

First choice when quality counts.™

For Controlling and Monitoring Automatic Lubrication Systems

Lubrication Controller, 24V

Part No. 115123

This Lubrication Controller is designed to control and monitor most single-line parallel automatic lubrication systems. All configuration parameters are electronically stored in a System Set-Up Menu and a Time Menu (see page 7), which eliminates the need to set dip switches or jumpers.



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C3001IE

Symbols

Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

WARNING



INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

- Disconnect the power before servicing and before you remove the cover.
- Do not touch electrical components inside the Lubrication Controller; you could get an electric shock or damage the circuits.
- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are not sure, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories. Modifying parts can cause a malfunction and result in serious bodily injury.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Connect to a proper electrical power source. See the **Technical Data** section on page 10.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.
- Use only alarm and control devices that are compatible with the electrical requirements of this unit.

Installation

Typical Installation

The installation shown in Fig. 1 is only a guide for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.

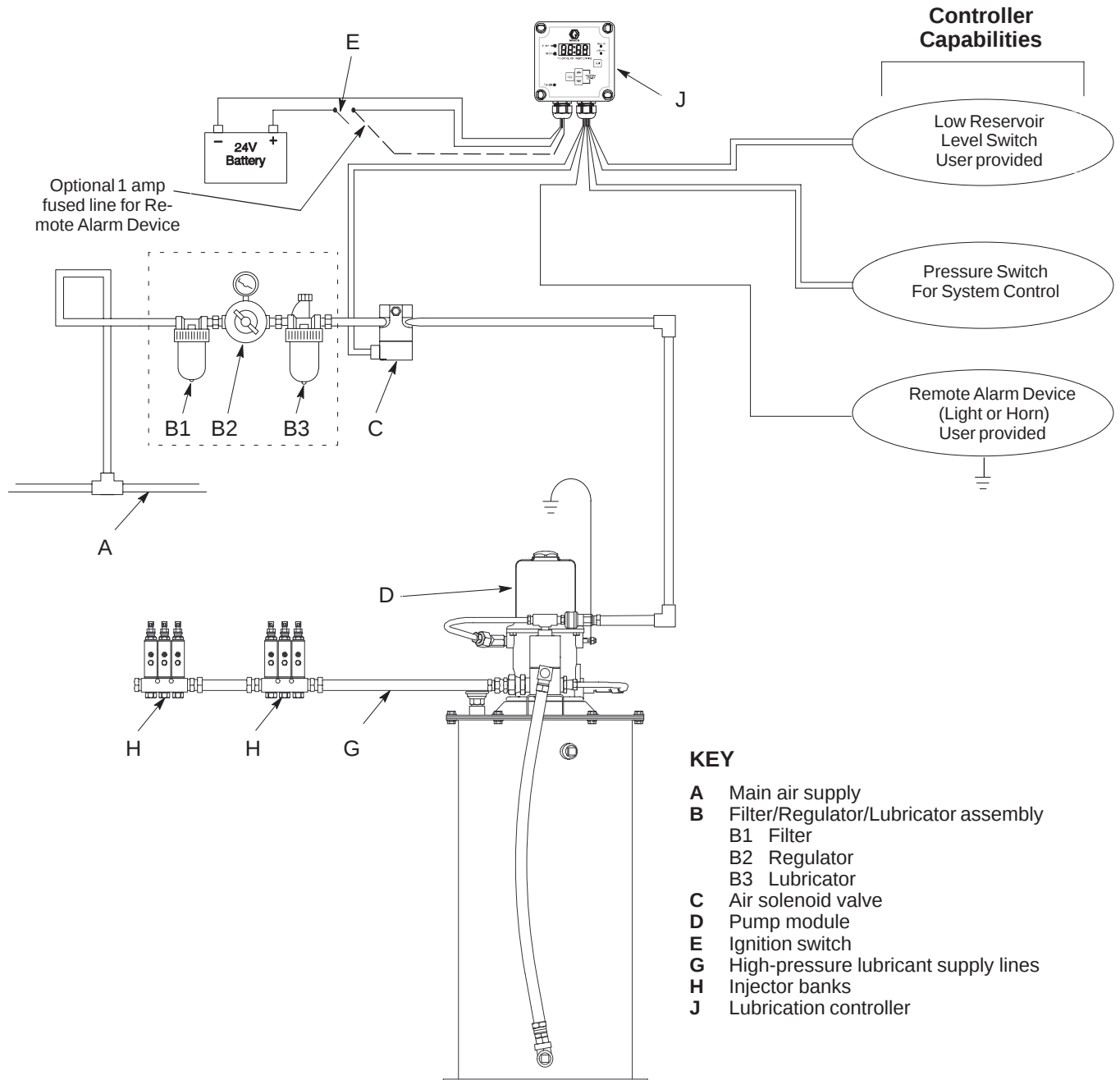


Fig. 1

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Installation

Installing the Lubrication Controller

⚠ CAUTION

This Lubrication Controller is not designed to be operated in a caustic environment.

1. Select a flat surface upon which to install the Lubrication Controller, and drill mounting holes according to the **Mounting Hole Layout** on page 10.

⚠ CAUTION

Use only the pre-drilled holes under the cover fasteners to mount the timer. Failure to use the designated mounting holes could cause circuit board damage.

2. Remove Lubrication Controller cover, and secure the junction box using four #6 screws (not provided).

⚠ CAUTION

Do not ground any lead for the pressure switch or the low level switch. Circuit board damage may result.

