



Electronic preselection counter with one or two presets

Features

| | |
|-----------|---|
| Models | Pulse counter, time counter with or without totalizer |
| Functions | Count und Reset for voltage pulse 12...260 VAC/VDC Adding or subtracting mode Actual value and preset value are displayed at the same time Scaling factor can be programmed 0.0001...9999.99 |

Order designation

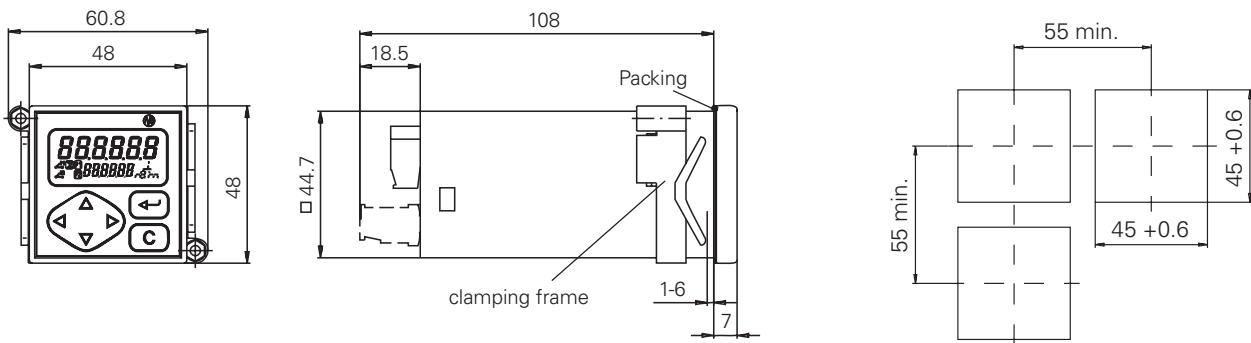
| | |
|-----------|------------------|
| Order no. | Preset |
| 1 | With one preset |
| 2 | With two presets |
| | Voltage |
| 2 | 85...265 VAC |
| 3 | 10...30 VAC/VDC |

NE131.0 AX01

Mechanical data

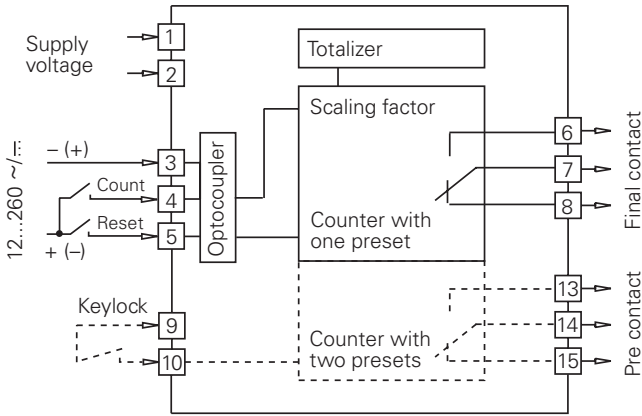
| | |
|--------------------|--|
| Display | LCD-display with 2 rows of digits Background illumination 6-digit displ. of real value, 7 mm high 6-digit displ. of pre. value, 4 mm high Decimal point can be programmed Suppression of leading zero Measurement units can be progr. in m, dm, cm, mm, l, h, min, s |
| Operation, keypad | Front membr. with short-stroke keys |
| Front dimensions | DIN housing 48 x 48 mm |
| Mounting | Front installation |
| Fastening | Clamping frame |
| Weight | Ca. 140 g |
| Type of connection | Plug-in screw terminals Grid 5.08 mm |
| Core cross-section | Max. 1.5 mm ² |
| Housing material | Polycarbonate black, UL 94V-0 |
| Membrane material | Polyester |

Dimensions and cutout size



NE131

Block diagram



Electrical data

| | |
|----------------------|---|
| Supply voltage | 85...265 VAC (50 / 60 Hz) 10...30 VAC/VDC (50 / 60 Hz) |
| Power consumption | 1,5 VA (2 W) |
| Signal inputs | 12...260 VAC/VDC |
| Counting rate | 25 Hz, (1 kHz for DC triggering) |
| Signal outputs | Can be programmed as momentary or permanent signals Impulse time can be programmed 0.01...99.99 s |
| Relay signal outputs | 1 or 2 floating relays to be programmed as normally open or normally closed contact Max. switch. voltage 260 VAC Max. switch. power 1 A Max. switch. capacity 150 VA /30 W Response time ca. 5 ms |
| Reset | With or without automatically reset |
| Data storage | > 10 years via EEPROM |
| Operation modes | To be programmed as adding or subtracting |

