

CONTROL SWITCHES

Pressure Switch + Control Box in One

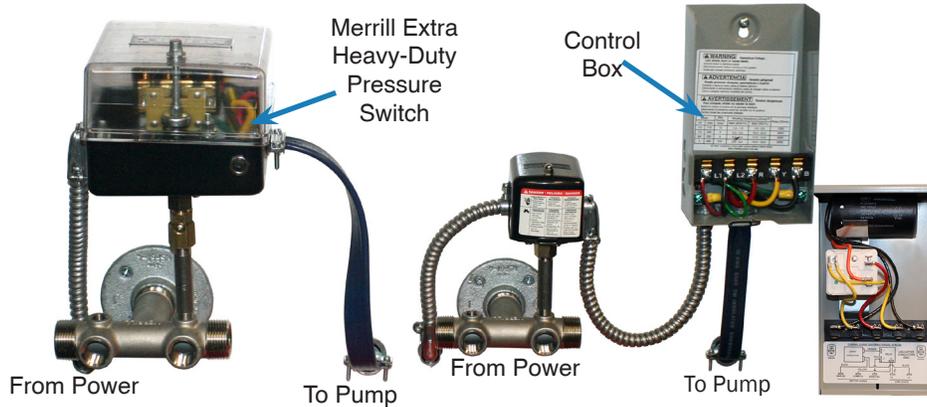
Much Lower Cost - Cut Labor in Half - Easier to Check



LEARN MORE ABOUT THE BEST IN THE INDUSTRY AT merrillmfg.com

CONTROL SWITCHES

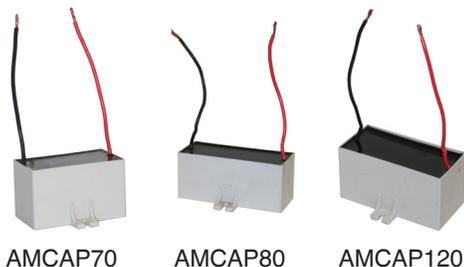
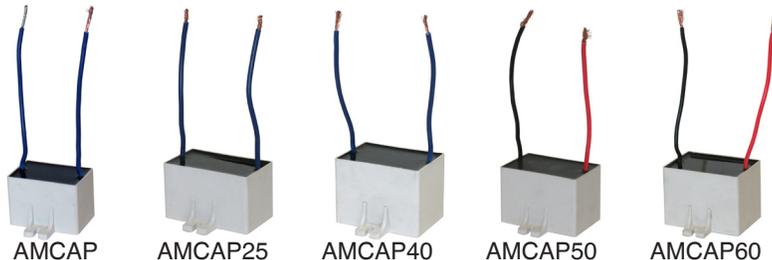
PROVEN BETTER WAY VS. TRADITIONAL CONTROL BOX CONTROL SWITCH ALL IN ONE



PARTS AND ACCESSORIES

Heavy-Duty Control Switch Parts

Order Number	UPC Bar Code (Qty.1)	Description	Approx. Weight
AMCAP	6 42367 43080 1	1/2 HP Capacitor	0.18 lbs
AMCAP25	6 42367 43283 6	3/4 HP Capacitor	0.20 lbs
AMCAP40	6 42367 43284 3	1 and 1-1/2 HP Capacitor	0.30 lbs
AMCAP50	6 42367 43542 4	Also 1/2 HP (115 volt)	0.37 lbs
AMCAP60	6 42367 43543 1	1 HP Capacitor (Deep Set)	0.41 lbs
AMCAP70	6 42367 43544 8	2 HP Capacitor	0.50 lbs
AMCAP80	6 42367 43544 8	2 HP Capacitor (Deep Set)	0.50 lbs
AMCAP120	6 42367 44161 6	3 HP Capacitor	0.60 lbs
AMCAP120	6 42367 44162 3	5 HP Capacitor	0.70 lbs
MPS1140G	6 42367 43206 5	Thermal Reset (15 AMP) 1-1/2 HP	0.02 lbs
MPSRESET20A	6 42367 44297 2	Thermal Reset (20 AMP) 2 HP	0.02 lbs
MPSRESET25A	6 42367 43708 4	Thermal Reset (25 AMP) 3 HP	0.02 lbs
MPSRESET35A	6 42367 43709 1	Thermal Reset (35 AMP) 5 HP	0.02 lbs



