ENOVATIVE® MANUFACTURING LLC

AutoHot®

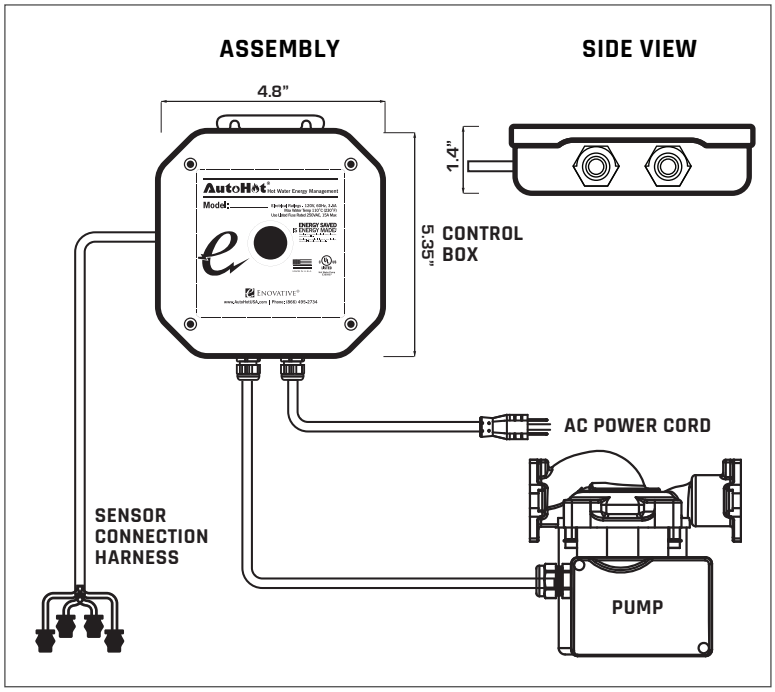
JOB or CUSTOMER:					
ENGINEER:					
CONTRACTOR:					
SUBMITTED BY:		APPROVED BY:		ORDER NO:	
Date:		Date:		Date:	

SUBMITTAL | SPECIFICATIONS DR CONTROLLER SERIES

The AutoHot® Residential Demand Recirculation System is an on-demand hot water delivery system designed to provide rapid hot water to fixtures while minimizing water and energy waste. The system operates by activating a recirculation pump only when hot water is needed, eliminating continuous circulation and reducing unnecessary energy consumption.

The system is compatible with both traditional return-line plumbing systems and retrofit crossover systems (under-sink installations). It is suitable for use with tank-type, tankless water heaters and heat pumps.

The Gen3 AutoHot® controller includes an integrated wireless receiver with two-way communication capability for wireless temperature sensors and activation devices.



SYSTEM TYPES

Return Line System

- Dedicated return line from fixtures back to water heater
- Pump installed at water heater on return line
- Highest efficiency and performance

Under Sink Kit (USK)

- Used when no return line is available
- Pump and controller installed under sink
- Requires electrical outlet under sink

Under Sink Crossover (USC)

- Used when no return line is available
- Pump and controller installed at water heater
- Thermal crossover valve installed at farthest fixture
- Wireless temperature sensor required
- No electrical outlet required under sink

SEQUENCE OF OPERATION

1. User activates system via wired or wireless device
2. Controller receives activation signal
3. Controller energizes pump via internal relay
4. Hot water is circulated through plumbing system
5. Return line temperature is monitored by sensor
6. Pump shuts off when one of the following occurs:
   - Delta temperature rise achieved (~5˚F default)
   - Lockout temperature reached (~105˚F default)
   - Maximum runtime reached (adjustable safety cutoff)

MODEL NUMBERS

Standard (Return Line)

- DR000A – Controller only (no pump)
- DR055A – Controller with 55-series pump
- DR099A – Controller with 99-series pump
- DR150A – Controller with 150-series pump

Under Sink Kit (USK)

- DR000A-USK
- DR055A-USK
- DR099A-USK

Under Sink Crossover (USC)

- DR000A-USC
- DR055A-USC
- DR099A-USC

HARNESS FUNCTIONS

Standard (Return Line)

- **Black/Black**: Temperature sensor (NTC)
- **Black/Red**: Dry contact input (activation)
- **Green/White**: LED indicator output
- **Green/Black**: 5VDC output for motion sensor

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CONTROLLER SPECIFICATIONS

Electrical

- **Power Supply:** 120 VAC, 60 Hz
- **Max Current:** 2.15 A
- **Relay Rating:** 1/2 HP (9.8 FLA / 58.8 LRA)
- **Relay Electrical Life:** 100,000 cycles minimum

Control Logic

- **Activation Type:**
  - On-Demand mode (Default)
  - Thermo mode (Available upon request)
- **Shutoff Methods:**
  - Temperature lockout
  - Delta temperature rise
  - Runtime safety cutoff (2–10 minutes adjustable)

Wireless

- **Frequency:** 433 MHz
- **Max Devices:** 10 per controller
- **Communication:** Two-way (Gen3)

Physical

- **Dimensions:** 4.8" H x 4.8" W x 1.2" D
- **Weight:** 14 oz
- **Enclosure:** PC/ABS, flame rated

Environmental

- **Operating Temperature:** 32°F to 122°F
- Indoor use only

Enclosure

PC/ABS, Minimum thickness 3.0 mm, 5VA/V-0, HWI 2, HAI 0, RTI 85, CTI 0

Modes and adjustments

- **Demand mode** - Turn on with activator, off with temperature
- **Thermo mode** - Turn on and off based on temperature setpoint

LED indicators

- **Standby:** The center button indicator will be off
- **Receiving signal:** The center button indicator will flash 3 seconds sharp fast flashing
- **Runtime:** The center button indicator will flash slowly
- **Pairing:** The center button will remain flashing for 15 seconds or until it receives signal
- **Target temperature:** The center button will stay on

Warranty

- Original owner only
  - **Controller:** 5 year limited warranty
  - **Recirculation Pump:** 18 months
  - **Activation Devices:** 12 months

Complete details available upon request

KIT CONTENTS

All Controller Kits Include:

1. Controller (Gen3)
   - Temperature Sensor (NTC)
   - Harness set:
     - **Black/Black** – Temp sensor
     - **Black/Red** – Dry contact input
     - **Green/White** – LED output
     - **Green/Black** – 5VDC output
   - Mounting hardware
   - Wire ties
   - Sensor insulation wrap
   - Anchors and screws
2. Pump
   - **Pump flanges:**
     - Mounting hardware
     - Gaskets
3. **Activation Device.**
   - Wired push button
   - Harnesses for wired activation devices

USK Kits Include:

- Stainless steel flex lines
- Custom tees

USC Kits Include:

- Thermal crossover valve
- Wireless temperature sensor
- ¾ in fem adapter

INSTALLATION REQUIREMENTS

Return Line Configuration

Return Line -> Isolation Valve -> Pump -> Hose Bib -> Isolation Valve -> Tee -> Cold Water Inlet

Sensor Installation

- Must be installed on return line or installed in tee for retrofit type installation
- Must be insulated, when strapped on
- Must be installed on metallic pipe (not CPVC)

