Instructions

GLC 2200
Lubrication Controller

3A2960J

EN

For controlling and monitoring an automated lubrication system. For professional use only.

Not approved for use in explosive atmospheres or hazardous (classified) locations. .

Model: 24N468

Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Save these instructions.

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Table of Contents

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** in the pump manual when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Component Identification

Keypad, Display, and Icons

NOTICE

To prevent damage to soft key buttons, do not press the buttons with sharp objects such as pens, plastic cards, or fingernails.

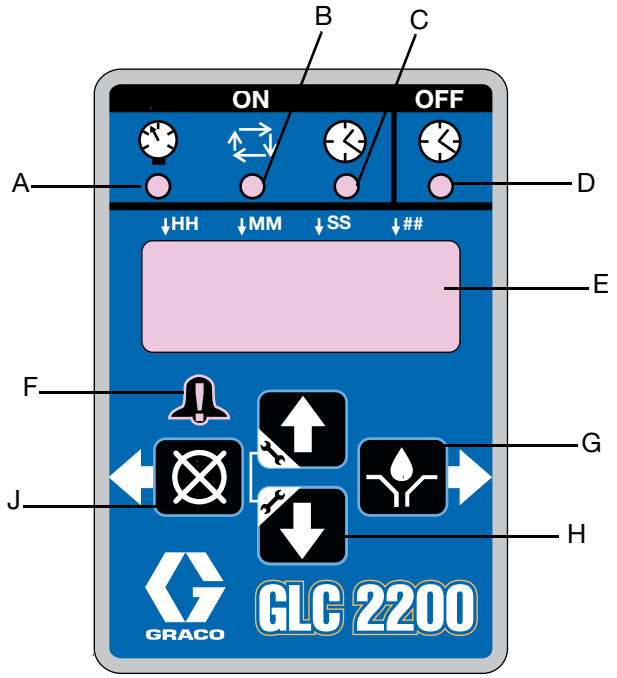


FIG. 1

Pump ON LEDs (A, B, C)

A	Pressure Control LED: In RUN MODE illuminates indicating function mode that is currently running.
B	Cycle Control LED: In RUN MODE illuminates indicating function mode that is currently running.
C	Time Control LED: In RUN MODE illuminates indicating function mode that is currently running.

Pump OFF LED (D)

- In RUN MODE this LED illuminates when in the OFF or RESET portion of the RUN CYCLE.

Display (E)

- A blinking field on the display indicates that the controller is in SETUP MODE.
- In RUN MODE the numbers on the display will not blink.

Alarm LED (F)

- Illuminates when any alarm is detected. When an alarm is active, an error code displays and an audible alarm also sounds.

RIGHT Direction Arrow/ MANUAL RUN / ENTER (G)

- In SETUP MODE: saves entry, moves cursor in display one field to the right or to the next setup step.
- In RUN MODE: activates the pump for one complete ON cycle if actuated during the OFF portion of the RUN cycle.

UP and DOWN Direction Arrows (H)

- Press and hold both the UP and DOWN arrow keys together for 3 seconds to enter SETUP MODE.
- In SETUP MODE: increases or decreases the number values associated with the various RUN MODES.

LEFT Direction Arrow / RESET (J)

- In SETUP MODE: moves cursor in display one field to the left.
- In RUN MODE: pressing RESET starts a PUMP OFF cycle.
- In ALARM MODE: press once to clear buzzer, press and hold for 3 seconds to clear warning and switch controller to OFF MODE.

Installation

Typical Installation

The installation shown in FIG. 2 is only a guide for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.

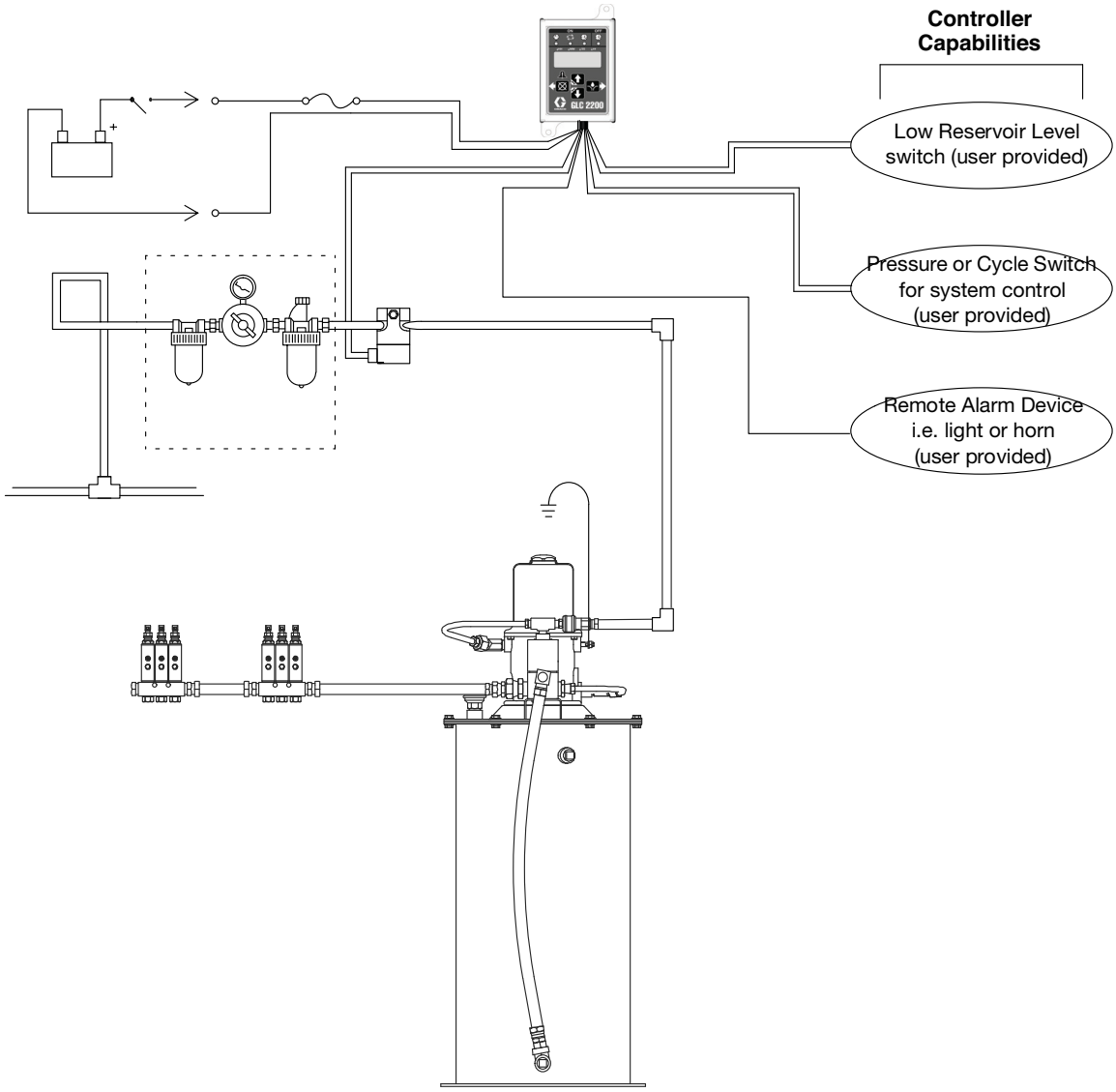


FIG. 2: Typical Installation

Key:

A Main Air Supply Line
B Filter/Regulator/Lubrication Assembly
  B1 Air Filter
  B2 Regulator
  B3 Lubricator
C Air Solenoid Valve
D Pump Module
E Ignition Switch
F High-Pressure Lubricant Supply Lines
G Injector Banks
H Lubrication Controller
J In-line Fuse
K Power Source

Installing the Lubrication Controller

Automatic System Activation Hazard

Unexpected activation of the lubrication system could result in serious injury, including skin injection and amputation. This device has an automatic timer that activates the lubrication system pump when power is connected or when exiting the programming function. Before you install or remove the Lubrication Controller from the system, disconnect and isolate all power to the pump, and relieve all pressure.

