

# Setpoint adjuster

**LED setpoint adjuster**      **Analogue signal output for mA or V, also time-controlled (DC)**      **Codix 533**



The setpoint adjuster Codix 533 triggers a standard analogue signal or a freely programmable signal sequence from 0 ... 12 V or from 0 ... 24 mA.

The setpoint adjuster is a real innovation, opening up new application potentials in process technology and automation.



<b>DIN 96 x 48</b> DIN front bezel	<b>4 LED</b> LED display	<b>DC</b> 10 ... 30 V Power supply	<b>Menu-driven programming</b>	<b>IP65</b> High protection level	<b>-20° + 65°</b> Temperature range	<b>mA, V</b> Output	<b>AC/DC</b> Galvanic isolation
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### Innovative

- Function of a digital time controller with analogue output
- Manual functions with direct input or stepped incremental output of the setpoint
- 4-digit, 8 mm high top-quality LED display
- Physical variables output / 0 ... 12 V or 0 ... 24 mA analogue signals
- Units of display can be freely programmed and displayed – no conversion of the specified output value required
- Ideal for simulation runs without the need for expensive, time-consuming running-in of processes

### Powerful

- Simpler to run processes than with a PLC or process controller
- Everything can be programmed easily by means of 2 keys and the text menu
- Digital setting - no additional DIP switches or potentiometers
- Display allows simple monitoring of the specified setpoint output
- User-friendly display form as direct digital value
- 3 separate functions integrated as standard in the Codix 533
- High accuracy of < 0.2% of the final value

### Order specifications

<b>Setpoint adjuster</b>	<b>6.533.012.300</b> <sup>1)</sup>	<b>Delivery specification</b> – Setpoint adjuster – Mounting clip / Gasket – Instruction manual, multilingual – 1 set of self-adhesive symbols	– 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"]
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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

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## Technical data

### General technical data

<b>Display</b>	4 digits, red 7 segment LED display; 8 mm [0.32"] high
<b>Data backup</b>	EEPROM
<b>Operating temperature</b>	-20°C ... +65°C [-4°F ... +149°F] (non-condensing)
<b>Storage temperature</b>	-25°C ... +85°C [-13°F ... +185°F]

### Mechanical characteristics

<b>Housing</b>	front panel mount 48x24 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]
<b>Connections</b>	screw terminal, pitch 5.08 mm [2"], 7 pin

### Electrical characteristics

<b>Power supply</b>	10...30 VDC, galvanically isolated with integrated reverse polarity protection
<b>Power consumption</b>	max. 1 W
<b>Test voltage</b>	500 V, 50 Hz, 1 min.
<b>EMC</b>	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2
<b>Device safety</b>	Designed to EN 61010 part 1 Protection class 2 Application area Pollution level 2

### General information about the measuring inputs

<b>Current output</b>	0 ... 24 mA, increment 10 $\mu$ A load $\leq$ 500 Ohm > 20 mA: $\leq$ 400 Ohm
<b>Voltage output</b>	0 ... 12 V, increment 10 mV load $\geq$ 2 kOhm
<b>Control input</b>	HIGH 4 ... 30 V DC LOW 0 ... 2 V DC
<b>Accuracy</b>	< 0.2% of the full scale value $\pm$ 0.02 %/K

## 3 operating modes programmable

### Manual direct input (Setp)

- Fast adjustment and manual approach to the desired setpoint value.
- Setpoint value can be specified directly during operation via the keys in V or mA.
- Output of the value 3 seconds after the last key actuation.

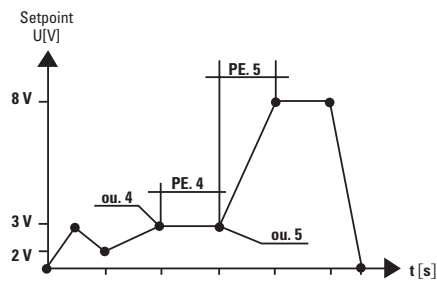
### Manual ramping function (Man)

- Possibility of a stepped, incremental approach to the desired setpoint value using the keys on the front.
- Input of the minimum and maximum setpoint values and the increment by key actuation in the programming level.
- During operation the device starts with the minimum setpoint value – the right key is used to increase the value by the amount of the increment; the left key decreases the value.
- The programmed maximum value cannot be exceeded.

### Automatic ramping function (Auto)

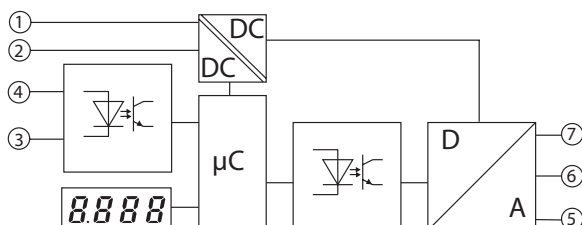
- Function of a digital time based controller with analogue output. Setpoint values can be programmed and carried out for process sequences, either cyclic or time dependent: irrigating, dosing, lubricating, filling, venting, mixing.
- With max. 20 current or voltage values.
- Cyclically limited (time) or unlimited.

