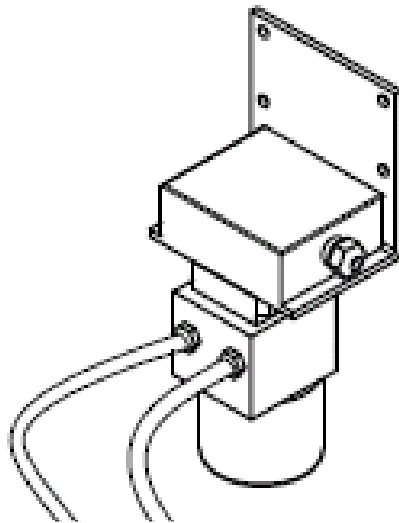




Hydrapulse Switch Ace-84



Owner's Manual

SONNY'S Enterprises LLC
5605 Hiatus Road
Tamarac, FL 33321



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WARNING *SAFETY REQUIREMENTS* WARNING

1. All employees must be thoroughly trained in safe operation and standard maintenance practices. All employees must review this entire manual monthly.
2. Do not enter the wash tunnel when the equipment is operating. Death or dismemberment may occur.
3. Do not wear loose fitting clothing or jewelry around moving equipment. Do not allow any part of your body or other objects (including ladders, hoses, or tools) to come in contact with moving equipment. Entanglement may result causing death or dismemberment.
4. Do not leave a ladder or any other items such as wash down hoses or tools in the wash tunnel while equipment is running. Vehicle damage and injury, including death, can occur.
5. Always exercise caution when walking (never run) through the wash tunnel as there may be slippery conditions. Be careful so you do not bump into or trip over equipment.
6. Only those employees specifically instructed and trained by the location management are permitted to enter the wash tunnel to perform inspections or maintenance. At least two qualified maintenance people must be present when performing equipment repairs or preventive maintenance.
7. Do not perform any maintenance or work on equipment unless you first perform Lock-Out Safety Precautions. All electrically powered equipment must have manually operated disconnects capable of being locked in the "OFF" position. Equipment that has been "locked out" for any reason must be restarted only by the person who performed the "lock out" operation.
8. When working on any equipment that is higher than your shoulders, always use a fiberglass ladder that is in good condition.
9. Do not attempt to repair or adjust any pressurized liquid or pneumatic part, hose, pipe or fitting while that equipment is in operation.
10. Electrical connections and repairs must be performed by a Licensed Electrician Only.
11. Emergency "STOP" buttons must be well marked, and their location and proper use reviewed with all personnel. Any activated "STOP" button must be reset only by the person who activated it. Clear the wash tunnel of any people, ladders, hoses, tools, and other loose items before restarting the equipment. An audible device must sound to warn people that the equipment is starting.
12. Do not operate any piece of equipment that requires safety covers with those covers removed or improperly installed. Do not operate any piece of equipment if any component of that piece is suspected to be defective or malfunctioning.



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13. Store all cleaning and washing solutions and oils in a well-ventilated area. Clean up fluid spills immediately to prevent hazardous safety conditions. Be certain to follow all safety procedures on SDS Sheets for each chemical product used.
14. All hydraulic and electric systems in the wash tunnel equipped with a torque relief or overload should be checked and set at the minimum amount that will allow for proper functionality under normal washing conditions.
15. No unauthorized people should ever be permitted in the wash tunnel or near the equipment at any time.

* * *

!! CAUTION !!

When a piece of equipment must be in operation during inspection or maintenance, one qualified technician must stay at the power disconnect switch while another qualified technician performs the inspection or maintenance.



INTRODUCTION

This Manual contains information that is vital to the successful installation, operation and maintenance of your SONNY'S vehicle washing equipment.

Please read, and understand, the full contents of this manual before installation and operation of the equipment. Keep this booklet in a location where it may be used for ongoing reference.

Should you have any questions on the operation or servicing of this equipment please contact

TECHNICAL SERVICES DEPT.

SONNY'S ENTERPRISES INC.

5605 Hiatus Road

TAMARAC, FLORIDA 33321

TELEPHONE: 800-327-8723 FAX: 800-495-4049

THANK YOU FOR YOUR CONFIDENCE IN SONNY'S !!!!



Mounting

The HYDRAPULSE SWITCH should be wall mounted in a dry area. Once the unit is mounted, the hydraulic connections should be made as shown in figure 1. The SUPPLY line going from the power pack to the ACE 84 should be used.

NOTE: When plumbing the Hydrapulse motor, DO NOT OVER TIGHTEN FITTINGS. This may crack the motor and void the warranty.

