

Frequency-Signal-Conditioner with Analog Output

NEW

WAVEANALOG PRO Frequency

- 3-way-isolation
- Max. input frequency 100 kHz
- Input and output selectable by DIP switches
- No adjustment required
- Special range programmable

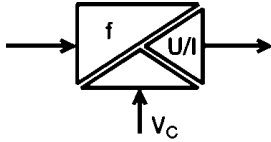
PRO Freq



Approvals:



Schematic circuit diagram



Ordering data

- Screw clamp connection
- Tension clamp connection

Technical data*

Input (selectable)

- Input frequency (selectable by DIP switches)
- Input frequency (programmable)
- Resolution
- Accuracy

Namur input according DIN 19234

PNP output

- Threshold
- Hysteresis
- min. pulse duration
- min. pulse separation

PNP output

- Threshold
- Hysteresis
- min. pulse duration
- min. pulse separation
- Supply voltage for electrical sensor

Output

- Current/voltage (selectable by DIP switches)
- Output voltage
- Output offset voltage
- Load resistance
- Output current
- Output offset current
- Load resistance
- Accuracy
- Temperature coefficient
- Response time

Coordination of insulation according to DIN EN 50178, 04/98

- Rated voltage
- Rated surge voltage
- Overvoltage category
- Contamination class
- Clearance and creepage distance
- Test voltage

General Data

- Voltage supply
- Power consumption
- Current carrying capacity of cross-connection
- Operating temperature
- Storage temperature
- Standards/Specifications
- EMC standards
- Factory setting
- Dimensions W/L/H mm (in.)
- Weight
- Approvals

* Tu 23°C, single module

Note: See pages 260-261 for further information.

Type

- WAS4 PRO Freq
- WAZ4 PRO Freq

Part No.

- 8581180000
- 8581190000

- 3-wire initiator with PNP output
- 3-wire initiator with PNP output and external power supply
- 3-wire initiator with NPN output
- 3-wire initiator with NPN output and external power supply
- 2-wire initiator
- Namur initiator
- Push-pull output stage

- 0...15.9 kHz
- 0...100 kHz
- 0.1 mHz full scale 5 ppm from end value
- max. 100 ppm full scale
- approx. 1.7 mA
- approx. 0.2 mA
- max. input: + 30 V
- approx. 6.5 V
- approx. 0.2 V
- 15 µs (5 µs push pull output stage)
- 5 µs
- max. input: ± 30 V
- approx. 6.7 V
- approx. 0.5 V
- 5 µs
- 5 µs
- approx. 16 V @ max. 15 mA

- 0...10 V/0...20 mA/4...20 mA
- 0...10 V
- max. 0.05 V
- ≥ 1kΩ
- 0/4...20 mA
- max. 100 µA
- ≤ 600Ω
- 0.2% of full scale
- max. 200 ppm/K of full scale
- 360 ms + 2 x period of the input frequency

(safe separation)

- 300 V
- 6 kV
- III
- 2
- 5.5 mm (0.22)
- 1.2 kV_{eff}

- 18 VDC ... 24 VDC ... 30 VDC
- max. 1.6 W @ I_{out}=20 mA
- ≤ 2A
- 0°C...+55°C
- 20°C...+85°C
- EN 50178 (safe separation)
- EN 50081, EN 50082, EN 55011, EN 61000-6-2, EN 61326
- 0...10 kHz/4...20 mA
- 12.5/92.4/112.5/(0.49/3.64/4.41)
- 100 g



Selecting the operating mode

Operating mode	Switch 2	
	3	4
0...fmax	<input type="checkbox"/>	<input type="checkbox"/>
fmin...fmax	<input type="checkbox"/>	<input type="checkbox"/>
saving	<input type="checkbox"/>	<input type="checkbox"/>
fmin	<input type="checkbox"/>	<input type="checkbox"/>

$$f = (A+B) \times C$$

A	Switch 1			
	1	2	3	4
0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B	Switch 1			
	5	6	7	8
0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C	Switch 2	
	1	2
x1	<input type="checkbox"/>	<input type="checkbox"/>
x10	<input type="checkbox"/>	<input type="checkbox"/>
x100	<input type="checkbox"/>	<input type="checkbox"/>
x1000	<input type="checkbox"/>	<input type="checkbox"/>

Output	Switch 2			
	5	6	7	8
0...10 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0...20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4...20 mA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0...5 V	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Special range (frequency generator is required)	Switch 2			
	1	2	3	4
save min. frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
save max. frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
select special range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

■ = on
□ = off

Application

