

Standard Counter SZ9648

Totalizing counter - preselect counter

Features

- LED-display, 14.2mm red
- Indicating range 0 ... 999999
- Count value is stored zero-voltage safe
- Up-counter function
- Inputs for contact operating max. 30Hz and electronic pulses max. 15kHz
- Counting value zero voltage protected
- Integrated transmitter supply 24 / 8V DC
- Auto-reset or external reset
- Max. 4 outputs SPDT relay or transistor
- Front protection IP65



DIN 96x48mm

General

The Standard-Counter SZ9648 is available as totalizing counter or preselect counter. It operates in up-counting function. The device offers separate counting inputs for proximity switch, light barriers, other electronic signals and for mechanical contacts

Short information

Programming	Parameters are programmed via front-side membrane keypad
Transmitter-supply	The integrated transmitter-supply allows direct connection of pnp initiators, light barriers, mechanical switch contacts, proximity switches, rotary encoders and Namur initiators (8V DC).
Preselect outputs	The preselect outputs can be programmed as continuous contact or pulse contact.
Function / reset	The counter can be resetted by external signal. The preselection counter mode additional offers an auto-reset function to realize a ring-counter. In this mode the counter set back to "Zero" automatically when reaching the preselection value, programmed on output A1. A new counting cycle starts again.

For more features like math functions- summing, difference and products of inputs, down counting etc. please choose Universal-Counter UZ9648.

Technical data

Power supply

Supply voltage	: 230V AC $\pm 10\%$; 115V AC $\pm 10\%$; 24V AC $\pm 10\%$ or 24V DC $\pm 15\%$
Power consumption	: max. 3.5VA
Operating temperature	: -10 ... +55°C
Rated voltage	: 250V~ acc. VDE 0110 between input / output / supply voltage Degree of pollution 2, over-voltage categoric III
Test voltage	: 4kV-, between input / output / supply voltage
CE - conformity	: EN55022, EN60555, IEC1000-4-3/4/5/11/13

Input

pnp-input	: Ri = 6.3k Ω level: < 4V low; > 8.5V high; hysteresis > 2,5V, max. 35V DC
Namur input	: Ri appr. 1k Ω (<4mA) level: < 1mA low; >2.2mA high; hysteresis > 0.5mA max. 35V DC
Counting frequency max.	: input A = 30 Hz, debounced input B = 15 kHz, DC pulse
Counting loss	: 100 μ s at reset; 20ms change of preselect value
Min. pulse width	: electronic pulse 50 μ s, switch contact 5ms
External reset	: min puls width 10ms
Transmitter-supply	: 8V DC (Namur), 24V DC (pnp), Ri appr.. 150 Ω , max.50mA (25mA with 4 relay outputs)

Display

Indicating range	: 0 ... 999999 Digit with leading zero suppression
Additional display	: LED 2-digit red, 7mm (parameter - and output indicator)

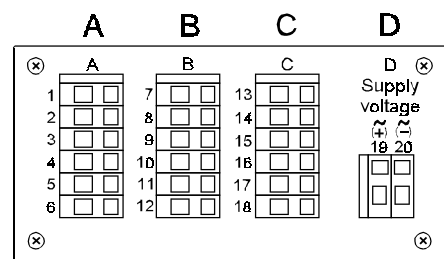
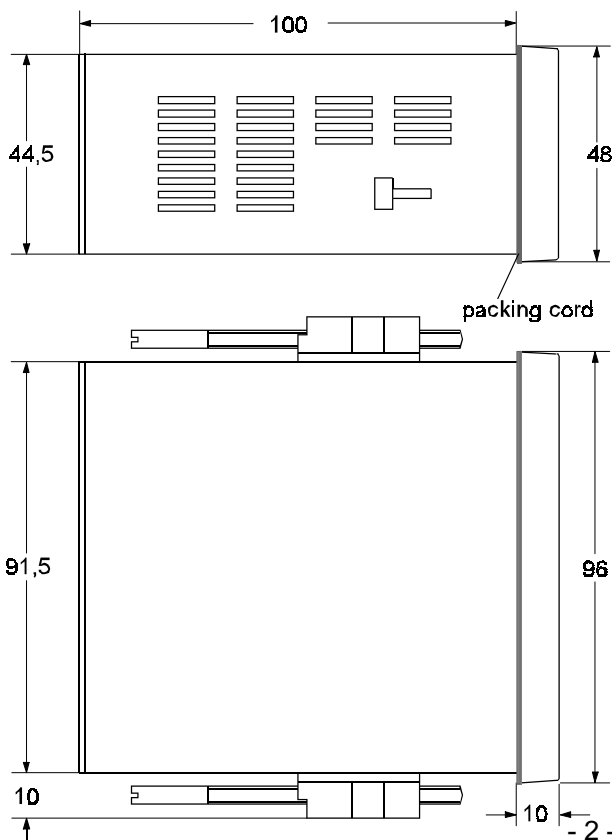
Output