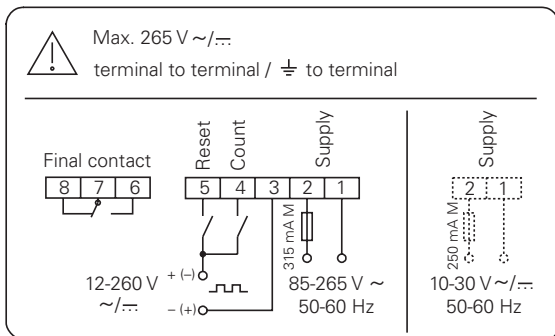
Ambient conditions

| | |
|-----------------------|--|
| Ambient temperature | 0...+50 °C |
| Storage temperature | -20...+70 °C |
| Relative humidity | Max. relative humidity 80 %, at 25 °C, non-condensing |
| Protection | Front IP 65 to DIN 40050 |
| General rating | EN 61010 Part 1 - Protection class II - Overvoltage protection categ. II - Contamination factor 2 |
| Interference immunity | EN 61000-6-2 |
| Emitted interference | EN 50081-2 |

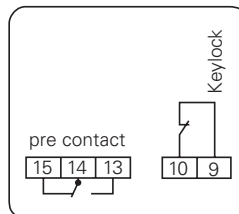
Accessories

| | |
|-----------|---|
| Order no. | |
| Z 118.033 | Adapter plate for screw fixture |
| Z 118.034 | Adapter plate for clamping bracket fixture |
| Z 118.035 | Adapter plate for clamping bracket fixture with large front plate |

Pin assignments



Pin assignments (Supplement for 2 presets)





Multifunctional Counter with one preset

Features

| | |
|-----------|---|
| Models | Multifunctional device that can be programmed as: |
| Functions | Batch counter, timer, time relay |
| | Main counter with one preset |
| | Timer with four different time ranges |
| | Time relay function with pickup and dropout delay |
| | Start value can be programmed |
| | Scaling factor can be programmed 0.001...99.999 |

Order designation

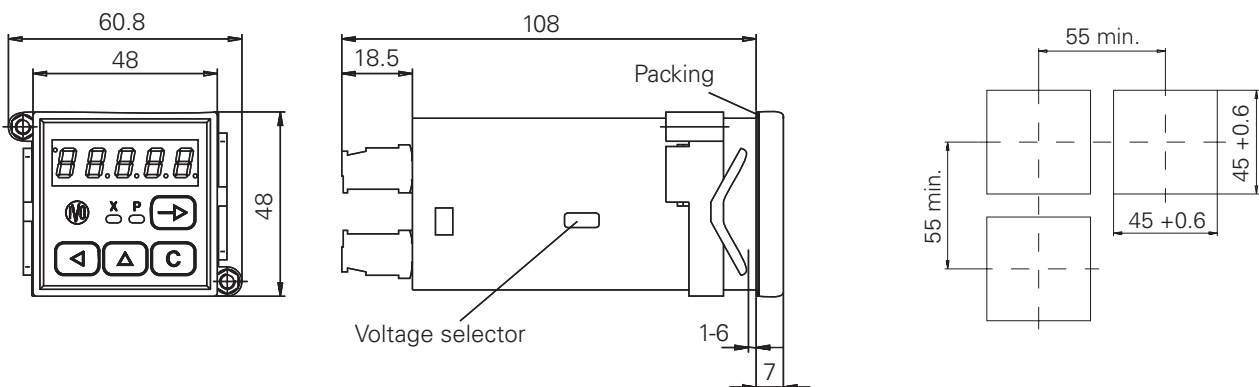
| | |
|-----------|-----------------------------------|
| Order no. | Output |
| 1 | With relay (electrical isolation) |
| 2 | With relay, signal output PNP |
| 3 | With relay, signal output NPN |
| 4 | Without relay, signal output PNP |
| 5 | Without relay, signal output NPN |
| | Voltage |
| 1 | 24 / 48 VAC |
| 2 | 115 / 230 VAC |
| 3 | 24 VDC |

