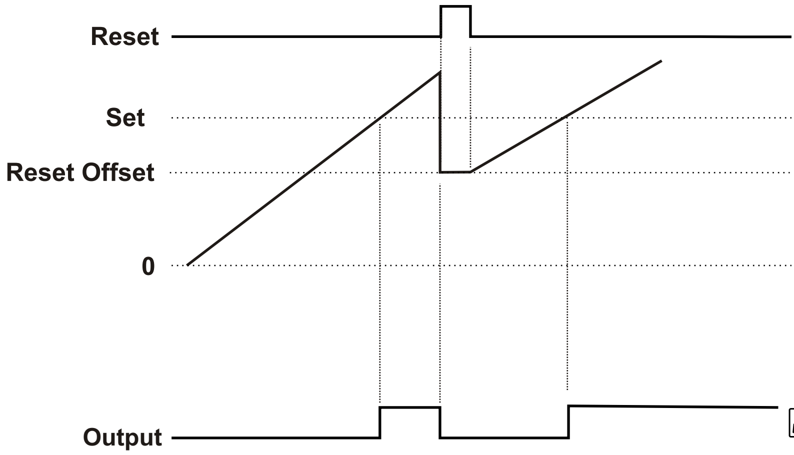
If output functions parameter outFnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then outPt1 must be different from zero for realizing Automatic Reset.

