

TECH NOTE :: ClipX Using an acceleration sensor

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Author: Michael Guckes

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Brief description

This is an instruction for using an acceleration sensor with ClipX. In the following the connection and the setup of an IFM VSA001 and a SiliconDesigns 2220-050 sensor is described.



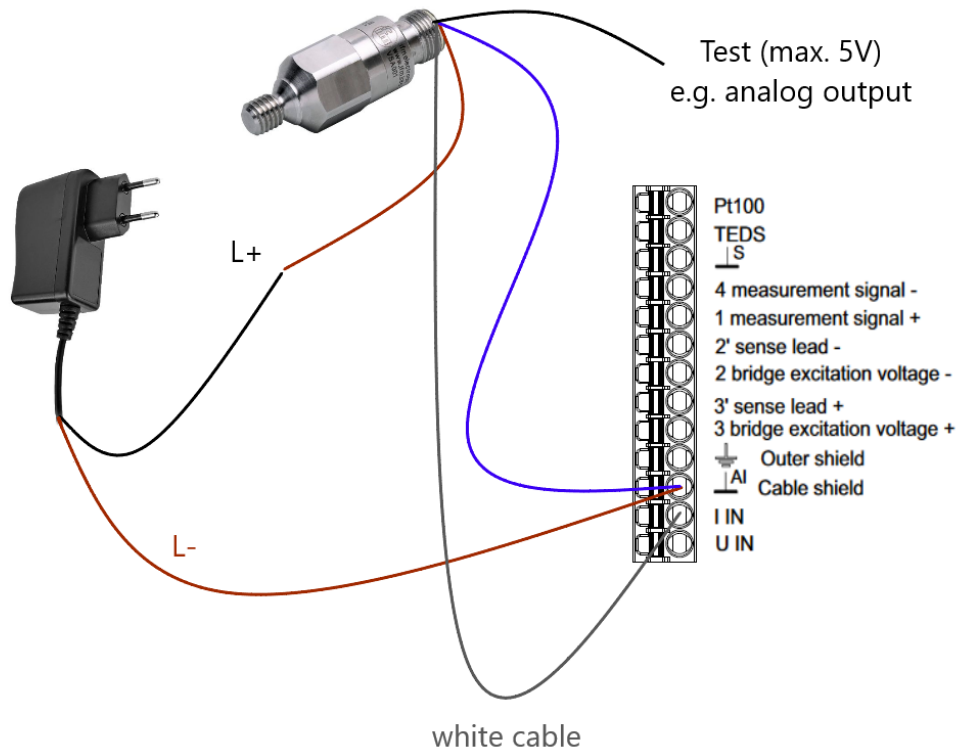
Building sketch

IFM VSA001

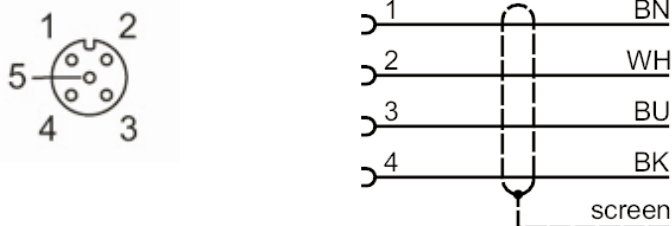
Connection

The following diagram shows schematically the connection. Since the sensor needs a supply voltage of 7.2V to 10.8V a suitable power supply is necessary.

