



Industrial Gly-Pack Feed Systems Operations & Maintenance Manual



**Record Your Model, Serial Number and
Other Information on the back of this document.**

Manufacturing: Bypass & Filter Feeders, Glycol Feed Packages, Separators & Separator Systems, Tanks, Tank Stands, Chemical Batch Mixers, Corrosion Coupon Racks, Packaged Feed Systems and Custom Systems

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***** WARNING – BEFORE YOU GET STARTED *****

- 1) All fasteners & fittings should be inspected and secured before operation as they may be loosened in transit
- 2) Personnel safety practices should apply at all times
- 3) Safety glasses or face shields and gloves should be worn
- 4) Do not service glycol feed package without disconnecting power
- 5) Close isolation valve and release pressure before servicing any components on the system
- 6) All liquids in system should be drained before servicing

1.0 INTRODUCTION Thank you for choosing General Treatment Products Industrial “Gly-Pack” Glycol Feed Package. This industrial, automated package comes complete and ready to install. In this document we explain the basics for locating, installing, adjusting and operating this glycol fed system. For further information, please contact us at customerservice@gtpcompany.com or call us at the phone number on the cover.

2.0 WARRANTY General Treatment Products Gly-Pack Feed Systems are guaranteed for two years from date of shipment against manufacturing defects in material and workmanship that develop in the service for which they are designed. We will repair or replace a defective part of this system when returned to our factory with freight prepaid; providing that the part is found to be defective upon inspection. We assume no liability for labor and/or other expenses in making repairs or adjustments.

3.0 UNPACKING **Upon receipt of order, inspect package thoroughly.** In the event there was damage incurred in transit you must notify the freight company within **3-5 days of receipt of order**. Once system is inspected for damage and received in good condition, and store indoors in safe place until installing. Damaged incurred before installation is not covered under warranty.

3.1 PRODUCT/ORDER VERIFICATION

MODEL			
GP	55	-E4	-1 -HM
OPTIONS			
-HM	High Temperature Discharge Manifold		
-SC	Surge Suppression Chamber		
-AL	Audible Alarm & Silence Switch		
-DC	Remote Dry Contact on Low Level		
-MX	Mixer & Control Switch		
-HL	High Level Indicator		
Note: See pricing for complete options list			
PRESSURE RANGE			
	CUT-IN	CUT-OUT	PSID
1	10-45 (20*)	20-50 (40*)	10-30 (20*)
2	40-80 (60*)	65-100 (90*)	20-40 (30*)
3	3-10 (8*)	9-30 (15*)	6-20 (7*)
E	Electronic Pressure Transducer 0-100 PSI (Digital Control Only)		
CST	Custom (See back of manual and inside of pressure switch cover to verify).		
PUMP			
D	Dual Pump System		
E	Standard Model		
H	High Temp Model		
4	1.3GPM at 100PSI gear pump		
5	3.0GPM at 100PSI gear pump		
SIZE (GALLONS)			
15	15 gallon PE tank and hinged cover		
30	30 gallon PE tank and hinged cover		
55	55 gallon PE tank and hinged cover		
100	100 gallon PE tank and hinged cover		
BASE MODEL			
GP	Glycol industrial package, tank, hinge lid, stand, low level, pressure switch, pump, pressure gauge and pressure relief.		
DGP	Digital Glycol industrial package, tank, hinge lid, stand, low level, pressure switch, pump, pressure gauge and pressure relief.		
GX	Glycol industrial wall mount package, low level wand, pressure switch, pump, pressure gauge and pressure relief.		
GDW	Glycol industrial double wall tank package, low level wand, pressure switch, pump, pressure gauge and pressure relief.		

Note: Not all options and sizes available on all systems. See pricing for standard models.

4.0 LOCATION AND ENVIRONMENT Although the control panel is rated for outdoor use the gear pump, pressure switch and power cord should not be exposed to direct elements. In the event there is no dry indoor location that is convenient to install the glycol feed system a shelter, awning or shed needs to be installed to validate warranty.

5.0 INSTALLATION Once location is decided on, system need to be securely mounted to concrete base. **Be sure that mounting pad and anchoring bolts comply with local building codes.**

Glycol feed packages come standard with an 8FT power cord. Power supply with no less than 15 amps should be within 8FT of glycol feed package. **Extension cords should not be used at anytime.** Systems can be hardwired, if need. Have only an experienced electrician hardwire system. Wiring diagrams are provided in section 9.0.

5.1 CONNECTING TO THE SYSTEM Glycol feed package should be installed within 10 to 30 feet of system. If system is too close, it is difficult to set low pressure systems. If system is too far, pump outputs will vary based on pipe size, elbows and other fittings.

Glycol feed package is supplied with ½" isolation valve and should be connected to system using a minimum pipe size of ½". **DO NOT INSTALL CHECK VALVES OR PRESSURE REDUCING VALVES BETWEEN GLYCOL FEED PACKAGE AND SYSTEM.** The installation of check valve or pressure reducing valves will cause problems with reading system pressure accurately.

5.2 ADJUSTING THE PRESSURE RELIEF VALVE Turning the pressure valve counter-clockwise will decrease the system pressure relief setting and turning the valve handle clockwise will increase the pressure setting. If an engineer or system designer has not set the system pressure relief for you, you should have the glycol system setting above 3% to 5% higher than the main system pressure relief valve. That way in the case of system over pressure, the contents of the system will not overflow the glycol package.

5.3 ADJUSTING THE PUMP INTERNAL PRESSURE RELIEF (Bronze gear pumps only) Turning the set screw and lock nut counter-clockwise will decrease the pump internal pressure relief setting and turning it clockwise will increase the internal pressure relief setting. This feature is a pump standard, and on our system is only needed when setting the pump in low pressure systems. Over adjustment may cause harm to the operations of the pump. It's normally best to leave this alone. If you have a pump that is not performing, give us a call and we'll be glad to help.

5.4 SETTING THE PRESSURE SWITCH GTP Glycol Feed Packages, when specified, can be factory pre-set to your system requirements. When requested, your factory settings will be listed on label on back of instruction manual and on packing slip. If you are setting the pressure switch on site, please follow the steps below.

STEP 1) close isolation valve and open pressure relief valve.

STEP 2) Start systems in manual and adjust pressure relief valve to cut-in pressure desired. (This should be the low pressure setting)

STEP 3) Turn large nut on pressure switch out (counter-clockwise) until pressure switch is off.

STEP 4) now, turn same nut on pressure switch in (clockwise) until pressure switch is on.

STEP 5) Adjust pressure relief valve to cut-out pressure determined. (This will be the high pressure setting)

STEP 6) If pressure switch has not turned off, turn small nut (counter-clockwise) until pressure switch turns off.

STEP 7) If pressure turn off before you could set it, turn small nut clockwise 2 or 3 revolutions and repeat STEP 6.

STEP 8) Test setting by adjusting pressure relief valve in and out of range before returning system to automatic position.

5.5 SETTING THE DIGITAL CONTROLLER

GTP Economy Digital Glycol Feed Controller is a back lit custom LCD and should not be exposed to direct sunlight. The screen and key image to the right is the home screen. Understanding the Icon based menus will allow you to navigate the system. The buttons below the screen execute the symbols along the lower portion of the screen.

The symbols across the bottom of the screen are:

Alarms Inputs Outputs Maintenance

Other icons include:

Back One Calibration Cancel Check
 Enter Scroll Left Scroll Down Scroll Up
 Value Down Value Up

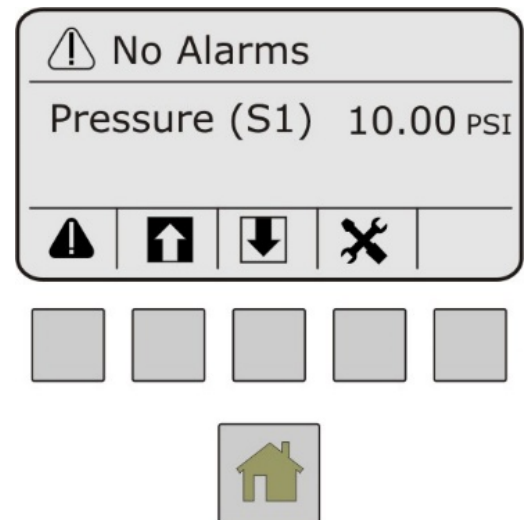
Main/Home Screen Menus

Alarms
Shows Alarms

Inputs
Pressure (S1)
Unassigned (S2)
Low Level (D1)
Flow Meter (D2)

Outputs
Glycol Pump (R1)
Mixer Timer (R2)
Alarms (R3)

Maintenance
Global Settings
Security Settings
Display Settings
File Utilities
Controller Details



5.5A ADJUSTING INPUTS: This is to maintain the pressure sensor, changing the settings for the low level switch or adding the setting for a output flow meter. Press the button below the input icon. The input menu will have all available inputs. Pressure sensor input (S1), Low Level sensor input (D1) and optional flowmeter input (D2).

5.5a1 PRESSURE SENSOR INPUT (S1) MENU: (maintenance) Sensor input menu includes alarms for low and high pressure and allows you to change values such as name and pressure units.

Prompt	Response/Value:
LoLo Alarm	0.00
Low Alarm	0.00
Hi Alarm	100.00
HiHi Alarm	100.00
Deadband	0.50
Cable/Length	3FT
Gauge Wire	22GA/.35MM2
Units	PSI
Sensor Slope	2.0
Sensor Offset	0.0
Low Range	0.0
Hi Range	100.0
Name	Pressure
Type	Generic

5.5a2 2 POINT CALIBRATION MENU: The glycol feed package is factory calibrated, to recalibrate the pressure sensor, always best to do a 2 point. Calibrating to two points allow the sensor to be accurate at low range and at the high range. While the glycol feed system is in the hand mode, get the system to recirculate glycol at a moderately low pressure. Go to the pressure input and press the calibration button under the sensor maintenance menu. Scroll down to the two point calibration and press the enter key. Use these next few steps to recalibrate the system:

Prompt:	Response:
Ok to disable controls?	Y
First buffer value	(enter the current low pressure of the system)
Please remove sensor	(do not remove sensor)
Stabilization	(will take a few moments)
Second buffer value	(increase system pressure and let it stabilize and enter the value)
Place sensor in second value	(do not remove sensor)
Stabilization	(will take a few moments)


Next the controller will show the gain and offset, press "Y" to accept and return to the home screen. If the controller fails to calibrate, please contact the factory for assistance.

5.5a3 LOW LEVEL INPUT MENU (D1): (✘ maintenance) Low level input menu lets you adjust and change settings such as change switch logic and name.

Prompt	Response/Value:
Open Message	Low Level
Closed Message	Level
Interlock	When Open
Alarm	When Open
Name	Levelswtch
Type	DI State



5.5a4 OPTIONAL FLOW METER INPUT (D2): (✘ maintenance) Optional flow meter input allows you to track and monitor your glycol usage, change your volume units and change the flow meter name and type. Flow meter can be added to the front display, contact factory for assistance.

Prompt	Response/Value:
Totalizer Alarm	0g
Reset Flow Total	
Volume/Contact	1gal
Flow Units	Gallons
Name	Flowmeter
Type	Contacting FM

5.5B  **ADJUSTING OUTPUTS:** Adjusting the outputs includes changing the set points and monitoring/changing the alarm relay. Setting the cut in (set point) and the cut out (deadband) is available in the R1 (relay 1) menu. From the home screen press the output menu. Enter the R1 menu and press maintenance button.

5.5b1 GLYCOL FEED OUTPUT (R1) MENU: (X maintenance)

Prompt:	Response/Value:
HOA Setting	(current) ** Make sure the relay is in auto by pressing enter
Set Point	20.00 PSI
Dead Band	10.00 PSI
Output Time Limit	20:00:00 (HH:MM:SS)
Reset Time Limit	
Interlock Channels	(D1 Low Level)
Activate With Channels	(none)
Hand Time Limit	00:10:00 (HH:MM:SS)
Input	Pressure S1
Direction	Force Higher
Name	Glycol
Mode	On/Off

When changing any of the values, scroll down to the setting you wish to change, press enter  and use the arrows to change the setting. Press the check mark  to accept the new setting. Contact factory for assistance with making changes or calibrating your controller.

6.0 PRESSURE AND TEMPERATURE LIMITATIONS: Industrial Glycol Feeders maximum operating perimeters are 150PSI @ 85F. High Temp designated glycol feeders have a maximum rating of 150PSI @ 150F. Some optional fittings, as noted in descriptions, may change limitations, contact factory for assistance.

MATERIAL	MAXIMUM SHORT TERM TEMPERATURE	MAXIMUM OPERATING TEMPERATURE	MAXIMUM OPERATING PRESSURE
Polyethylene (PE)	160°F/69°C	85°F/36°C	N/A
Polyvinylchloride (PVC)	140°F/60°C	85°F/36°C	100PSI/6.9BAR
Chlorinated Polyvinylchloride (CPVC)	180°F/77°C	120°F/49°C	100PSI/6.9BAR
Polypropylene (PP)	180°F/77°C	100°F/49°C	100PSI/6.9BAR
Carbon Steel (CS)	200°F/93°C	200°F/93°C	150PSI/10.3BAR
Cast Iron (CI)	200°F/93°C	200°F/93°C	150PSI/10.3BAR
Brass (BR)	200°F/93°C	200°F/93°C	150PSI/10.3BAR
Stainless Steel (SS)	200°F/93°C	200°F/93°C	150PSI/10.3BAR

Note: Minimum Fluid Temperature is 50°F/10°C.

7.0 ROUTINE MAINTENANCE Routine maintenance in this section is referred to as checking a system once a month until a maintenance schedule can be determined. **All fasteners should be checked for proper operations.** Maintenance and care will depend upon the usage and environment in which the glycol feed package is subject to. The following is the suggested regular maintenance checks required to keep the glycol feed system operating properly.

7.1 TANK AND PLUMBING Periodically check piping, hoses and tank fittings for leaks. Y-strainers and check valves need to be free from debris. Tank should be checked for signs of bulging and cracking.

7.2 GEAR PUMP The pump should be inspected for proper operation and output. Unusual noises and leaks need to be corrected immediately. Pump assembly and disassembly should only be done by qualified personnel. Wear items, like seal, carbon bearings and gears need to be inspected and replaced when needed. Contact us for assembly and disassembly.

Carbon bearing pumps do not need lubrication. Check the motor for lubrication instructions. Our standard motor does not need lubrication, but some custom motors do. Be sure to check lubrication instructions in pump manual. **DO NOT OVER LUBRICATE.** Oil is conductive and can cause harm or electric shock.

7.3 PRESSURE SWITCH The only wear item is the contacts. Make sure there are no shorts or wire connections problems.

7.4 PRESSURE RELIEF VALVE Pressure relief valves need to be free from debris. Disassembling and checking the seating surface for tears and abrasion is all that needed. Improper seating of diaphragm and seal can cause valve leaks.

8.0 PARTS LISTING In the following diagrams, the systems are shown with tables itemizing parts that may be replaced in the field. If further breakdown is needed, consult manufacturer's operations manual or call us for assistance.

8.1 GLYCOL SYSTEM OVERVIEW

PART	GP__E	GP__H	30	55	100
TANK & COVER	P30C-H	C30C-H	X		
	P55C-H	C55C-H		X	
	P100C-H	C100C-H			X
STAND	TS30B	Included in tank above.	X		
	TS55B			X	
	TS100B				X
DISC. MANIFOLD	0122001	0122010	X		
	0122002	0122011		X	
	0122003	0122012			X
SUCT. MANIFOLD	0122020	0122025	X	X	X
PUMP, 1/3HP	GP1.3E		X	X	X
PUMP, 1/2HP	GP3.0E		X	X	X
SUCT. HOSE	0122030		X	X	X
DISC. HOSE	0122035		X	X	X
RELIEF HOSE	0122040		X	X	X
CONTROL PANEL	CPE		X	X	X
RELIEF ADAPTR	0122050	N/A	X	X	X
PRESSURE SWITCH	PS-1		X	X	X
	PS-2		X	X	X
	PS-3		X	X	X
BALL VALVE	BV05P	BV05B	X	X	X
Y-STRAINER	YS05B		X	X	X
CHECK VALVE	CV05C		X	X	X
RELIEF VALVE	RV05B		x	x	X

Dual models use similar items.

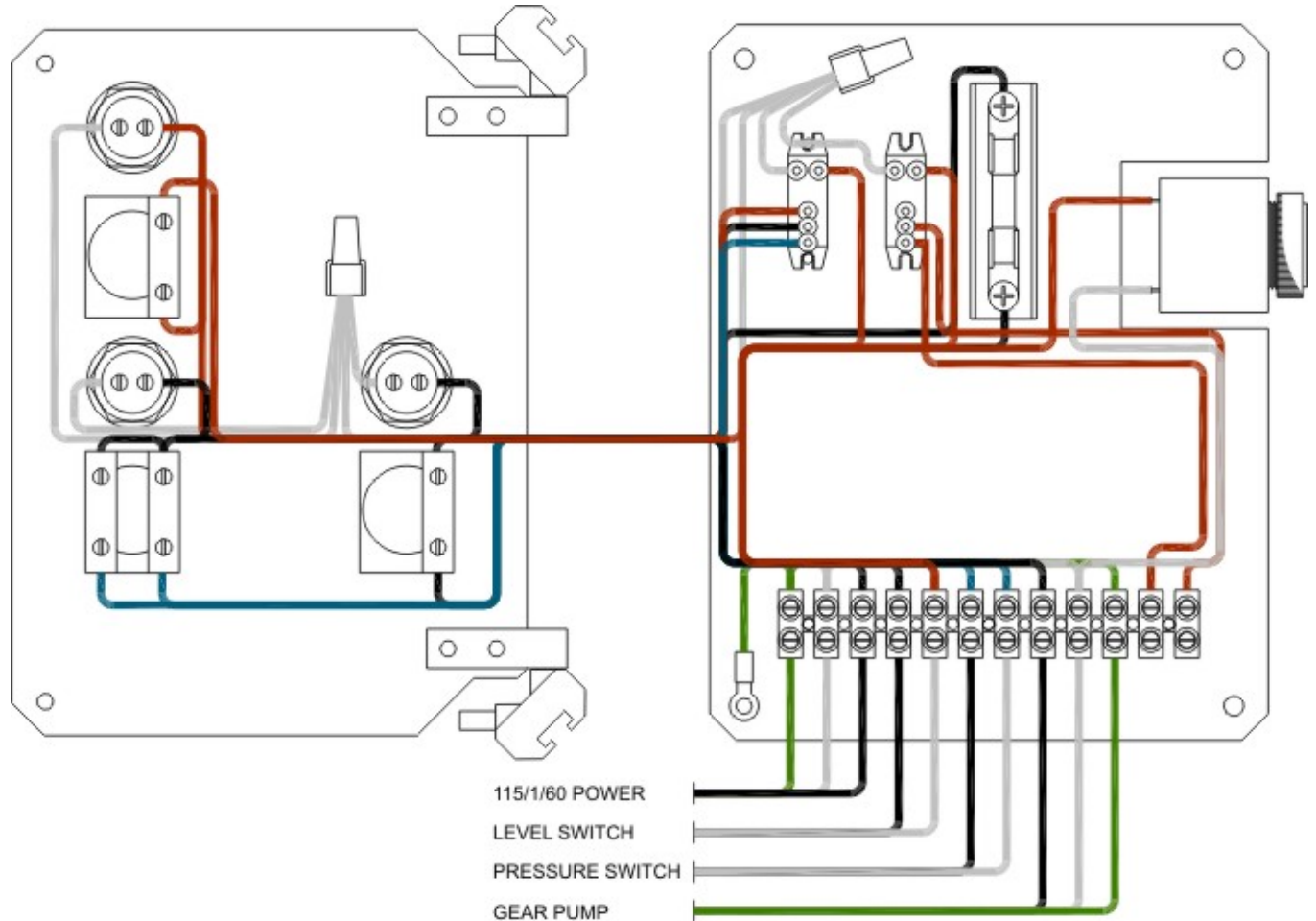
PART	GP__X
FRAME	MBGX
DISC. MANIFOLD	0122005
SUCT. MANIFOLD	0122021
PUMP, 1/3HP	GP1.3E
PUMP, 1/2HP	GP3.0E
CONTROL PANEL	CPE
RELIEF ADAPTR	0122050
PRESSURE SWITCH	PS-1
BALL VALVE	BV05P
Y-STRAINER	YS05B
CHECK VALVE	CV05B
RELIEF VALVE	RV05B

