Kit Instructions

General Industry Supply Systems Accessory Kits

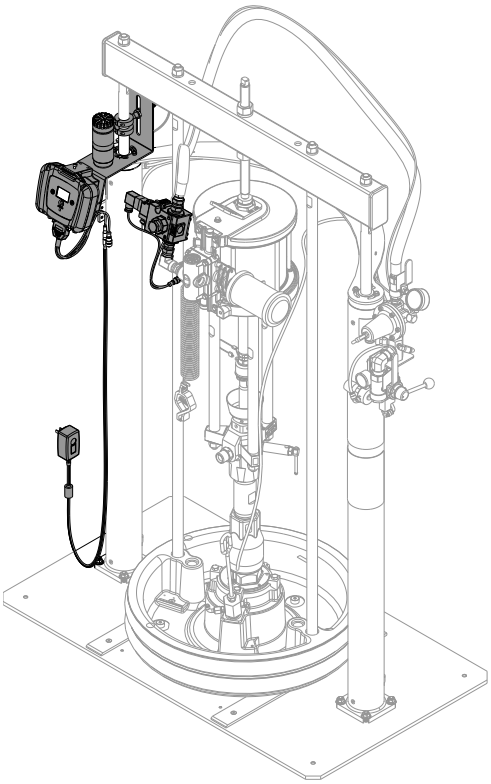
334222B

EN

For use with non-heated bulk supply of medium to high viscosity materials. For professional use only.

Not approved for use in explosive atmospheres or hazardous locations.

Important Safety Instructions
Read all warnings and instructions in this manual and in the General Industry Supply Systems, Operation-Parts manual. Save all instructions.



24W477 System Model Shown

PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

Related Manuals

See General Industry Supply Systems, Operation-Parts manual for related manuals

Accessory Kits

Accessory Number	Accessory Name
24W477	Remote DataTrak™ Machine Monitoring Kit
24W478	Customer Provided Programmable Logic Controller (PLC) Machine Monitoring Kit
127187	Light Tower Kit (Only available with kit 24W477)
24V979	Customer Signal Module Kit (Only available with kit 24W477)

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 symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

WARNING

ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Use only grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- Do not expose to rain. Store indoors.

Component Identification

24W477 Model Shown

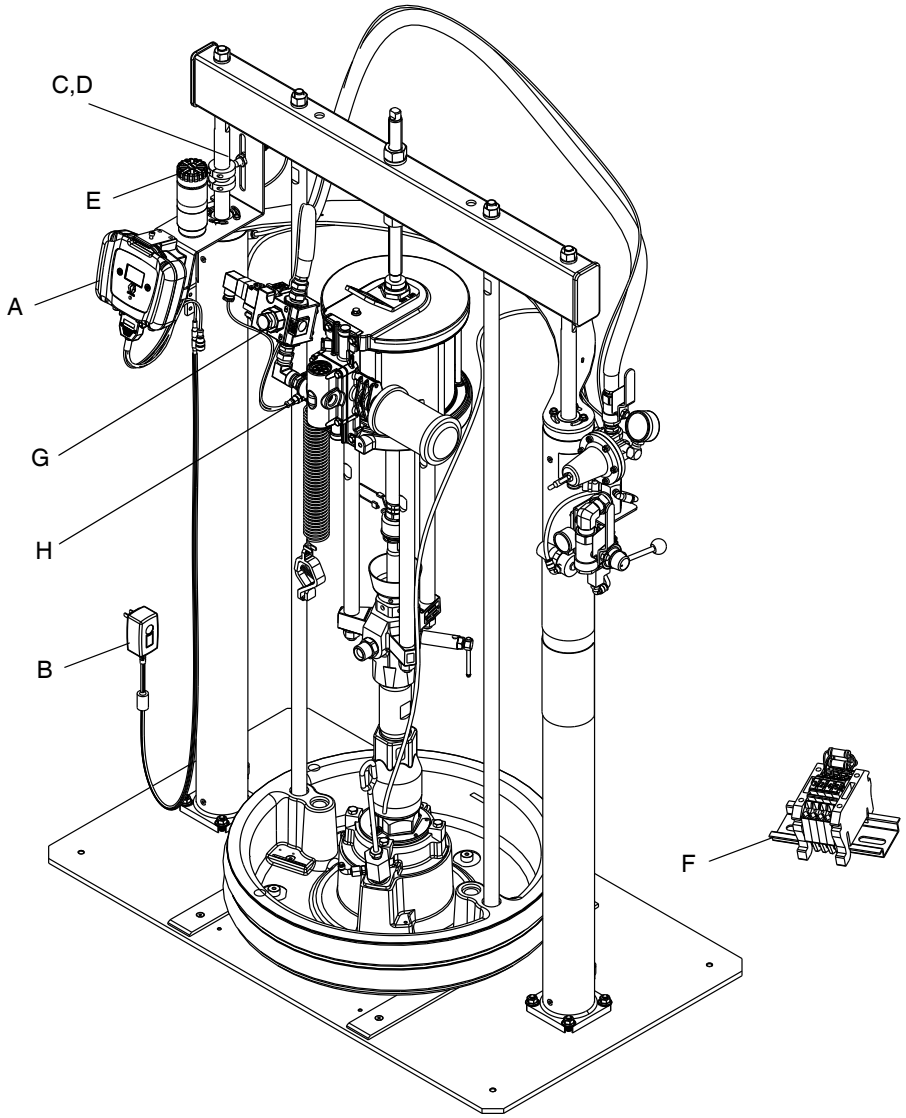


FIG. 1

Key:

A Display Module (Kit 24W477)
Customer Provided PLC Machine Monitoring Kit Control Box (Kit 24W478)
B AC Adapter
C Drum Low/Empty Sensor
D Piston Collars
E Light Tower (Kit 127187)
F Customer Signal Module (Kit 24V979)
G Power Valve
H Cycle Counter

Installation

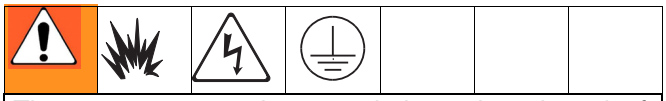
NOTICE

To avoid injury or machine damage, perform **Shut-down Procedure** found within the General Industry Supply Systems, Operation-Parts manual prior to installing any of the following kits.

NOTICE

To avoid machine damage, route all cables to avoid pinching during normal machine operation.

Grounding



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

DataTrak: ground through AC adapter.

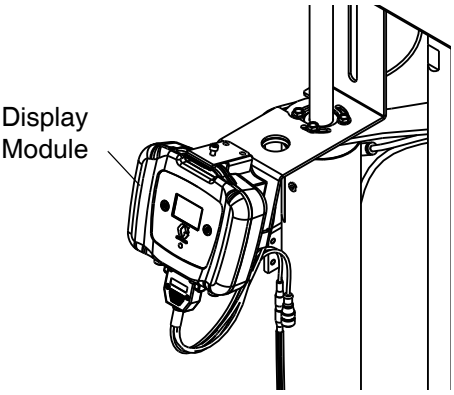
Customer Provided PLC Machine Monitoring Kit: ground through customer supplied grounding source.