1/4" NPT Swivel Union
No need to spin switch case
Included on Switch Inlet

FEATURES AND BENEFITS

- A** Extra heavy-duty pressure switch for longer life
- B** Easier/better wire connection with set screw inside brass tube - has higher (40 in. lbs.) torque rating
- C** Heavy brass wire connections (hold No. 4 wire) with set screws inside brass tube - wires will not slip off screw
- D** Extra large silver contact for longer service life
- E** Switch extra large case for easy wiring Merrill - 5.75" x 5.3" (30.5 sq. in.) vs. Competitor 3.7" x 3.4" (12.6 sq. in.) NEMA1 case rating
- F** Individually boxed - captive nut on switch cover
- G** 1/4" swivel union so switch case does not need to pivot to install (set screw to stop swivel)
- H** Adjustment instructions for switch inside top cover
- I** Contacts open (switch off) at cut-off pressure
Points close (switch on) at cut-in or pressure drop
- J** Raised grounding lug for easy connection, holds two wires
- K** Control switch eliminates pump control box

- L** Heavy-Duty run capacitor easily replaced or changeable for larger HP motor
- M** 3/4" conduit size knock outs for heavy wire (4 places) Extra Tall Model has 1" knock out
- N** Save time and money - less wiring - with control switch
- O** Extra Tall Model more room for heavy wires (double height) 6" Tall



Circuit Reset Button
1-1/2 HP



35A Reset Button
5 HP



MCSHDT
Extra Tall
Case



Extra Large
1" Knock Out
Hole



MPSRESET20A



MPSRESET25A



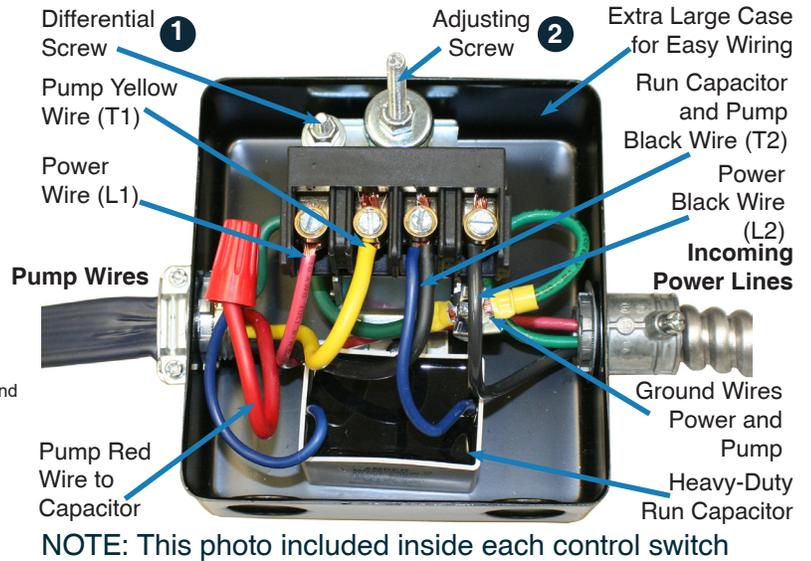
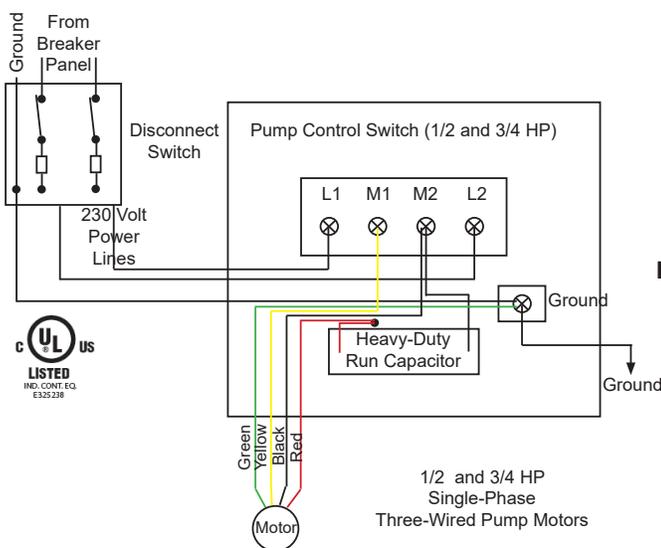
MPSRESET35A



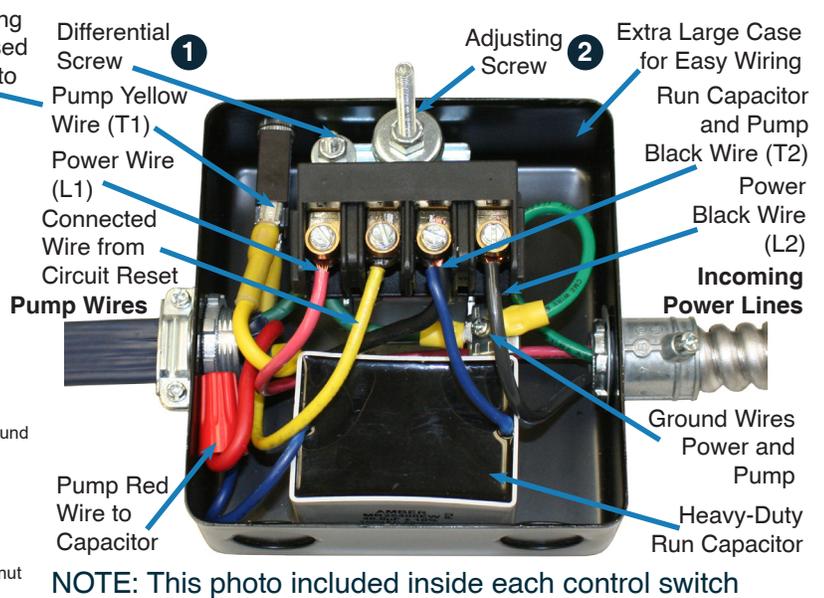
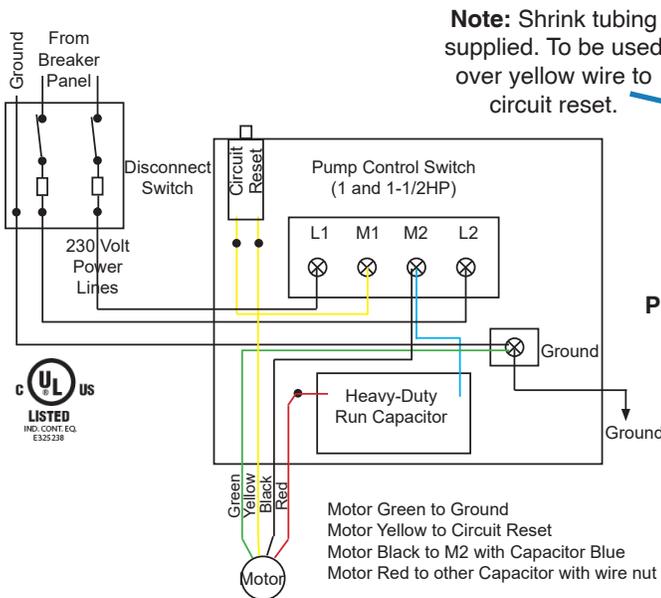
MPS1140G

CONTROL SWITCHES

Wiring Illustration for MERRILL Control Switch - 1/2 HP and 3/4 HP - 3 Wire Pumps (wired example)



Wiring Illustration for MERRILL Control Switch - 1 HP, 1-1/2 HP, 2 HP, 3 HP, 5 HP - (with circuit reset) 3 Wire Pumps (wired example)



Merrill Control Switches have very successfully been in service for over 14 years.

MCSHD CONTROL SWITCHES

U.S. Patent #
10,197,051

Canadian Patent #
2,922,833

Heavy-Duty Control Switches (230 volt)

Order Number	UPC Bar Code (Qty.1)	Motor HP	Preset On (PSI)	Preset Off (PSI)	Run Capacitor	Approx. Weight
MCSHD.53050	6 42367 44223 1	1/2	On @ 30psi	Off @ 50psi	20	3.2 lbs
MCSHD.54060	6 42367 43326 0	1/2	On @ 40psi	Off @ 60psi	20	3.2 lbs
MCSHD.56080	6 42367 43327 7	1/2	On @ 60psi	Off @ 80psi	20	3.2 lbs
MCSHD.753050	6 42367 44225 5	3/4	On @ 30psi	Off @ 50psi	25	3.3 lbs
MCSHD.754060	6 42367 43328 4	3/4	On @ 40psi	Off @ 60psi	25	3.3 lbs
MCSHD.756080	6 42367 43329 1	3/4	On @ 60psi	Off @ 80psi	25	3.3 lbs
* MCSHD1.3050	6 42367 44226 2	1 to 1-1/2	On @ 30psi	Off @ 50psi	40	3.4 lbs
* MCSHD1.4060	6 42367 43330 7	1 to 1-1/2	On @ 40psi	Off @ 60psi	40	3.4 lbs
* MCSHD1.6080	6 42367 43331 4	1 to 1-1/2	On @ 60psi	Off @ 80psi	40	3.4 lbs
* MCSHD2.3050	6 42367 44227 9	2	On @ 30psi	Off @ 50psi	60	3.5 lbs
* MCSHD2.4060	6 42367 43674 2	2	On @ 40psi	Off @ 60psi	60	3.5 lbs
* MCSHD2.6080	6 42367 44204 0	2	On @ 60psi	Off @ 80psi	60	3.5 lbs
* Extra Tall Cover Switch Supplied with 3 HP and 5 HP						
* MCSHDT3.4060	6 42367 44413 6	3	On @ 40psi	Off @ 60psi	80	4.2 lbs
* MCSHDT3.6080	6 42367 44414 3	3	On @ 60psi	Off @ 80psi	80	4.2 lbs
* MCSHDT5.4060	6 42367 44415 0	5	On @ 40psi	Off @ 60psi	120	4.3 lbs
* MCSHDT5.6080	6 42367 44416 7	5	On @ 60psi	Off @ 80psi	120	4.3 lbs

*Includes thermal reset inside pressure switch for 1 HP, 1-1/2 HP, 2 HP, 3 HP, and 5 HP



