Counters
48x48 digital preset counter
Type FKC01

- **6-digit preset counter (adding / subtracting)**
- **2-line LCD display with indicators for activated output and current preset value**
- **Count and preset range from -999999 to 999999**
- **Programmable to operate as:**
  - **pulse counter**
  - **frequency meter**
  - **time meter**
- **Displays text prompts to guide the user while programming**
- **2 count inputs: PNP or NPN, selectable**
- **Gate, Reset and Key inputs**
- **Maximum count frequency 30Hz or 10kHz selectable**
- **Programming of count functions/operating parameters via front keys**
- **Output: 3 A SPDT relay**
- **Power supply: 100 to 240 VAC**

Product Description

48 x 48 mm preset digital counter for flush mounting with 2 lines LCD display, programmable as impulse counter (with sign), frequency meter or time meter. SPDT output relay, NPN or PNP inputs.

Ordering Key

FKC 01 C 924

- **Housing**
- **Function**
- **Type**
- **Item number**
- **Output**
- **Input range**

Type Selection

Mounting	Output	Input	Housing	Supply: 100 to 240 VAC
Front panel	SPDT	NPN or PNP	48 x 48 mm	**FKC 01 C 924**

Input Specifications

Count inputs	
INP A - INP B	
Input type	NPN or PNP open collector
Low level	0 to 4 VDC
High level	12 to 30 VDC
Max counting frequency	10 kHz
Static gate input	
GATE	
Input type	NPN or PNP open collector
Low level	0 to 4 VDC
High level	12 to 30 VDC
Dynamic reset input	
RESET	
Input type	NPN or PNP open collector
Low level	0 to 4 VDC
High level	12 to 30 VDC
Static keyboard lock input	
KEY	
Input type	NPN or PNP open collector
Low level	0 to 4 VDC
High level	12 to 30 VDC
PNP/NPN sensor supply output	24 VDC -40% +15% 100 mA (unstabilized)
Polarity of the inputs	Programmable for all inputs together
Pulse shape	Variable (Schmitt-trigger character.)
Input resistance	Approx. 10 kΩ

Output Specifications

Output		SPDT relay
Rated insulation voltage		250 VAC
Contact ratings (AgCdO)		µ
Resistive loads	AC 1	3 A @ 250 VAC
	DC 12	2 A @ 24 VDC
Small inductive loads	AC 15	2.5 A @ 250 VAC
	DC 13	2 A @ 24 VDC
Mechanical life		≥ 2 x 10^6 operations
Electrical life		≥ 5 x 10^5 operations (at 3 A, 250 VAC)
Response time		Approx. 6 ms
Dielectric strenght		
Dielectric voltage		2 kVAC (rms)

Supply Specifications

Power supply		Overvoltage cat II (IEC 60664)
Rated operational voltage through terminals plug X1:	6, 7	100 to 240 VAC ±10%, 45 to 65 Hz
Rated operational power		4 VA
Dielectric voltage		(EN 61010-1)
Supply to input		2.3 kV/5s
Supply to output		2.3 kV/5s
Input to output		2.3 kV/5s

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General Specification

Display	
Number of digits	6 digits (with sign)
	2-line 7 segments LCD display
Display range	-999999 to 999999
Count digit height	9 mm
Preset value digit height	7 mm
Indicator for activated output	Present
Indicator for current preset value	Present
Number of decimal points	2 or 3
Programmable scaling factor	0.0001 to 9.9999
Data retention	Min. 10 years or 10^6 memory cycles
Accuracy	
(temperature drift included)	0.015%

Environment	(EN 60529)
Degree of protection	IP 65 front
Pollution degree	2
Operating temperature	0 °C to +50 °C , R.H. <90%
Storage temperature	-25 °C to +70 °C, R.H. <90%
Housing dimensions	48 x 48 x 89.5 mm
Weight	Approx. 240 g
Connector	Screw-type, detachable
Screw tightening torque	
Connector with grid 5.08mm	Max. 0.6 Nm
Connector with grid 3.81mm	Max 0.25 Nm
CE Marking	Yes
EMC	Electromagnetic Compatibility
Immunity	According to EN 61000-6-2 / EN 55011 class B
Emission	According to EN 61000-6-4

Front Panel Description

1. Front keys — 4 keys:

▲ To show the functions and steps in the programming routine; to modify the scaling factor; to modify the gate time; to increase the preset value; to eliminate the sign of the preset value.

