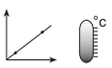
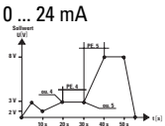
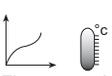
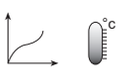
Kübler

Process Technology

- Process displays
- Temperature displays
- Process controllers
- Setpoint generator
- Accessories

pulses for automation

Overview

	Type	Inputs	Outputs	Additional functions	Page
	***CODIX* 529**	 0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V	–	Display Hold, Two adjustable characteristic curve end points, MIN/MAX value detection	12
	***CODIX* 530** With integration function (totaliser)	 0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V	–	Display Hold/Reset input, Two adjustable characteristic curve end points,Programmable mains hum suppression.	13
	***CODIX* 531** For temp. measurement with resistance-thermometer	 PT100, Ni100	–	Display Hold, MIN/MAX value detection with data backup in case of PowerOff Display in °C or °F	14
	***CODIX* 532** For temp. measurement with thermocouples	 J, K, N thermocouples	–	Display Hold, internal or external cold junction-compensation, MIN/MAX value detection in case for PowerOff. Display in °C or °F	16
	***CODIX* 533** Setpoint generator/ Time-based process adjuster	–	0 ... 12 V and 0 ... 24 mA 	When a value is entered using the keys on the front, this will appear on the output of the device as either a current or a voltage value. Manual operation or programmable time-based operation possible.	36
	***CODIX* 550**	 0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V ±10 V	Option: serial interface RS232/422/485	Display Hold, programmable input characteristic curve with 24 control points for voltage or mA ranges, MIN/MAX value detection.	18
	***CODIX* 551** For temperature measurement sensors in the mV range	 Thermocouples B, E, J, K N, R, S, T 0 ... 10 mV; ±100 mV Resistance thermometers PT100, PT1000, 0 ... 400/4000 Ω	Option: serial interface RS232/422/485	Display Hold, programmable input characteristic curve for mV/400/4000 Ω range MIN/MAX value detection	20
	***CODIX* 552** With integration function (totaliser)	 0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V ±10 V	Option: serial interface RS232/422/485	Display Hold integration function (totaliser) resetting key programmable characteristic curve with 24 control points MIN/MAX value detection	22
	***CODIX* 553** With 2 limit values	 0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V ±10 V	Relays with - change-over contact or optocoupler Option: serial inter-face RS232/422/485	2 limit values, limit values resetting key, key lock input, programmable characteristic curve with 24 control points MIN/MAX value detection, display hold	24
	***CODIX* 554** For temperature measurement sensors in the mV range	 Thermocouples B, E, J, K N, R, S, T 0 ... 10 mV; ±100 mV Resistance thermometers PT100, PT1000, 0 ... 400/4000 Ω	Relays with - change-over contact or optocoupler Option: serial interface RS232/422/485	2 limit values, limit values resetting key, key lock input, programmable characteristic curve with 24 control points MIN/MAX value detection, display hold	26

Overview

	Type	Inputs	Outputs	Additional functions	Page
	***CODIX* 555** With integration function (totaliser), and 2 limit values	0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V ±10 V	Relays with change-over contact or optocoupler Option: serial interface RS232/422/485	2 limit values, integration function (totaliser) resetting key, key lock input, programmable characteristic curve with 24 control points MIN/MAX value detection, display hold	30
	**Type 573** 2 Analogue inputs Analogue output 2 Limits Linearisation	±10 V 0 ... 20 mA, 4 ... 20 mA	2 Optocoupler-outputs or analogue output 0/4 ... 20 mA, ±10 V 0 ... 10 V	The process controller can also be used in dual channel mode; here all arithmetic operations are available for calculating sum total, difference etc. Tare, Offset or Teach-in function.	32
	***CODIX* 850**	0 ... 20 mA, 4 ... 20 mA ±20 mA 0 ... 1 V, 0 ... 20 V, ±100 mV, ±10 V Resistance thermometers Thermocouples	0 ... 20 mA, 4 ... 20 mA 20 ... 4 mA, 20 ... 0 mA 0 ... 10 V optional 2 relays, each with a change-over contact	Measuring transducer power supply RS232 Interface HART® communication socket	34
	***CODIX* 851** With LCD-Display and control keys	0 ... 20 mA, 4 ... 20 mA ±20 mA 0 ... 1 V, 0 ... 20 V, ±100 mV, ±10 V Resistance thermometers Thermocouples	0 ... 20 mA, 4 ... 20 mA 20 ... 4 mA, 20 ... 0 mA 0 ... 10 V optional 2 relays, each with a change-over contact	Measuring transducer power supply RS232 Interface HART® communication socket	34
	**Software EzControl**			For fast setup and programming of the ***CODIX* 55x**	39
	**DIN Rail mounting frame, small**			Accessory for our small ***CODIX*** 52X and 53X models to mount the displays in cabinets	39
	**Bezels**			Accessory for our small ***CODIX*** 52X and 53X models to mount the displays in front panels.	40
	**Transparent cover with key-lock**			Accessory for our small ***CODIX*** 52X and 53X	40

Process displays *CODIX*

	Version	Process display	Process display with totaliser function	Process display	Process display with totaliser function
	Series	*CODIX* 529	*CODIX* 530	*CODIX* 550	*CODIX* 552
	Special features	Compact, 5 digit display for analogue inputs, microprocessor based technology, galvanic isolation of the supply voltage.14 bit resolution, programmable scaling of characteristic curve for linear processes.		Very bright, large display, large keys for easy programming even wearing gloves, auxiliary sensor supply output, IP 65 protection (front). Process control devices with programmable characteristic curve with 24 control points. Relay outputs. Option: serial interface.	
	Technical data				
	Number of digits	5	5	5	5
	MIN/MAX memory (EEPROM)	yes	–	yes	yes
	Integration function scalable	–	yes	–	yes
	Display/digit height [mm]	LED/8	LED/8	LED/14	LED/14
	Dimensions [mm]	DIN 48 x 24	DIN 48 x 24	DIN 96 x 48	DIN 96 x 48
	Panel cut-out [mm]	45 x 22	45 x 22	92 x 45	92 x 45
	Inputs	0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V	0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V	0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V ±10 V	0 ... 20 mA, 4 ... 20 mA 0 ... 10 V, 2 ... 10 V ±10 V
	Control inputs	Display-Hold	Display-Hold/Reset	Display-Hold	Display-Hold/Reset
	Supply voltage [V DC/V AC]	10 ... 30	10 ... 30	10 ... 30/90 ... 260	10 ... 30/90 ... 260
	see page	12	13	18	22

Temperature displays *CODIX*

	Version	Temperature display PT100 and Ni 100 *CODIX* 531	Temperature display J, K and N *CODIX* 532	Temperature display *CODIX* 551	EzControl
	Special features	Sensor break detection, external or internal cold junction compensation		Very bright, large display, large keys for easy programming even wearing gloves. Option: serial interface.	• Easy parameter software for preset counter *CODIX* 716/717 and process displays *CODIX* 55x. • Upload and download function • Monitor- and terminal program • Online display for measurement values • Multilingual
	Technical data				
	Number of digits	5	5	5	
	MIN/MAX memory	yes	yes	yes	
	Display/Digit height [mm]	LED/8	LED/8	LED/14	
	Dimensions [mm]	DIN 48 x 24	DIN 48 x 24	DIN 96 x 48	
	Panel cut-out [mm]	45 x 22	45 x 22	92 x 45	
	Inputs				
		PT100, Ni100 resistance thermometer	J, K and N Thermocouples	0 ... + 100 mV –100 ... +100 mV 0 ... 400 Ω, 0 ... 4000 Ω, PT100/1000, Thermocouples	
	Control inputs	Display- Hold	Display- Hold	Display- Hold	
	Supply voltage [V DC]	10 ... 30	10 ... 30	10 ... 30	
	[V AC]			90 ... 260	
	see page	14	16	20	

Process Controller *CODIX*-Series

New ***– Process Controller Type 573 with analogue inputs and 2 x limit values***	Version	**Process controller**	**Temperature controller**	**Process controller**	**Process Controller, Signal Converter Type 573**
	Series	***CODIX* 553**	***CODIX* 554**	***CODIX* 555**	
	Special features	Very bright, large display, large keys for easy programming even wearing gloves, auxiliary sensor supply output, IP 65 protection (front). Process control devices with programmable characteristic curve with 24 control points. Relay outputs with hysteresis function. Menu programming. ***CODIX*** 555 has additional totaliser function. Option: serial interface.			2 analogue inputs, analogue outputs, or 2 x limit values, linearization of inputs/ outputs
Technical data					
Number of digits		5	5	5	6
Display/Digit height	[mm]	LED/14	LED/14	LED/14	LED/14
MIN/MAX memory		Yes	Yes	Yes	–
Dimensions [mm]		DIN 96 x 48	DIN 96 x 48	DIN 96 x 48	DIN 96 x 48
Panel cut-out	[mm]	92 x 45	92 x 45	92 x 45	92 x 45
Inputs					2 Analogue Inputs (±10 V, 0 ... 20 mA, 4 ... 20 mA)
0/4 ... 20 mA, 0/2 ... 10 V, ± 10 V		yes	–	yes	
Thermocouples		–	yes	–	
0 ... 400 Ω, 0 ... 4000 Ω, PT100/1000		–	yes	–	
–100 ... +100 mV		–	yes	–	
Control Inputs		Reset, Key, Display Hold	Reset, Key, Display Hold	Reset, Key, Display Hold	
Supply voltage	[V DC]	10 ... 30	10 ... 30	10 ... 30	17 ... 30
(galvanically isolated)	[V AC]	90 ... 260	90 ... 260	90 ... 260	115/230
Alarms/Outputs		2/Relay or Optocoupler-output	2/Relay or Optocoupler-output	2/Relay or Optocoupler-output	2 Optocoupler outputs or analogue outputs
see page		24	26	30	32

Process Controller *CODIX*-Series

	Version	**Multifunction Signal conditioner/ Process controller 850/851**	
	Series		
	Special features	designed for DIN-rail mounting, supplied with programming software, RS 232 interface	
Technical data			
Number of digits		5	
Display/Digit height	[mm]	6	
Dimensions [mm]		45 x 110 x 112	
Inputs		0 ... 1V, 0 ... 20V, –100 ... +100mV, –10 ...+10V, 0/4 ... 20mA, ±20mA, Potentiometer PT100/500/1000	
Power supply	[V DC]	18 ... 36	
	[V AC]	20 ... 28, 90 ... 253	
Limits/Outputs		Relay, Analogue out	
see page		34	

Setpoint generator *CODIX* 533

New ***– Setpoint generator/ Time-based process adjuster***	Version	**Setpoint generator/ Time-based process adjuster**	
	Series		
	Special features	When a value is entered using the keys on the front, this will appear on the output of the device as either a current or a voltage value. Manual operation or programmable.	
Technical data			
Function		Setpoint output	
Display/Digit height	[mm]	4 LED/8	
Dimensions [mm]		DIN 48 x 24	
Panel cut-out	[mm]	45 x 22	
Outputs		0 ... 12 V DC and 0 ... 24 mA	
Increment		10 µA, 10 mV	
Accuracy		0,1 %	
Inputs		Hold input, 2 keys	
Power supply	[V DC]	10 ... 30 V DC galvanically isolated	
see page		36	

EzControl

- Easy parameter software for counter type 716/717 and process displays 55x
- Upload and download function
- Monitor- and terminal program for easy diagnostic functions
- Online display of the measurement values
- German and English

see page 39

DIN rail mounting frame

- for mounting our small ***CODIX*** 52X and ***CODIX*** 53X in control cabinets
- Cutout 50.4 x 25.4
- For snap-on fitting to 35mm top-hat or G profile DIN rails
- can also be used in domestic installations
- Material: plastic, chromated sheet steel

see page 39

Cover and adapters

see page 39/40

Support and Service

Support
You will find comprehensive support pages on our home page: www.kuebler.com

Download our operating instructions from the support area of our home page

Visit our home page. To convince you of the easy programming and use of our products, we give you the possibility to **download the operating instructions before you buy** our products. You simply need Acrobat Reader to read and print our operating instructions.

All operating instructions are available in 3 languages (German, English and French). The ***CODIX*** **531/532** temperature displays are available in 5 languages (German, English, French, Spanish and Italian).

Personal advice:

Send an e-mail to
sales@kuebler.com
or call us:
+49 (0) 77 20 - 39 03 - 0

Our technical support team and our sales engineers will give you all information and advice you might need.

Process devices

Universal and clearly legible!

The ***CODIX*** range of devices from KÜBLER is the right solution whenever you want to display and control process values (e.g. temperature, pressure) or other analog measured values, or wish to convert and adapt measured variables.
When mounting space is tight, then the ***CODIX*** 529-532 models in their DIN 48 x 24 housing are the ideal solution.

If the device is to be operated with gloves, or if it must be legible from a great distance, choose the ***CODIX***-Series 55X with a DIN 96 x 48 housing.

The multifunction ***CODIX*** 85X Signal Conditioners, for DIN rail mounting in control cabinets, can be adapted to any application and configured via a PC.

Setpoint generator/ Time-based process adjuster *CODIX* 533
The set-point generator/adjuster triggers a standard signal or a freely programmable signal sequence from 0 ... 12 V or from 0 ... 24 mA. The set-point generator / adjuster is a real innovation opening up new application potentials in process technology and automation.

The multifunction process controller **Type 573** with 2 analogue inputs can be used both in single channel mode as well as in dual channel. In dual channel mode, all arithmetic operations are available for displaying sum total, difference, ratio or the product. Inputs and outputs can be scaled separately.

Process Controllers

Application areas for the KÜBLER Process Controllers

- Level measurement
- Flow measurement
- Silos
- Rotational speed display for machines
- Cabinet cooling
- Woodworking machines
- Bakery plants
- Drying plants/ovens
- Packaging machines
- Machine tools and plastic processing machines
- Chemical and pharmaceutical plants
- Food and drink processing machines
- Semiconductor industry
- Power supply and air conditioning
- Paper machines
- Glass production machines
- Speed monitoring
- Stretch and compression process monitoring
- Parallel-feed monitoring

Application areas for the KÜBLER Setpoint generators

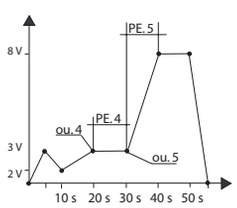
- Food, Chemical and Pharmaceutical industries
- Irrigation systems, Pump control
- Machine building: to simulate sensors, and speed controls for motors and pumps as well as automatic plant lubrication
- Medical Technology: for dosing, mixing or simulation
- Petrochemical engineering: for filling, mixing, simulation and for pump control

Advantages of all our Process Devices

- Galvanic isolation
- Linearisation function with up to 32 control points
- The ***CODIX*** family concept means simple, standard operation
- Modern industrial design
- Delivery at short notice from stock
- Attractive price/performance ratio

Advantages of the Setpoint generator *CODIX* 533

- The Setpoint generator offers three modes of operation:
  - Manual operation
  - Manual ramping
  - Automatic ramping
- With automatic ramping, the times and setpoint are programmed in and are then output automatically.



Example of automatic ramping

***CODIX* 550 ... 555 with serial interface**

Your benefit

- Value interrogation via PC
- Simple programming via PC
- Software EzControl

Order information (Example for ***CODIX* 550)**

6.550.012.10X

- 0 = without interface
- 5 = RS232
- 6 = RS422
- 7 = RS485

Process controllers

Why process controllers with an analogue input?

For many measuring operations, a digital signal acquisition is too inaccurate or too expensive. This is why analogue signal acquisition is often used in industrial environments. This includes for example temperature, weight (mass), pressure, filling level, volume (flow), speed, acceleration, position and many others. The sensor signals are mostly very small (in the mV or µV range) The KÜBLER Process Controllers amplify these signals, correct possible errors and send them to the display. The ***CODIX*** 850/851 process measuring transducers convert these signals into standard signals (e.g. 0 ... 10 V or 4 ... 20 mA). These signals can then be processed further and/or displayed. In addition it is possible to transmit the standard signals over larger distances. Many sensors do not supply a linear output signal. The KÜBLER process displays linearise these signals with up to 32 control points, depending on the version.

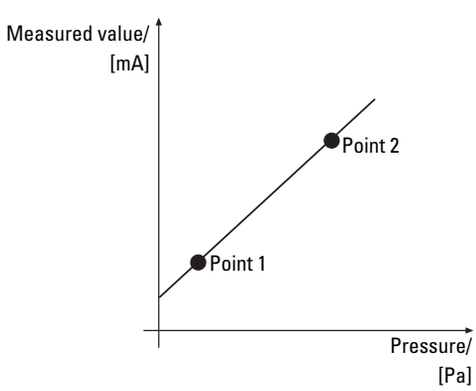
Input signals and output signals

KÜBLER offers the following **input signal** ranges, according to the version:
0 ... 20 mA
4 ... 20 mA
±20 mA
±100 mV, ±10 V
0 ... 10 V DC
2 ... 10 V DC
0 ... 400 Ω
0 ... 4000 Ω
PT1000, PT100, Ni100 for 2, 3, and 4 wire technology
Thermocouples B, E, J, K, N, R, S, T
The 2 .. 10 V and 4 ... 20 mA signals have the advantage that they also offer sensor monitoring at the same time. A 0 V or 0 mA signal may for instance mean that the sensor line is broken.