Dual models use similar items.

8.2 CONTROL PANEL

PART	INDUSTRIAL
ENCLOSURE	NE-P
POWER SWITCH	SW-2P
PUMP SWITCH	SW-3P
GREEN LIGHT	LGT-G
RED LIGHT	LGT-R
RELAY	RL-1
FUSE	FS-1

9.0 WIRING The following wiring diagram is for standard model with audible alarm and dry contact. Custom model may follow similar diagrams, but can be different. If you need assistance, contact us and have model number and serial number information ready.



Note: All standard and optional feature diagrams are available through our website, www.gtpcompany.com or you can e-mail us at literature@gtpcompany.com.

9.1 WIRING The following wiring diagram is for economy digital model with audible alarm, motor starter and dry contact. Custom model may follow similar diagrams, but can be different. If you need assistance, contact us and have model number and serial number information ready.

Inputs:

Pressure Sensor:

- Red = TB1 #4
- Black = TB1 #8
- Shield = TB1 #3
- Green = TB1 #7
- White = TB1 #11

Low Level:

- Black = TB2 #8
- Red = TB2 #9

**SH Mech Flow Meter:
(optional)**

- White = TB2 #4
- Red = TB2 #5
- Blue = Not Used

Outputs:

Glycol Pump:

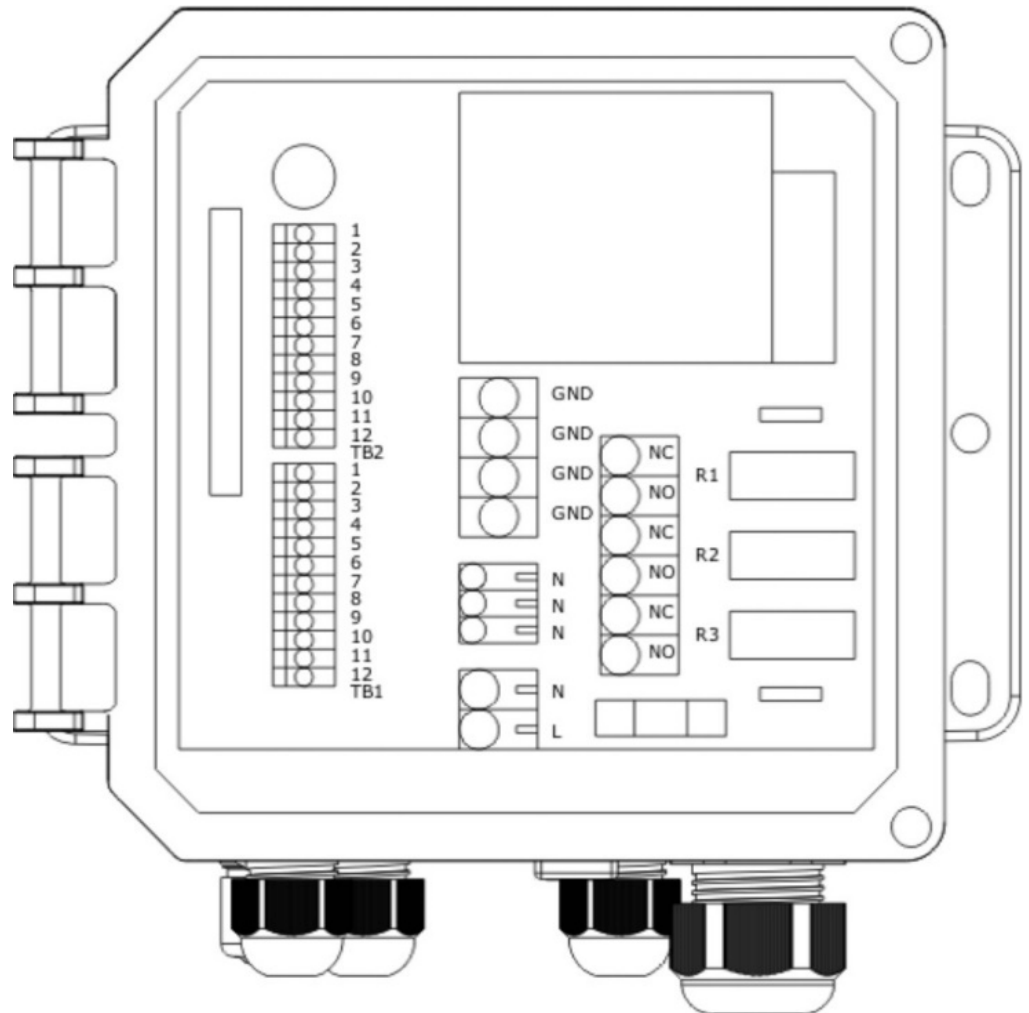
- White = Neutral
- Black = R1 NO

Mixer: (optional)

- White = Neutral
- Black = R2 NO
- Green = GND

Alarm:

- White = Neutral
- Black = R3 NO



10.0 TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE / ACTION
Low flow rate	Piping / equipment is dirty or fouled
	Discharge is restricted or undersized
	Gears are worn
Pump runs, but no fluid	Suction piping is restricted or plugged
	Pump suction valve is closed
	Pump is rotating in the wrong direction
Pressure is low	Line is restricted
	Gears are worn
Excessive noise while pump is in operation	Pump head and gear may be misaligned
	Pump mounting hardware is loose
	System pressure is excessive
Pump does not shut off at low level	Float switch is faulty, defective or damaged
	Low level relay is faulty, defective or damaged
	Wiring is incorrect or shorted
System does not relieve pressure properly	Pressure relief valve is clogged
	Pressure relief valve is set improperly
Pump cycles on and off repetitively	Piping leak on discharge side
	Pressure settings are not adequate for system size pressure

If you are still having trouble, contact us at technical@gtpcompany.com, or you can call us at the number on the front of the Instruction manual.

11.0 NOTES

12.0 PRODUCT LABEL

Model:

Serial Number:
