Operating instructions
Electronic position indicator
and electronic frequency meter
CODIX 52P

Kübler

1.1 Safety instructions and warnings

Only use this display

– in a way according to its intended purpose
– if its technical condition is perfect
– adhering to the operating instructions and the general safety instructions.

1.2 General safety instructions

1. Before carrying out any installation or maintenance work, make sure that the power supply of the digital display is switched off.
2. Only use this digital display in a way according to its intended purpose: If its technical condition is perfect.Adhering to the operating instructions and the general safety instructions.
3. Adhere to country or user specific regulations.
4. The digital display is not intended for use in areas with risks of explosion and in the branches excluded by the standard EN 61010 Part 1.
5. The digital display should only operate if it has been correctly mounted in a panel, in accordance with the chapter “Technical features”.

1.3 Use according to the intended purpose

The digital display may be used only as a panel-mounted device. Applications of this product may be found in industrial processes and controls, in manufacturing lines for the metal, wood, plastics, paper, glass, textile and other processing industries. Over-voltages at the terminals of the digital display must be kept within the limits in Category II.

If the digital display is used to monitor machines or processes in which, in case of a failure of the device or an error made by the operator, there might be risks of damaging the machine or causing accidents to the operators, it is your responsibility to take appropriate safety measures.

1.4 Description

- 6-digit position indicator and frequency meter
- Red LED display, character height 8 mm
- Display range -199 999…999 999
- Leading zeros suppression
- Programming via two setting keys on the front side
- During programming, the display guides the user with text prompts

- **Position indicator operating modes**

– Count input INP A + count direction input INP B(Cnt.Dir)
– Differential count INP A - INP B (up.dn)
– Totalising INP A + INP B (up.up)
– Count Up/Down INP A 90° INP B x 1 (quad)
– Count Up/Down INP A 90° INP B x 2 (quad2)
– Count Up/Down INP A 90° INP B x 4 (quad4)

- **Frequency meter**

– Frequency input INP C
– Value conversion and display in 1/s or 1/min

2. Inputs

INP A
Dynamic count input.
INP B
Dynamic count input.
INP C
Dynamic frequency input.

3. Selection of the displayed value

Pressing the right key allows switching between the totaliser display and the frequency meter display. Press the key briefly to display for 2 seconds the current function (“count” or “tAcho”). If, during this period of time, the right key is pressed a second time, the device switches to the current function and displays a confirmation (“count” or “tAcho”) for 2 seconds. Then, the value of the selected function is displayed.

4. Setting of the operating parameters

a. Press both front side keys keys and switch on the supply voltage or, if the supply voltage is already on, press both keys simultaneously during 5 s.

b. The display shows
`ProG`

c. After releasing the keys, the display shows
`no`

c1. Hold the left key pressed and press the right key to leave the programming operation.

c2. Press the right key to switch to
`YES`

d. Hold the left key pressed and press the right key to switch to the first parameter.

e. After releasing the keys, the display alternates between the menu title and the current menu item. After pressing any key, only the menu item setting is displayed.

f. Pressing the right key, the menu item setting will be switched to the next value.
If figures are to be input (e.g. when setting the scaling factor), select first the decade using the left key, and then set the value using the right key.

g. Hold the left key pressed and press the right key to switch to the next menu item.

h. The last menu title ”EndPro” allows, when selecting “YES”, to exit the programming menu and to take over (store) the new values. If “no” is selected, the programming routine is repeated, the latest values set remaining active. They can now be checked again or modified.

5. Programming routine

The programmable parameters of the device are described below, in the order in which they can be set. The device is fully programmed after one pass of the routine.

The first values stated correspond to the factory setting.

5.1 Polarity of the inputs

`inPol`

`nPn` npn: switching for 0 V

`PnP` pnp: switching for +U_B

5.2 Switching on the 30 Hz filter (INP A, INP B)

`FiltEr` The filter provides input damping*

`oFF` 30 Hz filter off (f_{max})

`on` 30 Hz filter on

5.3 Input mode

`inPut`

`CntDir` Count input and count direction input
INP A: Count input
INP B: Count direction input

`up dn` Differential input
IINP A: count input adding
INP B: count input subtracting

`up up` Totalising
INP A: count input adding
INP B: count input adding

`quAd` Quadrature input
INP A: count input 0°
INP B: count input 90°

`quAd 2` Quadrature input with pulse doubling
INP A: count input 0°
INP B: count input 90°
Each pulse edge of INP A will be counted

`quAd 4` Quadrature input with pulse quadrupling
INP A: count input 0°
INP B: count input 90°
Each pulse edge of INP A and INP B will be counted.

For the frequency measurement, INP C may be operated independently of the counter input modes.