Pump Installation

- Installed on return line, or on the hot water out line, or under the sink, depending on type of installation
- Shaft must be horizontal

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55-SERIES PUMP SPECIFICATIONS

TECHNICAL & ELECTRICAL DATA

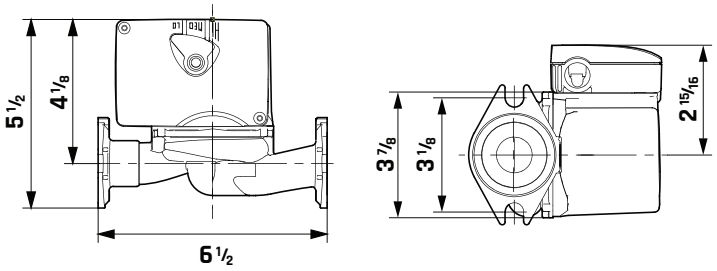
Flow range:	0-25 gpm
Head range:	0-18 feet
Motors:	2-pole, single-phase
Max. liquid temperature:	230°F (110°C)
Min. liquid temperature:	36°F (2°C)
Max. system pressure:	145 psi (10 bar)

Model	Spd	Volts	Amps	Watts	Hp	Capacitor
55-Series	3	115	0.75	87	0.12	10 µF/180 V
	2		0.69	77	0.10	10 µF/180 V
	1		0.53	58	0.08	10 µF/180 V

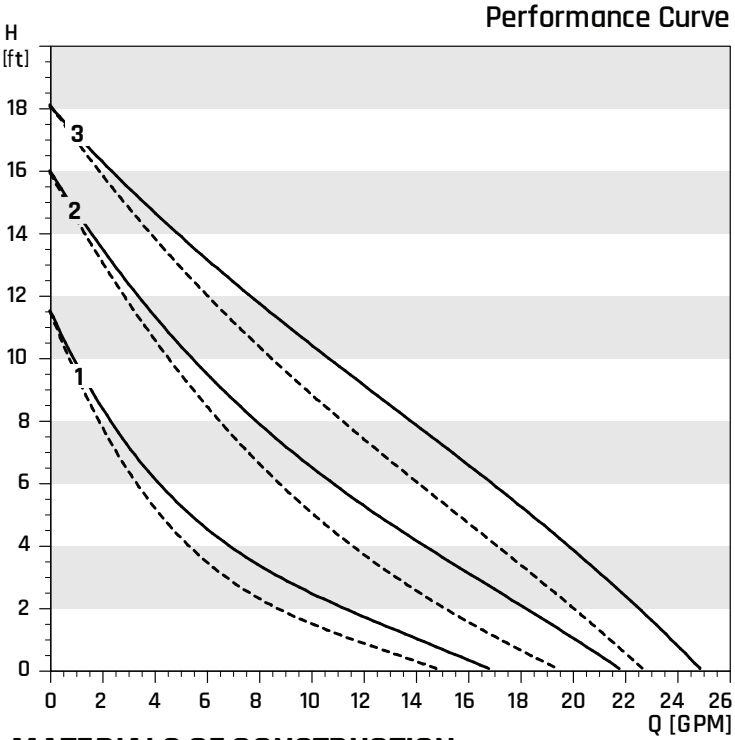
Part No.	Name	Description
DC055A	AutoHot®	55-series pump, commercial EMS, (3) temp sensors
DR055A		55-series pump, residential controller, push button activator
DR055A-USK		55-series pump, residential controller, push button, Under Sink Kit
DR055A		55-series pump, residential controller, integrated receiver, wireless and wired push button activators
DR055A-USK		55-series pump, residential controller, integrated receiver, wireless and wired push button activators, Under Sink Kit

SIZE & WEIGHT

Model	Type and Size	Wt. (lbs)
UPS 15-55 SFC	GF 15/26	6

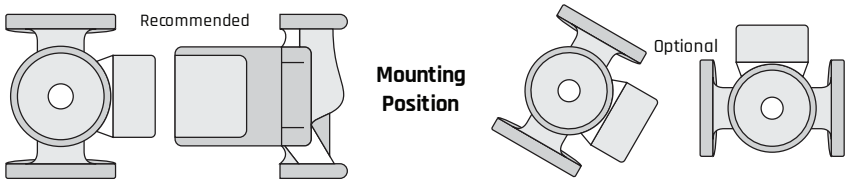


Performance Curve



MATERIALS OF CONSTRUCTION

Description	Material
Inlet Cone, Bearing Plate, Bearing Retainers, Rotor Can, Rotor Cladding Shaft Retainer	304 Stainless Steel
Stator Housing	Aluminum
Shaft, Upper & Lower Radial Bearings	Aluminum Oxide Ceramic
Thrust Bearing	Carbon bearing and EPDM retainer
Check Valve	ACETAL with 302 Stainless Steel Spring & Nitrile Rubber Seats
Pump Housing (Volute)	Silicon bronze C875 or Stainless steel 300 series
O'Ring & Gaskets	EP (Ethylene Propylene Rubber)
Impeller	PES Composite (30% Glass Filled)
Terminal Box	Noryl®



DO NOT
Mount Motor Shaft in Vertical Position

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99-SERIES PUMP SPECIFICATIONS

TECHNICAL & ELECTRICAL DATA

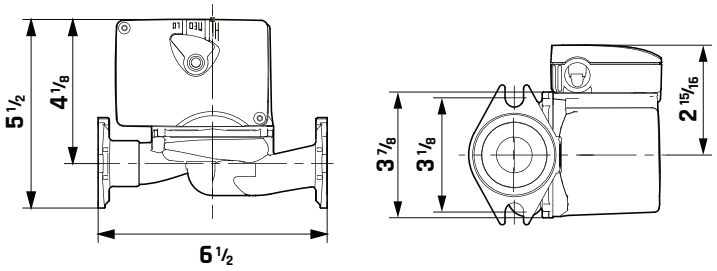
Flow range:	0-33 gpm
Head range:	0-29 feet
Motors:	2-pole, single-phase
Max. liquid temperature:	230˚F (110˚C)
Min. liquid temperature:	36˚F (2˚C)
Max. system pressure:	145 psi (10 bar)

Model	Spd	Volts	Amps	Watts	Hp	Capacitor
99-Series	3	115	1.8	197	1/6	20 µF/180 V
	2		1.8	179	1/6	20 µF/180 V
	1		1.8	150	1/6	20 µF/180 V

