

# HRS Series On/Off & Proportional Electric Actuators

OVERVIEW

## HRS SERIES ELECTRIC ACTUATORS



Non-Declutchable  
Manual Override System  
Suitable for use with overhead  
chain-wheel installations

Powder Coated Aluminum Alloy  
NEMA 4/4X/IP67 Enclosure

Raised Position Indicator

(2) Conduit Entry  
Ports, Cable or  
Conduit Compliant



Local Control Station Options  
Featuring Key Lockout, LCD  
Display and LED Indicator Display

Self Locking Epicyclic Transmission and  
Low Pull-Force Worm Override Design



**SAFE**  
Fail-Safe Battery  
Backup Options



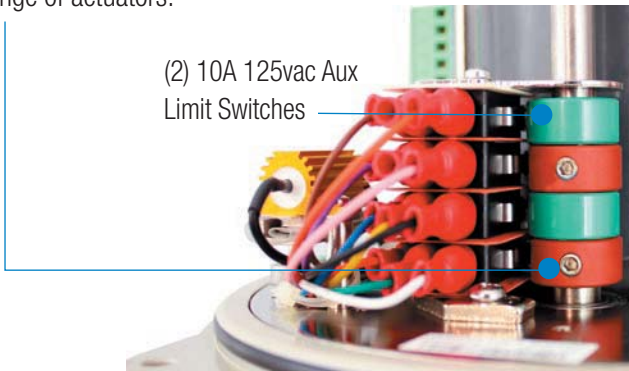
## OVERVIEW

Hayward's HRS Series electric actuators are designed and produced to provide years of service in demanding industrial environments such as chemical processing, waste and water treatment, power generation, oil & gas, marine, mining and building services. These quarter-turn units drive dampers, ball valves, butterfly valves or inlet guide vanes that require torque ranges from 300 lbf-in up through 177,000 lbf-in. The HR Series housings are designed to meet NEMA 4X environmental demands, with ISO5211 compliant mounting that readily mounts up to most valves in the industries served. Featuring an epicyclic transmission system, the HR Series provides highly efficient multiplication of motor power to produce uniquely compact torque ranges compared to other technologies. A clutch-free manual override system provides full-time override capabilities during powered or un-powered events, and allows for simple adaptation for overhead chain-wheel drive installations.

## UNDER THE HOOD

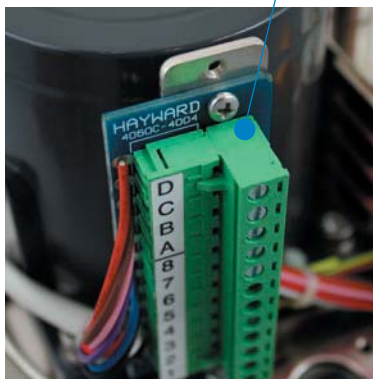
### COLOR CODED CAM SYSTEM

Easily accessible travel and auxiliary switch cams are color coded to provide instant recognition of the CW or CCW cams when making stroke adjustments. Cam positions are easily changed by utilizing 2.5mm setscrews across the entire HRS range of actuators.

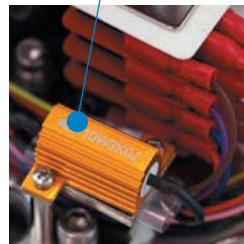


### PLUG & PLAY WIRING

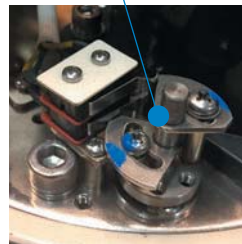
Clean, Easily Accessible Internal Wiring Layout, Removable Wire Receiver for Ease of Install



STANDARD ANTI-CONDENSATE HEATER



TORQUE SWITCH



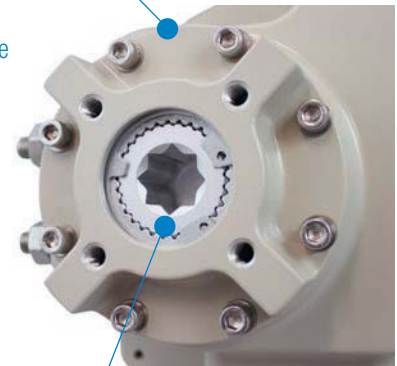
Pre Calibrated Torque Switch, Factory Set and not for field adjustment. Provides the utmost in over torque protection for the most sensitive of applications. All Torque forces are measured mechanically directly from the gear train.

