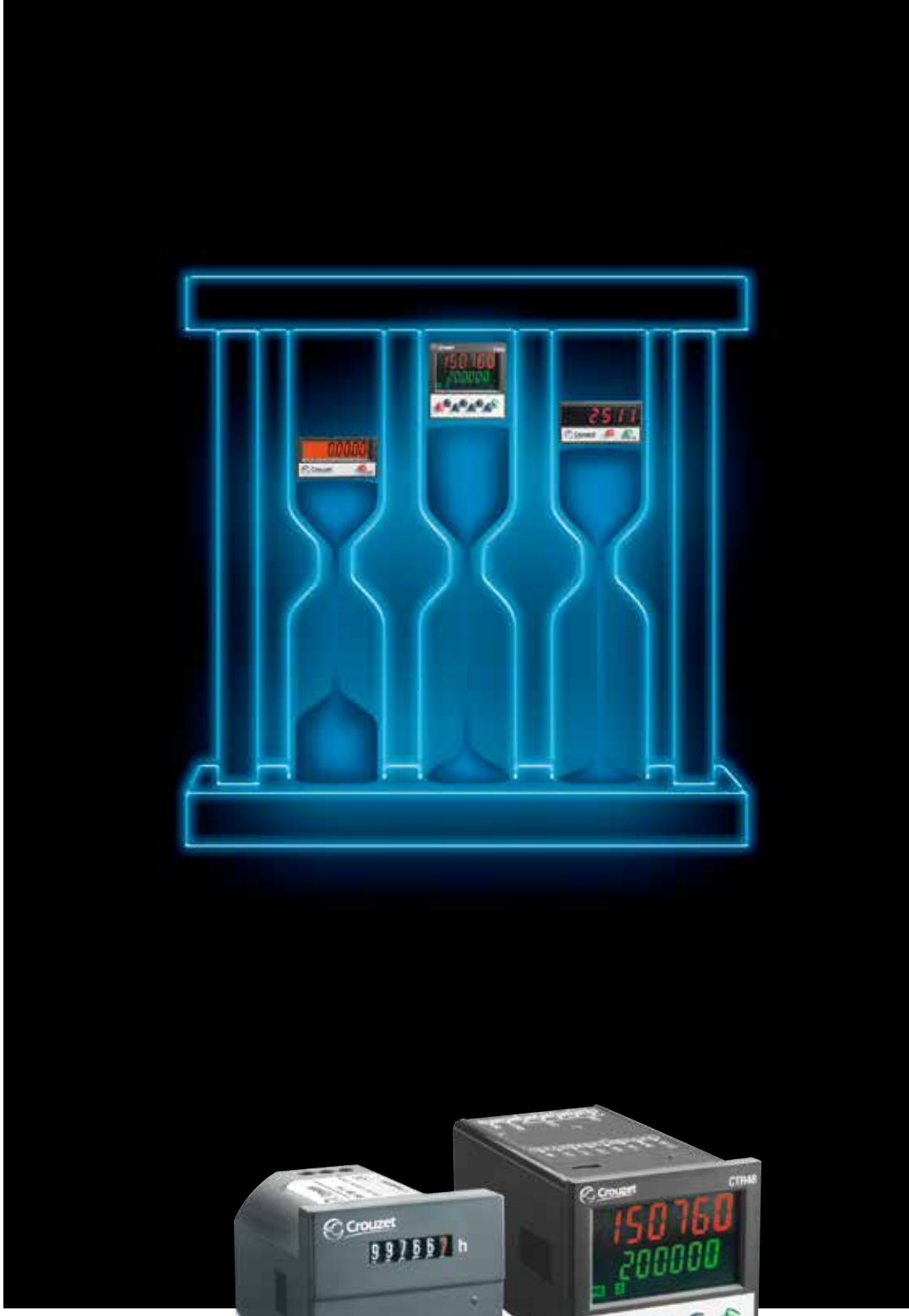
CROUZET
CONTROL




# Counters and Ratemeters

## Counting accuracy

A BRAND OF INNOVISTA SENSORS

www.crouzet-control.com

# Presentation

## Crouzet Control

Expert in the design of efficient and innovative monitoring & control products, Crouzet Control, supported by an experienced worldwide team, offers a broad range of industry standard and application specific adapted products in timing, control relays and counting functions.

Crouzet Control is a brand of InnoVista Sensors™.

**With operations around the globe,** Crouzet Control is constantly monitoring its customers' needs. Its sales teams, technicians and designers combine all their skills to adapt products to customer specifications, both in terms of the application and cost.

Crouzet Control also ensures that its products are manufactured in compliance with quality and environmental standards (factories certified ISO 9001, 14001 and OHSAS 18001, eco-design).

With its industrial and logistic flexibility Crouzet Control is able to deliver products, whether small-scale or mass production items, in the best possible timescale.

### Within this counter catalogue, Crouzet Control presents:

**Over 120 recently launched ergonomic counters** for better equipment integration including small formats..

**New electromechanical range:**

- Dual function hour counter and energy meter
- Dual function hour and impulse counter displays

**New electronic range:**

- Counters with backlit double LCD or two colour display
- Multi-function Counters
- Counters that integrate a Tachometer function

In addition to this catalogue, the **www.crouzet-control.com** website offers the latest tools, available as free downloads, including M3 Soft software, technical data sheets for each product and installation manuals.

## InnoVista Sensors™

# your trusted partner of choice to face industrial challenges of today and tomorrow

InnoVista Sensors™ is a worldwide industrial specialist of sensors, controllers and actuators for automated systems.

Through its brands, Crouzet Aerospace, Crouzet Automation, Crouzet Control, Crouzet Motors, Crouzet Switches and Systron Donner Inertial, InnoVista Sensors™ offers a wide range of reliable, efficient and customizable components dedicated to the Aerospace & Defence, Transportation and Industrial market and segments.

Thanks to the recognized expertise of its teams and a strong innovation policy, InnoVista Sensors™ brings performance enhancing solutions to its customers worldwide.

The Crouzet Control team worldwide

# The basics

## A counter, a ratemeter
## How can they be defined in simple terms?

**A counter** can be used to count a number of actions or events.
It thus participates in production management and preventive maintenance.
**A ratemeter** can be used to display the speed of rotation of a motor in real time.

## A counter, a ratemeter
## To execute which actions?

**Up counting, Down counting**

For **up counting** or **down counting** a number of parts, events, a running time, the counter is the ideal solution. There are different types of counter with the following functions: up/down counter, batch counter, ratemeter, chronometer, multi-totalizer, elapsed time counter, impulse counter.

**Informing, Displaying**

A counter can allow a user to be **informed** and to **display** data and quantities easily. The data displayed can be read directly on the front panel.

**Tripping, Actuating**

A counter can be used to **trip** an action or an intervention on a machine. The outputs **actuate** directly and/or transmit data to the control system.

**Measuring, Chronometer timing**

A counter can be used to schedule preventive maintenance. The machine running time is **measured** and the duration of an action **timed with a chronometer**.

**Up counting**

**Down counting**

**Informing**

**Displaying**

**Tripping**

**Actuating Measuring**

**Chronometer timing**

In addition to this catalogue, the **www.crouzet-control.com** website offers technical data sheets for each product and installation manuals, available as free downloads.

## Crouzet Control counters and ratemeters

# A digital range and an electromechanical range


CTR48


CEM48



## Crouzet Control counters and ratemeters

# Their features:

- For fast count applications, a high-speed counting frequency: up to **50 kHz**.
- A **two-colour or backlit LCD dual display** for ease of reading.
- Considerable space saving due to **dual-function** electromechanical and electronic ranges.
- A **complete** output operating **logic** to cover complex applications.
- **Easier maintenance** thanks to removable connectors (CTR48).
- An enhanced **multifunction** electronic range **for optimised stocks**.

# Applications

## Crouzet Control counters and ratemeters

# Where are they found?

In electrical cabinets associated with other automation functions for the following markets:

- Industrial automation systems
- Building equipment
- Industrial machines
- Medical

### Tachometer systems

Speed measurement and control on shrink wrapping machine.

ELECTRONIC COUNTER
CTR24L 2511

### Counting quantities

Managing quantities - Packaging by unit, batch or series of batches.

ELECTRONIC COUNTER
CTR48

### Metric counting

Calculation of cut length on wood and paper machines.

ELECTRONIC COUNTER
CTR48

### Position control

Managing quantities - Calculation of distance of travel.

ELECTRONIC COUNTER
CTR48

## Compressors

Counting operating hours and counting the number of starts.

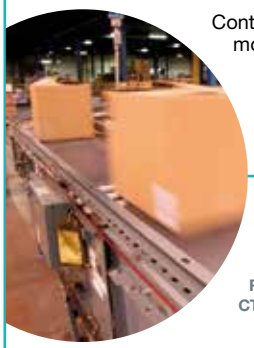
ELECTROMECHANICAL HOUR AND IMPULSE COUNTER
CMM48

## Dehumidifiers

Counting operating hours, energy consumption.

ELECTROMECHANICAL HOUR AND ENERGY COUNTER
CEM48

## Assembly line speed



Control of conveyor movement speed.

RATEMETER
CTR24L 2511

## Milling machine

Combined ratemeter and counter for controlling the position and speed of a router.

ELECTRONIC RATEMETER AND COUNTERS
CTR24L 2513

## Lifts

Combined impulse and hour counters - Maintenance. Start counters and operating time counters.

ELECTRONIC COUNTER
CTR24L 2514

## UV lamp

Counting and display of operating times. Event management, wear control.

HOUR COUNTER
CTR24 2323

# Selection guide

## Electronic counters

### 24 x 48 multifunction counters without preselection

| Functions | Modes | Multiplication coefficient/ Decimal point | Max. counting speed |
|---|---|---|---|
|  Totalizer or Hour counter or Ratemeter | Dir/up.dn/up.up Ph/2-ph/4-ph | Yes/Yes | 50 kHz |
| | Start/Stop | No/Yes | 999,999 hrs |
| | sec -1/min -1 | Yes/Yes | 50 kHz |
|  Double totalizer Independent inputs (A and B) | Counting A/B/A-B/A+B AdivB/%AB | Yes/Yes | 25 kHz |
|  Totalizer and Ratemeter Independent inputs | Dir/up.dn/up.up Ph/2-ph/4-ph | Yes/Yes | 30 kHz |
| | sec -1/min -1 | | |
|  Double totalizer Common input | Counting (total/partial) | Yes/Yes | 50 kHz |
|  Totalizer + Ratemeter or Totalizer + Totalizer or Totalizer + Hour or Hour + Hour | Counting + sec -1/min -1 | Yes/Yes | 35 kHz |
| | Counting | | 50 kHz |
| | Counting + Start/Stop | | 40 kHz |
| | | | 999,999 hrs |
| | Start/Stop | No/Yes | 999,999 hrs |

### 24 x 48 counters without preselection

| Functions | Inputs/Reset | Max. counting speed | Display |
|---|---|---|---|
|  Hour | PNP/Contact | 99,999.99 hrs | LCD |
| | NPN/Contact | | |
| | Voltage/Contact | | |
|  Hour | PNP/Contact | 99,999.99 hrs | Orange (backlit) |
| | NPN/Contact | | |
| | Voltage/Contact | | |
|  Totalizer | Voltage/Contact | 99,999,999 | LCD |
| | PNP/Contact | | |
| | NPN/Contact | | |
| | Voltage/Contact | | |
|  Totalizer | PNP/Contact | 99,999,999 | Orange (backlit) |
| | NPN/Contact | | |
| | Voltage/Contact | | |

| Display | Counting capacity | Supply | Part number | Type | Page |
|---|---|---|---|---|---|
| LED | 999,999<br>0.001 s ⇨ 999,999 hrs<br>999,999 | 10 ⇨ 30 V ⎓ | 87 623 570 | CTR24L - 2511 | 32 |
| LED | 999,999 | 10 ⇨ 30 V ⎓ | 87 623 571 | CTR24L - 2512 | 36 |
| LED | 999,999 | 10 ⇨ 30 V ⎓ | 87 623 572 | CTR24L - 2513 | 40 |
| LED | 999,999 | 10 ⇨ 30 V ⎓ | 87 623 573 | CTR24L - 2514 | 44 |
| LED | 999,999<br>999,999<br>0.001 s ⇨ 999,999 hrs<br>0.001 s ⇨ 999,999 hrs | 10 ⇨ 30 V ⎓ | 87 623 574 | CTR24L - 2515 | 48 |

| Counting capacity | Supply | Part number | Type | Page |
|---|---|---|---|---|
| 0.1 s ⇨ 99,999.99 hrs | Lithium battery | 87 622 161 | CTR24 - 2223 | 52 |
| | | 87 622 162 | CTR24 - 2233 | 52 |
| | | 87 622 170 | CTR24 - 2224 | 52 |
| 0.1 s ⇨ 99,999.99 hrs | Lithium battery | 87 622 181 | CTR24 - 2323 | 52 |
| | | 87 622 182 | CTR24 - 2333 | 52 |
| | | 87 622 190 | CTR24 - 2324 | 52 |
| 99,999,999 | Lithium battery | 87 610 340 | CP2 - 2108 | 52 |
| | | 87 622 061 | CTR24 - 2241 | 56 |
| | | 87 622 062 | CTR24 - 2251 | 56 |
| | | 87 622 070 | CTR24 - 2242 | 56 |
| 99,999,999 | Lithium battery | 87 622 081 | CTR24 - 2341 | 56 |
| | | 87 622 082 | CTR24 - 2351 | 56 |
| | | 87 622 090 | CTR24 - 2342 | 56 |

The counters and ratemeters accessories guide is available on the product data sheets which can be downloaded from the website www.crouzet-control.com

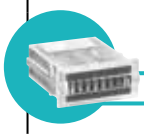
# Selection guide

## 48 x 48 multifunction counters with preselection

| | Functions | Number of preset(s) | Max. counting speed | Display |
|---|---|---|---|---|
|  | Preselection counter<br>Ratemeter<br>Chronometer<br>Multi-totalizer | 1 | 40 KHz | Backlit LCD (orange)<br>extra-bright<br>2 lines |
| | Preselection counter<br>Ratemeter<br>Chronometer<br>Multi-totalizer<br>Batch counter | 2 | | |
|  | Preselection counter<br>Ratemeter<br>Chronometer<br>Multi-totalizer | 1 | 40 KHz | Two-colour LCD<br>(red and green)<br>2 lines |
| | Preselection counter<br>Ratemeter<br>Chronometer<br>Multi-totalizer<br>Batch counter | 2 | | |
|  | Preselection counter<br>Chronometer | 1 | 5 KHz | Backlit LCD (green)<br>2 lines |
| | | 2 | | |

# Electromechanical counters

## Hour counters

| | Dimensions (mm) | Counting capacity |
|---|---|---|
|  | 48 x 48 | 99,999.99 |
|  | 48 x 48 | 999,999.99 |
|  | 24 x 48 | 99,999.99 |
|  | | 999,999.99 |
| | 15 x 32 | 99,999.99 |
|  | Modular<br>DIN rail<br>35 mm | 99,999.99 |

| Counting capacity | Outputs | Supply | Part number | Type | Page |
|---|---|---|---|---|---|
| -999,999 ⇨ 999,999 | 1 x 5 A changeover<br>1 solid state | 10 ⇨ 30 V ⎓ | 87 621 111 | CTR48 | 18 |
| | | 24 V ∿ | 87 621 112 | CTR48 | 18 |
| | | 90 ⇨ 260 V ∿ | 87 621 115 | CTR48 | 18 |
| | 1 x 5 A changeover<br>1 x 5 A N/O<br>2 solid state | 10 ⇨ 30 V ⎓ | 87 621 121 | CTR48 | 18 |
| | | 24 V ∿ | 87 621 122 | CTR48 | 18 |
| | | 90 ⇨ 260 V ∿ | 87 621 125 | CTR48 | 18 |
| -999,999 ⇨ 999,999 | 1 x 5 A changeover<br>1 solid state | 10 ⇨ 30 V ⎓ | 87 621 211 | CTR48 | 18 |
| | | 24 V ∿ | 87 621 212 | CTR48 | 18 |
| | | 90 ⇨ 260 V ∿ | 87 621 215 | CTR48 | 18 |
| | 1 x 5 A changeover<br>1 x 5 A N/O<br>2 solid state | 10 ⇨ 30 V ⎓ | 87 621 221 | CTR48 | 18 |
| | | 24 V ∿ | 87 621 222 | CTR48 | 18 |
| | | 90 ⇨ 260 V ∿ | 87 621 225 | CTR48 | 18 |
| -999,999 ⇨ 999,999 | 1 x 3 A changeover | 11 ⇨ 30 V ⎓ | 87 629 111 | CTR48E | 26 |
| | | 115 V ∿ | 87 629 113 | CTR48E | 26 |
| | | 230 V ∿ | 87 629 114 | CTR48E | 26 |
| | 1 x 3 A changeover<br>1 x 3 A N/O | 11 ⇨ 30 V ⎓ | 87 629 121 | CTR48E | 26 |
| | | 115 V ∿ | 87 629 123 | CTR48E | 26 |
| | | 230 V ∿ | 87 629 124 | CTR48E | 26 |

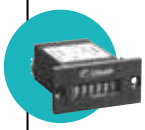
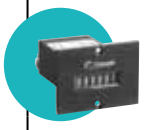


| Frequency | Supply | Part number | Type | Page |
|---|---|---|---|---|
| 50 Hz ∿ | 20 ⇨ 30 V ∿ | 99 772 710 | CHM48 | 60 |
| | 42 ⇨ 48 V ∿ | 99 772 711 | CHM48 | 60 |
| | 100 ⇨ 130 V ∿ | 99 772 712 | CHM48 | 60 |
| | 360 ⇨ 440 V ∿ | 99 772 713 | CHM48 | 60 |
| | 187 ⇨ 264 V ∿ | 99 772 714 | CHM48 | 60 |
| 60 Hz ∿ | 20 ⇨ 30 V ∿ | 99 772 718 | CHM48 | 60 |
| | 42 ⇨ 48 V ∿ | 99 772 719 | CHM48 | 60 |
| | 100 ⇨ 130 V ∿ | 99 772 715 | CHM48 | 60 |
| | 360 ⇨ 440 V ∿ | 99 772 717 | CHM48 | 60 |
| | 187 ⇨ 264 V ∿ | 99 772 716 | CHM48 | 60 |
| ⎓ | 10 ⇨ 30 V ⎓ | 99 772 810 | CHM48 | 60 |
| | 36 ⇨ 80 V ⎓ | 99 772 811 | CHM48 | 60 |
| | 100 ⇨ 130 V ⎓ | 99 772 812 | CHM48 | 60 |
| 50 Hz ∿ | 20 ⇨ 30 V ∿ | 99 782 710 | CHM24 | 62 |
| | 100 ⇨ 130 V ∿ | 99 782 712 | CHM24 | 62 |
| | 187 ⇨ 264 V ∿ | 99 782 714 | CHM24 | 62 |
| 60 Hz ∿ | 20 ⇨ 30 V ∿ | 99 782 718 | CHM24 | 62 |
| | 100 ⇨ 130 V ∿ | 99 782 715 | CHM24 | 62 |
| | 187 ⇨ 264 V ∿ | 99 782 716 | CHM24 | 62 |
| ⎓ | 10 ⇨ 30 V ⎓ | 99 782 810 | CHM24 | 62 |
| ⎓ | 4.5 ⇨ 35 V ⎓ | 99 792 810 | CHM15 | 64 |
| 50 Hz ∿ | 24 V ∿ | 99 793 710 | CHMDR | 65 |
| | 115 V ∿ | 99 793 712 | CHMDR | 65 |
| | 230 V ∿ | 99 793 714 | CHMDR | 65 |
| ⎓ | 10 ⇨ 27 V ⎓ | 99 793 810 | CHMDR | 65 |

The counters and ratemeters accessories guide is available on the product data sheets which can be downloaded from the website www.crouzet-control.com

# Selection guide

## Impulse counters

| | Dimensions (mm) | Reset to zero |
|---|---|---|
|  | 15 x 32<br>Clip-fixing | No |
|  | 24 x 48<br>Clip-fixing | No |
|  | 24 x 48<br>Clip-fixing | Yes |
|  | 24 x 48<br>Screw-fixing | No |
|  | 24 x 48<br>Screw-fixing | Yes |
|  | 36 x 37<br>Screw-fixing | No |
|  | 36 x 37<br>Screw-fixing | Yes |
|  | 36 x 48<br>Screw-fixing | No |
|  | 36 x 48<br>Screw-fixing | Yes |

## Dual function 48 x 48 counters

| | Functions | Reset to zero | Counting capacity |
|---|---|---|---|
|  | Impulse<br>Hour | No | 9,999,999<br>99,999.99 hrs |
| | | | 9,999,999/999,999.99 hrs |
|  | Hour<br>Energy | No | 99,999.9 hrs<br>99,999.9 kWh |

| Counting capacity | Supply | Part number | Type | Page |
|---|---|---|---|---|
| 9,999,999 | 24 V ∿ - 50/60 Hz | 99 778 710 | CIM 15 | 76 |
| | 115 V ∿ - 50/60 Hz | 99 778 712 | CIM 15 | 76 |
| | 230 V ∿ - 50/60 Hz | 99 778 714 | CIM 15 | 76 |
| | 5 V ⎓ | 99 778 805 | CIM 15 | 76 |
| | 12 V ⎓ | 99 778 806 | CIM 15 | 76 |
| | 24 V ⎓ | 99 778 810 | CIM 15 | 76 |
| 999,999 | 24 V ∿ - 50/60 Hz | 99 777 710 | CIM 24 | 70 |
| | 230 V ∿ - 50/60 Hz | 99 777 714 | CIM 24 | 70 |
| | 12 V ⎓ | 99 777 815 | CIM 24 | 70 |
| | 24 V ⎓ | 99 777 810 | CIM 24 | 70 |
| 99,999 | 24 V ∿ - 50/60 Hz | 99 777 720 | CIM 24 | 70 |
| | 230 V ∿ - 50/60 Hz | 99 777 724 | CIM 24 | 70 |
| | 12 V ⎓ | 99 777 825 | CIM 24 | 70 |
| | 24 V ⎓ | 99 777 820 | CIM 24 | 70 |
| 999,999 | 24 V ∿ - 50/60 Hz | 99 776 904 | CIM 24 x 48 | 78 |
| | 115 V ∿ - 50/60 Hz | 99 776 902 | CIM 24 x 48 | 78 |
| | 230 V ∿ - 50/60 Hz | 99 776 901 | CIM 24 x 48 | 78 |
| | 24 V ⎓ | 99 776 907 | CIM 24 x 48 | 78 |
| | 110 V ⎓ | 99 776 905 | CIM 24 x 48 | 78 |
| 99,999 | 24 V ∿ - 50/60 Hz | 99 776 924 | CIM 24 x 48 | 78 |
| | 115 V ∿ - 50/60 Hz | 99 776 922 | CIM 24 x 48 | 78 |
| | 230 V ∿ - 50/60 Hz | 99 776 921 | CIM 24 x 48 | 78 |
| | 24 V ⎓ | 99 776 927 | CIM 24 x 48 | 78 |
| 999,999 | 24 V ∿ - 50/60 Hz | 99 776 604 | CIM 36 x 37 | 72 |
| | 115 V ∿ - 50/60 Hz | 99 776 602 | CIM 36 x 37 | 72 |
| | 230 V ∿ - 50/60 Hz | 99 776 601 | CIM 36 x 37 | 72 |
| | 24 V ⎓ | 99 776 607 | CIM 36 x 37 | 72 |
| | 110 V ⎓ | 99 776 605 | CIM 36 x 37 | 72 |
| 99,999 | 24 V ∿ - 50/60 Hz | 99 776 613 | CIM 36 x 37 | 72 |
| | 115 V ∿ - 50/60 Hz | 99 776 611 | CIM 36 x 37 | 72 |
| | 230 V ∿ - 50/60 Hz | 99 776 610 | CIM 36 x 37 | 72 |
| | 24 V ⎓ | 99 776 616 | CIM 36 x 37 | 72 |
| 999,999 | 24 V ∿ - 50/60 Hz | 99 776 704 | CIM 36 x 48 | 74 |
| | 115 V ∿ - 50/60 Hz | 99 776 702 | CIM 36 x 48 | 74 |
| | 230 V ∿ - 50/60 Hz | 99 776 701 | CIM 36 x 48 | 74 |
| | 24 V ⎓ | 99 776 707 | CIM 36 x 48 | 74 |
| | 48 V ⎓ | 99 776 736 | CIM 36 x 48 | 74 |
| | 110 V ⎓ | 99 776 705 | CIM 36 x 48 | 74 |
| 99,999 | 24 V ∿ - 50/60 Hz | 99 776 713 | CIM 36 x 48 | 74 |
| | 115 V ∿ - 50/60 Hz | 99 776 711 | CIM 36 x 48 | 74 |
| | 230 V ∿ - 50/60 Hz | 99 776 710 | CIM 36 x 48 | 74 |
| | 24 V ⎓ | 99 776 716 | CIM 36 x 48 | 74 |

| Frequency | Supply | Part number | Type | Page |
|---|---|---|---|---|
| 50 Hz ∿ | 20 ⇨ 30 V ∿ | 99 779 710 | CMM48 | 68 |
| | 100 ⇨ 130 V ∿ | 99 779 712 | CMM48 | 68 |
| | 187 ⇨ 264 V ∿ | 99 779 714 | CMM48 | 68 |
| 60 Hz ∿ | 20 ⇨ 30 V ∿ | 99 779 718 | CMM48 | 68 |
| | 100 ⇨ 130 V ∿ | 99 779 715 | CMM48 | 68 |
| | 187 ⇨ 264 V ∿ | 99 779 716 | CMM48 | 68 |
| ⎓ | 10 ⇨ 30 V ⎓ | 99 779 810 | CMM48 | 68 |
| 50 Hz ∿ | 115 V ∿ | 99 780 712 | CEM48 | 68 |
| | 230 V ∿ | 99 780 714 | CEM48 | 68 |

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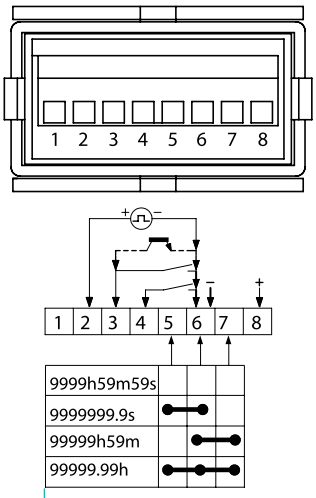
# Connection diagrams

## CTR24 counters

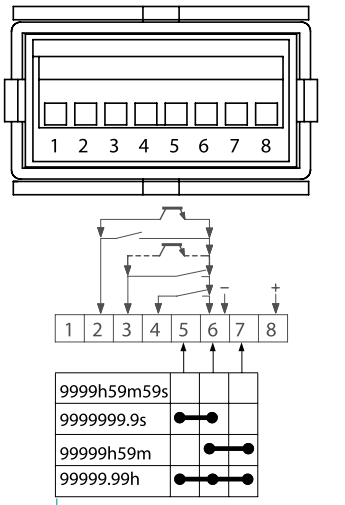
## Connections




**Types 2223 and 2323:**

**Part numbers:**

- 87 622 161
- 87 622 181

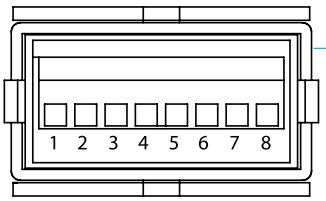



**Types 2233 and 2333:**

**Part numbers:**

- 87 622 162
- 87 622 182

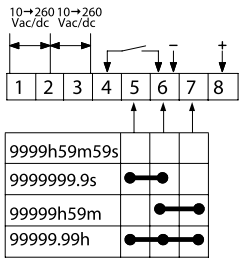
1. NC
2. Start/Stop input
3. Reset input
4. Enable front panel Reset
5. Mode 1 (Time selection)
6. GND/Optional backlighting - (only 23xx)
7. Mode 2 (Time selection)
8. Optional backlighting + (only 23xx)



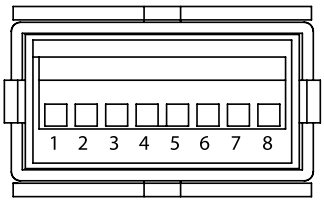

**Types 2224 and 2324:**

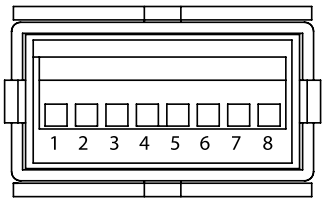
**Part numbers:**

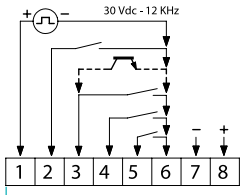
- 87 622 170
- 87 622 190

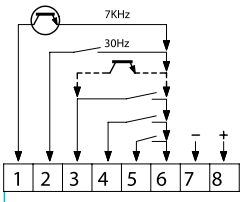



1. Common ≂
2. Start/Stop input
3. Reset input
4. Enable front panel Reset
5. Mode 1 (Time selection)
6. GND/Optional backlighting - (only 23xx)
7. Mode 2 (Time selection)
8. Optional backlighting + (only 23xx)




### Types 2241 and 2341:

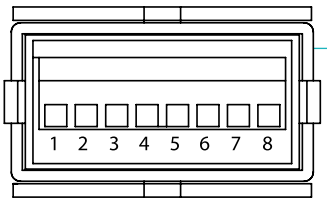
**Part numbers:**
- 87 622 061
- 87 622 081

### Types 2251 and 2351:

**Part numbers:**
- 87 622 062
- 87 622 082

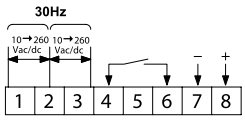
1. Fast count
2. Slow count
3. Reset input
4. Enable front panel Reset
5. Counting (counting direction)
6. GND
7. Optional backlighting - (only 23xx)
8. Optional backlighting + (only 23xx)






### Types 2242 and 2342:

**Part numbers:**
- 87 622 070
- 87 622 090




1. Fast count
2. Common ⏦
3. Reset input
4. Enable front panel Reset
5. NC
6. GND
7. Optional backlighting - (only 23xx)
8. Optional backlighting + (only 23xx)

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- A sales presence in over **40 countries**.
- A Premium offer designed to ensure the **excellence** of products and services.
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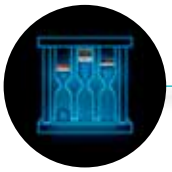


# Data sheets



**To order:**


Customer Service
Crouzet Control
Tel.: +33 (0) 475 802 102
**customer.relation@crouzet.com**


# Electronic multifunction counters with preselection

## ➜ Up counters / Down counters - 48 x 48 - CTR48

- **Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer**
- **Maximum input frequency 40 kHz**
- **Simple parameter setting, configuration using text menus**
- **Easy modification of presets**
- **Scaling factor**
- **5 A changeover relay and solid state output**
- **Removable connectors**
- **Backlit LCD display (orange) : 2 lines, 6 digits or multicoloured display (green-red)**
- **IP 65 sealed panel**
- **Option of locking the keypad, completely or partially (preset, programming)**
- **Accessories for 72 x 72 or 55 x 55 cut-out, DIN rail adaptor**

### Part numbers

| Type | Functions | Preset | Voltages | Output | Code |
|---|---|---|---|---|---|
| Orange backlight LCD display | Counter, Tachometer, Chronometer, Preselection multi-totalizer | 1 | 10 → 30 V⎓ | 1 changeover relay, 1 solid state | **87621111** |
| | Counter, Tachometer, Chronometer, Preselection multi-totalizer | 1 | 24 V~ | 1 changeover relay, 1 solid state | **87621112** |
| | Counter, Tachometer, Chronometer, Preselection multi-totalizer | 1 | 90 → 260 V~ | 1 changeover relay, 1 solid state | **87621115** |
| | Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer | 2 | 10 → 30 V⎓ | 1 changeover relay, 1 NO relay, 2 solid state | **87621121** |
| | Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer | 2 | 24 V~ | 1 changeover relay, 1 NO relay, 2 solid state | **87621122** |
| | Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer | 2 | 90 → 260 V~ | 1 changeover relay, 1 NO relay, 2 solid state | **87621125** |
| Multicoloured LCD display (green-red) | Counter, Tachometer, Chronometer, Preselection multi-totalizer | 1 | 10 → 30 V⎓ | 1 changeover relay, 1 solid state | **87621211** |
| | Counter, Tachometer, Chronometer, Preselection multi-totalizer | 1 | 24 V~ | 1 changeover relay, 1 solid state | **87621212** |
| | Counter, Tachometer, Chronometer, Preselection multi-totalizer | 1 | 90 → 260 V~ | 1 changeover relay, 1 solid state | **87621215** |
| | Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer | 2 | 10 → 30 V⎓ | 1 changeover relay, 1 NO relay, 2 solid state | **87621221** |
| | Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer | 2 | 24 V~ | 1 changeover relay, 1 NO relay, 2 solid state | **87621222** |
| | Counter, Tachometer, Chronometer, Multi-totalizer, Batch counter, Preselection totalizer | 2 | 90 → 260 V~ | 1 changeover relay, 1 NO relay, 2 solid state | **87621225** |

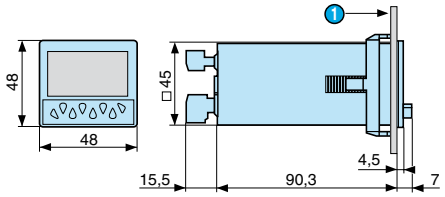
### Accessories

| Description | Code |
|---|---|
| Adaptor for 72 x 72 mm cut-out | **26546842** |
| Adaptor for 55 x 55 mm cut-out | **26546846** |
| DIN rail adaptor | **26546841** |

## General characteristics

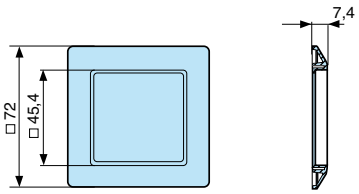
| | |
|---|---|
| **Environmental characteristics** | |
| Supply | 10 → 30 V⎓ / 24 V ∿ / 90 → 260 V∿ |
| Relative humidity (no condensation) | EN 60068-2-30 40/93% RLF |
| Altitude | 0 < 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Vibration resistance in 3 axes | 10-55 Hz / 1 min / XYZ EN 60068-2-6: 30 min. in each direction |
| Connection by screw terminals | Removable |
| Protection | Conforming to standard EN 60529 IP65 for panel / IP20 for connections |
| Front panel watertight seal | ✓ |
| Temperature limits use (°C) | -20 → +65 |
| Temperature limits stored (°C) | -25 → +75 |
| Weight (g) | 150 ⎓ version<br>250 ∿ version |
| **General characteristics** | |
| Reset to zero or to preset | On panel: if not locked during programming<br>Electrical: automatic, voltage or solid state (NPN or PNP depending on programming) |
| Minimum pulse time | Impulse counter: < 15 ms<br>Chronometer: 500 µs |
| Option to protect against reset from front panel | ✓ |
| Scale factor (each input pulse is multiplied by this figure) | 00.0001 → 99.9999 |
| Scaling factor (each input impulse is divided by this value) | 01.0000 → 99.9999 |
| Decimal point selectable for ease of reading | 0<br>0.0<br>0.00<br>0.000<br>0.0000<br>0.00000 |
| Sensor supply version ∿ | 24 V⎓ -20/+15% 50 mA |
| Programming and current value backed up via EEPROM memory | ✓<br>Service life 10 years |
| **Operating characteristics** | |
| Functions | Preselection counter, Tachometer, Chronometer, Multi-totalizer, Batch counters, Totalizer |
| Number of presets | 1 or 2 |
| Display | LCD with orange backlighting/Multicoloured LCD (green-red) |
| Height digits (mm) | LCD 9 |
| Display details | - 999 999 → 999 999 |
| **Input characteristics** | |
| Inputs | 2 counter inputs<br>1 reset input, 1 gate input |
| Input modes | Dir: Directional<br>AS: up/dn<br>AA: up/up<br>PP: phase<br>PP2: phase 2<br>PP4: phase 4 |
| Input type | Voltage or solid state |
| High level | 8 V⎓ → 30 V⎓ |
| Low level | 0 → 2 V⎓ |
| **Solid state output characteristics** | |
| Maximum current | 30 mA |
| Max. voltage | 10 → 30 V⎓ for the ⎓ version<br>24 V⎓ -20/+15% |
| **Relay output characteristics** | |
| Changeover relay | ✓ |
| NO contact | Depending on version |
| Maximum current | 5 A |
| Minimum current | 10 mA |
| Maximum voltage | 30 V⎓ / 250 V∿ |
| Min. voltage | 5 V⎓ |
| Response time | < 13 ms |
| Mechanical life (operations) | 20 x $10^6$ |
| Number of operations to 5 A | 5 x $10^4$ |
| Output modes: maintained or pulsed | 0.01 → 99.99 s |

## Dimensions (mm)

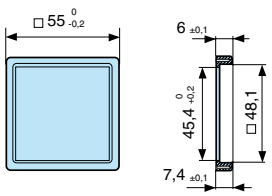



1 10.5 max.

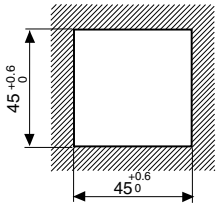
**26546842 - Adaptor for 72 x 72 mm cut-out**



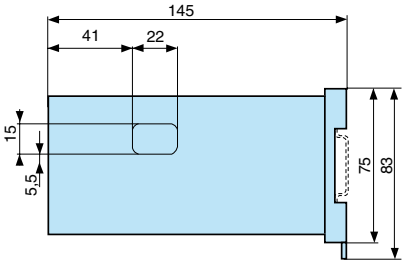

**26546846 - Adaptor for 55 x 55 mm cut-out**

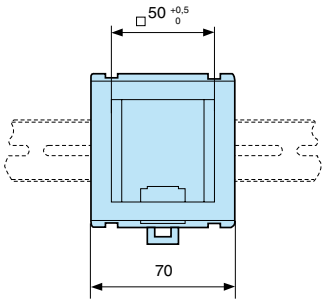



**Panel cut-out**



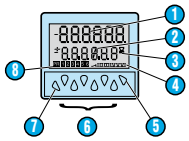

**26546841 - DIN rail adaptor**




## Principles

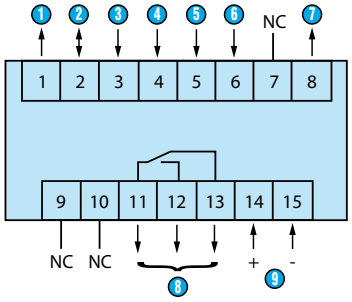
**Display and buttons**




1. Current value
2. Selected value
3. Chronometer display
4. Active output indication
5. Prog/mode button
6. Preset control buttons
7. Button required for programming parameters
8. Shows which value is displayed

## Connections

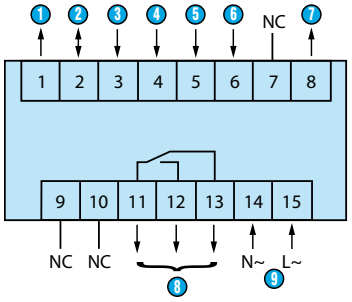
**87621111 / 211**




1. Sensor voltage supply (* UB interconnected)
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Gate input
7. Output 1 - 10-30 V⎓/30 mA
8. 11-12-13: Output 1
9. 14-15: Supply

Output: 5 A/250 V~ /AC: 24 V~

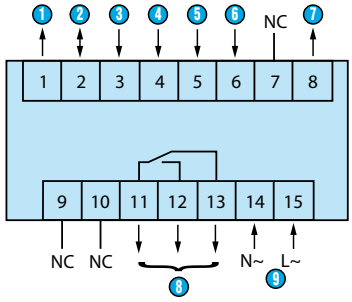
**87621112 / 212**




1. Sensor voltage supply
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Gate input
7. Output 1 - 24 V⎓/30 mA
8. 11-12-13: Output 1
9. 14-15: Supply

Output: 5 A/250 V~ /AC: 24 V~

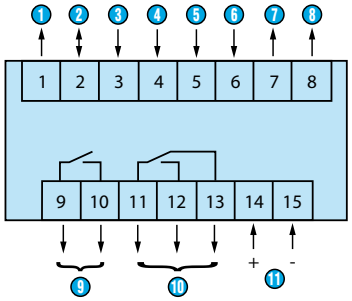
**87621115 / 215**




1. Sensor voltage supply
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Gate input
7. Output 1 - 24 V⎓/30 mA
8. 11-12-13: Output 1
9. 14-15: Supply

Output: 5 A/250 V~ / AC: 24 V~

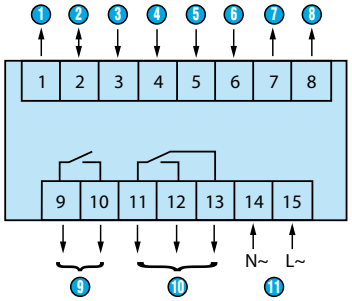
**87621121 / 221**




1. Sensor voltage supply (* UB interconnected)
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Gate input
7. Output 1: 10-30 V⎓/30 mA
8. Output 2: 10-30 V⎓/30 mA
9. 9-10: Output 1
10. 11-12-13: Output 2
11. 14-15: Supply

Output: 5 A/250 V~ / AC: 90 → 260 V⎓

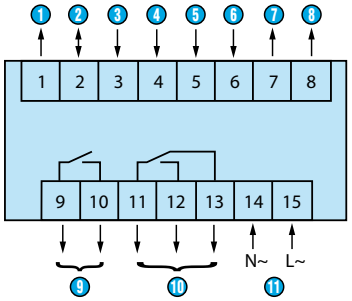
**87621122 / 222**




1. Sensor voltage supply
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Gate input
7. Output 1: 24 V⎓/30 mA
8. Output 2: 24 V⎓/30 mA
9. 9-10: Output 1
10. 11-12-13: Output 2
11. 14-15: Supply

Output: 5 A/250 V~ / AC: 90 → 260 V⎓

**87621125 / 225**

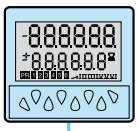



1. Sensor voltage supply
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Gate input
7. Output 1: 24 V⎓/30 mA
8. Output 2: 24 V⎓/30 mA
9. 9-10: Output 1
10. 11-12-13: Output 2
11. 14-15: Supply

Output: 5 A/250 V~ / AC: 90 → 260 V⎓

# Applications

## Programming diagram



### Cntr

- **Input** — PnP / npn
- **FrQ** — HIGH / Low
  Low=30Hz HIGH=max
- **In.Cnt** — dir / AS / AA / PP / PP2 / PP4
  **dir**: Count direction
  **AS**: Differential counting A-B
  **AA**: Totalising A+B
  **PP**: Quadrature Input
  **PP2**: Quadrature with pulse doubling
  **PP4**: Quadrature x4
- **Out.oP** — rS0 / rSA0 / rSAP2 / bCrSA0 / bCrSA2 / tCrSA0 / tCrSA2 / bCrSo / bCrSP2 / tCrS0 / tCrSP2 / MurS0
  **rS0**: Count mode Add (reset to zero)
  **rSP2**: Count mode Sub (reset to main preset)
  **rSA0**: Count mode Add with automatic reset
  **rSAP2**: Count mode Sub with automatic reset
  ***bCrSA0**: Count mode Add with automatic reset and batch counter
  ***tCrSA0**: Count mode Add with automatic reset and total counter
  **MurS0**: Multitotalizer (reset to zero)
  *Only version 2 preset
- **MultPl** — 00,0001...99,9999
- **diVidE** — 01,0000...99,9999
- **dEcPt** — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- **CoLor**** — rEd / rEdGm
  **Only for multicolor version
- **rESMod** — no rEs / ELrES / Man.rE / Man.EL
  **norES**: No reset
  **ELrEs**: Electrical reset
  **ManrE**: Manual reset
  **ManEL**: Manual and electrical reset

### tiMErC

- **Input** — PnP / npn
- **FrQ** — HIGH / Low
  Low=30Hz HIGH=max
- **StArt** — tcCb / tcCab / tcCbb / tcSb / tcSbb / tcSab / tcAuto
  **tcCb**: Start/Stop pulse duration on input B (comulative)
  **tcCab**: Start edge to input A Stop edge to input B (comulative)
  **tcCbb**: Start edge to input B Stop edge to input B (comulative)
  **tcSb**: Start/Stop pulse duration on input B (single pulse)
  **tcSbb**: Start edge to input B Stop edge to input B (single pulse)
  **tcSab**: Start edge to input A Stop edge to input B (single pulse)
  **tcAuto**: Control timing of reset
- **Out.oP** — rS0 / rSA0 / rSAP2 / bCrSA0 / tCrSA0 / rSP2
  **rS0**: Count mode Add (reset to zero)
  **rSP2**: Count mode Sub (reset to main preset)
  **rSA0**: Count mode Add with automatic reset
  **rSAP2**: Count mode Sub with automatic reset
  **bCrSA0**: Count mode Add with automatic reset and batch counter
  **tCrSA0**: Count mode Add with automatic reset and total counter
- **tUnit** — SEC / MIN / hour / h.Min.S /
- **dEcPt** — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- **CoLor** — rEd / rEdGm
- **rESMod** — no rEs / ELrES / Man.rE / Man.EL
  **norES**: No reset
  **ELrEs**: Electrical reset
  **ManrE**: Manual reset
  **ManEL**: Manual and electrical reset

### tAcho

- **Input** — PnP / npn
- **FrQ** — HIGH / Low
  Low=30Hz HIGH=max
- **StArt** — tA.AS / tA.AA / tA.PP tA.A
  **tA.AS**: Differential measurement A-B
  **tA.AA**:Total measurement A+B
  **tA.PP**: Freq. Measurement with direction (phase)
  **tA.A**: Single frequency measurement
- **MultPl** — 00,0001...99,9999
- **diVidE** — 01,0000...99,9999
- **tUnit** — U.MIN / U.SEC
- **dEcPt** — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- **AVG** — oFF / AVG2 / AVG5 / AVG 10 / AVG 20
  Moving average
- **StuPtm** — 00.0..99,9
  Start delay
- **WAit0** — 00.0..99,9
  Waiting time
- **CoLor**** — rEd / rEdGm
  **Only for multicolor version

### OutS1

- **OutS1** — on / oFF
- **S1**

permanent signal — timed signal

- **tiMES1** — 00.01..99,99s
  Time signal output regulation
- **P1** — Loc / UnLoc / Loc-tr
  **Loc**: Preset value is locked
  **UnLoc**: Preset value is open
  **UnLoc-tr**: Preset valure is locked is possible to open with pression key with 10s
- ****OutS2** — on / oFF
- ****S2**

permanent signal — timed signal

**Only version 2 preset

- **tiMES1** — 00.01..99,99s
  Time signal output regulation
- **P2** — Loc / UnLoc / Loc-tr
  **Loc**: Preset value is locked
  **UnLoc**: Preset value is open
  **UnLoc-tr**: Preset valure is locked is possible to open with pression key with 10s
- **PrG** — Loc / UnLoc
  **Loc**: Press Key R and P into 15s after powerOn to enter in the programming
  **UnLoc**: Press Key R and P for 3 sec to enter in the programming

**Counter**

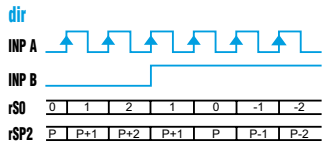
| Output operation modes | rSo / rSP2 bCrS0 bCrSP2 tCrS0 tCrSP2 MurS0 | rSA0 | rSAP2 bCrSA0 bCrSA2 tCrSA0 tCrSA2 |
|---|---|---|---|
| dir | 40 kHz | 5.2 kHz | 4.2 kHz |
| AS AA | 20 kHz | 4.4 kHz | 4.2 kHz |
| PP PP2 | 20 kHz | 2.2 kHz | 2.1 kHz |
| PP4 | 15 kHz | 1.1 kHz | 1.0 kHz |

**Tachometer**

| | |
|---|---|
| tA.A tA.AS tA.AA | 40 kHz |
| Quad | 20 kHz |

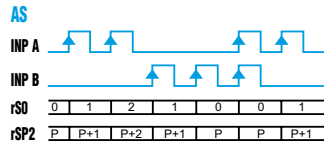
## Curves

### Counter: dir



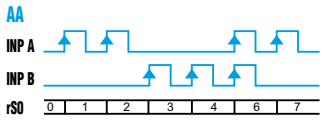

Inp A: counter input
Inp B: count direction
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Counter: AS



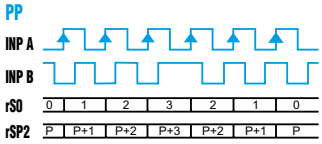

Inp A: Add. counter input 1
Inp B: sub. counter input 2
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Counter: AA



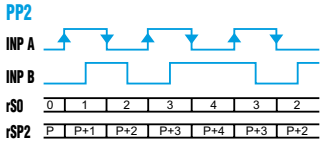

Inp A: Add. counter input 1
Inp B: sub. counter input 2
rS0: Display 0 → Preset

### Counter: PP



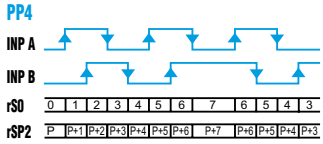

A 90° B
Inp A: Counter input
Counting on an edge
Inp B: Reversal of direction
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Counter: PP2



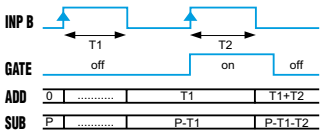

A 90° B
Inp A: Counter input
Counting on a rising edge and on a falling edge
Inp B: Reversal of direction
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Counter: PP4



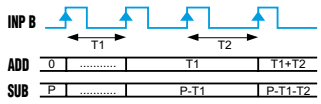

A 90° B
Inp A: Counter input
Counting on a rising edge and on a falling edge
Inp B: Counter input
Counting on a rising edge and on a falling edge, reversal of direction
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Chronometer: Start tcCb



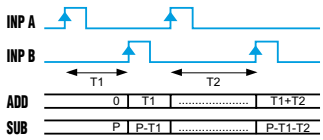

Inp A: No function
Inp B: On/Off
Cumulative time counting
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcCbb



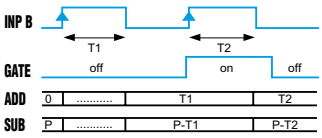

Inp A: No function
Inp B: On/Off
Cumulative time counting
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcCAb



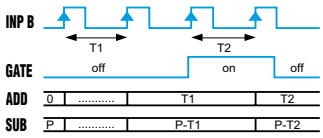

Inp A: On
Inp B: Off
Cumulative time counting
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcSb



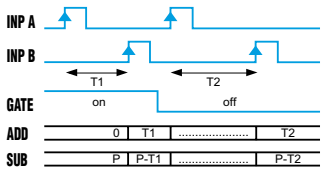

Inp A: No function
Inp B: On/Off
Individual time counting while B is active, automatic reset before each new count
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcSbb



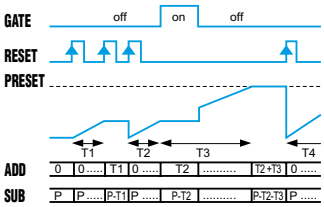

Inp A: No function
Inp B: On/Off
Individual time counting, automatic reset before each new count
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcSAb



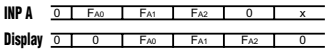

Inp A: On
Inp B: Off
Individual time counting, automatic reset before each new count
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcAuto



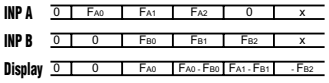

Inp A: No function
Inp B: No function
Time counting command via Reset (manual or electrical)
Add: Display 0 → Preset
Sub: Display Preset → 0
The Gate input has a display memory function

### Tachometer: Start tA.A



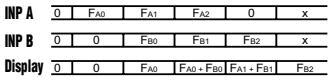

Inp A: Frequency input
Inp B: No function

### Tachometer: Start tA.AS



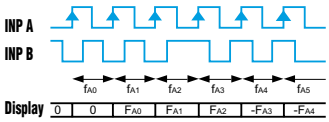

Inp A: Frequency input 1
Inp B: Frequency input 2
Formula: A - B

### Tachometer: Start tA.AA



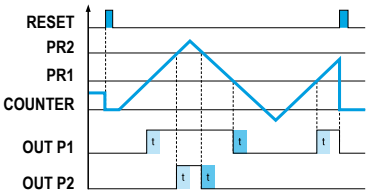

Inp A: Frequency input 1
Inp B: Frequency input 2
Formula: A + B

### Tachometer: Start tA.PP

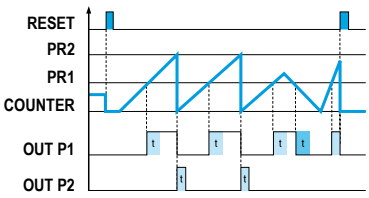



A 90° B
Inp A: Frequency input 1
Inp B: Reversal of direction

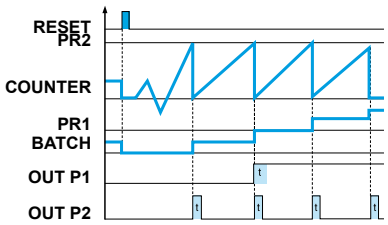
### Output operation: OutoP rS0



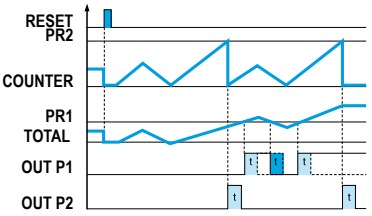

### Output operation: OutoP rSA0



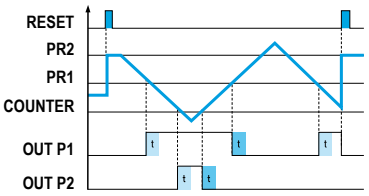

### Output operation: OutoP bCrSA0



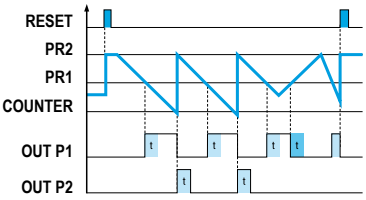

### Output operation: OutoP tCrSA0



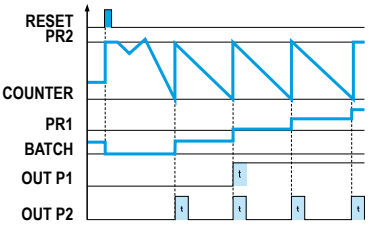

### Output operation: OutoP rSP2



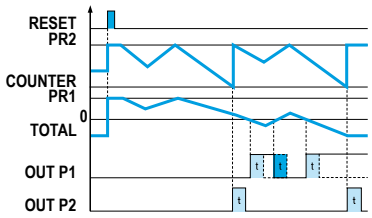

### Output operation: OutoP rSAP2



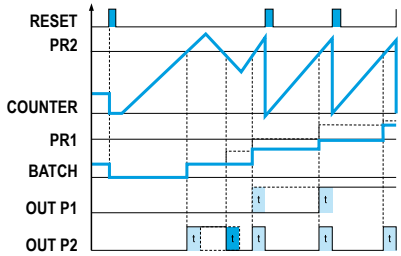

### Output operation: OutoPbCrSA2



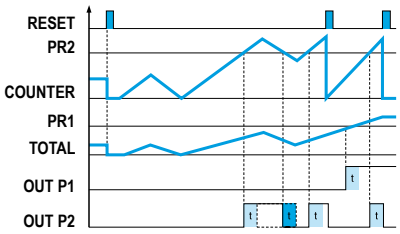
### Output operation: OutoP tCrSA2



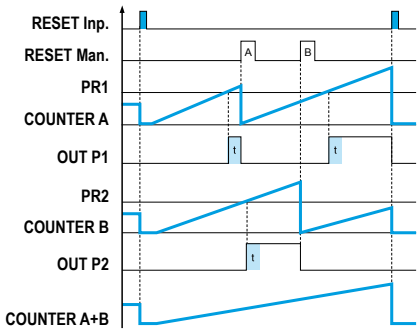

### Output operation: OutoP bCrS0



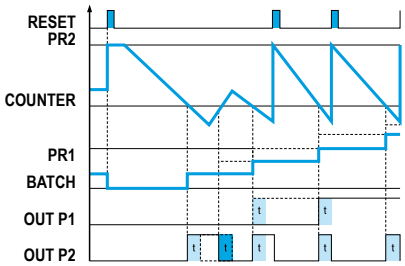

### Output operation: OutoP tCrS0



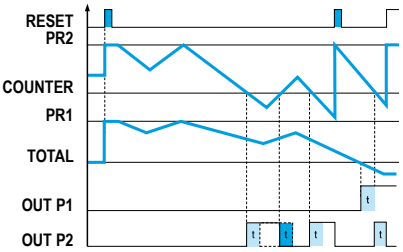

### Output operation: OutoP MurS0 (AA)



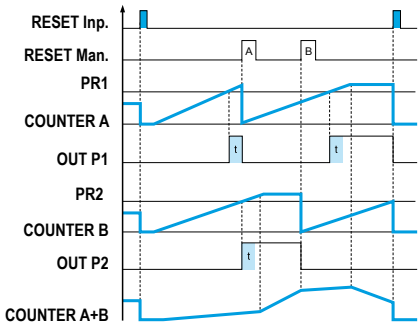

### Output operation: OutoP bCrSP2




### Output operation: OutoP tCrSP2




### Output operation: OutoP MurS0 (AS)



# Electronic multifunction counters with preselection

## ➜ Up counters/Down counters - 48 x 48 - CTR48E "Essential"

- **Counter, Preselection chronometer**
- **Maximum input frequency 5 k Hz**
- **Simple parameter setting, configuration using text menus**
- **Easy modification of presets**
- **Multiplication factor**
- **3 A changeover relay**
- **Backlit LCD display (green) : 6 digits, height 9 mm**
- **IP 65 sealed panel**
- **Option of locking the keypad, completely or partially (preset, programming)**
- **Accessories for 72 x 72 or 55 x 55 cut-out, DIN rail adaptor**

## Part numbers

| Type | Functions | Preset | Voltages | Output | Code |
|---|---|---|---|---|---|
| Green backlit LCD display | Counter, Preselection chronometer | 1 | 10 → 30 V⎓ | 1 relay | **87629111** |
| | Counter, Preselection chronometer | 1 | 115 V∿ | 1 relay | **87629113** |
| | Counter, Preselection chronometer | 1 | 230 V∿ | 1 relay | **87629114** |
| | Counter, Preselection chronometer | 2 | 10 → 30 V⎓ | 1 changeover relay, 1 NO relay | **87629121** |
| | Counter, Preselection chronometer | 2 | 115 V∿ | 1 changeover relay, 1 NO relay | **87629123** |
| | Counter, Preselection chronometer | 2 | 230 V∿ | 1 changeover relay, 1 NO relay | **87629124** |

## Accessories

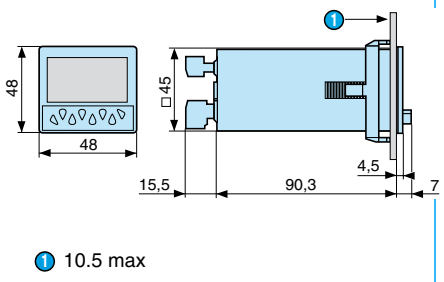
| Description | Code |
|---|---|
| Adaptor for 72 x 72 mm cut-out | **26546842** |
| Adaptor for 55 x 55 mm cut-out | **26546846** |
| DIN rail adaptor | **26546841** |

## General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Supply | 11 → 30 V⎓ / 115 V ∿ / 230 V∿ |
| Relative humidity (no condensation) | EN 60068-2-30 40/93% RLF |
| Altitude | 0 < 2000 m |
| Certifications | CE |
| Vibration resistance in 3 axes | 10-55 Hz/1 min/XYZ EN 60068-2-6: 30 min. in each direction |
| Connection by screw terminals | Removable |
| Protection | Conforming to standard EN 60529 IP65 for panel/IP20 for connections |
| Front panel watertight seal | ✓ |
| Temperature limits use (°C) | -10 → +50 |
| Temperature limits stored (°C) | -25 → +75 |
| Weight (g) | 150 ⎓ version<br>250 ∿ version |
| **General characteristics** | |
| Reset to zero or to preset | On panel: if not locked during programming<br>Electrical: automatic, voltage or solid state (NPN or PNP depending on programming) |
| Minimum pulse time | Impulse counter: < 15 ms<br>Chronometer: 500 µs |
| Option to protect against reset from front panel | ✓ |
| Scale factor (each input pulse is multiplied by this figure) | 00.0001 → 99.9999 |
| Decimal point selectable for ease of reading | 0<br>0.0<br>0.00<br>0.000<br>0.0000<br>0.00000 |
| Sensor supply version ∿ | -40/+15% 50 mA 230 V∿<br>-40/+15% 40 mA 115 V∿ |
| Programming and current value backed up via EEPROM memory | ✓<br>Service life 10 years |

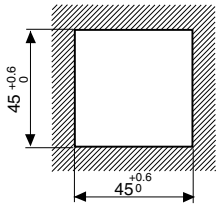
| Operating characteristics | |
|---|---|
| Functions | Preselection counter, Chronometer |
| Number of presets | 1 or 2 |
| Display | LCD with green backlighting |
| Height digits (mm) | LCD 9 |
| Display details | - 999 999 → 999 999 |
| **Input characteristics** | |
| Inputs | 2 counter inputs<br>1 reset input, 1 locking input |
| Input modes | Dir: Directional<br>AS: up/dn<br>PP: phase |
| Input type | Voltage or solid state |
| High level | 3.5 → 30 V⎓ |
| Low level | 0 → 2 V⎓ |
| **Relay output characteristics** | |
| Changeover relay | ✓ |
| NO contact | Depending on version |
| Maximum current | 3 A |
| Minimum current | 30 mA |
| Maximum voltage | 30 V⎓ / 250 V~ |
| Min. voltage | 5 V≂ |
| Response time | < 10 ms |
| Mechanical life (operations) | 20 x $10^6$ |
| Number of operations | 1 x $10^5$ |
| Output modes: maintained or pulsed | 0.01 → 99.99 s |

## Dimensions (mm)

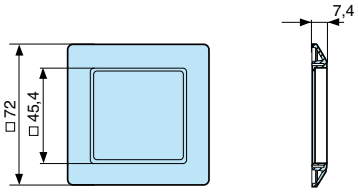



1 10.5 max

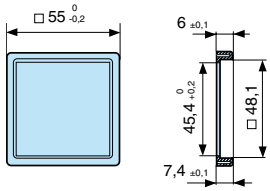
**Panel cut-out**



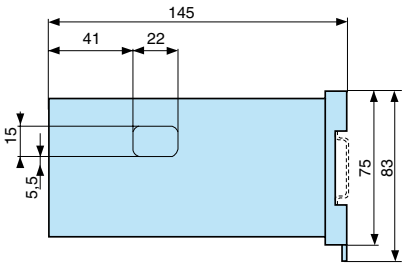

**26546842 - Adaptor for 72 x 72 mm cut-out**

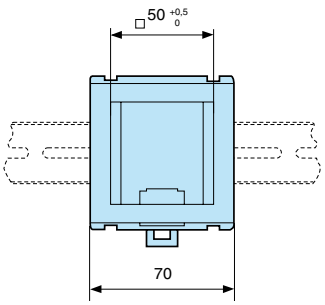



**26546846 - Adaptor for 55 x 55 mm cut-out**



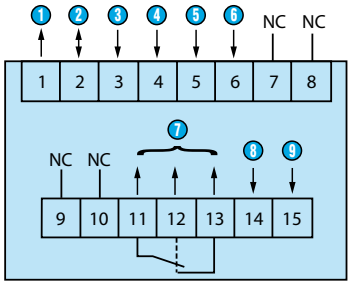

**26546841 - DIN rail adaptor**



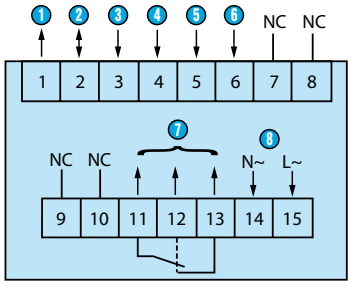
## Connections

**87629111**



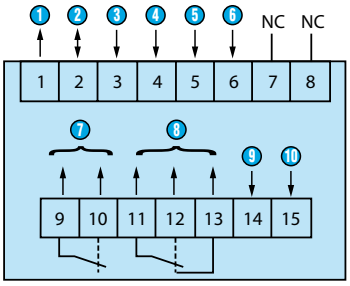

1. Sensor voltage supply (* UB interconnected)
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Lock (locking switch input)
7. 11-12-13: Output 1
8. 14-15: Supply
9. Power supply - GND

**87629113 / 114**



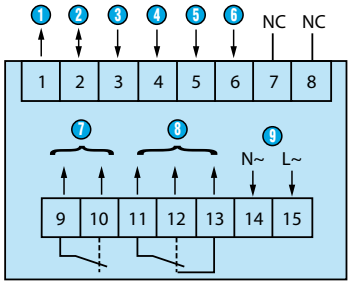

1. Sensor voltage supply
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Lock (locking switch input)
7. 11-12-13: Output 1
8. 14-15: Supply

**87629121**




1. Sensor voltage supply (* UB interconnected)
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Lock (locking switch input)
7. 9-10: Output 1
8. 11-12-13: Output 2
9. 14-15: Supply
10. Power supply - GND

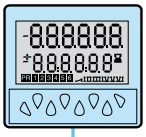
**87629123 / 124**




1. Sensor voltage supply
2. GND (0 V⎓)
3. INP A (signal A input)
4. INP B (signal B input)
5. Reset (Reset input)
6. Lock (locking switch input)
7. 9-10: Output 1
8. 11-12-13: Output 2
9. 14-15: Supply

## Applications

**Programming diagram**



**Cntr**

- **Input** — PnP / npn
- **FrQ** — HIGH / Low
  Low=30Hz HIGH=max
- **In.Cnt** — dir / AS / PP
  **dir**: Count direction
  **AS**: Differential counting A-B
  **PP**: Quadrature Input
- **Loc** — ProG / PrESEt / PrgPrE
  **ProG:** Programming us locked
  **PrESEt:** Preset value us locked
  **PrgPrE:** Preset and programming us locked
  (The activation is with the electrical input LOCK)
  (the choice is valid for P1 and P2 in the case of version to two pres.)
- **Out.oP** — rS0 / rSA0 / rSAP2 / rSP2
  **rS0**: Count mode Add (reset to zero)
  **rSP2**: Count mode Sub (reset to main preset)
  **rSA0**: Count mode Add with automatic reset
  **rSAP2**: Count mode Sub with automatic reset
- **MultPl** — 00,0001...99,9999
- **dEcPt** — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- **rESMod** — no rEs / ELrES / Man.rE / Man.EL
  **norES**: No reset
  **ELrEs**: Electrical reset
  **ManrE**: Manual reset
  **ManEL**: Manual and electrical reset

**tiMErC**

- **Input** — PnP / npn
- **FrQ** — HIGH / Low
  Low=30Hz HIGH=max
- **StArt** — tcCab / tcCbb / FrErun
  **FrErun**: Gate Mode (INPA)
  **tcCab**: Start edge to input A Stop edge to input B (comulative)
  **tcCbb**: Start edge to input B Stop edge to input B (comulative)
- **Loc** — ProG / PrESEt / PrgPrE
  **ProG:** Programming us locked
  **PrESEt:** Preset value us locked
  **PrgPrE:** Preset and programming us locked
  (The activation is with the electrical input LOCK)
  (the choice is valid for P1 and P2 in the case of version to two pres.)
- **Out.oP** — rS0 / rSA0 / rSAP2 / rSP2
  **rS0**: Count mode Add (reset to zero)
  **rSP2**: Count mode Sub (reset to main preset)
  **rSA0**: Count mode Add with automatic reset
  **rSAP2**: Count mode Sub with automatic reset
- **tUnit** — SEC / MIN / hour / h.Min.S /
- **dEcPt** — 0 / 0,0 / 0,00 / 0,000 / 0,0000 / 0,00000
- **rESMod** — no rEs / ELrES / Man.rE / Man.EL
  **norES**: No reset
  **ELrEs**: Electrical reset
  **ManrE**: Manual reset
  **ManEL**: Manual and electrical reset
- **S1**

permanent signal

timed signal

- **tiMES1** — 00.01..99,99s
  Time signal output regulation
- ****S2**

permanent signal

timed signal

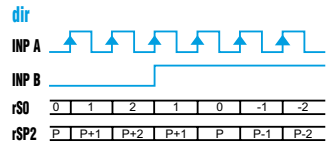
**Only version 2 preset

- **tiMES1** — 00.01..99,99s
  Time signal output regulation

| | Low : 1.0 V<br>High : 4.0 V | | Low : 3.0 V<br>High : 30.0 V | |
|---|---|---|---|---|
| | rS0<br>rSP2 | rSA0<br>rSAP2 | rS0<br>rSP2 | rSA0<br>rSAP2 |
| **dir** | 15 kHz | 1.5 kHz | 5 kHz | 1.2 kHz |
| **AS** | 10 kHz | 1.5 kHz | 5 kHz | 1.2 kHz |
| **PP** | 10 kHz | 0.7 kHz | 2.4 kHz | 0.5 kHz |

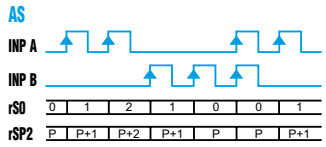
## Curves

### Counter: dir



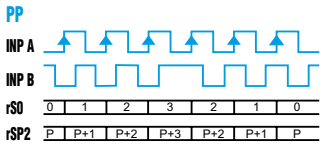

A 90° B
Inp A: Counter input
Counting on an edge
Inp B: Reversal of direction
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Counter: AS



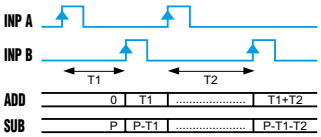

Inp A: Add. counter input 1
Inp B: Sub. counter input 2
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Counter: PP



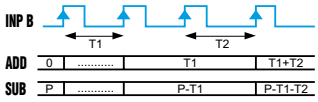

A 90° B
Inp A: Counter input
Counting on an edge
Inp B: Reversal of direction
rS0: Display 0 → Preset
rSP2: Display Preset → 0

### Chronometer: Start tcCAb



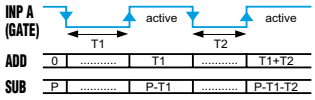

Inp A: On
Inp B: Off
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start tcCbb



