



type 3800, 3810, 3820, 3830, 3840, 3850, 3860, 3870, 3880, 3890



type 3801, 3811, 3821, 3831, 3841, 3851, 3861, 3871, 3881, 3891

**Time and pulse counters (single counter) for AC or DC or with Twin-technology as time, service or pulse counters (double counter) 7 mm digit height, 48 x 24 mm, 48 x 48 mm, Ø 52 mm**

Advanced BAUSER technology enables: Even without battery, your information remains registered in the EEPROM records. Further, the digital time- and pulse counters offer a smart design, high quality and reliability. Therefore, ideally suitable for the heavy applications in the industry and vehicles.

**With the BAUSER counters, you can count on:**

- LC-display with 7 digits, character height - 7 mm
- protection class IP 65 (without reset button)
- plug- and terminal connection

The BAUSER-Twin (double counter) registers cost effectively two different counting values as digital indication in just one counter. So, we offer you two counters in one unit. You decide which value should be indicated permanently and which one in the background. We programme the BAUSER-Twin individually for you, according to your priorities and requirements of service intervals and prewarning times.

**Order specifications:**



type 3802, 3812, 3822, 3832, 3842, 3852, 3862, 3872, 3882, 3892

| counting type     | housing dimensions |            |                         | reset for the following counter | notes   |
|-------------------|--------------------|------------|-------------------------|---------------------------------|---|
|                   | 48 x 24 mm         | 48 x 48 mm | Ø 56 mm with glass ring |                                 |   |
| HC*               | 3800               | 3801       | 3802                    |                                 |   |
| PC*               | 3810               | 3811       | 3812                    |                                 |   |
| HC with HC (bg)*  | 3820               | 3821       | 3822                    | HC                              | HC (bg) not resetable   |
| PC with PC (bg)*  | 3830               | 3831       | 3832                    | PC                              | PC (bg) not resetable   |
| HC with PC (bg)*  | 3840               | 3841       | 3842                    | HC + PC                         | both counters are resetable, even PC while appearing on the display (e.g. combination of power-on time and frequency) |
| PC with HC (bg)*  | 3850               | 3851       | 3852                    | PC + HC                         | both counters are resetable, even HC while appearing on the display (e.g. combination of power-on time and frequency) |
| HC with STC (bg)* | 3860               | 3861       | 3862                    | STC                             | HC not resetable  |
| PC with SPC (bg)* | 3870               | 3871       | 3872                    | SPC                             | PC not resetable  |
| STC with HC (bg)* | 3880               | 3881       | 3882                    | STC                             | HC not resetable  |
| SPC with PC (bg)* | 3890               | 3891       | 3892                    | SPC                             | PC not resetable  |

\* HC = hour counter  
 PC = pulse counter  
 STC = service time counter,  
 SPC = service pulse counter  
 bg = background

**Choose between the following software configurations**

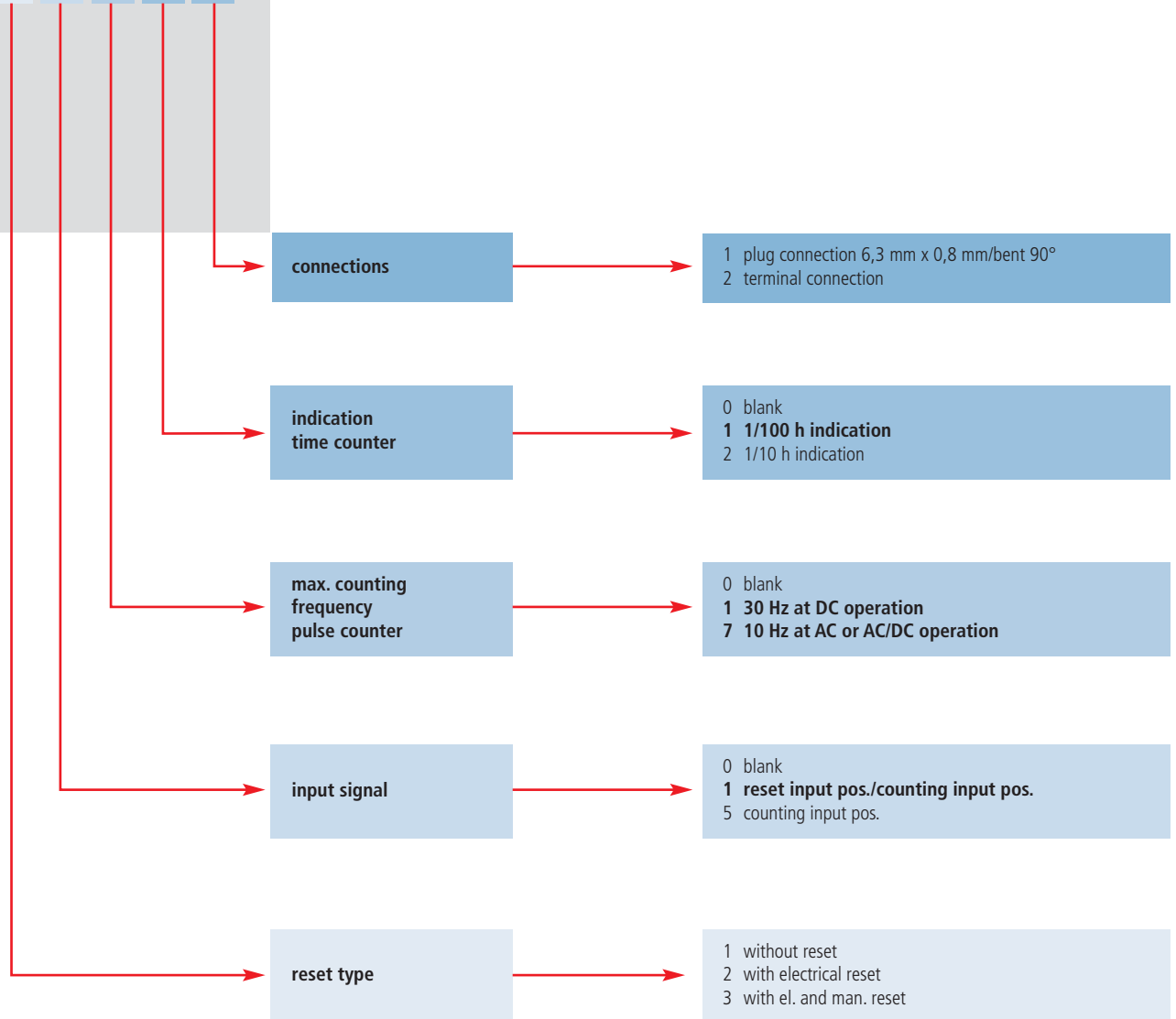
(The background counter appears for approx. 10 seconds every time you switch-on):