* where bounce occurs, e.g. with contacts

5.4 Multiplying factor (counter)

FACTOR

0.0000 It can be set from 00.0001 up to 99.9999.
The decimal point is set to 4 decimal places.
999999 „0“ is not accepted!

5.5 Dividing factor (counter)

DIV.FAC

0.0000 It can be set from 00.0001 up to 99.9999.
The decimal point is set to 4 decimal places.
„0“ is not accepted!

5.6 Decimal point (counter)

DP.CNT The decimal point defines the way of displaying the count values. It does not affect counting.

0 0 no decimal place
0.0 one decimal place
0.00 two decimal places
0.000 three decimal places

5.7 RESET Mode (counter)

RES.CNT

MANUAL manual reset via the red RESET key

no RES no reset (red RESET key locked)

5.8 Multiplying factor (frequency meter)

FACTOR

0.0000 It can be set from 00.0001 up to 99.9999.
The decimal point is set to 4 decimal places.
999999 „0“ is not accepted!

5.9 Dividing factor (frequency meter)

DIV.FAC

0.0000 It can be set from 00.0001 up to 99.9999.
The decimal point is set to 4 decimal places.
999999 „0“ is not accepted!

5.10 Decimal point (frequency meter)

DP.FAC The decimal point defines the resolution in the selected measuring range 1/min or 1/sec

0 0 no decimal place
0.0 one decimal place
0.00 two decimal places
0.000 three decimal places

5.11 Display mode (frequency meter)

DISPLA

SEC-1 Value conversion and display in 1/s

MIN-1 Value conversion and display in 1/min

5.12 Max. time to wait until „0“ is displayed (frequency meter)

This parameter indicates, how long it takes, when measuring is active, until „0“ is displayed.

WAIT0

00.1 Max. time to wait 00.1 s (min. value)

999 Max. time to wait 99.9 s

5.13 End of programming

ENDPRO

no The programming routine is repeated once more. The values set until now can be checked and modified.

YES The programming routine wil be left and all values set will be stored as new parameters. Afterwards the device is ready for operation.

6. Technical data

Supply voltage
DC power supply: 10…30 V DC/max. 55 mA with inverse-polarity protection

Display: 6 digits, red 7 segment LED display, height 8 mm

Data retention: EEPROM

Polarity of the inputs:
Programmable, npn or pnp for all inputs

Input resistance:
appr. 5 kΩ

Count frequency:

DC power supply:	24 V	12 V	10 ...30 V
Input level:	Standard 5V		
typ. level low:	2,5 V	2,0 V	1,0 V
typ. level high:	22,0 V	10 V	4,0 V
Fmax:*	**kHz**	**kHz**	**kHz**
ContDir/Tacho	30	10	8
UpDown/Tacho	10	10	8
Up.Up/Tacho	10	10	8
Quad 1/Tacho	15	10	8
Quad 2/Tacho	15	10	8
Quad 4/Tacho	10	8	8

Frequency measurement (INP C):
Accuracy: < 0.1 %
Measuring principle:
< 38 Hz: period measurement
> 38 Hz: gating time measurement
gating time = 26,3 ms

Input sensitivity:
Standard sensitivity:
DC power supply Low: 0…0,2 x U_B [V DC]
High: 0,6 x U_B…30 [V DC]

4…30 V DC level: Low: 0…2 V DC
High: 4 ...30 V DC

Pulse shape: any*,
Schmitt-Trigger inputs

Ambient temperature:
-20…+65 °C at 10…26 V DC
-20…+55 °C at >26…30 V DC

Storage temperature:
–25…+70 °C
Altitude: to 2000 m

EMC:
Interference resistance:
with shielded signal and control cables

Housing:
For front panel mounting: 48 x 24 mm
acc. to DIN 43700, RAL7021, dark grey

Weight: appr. 50 g

Protection: IP65 (front)

Cleaning:
The front of the units is to be cleaned only with a soft wet (water !) cloth.

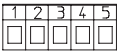
Approvals
UL compliant in accordance with
File no. E128604

CE compliant in accordance with
EMC Directive: 2014/30/EU
RoHS Directive: 2011/65/EU

UKCA compliant in accordance with
EMC Regulations S.I.: 2016/1091
RoHS Regulations S.I.: 2012/3032

7. Terminal assignment

1 10…30 V DC
2 0 V GND
3 INP A
4 INP B
5 INP C



8. Delivery includes:

1 Digital display
1 Panel mounting clip
1 Bezel for screw mounting, panel cut out 50 x 25 mm
1 Bezel for clip mounting, panel cut out 50 x 25 mm
1 Seal
1 Multilingual operating instructions

* at maximum frequency square wave pulses 1:1

9. Ordering code:

6.52P.012.3X0

Input sensitivity
0 = Standard
A = 4…30 V DC level

Dimensions: