

Counters

48x48 digital preset counter

Type FKC01

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- 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
- 48 x 48 mm housing

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, PNP or voltage free contact inputs.

Ordering Key

FKC 01 C 924

Housing _____
 Function _____
 Type _____
 Item number _____
 Output _____
 Input range _____

Type Selection

Mounting	Output	Input	Supply: 100 to 240 VAC
Front panel	SPDT	NPN, PNP or voltage free contact	FKC 01 C 924

Input Specifications

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

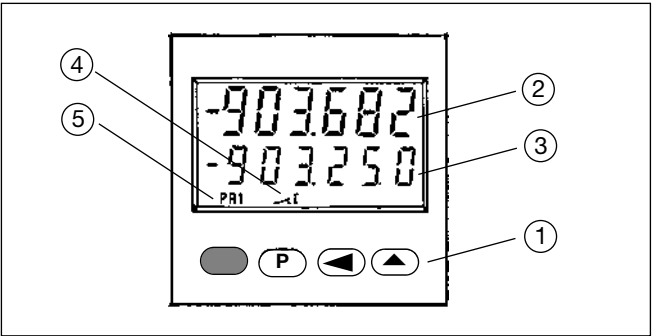
General Specification

Display	
Number of digits	6 digits (with sign)
Display range	2-line 7 segments LCD display
Count digit height	-999999 to 999999
Preset value digit height	9 mm
Indicator for activated output	7 mm
Indicator for current preset value	Present
Number of decimal points	Present
Programmable scaling factor	2 or 3
	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
Approvals	UL
CE Marking	Yes
EMC	
Immunity	Electromagnetic Compatibility
Emission	According to EN 61000-6-2
	According to EN 61000-6-3

Front Panel Description

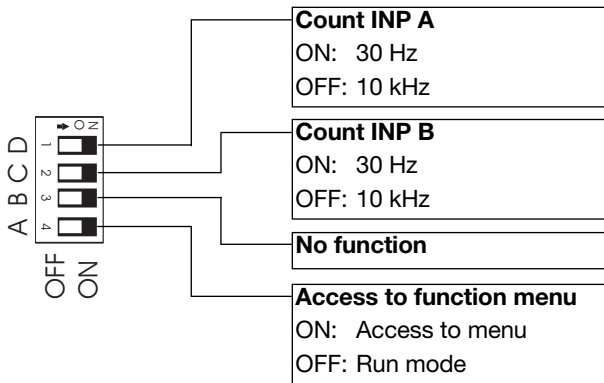
1. Front keys	4 keys:
	To show the functions and steps in the programming routine; to modify the scaling factor; to modify the gate time; to increase the preset value; to eliminate the sign of the preset value.
	To select the sign of the preset value; to scroll the digits on the "preset value".
	To confirm 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	

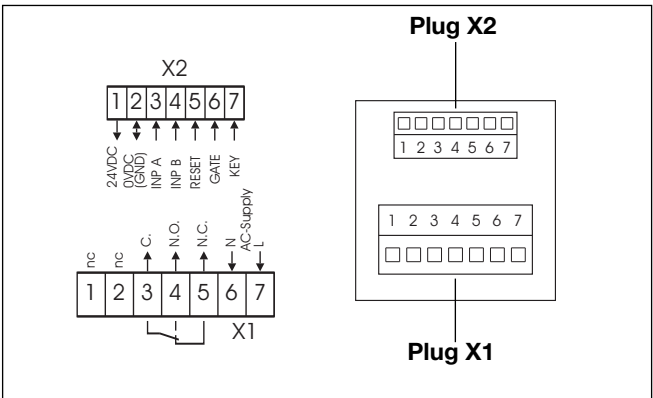




DIP Switches Description



Terminal Board Connections



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)