Relay	: SPDT <250V AC<250VA<2A, <300V DC<50W<2A
Transistor	: max. 35V AC/DC / 100mA, short circuit protected

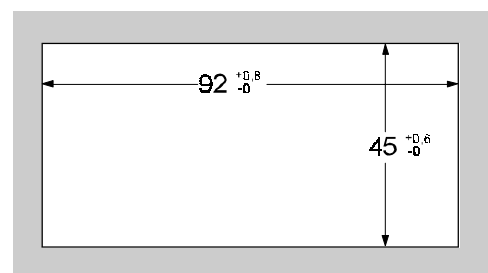
Panel case

Dimensions	: DIN 96x48 Material PA6-GF; UL94V-0
Weight	: max. 390g
Connection	: Clamp terminals, 2mm ² wire, 1mm ² flexible wire, AWG14
Protection	: Front IP65, terminals IP20, fingersafe acc. BGV A2 (old VBG4)

Dimensions



Terminal positions



Switchboard cut-out
acc. DIN 43700-96x48mm

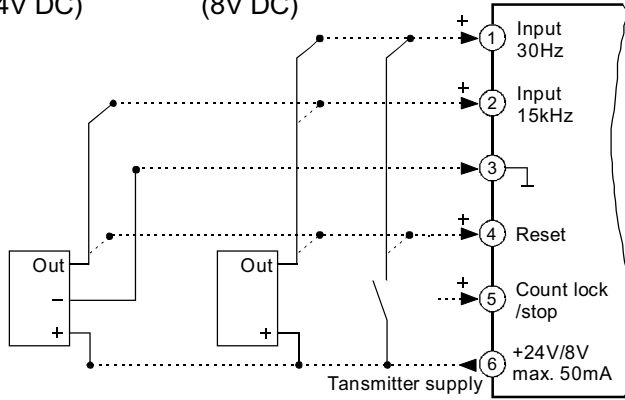
Connection diagram

Terminal strip A

pnp-sensor,
Rotary encoder
(24V DC)

Namur-
sensor
(8V DC)

Switch-
contact

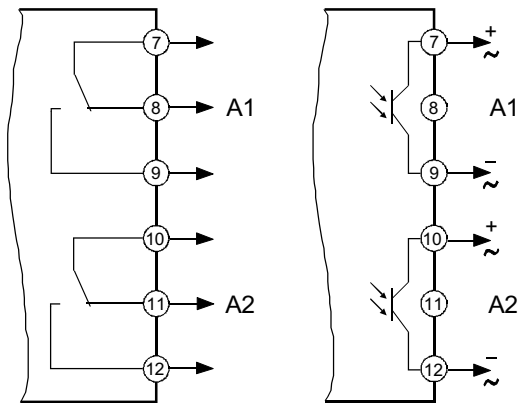


Terminal strip B (varies with version)

2 preselect (alarm) outputs

Relay

Transistor

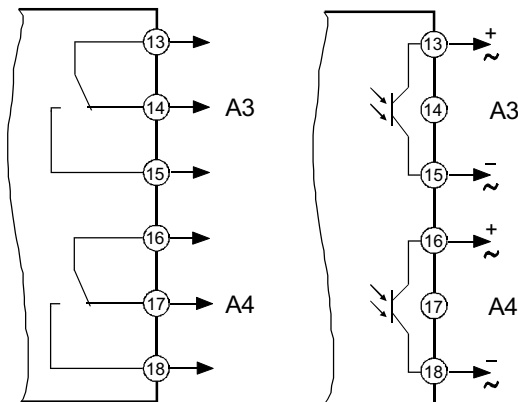


Terminal strip C (varies with version)

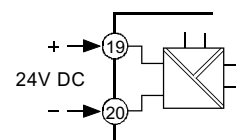
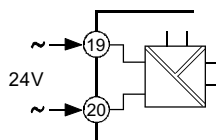
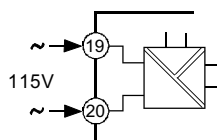
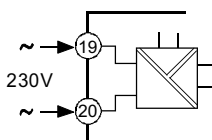
2 preselect (alarm) outputs

