

# WMP III Maxi-Monitor®

## DESCRIPTION

The WMP III Maxi-Monitor is a micro processor based controller, dedicated to the operation and monitoring of a centralized lubrication system. WMP III is designed to schedule lube intervals and monitor the operation of Trabon pumps and divider valves in intermittent operating systems.

The WMP III can control lube schedules on either a time or a machine stroke/cycle basis. It will also continuously monitor and display the status of the lube system it is controlling. It can even protect the equipment by shutting down the operation when a lube system fault does occur.

System performance can easily be determined through LED's (Light Emitting Diodes) and also by a two line, 16 character alphanumeric LCD (Liquid Crystal Display) in conjunction with the key pad.

The WMP III is easily programmed in the field. No special training or knowledge of computer language is necessary. Programming is simply a matter of inputting parameters and selecting or bypassing options as prompted by the LCD.

Available in either 115 VAC, 230 VAC, 12 VDC or 24 VDC.

## FEATURES/ADVANTAGES/BENEFITS

Control and monitor functions are field programmable

- Lube programs can be changed to meet changing conditions or work schedules.
- High flexibility means you can handle a variety of applications with the same basic WMP Controller.
- By working with one basic unit, operating and maintenance personnel quickly become familiar with the WMP and use it more effectively.
- Programming is done thru the keypad mounted on the face of the enclosure.

Fault detection and diagnosis are accomplished through a LED display and by readouts at the LCD.

- Problems are quickly identified, troubleshooting becomes fast and downtime is minimized.
- Faults can be identified without a need to open enclosure
- Fault contacts can be linked to remote alarm devices to protect machines or equipment against damage due to interrupted or inadequate lubrication.

## State of the Air in Lube System Controllers



A two line 16 character, alpha numeric LCD is featured to simplify programming and/or troubleshooting.

- Programming is just a matter of responding to the LCD prompting, no special knowledge of computer language is necessary.
- All active faults are alternately displayed on the LCD, and removed as the faults are cleared.
- A separate history of past faults is retained in memory until reset by user, which can be reviewed by prompting the WMP III.
- A running display of program, monitor or system cycles count down value can be exhibited to indicate the status of the function that was selected.

Utilizes sealed membrane covered keypad. Located on front of enclosure which allows for easy access to programming and troubleshooting functions without a need to open enclosure.

- All programming is accomplished thru the keypad. To prevent tampering or accidental changes to the program, tripping an internal switch can disable programming and set point functions of keypad, yet still allow access to other functions.
- Utilizes electrically erasable memory set points
  - Set points are stored in memory so no battery back up is required.
  - Present timer/counter values can be saved during power down and restored when power is reapplied

## DEFINITIONS

**LUBE SYSTEM** – Usually includes a lube reservoir, lube pump, divider valve or valves, feed lines to bearing points plus a WMP III Maxi-Monitor controller.

**LUBRICATION PROGRAM** – A lubrication sequence established to insure that the Lube System will deliver the proper amount of lubricant to designated bearing points at the proper intervals.

**DEFINITIONS Con't**

**PROGRAM PERIOD** – A user-determined interval between the start of one lube period and the start of the next lube period. **Can be** Time or Machine Strokes/Cycles.

**SYSTEM CYCLE** – One complete cycle of a divider valve, as evidenced by one complete movement of the valve’s cycle indicator pin and/or by one complete opening-to closing-to-opening sequence of a limit switch at the divider valve. This is an input to the WMP III.

**LUBE PERIOD** – A user programmed lube delivery period in which the Lube System is cycled the one or more times necessary to deliver the required amount of lubricant to the designated bearing points.

**MONITOR PERIOD** – A user-determined period of Time or the number of Machine Strokes/Cycles in which the Lube Period should normally be completed.

**PROGRAMMING** – The process of setting up the WMP III to execute the Lubrication Program established for the machine or the equipment to be lubricated.