1. Select a flat surface to install the Lubrication Controller. Drill mounting holes. See **Mounting Hole Layout**, page 29.
2. Align the junction box with the pre-drilled holes (FIG. 3).

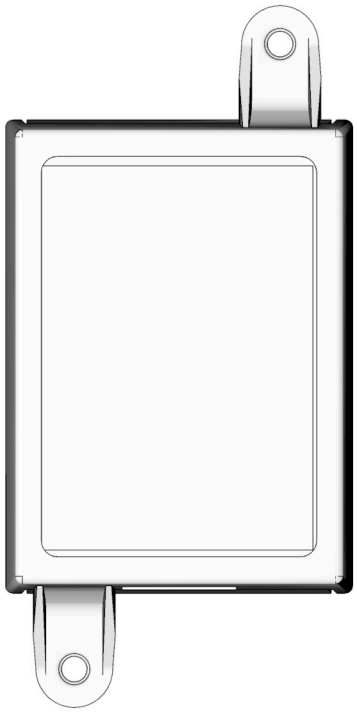


FIG. 3

System Configuration and Wiring

The **System Configuration** Diagrams (Fig 4 - 6), **Sensor Wiring** Diagrams (Fig 8 - 9), and **Wiring Diagram** (Fig 7) show typical Injector, Series Progressive and Dual Line lubrication system configurations.

Refer to Table 1, 2, and 3 to determine the Required System Configuration, Sensor Configuration, and Wiring Diagram to use to set up the system.

Table 1: System Configurations

System	Figure	Page
Injector	4	6
Series Progressive	5	7
Dual Line	6	8

Table 2: Sensor Wiring Configurations

System	Figure	Page
Dry Contact	7	10
Source Switch	8	10

Table 3: Modes of Operation

Mode	Power	Figure	Page
Time ON/Time OFF	DC	9	10
Cycle ON or Pressure ON/Time OFF	DC	9	10
Low Level Switch		9	10