- time and service counter (fix values)
- pulse and service counter (fix values)
- periodical and totalising counter
- time and pulse counter



## Further specifications for your order selection

38XX.X.X.X.X.X



written fat = preferred variants

### Further order specifications:

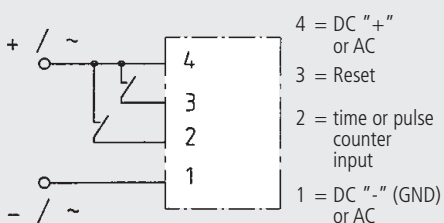
12 - 24 V DC, 24 - 48 V DC, 24 V AC/DC oder 110 - 240 V AC 50/60 Hz

Please indicate your desired service and prewarning times. i.e. The service should happen after 1.000 pulses with a pre-warning after 900 pulses, maximum 4, minimum 1 digit values.

accessories: additional sealing, rubber seal at additional costs.

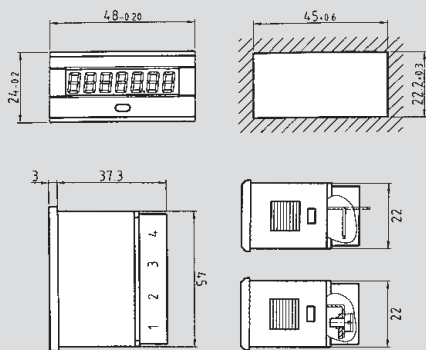
Our digital hour counters with signal output series 4000... are described on page 10 to 12.

### wiring diagram (for positive signal inputs):

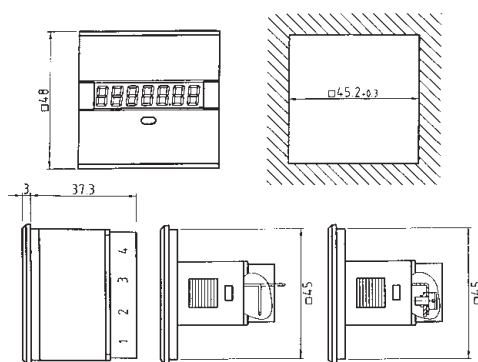


Pin 1 + 4 = voltage supply

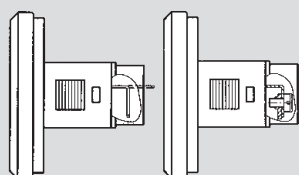
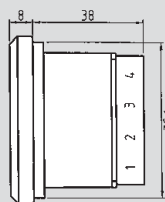
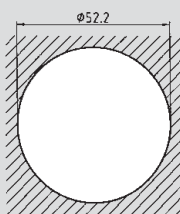
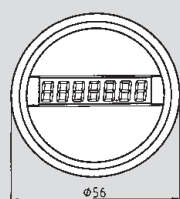
## Digital time and pulse counters



drawing: 48 x 24 mm



drawing: 48 x 48 mm



drawing:  
Ø 56 mm with glass ring

## Technical specifications of the single and double counters

On this page you will find the complete technical specifications and drawings of the digital single and double counters.

### Technical specifications:

|   |   |
|---|---|
| <b>housing:</b>                               | black plastic   |
| <b>indication:</b>                            | LC-display with 7 digits (only active while connected)  |
| <b>character height:</b>                      | 7 mm  |
| <b>operating voltages:</b>                    | 12 - 24 V DC / $\pm 25\%$<br>110 - 240 V AC 50/60 Hz / $\pm 10\%$   |
| <b>special voltages (at additional cost):</b> | 24 - 48 V DC / $\pm 25\%$<br>24 V AC/DC / $\pm 10\%$  |
| <b>current consumption:</b>                   | 12 - 24 V DC and 24 - 48 V DC / $< 5$ mA<br>24 V AC / DC / $< 10$ mA<br>110 - 240 V AC 50/60 Hz / $< 15$ mA   |
| <b>ambient temperature:</b>                   | $-30^\circ\text{C}$ to $+70^\circ\text{C}$  |
| <b>stocking temperature:</b>                  | $-40^\circ\text{C}$ to $+80^\circ\text{C}$  |
| <b>electrical connection:</b>                 | plug connection 6,3 x 0,8 mm / $90^\circ$ bent or terminal connection   |
| <b>reset:</b>                                 | without, manual or electrical   |
| <b>protection:</b>                            | without reset button IP 65, with reset button IP 54   |
| <b>vibration resistance:</b>                  | 20 g according to SAEJ1378, 1 g (10...500 Hz) according to EN 60068-2-34                                      |
| <b>shock resistance:</b>                      | 55 g according to SAEJ1378, 30 g (18 ms) according to EN 60068-2-27<br>25 g (6 ms) according to EN 60068-2-29 |
| <b>EMC:</b>                                   | EN 55011, EN 61000-6-2  |
| <b>industrial norm:</b>                       | EN 61010, protection class II   |
| <b>approval:</b>                              | CE, UL, cUL   |
| <b>counting frequency / pulse counter:</b>    | 30 or 200 Hz = DC-counter<br>10 Hz = AC-counter   |
| <b>data storage:</b>                          | EEPROM (min. 25 years)  |
| <b>fixing:</b>                                | retaining clip  |
| <b>weight:</b>                                | 39, 42 or 57 g.   |

### Please note:

On pages 10 to 12 you will find variants with signal- or relay output or with two permanent indications. Voltage-free counters, which operate with a lithium battery, will be shown on pages 7 to 9.

