

ZX020

Electronic Counter



- Mini housing 48 x 24 mm (1.890 x 0.945")
- Bright LED display 6 decades/ 8mm (0.315")
- Add-on frame for 50 x 25 mm (1.969 x 0.984")
- Counting frequency 15 – 60 kHz (depending on operating mode)
- Selectable filter for use with mechanical inputs
- Adjustable scaling factor and divider
- 10 – 30 volts DC supply
- Protection class IP65 (front side)
- Applicable as event counter, differential counter, summing counter, position counter
- Power down memory (10 years)
- Easy to set up by menu support

Operating Instructions



Safety Instructions

- This manual is an essential part of the unit and contains important hints about function, correct handling and commissioning. Non-observance can result in damage to the unit or the machine or even in injury to persons using the equipment!
- The unit must only be installed, connected and activated by a qualified electrician
- It is a must to observe all general and also all country-specific and application-specific safety standards
- When this unit is used with applications where failure or maloperation could cause damage to a machine or hazard to the operating staff, it is indispensable to meet effective precautions in order to avoid such consequences
- Regarding installation, wiring, environmental conditions, screening of cables and earthing, you must follow the general standards of industrial automation industry
- - Errors and omissions excepted –

Version:	Description:
Zx02001b/K/hk/Jan02	valid for models before august, 2006
Zx02002a/K/hk/Dec06	60 kHz, Divider, (x4), summing mode
ZX02002b/hk/Aug07	Modification of temperature range

Table of Contents

1. Operation of the front keys	4
2. Operational parameters	5
2.1. Input polarity	5
2.2. Input filter	5
2.3. Input Mode of count impulses	5
2.4. Impulse scaling factor	6
2.5. Decimal point	6
2.6. Set/Reset mode	6
2.7. Set point	7
2.8. End of program	7
3. Terminal Assignments	8
4. Delivery includes:	8
5. Specifications	9
6. Dimensions	10
6.1. Mounting without use of add-on frames	10
6.2. Bezel 50 x 25 mm (1.969 x 0.984") for clip mounting	10
6.3. Bezel 50 x 25 mm (1.969 x 0.984") for screw mounting	10

1. Operation of the front keys

To enter the setup mode, keep both front keys down while you switch power on.

You can also enter the setup mode when the unit is already powered on, by keeping both front keys down at the same time for approx. 5 seconds.

The display will then show



Prog

As soon as you release the keys, the unit starts to alternate between display of the actual parameter text and the associated setting, in a cycle of two seconds.

Press the key on the right to increment the actual set value to next.

For numeric entries, use the left key to select the decade and the right key to scroll the digit.

To continue to the next parameter, keep the left key down while you press the right key.

When you have reached the item „Endprog“, you get the choice to select

–„Yes“: this will store your entries to the unit and switch to normal operation.

–„No“: this will start the menu again and your previous data will not be stored.

2. Operational parameters

Please enter all of the subsequent parameters, as explained in section 1.

2.1. Input polarity

INPOL	InpoL	
<input type="checkbox"/> nPn	nPn	NPN: All inputs must switch to "0"
<input type="checkbox"/> PnP	PnP	PNP: All inputs must switch to "+". For Namur: Set to NPN, see 3.

2.2. Input filter

FILTER	Filter	
<input type="checkbox"/> OFF	Off	Filter off: Counting frequency up to 60 kHz (see specifications)
<input type="checkbox"/> ON	on	Filter on. Maximum counting frequency 30 Hz

2.3. Input Mode of count impulses

INPUT	Input	
<input type="checkbox"/> Cntdir	Cnt.dir	Input A: Count input Input B: Direction select up/down
<input type="checkbox"/> UP.dn	Up .dn	Differential: Input A: increments Input B: decrements
<input type="checkbox"/> UP.UP		Summing: Input A: increments Input B: increments
<input type="checkbox"/> QUAD	Quad	Quadrature up/down for signals A/B, 2 x 90° Counts rising edge of input A
<input type="checkbox"/> QUAD 2	Quad 2	Similar to "quad", but with impulse doubling. Counts rising and falling edges of input A
<input type="checkbox"/> QUAD 4	Quad 4	Similar to "quad", but with impulse quadrupling. Counts all edges of inputs A and B

2.4. Impulse scaling factor

FActor	Factor		
	00.0001	00.0001	Multiplies the input pulses with the factor set.
	99.9999	99.9999	Setting range 0.0001 to 99.9999. Setting "0" will not be accepted.
d. U. So	Divider		
	00.0001	00.0001	Divides the input pulses by the divider set.
	99.9999	99.9999	Setting range 0.0001 to 99.9999. Setting "0" will not be accepted.

2.5. Decimal point

dP	dP		
	0	0	Sets the decimal point of the display.
	0.000	0.000	(Max. 3 decimal places)

2.6. Set/Reset mode

rESnrd	resmd		
	Man.el	Man.el	Manual Set/ Reset function by the red front key and electrical Set/ Reset by the rear input.
	No res	no rES	All Set/ Reset functions disabled.
	El res	EL rES	Electrical Set/ Reset only by input "Reset".
	Manre	ManreE	Manual Set/ Reset only by the red front key.

