Setpoint adjuster

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

The setpoint adjuster Codix 533 triggers a standard analog 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.

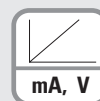|							
DIN 48 x 24	**4 LED**	**DC** 10 ... 30 V	**ProG**	**IP65**	**- 20° + 65°**	**mA, V**	**AC/DC**
DIN front bezel	LED display	Power supply	Menu-driven programming	High protection level	Temperature range	Output	Galvanic isolation

Innovative

- Function of a digital time controller with analog 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 analog 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 no.

Setpoint adjuster	**6.533.012.300** [1]

Delivery specification
- Setpoint adjuster
- Mounting clip
- Gasket
- 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"]
- 1 set of self-adhesive symbols
- Instruction manual, multilingual

[1] Stock types

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Accessories	Dimensions in mm [inch]		Order no.
Adapter front bezel, 72 x 36 [2.83 x 1.42]	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 anodized	**162704 Set**
Adapter front bezel, 48 x 48 [1.89 x 1.89]	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	**T008883**
Adapter front bezel, 60 x 50 [2.36 x 1.97]	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	**N003001**
Transparent cover, lockable, IP65	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]		**N003002**
Sealing cover type K1, IP65	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]		**G008301**
Mounting frame 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	**G300004**

Suitable gaskets, other accessories and installation examples for optional accessories can be found in chapter accessories or in the accessories section under: www.kuebler.com/accessories.

Technical data

General technical data

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

Mechanical characteristics

Housing	front panel mount 48 x 24 mm [1.89 x 0.94"] acc. to DIN 43700; RAL 7021, dark grey
Protection	IP65 (front side)
Weight	approx. 50 g [1.76 oz]
Connections	screw terminal, pitch 5.08 mm [2"], 7 pin

Electrical characteristics

Power supply	10 ... 30 V DC, galvanically isolated with integrated reverse polarity protection
Power consumption	max. 1 W
Test voltage	500 V, 50 Hz, 1 min.
EMC standard	EN 55011 class B EN 61000-6-2, EN 61000-6-3
UL approval	file E128604

Standard signal outputs / control input

Current output		0 ... 24 mA, increment 10 µA
	load 20 mA:	≤ 500 Ohm
	> 20 mA:	≤ 400 Ohm
Voltage output		0 ... 12 V, increment 10 mV
	load	≥ 2 kOhm
Control input Hold (HIGH active)	HIGH LOW	4 ... 30 V DC 0 ... 2 V DC
Accuracy		< 0.2% of the full scale value ±0.02 %/$K_{Ambient}$

Process devices

Setpoint adjuster

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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 analog 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.
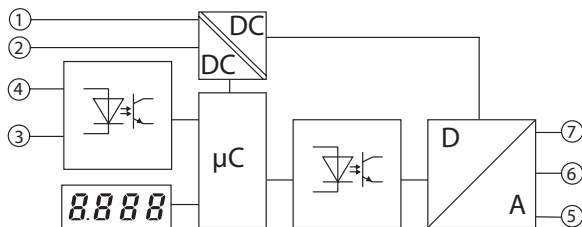- Cyclically limited (time) or unlimited.

Example of an automatic ramping function
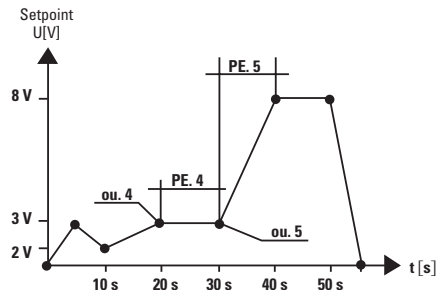
Example with 8 points	
ou. 1	0 V
PE 1	5 s
ou.2	3 V
PE 2	5 s
ou. 3	2 V
PE 3	10 s
ou. 4	3 V
PE 4	10 s
ou. 5	3 V
PE 5	10 s
ou. 6	8 V
PE 6	10 s
ou. 7	8 V
PE 7	10 s
ou. 8	0 V
PE 8	5 s

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)