### ISO VERSATILITY

Following ISO principle, the Hayward HRS Series line of actuation offers complete versatility with a wide range of ISO compliant flanges and interchangeable drive sockets.

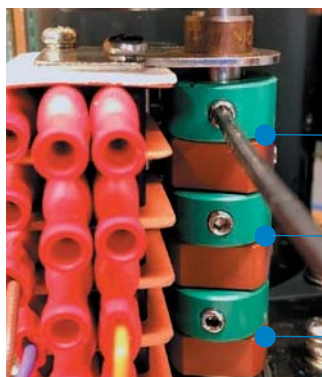
ISO 5211 MOUNTING FLANGE

- Double Square
- Square
- Double D
- Rounded Key



INTERCHANGEABLE BUSHING

Externally Accessible Adjustable Mechanical Stops



- (2) Optional AUX Switches  
*(Dry Contact Close / Dry Contact Open)*
- (2) STANDARD AUX SWITCHES  
*(Dry Contact Close / Dry Contact Open)*
- (2) Motor Close / Motor Open

### DIGITAL/ANALOG TIMER KIT

The 7-day timer offers two channels with daily and weekly programming functionality. High accuracy of timing, user-friendly interface and clear LCD display offers convenience and reliability for timing/scheduled applications.



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# HRSN2 Series On/Off & Proportional Electric Actuators



FOR BALL UP TO 6" AND  
 BUTTERFLY VALVES UP TO 4"  
**KEY FEATURES**

- Units are equipped with two (2) volt-free Form A Auxiliary switches
- ISO5211 compliant mounting with a double square female drive socket
- Raised visual position indicator
- NEMA 4X/IP67 compliant
- Two (2) EMT entry ports with sealed cable glands

**OPTIONS**

- Manual Override Handwheel
- Local Control Stations
- IP68 Submersion
- Battery Backup and Supercap Backup