Light Tower: ground through DataTrak kit cable.

Customer Signal Module: ground through DataTrak kit cable.

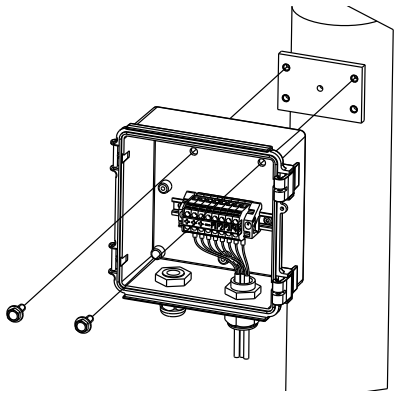
Attach the Monitoring Controls

DataTrak



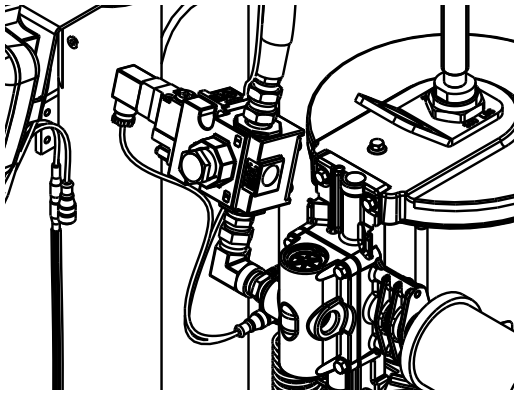
1. Attach the Display Module (DM) bracket to the left air cylinder.
2. Attach the DM to the bracket.
3. Plug the D-Sub harness into the bottom of the DM.

Customer Provided PLC



1. Attach the monitoring control box to the left air cylinder.

Attach the Power Valve

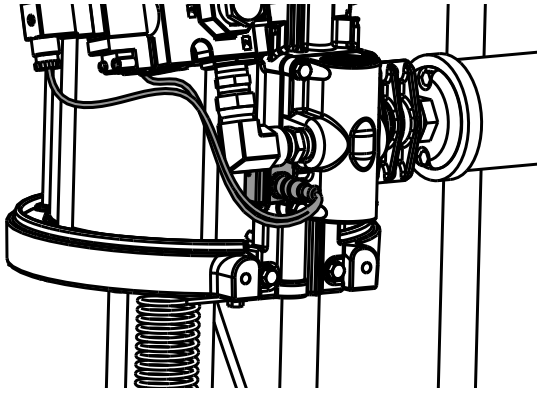


1. Remove the air line from the air motor.
2. Apply thread sealant to all male fittings and install the power valve as shown.

NOTE: Verify that port “1” of the power valve will receive the incoming air supply once installed.

3. Connect the air supply line.
4. **DataTrak:** Connect the power valve to the DIN connector on the D-Sub harness of the remote DataTrak.
   Customer Provided PLC Machine Monitoring Kit: Connect the power valve to the DIN connector of the control box.

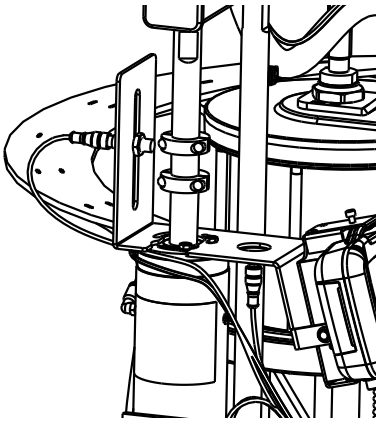
Attach the Cycle Counter



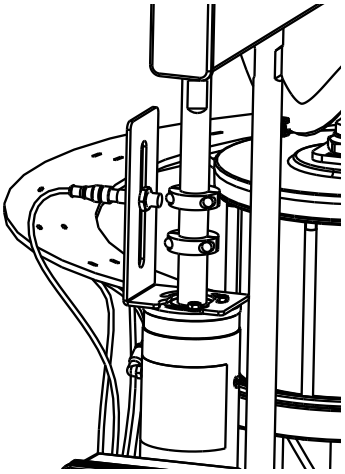
1. Attach the cycle counter to the air motor with the screw provided on the cycle counter.
2. **DataTrak:** Connect the cycle counter to the blue labeled connector on the D-Sub harness.
   Customer Provided PLC Machine Monitoring Kit: Connect the sensor to the 4 meter (13 feet) M12 gray connector of the control box.

Attach and Adjust Drum Low/Empty Sensor

DataTrak



Customer Provided PLC Machine Monitoring Kit

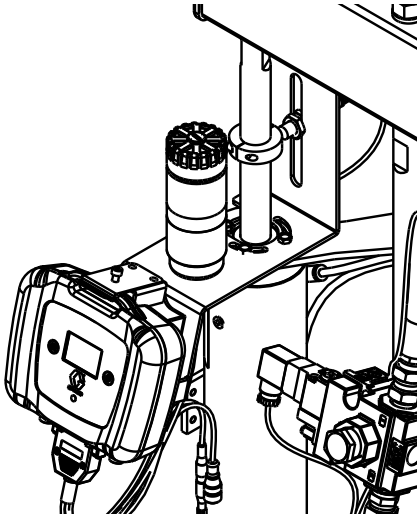


1. Position ram at desired level (low or empty).
2. Attach the sensor bracket to the mounting bracket or ram cylinder.
3. To measure either drum low or drum empty, attach the sensor to the sensor bracket.
4. Attach the piston collar to the ram piston rod, near the top, so it passes in front of the sensor at the correct level for drum low or drum empty.
5. Make precise adjustments by moving the sensor within the slot on the sensor bracket.
6. **DataTrak:** Connect the sensor to the yellow labeled connector on the D-Sub harness.
   Customer Provided PLC Machine Monitoring Kit: Connect the sensor to the 1 meter (3 feet) M12 gray connector of the control box.

Attach the Light Tower (Optional)

Table 1: Light Tower Signals

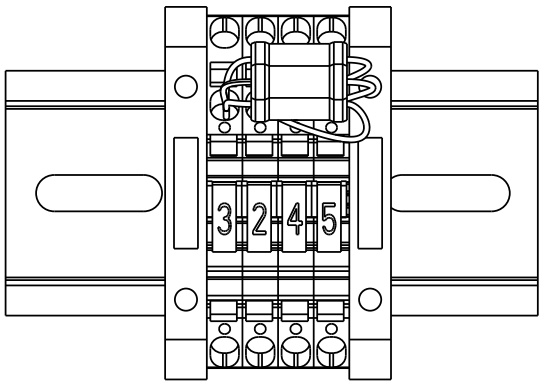
Signal	Description
Yellow flashing	A low priority error exists.
Yellow on	A medium priority error exists.
Red flashing	A high priority error exists.
Red on	The system is shut down due to error conditions.

