



## FlexConv U/I/f - Relay Converter

Inputs: Current, voltage, frequency and period

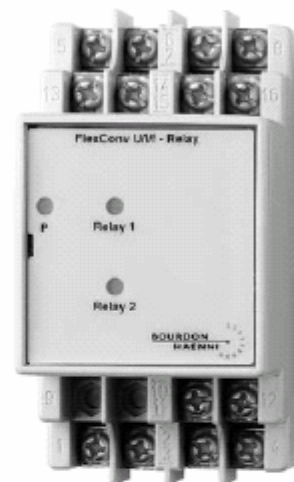
Outputs: 2 relays, 2 mio. operations/60 W

2kV<sub>dc</sub> isolation between input, output and supply

Fully configurable input and output via PC

Frequency ranges 0.01...1100 Hz

AC/DC supply



### Description

Input and output as well as power supply are mutually galvanically separated, which gives optimal safety under all operating conditions.

The input signal is digitalized and processed by the microprocessor which calculates the output signal based upon data configured by the customer and stored in EEPROM.

FlexConv U/I/f-relay is a universal module supplied with 2 relay outputs, each with 1 make and break contact. The input can be configured for current, voltage, frequency or period.

The configuration can be done from a standard PC which gives great flexibility.



## Technical Data

### Voltage input

Measuring range	0...1.1 V <sub>dc</sub> /0...11 V <sub>dc</sub>
Difference set-reset	≥ 1 mV <sub>dc</sub> /10 mV <sub>dc</sub>
Input impedance	Typ. 500 kOhm
Sample time	Max. 0.2 sec.
Resolution	13 bit (8192 counts)
Delay set/reset	0...999 sec.
Accuracy	Typ. < 0.1% of measuring range

### Current input

Measuring range	0...22 mA
Difference set-reset	≥ 0.02 mA
Input impedance	Max. 150 Ohm
Sample time	Max. 0.2 sec.
Resolution	13 bit (8192 counts)
Delay set/reset	0...999 sec.
Accuracy	Typ. < 0.1% of measuring range

### Frequency/period input

(Refer to table)

Input impedance	Typ. 5 kOhm (NPN) Typ. 10 kOhm (PNP)
Sample time	Max. 0.1 sec. + 2 periods
Pulse level	> 3.8 V (Max. 35 V <sub>dc</sub> )
Pause level	< 1.8 V
Delay set/reset	0...999 sec.
Accuracy:	
Frequency	0.01...1 Hz ±0.02 Hz
Frequency	1...110 Hz ±0.02 Hz
Frequency	2...550 Hz ±0.03 Hz
Frequency	2...1100 Hz ±2.0 Hz
Time	0.1...11 sec. Typ. < 5 msec.
Time	1...110 sec. Typ. < 50 msec.

### Relay output

Voltage	Max. 250 V <sub>ac/dc</sub>
Current	Max. 2 A
Effect	Max. 60 W/125 VA
Relay operations	Typ. 2 mio. (24 V/1 A Ohmic)
Contact resistance	Max. 100 mOhm

### Common data

Temperature drift	Typ. < 0.005% per °C
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### Power supply

Supply range	12...35 V <sub>dc</sub> /10...28 V <sub>dc</sub>
Power consumption	< 50 mA at 24 V <sub>dc</sub>
Isolation voltage	2 kV <sub>dc</sub>
Transfer capacity	Typ. 40 pF

### Environmental conditions

Operating temperature	-10...60°C
Storage temperature	-35...85°C
Humidity	< 90% RH, non-condensing
Vibrations	Lloyds Register, test 2

### EMC data

Immunity	EN 50082-2
Emission	EN 50081-2

### Mechanical data

Dimensions	62 x 88 x 45 mm
DIN-rail mounting	DIN 46277
Protection class	Housing: IP 30 Terminals: IP 10
Weight	0.12 kg

### Disposal of product and packing

According to national laws or by returning to Bourdon-Haenni

## Ordering Details - FlexConv U/I/f - Relay Converter

84 13 - 51x

Configuration	7' digit	
Not configured		4
Configured according to customer specifications		5

## Configuring the Relay

Wanted state at power off	Wanted state at max. input	Connectors		Input
		Relay 1	Relay 2	
Break	Make	7+15	8+16	Set point > Reset point
Break	Break	7+15	8+16	Set point < Reset point
Make	Make	11+15	12+16	Set point < Reset point
Make	Break	11+15	12+16	Set point > Reset point