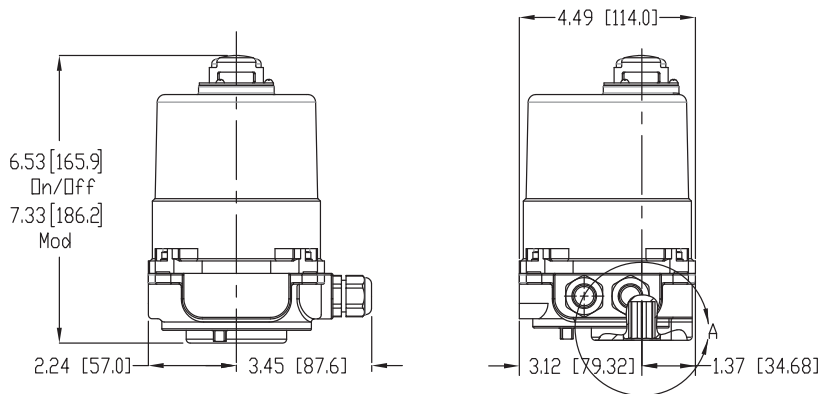
HRSN2  
 HRSN3  
 HRSN4  
 HRSN5

## TECHNICAL INFORMATION

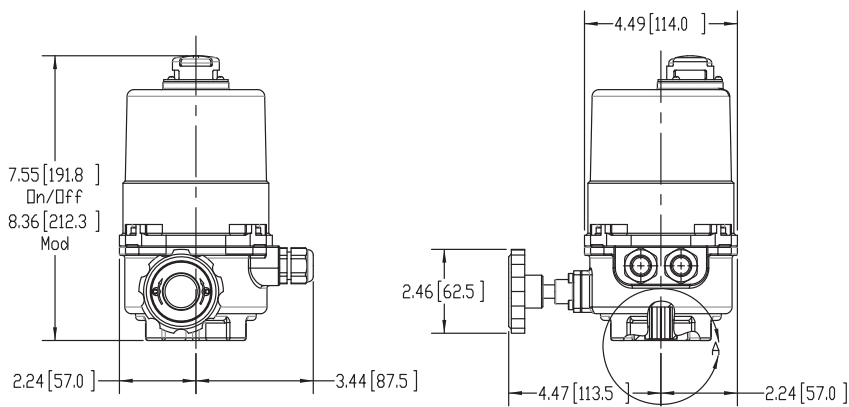
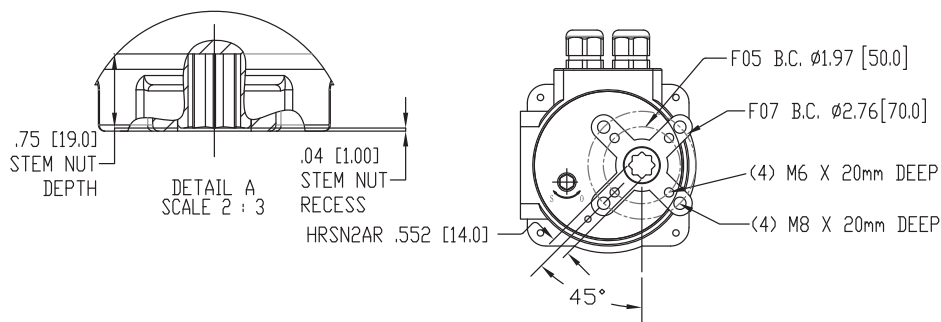
ACTUATOR SPECIFICATIONS		HRSN2A	HRSN2B	HRSN2R	HRSN2S
Supply	Torque Output (in-lb / Nm)	310 / 35	310 / 35	440 / 50	440 / 50
12VAC*	Current Draw (Start / Run / LRA)	3.5A / 2.0A / 3.8A	3.5A / 2.0A / 3.8A	3.5A / 2.0A / 3.8A	3.5A / 2.0A / 3.8A
	Speed (90°) DC-60Hz/50Hz, seconds	8 / 8	8 / 8	10 / 10	10 / 10
	Motor - 12V DC Perm Magnet 2 Pole Brush	6W	6W	6W	6W
12VDC*	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)			
	On/Off / Proportional	Motor Protection, Temp / Class All - 130°C / Class B			
	Motor Starts, per hour, Max	All - 600			
24VAC	Current Draw (Start / Run / LRA)	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A
	Speed (90°) DC-60Hz/50Hz, seconds	8 / 8	8 / 8	10 / 10	10 / 10
	Motor - 24V DC Perm Magnet 2 Pole Brush	6W	6W	6W	6W
24VDC	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)			
	On/Off / Proportional	Motor Protection, Temp / Class All - 130°C / Class B			
	Motor Starts, per hour, Max	All - 600			
120VAC	Current Draw (Start / Run / LRA)	0.4A / 0.4A / 0.5A	0.4A / 0.4A / 0.5A	0.4A / 0.4A / 0.5A	0.4A / 0.4A / 0.5A
	Speed (90°) 60Hz / 50Hz, seconds	9 / 11	9 / 11	13 / 15	13 / 15
	Motor - 120V Capacitor Run TENV	10W	10W	10W	10W
On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)			
	Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H			
	Motor Starts, per hour, Max	600 / 1200			
230VAC	Current Draw (Start / Run / LRA)	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A
	Speed (90°) 60Hz / 50Hz, seconds	9 / 11	9 / 11	13 / 15	13 / 15
	Motor - 230V Capacitor Run TENV	10W	10W	10W	10W
On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)			
	Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H			
	Motor Starts, per hour, Max	600 / 1200			
All	Manual Override	Bottom 8mm Hex Shaft	Hand Wheel	Bottom 8mm Hex Shaft	Hand Wheel
	Environmental Rating	NEMA 4/4X & IP67			
	Electrical Entry (2)	1/2" EMT or Polyamide gland			
	Control	On/Off, Proportional, 2 Pos RO, RC & 3 Position			
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 3A @ 250vac			
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)			
	Humidity Range	0-95% RH			
	Altitude Limit	9850 ft / 3000 m			

# HRSN2 Series On/Off & Proportional Electric Actuators

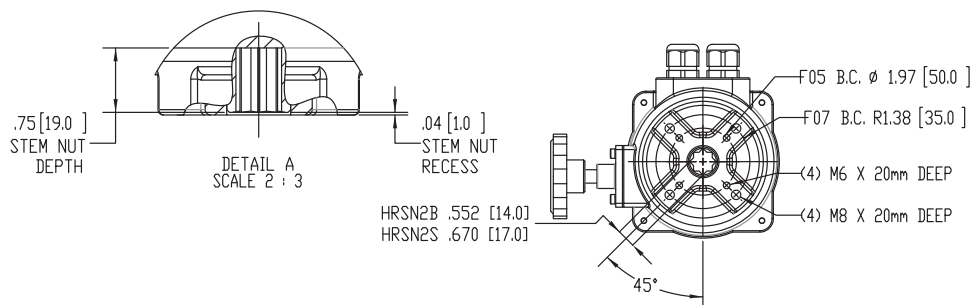
FOR BALL UP TO 6" AND BUTTERFLY VALVES UP TO 4"



