

## SERIES Z-57E

### Counting and Displaying

- Wide function range
- Easy setting by means of 15 operator keys
- High-contrast LED display
- Integrated power supply
- Compact housing for panel mounting
- 2x change over, volt free, relay output contacts



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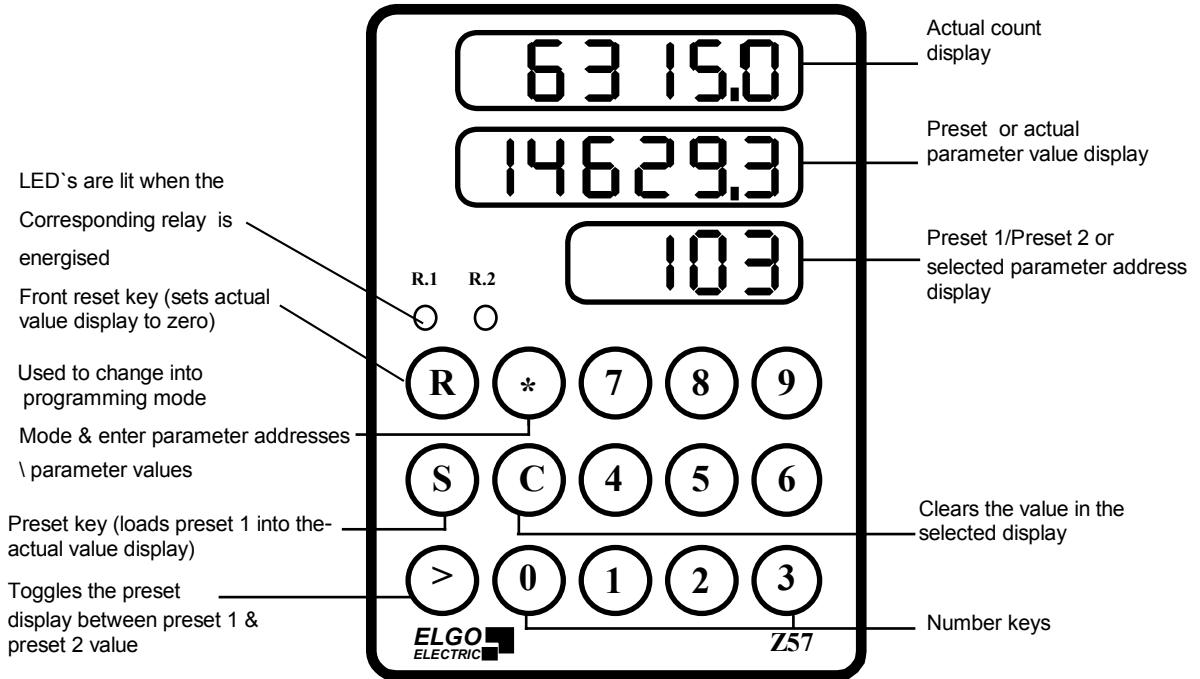
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## 1. Features of the Z57 Counter

