☞ **PLEASE LEAVE THIS MANUAL FOR OWNER'S USE** ☞

SHIPCO®
LOGIC
CONTROL

TYPE
SLC-C

SHIPCO® Logic Controller
Program Manual
for Condensate Units

Technical Support: (717) 532-7321

Contents

Features

- The controller is equipped with a touchscreen.

- Simply tap menu items or use the *Up* Δ and *Down* ∇ arrow keys to highlight menu options.

- Pressing the *Esc* key will return to a previous screen, previous menu or to cancel an action.

- Pressing the *Enter* **[↵]** key will confirm and execute the action of the highlighted menu item (e.g., an action is to input or select a value, enter a submenu or go to another screen).

- **Live graphical and numeric indication for water level and temperature via the Shipco® Transmitter.**

- **Operates up to 3 pumps.**

    - Alternating control — Automatically changes lead pump on each cycle.

    - Manual control — LEAD-LAG(-LAG2)-OFF selector switch.

    - Test button bypasses control sequence to energize pumps until button is released.

    - Pump graphics change color to indicate status (Green = ON, Red = FAULT, Grey = INACTIVE).

    - Run Cycle Timers with manual reset.

- **Failure indication and protection.**

    - High water alarm indicates overflow.

    - Low water alarm indicates leaking tank.

    - High temperature alarm indicates traps failed open.

    - High temperature shutoff protects pumps from cavitation.

    - Automatically adds cooling water to maintain operating temperature (optional).

    - Alarm ledger automatically logs any irregular operating conditions.

    - Loss of sensor signal indicators.

- **Specific communication protocol with remote control override capability.**

- **Factory programmed for the operating conditions of each unit.**

Root Menu
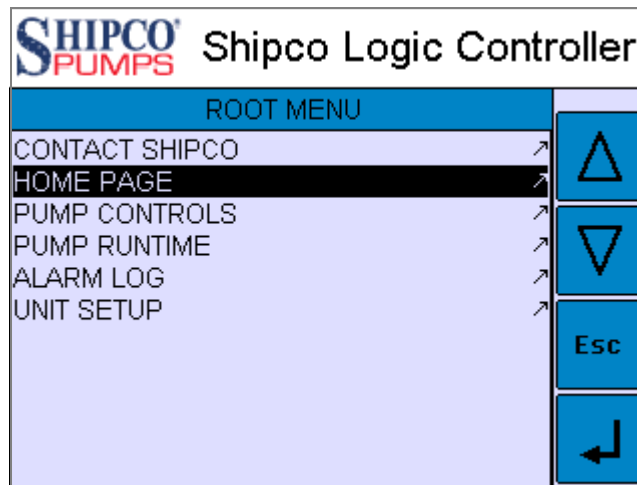
Root Menu

Note: This manual only covers menu items present on a standard controller configuration. For certain configurations some menu items may not be displayed. On custom configurations there many be additional menu items and options which are used to configure special equipment specific to the unit. These additional items are not covered in this manual; please consult factory for details.

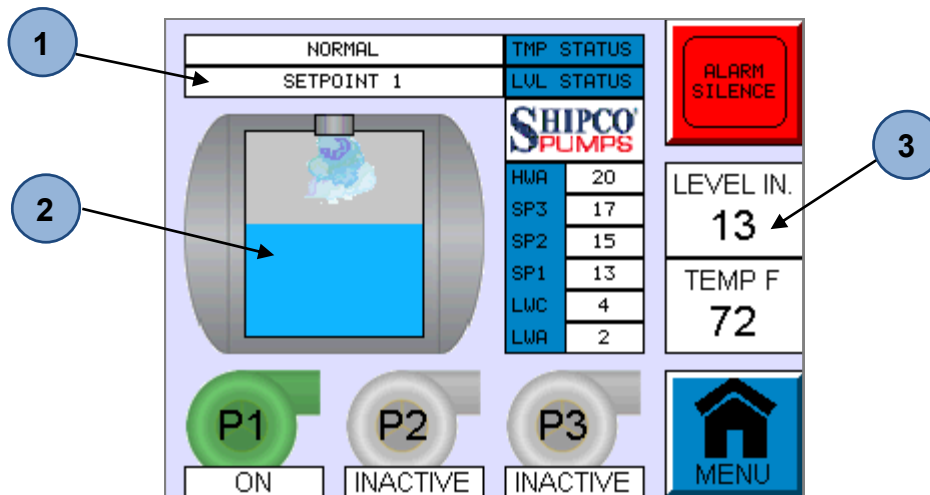|	
Contact Shipco	Displays Shipco® contact information.
Home Page	Unit status screen for the condensate unit.
Pump Controls	Pump sequence operations.
Pump Runtime	View/reset pump run counters.
Alarm Log	View and/or clear alarm events history.
Unit Setup	Change settings for sensors and adjust unit configuration.

Root Menu

Navigation
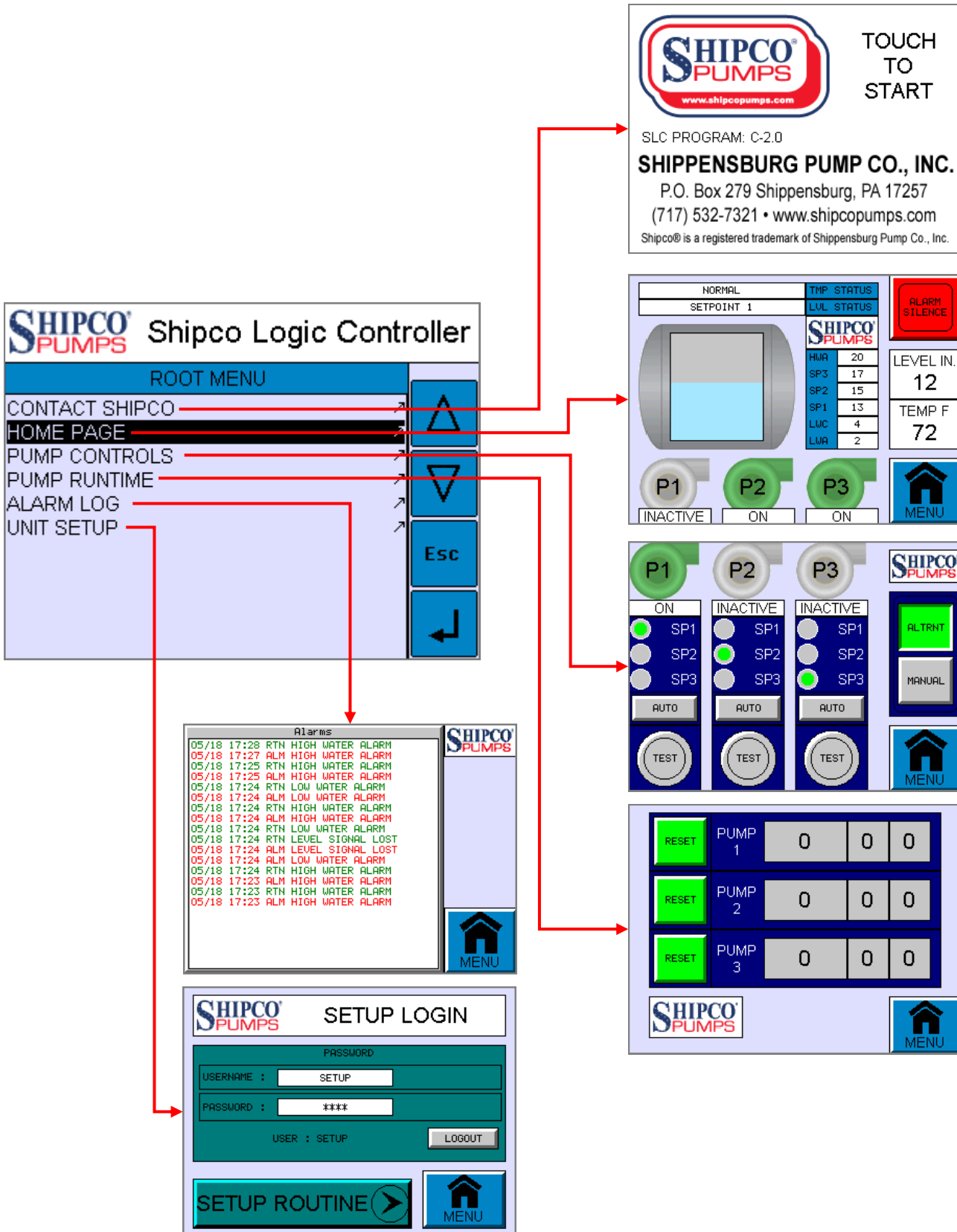
Home Page

Water Level

1. Level Status

LOW WATER ALARM	Traps failed closed or tank is damaged (leaking).
PUMPS OFF	Water is below the cut-off set point. All pumps will be de-energized.
SETPOINT 1	Water level is above the 1st set point. One pump will run (if available).
SETPOINT 2	Water level is above the 2nd set point. Two pumps will run (if available).
SETPOINT 3	Water level is above the 3rd set point. Three pumps will run (if available).
HIGH WATER ALARM	Overflow or possible flooded state.

2. Level Graphic

Rises and falls according to the water level in the tank. Graphic changes color when set points are reached or to indicate an alarm state.
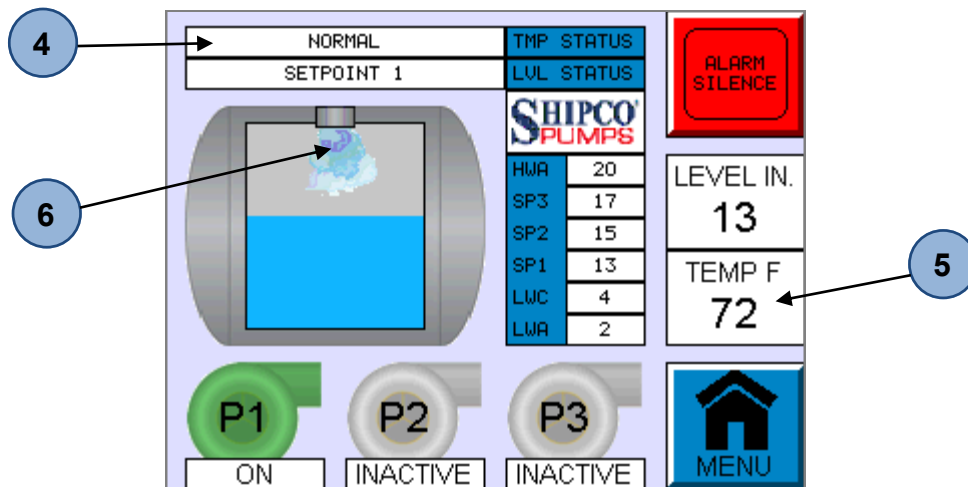
3. Level Indicator

Numeric readout of water level expressed in inches. Indicator will blink "SIG LOST" to indicate a loss of signal.
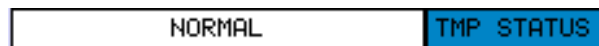
Home Page

Water Temperature

4. Temperature Status

NORMAL	Water temperature is within normal range.
COOLING WATER	Cooling water solenoid is on (if available).
HIGH TEMP	Traps failed open.
PUMP SHUTOFF	Protects pumps from cavitation.

5. Temperature Indicator

Numeric readout of water temperature expressed in °F. Indicator will blink "SIG LOST" to indicate a loss of signal.
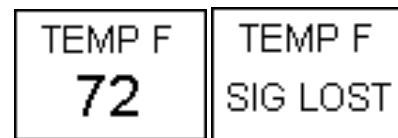
6. Cooling Water

The "spray" graphic shows to indicate cooling water from a solenoid valve (if available).

Home Page

Pump Status & Setpoints

7. Pump Status

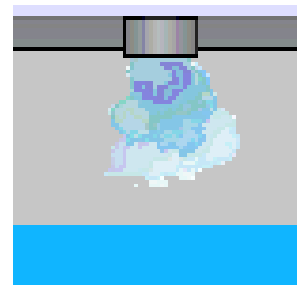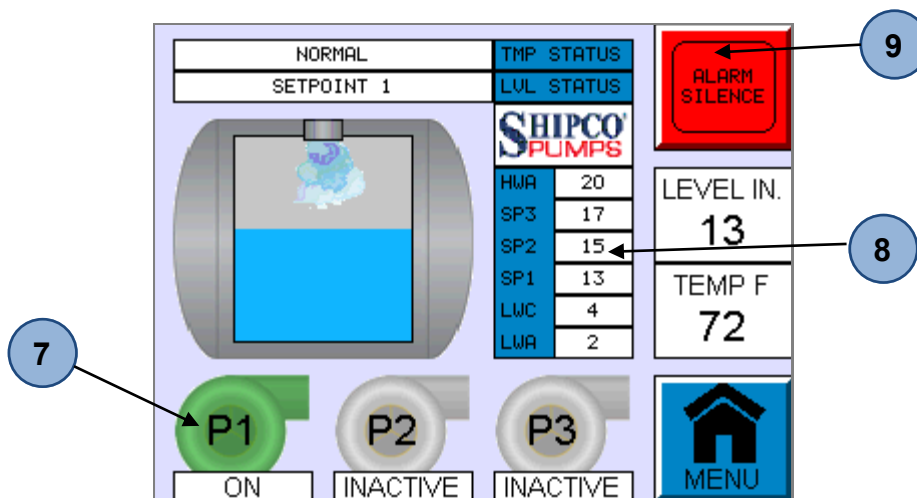|	
GREEN	*(ON)* Pump is energized and running.
GREY	*(INACTIVE)* Pump is available but is currently de-energized and not running.
RED	*(FAULT)* Pump was energized but failed to start due to possible failure from starter or motor.
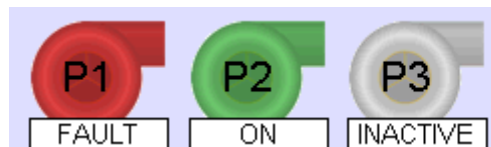
8. Set Point Indicators

Shows level control set points expressed in inches.

