

# Frequency displays / tachometers

**LCD frequency displays**      **Measuring range in Hz (battery)**      **Codix 136**



The Codix 136 is a simple battery powered frequency display / tachometer for NPN, PNP pulses.

Fast and slow count pulses are displayed directly in Hz via the 8-digit LCD display with its optional backlighting.



Battery powered	Frequency display/ Tachometer	Pulse counter/ Totaliser	Pulse voltage	Max. count frequency	Temperature range	High protection level	DIN front bezel	LCD display	Lockable reset

### Powerful

- Input frequency range from 1 Hz ... 12 kHz – gate measuring method, gate time 1 second
- Battery life approx. 8 years
- Filter function for bounce-free counting with mechanical contacts
- Count frequency max. 12 kHz – accuracy 0.05 %
- High protection level IP65

### Simple

- Screw terminals, RM 5 mm
- For positive or negative edges, depending on version
- Large 8-digit LCD display with 8 mm high figures and optional backlighting
- Display directly in Hz

**Order code**      6.136 . 012 . 8XX

**a** Backlighting  
5 = without<sup>1)</sup>  
6 = with

**b** Count input

	Mode	INP A:			INP B		
0 <sup>1)</sup>	Tacho	0 ... 0.7 V DC	NPN	7 kHz	0 ... 0.7 V DC	NPN	30 Hz
1 <sup>1)</sup>	Tacho	4 ... 30 V DC	PNP	12 kHz	4 ... 30 V DC	PNP	30 Hz

### Delivery specification

- Counter
- Mounting clip
- Front bezel for screw mounting (T008181) 56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Front bezel for clip mounting (T008180) 53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Gasket
- Instruction manual, multilingual

Accessories	Dimensions in mm [inch]	Order-No.
<b>Adapter front bezel, 72 x 36 [2.83 x 1.42]</b>	For cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set black and silver anodised	<b>162704 Set</b>
<b>Adapter front bezel, 48 x 48 [1.89 x 1.89]</b>	For cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94] black	<b>T008883</b>
<b>Adapter front bezel, 60 x 50 [2.36 x 1.97]</b>	For cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94] black	<b>N003001</b>
<b>Transparent cover, lockable, IP65</b>	For cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	<b>N003002</b>
<b>Sealing cover type K1, IP65</b>	Suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	<b>G008301</b>
<b>Mounting frame</b> with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94] chromated	<b>G300004</b>

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).

1) Stock types

# Frequency displays / tachometers

<b>LCD frequency displays</b>	<b>Measuring range in Hz (battery)</b>	<b>Codix 136</b>
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## Technical data

General technical data	
<b>Display</b>	LCD, 8 digits, 8 mm [0.32"] high
<b>Backlighting</b>	external electrical source 24 V DC $\pm 20\%$ , 50 mA
<b>Display range</b>	0 ... 99999999
<b>Resolution</b>	1/sec (1 Hz)
<b>Working temperature</b>	-10°C ... +55°C [+14°F ... +131°F] (non-condensing)
<b>Operating temperature</b>	-10°C ... +60°C [+14°F ... +140°F] (non-condensing)
<b>Storage temperature</b>	-20°C ... +70°C [-4°F ... +158°F]

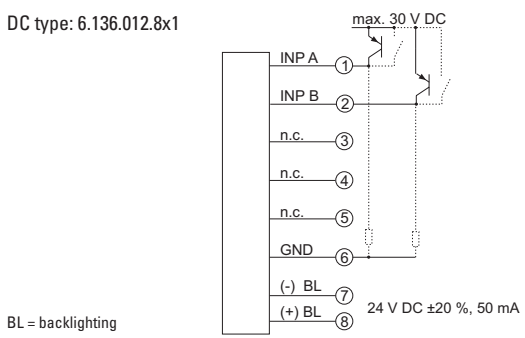
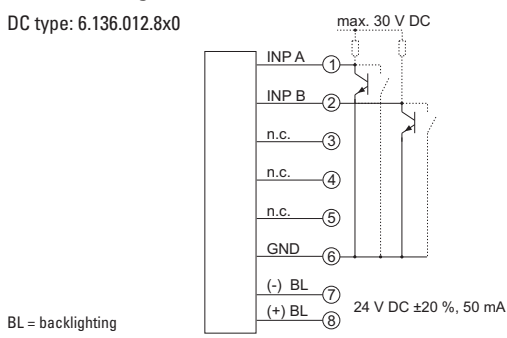
  

Mechanical characteristics	
<b>Housing</b>	dark grey RAL 7021
<b>Protection</b>	IP65 (front side)
<b>Weight</b>	approx. 50 g [1.76 oz]

