

## VIBRATION EVOLUTION MONITORING SYSTEM “VEMS”



### DESCRIPTION:

The vibration evolution control system “VEMS” is designed to monitor continuously the vibrations of rotating machines.

The system is able to control the vibrations of two bearings that support the shaft of a rotating machine such as fans, pumps, motors, etc.

The equipment was built for an on board machine installation, thus, providing a useful tool for maintenance operators.

Indeed, it is equipped with some alerts that can immediately allow the user to monitor the machine status.

The system, although designed for a local installation, is also capable to monitor remotely and record vibrations, alarm threshold and trips.

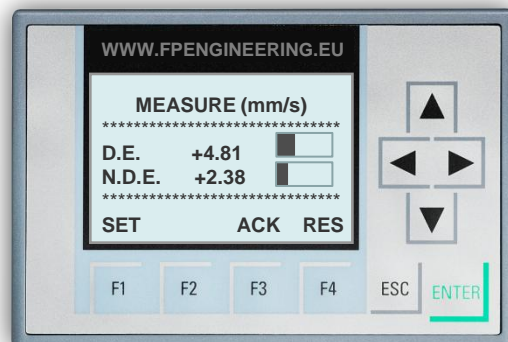
Therefore, it offers all the advantages of a local control equipment, giving also the possibility to centralize the data.

Locally, the vibration measurements are shown via an alphanumeric display.

Acting on the function keys, it is possible to access the settings menu for changing the language, alarm set-points, etc.

The following values are displayed during normal operation:

- **Real-time vibration measurement - D. E. side [mm/s]**
- **Real-time vibration measurement - N. D. E. side [mm/s]**



MULTIFUNCTIONAL INTERFACE - MAIN PAGE

If the alarm thresholds are triggered the display becomes animated in yellow colour (high vibration alarm) or in red colour (high high vibration alarm).

The following signals are available on the terminal strip (for the remote control system PLC or DCS):

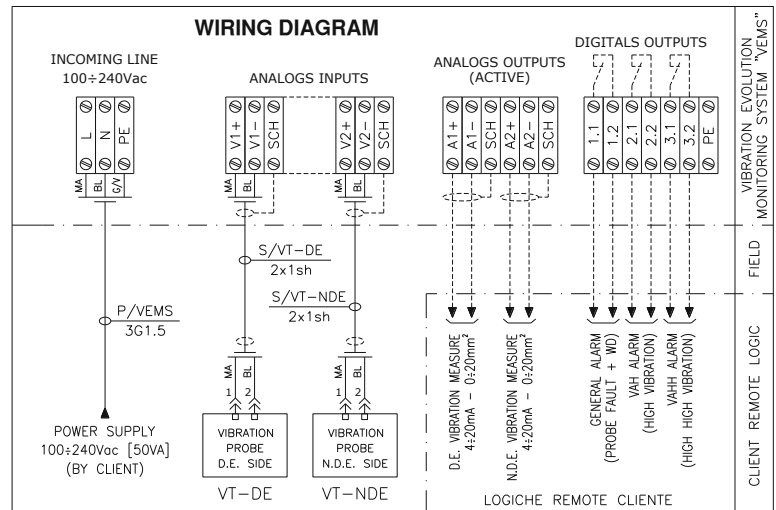
- **Analogs outputs for vibrations measurements (4÷20mA – actives signals)**
- **High vibration alarm (free voltage contact 6A-250Vac)**
- **High High vibration alarm (free voltage contact 6A-250Vac)**
- **High High vibration alarm (free voltage contact 6A-250Vac)**

The VEMS is equipped with an ethernet interface for the a possible connection to the plant network for the remote display of the measurements, for example, from the office of the maintenance manager.

## VIBRATION EVOLUTION MONITORING SYSTEM “VEMS”

### TECHNICAL FEATURES:

- Enclosure: painted steel RAL 7035
- Fixing brackets: included
- Dimensions and weight: 300x300x150mm – 5kg
- Protection degree: IP65
- Power supply: 100÷240Vac
- Absorbed power: 50VA max.
- Electrical connection: terminal strip 2.5mmq
- Cable inlet: from bottom (removable plate)
- Storage temperature: -25°C ÷ +70°C
- Operation temperature: -10°C ÷ +60°C
- Analog input: n°2 4÷20mA (vibrations probes)
- Analog output: n°2 4÷20mA (active)
- Digital output: n°3 alarms (relay 6A-250Vac)
- Customization possibility



### STANDARD FEATURES:

The VEMS is supplied in the standard version in an steel painted enclosure, colour RAL7035 IP65. This execution is suitable for an “indoor use” (indoors protected from sunlight and atmospheric agents). If the device is installed outdoors or in aggressive environment conditions (with saline fog or presence of acids or chemical elements) a specific enclosure will be used. For these options we have designed appropriate solutions to meet the most varied needs. The VEMS in standard execution is identified with the **SV** code.

