EZM-4430,EZM-4930,EZM-7730,EZM-9930
Programmable Counters

EZM-4430,EZM-4930,EZM-7730,EZM-9930
Programmable Counters
- 6 digits Process (PV) and 6 digits Set (SV) Value Display
- Operation with 1 Set Value
- Reset , Pause and ChA-ChB Counting Inputs
- NPN/PNP Type Operation
- Operation with Automatic and Manual Reset
- INC,DEC,INC/INC,INC/DEC,UP/DOWN, x1 / x2 / x4 Counting with Phase Shifting Property
- Multiplication Coefficient and Decimal Point Position

SPECIFICATIONS :

INPUTS :

Counting Inputs (Ch-A,Ch-B): Switch, Proximity, Capacitive sensor or encoder can be connected.

Reset Input: Switch, Proximity, Capacitive sensor or encoder can be connected.

Pause Input: Switch, Proximity, Capacitive sensor or encoder can be connected.

Sensor Type Selection: NPN or PNP can be selected.

Reset Function: Automatic or Manual.

Count Input Types and Maximum Frequency :
INC,DEC,INC/INC,INC/DEC,UP/DOWN max.20 kHZ.
x1 / x2 / x4: Phase Shift(for encoder) Counting;Max.10 kHZ.

Reset and Pause Input Filter : 2-50 msec (Can be adjusted in parameter.)

OUTPUT

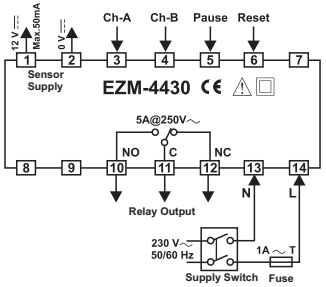
Process Output : Relay Output (5A@250V~ at Resistive Load)

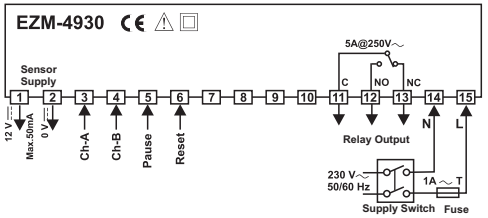
SUPPLY VOLTAGE
230 V ~ 50/60 Hz (-15%;+10%) 2.3VA
115V~(-15% ; +10%) -2.3VA
24V ~ 50/60 Hz (-15% ; +10%) 2.3VA
24 V⎓(-%15;+%15) / 24 V ~ 50/60Hz(-%15;+%15)4VA
(Must be determined in order.)

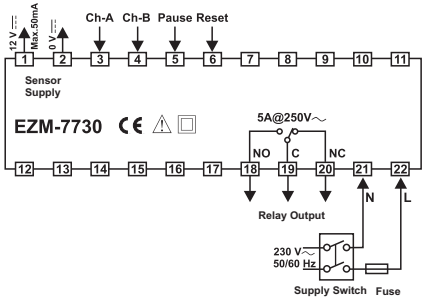
DISPLAY :
Process Value Display :
EZM-4430 : 8 mm Red 6 digit LED Display
EZM-4930 : 13.2 mm Red 6 digit LED Display
EZM-7730 : 10.8 mm Red 6 digit LED Display
EZM-9930 : 13.2 mm Red 6 digit LED Display
Set Value Display :
EZM-4430 : 8 mm Green 6 digit LED Display
EZM-4930 : 8 mm Green 6 digit LED Display
EZM-7730 : 8 mm Green 6 digit LED Display
EZM-9930 : 8 mm Green 6 digit LED Display
LED Display : SV(Set value),OP(Output Position) LEDs.

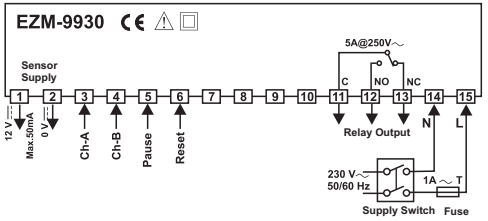
ENVIRONMENTAL RATINGS and PHYSICAL SPECIFICATIONS
Operating Temperature: 0...50°C
Humidity : 0-90%RH (none condensing),
Protection Class: Ip65 at front, Ip20 at rear.
Weight:
EZM-4430 : 210 gr.
EZM-4930 : 240 gr.
EZM-7730 : 270 gr.
EZM-9930 : 340 gr.
Dimensions:
EZM-4430 : (48 x 48mm,Depth:95 mm)
EZM-4930 : (96 x 48mm,Depth:96 mm)
EZM-7730 : (72 x72mm, Depth:95.5 mm)
EZM-9930 : (96 x 96mm,Depth:96 mm)
Panel Cut-Out:
EZM-4430 : (48 x 48mm)
EZM-4930 : (96 x 48mm)
EZM-7730 : (72 x72mm)
EZM-9930 : (96 x 96mm)