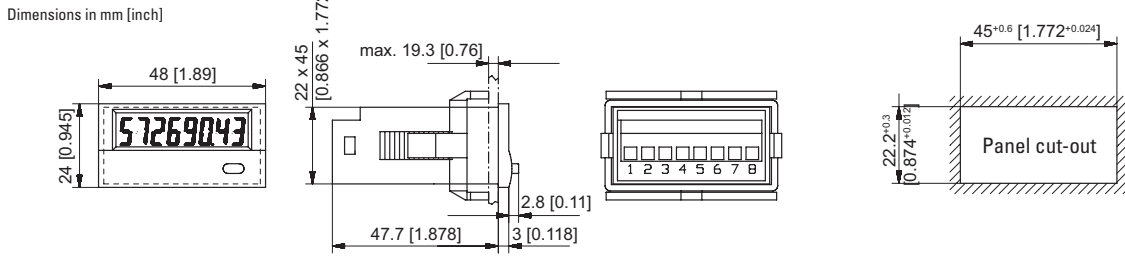
Electrical characteristics	
<b>Power supply</b>	internal lithium battery approx. 8 years at 20°C [68°F]
<b>EMC</b>	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2

Counting inputs	
<b>Counting input of the DC-versions (max. 30 V DC)</b>	
slow counting input	max. 30 Hz NPN or PNP
fast counting input	max. 12 kHz (PNP), 7 kHz (NPN)
switching level NPN	LOW 0 ... 0.7 V DC HIGH 3 ... 30 V DC
switching level PNP	LOW 0 ... 0.7 V DC HIGH 4 ... 30 V DC

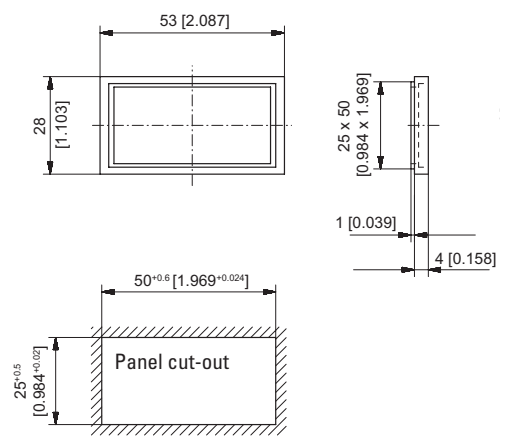
### Terminal assignment



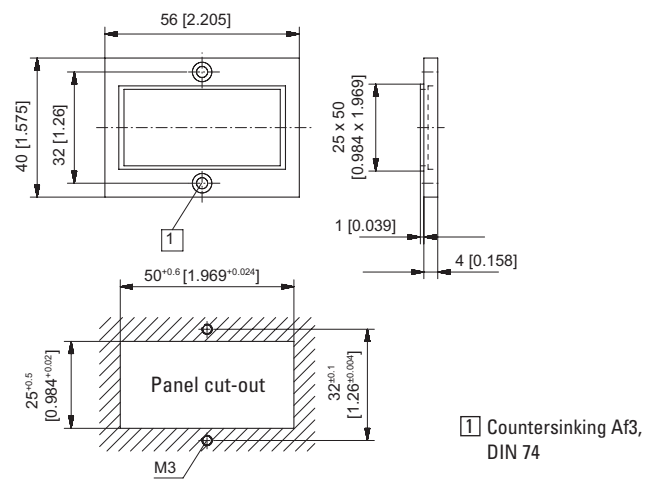
### Dimensions



### Front bezel for clip mounting (included in delivery)



### Front bezel for screw mounting (included in delivery)



# Frequency displays / tachometers

LED frequency displays

Measuring range 1/min or 1/sec HRA-measurement (DC)

Codix 522



The Codix 522 is a simple voltage powered frequency display / tachometer.

Display in 1/min or 1/sec, freely scalable, for fast and slow count pulses, with 6-digit LED display for NPN, PNP input signals, with fast HRA measurement system (High Rate Accuracy).



Power supply



DIN front bezel



Temperature range



High protection level



Menu-driven programming



Frequency display/Tachometer



Frequency display with HRA

## Powerful

- Very bright LED display, 8 mm high
- Fast count input – input frequency max. 60 kHz
- Robust housing – IP65 protected
- Very accurate precise frequency measurement principle (HRA - High Rate Accuracy System)  
Frequencies up to 38 Hz are calculated using time-interval (period duration) measurement. Frequencies > 38 Hz are calculated using a special time base (gate time) measurement. A very high accuracy of < 0.1% is achieved, even with very short gate times. The resulting measurement is available after a max. of 50 ms.