Relay

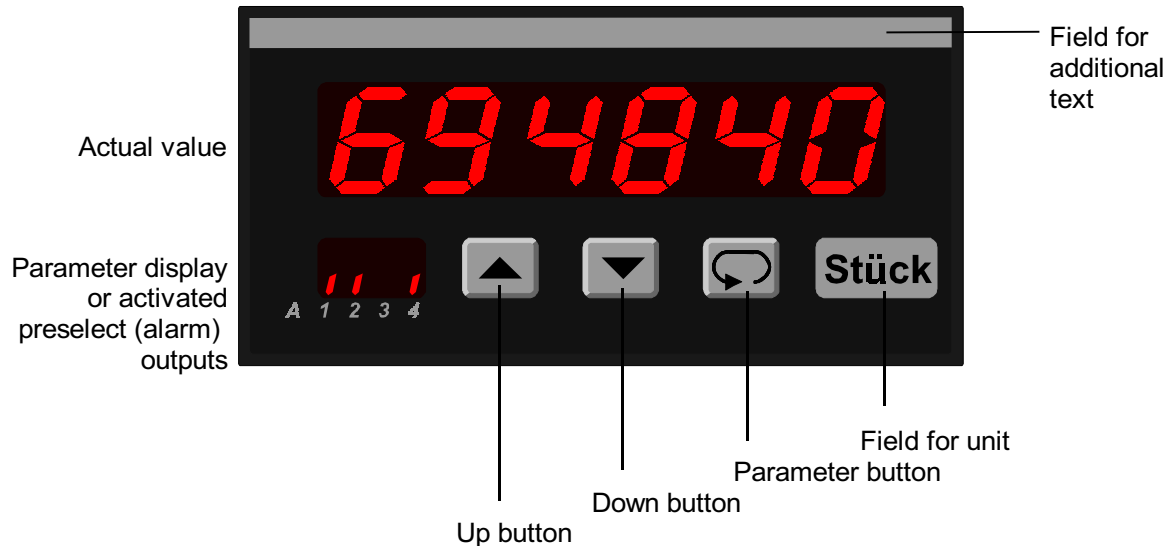
Transistor



Terminal strip D Supply voltage (varies with version)



Controls and indicators



Description

Operation of the device is arranged in 2 levels. The requested parameter can be called by button. Selection within a parameter or entering data use button and . Parameters and counting value are stored zero-voltage safe in the EEPROM.

Button combinations:

- + + pressing all buttons together will reset the actual value to zero.
- + one parameter back
- + setting parameter to zero or minimum value

After turn on the supply voltage the device is working in the **Working level**.

Set points of alarm outputs can be preselected if available.

Activating the button program for more than 2 seconds the program is jumping into the **Configuration level**. Now all the parameters defining the function of the counter can be programmed.

After finishing the configuration or when longer than 2 minutes no button was pushed, the program jumps back to the working level. Leaving the configuration level is possible at any time when pushing the button .

Error codes:

PE Reading this symbol in the parameter display a parameter failure has been occurred. The display flashes. When pushing one of the buttons the error code will be deleted and the counter is running with factory programmed parameters. Configuration and function of the counter must be checked. If error occurs again, please ship the counter to factory for repair service.

Lo c Programming lock active. See configuration page 7.

o F Overflow

Start-up note:

Before the device can be used, it must be configured for the intended use

⇒ see page 6

Note to representation



Parameter only shown when configured




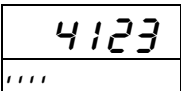

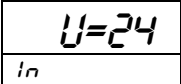




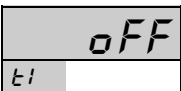




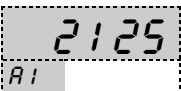




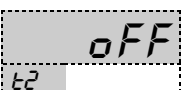








Parameter only shown when installed in the device

Please note: All parameters can be called if they are not blocked by other programmed parameters and if they are available. Factory settings are shown in [].

Working level

Button	Display	Description	[Factory settings]
		Count value (stored zero-voltage safe)	
		Output indication (only if installed and activated).	
		Setpoint output A1 Setting possible from 0 ... 999999 digit, with button and . Note: when operating as a ring-counter, reset will activated on setpoint A1	
		Setpoint output A2 Setting possible from 0 ... 999999 digit, with button and .	
		Setpoint output A3 Setting possible from 0 ... 999999 digit, with button and .	
		Setpoint output A4 Setting possible from 0 ... 999999 digit, with button and .	