With the ***CODIX*** 850/851 and Type 573, KÜBLER offers the following **output signal** ranges for further processing:
0 ... 20 mA
4 ... 20 mA
20 ... 4 mA
20 ... 0 mA
0 ... 10 V
±10 V
Error behaviour according to NAMUR NE43, optocoupler or relay outputs in conjunction with adjustable limit values.

The 4 ... 20 mA and 20 ... 4 mA signals have the advantage that they also offer sensor monitoring at the same time. A 0 mA signal may for instance mean that the sensor line is broken.

Example



A digital display with analogue input, e.g. ***CODIX*** 550 can be used to replace or complement the pressure gauges on a compressor.
The current signal of the pressure sensor is displayed as the pressure on the display.
Programming of the characteristic curve:
Point 1: 4 mA, 2.5 Pa
Point 2: 20 mA, 30 Pa
Minimum and maximum values are saved and can be read at any time. The display value can easily be scaled, to show for example atmospheres or bar instead of Pa, by modifying the points of the characteristic curve.

The integration function (totaliser)

The devices equipped with the integration function (totaliser) can calculate the integral, that is to say "totalize" the analogue signal, using any period of time.
A typical field of application is flow measurement. In this case, an analogue sensor measures the flow quantity per time unit in a pipe and displays the momentary flow value (e.g. litres per minute). The integration function (totaliser) calculates, from this constantly fluctuating quantity, a "total", that is to say it defines the absolute quantity that has flowed through the pipe (e.g. in litres).

Temperature measurement technology

Which temperature display/control is the right one for you?
The device must be chosen according to the temperature sensor used.

Pt and Ni resistance sensors:
Temperature measurement with resistance sensors uses the temperature sensitivity of metal resistances. A constant current is applied to the measuring resistance. The voltage drop at the resistance is measured. This drop represents the temperature measurement. KÜBLER offers the following devices for resistance sensors:
***CODIX* 531, *CODIX* 551, *CODIX* 554**
***CODIX* 850/851**

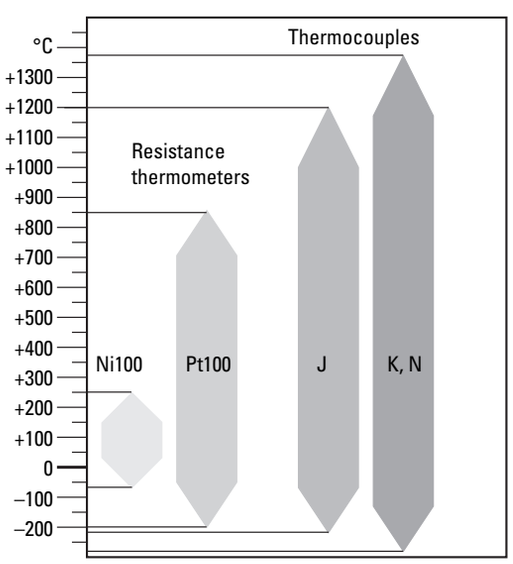
Thermocouple sensors
Temperature measurement with thermocouple sensors uses the thermoelectric effect. Thermocouples consist of two wires, soldered together. The wires are made of different metals. The thermoelectric voltage appearing at the soldering point is measured, amplified and displayed by the KÜBLER display. KÜBLER offers the following devices for thermocouple sensors:
***CODIX* 532, *CODIX* 551, *CODIX* 554**
***CODIX* 850/851**

The ***CODIX* 551, *CODIX* 554** displays and the ***CODIX* 850/851** signal conditioners/process controllers suit as well for resistance sensors as for thermocouples.

Information about 2, 3 or 4 wire circuits

Unlike thermocouples, which deliver a voltage, a resistance does not deliver any signal by itself. This means that it requires external energy from an electrical measuring circuit. This power source is generally a constant current source.
With the **2 wire circuit**, the measuring resistance is connected to the measuring device by means of two wires. The conductors are connected serially with the measuring resistance and lead to a higher total resistance, and thus to a measuring error. With the **3 wire circuit**, an additional wire is connected to the resistance, resulting in two measuring circuits. The resistance of the conductors is compensated for by means of internal circuits, provided all three conductors are identical.
With the **4 wire circuit**, the resistance of all conductors is compensated for, even if they have different lengths.

Overview ot the temperature measuring range



The diagram opposite shows an overview of the temperature range of the various sensors.

Advice:
– for Pt100 resistance sensors adhere to DIN IEC 751
– for Ni100 resistance sensors adhere to DIN 43760
– for thermocouple sensors adhere to DIN IEC 584.
– J: (Fe-CuNi)
– K: (Ni-CrNi)
– N: (NiCrSi-NiSi)

J: (Fe-CuNi)
These thermocouples are very common, economic and deliver a high thermoelectric voltage. Disadvantage: danger of corrosion. Iron becomes brittle with sulphurous gases.
K: (Ni-CrNi)
These thermocouples are very common, demonstrate excellent long-term stability but only have a low thermoelectric voltage.
N: (NiCrSi-NiSi)
These thermocouples are not common, since they appeared only recently on the market. They can be used for very high temperatures and can replace elements out of noble metal.

Application examples

Temperature monitoring in a tubular furnace

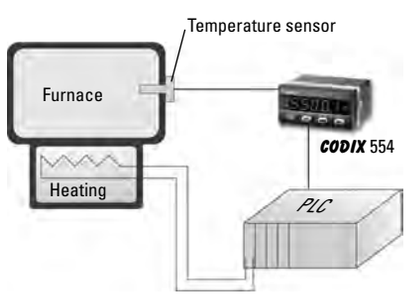
When the process temperature is higher or lower than the set value, the heating of the oven is directly controlled by means of the relay outputs of the ***CODIX*** 554 process controller. In case of very high power, the process controller can also drive a power contactor.

Linearisation of the characteristic curve of a container

Our process controllers linearise the relationship between the fill-up level h and the volume V of the container. This can be set exactly thanks to 24 or 32 control points. The devices of the ***CODIX*** 850/851 or type 573 series can output the linearised values as current or as voltage values (e.g. 4 ... 20 mA) and thus offer in addition the function of a voltage transformer.

Control of the heating of a furnace

The furnace temperature is monitored thanks to a temperature sensor. When the temperature becomes higher or lower than a defined temperature, the ***CODIX*** 554 sends an output signal to the PLC, which controls, among others, the heating of the furnace. The operator can read the temperature on the large LED Display .

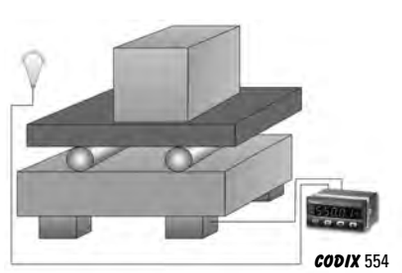


Measurement of the total throughput [m^3] and of the flow [l/min]

Thanks to its double function, the ***CODIX*** 530, 552 or 555 measures the total throughput in m^3 and the momentary flow in l/min. The sensor delivers a current signal proportional to the flow:
0 mA => 0 l/min
20 mA => 1000 l/min.
The total volume is calculated by the integration function (totaliser). Switching of the display is carried out by the front key .
The ***CODIX*** 555 has two additional limits

Weight determination

A DMS measuring tape or a strain gauge measures the pressure of the item to be weighed. The differential signal voltage lies in the mV range and this is converted to the desired weight and displayed by a ***CODIX*** 554.



CODIX 529

Your benefit
- Galvanic isolation with protection against incorrect polarity
- Autom. MIN/MAX value detection
- Freely programmable characteristic curve end points

Input range
1 current measuring input,
1 voltage measuring input

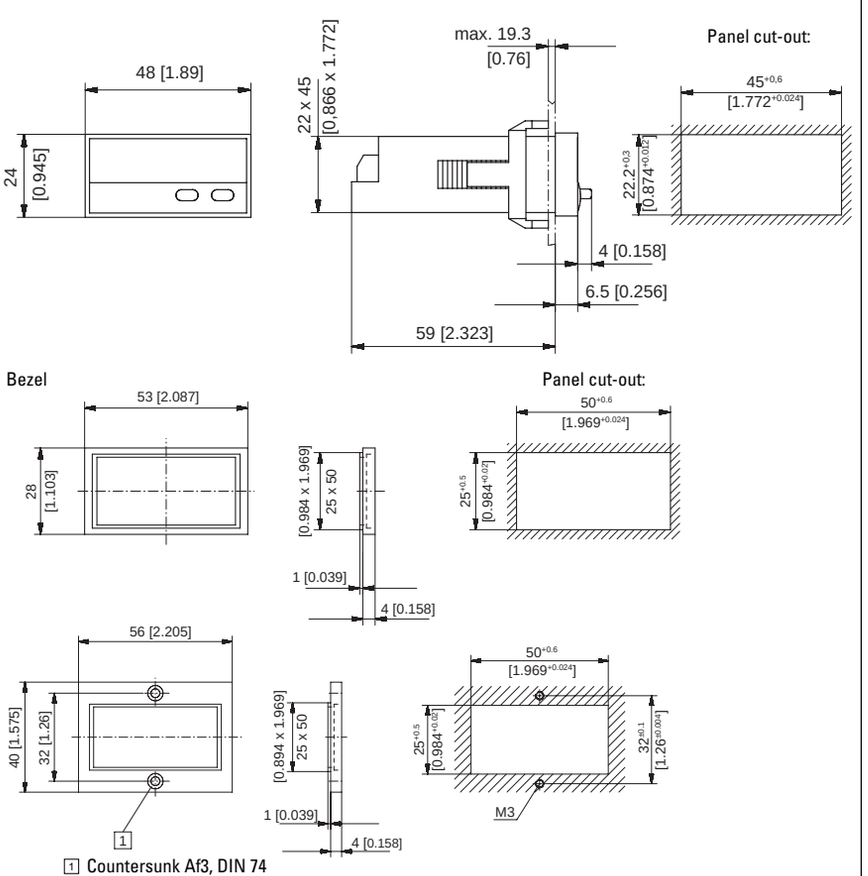
More advantages
- Compact display for analogue standard signals
- Display range -19 999 ... 99 999 with leading zeros suppression
- Modern industrial design
- Input for Display-Hold

Technical data

Supply voltage:	10 ... 30 V DC, galvanically isolated with integrated protection against incorrect polarity
Current consumption:	max. 50 mA
Display:	5-digit display, red 7-segment LED`s; height 8 mm [0.35“]
Measuring rate:	2 measurements/second
Data backup:	EEPROM
Housing:	housing for control panel 48 x 24 mm [1.89 x 0.945“] acc. to DIN 43 700; RAL 7021, dark grey
Ambient temperature:	-10 ... +50 °C [14 °F ... +122 °F]
EMC:	according to EC EMC directive 89/36/EEC
Interference emissions:	EN 61 000-6-4/EN 55 011 Class B
Interference resistance:	EN 61 000-6-2

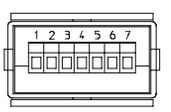
Protection: IP65	(front)
Input current measurement:	0 ... 20 mA, 4 ... 20 mA voltage drop max 1.5 V DC
Input voltage measurement :	0 ... 10 V, 2 ... 10 V input resistance approx. 1 MΩ max. input signal level 30 V DC
Control inputs:	High: 4 ... 30 V DC Low: 0 ... 2 V DC
Resolution:	14 bits
Accuracy:	< 0.1 % for the whole measuring range at an ambient temperature of 20 °C [68 °F]
Temperature drift:	< 70ppm/$K_{Ambient}$
Weight:	approx. 50 g [1.764 oz]
Connections:	screw terminal, pitch 5.08 mm [0.2“], 7 pin

Dimensions:



Connections:

1 10 ... 30 VDC	5 0 (4) ... 20 mA
2 GND	6 Analogue GND
3 GND	7 0 (2) ... 10 V DC
4 Latch	



Delivery includes:
Digital display
Panel mounting clip
Bezel for clip mount,
Panel cut-out 50 x 25 mm [1.969 x 0.984“]
Bezel for screw mount,
Panel cut-out 50 x 25 mm [1.969 x 0.984“]
Gasket
1 set of self-adhesive symbols
Multilingual operating instructions

Order Code:
CODIX 529: 6.529.012.300

Accessories see Page 39

CODIX 530 with totaliser

Your benefit

- Compact display for analogue measured values and integration function (totaliser) with programmable factor
- Galvanic isolation with protection against incorrect polarity
- Display Hold input
- Freely programmable characteristic curve end points

Input range

1 current measuring input,
1 voltage measuring input

- Programmable Display Hold input (MPI) or integration function (totaliser) reset input

More advantages

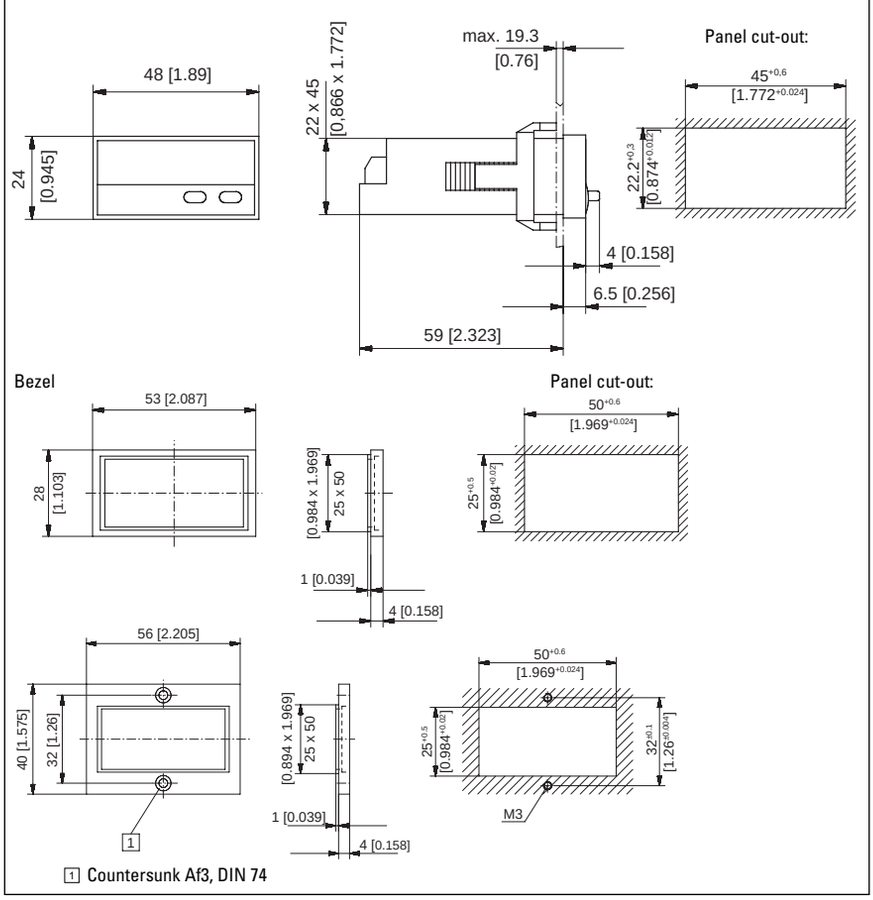
- Display range -19 999 ... 99 999 with leading zeros suppression
- Modern industrial design
- Programmable mains hum suppression

Technical data

Supply voltage:	10 ... 30 V DC, galvanically isolated with integrated protection against incorrect polarity
Current consumption:	max. 50 mA
Display:	5-digit display, red 7-segment LED`s; height 8 mm [0.35“]
Measuring rate:	1 measurement/second
Data backup:	EEPROM
Housing:	housing for control panel 48 x 24 mm [1.89 x 0.945“], acc. to DIN 43 700; RAL 7021, dark grey
Ambient temperature:	–10 ... +50 °C [14 °F ... +122 °F]
EMC:	according to EC EMC directive 89/36/EEC
Interference emissions:	EN 61 000-6-4/EN 55 011 Class B
Interference resistance:	EN 61 000-6-2
Protection: IP65	(front)

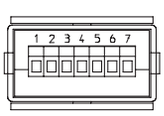
Input current measurement:	0 ... 20 mA, 4 ... 20 mA voltage drop max 1.5 V DC
Input voltage measurement:	0 ... 10 V, 2 ... 10 V input resistance app. 1 MΩ max. input signal level 30 V DC
Control inputs:	High: 4 ... 30 V Dc Low: 0 ... 2 V DC
Resolution:	14 bits
Accuracy:	< 0.1 % for the whole measuring range at an ambient temperature of 20 °C [68 °F]
Temperature drift:	< 70ppm/$K_{Ambient}$
Accuracy:	50 ppm
Weight:	approx. 50 g [1.764 oz]
Connections:	screw terminal, pitch 5.08 mm [0.2“], 7 pin

Dimensions:



Connections:

1	10 ... 30 VDC	5	0 (4) ... 20 MA
2	GND	6	Analogue GND
3	GND	7	0 (2) ... 10 V DC
4	MPI		



Delivery includes:

Digital display
Panel mounting clip
Bezel for clip mount,
Panel cut-out 50 x 25 mm [1.969 x 0.984“]
Bezel for screw mount,
Panel cut-out 50 x 25 mm [1.969 x 0.984“]
Gasket
1 set of self-adhesive symbols
Multilingual operating instructions

Order Code:

CODIX 530: 6.530.012.300

Accessories see page 39

CODIX 531 for Pt100 and Ni100 resistance thermometers

Your benefit
- Temperature display in °C or °F
- MIN/MAX value acquisition and data backup in case of Power Off
- Galvanic isolation with protection against incorrect polarity
- Screw terminal connection: pitch 5 mm
- Display Hold input