## User-friendly and universal

- Large keys – can also be operated when wearing gloves
- Simple uniform menu-driven programming and operation. Possible to enter the programming also during operation with a confirmation prompt.
- Individually programmable scaling – multiplication and division factor (0.0001 to 99.9999), to display corresponding engineering units, e.g. frequency in Hz and speed in RPM
- Programmable decimal point, can be set from 0.0 to 0.000 (this determines the resolution)
- Programmable delay until 0 is displayed
- Display in 1/min or 1/sec
- As an alternative to the HTL inputs, devices with a 4 ... 30 V DC input level are available
- Optional output for zero-speed monitoring

## Order code

6.522 . 01 X . 3 X 0  
a b

### **a** Output

- 1 = optocoupler output
- 2 = no output <sup>1)</sup>

### **b** Input switching level

- 0 = Standard (HTL) <sup>1)</sup>
- A = 4 ... 30 V DC level

### Delivery specification

- Digital display
- Mounting clip
- Front bezel for screw mounting (T008181)  
56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Front bezel for clip mounting (T008180)  
53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Gasket
- Instruction manual, multilingual

# Frequency displays / tachometers

## LED frequency displays    Measuring range 1/min or 1/sec HRA-measurement (DC)    Codix 522

Accessories	Dimensions in mm [inch]	Order-No.
<b>Adapter front bezel, 72 x 36 [2.83 x 1.42]</b>	For cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set	black and silver anodised <b>162704 Set</b>
<b>Adapter front bezel, 48 x 48 [1.89 x 1.89]</b>	For cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94]	black <b>T008883</b>
<b>Adapter front bezel, 60 x 50 [2.36 x 1.97]</b>	For cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94]	black <b>N003001</b>
<b>Transparent cover, lockable, IP65</b>	For cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	<b>N003002</b>
<b>Sealing cover type K1, IP65</b>	Suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	<b>G008301</b>
<b>Mounting frame</b> with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94]	chromated <b>G300004</b>

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).

### Technical data

General technical data	
<b>Display</b>	6 digits, red 7 segment LED display; 8 mm [0.32"] high
<b>Data backup</b>	EEPROM
<b>Operating temperature</b>	10 ... 26 V DC    -20°C ... +65°C [-4°F ... +149°F] > 26 ... 30 V DC    -20°C ... +55°C [-4°F ... +131°F] (non-condensing)
<b>Storage temperature</b>	-25°C ... +70°C [-13°F ... +158°F]

Electrical characteristics	
<b>Power supply</b>	10 ... 30 V DC, with integrated reverse polarity protection
<b>Current consumption</b>	max. 50 mA
<b>EMC</b>	Emitted interference    EN 55011 class B Immunity to interference    EN 61000-6-2

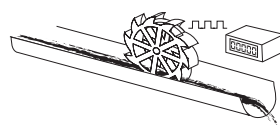
Mechanical characteristics	
<b>Housing</b>	front panel mount 8x24 mm [1.89 x 0.94"] acc. to DIN 43700; RAL 7021, dark grey
<b>Protection</b>	IP65 (front side)
<b>Weight</b>	approx. 50 g [1.76 oz]

Inputs	
<b>Polarity of inputs</b>	programmable, NPN or PNP
<b>Input resistance</b>	approx. 5 kΩ
<b>Counting frequency</b>	max. 60 kHz, can be damped to 30 Hz
<b>Measurement principle / Accuracy</b>	Gate and/or time interval (period duration) measurement, with high accuracy <0.1% (HRA)
<b>Input switching level (HTL)</b>	LOW    0 ... 0.2 x U <sub>B</sub> [V DC] HIGH    0.6 x U <sub>B</sub> ... 30 V DC
<b>Input switching level at 4 ... 30 V DC</b>	LOW    0 ... 2 V DC HIGH    4 ... 30 V DC

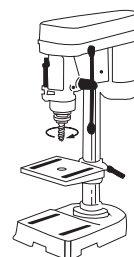
Outputs (optional)	
<b>Optocoupler output</b>	max. 30 V DC, 10 mA

### Applications for speed and frequency displays

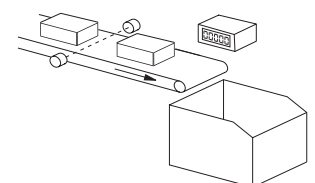
- Rotary speed applications, e.g. OEM equipment or retrofitting to drilling machines
- OEM equipment for flow rate measuring, e.g. current flow rate; production data such as volume/time
- Speed applications on motors, turbines, machines; feed-rate measurement
- Recording of production rates
- Frequency measurement