System Configuration

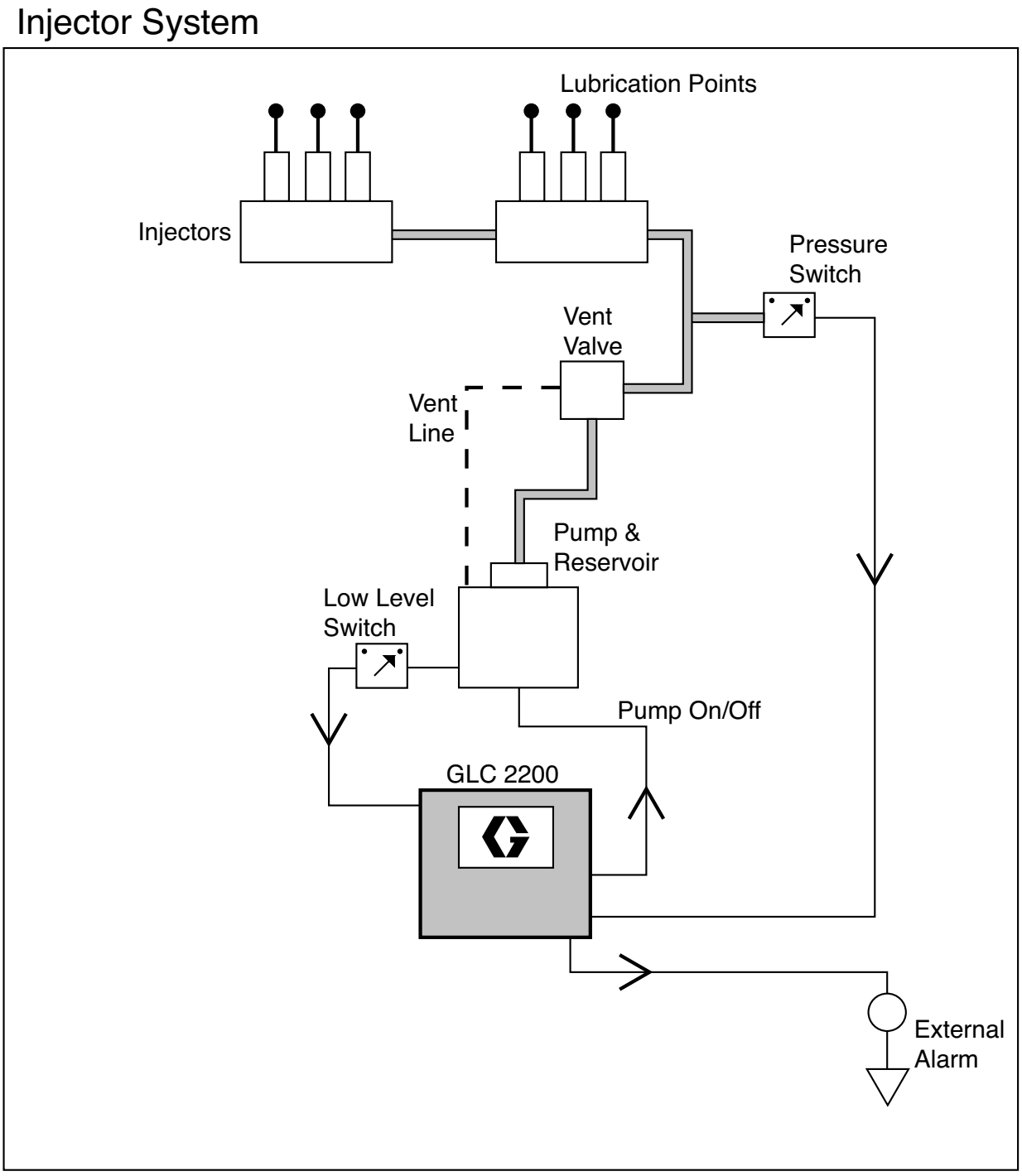


FIG. 4: Injector System

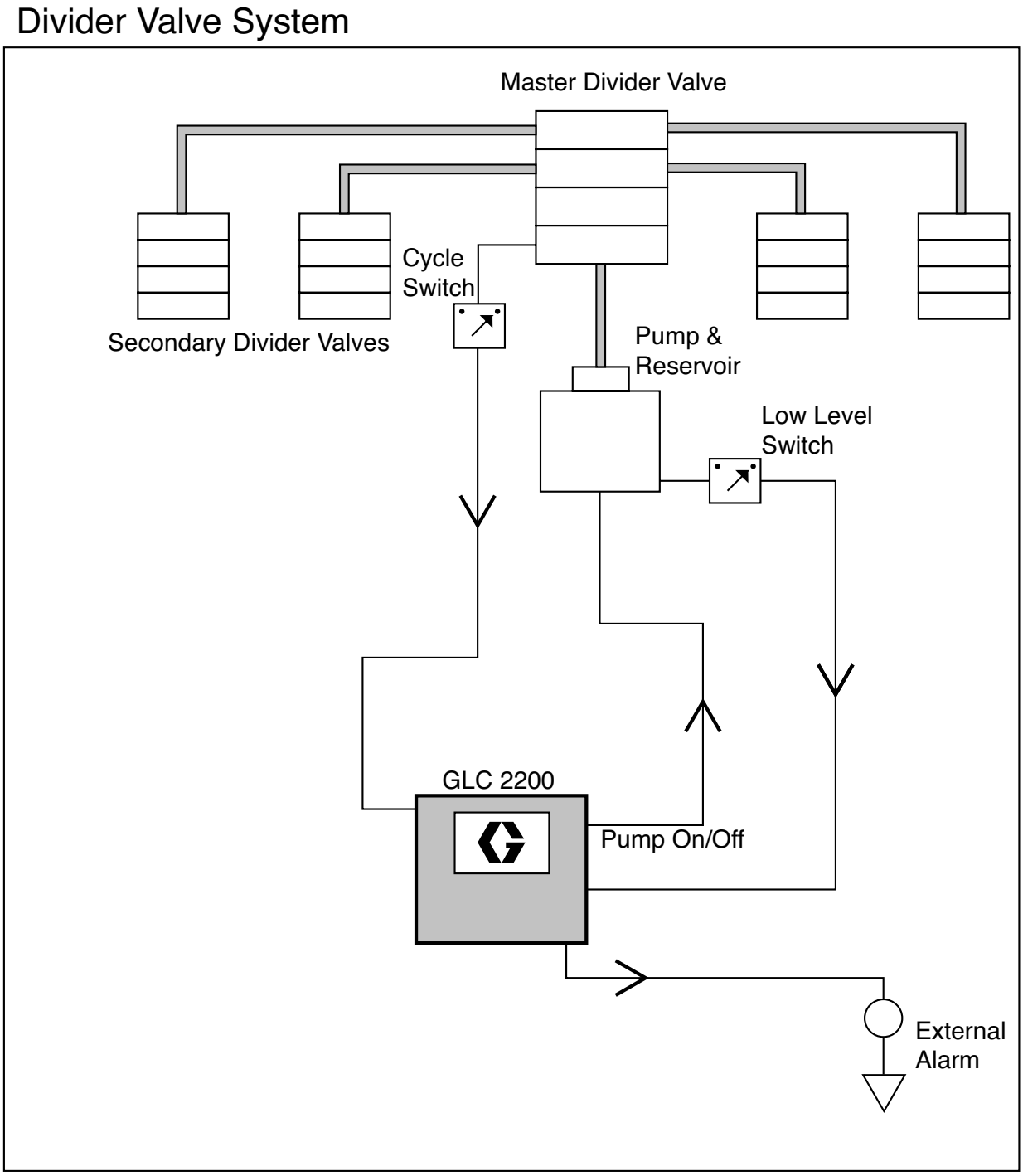


FIG. 5: Divider Valve System

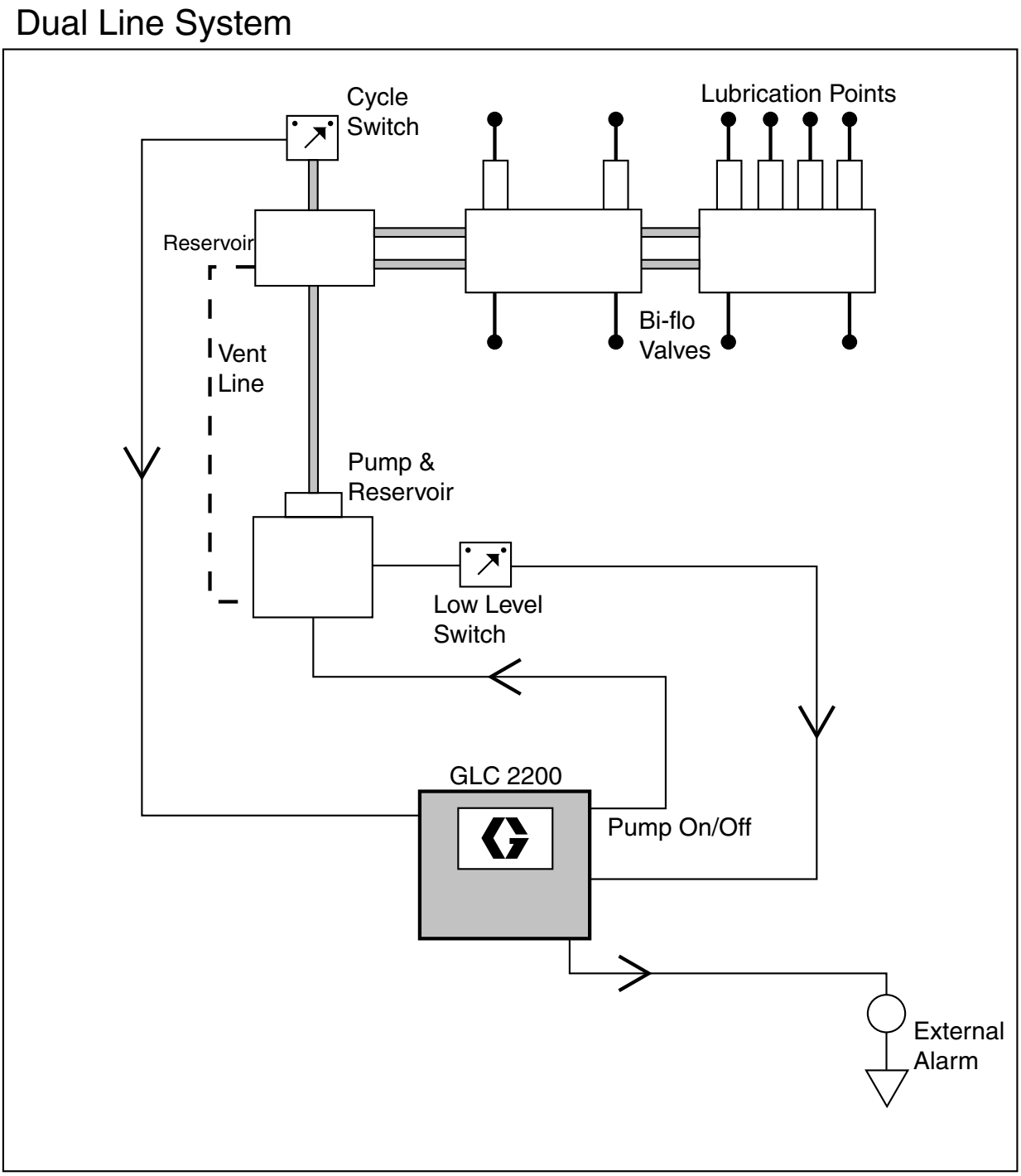


FIG. 6: Dual Line System

Wiring Diagram

Modes of Operation: Optional I/O Wiring Diagram

Used with all modes of GLC2200 Operation

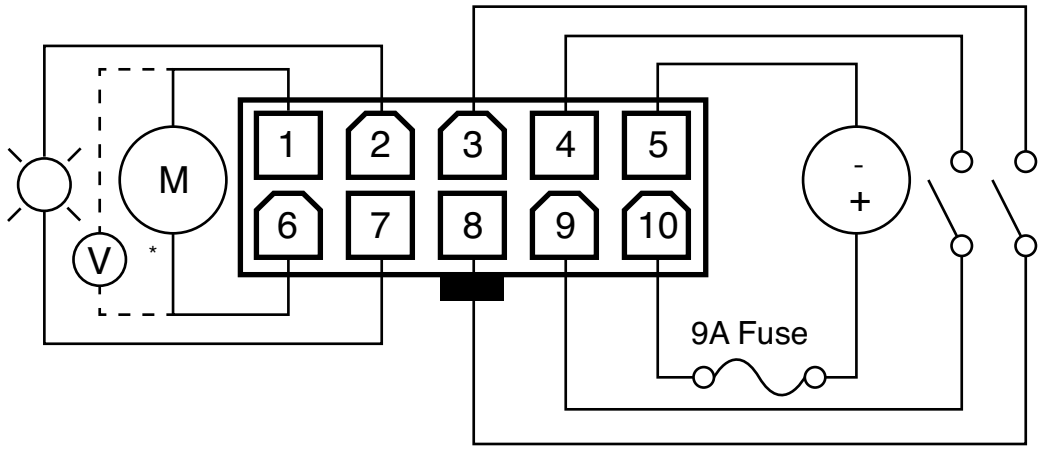


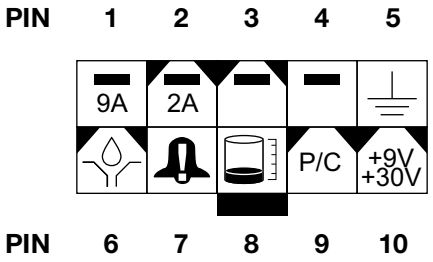
FIG. 7

*Normally open vent valve for use with Injector-based systems

Wiring Key

Pin	Description	+/-
1	Pump	-
2	Alarm	-
3	Low Level	-
4	Pressure/Cycle Switch	-
5	Voltage Input	-
6	Pump	+
7	Alarm	+
8	Low Level	+
9	Pressure/Cycle Switch	+
10	Voltage Input	+

Connector Identification Label



Sensor Wiring

DRY CONTACT SWITCH Configuration

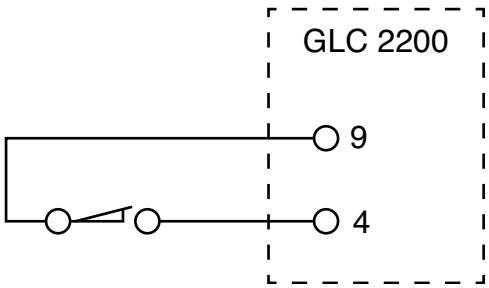


FIG. 8

SOURCE SWITCH - 2 or 3 Wire Type Configuration

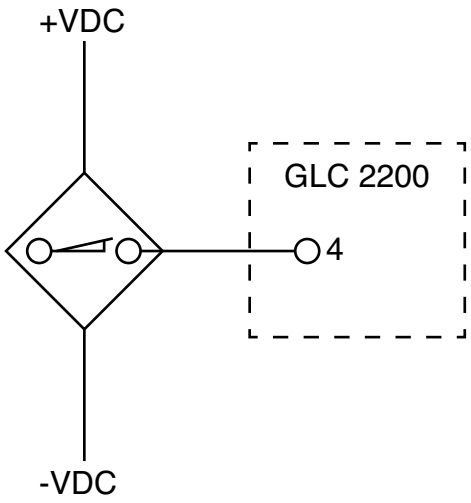


FIG. 9

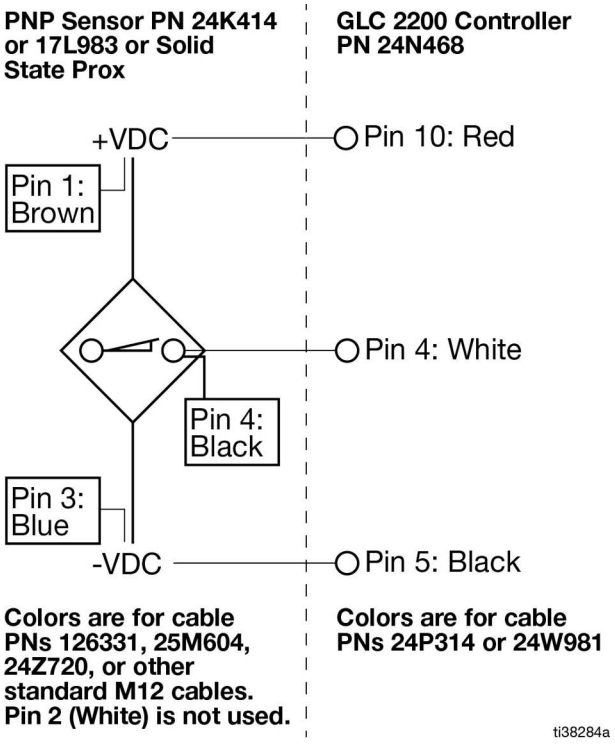

PNP Sensor PN 24K414 or 17L983 or Solid State Prox
GLC 2200 Controller PN 24N468
+VDC
Pin 10: Red
Pin 1: Brown
Pin 4: White
Pin 4: Black
Pin 3: Blue
-VDC
Pin 5: Black
Colors are for cable PNs 126331, 25M604, 24Z720, or other standard M12 cables. Pin 2 (White) is not used.
Colors are for cable PNs 24P314 or 24W981
ti38284a

FIG. 10

Setup

Entering SETUP MODE

Press both the UP and DOWN arrow buttons together for three seconds.