HWA	High water alarm.
SP3	3rd operating set point (three pumps run if available).
SP2	2nd operating set point (two pumps run if available).
SP1	1st operating set point (one pump run if available).
LWC	Low water cut-off (shuts pumps off when tank is empty).
LWA	Low water alarm.

9. Alarm Silence

Push to silence the audible alarm buzzer. The buzzer will remain off until the next alarm status re-energizes the alarm.

Pump Controls

Pump Sequence & Operation
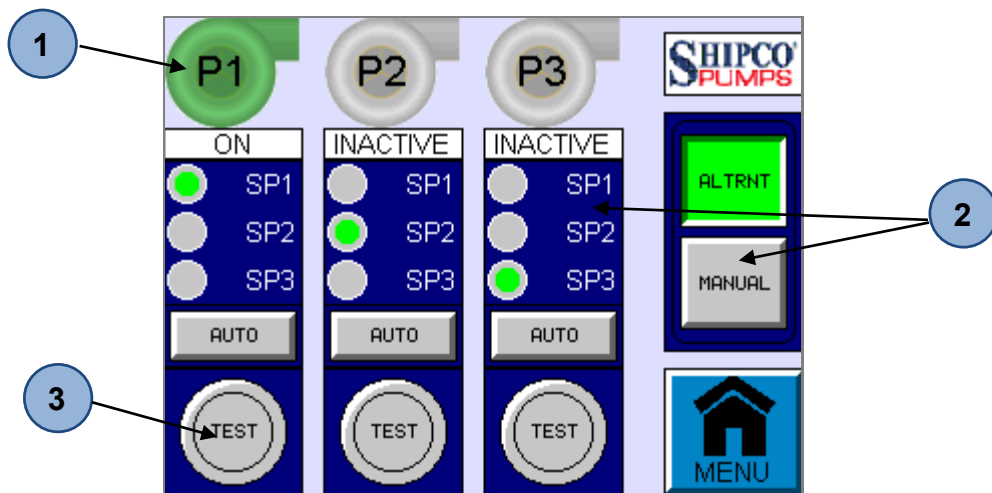
1. Pump Status

GREEN *(ON)* Pump is energized and running.

GREY *(INACTIVE)* Pump is available but is currently de-energized and not running.

RED *(FAULT)* Pump was energized but failed to start due to possible failure from starter or motor.
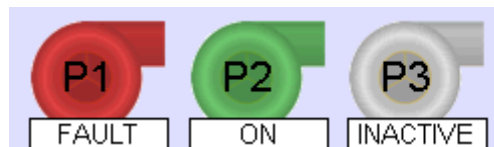
2. Sequence Operation

Toggles pump sequence operation to either automatically alternate (ALTRNT) or user-defined without alternation (MANUAL).
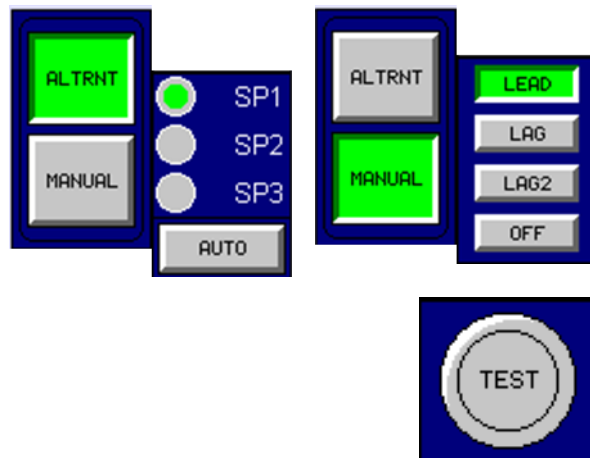
3. Test Button

Push to test the motor rotation for a specific pump.

Pump Controls

Alternation Pump Sequence
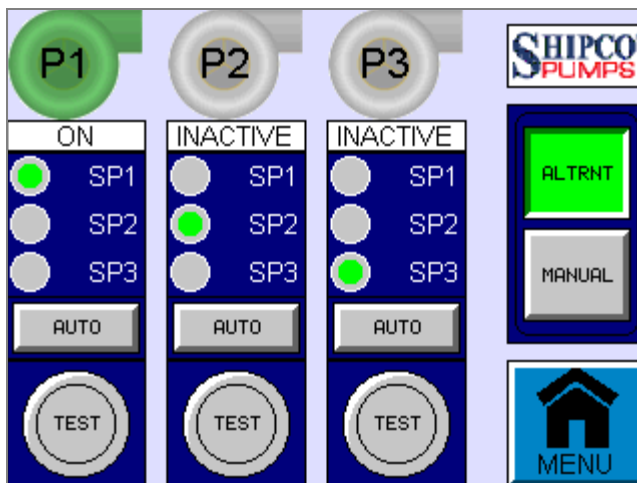
Alternation

When sequence is set to "ALTRNT" the controller automatically alternates pumps after each pumping cycle. Each pump has an alternation sequence indicator.

Alternation Sequence Indicator

SP1	Pump will turn on when water level reaches set point 1.
SP2	Pump will turn on if water level continues to rise to set point 2.
SP3	Pump will turn on if water level continues to rise to set point 3.
AUTO/OFF	Toggles removing the pump from level sequence.
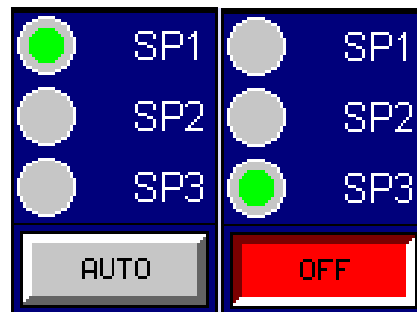
⚠️ **IMPORTANT: AUTO/OFF** setting <u>does not</u> take the place of **pump disconnect** or **control circuit disconnect** switches to isolate a pump from electrical current during servicing.

All running pumps will turn off when tank level reaches low water shutoff.

Pump Controls

Manual Pump Sequence
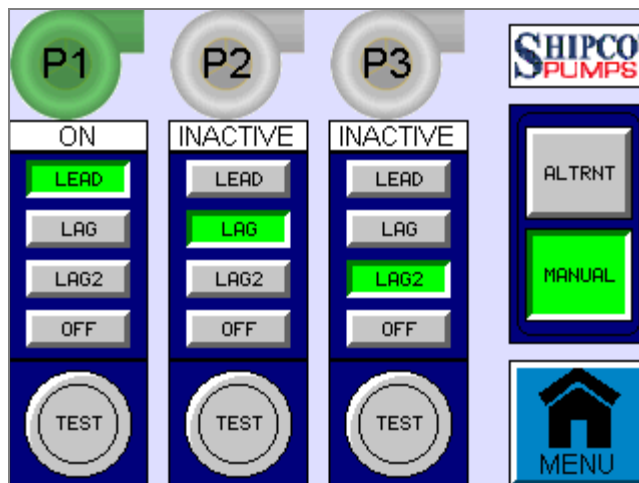
Manual

When sequence is set to "MANUAL" the controller allows the user to define pump sequence without alternation. Each pump has a manual sequence indicator.

Manual Sequence Indicator

LEAD   Pump will turn on when water level reaches set point 1.

LAG   Pump will turn on if water level continues to rise to set point 2.

LAG2   Pump will turn on if water level continues to rise to set point 3.

OFF   Removes the pump from level sequence.

⚠ **IMPORTANT: OFF** setting <u>does not</u> take the place of **pump disconnect** or **control circuit disconnect** switches to isolate a pump from electrical current during servicing.

All running pumps will turn off when tank level reaches low water shutoff.

Pump Runtime
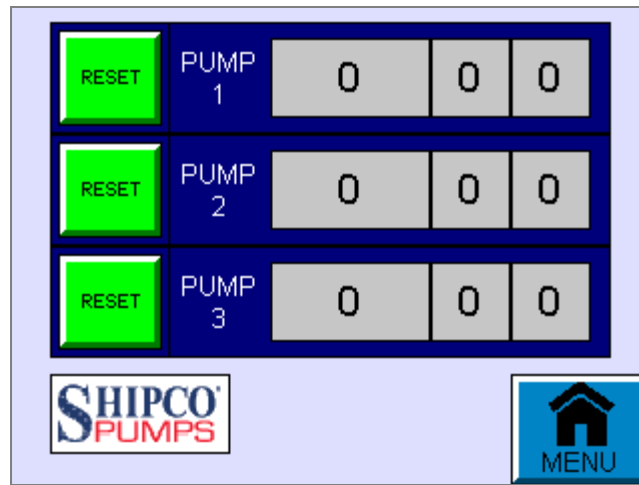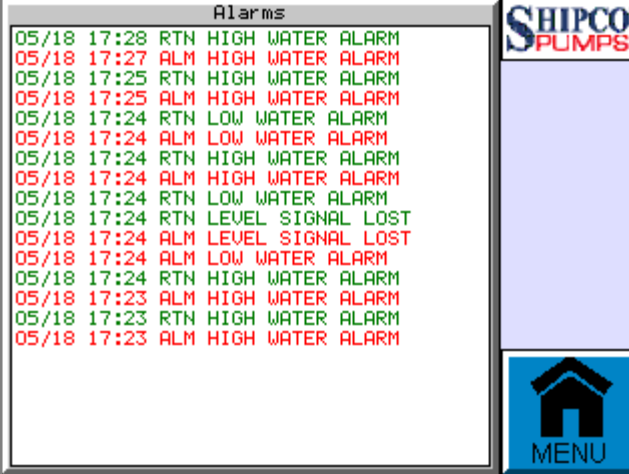
Pump Runtime Counters

Each pump has a counter showing hours, minutes and seconds of pump operation. Press the RESET button to reset the counter for each pump.

Alarm Log

Alarm Log

Any alarms that are displayed are also recorded on the Alarm Log screen. Touching the log object allows the user to acknowledge alarms or clear the log.

Login (to Unit Setup)

Unit Setup is protected by a basic user name and password to prevent unintentional tampering with sensors and unit configuration. Login credentials are obtained by consulting the factory or your local service representative.

Login

Tap inside the Username or Password fields to bring up the virtual keyboard. Pressing the Caps Lock (padlock**)** symbol toggles between uppercase and lowercase letters. Input the value for each field and press **[Enter]** when finished or **[Esc]** to cancel.

Press the **[Login]** button. If the Username and Password are valid, User will change to show who is currently logged in. The Login button will also change to display **[Logout]**.

A logged in User will stay logged in for 30 minutes or until **[Logout]** is pressed.

Press **[Setup Routine]** to enter the Unit Setup menu.
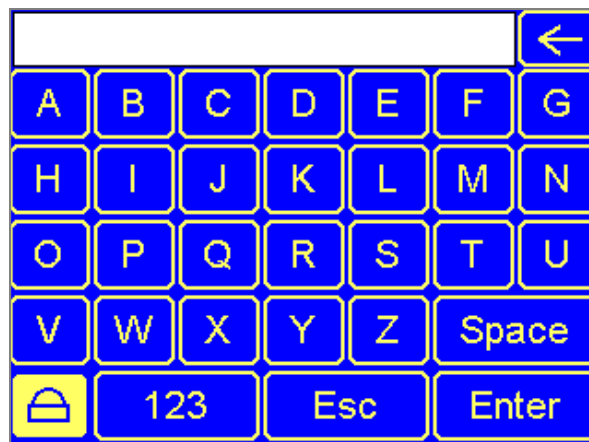
Unit Setup
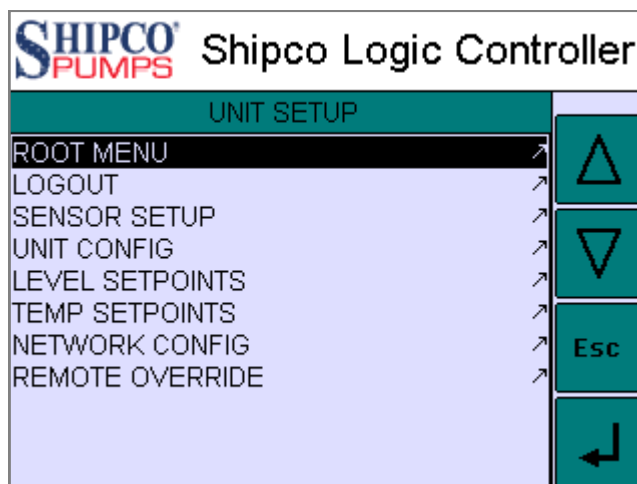
WARNING: Be cautious adjusting parameters in Unit Setup! Certain parameters are factory set to design specifications and incorrectly adjusting these parameters could result in unit malfunction and/or serious equipment damage. Consulting the factory or local service representative is highly advised before making adjustments which could affect unit operation.

Unit Setup Menu

Note: This manual only covers menu items present on a standard controller configuration. For certain configurations some menu items may not be displayed. On custom configurations there many be additional menu items and options which are used to configure special equipment specific to the unit. These additional items are not covered in this manual; please consult factory for details.

Root Menu	Goes back to the Root Menu screen.
Sensor Setup	Adjust the level and temperature sensor range.
Unit Config	Toggle unit configuration options.
Level Setpoints	Adjust water level set points for alarms and options.
Temp Setpoints	Adjust water temperature set points for alarms and options.
Network Config	Network communications.
Remote Overrides	Feature control overrides.

Unit Setup

Navigation

Sensor Setup

Sensor Length

The total length of the continuous level/temperature transmitter inside the tank expressed in inches.

Level Offset

An offset value allows the level sensor to ignore a measurement of level from the bottom of the tank, expressed in inches.

Level Deadband

Defines the amount of level change before the controller triggers an alarm, expressed in inches.

Temperature Offset

An offset value from the current temperature to correct for accuracy, expressed in °F. The accuracy of the temperature sensor is typically within 1-2 degrees.

Temperature Deadband

Defines the amount of temperature change before the controller triggers an alarm, expressed in °F.

Unit Configuration
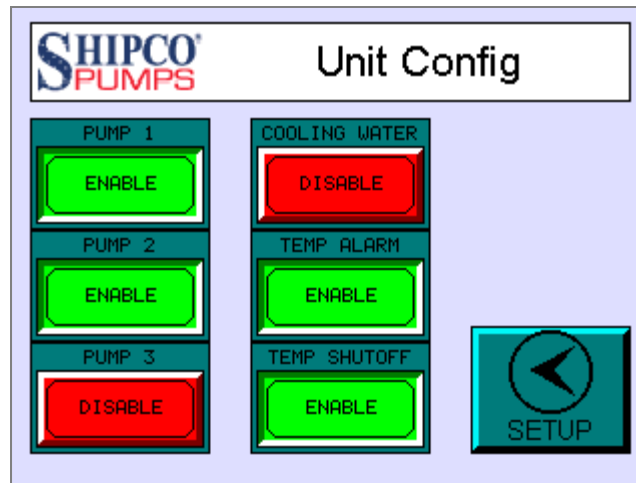
Pumps

Toggles whether a pump should be included on the controller. Disabling a pump will not allow the pump to run and it will not be available in pump sequence operations.

⚠️ **IMPORTANT:** This <u>does not</u> take the place of **pump disconnect** or **control circuit disconnect** switches to isolate a pump from electrical current during servicing.

Cooling Water

Toggles whether a solenoid valve is present to allow cooling water into the tank.

Temperature Alarm

Toggles whether to trigger an alarm if temperature exceeds the high temperature set point defined under the Temperature Setpoints menu.

Temperature Shutoff

Toggles whether to shut pumps off if temperature falls below the pump shutoff set point defined under the Temperature Setpoints menu.

Level Setpoints

High Water Alarm

Water must rise to this level before a high water alarm status is triggered, expressed in inches. This value should be larger than all other set points.

Set Points 1, 2 and 3

Pumps will stage on or off according to their defined sequence operation if water level rises above or falls below these set points, expressed in inches. Ideally the value of each set point starting from set point 1 should be greater than the previous.

Pump Shutoff

Water must fall to this level before all pumps are shut off, expressed in inches.

Low Water Alarm

Water must fall to this level before a low water alarm status is triggered, expressed in inches. This value should be smaller than all other set points.

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Temperature Setpoints

Cooling Water On

If a solenoid valve is present, temperature inside the tank must rise to this measure before the valve opens allowing cold water into the tank, expressed in °F.

Cooling Water Off

If a solenoid valve is present, temperature inside the tank must fall to this measure before the valve closes prohibiting cold water into the tank, expressed in °F.
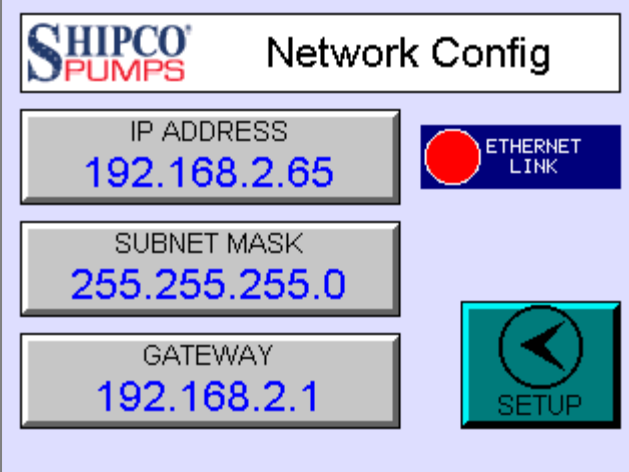
High Temperature Alarm

If enabled under *Unit Configuration*, temperature must rise to this measure before a high temperature alarm status is triggered, expressed in °F. This value should be larger than all other set points.

Pump Shutoff

If enabled under *Unit Configuration*, temperature must fall to this measure before pumps are shutoff, expressed in °F.

Network Configuration

BACnet IP requires physical connection to the 10/100 Mbps Ethernet (LAN) port on the controller and communication occurs via UDP port 47808 (0xBAC0).

Ethernet Configuration

The controller must be manually assigned an individual IP, Subnet and Gateway address expressed in IPv4 dot-decimal notation. Consulting with local information technology (IT) or computer network personnel may be necessary to obtain this information.

Note: There are only a few configurable options for BACnet IP at this time. Unfortunately due to current limitation of the BACnet IP protocol implementation, the parameters listed below must be <u>pre-programmed</u> by the factory or adjusted via a program update per requested specifications.

> **Device ID**   BACnet Device Object Identifier; a network-wide unique number.

Remote Overrides
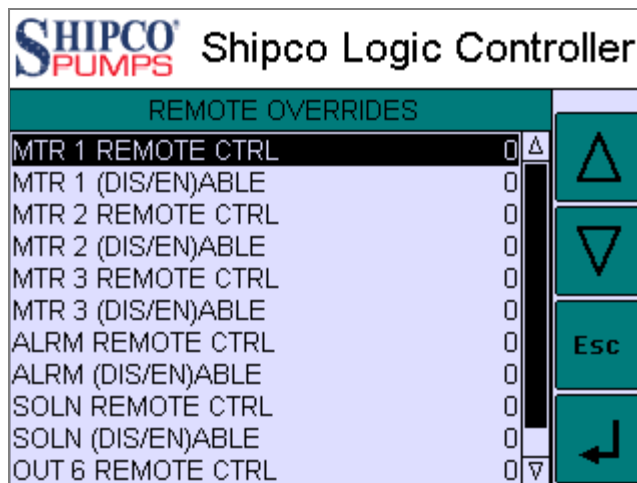
Remote Overrides

IMPORTANT: Remote overrides are not intended to be used in standard unit operation. Please use with caution as changing these options could cause damage to the unit.

If the controller is connected to a communication system (e.g., BACnet), the remote overrides listed on this screen allow the specified remote control feature to be enabled or disabled for manual remote override of said feature.

These values can also be changed when connected to a communication system by changing the specified register (see Communication Registers). This screen is simply provided as a method to perform these actions via the controller if necessary.

    0 = Disabled
    1 = Enabled

For example, to control Motor 1 remotely, a user must first enable **MTR 1 REMOTE CTRL** by setting this option to "1" relinquishing control from the controller. To manually turn on Motor 1 remotely the user must set **MTR 1 (DIS/EN)ABLE** to "1" and the motor turns on.

Appendix

I/O Configuration

Controller

MTR 1 FAULT -	I1	- O		O -	C6	- EMPTY
MTR 2 FAULT -	I2	- O		O -	R6	- EMPTY
MTR 3 FAULT -	I3	- O	SLC-C	O -	C5	- DC PWR +
EMPTY -	I4	- O		O -	R5	- SLND -
EMPTY -	I5	- O		O -	C4	- DC PWR +
EMPTY -	I6	- O		O -	R4	- ALRM -
EMPTY -	I7	- O		O -	C3	- DC PWR +
EMPTY -	I8	- O		O -	R3	- MTR 3 -
EMPTY -	H1	- O		O -	C2	- DC PWR +
DIG. SIG. - -	0V	- O		O -	R2	- MTR 2 -
				O -	C1	- DC PWR +
LVL 4-20mA -	AI1	- O	JP2 4-20mA	O -	R1	- MTR 1 -
EMPTY -	AI2	- O	4-20mA			
TEMP 0-10V -	AI3	- O	O O 0-10V	JP1		
EMPTY -	AI4	- O	O O 0-10V	O		
EMPTY -	0V	- O		O -	H4	- EMPTY
			- LOGIC	O -	H3	- EMPTY
				O -	H2	- EMPTY

O O O

GND - +

PANEL GND | DC PWR - | DC PWR +

Communication Registers

BACnet Objects: **AI** = Analog Input, **AV** = Analog Value

MONITORING	BACNET	TYPE
RAW SENSOR LEVEL	AI 001	0-32000
LIVE LEVEL (INCH)	AV 0006	0-#
RAW SENSOR TEMPERATURE	AI 003	0-32000
LIVE TEMPERATURE (°F)	AV 0011	0-#
MOTOR 1 FAULT	AV 9501	1/0
MOTOR 2 FAULT	AV 9502	1/0
MOTOR 3 FAULT	AV 9503	1/0
EMPTY 4 INPUT	AV 9504	1/0
EMPTY 5 INPUT	AV 9505	1/0
EMPTY 6 INPUT	AV 9506	1/0
EMPTY 7 INPUT	AV 9507	1/0
EMPTY 8 INPUT	AV 9508	1/0
MOTOR 1 ON	AV 9401	1/0
MOTOR 2 ON	AV 9402	1/0
MOTOR 3 ON	AV 9403	1/0
ALARM BELL	AV 9404	1/0
COOLING WATER	AV 9405	1/0
EMPTY 6 OUTPUT	AV 9406	1/0

CONTROL	BACNET	TYPE
MTR 1 REMOTE CTRL	AV 9701	1/0
MTR 1 (DIS/EN)ABLE	AV 9801	1/0
MTR 2 REMOTE CTRL	AV 9702	1/0
MTR 2 (DIS/EN)ABLE	AV 9802	1/0
MTR 3 REMOTE CTRL	AV 9703	1/0
MTR 3 (DIS/EN)ABLE	AV 9803	1/0
ALRM REMOTE CTRL	AV 9704	1/0
ALRM (DIS/EN)ABLE	AV 9804	1/0
SOLN REMOTE CTRL	AV 9705	1/0
SOLN (DIS/EN)ABLE	AV 9805	1/0
OUT 6 REMOTE CTRL	AV 9706	1/0
OUT 6 (DIS/EN)ABLE	AV 9806	1/0

Communication Ports: Wiring and Pin-out

8-pin RJ45 connector

Ⓐ Modular Jack (MJ) Serial Port

Ⓑ 10/100 Ethernet LAN Port
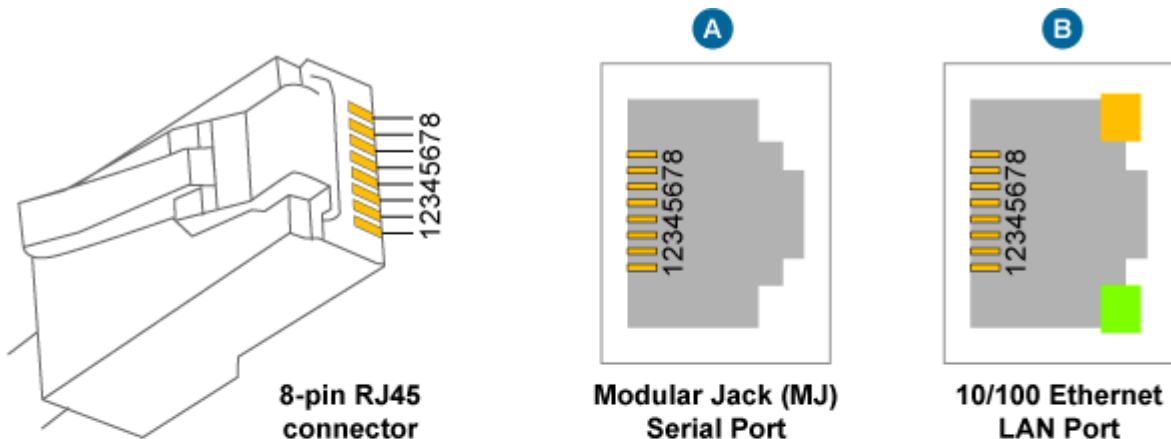
PIN	MJ1 Ⓐ RS232	MJ2 Ⓐ RS485 (2-wire)	MJ3 Ⓐ RS232 or RS485 (4-wire)	LAN Ⓑ 10/100 Ethernet
8	TX [OUT]	—	TX (RS232) [OUT]	—
7	RX [IN]	—	RX (RS232) [IN]	—
6	0V GND	0V GND	0V GND	RX −
5	+5V [OUT]	+5V [OUT]	+5V [OUT]	—
4	RTS [OUT]	—	TX − (RS485) [OUT]	—
3	CTS [IN]	—	TX + (RS485) [OUT]	RX +
2	—	RX − / TX − [IN/OUT]	RX − (RS485) [IN]	TX −
1	—	RX + / TX + [IN/OUT]	RX + (RS485) [IN]	TX +

Pictured above is the pin-out for each type of port connection using an 8-pin RJ45 connector. **Any wiring should have proper shielding and/or termination depending your network environment and configuration.**

MJ1/2 and MJ3 Serial Port

Protocols: **Modbus RTU/ASCII** or **BACnet MSTP**. *The desired protocol must be loaded to a port by the factory per requested specifications.*

The controller has a modular jack (MJ) serial port labeled **MJ1/2** (default). MJ1/2 is considered dual-purpose, ports MJ1 and MJ2 respectively, which varies on its mode setting for the protocol. MJ1 for RS232 and MJ2 for half-duplex (2-wire) RS485. Some controller models have a second port labeled **MJ3** which supports either RS232 or full-duplex (4-wire) RS485.

Note for RS485: Use of grounding (pin 6, 0V GND) for MJ2 and MJ3 may be required depending on network environment, but is typically not necessary.

LAN1 and LAN2 Ethernet Port

Protocols: **Modbus TCP** or **BACnet IP**. *The desired protocol must be loaded to a port by the factory per requested specifications.*

The controller has a 10/100 Mbps Ethernet port labeled **LAN1** (default). Some controller models have a second port labeled **LAN2**.
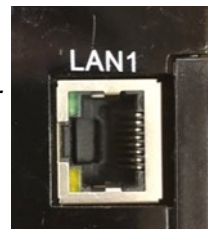
TERMS AND CONDITIONS OF SALE

AGREEMENT

By entering your order or requesting a quote, you confirm that the following terms and conditions of sale are the legal agreement governing your purchase, and that no changes or additional or different terms will apply unless you have previously established a different written contract for these purchases with Shippensburg Pump Company, Inc., hereafter referred to as the Seller.

ORDER ACCEPTANCE

All orders are subject to acceptance by Seller at its general office in Shippensburg, Pennsylvania. Acceptance will be evidenced by Seller issuing its Sales Acknowledgement Form. The Sales Acknowledgement Form, together with any documents incorporated therein, shall constitute the entire agreement and may not be changed except in writing signed by Seller and Buyer. Publication and circulation of current price lists, catalogues and related literature by Seller shall not be deemed an offer to sell, but rather an invitation for offers to buy. Acceptance by Seller of the Buyer's order is expressly limited to the Terms and Conditions stated herein; any additional, inconsistent or different terms and conditions contained in the Buyer's purchase order or other documents supplied by Buyer are expressly rejected.

PAYMENT TERMS—PRICES

Payment terms are as follows: If the Buyer is a Credit Card Customer, the Buyer agrees to pay at the time of purchase the price, shipping and handling charges, taxes and duties quoted by the Seller. If the Buyer is an Account Holder, the Buyer agrees to pay invoices with payment terms of net thirty (30) days after date of invoice unless otherwise specifically agreed to in writing. If the Seller believes that the Buyer's financial condition requires it, the Seller reserves the right to require full or partial payment prior to manufacture or shipment. If the Buyer fails to make any payment when due, (1) the seller reserves the right to suspend performance and the Buyer agrees that any charges incurred prior to the suspension will be assessed to the Buyer and payable to the Seller; (2) the Buyer further agrees to pay a charge on the amount past due at the rate of 1½% per month (18% per year) or the maximum lawful rate, whichever is less. In the event of non-payment, the Buyer agrees to pay the Seller reasonable attorney's fees and court costs, if any incurred by the Seller to collect payment and interest charges. These terms shall apply to partial, as well as complete shipments of Product. Published prices are subject to change without notice and the right is reserved to invoice at prevailing prices at time of shipment unless otherwise specifically agreed to in writing. All quotations are conditional on 30 days acceptance unless stipulated otherwise in writing and to approved credit rating or reference, otherwise payment terms are cash with order or C.O.D.

DELIVERY—DELAYS

Shipping dates represent estimates only and are based on projected production schedules and commitments by suppliers. Seller shall not be liable for failure or delay in manufacturing or shipping Products, nor shall such failure or delay constitute grounds for cancellation if such failure or delay is directly or indirectly due to shortages of fuel or energy; acts of omissions of the Buyer; acts of God; war, riot, civil disturbances; labor difficulties; accident; inability to reasonably obtain materials; acts of transportation companies; or other causes of any kind whatever beyond the control of Seller. In the event of such delays, Seller reserves the right to make adjustments in price and delivery schedules.

FREIGHT TERMS

Prices are f.o.b. factory unless otherwise stated. Seller's responsibility ceases upon delivery to the transportation company at shipping point. It is the Buyer's responsibility to examine shipment upon arrival to ascertain if in good order. Any shortage or damage claims must be pursued by the Buyer. All weights shown on price sheets and literature are approximate. All packaging is standard domestic boxing, slat and wire crating and/or skidding. An additional charge will be made for full wooden crating or special packaging when specified on the order.

Seller will make every effort to consolidate orders and backorders wherever possible. Seller will not be responsible for excess charges due to their inability to consolidate shipments.

When requested by Buyer, shipments may be routed using premium carriers such as express or airfreight or the Buyer may specify the method or route of shipment. In such cases the shipment will be made on a "collect" basis and where applicable the freight allowance will appear as a separate line item on the product invoice, Seller reserves the right to select the transportation company where freight is allowed.

TAXES

In addition to the price stated, the amount of any present or future sales, use, excise or other similar tax applicable to the production, sale, use or transportation of the Products shall be paid by Buyer. In lieu of paying such taxes to Seller, Buyer may furnish Seller a Tax Exemption Certificate or Certificates acceptable to appropriate taxing authorities at any time prior to Seller's shipment of the Products.

CANCELLATIONS

Any order placed with Seller may be cancelled by the Buyer only upon payment of reasonable cancellation charges that shall include but not be limited to expenses already incurred, as well as material and labor commitments made by Seller.

SHIPMENT—TITLE—RISK OF LOSS

Shipment terms are f.o.b. Seller's facility, unless otherwise specifically agreed to in writing. Notwithstanding the granting of any allowances for shipping, title to and risk of loss for Products will pass to the Buyer when delivered to the Common carrier at the Seller's facility.