3. Connect solenoid valve leads to terminals 4(–) and 6(+) (output).
4. **Fig. 2. Step optional for use of external alarm.** Terminals 7 and 8 are a normally open, voltage-free switch, available as a switching device for an external alarm circuit. Connect fused (+) power supply (not supplied) to terminal 8. Connect terminal 7 to external alarm. Ground external alarm to complete circuit

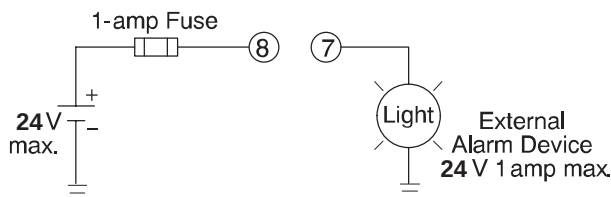


Fig. 2 8855A

5. **This step is optional.** Connect terminals 9 and 11 to a normally-open pressure switch installed in system lubricant supply line for pressure-controlled system shut-down.

NOTE: The pressure switch, upon detecting the preset pressure, will send a signal to the Lubrication Controller to deactivate the air solenoid valve, which will deactivate the pump.

6. **This step is optional.**

Connect terminals 12 and 13 to a normally-open low-level switch (user provided).

NOTE: Upon detection by a low-level sensor, the Lubrication Controller will activate the alarm condition.

⚠ CAUTION

If using the low level indication feature, the lubrication controller will remain in alarm mode and will not function until the low level switch is opened by refilling of the fluid reservoir. Failure to correct the low level condition will result in interruption of the automatic lube system which could lead to premature bearing failure.

7. **This step is optional.**

Connect terminals 14 and 15 to a normally open switch. Closing of the switch will suspend Lubrication Controller operation. Reopening of the switch will resume Lubrication Controller function from the point at which operation was suspended.

⚠ WARNING



AUTOMATIC SYSTEM ACTIVATION

Do not connect power to timer if the pump power supply is on, unless activation of the automatic lubrication system is intended.



This device is an automatic timing device that activates the output circuit (air solenoid valve) upon power connection or upon exit of the programming function. Ignoring this warning could lead to serious injury including fluid injection and amputation due to activation of connected system components.

8. Connect the power leads from an isolated power supply. Connect terminal 3 to the negative (–) lead (ground), and connect terminal 2 to the positive (+) lead.
9. Replace the Lubrication Controller cover.