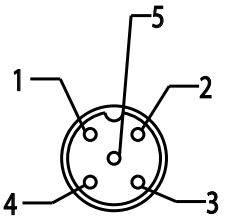


1. Attach the light tower to the DM bracket.
2. Connect the light tower to the red labeled connector on the D-Sub harness.

Attach the Customer Signal Module Kit (Optional)

1. Attach the customer signal module to an accessible location.
2. Using 18 gauge wire or smaller, connect the M12 connector terminals to the module.





M12 Pin No.	Connects to	Module Terminal No.	Function
1		---	---
2		2	Cycle Counter Output
3		3	VDC Common
4		4	Drum Low Output
5		5	General Fault Output

3. Connect the M12 connector to the green labeled connector on the D-Sub harness.
4. Connect the customer provided user interface to the appropriate terminals of the module.

Connect Power to the Monitoring Controls (Optional)

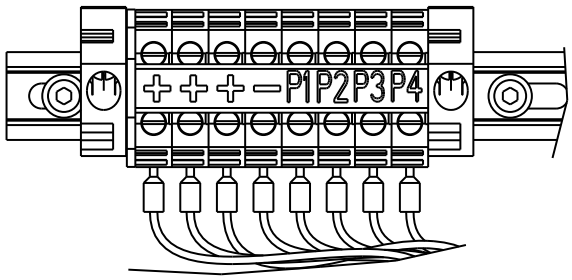
DataTrak

1. Connect the AC adapter to the black labeled connector on the D-Sub harness.
2. Plug the AC adapter into a 100-240V, 50-60 Hz power source.

Customer Provided PLC Machine Monitoring Kit

1. Using 22 gauge wire or smaller, connect the customer provided 24+ VDC power source and signals to the terminals.

NOTE: The low level sensor sends a high signal when activated. Refer to **Schematics**, page 24.



Module Terminal No.	Customer Required Connection	Function
+	24+ VDC	Supply 24+ VDC power to components
+		
+		
-	VDC Common	Low level sensor common
P1	VDC Common with indicator (LED)	Low level sensor activated signal
P2		Cycle counter - Up
P3		Cycle counter - Down
P4	VDC Common with normally open switch	Activate power valve

Remote DataTrak Controls and Indicators

Key for FIG. 2

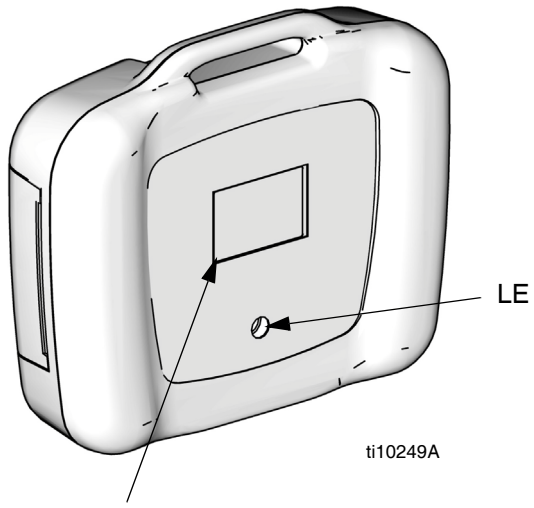
SC Display Screen
LE LED (diagnostic indicator when lit)
FR Flow Rate Units, user settable to:

↕ /min, = cycles per minute

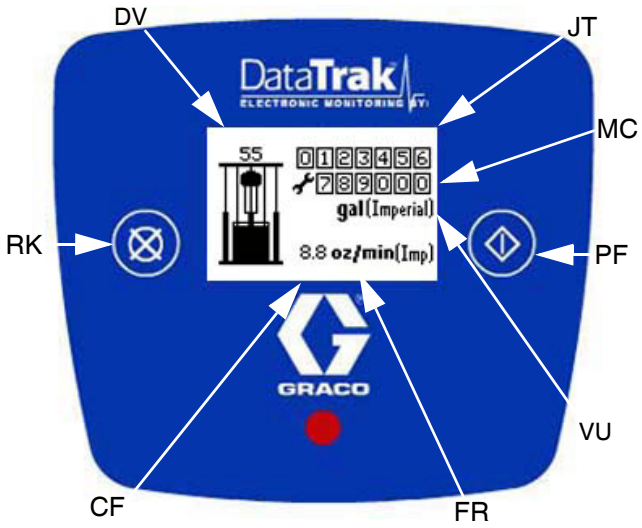
gpm [US] = gallons per minute, United States
gpm [UK] = gallons per minute, United Kingdom
oz/min [US] = ounces per minute United States
oz/min [UK] = ounces per minute United Kingdom
l/min = liters per minute
cc/min = cubic centimeters per minute

VU Volume Units

PF Prime/Flush Key
RK Reset/Cancel Key (also used to scroll)
CF Cycle/Flow Rate
JT Job Total Counter, resettable
MC Maintenance Counter
MS Maintenance Counter Setpoint
DV Drum Volume Remaining
DS Drum Size
DF Drum Fill Volume
RT Runaway Protection (enable/disable)
RS Runaway Cycle Rate
PV Displacement Pump Volume



Run Mode



Setup Mode

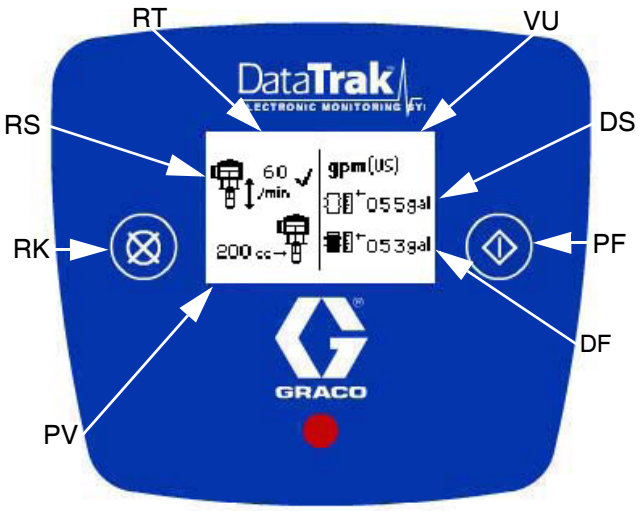


FIG. 2. Remote DataTrak Controls and Indicators

Remote DataTrak Operation

NOTICE

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

Startup

1. Turn the main air ball valve off before turning the remote DataTrak power on.

NOTICE

If the motor air valve is not turned off, the air supply to the motor will automatically turn on via activation of the air solenoid when the display changes from the Splash screen to Run mode.

2. Turn on the remote DataTrak system by plugging the AC adapter into a 100-240V power supply.
3. The Splash screen (FIG. 3) will flash on while the progress bar fills from left to right. It will then go directly to Run mode (FIG. 4).
4. Follow the Start and Adjust Pump procedure in the pump manual.

