

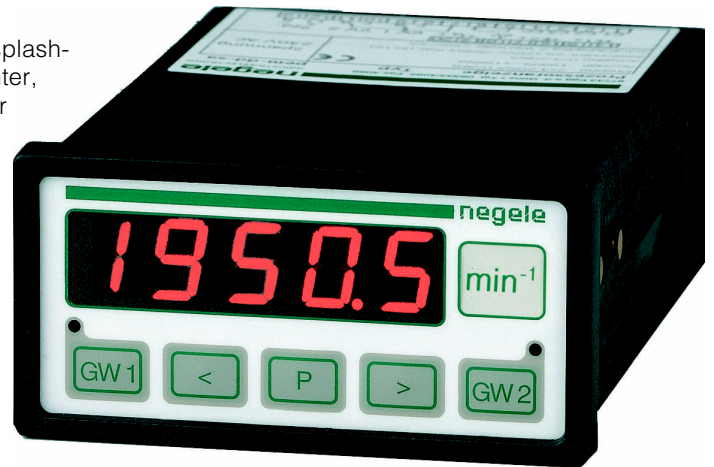
Processor Digital Counter

pez

General Function

The processor digital counter **pez** can be set by means of the splash-proofed film-sealed key pad to one of the input types pulse counter, frequency counter, revolution counter, timer or distance meter with rotation encoder. The display range can be freely assigned to the number of pulses. Further hardware can be operated from the **pez** by means of the freely adjustable analog output (optional).

By means of the two counting inputs (E1, E2) both the difference (E1-E2) and sum counting (E1+E2) can be realized with the **pez**. A count value can be set. Besides there is a "Hold"-input to freeze the display. Rotation encoders and initiators can be connected to the **pez** (without external power supply) directly.



Processor digital counter *pez*

Features

- two relay switching outputs
- counting of frequency, revolutions, distance or time
- all settings saved on loss of power
- unit plate replaceable
- MAX/MIN hold
- 0/4...20mA analog output
- plug-in terminal block connections

Order Code

You must state the following when ordering:

Type	Options	Supply voltage
pez		230V AC
pez-sa	analog output	24V AC
pez	input npn	115V AC
pez	input Namur	230V AC

Specification

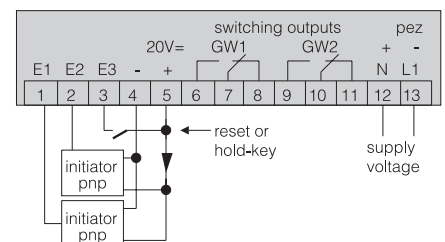
Housing	panel mount case	96x48x130mm, 2 side mounting clips
Panel cutout	(WxH)	92x45mm tol. -0,5mm
Enclosure code	front/rear	IP65 / IP20
Ambient	operation temp.	0...+50°C
	shelf temperature	-20...+70°C
	humidity	0...95% no condensate
Input type	standard	pnp-initiator
Inputs	count E1, E2	0...8,5kHz, level L=0...2,5V, H=4,5...24V
Input	HOLD/RESET E3	level L=0...2,5V, H=4,5...24V
Display	7-segment	-19999...+19999, 13mm high
Switching outputs	2 alarms	250V/3A AC changeover contacts
		switching function
Sensor supply	short-circuit proof	about 20V 50mA max.
Supply voltage	AC	230V AC, 50Hz, 7VA, 115V AC, 24V AC
	DC	24V DC $\pm 10\%$ 0,3A max.

Options

Input type	for npn-initiator	e.g. npn-rotation encoder
	Namur-initiator	with suitable sensor supply+10V DC
	contact	no bounce up to <100Hz
Analog output -sa	current 0/4-20mA	12bit resolution, 500 Ω burden max.
		freely adjustable, accuracy 0,15% typ.

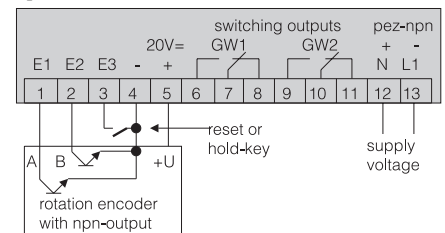
Connecting Diagram 1

Sum or difference counting



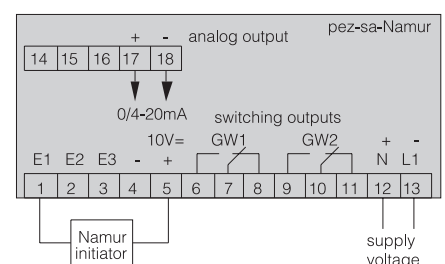
Connecting Diagram 2

nnp-rotation encoder



Connecting Diagram 3

Namur initiator



Menu (Display Mode Functions)