NOTE**:**

- If a button is not pushed for one (1) minute, the controller returns to the start of an OFF cycle.
- Setting changes are not stored unless programming is completed and SETUP MODE is exited normally by pressing the ENTER button.
- A blinking dot below the HH, MM, SS, or ## indicates the field currently being programmed.

PIN Code (Series E or later models only)

NOTE**:** If, after entering SETUP MODE, four zeros are displayed, the unit has a PIN Code lockout enabled. See Entering a PIN Code to Access SETUP MODE for instructions on entering a value.

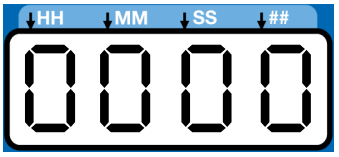
Entering a PIN Code to Access SETUP MODE

The controller does not require a PIN code to access the programming features of the unit. However, to protect the program settings, an option for adding PIN Code authorization is available. The instructions for setting a PIN Code are provided in the Advanced Programming section of this manual. See page 22.

To enter the PIN Code:

1. Press both the UP and DOWN arrow buttons for 3 seconds.

2. Four zeros appear on the display, indicating the system requires a PIN Code to access the SETUP MODE.



3. The cursor automatically positions to enter the first character of the PIN Code. Use the UP and DOWN arrow buttons to move up and down through the numbers 0-9 until the first number in the PIN code is displayed in the field.