out.Fnc = 000006 Automatic Reset-4

Counting direction : 0 --> P (Upcounting) dirEct = 000000



out.Pt1 ≠ 000000

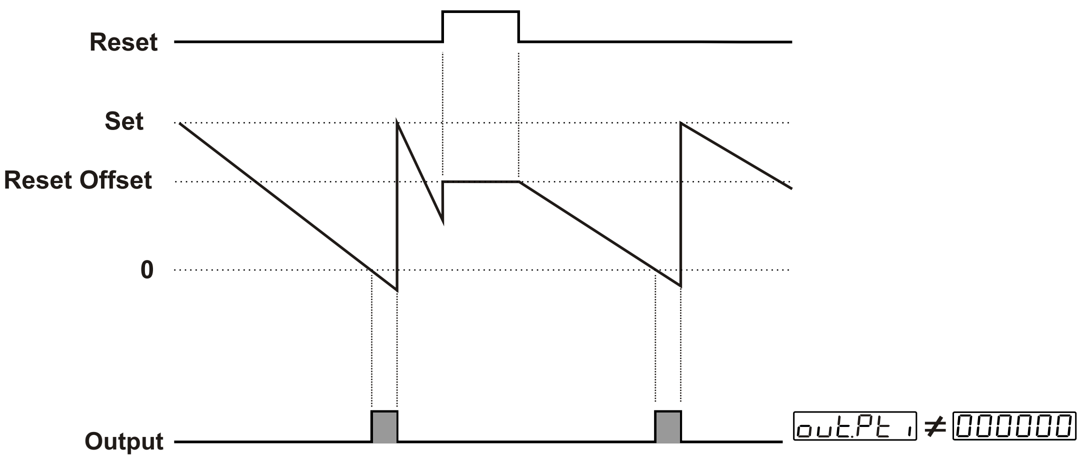


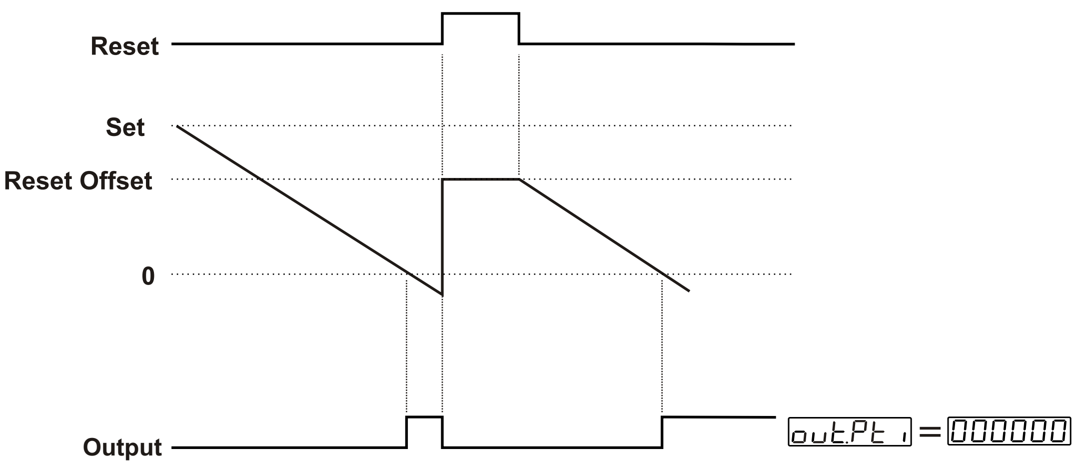
out.Pt1 = 000000

When count value reaches the SET Value, Output Position is changed. If Output Pulse time out.Pt1 is not 0, then Output Position is changed at the end of the Pulse time. Counting continue over SET value. Counting value becomes 0 and output position becomes old position. If output pulse time out.Pt1 = 000000 ,then output position has not change until Manual Reset happens.
When Manual Reset happens, count value becomes Reset Offset value.

If output functions parameter out.Fnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.

Counting direction : P --> 0 (Downcounting) dirEct = 000001





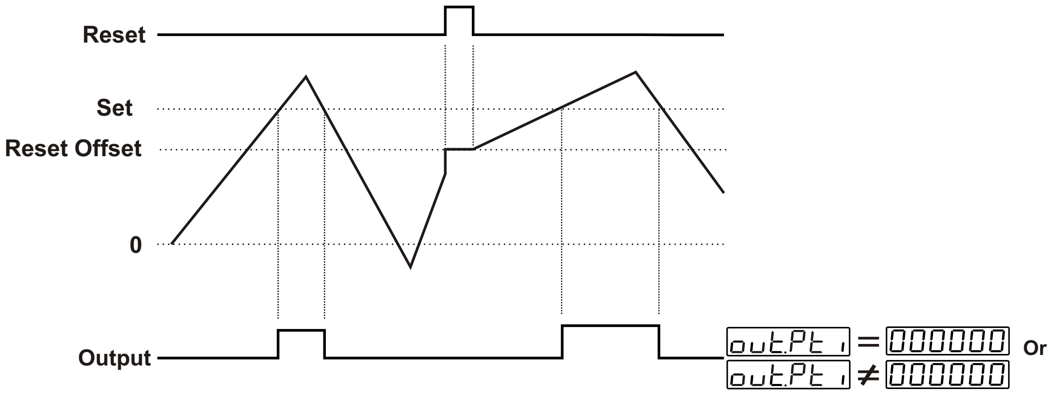
When count value reaches the 0 Value, Output Position is changed. If Output Pulse time out.Pt1 is not 0, then Output Position is changed at the end of the Pulse time. Counting continue under 0 value. Counting value becomes SET and output position becomes old position. If output pulse time out.Pt1 = 000000 ,then output position has not change until Manual Reset happens.
When Manual Reset happens, if r.oFSEt = 000000, then count value becomes SET value. If r.oFSEt ≠ 000000 ,then count value becomes Reset Offset value.

If output functions parameter out.Fnc is selected Automatic Reset (000003 000004 , 000005 or 000006 , then out.Pt1 must be different from zero for realizing Automatic Reset.

outFnc = 000007 **Automatic Reset-5**

outPt1 **is not considered.**

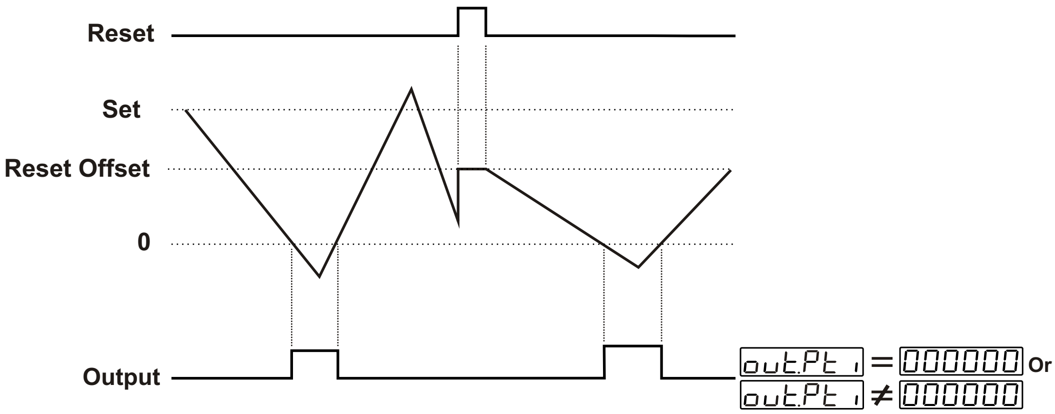
Counting direction : 0 --> P (Upcounting) direct = 000000