Installation

Electrical Connections and Circuit Details

WARNING



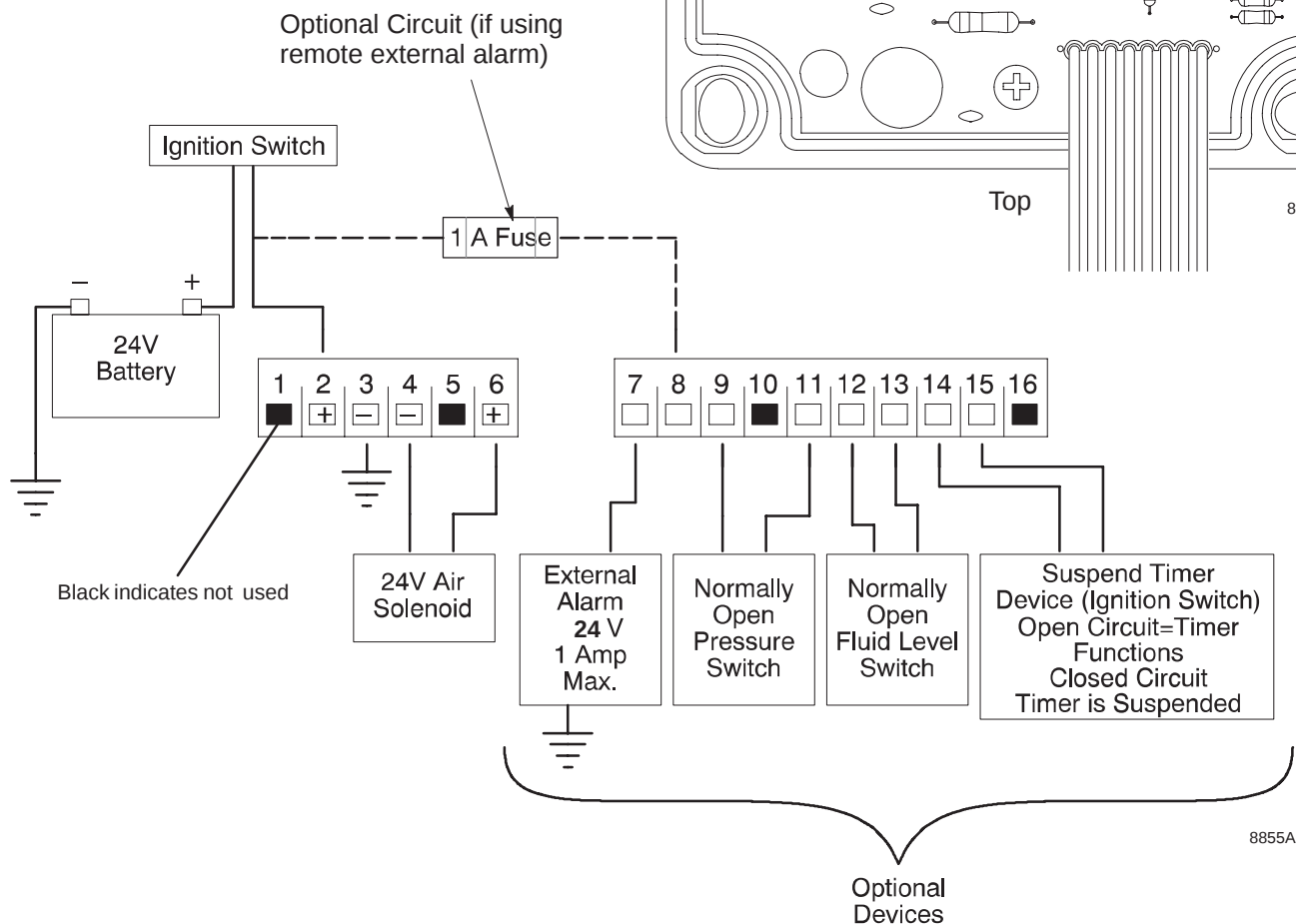
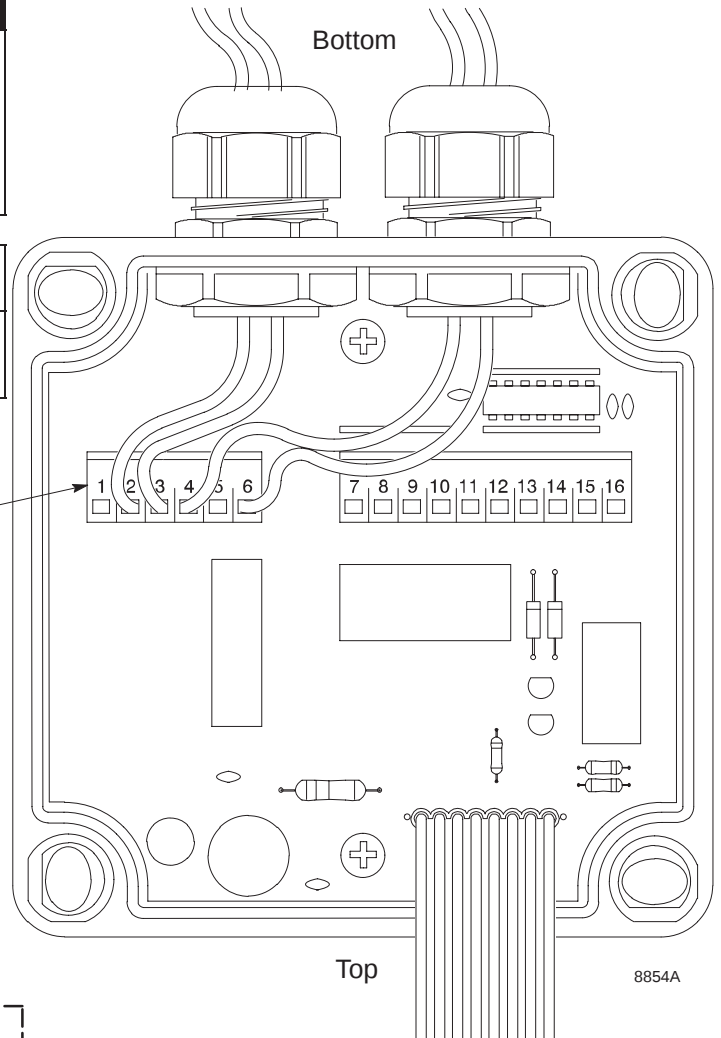
ELECTRIC SHOCK HAZARD

