

## Frequency / Analog – Converter

**FW2**

Characteristics:

- Linearity error < 0,01%
- Input frequency max. 100kHz
- Input 5/15/24VDC
- Push-pull output, short-circuit proof
- Frequency configurable by Dip-Switch
- Status display of the output frequency
- Power supply 24VDC
- Mountable on 35mm cap rail TS35
- Clear terminal labeling
- Narrow design
- Shape 17,5mm
- PB - Power -Bus compatible
- High reliability, 5 years warranty



Description:

The devices of the series FW2 frequency / analog – converter have been developed for proportional converting of frequencies into norm signals. With this series frequencies in the range of 0Hz up to 100 kHz 0...10V can be converted into norm signals of 0/4...20mA resp. 0...10V. The input voltage can be 5V, 15V or 24V without dimensioning the performance of the signal. The output frequency has a rough adjustment by the Dip-Switch S1, and by two potentiometers (V), (O) then you will be able to do the fine adjustment. A LED displays the status of the output frequency.

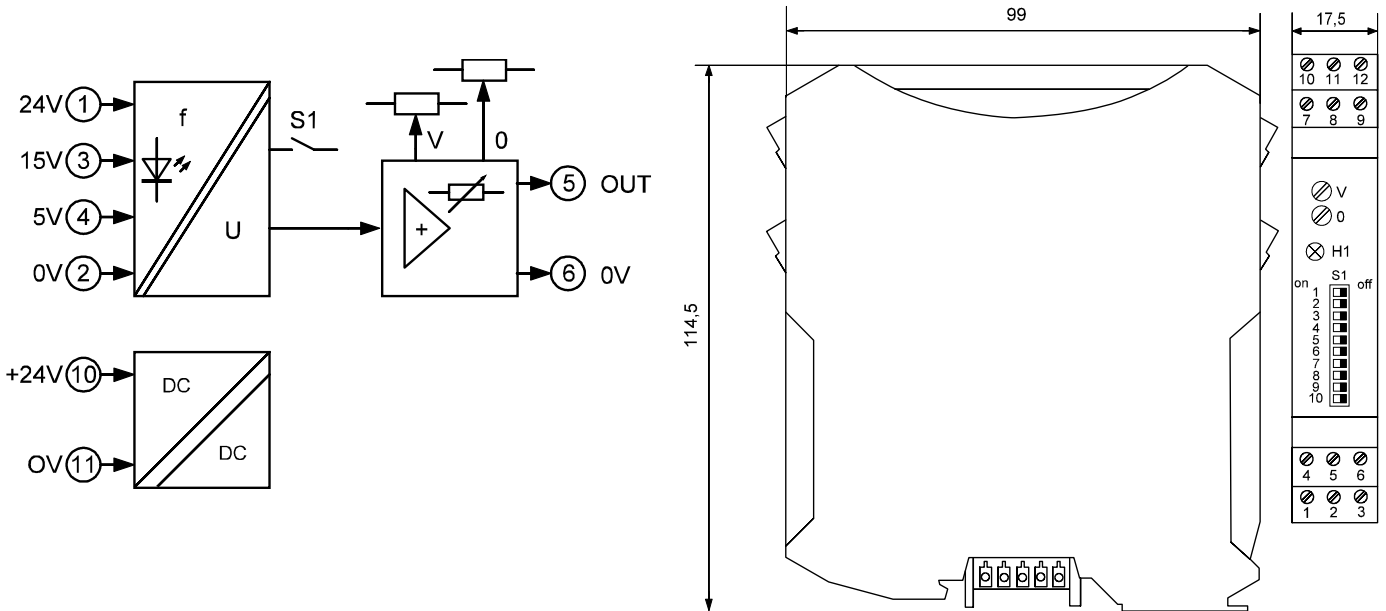
Application:

Signal converting frequency/analog

**Order-No.:**

	Output:	Input frequency:
<b>FW2-1-1</b>	0...10V	0...50Hz/0...100kHz
<b>FW2-1-2</b>	0...20mA	0...50Hz/0...100kHz
<b>FW2-1-3</b>	4...20V	0...50Hz/0...100kHz

Standard delivery: Input frequency: 0-10kHz Output: 0-10V resp. 0-20mA/4-20mA



**Measuring range:**

Switch position S1 ● = on											
Input frequency range*	1	2	3	4	5	6	7	8	9	Output	10
0... 50 Hz bis 0... 200 Hz					●	●			●	0...20 mA	
0...200 Hz bis 0... 1 kHz				●		●			●	4...20 mA	●
0... 1 kHz bis 0... 5 kHz			●				●			0...10 V	
0... 5 kHz bis 0... 25 kHz		●					●				
0...25 kHz bis 0...100 kHz	●							●			