**TIME-BASED PROGRAMMING** – Programming which measures, in seconds, minutes or hours the interval between Lube Periods and the duration of the Monitor Period.

**MACHINE STROKE/CYCLE-BASED PROGRAMMING –**

have been met by the required number of cycle/proximity switch closures (system cycles) or if the monitored interval has been reached, at which time lube fault is indicated.

**KEYBOARD COMPONENT IDENTIFICATION**

**FAULT (Red LED):** The fault LED is energized whenever an active fault is present in the system. It is also accompanied by the activation of the fault relay contacts (in the enclosure) to the fault position. The fault LED can be cleared by correcting the given fault and in some cases a successful lube interval completed.

**CYCLE (Yellow LED):** The cycle LED goes on and off as the cycle/proximity switch contacts (that are being monitored by the WMP III) make and break.

**ITEM NUMBER – ②**

**LIQUID CRYSTAL DISPLAY (LCD):** The LCD is a backlighted, 16 character, two line, alpha numeric display. It constantly displays the system status and is used in conjunction with the keypad to program the operating parameters and to diagnose a fault condition. The display back light comes on whenever a button on the keypad is pressed or a fault is present. It will remain lit between two and three minutes after the last button has been pressed or fault is removed. Although the back light will extinguish after a maximum three minute period of time, the display will stay active, up-dating the status of the function invoked. By simply pressing any button on the keypad, the display backlight will come on.

**ITEM NUMBER – ③**

**The keypad is made up of 16 individual buttons in a 4x4 array.** Several of the keys serve dual purposes and are treated differently by the Maxi-Monitor depending on what function or process is being executed. Listed are the buttons with a brief description of their use.

**PROGRAM/7** – Used to set the period between lube applications. Also used to enter the digit ‘7’ in a value.

**CYCLE/8** – Used to set the number of cycles the monitored divider block assembly is required to go thru in order to satisfy the lubricant requirement in the programmed lube interval. It is also used to enter the digit ‘8’ in a value.

**MONITOR/9** – Used to set the period within which the lube is to be completed before going into a fault condition. It is also used to enter the digit ‘9’ in a value.

**CONFIGURE/4** – Used to enter the configuration mode where various programmed options can be selected. It is also used to enter the digit ‘4’ in a value.

**DISPLAY FAULT/5** – Used to display any fault flags that may have occurred. It is also used to enter the digit ‘5’ in a value.

**RESET FAULT/6** – Used to clear fault flags held in memory once the fault has been corrected. It is also used to enter the digit ‘6’ in a value.

**HOURS/1** – Used to set the program and/or monitor time base in units of hours. It is also used to enter the digit ‘1’ in a value.

**MINUTES/2** – Used to set the program and/or monitor time base in



Programming that measures the interval between Lube Periods, and the duration of the Monitor Period, in terms of machine strokes or cycles. This is an input to the WMP III.

**ITEM NUMBER – ①**

**Integrated LED's indicate system status at a glance.**

**POWER (Green LED):** This LED is lit anytime power is applied to the unit.

**OPERATE (Yellow LED):** This LED becomes lit when a lube interval is initiated. It will remain lit until the lubrication requirements

units of minutes. It is also used to enter the digit '2' in a value.

**SECONDS/3** – Used to set the program and/or monitor time base in units of seconds. It is also used to enter the digit '3' in a value.

**NO/OFF** – Used to answer 'no' or turn 'off' an option during the configuration process.

**NEXT/O** – Used to advance to the next option or selection in the configuration process or display fault functions. It is also used to enter the digit '0' in a value.

**YES/ON** – Used to answer 'yes' or turn 'on' an option in the configuration process.

**CLEAR** – Used to exit any function routine without making any changes and will return to monitoring system status. If any mistakes are made during programming use this key to safely exit the function.

**RUNNING MONITOR** – Used to display the count down value for the program, cycle or monitor functions in the base it was programmed.

**MANUAL RUN** – Used to initiate a lube period upon being pressed. Pressing this key will also re-initialize any new values entered into the program, cycle and monitor controls. This key is only functional when the WMP III is displaying system status.

