

Hour Meter BZ 9648

Process time - time controlled programs

Features

- LED-Display 14.2mm rot
- Display range 0 ... 999999
- Programmable time base; h, min, s
- Decimal point programmable
- External reset
- Max. 4 preselect outputs ,
SPDT relay or transistor
- Isolated analog output
0/4 ... 20mA and 0/2 ... 10V DC
- Front protection IP65



DIN 96x48mm

General

The hour meter BZ9648 has been designed for the indicating and monitoring of timings. The device can be used generally as hour meter or programmer. In connection with preselection outputs service intervals can be monitored and operating time-controlled sequences are possible, e.g. operating central lubrication functions.

Short information

| | |
|-------------------|---|
| Programming | Parameters are programmed via front-side membrane keypad. |
| Operating control | Decimal point flashes second clock cycle. |
| Preselect outputs | The preselect outputs can be programmed as continuous contact or pulse contact. |
| Function/reset | The device can be reset by external signal or internal contacts at terminal strip B or C . Additional the preselect output A1 can be programmed for internal auto-reset (ring-counter mode). In this mode the program set back to zero automatically when reaching the preselected value programmed on output A1. A new cycle starts again. |
| Analog output | Proportional to the lap time an isolated analog output signal 0 ... 20mA / 0 ... 10V DC or 4 ... 20mA / 2 ... 10V DC can be generated. Output changed automatically from current signal to voltage signal depending on burden. |

Technical data

Power supply

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

Input

| | |
|-------------------|---------------------------------------|
| External reset | : Reset impulse ≥ 10 ms |
| -indicating level | : 0V DC inactive; 8 ... 24V DC active |

Display

| | |
|-------------------|---|
| Display range | : 0 ... 999999 digit with leading zero suppression |
| Parameter display | : LED 2-digit red, 7mm (Parameter - and output indicator) |

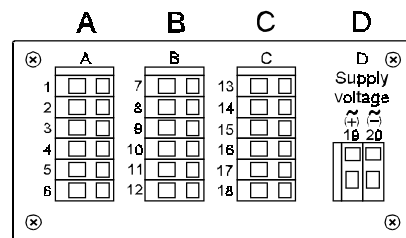
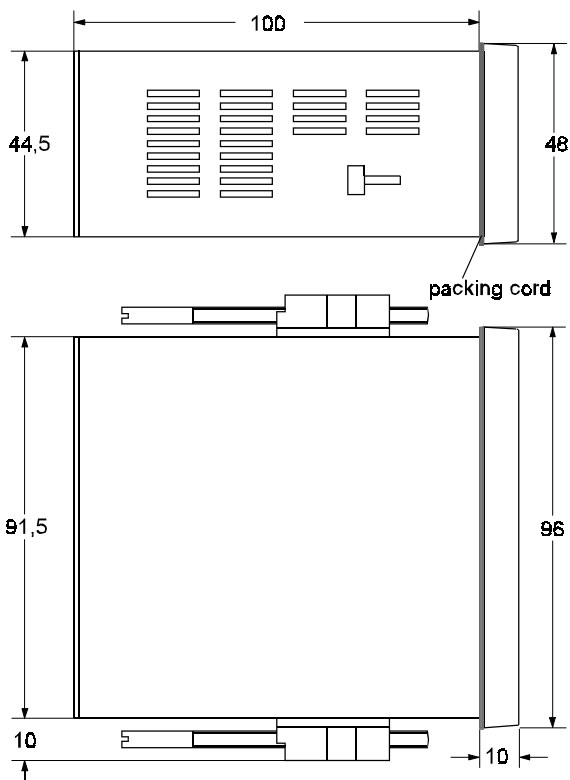
Output

| | |
|---------------|---|
| Relay | : SPDT <250V AC<250VA<2A, <300V DC<50W<2A |
| Transistor | : max. 35V AC/DC / 100mA, with short circuit protection |
| Analog output | : 0/4 ... 20mA burden $\leq 500\Omega$; 0/2 ... 10V burden $>500\Omega$, isolated Automatic output changing (burden dependent) |
| -Accuracy | : 0.1%; TK 0.01%/K |