Input range
Resistance thermometer

More advantages
- Compact and low-price temperature display
- Easy programming and operation
- Modern industrial design
- 5 measurements/second

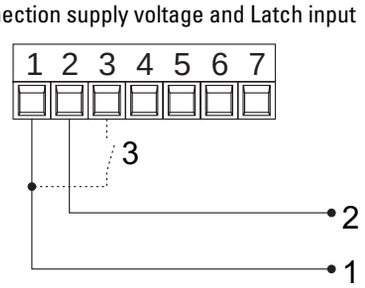
Technical data

Supply voltage:	10 ... 30 V DC, galvanically isolated with integrated protection against incorrect polarity
Current consumption:	max. 40 mA
Display:	5-digit display, red 7-segment LED`s; height 8 mm [0.315“]
Measuring rate:	5 measurements/second
Display refresh:	1 ... 2 times per second
Data backup:	EEPROM
Housing:	housing for control panel 48 x 24 mm [1.89 x 0.945“], acc. to DIN 43 700; RAL 7021, dark grey
Ambient temperature:	-20 ... +65 °C [-4 °F ... +149 °F]
EMC:	according to EC EMC directive 89/36/EEC
Interference emissions:	EN 61 000-6-4/EN 55 011 Class B
Interference resistance:	EN 61 000-6-2
Protection: IP65	(front)
Weight:	approx. 50 g [1.764 oz]
Circuit type:	2-wire, 3-wire and 4-wire connection technique, programmable

Input:	Pt100-Resistance thermometer Ni100-Resistance thermometer with sensor breakage monitoring
Control inputs:	High: 4 ... 30 V DC Low: 0 ... 2 V DC
Supply current:	1 mA
Supply line:	2-wire: max 20 Ω, programmable 3-wire, 4-wire: max 20 Ω, no balancing required
Temperature ranges:	Pt100 acc. to DIN IEC 751: -199.9 °C ... +850.0 °C -327.8 °F ... +1562.0 °F Ni100 acc. to DIN 43760: -60.0 °C ... +250.0 °C -76.0 °F ... +482.0 °F
Resolution:	0.1°C (0.1 °F) or 1°C (1 °F)
Linearity error:	Pt100 < 0.1 % for the whole measuring range at an ambient temperature of 20 °C [68 °F] Ni100 < 0.2 % for the whole measuring range at an ambient temperature of 20 °C [68 °F]
Temperature drift:	0.1 $K/K_{Ambient}$
Connections:	screw terminal, pitch 5.08 mm [0.2“], 7 pin

Electrical connection

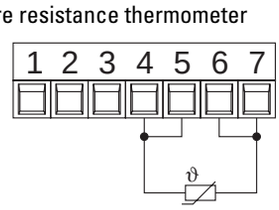
Connection supply voltage and Latch input



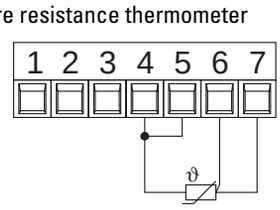
3	Latch input
2	0 V DC (GND)
1	10 ... 30 V DC

Resistance thermometer Pt100/Ni100

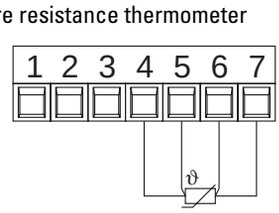
2-wire resistance thermometer



3-wire resistance thermometer

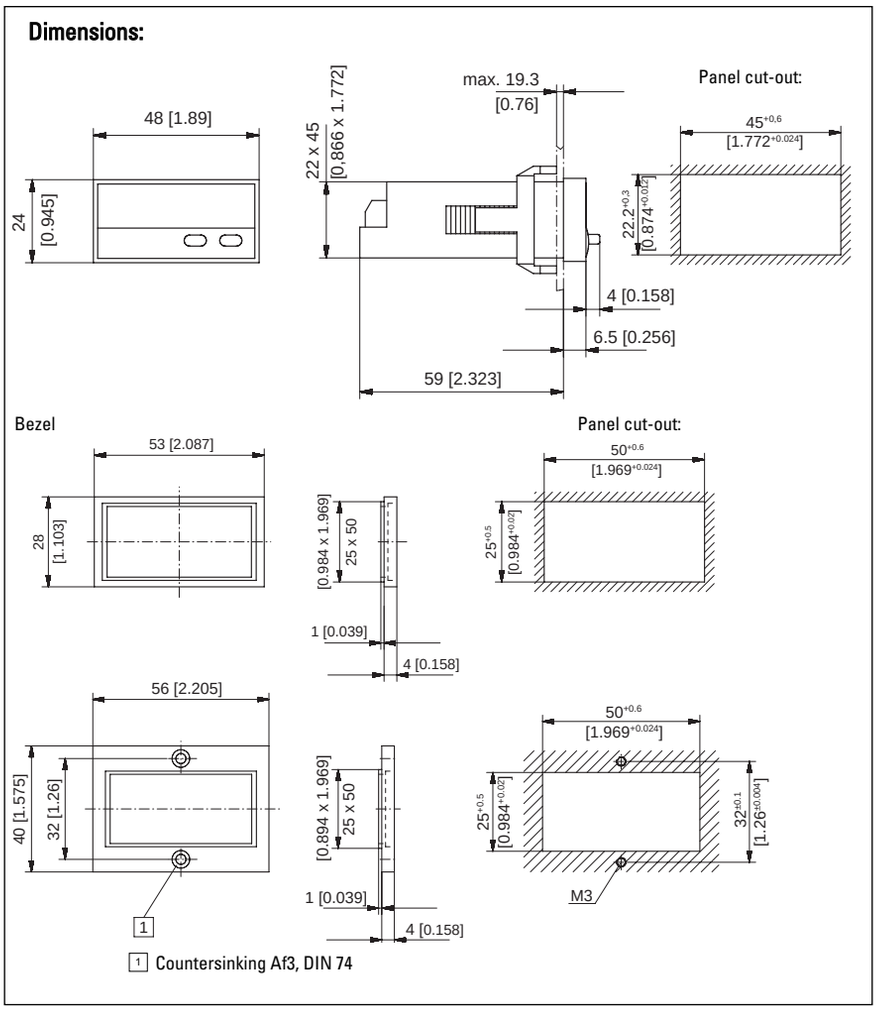


4-wire resistance thermometer



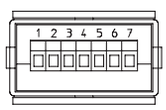
CODIX 531 for Pt100 and Ni100 resistance thermometers

Dimensions:



Connections:

1	10 ... 30 V DC supply voltage
2	0 V DC (GND)
3	Latch input
4	Pt100/Ni100
5	Pt100/Ni100
6	Pt100/Ni100
7	Pt100/Ni100



Fields of application

- Cabinet cooling
- Bakery plants
- Drying plants/ovens
- Packaging machines
- Machine tools and plastic processing machines
- Chemical and pharmaceutical plants
- Food and drink processing machines
- Semiconductor industry
- Power supply and air conditioning
- Paper machines
- Glass production machines

Delivery includes:

Digital display
Panel mounting clip
Bezel for clip mount, panel cut-out
50 x 25 mm [1.969 x 0.984“]
Bezel for screw mount, panel cut-out
50 x 25 mm [1.969 x 0.984“]
Gasket
1 set of self-adhesive symbols
Multilingual operating instructions

Order Code
CODIX 531: 6.531.012.300

Accessories see page 39

CODIX 532 for J, K and N thermocouples

Your benefit

- Temperature display in °C or °F
- MIN/MAX value acquisition and data backup in case of Power Off
- Galvanic isolation with protection against incorrect polarity
- Screw terminal connection: pitch 5 mm
- Display Hold input

Input ranges

J, K, N thermocouples
with external or internal
cold junction compensation

More advantages

- Easy programming and operation
- Modern industrial design
- 5 measurements/second

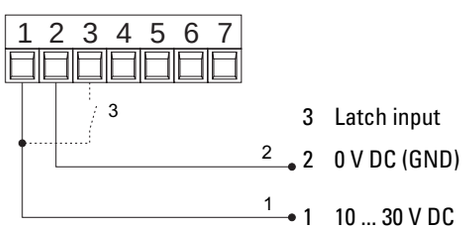
Technical data

Supply voltage:	10 ... 30 V DC, galvanically isolated with integrated protection against incorrect polarity
Current consumption:	max. 40 mA
Display:	5-digit display, red 7-segment LED`s; height 8 mm [0.35“]
Measuring rate:	5 measurements/second
Display refresh:	1 ... 2 times per second
Data backup:	EEPROM
Housing:	housing for control panel 48 x 24 mm [1.89 x 0.945“] acc. to DIN 43 700; RAL 7021, dark grey
Ambient temperature:	-20 ... +65 °C [-4 °F ... +149 °F]
EMC:	according to EC EMC directive 89/36/EEC
Interference emissions:	EN 61 000-6-4/EN 55 011 Class B
Interference resistance:	EN 61 000-6-2
Protection: IP65	(front)
Weight:	approx. 50 g [1.764 oz]
Control inputs	High: 4 ... 30 V DC Low: 0 ... 2 V DC

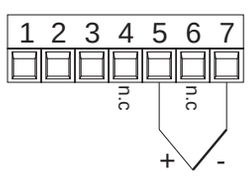
Input:	Thermocouple sensor J (Fe-CuNi) K (Ni-CrNi) N (NiCrSi-NiSi) with sensor breakage monitoring	
Temperature ranges:	according to DIN IEC 584	
	J (Fe-CuNi)	-210.0 °C ... +1200.0 °C
		-346.0 °F ... +2192.0 °F
	K (Ni-CrNi)	-200.0 °C ... +1372.0 °C
		-328.0 °F ... +2501.6 °F
	N (NiCrSi-NiSi)	-200.0 °C ... +1300.0 °C
		-328.0 °F ... +2370.0 °F
Resolution:	0.1°C (0.1 °F) or 1°C (1°F)	
Linearity error:	< 0.4 % for the whole measuring range at an ambient temperature of 20 °C [68 °F]	
Cold junction error:	±1.0 °C typ. [±1.8 °F] ±3.0 °C [±5.4 °F]	
Temperature drift:	0.1 $K/K_{Ambient}$	
Connections:	screw terminal, pitch 5.08 mm [0.2“], 7 pin	

Electrical connection

Connection supply voltage and Latch input

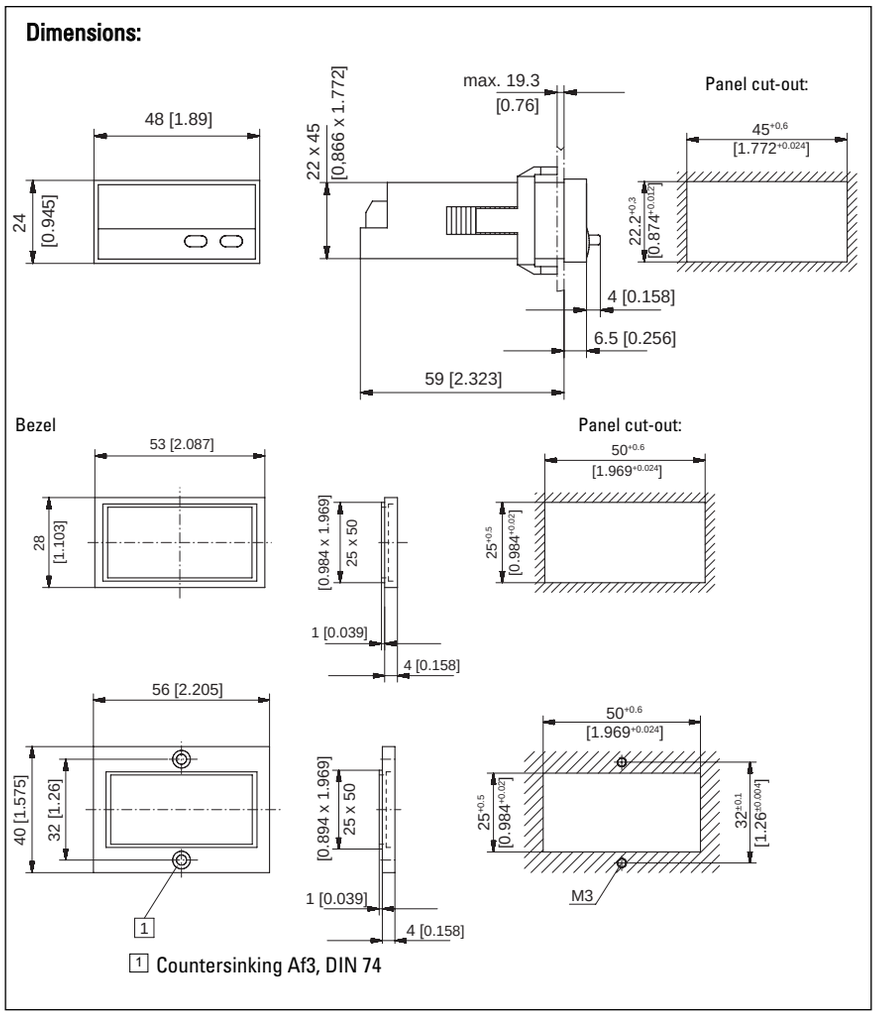


Thermocouple sensor



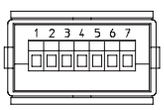
CODIX 532 for J, K and N thermocouples

Dimensions:



Connections:

1 10 ... 30 V DC supply voltage
2 0 V DC GND
3 Latch input
4 n.c.
5 Thermocouple "+"
6 n.c.
7 Thermocouple "–"



Fields of application

- Cabinet cooling
- Bakery plants
- Drying plants/ovens
- Packaging machines
- Machine tools and plastic processing machines
- Chemical and pharmaceutical plants
- Food and drink processing machines
- Semiconductor industry
- Power supply and air conditioning
- Paper machines
- Glass production machines

Delivery includes:

Digital display
Panel mounting clip
Bezel for clip mount, panel cut-out
50 x 25 mm [1.969 x 0.984"]
Bezel for screw mount, panel cut-out
50 x 25 mm [1.969 x 0.984"]
Gasket
1 set of self-adhesive symbols
Multilingual operating instructions

Order Code:
CODIX 532: 6.532.012.300

Accessories see page 39

CODIX 550

Available with serial interface and set-up software EzControl!

Your benefit
- Programmable input characteristic curve with up to 24 control points
- MIN/MAX value acquisition and data backup in case of Power Off
- Display-Hold
- Very big keys for use with gloves
- Very bright display
- Input range
  0 ... 20 mA, 4 ... 20 mA; 0 ...10 V
  2 ... 10 V; ±10 V

More advantages
- Auxiliary power supply output for measuring transducer/sensor
- Optional serial interface

Technical data

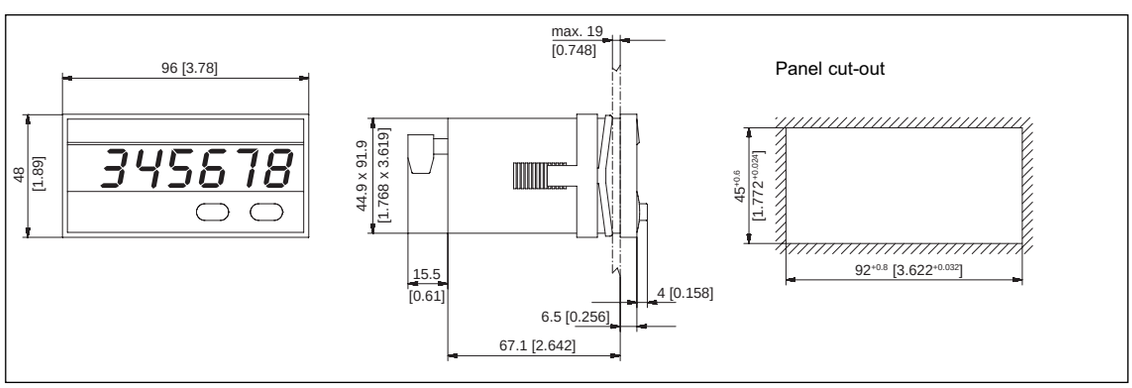
Miscellaneous Data	
Display	5 digit red LED 14.2 mm [0.559"] high
Display range	–19999 ... 99999, with leading zeros suppression
Out of Range Indication	Under-range uuuuu / Over-range ooooo
Data storage	EEPROM, 1 Million storage cycles or 10 Years
Test voltages	EN 61010 Part 1 ; overvoltage category 2, level 2
EMC	Interference emissions EN 55011 Class B
	Interference resistance EN 61000-6-2
AC power supply	90 ... 260 V AC/max. 6 VA external fuse 100 mA/T
DC power supply	10 ... 30 V DC, max. 2 W, galvanically isolated with inverse polarity protection external fuse 250 mA/T
Mains Hum Filter	digital filter 50 Hz or 60 Hz, programmable
Measurement ranges	
Current input (DC)	Ranges 0 ... 20 mA, 4 ... 20 mA
Resolution	2 µA
Voltage drop	max. 2 V at 20 mA
Max. current	50 mA
Voltage input(DC)	Ranges 0 ... 10 V, 2 ... 10 V, ±10 V
Resolution	1 mV
Input resistance	> 2 MΩ
Max. Voltage	± 30 V
Measuring speed	approx. 2 measurements/s
Linearity	< 0.1% ±1 Digit for the whole measuring range at an ambient temperature of 20°C [68 °F]
Zero calibration	automatic
Temperature drift	100 ppm/K