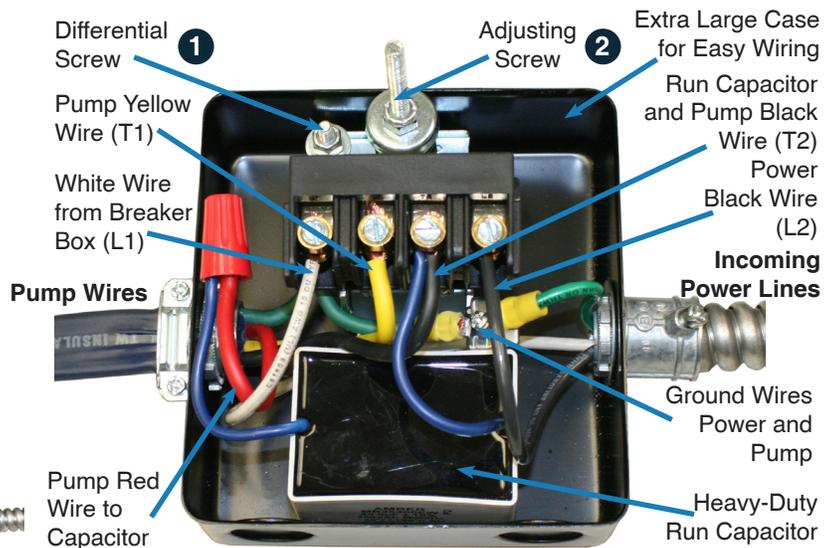
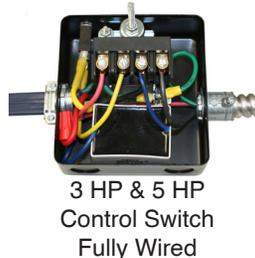
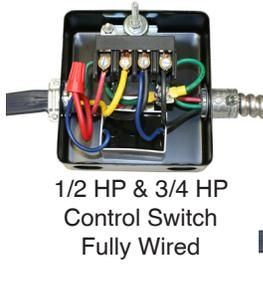
Certified to
NSF/ANSI/CAN 61 & 372

Note: Main component for the Control Switch is the MPSXHD which is ALS certified.

Heavy-Duty Control Switches (115 volt)

Order Number	UPC Bar Code (Qty.1)	Motor HP	Preset On (PSI)	Preset Off (PSI)	Run Capacitor	Approx. Weight
MCSHD3050	6 42367 44228 6	1/2	On @ 30psi	Off @ 50psi	40	3.2 lbs
MCSHD4060	6 42367 43424 3	1/2	On @ 40psi	Off @ 60psi	40	3.2 lbs
MCSHD6080	6 42367 43425 0	1/2	On @ 60psi	Off @ 80psi	40	3.2 lbs

1/2 HP - 3 Wire Pumps (115 volt) (wired example)



Wiring for: MCSHD3050, MCSHD4060, and MCSHD6080



CONTROL SWITCHES

ADJUST IN PROPER SEQUENCE

The sequence for control switch adjustment must be followed as well as minimum pressure differential.

1. ADJUSTMENT RANGE

Always adjust the range spring nut (1) First (Setting it to the desired operating point on falling pressure) Keep in mind that this adjustment changes both the high and low operating points. It should always be adjusted for the low operating point. Turning the nut (1) clockwise increases the setting. Turn nut down for higher cut in pressure, or up for lower cut in.

2. DIFFERENTIAL

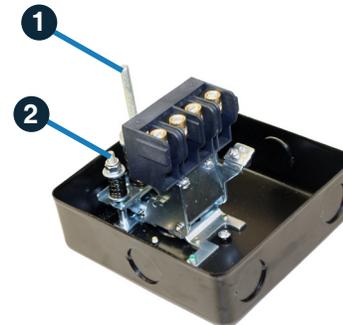
To set the operating point or rising pressure, adjust the differential spring nut (2). Turning the nut (2) clockwise increases the pressure difference between the high and low operating points. NOTE: The maximum operating pressure of the pump using this switch must be a minimum of 12psi above the switch shut off setting. Also the differential must be set to be more than 12psi between on and off of the switch. Use of this control switch outside of noted parameters will not be warranted. Always check control switch operation after resetting.



Extra Tall
Cover
Switch

TWO-POLE RATINGS

VOLTAGE	SINGLE PHASE AC
115	1/2 HP
230	1/2 HP to 5 HP



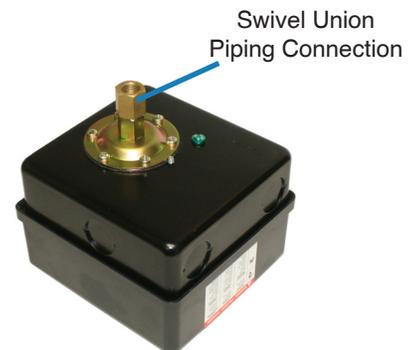
ENCLOSURE RATING

MERRILL heavy-duty control switches have NEMA1 enclosures, which are intended for indoor use primarily to provide protection against contact with the enclosed equipment in locations where unusual service conditions do not exist.