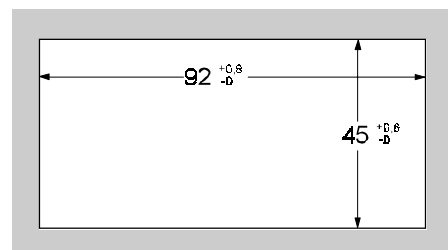
Panel case

| | |
|-----------------------|--|
| Dimensions | : DIN 96x48mm, material PA6-GF; UL94V-0 |
| Weight | : max. 390g |
| Electrical connection | : Clamp terminals, 2mm ² single wire, 1mm ² flexible wire, AWG14 |
| Protection | : Front IP65, terminals IP20, finger safe acc. BGV A2 (old VBG4) |

Dimensions



Position terminal strips

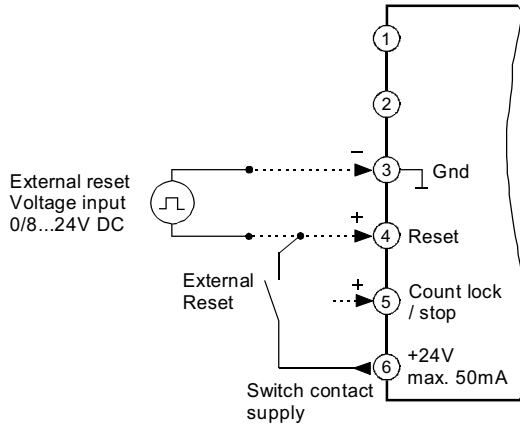


Panel cut-out
acc. to DIN 43700-96x48mm

Connection diagrams

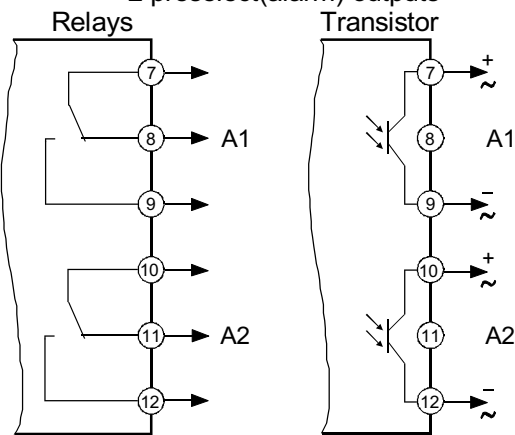
Terminal strip A

Reset inputs



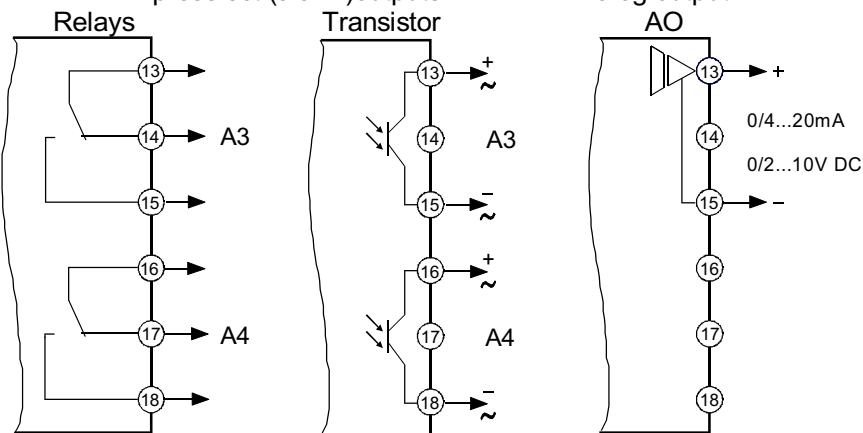
Terminal strip B (varies with version)

2 preselect(alarm) outputs

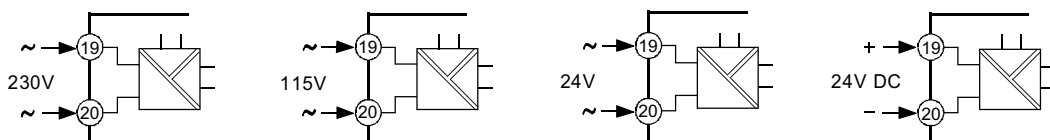


Terminal strip C (varies with version)