Weight	approx. 220 g [7.76 oz]
Protection	IP 65 (front)
Ambient temperature	-20 ... +65 °C [-4 °F ... 149 °F]
Storage temperature	-40 ... +85 °C [-40 °F ... 185 °F]
Digital inputs	
Input MPI*	Function of the input is dependent on set up
1. Function Display-Hold	to stop the instantaneous value

Auxiliary power supply output for measuring transducer/sensor	
AC models	voltage output 10 V DC ±2%, 30 mA and voltage output 24 V DC ±15%, 50 mA
DC models	only voltage output 10 V DC ±2%, 30 mA
Interface	
Available options	RS232, RS485, RS422
Baud rate	600, 1200, 2400, 4800, 9600, 19 200 programmable
Address	00 ... 99 programmable

*Multi Purpose Input

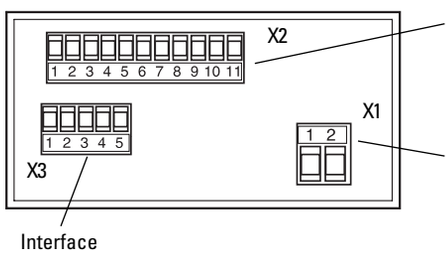
Dimensions:



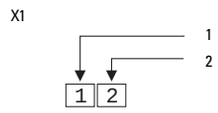
CODIX 550

Connections:

Rear side view

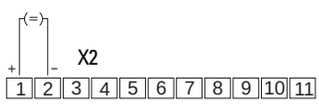


Power supply



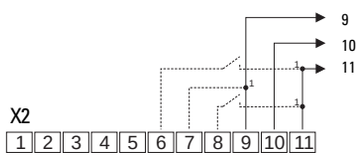
	DC version	AC version
1	10 ... 30 V DC	90 ... 260 V AC (N~)
2	GND4 (0 V DC)	90 ... 260 V AC (L~)

Current measurement



1	Current input (I) 0 ... 20 mA / 4 ... 20 mA
2	GND1 (Analog)

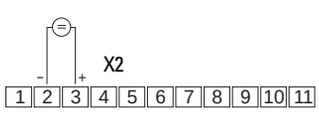
Control inputs and auxiliary power supply (U_{out})



1) Alternatively connect directly to DC supply (galvanic separation of control and measurement inputs)

9	GND3 (for Uout)
10	Uout +10 V/30 mA
11	Uout +24 V/50 mA only for power supply 90 ... 260 V AC
8	MP-Input Display-Hold
7	GND2 (MPI)

Voltage measurement



2	GND1 (Analogue)
3	Voltage input (U) 0 ... 10 V, 2 ... 10 V, -10 ... +10 V

Interface

X3 1 2 3 4 5

	RS232	RS485	RS422
1	GND	–	–
2	RxD	DO+/RI+	RI+
3	TxD	DO–/RI–	RI–
4	–	–	DO+
5	–	–	DO–

Serial interface

– For data transmission and documentation
– Connection for programmable logic controllers
– Programming via PC

Delivery includes:

Process display
Screw terminal, 2-pole, RM 5.08
Screw terminal, 11-pole, RM 3.81
Screw terminal, 5-pole, RM 3.81(*)
Clamping bracket
Gasket
Multilingual operating instructions
1 set of self-adhesive symbols

* only with the interface option

Order code:

6.550.012.X0X

- Interface
  - 0 = without interface
  - 5 = RS232
  - 6 = RS422
  - 7 = RS485
- Supply voltage
  - 0 = 90 .. 260 V AC
  - 3 = 10 .. 30 V DC

CODIX 551 for thermocouples and sensors in mV range

Available with serial interface and set-up software EzControl!

Your benefit

- Programmable input characteristics curve with up to 24 control points for 0...400/4000 Ω, 0...100 mV and -100... +100 mV
- MIN/MAX value acquisition and data backup in case of Power Off
- Auxiliary power supply output for measuring transducer/sensor
- Display Hold input
- Easy operation and programming thanks to large keys
- Inputs thermocouples millivolt, resistance thermometer with 2, 3 or 4-wire measurement
- Optional serial interface

Technical Data

Display	5-digit display, red 7-segment LED´s; height 14.2 mm [0.559“]
Display range	–19999 ... 99999, with leading zeros suppression
Out of range - Indication	Under-range uuuuu / Over range ooooo
Data storage	EEPROM, 1 Million storage cycles or 10 Years
Test voltages	EN 61010 Part 1 ; overvoltage category 2, level 2
EMC	Interference emissions EN 55011 Class B
	Interference resistance EN 61000-6-2
AC power supply	90 ... 260 V AC / max. 6 V A external fuse 100 mA/T
DC power supply	10 ... 30 V DC / max. 2 W/galvanically isolated/ with inverse polarity protection external fuse 250 mA/T
Mains Hum Filter	digital filter 50 Hz or 60 Hz, programmable

Measurement ranges

Thermocouples		Ranges	Accuracy
Type	B	400.0 °C ... 1820.0 °C [752 °F... 3308 °F]	±1.5 °C [± 2.85 °F]
	E	-200.0 °C ... 1000.0 °C [-328 °F... 1832 °F]	±0.5 °C [± 0.9 °F]
	J	-210.0 °C ... 1200.0 °C [-346 °F... 2192 °F]	±0.5 °C [± 0.9 °F]
	K	-200.0 °C ... 1372.0 °C [-328 °F... 2501 °F]	±0.5 °C [± 0.9 °F]
	N	-200.0 °C ... 1300.0 °C [-328 °F... 2372 °F]	±0.5 °C [± 0.9 °F]
	R	-50.0 °C ... 1760.0 °C [-58 °F... 3200 °F]	±1.0 °C [± 1.8 °F]
	S	-50.0 °C ... 1767.0 °C [-58 °F... 3212.6 °F]	±1.0 °C [± 1.8 °F]
	T	-210.0 °C ... 400.0 °C [-346 °F... 752 °F]	±0.5 °C [± 0.9 °F]
Resolution		0.1 °C [0.1 °F]	
Cold-junction-compensation		internal or external (programmable)	

Input for resistance thermometers

Resistance thermometer		Ranges	Accuracy
Type	Pt100	-200,0 °C ... 800,0 °C [-328 °F... 1472 °F]	±1.0 °C [± 1.8 °F]
	Pt1000	-200.0 °C ... 800.0 °C [-328 °F... 1472 °F]	±1.0 °C [± 1.8 °F]
Resolution		0,1 °C [0.18 °F]	
Type		2 wire, 3 wire and 4 wire technology, programmable	
Current		800 µA at Pt100; 80 µA at Pt1000	

Input for resistance

	Ranges	Accuracy
Resistance	0 ... 400 Ω	± 0.2 Ω
Resistance	0 ... 4000 Ω	± 2.0 Ω
Resistance	14 Bit	
Type	2 wire, 3 wire and 4 wire technology, programmable	
Current	800 µA at 400 Ω 80 µAat 4000 Ω	

Voltage measurement

	Ranges	Accuracy
Voltage	0 .. +100 mV DC	< 0.1% v. Mb ± 1 Digit
Voltage	-100 .. +100 mV DC	< 0.1% v . Mb ± 1 Digit
Resolution	14 bit	
Input resistance	> 2 MΩ	

Further data for measurement input

A/D transducer	Dual-Slope
Measuring speed	approx. 1 measurement/sec
Zero adjustment	automatically
Weight	approx. 220 g [7.76 oz]
Protection	IP 65
Ambient temperature	-20 ... +65 °C [-4 °F ... 149 °F]
Storage temperature	-40 ... +85 °C [-40 °F ... 185 °F]

Digital input

Input MPI*	Function of the input depends on set-up
1. Function: Display-Hold	to stop the instantaneous value
Input KEY	Keypad lock-out of alarm settings

Auxiliary power supply output for measuring transducer/sensor

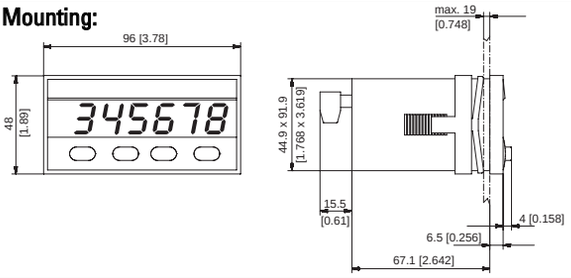
AC models	voltage output 10 V DC ±2%, 30 mA and voltage output 24 V DC ±15%, 50 mA
DC models	voltage output 10 V DC ±2%, 30 mA

Interface

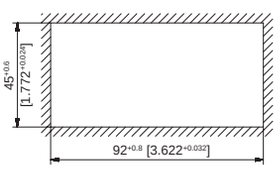
Available options	RS232, RS485, RS422
Baud rate	600, 1200, 2400, 4800, 9600, 19200 programmable
Address	00 ... 99 programmable

*Multi Purpose Input

Mounting:



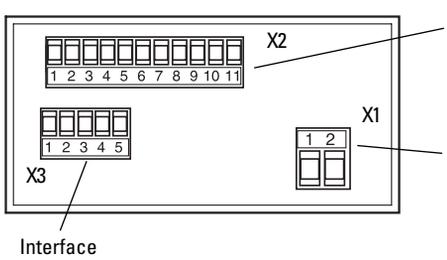
Panel cut-out



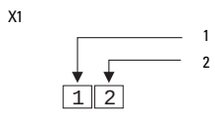
CODIX 551 for thermocouples and sensors in mV range

Electrical Connections

Rear side view



Power supply



	DC voltage	AC voltage
1	10 ... 30 V DC	90 ... 260 V AC (N~)
2	GND4 (0 V DC)	90 ... 260 V AC (L~)

Interfaces

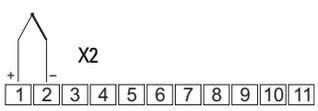
X3 1 2 3 4 5

	RS232	RS485	RS422
1	GND	–	–
2	RxD	DO+/RI+	RI+
3	TxD	DO–/RI–	RI–
4	–	–	DO+
5	–	–	DO–

Serial interface
– For data transmission and documentation
– Connection for programmable logic controllers
– Programming via PC

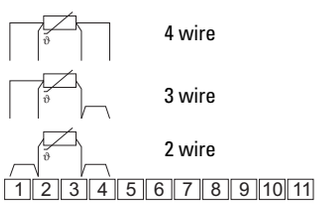
Inputs

Thermocouples

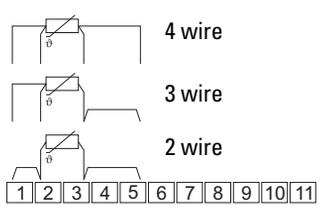


1	Positive leg of thermocouples
2	Negative leg of thermocouples

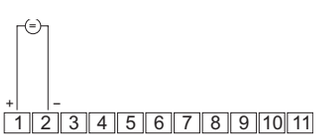
Resistance measurement
Pt1000 or 0 ... 4000 Ω



Resistance measurement
Pt100 or 0 ... 400 Ω



Voltage measurement 0 ... 100 mV,
or –100 ... 100 mV



1	voltage input (U) 0 ... 100 mV, –100 ... 100 mV
2	GND 1 (analogue)

Delivery includes:
Process display
Screw terminal, 2-pole, RM 5.08
Screw terminal, 11-pole, RM 3.81
Screw terminal, 5-pole, RM 3.81(*)
Clamping bracket
Gasket
Multilingual operating instructions
1 set of self-adhesive symbols

* only with the interface option

Order code

6.551.012.X0X

Interface
0 = without interface
5 = RS232
6 = RS422
7 = RS485

Power supply
0 = 90 ... 260 V AC
3 = 10 ... 30 V DC

CODIX 552 with totaliser

Available with serial interface and set-up software EzControl!

Your benefit
- Programmable input characteristic curve with up to 24 control points
- MIN/MAX value acquisition and data backup in case of Power Off
- Integration function (totaliser) or limit values reset keys
- Display-Hold or reset input for the integration function (totaliser)
- Very big keys for use with gloves
- Very bright display
- Input range
  0 ... 20 mA, 4 ... 20 mA; 0 ...10 V
  2 ... 10 V; ±10 V

More advantages
- Auxiliary power supply output for measuring transducer/sensor
- Optional serial interface

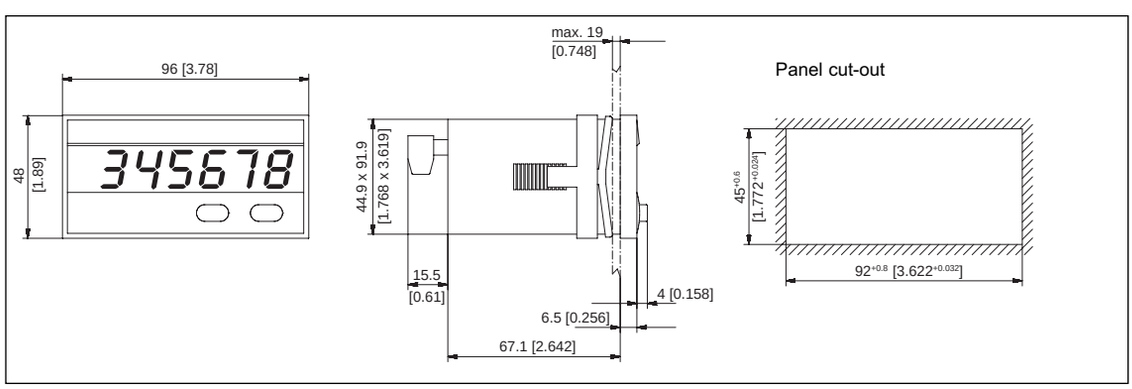
Technical data

Miscellaneous Data	
Display	5-digit display, red 7-segment LED´s; height 14.2 mm [0.559“]
Display range	–19999 ... 99999, with leading zeros suppression
Out of Range Indication	Under-range uuuuu / Over-range ooooo
Data storage	EEPROM, 1 Million storage cycles or 10 Years
Test voltages	EN 61010 Part 1 ; overvoltage category 2, level 2
EMC	Interference emissions EN 55011 Class B
	Interference resistance EN 61000-6-2
AC power supply	90 ... 260 V AC/max. 6 VA external fuse 100 mA/T
DC power supply	10 ... 30 V DC, max. 2 W, galvanically isolated with inverse polarity protection external fuse 250 mA/T
Mains Hum Filter	digital filter 50 Hz or 60 Hz, programmable
Measurement ranges	
Current input (DC)	Ranges 0 ... 20 mA, 4 ... 20 mA
Resolution	2 µA
Voltage drop	max. 2 V at 20 mA
Max. current	50 mA
Voltage input(DC)	Ranges 0 ... 10 V, 2 ... 10 V, ±10 V
Resolution	1 mV
Input resistance	> 2 MΩ
Max. voltage	± 30 V

Measuring speed	approx. 2 measurements/s
Linearity	< 0.1% ±1 Digit for the whole measuring range at an ambient temperature of 20°C [68 °F]
Zero calibration	automatic
Temperature drift	100 ppm/K
Weight	approx. 220 g [7.76 oz]
Protection	IP 65 (front)
Ambient temperature	-20 ... +65 °C [-4 °F ... 149 °F]
Storage temperature	-40 ... +85 °C [-40 °F ... 185 °F]
Digital inputs	
Input MPI*	Function of the input is dependent on set up
1. Function Display-Hold	to stop the instantaneous value
2. Function Reset-Totaliser	Resetting the Totaliser
Auxiliary power supply output for measuring transducer/sensor	
AC models	voltage output 10 V DC ±2%, 30 mA and voltage output 24 V DC ±15%, 50 mA
DC models	only voltage output 10 V DC ±2%, 30 mA
Interface	
Available options	RS232, RS485, RS422
Baud rate	600, 1200, 2400, 4800, 9600, 19 200 programmable
Address	00 ... 99 programmable

*MPI: Multi Purpose Input

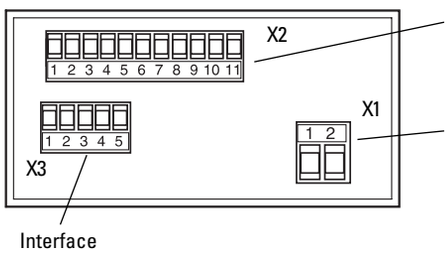
Dimensions:



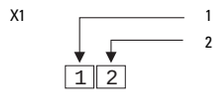
CODIX 552 with totaliser

Connections:

Rear side view

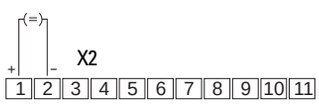


Power supply



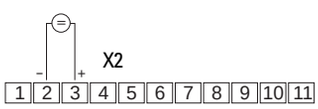
	DC version	AC version
1	10 ... 30 V DC	90 ... 260 V AC (N~)
2	GND4 (0 V DC)	90 ... 260 V AC (L~)

Current measurement



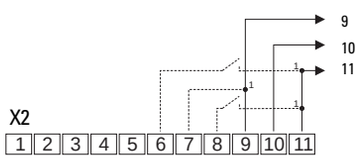
1	Current input (I) 0 ... 20 mA / 4 ... 20 mA
2	GND1 (Analogue)

Voltage measurement



2	GND1 (Analogue)
3	Voltage input (U) 0 ... 10 V, 2 ... 10 V, -10 ... +10 V

Control inputs and auxiliary voltage (U_{out})



1) Alternatively connect directly to DC supply (galvanic separation of control and measurement inputs)

9	GND3 (for Uout)
10	Uout +10 V/30 mA
11	Uout +24 V/50 mA at 90 ... 260 V AC
8	MP-Input Display-Hold/Reset Totaliser
7	GND2 (MPI)

Interface

X3 1 2 3 4 5

	RS232	RS485	RS422
1	GND	–	–
2	RxD	DO+/RI+	RI+
3	TxD	DO–/RI–	RI–
4	–	–	DO+
5	–	–	DO–

Serial interface

– For data transmission and documentation
– Connection for programmable logic controllers
– Programming via PC

Delivery includes:

Process display
Screw terminal, 2-pole, RM 5.08
Screw terminal, 11-pole, RM 3.81
Screw terminal, 5-pole, RM 3.81(*)
Clamping bracket
Gasket
Multilingual operating instructions
1 set of self-adhesive symbols

* only with the interface option

Order code:

6.552.012.X0X

- Interface
  - 0 = without interface
  - 5 = RS232
  - 6 = RS422
  - 7 = RS485
- Power supply
  - 0 = 90 .. 260 V AC
  - 3 = 10 .. 30 V DC

CODIX 553 with 2 limit values

Available with serial interface and set-up software EzControl!