The smart double counters are also available as modules. Find more information on pages 18 to 22.

## Digital time and pulse counters



type 4500, 4510, 4550, 4560, 4580, 4590



type 4501, 4511, 4551, 4561, 4581, 4591



type 4502, 4512, 4552, 4562



type 4503, 4513, 4553, 4563

### Time and pulse counters, multi voltage 12 - 150 V DC and 24 - 240 V AC or battery-operated units, 5 mm digit height, 36 x 24 mm, 48 x 24 mm, 53 x 31 mm, ø 52 mm

The digital time or pulse counter range 4500 is based on a specially developed by BAUSER ASIC-component. This ASIC features ultra low current consumption, as well as by its integrated temperature compensation for the high visibility LCD.

The digital counters are powered by an external power supply or by an internal lithium battery (life time minimum 10 years). At the external power supply the data are stored by an EEPROM. The battery-operated counters feature a permanently readable indication and can therefore be considered as a real alternative to the traditional electromechanical hour counters.

The wide voltage range and the variety of housing sizes (from minimum to maximum) are the basis for various applications. The design and the quality are further positive aspects for applying these counters in the utility vehicle or industrial sector.

#### The technical advantages of this product range:

- high visibility LCD with digits height of 5 mm and temperature range of -40 °C to +85 °C
- sealed completely against dirt and humidity, IP66
- battery-operated version (life time of battery: 10 years) is a real alternative to the electromechanical hour or pulse counters, alternatively with voltage-free input
- voltage range 12 - 48 V DC / 12 - 150 V DC and 24 - 240 V AC (in one unit), low current consumption
- pulse counter with input frequency of up to 500 Hz (DC operation)
- 2- or 3-wire connection at hour counter
- high shock and vibration resistant
- operating indication: clock-symbol on the display
- data storage by battery (life time: min. 10 years) or EEPROM (min. 25 years)
- optionally with single reset

#### Order specifications of range 45XX

| counter   | 36 x 24 mm | 48 x 24 mm | Ø 56 mm with front fixing | rectangular with glassing |
|---|------------|------------|---------------------------|---------------------------|
| <b>counter with external power supply</b>                           |            |            |                           |                           |
| time counter  | 4500       | 4501       | 4502                      | 4503                      |
| pulse counter   | 4510       | 4511       | 4512                      | 4513                      |
| <b>counter with internal lithium battery</b>                        |            |            |                           |                           |
| time counter  | 4550       | 4551       | 4552                      | 4553                      |
| pulse counter   | 4560       | 4561       | 4562                      | 4563                      |
| <b>counter with internal lithium battery and voltage-free input</b> |            |            |                           |                           |
| time counter  | 4580       | 4581       |                           |                           |
| pulse counter   | 4590       | 4591       |                           |                           |

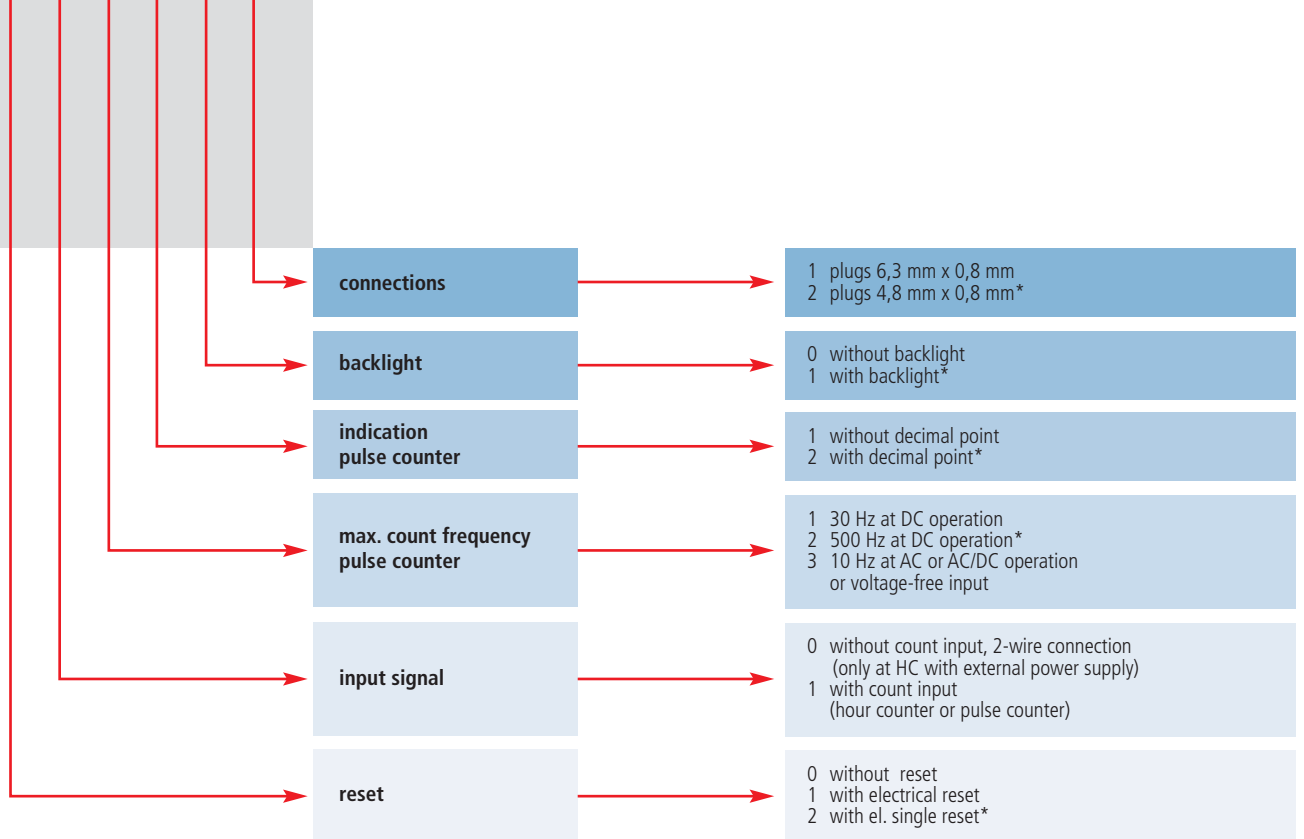
#### Please note:

For smaller quantities of less than 100 pcs per shipment we recommend the types 3800 on pages 4 to 6.