### OPTION ON REQUEST:

- Code DV** Double door steel painted enclosure (external door with glass), RAL7035 – IP66. This execution is recommended for outdoor installations.
- Code SA** Stainless steel AISI304 enclosure, IP65. This execution is recommended for indoor installations, where there are aggressive environment conditions.
- Code DA** Double door stainless steel AISI 304 enclosure (external door with glass) IP66. This execution is recommended for outdoor installations, where there are aggressive environment conditions.
- Code SX** Stainless steel AISI316L enclosure, IP65. This execution is recommended for indoor installations, where there are very aggressive environment conditions.
- Code DX** Double door stainless steel AISI316L enclosure (external door with glass), IP66. This execution is recommended for outdoor installations, where there are very aggressive environment conditions.

### ORDER CODE:

VEMS-XX

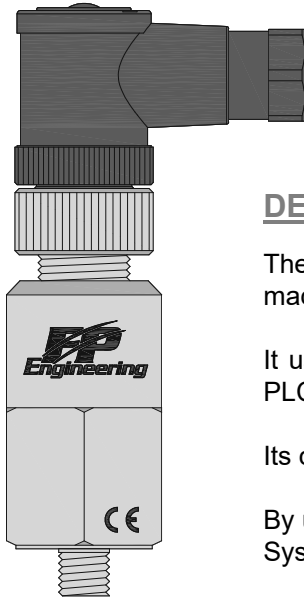


Enclosure execution: code SV-DV-SA-DA-SX-DX

Order code example:

- VEMS-SV:** Standard execution
- VEMS-SA:** Enclosure in stainless steel AISI 304 IP65
- VEMS-DX:** Enclosure in stainless steel AISI 316L IP66 double door

## VIBRATION SENSOR “125.01-VR20-2DA”



### DESCRIPTION:

The accelerometer sensor model 125 is designed to monitor the vibration of rotating machines in harsh industrial environments.

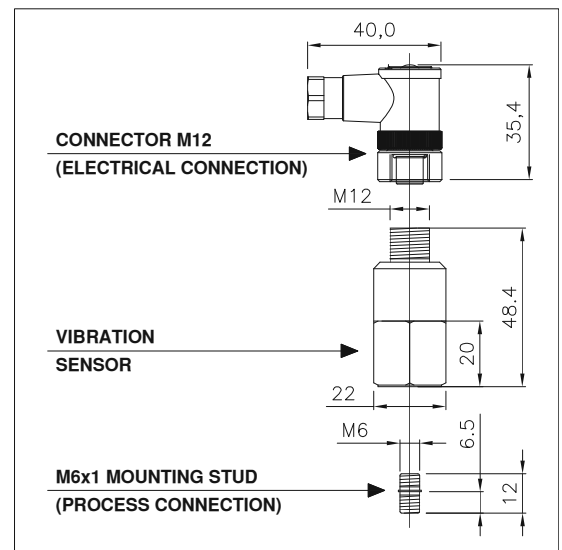
It uses the standard 4÷20mA signal (range 0÷20mm/s) in order to interface directly with PLC, DCS and any other monitoring system capable of acquiring analog signals.

Its compact design allows installation in any type of machinery.

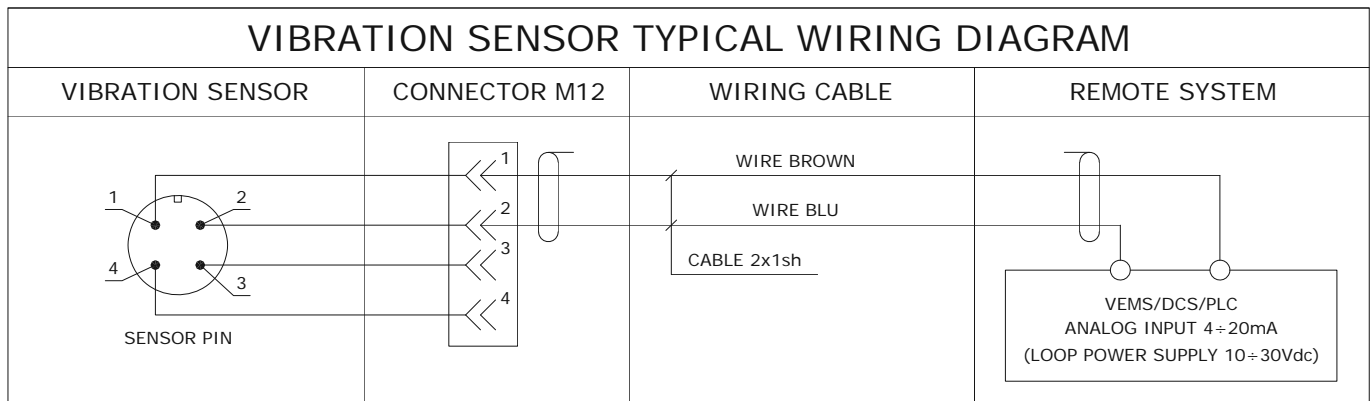
By using this sensor in conjunction with our “VEMS” device (Vibration Evolution Monitoring System) we can achieve an effective and complete vibration control system.