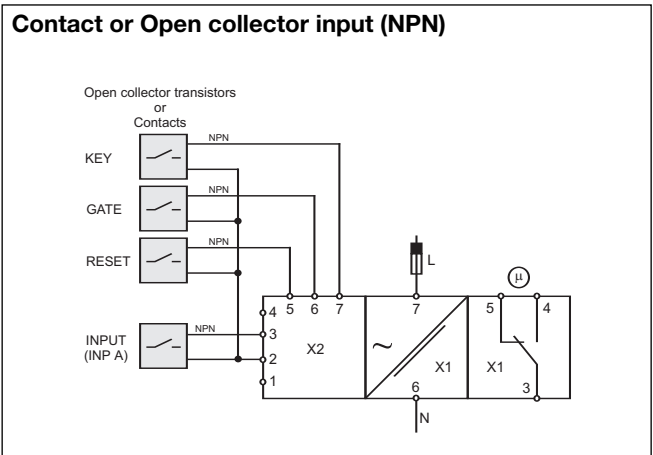
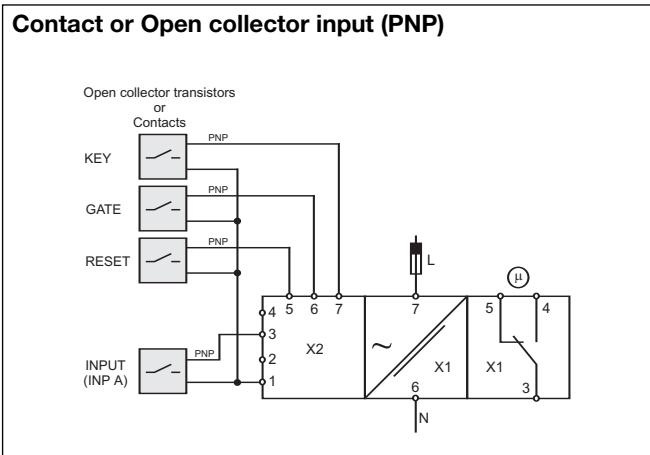
Plug connection X2

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 $\neg$ and $\neg$ the connections of terminal 4 and 5 change as follows:

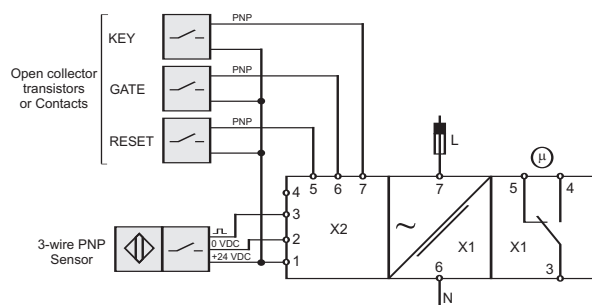
Terminal No.	Designation	Description
4	N C	Relay output normally closed
5	N O	Relay output normally open

Wiring Diagrams

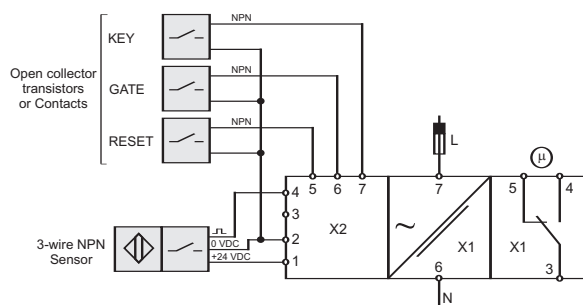


Wiring Diagrams (cont.)

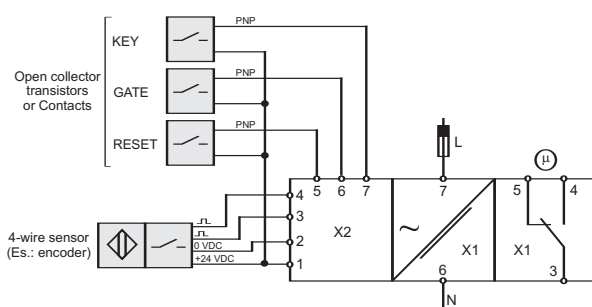
PNP sensor input



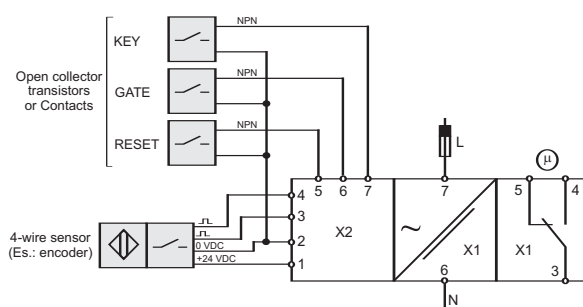
NPN sensor input



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;
- panel mounting clip.