Before you install or remove the Lubrication Controller from the system, disconnect and isolate all power supplies.

CAUTION

110 volt and 220 volt power is not supported at this time.

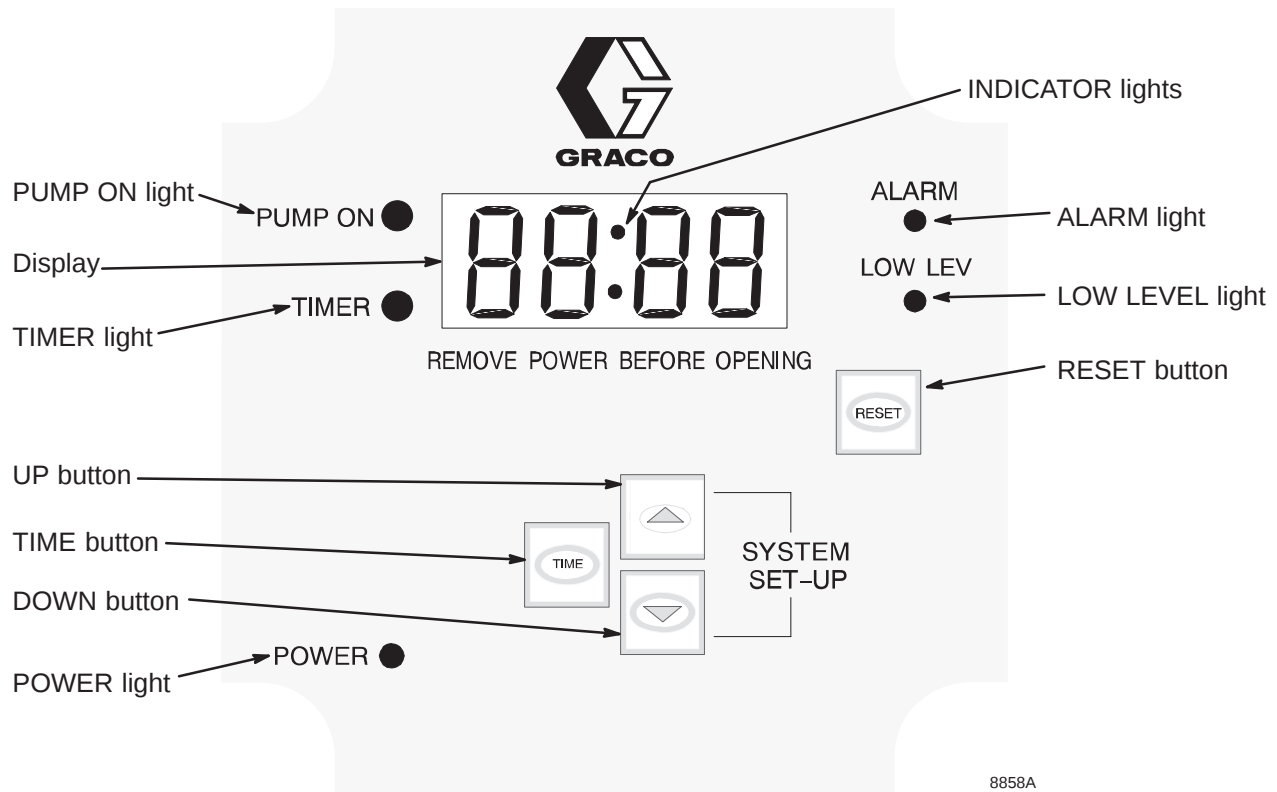
See diagram below for terminal identification