Your benefit
- Programmable input characteristic curve with up to 24 control points
- MIN/MAX value acquisition and data backup in case of Power Off
- Display-Hold or reset input for the limit values
- Very big keys for use with gloves
- Input for key-lock
- Very bright display
- Input range
  0 ... 20 mA, 4 ... 20 mA; 0 ...10 V
  2 ... 10 V; ±10 V
- Outputs
  2 limit values with programmable hysteresis and programmable signal behaviour, relays with change-over contact or optocoupler

More advantages
- Auxiliary power supply output for measuring transducer/sensor
- Optional serial interface

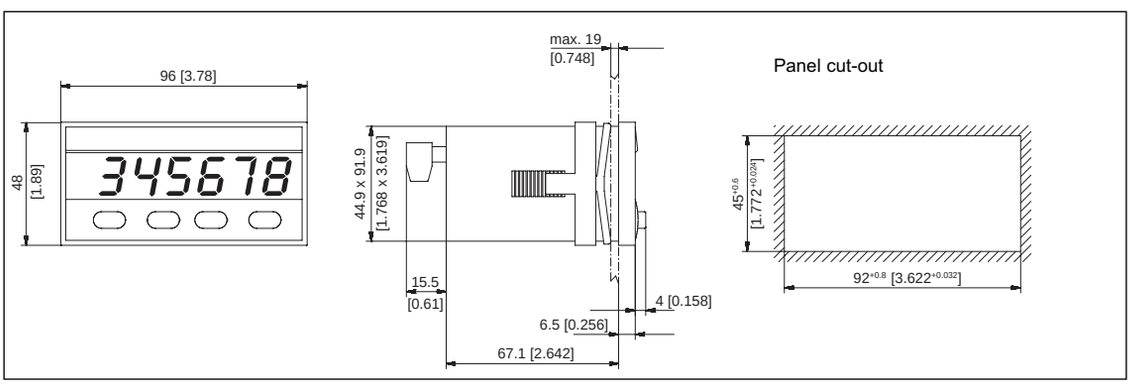
Technical data

Miscellaneous Data	
Display	5-digit display, red 7-segment LED´s; height 14.2 mm [0.559"]
Display range	–19999 ... 99999, with leading zeros suppression
Out of Range Indication	Under-range uuuuu / Over-range ooooo
Data storage	EEPROM, 1 Million storage cycles or 10 Years
Test voltages	EN 61010 Part 1 ; overvoltage category 2, level 2
EMC	Interference emissions EN 55011 Class B
	Interference resistance EN 61000-6-2
AC power supply	90 ... 260 V AC/max. 6 VA external fuse 100 mA/T
DC power supply	10 ... 30 V DC, max. 2 W, galvanically isolated with inverse polarity protection external fuse 250 mA/T
Mains Hum Filter	digital filter 50 Hz or 60 Hz, programmable
Measurement ranges	
Current input (DC)	Ranges 0 ... 20 mA, 4 ... 20 mA
Resolution	2 µA
Voltage drop	max. 2 V at 20 mA
Max. current	50 mA
Voltage input(DC)	Ranges 0 ... 10 V, 2 ... 10 V, ±10 V
Resolution	1 mV
Input resistance	> 2 MΩ
Max. voltage	± 30 V
Measuring speed	approx. 2 measurements/s
Linearity	< 0.1% ±1 Digit for the whole measuring range at an ambient temperature of 20°C [68 °F]
Zero calibration	automatic
Temperature drift	100 ppm/K

Weight	approx. 220 g [7.76 oz]
Protection	IP 65 (front)
Ambient temperature	-20 ... +65 °C [-4 °F ... 149 °F]
Storage temperature	-40 ... +85 °C [-40 °F ... 185 °F]
Digital inputs	
Input MPI*	Function of the input is dependent on set up
1. Function Display-Hold	to stop the instantaneous value
2. Function Reset Alarm Latch	Reset the alarm value
Outputs	
Alarm 1/Alarm output 2	
Relay output	with volt-free changeover contacts can be setup as normally closed or normally open
Switching voltage	250 V AC/300 V DC
Switching current	max. 3 A AC/DC, min. 30 mA DC
Switching power	2000 VA / 50 Ω
or NPN-**optocoupler** with open collector and open emitter	
Switching power	30 V DC/15 mA
Auxiliary power supply output for measuring transducer/sensor	
AC models	voltage output 10 V DC ±2%, 30 mA and voltage output 24 V DC ±15%, 50 mA
DC models	only voltage output 10 V DC ±2%, 30 mA
Interface	
Available options	RS232, RS485, RS422
Baud rate	600, 1200, 2400, 4800, 9600, 19 200 programmable
Address	00 ... 99 programmable

*MPI: Multi Purpose Input

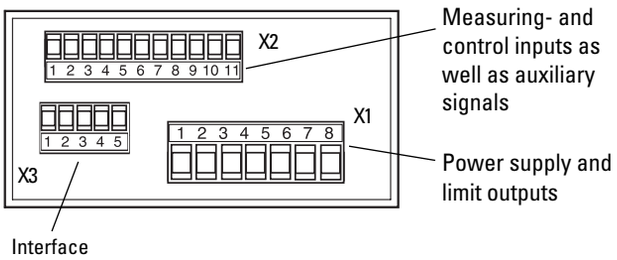
Dimensions:



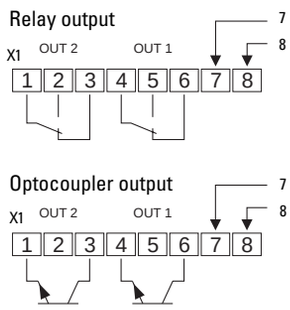
CODIX 553 with 2 limit values

Connections:

Rear side view

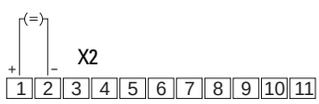


Power supply and alarm outputs



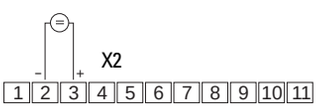
	DC version	AC version
7	10 ... 30 V DC	90 ... 260 V AC (N~)
8	GND4 (0 V DC)	90 ... 260 V AC (L~)

Current measurement



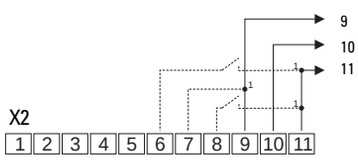
1	Current input (I) 0 ... 20 mA / 4 ... 20 mA
2	GND1 (Analog)

Voltage measurement



2	GND1 (Analogue)
3	Voltage input (U) 0 ... 10 V, 2 ... 10 V, -10 ... +10 V

Control inputs and auxiliary power supply (U_{out})



1) Alternatively connect directly to DC supply (galvanic separation of control and measurement inputs)

9	GND3 (for Uout)
10	Uout +10 V/30 mA
11	Uout +24 V/50 mA only for power supply 90 ... 260 V AC
8	MP-Input "Reset-Alarm-Latch/ Display-Hold
7	GND2 (KEY/MPI)
6	Keypad lock-out "Key"

Interface

X3 1 2 3 4 5

	RS232	RS485	RS422
1	GND	–	–
2	RxD	DO+/RI+	RI+
3	TxD	DO–/RI–	RI–
4	–	–	DO+
5	–	–	DO–

Application:

– Level measurement
– Flow measurement
– Pressure measurement
– Revolution measurement
- Speed control in conjunction with the 0.... 10 V outputs from inverters
- Programming and readout of values via PC

Serial interface

– For data transmission and documentation
– Connection for programmable logic controllers
– Programming via PC

Delivery includes:

Process display
Screw terminal, 8-pole, RM 5.08
Screw terminal, 11-pole, RM 3.81
Screw terminal, 5-pole, RM 3.81(*)
Clamping bracket
Gasket
Multilingual operating instructions
1 set of self-adhesive symbols

* only with the interface option

Order code:

6.553.01X.X0X

- Interface
  - 0 = without interface
  - 5 = RS232
  - 6 = RS422
  - 7 = RS485
- Supply voltage
  - 0 = 90 .. 260 V AC
  - 3 = 10 .. 30 V DC
- Alarm output
  - 0 = relay
  - 1 = optocoupler

CODIX 554 for temperature and mV sensors with 2 limit values

Available with serial interface and set-up software EzControl!

Your benefit

- Programmable input characteristic curve with up to 24 control points for 0...400/4000 Ω, 0...100 mV and -100... +100 mV
- MIN/MAX value acquisition and data backup in case of Power Off
- Auxiliary power supply output for measuring transducer/sensor
- SET key for limit values reset
- Display Hold input or limit values reset input
- Easy operation and programming thanks to large keys
- Inputs: thermocouples, millivolt, resistance thermometer with 2, 3 or 4-wire measurement
- Outputs
  2 limit values with programmable hysteresis and programmable signal behaviour, relays with change-over contact or optocoupler
- Key-lock input
- Optional serial interface

Technical Data

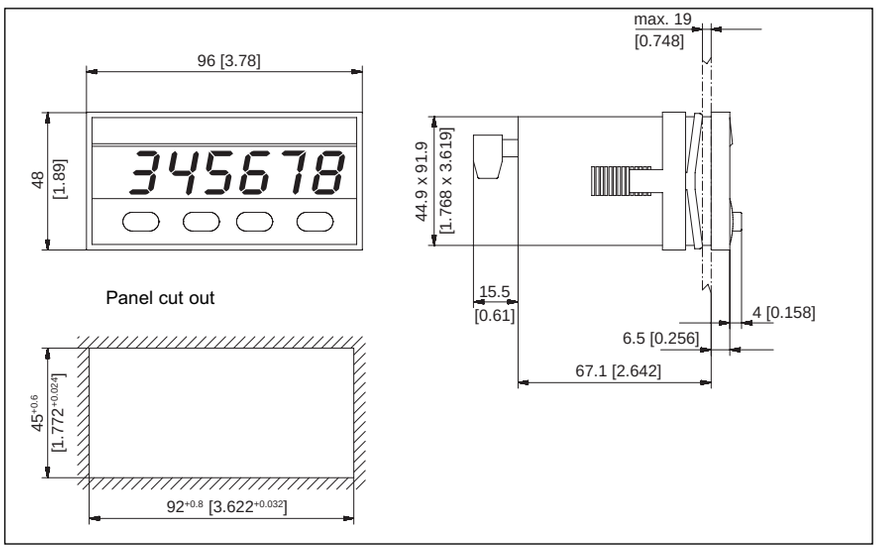
Display	5-digit display, red 7-segment LED´s; height 14.2 mm [0.559“]		
Display range	–19999 ... 99999, with leading zeros suppression		
Out of range - Indication	Under-range uuuuu / Over range ooooo		
Data storage	EEPROM, 1 Million storage cycles or 10 Years		
Test voltages	EN 61010 Part 1 ; overvoltage category 2, level 2		
EMC	Interference emissions EN 55011 Class B		
	Interference resistance EN 61000-6-2		
AC power supply	90 ... 260 V AC / max. 6 V A external fuse 100 mA/T		
DC power supply	10 ... 30 V DC / max. 2 W/galvanically isolated/ with inverse polarity protection external fuse 250 mA/T		
Mains Hum Filter	digital filter 50 Hz or 60 Hz, programmable		
Measurement ranges			
Thermocouples	Ranges		Accuracy
Type B	400.0 °C ... 1820.0 °C [752 °F... 3308 °F]		±1.5 °C [± 2.85 °F]
E	-200.0 °C ... 1000.0 °C [-328 °F... 1832 °F]		±1.5 °C [± 0.9 °F]
J	-210.0 °C ... 1200.0 °C [-346 °F... 2192 °F]		±0.5 °C [± 0.9 °F]
K	-200.0 °C ... 1372.0 °C [-328 °F... 2501 °F]		±0.5 °C [± 0.9 °F]
N	-200.0 °C ... 1300.0 °C [-328 °F... 2372 °F]		±0.5 °C [± 0.9 °F]
R	-50.0 °C ... 1760.0 °C [-58 °F... 3200 °F]		±1.0 °C [± 1.8 °F]
S	-50.0 °C ... 1767.0 °C [-58 °F... 3212.6 °F]		±1.0 °C [± 1.8 °F]
T	-210.0 °C ... 400.0 °C [-346 °F... 752 °F]		±0.5 °C [± 0.9 °F]
Resolution	0.1 °C [0.1 °F]		
Cold-junction-compensation	internal or external (programmable)		
Input for resistance thermometers			
Resistance thermometer		Ranges	Accuracy
Type Pt100		-200.0 °C ... 800.0 °C [-328 °F... 1472 °F]	±1.0 °C [± 1.8 °F]
Pt1000		-200.0 °C ... 800.0 °C [-328 °F... 1472 °F]	±1.0 °C [± 1.8 °F]
Resolution		0.1 °C [0.1 °F]	
Type	2 wire, 3 wire and 4 wire technology, programmable		
Current	800 µA for Pt100; 80 µA for Pt1000		
Input for resistance			
	Ranges	Accuracy	
Resistance	0 ... 400 Ω	± 0.2 Ω	
Resistance	0 ... 4000 Ω	± 2.0 Ω	
Resistance	14 Bit		
Measurement mode	2 wire, 3 wire and 4 wire technology, programmable		

Current	800 µA at 400 Ω 80 µA at 4000 Ω	
Voltage measurement		
	Ranges	Accuracy
Voltage	0 .. +100 mV DC	< 0.1% v. Mb ± 1 Digit
Voltage	–100 .. +100 mV DC	< 0.1% v . Mb ± 1 Digit
Resolution	14 bit	
Input resistance	> 2 MΩ	
Further data for measurement input		
A/D transducer	Dual-Slope	
Measuring speed	approx. 1 measurement/sec	
Zero adjustment	automatically	
Weight	approx. 220 g [7.76 oz]	
Protection	IP 65	
Ambient temperature	-20 ... +65 °C [-4 °F ... 149 °F]	
Storage temperature	-40 ... +85 °C [-40 °F ... 185 °F]	
Digital input		
Input MPI*	Function of the input is dependent on set-up	
1. Function: Display-Hold	to stop the instantaneous value	
2. Function: Reset-Alarm Latch	Reset the alarm value	
Input KEY	Keypad lock-out of alarm settings	
Alarm 1/Alarm 2		
Relay	with volt-free changeover contacts, can be setup as normally closed or normally open	
Switching voltage	250 V AC/300 V DC	
Switching current	max. 3 A AC/DC, min. 30 mA DC	
Switching power	2000 VA / 50 W	
or NPN-optocoupler with open collectror and open emitter		
Switching power	30 V DC / 15 mA	
Auxiliary power supply output for measuring transducer/sensor		
AC models	voltage output 10 V DC ±2%, 30 mA and voltage output 24 V DC ±15%, 50 mA	
DC models	voltage output 10 V DC ±2%, 30 mA	
Interface		
Available options	RS232, RS485, RS422	
Baud rate	600, 1200, 2400, 4800, 9600, 19200 programmable	
Address	00 ... 99 programmable	

*Multi Purpose Input

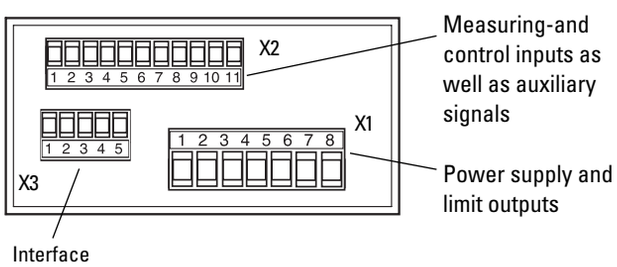
CODIX 554 for thermocouples and sensors in mV range with 2 limit values

Dimensions:

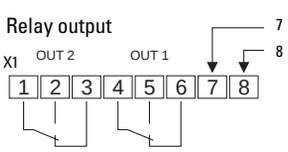


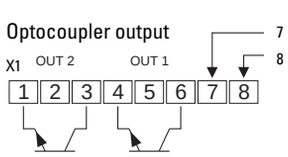
Electrical Connections

Rear side view



Power supply and alarm outputs





	DC voltage	AC voltage
7	10 ... 30 V DC	90 ... 260 V AC (N~)
8	GND4 (0 V DC)	90 ... 260 V AC (L~)