MODEL	TYPE	COVER REMOVAL CLEARANCE		WEIGHT
		IN	MM	
HRSN2A	on/off - All	4.93	125	6.6 / 3.0
	Mod - LV / HV			8.8 / 4.0
HRSN2R	on/off - All	4.93	125	6.6 / 3.0
	Mod - LV / HV			8.8 / 4.0



MODEL	TYPE	COVER REMOVAL CLEARANCE		WEIGHT
		IN	MM	
HRSN2B	on/off - All	4.93	125	7.0 / 3.2
	Mod - LV / HV			9.3 / 4.2
HRSN2S	on/off - All	4.93	125	7.0 / 3.2
	Mod - LV / HV			9.3 / 4.2



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## HRSN2 Series Electronic Fail-Safe Actuators Battery/Supercapacitor Backup



FOR BALL UP TO 6" AND  
BUTTERFLY VALVES UP TO 4"

### KEY FEATURES

- 24VAC/VDC operation standard, with 120vac and 230vac transformer options available
- Up to 440"lbs torque for ball valves up to 6" and butterfly valves up to 4"
- Field selectable fail CW or CCW operation for complete flexibility
- Self-Contained charge and discharge control of the reserve bank provides maximum life from the reserve energy system
- Status indicators show reserve health
- Reserve bank is field replaceable to minimize down-time
- Reserve System Fault-Out contact is standard and allows remote monitoring of reserve system performance.
- Two (2) 1/2" EMT ports for ease of field wiring
- NEMA 4/4x/IP67 Compliant
- ISO5211 Mechanical mount w/ double-square female drive socket

*HRS Series Electronic Fail-Safe Actuators are intended to provide positive positioning in power-fail conditions.*

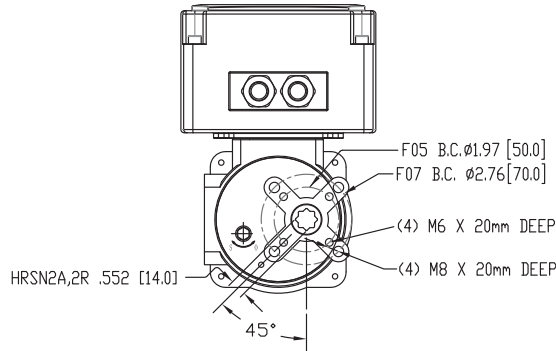
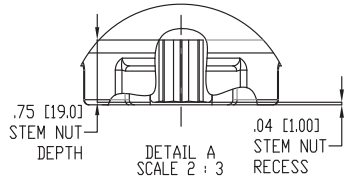
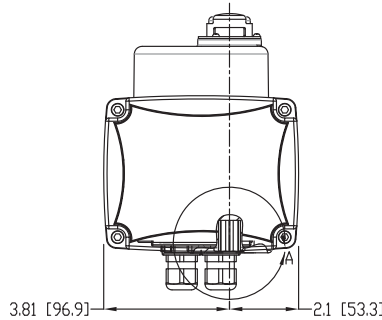
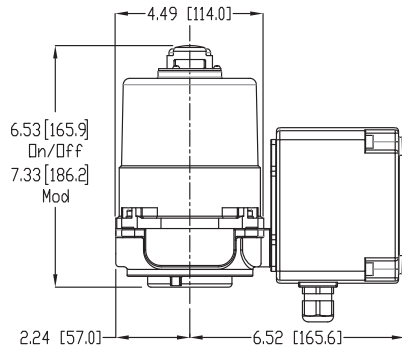
HRSN2  
HRSN3  
HRSN4  
HRSN5

