

# Frequency-Analog Transmitter FT 500

Frequency measuring range from 0 ... 0.01Hz up to 0 ... 20kHz

## Features

- Start value and end value programmable
- Input for 24V proximity switch, switching contact and Namur proximity switch
- Transmitter supply , 20V DC
- Output 0/4 ... 20mA, simultaneous 0/2 ... 10V DC
- Full 3-port isolation
- Power-on LED
- Supply voltage 85 ... 265V AC or 10.8 ... 30 AC/DC
- 22.5mm case for DIN rail mounting



## General information

Frequency transmitter FT 500 are used to convert an impulse frequency range into industry standard signals. The transmitter accepts impulses from proximity switch, contact switch, light barriers and Namur proximity switches. Initial- and final value will be programmed with 5 rotary switches. Increase or decrease output characteristic is programmable.

## Short information

Range switches	initial and final value will be programmed with 2 rotary switches each. an additional switch select the factor.
Watch-dog	watching program running and provides auto-reset in case of error.
Current output	maximum burden 1 kΩ

## Technical data

### Power supply

Supply voltage	: 85 ... 265V AC, 47 ... 63Hz, or 10 ... 30V DC
Power consumption	: < 4VA
Working temperature	: -10 ... +60°C
Isolation voltage	: 400 V <sub>≈</sub> according to German VDE 0110 group 2 between / input / output / power supply
Test voltage	: 4kV- between input / output / power supply
CE - conformity	: EN55022, EN60555, IEC1000-4-4/5/11/13

### Input

Frequency range	: 0 ... 0.01Hz / 20kHz
Pulse-width / pulse off-time	: min. 20µsec (transistor) or min. 5msec (switching contact)
Start value	: adjustable 0 ... +25%
End value	: adjustable -15 ... +5%
Impulse input (terminal 2,3)	: low- Signal -30V ... +3V, high- Signal +10V ... +35V
Input resistor	: Ri > 10 kΩ
Transmitter supply (terminal 1)	: ca. 20V DC, short-circuit-proof approx. 25mA
Namur input (terminal 4,5)	: to DIN 19234, Namur
Input resistor	: approx. 1 kΩ

### Accuracy

: 0.1 % of measuring value

Temperature coefficient : 10ppm/K

### Output

Current output	: 0/4 ... 20 mA switch selectable, max load 1 kΩ
Voltage output	: 0/2 ... 10V DC load max. 10 mA, short-circuit-proof (simultaneous with current output 5mA)
Rise time (0 ... 100%)	: 150msec ≤ t <sub>rise</sub> ≤ 1 period

### Case

Weight	: standard case of polycarbonate 8020 UL 94 V-1
connection	: approx. 140g
protection	: screw terminals with cover plate, max.2.5mm <sup>2</sup> , wire : case IP30, terminals IP20 finger safe acc. German VBG 4

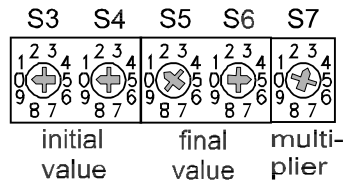
## Configuration of frequency measuring range

On the right side of the case are 5 rotary switches accessible to set the measuring range. The means of the positions are the following:

Rotary switch S3, S4 for initial value; S5, S6 for final value, switch S7 defines the multiplier.

#### Example 1

Range	: 0 ... 15Hz 00 ... 15 x 1 Hz
Switch adjust	: 0-0 -1-5 -3

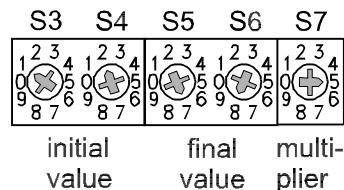


#### Multiplier :

1	0,01 Hz
2	0,1 Hz
3	1 Hz
4	10 Hz
5	100 Hz
6	1 kHz
7	0,01 Hz chatter proof
8	0,1 Hz chatter proof
9	1 Hz chatter proof
0	simulation

#### Example 2

Range	: 1200 ... 7800Hz ..12 ... 78 x 100Hz
Switch adjust	: 1-2 -7-8 -5



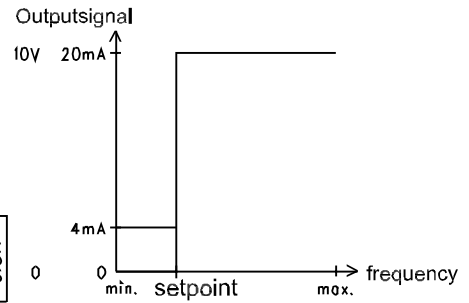
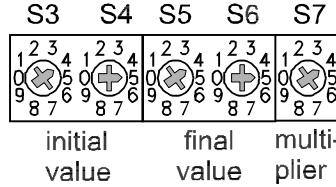
#### Programming output

Output	DIP-switch S1 (0/4-20)
0...20mA / 0...10V	off
4...20mA / 2...10V	on

### Limiting value mode

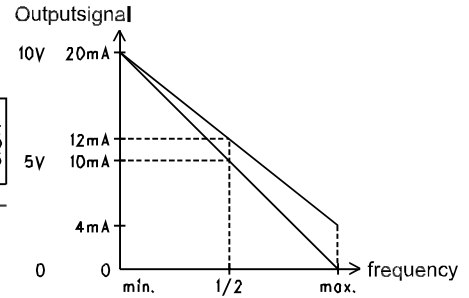
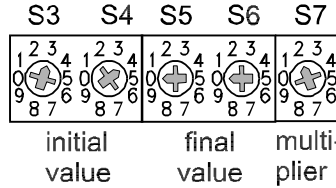
When frequency setting of initial and final value is identical, the output jumps from minimum to maximum level if the input frequency exceeds the setpoints.