If count value equal or greater than SET value, then output becomes active. If count value less than SET value, then output becomes inactive. outPt1 is not considered. Counting process continues over the Set value.

When Manual Reset happens, count value becomes Reset Offset value.

Counting direction : P --> 0 (Downcounting) direct = 000001



If count value is equal or less than 000000 value, then output becomes active. If count value greater than 000000 value, then output becomes inactive. Output Pulse time outPt1 is not considered.

When Manual Reset happens; if r.oFSEt = 000000, then count value becomes SETvalue, if r.oFSEt ≠ 000000, then count value becomes Reset Offset value.

It is preferred if upcount and downcount is performed at the same time.

out.run **Output Run Type**

000000 Output Normally non-energised

000001 Output Normally energised

out.Pti **Output Pulse Time**

It determines how long Output will be active.
It can be adjusted from 00.00 to 99.99 seconds.
If it is 00.00 second, then it operates indefinitely.
For details, refer to the section where output functions out.Fnc are defined

PointP **Point Position for Display**

000000	No point	000000
000001	Between first and second digits	00000.0
000002	Between second and third digits	0000.00
000003	Between third and fourth digits	000.000
000004	Between fourth and fifth digits	00.0000

dAt.rEc **Data Record**

000000 Count value is saved to memory when power is disconnected and restored on power up.

000001 Count value is not saved to memory when power is disconnected. When power up, if the direction is upcounting, 0 value is shown on the screen. If the direction is down counting then SET value is shown on the screen.

ProtEc **Reset and Set Protection (for Front Panel Access)**

000000 There is no Reset and Set protection

000001 Only RESET Button protection is active.
Actual value can not be reset by Reset button.

000002 SET value can not be changed.

000003 Full protection ; Reset protection is active and SET value can not be changed.

coEFF1

Multiplication Coefficient

It can be adjusted from 00.0001 to 99.9999 . Changes in this parameter is evaluated when counting starts.
If it is 01.0000 multiplication is not performed. So number of pulses are displayed without having any changes.

r.oFSEt

Reset Offset

It can be adjusted from 000000 to 500000.