## TECHNICAL INFORMATION

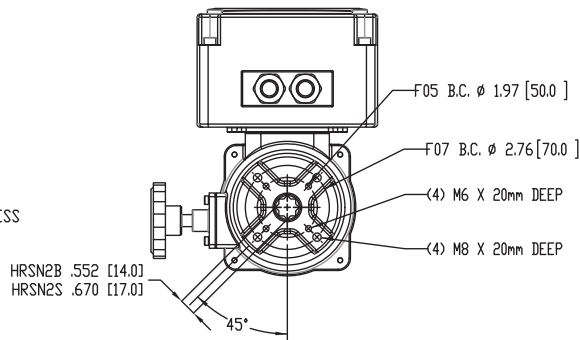
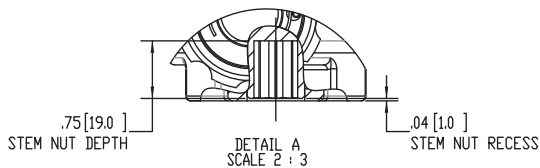
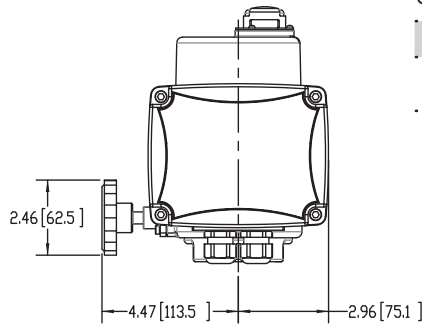
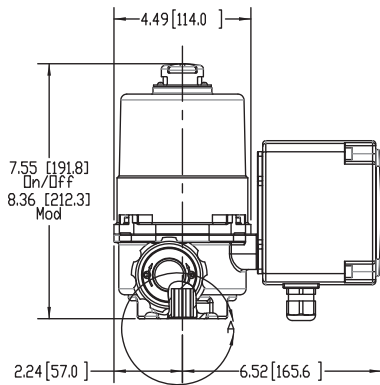
ACTUATOR SPECIFICATIONS		HRSN2A..2X/3X	HRSN2B..20/30	HRSN2R..2X/3X	HRSN2S..20/30	
Supply	Torque Output (in-lb / Nm)	310 / 35	310 / 35	440 / 50	440 / 50	
24VAC ~ 24VDC	Current Draw (Start/Run/LRA)	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	
	Speed (90°) DC-60Hz/50Hz, seconds	8 / 8	8 / 8	10 / 10	10 / 10	
	Motor - 24V DC Perm Magnet 2 Pole Brush	6W	6W	6W	6W	
	On/Off / Proportional	Duty Cycle (IEC60034) Motor Protection, Temp / Class Motor Starts, per hour, Max	75% (S2-15 min) / 75% (S4-75%) All - 130°C / Class B All - 600			
120VAC 230VAC	Requires 120:24 Transformer Pack, 100VA	HRSBBC120-100	HRSBBC120-100	HRSBBC120-100	HRSBBC120-100	
	Requires 230:24 Transformer Pack, 100VA	HRSBBC230-100	HRSBBC230-100	HRSBBC230-100	HRSBBC230-100	
All	Manual Override	Bottom 8mm Hex Shaft	Hand Wheel	Bottom 8mm Hex Shaft	Hand Wheel	
	Environmental Rating	NEMA 4/4X & IP67				
	Electrical Entry (2)	1/2" EMT or Polyamide gland				
	Control	On/Off, Proportional				
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 3A @ 250vac				
	Ambient Operating Range	-22°F to +158°F / -30°C to +70°C				
	Humidity Range	0-95% RH				
	Altitude Limit	9850 ft / 3000 m				
	RESERVE SPECIFICATIONS		HRSN2A~HRSN2S			
	Type - Battery		22.2V Lithium-Ion pack with charge / discharge control (20 Series)			
Type - Supercapacitor		28V 60F Supercapacitor Bank with Charge/Discharge Control (30 Series)				

# HRSN2 Series Electronic File-Safe Actuators Battery Backup

FOR BALL UP TO 6" AND BUTTERFLY VALVES UP TO 4"



		COVER REMOVAL CLEARANCE		WEIGHT
MODEL	TYPE	IN/MM	LBS/KG	
HRSN2A	on/off - All	4.93 / 125	12.1 / 5.5	
	Mod - LV / HV			14.3 / 6.5
HRSN2R	on/off - All	4.93 / 125	12.1 / 5.5	
	Mod - LV / HV			14.3 / 6.5