**ENTER** – Used to save any changes made during programming and exit to monitoring system status.

**PANEL COMPONENT IDENTIFICATION**

**ITEM – ①**

**Terminal strip contacts** – Used to wire input and output electrical connections to the WMP III unit. Each device has a dedicated set of contacts. A termination point is also provided if shielded cable is used. See Bulletin 14752 for further instructions and wiring diagram.

**ITEM – ②**

**Fuses** – There are two fuses in the WMP III, one labeled FU-1 1/2A LOGIC and the other FU-2 2A PUMP. FU-1 is a 1/2 amp fuse that protects the controller, if this fuse blows, the power (green) LED will extinguish and the pump output and fault relays will de-energize. FU-2 fuse limits the pump output to 2 amps. Should an over current condition cause the fuse to blow the WMP III will sense this condition, cease the lube cycle and display a system fault. This fault condition will be registered and can be diagnosed thru the display fault key.

**ITEM – ③**

**Operational Switches** – Set of three rocker switches that affect the operation of the WMP III.

**Debug Switch** – is for factory use only and must remain in the normal position.

**Keyboard Switch** – When placed in the 'normal' position will restrict access to any program changes attempted at the keypad. This prevents tampering and any accidental changes to the programming settings. Any attempt to reprogram the WMP III

while the keyboard switch is in the "normal" position will generate the message "access denied". Even though the program function is locked, it is still possible to monitor functions, read faults and reset fault messages. To change values the keyboard switch must be in the "on" position.

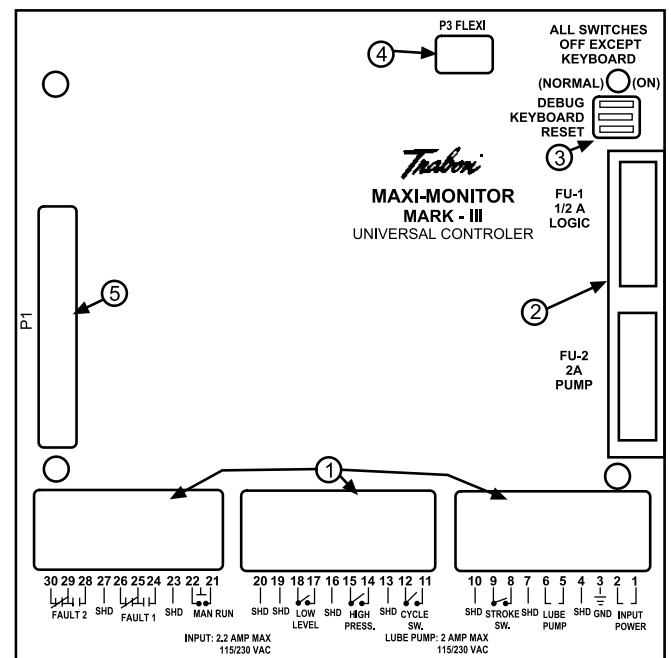
**Reset** – is used to reset the WMP III without the need to recycle power (power down and power back up). A reset can be initiated by temporarily turning this switch to the 'on' and then to the 'normal' position. This switch should be left in the normal position for the controller to operate.

**ITEM – ④**

**P3 Flexi** – Port that will allow for future expansion capabilities to monitor more than one cycle/proximity switch. This port is not enabled at this point in time.