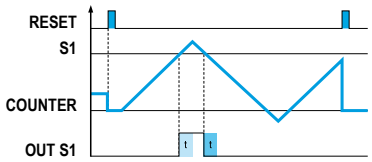

Inp A: No function
Inp B: On/Off
RS0/RSP2
Add: Display 0 → Preset
Sub: Display Preset → 0

### Chronometer: Start FrErun

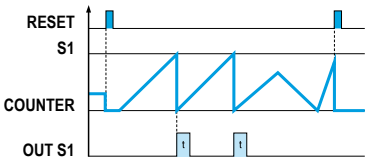



InpA: Gate
Time measurement via InpA
InpB: No function

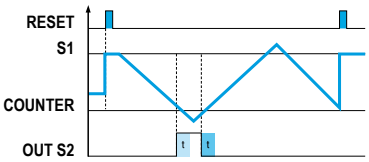
### Output operation 1: rS0



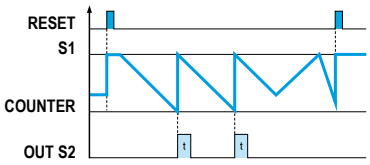

### Output operation 1: rSA0



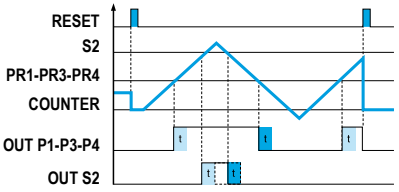

### Output operation 1: rSP2



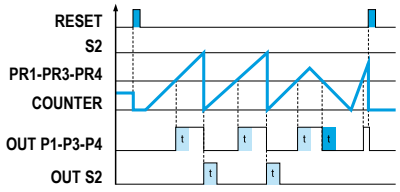

### Output operation 1: rSAP2



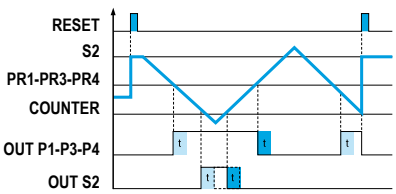

### Output operation 2: rS0



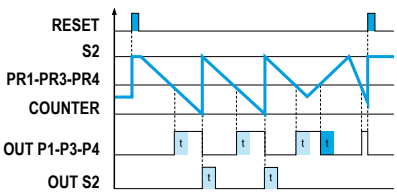

### Output operation 2: rSA0




### Output operation 2: rSP2




### Output operation 2: rSAP2



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# Electronic multifunction counters without preselection

## ➜ Multifunction counter - LED 24 x 48 - CTR24L

- **High brightness display: 6-digit LED, height 8 mm**
- **Maximum input frequency 50 k Hz**
- **Programmable multifunction: Counter/Tachometer/ Chronometer**
- **Reset on panel or external with inhibition option**
- **Supply: 10 → 30 V⎓**
- **Easy to program**
- **Scaling factor (Counter - Tachometer)**
- **Decimal point (Counter - Tachometer)**
- **Timing range 0.001 s → 999.999 hrs (Chronometer)**
- **Impulses or time measured in hrs/min/sec and in real time (Chronometer)**
- **Accessories for 50 x 25 mm cut-out**

### Part numbers

| Type | Functions | Code |
|---|---|---|
| CTR24L - 2511 | Counter, Tachometer, Chronometer | **87623570** |

### Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

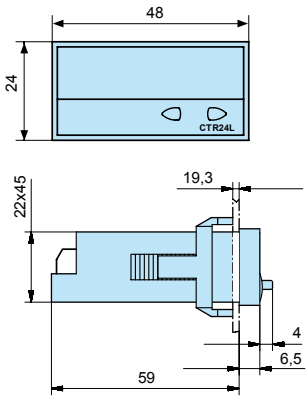
### General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | 10 → 30 V⎓ max 55 mA with protection against polarity reversal |
| Connection by 5 screw terminals at rear of casing | ✓ |
| Connection capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Data memory | EEPROM |
| Temperature limits use (°C) | -20 → +55 |
| Temperature limits stored (°C) | -25 → +70 |
| Dielectric strength | According to EN 61010-1: 2000 V/50 Hz/1 min |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Functions | Impulse counter, Tachometer, Chronometer |
| Display | 6-digit LED |
| Height digits (mm) | 8 |
| **Input characteristics** | |
| Inputs | 2 counter inputs, 1 reset input |
| High level | 0 → 0.2 x Ub V⎓ |
| Low level | 0.6 x Ub → 30 V⎓ |
| Cyclical ratio | Any (maximum frequency given for a cyclical ratio = 1/1)<br>Schmitt trigger input |
| Polarity | NPN or PNP for all inputs (programming) |
| Minimum impulse duration for reset | 5 ms |
| Frequency of filtered input | Filter active: 30 Hz<br>Filter disabled: maximum frequency (programming) |
| Input impedance (kΩ) | Appr. 5 |
| **Impulse counter** | |
| Display details | - 19 999 → 999 999 |
| Elimination of non-significant zeros | ✓ |

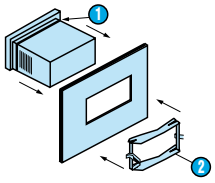
| | |
|---|---|
| Counting input modes | Cnt.Dir → Counter input INPA and counter direction input INPB<br>Up.dn → INPA INPB differential counting<br>Up.up → Sum of INPA + INPB<br>QuAd → Phase discriminator<br>QuAd2 → Phase discriminator with doubling of impulses<br>QuAd4 → Phase discriminator with quadrupling of impulses |
| Inputs INPA / INPB | Dynamic |
| Reset input (terminal 5) | Dynamic Reset input connected in parallel with the red SET/RESET button<br>Sets the counter to the defined preset value |
| Reset to zero - Panel | If not locked during programming |
| Remise à zéro - Externe (borne 5) | If not locked during programming |
| Scale factor | 1 → 99.9999 |
| Scaling factor | 1 → 99.9999 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | CntDir → 50 kHz<br>UpDown → 25 kHz<br>UpUp → 25 kHz<br>Quad1 → 25 kHz<br>Quad2 → 25 kHz<br>Quad4 → 15 kHz |
| **Tachometer** | |
| Display details | 0 → 999 999 |
| Elimination of non-significant zeros | ✓ |
| Conversion time | 1/s ou 1/min |
| Input INPA | Dynamic |
| Accuracy | < 0.1% |
| Measurement principle | < 38 Hz: measurement of period duration<br>> 38 Hz: measurement with duration time base = 26.3 ms |
| Scale factor | 1 → 99.9999 |
| Scaling factor | 1 → 99.9999 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | 50 kHz |
| **Chronometer** | |
| Display details | 0.001 s → 999 999 h |
| Elimination of non-significant zeros | ✓ |
| Functions | GatE.Lo → Time measurement if INPB is not active<br>GatE.hi → Time measurement if INPB is active<br>Inb.Inb → Time measurement on/off via the INPB edge<br>InA.Inb → Measurement on via the INPA edge, measurement off via the INPB edge |
| Input INPA | Start |
| Input INPB | Start/Stop or Gate (depends on the input mode chosen) |
| Remise à zéro - Externe (borne 5) | If not locked during programming |
| Reset input (terminal 5) | Dynamic Reset input connected in parallel with the red SET/RESET button<br>Sets the counter to the defined preset value |
| Reset to zero - Panel | If not locked during programming |
| Accuracy | < 50 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Time ranges | 0.001 s → 999 999 s<br>0.001 min → 99 999 min<br>0.001 h → 999 999 h<br>00 h 00 min 01 s → 99 h 59 min 59 s |

## Dimensions (mm)

**CTR24L - 2511**

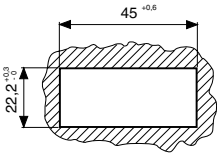



**Fixing strip with clip-on yoke**

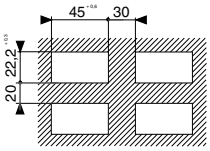



1 Seal
2 Fixing yoke

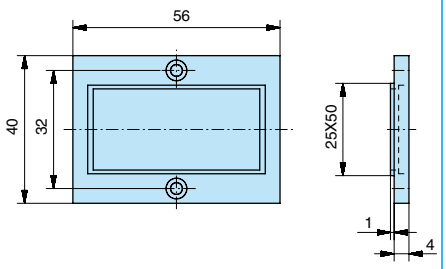
**Panel cut-out**



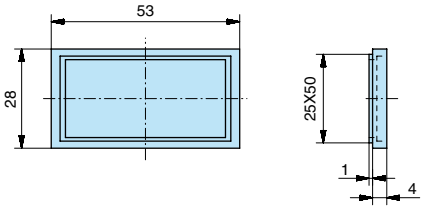

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

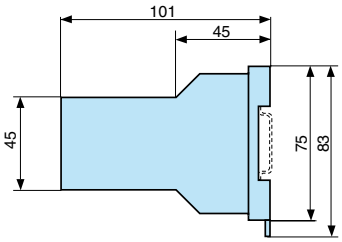


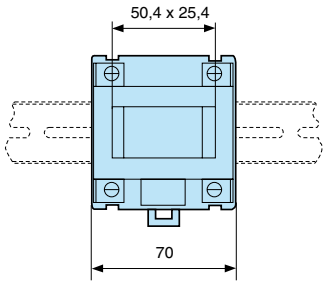

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**



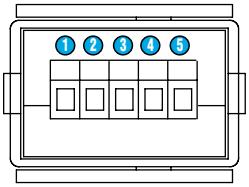

Accessory supplied with the counter

**26546840 - DIN rail adaptor**



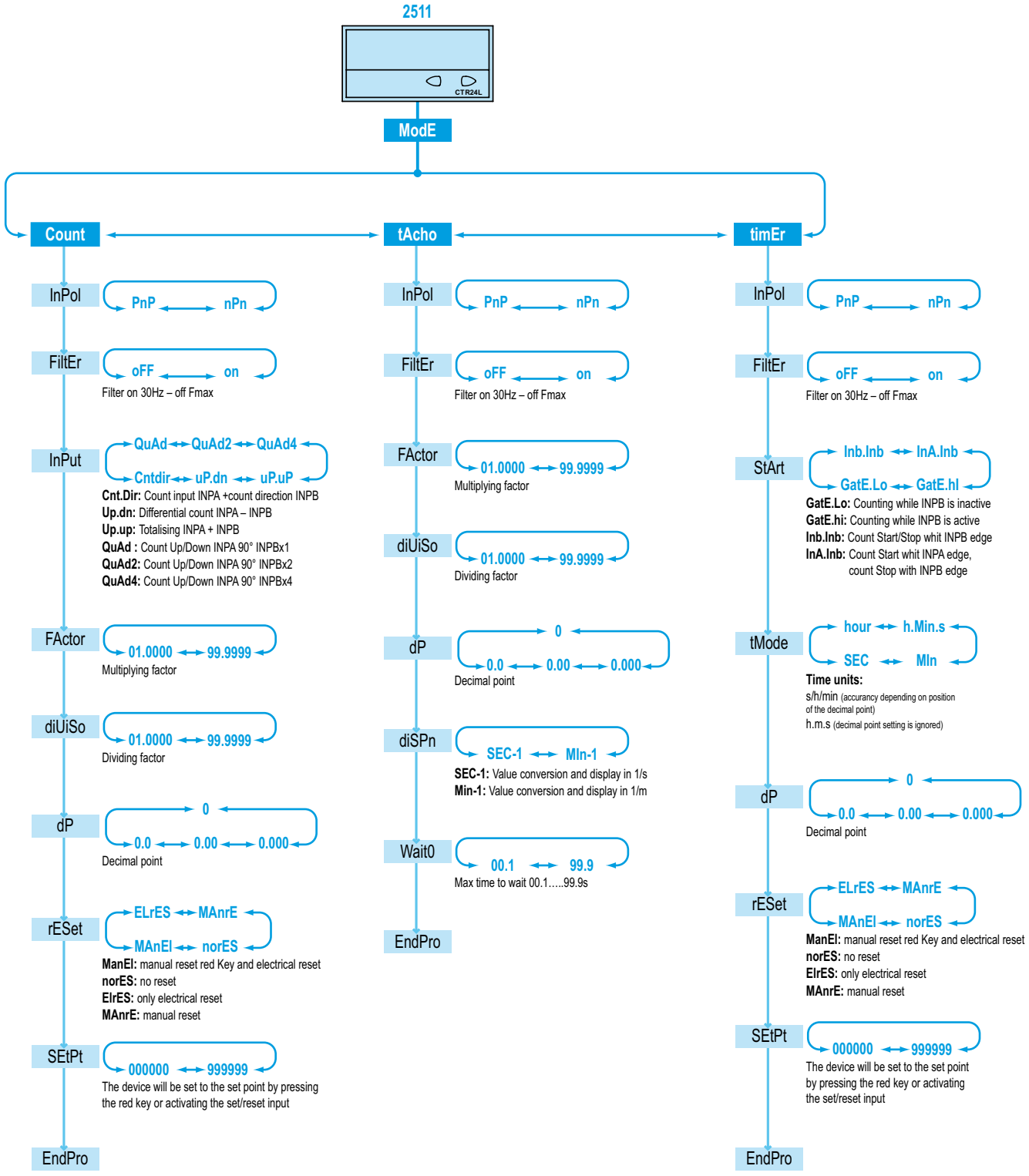

## Connections




1 Supply: 10 → 30 V⎓
2 Supply: GND (0 V⎓)
3 INPA
4 INPB (NC in tachometer mode)
5 SET/RESET (NC in tachometer mode)

## Applications

**Programming diagram**




**Count frequency:**

| DC power supply | 24V | 12V |
|---|---|---|
| Input level | Standard | |
| typ. low | 2.5V | 2.0V |
| typ. High | 22.0V | 10V |
| **Fmax*** | **kHz** | **kHz** |
| CntDir | 50 | 20 |
| UpDown | 25 | 15 |
| Up.up | 25 | 15 |
| Quad1 | 25 | 15 |
| Quad2 | 25 | 15 |
| Quad4 | 15 | 15 |

**Count frequency:**

| DC power supply | 24V | 12V |
|---|---|---|
| Input level | Standard | |
| typ.low | 2.5V | 2.0V |
| typ. Hight | 22.0V | 10V |
| **Fmax*** | **kHz** | **kHz** |
| Tacho | 50 | 20 |

**Counting ranges:**

| | |
|---|---|
| Seconds | 0,001s...999 999s |
| Minutes | 0,001min...999 999min |
| Hours | 0,001h...999 999h |
| h.min.s | 00h00min01s...99h59min59s |

# Electronic multifunction counters without preselection

## ➜ Multifunction counter with 2 totalizers - LED 24 x 48 - CTR24L

- **High brightness display: 6-digit LED, height 8 mm**
- **Maximum input frequency 25 k Hz**
- **Counter with 2 separate totalizers, each with a dedicated input**
- **Reset on panel or external with inhibition option**
- **Supply: 10 → 30 V⎓**
- **Easy to program**
- **Scaling factor**
- **Decimal point**
- **Accessories for 50 x 25 mm cut-out**

### Part numbers

| Type | Functions | Code |
|---|---|---|
| CTR24L - 2512 | Counter with 2 separate totalizers | **87623571** |

### Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

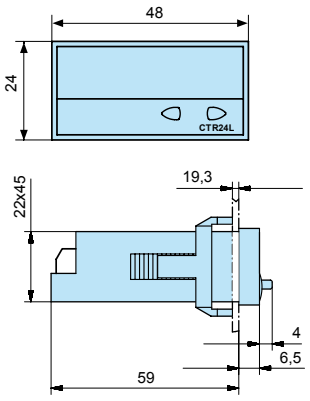
### General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | 10 → 30 V⎓ max 55 mA with protection against polarity reversal |
| Connection by 5 screw terminals at rear of casing | ✓ |
| Terminal capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Data memory | EEPROM |
| Temperature limits use (°C) | -20 → +55 |
| Temperature limits stored (°C) | -20 → +55 |
| Breakdown voltage | EN 61010-1: 2000 V / 50 Hz / 1 min |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Functions | Counter with 2 separate totalizers |
| Display | 6-digit LED |
| Height digits (mm) | 8 |
| **Input characteristics** | |
| Inputs | 2 counter inputs, 1 reset input |
| Low level | 0 → 0.2 x Ub V⎓ |
| High level | 0.6 x Ub → 30 V⎓ |
| Cyclical ratio | Any (maximum frequency given for a cyclical ratio = 1/1)<br>Schmitt trigger input |
| Polarity | NPN or PNP for all inputs (programming) |
| Minimum impulse duration for reset | 5 ms |
| Frequency of filtered input | Filter active: 30 Hz<br>Filter disabled: maximum frequency (programming) |
| Input impedance (kΩ) | Appr. 5 |
| **Impulse counter** | |
| Display details | 0 → 999 999 |
| Display | When the buttons are pressed, the counter displays the following values:<br>CntA → Value of counter A (INPA input)<br>CntB → Value of counter B (INPB input)<br>Asubb → Difference between A-B (INPA-INPB input)<br>Aaddb → Addition of A+B (INPA+INPB input)<br>AdIUb → Division of A/B (INPA/INPB input)<br>Aprocb → Percentage (A-B) /A ( (INPA-INPB) /INPA input) |
| Elimination of non-significant zeros | ✓ |
| Counting input modes | CntA → INPA input counting<br>CntB → INPB input counting |

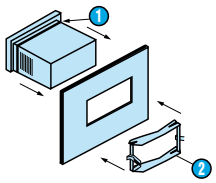
| | |
|---|---|
| Inputs INPA / INPB | Dynamic |
| Reset input (terminal 5) | Dynamic Reset input connected in parallel with the red SET/RESET button<br>Sets the counter to the defined preset value - possible on both totalizers |
| Reset to zero - Panel | If not locked during programming |
| Reset to zero - External (borne 5) | If not locked during programming |
| Scale factor | 1 → 99.9999 (separate for A and B) |
| Scaling factor | 1 → 99.9999 (separate for A and B) |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | 25 k Hz |

## Dimensions (mm)

**CTR24L - 2512**

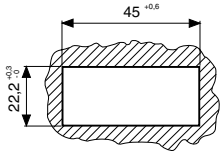



**Fixing strip with clip-on yoke**

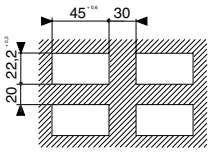



1 Seal
2 Fixing yoke

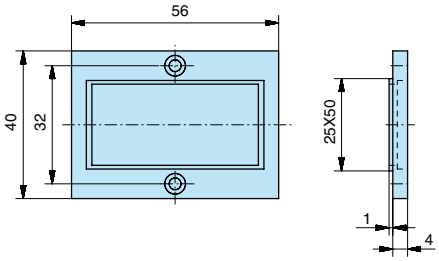
**Panel cut-out**



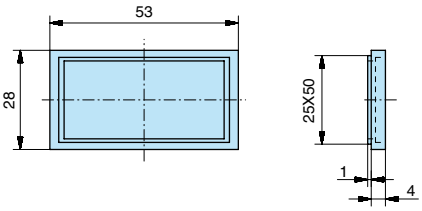

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

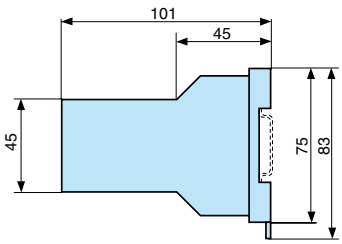


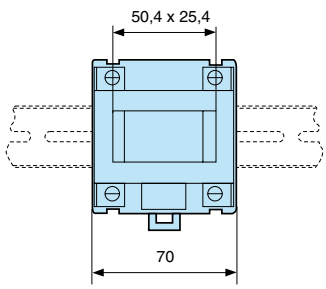

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**



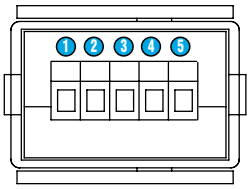

Accessory supplied with the counter

**26546840 - DIN rail adaptor**



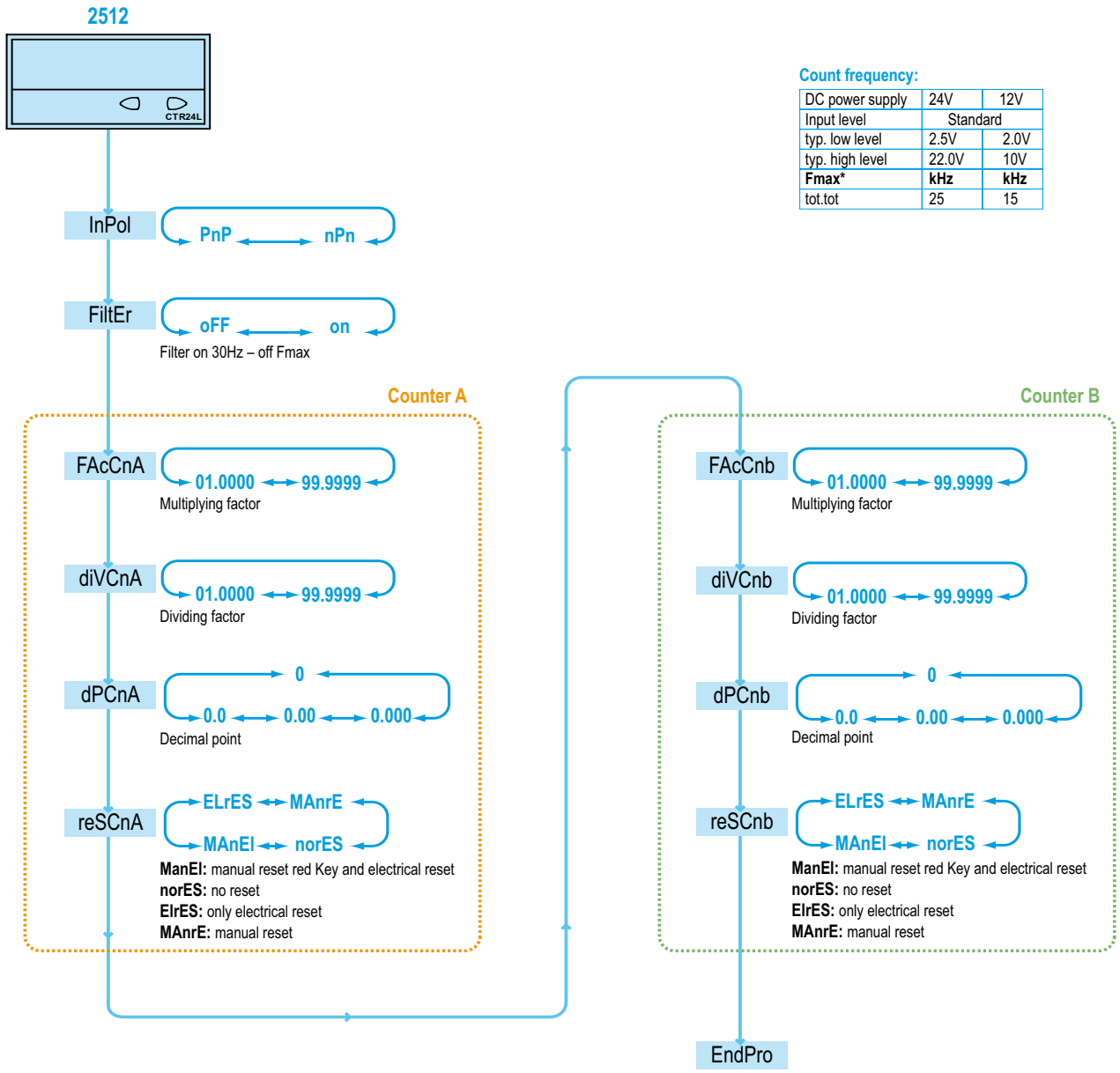

## Connections




1 Supply: 10 → 30 V⎓
2 Supply: GND (0 V⎓)
3 INPA
4 INPB
5 SET/RESET

## Applications

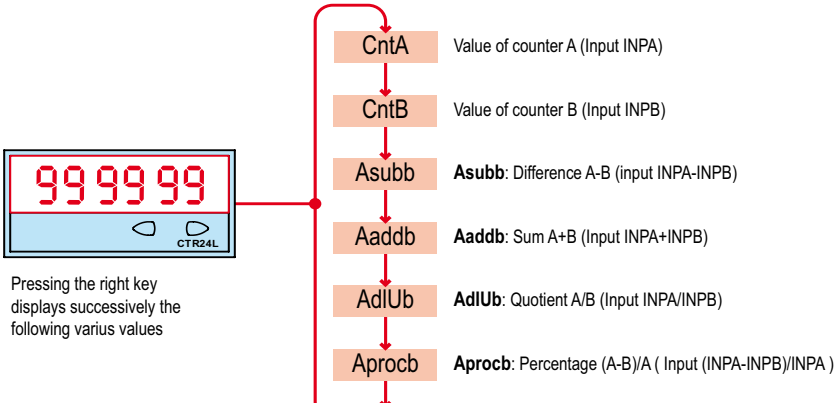
**Programming diagram**




**Count frequency:**

| DC power supply | 24V | 12V |
|---|---|---|
| Input level | Standard | |
| typ. low level | 2.5V | 2.0V |
| typ. high level | 22.0V | 10V |
| **Fmax*** | **kHz** | **kHz** |
| tot.tot | 25 | 15 |