Hint: The gray cable in the sketch represents the white cable of the sensor



Cable pinning (IFM EVT384):



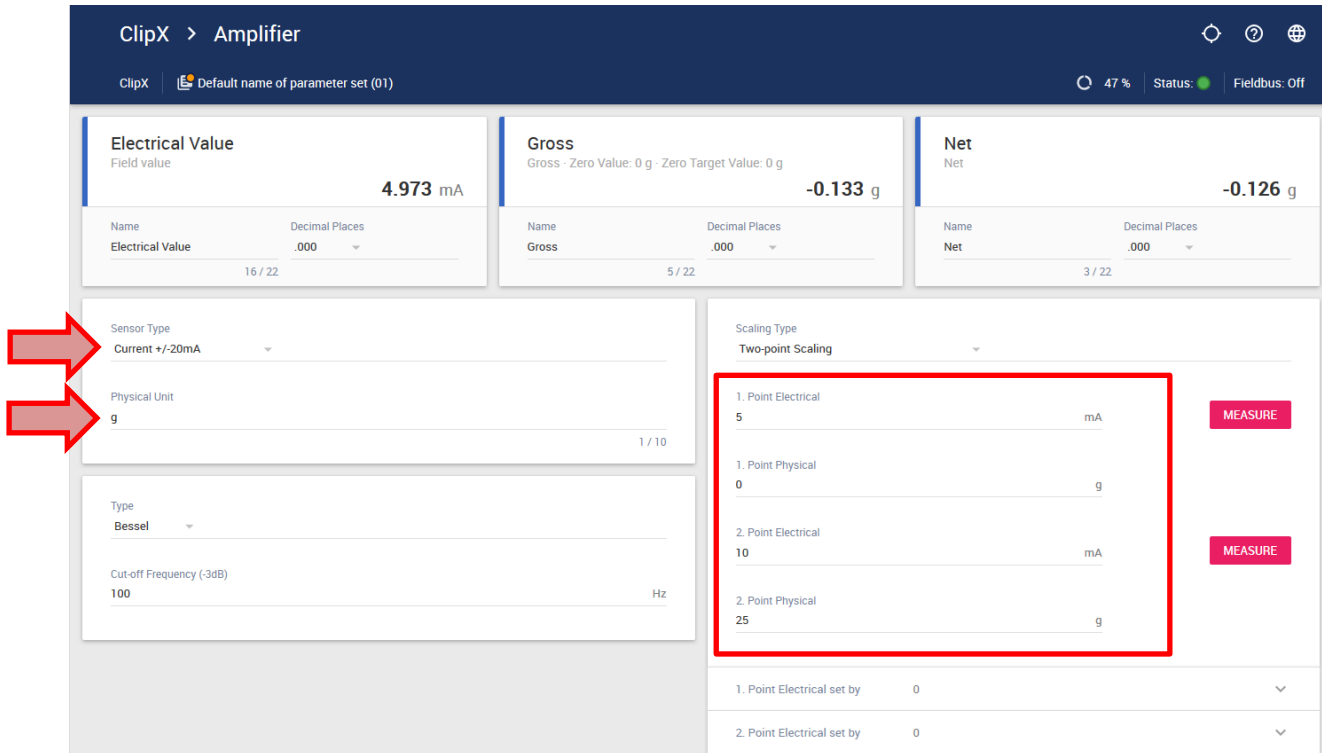
Test signal:

If a voltage of 4-5V is applied to the test signal, the result is a signal of ca. 5mA at the output of the sensor, which corresponds to 0g.

Setup

In the amplifier settings of ClipX the following settings must be changed:

- Sensor Type: Current +/-20mA
- Physical Unit: g
- Set scaling (right)



ClipX > Amplifier

ClipX | Default name of parameter set (01) | 47 % | Status: | Fieldbus: Off

Electrical Value	Gross	Net
Field value	Gross - Zero Value: 0 g - Zero Target Value: 0 g	Net
4.973 mA	-0.133 g	-0.126 g
Name: Electrical Value	Name: Gross	Name: Net
Decimal Places: .000	Decimal Places: .000	Decimal Places: .000
16 / 22	5 / 22	3 / 22

