

High Amp Switch Junction Box 25 Amp

120 VAC Models: TS-304 and TS-304NC

Operation, Maintenance and Installation Manual



Introduction

The TS-304 is a plug and play high amp switch and junction box. Use the TS-304 to operate pumps or motors up to 25 Full Load Amps (FLA). The switch is prewired to the box at the factory. The pump and incoming power are plugged into the quick connectors in the TS-304.

Safety Guidelines



1. DO NOT USE WITH FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, KEROSENE, ETC. DO NOT USE IN EXPLOSIVE ATMOSPHERES.
2. DO NOT HANDLE THE TS-304 WITH WET HANDS OR WHEN STANDING ON A WET OR DAMP SURFACE OR IN WATER.
3. DISCONNECT ALL ELECTRICAL SERVICE BEFORE WORKING OR HANDLING THE TS-304.
4. INCOMING VOLTAGE MUST BE 120 VAC.
5. TO PREVENT ELECTRICAL SHOCK AND EQUIPMENT MALFUNCTION, USE ONLY WITH A PUMP SUPPLIED WITH A GROUNDING CONDUCTOR AND GROUNDING-TYPE ATTACHMENT PLUG.

Installation

1. The TS-304 includes the following components: prewired float switch into junction box (Fig. 1) and Ground quick connect (Fig. 2). NOTE: Float can be disconnected to run through conduit or tank cover if needed.
2. Use a phillips screwdriver (not included) to remove the four (4) screws on the cover.
3. Bring electrical power into the box using flat cable connector or pvc hub (field provided).
4. Plug the pump or motor into the quick connect labeled "T1 Pump" and "T2 Pump" (Fig. 3). Connect the incoming power to "L1" and "N" (Fig. 4).

(Fig. 1)



(Fig. 2)



(Fig. 3)



(Fig. 4)



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Installation Continued

5. Connect pump ground and incoming power ground connectors into quick connect labeled “Ground” (Fig. 5).
6. The float switch is factory connected to “W Float” and “B Float” (Fig. 6). If you need to pull the float through conduit, pull up on the orange release tabs (Fig. 7) to disconnect the float cable from the quick connectors, then re-connect them after you have pulled the float through the conduit. NOTE: “B Float” is the quick connect that also has the “L1” label on the other side.
7. Connect the float to the pipe clamp (Fig. 8), use the tether guide (Fig. 9) as a rough estimate to determine your desired pumping range. NOTE: TS-304 is for Pump Down applications and TS-304NC is for Pump Up applications.

(Fig. 5)



(Fig. 6)



(Fig. 7)



(Fig. 8)

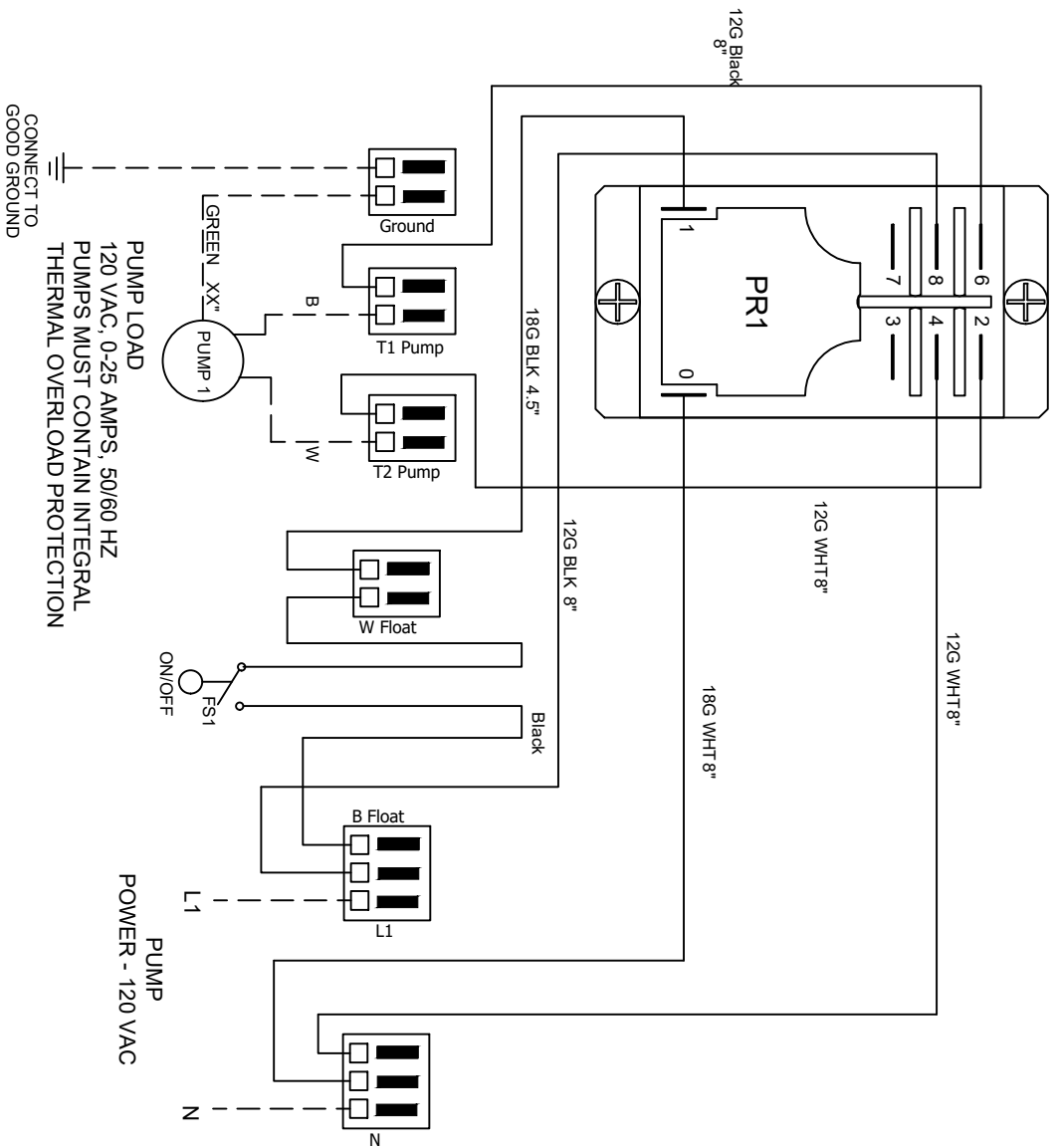


(Fig. 9)



