

dametric

POM-M2 POM-M3

POSITION MONITOR



USERS MANUAL

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1 TECHNICAL SPECIFICATION

Article number:	Dametric	Metso
POM-M2	POM-M2	VAL0223544
POM-M2	POM-M3	VAL0308988
Power supply:		
POM-M2	115 or 230 VAC, +5%/-10%, 48-62 Hz	
POM-M3	24 VDC, ±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:	POT-50 (VAL0103227 / SKC9069808)	
Cable:	K-POT25 (VAL0122963 / SKC9069815)	
Front display:	Led ramp, scaled 0 - 50 mm, 2.50 mm/s per led, indicating the measured position 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 800Ω load	
Alarm limit 1,2:	Adjustable, 0 to 50 mm, 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 POM-M2/M3 monitors are used together with a position transducer to measure and indicate the axial position of the rotor or the stator in a pulp refiner.

The position transducer, POT-50 is mounted on the refiner and fed with a sinusoidal signal from the POM-M2. The secondary transformer windings of the transducer respond with two signals where the amplitude ratio is proportional to the position of the sensor. The monitor then converts the signals to a standard industrial current signal of 4-20mA.

The signal current output is galvanically isolated from the ground and from the measuring circuits. The monitor also includes a bar graph display which consists of a 20 segment LED's and normally indicates the vibration signal level.

A transducer check circuit which detects open-loop and short-circuit input. Any fault deactivates the limit outputs and generates a 0 % 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 50 mm. 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.

Each limit circuit has a pushbutton and if any of these are pressed, the corresponding alarm limit level is displayed on the bar graph display.

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

The unit works together with the POT-50 position transducer and the cable K-POT25.

3 HANDLING

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

3.1 Calibration

General

The POT-50 transducer has to be calibrated together with the POM-M2/POM-M3 monitor unit.

The transducer must be removed

from the holder on the refiner stand to be able to use the full mechanical stroke length. First the tip is pushed in to fully inner position for the zero calibration and then the tip is released so it returns to the fully outer position for the span calibration.

Connect a DVM between the K3/11 (+) and the K3/12 (-) connector.

Zero calibration

Push the tip to fully inner position and hold it there.

Adjust the "Zero" potentiometer until the DVM reading is $0.00 \pm 0.001\text{Vdc}$.

Span calibration

Release the tip so it returns to the fully outer position.

Adjust the "Span" potentiometer until the DVM reading is $5.00 \pm 0.001\text{Vdc}$.

3.2 Limit setting

General.

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

For better accuracy, measure the voltage between K3/11 and K3/12 which will indicate the limit level when the pushbutton is activated. $0.00\text{V} = 0.00\text{mm}$, $5.00\text{V} = 50.00\text{mm}$.

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

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

Limit 1

Push the "Limit 1" pushbutton and hold it there.

Adjust the "Limit 1" potentiometer until a chosen value on the DVM.

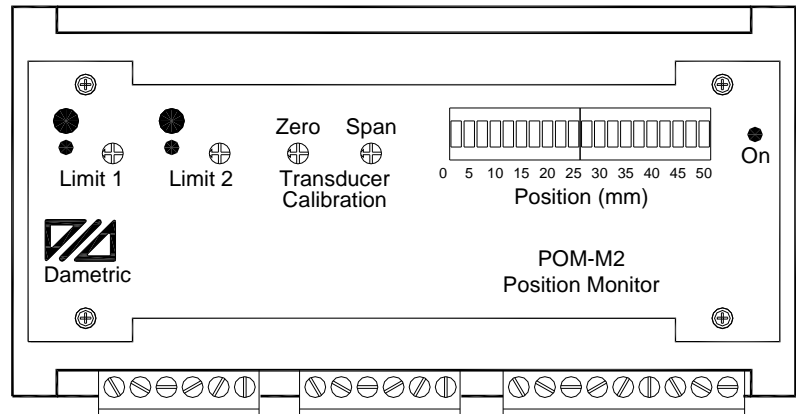
Limit 2

Push the "Limit 2" pushbutton and hold it there.

Adjust the "Limit 2" potentiometer until a chosen value on the DVM.

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

POM-M2:

115 VAC Mains Voltage

Live K1/1

Neutral K1/6

Jumper K1/2 to K1/3, K1/4 to K1/5

230 VAC Mains Voltage

Live K1/1

Neutral K1/6

Jumper K1/3 to K1/4

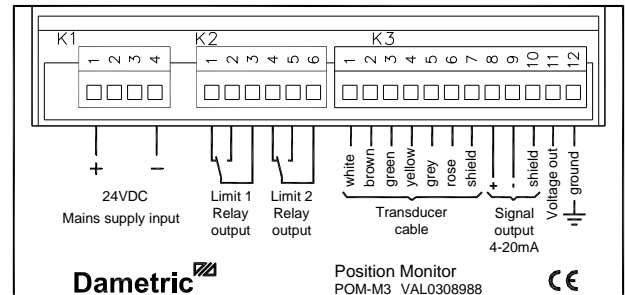
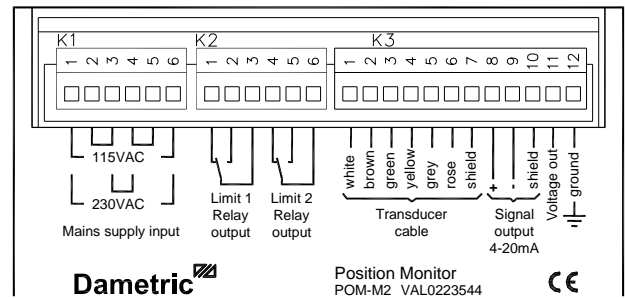
POM-M3:

24VDC Mains Voltage

Plus K1/1

Minus K1/4

Jumper none



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 on and the vibration level is lower than the limit level) the normally open contact is closed to the common contact.

4.3 K3 – Transducer, signal output, ground

Transducer signals	K-POT25:
K3/1	Transducer white
K3/2	Transducer brown
K3/3	Transducer green
K3/4	Transducer yellow
K3/5	Transducer gray
K3/6	Transducer rose
K3/7	Transducer outer cable shield (isolate the inner shield)

Signal output

K3/8	+ 4-20 mA current output
K3/9	- 4-20 mA current output
K3/10	Cable shield
K3/11	Voltage output, 0-5V for calibration and limit setting

Ground

K3/12 Connect this pin direct to the protective ground close to the unit. Use a copper wire with an area of 2.5 mm²

4.4 K3 – Reversed indication

For refiner system with reversed indication of the transducer (50.00 mm when pushed fully in), use the following connection of the white and brown cable to the connector.

Transducer signals		K-POT25:
K3/1	Transducer	brown
K3/2	Transducer	white

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 0 mm

Transducer fault or cable fault

Is the cable connected to the transducer?

Check the transducer and the cable.

6 MANUFACTURER

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