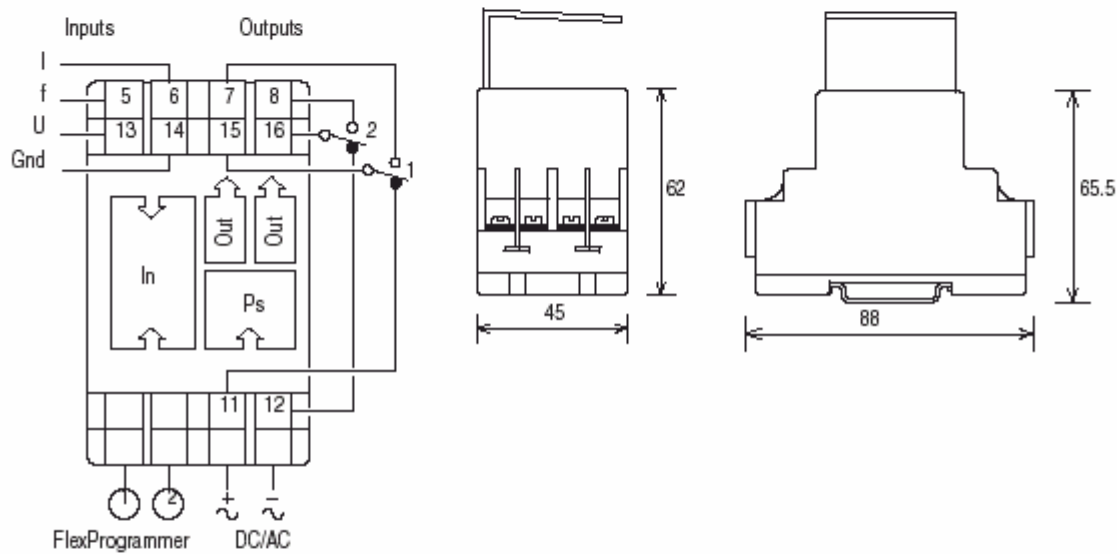
Note: When relay 1 and/or 2 is activated, the corresponding LED on the front panel will be lit.