Holding gray background keys  pressed produces the following key function in the display mode:

	read relay output 1
	read relay output 2
	hold display
	reset to start value after 3s (if active)
	read MIN
	read MAX
 + 	clear MIN
 + 	clear MAX
 + 2x 	edit mode relay output 1
+ 2x 	edit mode relay output 2
+ + 2x	edit mode basic settings

Key Functions in Edit Mode

scrolls FWD to next setting
scrolls RTN to previous setting
selects digit (flashing) to be changed
counts flashing digit UP
carry settings, END edit mode

When no entry is made within two minutes, display returns to the display mode.

Relay Output Edit Mode

key combination + 2x  (relay output 1)

scroll	display	setting	range
	S1. S	switchpoint	-19999...+19999
	S1. H	hysteresis	1...19999 Digit
	S1.An	delayed ON (in s)	0...999,9s
	S1.Ab	delayed OFF (in s)	0...999,9s

Key combination + 2x  analogous to this for relay output 2.

Alarm Displays

F.unt	range LO violated
F.üb	range HI violated
F.Err	input frequency HI violated

Examples for setting signal input

1. Press key combination +  + 2x to change to edit mode.
2. Choose by keys  or  the appropriate display points.
3. With  or  set the parameters you need (see examples).
4. Carry settings with .

Example 1 Event counter (Sum or difference counter)

Connection see diagram 1.

Setting return counter 100...0, step 1.

display	setting	meaning
SE. b	0	E1+E2, pulses to E1 or E2 are treated equal ("1"=difference E1-E2)
InnP	1	number of pulses
A. dP	11111	none decimal point
AnZU	-1	-1 step per 1 pulse (return counter)
St.E3	1	E3 active for reset-input
PrES	100	start value 100

Example 2 Distance meter with rotation encoder

Connection see diagram 2.

Setting to input 300 pulses=display 200,0mm.

display	setting	meaning
SE. b	2	input rotation encoder
InnP	300	number pulses
A. dP	1111.1	decimal point last place
AnZU	200,0	display range per 300 pulses
St.E3	1	E3 active for reset input
		for example to automatic cycle reset
St. P	1	3s key  = cycle reset
PrES	0,0	start value 0,0

Basic Settings in Edit Mode

Key combination  +  + 2x

display	setting	range
SE. b	signal input	1=counter difference E1-E2
	0=counter sum E1+E2	3=frequ. 1000...11000Hz
	2=distance w. rot.encoder	5=frequency 0...1000Hz
	4=range 3 x factor 60	7=puls width
	6=timer start-stop	1...19999
InnP	number pulses	1=LO active
A. dp	display decimal point	1=HI active
AnZU	display range / pulse	0=without function
A.PuF	display buffer, average	1=reset-input
A. An	display LO	2=hold-input
A. En	display HI	0=not possible
SA.An	current output LO	1=possible after about 3s
SA.En	current output HI	-19999...+19999
St.PF	control inputs E1...E3, level	0=independent outputs
		1>window function
St.E3	control input E3	2=three-term controller
		0=Min,1=Max
		2=Min inverted
		3=Max inverted
St. P	reset with key	0=switching
PrES	Preset value, reset to	1=wiping
S. bA	relay output mode	0=Min,1=Max
		2=Min inverted
		3=Max inverted
S1.SF	relay output 1 function	0=switching
S1.tF	relay output 1 time function	1=wiping
S2.SF	relay output 2 function	0=Min,1=Max
S2.tF	relay output 2 time function	2=Min inverted
		3=Max inverted
		0=switching
		1=wiping

Example 3 Frequency counter with initiator

Connection see diagram 1 or diagram 3.

Setting to 0...5kHz=0...100,0% with analog output 4-20mA.

display	setting	meaning
SE. b	3	frequency input
InnP	5000	number of pulses
A. dP	1111.1	decimal point last place
AnZU	100,0	display range 5000 pulses
A. An	0,0	display LO 0,0
A. En	100,0	display HI 100,0%
SA.An	4,00	analog output LO 4,00mA
SA.En	20,00	analog output HI 20,00mA

Example 4 Revolution counter with initiator

Connection see diagram 1 or diagram 3.

Setting input 0...600 pulses/min=display 0...100,0 r.p.m.

display	setting	meaning
SE. b	5	input frequ. 0...1000Hz (=0...60000 r.p.m.)
InnP	10	number of pulses per second (600 pulses / min = 10/s)
A. dP	1111.1	decimal point last place
AnZU	100,0	display range per 10 pulses/s (=600/min)