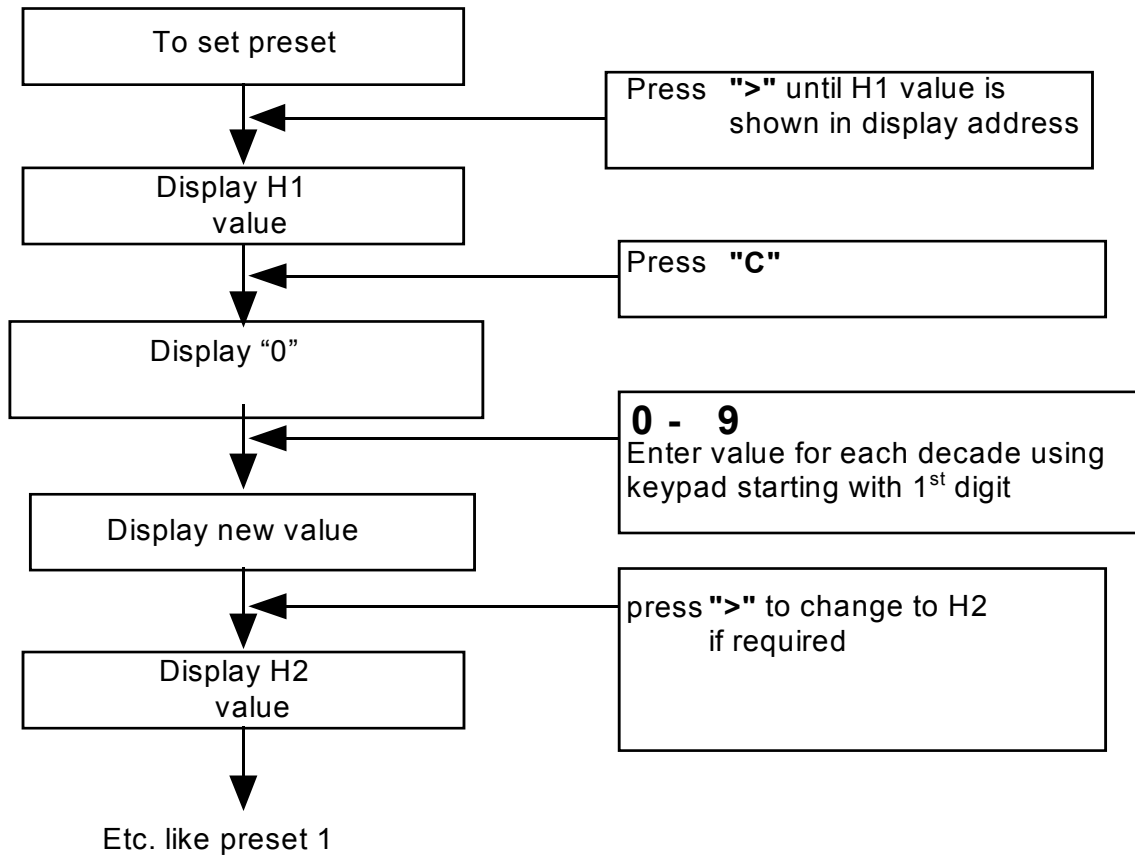
The Z57 Series Counter is a programmable preset counter for various industrial counting tasks. It evaluates the input pulses at inputs A and B and processes them according to the programmed functions. It displays the result in a 6-digit display and switches the output relays depending on the programmed output function.

- Supply voltage 230v AC/110v AC/24v DC (24v DC as option)
- Counts pulses from electronic pulse pick-ups (pnp switching) or incremental shaft encoders; maximum input frequency: 20kHz
- Electronic pulse pick-ups can be supplied via the integrated power supply (24v DC, 200mA short-circuit protected). The unit can be connected to mechanical sensors (input frequency 60Hz, suppression of bouncing).
- Simple connection by means of plug-in terminal strips with reverse-polarity protection and self-opening screw terminals up to 2.5mm<sup>2</sup>.
- 2 six-digit and 1 four-digit displays with adjustable brightness.
- Counting function forwards/backwards in the unit recognises phase-shifted signals on inputs A and B and counts in the direction: adding with signal sequence AB, subtracting with signal sequence BA.
- Counting function differential in the unit adds the pulses on input A and subtracts the pulses on input B and it displays the difference.
- Reset/Preset function: the display is set to "0" or a preset value, via the front keys or external input signal.
- Count disable by external input signal: as long as the signal is present internal counting is inhibited; the display remains on the last value.
- 0 to 3 decimal places as well as +/- count.
- One, two or four-times edge multiplication on the count inputs.
- Multiplication factor 0.0001 up to 9.9999 for the count inputs.
- 2 relay outputs with one change-over, volt free, contact each.
- various programming possibilities for the switching function of the output relays.
- Last value memory and front reset can be turned on or off
- Return to factory default of parameters by activating parameter address P16
- Protection against unintentional changes of programming. It is only possible to access parameter setting mode if terminals 6 and 7 are linked, e.g. by means of a key-operated switch.