NE210. 0 AXA1

Mechanical data

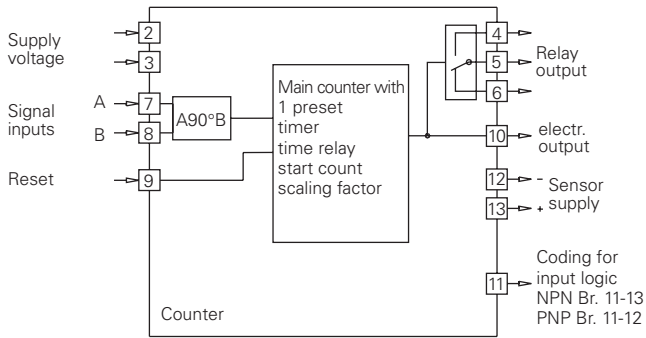
| | |
|--------------------|--|
| Display | 7-segment LED-display 5-digit display of real value, 7.6 mm high Decimal point can be programmed Suppression of leading zero |
| Operation, keypad | Front membrane with short-stroke keys |
| Front dimensions | DIN housing 48 x 48 mm |
| Mounting | Front installation |
| Fastening | Clamping frame |
| Weight | Version AC: ca. 260 g Version DC: ca. 140 g |
| Type of connection | Plug-in screw terminals Grid 5.08 mm |
| Core cross-section | Max. 1.5 mm ² |
| Housing material | Polycarbonate black, UL 94V-0 |
| Membrane material | Polyester |

Dimensions and cutout size



NE210

Block diagram



Electrical data

| | |
|----------------------|---|
| Supply voltage | Choice of two voltages via switch on device. When supplied, always higher voltage adjusted. 115 ± 10 % / 230 VAC +6 / -10 % (50 / 60 Hz) 24 / 48 VAC ± 10 % (50 / 60 Hz) 24 VDC ± 10 %, 5 % residual ripple |
| Power consumption | 7 VA, 4.5 W |
| Sensor supply | 12...26 VDC / 50 mA |
| Signal inputs | Optocoupler inputs Count input A / B - control current 9...16 mA - breaking current < 0.5 mA - input resistance 1.65 kOhm Reset input - control current 5...8 mA - breaking current < 0.5 mA - input resistance 3.3 kOhm Can be coded as PNP / NPN via wire jumper to screw terminal |
| Input counting rate | Adjustable to 15 Hz, 10 kHz via DIP |
| Signal outputs | Can be programmed as momentary or permanent signals; Impulse time can be programmed 0.01...9.99 s, tolerance: +0.01 s |
| Relay signal outputs | 1 float. relay as changeover contact Internal spark suppression Relay can be programmed in inverted output logic Max. switching volt. 250 VAC/110VDC Max. switching power 1 A Max. switching capacity 150 VA/30W |
| Electronic output | NPN switching transistor - Max. switching voltage +35 V - Max. switching power 50 mA PNP switching transistor - Max. switching voltage 12...24 VDC With AC operation, depending on load - Max. switching power 50 mA, for DC operation - Max. switching power 10 mA, for AC operation |
| Data storage | > 10 years via EEPROM |
| Operation modes | To be programmed as adding or subtracting via DIP-switch |

Counting mode of signal inputs A / B

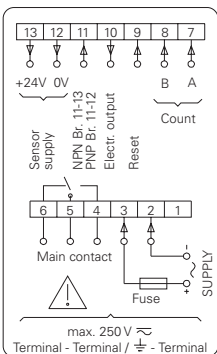
UP / DOWN, A - B, A + B, A 90° B x1, A 90° B x2, A 90° B x4

Ambient conditions

| | |
|-----------------------|--|
| Ambient temperature | 0...+50 °C |
| Storage temperature | -20...+70 °C |
| Relative humidity | Max. rel. humidity 80 %, at 25 °C, non-condensing |
| Protection | Front IP 65 to DIN 40050 |
| General rating | EN 61010 Part 1 - Protection class II - Overvoltage protection categ. II - Contamination factor 2 |
| Interference immunity | EN 50082-2 |
| Emitted interference | EN 50081-1 |

Pin assignments

with relay output



Accessories

| | |
|-----------|---|
| Order no. | |
| Z 118.033 | Adapter plate for screw fixture |
| Z 118.034 | Adapter plate for clamping bracket fixture |
| Z 118.035 | Adapter plate for clamping bracket fixture with large front plate |

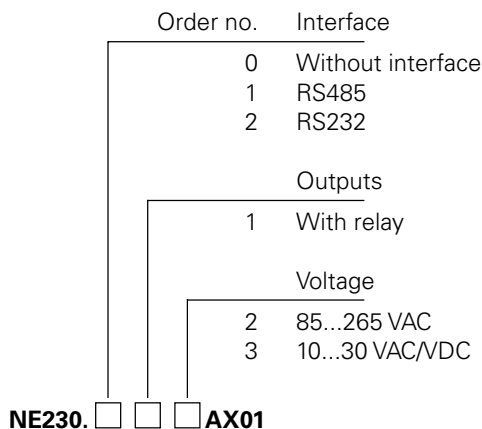


Multifunctional counter in DIN rail with two presets

Features

| | |
|-----------|--|
| Models | Preselection counter Totalizer Time Meter |
| Functions | Main counter with two presets Start value can be programmed Scaling can be progr. 0,0001...9999,99 Interface RS485, RS232 Preselection mode can be program.: - Progressive - Prinzipal preselection - Parallel comparison - Trailing preselection (P1) |