Sensor Type: Current +/-20mA

Physical Unit: g

Type: Bessel

Cut-off Frequency (-3dB): 100 Hz

Scaling Type: Two-point Scaling

1. Point Electrical	1. Point Physical	2. Point Electrical	2. Point Physical
5 mA	0 g	10 mA	25 g

MEASURE

MEASURE

1. Point Electrical set by: 0

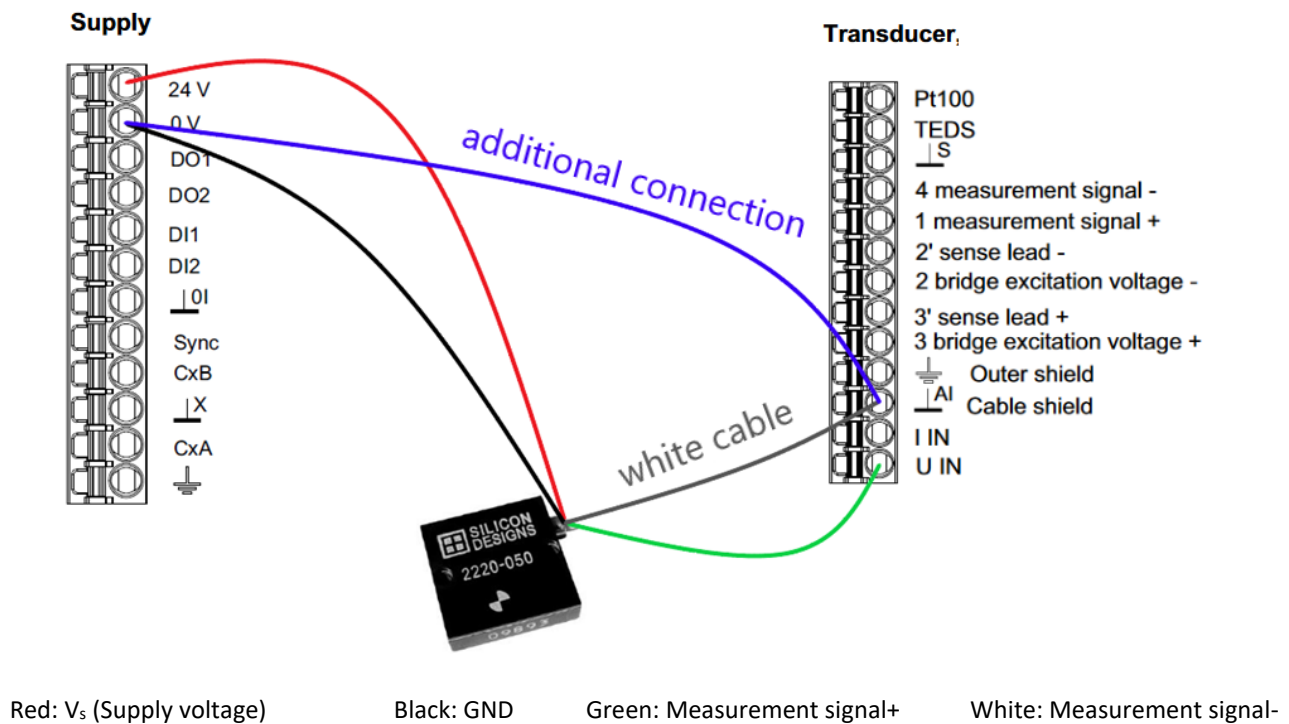
2. Point Electrical set by: 0

SiliconDesigns 2220-050

Connection

The acceleration sensor of SiliconDesigns required a supply voltage of 9V to 32V. Therefore the supply voltage of the ClipX can be used.