BACK CHARGES

All invoices shall be due and payable when submitted for payment in accordance with the provision entitled "Payment Terms—Prices." No withholding of funds, back charges, or credits against amounts otherwise due Seller will be permitted unless specifically agreed to in writing by Seller. Settlement of any amounts due Buyer will be negotiated as separate items and not as offsets against amounts otherwise due Seller from Buyer for Products sold hereunder.

RETURNED GOODS

Unused material of current manufacture can only be returned for credit with the written consent of Seller, under return goods policies existing at the date of the return. Products that are obsolete or made to special order are not returnable.

PATENT INDEMNITY

a. Patent Indemnity by Seller to Buyer

Seller agrees to indemnify and hold harmless the Buyer from and against all legal expenses which may be incurred, as well as all damages and costs (except all consequential and special damages and costs) which may be finally assessed against Buyer in any action for infringement of any United States Letters Patent by the Products delivered to Buyer hereunder; provided that the Buyer shall give Seller prompt written notice of any action, claim or threat of patent infringement suit, either oral or written, or of the commencement of any patent infringement suit against Buyer relating to Products sold by Seller to Buyer hereunder; and provided Buyer shall give Seller opportunity to elect to take over, settle, or defend any such claim, action or suit through counsel of Seller's own choice and under its sole direction, and at its sole expense, and provided that in the event Seller elects to take over, defend or settle same. Buyer will make available to Seller all defenses against any such claim, action, suit or proceeding known to or available to Buyer; and provided further that Seller shall have the right to substitute for any such Product or any part thereof claiming to

infringe the patent right of others, non-infringing Products which will give equally good service. If the use of any such Product or any part thereof should be enjoined, Seller shall have the right at its own expense, to take any of the following courses of action:

   i. To procure for Buyer the right to continue using such Product;

   ii. To replace said Product with a non-infringing Product;

   iii. To modify the Product so that it becomes non-infringing; or

   iv. To remove said Product and refund the purchase price, transportation costs and installation costs thereof.

b. Limitation

The foregoing provisions as to patent protection by Seller to Buyer shall not apply to any of the following:

   i. To any Product manufactured to the design or specification furnished by the Buyer;

   ii. To orders for special non-commercial Products which Seller has not sold or offered for sale to the public on the open commercial market;

   iii. To any infringement occasioned by modification by Buyer of any Product without Seller's written consent, or any infringement arising from the use of a Product with any adjunct or device added by the Buyer without Seller's written permission.

c. Patent Indemnity by Buyer to Seller

To the extent that Products delivered hereunder are manufactured pursuant to detailed designs furnished by Buyer, Buyer agrees to indemnify Seller and hold Seller harmless from all legal expenses which may be incurred, as well as all damages and costs, which may finally be assessed against Seller in any action for infringement of any United States Letters Patent by such Products delivered hereunder. Seller agrees to promptly inform the Buyer of any claim for liability made against Seller with respect to such Products and Seller agrees to cooperate with the Buyer in every way reasonably available to facilitate the defense against any such claim.

GOVERNING LAW

The validity, interpretation and performance of any order shall be governed by the Uniform Commercial Code ("UCC") as adopted by the state in which the Products are manufactured by Seller.

WARRANTY AND LIMITATION OF LIABILITY

Seller warrants for a period of eighteen (18) months from date of shipment from its factory or one (1) year from date of installation, whichever occurs first, that all Products furnished by it are free from defects in materials and workmanship.

Seller's liability for any breach of this Warranty shall be limited solely to replacement or repair, at the sole option of Seller, of any part or parts found to be defective during the Warranty period providing the Product is properly installed and is being used as originally intended. Buyer must notify Seller of any breach of this Warranty within the aforementioned Warranty period; defective parts must be shipped by Buyer to Seller, transportation charges prepaid.

IT IS EXPRESSLY AGREED THAT THIS SHALL BE THE SOLE AND EXCLUSIVE REMEDY OF THE BUYER. UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR ANY COSTS, LOSS, EXPENSE, DAMAGES, SPECIAL DAMAGES, INCIDENTAL DAMAGES OR CONSEQUENTIAL DAMAGES ARISING DIRECTLY OR INDIRECTLY FROM THE DESIGN, MANUFACTURE, SALE, USE OR REPAIR OF THE PRODUCT WHETHER BASED UPON WARRANTY, CONTRACT, NEGLIGENCE OR STRICT LIABILITY. IN NO EVENT WILL LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

THE WARRANTY AND LIMITS OF LIABILITY CONTAINED HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESSED OR IMPLIED. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED FROM THIS WARRANTY.

Seller neither assumes, nor authorizes any person to assume for it, any other Warranty obligation in connection with the sale of the Product. This Warranty shall not apply to any Product or parts of Products which (a) have been repaired or altered outside of Seller's facilities; or (b) have been modified or damaged through misuse, abuse, accident, neglect or mishandling by Purchaser or Purchaser's customer, erroneous voltage, modification, acts of God, or any other act not specifically stated; or (c) have been used in a manner contrary to Seller's instructions.

Products covered by this warranty are for the intended uses as described in the corresponding seller's instructions. Before using for any other application, user shall determine the suitability of the product for its intended use and user assumes all risk and liability in connection therewith.

No oral statement made by the seller, its agents, employees, or other representatives, concerning the product, its value, description, condition, design, specifications, performance, capability, durability, adaptability, or accuracy, shall be relied upon by the purchaser and is specifically and expressly excluded and invalidated as the basis for any bargain or warranty.

In the case of Products not manufactured by Seller, there is no Warranty from Seller, but Seller will extend to the Buyer any Warranty of Seller's supplier of such Products.

FORCE MAJEURE

Seller shall have no liability in respect of failure to deliver or perform, or delay in delivering or performing any obligations due to causes such as acts of omissions of Buyer; acts of God, fire, flood, war and civil disturbances; riot, acts of governments, currency restrictions, labor shortages or disputes, unavailability of materials, fuel, power, energy or transportation facilities, failures of suppliers or subcontractors to deliver on time and every other circumstance outside the reasonable control of Seller.

MODIFICATIONS

Unless otherwise provided, Seller reserves the right to modify the specifications of Products ordered by the Buyer providing that the modification will not materially affect the performance.

STORAGE CHARGE

If Buyer is unable to accept products in accordance with the applicable shipping schedule then Seller may arrange to store ordered Products and the cost of storage will be charged to Buyer.

ENTIRE CONTRACT

These provisions constitute all the terms and conditions agreed upon by the parties and shall replace and supersede any provisions on the face and reverse side of Purchase Order and any attachment thereto, or any prior general agreement inconsistent with the provisions hereof except that orders by Representatives with whom Seller has an Agreement shall be subject to the provisions of the Agreement. No modification hereof shall be valid unless in writing and duly signed by a person authorized by Seller. The provisions hereof shall not be modified by any usage of trade, or any course of prior dealings or acquiescence in any course of performance.