Mass flow rate



Drilling machine head, rotary speed

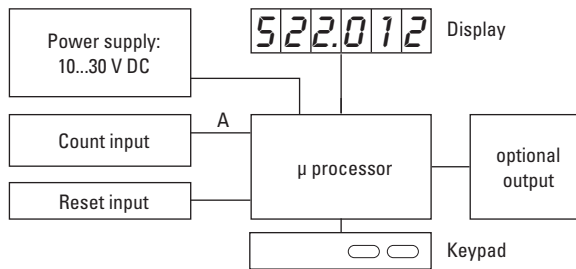


Production rate

# Frequency displays / tachometers

## LED frequency displays      Measuring range 1/min or 1/sec HRA-measurement (DC)      Codix 522

### Block diagram

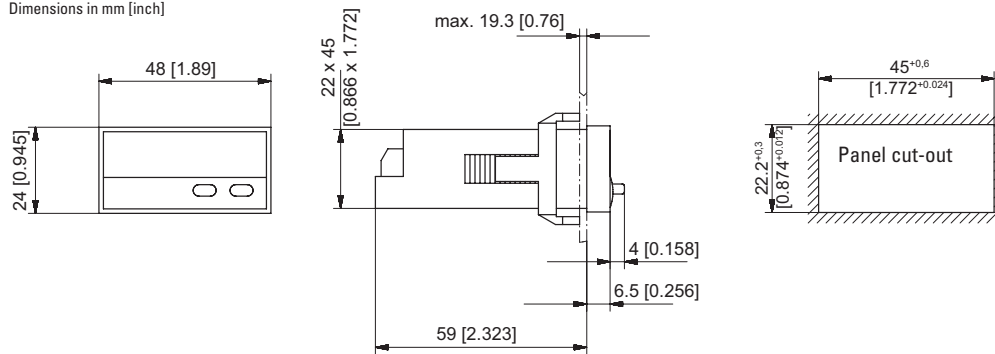


### Terminal assignment

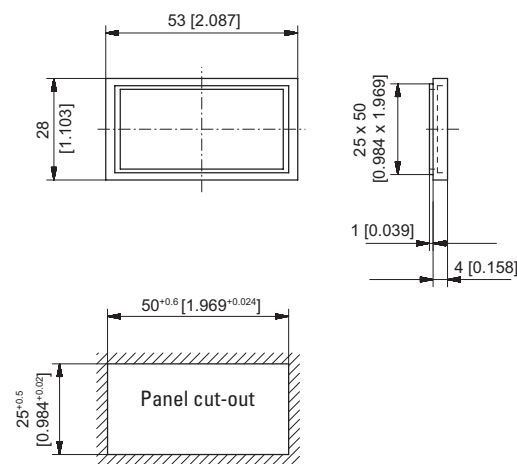
1	2	3	4	5	1	2	3	4	5	6	7
PIN	without optocoupler					PIN	with optocoupler (NPN)				
1	10 ... 30 V DC					1	10 ... 30 V DC				
2	0 V GND					2	0 V GND				
3	INP					3	INP				
4	-					4	-				
5	-					5	-				
					6	Emitter					
					7	Collector					

### Dimensions

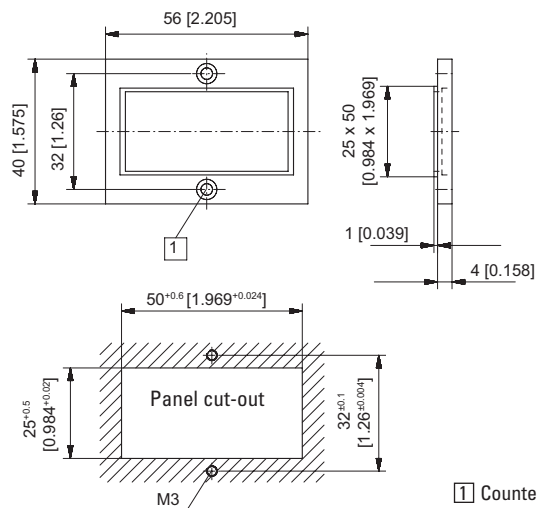
Dimensions in mm [inch]



### Front bezel for clip mounting (included in delivery)



### Front bezel for screw mounting (included in delivery)



1 Countersinking Af3, DIN 74

# Frequency displays / tachometers

**LED frequency displays**    **Measuring range 1/min or 1/sec HRA-measurement (AC+DC)**    **Codix 542**



The Codix 542 is a voltage powered frequency display / tachometer, with 6-digit LED display for NPN, PNP input signals.

The display in 1/min or 1/sec is freely scalable for fast and slow count pulses – with fast HRA measurement system (High Rate Accuracy).



 10 ... 260 V Power supply	 DIN 96 x 48 DIN front bezel	 -20° + 65° Temperature range	 IP65 High protection level	 Plug-in screw terminal	 Menu-driven programming	 Operation with gloves	 1/sec 1/min Frequency display/Tachometer	 HRA Frequency display with HRA
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### Powerful

- Very bright LED display, 14 mm high
- Fast count input – input frequency max. 60 kHz
- Robust housing – IP65 protected
- Very accurate precise frequency measurement principle (HRA - High Rate Accuracy System)  
Frequencies up to 38 Hz are calculated using time-interval (period duration) measurement. Frequencies > 38 Hz are calculated using a special time base (gate time) measurement. A very high accuracy of < 0.1% is achieved, even with very short gate times. The resulting measurement is available after a max. of 50 ms.

### User-friendly and universal

- Large keys – can also be operated when wearing gloves
- Simple uniform menu-driven programming and operation. Possible to enter the programming also during operation with a confirmation prompt.
- Programmable decimal point, can be set from 0.0 to 0.000 (this determines the resolution)
- As an alternative to the HTL inputs, devices with a 4 ... 30 V DC input level are available
- Individually programmable scaling – multiplication and division factor (0.0001 to 99.9999), to display corresponding engineering units, e.g. frequency in Hz and speed in RPM
- Programmable delay until 0 is displayed
- Display in 1/min or 1/sec
- AC or DC power supply with sensor power supply
- Optional output for zero-speed monitoring

Frequency displ. Tachometers

**Order code**    **6.542 . 01 X . X X 0**

- |  |  |   |   |
|--|--|---|---|
| <b>a</b> Output<br>1 = Optocoupler output<br>2 = No output <sup>1)</sup> | <b>b</b> Power supply<br>0 = 90 ... 260 V AC <sup>1)</sup><br>3 = 10 ... 30 V DC <sup>1)</sup> | <b>c</b> Input switching level<br>0 = Standard level (HTL) <sup>1)</sup><br>A = 4 ... 30 V DC level | <b>Delivery specification</b><br>– Digital display<br>– Mounting clip<br>– Gasket<br>– Instruction manual, multilingual |
|--|--|---|---|

Accessories	Dimensions in mm [inch]	Order-No.
<b>Mounting frame</b> with cut-out 92 x 45 [3.62 x 1.77]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 96 x 48 [3.74 x 1.89]	grey <b>G300005</b>

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).

1) Stock types

# Frequency displays / tachometers

## LED frequency displays    Measuring range 1/min or 1/sec HRA-measurement (AC+DC)    Codix 542

### Technical data

General technical data	
Display	6 digit, red 7 segment LED display; 14 mm [0.55"] high
Data backup	EEPROM
Operating temperature	-20°C ... +60°C [-4°F ... +140°F] (non-condensing)
Storage temperature	-20°C ... +70°C [-4°F ... +158°F]
Altitude	up to 2000 m [6562']

Electrical characteristics	
Power supply	10 ... 30 V DC, with reverse polarity protection 90 ... 260 V AC
Current consumption	max. 50 mA, 6 VA
EMC	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2
Device safety	Designed to EN 61010 part 1 Protection class 2 Application area Pollution level 2

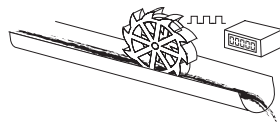
Mechanical characteristics	
Housing	front panel mount 96 x 48 mm [3.74 x 1.89"] acc. to DIN 43700; RAL 7021, dark grey
Protection	IP65 (front side)
Weight	approx. 150 g [5.29 oz]

Inputs	
Polarity of inputs	programmable, NPN or PNP for all inputs
Input resistance	approx. 5 kΩ
Counting frequency <sup>1)</sup>	max. 60 kHz, can be damped to 30 Hz
Measurement principle / Accuracy	Gate and/or time interval (period duration) measurement, with high accuracy <0.1% (HRA)
<b>Input switching level standard version (HTL)</b>	
DC power supply	LOW 0 ... 0.2 x U <sub>B</sub> [V DC]
	HIGH 0.6 x U <sub>B</sub> ... 30 V DC
AC power supply	LOW 0 ... 4 V DC
	HIGH 12 ... 30 V DC
<b>Input switching level at 4 ... 30 V DC</b>	
LOW	0 ... 2 V DC
HIGH	4 ... 30 V DC

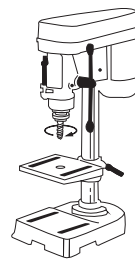
Outputs	
Sensors power supply (AC version)	24 V DC ±15 %/100 mA
Output power optocoupler	max. 30 V DC, 10 mA

### Applications for speed and frequency displays

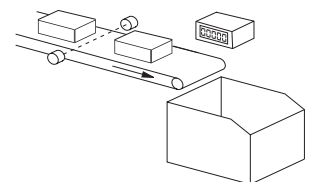
- Rotary speed applications, e.g. OEM equipment or retrofitting to drilling machines
- OEM equipment for flow rate measuring, e.g. current flow rate; production data such as volume/time
- Speed applications on motors, turbines, machines; feed-rate measurement
- Recording of production rates
- Frequency measurement