CODIX 554 for thermocouples and sensors in mV range with 2 limit values

Interfaces

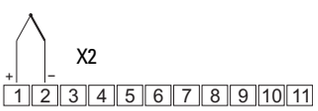
X3 1 2 3 4 5

	RS232	RS485	RS422
1	GND	–	–
2	RxD	DO+/RI+	RI+
3	TxD	DO–/RI–	RI–
4	–	–	DO+
5	–	–	DO–

Serial interface
– For data transmission and documentation
– Connection for programmable logic controllers
– Programming and readout of values via PC

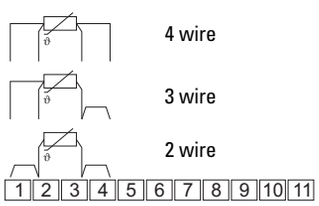
Inputs

Thermocouples

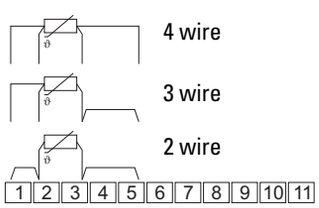


1	Positive leg of thermocouples
2	Negative leg of thermocouples

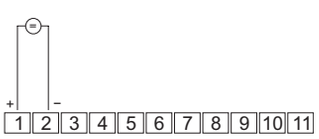
Resistance measurement
Pt1000 or 0 ... 4000 Ω



Resistance measurement
Pt100 or 0 ... 400 Ω



Voltage measurement 0 ... 100 mV,
or -100 ... 100 mV



1	Voltage input (U) 0 ... 100 mV, –100 ... 100 mV
2	GND 1 (analogue)

Delivery includes:
Process display
Screw terminal, 8-pole, RM 5.08
Screw terminal, 11-pole, RM 3.81
Screw terminal, 5-pole, RM 3.81(*)
Clamping bracket
Gasket
Multilingual operating instructions
1 set of self-adhesive symbols
* only with the interface option

Order code

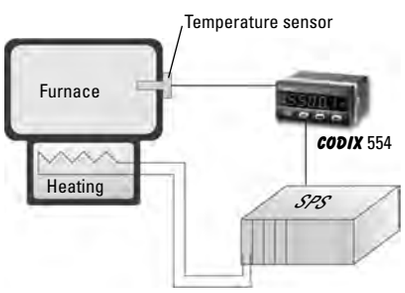
6.554.01X.X0X

- Interface
  - 0 = without interface
  - 5 = RS232
  - 6 = RS422
  - 7 = RS485
- Power supply
  - 0 = 90 ... 260 V AC
  - 3 = 10 ... 30 V DC
- Alarm output
  - 0 = relay
  - 1 = optocoupler

CODIX 554 for thermocouples and sensors in mV range with 2 limit values

You will find more about our products on the W eb.
Under http://www.kuebler.com
the operating instructions are available for
free download.

Application:



CODIX 555 with totaliser and 2 limit values

Available with serial interface and set-up software EzControl!

Your benefit
- Programmable input characteristic curve with up to 24 control points
- MIN/MAX value acquisition and data backup in case of Power Off
- Integration function (totaliser) or limit values reset keys
- Display-Hold or reset input for the integration function (totaliser) or for the limit values
- Very big keys for use with gloves
- Input for key-lock
- Very bright display
- Input range
  0 ... 20 mA, 4 ... 20 mA; 0 ...10 V
  2 ... 10 V; ±10 V
- Outputs
  2 limit values with programmable hysteresis and programmable signal behaviour, relays with change-over contact or optocoupler

More advantages
- Auxiliary power supply output for measuring transducer/sensor
- Optional serial interface

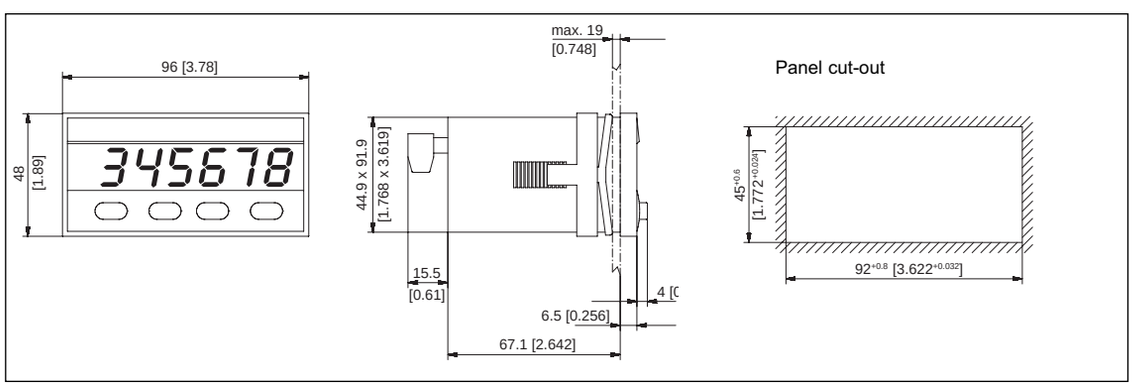
Technical data

Miscellaneous Data	
Display	5-digit display, red 7-segment LED´s; height 14.2 mm [0.559"]
Display range	–19999 ... 99999, with leading zeros suppression
Out of Range Indication	Under-range uuuuu / Over-range ooooo
Data storage	EEPROM, 1 Million storage cycles or 10 Years
Test voltages	EN 61010 Part 1 ; overvoltage category 2, level 2
EMC	Interference emissions EN 55011 Class B
	Interference resistance EN 61000-6-2
AC power supply	90 ... 260 V AC/max. 6 VA external fuse 100 mA/T
DC power supply	10 ... 30 V DC, max. 2 W, galvanically isolated with inverse polarity protection external fuse 250 mA/T
Mains Hum Filter	digital filter 50 Hz or 60 Hz, programmable
Measurement ranges	
Current input (DC)	Ranges 0 ... 20 mA, 4 ... 20 mA
Resolution	2 µA
Voltage drop	max. 2 V at 20 mA
Max. current	50 mA
Voltage input(DC)	Ranges 0 ... 10 V, 2 ... 10 V, ±10 V
Resolution	1 mV
Input resistance	> 2 MΩ
Max. voltage	± 30 V
Measuring speed	approx. 2 measurements/s
Linearity	< 0.1% ±1 Digit for the whole measuring range at an ambient temperature of 20°C [68 °F]
Zero calibration	automatic
Temperature drift	100 ppm/K

Weight	approx. 220 g [7.76 oz]
Protection	IP 65 (front)
Ambient temperature	–20 ... +65 °C [-4 °F ... 149 °F]
Storage temperature	–40 ... +85 °C [-40 °F ... 185 °F]
Digital inputs	
Input MPI*	Function of the input is dependent on set up
1. Function Display-Hold	to stop the instantaneous value
2. Function Reset Alarm Latch	Reset the alarm value
3. Function Reset-Totaliser	Resetting the Totaliser
Input Key	Input for key-lock
Outputs Alarm 1/Alarm output 2	
Relay output	with volt-free changeover contacts, can be setup as normally closed or normally open
Switching voltage	250 V AC/300 V DC
Switching current	max. 3 A AC/DC, min. 30 mA DC
Switching power	2000 VA / 50 Ω
or NPN-**optocoupler** with open collector and open emitter	
Switching power:	30 V DC/15 mA
Auxiliary power supply output for measuring transducer/sensor	
AC models	voltage output 10 V DC ±2%, 30 mA and voltage output 24 V DC ±15%, 50 mA
DC models	only voltage output 10 V DC ±2%, 30 mA
Interface	
Available options	RS232, RS485, RS422
Baud rate	600, 1200, 2400, 4800, 9600, 19 200 programmable
Address	00 ... 99 programmable

*MPI: Multi Purpose Input

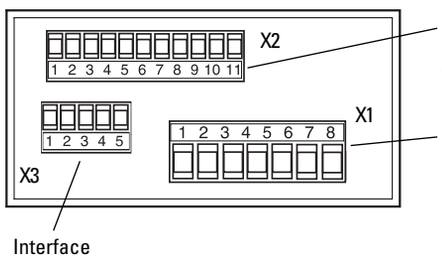
Dimensions:



CODIX 555 with totaliser and 2 limit values

Connections:

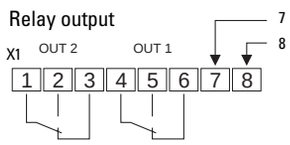
Rear side view

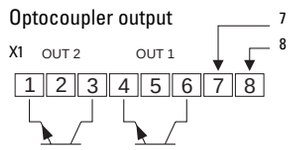


Measuring- and control inputs as well as auxiliary signals

Power supply and limit outputs

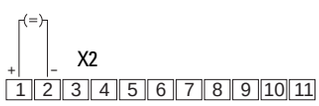
Power supply and alarm outputs





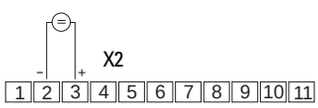
	DC version	AC version
7	10 ... 30 V DC	90 ... 260 V AC (N~)
8	GND4 (0 V DC)	90 ... 260 V AC (L~)

Current measurement



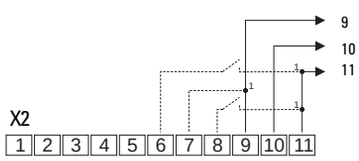
1	Current input (I) 0 ... 20 mA / 4 ... 20 mA
2	GND1 (Analogue)

Voltage measurement



2	GND1 (Analogue)
3	Voltage input (U) 0 ... 10 V, 2 ... 10 V, -10 ... +10 V

Control inputs and auxiliary power supply (U_{out})



1 Alternatively connect directly to DC supply (galvanic separation of control and measurement inputs)

9	GND3 (for Uout)
10	Uout +10 V/30 mA
11	Uout +24 V/50 mA only for power supply 90 ... 260 V AC
8	MP-Input "Reset-Alarm-Latch/ Display-Hold/Reset Totalisator"
7	GND2 (KEY/MPI)
6	Keypad lock-out "Key"

Interface

X3 1 2 3 4 5

	RS232	RS485	RS422
1	GND	–	–
2	RxD	DO+/RI+	RI+
3	TxD	DO–/RI–	RI–
4	–	–	DO+
5	–	–	DO–

Application:

– Level measurement
– Flow measurement
– Pressure measurement
– Revolution measurement
– Speed control in conjunction with the 0 ... 10 V outputs from inverters

Serial interface

– For data transmission and documentation
– Connection for programmable logic controllers
– Programming via PC

Delivery includes:

Process display
Screw terminal, 8-pole, RM 5.08
Screw terminal, 11-pole, RM 3.81
Screw terminal, 5-pole, RM 3.81(*)
Clamping bracket
Gasket
Multilingual operating instructions
1 set of self-adhesive symbols

* only with the interface option

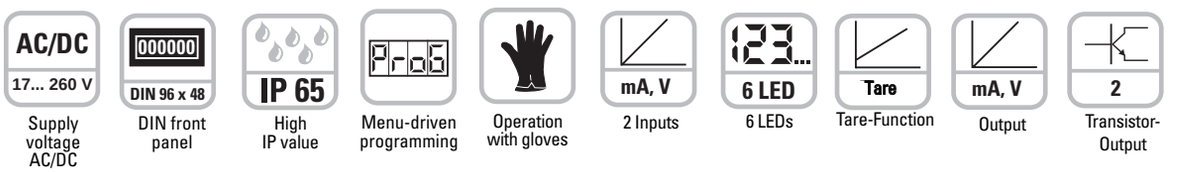
Order code:

6.555.01X.X0X

- Interface
  - 0 = without interface
  - 5 = RS232
  - 6 = RS422
  - 7 = RS485
- Supply voltage
  - 0 = 90 .. 260 V AC
  - 3 = 10 .. 30 V DC
- Alarm output
  - 0 = relay
  - 1 = optocoupler

Multifunction Process Controller Type 573

The process controller with 2 analogue inputs can be used both in single channel mode as well as in dual channel. In dual channel mode, all arithmetic operations are available for displaying sum total, difference, ratio or the product. Inputs and outputs can be scaled separately.



Innovative:

- 2 separate freely scalable analogue inputs +/-10 V, 0 ...10 V and 0/4 ... 20 mA, Resolution 14 bit
- Tare function – the unit can be set to 0 for any input voltage
- Programmable linearization: with up to 16 control points, input via key-pad or via the Teach-In function
- Averaging measurement over 2 to 16 measuring cycles, for use with serious fluctuations of the input signals
- Easy to programme - the desired display value is simply keyed-in for a specific input signal
- Fast 25 ms sampling rate per channel alternating

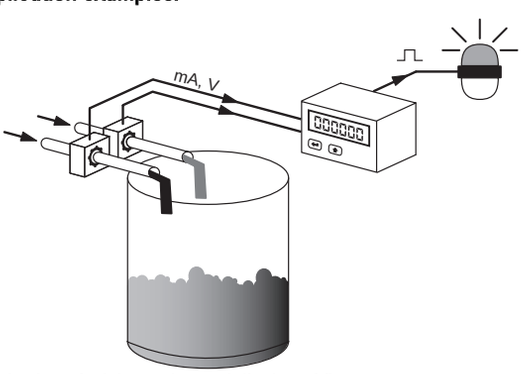
Compact:

- Up to 3 display values in one device, display A, display B + display calculated based on A and B
- AC and DC supply voltages in one device
- Simple menu-driven programming with just 2 keys, as well as Tare or Teach-In key

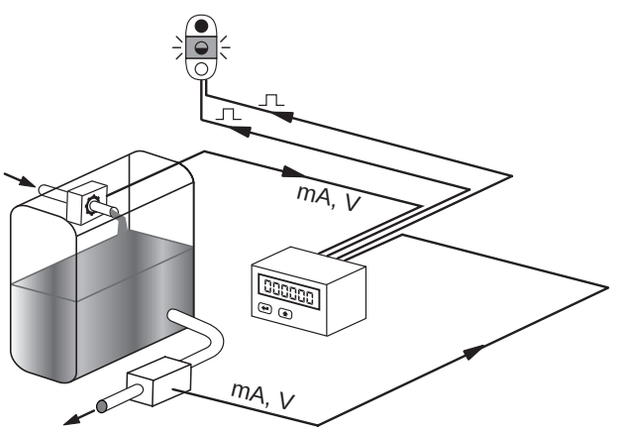
Versatile:

- Can be used as a simple process signal converter, process controller (ON/OFF controller) or for complex measuring tasks where the relationship between two values, one to the other, must be monitored, calculated or further processed in a higher-level controller.
- Mathematical operation of the measured values of inputs A and B. The result can also if required be multiplied, divided or added to an offset value, in order to obtain the desired display value.
- Analogue output 0/4 ... 20 mA, +/-10 V or 0 ... 10 V
- 2 fast PNP switching outputs, 50 ms, with switching hysteresis, step or tracking preset
- Programmable display refresh time

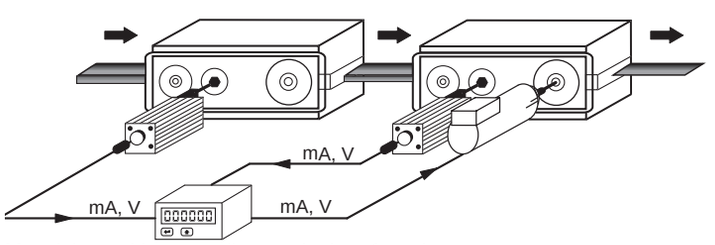
Application examples:



Monitoring of mixing ratios and display of flow rate



Level monitoring and adjustment, display of inflow and outflow



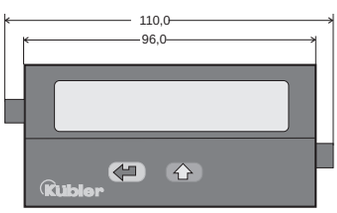
Material stretching, as well as monitoring of synchronous operation, with display of individual speeds

NEW

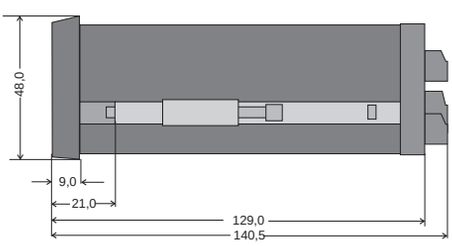
Multifunction Process Controller Type 573

Supply-voltage:	17 ... 30 V DC (Nominal voltage: 24 V DC) 115/230 V AC ± 12.5 %
Power consumption [DC]:	18 V: 110 mA, 24 V: 90 mA 30 V: 80 mA
Connected load [AC]:	7,5 VA
Auxiliary power supply output for sensors:	24 V DC ± 15%, 100 mA (for AC and DC supply)
Display:	15 mm high LED display, 6 Digits
Inputs:	2 analogue inputs (±10 V, 0 ... 20 mA, 4 ... 20 mA)
Input resistance:	Current: Ri = 100 Ohm, Voltage Ri = 30 kOhm
Measuring time per channel:	25 ms (alternating)
Resolution:	14 Bit (13 Bit + sign)
Accuracy:	±0.1% ± 1 digit
Outputs:	Switching outputs: 2 x PNP, max. 35 V, max. 150 mA Response time max. 50 ms
	Analogue output 0 ... 20 mA, 4 ... 20 mA (max. 300 Ohm) -10 ... +10 V, 0 ... 10 V (max. 2 mA) Response time max. 57 ms (analogue output 7 ms after detection of the measurement value)
Resolution:	14 Bit (13 Bit + sign)
Operating temperature:	0 ... +45 °C
Storage temperature:	–25 ... +70 °C
Housing:	Noryl UL94–V-0
Protection:	IP 65 front, IP20 rear
Connections:	Signal max. 1.5 mm^2, AC supply max. 2.5 mm^2
EMC: Standards:	CE conform to EC directive 89/336/EWG EN 61 000-6-2/EN 61 000-6-3 NS73/23/EWG: EN 61 010-1
Weight:	approx. 200 g