Terminal assignment

Inputs

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

Outputs

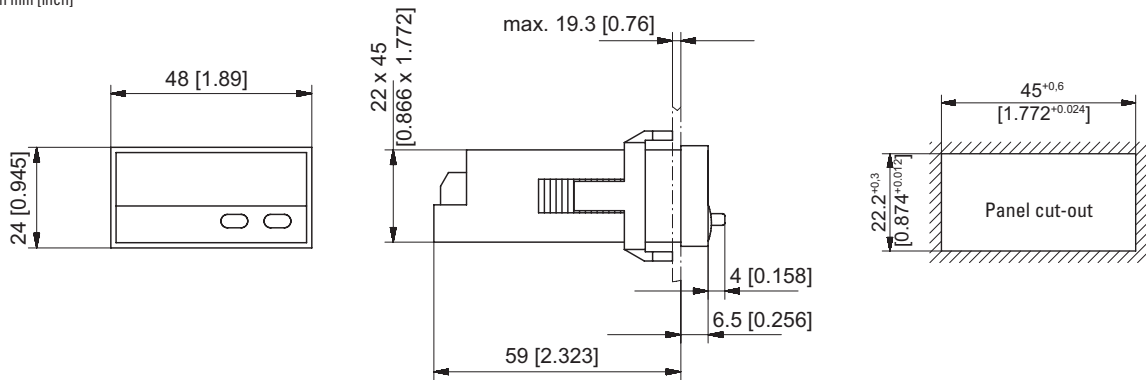| 5	6	7
0 ... 24 mA	Analog GND_3	0 ... 12 V DC
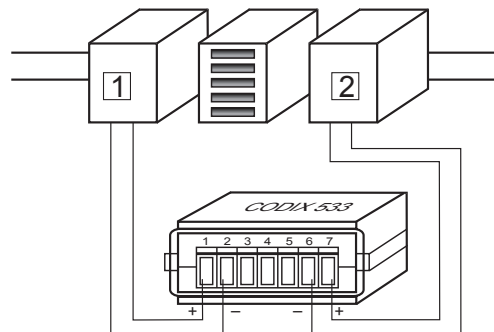
1 Power supply
2 Analog input

Setpoint adjuster

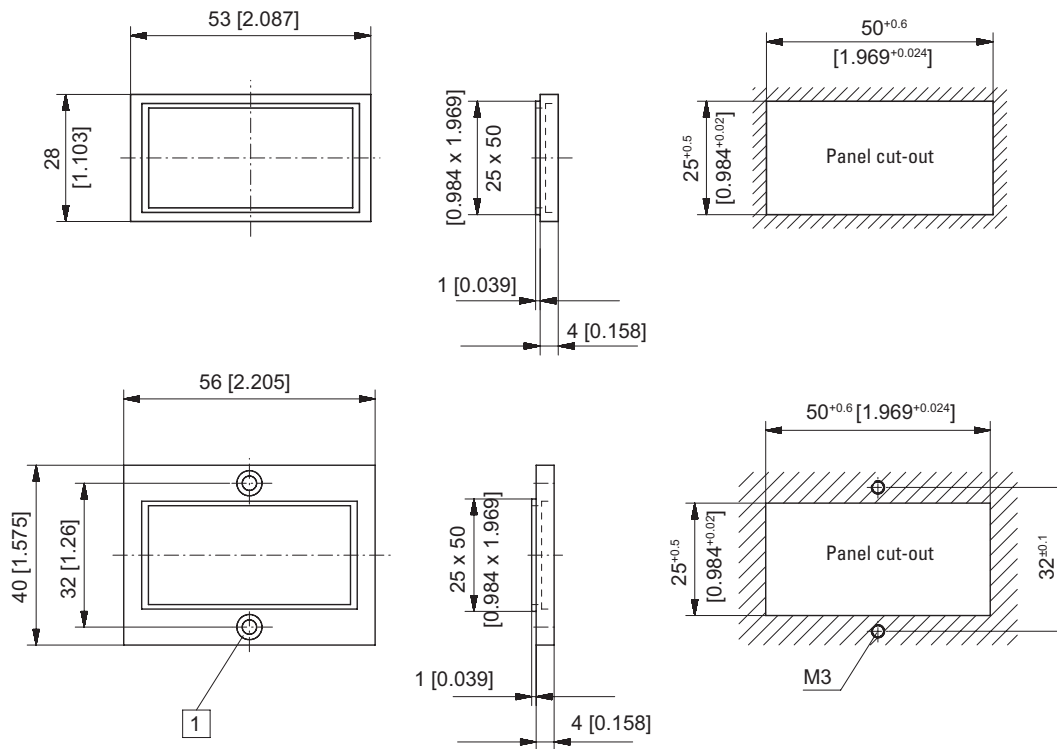| LED setpoint adjuster | Standard signal output for mA or V, also time-controlled (DC) | Codix 533 |