Dimensions

Panel cut-out 45 x 45 mm

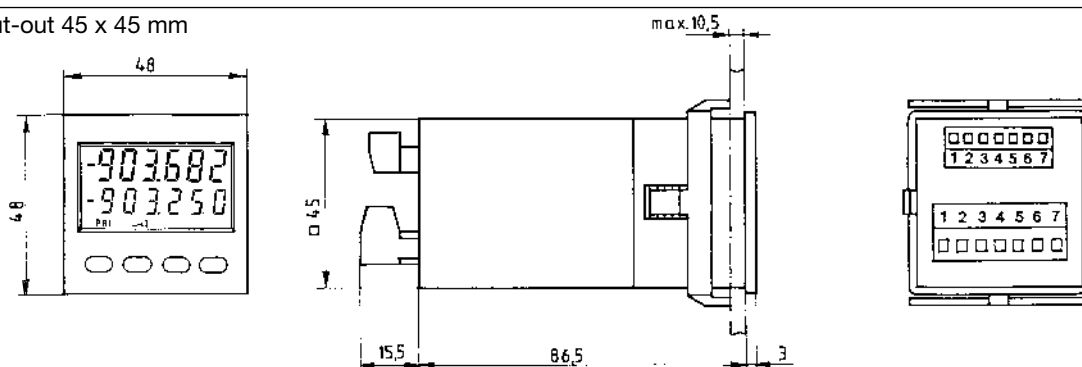


Fig. 1

Dimensions (cont.)

Panel cut-out 50 x 50 mm

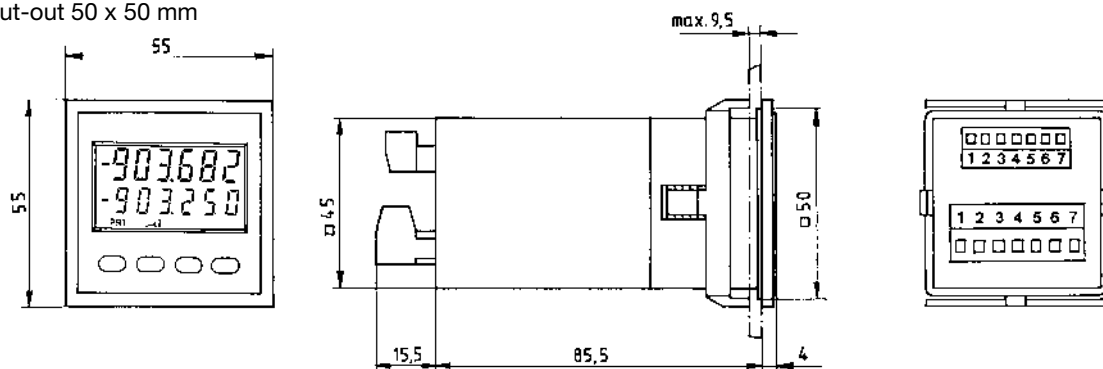


Fig. 2

Panel cut-out 50 x 50 mm

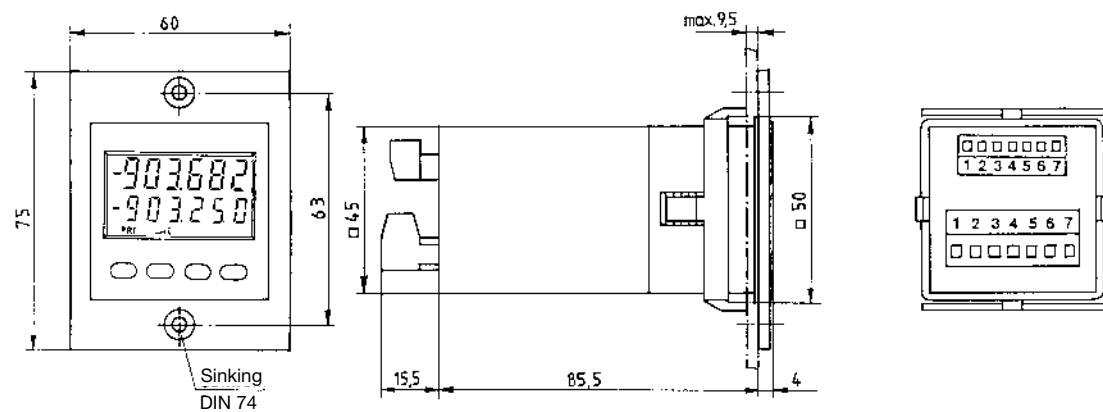


Fig. 3