SELECTION OF THE DISPLAYED VALUE



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# Electronic multifunction counters without preselection

## ➜ Multifunction counter combining a totalizer and tachometer - LED 24 x 48 - CTR24L

- **High brightness display: 6-digit LED, height 8 mm**
- **Maximum input frequency 30 k Hz**
- **Combined function: Position indicator counter and Tachometer**
- **Reset on panel**
- **Supply: 10 → 30 V⎓**
- **Easy to program**
- **Scaling factor (Counter - Tachometer)**
- **Decimal point (Counter - Tachometer)**
- **Accessories for 50 x 25 mm cut-out**

## Part numbers

| Type | Functions | Code |
|---|---|---|
| CTR24L - 2513 | Combined: Counter and Tachometer | **87623572** |

## Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

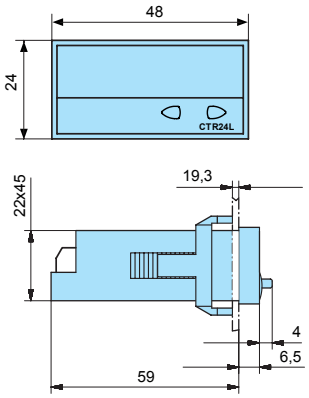
## General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | 10 → 30 V⎓ max 55 mA with protection against polarity reversal |
| Connection by 5 screw terminals at rear of casing | ✓ |
| Terminal capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Data memory | EEPROM |
| Temperature limits use (°C) | -20 → +55 |
| Temperature limits stored (°C) | -25 → +70 |
| Breakdown voltage | According to EN 61010-1: 2000 V / 50 Hz / 1 min |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Functions | Impulse counter and Tachometer |
| Display | 6-digit LED |
| Height digits (mm) | 8 |
| **Input characteristics** | |
| Inputs | 2 counter inputs, 1 tachometer input, 1 reset input |
| Low level | 0 → 0.2 x Ub V⎓ |
| High level | 0.6 x Ub → 30 V⎓ |
| Cyclical ratio | Any (maximum frequency given for a cyclical ratio = 1/1)<br>Schmitt trigger input |
| Polarity | NPN or PNP for all inputs (programming) |
| Minimum impulse duration for reset | 5 ms |
| Frequency of filtered input | Filter active: 30 Hz<br>Filter disabled: maximum frequency (programming) |
| Input impedance (kΩ) | Appr. 5 |
| **Impulse counter** | |
| Display details | - 19 999 → 999 999 |
| Elimination of non-significant zeros | ✓ |
| Counting input modes | Cnt.Dir → Counter input INPA and counter direction input INPB<br>Up.dn → INPA INPB differential counting<br>Up.up → Sum of INPA + INPB<br>QuAd → Phase discriminator<br>QuAd2 → Phase discriminator with doubling of impulses<br>QuAd4 → Phase discriminator with quadrupling of impulses |
| Inputs INPA / INPB | Dynamic |
| Reset to zero - Panel | If not locked during programming |

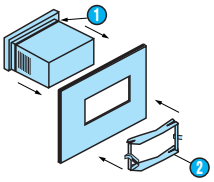
| | |
|---|---|
| Scale factor | 1 → 99.9999 |
| Scaling factor | 1 → 99.9999 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | Combined Counter + Tachometer functions:<br>CntDir → 30 kHz<br>UpDown → 10 kHz<br>UpUp → 10 kHz<br>Quad1 → 15 kHz<br>Quad2 → 15 kHz<br>Quad4 → 10 kHz |
| **Tachometer** | |
| Display details | 0 → 999 999 |
| Elimination of non-significant zeros | ✓ |
| Conversion time | 1/s or 1/min |
| Input INPC | Dynamic |
| Accuracy | < 0.1% |
| Measurement principle | < 38 Hz: measurement of period duration<br>> 38 Hz: measurement with duration time base = 26.3 ms |
| Scale factor | 1 → 99.9999 |
| Scaling factor | 1 → 99.9999 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | 30 kHz |

## Dimensions (mm)

**CTR24L - 2513**

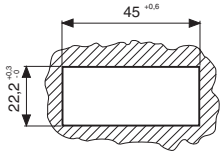



**Fixing strip with clip-on yoke**

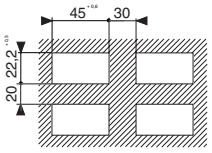



1 Seal
2 Fixing yoke

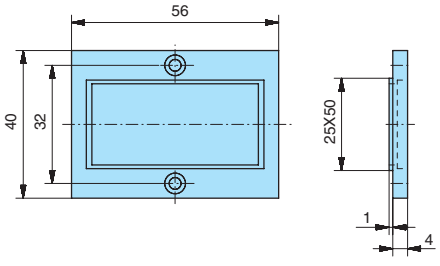
**Panel cut-out**



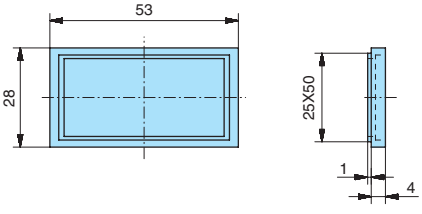

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

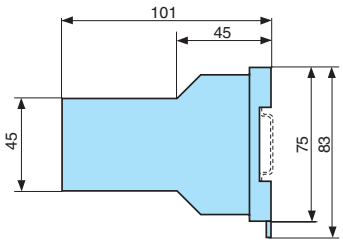


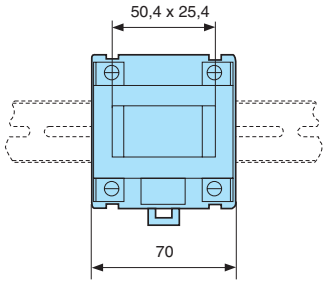

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**



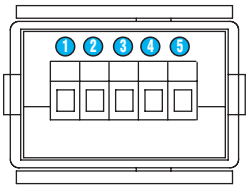

Accessory supplied with the counter

**26546840 - DIN rail adaptor**



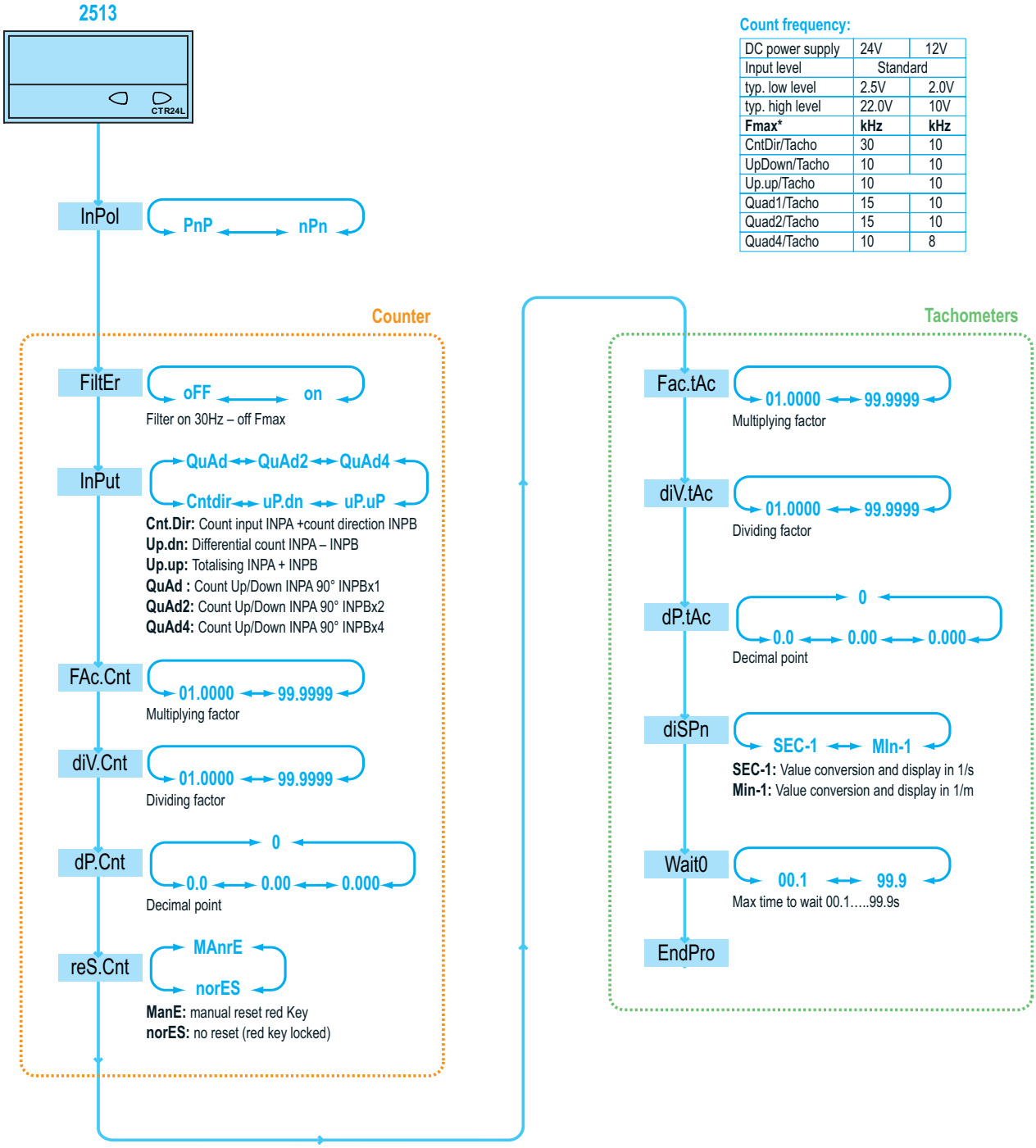

## Connections




1. Supply: 10 → 30 V⎓
2. Supply: GND (0 V⎓)
3. INPA (Counter)
4. INPB (Counter)
5. INPC (Tachometer)

## Applications

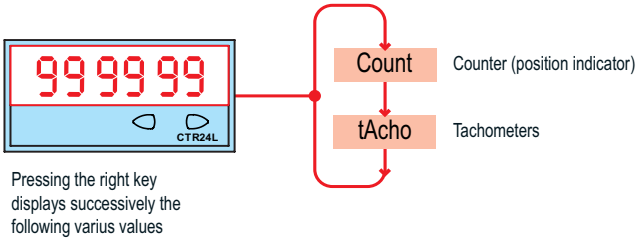
**Programming diagram**




**Count frequency:**

| DC power supply | 24V | 12V |
|---|---|---|
| Input level | Standard | |
| typ. low level | 2.5V | 2.0V |
| typ. high level | 22.0V | 10V |
| **Fmax*** | **kHz** | **kHz** |
| CntDir/Tacho | 30 | 10 |
| UpDown/Tacho | 10 | 10 |
| Up.up/Tacho | 10 | 10 |
| Quad1/Tacho | 15 | 10 |
| Quad2/Tacho | 15 | 10 |
| Quad4/Tacho | 10 | 8 |

SELECTION OF THE DISPLAYED VALUE




Pressing the right key displays successively the following varius values

# Electronic multifunction counters without preselection

## ➜ Multifunction counter with 2 totalizers (total and partial function) with common input - LED 24 x 48 - CTR24L

- **High brightness display: 6-digit LED, height 8 mm**
- **Maximum input frequency 50 k Hz**
- **Counter with 2 separate totalizers and a common input (INPA)**
- **Reset on panel or external with inhibition option**
- **Supply: 10 → 30 V⎓**
- **Easy to program**
- **Scaling factor**
- **Decimal point**
- **Accessories for 50 x 25 mm cut-out**

## Part numbers

| Type | Functions | Code |
|---|---|---|
| CTR24L - 2514 | Counter with 2 separate totalizers and a common input | **87623573** |

## Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

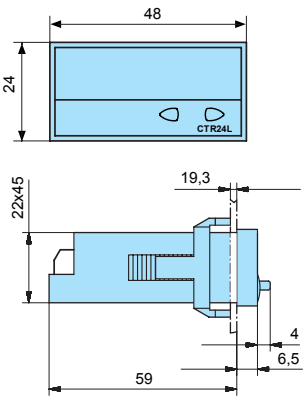
## General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | 10 → 30 V⎓ max 55 mA with protection against polarity reversal |
| Connection by 5 screw terminals at rear of casing | ✓ |
| Terminal capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Data memory | EEPROM |
| Temperature limits use (°C) | -20 → +55 |
| Temperature limits stored (°C) | -25 → +70 |
| Breakdown voltage | According to EN 61010-1: 2000 V / 50 Hz / 1 min |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Functions | Counter with 2 separate totalizers and a common input |
| Display | 6-digit LED |
| Height digits (mm) | 8 |
| **Input characteristics** | |
| Inputs | 1 counter input (INPA), 1 reset input |
| Low level | 0 → 0.2 x Ub V⎓ |
| High level | 0.6 x Ub → 30 V⎓ |
| Cyclical ratio | Any (maximum frequency given for a cyclical ratio = 1/1)<br>Schmitt trigger input |
| Polarity | NPN or PNP for all inputs (programming) |
| Minimum impulse duration for reset | 5 ms |
| Frequency of filtered input | Filter active: 30 Hz<br>Filter disabled: maximum frequency (programming) |
| Input impedance (kΩ) | Appr. 5 |
| **Impulse counter (Partial - Totalizer)** | |
| Display details | 0 → 999 999 |
| Display | When the buttons are pressed, the counter displays the following values:<br>Total 1<br>Total 2 |
| Elimination of non-significant zeros | ✓ |
| Counting input mode | INPA input counting |
| Input INPA | Dynamic |
| Reset input (terminal 5) | Dynamic Reset input connected in parallel with the red SET/RESET button |

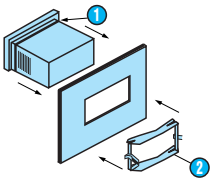
| | |
|---|---|
| Reset to zero - Panel | If not locked during programming |
| Remise à zéro - Externe (borne 5) | If not locked during programming |
| Scale factor | 1 → 99.9999 (separate for A and B) |
| Scaling factor | 1 → 99.9999 (separate for A and B) |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | 50 k Hz |

## Dimensions (mm)

**CTR24L - 2514**

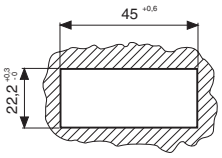



**Fixing strip with clip-on yoke**

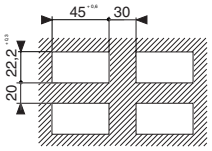



1 Seal
2 Fixing yoke

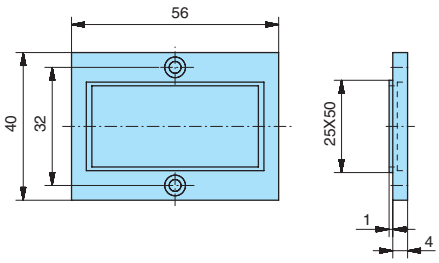
**Panel cut-out**



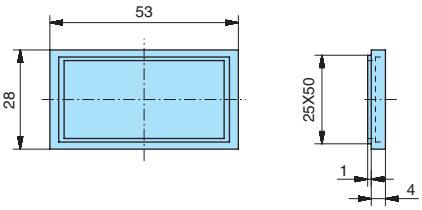

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

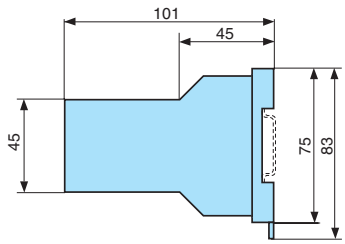


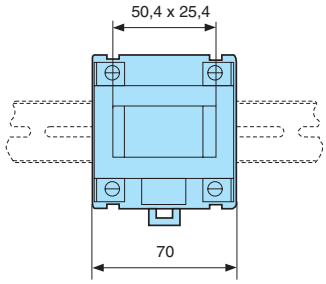

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**



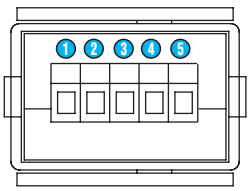

Accessory supplied with the counter

**26546840 - DIN rail adaptor**



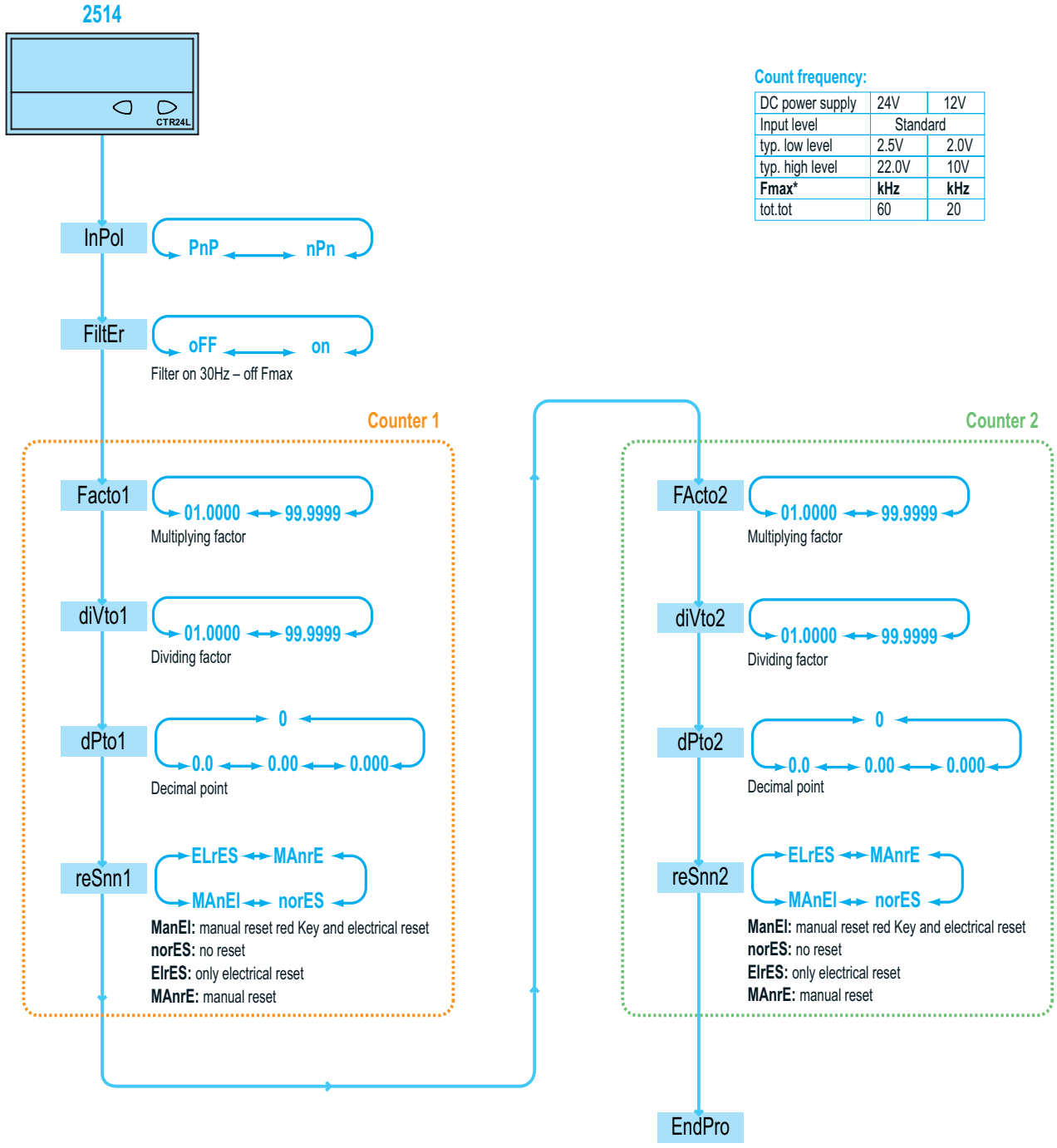

## Connections




1 Supply: 10 → 30 V⎓
2 Supply: GND (0 V⎓)
3 INPA
4 NC
5 SET/RESET

## Applications

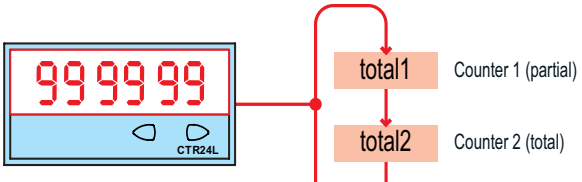
**Programming diagram**




**Count frequency:**

| | | |
|---|---|---|
| DC power supply | 24V | 12V |
| Input level | Standard | |
| typ. low level | 2.5V | 2.0V |
| typ. high level | 22.0V | 10V |
| **Fmax*** | **kHz** | **kHz** |
| tot.tot | 60 | 20 |

SELECTION OF THE DISPLAYED VALUE




Pressing the right key displays successively the following varius values

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- A **dynamic R&D** department.