## 2. Front Panel Layout & Functions



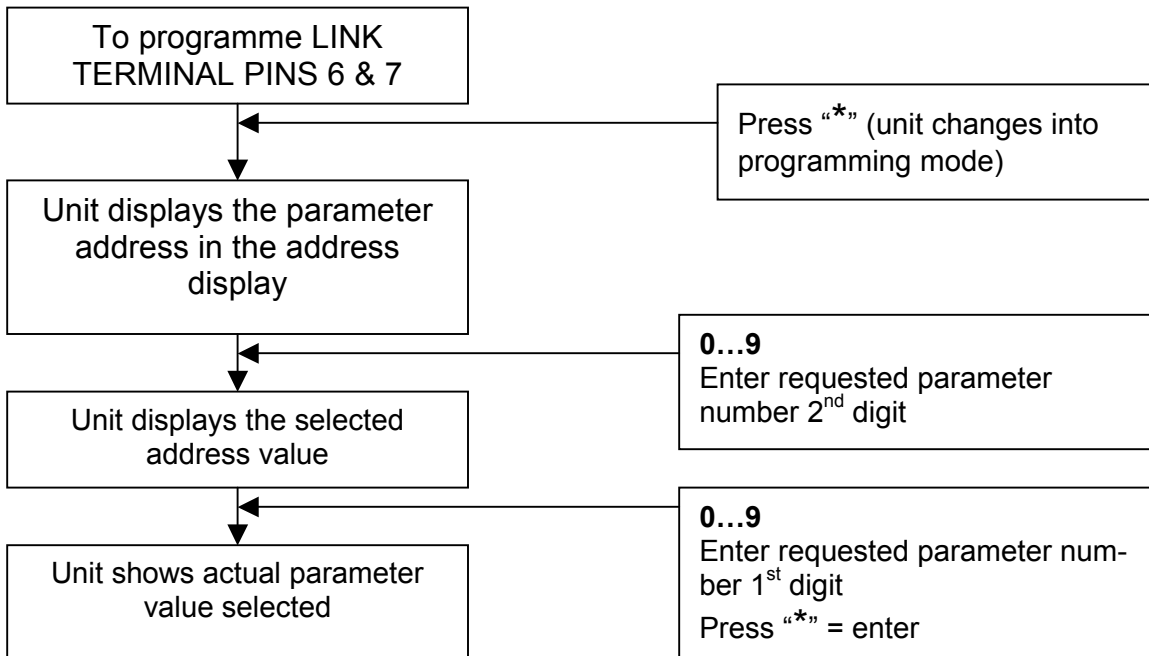
### 3. Setting the Presets



To set the actual value display to a value other than zero, you must Program the value into preset 1 (H1) and then press the **S** key.

## 4. Programming Parameter Values

(terminals 6 and 7  
must be linked)

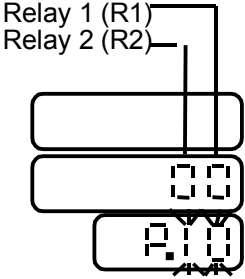


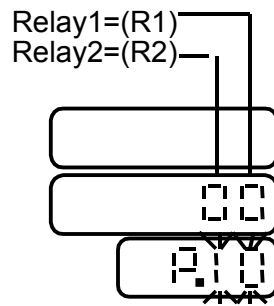
If no key is pressed during the programming/setting process for approx. 15 seconds, the unit will change back into the operating mode without changing the selected values.

## 5. Parameter List

The following parameters can be set; using SV001.V1-6 software or greater

| Parameter address                       | Parameter value   | Factory Default Setting |
|---|---|-------------------------|
| P01 Counting function                   | 0 = Up/Down differential<br>1 = Up/Down quadrature  | 1                       |
| P02 Control inputs                      | 0 = PNP switching<br>1 = NPN switching  | 0                       |
| P03 Decimal places                      | 0...3 = 0...3 decimal places after the point  | 0                       |
| P04 Power off actual<br>Position memory | 0 = Memory active<br>(on power up the last value of the actual position is displayed)<br>1 = Memory not active<br>(on power up the preset value is displayed in the actual position window) | 0                       |
| P05 R Key function                      | 0 = Front reset active<br>1 = Front reset not active  | 0                       |
| P06 Edge multiplier                     | 0 = one times<br>1 = two times<br>2 = four times  | 0                       |
| P07 Display minus sign                  | 0 = sign active<br>1 = sign not active  | 0                       |
| P08 Multiplication factor               | = Multiplication of the input pulses by factor 0,0001...9,9999  | 1.0000                  |
| P10 Relay Outputs                       | 0 = Relay pulsed for time (P12=R1, P13=R2)<br>1 = Relay latched until Reset/Preset  | 0                       |