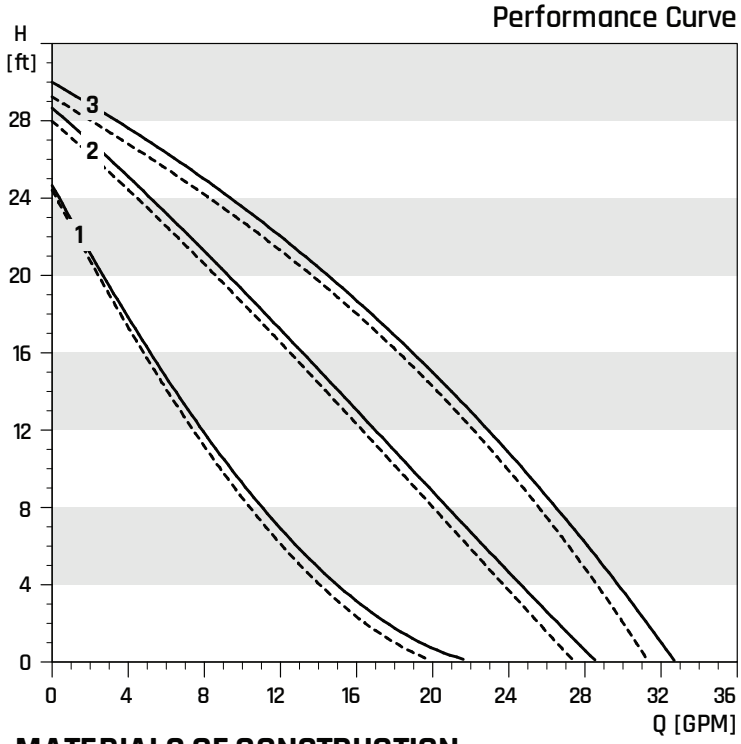
Part No.	Name	Description
DC099A	AutoHot®	99-series pump, commercial EMS, (3) temp sensors
DR099A		99-series pump, residential controller, push button activator
DR099A-USK		99-series pump, residential controller, push button, Under Sink Kit
DR099A		99-series pump, residential controller, integrated receiver, wireless and wired push button activators
DR099A-USK		99-series pump, residential controller, integrated receiver, wireless and wired push button activators, Under Sink Kit

SIZE & WEIGHT

Model	Type and Size	Wt. (lbs)
99-11	Flange - (2) ½" Dia. Bolt Holes	10

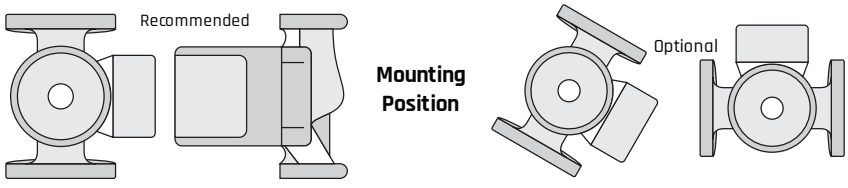


Performance Curve



MATERIALS OF CONSTRUCTION

Description	Material
Inlet Cone, Bearing Plate, Bearing Retainers, Rotor Can, Rotor Cladding Shaft Retainer	304 Stainless Steel
Stator Housing	Aluminum
Shaft, Upper & Lower Radial Bearings	Aluminum Oxide Ceramic
Thrust Bearing	Carbon bearing and EPDM retainer
Check Valve	ACETAL with 302 Stainless Steel Spring & Nitrile Rubber Seats
Pump Housing (Volute)	Silicon bronze C875 or Stainless steel 300 series
O'Ring & Gaskets	EP (Ethylene Propylene Rubber)
Impeller	PES Composite (30% Glass Filled)
Terminal Box	Noryl®



DO NOT
Mount Motor Shaft in Vertical Position

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150-SERIES PUMP SPECIFICATIONS

TECHNICAL & ELECTRICAL DATA

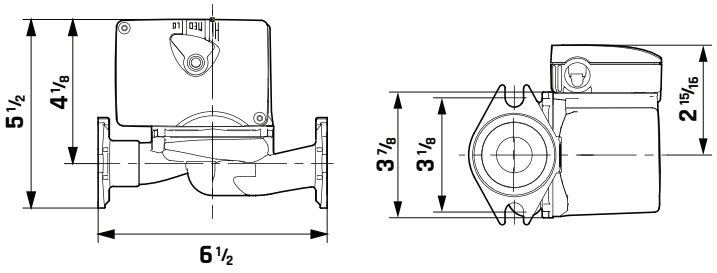
Flow range:	0-53 gpm
Head range:	0-46 feet
Motors:	2-pole, single-phase
Max. liquid temperature:	230°F (110°C)
Min. liquid temperature:	36°F (2°C)
Max. system pressure:	145 psi (10 bar)

Model	Spd	Volts	Amps	Watts	Hp	Capacitor
150-Series	3	115	3.5	370	1/6	40 µF/180 V
	2		3.1	335	1/6	40 µF/180 V
	1		2.5	265	1/6	40 µF/180 V

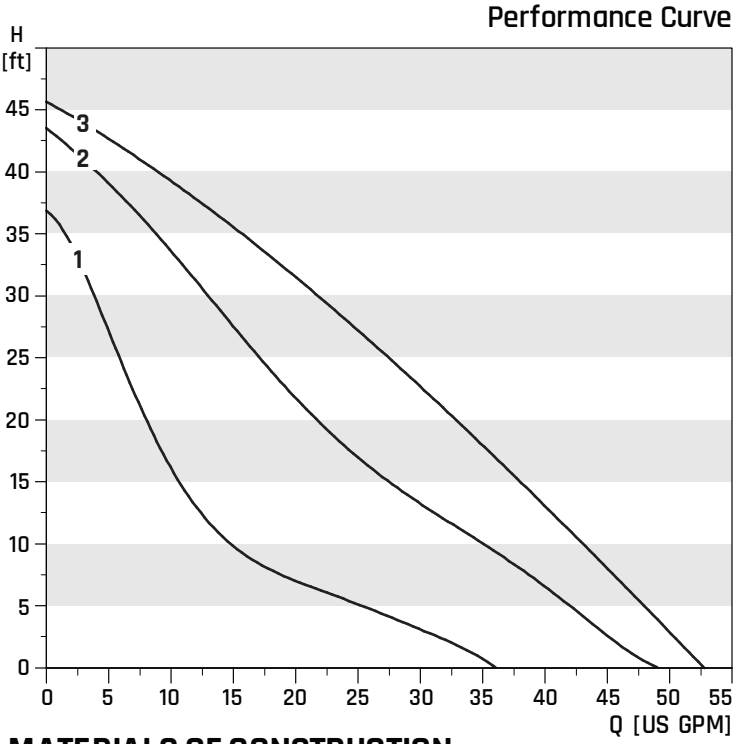
Part No.	Name	Description
DC0150A	AutoHot®	150-series pump, commercial EMS, (3) temp sensors
DR0150A		150-series pump, residential controller, push button activator
DR0150A-USK		150-series pump, residential controller, push button, Under Sink Kit
DR0150A		150-series pump, residential controller, integrated receiver, wireless and wired push button activators
DR0150A-USK		150-series pump, residential controller, integrated receiver, wireless and wired push button activators, Under Sink Kit