Setup

Keypad and Display

The keypad and display are shown below with explanations.



PUMP ON light: Indicates that the Lubrication Controller is in the *Pump On* mode, and the device (air solenoid valve) connected to terminals 4 and 6 should be receiving power.

Display: TIMER light on: Display indicates time remaining in hours and minutes until the next *Pump On* cycle.
PUMP ON light on: Display indicates time remaining in minutes and seconds in the *Pump On* cycle.
ALARM light on: Display indicates alarm codes (see page 8).
INDICATOR lights flashing: Display indicates that the Lubrication Controller is counting down to the next *Pump On* cycle.
INDICATOR lights steady: Display indicates that the Lubrication Controller is in *Suspended* mode, activated by contacts 14 and 15 being close-circuited.

TIMER light: Indicates that the Lubrication Controller is in *Timer* mode.

UP button: For toggling between options in the System Set-Up Menu. Press this button and the DOWN button at the same time to enter the System Set-Up Menu.

TIME button: For advancing to the next option in the Time Menu.

DOWN button: For adjusting settings in the Time Menu. Press this button and the UP button at the same time to enter the System Set-Up Menu.

POWER light: Indicates that power to the Lubrication Controller is on.

RESET button: For resetting an alarm malfunction. Resets to the start of a lube cycle — pushing this button activates Lubrication Controller to open solenoid and start pump. Will activate a manual lube cycle and resets pause interval.

LOW LEVEL light: Indicates that the reservoir fluid level is low.

ALARM light: Indicates that an alarm is activated.

Setup

⚠ WARNING



AUTOMATIC SYSTEM ACTIVATION

Do not connect power to timer if the pump power supply is on, unless activation of the automatic lubrication system is intended. This device is an automatic timing device that activates the output circuit (air solenoid valve) upon power connection or upon exit of the programming function. Ignoring this warning could lead to serious injury including fluid injection and amputation due to activation of connected system components.

System Set-Up Menu

The System Set-Up Menu is used to configure the type of pump and automatic lubricating system that is connected to the Lubrication Controller. The modes in the System Set-Up Menu progress in the order shown in the table below.

To access the System Set-Up Menu, press the UP and DOWN buttons simultaneously, and hold them down for two seconds.

Parameter	Description	Screen Display	Operation
Lubrication system type	Pressure-switch-controlled on single-line systems	PSI	Press the UP button to toggle between the two options.
	No pressure-switch-control, just timer	CLOC	
Press the TIME button to accept the change. Press the RESET button to cancel the change.			

Time Menu

The Time Menu is used to adjust the *Pump On* cycle and *Pause Interval*. The modes in the Time Menu progress in the order shown in the table below.

To access the Time Menu, press and hold the TIME button for two seconds.

Parameter	Description	Screen Display	Operation
<i>Pump On</i> time	Indicates the minimum <i>Pump On</i> time in minutes : seconds Maximum: 59:50 Minimum: 00:10	MM:SS PUMP ON light flashing	Press the UP and DOWN buttons to adjust the setting.
Press and hold the TIME button for two seconds to advance to the next option.			
Pause interval	Indicates the <i>Pause Interval</i> between lubrication cycles in hours : minutes Maximum: 99:59 Minimum: 00:01	HH:MM TIMER light flashing	Press the UP and DOWN buttons to adjust the setting.
Press and hold the TIME button for two seconds to return to normal operating mode.			

Operation

1. Connect power to Lubrication Controller.


WARNING



AUTOMATIC SYSTEM ACTIVATION

Do not connect power to timer if the pump power supply is on, unless activation of the automatic lubrication system is intended.