Mass flow rate



Drilling machine head, rotary speed



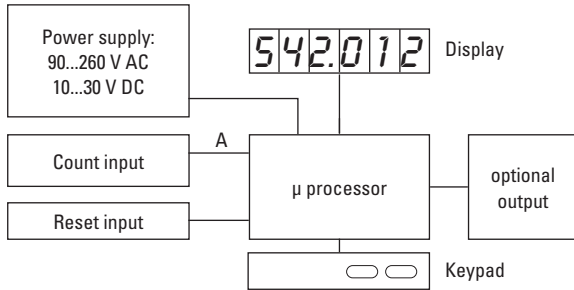
Production rate

1) Please refer to the manual

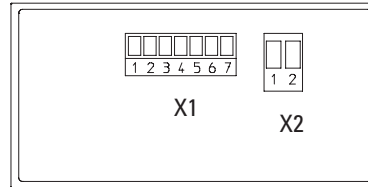
# Frequency displays / tachometers

**LED frequency displays**    **Measuring range 1/min or 1/sec HRA-measurement (AC+DC)**    **Codix 542**

### Block diagram



### Terminal assignment



#### Connection X1

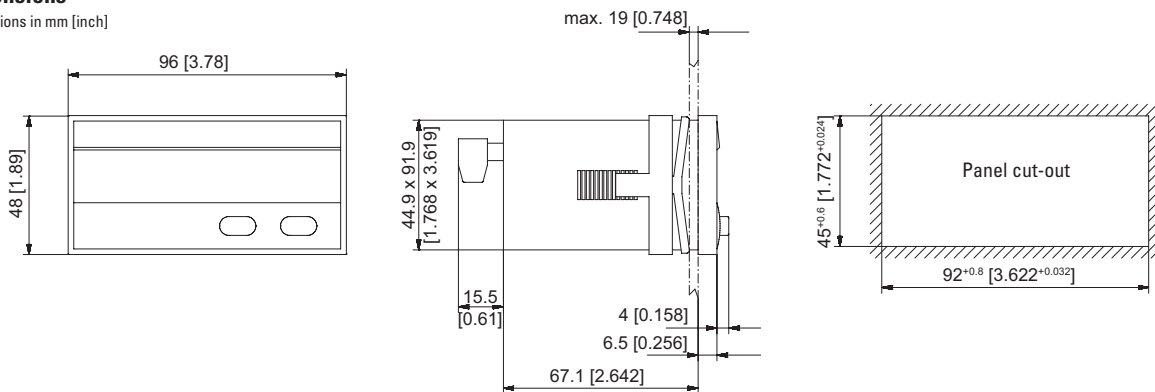
PIN	AC version	DC version
1	Optocoupler-output	Collector
2	Optocoupler-output	Emitter
3	n.c.	
4	n.c.	
5	INP A	
6	GND out	n.c.
7	+24 V out	n.c.

#### Connection X2

PIN	AC version	DC version
1	90 ... 260 V AC	0VDC (GND)
2	90 ... 260 V AC	10...30 V DC

### Dimensions

Dimensions in mm [inch]



Frequency displ.  
Tachometers



# Frequency displays / tachometers with limits

**LED tachometers**

**Dual frequency displays with 4 outputs and analogue output (AC+DC)**

**574**

**new**



Frequency display for demanding applications, with two individually scalable encoder inputs, in each case A, /A, B, /B for count frequencies up to 1 MHz per channel (also for single channel use).

Operating modes can be selected for tachometer or frequency display with measurements for difference, total value, product or ratio (also with reciprocal display).



Power supply



DIN front bezel



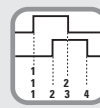
High protection level



2 separate pulse inputs



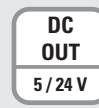
Operation with gloves



TTL, HTL and RS422-input



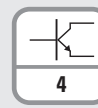
LED display



2 x Sensor supply



Analogue output optional



Transistor output



Interface

## Innovative

- 2 separate freely scalable frequency inputs: HTL or TTL (both also with inverted inputs), max. input frequency 1 MHz/channel
- Very bright LED display, 15 mm high (6 digits)
- 4 freely programmable fast solid-state outputs, each with 350 mA output current
- Many different output modes
- Simple programming – with function codes, dependent on the operating mode selected
- With 9 fixed different frequency functions, e.g.:
  - Single, difference and total value measurement of both inputs
  - Product and ratio measurement
  - Percentage measurement
  - In-process time calculated from frequency (reciprocal speed)