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# Electronic multifunction counters without preselection

## ➜ "DUO" multifunction counter - LED 24 x 48 - CTR24L

- **High brightness display: 6-digit LED, height 8 mm**
- **Maximum input frequency 50 kHz (in tot.tot function)**
- **Programmable dual functions: Counter + Tachometer/ Counter + Counter/Counter + Chronometer/ Chronometer + Chronometer**
- **Reset on panel or external with inhibition option**
- **Supply: 10 → 30 V⎓**
- **Easy to program**
- **Scaling factor (Counter - Tachometer)**
- **Decimal point (Counter - Tachometer - Chronometer)**
- **Timing range 0.001 s → 999.999 hrs (Chronometer)**
- **Impulses or time measured in hrs/min/sec and in real time (Chronometer)**
- **Accessories for 50 x 25 mm cut-out**

### Part numbers

| Type | Functions | Code |
|---|---|---|
| CTR24L - 2515 | DUO counter: Counter + Tachometer/Counter + Counter/Counter + Chronometer/Chronometer + Chronometer | **87623574** |

### Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

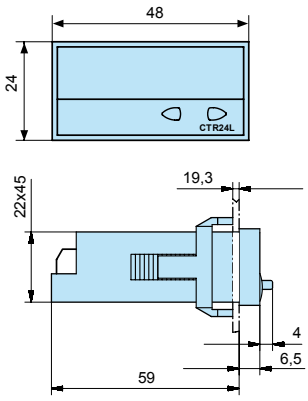
### General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | 10 → 30 V⎓ max 55 mA with protection against polarity reversal |
| Connection by 5 screw terminals at rear of casing | ✓ |
| Connection capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Data memory | EEPROM |
| Temperature limits use (°C) | -20 → +55 |
| Temperature limits stored (°C) | -25 → +70 |
| Breakdown voltage | According to EN 61010-1: 2000 V / 50 Hz / 1 min |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Functions | Counter + Tachometer/Counter + Counter/Counter + Chronometer/ Chronometer + Chronometer |
| Display | 6-digit LED |
| Height digits (mm) | 8 |
| **Input characteristics** | |
| Inputs | 2 counter inputs, 1 reset input |
| Low level | 0 → 0.2 x Ub V⎓ |
| High level | 0.6 x Ub → 30 V⎓ |
| Cyclical ratio | Any (maximum frequency given for a cyclical ratio = 1/1) Schmitt trigger input |
| Polarity | NPN or PNP for all inputs (programming) |
| Minimum impulse duration for reset | 5 ms |
| Frequency of filtered input | Filter active: 30 Hz<br>Filter disabled: maximum frequency (programming) |
| Input impedance (kΩ) | Appr. 5 |
| **Impulse counter** | |
| Display details | 0 → 999 999 |
| Elimination of non-significant zeros | ✓ |
| Counting input modes | INPA input counting |
| Input INPA | Dynamic (uses the same INPA input as the counter) |

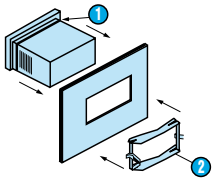
| | |
|---|---|
| Reset input (terminal 5) | Dynamic Reset input connected in parallel with the red SET/RESET button<br>Sets the counter to the defined preset value |
| Reset to zero - Panel | If not locked during programming |
| Reset to zero - External (terminal 5) | If not locked during programming |
| Scale factor | 1 → 99.9999 |
| Scaling factor | 1 → 99.9999 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | 50 kHz |
| **Tachometer** | |
| Display details | 0 → 999 999 |
| Elimination of non-significant zeros | ✓ |
| Conversion time | 1/s or 1/min |
| Input INPA | Dynamic (uses the same INPA input as the counter) |
| Accuracy | < 38 Hz: measurement of period duration<br>> 38 Hz: measurement of duration time base = 26.3 ms |
| Measurement principle | < 0.1% |
| Scale factor | 1 → 99.9999 |
| Scaling factor | 1 → 99.9999 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Maximum counting frequency | 35 kHz |
| **Chronometer** | |
| Display details | 0.001 s → 999 999 h |
| Elimination of non-significant zeros | ✓ |
| Functions | In tot.tr function:<br>GatE.Lo → Time measurement if INPB is not active<br>GatE.hi → Time measurement if INPB is active<br>Inb.Inb → Time measurement on/off via the INPB edge<br>In tr.tr function:<br>IGatE.Lo → Time measurement if INPB is not active<br>GatE.hi → Time measurement if INPB is active<br>Inb.Inb → Time measurement on/off via the INPB edge<br>InA.Inb → Measurement on via the INPA edge, measurement off via the INPB edge |
| Input INPA | Start/Stop or Gate (depends on the input mode chosen) |
| Input INPB | Start/Stop or Gate (depends on the input mode chosen) |
| Reset input (terminal 5) | Dynamic Reset input connected in parallel with the red SET/RESET button<br>Sets the counter to the defined preset value |
| Rest to zero - External (terminal 5) | If not locked during programming |
| Reset to zero - Panel | If not locked during programming |
| Accuracy | < 50 |
| Decimal point | 0<br>0.0<br>0.00<br>0.000 |
| Time ranges | 0.001 s → 999 999 s<br>0.001 min → 99 999 min<br>0.001 h → 999 999 h<br>00 h 00 min 01 s → 99 h 59 min 59 s |
| Maximum counting frequency | 40 kHz |

## Dimensions (mm)

**CTR24L - 2515**

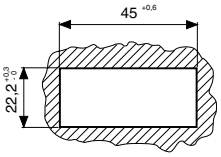



**Fixing strip with clip-on yoke**

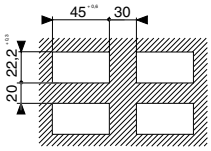



1 Seal
2 Fixing yoke

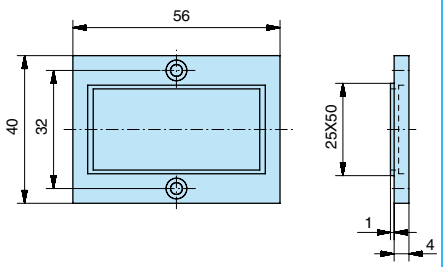
**Panel cut-out**



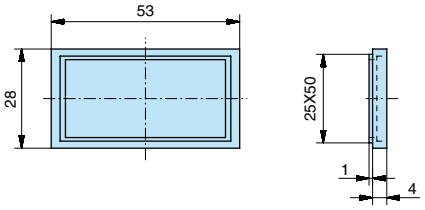

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

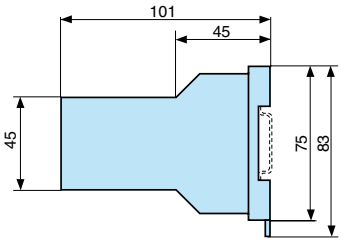


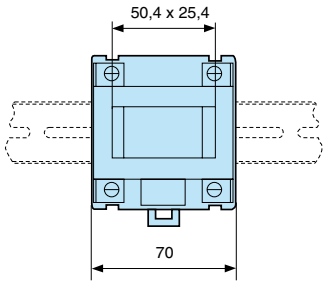

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**



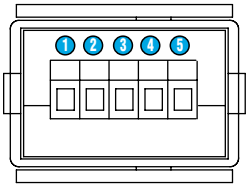

Accessory supplied with the counter

**26546840 - DIN rail adaptor**



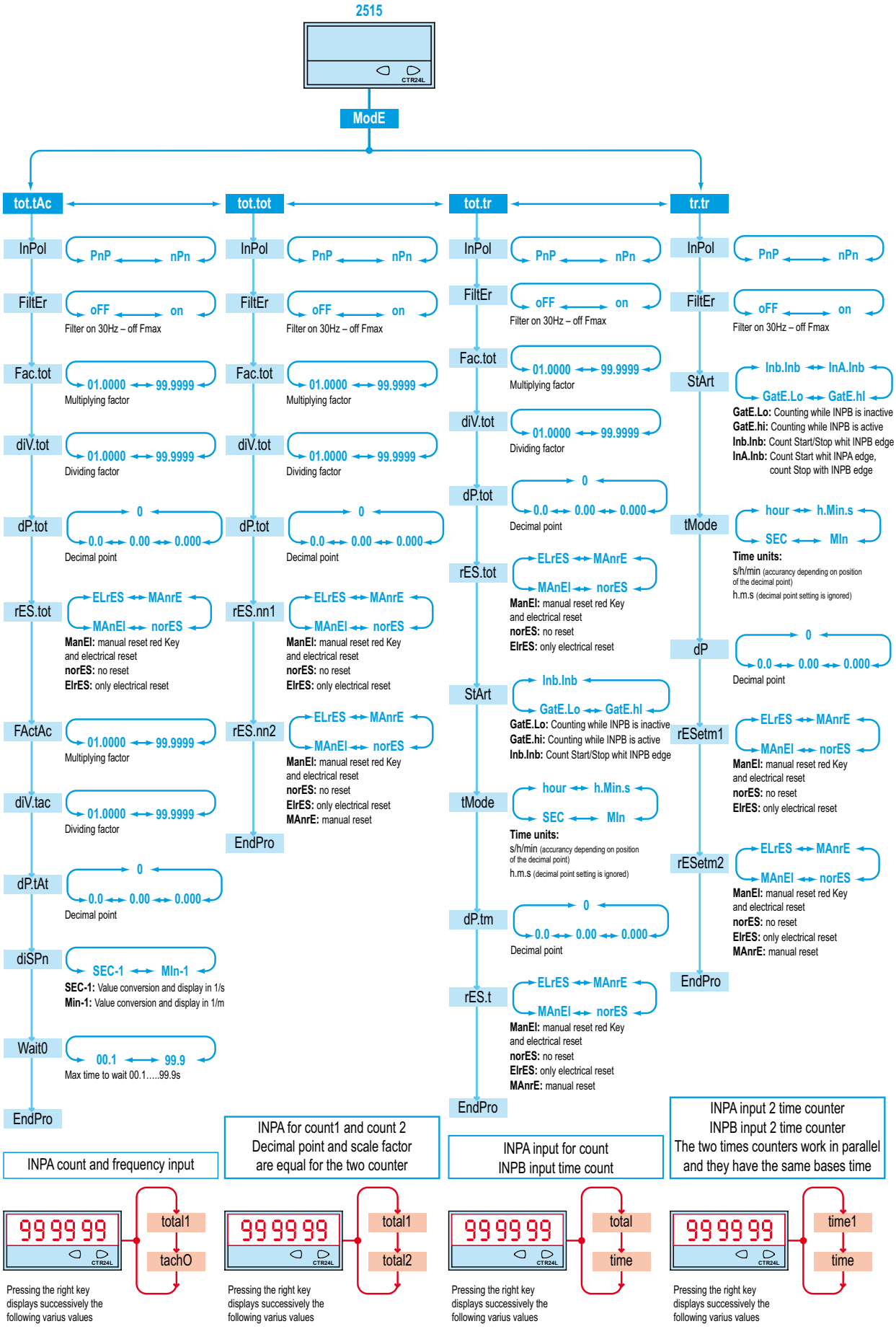




## Connections




1 Supply: 10 → 30 V⎓
2 Supply: GND (0 V⎓)
3 INPA
4 INPB
5 SET/RESET

**Programming diagram**



# Electronic counters without preselection

## ➜ Hour counters without preselection - LCD 24 x 48 - CTR24

- **Display: 8 digits LCD, 8 mm height**
- **Built-in module for voltage inputs 10 → 260 V~ (2224-2324)**
- **4 timing ranges: 99.999.99 hrs - 99.999.59 hrs - 999.999.9 s - 9.999 hrs 59 min 59 s**
- **Powered by a lithium battery, service life 8 years**
- **Reset on panel or external with inhibition option**
- **Backlit model (2323-2333-2324)**
- **Accessories for 50 x 25 mm cut-out**

### Part numbers

| Type | Type | Functions | Code |
|---|---|---|---|
| CTR24 non-backlit model | 2223 | Hour counter, solid state input PNP | **87622161** |
| | 2233 | Hour counter, solid state input NPN | **87622162** |
| | 2224 | Hour counter, voltage input | **87622170** |
| CTR24 model with orange backlighting | 2323 | Hour counter, solid state input PNP | **87622181** |
| | 2333 | Hour counter, solid state input NPN | **87622182** |
| | 2324 | Hour counter, voltage input | **87622190** |

### Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

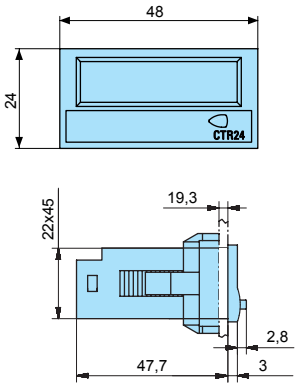
### General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | Backlighting: 24 V⎓ ± 20% 50 mA |
| Connection by 8 screw terminals at rear of casing | ✓ |
| Connection capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Temperature limits use (°C) | -10 → +60 |
| Temperature limits stored (°C) | -20 → +70 |
| Breakdown voltage | According to EN 610110-1: 2000 V / 50 Hz / 1 min. |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Function | Hour counter |
| Display | 8-digit LCD |
| Height digits (mm) | 8 |
| Time ranges | 0 → 99 999.99 h<br>0 → 99 999.59 h<br>0 → 9 999 999.9 s<br>0 → 9 999 h 59 min 59 s |
| Time base: Crystal controlled (Accuracy ± 100) | ✓ |
| **Input 2223-2323** | |
| One start/stop input by volt-free contact or NPN/PNP open-collector transistor (terminals 2-6) | ✓ |
| Low level | 0 → 0.7 V⎓ |
| High level | 4 → 30 V⎓ PNP |
| Min time closed | > 100 ms |
| Input impedance | 100 kΩ PNP |
| **Input 2233-2333** | |
| One start/stop input by volt-free contact or NPN/PNP open-collector transistor (terminals 2-6) | ✓ |
| Low level | 0 → 0.7 V⎓ |
| High level | 3 → 30 V⎓ |
| Minimum time closed | > 100 ms |
| Input impedance | 1 MΩ |

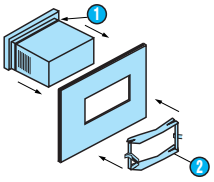
| | |
|---|---|
| **Reset - External 2223-2323 & 2233-2333** | |
| Volt-free contact or open collector (terminals 3-6) | ✓ |
| Minimum time closed | 50 ms |
| **Input 2224-2324** | |
| One start/stop input Two voltage levels (terminals 3-6) | ✓ |
| Voltage - Terminals 1-2 | 10 → 260 V~ |
| Input impedance | 160 KΩ |
| Minimum pulse time ⎓ | 100 ms |
| Minimum pulse time ~ | 100 ms |
| Low level | 0 → 2 V~ |
| High level | 10 → 260 V~ |
| **Reset - External 2224-2324** | |
| Voltage - Terminals 2-3 | ✓ |
| Minimum pulse time | 16 ms |
| Low level | 0 → 2 V~ |
| High level | 10 → 260 V~ |
| **Reset to zero - Panel** | |
| Reset via | Inhibited: Terminals 4-6 not connected<br>Active: Terminals 4-6 connected |
| **Supply** | |
| 1 lithium battery - Life (years) | 8 |

## Dimensions (mm)

**CTR24**

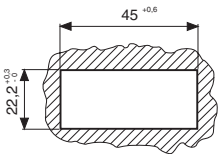



**Fixing strip with clip-on yoke**

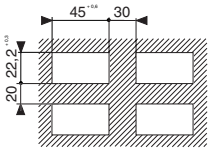



1 Seal
2 Fixing yoke

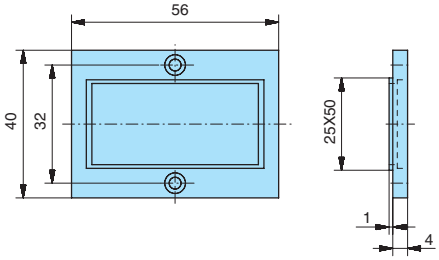
**Panel cut-out**



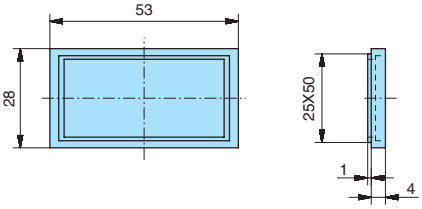

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

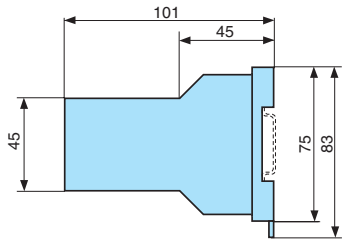


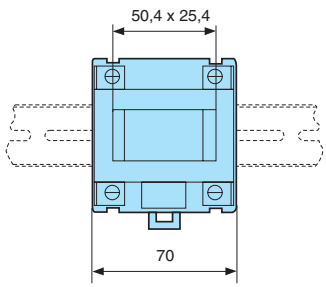

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**




Accessory supplied with the counter

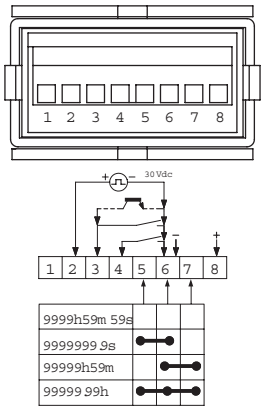
**26546840 - DIN rail adaptor**



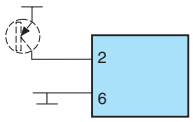
## Connections

**2223-2323**



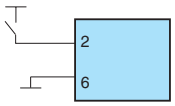

1. NC
2. Start/Stop input
3. Reset input 100 ms
4. Enable panel reset
5. Mode 1 (Time selection)
6. 0 V common/ (BL- only 23xx)
7. Mode 2 (Time selection)
8. Backlighting option + 24 V⎓ (only 2323)

**2223-2323**



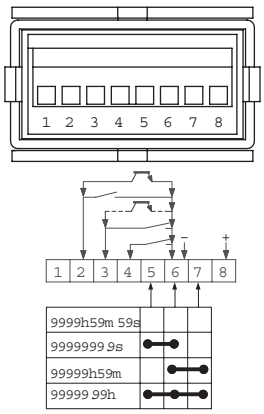

Start/Stop input
Transistor PNP

**2223-2323**



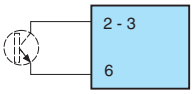

Start/Stop input PNP

**2233-2333**



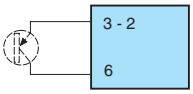

1. NC
2. Start/Stop input
3. Reset input 100 ms
4. Enable panel reset
5. Mode 1 (Time selection)
6. 0 V common/ (BL- only 23xx)
7. Mode 2 (Time selection)
8. Backlighting option + (only 2333)

**2233-2333**



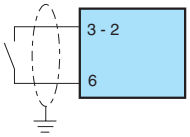

Start/Stop or reset input NPN - Transistor

**2233-2333**



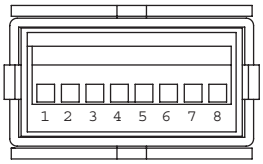

Start/Stop or reset input PNP - Transistor

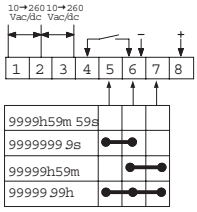
**2233-2333**




Start/Stop or reset input NPN - Transistor

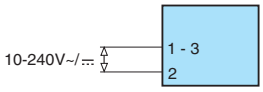
**2234-2324**



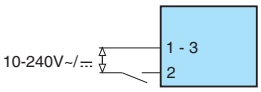

1. Start/Stop input
2. AC/DC common
3. Reset input
4. Enable panel reset
5. Mode 1 (Time selection)
6. 0 V common/ (BL- only 23xx)
7. Mode 2 (Time selection)
8. Backlighting option + 24 V⎓ (only 2324)

**2234-2324**



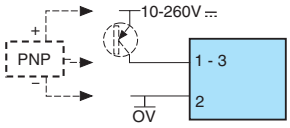

Start/Stop or reset input - Voltage

**2234-2324**



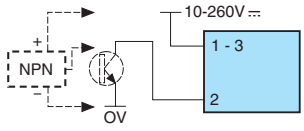

Start/Stop or reset input - Contact supplied with power

**2234-2324**



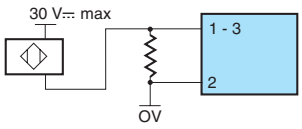

Start/Stop or reset input PNP Transistor or 3-wire PNP proximity sensor for leakage current detector < 1 mA

**2234-2324**



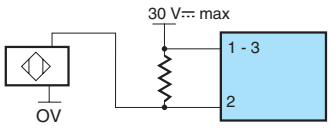

Start/Stop or reset input NPN Transistor or 3-wire NPN proximity sensor for leakage current detector < 1 mA

**2234-2324**




Start/Stop or reset input: 2-wire proximity sensor R=470 Ω/2 W for 2-wire leakage current detector ≤ 1 mA

**2234-2324**




Start/Stop or reset input: 2-wire proximity sensor R=470 Ω/2 W for 2-wire leakage current detector ≤ 1 mA

# Electronic counters without preselection

## ➜ Totalizers without preselection - LCD 24 x 48 - CTR24

- **Display: 8-digit LCD, height 8 mm**
- **Powered by a lithium battery**
- **Counter inputs: solid state (4-30 V⎓) or voltage (10 → 260 V∿)**
- **Reset on panel or external with inhibition option**
- **Backlit model (2341-2351-2342)**
- **Counting directions can be selected with input (2241-2341/2251-2351)**
- **Accessories for 50 x 25 mm cut-out**

### Part numbers

| Type | Type | Functions | Code |
|---|---|---|---|
| CTR24 non-backlit model | 2241 | Solid state input, lithium battery PNP/NPN | **87622061** |
| | 2251 | Solid state input, lithium battery NPN/NPN | **87622062** |
| | 2242 | Voltage input, lithium battery | **87622070** |
| CTR24 model with orange backlighting | 2341 | Solid state input, lithium battery PNP/NPN | **87622081** |
| | 2351 | Solid state input, lithium battery NPN/NPN | **87622082** |
| | 2342 | Voltage input, lithium battery | **87622090** |

### Accessories

| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |
| DIN rail adaptor | **26546840** |
| Clip-fixing kit (supplied with the product) | **26546848** |

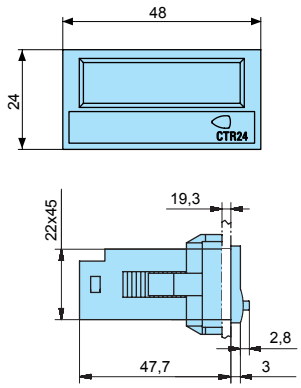
### General characteristics

| | |
|---|---|
| **Environmental characteristics** | |
| Consumption | Backlighting: 24 V⎓ ± 20% 50 mA |
| Connection by 8 screw terminals at rear of casing | ✓ |
| Connection capacity | 1.5 mm² |
| Fixed using bracket | ✓ |
| Degree of protection front face | IP 65 |
| Temperature limits use (°C) | -10 → +60 |
| Temperature limits stored (°C) | -20 → +70 |
| Breakdown voltage | According to EN 61010-1: 2000 V / 50 Hz / 1 min |
| Conformity to standards | EN 61000-6-2 - EN 55011 class B |
| Altitude | 2000 m |
| Certifications | UL - cULus (pending) - CE |
| Weight (g) | 50 |
| **Operating characteristics** | |
| Function | Impulse counter |
| Display | 8-digit LCD |
| Height digits (mm) | 8 |
| Counting capacity | -9.999.999 → 99.999.999 with elimination of zeros |
| **Inputs 2241-2341** | |
| 1 slow counting input for contact closure on NPN open-collector transistor input (terminals 2-6) | ✓ |
| 1 input for high speed counting signal from voltage level (terminals 1-6) | 4 → 30 V⎓ |
| Low level | 0 → 0.7 V⎓ |
| High level | 4 → 30 V⎓ PNP |
| High-speed counting | 12 KHz max.<br>42 µs PNP |
| Input impedance | 100 KΩ PNP |
| **Inputs 2251-2351** | |
| 1 slow counting input for contact closure on NPN open-collector transistor input (terminals 2-6) | ✓ |
| 1 input for high speed counting signal from voltage level (terminals 1-6) | 3 → 30 V⎓ |
| Low level | 0 → 0.7 V⎓ |
| High level | 3 → 30 V⎓ |
| High-speed counting | 7 KHz max.<br>70 µs NPN |
| Input impedance | 1 MΩ |

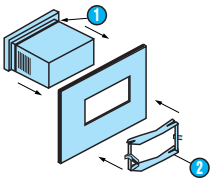
| | |
|---|---|
| **Reset - External 2241-2341 & 2251-2351** | |
| Volt-free contact or open collector (terminals 3-6) | ✓ |
| **Inputs 2242-2342** | |
| 1 input for slow counting 2 voltage levels | ✓ |
| Voltage - Terminals 1-2 | 10 → 260 V~ |
| Input impedance (kΩ) | 160 |
| Slow counting | 30 Hz |
| Minimum pulse time | 16 ms |
| Low level | 0 → 2 V~ |
| High level | 10 → 260 V~ |
| **Reset - External 2242-2342** | |
| Voltage - Terminals 2-3 | ✓ |
| Minimum pulse time | 16 ms |
| Low level | 0 → 2 V~ |
| High level | 10 → 260 V~ |
| **Reset to zero - Panel** | |
| Reset via | Inhibited: Terminals 4-6 not connected<br>Active: Terminals 4-6 connected |
| **Supply** | |
| 1 lithium battery - Life (years) | 8 |

