



VIM-M2 / VIM-M3

VIBRATION MONITOR



USERS MANUAL

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1 TECHNICAL SPECIFICATION

Article number:	Dametric	Valmet	SKC
VIM-M2	VIM-M2	VAL0123137	SKC9826807
VIM-M3	VIM-M3	VAL0308990	SKC2602408
Power supply:			
VIM -M2	115 or 230 VAC, +5%/-10%, 48-62 Hz		
VIM -M3	24 VDC, $\pm 10\%$		
Power consumption:	Max. 20 VA		
Power fuse:	PTC resistors in serial with live and neutral		
Temperature limit:	0 to +70 °C		
Enclosure:	Polycarbonate box, aluminum front, width =150, height =75, depth = 110		
Sealing:	IP20		
Mounting:	DIN-rail or two 4-mm screws		
Weight:	0.9 kg		
Transducer:	VIM-T2		
Amplifier:	Voltage input		
High pass filter:	7 Hz, active, 12dB/octave		
Low pass filter:	1.1 kHz, active, 12dB/octave		
Integrator:	1/f, cut off frequency 160 Hz		
Measurement:	True RMS to DC converter		
Front display:	Led ramp, scaled 0 - 25 mm/s, 1.25 mm/s per led, indicating the measured vibration level or the alarm limit levels		
	Led, yellow indicating active alarm limit output's		
	Led, green, indicating power on		
Signal output:	Galvanically isolated analogue current signal, 4-20 mA, low pass filtered to 1Hz, max 800 Ω load		
Alarm limit 1,2:	Adjustable, 0 to 25 mm/s, single turn potentiometers		
Alarm output 1,2:	1-pole toggling relay contact, max. 230 Vac, 1A, 100VA		
Connection:	Detachable screw connectors		
CE-approval	EN50081-2:1993, EN50082-2:1995, 89/336/EEC.		

2 DESCRIPTION

The VIM-M2 and VIM-M3 monitors are used together with a vibration transducer to measure the radial vibrations in a pulp refiner. The unit monitors a low impedance piezoelectric accelerometer-transducer mounted on the refiner. The accelerometer is fed with a constant excitation current, and returns a superimposed voltage signal proportional to the acceleration amplitude. The frequency is in the range of 10 Hz to 1000 Hz. The monitor includes following functions:

An ac-voltage amplifier.

A band pass filter (10 to 1000 Hz) to accommodate the vibration specifications standard.

An 1/f filter to convert the acceleration vibration signal to a velocity vibration signal.

RMS to DC-converter to measure the vibration amplitude.

A 4-20 mA signal current output.

A bar graph display which consists of a 20 segment LED's and normally indicates the vibration signal level. If any of the limit push-buttons is pressed, the corresponding alarm limit level is displayed.

A transducer check circuit which detects open-loop and short-circuit input. Any fault deactivates the limit output's and generates a 100% signal amplitude both on the display and the current output.

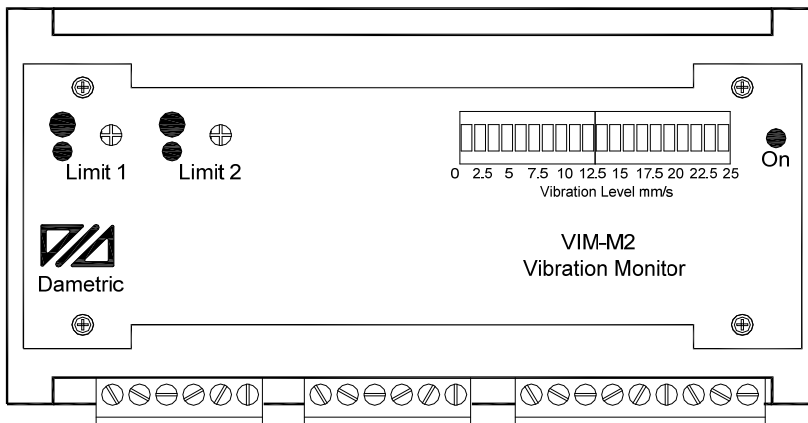
Two limit circuits, which compares the signal to two limit values. The limit values are adjustable between 0 and 25 mm/s. Each limit-output is active when the signal is lower than the adjusted limit value, and is indicated by the front panel LED's. A not active output initiates a hysteresis on the falling slope of the signal. The output drives a toggling relay contact.