Potentiometer V: Fine adjustment for the requested output voltage/-current  
 Potentiometer 0: Setting of zero point

**Adjustment description, only for the 4-20mA – output:**

- Input frequency preselect by S1-...
- S1-10 OFF (0mA)
- Input frequency 0Hz, potentiometer 0 to 0mA
- Input frequency on set point frequency, potentiometer V to 16mA
- S1-10 ON (4mA)
- Potentiometer 0 to 20mA
  - Final check: Input frequency 0Hz, output 4mA

## Technical data

### Auxiliary power:

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Power supply : 19, 2...30VDC  
 Current consumption : < 1,5VA

### Inputs:

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Signal amplitude	:	24V 16, 8...30V	5...8mA
		15V 10, 5...18,75V	4...9mA
		5V 3, 5...6,25V	4...9mA
Frequency	:	FW2-1-...	vernier adjustment with potentiometer V
		0...50Hz/200Hz	S1-5 + S1-6 + S1-9 ON
		0...200 Hz/1kHz	S1-4 + S1-6 + S1-9 ON
		0...1 kHz/5kHz	S1-3 + S1-7 ON
		0...5 kHz/25kHz	S1-2 + S1-7 ON
		0...25 kHz/100kHz	S1-1 + S1-8 ON
Signal form	:	arbitrary	
Setting time	:	0 – 50Hz/200Hz	<5 – 12s
		0 – 200 Hz/1kHz	< 1, 5 - 3s
		0 – 1 kHz/5kHz	< 220 - 400ms
		0 – 5 kHz/25kHz	< 50 - 130ms
		0 – 25 kHz/100kHz	< 15 - 30ms

### Outputs:

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Voltage output : 0...10V / max. 10mA  
 Current output : 0(4)...20mA / load resistor max. 500Ω

### Accuracy:

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Linearity error : < 0, 01%  
 Temperature coefficient : < 0,015 % / K

### General data:

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Operating temperature : 0...50°C  
 Storage temperature : -25...+85°C, condensation before putting into operation is not allowed  
 CE conformity : EN 61326-1, EN 61000-4-2/3\*/4/5/6\*, EN 61000-6-4  
 \*during measurements are small deviations possible

### Body:

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Dimension : See drawing, 17,5mm adjoin body, 17,5x114,5x104,5mm (with terminals)  
 Material : PA / V0  
 Protection category : IP20  
 Connection : M3-screw-type terminal 0, 14 - 2,5mm<sup>2</sup>, flexible or inflexible  
 Fixing : Snap-on mounting for norm rail TS35  
 Weight : 120g

**Note on safety:**

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Disconnect the power supply before attempting to open the unit.

During the operation of this module it is possible that parts of the module, even there is extra-low voltage, (for example shunt measurement) are under dangerous voltage! Therefore a non-observance of this caution may cause damage of property or physical injury.

Only trained qualified personnel should install or operate the unit. Before installation the qualified personnel should read the documentation and should familiarize themselves with the unit.

If there is visible damage to the body of the unit it should be immediately replaced and not put into operation.



Please ensure that there is a sufficient prevention against electrostatic discharge during installation of the unit.

**Installation Information:**

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Pay attention and make sure the unit is far away from mounted sources that may disturb the device such as magnetic coils, transformers, frequency converters etc.

**Wiring advice:**

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Use only shielded cables. The shield is to be connected extensively to ground. Do not mix power- and signal-wires/cables in the same cable tray.

**Limited warranty:**

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The LEG Industrie-Elektronik GmbH warranted that the product does not have any material or processing defects in a period of 5 years after date of delivery.

It is up to the choice of LEG to repair or to exchange an inoperative unit.

Subsequent damages or any claim for indemnification above the functionality of the unit are excluded.

This limited warranty is only valid if ...

1. the product was installed and put into operation according to the LEG operation documentation;
2. the technical configuration of the power supply was abided;
3. the product was not used for unintended purposes;
4. there were no unauthorized modifications or manipulations, misuse or repairs without previous agreement from LEG .

Our Terms of Trade are based on the "General Conditions for the supply of products and services of the Electrical and Electronics Industry" including the "Complementary Clause: Extended Reservation of Property" of the ZVEI e.V. (German Association of Electrical Manufacturers).

**Miscellaneous:**

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We expressly reserve the right, without previous notice, to correct errors contained in any data of this information brochure, and to make alterations to the program and technical modifications.