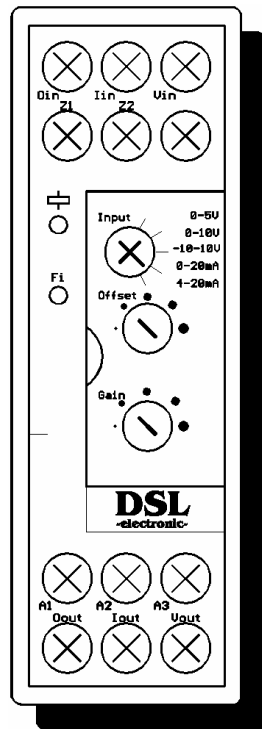


**Isolation Amplifier ( 3 - Way )  
with front panel adjustment**

**FTV924 ( 20,4 - 27,6V DC )  
FTV230 ( 196 - 264 V AC )**

Input Ranges 0-20mA, 4-20mA, 0-5V, 0-10V, 2-10V, ±10V  
Output Ranges 0-20mA, 4-20mA, 0-10V, 2-10V

- Three-way isolation  
3,75kV AC 1 min.
- Easy operating mode  
switching and  
gain / offset adjustment
- Concealed settings
- LED displays for  
auxiliary voltage supply  
and cable rupture
- High precision (<1%)  
Low temp. drift
- Wide temp. range  
-20 to 55°C

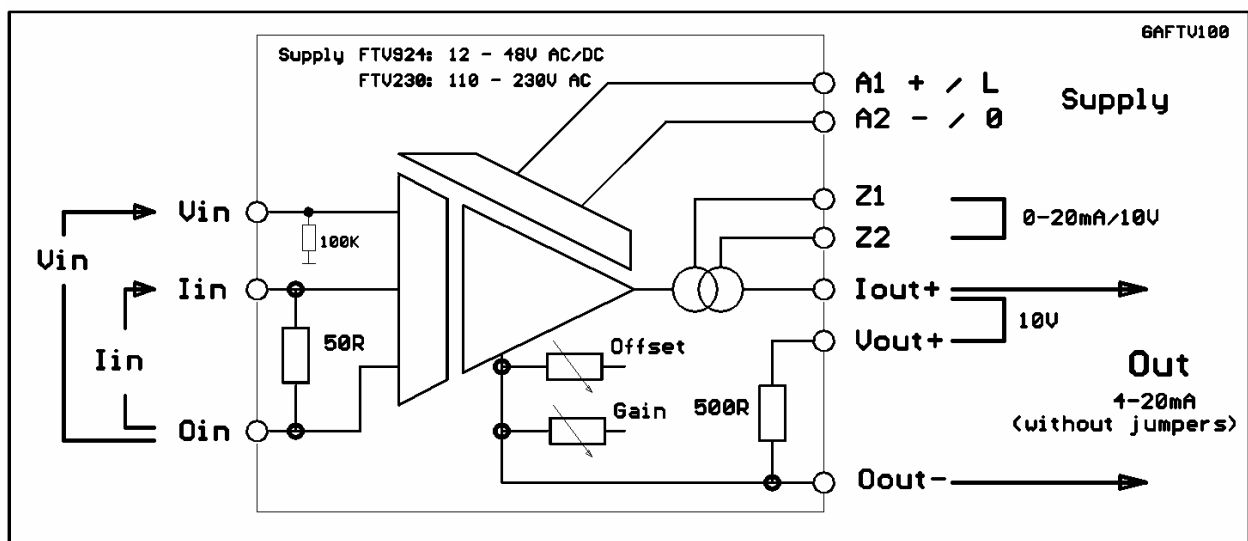


**Application:**

The FTV Isolation Amplifier is used to isolate signals of differing potential in measurement circuits operating in disturbed environments or with drifting potential values, as a power driver or for signal conversion. The potential isolation of 3.75 kV between power supply, input circuit and output circuit allows the safe isolation, amplification or conversion of signals on different voltage levels.

4 types with wide auxiliary AC and DC voltage ranges are available for the supply of the FTV. The unit effects the linear transformation of the input signal into the output signal. Depending on the assignment of the terminals and the position of the "Input" switch under the cover, 20 different operating mode settings are available. Amplification adjustment and zeroing allow the unit to be adapted to the user network.

**Block Diagram and Connections**



## Settings

The desired input range is set below the removable front cover. Example: **0-5V** indicates a maximum input voltage of +5V between the Vin and 0in terminals. In this setting, the resulting outputs are 0-20mA, 4-20mA, 0-10V or 2-10V depending on the assignment of the terminals.

Please note that inputs and outputs are connected to different terminals depending on whether current or voltage is applied. Example: a voltage of 10V is generated from 20mA at the output if an integrated load is connected to the current output.

The front-panel 'Offset' and 'Gain' controls allow the compensation of cable losses up to +/- 5% of the operating range while the unit is in operation. The default settings on leaving the factory are as follows: Offset = 0%, Gain = 100%.

## Technical Data

Type, Auxiliary Ranges	Isolation Amplifier with Front Panel Adjustment	FTV924 (20,4 - 27,6 V DC) FTV230 (196 - 264VAC)
Construction	Plastic Housing on 35 mm Hat Rail acc. DIN EN 50022	
Material of Housing	Noryl (GE) , UL94V1 (Housing), UL94V0 (Terminal Block)	
Dimensions, Weight	22,5 x 80 x 104mm (B x H x T), ca. 170 g	
Power Consumption	< 2W (DC), <3W (AC)	
Input Voltage	+/- 10V 100kOhm Umax 50Vpp	
Input Current	0-20mA 50 Ohm I <sub>max</sub> 50mA	
Output Voltage	0 - 10V with internal Shunt 500 Ohm	
Output Current	0/4 - 20mA , max. Load 500 Ohm	
LED Indication Green (On)	Aux. Voltage existing	
LED-Indication Yellow (On)	Input Signal < 5 % of maximal signal value ( open cable indication)	
Settings on Front Panel	Range for Offset - and Gain : appr.+/- 5%	
Lower Frequency Limit	ca. 30 Hz	
Accuracy	< 1% without calibration	
Accuracy of Linearity	< 0,05% over whole range	
Drift of Temperature	< 0,02% / °C	
Output noise (RMS)	< 0,1%	
On Period	100 %	
3 Way Isolation	3,75kVAC 1 min. between Input - Output, Input.- Aux. and Output - Aux.	
Connecting Terminals	each Terminal 2 x 2,5 mm <sup>2</sup> or 2 x 1,5 mm <sup>2</sup> wire end ferrule, combined slotted-head screw 0,5 - 0,7Nm	
Type of Protection	Housing IP 40 , Terminals IP 20	
Environment Temperature	-20 °C bis +55°C	
Storage Temperature	-40 °C bis +80°C	
General Regulations	EN 60 204-1 / VDE 0113 Electrical material on machines IEC 664 / VDE0110 Isolation specifications / creepage and clearance distances EN 61 010 Electrical Safety IEC 414 Safety regulations for control and monitoring equipment	
EMC	EN 50081-1 Noise Transmitting EN 50082-2 Noise Receiving	
CE	yes	
Humidity	IEC 68-2-3, RH=95%, 40°C	
Vibration	IEC 68-2-6	
Shock, when mounted	IEC 68-2-27	
Installation Position	Any, no distance to be needed between different sets	
Maintenance	Free of Maintenance	

### Note on Assembly

The FTV isolation amplifier is mounted on the hat rail from the bottom up (see diagram). To remove the unit, push it up and tip it forwards and down.