SIZE & WEIGHT

Model	Type and Size	Wt. (lbs)
UPS 26-150 SF	GF 15/26	6

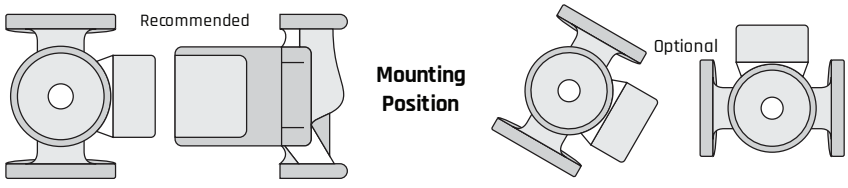


Performance Curve



MATERIALS OF CONSTRUCTION

Description	Material
Inlet Cone, Bearing Plate, Bearing Retainers, Rotor Can, Rotor Cladding Shaft Retainer	304 Stainless Steel
Stator Housing	Aluminum
Shaft, Upper & Lower Radial Bearings	Aluminum Oxide Ceramic
Thrust Bearing	Carbon bearing and EPDM retainer
Check Valve	ACETAL with 302 Stainless Steel Spring & Nitrile Rubber Seats
Pump Housing (Volute)	Silicon bronze C875 or Stainless steel 300 series
O'Ring & Gaskets	EP (Ethylene Propylene Rubber)
Impeller	PES Composite (30% Glass Filled)
Terminal Box	Noryl®



DO NOT
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SUBMITTAL | SPECIFICATIONS DR CONTROLLER SERIES

ELECTRICAL INTERFACE

- **Dry Contact Input:** Accepts normally open contact (no external voltage required)
- **5VDC Output:** Powers wired motion sensors
- **Compatible with third-party devices** (e.g., motion sensors, electric eye switches)

COMPLIANCE

- **ETL Listed**
- **NSF 61 compliant pumps**
- **Meets CA Title 24 requirements**
- **Meets IECC requirements**

SYSTEM BENEFITS

- Reduces water waste
- Reduces energy consumption
- Provides rapid hot water delivery
- Extends plumbing system efficiency

NOTES

- System performance depends on proper installation
- Installer may add external check valve if required
- Maximum of 10 wireless devices per controller

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ACTIVATION DEVICES

WIRED DEVICES

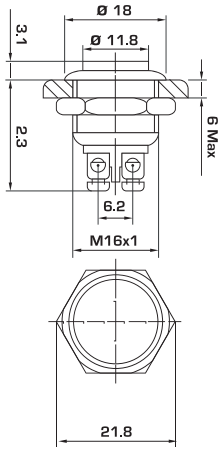
HB-S-13A
(Hardwired Push Button)

Description

The hardwired push button activator is a normally open, momentary contact switch that signals the AutoHot® to turn on when pressed by the user. One hard wired push button comes standard with every AutoHot® system and is suitable for a 16mm mounting hole. You can run multiple hardwired buttons in parallel to activate the AutoHot® system from various fixture locations. The hardwired push button has a 4 feet long (22/2 cable) attached with color coded wires. Black and Red are for the dry switch, there is no polarity. Use color code matching and install in parallel when installing these devices. Use the harnesses provided with the controller to connect the low voltage wiring into the correct harness connector.

Thread Diameter:	Length:	Net Weight:	Width:
16 mm	24 mm / 0.94"	14 g	21 mm / 0.83"

SPECIFICATIONS	
Contact type	Momentary (1NO)
Head shape	High Round
Switch rating	36 VDC, 2A
Terminal number	2; Mounting
Material	Stainless Steel
Wire	22awg 2 wire (22/2 stranded or solid wire)
Housing color	Silver Tone, Blue
Thread diameter	16 mm / 0.63"



HB-S-20LED
(Hardwired LED Lighted Push Button)

Description

The hardwired LED indicator push button is a normally open momentary contact switch that activates the AutoHot® system, it has a LED indicator which lights up when the return line is hot and turns off when the lines have cooled down and the pump needs to be reactivated. The hardwired LED rocker switch has a 4 feet long cable attached with color coded wires (22/4 cable). Black and Red are for the dry switch, Green (positive) and White (negative) are the power wires for the LED. Power. Use color code matching and install in parallel when installing several of these devices. To connect wired devices use the harnesses provided.

Height:	Depth:	Net Weight:	Width:	Gross Weight:
0.8 Inches	1.3 Inches	20 Grams	0.86 Inches	35 Grams

SPECIFICATIONS			
Contact type	Momentary		
Head shape	Flat Round	Housing color	Orange
Switch rating	36 VDC, 2A	Thread diameter	18 mm / 0.70"
Terminal number	4; Wire Splice	LED Color	Red
Material	Stainless Steel		
Wire	22awg 4 wire (22/4 stranded or solid wire)		

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ACTIVATION DEVICES

WIRED DEVICES

HR-S-17W
(Rocker Switch)

Description

The hardwired decorative rocker switch can be used with any AutoHot® on-demand system for activation. Multiple switches can be used, running parallel, to activate the system from different fixtures. Can be used in the bathroom or kitchen for easy activation.

SPECIFICATIONS	
Part Number	HR-S-17W
Product Description	Single Control Momentary Contact Rocker Toggle Switch.
Dimension	6in × 4in × 4 in
Max. Current	15A
Max. Voltage	277V
Face Color	Egg Shell White
Type	Electronic Switch
Material	Thermoplastic

HR-S-17LED
(Hardwired Rocker Switch White LED)

Description

The hardwired decorative LED rocker switch is a momentary activation device used to trigger the AutoHot® system. When pressed, it briefly closes a normally open contact to signal the controller to start the recirculation pump. The switch includes an LED indicator that mirrors the controller's status, providing a visual indication of system operation. Wire terminals on back of LED rocker switch are labeled for the color coded harnesses Black/Red are for the dry switch,Green/White are the power wires for the LED.

SPECIFICATIONS				
Part Number	HR-S-17LED			
Product Description	15 A 277 V Single Control Momentary Contact Rocker Toggle Switch with Red LED			
Size	65mm x 32mm x 38mm			
Max. Current	15A		Max. Voltage	277V
Mechanical Life	10 Years		Type	Electronic Switch
Face Color	White		Feature	Safety
LED Color	Red		LED Voltage	5VDC
Material	PolyCarbonate		Application	House
Wire	22awg 4 wire (22/4 stranded or solid wire)			
Function	Touch panel light wall switch with LED indicator			

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ACTIVATION DEVICES

WIRED DEVICES

HM-S-22A
(Hardwired Motion Sensor)

Description

The hardwired motion sensor is an activation device used to trigger the AutoHot® system automatically. When motion is detected, the sensor briefly closes a normally open contact to signal the controller to start the recirculation pump. The sensor includes an LED indicator that provides visual confirmation of motion detection and activation with the option to turn it off. Wire terminals on the back of the motion sensor are labeled for the color-coded harnesses: **Black/Red** are for the dry switch signal, and **Green/Black** are the power wires (5VDC).

SPECIFICATIONS				
	Model	HM-S-22A	Detecting Distance	8M
	Working Voltage	5-9VDC	Detecting Angle	360° LED Light is ON
	Working Current	≤ 18mA (DC 12V)	Working Temperature	-10~50°C
	Dimension	88mm x 22mm		
	Wire	22awg 4 wire (22/4 stranded or solid wire)		
	Installation	Ceiling Mounted		
	Alarm Output	N.O/N.C (Optional)		
	LED ON/OFF	Optional		

HM-S-25A
(Compact Motion Sensor)

Description

The hardwired motion sensor is an activation device **used to trigger the AutoHot® system automatically.** When motion is detected, the sensor briefly closes a normally open contact to signal the controller to start the recirculation pump.