For details, refer to the section where output functions out.Fnc are defined

ProG.PS

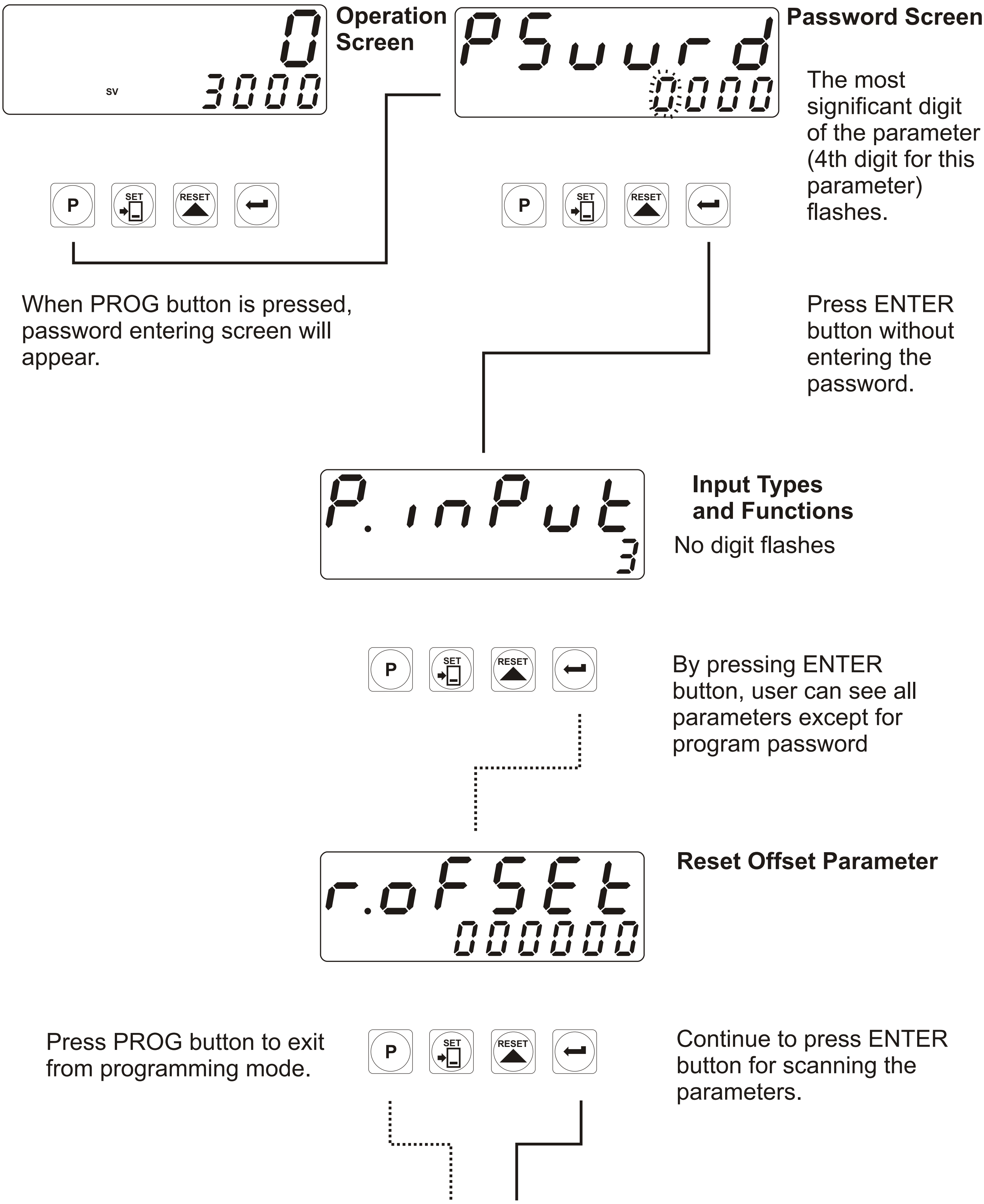
Program Password

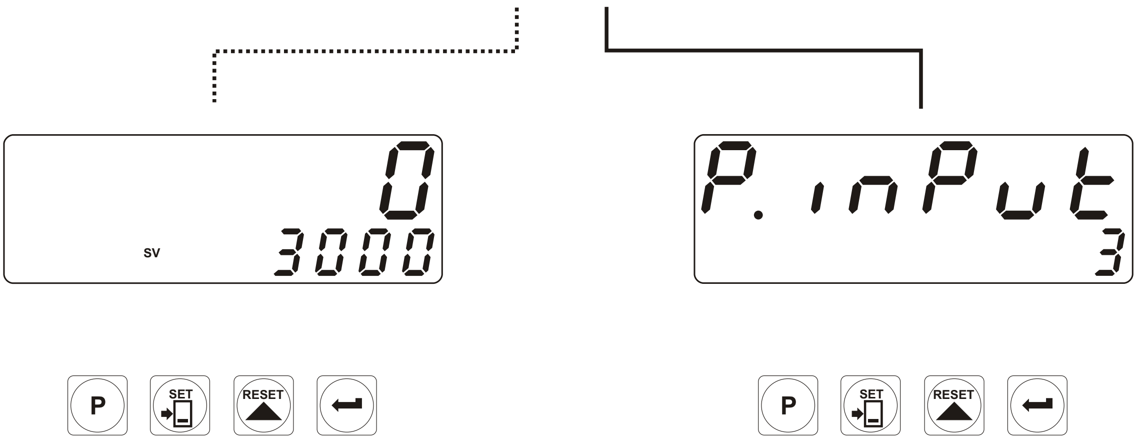
It is used for accessing to the program parameters. It can be adjusted from 000000 to 009999 .
If it is 000000 , there is no password protection while accessing to the parameters.
When programming button is pressed, ProG will appear on the display.
If program password is not “0” while accessing to the program parameters ;
1- If user does not enter the PSuurd value correctly ; operation screen will appear without entering to operator parameters.