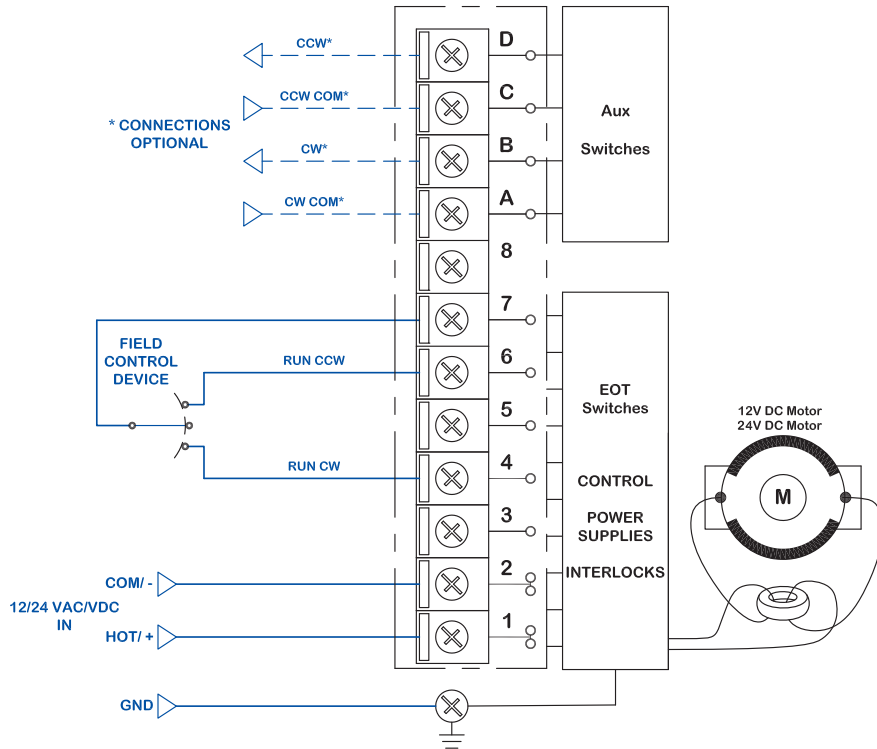


		COVER REMOVAL CLEARANCE		WEIGHT
MODEL	TYPE	IN/MM	LBS/KG	
HRSN2B	on/off - All	4.93 / 125	12.5 / 5.7	
	Mod - LV / HV			14.7 / 6.7
HRSN2S	on/off - All	4.93 / 125	12.5 / 5.7	
	Mod - LV / HV			14.7 / 6.7

