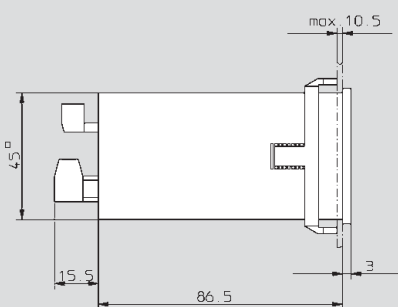
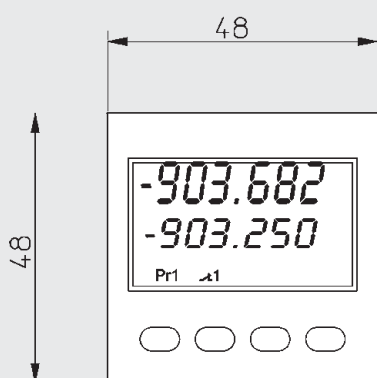




type 320, 321



## Multifunctional preselection counters, AC or DC, programmable as a pulse, frequency or time counter, 48 x 48 mm

These counters are easily programmable and cover the following application fields: preselection of pulses, cutting into lengths, dosing, time control, speed and rate supervision, flow control.

### Description:

- 6 digit LCD preselection counter with polarity sign
- 2-line indication for counter status and preselection value
- symbols for active outputs and current preselection
- programmable as pulse, frequency or time counter
- simple operation and preselection of values via 4 buttons
- factor input of 0,0001 to 9,9999
- two preselections (type 320 one preselection)
- relay output
- voltage: 90-...250 V AC or 11-...30 V DC
- normal housing 48 x 48 mm with adapter for 50 x 50 mm cutout
- electrical connection through plug-in screw terminals

### Programmable features are:

- operating mode, polarity of the inputs, input type, factor, decimal point
- output signals as continuous or wiping contact
- automatic repeat
- gate time as frequency counter, while programming
- resolution in sec., min., h or h:min:sec as time counter

### Inputs:

#### INP A, INP B

- Counter input; the maximum counting frequency of these two inputs is for every channel separately settable on 30 Hz or 10 kHz.

#### Gate

- Static gate input; no counting while this input is activated.

#### Reset

- Dynamic reset input: has the same function as the red SET button and resets the counter to zero (accumulative counting mode) or to the preselection value (subtractive counting mode).

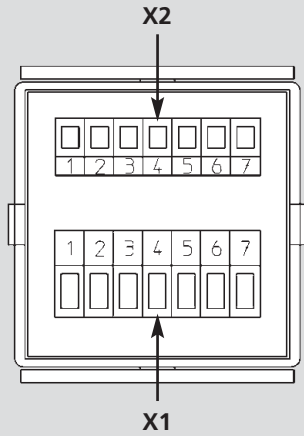
#### Key

- Static input for locking of the buttons; while this input is activated the buttons in front remain locked for operation.

#### Outputs

- 2 potential-free outputs (320: 1 output) as relay.

## Digital preselection counters



connection diagram type 321

### pin AC-version / DC-version

pin	description
1	output 1 relay
2	output 1 relay
3	output 2 relay common contact (C)
4	output 2 relay normally open (NO)
5	output 2 relay normally close (NC)
6	supply voltage 90 ... 260 V AC / 11 - 30 V (DC-version)
7	90 ... 260 V AC / 0 V (DC-version)

### pin connection X1

### pin description AC-version / DC-version

pin	description	AC-version / DC-version
1	+24 V DC	transmitter voltage supply / not connected (DC-version)
2	0 V DC (GND)	GND / not connected (DC-version)
3	INP A	count input A
4	INP B	count input B
5	Reset	reset input
6	Gate	gate input
7	Key	key locking input

### pin connection X2

## Programming:

The programming of the counter 320 and 321 takes place via 4 buttons on the front of the unit. A user guidance on the display offers an operation without problems. Here you can effect all adjustments and the corresponding parameters can be selected out of one menu.

### Programmable are:

#### Polarity of the inputs

- Switching positive (PNP) or negative (NPN). The selection is valid for all inputs at the same time.

#### Operation variants, pulse or time counting

- accumulative with starting to count from zero
- subtractive with starting to count from the preselection value (320)  
or preselection value 2 (321)
- accumulative with automatical reset by reaching the preselection value (320)  
or the preselection value 2 (321)
- subtractive with automatical setting on the preselection value (320)  
or preselection value 2 (321) by reaching of zero
- additional preselection cycle counter (only at type 321)

#### Input variants, pulse and frequency counter

- E1: 1 counting input, 1 switching input for the counting direction
- E2: 1 counting input upwards, 1 counting input down
- E3: quadrature input
- E4: quadrature input with pulse doubling

#### Decimals

- The indication can be effected without, with one, two or three decimal places after the decimal point.

#### Factor

- For an optimal transmitter adjustment the counting values can be preselected with a factor between 0,0001 and 9,9999.

#### Output signal

- The output signal (at type 321 even separate signal for both outputs) can be preselected as make or break contact, positive or negative wiping signal, duration 0,01 to 99,99 sec.

#### Gate time at frequency counter

- Programmable from 0,01 sec. to 99,99 sec.

#### Time counter

- The counting can be done in h, min. or sec., with a resolution of 0,001; 0,01; 0,1 and 1,0 or in h:min:sec

## Included in delivery

- type 320 = 1 preselection, 1 relay output
- type 321 = 2 preselections, 2 relay outputs
- plug-in screw terminals X1, 7-pole, grid 5,08 mm
- plug-in screw terminals X2, 7-pole, grid 3,81 mm
- frontal frame for screw fixing 60 x 75 mm mounting cross section 50 x 50 mm
- frontal frame for retaining clip fixing 55 x 55 mm mounting cross section 50 x 50 mm
- frontal frame for retaining clip fixing 48 x 48 mm mounting cross section 45 x 45 mm
- retaining clip

### Technical specifications:

<b>indication:</b>	2 lines, 6 digits, 7 segments LC-display with polarity sign
<b>character height:</b>	9 / 7 mm
<b>preselection:</b>	2 preselections at type 321, 1 preselection at type 320
<b>counting input:</b>	2 counting inputs, 4 input variants programmable
<b>polarity of the inputs:</b>	programmable, switching positive (PNP) or negative (NPN)
<b>input resistance:</b>	10 kOhm
<b>max. counting frequency:</b>	10 kHz, reducable to 30 Hz via DIL switcher
<b>min. pulse time of the control inputs:</b>	5 msec.
<b>switching level of the inputs:</b>	at AC supply: Log "0": 0...4 V DC, Log "1": 12...30 V DC at DC supply: Log "0": 0...0,2 x Ub, Log "1": 0,6 x Ub...30 V DC
<b>pulse form:</b>	variable, Schmitt-trigger input
<b>output:</b>	type 320: 1 relay output, type 321: 2 relay outputs
<b>transmitter voltage:</b>	24 V DC, 100 mA at 90-...260 V AC
<b>value recording:</b>	minimum 10 years or 10 <sup>6</sup> memory cycles
<b>interference resistance:</b>	EN 50082, part 2
<b>interference transmission:</b>	EN 55011, class B
<b>operation temperature:</b>	0 to +50 °C
<b>housing:</b>	48 x 48 mm DIN
<b>protection class:</b>	IP 65 (front)
<b>operating voltage:</b>	90 - 250 V AC 11 - 30 V DC