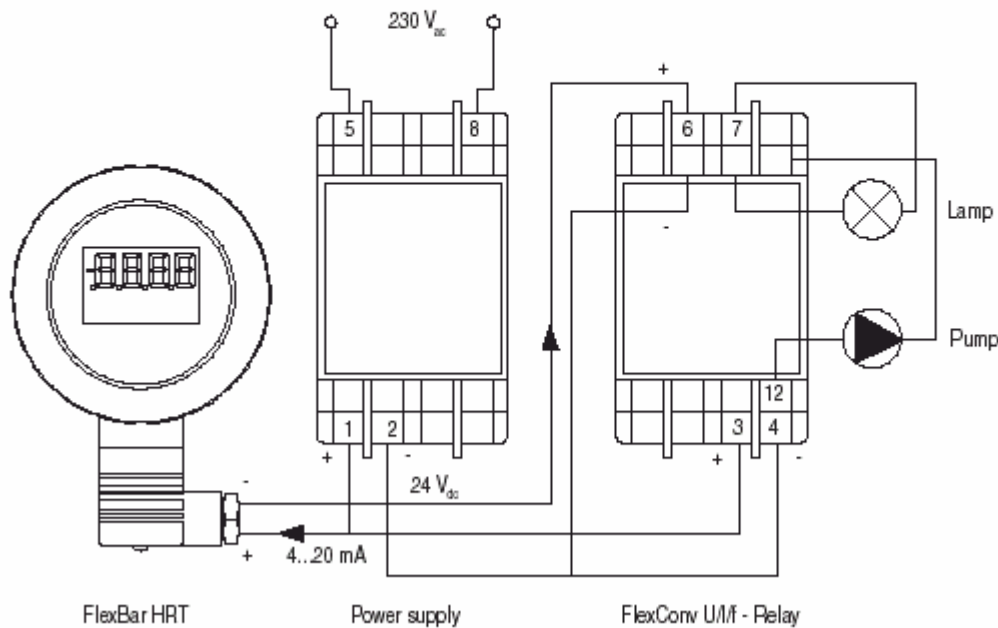
## Measuring Ranges

Measuring range	Difference set-reset	Period time	Pulse time	Pause time	Bounce suppression	Frequency range
0.01...1 Hz	$\geq 0.02$ Hz		$> 0.5$ msec.	$> 25$ $\mu$ sec.	0.3 msec.	0...1 kHz
1...110 Hz	$\geq 0.1$ Hz		$> 0.5$ msec.	$> 25$ $\mu$ sec.	0.3 msec.	0...1 kHz
2...550 Hz	$\geq 2$ Hz		$> 0.1$ msec.	$> 25$ $\mu$ sec.	0.06 msec.	0...5 kHz
2...1100 Hz	$\geq 5$ Hz		$> 0.1$ msec.	$> 25$ $\mu$ sec.	0.03 msec.	0...10 kHz
0.1...11 sec.	$\geq 0.01$ sec.	$> 0.1$ sec.	$> 50$ msec.	$> 25$ $\mu$ sec.	30 msec.	
1...110 sec.	$\geq 0.1$ sec.	$> 1$ sec.	$> 500$ msec.	$> 25$ $\mu$ sec.	300 msec.	
0...1.1 V	$\geq 1$ mV					
0...11 V	$\geq 10$ mV					
0...22 mA	$\geq 0.02$ mA					

## Electrical Installation



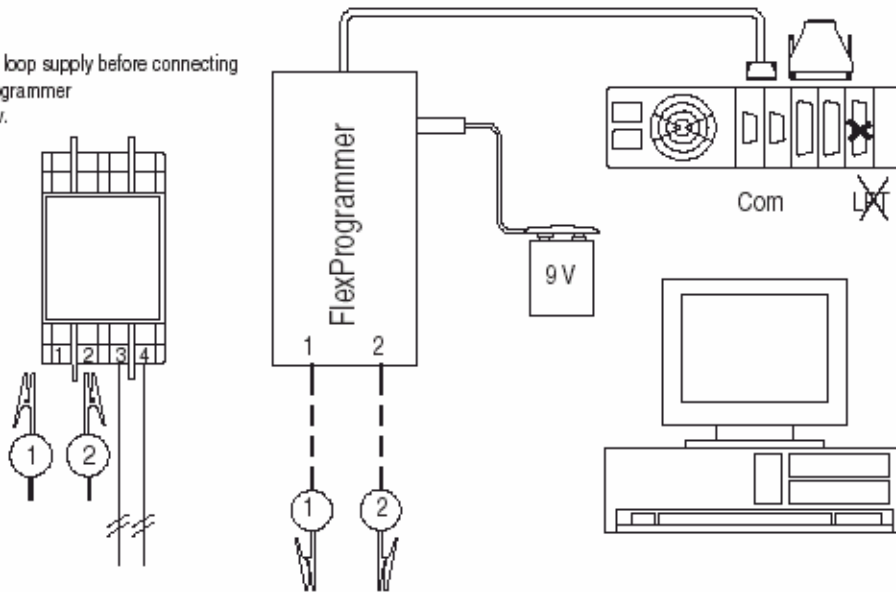
## Example of Application



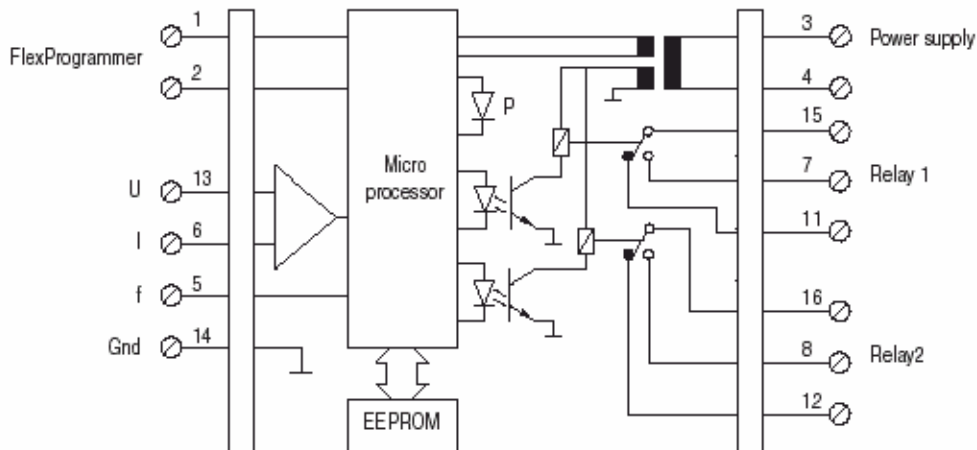


## Configuration

Note:  
Disconnect loop supply before connecting the FlexProgrammer to FlexConv.



## Block Diagram



## Accessories

FlexProgrammer configuration set,  
type number 82 23-903 comprises:

- FlexProgrammer with 9 pole RS232C cable
- 3.5" Program diskettes
- Battery plug
- Cable with test plugs



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