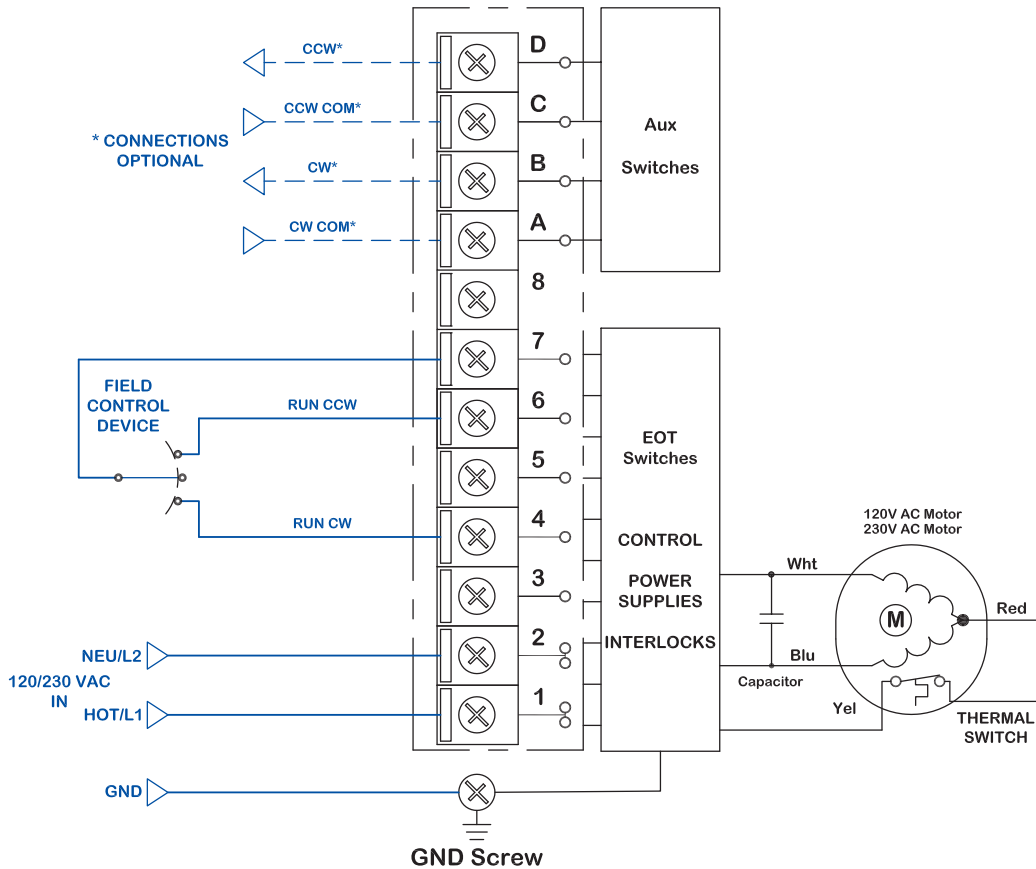


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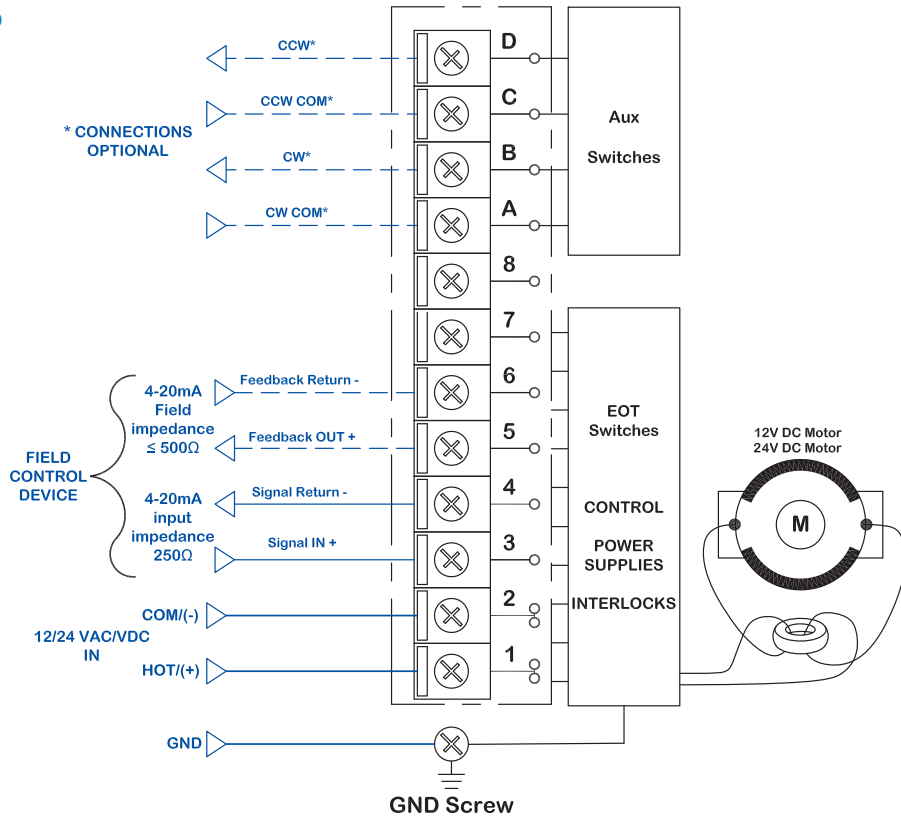
12/24VAC/VDC ON/OFF  
HRSN2