FIG. 3: Splash Screen

Run Mode

See FIG. 2 and FIG. 4.

The Run Mode screen displays the resettable job total counter (JT), maintenance counter (MC), cycle/flow rate (CF), and the remaining volume in the drum (DV) in both numeric and icon versions.

NOTE: All items are displayed using the defined volume units (VU).

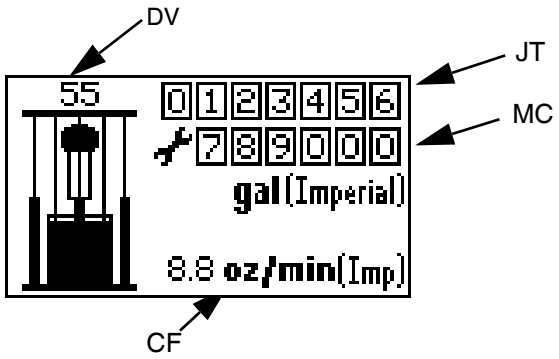


FIG. 4: Run Mode Screen

Key Functions When in Run Mode

1. To enter Prime Mode, press and release ◇.
2. To enter Setup Mode (page 12), press and hold ◇ for 3 seconds.
3. To enter Diagnostic Mode (page 15), press and release ⊗. The system will enter Diagnostic Mode only if there are active warnings/alarms.
4. To reset the job total counter, press and hold ⊗ from Run Mode for 3 seconds.

Prime Mode

See FIG. 5.

1. Press ◈ to enter Prime Mode screen. The Prime symbol (PS) will appear in the display and the LED (LE, FIG. 2) will flash.

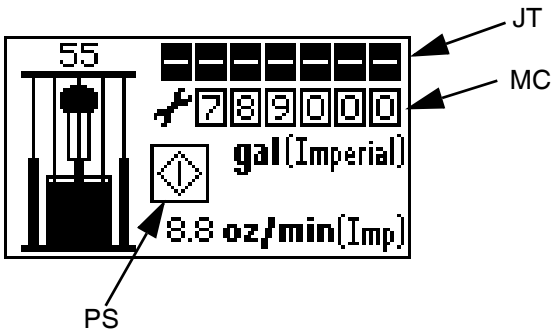


FIG. 5: Prime Mode Screen

2. While in Prime Mode, the job total counter (JT) is blank and will not count. However, the maintenance counter (MC) will continue to decrement.

3. When a new drum is installed, press and hold ⊗ while in Prime Mode to reset the drum volume remaining (DV) to the drum fill volume (DF).

4. To exit Prime Mode, press ◈. The Prime symbol will disappear and the LED will stop flashing; the screen will return to Run Mode (FIG. 4).

5. To enter Setup Mode, press and hold ◈ for 3 seconds.

Setup Mode

NOTE: If a key is not pressed within one minute of entering a setup screen, the system will return to Run Mode (FIG. 4).

See FIG. 2. Press and hold ◈ for 3 seconds.

- If a password has not been assigned (set to '0000'), the system will go directly to Setup screen 1.

Password Screen

If a password has been assigned (not set to '0000'), the Password screen will appear (FIG. 6). Enter the password to access the Setup screens.

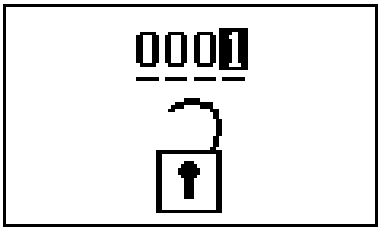


FIG. 6: Password Screen

1. To enter a password, press ⊗ to enter edit mode.

2. Once in edit mode, press ⊗ to scroll through digits.

3. Press ◈ to select the correct digit and move on to the next.

4. When password is correct, press ◈ on the rightmost digit to submit the password.

Setup Screen 1

Use Setup screen 1 to set runaway cycle rate (RS), enable/disable runaway protection (RT), select pump volume per cycle (PV), select flow rate units (FR), enter drum size (DS), and enter drum fill volume (DF). See FIG. 7.

1. Press ◈ to toggle from field to field through the screen.

NOTE: If you go past a field you want to edit, toggle through the remaining fields, exit the Setup mode, and reenter Setup. It is impossible to back up in the Setup screens.

2. Press ⊗ to scroll through available values for each field.

3. Press ◈ again to set the value and move the cursor to the next data field.

Runaway Cycle Rate/Enable Runaway Protection

NOTE: Graco recommends setting runaway cycle rate (RS) to 60 or less. Choose a value that is just above the maximum cycle rate of the application.

NOTE: When runaway protection is enabled (RT), a ✓ will appear on the setup screen. See FIG. 7.

Displacement Pump Volume

Press ⊗ to scroll through the available displacement pump volumes (PV) in cc per cycle. set the values to the pump size installed.

Flow Rate Units

Press ⊗ to scroll through the available flow rate units. See **Key** on page 10. The selected units will be used to display flow rate and volume on the main Run screen and most of the setup values.

NOTE: Initially, choose units that will allow easy definition of the setup values (e.g. drum volume in gallons). Then, return and select the flow rate unit to display on the Run screen. The defined setup values will convert automatically.

Drum Size

Use DS to enter the size of the container.

Drum Fill Volume

Use the Drum Fill Volume field (DF) to enter the exact volume of material in the drum. Contact supplier for exact volume. This value is used to determine the remaining volume in the drum.

4. To move to Setup screen 2, move the cursor to the Drum Fill Volume field (DF), then press ◈ once more.

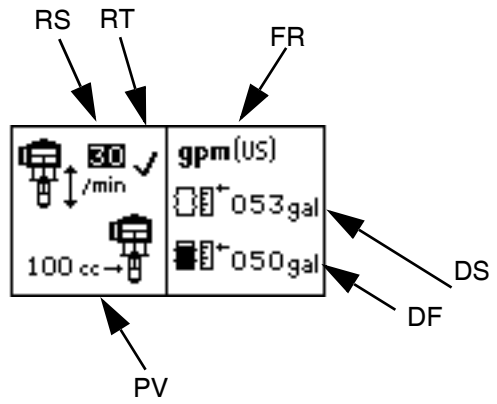


FIG. 7: Setup Screen 1

Setup Screen 2

Use Setup screen 2 to set the maintenance counter setpoint (MC), reset the maintenance counter, enable/disable diagnostic codes (EC), and choose whether the E7 drum icon (DL) will indicate when the drum is low or when the drum is completely empty.