Example  
 Frequency limit : 450 ... 450Hz  
 45 ... 45 x 10Hz  
 Switch position : 4-5- 4-5- 4



### Inverse output

Example  
 Range : 0 ... 3.4Hz  
 00...34 x 0.1 Hz  
 Switch position : 3-4 -0-0 -2

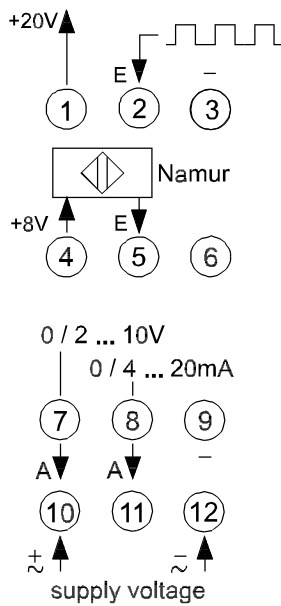


### Simulation mode (S7=0)

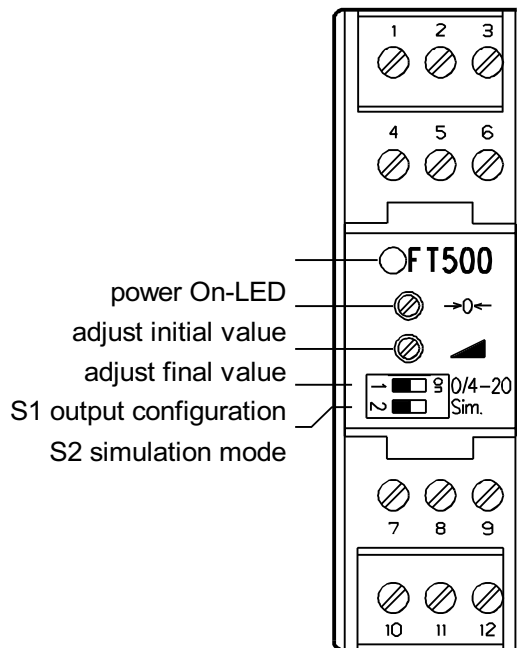
This mode is only for testing the min. and max. output without any input signal. S2=on; the output is maximum value; (S2=off) the output is minimum value.

Sim. (S2)	Output
on	max. value (10V, 20mA)
off	min. value (0/2V, 0/4mA)

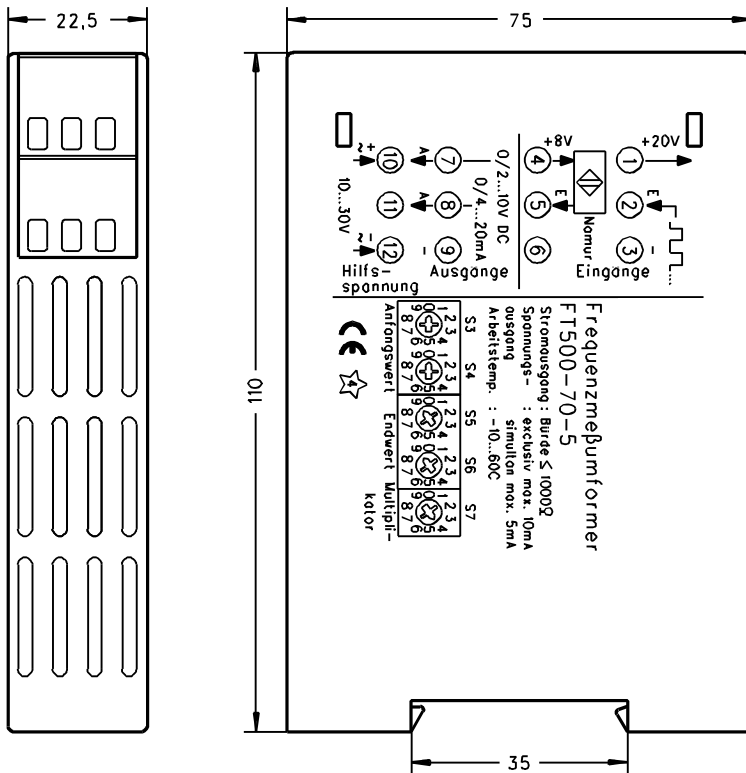
### Connection diagram



### Frontpanel controls

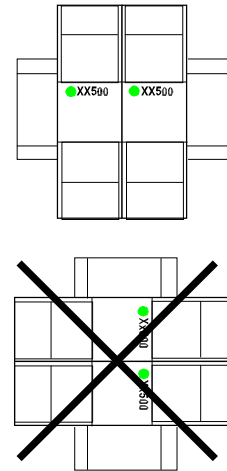


## Dimensions



### Caution!

Mounting of multiple units without distance is only permitted in vertical orientation



TS 35 DIN rail mounting  
acc. to DIN 46277 and DIN EN50022

## Order code

FT500 -  1. -  2.

### 1. Measuring range

70 adjustable Frequency Range from 0...0.01Hz up to 0 ... 20kHz  
output 0/4...20mA and 0/2...10V DC

### 2. Supply voltage

0 85 ... 265V AC  
5 10 ... 30V AC/DC

Ihr kompetenter Ansprechpartner / Your competent contact partner :

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