2- When PSuurd in top display and 000000 in bottom display,if user presses ENTER button without entering password (for observing the parameters):
User can see all parameters except Program Password but device does not allow to do any changes with parameters.

6. Failure Messages in EZM-9930 Programmable Counter

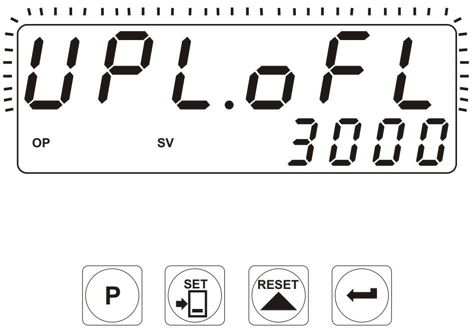
1-If the password is not 0, user can access to the parameters without entering the password and by pressing ENTER button.
User can see all parameters except for programming password parameter ProGPS but user can not do any changes in parameters. If password is entered for accessing to the parameters correctly, most significant digit of the parameter flashes. But if the password is not entered, flashing of the most significant digit is not realised.



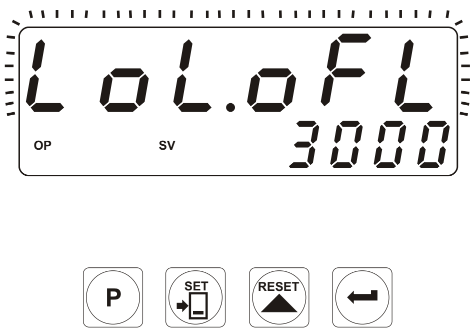


Operation Screen

Input Types and Functions



2-If Actual Value is flashing and counting is stopped ;
It appears if any of the count value is greater than the maximum count value.
To remove this warning and reset the count value press RESET button.



3-If Actual Value is flashing and counting is stopped ;
It appears if any of the count value is lower than the minimum count value.
To remove this warning and reset the count value press RESET button.

7. Specifications

Device Type	: Programmable Counter
Housing & Mounting	: 96mm x 96mm x 87.5 1/4 DIN 43700 plastic housing for panel mounting. Panel cut-out is 92x92mm
Protection Class	: IP65 at front, IP20 at rear.
Weight	: Approximately 0.34 Kg.
Environmental Ratings	: Standard, indoor at an altitude of less than 2000 meters with none condensing humidity
Storage / Operating Temperature	: -40 °C to +85 °C / 0 °C to +50 °C
Storage / Operating Humidity	: 90 % max. (None condensing)
Installation	: Fixed installation
Over Voltage Category	: II
Pollution Degree	: II, office or workplace, none conductive pollution
Operating Conditions	: Continuous

Supply Voltage and Power	: 230 V ∼ (-%15 / +%10) 50/60 Hz. 2.3VA 115 V ∼ (-%15 / +%10) 50/60 Hz. 2.3VA 24 V ∼ (-%15 / +%10) 50/60 Hz. 2.3VA 24 V ⎓ (-%15 / +%10) - 4W
Digital Inputs	
Electrical Characteristics	: Rated voltage : 16 V⎓ @ 5mA Maximum continuous permissible voltage : 30 V⎓ Logic 1 minimum level : 3 V⎓ Logic 0 maximum level : 2 V⎓
Sensor Supply Voltage	**:** 12V⎓ ± %10 max. 50mA
Maximum Input Frequency	: P. inPut = 0 , 1 , 2 with 20000 Hz P. inPut = 3 , 4 with 20000 Hz P. inPut = 5 , 6 with 12000 Hz P. inPut = 7 with 10000 Hz
Output Type	: Relay Output on Resistive Load 5A@250V∼ 100.000 operation (Full Load)
Actual Value Display	: 13,2 mm Red 6 digit LED Display
Set Display	: 8 mm Green 6 digit LED Display
LED Displays	: SV (Set value) , OP (Control output) LEDs
Approvals	: EAC , CE

8. Other Informations

Manufacturer Information:

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