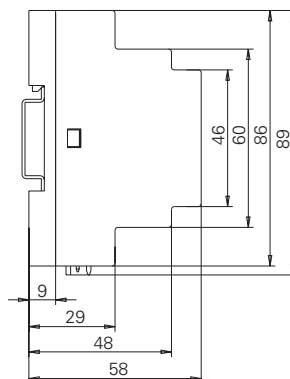
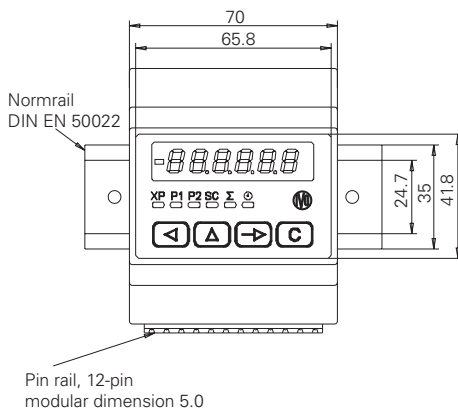
Order designation



Mechanical data

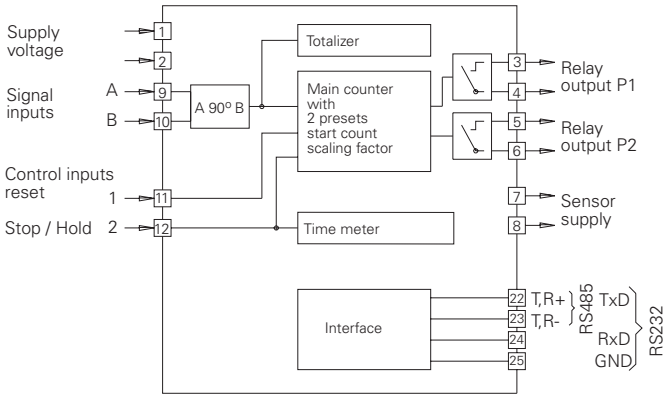
| | |
|---------------------|---|
| Display | 7-segment LED-display 6-digit display of real values, 7.6 mm high Decimal point can be programmed Suppression of leading zero |
| Operation, keyboard | Front membrane keyboard with short-stroke keys |
| Front dimensions | DIN housing 70 x 86 mm |
| Mounting | On DIN rail EN 50022 |
| Weight | Approx. 300 g |
| Connection | Plug-in screw terminals 5.00 mm / 3.81 mm |
| Core cross-section | Max. 1.5 mm ² |
| Housing material | upper part lower part |
| | Polycarbonate, UL 94V-1 Polyphenylenoxid UL 94V-0 |
| Membrane material | Polyester |

Dimensions and cutout size



NE230

Block diagram



Electrical data

| | |
|----------------------|---|
| Supply Voltage | 85...265 VAC (50 / 60 Hz) 10...30 VAC / VDC (50 / 60 Hz) |
| Power consumption | 5 VA, 4 W |
| Sensor supply | 85...265 VAC: 18 VDC ± 15% / 100 mA 10...30 VAC: 9...40 VDC / 100 mA 10...30 VDC: 8...28 VDC / 100 mA |
| Signal inputs | 2 comparator inputs Voltage level 4...40 V Input resistance approx. 3 kOhm |
| Input frequency | 3 Hz, 25 Hz, 10 kHz programmable |
| Control inputs | 2 control inputs for reset, stop, hold, print, etc. Input resistance approx. 3 kOhm |
| Signal outputs | Programmable as latch or permanent signals Latch time 0.01...99.99 s programmable |
| Relay signal outputs | 2 floating relays can be programmed as normally open or closed Max. switch voltage 250 VAC/110 VDC |
| VDC | Max. switch current 1 A Max. switch power 150 VA/30 W |
| Data storage | > 10 years by EEPROM |
| Operation modes | Programmable as adding or subtracting |

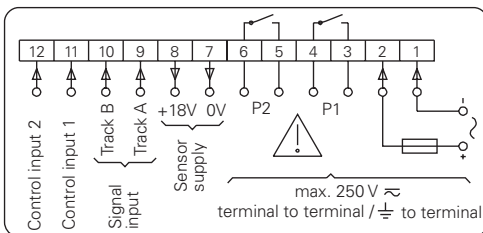
Counting mode of signal inputs A / B

- Up/Down
- Difference, A - B
- Total, A + B
- Phase, A 90° B x1
- Phase, A 90° B x2
- Phase, A 90° B x4