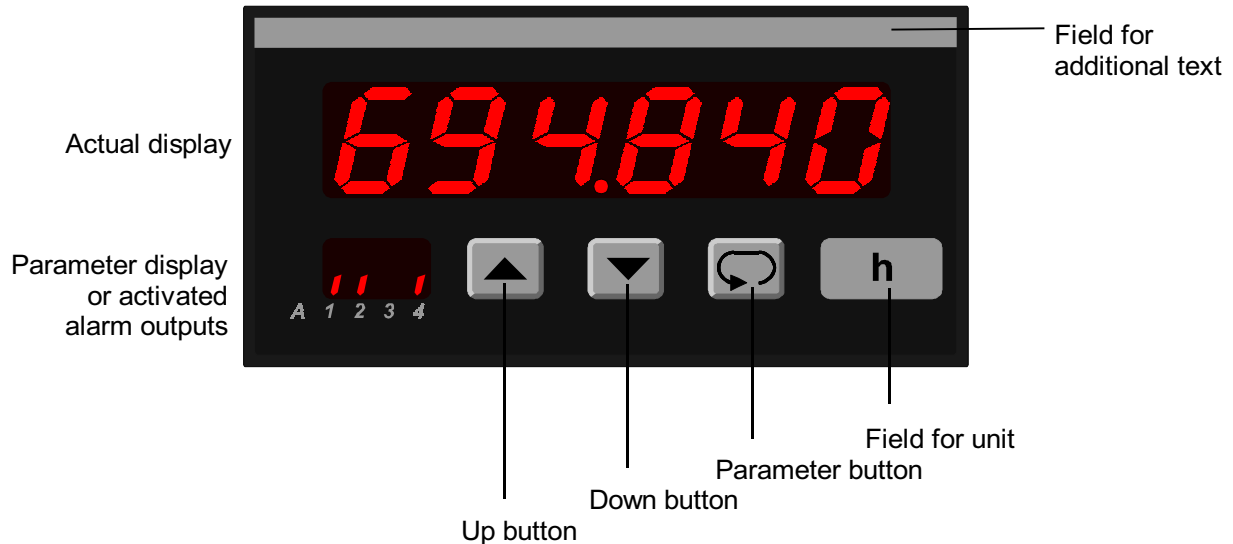
2 preselect (alarm) outputs



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 buttons and . Parameters are stored zero-voltage safe in the EEPROM.

Button combinations:

- + + pressing all buttons together will reset the actual display 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 point settings possible.

Activating the button for more than 2 seconds, the program is jumping into the **Configuration level**.

Now all 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 for 2 seconds.

Error messages:

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

Lo c Programming lock active ⇒ see configuration page 7


oF Overflow


Start-up note:

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

⇒ see page 6


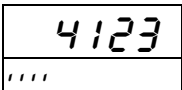

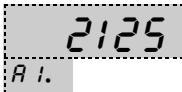

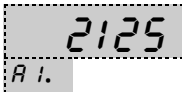









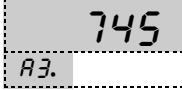



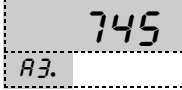






Notes to representation

 Parameter only shown when configured


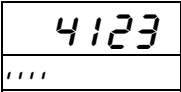
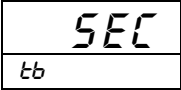

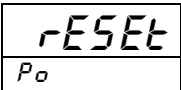
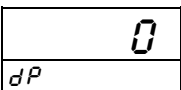






 Parameter is only shown when installed in the device (see order code)

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 [0].