4. Press the ENTER (right arrow) button to set the number. The cursor automatically moves to the next number field.

5. Repeat steps 3 and 4 for each PIN Code prompt field.

If the PIN Code entered is correct, the unit enters SETUP MODE.

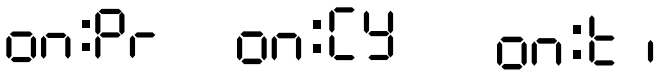
6. Press the ENTER (right arrow) button to set the number. The cursor automatically moves to the next number field.

   NOTE**:** A blinking field on the display indicates the unit is in SETUP MODE. In RUN MODE the numbers on the display will not blink.

If the PIN Code is entered incorrectly, the unit displays “Eror” and will do a power cycle.

Programming ON Duration

on:Pr, on:CY or **on:ti** appears on the display identifying the function being programmed (see below).

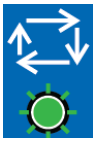


The LED illuminates below the related symbol on the controller to indicate the active function.

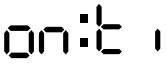
NOTE**:** Selection **on:Pr, on:CY** or **on:ti** designates the way the pump run time is controlled:

- **on:Pr** - Pressure Control, reaching a specific pressure threshold measured by an external pressure switch

- **on:CY** = Cycle Control, completing a specific number of cycles of an external prox/cycle switch



- **on:ti** = Time Control, a specific duration of time elapses



Pressure Control (on:Pr) ON Setup

1. Use the UP or DOWN arrow button until **on:Pr** displays.

2. Press the ENTER button.

3. Pressure control is an ON / OFF selection only. After pressing the ENTER button, the controller saves the Pressure Control information and moves to setting **Backup Time**, page 15.

Cycle Control (on:CY) ON Setup

1. Use the UP or DOWN arrow button until **on:CY** displays.

2. Press the ENTER button.

The first number displayed after the **on:CY** is entered, blinks. This indicates the device is ready to program the number of cycles.

NOTE**:** The cycle entry is a 2-digit number. Enter a leading zero (0) in the first field if the number of cycles is fewer than 10.

3. Program the cycles by pressing the UP or DOWN arrow button to move up or down through the numbers 0 to 9.

4. When the correct first digit is displayed, press the ENTER button.

The cursor automatically moves to the second number field and flashes. Use the UP or DOWN arrow button to scroll through the numerals 0 to 9 until the desired number appears in the second cycle number field.

5. Press the ENTER button. After pressing the ENTER button, the controller saves the Cycle Control information and moves to setting **Backup Time**, page 15.

Time Control (on:ti) ON Setup

1. Use the UP or DOWN arrow button to cycle through until **on:ti** displays.

2. Press ENTER.

3. To set the ON time use the UP or DOWN arrow button to scroll through the numerals 0 to 5 until the desired number appears in the first Minutes (MM) field.

NOTE**:** The MM field is a 2-digit number. Enter a leading zero (0) in the first field if the number of minutes is fewer than 10. The highest number that can be set for the MM field value is 59.

4. Press the ENTER button.

The next MM number field to the right flashes, indicating it is ready for programming.

5. Use the UP or DOWN arrow button to scroll through the numerals 0 to 9 until the desired number appears in the second MM number field.

6. Press the ENTER button.

The next number field to the right flashes indicating it is ready to program the Seconds (SS) fields.

NOTE**:** The Seconds (SS) field is a 2-digit number. Enter a leading zero (0) in the first field if the number of seconds is fewer than 10. The highest number that can be set for the SS field value is 59.

7. Repeat steps 3 to 6 to set the SS fields.

8. Press the ENTER button. The controller automatically switches to the OFF TIME SETUP MODE.

Backup Time

In both Cycle and Pressure Modes, a maximum run Time (Backup Time) for the lubrication period must be set up. If this Time expires before the lubrication is completed an alarm/warning is triggered and the pump stops.

To determine the Backup Time, Graco recommends verifying the length of time to complete a typical cycle and then double that value.

Backup Time is setup after Cycle or Pressure Sensor Setup is complete.

NOTE:

- The LED below the clock in the ON field lights, indicating the Backup Time is being programmed.

- BACKUP (ON) Time is set as minutes and seconds (MM:SS) only.
- The small flashing LED under the MM indicates minutes are being setting.
- The first field (left side of display) blinks indicating the device is ready to be programmed.

Programming Backup Time

NOTE**:** When programming a time of less than 10 minutes a leading zero must be in the first number field and press the ENTER button.

1. To set the ON Time use the UP or DOWN arrow button to scroll through numerals 0 to 5 until the desired number appears in the first MM (minutes) field.

2. Press the ENTER button. The next MM number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN arrow button to scroll through numerals 0 to 9 until the desired number appears in the second MM number field.

4. Press the ENTER button. The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the seconds fields.

5. Repeat steps 1 to 4 to set the SS (seconds) fields.

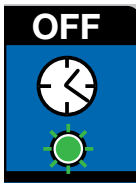
6. After pressing the ENTER button to set the last SS field, all of the programmed ON Time information is saved.

The controller automatically switches to the OFF Time SETUP MODE.

Programming OFF TIME Duration

After setting the parameters for either Pressure (Pr), Cycle (CY) or Time (Ti) ON Modes, the OFF TIME or PUMP REST CYCLE must be set up.

The LED below the OFF TIME Symbol Illuminates.



NOTE**:** The HH field is a 2-digit number. Enter a leading zero (0) in the first field if the number of hours is fewer than 10. The highest number that can be set for the HH field value is 99.

To set the OFF Time:

1. Use the UP or DOWN arrow button to scroll through the numerals 0 to 9 until the desired number appears in the first Hours (HH) field.

2. Press ENTER.

The next HH number field to the right flashes, indicating it is ready for programming.

3. Use the UP or DOWN arrow button to scroll through the numerals 0 to 9 until the desired number appears in the second HH field.

4. Press the ENTER button.

The next number field to the right flashes indicating it is ready to program the Minutes (MM) fields.

NOTE**:** The MM field is a 2-digit number. Enter a leading zero (0) in the first field if the number of minutes is fewer than 10. The highest number that can be set for the MM field value is 59.

5. Repeat steps 1 to 4 to set the MM fields.

6. Press the ENTER button to lock in the last MM field.

The controller automatically switches to the LOW LEVEL SETUP MODE.

Programming the Low Level Setting

NOTE**:** If Low Level is not used (i.e., low level inputs are not connected), configuring the low level setting is still required. The unit's default settings (LL:01) can be used.

1. Use the UP or DOWN arrow button to select the low level setting.

2. Press ENTER.

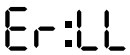
LL:01 - Default

This is the default low level setup when working with a standard, normally open, low level switch. The pump stops when the low level occurs.

The unit enters a low level fault condition after the switch input is closed for more than 1 second when the unit is in the ON portion of the RUN MODE.

When low level occurs:

- The pump stops
- The unit displays ER:LL
- A buzzer sounds
- The alarm LED illuminates
- The alarm output contact is closed



To Clear Alarm Buzzer

Press RESET button to silence the buzzer.

To Clear Low Level Alarm

Resolve low level condition at low level sensor (i.e., fill the reservoir).