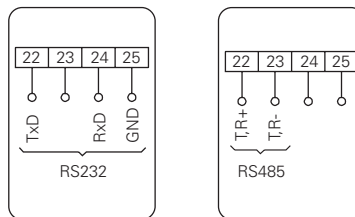
Ambient conditions

| | |
|-------------------------|--|
| Environment temperature | 0...+50 °C |
| Warehouse temperature | -20...+70 °C |
| Relative humidity | Max. relative humidity 80 %, at 25 °C, non-condensing |
| Protection class | Front IP 50 according to DIN VDE 0470-1 |
| General rating | EN 61010 part 1 - Protection class II - Overvoltage protection categ. II - Contamination factor 2 |
| Interference immunity | EN 61000-6-2 |
| Emitted interference | EN 50081-1 |

Pin assignment



Pin assignments for interfaces models





Mechanical Meter Counters Preliminary PTB test

Technical data

| | |
|---------------------|--|
| Counting mode | In direction of defined rotation, adding. Subtracting in reverse direction. 5 revolutions = 1.00 m displayed in relation with measuring wheel with circumference of 20 cm 1 digit = 1 cm |
| Display | 5-digit, 999.99 m/cm |
| Digit size | Approx. 4.5 mm high, white on black background Decimal display in red |
| Drive shaft | Projecting on both sides, Ø 4 mm |
| Reset | Reset to zero by pushing the lever (with socket on left or right side, at choice). |
| Max. Speed | Max. 60.00 m/min. |
| Base plate | Steel of 2 mm thickness, galvanized |
| Housing material | Gray plastic |
| Ambient temperature | 0...+60 °C |
| Weight | Approx. 130 g |

Order designation

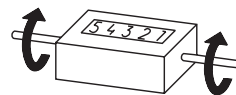
- 1 Sense of rotat. I, 5 rev. = 100 digits
5-digit display, 999.99 m / cm
- 2 Sense of rotat. II, 5 rev. = 100 digits
5-digit display, 999.99 m

M 310.A0

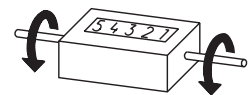
PTB approval:

1.3
90.02

Sense of rotation

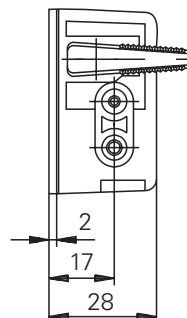
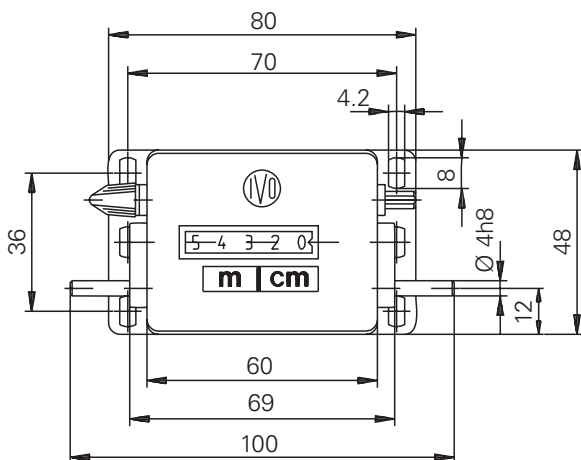


Away from user I

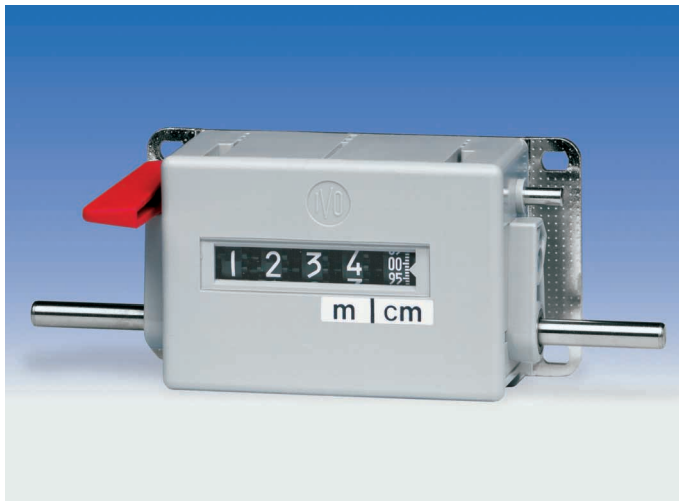


Towards user II

Dimensions and cutout sizes



M 410.A



Mechanical Meter Counters Preliminary PTB test

Technical data

| | |
|---------------------|--|
| Counting mode | In direction of defined rotation, adding. Subtracting in reversed direction. |
| Display | 5-digit, 9999.95 m/cm 1st wheel with dividing lines |
| Digit size | Approx. 7 mm high, white on black background |
| Drive shaft | Projecting on both sides, Ø 7 mm |
| Reset | Reset to zero by pushing the lever (screwed on left or right side, at choice). |
| Max. Speed | Max. 200.00 m/min. with measuring wheel |
| Base plate | Steel of 2.5 mm thickness, galvanized |
| Housing material | Gray plastic |
| Ambient temperature | 0...+60 °C |
| Weight | Approx. 380 g |