## Compact and multifunctional

- Up to 3 display values in a single device: display counter 1, display counter 2 as well as the display calculated from counter 1 and 2
- AC and DC power supply in one device
- Simple programming with 4 keys, all keys can be assigned dual programming functions
- Can be used as a frequency display or tachometer with limit values
- Monitoring function, where 2 values are monitored or calculated with respect to each other
- 4 fast programmable inputs with various functions such as start delay, key lockout, display memory, reference input or switching between the display values
- Scalable analogue output 0/4 ... 20 mA, +/-10 V or 0 ... 10 V
- Standard interface RS232 for parameter setting, for reading out the values to a PC or PLC, for modifications during operation

## Order specifications

**4 fast switch outputs, serial interface (RS232)**

6 digits

6 digits, scalable analogue output

6 digits, RS232 and RS485

Order-No.

**6.574.0116.D05**

**6.574.0116.D95**

**6.574.0116.D07**

Delivery specification

- Controller 574

- Gasket

- Fastening set

- Instruction manual German/English

## Accessories

**Mounting frame for DIN rail mount**



Dimensions in mm [inch]

with cut-out 92 x 45 [3.62 x 1.77]

Order-No.

**G300005**

**OS2 software for parameter setting**

can be downloaded at [www.kuebler.com](http://www.kuebler.com)

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).

# Frequency displays / tachometers with limits

## LED tachometers Dual frequency displays with 4 outputs and analogue output (AC+DC) 574

General technical data		
Display	6-digit	LED display, 15 mm [0.59"] high
Operating temperature	0°C ... +45°C [+32°F ... +113°F] (non-condensing)	
Storage temperature	-25°C ... +70°C [-13°F ... +158°F]	

Electrical characteristics		
Power supply	24 V AC, + 10% 24 (17 ... 30) V DC	
Current consumption DC	100 mA + Current consumption encoder	
Connected load AC	15 VA	
Auxiliary power supply (for sensors)	2 x 5.2 V DC, each 150 mA 2 x 24 V DC, each 120 mA	
EMC	Emitted interference	EN 61000-6-3
	Immunity to interference	EN 61000-6-2
Device safety	Designed to	EN 61010 part 1
	Protection class	2
	Application area	Pollution level 2

Mechanical characteristics		
Housing material	Noryl UL94-V-0	
Screw terminal	Cable cross-section	max. 1.5 mm <sup>2</sup> [AWG 15]
Protection	IP65 from front	
Weight	approx. 250 g [8.82 oz]	

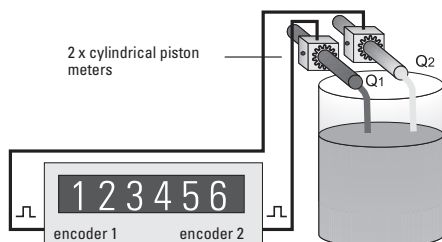
Inputs		
2 universal incremental encoder inputs		
Count frequency: (per encoder)	RS422 and TTL with inv.	1 MHz
	HTL asymmetric	200 kHz
	TTL asymmetric	200 kHz
Control inputs		
4 control inputs HTL, Ri = 3.3 kOhm Low < 2.5 V, High > 10 V, min. pulse duration 50 µs		

Outputs		
Switch outputs		
4 fast power transistors		5 ... 30 V DC, 350 mA
reaction time		< 1 ms <sup>1)</sup>
inductive loads require a freewheeling diode		
Serial interface		RS232, 2400 ... 38400 baud RS485 (6.574.0116.D07)
Analogue outputs (6.574.0116.D95)		
0 / 4 ... 20 mA, load max. 270 Ohm		
0 ... +10 V (max. 2 mA)		
Resolution 14 bit, precision 0.1 %, reaction time < 1 ms		