Our digital counters with signal output, series 40XX are described on page 10 - 12.

## Further specifications for your order selection

45XX.X.X.X.X.X



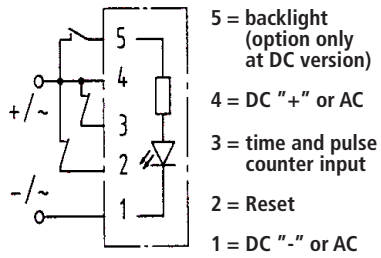
\* = no standard version - available on request!

### Technical specifications:

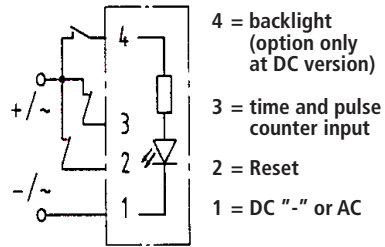
|                                 |  |
|---------------------------------|--|
| <b>housing:</b>                 | black plastic  |
| <b>indication:</b>              | LC-Display, 7 digits, at battery-operated version permanent indication   |
| <b>character height:</b>        | 5 mm   |
| <b>reset:</b>                   | without or electrical  |
| <b>data storage:</b>            | EEPROM (min. 25 years) or battery (min. 10 years)  |
| <b>ambient temp.:</b>           | -40 °C to +85 °C, -40 °C to +70 °C at battery supply   |
| <b>storage temp:</b>            | -40 °C to +90 °C, -40 °C to +70 °C at battery supply   |
| <b>electr. connection:</b>      | plugs 6.3 x 0.8 mm optionally 4.8 x 0.8 mm   |
| <b>vibration resistance:</b>    | 20 g according to SAEJ1378, 1 g (10..500 Hz) according to EN60068-2-34   |
| <b>shock resistance:</b>        | 55 g according to SAEJ1378, 30 g (18 ms) according to EN60068-2-27<br>25 g (6 ms) according to EN60068-2-29  |
| <b>counting frequency (PC):</b> | maximum 30 Hz or 500 Hz at DC operation / maximum 10 Hz for AC or AC/DC variant  |
| <b>operating voltage :</b>      | 12 V DC - 150 V DC and 24 V AC - 240 V AC ±10 %  |
| <b>current consumption:</b>     | 100 µA - 3 mA  |
| <b>input resistance:</b>        | approx. 120 kOhm (count, reset)  |
| <b>life time of battery:</b>    | Min. 10 years under the following conditions: <ul style="list-style-type: none"> <li>• 10 Mio. switching cycles of count and reset at 23 °C</li> <li>• mean duty cycle at count and reset: 12 h/day</li> <li>• min. signal rise time at count and reset: 5 ms</li> <li>• signal voltage at count and reset: Ub ±25 %, off: &lt; 0,75V or floating</li> </ul> |
| <b>option backlight:</b>        | operating voltage: 12 V DC ±25 %    24 V DC ±25 %    36 V DC ±25 % - 48 V DC ±25 %<br>current consumption: ca. 30 mA    ca. 15 mA    ca. 5 mA - 8 mA   |
| <b>EMC:</b>                     | EN 55011, EN 61000-6-2   |
| <b>industrial norm:</b>         | EN 61010, protection class II  |
| <b>approval:</b>                | CE, UL, cUL  |
| <b>protection:</b>              | IP66, pins IP00  |
| <b>fixing:</b>                  | retaining clip or front fixing   |

## Drawings and wiring diagrams

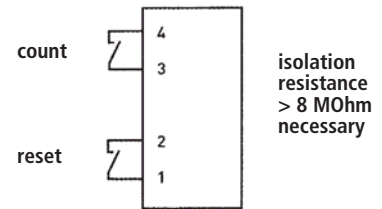
wiring diagram  
(external power supply):



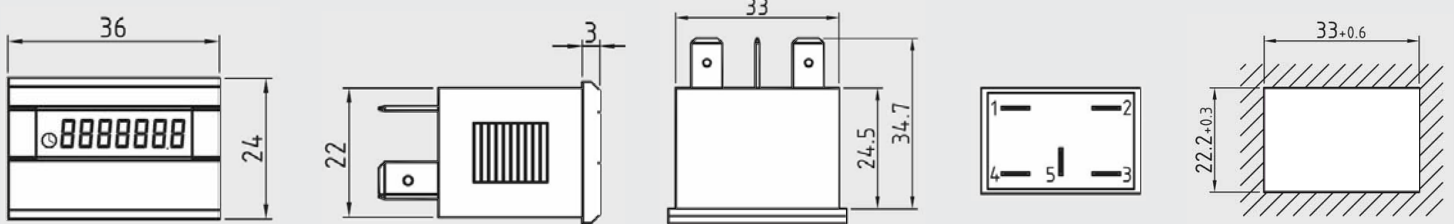
wiring diagram  
(battery-operated version):



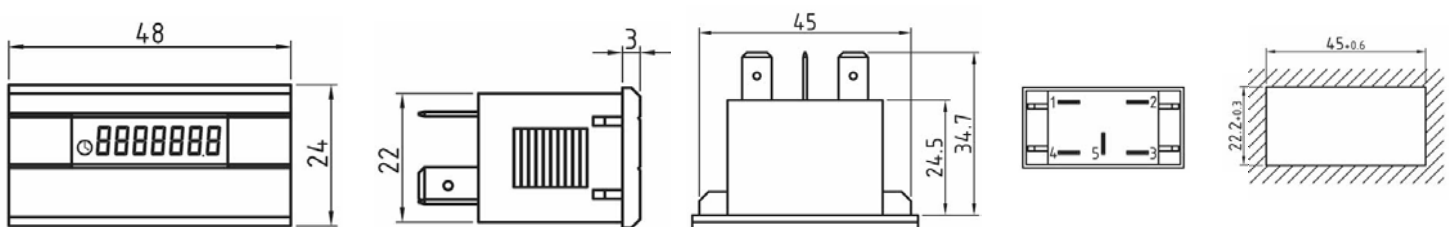
wiring diagram  
(battery version voltage-free):