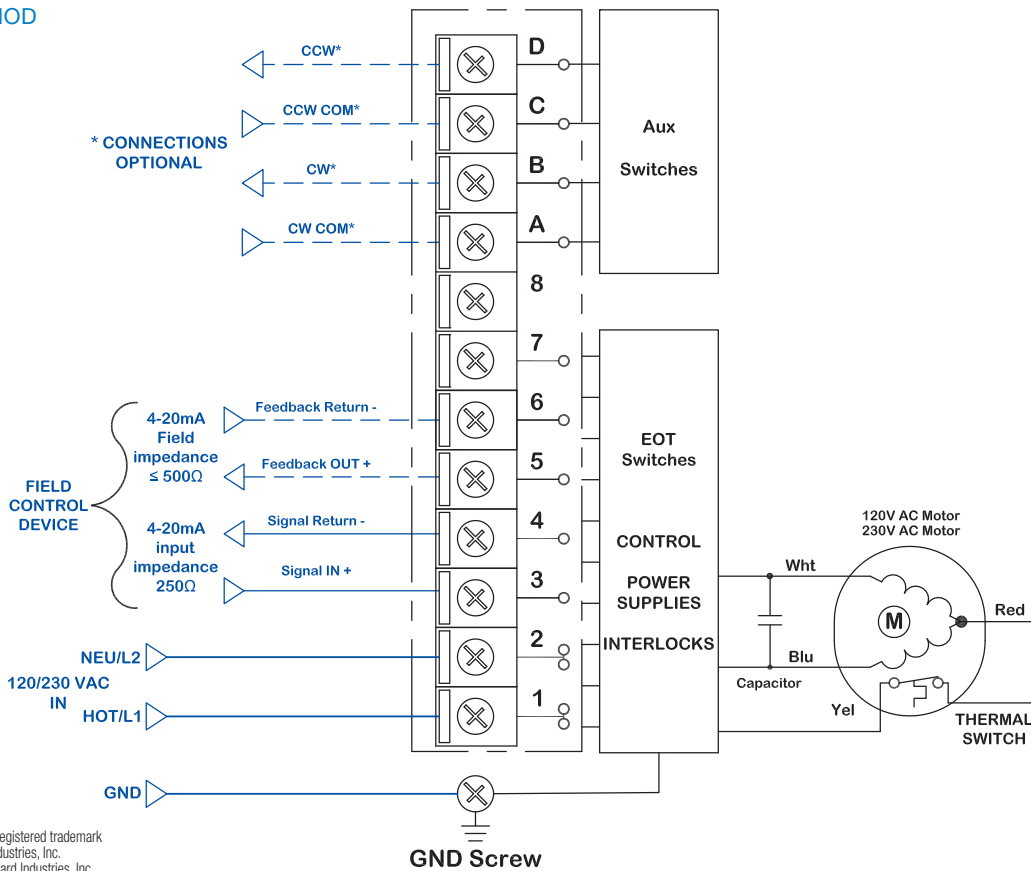
120/230VAC ON/OFF  
HRSN2



12/24VAC/VDC MOD  
HRSN2



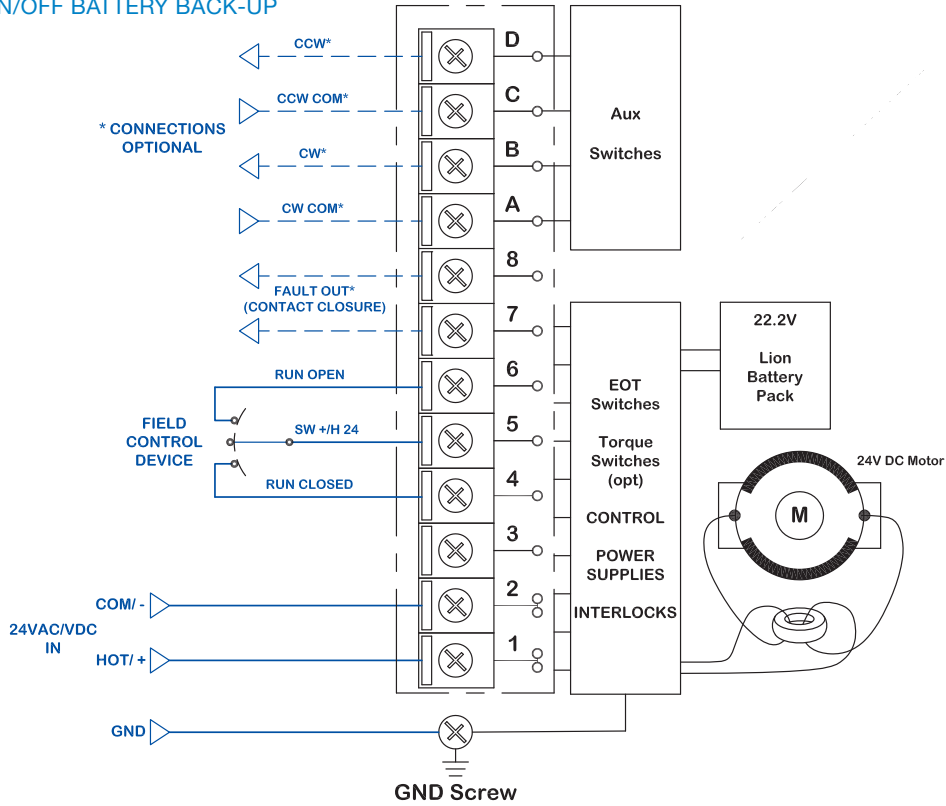
120/230VAC MOD  
HRSN2





24 VAC/VDC ON/OFF BATTERY BACK-UP

HRSN2



24 VAC/VDC MOD BATTERY BACK-UP

HRSN2

