VibroLine brief instruction

VLX-Series

version: 05/10/20

Content

1. Safety infomation

Before installation and operation, this brief instruction and the VibroLine manual (software) must be read and understood completely.

- This device may only be installed and adjusted by skilled and competent personnel. This includes in particular persons who have sufficient knowledge of the EMC and low-voltage directives.
- Changes to the electrical connections may only be made to the de-energized device. This also includes output load circuits.
- The protection against accidental contact according to IP20 only exists after all terminals have been completely plugged in.
- The device may only be operated under the conditions specified in the data sheet.
- All peripheral devices (sensors, devices at the interfaces to digital and relay outputs) must be designed for operation with VibroLine devices. The responsibility for this lies with the operator.
- Any unauthorized modification of the VLX devices (e. g. opening of the housing, repair or replacement of components or PCBs) will void the warranty.
- The manufacturer accepts no liability for damage caused by non-observance of this manual.
- If there are any uncertainties or malfunctions, please contact the manufacturer.

Contact us: technik@innomic.de / +49 3901 3059954

2. Installation and connection

Installation and start-up may only be carried out by qualified personnel.

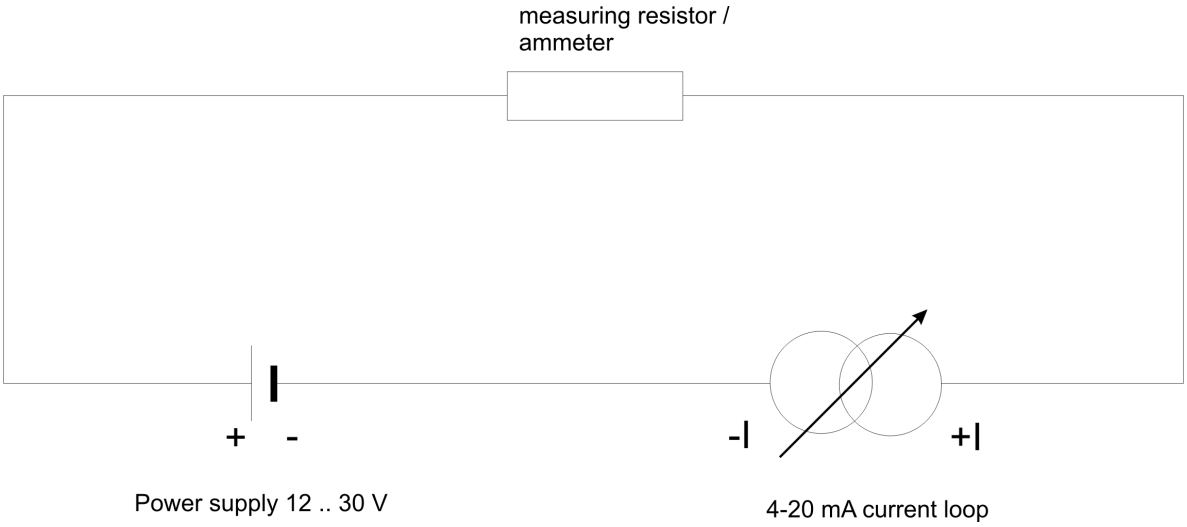
All VibroLine devices are designed for mounting on DIN-rail systems. For mounting, the VLE devices are placed on top of the DIN rail and locked in place with a rotary movement and light pressure downwards. The upper and lower sides of the unit must be left at least 5 cm free space to ensure the necessary air circulation.

For disassembly, pull the metal tab on the underside of the device downwards and turn the device upwards. It can then be detached from the DIN rail.

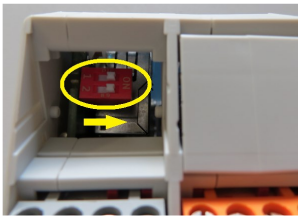
After installation, the following steps should be carried out according to the connection scheme:

- Connection of the **sensors** (green connectors, max. cable length 250 m)
- Connection of the **speed inputs** (grey connector)
- Connection of the passiv **current loop** outputs (orange connector, 12..30 V voltage source required to supply the current sink, max. cable length 1000 m)

Note: A Voltage of >12 V must be applied via the output terminals on the VibroLine device.
Consider voltage drop via measuring resistors!



- Connection of **field bus interfaces** (blue connector / RJ45 connector)



Note: A 120 Ω termination of the Modbus RTU and CANopen Interface can be activated by DIP switch. To do this, remove the plastic cover on the lower left side of the device (in front of connections 9-12).

DIP-switch1 = ON: Modbus RTU termination active.

DIP-switch 2 = ON: CANopen termination active.

- Connection of the **24 V power supply** and **digital output** (red plug connector)

Note: The digital output is active, i.e. Is is switched to 24 V (or 0 V) (potential from power supply).