Configuration Level

Button	Display	Description	[Factory settings]
 press 2s		Working level	
		Transmitter supply / input level $U = 24$ = 24V DC for pnp-sensors $U = 8$ = 8V DC for Namur-sensor* (* with ext. 5V supply also useful for TTL-signals) $t E S t$ = only for factory settings	[U = 24]
		Selection with buttons  and  .	
		Operating performance and function preselect output A1 $o n$ (max) continuous contact: off-on (totalizing function) $0.1 \dots 9.9$ pulse contact: off-on-off [sec] (ring-counter function) $o F F$ output deactivated Selection or setting with button  and  .	[o F F]
		A1= $o n$ or $o F F$ -the counter works as totalizing counter in the full range. When reaching the value of 999999 the counter will stop. A1= $0.1 \dots 9.9$ -the counter works as ring-counter between 0 and set point A1 (see next parameter)	
		Setpoint preselect output A1 Setting possible from 0 ... 999999 digit, with buttons  and  .	[0]
			
		Switching performance output A2 $o n$ (max) continuous contact: off-on $0.1 \dots 9.9$ pulse contact: off-on-off [sec] $o F F$ output deactivated Selection or setting with button  and  .	[o F F]
			
		Setpoint preselect (alarm) output A2 Setting possible from 0 ... 999999 d, with buttons  and  .	[0]
		Note: Switching performance and setpoint of the outputs A2 to A4 are identical.	

continue
page 7

Button	Display	Description	[Factory settings]
↓		Program lockout. oFF = no lock CoNF. = configuration locked ALL = all parameters locked Selection with buttons ▲ and ▼.	[oFF]
↻			
↓		Return to the working level	
↻			

Explanations

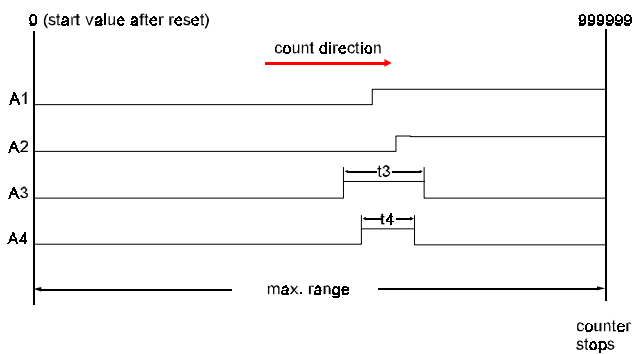
Totalizing counter

Without external reset. Counter works over the full range 0...999999, starting from 0 (see drawing).

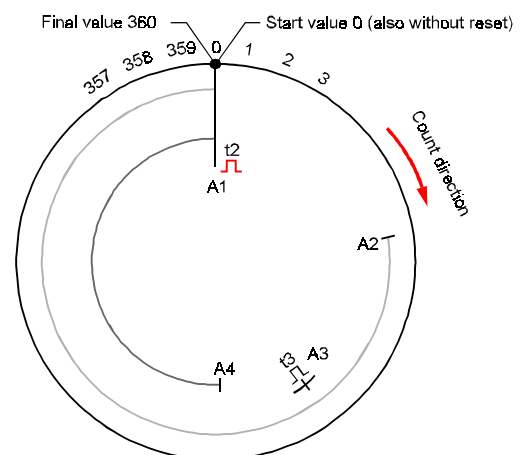
Ring counter

Counter operates from 0 and to set point A1, where an auto-reset was triggered. Then start again and so on

Example totalizing counter



Example ring counter



Order code

SZ9648 - 1. - 2. - 3. - 4. - 5. - 6. - 7.

1. Terminal strip A

1 2 counting inputs, 30Hz und 15kHz
integrated Transmitter-supply
2 additional control inputs

2. Terminal strip B

00 not installed
2R 2 preselect (alarm) outputs relay
2T 2 preselect (alarm) outputs transistor

3. Terminal strip C

00 not installed
2R 2 preselect (alarm) outputs relay
2T 2 preselect (alarm) outputs transistor

4. Terminal strip D supply voltage

0 230V 50/60Hz ±10%
1 115V 50/60Hz ±10%
4 24V 50/60Hz ±10%
5 24V DC ±15%

5. Option

00 without option

6. Unit (appears in the unit field)

7. Additional text (appears on the faceplate in the field for additional text max. size 3 x 90mm, HxW)