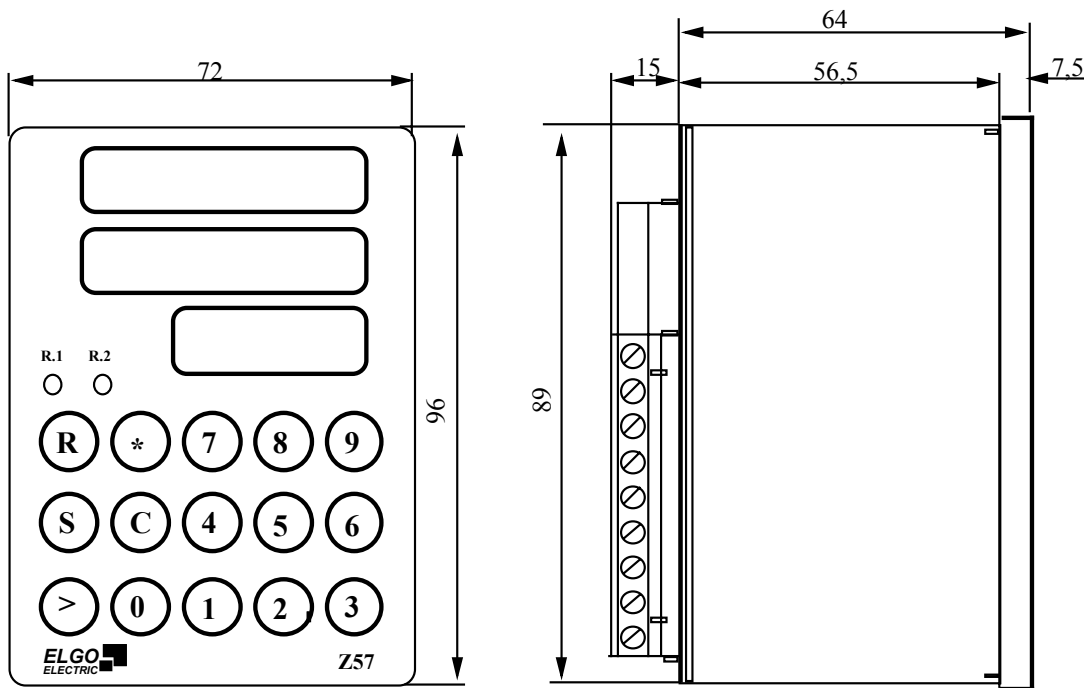


- 1 = Relay switches at preset value (H1 for R1, H2 for R2)
- 2 = Relay switches at  $\geq$  preset value (H1 for R1, H2 for R2)  
de-energises at  $<$  preset value (H1 for R1, H2 for R2)
- 3 = Relay energised below preset value (H1 for R1, H2 for R2)  
and de-energises at preset value + 1 (H1 for R1, H2 for R2)
- 4 = Relay R1 (ONLY) switches at 0 and display auto-presets to preset H1 value  
Reset key or input sets the display to preset value H1 minus preset H2 value
- 5 = Relay R1 (ONLY) switches at preset H1 value, and the display auto-resets  
to zero

|   |   |            |
|---|---|------------|
| P12 Pulse time relay R1                                   | 0,1...9,9 = 0,1 seconds...9,9 seconds adjustable in steps of 0,1 s  | 1,0        |
| P13 Pulse time relay R2                                   | 0,1...9,9 = 0,1 seconds...9,9 seconds adjustable in steps of 0,1 s  | 1,0        |
| P14 Display-brightness                                    | 0...9 = level of brightness   | 5          |
| P15 Terminal 13<br>External Reset/Preset                  | 0 = Set to preset 1, external preset<br>1 = Set to 0, external reset  | 0          |
| P16 Default to factory settings                           | 1 = all Parameter values are set to the factory default settings  | 0          |
| P18 Output relay off state                                | 00 = R1,R2 open<br>01 = R1 closed, R2 open<br>10 = R1 open, R2 closed<br>11 = R1, R2 closed   | 00         |
| P19 Count frequency = 50 Hz<br>In differential count mode | 00 = channel A and B = 50 Hz<br>01 = channel B = 50 Hz<br>10 = channel A = 50 Hz<br>11 = channel A and B with maximum frequency (20KHz) | 11         |
| P21 Counting in negative<br>direction                     | 0 active<br>1 inactive  | 1          |
| P99 Software Version                                      | Shows the actual version  | SV001.V1.6 |