2.7. Set point

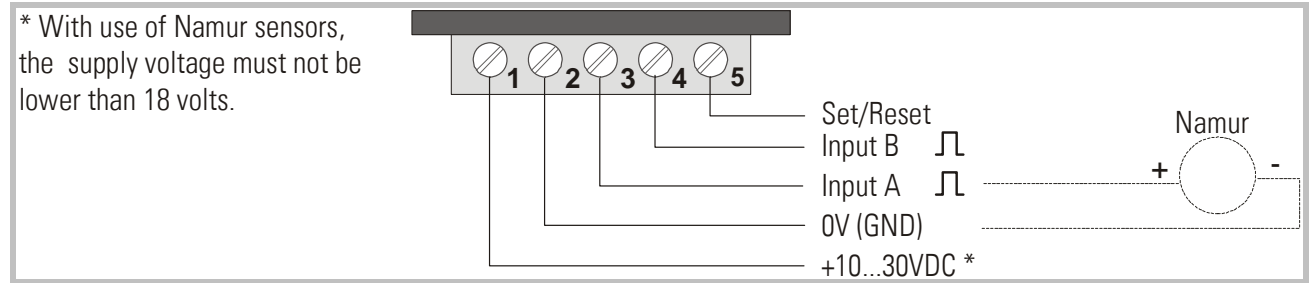
SEtPt	Setpt	
-199999	-199999	Upon a Set/ Reset command, the counter sets to the value entered here.
999999	99.9999	Range – 199 999....999 999.

2.8. End of program

EndPro	Endpro	
no	No	Select "No" to return to the beginning of the menu for verification of settings.
YES	Yes	Select "Yes" to store data and exit the menu.

3. Terminal Assignments

(also printed to the top of the unit)



4. Delivery includes:

- Panel mounting clip
- Bezel for screw mounting with panel cut out 50 x 25mm
- Bezel for clip mounting with panel cut out 50 x 25mm
- Sealing

5. Specifications

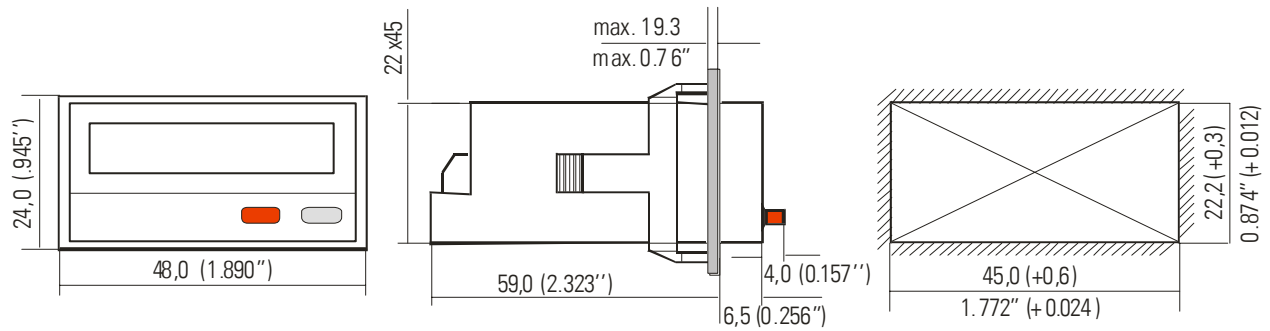
Power supply UB	:	10...30 Vdc, max. 50 mA
Display	:	6 Decade / 8mm (0.315")
Inputs	:	3 x NPN / PNP / Namur, Ri = 10 kOhm
Counting frequency	:	depending on operating conditions, see table 30 Hz with filter switched on
Minimum pulse width for Reset	:	5 msec
Switching thresholds of inputs	:	Low = 0V....0.2 x UB High = 0.6 x UB...30V
Shape of input wave	:	any (Smith trigger inputs)
Data retention	:	10 years, 10 ⁶ store cycles
Operating temperature	:	-20°... + 55° C (-4 ... +131° F)
Storage temperature	:	-25°... + 70° C (-13 ... +158° F)
Weight	:	50g
Protection class (front side only)	:	IP 65
Conformity and Standards	:	EMC 89/336/EEC: EN 61000-6-2 EN 61000-6-3 LV73/23/EEC: EN 61010-1

Maximum counting frequency with respect to operating mode and power supply:

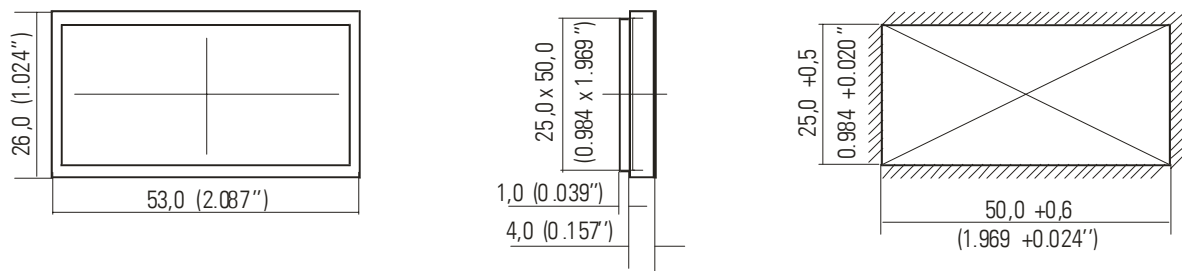
Mode	Input power 24 VDC	Input power 12 VDC
CntDir	60 kHz	20 kHz
Up-Down	25 kHz	15 kHz
Up-Up	25 kHz	15 kHz
Quad	25 kHz	15 kHz
Quad2	25 kHz	15 kHz
Quad4	15 kHz	15 kHz

6. Dimensions

6.1. Mounting without use of add-on frames



6.2. Bezel 50 x 25 mm (1.969 x 0.984") for clip mounting



6.3. Bezel 50 x 25 mm (1.969 x 0.984") for screw mounting