The sensor includes an LED indicator that **provides visual confirmation** of motion detection and activation.

Wire terminals on the back of the motion sensor are labeled for the color-coded harnesses: **Black/Red** are for the dry switch signal, and **Green/Black** are the power wires (5VDC).

SPECIFICATIONS				
	Model	HM-S-25A	Working Humidity	< 93% RH No condensation
	Working Voltage	4 - 12VDC	Installation Height	7.5 feet > H > 10.5feet
	Detecting Angle	140°	Product Size	D2 .56in X 1.98in
	Detecting Range	15 ~ 24 feet (ambient temperature 25°)		
	Delay Time	3 - 5s		
	Relay Output Mode	Normally open or normally closed is optional		
	Relay Output Voltage	Dry contacts.		
	LED Output Mode	ON/OFF are optional		
	Working Temperature	-10° ~ 50°C		

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ACTIVATION DEVICES

WIRELESS DEVICES

WB-S-16A
(Wireless Button Sensor)

Description

The wireless push button is **used to activate** the AutoHot® system on demand from a remote location. When pressed, it sends a wireless signal to the controller to start the recirculation pump.

The device offers long-range operation and can be installed without wiring, making it ideal for convenient placement throughout the home.

Multiple wireless devices can be paired to a single controller, and it can be used in combination with other activation wireless and wired devices. It includes mounting hardware for easy installation.

Height:	Width:	Depth:	Net Weight:
2.81 Inches	1.63 Inches	0.75 Inches	20 grams

SPECIFICATIONS	
Device Type	Wireless momentary push button transmitter
Function	Sends activation signal to AutoHot® controller on demand
Power Source	Battery powered
Operating Frequency	~433 MHz
Range	~800–1000 ft (open air)
Pairing Capacity	Up to 10 wireless devices per controller
Installation	Surface mount (screws or double-sided adhesive)
Enclosure	Plastic housing, indoor use

WM-S-16A
(Wireless Motion Sensor)

Description

The wireless motion sensor is used to automatically activate the AutoHot® system when motion is detected. When movement is sensed, it sends a wireless signal to the controller to start the recirculation pump.

SPECIFICATIONS	
Device Type	Wireless motion sensor (PIR)
Function	Sends activation signal to AutoHot® controller upon motion detection
Power Source	Battery powered
Signal Type	RF wireless transmission
Operating Frequency	~433 MHz
Range	~600–800 ft (open air)
Pairing Capacity	Up to 10 wireless devices per controller
Installation	Surface mount
Enclosure	Plastic housing, indoor use

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ACTIVATION DEVICES

WIRELESS DEVICES

WR-S-24LED
(Wireless LED Rocker Switch)

Description

The wireless LED rocker switch is used to activat the AutoHot system on demand from a remote location. When pressed, the device sends a wireless signal to the controller to start the recirculation pump. The switch includes an LED indicator that mirrors the controller's status providing visual feedback of system operation. The WR-S-24LED wireless rocker swtich needs standard AC power to operate.

Install by using an existing wall outlet. Install a new single-gang box directly above the outlet, run an electrical wire from the outlet to that box, this provides power to the switch without needing a new circuit. Once the power is connected the switch works wirelessly with the AutoHot controller, no additional low voltage wiring is requied to be installed. Multiple wireless devices can be paired to a single controller and used in combination with other activation devices.

Height:	**Width:**	**Depth:**	**Net Weight:**
4 Inches	2 Inches	3 Inches	0.31 lbs

SPECIFICATION	
Device Type	Wireless LED rocker switch
Function	Sends activation signal to AutoHot® controller
Power Source	AC powered
Signal Type	RF wireless transmission
Operating Frequency	~433 MHz
Range	~800–1000 ft (open air)
Pairing Capacity	Up to 10 wireless devices per controller
Installation	Wall mount (standard electrical box)
Enclosure	Plastic housing, indoor use

WIRELESS SPECIFICATIONS

- Max devices: 10
- Pairing via controller button
- Automatic overwrite of oldest device when limit exceeded

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AutoHot®

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CONTRACTOR:					
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ACCESSORIES

WR-16A Wireless Receiver (Legacy System)

Description

The WR-16A wireless receiver is used to receive activation signals from AutoHot® wireless devices and trigger the AutoHot® system. It connects to the controller and allows wireless activation from compatible devices such as push buttons and motion sensors.

This receiver is used in legacy AutoHot® systems where the wireless receiver is not integrated into the controller. Multiple wireless devices can be paired to a single receiver and used in combination with other activation devices.

SPECIFICATION	
Device Type	Wireless receiver (legacy accessory)
Function	Receives RF signal and provides dry contact output to AutoHot® controller
Power Source	Powered through controller connection
Signal Type	RF wireless reception
Operating Frequency	~433 MHz
Pairing Capacity	Up to 10 wireless devices per receiver
Connection	Low-voltage connection to controller
Installation	Plugs into controller (internal/external depending on model)
Enclosure	Plastic housing, indoor use

SIGNAL REPEATER

Description

The Wireless Repeater (WRP-100) is the perfect add-on if you need more range from your AutoHot® system. It extends the wireless signal by an extra 400 feet in open air – great for larger homes or setups where the signal travels through multiple rooms or floors. No more dead spots or delayed responses.

Setup is simple – just plug it into any standard 120VAC outlet and pair it with your AutoHot® Gen3 On Demand Recirculation Controller. Once running, it works quietly in the background, only transmitting when activated. It won't light up in dark areas either, so it won't disturb anyone in bedrooms or hallways at night.

The design is clean and understated – white with a light blue face – so it blends naturally into any room. Set it up and forget about it.

Like the rest of the AutoHot lineup, the WRP-100 meets IECC and California Title 24 energy code requirements, helping reduce wasted water and electricity year-round.

Notes:

- Compatible with AutoHot® Gen3 controllers only – check your system before buying.
- Only one repeater can be used at a time. Multiple units will cause interference and hurt performance.

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ACCESSORIES

WRK-100 KIT

Description

The Wireless Receiver Kit (WRK-100) is a simple upgrade that makes your tankless water heater smarter. Instead of running your recirculation pump all day, it only triggers hot water when you need it – saving energy and lowering your bills.

Setup is easy. The receiver has a magnetic back, so it sticks right to your water heater – no wiring, no drilling. Power it via the included Micro USB cable or just drop in the included AAA batteries for a fully wireless setup.

It works with most major tankless brands – Rinnai, Bradford White, Navien, Rheem, Noritz, Takagi, A0 Smith, and more – as long as your unit has a built-in recirculation pump.

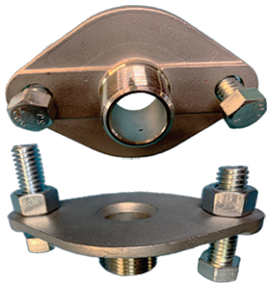
The kit comes with two Wireless Push Button Activators to place wherever you need them. Need more coverage? Add extra push buttons or motion sensors from the AutoHot wireless lineup. Wireless range reaches up to 1,000 feet in open air – one of the best in its class.