Electrical Wirings

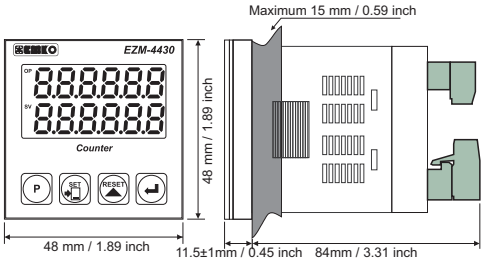


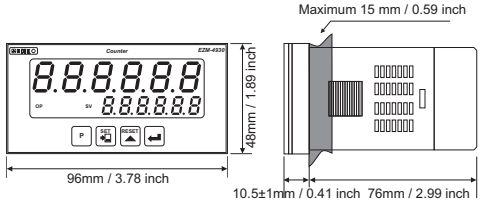


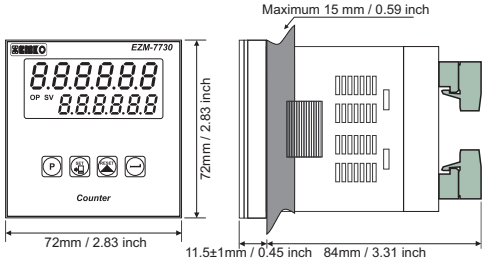


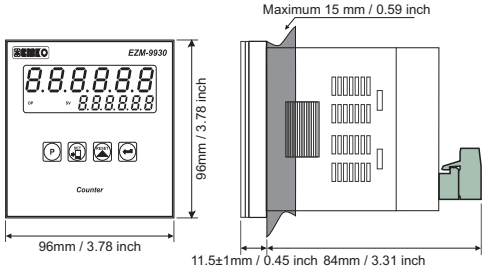


DIMENSIONS

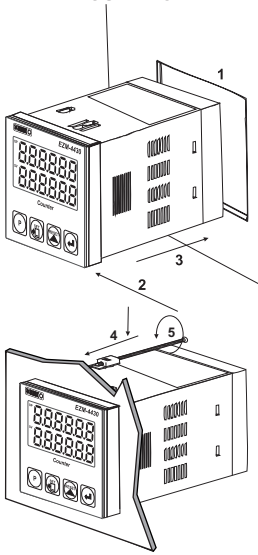








PANEL MOUNTING



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

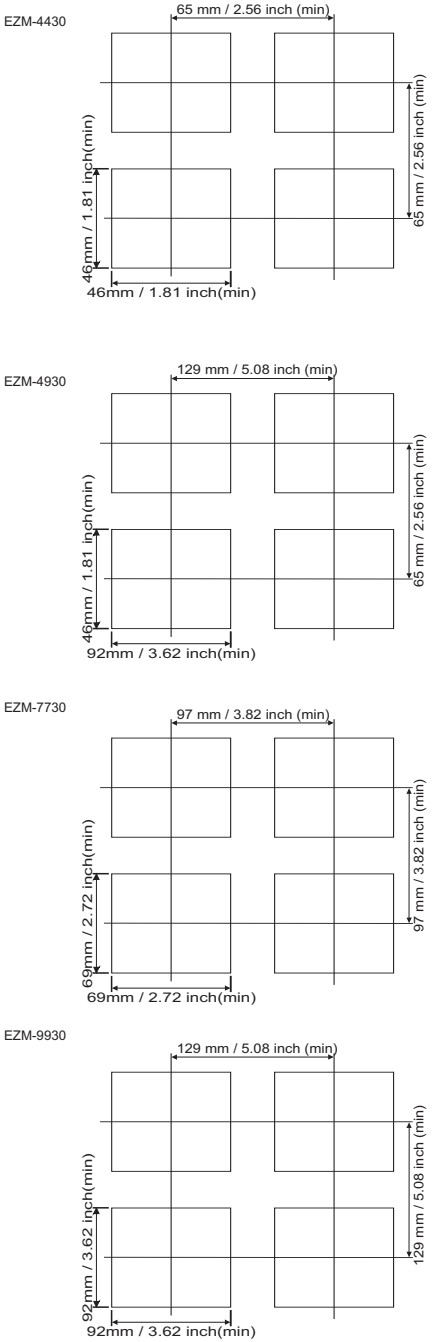
2- Check front panel gasket Position.