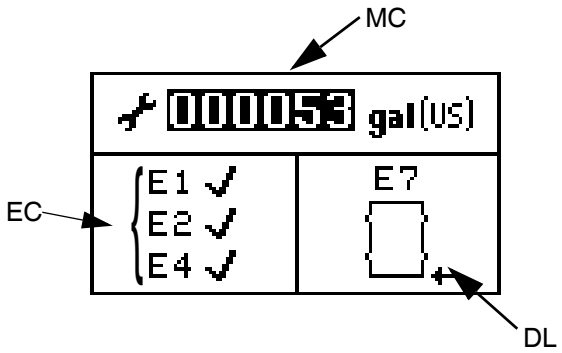


FIG. 8: Setup Screen 2

1. Press ◈ to toggle from field to field through the screen.

2. Press ⊗ to scroll through available values for each field.

3. Press ◈ again to set the value and move the cursor to the next data field.

Maintenance Counter

Use the maintenance counter setpoint (MS) to set the maintenance schedule based on the units displayed. Press and hold ⊗ for 3 seconds when the entire MS field is highlighted to reset the MC value.

4. See page 16 for a description of E1, E2, and E4 diagnostic codes.

NOTE: When E1, E2, and E4 diagnostic options are enabled, a ✓ will appear on the setup screen. See FIG. 8.

Drum Low/Empty Diagnostic Code

The E7 drum icon can represent either a drum low or a drum empty.

Drum Low: A drum low setting will result in a warning condition. The icon will show as an almost empty drum. The light tower and diagnostic LED will signal a warning. The pump will continue to cycle.

Drum Empty: A drum empty setting will result in an alarm condition. The icon will show as a completely empty drum. The light tower and diagnostic LED will signal an alarm. The pump will stop cycling.

Press ⊗ while E7 is selected to toggle between these options.

5. To enter Setup screen 3, move the cursor to the E7 drum setting, then press ◈ once more.

Setup Screen 3

Setup screen 3 displays a non-resettable grand total counter (GT) at the top. Use Setup screen 3 to set the password (PW), assign a time limit for the screensaver (SS), and adjust the LCD contrast (CS).

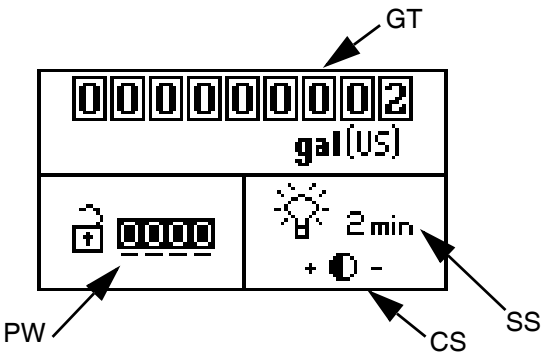


FIG. 9

1. Press ◈ to toggle from field to field through the screen.

2. Press ⊗ to scroll through available values for each field.

3. Press ◈ again to set the value and move the cursor to the next data field.

NOTE: The screensaver turns off the backlight of the LCD after the specified time has elapsed. **A setting of 0 minutes is not recommended** because it turns off the screensaver, leaving the backlight on constantly.

NOTE: When in the contrast setting field press ⊗ to adjust the contrast + (up) or - (down) respectively.

4. To return to the Run screen, move the cursor to the contrast setting, then press ◈ once more. If you entered Setup Mode from Prime Mode, you will be returned to that screen.

Diagnostic Mode

Diagnostics

Remote DataTrak can diagnose several problems with the supply system. When the monitor detects a problem, the LED (LE, FIG. 2) will flash and a diagnostic code will appear on the display. See Table 2, page 19.

If the accessory light tower kit is installed a light will illuminate or flash on the tower. See TABLE 2.

NOTE: Diagnostic screens will become the active screen as soon as the diagnostic code condition is detected. See TABLE 2.

To acknowledge the diagnosis and return to the normal operating screen, press ⊗ once. To clear a diagnostic code, see the section specific to the code.

See FIG. 2. Press and release ⊗ to access the Diagnostic screens. The system will enter Diagnostic Mode only if active warnings/alarms are present.

Runaway Diagnostic Code Screen

See FIG. 10. If pump runaway occurs, the Runaway screen becomes active, stopping the pump.

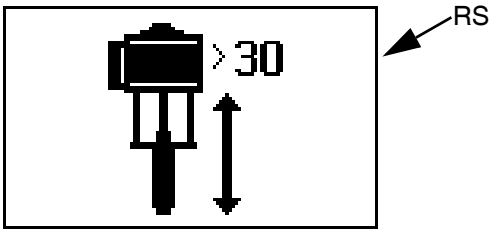


FIG. 10: Runaway Diagnostic Code Screen

1. Correct the condition causing the diagnostic code. See TABLE 2, page 19.

2. Press and release ⊗ to acknowledge the diagnostic code and return to the previous screen.

3. To clear the Runaway diagnostic code:

   a. Press and release ⊗ to enter Diagnostic Mode from Run Mode (FIG. 4).

   b. Press and release ⊗ to scroll to the Runaway Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

   c. Press and hold ⊗ for 3 seconds while on the runaway Diagnostic screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

NOTICE

Clearing this diagnostic code will immediately cause the air solenoid to activate, applying air to the motor.

NOTE: To disable runaway monitoring, go to setup mode and set runaway value to 0 (zero) or toggle (RT) off. See FIG. 7.

Diving Up Diagnostic Code Screen

See FIG. 11. If the pump shows diving up symptoms and the E1 Diagnostic Code is enabled, the Diving Up screen becomes active.

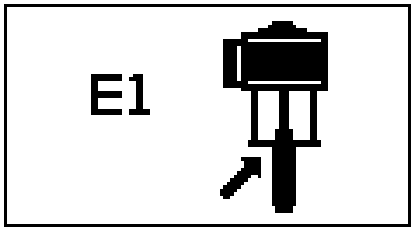


FIG. 11: Diving Up Diagnostic Code Screen

1. Press and release ⊗ to exit the Diving Up screen. This will set the diagnostic code as a standing diagnostic code. A standing diagnostic code has not been cleared, simply acknowledged.
2. Correct the condition causing the diagnostic code. See TABLE 2, page 19.
3. To clear the diagnostic code, navigate to the Diving Up diagnostic screen.
   a. Press and release ⊗ to enter Diagnostic Mode from Run Mode.
   b. Press and release ⊗ to scroll to the Diving Up Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
   c. Press and hold ⊗ for 3 seconds while on the Diving Up Diagnostic screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

Diving Down Diagnostic Code Screen

See FIG. 12. If the pump shows diving down symptoms and the E2 Diagnostic Code is enabled, the Diving Down screen becomes active.

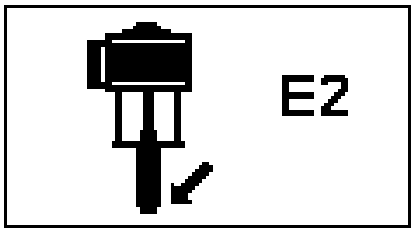


FIG. 12: Diving Down Diagnostic Code Screen

1. Press and release ⊗ to exit the Diving Down screen.
2. Correct the condition causing the diagnostic code. See TABLE 2, page 19.
3. To clear the diagnostic code, navigate to the Diving Down diagnostic screen.
   a. Press and release ⊗ to enter Diagnostic Mode from Run Mode.
   b. Press and release ⊗ to scroll to the Diving Down Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
   c. Press and hold ⊗ for 3 seconds while on the Diving Down Diagnostic Screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

Disconnected Solenoid Diagnostic Code Screen

See FIG. 13. If the system detects a disconnected air motor solenoid and the E4 Diagnostic Code is enabled, the Disconnected Solenoid screen becomes active.