Order designation

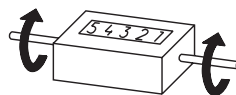
- 1 Sense of rotat. I, 2 rev. = 10 digits
5-digit display, 999.95 m / cm
- 2 Sense of rotat. II, 2 rev. = 10 digits
5-digit display, 999.95 m / cm
- 3 Sense of rotat. I, 1 rev. = 10 digits
5-digit display, 9999.95 m / cm
- 4 Sense of rotat. II, 1 rev. = 10 digits
5-digit display, 9999.95 m / cm

M 410.A0

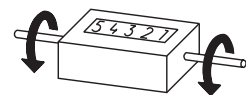
PTB approval:

1.5
87.05

Sense of rotation

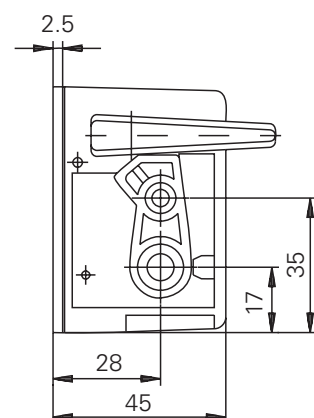
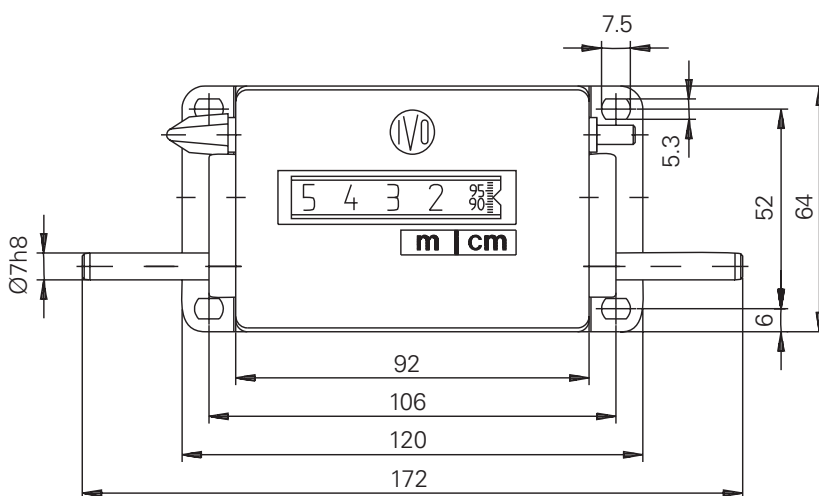


Away from user I



Towards user II

Dimensions and cutout sizes





T 120 with retaining ring



T 123 for table mounting



T 124 for wall mounting

Mechanical Metal Manual Piece Counters

Application

For counting the number of people in cinemas, at sporting events, at ski lifts, etc.
Also for counting piece parts when taking inventory, during production or when counting traffic.

Technical data

| | |
|------------------|---|
| Counting mode | After every stroke of the pushbutton, the counter adds one digit |
| Display | 4-digit, 9999 |
| Digit size | Approx. 4.5 mm high, white on black background |
| Reset | By turning the fixed knurled knob |
| Housing material | Diecast, silver lacquered |
| Dimensions | Housing Ø 47 mm Base plate Ø 65 mm |
| Weight | T 120 approx. 115 g T 123 approx. 190 g T 124 approx. 170 g |

Order designations

| | |
|-------------|---|
| T 120. 010A | Manual piece counter with retaining ring |
| T 123. 010A | Manual piece counter for table mounting |
| T 124. 010A | Manual piece counter for wall mounting |



T 130 with retaining ring



T 134 for table mounting

Base can be used for table or wall mounting

Mechanical Plastic Manual Piece Counters

Application

For counting the number of people in cinemas, at sporting events, at ski lifts, etc.

Also for counting piece parts when taking inventory, during production or when counting traffic.