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

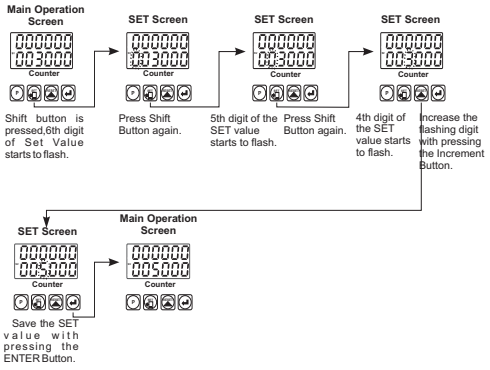
4- Insert the unit in the panel cut-out from the front side.

5- 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.

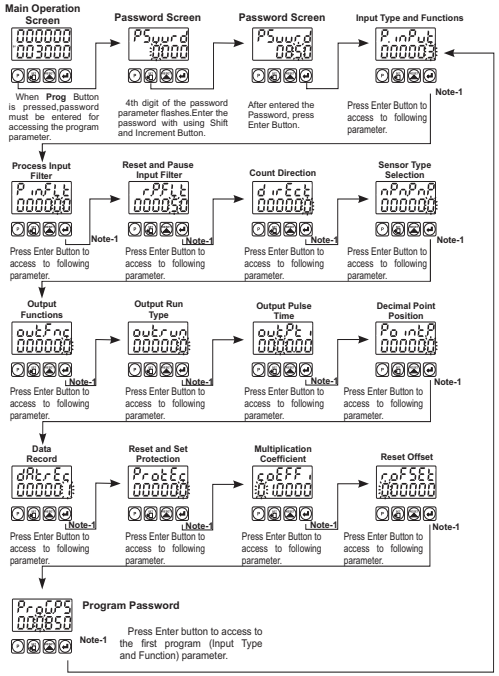
Panel Cut-out



Accessing and Changing the Set Values



Accessing to the Program Parameters



Note 1- Parameter value can be changed with Increment button. When the Enter button is pressed,parameter value will be saved and following parameter is accessed.

Note 2- Press "P" button is exit without saving the parameter value.Thus Main Operation Screen is appeared.

Parameter Definitions

P.inPut :Input Type and Functions (Default=3)

0 : Upcount on rising edge of Ch-A input.(INC)
1 : Downcount on rising edge of Ch-A input. (DEC)
2 : Upcount on rising edge of Ch-A input, Downcount on rising edge of Ch-B input.(INC/DEC)
3 : Upcount on rising edge of Ch-A input,Upcount on rising edge of Ch-B input. (INC/INC)
4 : 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. (UP/DOWN)
5 : x1 Phase Shifting.(for Incremental Encoder)
6 : x2 Phase Shifting.(for Incremental Encoder)
7 : x4 Phase Shifting.(for Incremental Encoder)

P.inFLt :Filter time for Ch-A and Ch-B Inputs (Default=0)

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 000000 to 000050 milisecond.

rPFLt :Filter time for Reset and Pause Inputs (Default=50)

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 000002 to 000050 milisecond.

dirECt :Count Direction (Default=0)

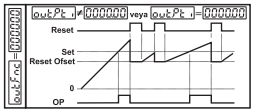
000000 Upcount. (0 -->Preset)
000001 Downcount. (Preset--> 0)

nPnPnP :Sensor Type Selection (Default=0)

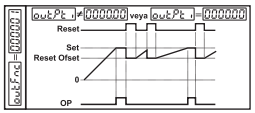
000000 NPN Sensor type is selected.
000001 PNP Sensor type is selected.

outFnc :Output Functions (Default=0)

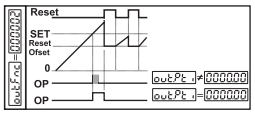
0:**Manuel Reset-1:** Process counts,until manuel reset happens.When count value reaches the Set value,Output Position is changed.



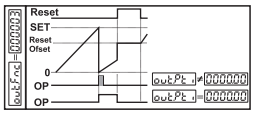
1:**Manuel Reset-2:** Process counts,until manuel reset happens.When count value reaches the Set value,Output Position is changed.Counting doesn't change continue over Set value.Output Position doesn't change ,until manuel reset happens.



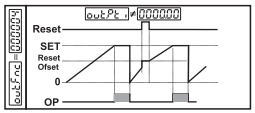
2:**Manuel Reset-3:** Process counts,until manuel reset happens.When count value reaches the Set value,Output Position is changed.After the end of the Output Pulse Time outPt output positions changes the old position.



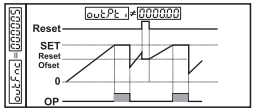
3:**Automatic Reset-1:**When count value reaches the Set value,Output position is changed.Process value automatically and counting will continue from "0"(up count) or "Set"(down count).After the end of the Output Pulse Time outPt output positions changes the old position.