Working level

| Button | Display | Description | [Factory settings] |
|---|---|--|----------------------|
|  |  | Process display | |
|  |  | Output indication (only if installed and activated). | |
|  |  | Setpoint output A1 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  |  | Setpoint output A2 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  |  | Setpoint output A2 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  |  | Setpoint output A3 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  |  | Setpoint output A3 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  |  | Setpoint output A4 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  |  | Setpoint output A4 Setting possible from 0 ... 999999 digit with buttons  and  . | [0] |
|  | | | |

Configuration level

| Button | Display | Description | [Factory settings] |
|--|---|---|--------------------|
|  press 2 sec. |  | Working level | |
| ↓ |  | Time base hr = hours (h) mm,nn = minutes (min) SEC = seconds (s) Selection with buttons ▲ and ▼. | [SEC] |
|  |  | Display value at Power-on rESEt = loading zero rESEtor = last value zero voltage safe stored tESEt = only factory settings Selection with buttons ▲ and ▼. | [rESEt] |
| ↓ |  | Decimal point position .0 0. Selection with buttons ▲ and ▼. | [0.] |
|  |  | Switching performance preselect (alarm) output A1 oFF no function o n L (min); continuous contact: on-off (Linear counter mode) o n U (max); continuous contact: off-on (Linear counter mode) o n n (max); pulse contact: off-on-off (Ring counter mode) o n u (min); pulse contact: on-off-on (Ring counter mode) A1= o n L, o n U, o F F -the device works as linear counter in the full range. When reaching the value of 999999 the counter will stop A1= o n n, o n u -the device works as ring-counter between 0 and set point A1 (see next parameter) Selection with buttons ▲ and ▼. | [oFF] |
| ↓ |  | Setpoint output A1 Setting possible from 0 ... 999999 digit, with buttons ▲ and ▼. | [0] |
|  |  | Switching time output A1 in sec. Setting possible from 0.01 ... 99.99 s, with buttons ▲ and ▼. | [1.00] |
|  | | | |

weiter
Seite 7

| Button | Display | Description | [Factory settings] |
|--------|---------|--|----------------------|
| ↓ | | Switching performance preselect (alarm) output A2 <i>oFF</i> no function <i>o n L</i> (min); continuous contact: on-off <i>o n U</i> (max); continuous contact: off-on <i>o n n</i> (max); pulse contact: off-on-off <i>o n u</i> (min); pulse contact: on-off-on Selection with buttons ▲ and ▼ . | [<i>oFF</i>] |
| ↺ | | | |
| ↓ | | Setpoint output A2 Setting possible from 0 ... 999999 digit, with buttons ▲ and ▼ . | [0] |
| ↺ | | | |
| ↓ | | Switching time output A2 in sec. Setting possible from 0.01 ... 99.99 s, with buttons ▲ and ▼ . | [1.00] |
| ↺ | | Note: Switching performance, setpoint and switching time of preset outputs A2 to A4 are identical. | |
| ↺ | | | |
| ↓ | | Analog output 0 - 20 mA (0 - 10 V DC) 4 - 20 mA (2 - 10 V DC). Changing from current to voltage output is load-dependent (≤ 500Ω = current output, > 500Ω = voltage output). Selection with buttons ▲ and ▼ . | [0 - 20] |
| ↺ | | | |
| ↓ | | Start value for the analog output Setting possible from 0 ... 999999 digit, with buttons ▲ and ▼ . | [0] |
| ↺ | | | |
| ↓ | | End value for the analog output Setting possible from 0... 999999 digit, with buttons ▲ and ▼ . If the Start value <i>A5</i> > <i>A E</i> the output works with a decreasing characteristic. | [0] |
| ↺ | | | |
| ↺ | | | |
| ↓ | | Program lockout. <i>oFF</i> = no lock <i>L c o n F.</i> = configuration level locked <i>A L L</i> = all parameters locked <i>L A L</i> = only with analog output (only for factory settings) Selection with buttons ▲ and ▼ . | [<i>oFF</i>] |
| ↺ | | | |
| ↺ | | Return to the working level | |

Order code

BZ9648 - 1. - 2. - 3. - 4. - 5. - 6. - 7.

1. Terminal strip

- 1 external reset
- integrated switch contact supply

2. Terminal strip B

- 00 not installed
- 2R 2 alarm outputs relays
- 2T 2 alarm outputs transistor

3. Terminal strip C

- 00 not installed
- 2R 2 alarm outputs relays
- 2T 2 alarm outputs transistor
- AO Analog output 0/4 ... 20mA or 0/2 ... 10V DC, isolated

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 on the unit field)

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