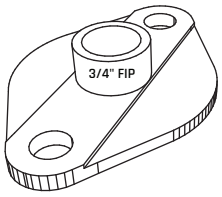
The WRK-100 also meets CA Title 24 and IECC energy code requirements for on-demand recirculation controls.

Note:

- This kit is wireless only – hardwired devices cannot be added.

PUMP FLANGES (ASM-FL-001)



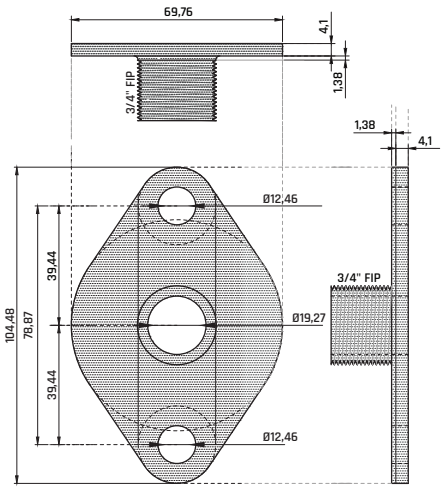


Description

A Stainless steel pump flange for AutoHot® domestic hot water recirculation systems. Used to connect recirculation pump to domestic hot water return line. Designed for potable water and closed-loop systems.

Height:	Depth:	Width:
104.48 mm	4.1 mm	69.76 mm

SPECIFICATIONS	
Material	Stainless Steel 304
Assembly Process	Lead-free compliant
Pipe Connection	FNPT (Female National Pipe Thread)
Pump Connection	2-bolt flange (standard circulator pattern One side: Flat flange face (pump connection) Opposite side: Female threaded (FNPT)
Nominal Size	3/4 inch
Pressure Rating	-150 PSI (varies by manufacturer)
Temp. Range	up to ~230°F (110°C)



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ACCESSORIES

PUMP MOUNTING BRACKETS (MBKT-19)

MBKT-19A

MBKT-19W

Description

The AutoHot® Pump Bracket is a rigid mounting support designed to securely anchor the recirculation pump to a wall or structural surface. It ensures proper pump orientation, minimizes vibration, and reduces mechanical stress on plumbing connections.

- Provides mechanical support for recirculation pump assemblies.
- Maintains proper horizontal pump orientation (critical for bearing life).
- Reduces strain on pump flanges and piping connections.
- Helps minimize vibration and noise transmission.
- Improves installation stability and long-term reliability.

MBKT-19A	**Width:** 120 mm	**Height:** 65 mm	**Depth (Offset):** 50 mm	**Hole Size:** 40 mm
MBKT-19W	**Width:** 114.3 mm	**Height:** 117.6 mm	**Depth (Offset):** 40.1 mm	**Hole Size:** 44.5 mm

SPECIFICATIONS

Material	Galvanized Steel
Finish	Corrosion-resistant black coating
Thickness	Typically 14 gauge steel
Design	Pre-drilled mounting holes for fast installation Slotted holes may allow minor alignment adjustment

FLEXIBLE CORRUGATED STAINLESS STEEL HOSES

for USK model

Hose Length: 18 inch

for USC model

Hose Length: 12 inch

Description

Flexible corrugated stainless steel connector hoses used in AutoHot® residential systems to connect pumps, crossover valves, and plumbing lines. These hoses provide flexibility, durability, and vibration isolation while maintaining full flow capacity for domestic hot water recirculation.

- Corrugated design allows bending without kinking
- Maintains internal diameter under moderate bending
- High resistance to heat and pressure
- Corrosion-resistant stainless steel construction
- Ideal for continuous recirculation systems
- Provides vibration isolation at pump connections
- More durable than rubber-core braided hoses
- Maintains flow efficiency compared to restrictive hoses

Function:

- Connects recirculation pump to return line assembly
- Absorbs vibration from pump operation
- Allows alignment flexibility during installation

SPECIFICATIONS

Body Material	Corrugated stainless steel (304)		
Exterior	Natural stainless steel finish	End Fittings	Stainless steel
Assembly Process	Lead-free compliant	Sealing Method	Washer-based
Certified	NSF Certified (Potable Water)	Diameter	3/4 inch
Working Pressure	-150 - 300 PSI	Burst Pressure	≥ 600 PSI
Temperature	Up to ~200°F+ (suitable for domestic hot water systems)		