◀ To select the sign of the preset value; to scroll the digits on the "preset value".

P To confirm the selected step on the routine program.

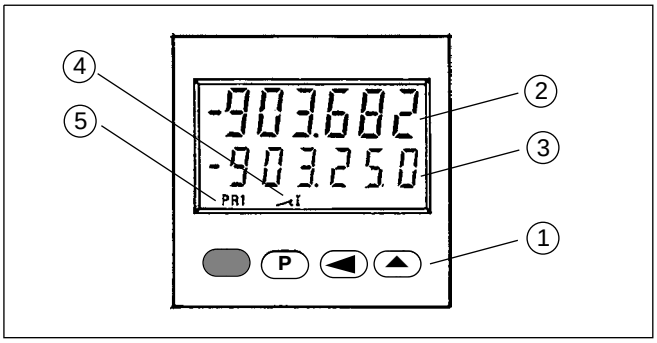
To set the counter to zero (add. mode) or to the preset value (subtr. mode).

2. Count value display — 6 LCD digits

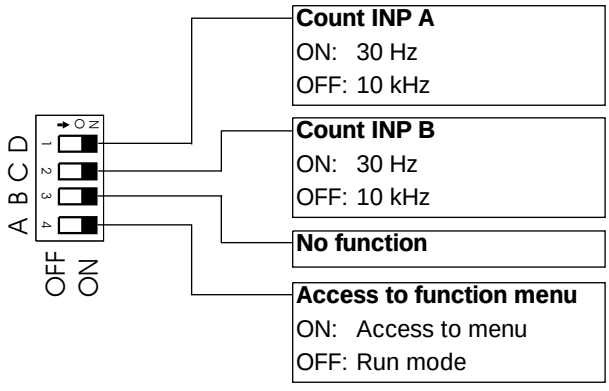
3. Preset value display — 6 LCD digits

4. **Indicator for ativated output**

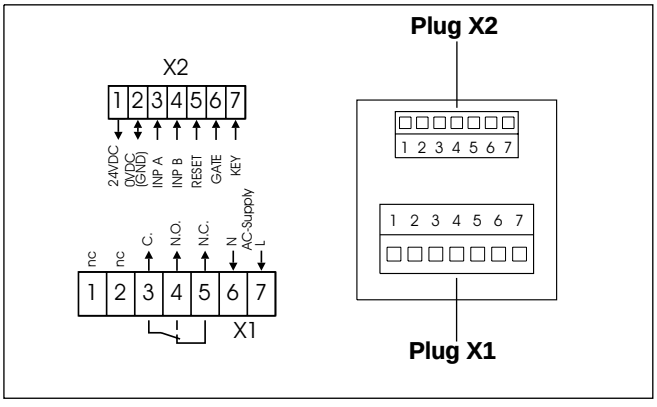
5. Indicator for current preset value



DIP Switches Description



Terminal Board Connections



Specifications are subject to change without notice (20.04.05)

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Terminal Board Description

Plug connection X1

Terminal No.	Designation	Description
1	nc	No function
2	nc	No function
3	C	Relay output common contact
4	N O	Relay output normally open
5	N C	Relay output normally closed
6	N	Power supply (neutral)
7	L	Power supply (line)

Plug connection X2

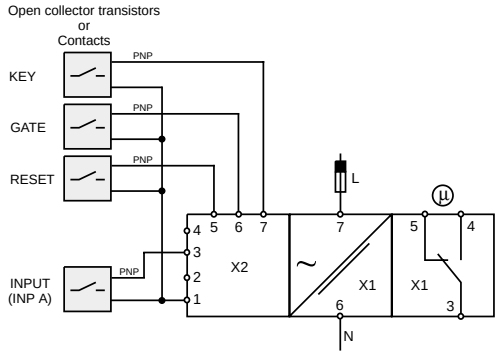
Terminal No.	Designation	Function
1	24 VDC	PNP/NPN sensor supply output
2	GND	0 VDC reference voltage
3	INP A	Count input A
4	INP B	Count input B
5	RESET	Reset input
6	GATE	Gate input
7	KEY	Keyboard lock input

Warning!
For settings ⌐└ and ⌐┘ the connections of terminal 4 and 5 change as follows:

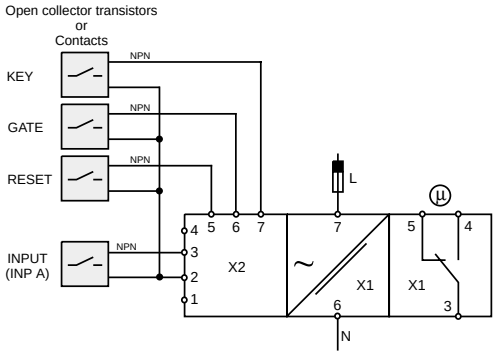
Terminal No.	Designation	Description
4	N C	Relay output normally closed
5	N O	Relay output normally open

Wiring Diagrams

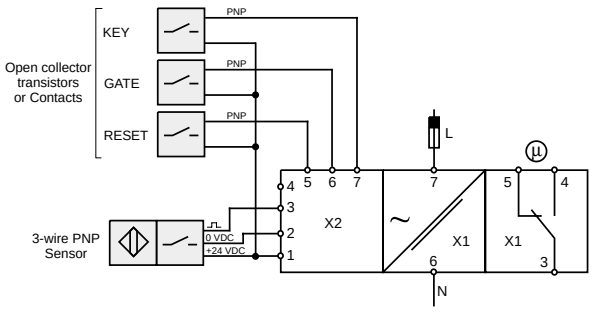
Contact or Open collector input (PNP)



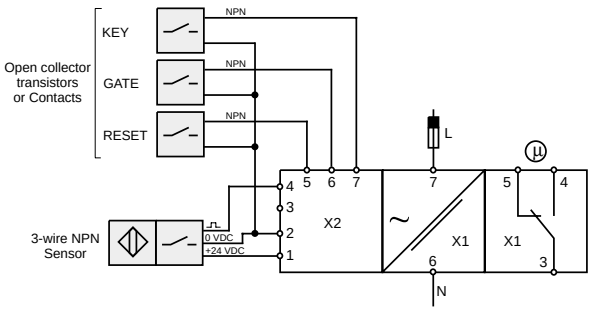
Contact or Open collector input (NPN)



PNP sensor input



NPN sensor input



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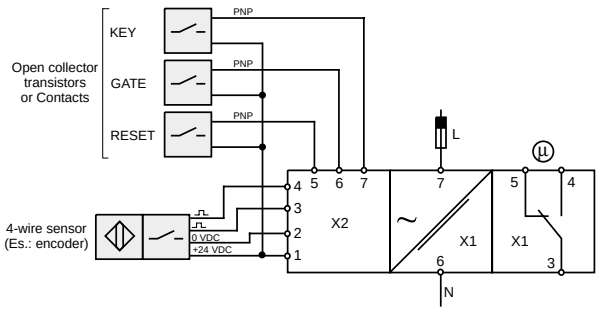
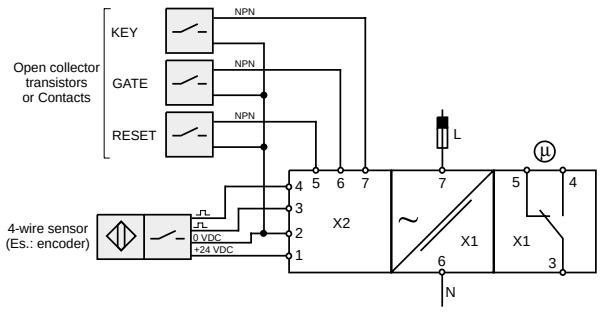
Wiring Diagrams (cont.)

4-wire sensor (PNP open collector or contact inputs)



4-wire sensor (NPN open collector or contact inputs)



Accessories Included

The counter is supplied with the followings accessories:

- screw terminal plug 7 poles, reference grid 5.08 mm;
- screw terminal plug 7 poles, reference grid 3.81 mm;
- bezel for clip mount (see fig. 2), panel cut-out 50 x 50 mm;
- bezel for screw mount (see fig.3), panel cut-out 50 x 50 mm;
- panel mounting clip.