This device is an automatic timing device that activates the output circuit (air solenoid valve) upon power connection or upon exit of the programming function. Ignoring this warning could lead to serious injury including fluid injection and amputation due to activation of connected system components.

3. Open air supply to air solenoid valve.

4. Activate power to Lubrication Controller to initiate *Pump On* cycle. Ensure that PUMP ON light and POWER light are on and the pump is operational.

5. Ensure that POWER light and TIMER light are on after *Pump On* cycle is complete.

Lubrication Controller will automatically activate the system at programmed intervals.

6. Power will be removed from properly wired system upon turning off ignition key.

7. To disable automatic lube system, turn off air supply to solenoid and/or pump.

2. See **Setup** on page 7 for Lubrication Controller programming.

Alarm Codes

The Lubrication Controller self diagnoses when it is powered up, and alarm codes are shown in the display during fault conditions. These alarm codes are explained in the table below.

NOTE: for automatic lube system troubleshooting, see manual 309015.

Alarm Code	Description	Corrective Action
A01	No parameters set.	Set the parameters of the system. See Setup on page 7.
A02	Level of lubricant is low in the supply container. Lubrication Controller will not function until the fluid reservoir is filled.	Add lubricant to the supply container. NOTE: This alarm requires that your system has a low-level switch installed.
A04 (PSI mode only)	The system pressure was already high before the start of the cycle.	Check pressure switch and replace if necessary. Check to see if system vents properly.
A05 (PSI mode only)	PSI mode: The system did not achieve pressure during the specified cycle times. 1. <i>Pump On</i> setting for system is too short. 2. Out of lubricant. 3. Broken supply line. 4. Injector malfunction. 5. Pump malfunction. 6. Vent valve malfunction.	Check for and correct lubricant leakage from any loose fittings or from the pump. Adjust setting as appropriate. See Time Menu on page 7. Fill reservoir. Fix or replace. Replace. Refer to Pump Manual 308883. Fix or replace.

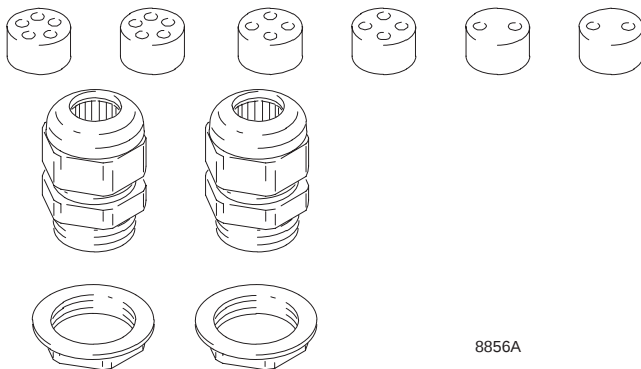
Troubleshooting

Description	Problem	Solution
Timer fails to activate solenoid	No power supplied to solenoid Solenoid faulty Timer faulty Low Level alarm	Power light off: timer is not receiving power. Verify connections and verify power supply Power light on: verify solenoid connections Replace solenoid Replace timer Refill reservoir
Pressure switch fails to shut down system	Pressure switch incorrectly wired Pressure switch faulty Timer faulty	Verify proper connections Replace pressure switch Replace timer