## 6. Technical Specifications



|  |       |  |
|--|-------|--|
| Nominal voltage AC                               | (V)   | 115/230*   |
| Nominal voltage DC                               | (V)   | 24*  |
| Voltage tolerance                                | (%)   | +/- 10   |
| Power consumption                                |       | 230 V AC : 15 V A/24 V DC : 12 W   |
| Housing  |       | For panel mounting, anodised aluminium   |
| Protection housing / terminals                   |       | IP40 / IP00  |
| Connection                                       |       | Coded plug-in terminal strips<br>Screw terminals up to 2,5 mm <sup>2</sup>     |
| Operating temperature                            | (°C)  | 0...+50°C  |
| Supply voltage for pulse Transmitters / encoders | (V)   | 24 V DC / 200 mA, short-circuit protection                                     |
| Current consumption                              |       |  |
| Signal input                                     | (mA)  | typical. 10 (at 24 V DC)   |
| Control input                                    | (mA)  | typical. 10  |
| Input operating frequency                        |       |  |
| Signal input max.                                | (KHz) | 20   |
| Control inout max.                               | (Hz)  | 60   |
| Output   |       | 2 changeover contact rated at 250 V AC / 3 A                                   |
| Displays   |       | 16 x 7-Segment-LED, red, 8 mm high<br>2 x LED red (switching status of relays) |

**\*either: 24 v. DC or 115/230 v AC is available please specify at order stage.**

## 7. Pin Connections

### INPUTS

| PIN | Function                  |
|-----|---------------------------|
| 13  | Reset/Preset              |
| 12  | No connection             |
| 11  | Channel A                 |
| 10  | Channel B                 |
| 9   | Encoder supply +24VDC     |
| 8   | Encoder Gnd 0V            |
| 7   | Link to pin 6 to enable   |
| 6   | Access to parameters      |
| 5   | Optional supply +24VDC in |
| 4   | Optional supply 0V in     |
| 3   | PE (Earth)                |
| 2   | Unit Supply 115/230VAC in |
| 1   | Unit Supply 115/230VAC in |

### OUTPUTS

| PIN | Function                |
|-----|-------------------------|
| 1   | Common relay 1          |
| 2   | Normally Closed relay 1 |
| 3   | Normally Open relay 1   |
| 4   | Common relay 2          |
| 5   | Normally Closed relay 2 |
| 6   | Normally Open relay 2   |
| 7   | No connection           |
| 8   | No connection           |

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## 8. Liability exclusion / Guarantee

We have checked the contents of this instruction manual carefully, to the best of our knowledge and belief for conformity with the described hardware and software. Nevertheless errors, mistakes or deviations can not be excluded, therefore we do not guarantee complete conformity. Necessary corrections will be included in the subsequent editions. We appreciate your ideas and improvement suggestions very much. Reprint, duplication and translation, even in extracts, are only allowed with a written authorization by the company ELGO Electric GmbH. We constantly strive for improving our products, therefore we keep all rights reserved for any technical modifications without any notice.

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The guarantee period is one calendar year from the date of delivery and includes the delivered unit with all components. ELGO Electric GmbH will at its option replace or repair without charge defects at the unit or the included parts, verifiable caused by faulty manufacturing and/or material in spite of proper handling and compliance to the instruction manual.

Damages verifiably not caused by ELGO Electric GmbH and due to improper handling are excluded from any guarantee e.g. by applying faulty voltage, diffusion of liquid into the interior of the engine, using force, scratching the surface, chemical influences etc.!

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