Dimensions

Panel cut-out 45 x 45 mm

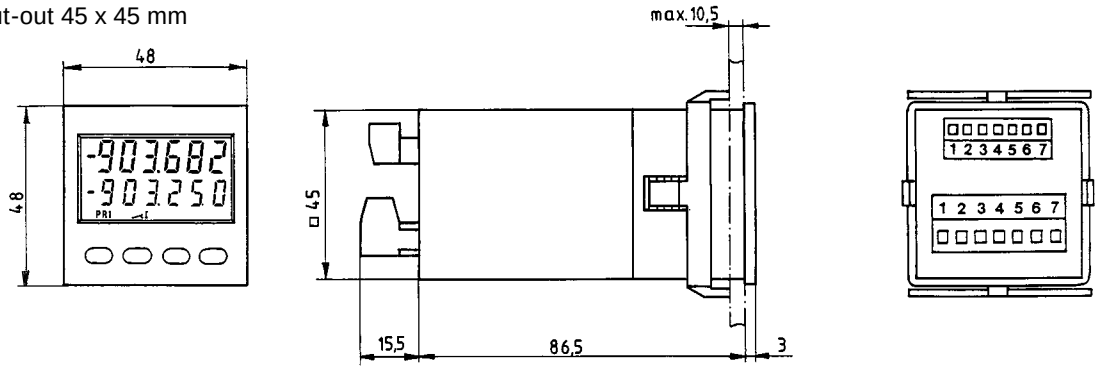


Fig. 1

Panel cut-out 50 x 50 mm

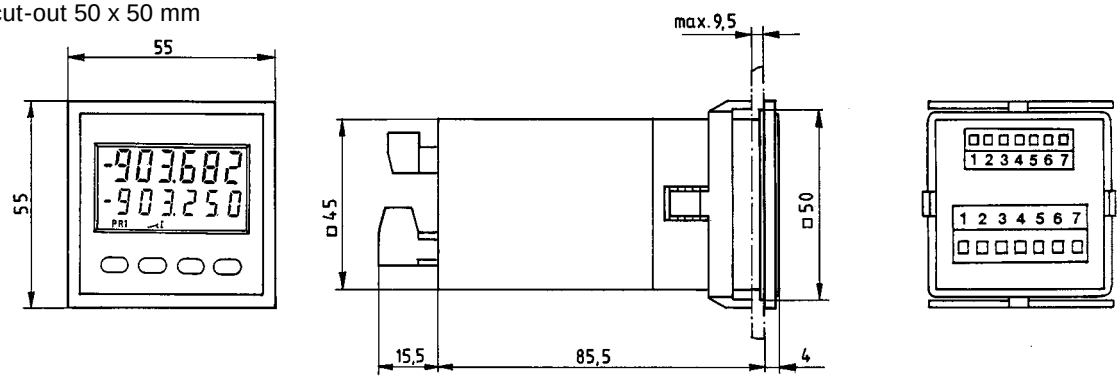


Fig. 2

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Dimensions (cont.)

Panel cut-out 50 x 50 mm

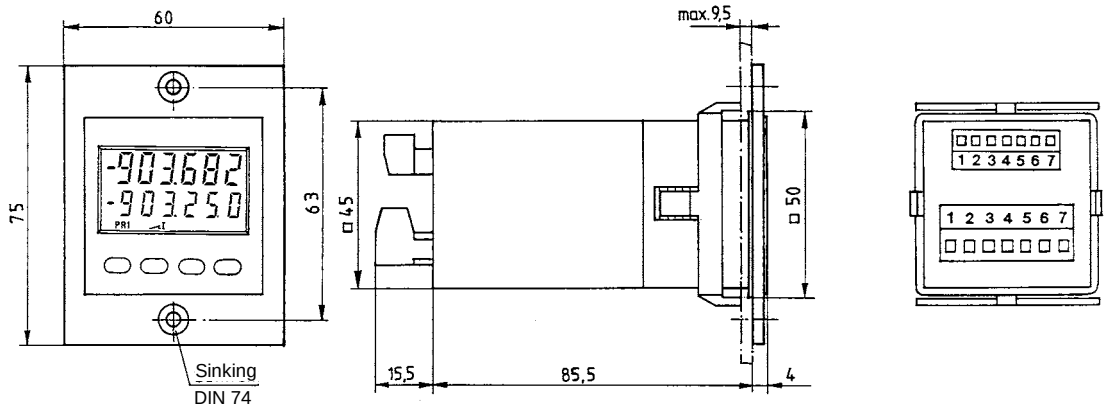

Fig. 3