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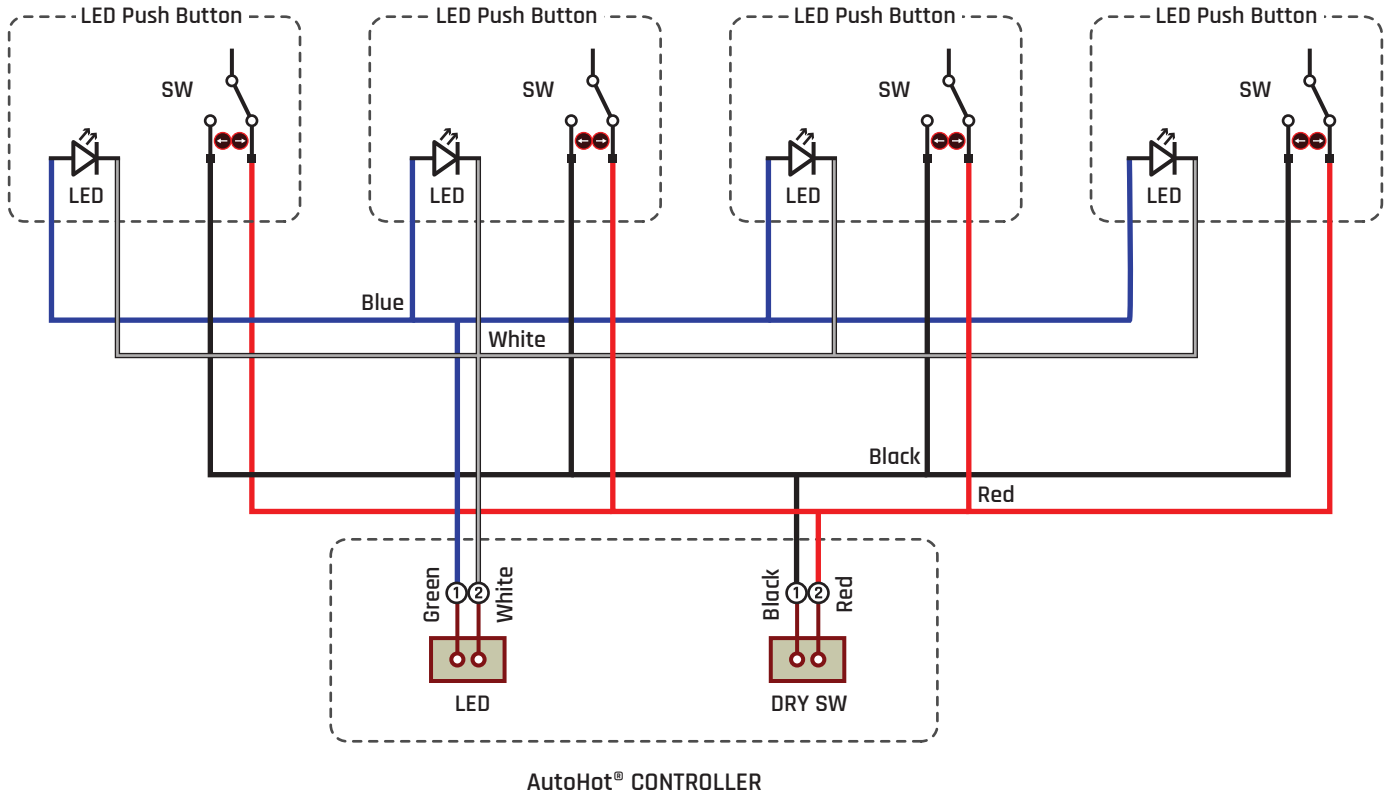
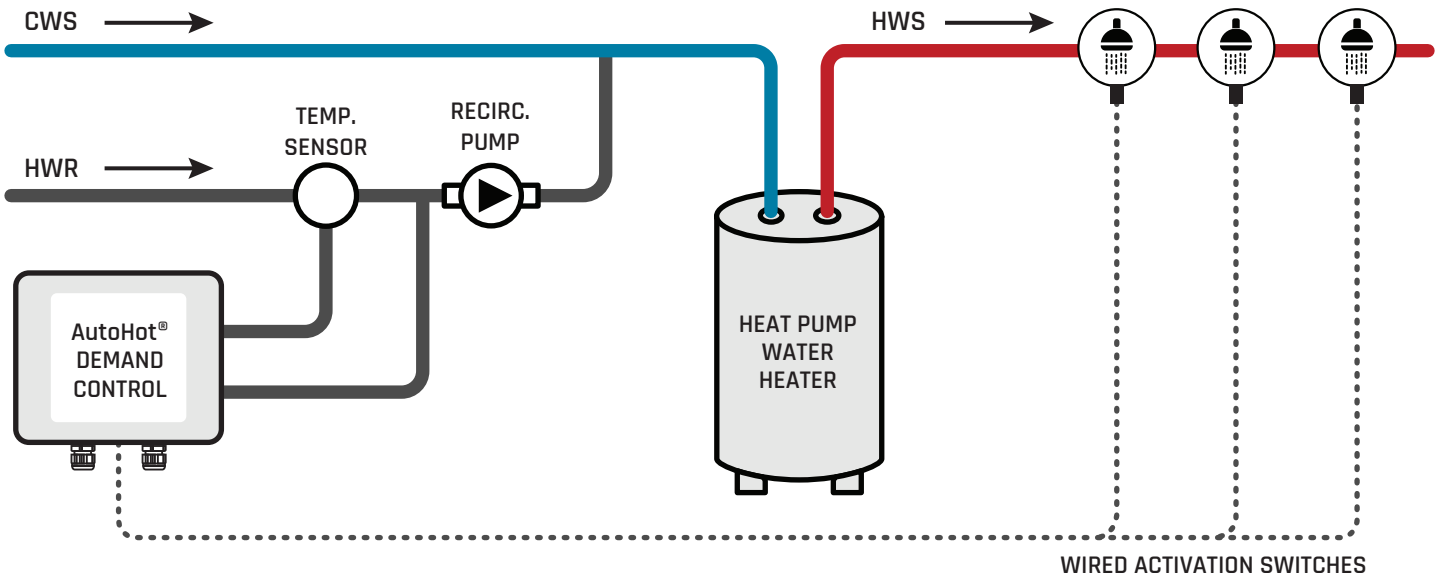
ELECTRICAL SCHEMATIC FOR WIRED DEVICES



ELECTRICAL SCHEMATIC FOR WIRED DEVICES



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INSTALLATION

WIRED DEVICE INSTALLATION OVERVIEW

Proper installation of wired activation devices is critical to ensure reliable system operation. All wired devices must be connected correctly so the controller can receive activation signals without interruption or failure.

Color-coded wiring (red and black) is used to simplify installation and reduce errors. By consistently connecting red wires to red and black wires to black, installers can easily identify correct connections without needing advanced electrical knowledge. This ensures all devices are properly connected in parallel and function as intended.

The included images provide clear visual examples of these connections. They are intended to guide installers step-by-step, showing exactly how wires should be grouped and connected to the controller harness to achieve a correct and dependable installation.

WARNING – Common Installation Mistakes

⚠ **Do NOT connect devices in series.**
All wired devices must be connected in parallel. Incorrect wiring will prevent the system from activating properly.

⚠ **Do NOT mix wire colors.**
Always connect red wires to red and black wires to black. Mixing colors can cause the system to malfunction or not respond.

⚠ **Do NOT leave loose or exposed connections.**
All wire connections must be secure and properly insulated to prevent intermittent operation or failure.

⚠ **Do NOT connect wired devices directly to power.**
Wired activation devices are low-voltage and must only be connected to the controller harness.

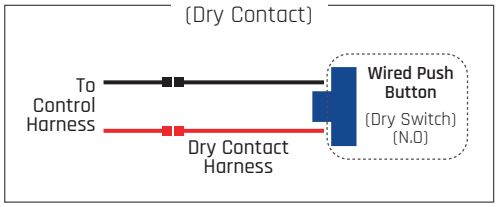
⚠ **Do NOT run incomplete wiring to the controller.**
Each device must have both wires (red and black) properly connected back to the controller.

⚠ **Do NOT assume one device wiring method is different from another.**
All wired activation devices (push buttons, motion sensors, rocker switches) follow the same connection method.

⚠ **Always run a dedicated low-voltage wire (home run) from each device to the controller.**
Do not tap into random wires or share unrelated wiring.

Wired Metal Push Button Activator

Wired Push Button Wiring Diagram
(Dry Contact)



Description:

A simple push button with two wires used to activate the system.

Controller:

Red/Black harnesses.

Instructions:

Run low-voltage wires from the push button to the controller.

Single WiredPush Button:

Connect the push button red wire to the controller red wire, and the push button black wire to the controller black wire.

Several push buttons.

Bundle all red wires, and connect to the controllers red wire, bundle all black wires and connect to controller black wire. group of red wires, and the black wire to the group of black wires.

Then connect to the controller harness.

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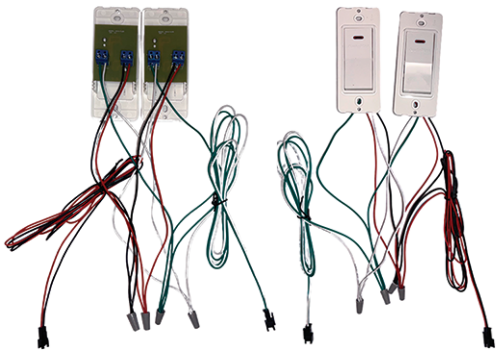
INSTALLATION

Wired LED rocker switch Activator



Description:

A Wired LED rocker switch used to activate the system.