Technical data

| | |
|------------------|--|
| Counting mode | After every stroke of the pushbutton, the counter adds one digit |
| Display | 4-digit, 9999 |
| Digit size | Approx. 4.5 mm high, white on black background |
| Reset | By turning the fixed knurled knob |
| Housing material | Red, yellow or gray plastic |
| Dimensions | Housing Ø 47 mm Base plate Ø 65 mm |
| Weight | T 130 approx. 35 g T 134 approx. 55 g |

Order designations

| | | |
|-------------------------------------|---|--|
| | A | Outside housing – yellow |
| | B | Outside housing – red |
| | C | Outside housing – gray |
| T 130. 010 <input type="checkbox"/> | | Manual piece counter with retaining ring |
| T 134. 010 <input type="checkbox"/> | | Manual piece counter with base for table or wall mounting |

Print of company logo, if desired



F 304 with reset button, push-in housing



F 314 with reset button, screw fixture



F 324 with reset button, clamping fixture

Electro-mechanical Impulse Counter with / without Reset

Order designations

Standard voltages

- A3 24 VDC
- A5 24 VAC
- A8 110 VAC
- A9 230 VAC

Front dimensions 50 x 25 mm
To be plugged in and lined up within housing

- F 304.800B C Without reset, 8-digit display
- F 304.640A B With key reset, 6-digit display
- F 304.650A B With reset button, 6-digit display

Front dimensions 60 x 50 mm
Fastening of front plate by means of 2 screws

- F 314.800B C Without reset, 8-digit display
- F 314.640A B With key reset, 6-digit display
- F 314.650A B With reset button, 6-digit display

Front dimensions 53.2 x 28.2 mm
Fastening by means of clamp. spring

- F 324.800B C Without reset, 8-digit display
- F 324.640A B With key reset, 6-digit display
- F 324.650A B With reset button, 6-digit display

Front dimensions 60 x 37.5 mm
Fastening of front plate by means of 2 screws

- F 334.650A B With reset button, 6-digit display

Front dimensions 66.5 x 37 mm
Fastening of front plate by means of 4 screws

- F 364.640A B With key reset, 6-digit display
- F 364.650A B With reset button, 6-digit display

F 304, F 314, F 324, F 334, F 364



F 334 with reset button, screw fixture



F 364 with reset button, screw fixture

Mechanical data

| | |
|------------------|--|
| Display | 6-digit, 999 999 8-digit, 99 999 999 |
| Digit size | Approx. 4.5 mm high, white on black background |
| Reset | Manual by button or key |
| Counting | 1 pulse = 1 digit added in two half-steps |
| Housing material | Black plastic |
| Weight | Approx. 100 g |
| Life cycle | Approx. 10^8 pulses |

Electrical data

| | Maximum counting speed | |
|-----------------------------|------------------------|---|
| | 20 pulses/s | 10 pulses/s |
| Voltage | 24 VDC ± 10 % | 24 VAC ± 10 % 110 VAC ± 10 % 230 VAC $+6/-10$ % |
| Residual ripple / Frequency | ≤ 48 % | 50...60 Hz |
| Rating | 2.2 W | 2.4 VA |
| Min. pulse duration | 25 ms | 50 ms |
| Min. pulse interval | 25 ms | 50 ms |
| Load factor at 25 °C | 100 % | 100 % |

E-connection

Push-in housing:
Solder terminal or terminal contacts on silver-plated tab connectors 0.8 x 2.8 mm

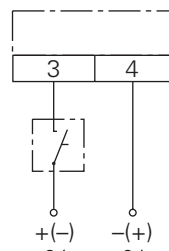
Without push-in housing:
Contact pins \varnothing 1.5 mm, solder terminal on push-on silverplated contact lugs

F 364 Screw-clamp-connection

Ambient conditions

| | |
|--------------------------|---|
| Ambient temperature | 0...+45 °C |
| Storage temperature | -20...+70 °C |
| Relative humidity | Max. relative humidity 80 %, at 25 °C, non-condensing |
| Protection | IP 41 for front side per DIN 40050 |
| Operational requirements | To contamination degree 2 |
| Classification | EN 61010, Category II |
| Interference immunity | EN 50082 - 2 Severity grade 2 - 3 |
| Emitted interference | EN 50081 - 2 |
| General rating | EN 61010 |
| Overvoltage protection | II |

Pin assignment



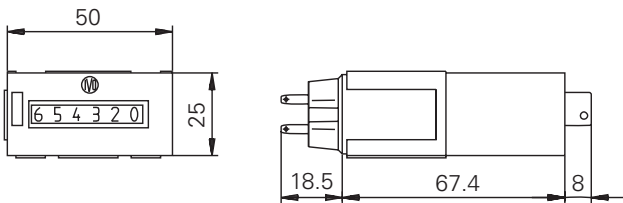
F 304, F 314, F 324, F 334, F 364

Dimensions and cutout sizes

F 304 with reset button, 6-digit display

Please indicate when placing your order whether counters F 304 are to be mounted together with preselection counters FE304 in a common front frame and/or in counter panels with common mounting rails. The counter F 304 will then be supplied ex works with a suitable, so-called external push-in housing "H".