### TECHNICAL FEATURES:

- |                                |                                |
|--------------------------------|--------------------------------|
| • Material:                    | AISI 316L (stainless steel)    |
| • Power supply:                | 10÷30Vdc                       |
| • Output signal:               | 4÷20mA (range 0÷20mm/s)        |
| • Maximum loop resistance:     | (Vdc power – 10V)/mA           |
| • Electrical grounding:        | isolated from machine ground   |
| • Accuracy (Repeatability):    | 2%                             |
| • Operation temperature:       | -55 ÷ 90°C                     |
| • Protection degree:           | IP67                           |
| • Process connection:          | M6x1 mounting stud (supplied)  |
| • Electrical connection:       | M12 screw connector (supplied) |
| • Overvoltage protection:      | yes                            |
| • Reverse polarity protection: | yes                            |
| • Mean time between failure:   | 10 years (MTBF)                |
| • Calibration certificate:     | supplied                       |



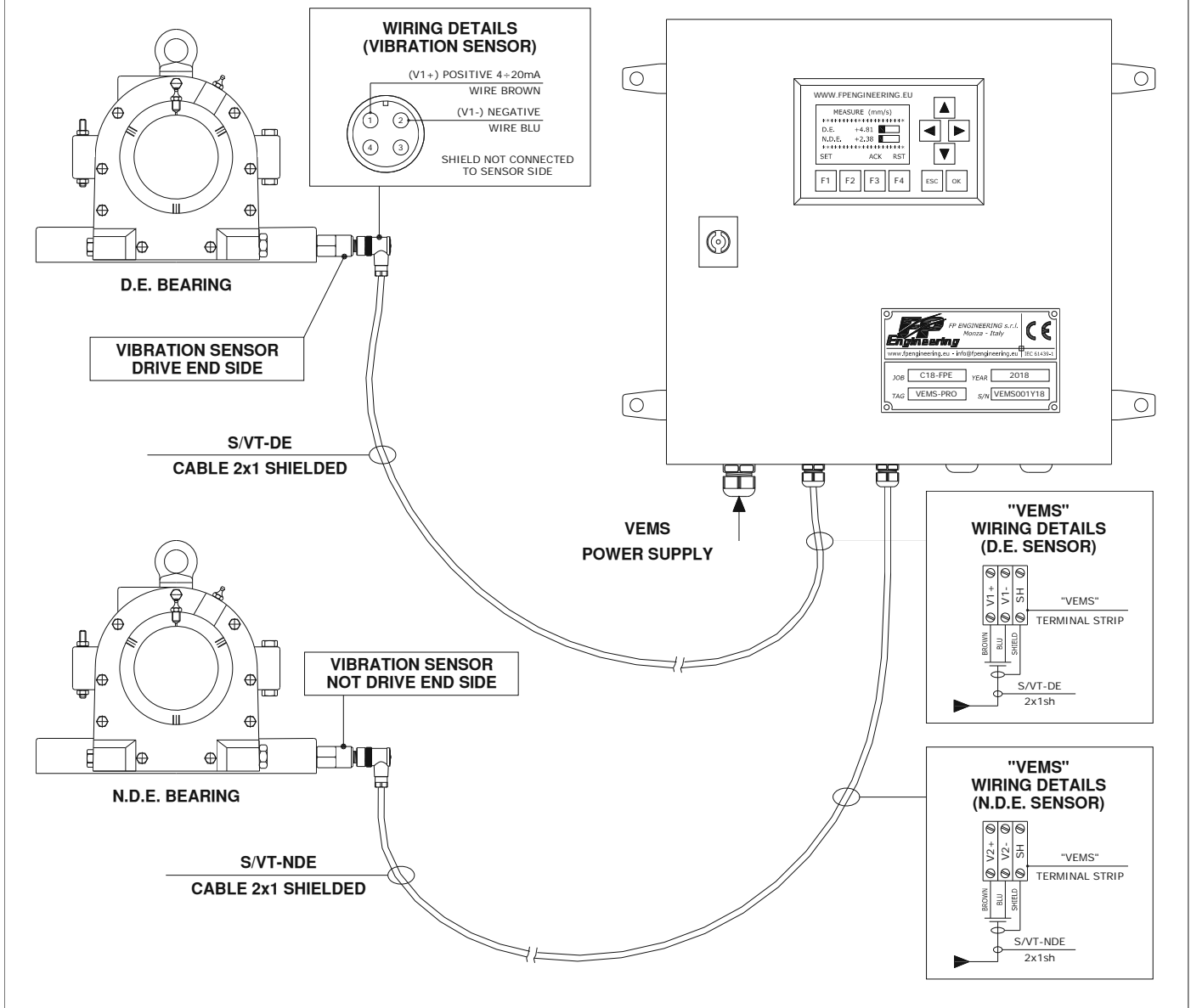
### VIBRATION SENSOR TYPICAL WIRING DIAGRAM



## VIBRATION SENSOR "125.01-VR20-2DA"

### WIRING DIAGRAM

#### VIBRATION EVOLUTION CONTROL SYSTEM "VEMS"



#### ORDER CODE:

125.01-VR20-2DA