WARRANTY

Control switches overheated or burned up inside from rapid cycling will not be warranted. Factory set pressure range settings are +/- 8psi. A mechanical control switch factory setting can not always be more accurate, field adjustments may be needed.

Electrical equipment should be serviced only by qualified personnel. No responsibility is assumed by MERRILL Manufacturing Co. for any consequences arising out of the use of this material. This instruction sheet is not intended as an instruction manual for untrained persons.



UNIVERSAL CONTROL SWITCH

Instruction for cross reference of **WIRE COLORS** for USA Domestic/60 HZ. Motors and Foreign/50 HZ. Motors (Europran or Asian color codes)

How To Be Wired to Merrill Control Switch

	Motor Wire Colors USA Domestic/60HZ	Motor Wire Colors Foreign/50Hz
Start Windings	RED	= BROWN
Main Windings	BLACK	= YELLOW
Line Wire	YELLOW	= BLUE or GRAY
Ground	GREEN	= GREEN with YELLOW STRIP

Wire Colors for 3 Wire Motors Single Phase (60 or 50 HZ) 115 or 230 volt

Wires Incoming Power	Wires to USA Pump Motor	
RED - L1 Pressure Switch	RED	Red wire nut on capacitor wire
BLACK - L2 Pressure Switch	BLACK	M2 with blue capacitor wire M1 (1/2 & 3/4 HP) Pressure Switch or (1 & 1-1/2 HP) Yellow crimp terminal on circuit over- load reset that is already wire, to M1 on pressure switch
GREEN - Grounding Lug of Switch	YELLOW GREEN	Ground lug of Switch

Merrill Control Switch has Run the Motors for the Below List of Pump Companies

Company	From	Company	From
A.Y. McDonald	USA	Pentair Flow Technologies	USA
AA Rotating Apparatus Corp. (Aurora Motors)	USA	Rentzel Energy Equipment Co. (RPM)	USA
ABB, Inc.	USA	Robbco Pumps	USA
Alstra Industries	USA	Ruhrpumpen	USA
American West Windmill & Solar	USA	SME-USA Inc.	USA
American-Marsh Pumps	USA	Shakti Pumps USA LLC	Asia
BMR USA Inc.	USA	Solar Power & Pump Company (Solar)	USA
C.R.I Pumps (PVT) Ltd.	USA	Stairs Industrial Co. Ltd.	Asia
Central Water Pump Inc.	USA	Submersibles and Electric Inc.	USA
DAB Pumps, Inc.	USA	Sumoto Srl	Europe
Flint & Walling	USA	SunPumps Inc. (Solar)	USA
Flowserve	USA	Teco-Westinghouse	USA
Franklin Electric	USA	Unitra, Inc.	USA
GenPro Energy Solutions (Solar)	USA	Vansan Makina San ve Tic A.S.	Europe
Goulds Water Technology, a Xylem Brand	USA	Varuna Pumps	Asia
Grundfos	USA	Weber Industries Inc. (Webtrol Pumps)	USA
Hitachi America, Ltd.	USA	Well Pumps S.A.	Europe
Hydroflo Pumps USA, Inc.	USA	Wellmate & American Plumber by Pentair	USA
Karlington	USA	Wilo USA LLC	Europe
National Pump Company	USA	Wolf Pump	USA
Nidec Motor Corporation	USA	Yaskawa American Inc.	Asia



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315 Flindt Dr. | Storm Lake, Iowa 50588 | (800) 831-6962 | merrillmfg.com