Tether Guide									
Pumping Range (Feet)									
4'	5'	6'	7'	8'	9'	10'	11'	12'	13'
8'00"	9'00"	10'0"	11'0"	12'0"	13'0"	14'0"	15'0"	16'0"	17'0"

--- FIELD WIRING	
..... FIELD SUPPLIED	
	TERMINAL BLOCK
TB	
Power Wiring = BLK	
120VAC Control Wiring = RED	
Neutral = WHT	
Ground = GRN	
AWG / OR CIRCULAR MIL SIZE	TIGHTENING TORQUE IN INCH POUNDS
	SCREW DRIVER WRENCH
14	35 75
12	35 75
10	35 75
8	40 75
6	45 110
4	45 110
2	50 150
1	50 150
1/0	50 180
2/0	50 180
LEGEND	
PR1	Power Relay
FS1	Float Switch



Model Number:	TS-304
DWG Number:	TS-304
Quote Number:	----
Drawn By:	B. Klabunde
Checked By:	----
Date:	4/17/2014
Revision Level:	001

Page Notes:



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Sheet No:

1 1

- Notes:
1. WARNING! Electrical Shock Hazard! Disconnect power before servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.
 2. Install in accordance with National Electric Code, NFPA 70. Seal all boxes, fittings and conduit with appropriate seal devices to prevent moisture and gases from entering enclosure.
 3. Connect all grounds to a good ground.
 4. Dashed lines represent field wiring. - Use *minimum* 60 deg C Copper Wire
 5. Branch Circuit Protection Device/Disconnect Means Field Provided.

Control/Pilot Duty Switch Wide Angle



Operation, Maintenance and Installation Manual

Safety Guidelines



Before proceeding with the installation or operation of the product, make sure to read all instructions thoroughly, as well as complying with all federal, state and local codes, regulations and practices. The product must be installed by qualified personnel familiar with all applicable local electrical and mechanical codes. Refer to the National Electric Code (NFPA 70). Failure to properly install and test this product can result in personal injury or equipment malfunction.

1. DISCONNECT ALL ELECTRICAL SERVICE BEFORE WORKING ON OR HANDLING THE PRODUCT.
2. DO NOT USE WITH FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, KEROSENE, ETC. DO NOT USE IN EXPLOSIVE ATMOSPHERES.
3. DO NOT CONNECT DIRECTLY TO PUMPS.
4. END USER TO PROVIDE OVERCURRENT PROTECTION RATED AT 240VAC MINIMUM, 15 AMPS MAXIMUM

Specifications

Electrical:	1 Amp @ 24VDC or 4 Amps @ 120VAC / 230VAC
Cable Type:	SJOOW flexible 18 gauge, 2 conductors, water resistant (UL, CSA)
Float Housing:	High impact PVC, 3.25" diameter x 4.55" length
Maximum Temperature:	140° F
Switch Configuration:	Single Pole, Single Throw
Switching Differential:	90 degrees total

NOTE: Check to make sure the right float switch is being used for the application.

Normally Open - Contacts are open while hanging down and will close on a rising liquid level. Typically used for high level alarms and empty tank applications.

Normally Closed - Contacts are closed while hanging down and will open on a rising liquid level. Typically used for low level alarms and fill tank applications.

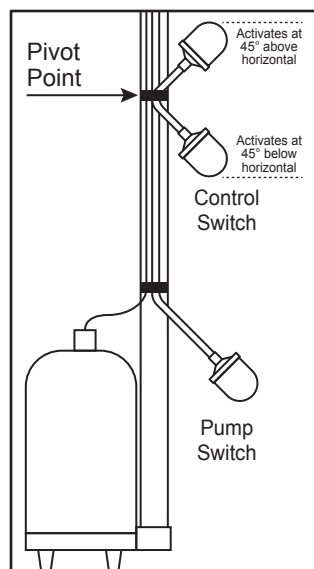
Installation

1. Determine desired pivot point (Fig. 2), mount the float cable attachment at desired location and adjust the tether length (Fig. 1) to achieve the correct activation range. For external float weight models, determine desired pivot point (Fig. 3), suspend the control switch with weight at desired location and adjust tether length (Fig. 1) to achieve the correct activation range.
2. The float cable attachment should be tightened to prevent slipping and maintain accurate operation.
3. Connect wires from the control switch to the control/alarm device as required.
4. Check installation by cycling the control switch on and off to ensure proper operation.

(Fig. 1)

CAUTION: USE ONLY AS A GUIDE, MINIMUM TETHER LENGTH IS 4"													
Tether Length (inches)	4"	5"	6"	7"	8"	9"	10"	11"	12"	16"	17"	18"	
Pumping Range (inches)	8"	9"	10"	11"	12"	13"	14"	15"	16"	20"	21"	22"	
Actual Ranges May Vary - Reference Only - Testing Must Be Performed for Actual Ranges													

(Fig. 2)



(Fig. 3)