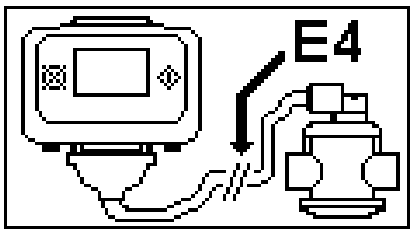


FIG. 13: Disconnected Solenoid Diagnostic Code Screen

1. Press and release ⊗ to exit the Disconnected Solenoid screen.
2. Correct the condition causing the diagnostic code; see TABLE 2, page 19.
3. This diagnostic code will automatically clear when the system detects that the solenoid is connected.

Drum Low/Empty Diagnostic Code Screen

See FIG. 14 and FIG. 15. If the drum low/empty sensor trips, the Drum Low or Drum Empty screen becomes active, depending on which sensor setting is chosen, see page 14.

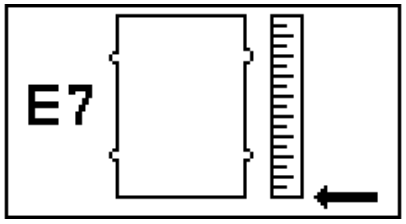


FIG. 14: Drum Empty Diagnostic Code Screen

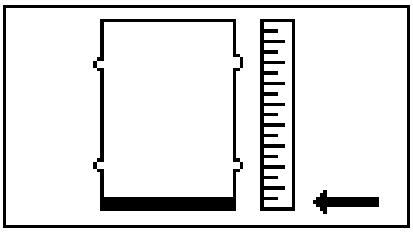


FIG. 15. Drum Low Diagnostic Code Screen

1. Press and release ⊗ to exit the Drum Low/Empty screen. This will set the diagnostic code as a standing diagnostic code. A standing diagnostic code has not been cleared, simply acknowledged.
2. Replace the low or empty drum with a full drum. When the sensor no longer detects a low or empty drum the diagnostic code will clear automatically.

Reed Switch Diagnostic Code Screen

See FIG. 16.

If the system detects an air motor reed switch error, the Reed Switch Diagnostic screen becomes active.

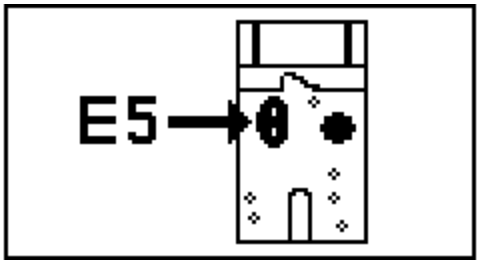


FIG. 16. Reed Switch Diagnostic Code Screen

1. Press and release ⊗ to exit the Reed Switch Diagnostic screen.
2. Correct the condition causing the diagnostic code. See TABLE 2, page 19.
3. To clear the diagnostic code, navigate to the Reed Switch diagnostic screen.
   a. Press and release ⊗ to enter Diagnostic Mode from Run Mode.
   b. Press and release ◇ to scroll to the Reed Switch Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
   c. Press and hold ⊗ for 3 seconds while on the Reed Switch Diagnostic Screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

Maintenance Counter Expired Screen

See FIG. 17.

If the system has counted down to 0 from the setpoint for number of cycles/gallons/liters, the Maintenance Counter Expired Screen becomes active.

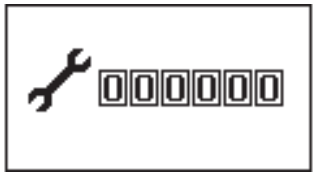
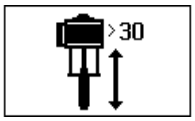
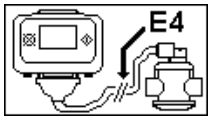
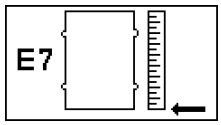
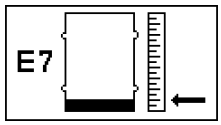
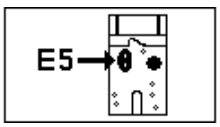
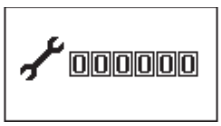


FIG. 17. Maintenance Counter Expired Screen

1. Press and release ⊗ to exit the Maintenance Counter Expired screen.
2. Perform necessary maintenance.
3. Reset the Maintenance Counter. See **Setup Screen 2**, page 13.