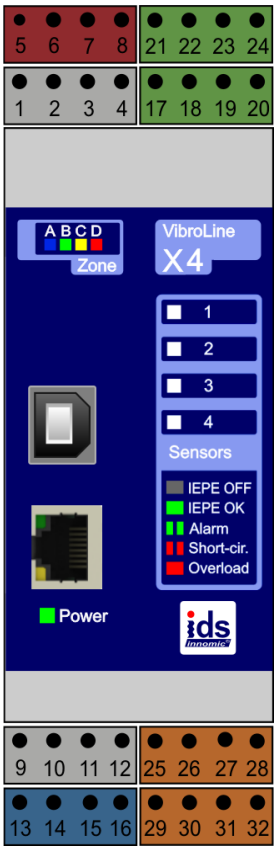
The individual inputs and outputs are protected against polarity reversal. In addition, the connectors are mechanically coded (except for single sensor and current loop outputs). The device can be destroyed if the connectors are interchanged.

Before switching on the power supply, the correct cabling must be checked.

3. Connection table

The numbering indicates the following connections:

1	Digital output 1
2	GND Trigger 1
3	Digital output 2
4	GND Trigger 2
5	Digital output 3
6	GND DO
7	Voltage supply 24 V (max. 0,5 A)
8	GND
9	Speed trigger 3
10	GND Trigger 3
11	Process trigger
12	GND Process trigger
13	RS485 A (Modbus RTU)
14	RS485 B (Modbus RTU)
15	CAN LOW
16	CAN High
17	Measuring input Sensor 1 (IEPE / ±10 V)
18	GND S1
19	Measuring input Sensor 2 (IEPE / ±10 V)
20	GND S2
21	Measuring input Sensor 3 (IEPE / ±10 V)
22	GND S3
23	Measuring input Sensor 4 (IEPE / ±10 V)
24	GND S4
25	Positive 4-20 mA current loop S1
26	Negative 4-20 mA current loop S1
27	Positive 4-20 mA current loop S2
28	Negative 4-20 mA current loop S2
29	Positive 4-20 mA current loop S3
30	Negative 4-20 mA current loop S3
31	Positive 4-20 mA current loop S4
32	Negative 4-20 mA current loop S4
33	Measuring input Sensor 5 (IEPE / ±10 V)
34	GND S5
35	Measuring input Sensor 6 (IEPE / ±10 V)
36	GND S6
37	Measuring input Sensor 7 (IEPE / ±10 V)
38	GND S7
39	Measuring input Sensor 8 (IEPE / ±10 V)
40	GND S8
41	Positive 4-20 mA current loop S5
42	Negative 4-20 mA current loop S5
43	Positive 4-20 mA current loop S6
44	Negative 4-20 mA current loop S6
45	Positive 4-20 mA current loop S7
46	Negative 4-20 mA current loop S7
47	Positive 4-20 mA current loop S8
48	Negative 4-20 mA current loop S8



VLX 4

VLX 8

4. Starting Up

After installation and connection, the device is put into operation. To do this, the device must be connected to a computer using the supplied USB cable. The supplied software VibroLine Configurator and the device driver for the VibroLine devices are installed on the computer. After starting the software, the device can be parameterised accordingly. After setting all configuration parameters, the device operates autonomously and reports the current machine status.

Further information on parameterization can be found in the program help of the VibroLine software.

5. Operation

When the operating voltage is turned on, the settling process of the digital filters is indicated by a fast flashing of the zone LEDs. The settling process depends largely on the selected value of the high-pass filter frequency. All outputs are deactivated for this time period to prevent false alarms (except internal errors). However, with the test measurement function in the software, the transient response can be observed.

The operational status of the VibroLine device is indicated by the lighting up of a single zone LED.

During operation, all sensor inputs are analyzed and evaluated in parallel. Alarms are output on the 3 digital outputs and/or the changeover relay in accordance with the specified limit values. The process variable outputs provide an individually parameterisable 4-20 mA current loop signal.

The current status of the vibration monitoring is signalled by the VLE device as follows:

Zonen-LED:

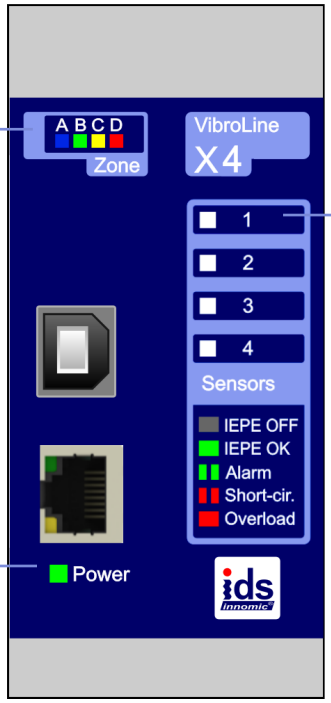
Indicates the vibration state of the machine according to the limit values set. The maximum of all connected channels is displayed.

All LEDs flash:

- Transfer of the configuration to the device
- Filter transient phenomenon
- Internal error (e.g. DSP-configuration faulty)

Power-LED:

Indicates active power supply



Also for channels 2-8 (VLX2 – VLX8)

Status-LED:

Indicates Sensor status:

OFF
No Sensor connected or IEPE switches off (± 10 V input)

GREEN
IEPE-Sensor connected

GREEN flashing
Warning or alarm on respective channel (adjustable)

RED
Input overload

RED flashing
Short circuit (IEPE only)

© IDS Innomic Schwingungsmesstechnik GmbH