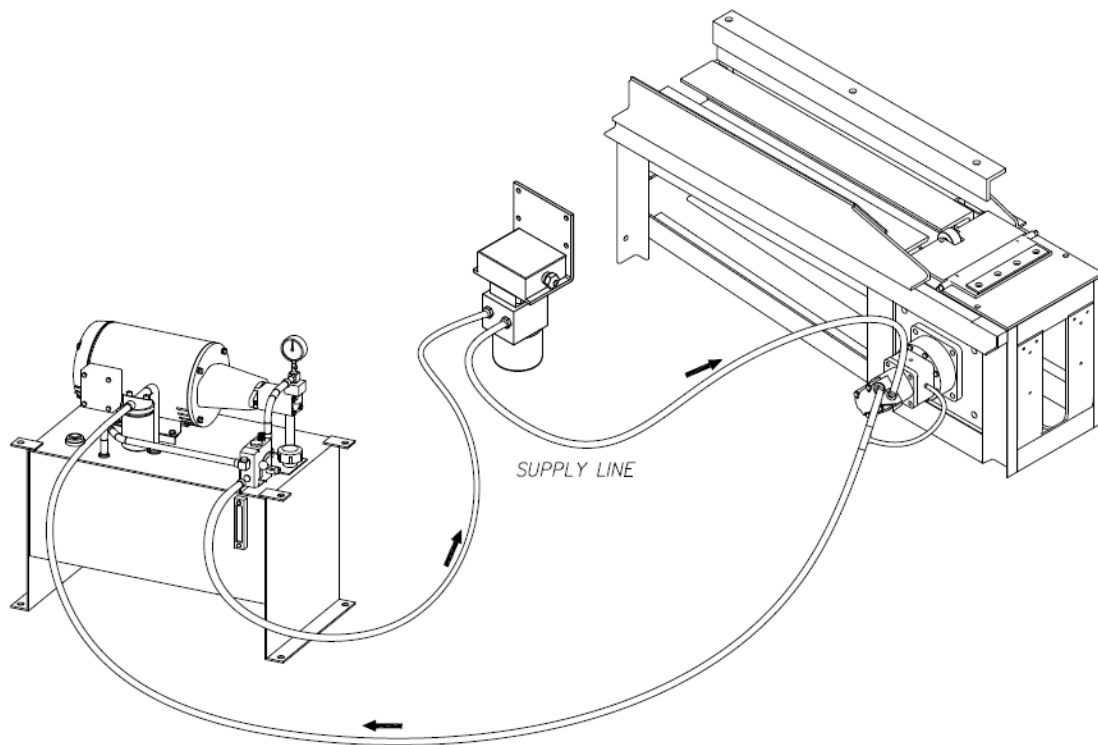


FIGURE #1

Wiring

The Hydrapulse Switch requires 9 - 24VAC or DC to operate and provides a dry contact closure as output. A supply current of 15 - 30 mA (0.4 W) depending on the supply voltage is required. The output contacts are rated at 500 mA (1/2 A) maximum. An AC adapter is provided to supply power to the Hydrapulse Switch. This can be mounted anywhere and wired to the unit.

NOTE: We highly recommend using this adapter and NOT the power from your controller.

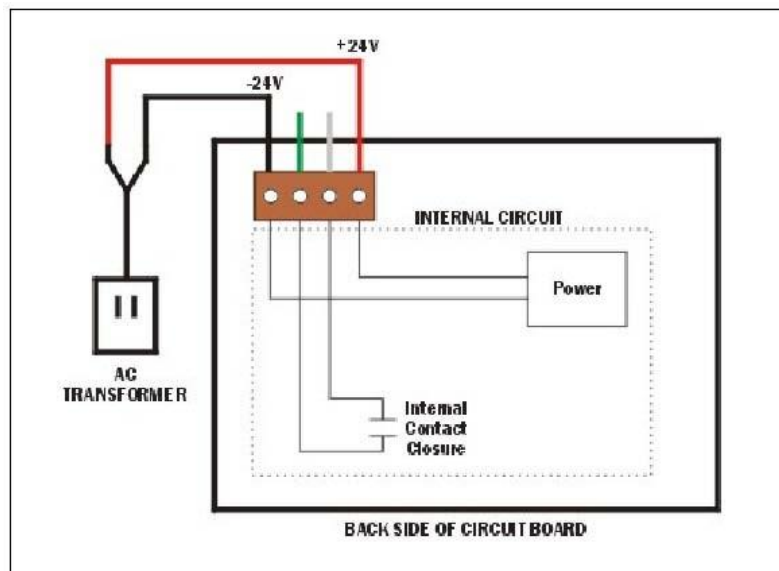


FIGURE #2

When Using a Commander Controller

When connecting the Hydrapulse Switch to a CarWash Controls Commander controller, the pulse wires get connected to TB5 located on the right side of the main circuit board (CC64).

When Using a WashPilot or Other Controller

For connections to other controllers check the installation manuals for these controllers. If the controller requires a contact closure connect the GREEN and WHITE wires to the input terminals and the RED and BLACK wires to the power observing voltages and polarities. If on the other hand it requires a voltage level as input a connection scheme, a qualified technician or a CarWash Controls technical support individual will be able to assist you.

Powering Up

Once all connections are completed satisfactorily turn the power on, the display should read "0.00."

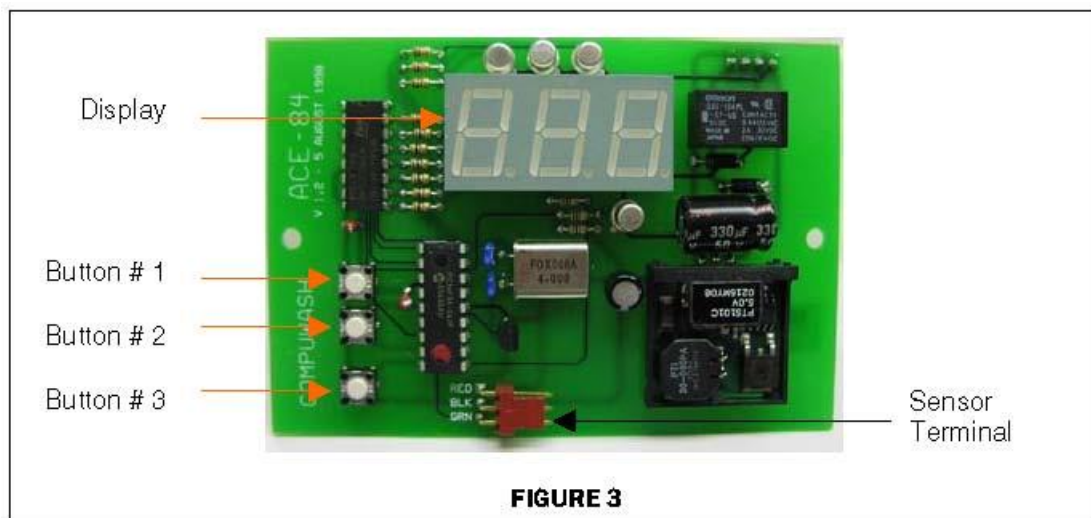
Calibration

You will need the following items to calibrate your Hydrapulse Switch:

- Stopwatch
- Wax-pencil or Marker
- Measuring Tape

Process

1. Place two marks 200 inches apart on the conveyor. These marks will be used to time a conveyor roller.
2. Remove the cover from the Hydrapulse Switch enclosure and locate the three buttons shown in Figure 3.
3. Turn on the conveyor. After a few seconds, the display will stabilize. Once calibrated the display will show an average speed for the last 2 seconds. The Hydrapulse Switch can display your conveyor speed in two formats: 'feet per minute' or 'cars per hour' (a standard car length and space is 21 feet). To select 'feet per minute' press and release button 1. For 'cars per hour' press and release button 2.



All calibration values are in 'feet per minute.' Once the unit has been calibrated to match your conveyor the display format can be selected as shown above.

NOTE: The conveyor must be running and brought up to a high constant speed throughout the entire calibration process. To get the best readings the flow control speed should be set around 6-6.5. Cars should not be on the conveyor during calibration.



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4. Press and release button 1. This sets the display to 'feet per minute'.
5. Using your stopwatch, measure the time **in seconds** that it takes a roller to go from your first mark, to your second mark.
6. Calculate your conveyor speed using the formula: 1,000 divided by the time recorded in step 5.

NOTE: For accurate results use speed values between 40 and 90 'feet per minute'. If value is less than 40 or greater than 90, use flow control to adjust conveyor speed, repeat steps 5 & 6.

7. Press and release button 3. The left digit on the display will begin to flash. Use buttons 1 and 2 to adjust the display to match the value calculated in step 6, noting the decimal place. Button 1 increases the display while button 2 decreases it. If buttons 1 and 2 are held down, the display will change quickly.
8. Once the display matches the calculated value press and release button 3. The display will now go blank for 15 seconds. After 15 seconds the display will now read "2.0" and the middle digit will now be flashing. Using buttons 1 and 2, adjust the display to set the number of pulses you wish the Hydrapulse Switch to generate per foot of conveyor movement.

For example: If you want your pulses to be 6 inches apart, leave the display at "2.0". For 8 inches apart, adjust the display to "1.50".

If you are trying to match an existing pulse rate you can calculate that by dividing a function's pulse count by the distance to the enter switch. Use functions at the end of the tunnel to be most accurate.

For example: If the air dryer was previously set at 100 pulses and is at a distance of 60 feet, the pulse rate is $100/60$ or 1.67 pulses per foot. The formula for calculating this number is $12/(\text{the number of inches for each pulse})$.

NOTE: For customers with DRB Controllers – DRB's tunnel controllers prefer to have one pulse per sprocket revolution. This means that if you have a standard 12-tooth sprocket, then your pulses per foot rate should be $0.37(12''/31.92'' \text{ per sprocket revolution}=0.37)$

When using a 4 tooth sprocket then your pulses per foot rate should be $0.45(12''/26.69'' \text{ per sprocket revolution}=0.45)$

9. After the pulse rate has been set, press, and release button 3. After a few seconds, the display should now show the speed of the conveyor. If the value is incorrect, repeat steps 1 to 6.
10. You can now select the display format. For display in 'feet per minute' press button 1. For 'cars per hour' press button 2.
11. Replace cover. the Hydrapulse Unit is now calibrated to match your conveyor. The values recorded are retained even if the power is removed.



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Converting Conveyor Speed

Inches per Second x 14.3 = Cars per Hour (i.e. 7 Inches per Second = 100 CPH)

Feet per Minute x 2.86 = Cars per Hour (i.e. 35 Feet per Minute = 100 CPH)

PARTS



Hydrapulse Switch



Benefits

- Extremely accurate vehicle measurement within 1 inch per pulse
- Cost savings on chemicals, water and electrical
- Installs in the control room
- Digital display shows accurate chain speed, easy to calibrate

Hydraulic Features

- Geroler design provides high efficiency across a wide performance range
- High pressure shaft seal offers superior seal life and performance
- White Drive™ hydraulic motor
- 1/2in NPT

Item #	Description
20003361	Hydrapulse, ACE-84 Pulse Switch
Item #	Replacement Parts
10007605	Hydrapulse, Hydraulic Motor for ACE-84
20000096	Hydrapulse, Circuit Board for ACE-84
20002032	Hydrapulse, Proximity Sensor for ACE-84
20001691	Hydrapulse, Cable 75ft w/Connector
10003890	Hydrapulse, Transformer 24VDC .25amps
10001396	Elbow, 90deg 1/2in M JIC x 1/2in MPT



WARRANTY & REPAIR

SONNY'S CarWash Controls Systems

- Telephone technical support at (800) 876-3900 Ext. 251.
- Replacement on parts manufactured by CarWash Controls for one (1) year after delivery.
- Replacement on parts **NOT** manufactured by CarWash Controls (i.e. printers, monitors, routers, scanners, cash drawers, etc.) for ninety (90) days after delivery.

CarWash Controls warrants all equipment, which it manufactures to be free from defects in material or workmanship under normal use and service for a period of one (1) year from the date of delivery. Any defect reported within one (1) year will be replaced by CarWash Controls pending a technician's evaluation and all charges for labor and material will be borne by CarWash Controls. The Buyer will assume shipping costs.

For all items being sent back to CarWash Controls for replacement or repair, a Return Merchandise Authorization (RMA) number is required prior to shipping. Merchandise received without an RMA# will be returned to sender. If it is determined that either no fault exists in Company, or the damage to be repaired was caused by negligence of Buyer, its agents, employees or customers, Buyer agrees to pay all charges associated with each such repair. Any tampering, misuse or negligence in handling, installation or use of Equipment renders the warranty void.

Further, the warranty is void if, at any time, Buyer attempts to make any internal changes to any of the components of the Equipment; if at any time and for any reason the power supplied to any part of the Equipment exceeds the rated tolerance; if any external device attached by Buyer creates conditions exceeding the tolerance of the Equipment; or if at any time the serial number plate is removed or defaced.

THIS CONSTITUTES THE SOLE WARRANTY MADE BY COMPANY EITHER EXPRESSED OR IMPLIED. IN NO EVENT SHALL COMPANY BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES AND BUYER'S REMEDIES SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF NONCONFORMING UNITS OR PARTS.

Repair

CarWash Controls has a service and support department dedicated to analyzing, repairing, and testing any WashPilot™ component in need of such services. In the event a component needs to be sent to CarWash Controls for warranty replacement or repair, an evaluation must first be made over the telephone by a CarWash Controls technician.



CUSTOMER SERVICE

Please contact SONNY'S CarWash Controls Systems for installation and/or operational questions regarding this piece of equipment.

Please refer to the Parts list in this manual or the SONNY'S Parts Catalog and contact SONNY'S Customer Service Order Entry Department for any replacement parts for this piece of equipment.

For Equipment Repairs please visit the web at www.sonnysdirect.com/manuals.

DEPARTMENT

Toll Free Main Line
Equipment Department

PHONE NUMBERS

800-876-3900
954-327-8723

FAX NUMBERS

954-721-7677
800-495-4049

Or you can email Sales at sales@sonnysdirect.com

Thank you for being a SONNY'S CarWash Controls equipment owner!

From all of us here at