DataTrak Diagnostic Codes

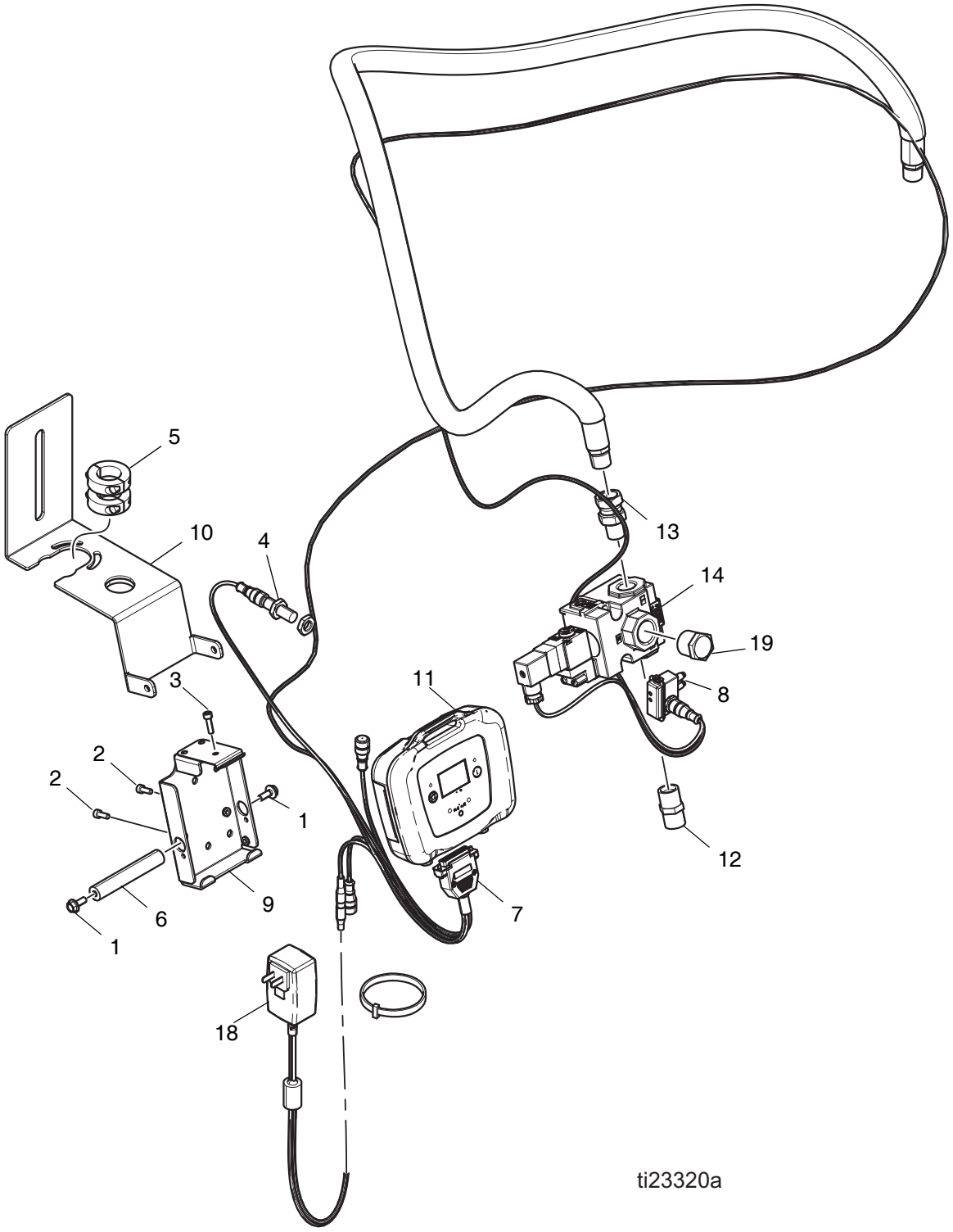
Table 2: Diagnostic Codes

Symbol	Code No.	Code Name	Diagnosis	Cause	LED Flash Code*	Accessory Light Tower Code
		Runaway	Pump running faster than set runaway limit.	• Increased air pressure. • Increased fluid output. • Exhausted fluid supply.	2	Red Solid
	E1	Diving Up	Leak during upstroke.	Worn piston valve or packings.	7	Yellow Solid
	E2	Diving Down	Leak during downstroke.	Worn intake valve or priming rod seal.	6	Yellow Solid
	E4	Disconnected Solenoid	Solenoid is disconnected.	• Solenoid unplugged. • Damaged solenoid wires.	3	Red Solid
	E7	Drum Empty	Drum empty sensor has tripped.	Replace empty drum with full drum to clear.	4	Red Solid
	E7	Drum Low	Drum low sensor has tripped.	Replace empty drum with full drum to clear.	4	Red Flashing
	E5	Reed Switch	The air motor has seen multiple up strokes without a down stroke, or vice versa.	Damaged or disconnected reed switches.	8	Yellow Solid
		Maintenance Counter Expired	Maintenance Counter has counted down to 0 from setpoint.	Number of cycles/gallons/liters specified by setpoint have passed since last reset.	5	Yellow Flashing

NOTE: *LED (LE, page 10) will flash a code, pause, then repeat.

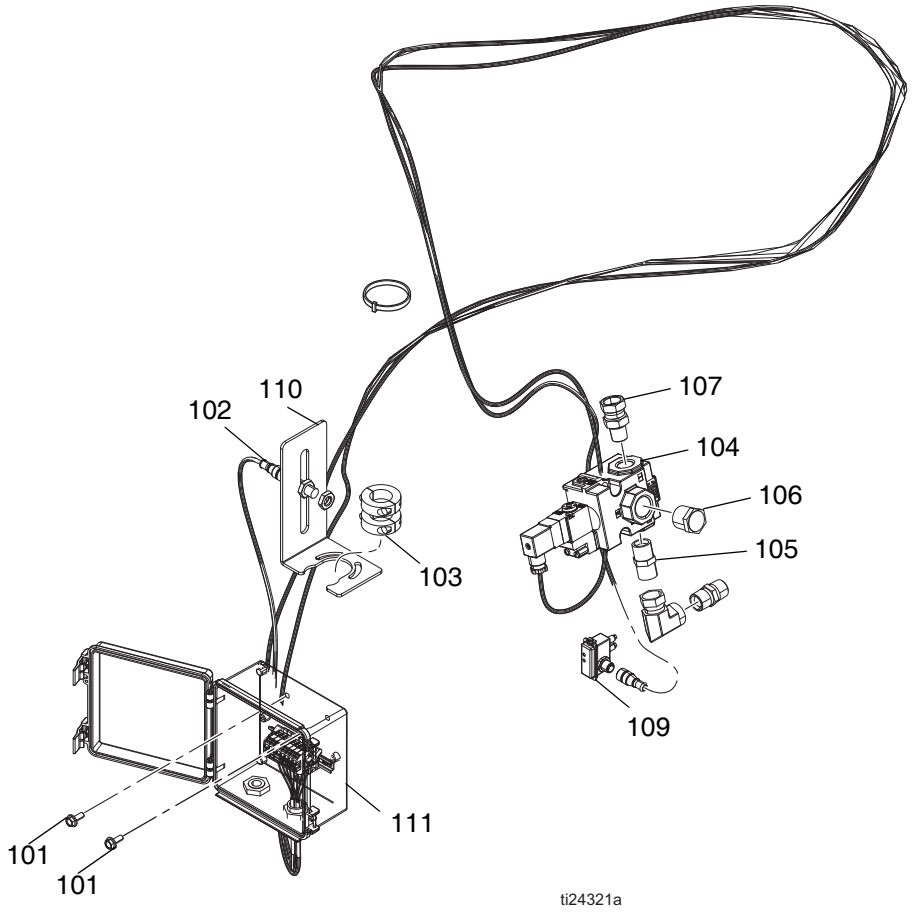
Parts

DataTrak, 24W477



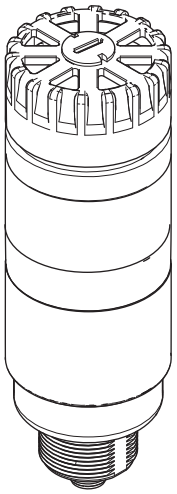
Ref	Part	Description	Quantity
1	114182	SCREW, M6x16mm	2
2	120885	SCREW, M5x14mm	2
3	120904	SCREW, M5x18mm	1
4	122716	SENSOR, inductive, M12	1
5	127141	COLLAR, clamp	2
6	17A532	BAR, bracket, DM	1
7	17A640	HARNESS, datatrak	1
8	24A032	SWITCH, reed assembly	1
9	24A326	BRACKET, mounting, assembly	1
10	24V761	BRACKET, mounting, DM	1
11	255415	PENDANT, datatrak	1
12	158491	FITTING, nipple	1
13	190451	UNION, adapter	1
14	127746	VALVE, power, 1/2 NPT	1
18	127761	POWER SUPPLY, 100-240V	1
19	16K281	VENT, breather, muffler	1
20	17A531	SOFTWARE, GCA	1

Customer Provided Programmable Logic Controller (PLC) Machine Monitoring Kit, 24W478



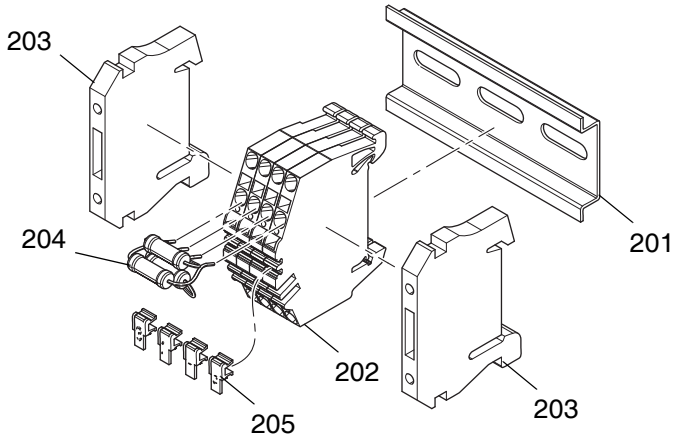
Ref	Part	Description	Quantity
101	114182	SCREW, M6x16mm	2
102	122716	SENSOR, inductive	1
103	127141	COLLAR, clamp	2
104	127746	VALVE, power, 1/2 NPT	1
105	158491	FITTING, nipple	1
106	16K281	VENT, breather, muffler	1
107	190451	UNION, adapter	1
109	24A032	SWITCH, reed assembly	1
110	24W155	BRACKET, mounting, assembly	1
111	24W189	ENCLOSURE, electronics, PLC interface	1

Light Tower Kit, 127187



ti24322a

Customer Signal Module Kit, 24V979

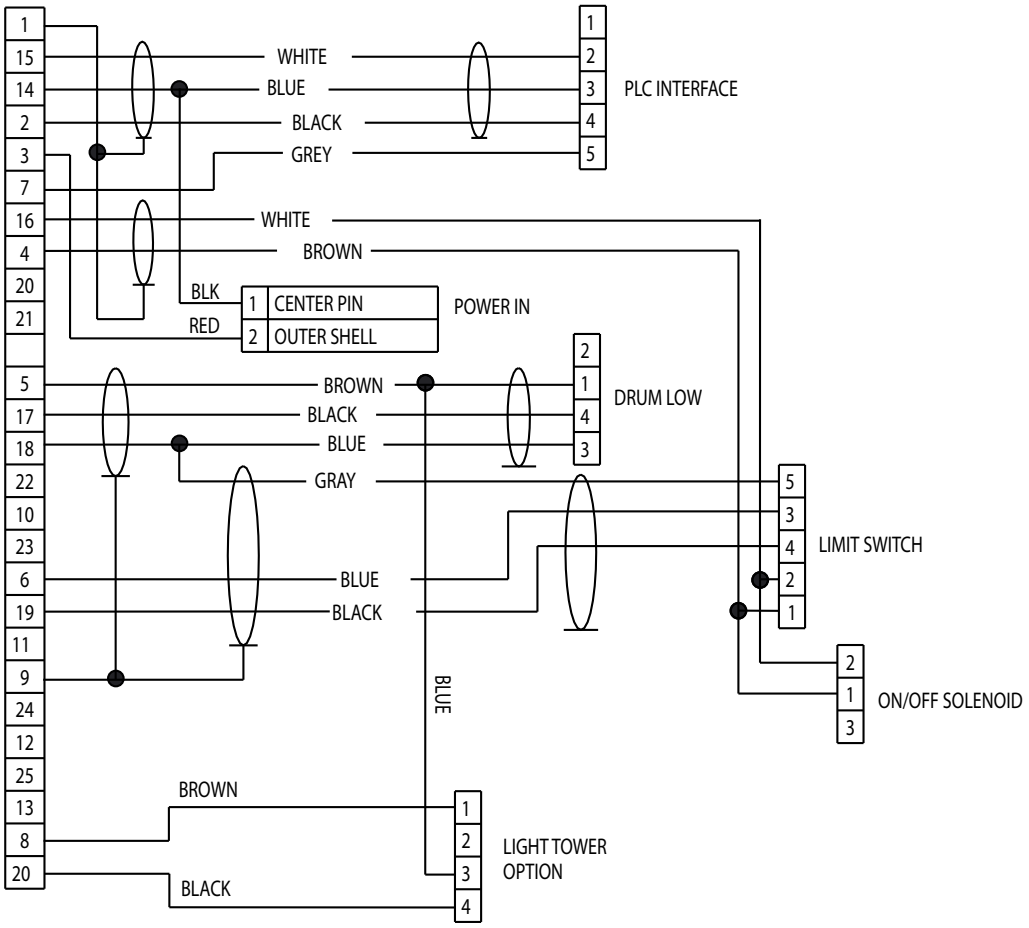


ti24323a

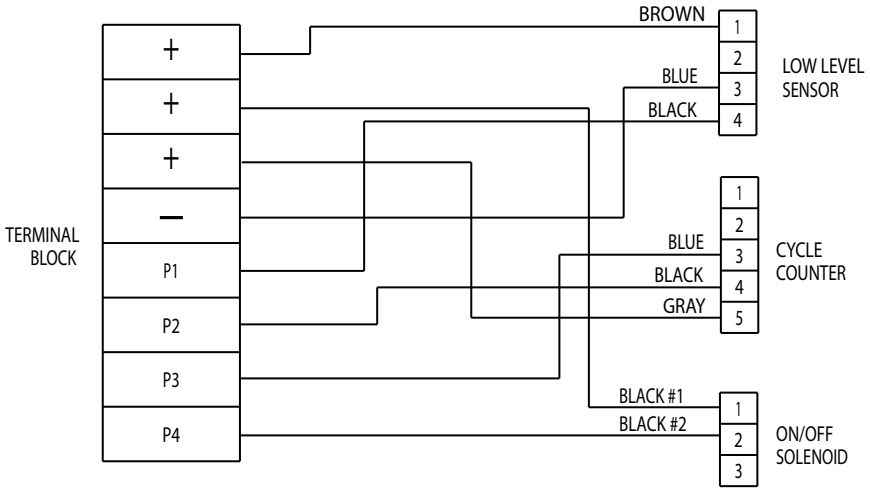
Ref	Part	Description	Quantity
201	---	RAIL, mount	0.25
202	---	BLOCK, terminal	4
203	---	BLOCK, end stop	2
204	---	RESISTOR, 330 Ohm, 3W	3
205	---	COVER, tag	4
206	---	SLEEVE	1
207	---	CONNECTOR, 5 pin	1

Schematics

DataTrak



Customer Provided PLC Machine Monitoring Kit



Technical Data

General Industry Ram - Kit Accessories		
	US	**Metric**
External power supply requirements (DataTrak)		
AC power units	100-240 Vac, 50/60 Hz, single phase, 1 amp	
External power supply requirements (Customer Provided PLC Machine Monitoring Kit)		
DC power units	24 Vdc, 1 amp	

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