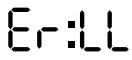
Press and hold RESET button for three (3) seconds.

LL:02 - Paddle Style

This setting is intended for use with “paddle-style” low level sensors (such as the Graco G3 grease units).The pump stops when low level occurs. To ensure a low level condition has been met in this mode, 10 consecutive low level triggers must be detected. If a low level trigger is not detected in 30 seconds of RUN MODE, the count is reset to zero.

When low level occurs:

- The pump stops
- The unit displays ER:LL
- A buzzer sounds
- The alarm LED illuminates
- The alarm output contact is closed



To Clear Alarm Buzzer

Press RESET button to silence the buzzer.

To Clear Low Level Alarm

Resolve low level condition at low level sensor (i.e., fill the reservoir).

Press and hold RESET button for 3 seconds to clear the error.

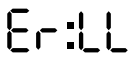
LL:03 - Low Level Warning (Series F or later models only)

This setting configures the controller into low level warning mode. This mode is intended to operate with a standard, normally open, low level switch. This mode is also intended to operate with a low level switch that provides a persistent output.

The enters a low level condition after the switch input is closed for more than 1 second when the unit is in the ON portion of the RUN MODE. The pump continues to operate.

When low level occurs:

- The unit periodically displays ER:LL (approximately 5 out of 10 seconds)



- A buzzer sounds
- The alarm LED illuminates

- The alarm output contact is closed
- The pump controller continues to operate normally

To Clear Alarm Buzzer

Press RESET button to silence the buzzer.

NOTE: The buzzer will sound again after 4 hours if the low level condition is not resolved. Buzzer will also sound again when power is cycled.

To Clear Low Level Alarm

Resolve low level condition at low level sensor (i.e., fill the reservoir). To remove the low level condition from the controller (Er:LL) the low level must be cleared for more than five (5) seconds.

Operation

Run Mode

The controller is in RUN MODE providing the following circumstances are present:

- The controller is not in SETUP MODE.
- An Alarm is not active.

Pressure Mode: Pump ON

The display indicates the amount of backup time remaining (see **Pressure Control (on:Pr) ON Setup**, page 14).

- The Pressure ON LED illuminates and the pump output is enabled as long as the system is in the Pump ON state.
- If the pressure switch input is activated before the Backup Pump On Time expires, the system switches to a Pump OFF state.
- If the pressure switch is NOT activated before the Backup Pump On Time expires the system faults, goes to the Pump OFF state and pauses until the alarm is cleared.
- Pump ON time is shown in MM:SS (minutes:seconds)

Pressure Mode: Pump OFF

The display indicates the amount of time remaining in the pump OFF cycle, counting down the Pump OFF time value (see **Programming OFF TIME Duration**, page 16).

- The pump output is disabled during the Pump OFF time.
- The Time OFF LED is illuminated as long as the system is in the Pump OFF state.
- Pump OFF time is shown in HH:MM (hours:minutes) or MM:SS if the time remaining is less than an hour.

Cycle Mode: Pump ON

The display alternates between the number of cycles remaining and indicates the amount of time remaining in the pump cycle, counting down the Backup Pump ON time value (see **Cycle Control (on:CY) ON Setup** page 14).

- The Cycle ON LED illuminates and the pump output is enabled as long as the system is in the Pump ON state.
- If the Input Cycle Switch is activated the amount of times equal to the Cycle Definition variable before the Backup Pump On Time expires, the system switches to a Pump OFF state.
- If the cycle switch is NOT activated the number of times equal to the cycle definition variable before the Backup Pump On Time expires the system faults, goes to the Pump OFF state and pauses until the Alarm is cleared.
- Pump ON time is shown in MM:SS (minutes:seconds)

Cycle Mode: Pump OFF

The display indicates the amount of time remaining in the pump OFF cycle, counting down the Pump OFF time value (see **Programming OFF TIME Duration**, page 16).

- The pump output is disabled during the Pump OFF time.
- The Time OFF LED illuminates as long as the system is in the Pump OFF state.
- Pump OFF time is shown in HH:MM (hours:minutes) or MM:SS, if the time remaining is less than an hour.

Timer Mode: Pump ON

The display indicates the amount of time remaining in the pump cycle, counting down the Pump ON time value (see Time Control (on:ti) ON Setup page 14).

- The Pump output is enabled.
- Pump ON time is shown in MM:SS (minutes:seconds).

Timer Mode: Pump OFF

The display indicates the amount of time remaining in the pump OFF cycle, counting down the Pump OFF time value (see **Programming OFF TIME Duration**, page 16).

- The Time OFF LED illuminates and the pump output is disabled during the Pump OFF time.
- Pump OFF time is shown in HH:MM (hours:minutes) or MM:SS if the time remaining is less than an hour.

Series F and Later

To enter TEST MODE:

1. Press the LEFT and RIGHT arrow buttons together for three (3) seconds.

2. The unit enters a sequence of ON for the programmed on time, and OFF for one (1) minute until TEST MODE is exited or 10 sequences are completed. If pressure or cycle feedback is selected, it will change to OFF when the SETUP parameters are met. If the amount of cycles or pressure is not met, it goes into the corresponding alarm condition.
3. To exit TEST MODE, press the RESET button once.

Alarm Operation

When an alarm situation occurs:

- pump operation is immediately disabled,
- the front panel Alarm LED illuminates,
- an error code displays
- an audible alarm sounds
- the alarm output contact activates

Press the Reset button once to clear buzzer; press and hold for 3 seconds to clear alarm and switch controller to OFF MODE.

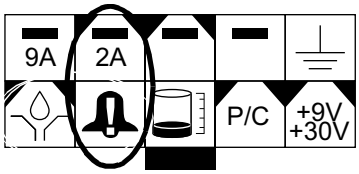
See **Alarm Types and Messages** Table, page 21 for additional information related to alarms and alarm mes-

Alarm Types and Messages

Alarm Type	Error Code	Description	Things to Check/Do
Low Level	Er:LL	Low lubricant level	Refill lubrication reservoir. If low level fault occurs unexpectedly verify wiring and programming setup.
Cycle	Er:Cy	Backup time expired prior to receiving programmed number of cycle counts	Inspect lubrication system for broken or plugged lines. Confirm pump is operating correctly. Inspect wiring and switch. Confirm that sufficient backup time was programmed for environment conditions (e.g., slower system response in cold temperatures) Verify programming.
Pressure	Er:Pr	Backup time expired prior to receiving pressure switch input.	Inspect lubrication system for broken or plugged lines. Confirm pump is operating correctly. Confirm vent valve is operating correctly. Inspect wiring and switch. Confirm that sufficient backup time was programmed for environment conditions (e.g., slower system response in cold temperatures). Verify programming.
		Pressure not relieved at lubrication cycle start.	Confirm vent valve is operating correctly. Inspect wiring and switch.
System Fault	Er:Sy	Internal system error occurred.	Cycle power. If the system error persists the controller may need to be replaced.
Pin Code	Eror	Invalid PIN Code	Confirm the PIN Code is correct.

Advanced Programming (Series E or later models only)

The following Table Identifies each option and when it is used.