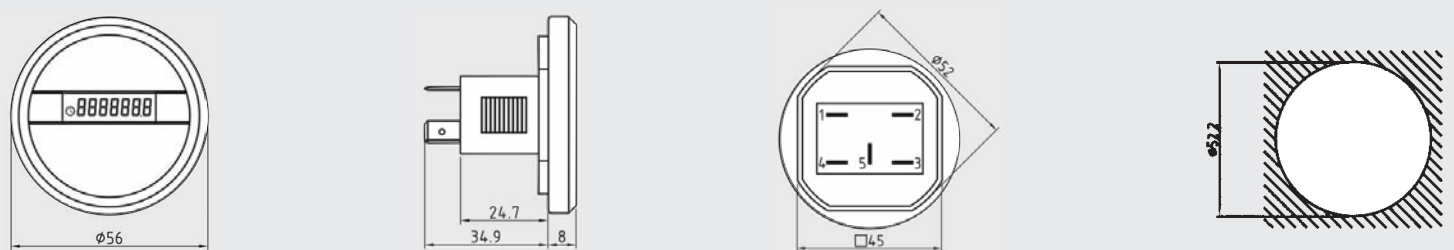
drawing: 36 x 24 mm



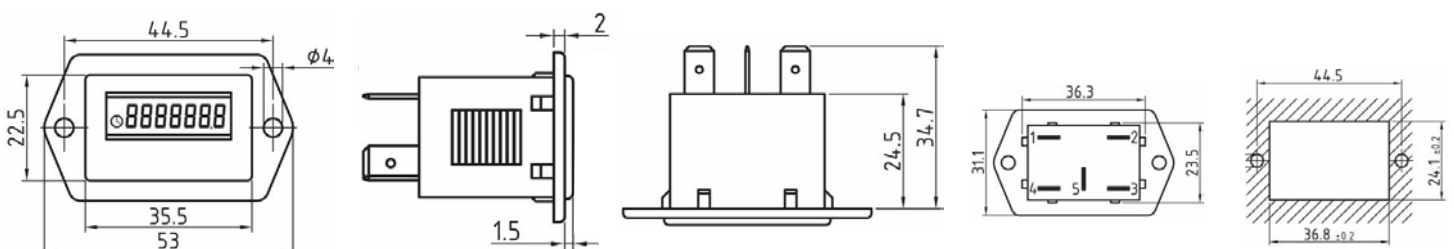
drawing: 48 x 24 mm



drawing:  $\varnothing$  56 mm



drawing: front fixing





## Digital time and pulse counters

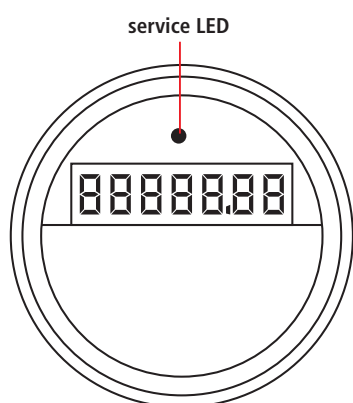


type 4000.0 to 4091.0

### Time, service or pulse counters with signal or relay output and service LED, for DC only, 1 or 2 displays, ø 52 mm

Here you will find another multiple solution from BAUSER. With the Twin-service-counter for time and pulses or cycles a counter can operate in the background. The requested service intervals are programmed factory set. The background counter appears for approx. 10 seconds every time you switch-on. Choose your combination, we programme the fix values according to your priorities.

#### Digital counter with 1 display – on request with background counter



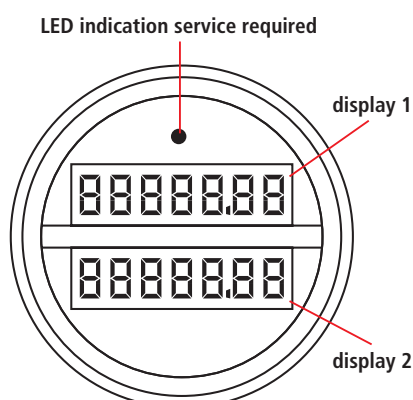
front view



type 4000.1 to 4091.1  
type 4000.2 to 4091.2

| counter type                                 | type   | reset for the following counters | notes  |
|--|--------|----------------------------------|--|
| HC* without output, without LED              | 4000.0 | HC                               |  |
| PC* without output, without LED              | 4010.0 | PC                               |  |
| HC with HC (bg)* without output, without LED | 4020.0 | HC                               | HC (bg) not resetable  |
| PC with PC (bg)* without output, without LED | 4030.0 | PC                               | PC (bg) not resetable  |
| HC with PC (bg)* without output, without LED | 4040.0 | HC + PC                          | both counters are resetable, even PC (bg) while appearing on the display |
| PC with HC (bg)* without output, without LED | 4050.0 | PC + HC                          | both counters are resetable, even HC (bg) while appearing on the display |
| HC with STC (bg)* with relay output          | 4060.0 | STC                              | HC not resetable   |
| HC with STC (bg)* with el. signal output     | 4061.0 | STC                              | HC not resetable   |
| PC with SPC (bg)* with relay output          | 4070.0 | SPC                              | PC not resetable   |
| PC with SPC (bg)* with el. signal output     | 4071.0 | SPC                              | PC not resetable   |
| STC with HC (bg)* with relay output          | 4080.0 | STC                              | HC(bg) not resetable   |
| STC with HC (bg)* with el. signal output     | 4081.0 | STC                              | HC (bg) not resetable  |
| SPC with PC (bg)* with relay output          | 4090.0 | SPC                              | PC (bg) not resetable  |
| SPC with PC (bg)* with el. signal output     | 4091.0 | SPC                              | PC (bg) not resetable  |