## Dimensions (mm)

**CTR24**

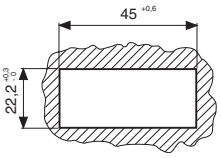



**Fixing strip with clip-on yoke**

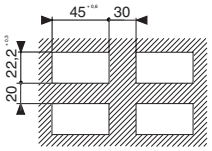



1 Seal
2 Fixing yoke

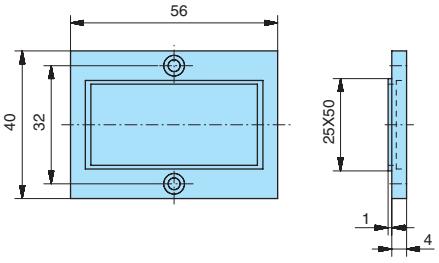
**Panel cut-out**



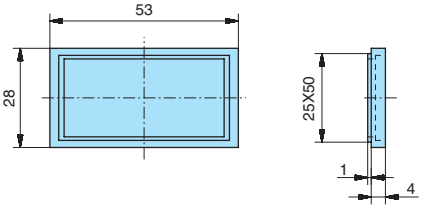

**4 appliances**




**26546843 - Adaptor for 50 x 25 mm cut-out - Fixed with screws**

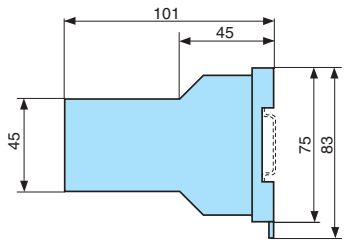


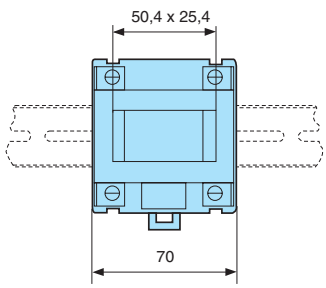

**26546844 - Adaptor for 50 x 25 mm cut-out - Fixed with clips**




Accessory supplied with the counter

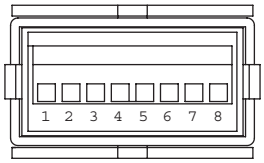
**26546840 - DIN rail adaptor**

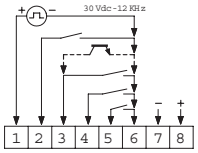


## Connections

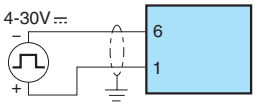
### 2241-2341



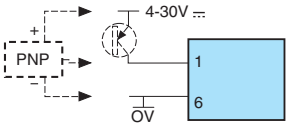

1. Fast count
2. Slow count
3. Reset input 12 ms
4. Enable panel reset
5. Mode count direction
6. 0 V common/ (BL- only 23xx)
7. Backlighting option (only 2341)
8. Backlighting option + 24 V⎓ (only 2341)

### 2241-2341



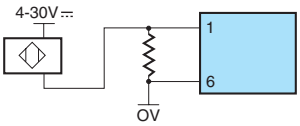

PNP fast count input - Voltage

### 2241-2341



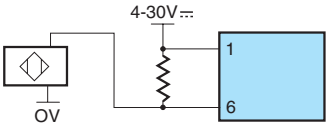

PNP fast count input Transistor or 3-wire PNP proximity sensor (for leakage current detector ≤ 1 mA)

### 2241-2341



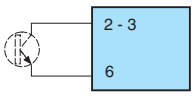

2-wire proximity sensor fast count input

### 2241-2341



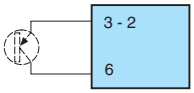

2-wire proximity sensor fast count input

### 2241-2341



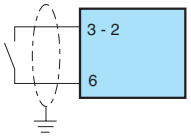

Slow count input (2) or reset input (3)

### 2241-2341



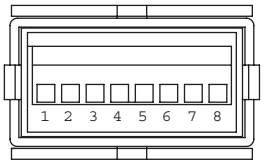

Slow count input (2) or reset input (3)

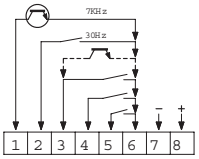
### 2241-2341




Slow count input (2) or reset input (3) - Contact not supplied with power

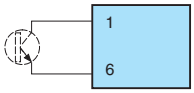
### 2251-2351



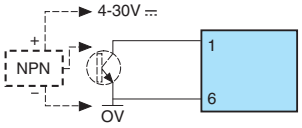

1. Fast count
2. Slow count
3. Reset input 12 ms
4. Enable panel reset
5. Mode count direction
6. 0 V common/ (BL- only 23xx)
7. Backlighting option + (only 2351)
8. Backlighting option + 24 V⎓ (only 2351)

**2251-2351**



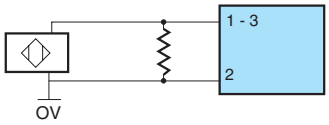

Fast count input NPN - Voltage

**2251-2351**



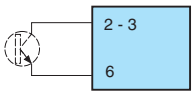

Fast count input NPN Transistor or 3-wire PNP proximity sensor (for leakage current detector ≤ 1 mA)

**2251-2351**



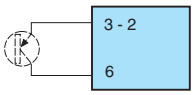

2-wire proximity sensor fast count input

**2251-2351**



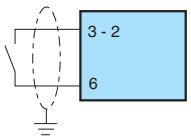

Slow count input (2) or reset input (3)

**2251-2351**



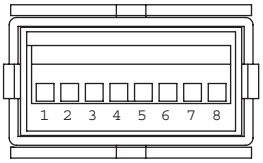

Slow count input (2) or reset input (3)

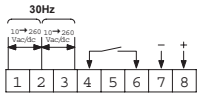
**2251-2351**




Slow count input (2) or reset input (3)
Contact not supplied with power

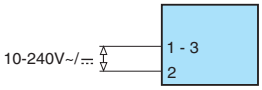
**2242-2342**



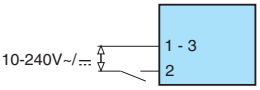

1. Fast count
2. AC/DC common
3. Reset input 12 ms
4. Enable panel reset
5. count direction
6. 0 V common/ (BL- only 23xx)
7. Backlighting option - (only 2342)
8. Backlighting option + 24 V⎓ (only 2342)

**2242-2342**



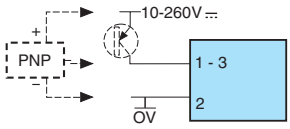

Counter or reset input - Voltage

**2242-2342**



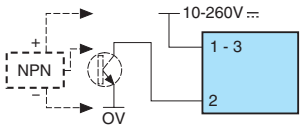

Counter or reset input -
Contact supplied with power

**2242-2342**



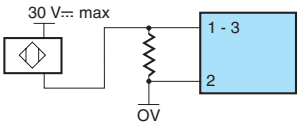

Counter or reset input PNP Transistor or 3-wire PNP proximity sensor (for leakage current detector < 1 mA)

**2242-2342**




Counter or reset input NPN Transistor or 3-wire PNP proximity sensor (for leakage current detector < 1 mA)

**2242-2342**




Start/Stop or reset input: 2-wire proximity sensor R=470 Ω/2 W for 2-wire leakage current detector ≤ 1 mA

# Electromechanical hour counters

## ➜ Hour counters 48 X 48 - CHM48

- **AC: capacity 100.000 hrs (99.999.99 hrs)**
- **DC: capacity 1.000.000 hrs (999.999.99 hrs)**
- **Operation indicator**
- **Panel mounted**
- **DIN rail mounted with connector base (accessory part number: 26546845)**
- **IP52**
- **Highly resistant to shocks and impacts**
- **Excellent visibility due to the large digit size**

### Part numbers

| Type | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|
| CHM48 | 50 | 20 → 30 V~ | **99772710** |
| | 50 | 42 → 48 V~ | **99772711** |
| | 50 | 100 → 130 V~ | **99772712** |
| | 50 | 360 → 440 V~ | **99772713** |
| | 50 | 187 → 264 V~ | **99772714** |
| | 60 | 100 → 130 V~ | **99772715** |
| | 60 | 187 → 264 V~ | **99772716** |
| | 60 | 360 → 440 V~ | **99772717** |
| | 60 | 20 → 30 V~ | **99772718** |
| | 60 | 42 → 48 V~ | **99772719** |
| | ⎓ | 10 → 30 V⎓ | **99772810** |
| | ⎓ | 36 → 80 V⎓ | **99772811** |
| | ⎓ | 100 → 130 V⎓ | **99772812** |

### Accessories

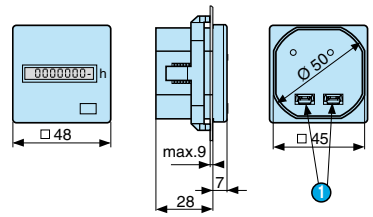
| Description | Code |
|---|---|
| Adaptor for 72 x 72 mm cut-out | **26546842** |
| Adaptor for 55 x 55 mm cut-out | **26546846** |
| DIN rail adaptor | **26546845** |

### General characteristics

| General characteristics | |
|---|---|
| Counting capacity | V~ : 99 999.99<br>V⎓ : 999.999.99 |
| Reset to zero | Not included |
| Read accuracy | 1/100 h |
| Height digits (mm) | 4 |
| Colour of hour numbers | White on a black background |
| Colour of decimal digits | Red on a black background |
| Accuracy | V~ : frequency + 30 ms<br>V⎓ : < 0.003% (24 hrs) |
| Counting input mode | Addition |
| Operation indicator | V~ : rotating red lines<br>V⎓ : 1/100 hr 1 digit in 36 s |
| Degree of protection front face | IP52 |
| Mounting | Any |
| Temperature limits use (°C) | -15 → +50 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | UL (pending) |
| Connections (panel mounted version) | Screw terminals - 6.35 mm Faston connectors |
| Connections (DIN rail mounted version) | Screw terminals with accessory 26 546 845 |
| Connection capacity | 2.5 $mm^2$ |
| Consumption | V⎓ : 10 → 30 approx. 500 mW/100 → 130 approx. 750 mW/<br>V~ 50 Hz: 20 → 30 approx. 0.3 VA/42 → 48 approx. 0.25 VA/100 → 130 approx. 0.6 VA/187 → 264 approx. 1.2 VA/360 → 440 approx. 1.65 VA |
| Vibration resistance | 50 $m/s^2$ (10-500 Hz) IEC 68-2-6 |
| Test voltage for AC models | 2 000 V~ 50 Hz |
| Weight (g) | 50 |

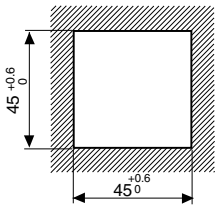
## Dimensions (mm)

### Panel mounted

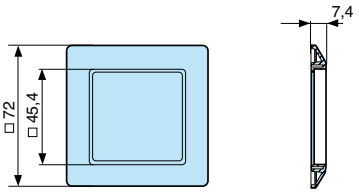



1 Screw terminals

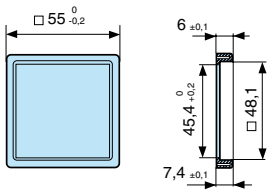
### Panel cut-out



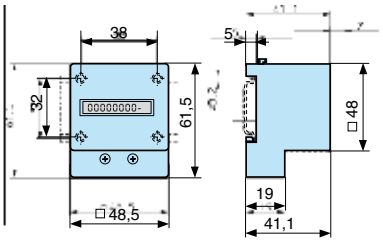

### 26546842 - Adaptor for 72 x 72 mm cut-out




### 26546846 - Adaptor for 55 x 55 mm cut-out




### 26546845 - DIN rail mounted



# Electromechanical hour counters

## ➜ Hour counters 24 X 48 - CHM24

- **V∼ : capacity 100.000 hrs (99.999.99 hrs)**
- **V⎓ : capacity 1.000.000 hrs (999.999.99 hrs)**
- **Operation indicator**
- **Panel mounted**
- **IP65 (with accessory 26546847)**
- **Highly resistant to shocks and impacts**
- **Compact size**
- **Excellent visibility due to the large digit size**

### Part numbers

| Type | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|
| CHM24 | 50 | 20 → 30 V∼ | **99782710** |
| | 50 | 100 → 130 V∼ | **99782712** |
| | 50 | 187 → 264 V∼ | **99782714** |
| | 60 | 100 → 130 V∼ | **99782715** |
| | 60 | 187 → 264 V∼ | **99782716** |
| | 60 | 20 → 30 V∼ | **99782718** |
| | ⎓ | 10 → 30 V⎓ | **99782810** |

### Accessories

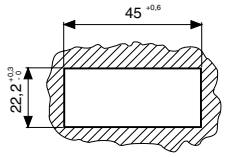
| Description | Code |
|---|---|
| Set of seals | **26546847** |
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips | **26546844** |

### General characteristics

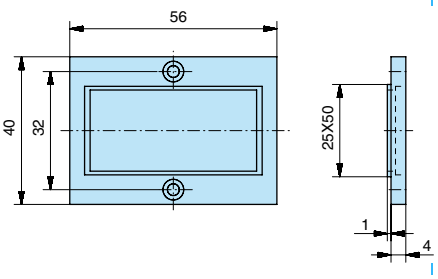
| General characteristics | |
|---|---|
| Counting capacity | V∼ : 99.999.99<br>V⎓ : 999.999.99 |
| Reset to zero | Not included |
| Read accuracy | 1/100 h |
| Height digits (mm) | 4 |
| Colour of hour numbers | White on a black background |
| Colour of decimal digits | Red on a black background |
| Accuracy | V∼ : frequency + 30 ms<br>V⎓ : < 0.003% (24 hrs) |
| Counting input mode | Addition |
| Operation indicator | V∼ : rotating red lines/DC: 1/100 hr 1 digit in 36 s |
| Protection rating | IP52 or IP65 with accessory (26546847) |
| Mounting position | Any |
| Temperature limits use (°C) | -10 → +50 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | CE - UL (pending) |
| Connections (panel mounted version) | Screw terminals - 6.35 mm Faston connectors |
| Tightening torque (Nm) | 0.8 |
| Connection capacity | 2.5 $mm^2$ |
| Consumption | V⎓ : 10 → 30 approx. 500 mW/100 → 130 approx. 750 mW/<br>V∼ 50 Hz: 20 → 30 approx. 0.3 VA/100 → 130 approx. 0.6 VA/187 → 264 approx. 1.2 VA |
| Vibration resistance | 50 $m/s^2$ (10-500Hz) IEC 68-2-6 |
| Test voltage for AC models | 2 000 V∼ 50 Hz |
| Weight (g) | 50 |

## Dimensions (mm)

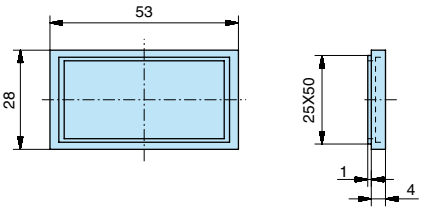
**Panel cut-out**



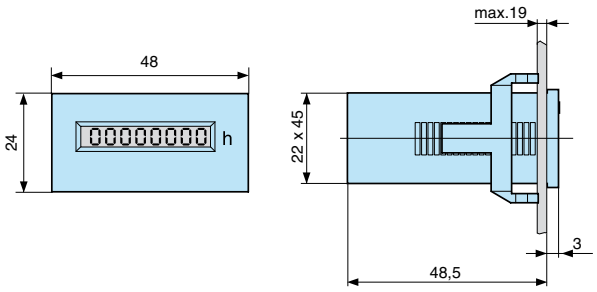

**26546843 - Adaptor for cut-out**




**26546844 - Adaptor for cut-out**




**CHM24**



# Electromechanical hour counters

## ➜ Hour counters 15 X 32 - CHM15

- **Capacity 100.000 hrs (99.999.99 hrs)**
- **Wide range of voltages: 4.5 → 35 V⎓**
- **Panel mounted**
- **IP65**
- **Highly resistant to shocks and impacts**
- **Compact size**
- **Excellent visibility thanks to the large digit size**

## Part numbers

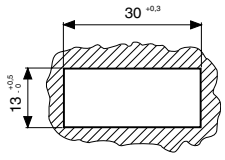
| Type | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|
| CHM15 | ⎓ | 4.5 → 35 V⎓ | **99792810** |

## General characteristics

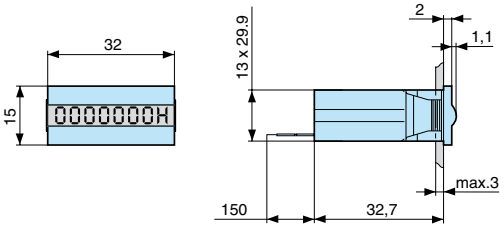
| General characteristics | |
|---|---|
| Counting capacity | 99.999.99 |
| Reset to zero | Not included |
| Read accuracy | 1/100 h |
| Height digits (mm) | 4 |
| Colour of hour numbers | White on a black background |
| Colour of decimal digits | Red on a black background |
| Accuracy | V⎓ : < 0.003% (24 hrs, 25°C) |
| Counting input mode | Addition |
| Degree of protection front face | IP65 |
| Mounting position | Horizontal readout of digits |
| Temperature limits use (°C) | -10 → +60 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | CE - UL (pending) |
| Connections (panel mounted version) | Flying leads: 150 mm |
| Consumption | 5 V⎓ approx. 82 mW/12 V⎓ approx. 135 mW/24 V⎓ approx. 135 mW/ max 170 mW |
| Vibration resistance | 50 m/s² (10-500 Hz) IEC 68-2-6 |
| Test voltage for AC models | 2 000 V∿ 50 Hz |
| Weight (g) | 20 |

## Dimensions (mm)

**Panel cut-out**




**CHM15**






CROUZET CONTROL

# Electromechanical hour counters

## ➜ DIN rail mounting hour counters - CHMDR

- **Width equivalent to 2 modules**
- **Capacity 100.000 hrs (99.999.99 hrs)**
- **Extended temperature range: -10 → +70°C (⏦ version)**
- **DIN rail mounted according to EN 50022**
- **IP65 on panel**
- **Highly resistant to shocks and impacts**
- **Colour: RAL 7035 grey**
- **Screw terminals**

### Part numbers

| Type | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|
| CHMDR | 50 | 24 V⏦ | **99793710** |
| | 50 | 115 V⏦ | **99793712** |
| | 50 | 230 V⏦ | **99793714** |
| | ⎓ | 10 → 27 V⎓ | **99793810** |

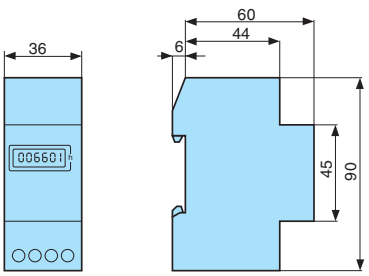
### Accessories

### General characteristics

| General characteristics | |
|---|---|
| Counting capacity | 99.999.99 |
| Reset to zero | Not included |
| Read accuracy | 1/100 h |
| Height digits (mm) | 3.5 |
| Colour of hour numbers | White on a black background |
| Colour of decimal digits | Black on a white background |
| Accuracy | V⏦/V⎓ : < 0.01% (24 hrs) |
| Counting input mode | Addition |
| Degree of protection front face | IP 65 |
| Tolerance | V⏦ ± 10% |
| Temperature limits use (°C) | V⏦ : -10 → +70<br>V⎓ : -10 → +50 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | CE |
| Connection | Screw terminals |
| Consumption | V⏦ : approx. 2.5 VA<br>V⎓ : approx. 1 W |
| Vibration resistance | 1G (10-500 Hz) |
| Test voltage for AC models | 2 000 V⏦ 50 Hz |
| Weight (g) | 60 |

### Dimensions (mm)

**CHMDR**



# Dual-function electromechanical counters

## ➜ Dual-function counter (hour counter and watt-hour meter) 48 x 48 - CEM48

- **Dual-function counter (hour counter and watt-hour meter)**
- **Capacity 100.000 hrs (99.999.99 hrs)**
- **Remote readout via SO output**
- **Panel mounted**
- **IP 65**
- **Excellent visibility due to the large digit size**

## Part numbers

| Type | Designation | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|---|
| CEM48 | Single-phase (max. 16 A) | 50 / 60 | 115 V~ | **99780712** |
| | Single-phase (max. 16 A) | 50 / 60 | 230 V~ | **99780714** |

## Accessories

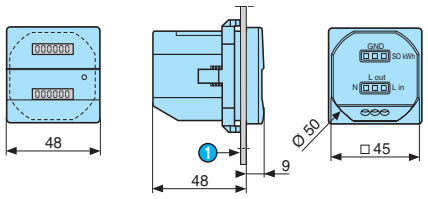
| Description | Code |
|---|---|
| Adaptor for 72 x 72 mm cut-out | **26546842** |
| Adaptor for 55 x 55 mm cut-out | **26546846** |
| DIN rail adaptor | **26546841** |

## General characteristics

| General characteristics | |
|---|---|
| Counting capacity | 99.999.9 hrs/99.999.9 kWh |
| Display by LED | LED backlight: the counter is powered up<br>LED flashing: the energy is being measured |
| Reset to zero | Not included |
| Read accuracy | 1/10 h |
| Height digits (mm) | 4 |
| Colour of hour numbers | White on a black background |
| Colour of decimal digits | Red on a black background |
| Accuracy | Hour counter: ± 2%<br>Watt-hour meter: Class B (1%) |
| Current | Imax: 16 A<br>Current limits between 20 mA and 16 A<br>Use for current > 20 mA |
| Degree of protection front face | IP65 |
| Mounting | Any |
| Temperature limits use (°C) | - 20 → +55 |
| Temperature limits stored (°C) | - 25 → +65 |
| Certifications | CE |
| Connection | Screw terminals |
| Connection capacity | 2.5 mm² |
| Output signal | Watt-hour meter: 10 impulses/hr, 5 → 30 V⎓, Imax: 20 mA<br>Hour counter: 1000 impulses/kWh, 5 → 30 V⎓, Imax: 20 mA |
| Standards | EN 50470-1, EN 50470-3 |
| Test voltage for AC models | 2 000 V~ 50 Hz |
| Weight (g) | 83 |

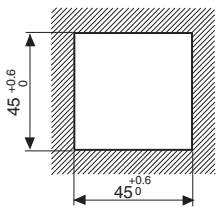
## Dimensions (mm)

**Panel mounted**

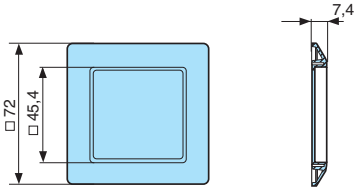



1 9 max.