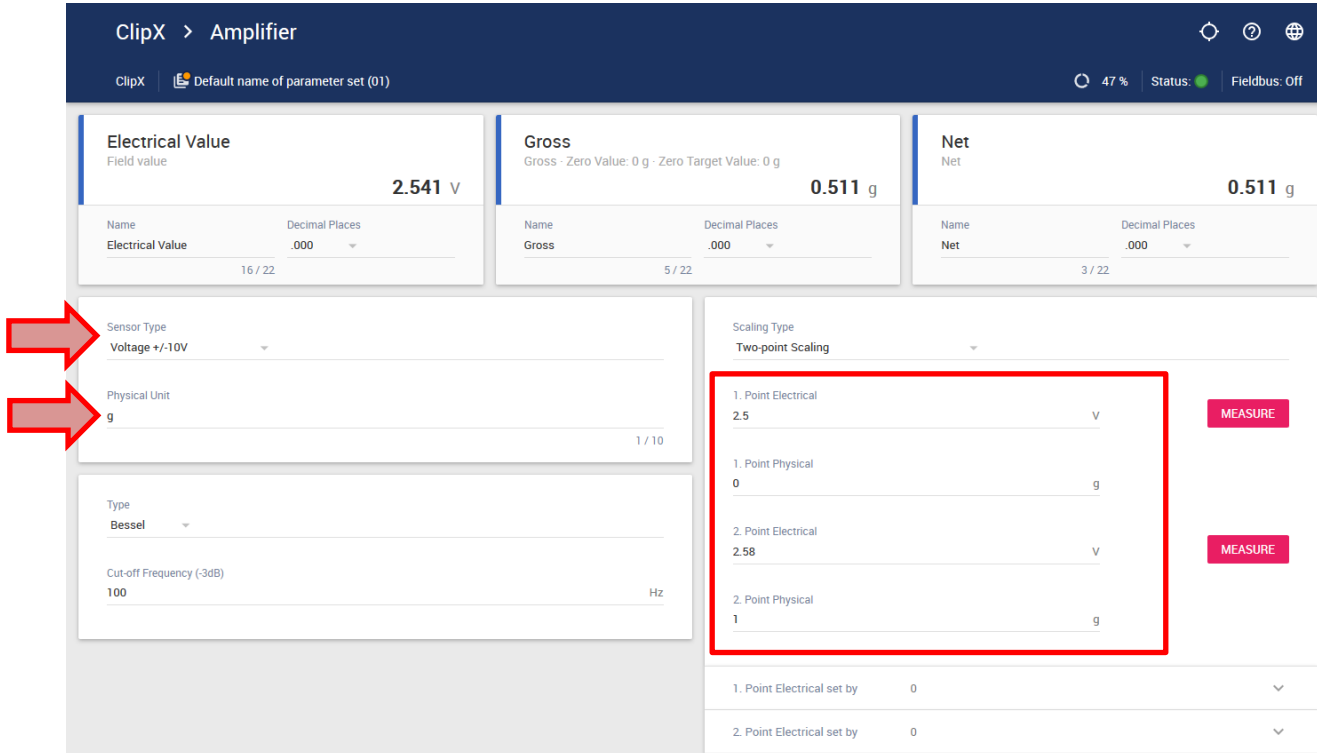
The following diagram shows schematically the connection:



Setup

In the amplifier settings of ClipX the following settings must be changed:

- Sensor Type: Voltage +/-10V
- Physical Unit: g
- Set scaling (right)



ClipX > Amplifier

ClipX | Default name of parameter set (01) | 47 % | Status: | Fieldbus: Off

Electrical Value
Field value

2.541 V

Name	Decimal Places
Electrical Value	.000

16 / 22

Gross
Gross - Zero Value: 0 g - Zero Target Value: 0 g

0.511 g

Name	Decimal Places
Gross	.000

5 / 22

Net
Net

0.511 g

Name	Decimal Places
Net	.000

3 / 22

Sensor Type
Voltage +/-10V

Physical Unit
g

1 / 10

Type
Bessel

Cut-off Frequency (-3dB)
100 Hz

Scaling Type
Two-point Scaling

1. Point Electrical
2.5 V

1. Point Physical
0 g

2. Point Electrical
2.58 V

2. Point Physical
1 g

MEASURE

MEASURE

1. Point Electrical set by 0

2. Point Electrical set by 0

Disclaimer

These examples are for illustrative purposes only. They cannot be used as the basis for any warranty or liability claims.