\* HC = hour counter, PC = pulse counter, STC = service time counter, SPC = service pulse counter, bg = background



front view

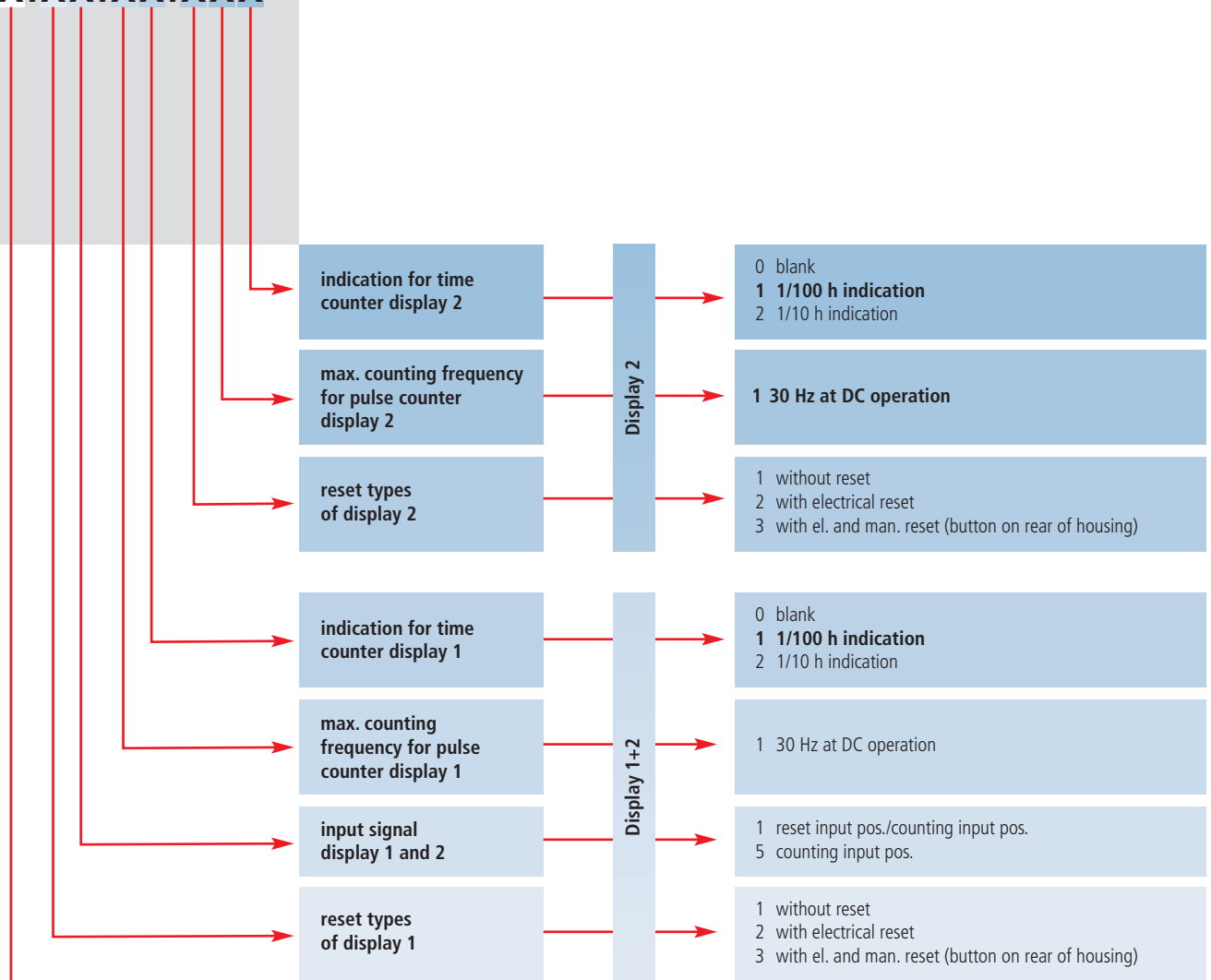
If you require 2 permanent indications, even for this BAUSER has a solution: the 2-display counter. Of course, we are able to offer an additional LED indication for signal and relay output.

The counter type of the second display will be determined according to the following chart. You have to amend the type no. 40XX.0 of the chart above according to the chart beneath. i.e. for a HC in display 2, you have to change type 4060.0 into type 4060.1.

Further counter types for display 2 are available on request.

Further specifications for your order selection

40XX.X.XX.XX.XXX

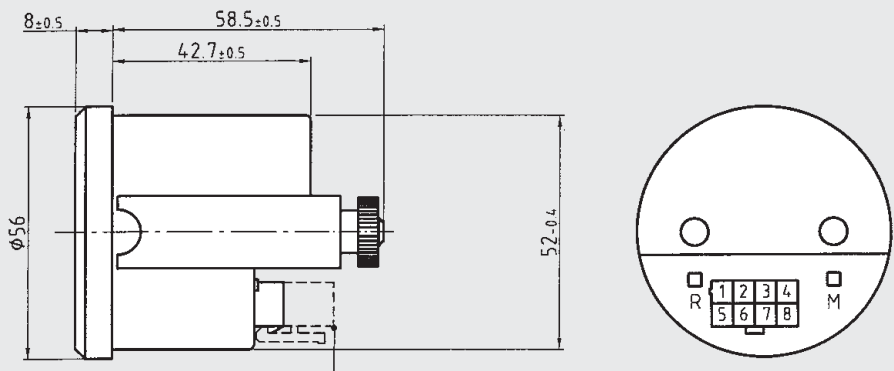


written fat = preferred variants

Additionally please specify the operating voltage and the required service and prewarning values. i.e.: The service should happen after 1.000 pulses with a prewarning after 900 pulses.

digital counter with 2 displays – permanent indication

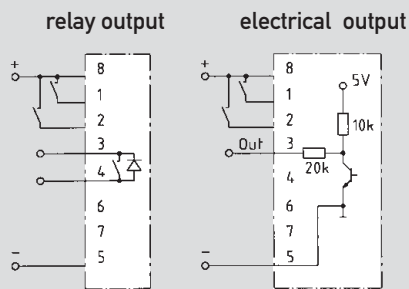
| counter type | type   | reset for the following counter |
|--------------|--------|---------------------------------|
| HC           | 40XX.1 | HC                              |
| PC           | 40XX.2 | PC                              |



drawing type 40XX:



## Technical specifications



wiring diagram type 4060.0 to 4091.0  
**1 display**

1 = count display 1

2 = reset display 1

3 = relay "+" (or Out)\*

4 = relay "-" (or not connected)\*

5 = DC "-"

6 = not connected

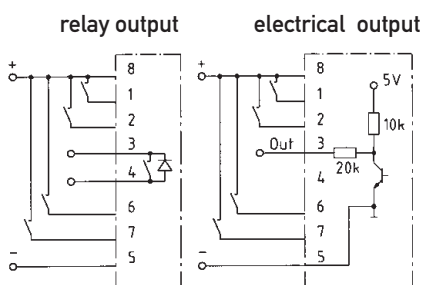
7 = not connected

8 = DC "+"

\*electrical output version

### Technical specifications:

|   |  |
|---|--|
| <b>housing:</b>                               | black plastic with glass and bevelled black chrome-plated bezel  |
| <b>indication:</b>                            | LC-display with 7 digits = 1 or 2 indications (only active while connected)  |
| <b>character height:</b>                      | 7 mm   |
| <b>operating voltages:</b>                    | 12 - 24 V DC / $\pm 25\%$<br>24 V DC – with relay output   |
| <b>special voltages (at additional cost):</b> | 24 - 48 V DC / $\pm 25\%$<br>12, 36, 48 V DC – with relay output   |
| <b>current consumption:</b>                   | 12 - 24 V DC, 24 - 48 V DC / $< 10$ mA<br>12 V / $< 35$ mA – with relay output<br>24 V / $< 25$ mA – with relay output<br>36 V / $< 25$ mA – with relay output<br>48 V / $< 20$ mA – with relay output |
| <b>relay contact:</b>                         | voltage-free closes at service / breaking capacity 12 V/2 A; 24 V/2 A; 36 V/1,5 A; 48 V/1 A  |
| <b>signal output:</b>                         | high level at service  |
| <b>ambient temperature:</b>                   | -30 °C to +70 °C   |
| <b>stocking temperature:</b>                  | -40 °C to +80 °C   |
| <b>electrical connection:</b>                 | 8 pole compact plug (optionally with cable-glands)   |
| <b>protection:</b>                            | IP 65 (front)  |
| <b>reset:</b>                                 | without, manual (button on the rear of the housing) or electrical  |
| <b>vibration resistance:</b>                  | 20 g according to SAEJ1378, 1 g (10...500 Hz) according to EN 60068-2-34   |
| <b>shock resistance:</b>                      | 55 g according to SAEJ1378, 30 g (18 ms) according to EN 60068-2-27,<br>25 g (6 ms) according to EN 60068-2-29   |
| <b>EMC:</b>                                   | EN 55011, EN 61000-6-2   |
| <b>industrial norm:</b>                       | EN 61010, protection class II  |
| <b>counting frequ./pulse counter:</b>         | 30 or 200 Hz   |
| <b>data storage:</b>                          | EEPROM   |
| <b>approval:</b>                              |  |
| <b>fixing:</b>                                | metal clamp with two nuts  |



wiring diagram type 4060.1 to 4091.2  
**2 displays**

1 = count display 1

2 = reset display 1

3 = relay "+" (or Out)\*

4 = relay "-" (or not connected)\*

5 = DC "-"

6 = count display 2

7 = reset display 2

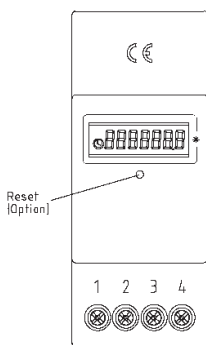
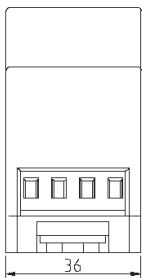
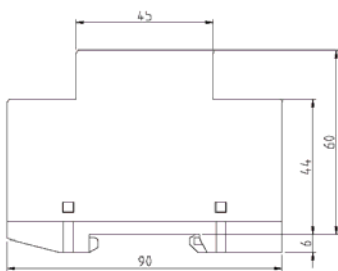
8 = DC "+"

\*electrical output version

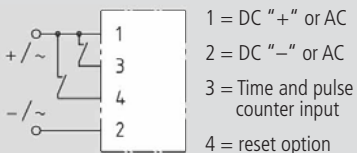
## Digital time and pulse counters



type 670.6.X.X



drawings



wiring diagram

## Time or pulse counters for DIN-rail mounting, multi voltage 12 - 150 V DC and 24 - 240 V AC, overall height 60 mm

The basis of the digital time and pulse counter is a special ASIC-component which has been developed by BAUSER. The voltage range of 12 - 150 V DC and 24 - 240 V AC in only one unit is very particular to these time and pulse counters. Further advantages are the high visibility 7-digit-LC-display and a reset selection of: without, electrical or manual and electrical.

### Order specifications type range 670.6.X.X

## 670.6.X.X

1 hour counter  
2 pulse counter

Reset type

1 without reset  
2 with electrical reset  
3 with manual or electrical reset

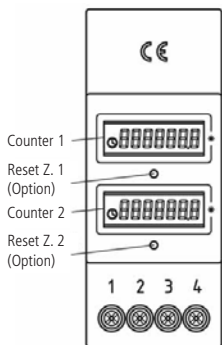
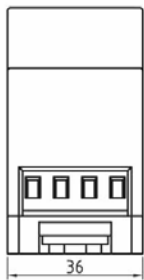
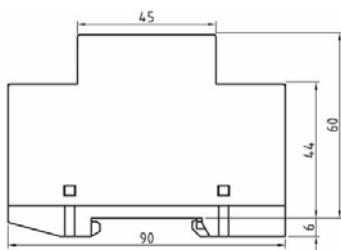
### Technical specifications:

|   |   |
|---|---|
| <b>housing:</b>                               | plastic light grey RAL 7035   |
| <b>indication:</b>                            | LC-display, 7 digits (0.1 h resolution for hour counter)  |
| <b>character height:</b>                      | 5 mm  |
| <b>operating voltage (U<sub>b</sub>):</b>     | 12 V DC - 150 V DC und 24 V AC - 240 V AC ±10 % (in one unit)   |
| <b>frequency:</b>                             | 50/60 Hz  |
| <b>current consumption:</b>                   | 100 µA - 3 mA   |
| <b>input resistance:</b>                      | approx. 120 kOhm (Count, Reset)   |
| <b>protection (front):</b>                    | IP65 (without reset button)<br>IP40 (with reset button), screw IP20   |
| <b>ambient temperature:</b>                   | -10 °C bis +70 °C   |
| <b>stocking temperature:</b>                  | -40 °C bis +80 °C   |
| <b>electrical connection:</b>                 | Terminal Blocks (lift principle) with Philips-Head-Screw (+/- screw) in combination with slotted screw with 3 mm screwdriver size, 0-2.5 mm <sup>2</sup> fine wire or 0-4 mm <sup>2</sup> single wire |
| <b>max. torque:</b>                           | 0,5 Nm  |
| <b>vibration resistance:</b>                  | 1 g (10...500 Hz) according to EN 60068-2-34  |
| <b>shock resistance:</b>                      | 30 g (18 ms) according to EN 60068-2-27<br>25 g (6 ms) according to EN 60068-2-29   |
| <b>EMC:</b>                                   | EN 55011, EN 61000-6-2  |
| <b>industrial norm:</b>                       | EN 61010, protection class II   |
| <b>approval:</b>                              | CE, UL, cUL   |
| <b>reset:</b>                                 | without, electrical or manual and electrical (sunk button, for example utilisable with ball point pen)  |
| <b>weight:</b>                                | approx. 75 g  |
| <b>counting frequency/<br/>pulse counter:</b> | maximum 10Hz for AC signal voltage<br>optionally higher counting frequency at DC-version  |
| <b>data storage:</b>                          | EEPROM (min. 25 years)  |
| <b>fixing:</b>                                | snap-on fixing for DIN-rail according DIN EN 50022  |

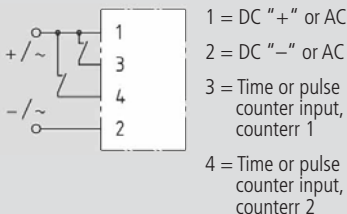
## Digital time and pulse counters



type 672.6.X.X.X.X



drawings



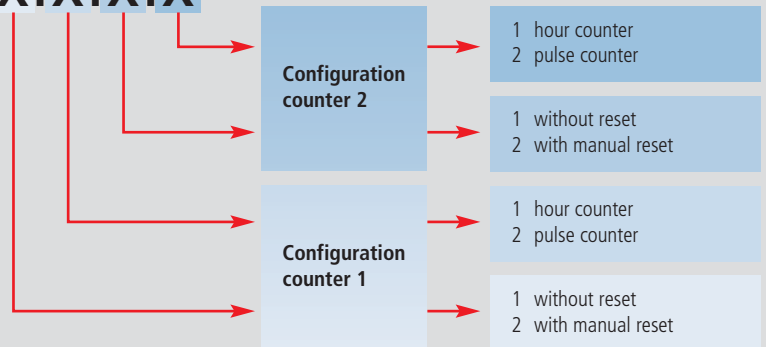
wiring diagram

## Time or pulse counters for DIN-rail mounting, 2 displays, multi voltage 12 - 150 V DC and 24 - 240 V AC, overall height 60 mm

Digital time or pulse counters with high visibility 7-digit-LC-display. You decide, which value should be indicated by this double counter. Two times time or pulses or even one time and one pulse indication. The heart of these counters is a new ASIC-component, which has been developed by BAUSER. This component enables a voltage range of 12 - 150 V DC and 24 - 240 V AC in just one unit. The single counters are available without or with a manual reset and with common or separate input.

### Order specifications type range 672.6.X.X.X.X

## 672.6.X.X.X.X



### Technical specifications:

|   |   |
|---|---|
| <b>housing:</b>                               | plastic light grey RAL 7035   |
| <b>indication:</b>                            | LC-display, 7 digits (0.1h resolution for hour counter)   |
| <b>character height:</b>                      | 5 mm  |
| <b>operating voltage (U<sub>b</sub>):</b>     | 12 V DC - 150 V DC and 24 V AC - 240 V AC ±10 % (in one unit)   |
| <b>frequency:</b>                             | 50/60 Hz  |
| <b>current consumption:</b>                   | 100 µA - 3 mA   |
| <b>input resistance:</b>                      | approx. 120 kOhm (Count, Reset)   |
| <b>protection (front):</b>                    | IP65 (without reset button)<br>IP40 (with reset button), screw IP20   |
| <b>ambient temperature:</b>                   | -10 °C bis +70 °C   |
| <b>stocking temperature:</b>                  | -40 °C bis +80 °C   |
| <b>electrical connection:</b>                 | Terminal Blocks (lift principle) with Philips-Head-Screw (+/- screw) in combination with slotted screw with 3 mm screwdriver size, 0-2.5 mm <sup>2</sup> fine wire or 0-4 mm <sup>2</sup> single wire |
| <b>max. torque:</b>                           | 0,5 Nm  |
| <b>vibration resistance:</b>                  | 1 g (10...500 Hz) according to EN 60068-2-34  |
| <b>shock resistance:</b>                      | 30 g (18 ms) according to EN 60068-2-27<br>25 g (6 ms) according to EN 60068-2-29   |
| <b>EMC:</b>                                   | EN 55011, EN 61000-6-2  |
| <b>industrial norm:</b>                       | EN 61010, protection class II   |
| <b>approval:</b>                              | CE, UL, cUL   |
| <b>reset:</b>                                 | without, electrical or manual and electrical (sunk button, for example utilisable with ball point pen)  |
| <b>weight:</b>                                | approx. 75 g  |
| <b>counting frequency/<br/>pulse counter:</b> | maximum 10 Hz for AC signal voltage<br>optionally higher counting frequency at DC-version   |
| <b>data storage:</b>                          | EEPROM (min. 25 years)  |
| <b>fixing:</b>                                | snap-on fixing for DIN-rail according DIN EN 50022  |