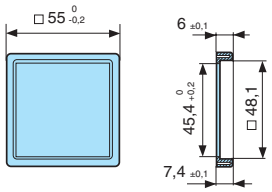
**Panel cut-out**



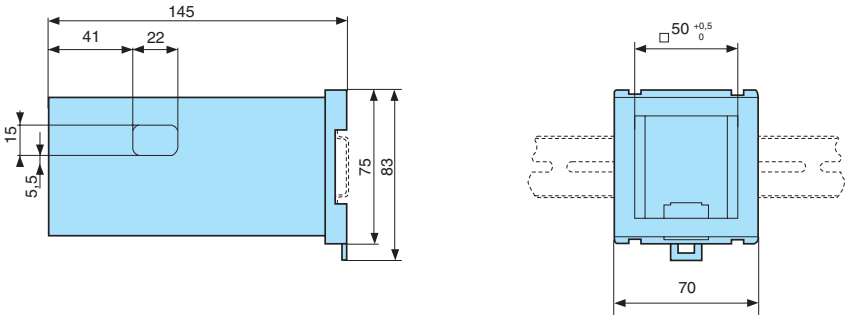

**26546842 - Adaptor for 72 x 72 mm cut-out**



**26546846 - Adaptor for 55 x 55 mm cut-out**

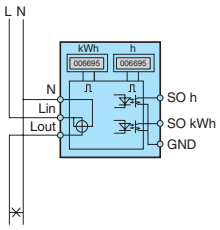



**26546841 - DIN rail adaptor**




## Connections

**CEM48**



# Dual-function electromechanical counters

## ➜ Dual-function counters (hour counter and impulse counter) 48 x 48 - CMM48

- **Dual-function counter (hour counter and impulse counter)**
- **V~ : capacity 100.000 hrs (99.999.99 hrs)**
- **V⎓ : capacity 1.000.000 hrs (999.999.99 hrs)**
- **Operation indicator**
- **Panel mounted**
- **IP52**
- **Highly resistant to shocks and impacts**
- **Excellent visibility thanks to the large digit size**

## Part numbers

| Type | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|
| CMM48 | 50 | 20 → 30 V~ | **99779710** |
| | 50 | 100 → 130 V~ | **99779712** |
| | 50 | 187 → 264 V~ | **99779714** |
| | 60 | 20 → 30 V~ | **99779718** |
| | 60 | 100 → 130 V~ | **99779715** |
| | 60 | 187 → 264 V~ | **99779716** |
| | V⎓ | 10 → 30 V⎓ | **99779810** |

## Accessories

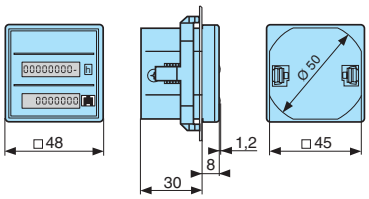
| Description | Code |
|---|---|
| Adaptor for 72 x 72 mm cut-out | **26546842** |
| Adaptor for 55 x 55 mm cut-out | **26546846** |

## General characteristics

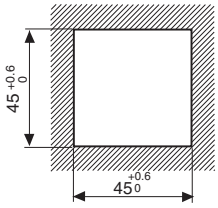
| General characteristics | |
|---|---|
| Counting capacity | V~ : 99.999.99 hrs<br>V⎓ : 999.999.99 hrs |
| Reset to zero | Not included |
| Read accuracy | 1/100 h |
| Height digits (mm) | 4 |
| Colour of hour numbers | White on a black background |
| Colour of decimal digits | Red on a black background |
| Accuracy | V~ : frequency + 30 ms<br>V⎓ : < 0.003% (24 hrs) |
| Counting input mode | Addition |
| Operation indicator | V~ : rotating red lines<br>V⎓ : 1/100 hr  1 digit in 36 s |
| Degree of protection front face | IP52 |
| Mounting position | Any |
| Temperature limits use (°C) | -15 → +50 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | CE - UL (pending) |
| Connections (panel mounted version) | Screw terminals - 6.35 mm Faston connectors |
| Connection capacity | 2.5 $mm^2$ |
| Consumption | V⎓ : 10 → 30 approx. 1 W<br>V~ 50 Hz: 20 → 30 approx. 0.53 VA<br>100 → 130 approx. 1.43 VA/187 → 264 approx. 3 VA |
| Vibration resistance | 50 $m/s^2$ (10-500 Hz) IEC 68-2-6 |
| Test voltage for AC models | 2 000 V~ 50 Hz |
| Weight (g) | 65 |

## Dimensions (mm)

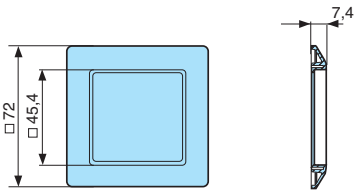
**Panel mounted**



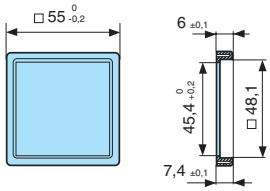

**Panel cut-out**




**26546842 - Adaptor for 72 x 72 mm cut-out**




**26546846 - Adaptor for 55 x 55 mm cut-out**



# Electromechanical impulse counters

## ➜ Impulse counters 24 x 48 - CIM24

- **5 or 6 digits, height of digits 4 mm**
- **With or without manual reset**
- **White digits on a black background**

### Part numbers

| Type | Number of digits | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|---|
| Without manual reset | 6 | 50 / 60 | 230 V~ | **99777714** |
| | 6 | 50 / 60 | 24 V~ | **99777710** |
| | 6 | V⎓ | 24 V⎓ | **99777810** |
| | 6 | V⎓ | 12 V⎓ | **99777815** |
| With manual reset | 5 | 50 / 60 | 230 V~ | **99777724** |
| | 5 | 50 / 60 | 24 V~ | **99777720** |
| | 5 | V⎓ | 24 V⎓ | **99777820** |
| | 5 | V⎓ | 12 V⎓ | **99777825** |

### Accessories

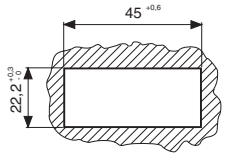
| Description | Code |
|---|---|
| Adaptor for 50 x 25 mm cut-out - Fixed with screws | **26546843** |
| Adaptor for 50 x 25 mm cut-out - Fixed with clips (supplied with the product) | **26546844** |
| Adaptor for 48 x 48 mm cut-out | **26546849** |

### General characteristics

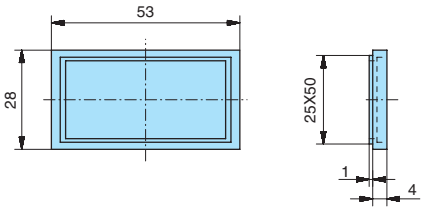
| General characteristics | |
|---|---|
| Counting capacity | 999.999 impulses without manual reset<br>99.999 impulses with manual reset |
| Height digits (mm) | 4 |
| Max. count rate | V~ → 10 impulses/s<br>V⎓ → 10 impulses/s |
| Min. count rate | V~ → 50 ms<br>V⎓ → 50 ms |
| Min pause time between 2 pulses | V~ → 50 ms<br>V⎓ → 50 ms |
| Max. pulse length (count coil) | Unlimited |
| Voltage variation | 12/24 V⎓ : ± 10%<br>V~ : ± 10% |
| Consumption | 24 V~ : 0.75 VA<br>230 V~ : 1.5 VA<br>12/24 V⎓ : 0.5 W |
| Mechanical life count function (operations) | > 50 x $10^6$ |
| Test voltage according to standard IEC 255-5 | U < 60 V: 500 V<br>U > 60 V: 2 000 V |
| Protection Housing | IP40 |
| Degree of terminal protection | IP00 |
| Environmental protection | Plated or stainless steel components |
| Maintenance | None |
| Operating position | Any |
| Temperature limits use (°C) | - 10 → +50 |
| Temperature limits stored (°C) | - 40 → +80 |
| Certifications | CE |
| Connection | 6.35 Faston connectors or screw terminals |
| Mounting | With clip |
| Weight (g) | 65 |

## Dimensions (mm)

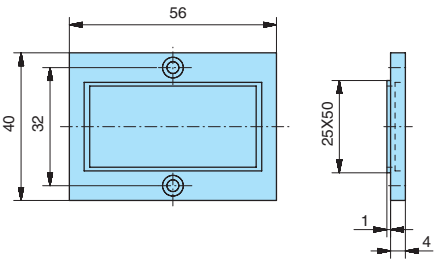
**Panel cut-out**



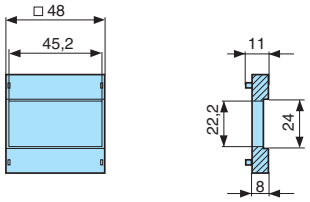

**26546844 - Adaptor for 50 x 25 mm cut-out**



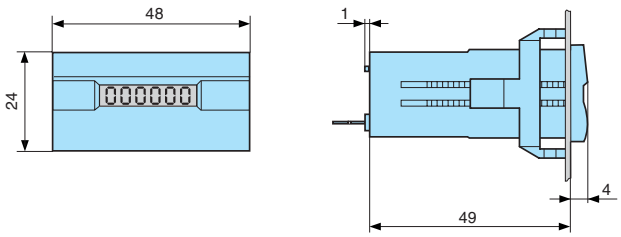

**26546843 - Adaptor for 50 x 25 mm cut-out**



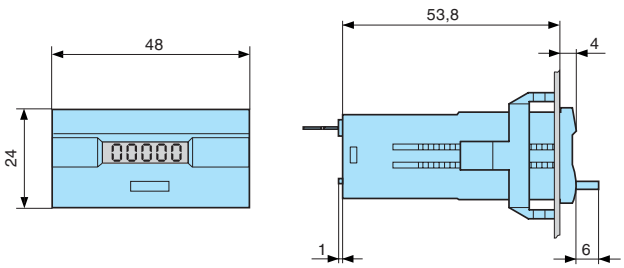

**26546849 - Adaptor for 50 x 25 mm cut-out**




**9977771/81 - 6 digits**




**9977772/82 - 5 digits**



# Electromechanical impulse counters

## ➜ Impulse counters - CIM 36 x 37

- **5 or 6 digits, height of digits 4 mm**
- **With or without manual reset**
- **White digits on a black background**

### Part numbers

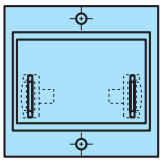
| Type | Number of digits | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|---|
| Without manual reset | 6 | 50 / 60 | 230 V~ | **99776601** |
| | 6 | 50 / 60 | 115 V~ | **99776602** |
| | 6 | 50 / 60 | 24 V~ | **99776604** |
| | 6 | V⎓ | 110 V⎓ | **99776605** |
| | 6 | V⎓ | 24 V⎓ | **99776607** |
| With manual reset | 5 | 50 / 60 | 230 V~ | **99776610** |
| | 5 | 50 / 60 | 115 V~ | **99776611** |
| | 5 | 50 / 60 | 24 V~ | **99776613** |
| | 5 | V⎓ | 24 V⎓ | **99776616** |

### General characteristics

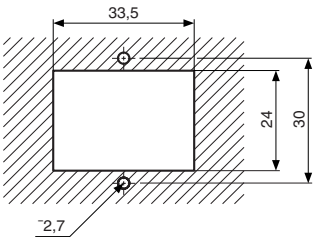
| General characteristics | |
|---|---|
| Counting capacity | 999.999 impulses without manual reset<br>99.999 impulses with manual reset |
| Height digits (mm) | 4 |
| Max. count rate | V~ → 18 impulses/s<br>V⎓ → 25 impulses/s |
| Min. count rate | V~ → 28 ms<br>V⎓ → 20 ms |
| Min pause time between 2 pulses | V~ → 28 ms<br>V⎓ → 20 ms |
| Max. pulse length (count coil) | Unlimited |
| Voltage variation | + 10% / -15% Un |
| Consumption | 24 V~ / 115 V~ : 1.1 VA<br>230 V~ : 2.1 VA<br>110 V⎓ : 1 W<br>24 V⎓ : 0.8 W |
| Mechanical life count function (operations) | > 50 x $10^6$ |
| Test voltage according to standard IEC 255-5 | U < 60 V: 500 V<br>U > 60 V: 2 000 V |
| Protection Housing | IP40 |
| Degree of terminal protection | IP00 |
| Environmental protection | Plated or stainless steel components |
| Maintenance | None |
| Operating position | Any |
| Temperature limits use (°C) | - 10 → +60 |
| Temperature limits stored (°C) | - 40 → +80 |
| Certifications | CE |
| Connection | 6.35 Faston connectors or screw terminals |
| Mounting | 2 x 2.5 Ø screws - F90° on front face |
| Weight (g) | 50 |

## Dimensions (mm)

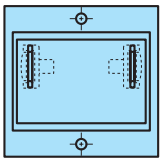
**9977660 - Rear faces**



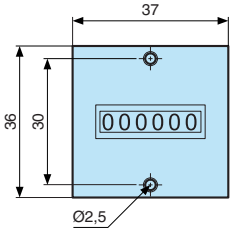
**Panel cut-out**

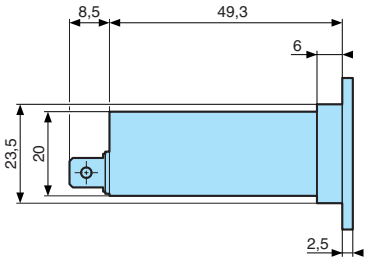



**9977660 - Rear faces**

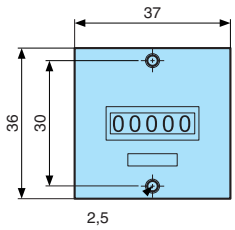


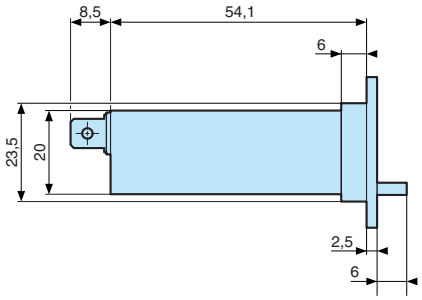
**9977660 - 6 digits**




**9977661 - 5 digits**



# Electromechanical impulse counters

## ➜ Impulse counters - CIM 36 x 48

- **5 or 6 digits, height of digits 4 mm**
- **With or without manual reset**
- **White digits on a black background**

### Part numbers

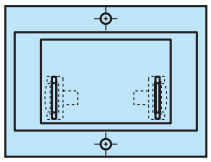
| Type | Number of digits | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|---|
| Without manual reset | 6 | 50 / 60 | 230 V~ | **99776701** |
| | 6 | 50 / 60 | 115 V~ | **99776702** |
| | 6 | 50 / 60 | 24 V~ | **99776704** |
| | 6 | V⎓ | 110 V⎓ | **99776705** |
| | 6 | V⎓ | 24 V⎓ | **99776707** |
| | 6 | V⎓ | 48 V⎓ | **99776736** |
| With manual reset | 5 | 50 / 60 | 230 V~ | **99776710** |
| | 5 | 50 / 60 | 115 V~ | **99776711** |
| | 5 | 50 / 60 | 24 V~ | **99776713** |
| | 5 | V⎓ | 24 V⎓ | **99776716** |

### General characteristics

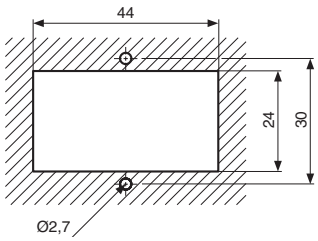
| General characteristics | |
|---|---|
| Counting capacity | 999.999 impulses without manual reset<br>99.999 impulses with manual reset |
| Height digits (mm) | 4 |
| Max. count rate | V~ → 18 impulses/s<br>V⎓ → 25 impulses/s |
| Min. count rate | V~ → 28 ms<br>V⎓ → 20 ms |
| Min pause time between 2 pulses | V~ → 28 ms<br>V⎓ → 20 ms |
| Max. pulse length (count coil) | Unlimited |
| Voltage variation | + 10% / -15% Un |
| Consumption | 24 V~ / 115 V~ : 1.1 VA<br>230 V~ : 2.1 VA<br>110 V⎓ : 1 W<br>48 V⎓ : 0.8 W<br>24 V⎓ : 0.8 W |
| Mechanical life count function (operations) | > 50 x $10^6$ |
| Test voltage according to standard IEC 255-5 | U < 60 V: 500 V<br>U > 60 V: 2 000 V |
| Protection Housing | IP40 |
| Degree of terminal protection | IP00 |
| Environmental protection | Plated or stainless steel components |
| Maintenance | None |
| Operating position | Any |
| Temperature limits use (°C) | -10 → +60 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | CE |
| Connection | 6.35 Faston connectors or screw terminals |
| Mounting | 2 x 2.5 Ø screws - F90° on front face |
| Weight (g) | 50 |

## Dimensions (mm)

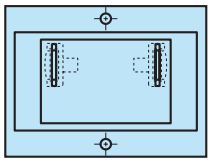
**9977670/3 - Rear faces**



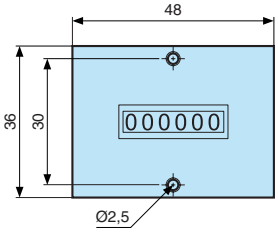
**Panel cut-out**

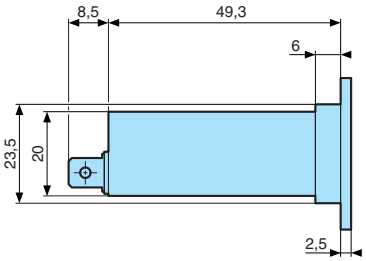



**9977671 - Rear faces**

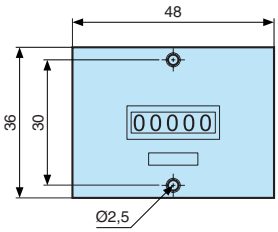


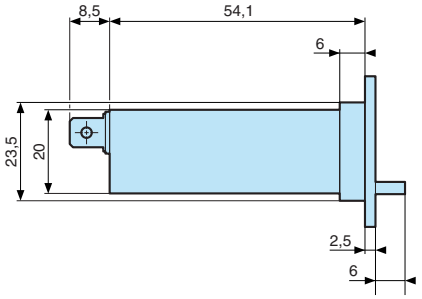
**9977670/3 - 6 digits**




**9977671 - 5 digits**



# Electromechanical impulse counters

## ➜ Impulse counters with built-in fixing clip - 15 x 32 - CIM15

- **7 digits, height of digits 4 mm**
- **Without manual reset**
- **White digits on a black background**
- **Compact size**
- **Built-in fixing clip**
- **IP65 (panel only)**

## Part numbers

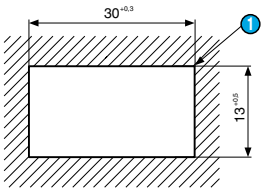
| Type | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|
| Without manual reset | 50 / 60 | 24 V~ | **99778710** |
| | 50 / 60 | 115 V~ | **99778712** |
| | 50 / 60 | 230 V~ | **99778714** |
| | V⎓ | 5 V⎓ | **99778805** |
| | V⎓ | 12 V⎓ | **99778806** |
| | V⎓ | 24 V⎓ | **99778810** |

## General characteristics

| *9.999.999 | |
|---|---|
| Counting capacity | 9.999.999 |
| Height digits (mm) | 4 |
| Max. count rate | V~ → 10 impulses/s<br>V⎓ → 10 impulses/s (except for 99778810: up to 25 impulses/s) |
| Min. count rate | V~ → 50 ms<br>V⎓ → 50 ms |
| Min pause time between 2 pulses | V~ → 50 ms<br>V⎓ → 50 ms |
| Max. pulse length (count coil) | Unlimited |
| Voltage variation | V⎓ : ± -10%<br>V~ : ± -10% |
| Consumption | V~ : 800 mVA<br>V⎓ : 50 mW |
| Mechanical life count function (operations) | > 50 x $10^6$ |
| Test voltage according to standard IEC 255-5 | U < 60 V: 500 V<br>U > 60 V: 2 000 V |
| Protection Housing | IP65 panel only |
| Degree of terminal protection | IP00 |
| Environmental protection | Plated or stainless steel components |
| Maintenance | None |
| Operating position | Any |
| Temperature limits use (°C) | -10 → +60 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | UL (pending) - CE |
| Connection | Flying leads |
| Mounting | Built-in fixing clip |
| Weight (g) | 20 |

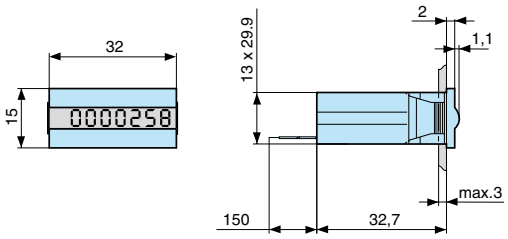
## Dimensions (mm)

**Panel cut-out**




1 R max: 0.5 mm

**997787/8 - 7 digits**



# Electromechanical impulse counters

## ➜ Screw-fixing impulse counters - CIM 24 x 48

- **5 or 6 digits, height of digits 4 mm**
- **With or without manual reset**
- **White digits on a black background**

## Part numbers

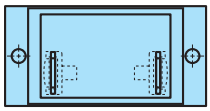
| Type | Number of digits | Operating frequency (Hz) | Voltages | Code |
|---|---|---|---|---|
| Without manual reset | 6 | 50 / 60 | 230 V~ | **99776901** |
| | 6 | 50 / 60 | 115 V~ | **99776902** |
| | 6 | 50 / 60 | 24 V~ | **99776904** |
| | 6 | V⎓ | 110 V⎓ | **99776905** |
| | 6 | V⎓ | 24 V⎓ | **99776907** |
| With manual reset | 5 | 50 / 60 | 230 V~ | **99776921** |
| | 5 | 50 / 60 | 115 V~ | **99776922** |
| | 5 | 50 / 60 | 24 V~ | **99776924** |
| | 5 | V⎓ | 24 V⎓ | **99776927** |

## General characteristics

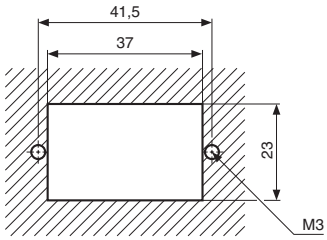
| General characteristics | |
|---|---|
| Counting capacity | 999.999 impulses without manual reset<br>99.999 impulses with manual reset |
| Height digits (mm) | 4 |
| Max. count rate | V~ → 18 impulses/s<br>V⎓ → 25 impulses/s |
| Min. count rate | V~ → 28 ms<br>V⎓ → 20 ms |
| Min pause time between 2 pulses | V~ → 28 ms<br>V⎓ → 20 ms |
| Max. pulse length (count coil) | Unlimited |
| Voltage variation | + 10% / -15% Un |
| Consumption | 24 V~ / 115 V~ : 1.1 VA<br>230 V~ : 2.1 VA<br>110 V⎓ : 1 W<br>24 V⎓ : 0.8 W |
| Mechanical life count function (operations) | 50 x $10^6$ |
| Test voltage according to standard IEC 255-5 | U < 60 V: 500 V<br>U > 60 V: 2 000 V |
| Protection Housing | IP40 |
| Degree of terminal protection | IP00 |
| Environmental protection | Plated or stainless steel components |
| Maintenance | None |
| Operating position | Any |
| Temperature limits use (°C) | -10 → +60 |
| Temperature limits stored (°C) | -40 → +80 |
| Certifications | CE |
| Connection | 6.35 Faston connectors or screw terminals |
| Mounting | 2 M3 screws - F90° on front face |
| Weight (g) | 50 |

## Dimensions (mm)

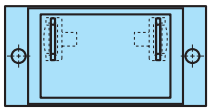
**9977690 - Rear faces**



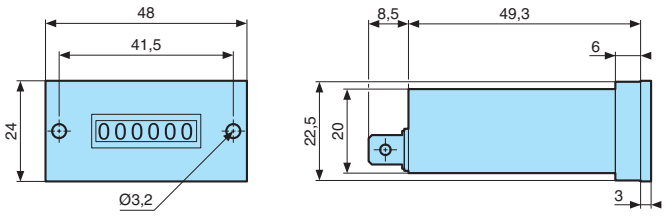
**Panel cut-out**




**9977692 - Rear faces**



**9977690 - 6 digits**



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