The VIM-M2 includes an AC/DC power unit, which converts and isolates the 115/230 VAC power supply to the internal +12V and -12V DC-voltages.

The VIM-M3 is powered from a 24VDC source and includes a DC/DC converter for the internal supplies.

The unit works together with the VIM-T2 vibration transducer and the cable K-VIMS25.

3 HANDLING



The 20 bar graph display indicates the Vibration Signal or the alarm limit levels.

Limit 1.

Push the switch to view the limit level on the bar graph display and adjust the corresponding potentiometer to a chosen limit level.

The yellow led-diode is lit when the signal level is lower than the limit level.

Limit 2. The same function as the limit 1.

If both limits are used, this limit level is normally adjusted to a higher level than limit 1.

Power supply.

This green led is lit when the unit is powered.

4 CONNECTION

The cables are connected to the detachable screw connectors at the bottom of the unit.

4.1 K1 - POWER SUPPLY

VIM-M2:

115-230 VAC Mains Voltage

Live K1/1

Neutral K1/6

VIM-M3:

24VDC Mains Voltage

Plus K1/1

Minus K1/4

4.2 K2 - ALARM OUTPUTS

Function	normally closed	normally open	common
Limit 1	K2/1	K2/2	K2/3
Limit 2	K2/4	K2/5	K2/6

Explanation. The above describes the state of a not active output.

When the output is active (the led is lit and the vibration level is lower than the limit level) the normally open contact is closed to the common contact.

4.3 K3 - LOGIC INPUT, TRANSDUCER, SIGNAL OUTPUT, GROUND

K3/1-2 Not used

K3/1 Leave this pole open

K3/2 Leave this pole open

K3/3-5 Transducer signals

K3/3 Transducer + white + brown

K3/4 Transducer - green + yellow

K3/5 Transducer, cable shield

K-VIMS25:

outer shield (isolate the inner shield)

K3/6-8 Signal current output

K3/6 + 4-20 mA

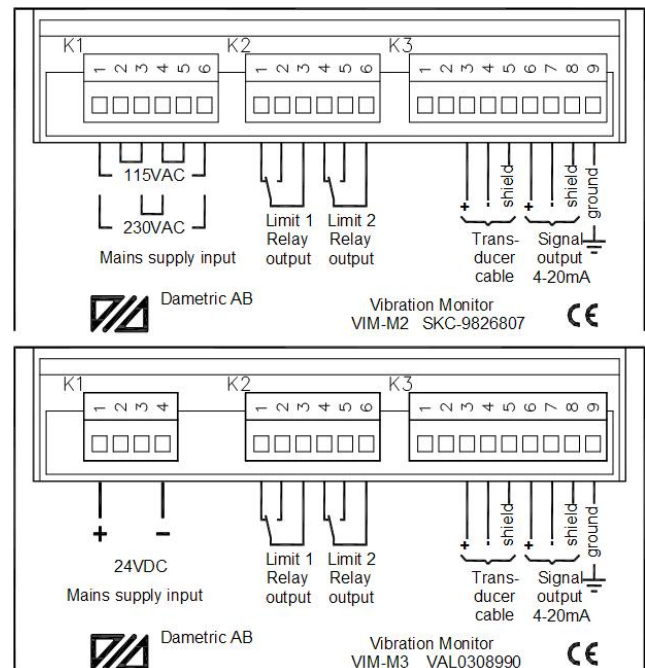
K3/7 common

K3/8 cable shield

K3/9 Ground

K3/9 Connect this pin direct to the protective ground close to the unit.

Use a copper wire with an area of 2.5 mm²



5 TROUBLE SHOOTING

Symptom

Possible failure

Action

The ON led is not lit

No power attached

Check the main supply voltage at K1.

Check the main supply jumper at K1.

If the supply and jumpers are correct, the unit is defective.

Note. The unit is protected against over voltage by PTC-resistors. If these are activated, the mains power supply must be shut off for at least 2 minutes.

The LED ramp is constantly indicating 100%

Transducer fault or cable fault

Is the cable connected to the transducer?

Check the transducer and the cable.

At normal conditions, the nominal voltage across the transducer is about 10.5Vdc.

(+ to K3/3, - to K3/4). If the voltage is below 6.0V or above 15V, the unit is defective.

6 DOCUMENT REVISION

Sept. 1, 2018/BL Added SKC article no.

7 CONTACT

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