Dimensions

Dimensions in mm [inch]

48 [1.89]

24 [0.945]

22 x 45 [0.866 x 1.772]

max. 19.3 [0.76]

4 [0.158]

6.5 [0.256]

59 [2.323]

45 $^{+0,6}$ [1.772 $^{+0.024}$]

22.2 $^{+0,3}$ [0.874 $^{+0.012}$]

Panel cut-out

Front bezel

53 [2.087]

28 [1.103]

[0.984 x 1.969] 25 x 50

1 [0.039]

4 [0.158]

50 $^{+0.6}$ [1.969 $^{+0.024}$]

25 $^{+0.5}$ [0.984 $^{+0.02}$]

Panel cut-out

56 [2.205]

40 [1.575]

32 [1.26]

25 x 50 [0.984 x 1.969]

1 [0.039]

4 [0.158]

50 $^{+0.6}$ [1.969 $^{+0.024}$]

25 $^{+0.5}$ [0.984 $^{+0.02}$]

Panel cut-out

32 $^{±0.1}$

M3

1

1 Countersinking Af3, DIN 74

Setpoint adjuster

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

Areas of application / Applications

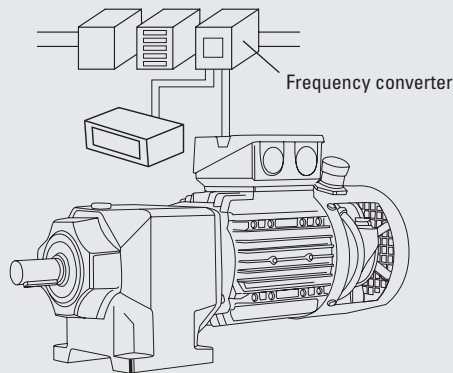|	Simple control (fixed installation) in plants, machines and devices	For use in set-up mode of plants, machines and devices
	Time-based ramping up or down of:	Manual (direct) specification or time-based or manual setting (ramping up or down) of:

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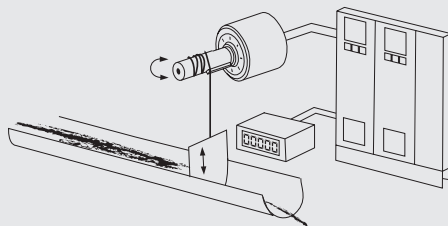In short: all physical quantities that can be represented with analog standard signals.

Applications

Simple time controller with standard signal output

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

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

Frequency converter

Frequency converter

Simulation

Control of simple, time-based processes by means of an analog signal, e.g. ramping control for locks and sluices
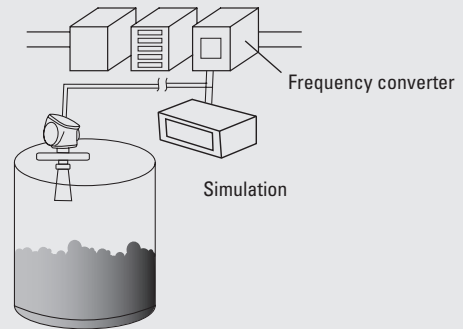
Alignment for temperature-based processes without having to heat up the plant:
the setpoint adjuster can simulate various processes for test purposes.
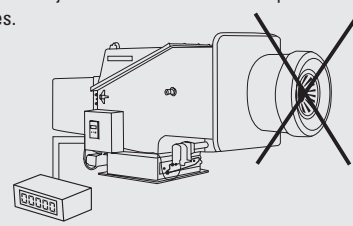
Solution with different modes

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.