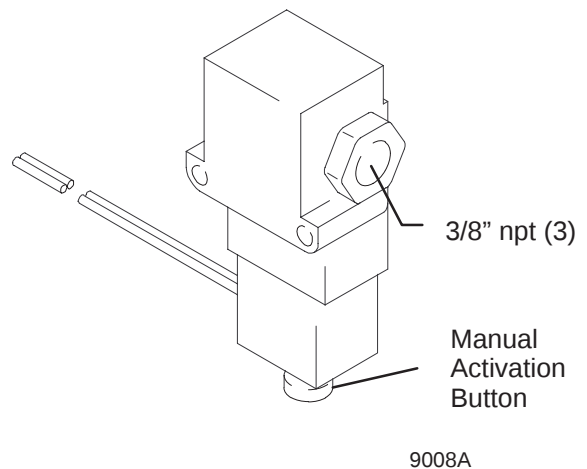
Accessories and Kits

Repair Kit 241574

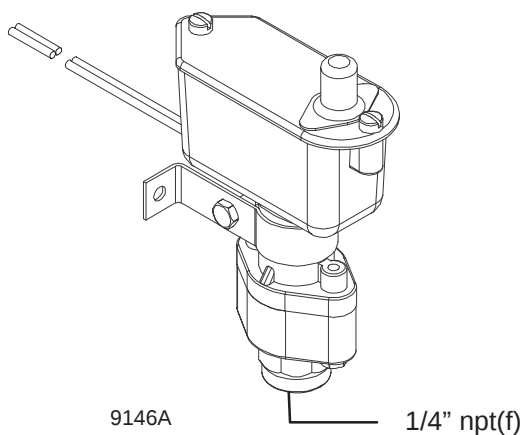
Repair Kit 241574 is available. It contains two junction box connectors and six rubber grommets, as shown.



24V Air Solenoid 114488



Pressure Switch 115124



Technical Data

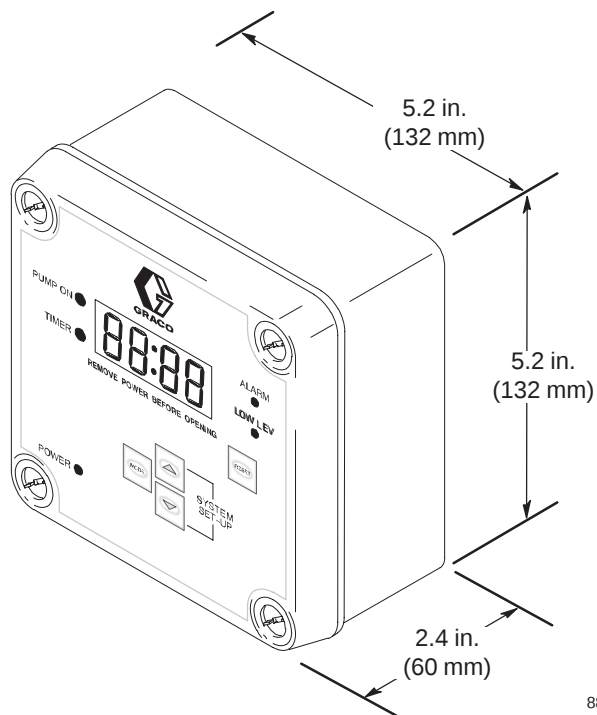
Input Contacts

Power	24V D.C.
Power consumption	20 Watts
Control input (optional)	Normally open pressure switch
Lubrication level (optional)	Normally open level switch, closes upon low level

Outputs

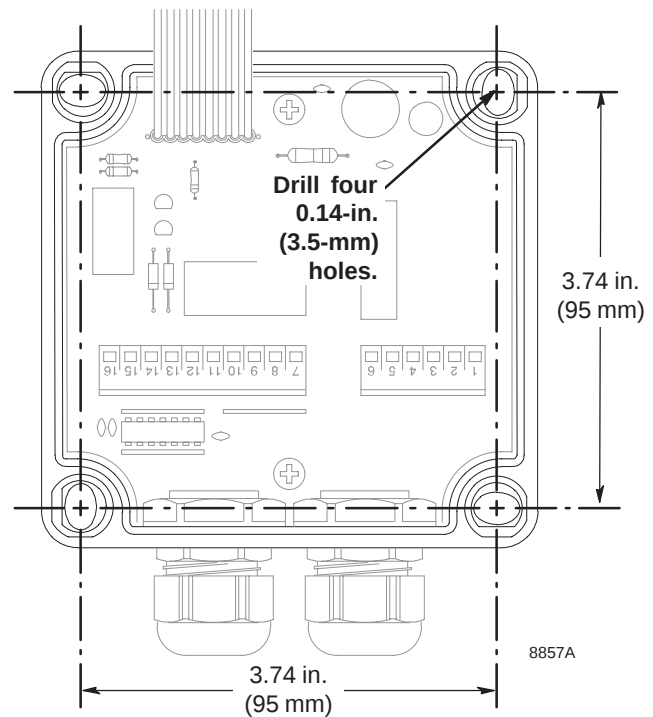
Air solenoid valve (pump control)	24V D.C.
Alarm switch, normally open (optional)	Voltage-free contact, 250V maximum, 1 amp
Protection grade	IP55, Nema 12
Operating temperature range	-13° F to 131° F (-25° C to 55° C)

Dimensions



8852A

Mounting Hole Layout



[illegible]

Graco Standard Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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