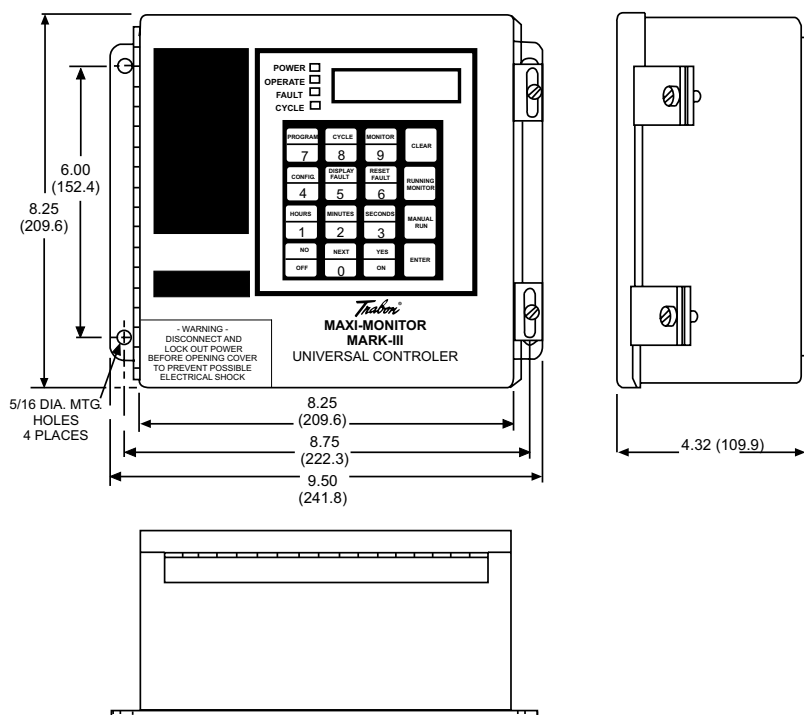
**ITEM – ⑤**

**Ribbon Cable** – Cable that connects logic board to front door functions.



## DIMENSIONS AND MOUNTING

### Inches (mm)



SPECIFICATIONS	
<b>Power Supply</b>	115 ± 15 % VAC, 50/60 Hz; 230 ± 15% VAC, 50/90 Hz; 24 ± 15% VDC; 12 ± 10% VDC; Voltage must be specified when ordering
<b>Inputs</b>	Same voltage of WMP III in use
<b>Current Consumptions</b>	0.1 amp for AC (less external loads); 0.4 amp for DC (less external loads); 0.5 amp 3AG fuse supplied; 115, 230 VAC & 12, 24 VDC
<b>External Pump Load</b>	115, 230 VAC or 12, 24 VDC; 2 amp max (4 amp typical inrush), AC; 2 amp AGC fuse supplied; Determined by input power supply
<b>Fault Relay</b>	2 isolated, non-fused, double-pole, double-throw form, C contacts, 5 amp resistive
<b>Count Rate</b>	15 CTS/SEC max @ 50% duty cycle; min contact open or close time - 0.066 sec (66ms)
<b>Transient Withstanding Capacity</b>	2000 Volts for 1 millisecond (typical); Joule Max
<b>Temperature Range Ambient Storage</b>	(LCD limited) 10°F to 113°F (-21°C to 45°C) -8°F to 140°F (-25°C to 60°C)
<b>Time Base</b>	Crystal Controller Time Base
<b>Weight</b>	9.3 lbs (4.2 kg)
<b>Programming Selections</b>	
<b>Program Range</b>	2-9999 sec; 1-9999 min; 1-9999 hrs; 2-9999 stroke counts
<b>Monitor Range</b>	1-9999 sec; 1-9999 min; 1-9998 hrs; 1-9998 stroke counts
<b>System Cycle Range</b>	1-9999 counts

ORDERING INFORMATION		
Description	Part No.	Old Part No.
WMP III 115 VAC	556023	163-310-000
WMP III 230 VAC	556024	163-310-010
WMP III 12 VDC	-	163-310-030
WMP III 24 VDC	556024	163-310-020

### NOTES:

**Do not mount controller on surfaces which are subject to heavy mechanical vibration. Excessive vibration may cause component related failures.**

While the enclosure is a NEMA 12 rated, the keypad may not survive continuous exposure to some dripping and splashing liquids and chemicals. The controller should be mounted away from such environments, or be placed in a suitable protective enclosure.

All written and visual data contained in this document are based on the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

## Contact us today!

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