### Example of an automatic ramping function



Example with 8 points	
ou. 1	0 V
PE 1	5 s
ou.2	3 V
PE 2	5 s
ou. 3	2 V
PE 3	10 s
ou. 4	3 V
PE 4	10 s
ou. 5	3 V
PE 5	10 s
ou. 6	8 V
PE 6	10 s
ou. 7	8 V
PE 7	10 s
ou. 8	0 V
PE 8	5 s

## Block diagram



### Inputs

1	2	3	4
10 ... 30 V DC	GND_1	GND_2	Hold

### Outputs

5	6	7
0 ... 24 mA (Iout)	GND_3	0 ... 12 V DC (Uout)

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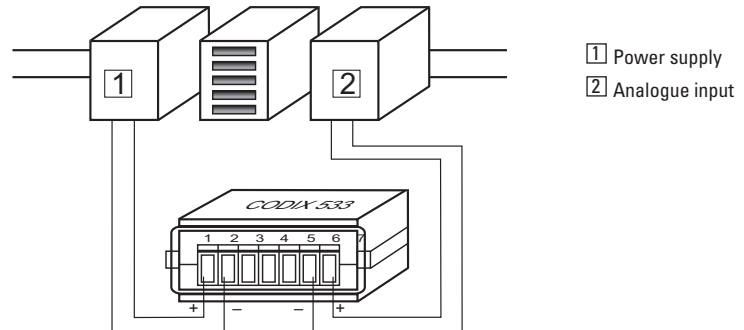
## Terminal assignment

Inputs

1	2	3	4
10 ... 30 V DC	GND_1	GND_2	Hold

Outputs

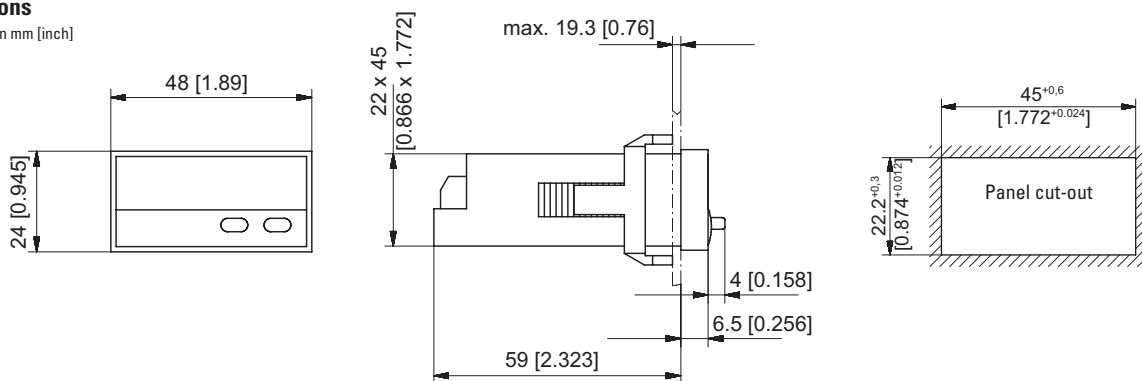
5	6	7
0 ... 24 mA	Analogue GND_3	0 ... 12 V DC