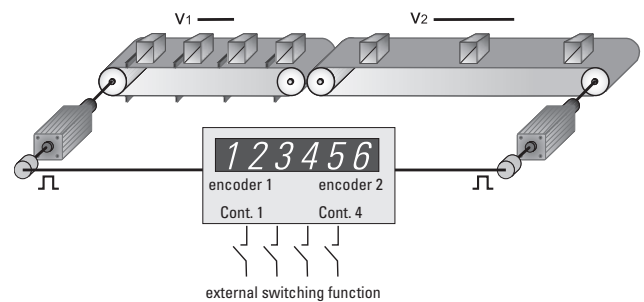
Frequency displ.  
Tachometers

### Application examples

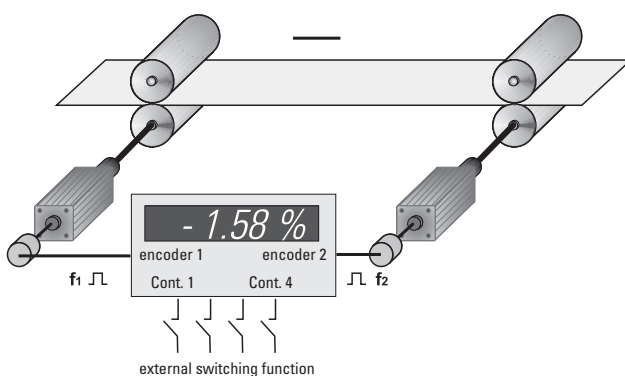
#### Total flow rate



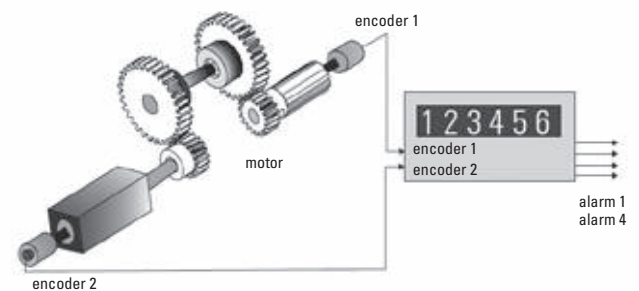
#### Speed difference



#### Material stretching to create tensile stress



#### Monitoring of torsion, shafts or gear breakage

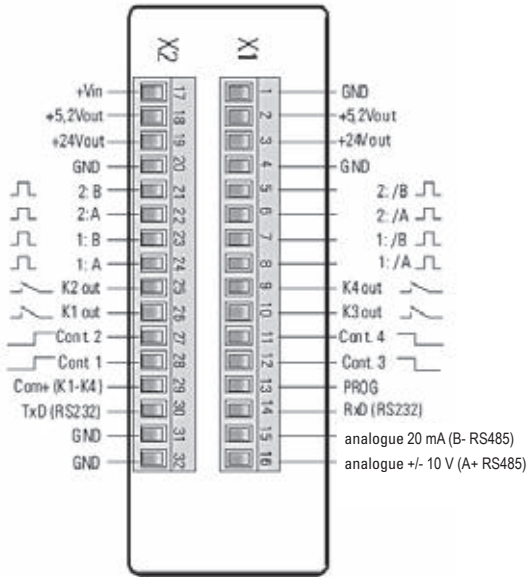


1) Intensive serial communication can temporarily increase the reaction time.

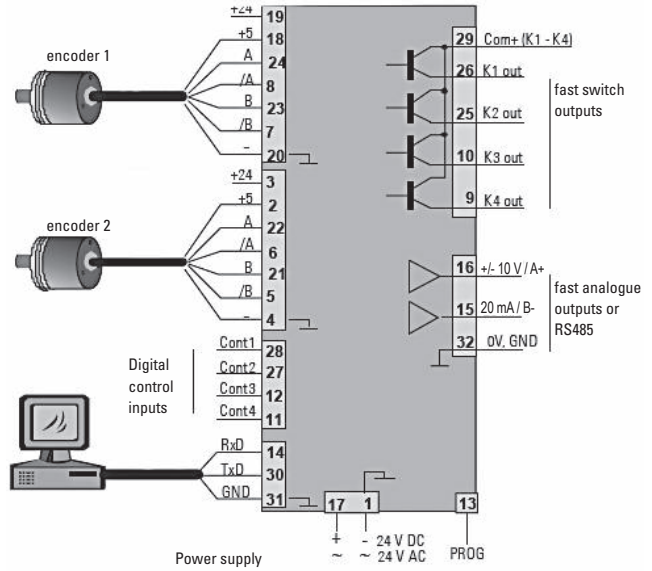
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### Terminal assignment

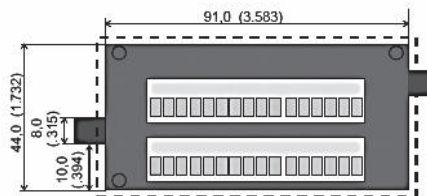
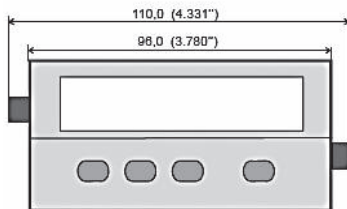


### Application examples

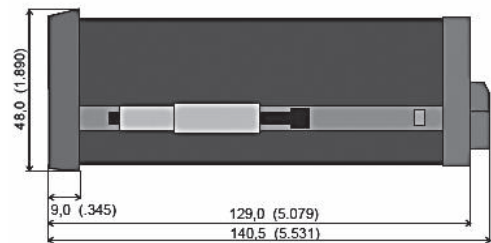


### Dimensions

Dimensions in mm [inch]



Panel cut-out 92 x 45 mm



## Frequency displays / tachometers