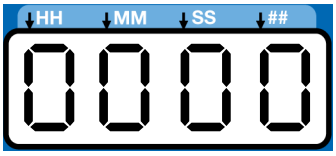
Advanced Option	Setting	Format/ Description	Why Use This?
A1	Lockout Code (Optional)	Secures setup modes with PIN	Prevents unauthorized users from adjusting settings.
A2	Pulsed Mode	**MM:SS** (minutes:seconds) Set Pulse ON Time; then set Pulse OFF time	Pulsed Mode allows the user to program the pump cycle on and off during the normal run mode.
A3	Auxiliary Output Mode	Enables alarm output as secondary output during run mode. 	Auxiliary Output Mode allows the user to operate a second device, such as a solenoid, during the normal run mode. When enabled, the output is on for the entire duration of the ON cycle. **NOTE:** When pulsed mode is enabled, the auxiliary output will remain enabled and will not pulse during the Pump ON cycle. When not enabled, alarm output will operate as an alarm output.
A4*	Low Level Reset Upon Power ON	Changes low level fault upon Power ON. Default: ON	Resets the low level fault upon power cycle. If a low level condition is detected once it starts, it goes back into a low level Alarm. If A4 is OFF, the low level alarm will not reset upon power cycle and it will power up in alarm mode.

*Models Series F and later

Entering Advanced Setup

1. Press the UP arrow button for three seconds.

If a PIN Code is required, the unit will show four zeros.



2. The cursor is positioned to enter the first character of the PIN Code. Use the UP and DOWN arrow buttons to move through the numbers 0 to 9 until the first number in the PIN code is displayed.

3. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

4. Repeat steps 2 and 3 for each PIN Code prompt field.

If the PIN Code entered is correct, the unit enters ADVANCED SETUP MODE.

Selecting Advanced Setup Options

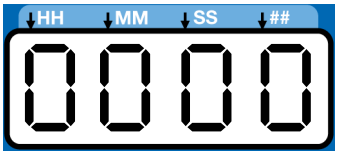
1. Press the UP or DOWN arrow button to move up or down through Advanced Options A1 - A4.

2. Press the ENTER button to set the selection.

A1 - Setting Up PIN Code

A PIN Code can be programmed into the GLC 2200 to protect the settings from inadvertently being changed by unauthorized users.

Four zeros on the display lights, indicating you have entered the PIN MODE.



3. The word A1:OF appears in the display. Press the UP or DOWN arrow button to change this to A1:ON.

4. The cursor is automatically positioned to entered the first character of the PIN Code. Use the UP and DOWN arrow buttons to move up and down through the numbers 0 to 9 until the first number in the PIN code is displayed in the field.

5. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

6. Repeat steps 4 and 5 for each PIN Code prompt field.

7. Press the ENTER button to set the PIN Code and exit Advanced Setup.

A2 - Pulsed Setup

Programs ON and OFF time in MM: SS (minutes and seconds) for pump operation during a normal pump on cycle.

1. To set the ON time use the UP or DOWN arrow button to scroll through numerals 0 to 9 until the desired number appears in the first MM (minutes) field.

2. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

3. Repeat Steps 1 and 2 until all MM:SS fields are programmed.

4. Repeat Steps 1 to 3 to program the OFF time.

NOTE**:** If the pulse mode is enabled, the pump ON LED will blink for the duration of the pulse ON time while the pump is on in RUN MODE. The pump ON LED will remain solid during the RUN MODE for the duration of the pulse OFF time.

A3 - Auxiliary Output Setup

Allows the use of the alarm output during normal pump ON cycle.

1. The word A3:ON appears in the display. Press the UP or DOWN arrow button to cycle between A3:ON and A3:OF.

2. Press the ENTER button to save and exit setup.

- When the Auxiliary Output is enabled, the output will remain powered during the Pump ON cycle whether or not the main pump output is pulsing.

- When the Auxiliary Output is not enabled (OFF) the alarm output will operate as an alarm output.

Series F and Later

A4 - Low Level Reset Upon Power ON

Resets the low level fault upon a power reset.

Selecting Advanced Setup Options

1. The word A4:ON appears in the display. Press the UP or DOWN arrow button to cycle between A4:ON and A4:OF.

2. Press the ENTER button to save and exit SETUP.

- When the Low Level Reset is enabled (ON), the Low Level Alarm will reset upon a power cycle.

- When the Low Level Reset is not enabled (OF), the Low Level Alarm continues to be active upon a power cycle.

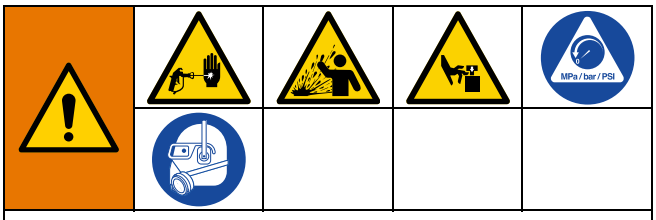
End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Remove motors, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of electronic components with household or commercial waste.

- Deliver remaining product to a recycling facility.

Troubleshooting



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure in the pump manual when you stop dispensing and before cleaning, checking, or servicing the equipment.

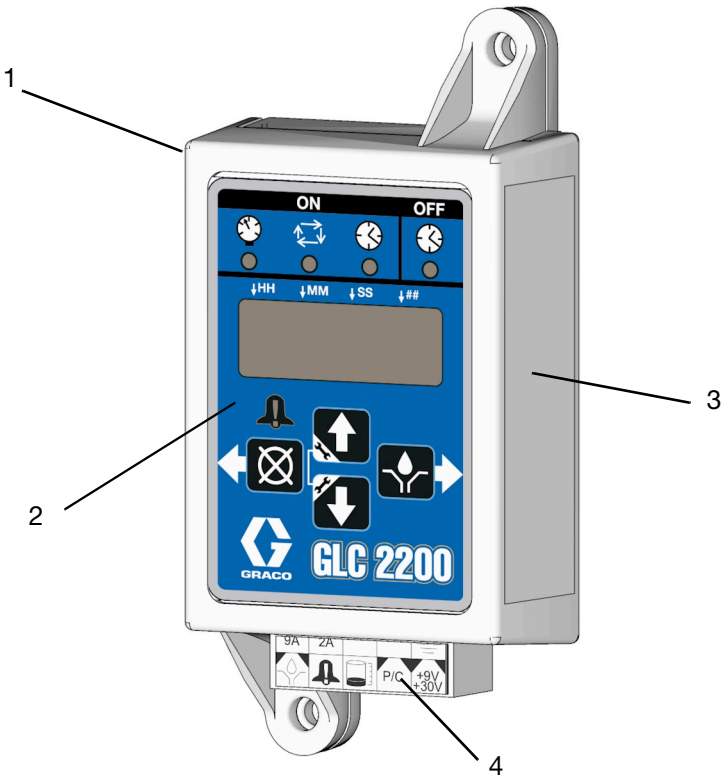
Problem	Cause	Solution
Unit does not power on or the display is dim/unresponsive.	Incorrect or loose wiring	Refer to the **Installing the Lubrication Controller**, page 6.
	Input voltage is out of range	Confirm that the power source is between 9 and 30 VDC.
	Tripped external fuse	Confirm that none of the devices or wiring connected to the controller are causing a short circuit connection. Replace fuse.
The pump is not running during Pump ON.	Incorrect or loose wiring	Confirm that current is being delivered to the pump during pump ON. Refer to **Installing the Lubrication Controller**, page 6. Verify that the system is wired correctly.
	Controller output is incorrect	Confirm the output voltage (PUMP+) from the controller during pump ON is correct (should be similar to input voltage). NOTE: Measure voltage at the controller to make sure it is not a wiring issue causing the problem. If the controller output voltage is never present, the device may need to be replaced.
	Air solenoid failure	Replace the air solenoid.
The reservoir quickly and unexpectedly runs out of grease.	TEST MODE is engaged	Turn off TEST MODE.