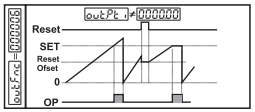
4: **Automatic Reset-2:** When count value reaches the Set value,Output position is changed.Counting doesn't continue over the Set value. Process value is reset automatically,counting continue from "0" (upcount) or "Set" (downcount) and Output position changes the old position at the end of the output pulse time.



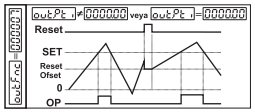
5: **Automatic Reset-3:** When count value reaches the Set value,Output position is changed.Count value becomes zero.(For 0->P) Counting restarts on "0" value, but Set Value is showen on the Process value screen. Output position becomes the old and the Real count value can be seen at the end of output pulse time.outPt



6: **Automatic Reset-4:** When count value reaches the Set value,Output position is changed.Count value is automatically reset and counting will continue (for 0->P) and Output position changes the old position at the end of the output pulse time.outPt



7:**Automatic Reset-5:**Process counts,until manuel reset happens.Output pulse time does not take into considera tion.This function can be prefered on systems that, upcounts or downcounts at the same time.



outrun :Output Run Type (Default=0)

000000 Normally De-energised.
000001 Normally Energised.

outPt :Output Pulse Time (Default=0.00)

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.

PointP: Point Position (Default=0)

000000 No point.
000001 Between first and second digits. 000000
000002 Between second and third digits. 000000
000003 Between third and fourth digits. 000000
000004 Between fourth and fifth digits. 000000

dRtrEc: Data Record (Default=1)

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.

ProtEc :Reset and Set Protection (Default=0)

000000 No Reset and Set protection.
000001 Only Reset button protection is active.
000002 Only Set button protection is active .
000003 Full Protection.Reset and Set button protection is active.

coEFF : Multiplication Coefficient (Default=01.0000)

The Count value that is read from Process input,is multiplied with this value.Parameter value can be adjusted from 00.0000 to 99.9999.If this parameter is adjusted to "01.0000" then this parameter has no effect on Process input count,so Process value equal to the Process input count.

roFSEt : Reset Offset (Default=0)

It can be adjusted from 000000 to 500000.When Process is manually reset ,count process starts from this value.

ProGPS : Program Password (Default=0)

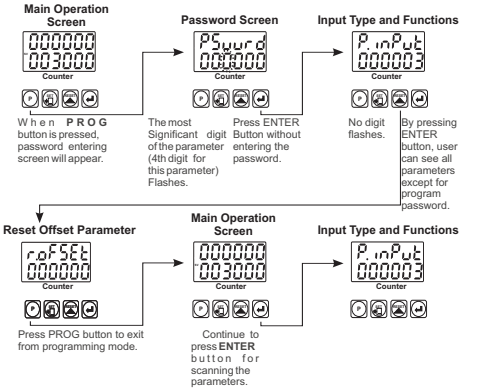
It is used for accessing to the program parameters.

It can be adjusted from 000000 to 009999 .

If it is 000000 ; there is no password protection while entering to the program parameters.

If operator accesses to the program parameters by entering "0" to PSuurd,then the operator can only see the parameter without changing,except ProGPS

Failure Messages in EZM-XX30 Programmable Counter



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

2- 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.

Installation

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

In package ,
-One piece unit
-Two pieces mounting clamp
-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 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 mounting clamp. Do not do the montage of the device with in appropriate mounting 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.

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.

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.

Other Informations

Manufacturer Information:
Emko Elektronik Sanayi ve Ticaret A.Ş.
Demirtaş Organize Sanayi Bölgesi Karanfil Sk. No:6 16369
BURSA/TURKEY
Phone : +90 224 261 1900
Fax : +90 224 261 1912

Repair and maintenance service information:
Emko Elektronik Sanayi ve Ticaret A.Ş.
Demirtaş Organize Sanayi Bölgesi Karanfil Sk. No:6 16369
BURSA/TURKEY
Phone : +90 224 261 1900
Fax : +90 224 261 1912

Order Information

	A	BC	D	E	/	FG	HI	/	U	V	W	Z
EZM-4430 (48x48 1/16 DIN) **EZM-4930** (96x48 1/8 DIN) **EZM-7730** (72x72 DIN) **EZM-9930** (96x96 1/4 DIN)		00	0	1	/	00	00	/	0	0	0	0

A Supply Voltage

2	24 V⎓ (-%15;+%15) / 24 V ∿ (-%15;+%15) 50/60Hz
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 ∿ at resistive load)

All order information of EZM-XX30 series are given on the table at above.User may form appropriate device configuration from information and codes that at the table and convert it to the ordering codes.
Firstly, supply voltage then other specifications must be determined.
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 ≂

EMKO Your Technology Partner

Thank you very much for your preference to use Emko Elektronik products, please visit our web page to download detailed user manual.
www.emkoelektronik.com.tr