Dimensions:



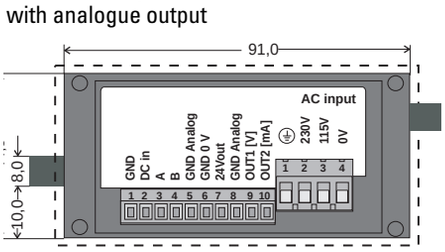
Panel cut-out 91 mm x 44 mm



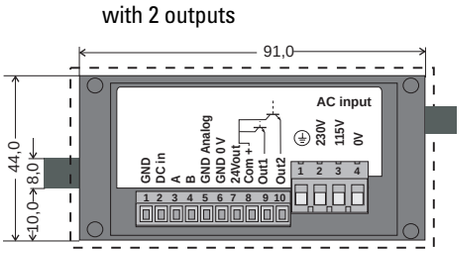
Accessories for DIN rail mount
Order code: G 300 005

Terminal assignment:

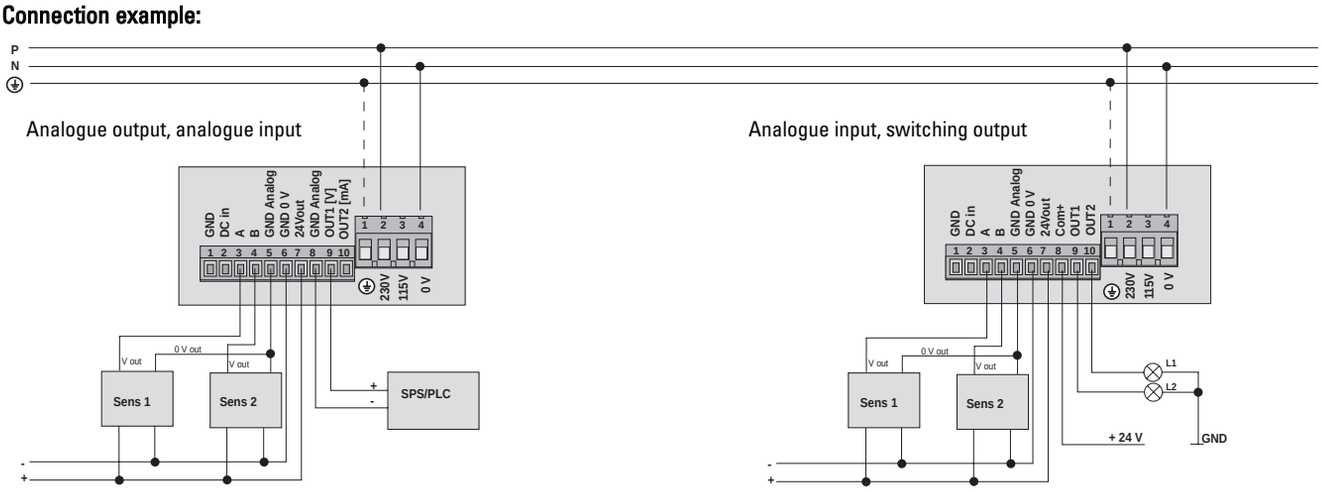
with analogue output



with 2 outputs



Connection example:



Delivery includes:

- Process Controller 573
- Gasket
- Mounting set
- Multilingual operating instructions, German /English

Order codes:

Display with 2 outputs	**Order code 6.573.011.E00**
Display with analogue output	**Order code 6.573.012.E90**

Codix 850/851

Your benefit
- multifunctional, i.e. all usual measuring signals can be connected directly (voltage, current, thermocouples, resistance thermometers, resistance)
- flexible limit value monitoring (2 limit values)
- HART® communication socket for setting parameters
- LCD display and keys for on-site operation for model 851
- programmable input characteristic curve with up to 32 control points

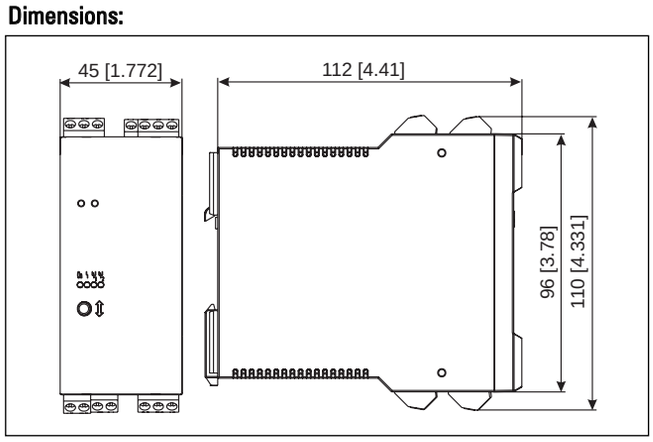
More advantages
- programmable via PC or keys
- integrated measuring transducer power supply
- RS232 interface for parameter setting and measured values output
- analog output with scale factor for current or voltage of the linearised input

Technical data

Supply voltage:	18 ... 36 V DC
(galvanically isolated)	20 ... 28 V AC, 50/60 Hz
	90 ... 253 V AC, 50/60 Hz
Power consumption:	max. 4 VA
Display:	5-digit LCD-Display; height 6 mm [0.236"], LED´s to indicate limit values, operation and fault conditions
Fuses:	AC: 315 mA slow blow; DC: 1 A slow blow
Data backup:	EEPROM
Housing:	plastic PC/ABS, UL94 VO
Ambient temperature:	–10 ... +50 °C [14 °F ... 122 °F]
Storage temperature:	–30 ... +70 °C [-22 °F ... 158 °F]
EMC:	according to EC EMC directive 89/36/EEC
Interference emissions:	EN 61 000-6-4/EN 55 011 Class B
Interference resistance:	EN 61 000-6-2
Protection: IP	20

Weight:	approx. 280 g [9.877 oz]
Interface:	RS 232, 3.5 mm [0.138 "] stereo socket on housing front side
Connection:	coded, plug-in screw terminal, max. wire gauge 1.5 mm^2 [0.06^{2}"]
Inputs:	0 ... 1 V, 0 ... 20 V, ±100 mV, ±10 V 0 ... 20 mA, 4 ... 20 mA, ±20 mA Pt100, Ni100, potentiometers, thermocouples T, J, K, N, R, S, B, L, U, W3, W5
Measuring speed	1 measurement/second
Accuracy:	0.05 % FSD
Internal resistance:	voltage : 1 MΩ ; current: 5 Ω
Outputs:	0 ... 20 mA, 4 ... 20 mA, 20 ... 4 mA, 20 ... 0 mA 0 ... 10 V, fault behaviour acc. to NAMUR NE43
Resolution:	D/A: current 13 bits, voltage 15 bits
Limit value contacts:	optional 2 relays, each with 1 change-over contact 250 V AC/30 V DC, 5 A

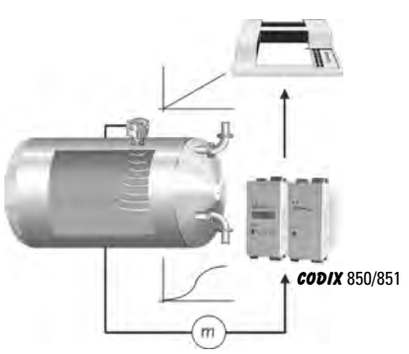
Dimensions:



Applications:
- Appliances
- Electrical cabinets and laboratory equipment
- Temperature display/monitoring
- Process acquisition/monitoring
- Process control
- Signal matching/conversion

Example:
Linearisation of the characteristic curve of a container

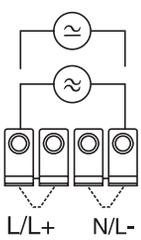
Our process controllers linearise the relationship between the fill-up level h and the volume V of the container. This can be set exactly thanks to 24 or 32 control points. The devices 850/851 can output the linearised values as current or as voltage values (e.g. 4 ... 20 mA) and thus offer in addition the function of a voltage transformer.



Codix 850/851

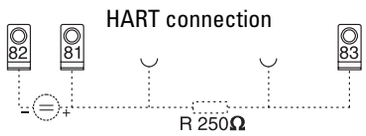
Connections

Supply voltage and outputs

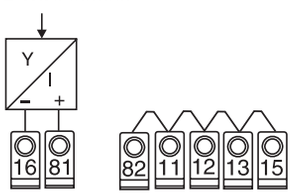


18 ... 36 V DC
20 ... 28 V AC, 50/60 Hz
90 ... 253 V AC, 50/60 Hz
The terminals are linked internally and can be used for series connection.

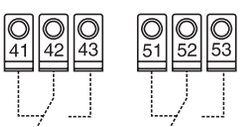
Measuring transducer
(internal circuit)



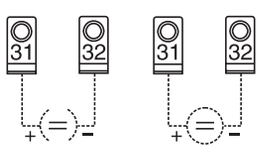
Measuring transducer excitation
2-wire sensor



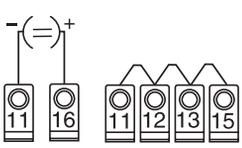
Relays
(internal circuit)



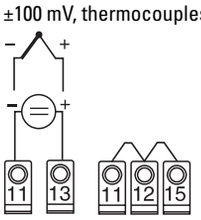
Relays
(internal circuit)



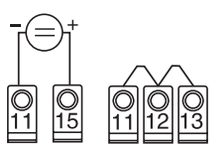
Current input
±20 mA, 0/4 ... 20 mA



Voltage input
±100 mV, thermocouples

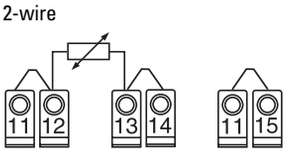


Voltage input
±10 V, 0 ... 1/10 V

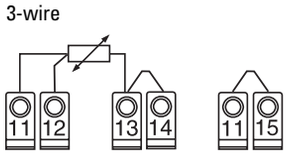


Resistance thermometers/potentiometers

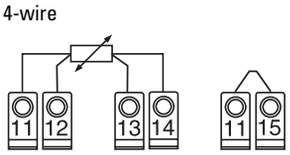
2-wire



3-wire



4-wire



Connect Pt 500 and Pt 1000 to terminal 15, link 13 and 11

Order information:

0.85X.00X.XXX

Series 0 = ***CODIX* 850** (without display) 1 = ***CODIX* 851** (5-digit LCD, 3 keys)	Interface 05 = RS232 serial interface 95 = analogue output and RS232 serial interface
Limit values 0 = 2 relays 2 = no limit values	Supply voltage 0 = 90 ... 253 V AC D = 18 ... 36 V DC and 20 ... 28 V AC

Please note:
The combination
0.850.002.X05 is not
available.

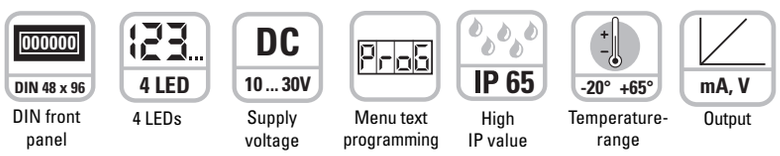
Advice:
The use of the PC-Software with RS 232 connection cable (to be ordered separately) is strictly required for all versions 0.85**0**.XXX.XXX.
It is also recommended when using the 0.85 **1**.XXX.XXX versions to facilitate the device set up.
Order information:
N. 150.060 PC-Software including RS 232 connection cable

Setpoint generator/ Time based process adjuster
CODIX 533

CODIX 533 – the new setpoint compact class for process and automation technology

The set-point generator /adjuster ***CODIX*** 533 triggers a standard signal or a freely programmable signal sequence from 0 ... 12 V or from 0 ... 24 mA

The set-point generator /adjuster ***CODIX*** 533 is a real innovation opening up new application potentials in process technology and automation. .



Innovative:

- **Function of a digital time controller with analogue output.**
- **Manual functions with direct input or stepped incremental output of the set-point.**
- **4-digit 8 mm high top-quality LED display**
- **Physical variables output in the form of 0 to 12 V or 0 to 24 mA analogue signals.**
- **Units of display can be freely programmed and displayed – no conversion of the specified output value required.**
- **High accuracy of < 0.1% of the final value.**

Cost-saving and compact:

- **Ideal for simulation runs without the need for expensive, time-consuming running-in of processes.**
- **Processes become more cost-effective**
- **DIN 48 x 24 mm panel-mount housing with installation depth of only 59 mm.**

User-friendly:

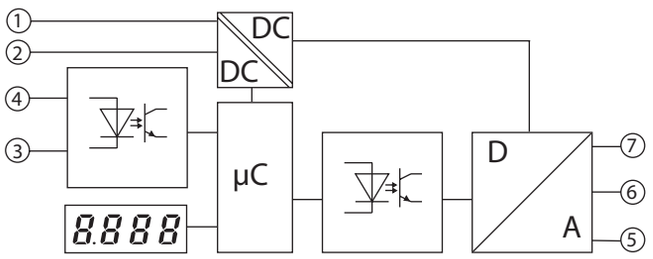
- **Simpler to run processes than with a PLC or process controller.**
- **Everything can be programmed easily by means of 2 keys and the text menu.**
- **Digital setting - no additional DIP switches or potentiometers.**
- **Display allows simple monitoring of the specified setpoint output.**
- **User-friendly display form as direct digital value**
- **3 functions integrated as standard in the CODIX 533, manual and time-based**

Technical data:

Supply voltage:	10 ... 30 V DC, galvanically isolated with integrated protection against incorrect polarity
Power consumption:	max. 1W
Display:	4-digit display, red 7-segment LEDs; height 8 mm [0.35“]
Data backup:	EEPROM
Housing:	housing for control panel 48 x 24 mm [1.89 x 0.945“] accord. to DIN 43 700; RAL 7021, dark grey
Protection: IP65	(front)
Operating temperature:	-20 ... +65 °C [-4 ... +149 °F]
Storage temperature:	-25 ... +85 °C [-13 ... +185 °F]
Conformity:	conforms to CE requirements acc. to the EC directive 89/36/EEC
EMC:	interference emissions EN 55011 class B interference resistance EN61000-6-2

Test voltages:	EN 61010-1, degree of soiling 2 and overvoltage category 2
Test voltage:	500 V, 50 Hz, 1 min.
Current output:	0 ... 24 mA, increment 10 µA load 20 mA up to ≤ 500 Ohm, > 20 mA up to≤ 400 Ohm
Voltage output:	0 ... 12 V, increment 10 mV load ≥ 2 kOhm
Control input Hold (high active):	High: 4 ... 30 V DC Low: 0 ... 2 V DC
Accuracy:	< 0.1 % of the full scale value ±0.01 %/K
Weight:	approx. 50 g [1.764 oz.]
Connections:	screw terminal, pitch 5.08 mm, 7 poles

Block diagram:



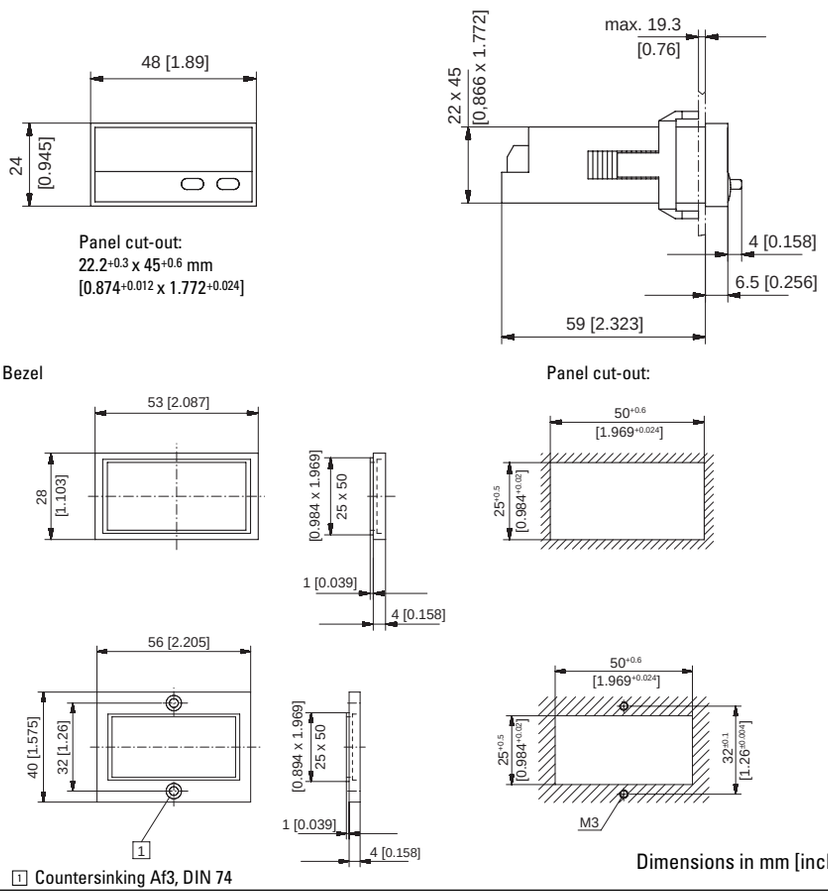
Inputs
1: 10 ... 30 V DC
2: GND_1
3: GND_2
4: Hold

Outputs
5: 0 ... 24 mA (I_{out})
6: GND_3
7: 0 ... 12 V DC (U_{out})

Setpoint generator/ Time based process adjuster
CODIX 533

CODIX 533 – the new setpoint compact class for process and automation technology

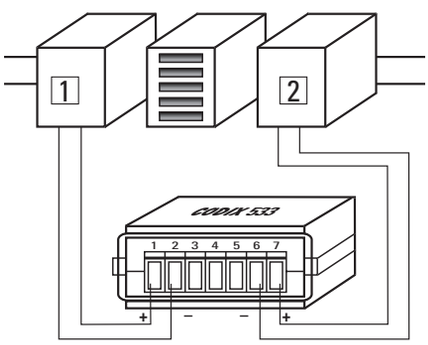
Dimensions:



1 Countersinking Af3, DIN 74

Terminal assignment:

1 10 ... 30 VDC	5 0 ... 24 mA
2 GND 1	6 Analog GND 3
3 GND 2	7 0 ... 10 V DC
4 Hold	



1 Power supply
2 Analogue input

Delivery includes:
Digital display
Panel mounting clip
Bezel for clip mount,
Panel cut-out 50 x 25 mm [1.969 x 0.984“]
Bezel for screw mount,
Panel cut-out 50 x 25 mm [1.969 x 0.984“]
Gasket
1 set of self-adhesive symbols
Multilingual operating instructions

Order code:
***CODIX* 533**: 6.533.012.300

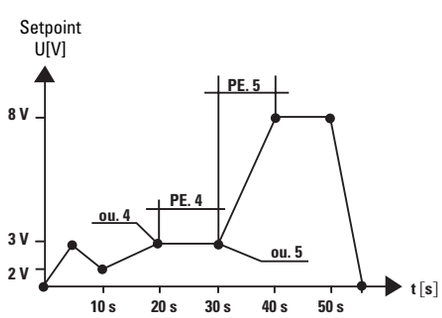
3 operating modes programmable

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.