Controller:

Red/Black and Green/White harnesses.

Instructions:

Run low-voltage wires from the LED rocker switch to the controller. Install wires to the LED rocker switch terminals Switch, red/black wires, LED white/green wires. Terminals are labeled.

Single Wired LED rocker switch:

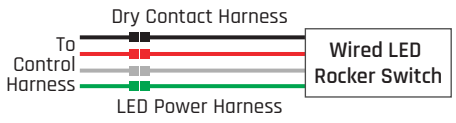
Match each wire by color: connect green to green and white to white on the green/white harness, and connect red to red and black to black on the red/black harness.

Several Wired LED rocker switches.

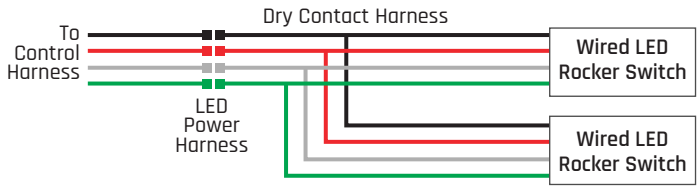
Bundle all red wires, and connect to the controllers red wire, bundle all black wires and connect to controller black wire. group of red wires, and the black wire to the group of black wires.

Then connect to the controller harness.

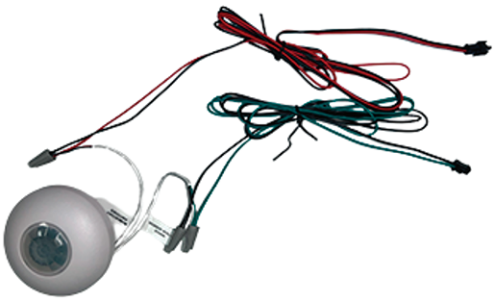
Single Wired LED Rocker Switch
(Wiring Diagram)



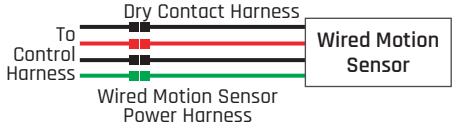
Multiple Wired LED Rocker Switches
(Parallel Wiring Diagram)



Wired Motion Sensor Activator



Single Wired Sensor Wiring Diagram
(Dry Contact)



Description:

A Wired motion sensor used to activate the system.

Controller:

Red/Black and Black/Green harnesses.

Instructions:

Run low-voltage wires from the wired motion sensor to the controller. Install wires to the wired motion sensor. Red/black wires and black/green wires.

Single Wired LED rocker switch:

Match each wire by color: connect green to green and black to black on the black/green harness, and connect red to red and black to black on the red/black harness.

Several push buttons.

Bundle all red wires and all black wires from the signal side and connect to the controllers red and black harness. Bundle all black wires and all green wires and connect to controller's black/green harness.

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INSTALLATION

Wired Motion Sensor Activator, Low profile

Description:

A Wired motion sensor used to activate the system.

Controller:

Red/Black and Black/Green harnesses.

Instructions:

Run low-voltage wires from the wired motion sensor to the controller. Install wires to the wired motion sensor terminals Red/black wires and black/green wires.

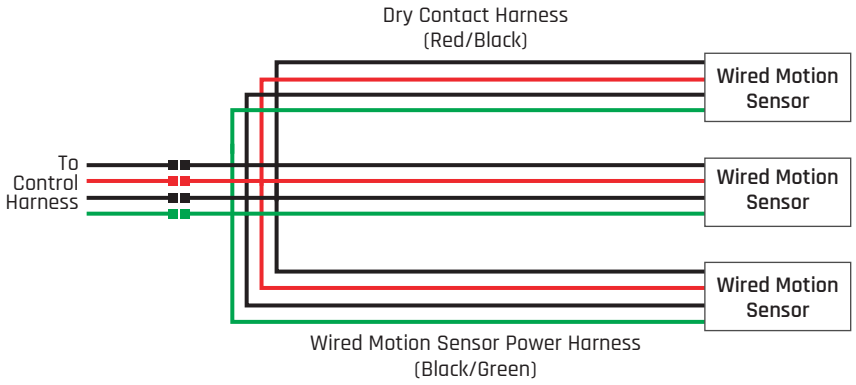
Single Wired LED rocker switch:

Match each wire by color: connect green to green and black to black on the black/green harness, and connect red to red and black to black on the red/black harness.

Several push buttons.

Bundle all red wires and all black wires from the signal side and connect to the controllers red and black harness. Bundle all black wires and all green wires and connect to controller's black/green harness.

Multiple Wired Motion Sensor
(Parallel Wiring Diagram)



All switches must be wired in parallel directly to the controller harness.
Do not wire in series.

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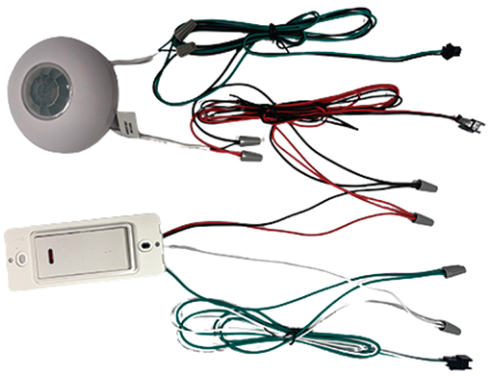
INSTALLATION

Combination of activators, Wired Motion Sensor and LED Rocker Switch activators



Description:

Wired motion sensor and LED rocker switch used to activate the system.

Controller:

Red/Black and Black/Green harnesses for wired motion sensor and Rec/Black and White/Green for LED rocker switch.

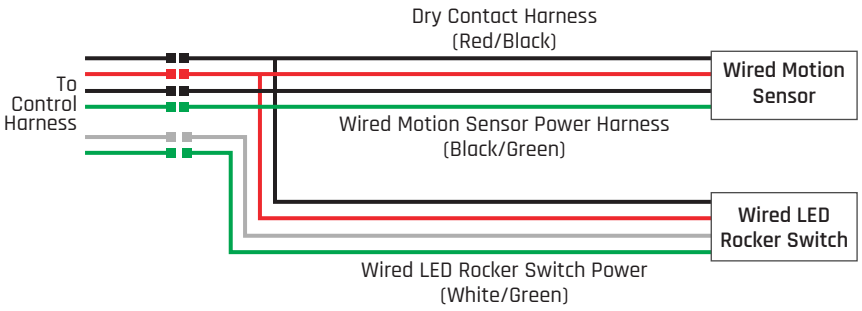
Instructions:

Run low-voltage wires from the wired motion sensor and LED rocker switch to the controller. Install wires to the wired motion sensor terminals Red/black wires and black/green wires.

Run low-voltage wires from the LED rocker switch to the controller. Install wires to the LED rocker switch terminals red/black wires and LED white/green wires. Red/black harness is common to the two devices. Terminals are labeled.

Wired Motion Sensors and LED Rocker Switch

(Parallel Wiring Diagram)



All switches must be wired in parallel directly to the controller harness.
Do not wire in series.