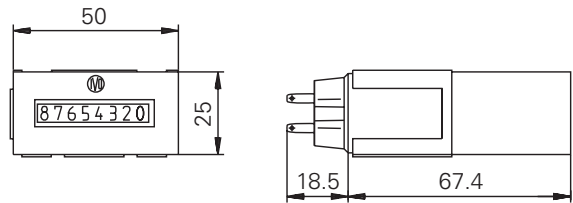
Cutout 50 x 25 mm



Dimensions and cutout sizes

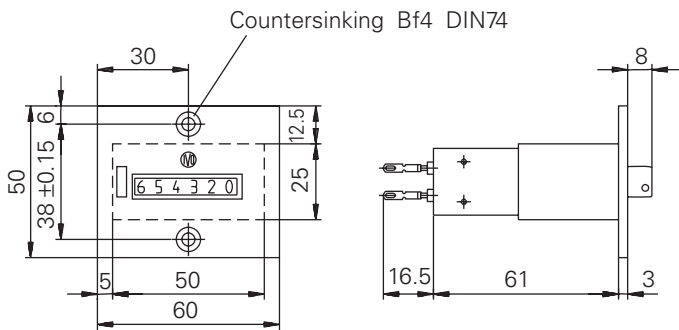
F 304 without reset, 8-digit display

Cutout 50 x 25 mm



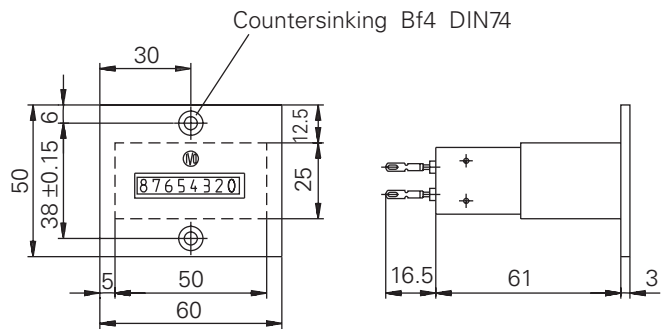
F 314 with reset button, 6-digit display

Cutout 51 x 26 mm



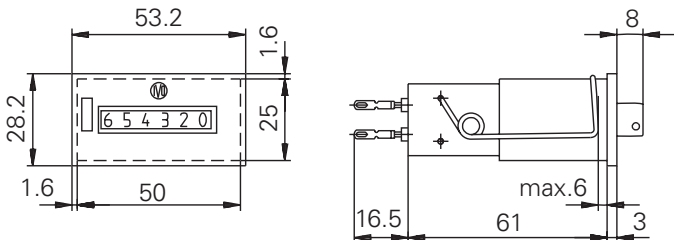
F 314 without reset, 8-digit display

Cutout 51 x 26 mm



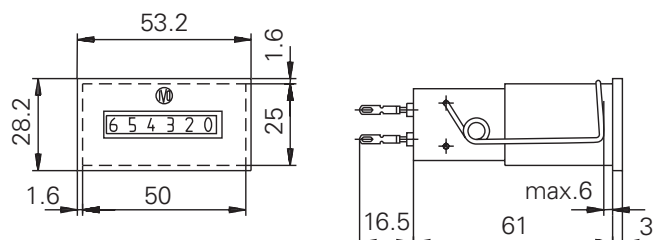
F 324 with reset button, 6-digit display

Cutout 51 x 26 mm



F 324 without reset, 8-digit display

Cutout 51 x 26 mm

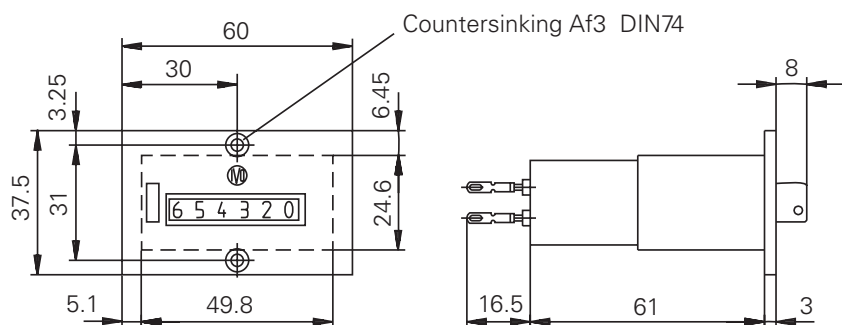


F 304, F 314, F 324, F 334, F 364

Dimensions and cutout sizes

F 334 with reset button, 6-digit display

Cutout 51 x 26 mm



F 364 with reset button, 6-digit display

Cutout 51 x 26 mm