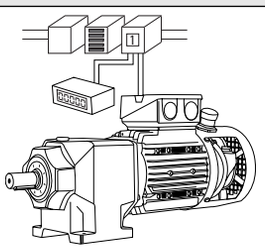
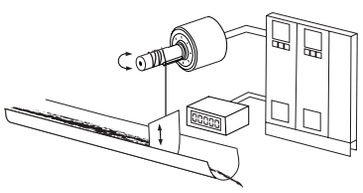
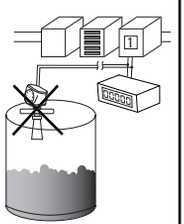
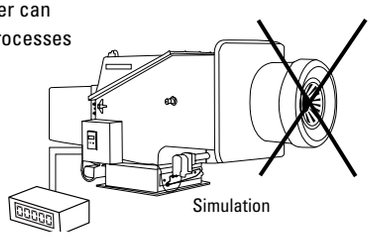
Example of an automatic ramping function:



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

Setpoint generator/ Time based process adjuster
CODIX 533

Applications:

Applications:	**Simple controller (fixed installations) in plant, machinery and equipment.**	**For use in setting up plant, machinery and equipment.**
	Time based or manual ramping up or ramping down of:	Manual (direct) input or time based/manual set-up (ramping up or ramping down) of:
	Rotary speeds (e.g. frequency inverters), flow rates, temperature, position, pressure, level, i.e. all physical variables that can be displayed via analogue signals	
	Simple time-switch with analogue output	
	Starting and running-in or speed control of motors via setpoint specification  1 frequency inverters Control of simple time-dependent processes by means of an analogue signal, e.g. ramping control for locks and sluices, flow valves etc.. 	Calibration of fill levels and flow rates: the setpoint adjuster simulates the output signals of a level or flow sensor for configuring a PLC.  Simulation Adjustment of temperature-dependent processes, without the need to heat up the plant. Plant commissioning: the setpoint adjuster can simulate various processes for test purposes.  Simulation
Solution with various modes:	To do this 2 selectable operating modes are provided	To do this, the following operating modes are provided
	- Manual ramping function - Automatic ramping function	- Manual direct input - Manual ramping function - Automatic ramping function
Benefits:	Our Setpoint Adjuster can undertake this task as a stand-alone device, instead of having to use an expensive, complex, difficult-to-programme PLC. The user saves on costs and the job can be carried out quickly and flexibly – without specialised training being necessary.	The Setpoint Adjuster simulates the sensor signal, which detects the physical process, e.g. ramping up of temperature, filling of tanks. The expensive, time-consuming running-in of processes can be eliminated by using the Setpoint Adjuster to simulate the function.
	The output signal can be displayed directly or can be scaled to any desired engineering unit. The user can see exactly what is happening at that particular moment in time.	
	An easy-to-programme controller with three selectable modes is available.	

EzControl

- Easy parameter sotware for counter type 716/717 and process displays 55x.
- Upload and download function
- Monitor- and terminal program for easy diagnostic functions
- Online display of the measurement values
- German and English.

EzControl software on CD **Order code: N 150.080**

Accessories:

RS 232 interface cable to the counter **Order code: N 140.076**

RS 232 <=> RS 485/422 interface converter with power supply 90 ... 250 V AC (50 or 60 Hz) and cable to counter **Order code: N 150.002**

RS 232 <=> RS 485/422 interface converter ith power supply and cable to counter for the US market (110 V AC) **Order code: N 150.003**

RS 232 <=> RS 485/422 interface converter **Order code: N 150.001**

DIN rail mounting frame

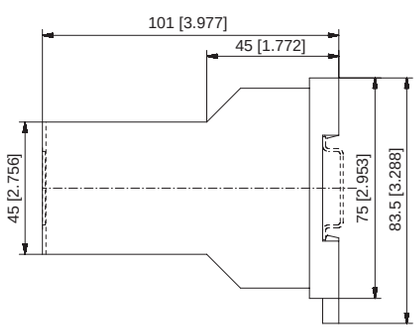
Mounting frame, small

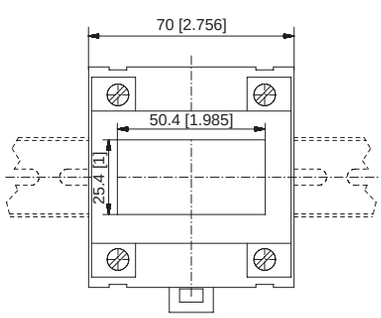
- for panel-mounting of all counters, timers and process indicators, with DIN size 24 x 48 mm [0.945 x 1.89“] or 50 x 25 mm [1.969 x 0.984“], such as ***CODIX*** 52X, ***CODIX*** 53X, ***CODIX*** 13X as well as electro-mechanical pulse counters and hour meters, such as H37, W17.50 etc.

Note:

when mounting the DIN 24 x 48 mm [0.945 x 1.89“] units in the frame, please use the 50 x 25 mm [1.969 x 0.984“] frame adapter, which is provided with all electronic products.

- cut-out 25 x 50 mm [0.984 x 1.969“]
- for snap-on fitting to 35 mm [1.378“] top hat DIN rails
- construction: mounting frame for counter: chromated sheet steel
  top hat DIN rail adapter: glass fibre reinforced polyamide
- applications include, for example, control cabinets

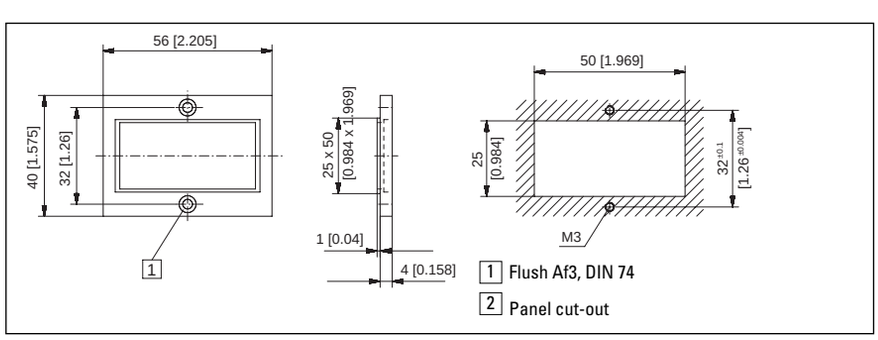




Order code: G.300.004

Adapters

Bezel adapter **37.1**

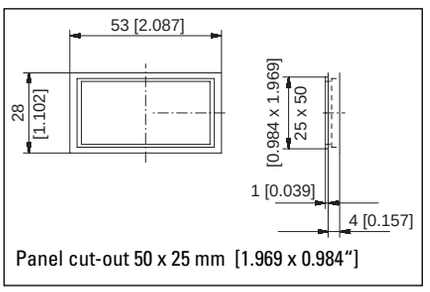


Suitable for Process Displays ***CODIX*** 529, 530, 531; 532 and 533

Order code:	
grey:	Art.-No. T008 160
anthracite:	Art.-No. T008 181

Adapters

Slip-on bezel **37.2**

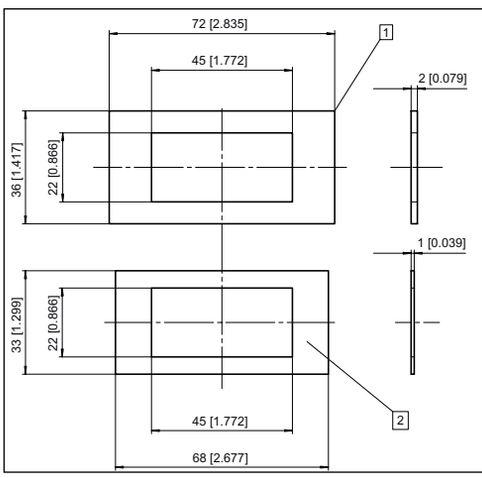


Panel cut-out 50 x 25 mm [1.969 x 0.984“]

Suitable for Process Displays:
CODIX 529, 530, 531 532 and 533

Order code:	
grey:	Art.-No. T008 164
anthracite:	Art.-No. T008 180

Adapter bezel for cut-out
68 x 33 mm [2.677 x 1.299“]



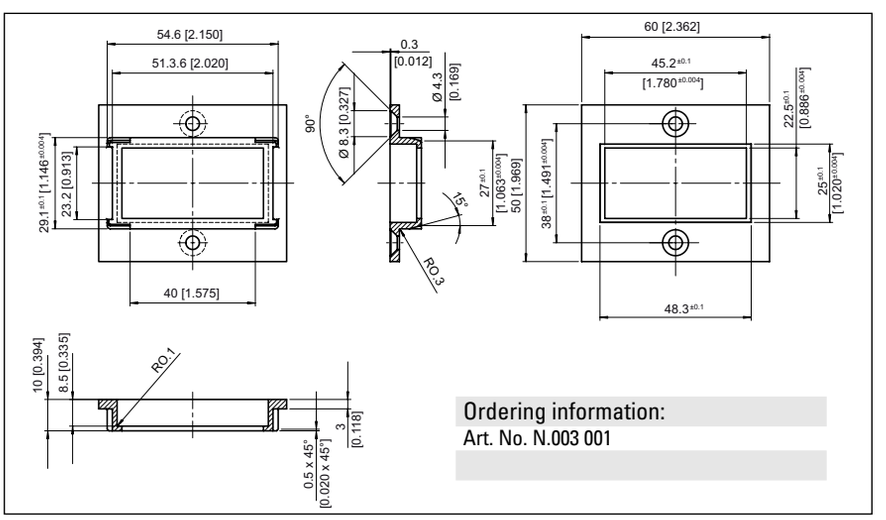
Suitable for Process Displays:
CODIX 529, 530, 531 532 and 533

Order code:
Art. No. 162 704 (Set)

1 Bezel 2 pieces
1x black, 1 x silver

2 Bezel adapter 1x

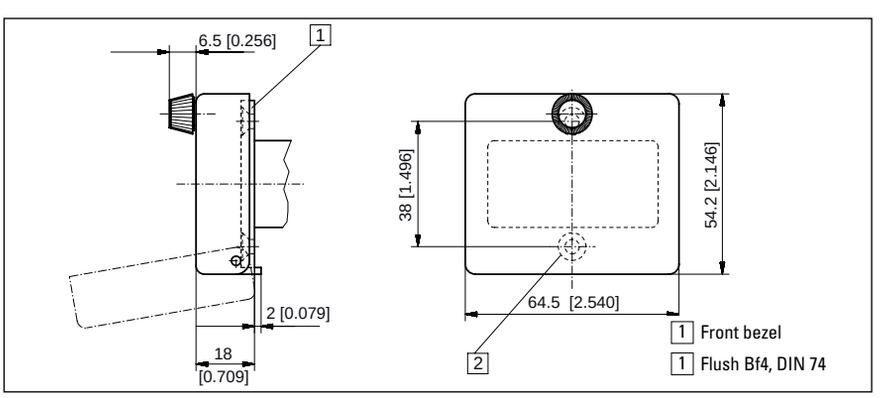
Adapter bezel for cut-out
55 x 29 mm [2.165 x 1.142“]



Suitable for Process Displays ***CODIX*** 529, 530, 531; 532 and 533

Ordering information:
Art. No. N.003 001

Transparent cover with key-lock 1 Dv

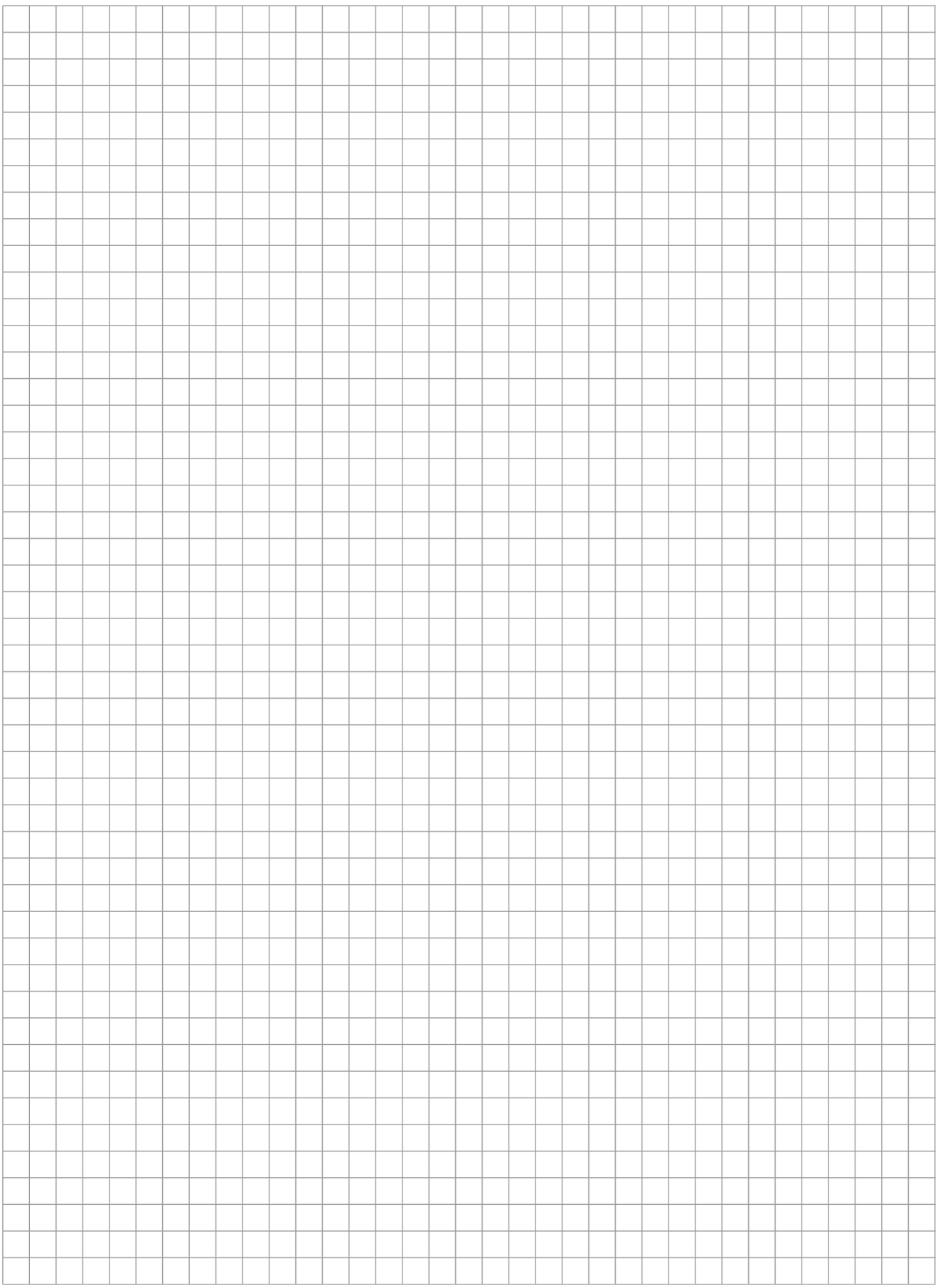


Suitable for Process Displays:
CODIX 529, 530, 531 532 and 533
with adapter 50 x 60 mm

- Screw-on transparent cover, 1 DV, with key locking for size F1
- IP 65 protection with front bezel

Order code:	
grey	Art. No. N.003 002

Notes



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