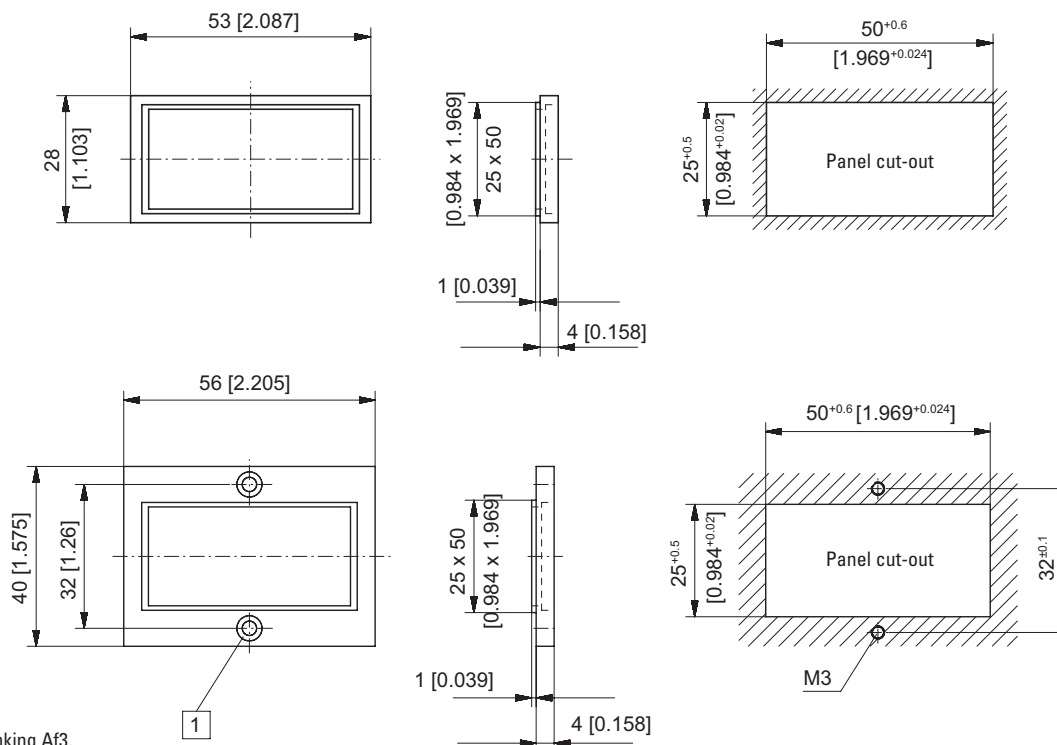
- 1 Power supply
- 2 Analogue input

## Dimensions

Dimensions in mm [inch]



## Front bezel



1 Countersinking Af3, DIN 74

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## Areas of application / Applications

**Simple control (fixed installation)  
in plants, machines and devices**

Time-based ramping up or down of:

**For use in set-up mode  
of plants, machines and devices**

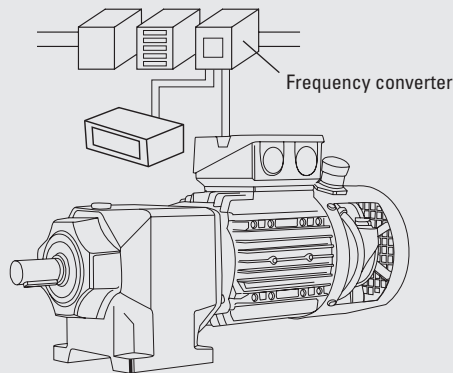
Manual (direct) specification or time-based or manual setting  
(ramping up or down) of:

Rotary speeds (e.g. frequency converter), flow rates, temperatures, positions, pressure and fill levels.  
In short: all physical quantities that can be represented with analogue standard signals.

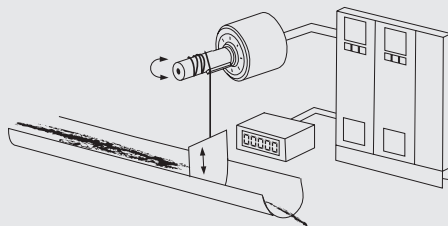
## Applications

Simple time controller with analogue signal output

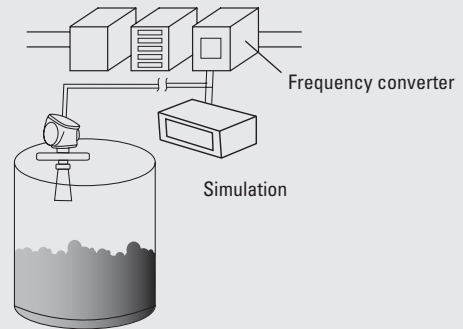
Commissioning, running-in processes or rotary speed control of motors through setpoint setting.



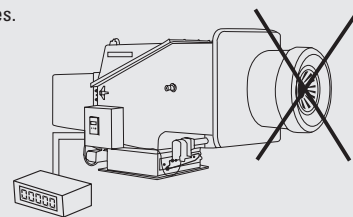
Control of simple, time-based processes by means of an analogue signal, e.g. ramping control for locks and sluices



Calibration of filling levels and flow rates: the setpoint adjuster simulates the output signals of a level or flow sensor for configuring a control.



Alignment for temperature-based processes without having to heat up the plant: the setpoint adjuster can simulate various processes for test purposes.



## Solution with different modes

2 operating modes are provided for that purpose:

- Manual ramping function
- Automatic ramping function

The following operating modes are provided for that purpose:

- Manual direct input
- Manual ramping function
- Automatic ramping function

## Advantages

Instead of using an expensive, complex and difficult-to-use PLC, our setpoint adjuster can handle this task as a standalone device. The user saves costs and the task can be performed in a flexible and quick way, even without any prior knowledge.

The setpoint adjuster simulates the sensor signal that is read by the physical process, e.g. the rise of the temperature, the filling of tank plants. Expensive and complex running-in of processes can be replaced with the simulation performed by the setpoint adjuster.

The output signal can be displayed directly or scaled in any desired unit.  
The user always sees the exact progress.  
An easy-to-use device with three selectable modes is available.