Program Settings

Description	Modes of Operation Maximum/Minimum and Additional Comments
PROGRAMMING ON, page 14	Pressure, Cycle, Time
PRESSURE CONTROL, page 14	MM:SS (00:01 - 59:59)
CYCLE CONTROL SETUP, page 14	Cycles: 01 to 99
BACKUP TIME, page 15	MM:SS (00:01 to 59:59)
TIME CONTROL, page 14	MM:SS (00:01 to 59:59)
PUMP OFF SETUP, page 16	Time Pump OFF Time: HH:MM (00:01 to 99:59)
LOW LEVEL, page 16	LL:01: Default single activation LL:02: “Paddle Style” - 10 count activation LL:03: Low level warning

Parts

Ref.	Description	Qty
1	BOX, enclosure	1
2	LABEL, control, overlay	1
3	LABEL, serial, name	1
4	LABEL, connector	1



Accessories

Related Kits

Kit No.	Description
24P314	GLC2200 Wiring Harness Kit
24P686	Single Connector Kit
24P687	Multiple Connector Kit

Technical Specifications

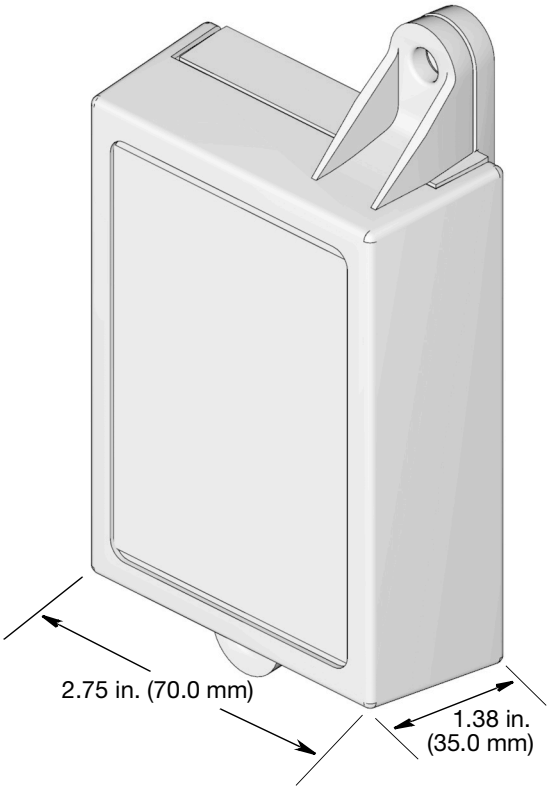
Input Contact	
Power Source DC	9 - 30 VDC
Power Consumption	1 Watt
Cycle/Pressure Control Input (optional)	9 - 30 VDC, Normally open pressure or cycle switch
Lubrication level (optional)	Normally open level switch, closes upon low level
Outputs	
Pump control	Pump Control Voltage = Power Source
Voltage	Pump Control Voltage = Power Source
Max Switching Voltage	30 VDC
Max Switching Current	7A(DC), 9A (Peak)
Min Switching Current	100 mA (DC)
Alarm, normally open	
Voltage	Alarm = Power Source
Max Switching Voltage	30 VDC
Max Switching Current	2A (DC)
Protection grade	IP54 for indoors and vehicle cab use
Enclosure Material	ABS
Membrane Material	Polyester
Maximum Humidity	90% RH (non-condensing)
Operating temperature range	- 40°F to 176°F (- 40°C to 80°C)
Storage Temperature	- 40°F to 176°F (- 40°C to 80°C)

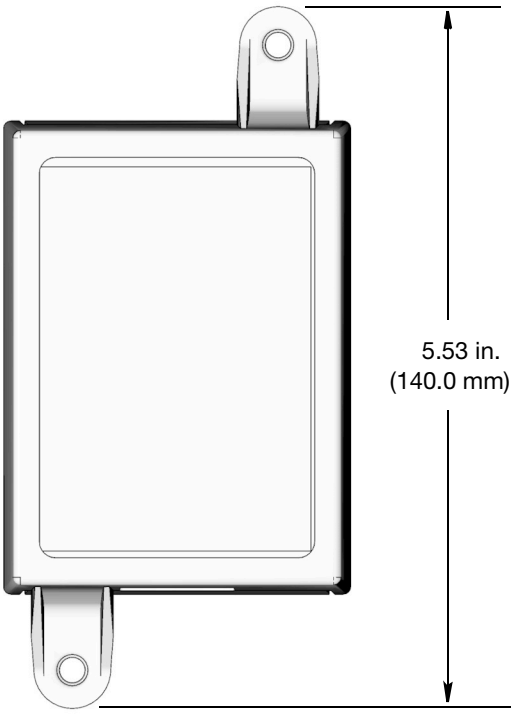
California Proposition 65

CALIFORNIA RESIDENTS

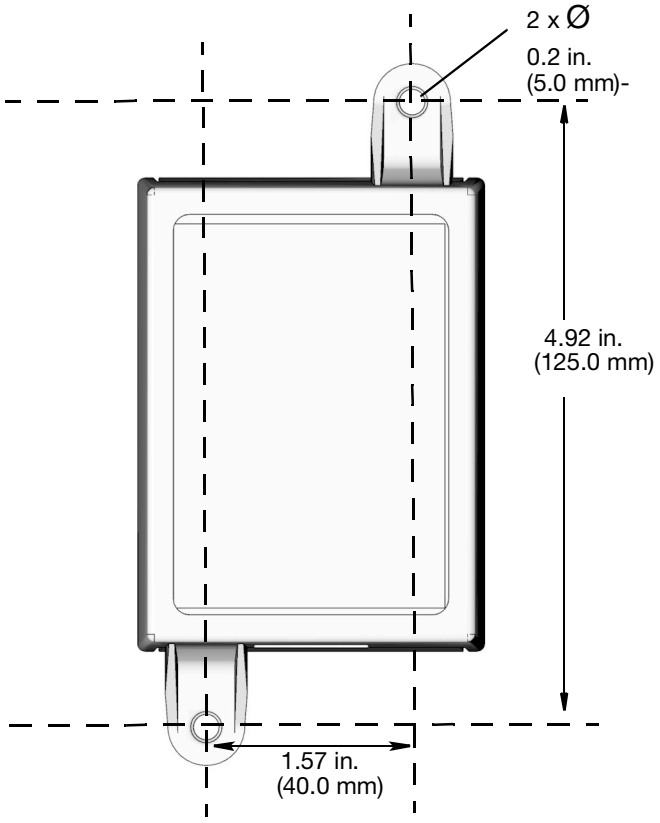
⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Dimensions





Mounting Hole Layout



Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale 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.

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Revision J, June 2023