



**ESSENTIAL SERIES™**  
VARIABLE FREQUENCY DRIVE

120 V / 240 V | Single Phase  
1/3 HP to 2 HP | 2-Wire & 3-Wire Motors



**ES**  
SERIES

**Constant Pressure - Leading Value**

- Reduced tank size
- Quick & simple installation

**Easy Setup with PERFECT PRESSURE™**

- Setup constant pressure in minutes

**Large Graphic Display**

- Bright backlit screen
- Visible in direct sunlight

**Rugged & Compact**

- NEMA 3R steel enclosure
  - Rated to 122 °F \*
- (\*see Technical Specifications table)

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**Nomenclature**

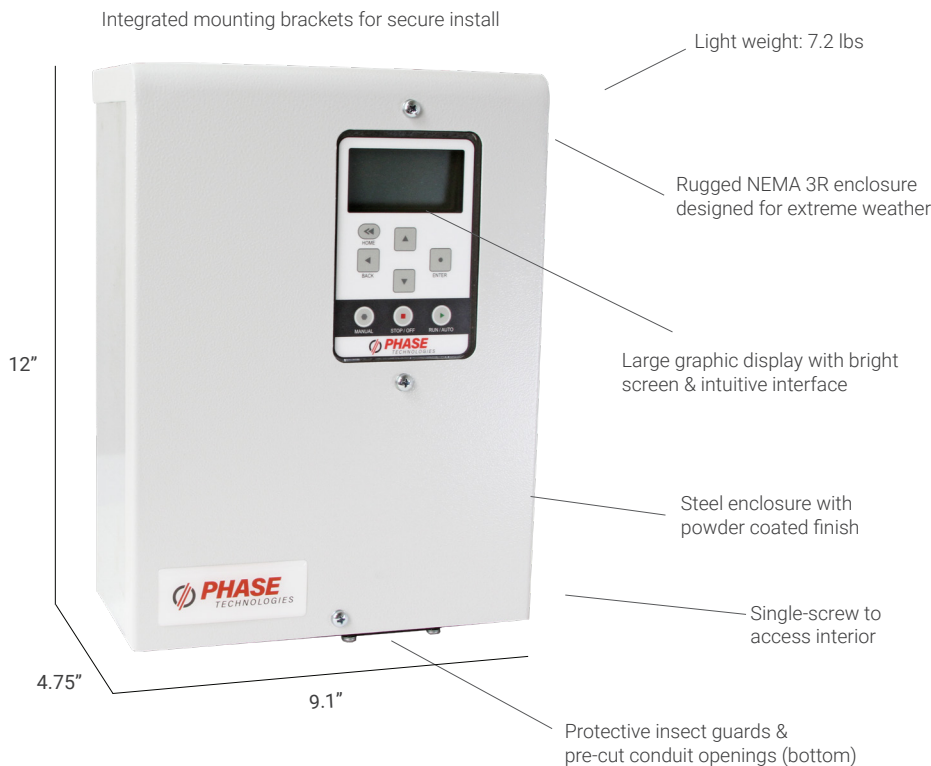
**ES Essential Series** Example Part Number ES3R-A

Model Series	Enclosure Rating	Option
<b>ES3</b> 115V   230V (Choose Option In Software) 1/3 HP to 2 HP	<b>R</b> 3R Rated Outdoor Type Rain / Bug Proof	<b>A</b> <i>Included</i> 4-20 mA Transducer & Analog PCB

**Optional Installed Accessories**

Part Number	Description
S150ES	4-20 mA Transducer Kit, 150 psi, 15 ft.
S00150	Replacement Transducer; 4-20mA, 150 psi, 15 ft.
XDR0002	Replacement Overpressure Switch (60 psi)
XDR0003	Overpressure Switch (75 psi)

**Enclosure Overview**



## Technical Specifications

Physical / Environmental	
Operating Temperature Range	1/3 HP to 1-1/2 HP -20 °C to 50 °C (-4 °F to 122 °F)* 2 HP -20 °C to 40 °C (-4 °F to 104 °F)*
Storage Temperature Range	-25 °C to 74 °C (-13 °F to 165 °F)
Enclosure	NEMA Type 3R: Outdoor   Rainproof
Altitude	Derate by 5 °C every 2000 ft over 5500 ft of elevation
Dimensions	12.25 in x 9.25 in x 4.68 in
Weight	7.2 lbs
Specifications	
Part Number	ES3R   ES3R-A
Horsepower	1/3 HP to 2 HP
Motor Style	2-Wire or 3-Wire
Rated Current	
Rated Input Current	Max: 24 A
Rated Output Current	Max: 14 A
Input Power	
Input Phase	1 phase
Input Voltage	120 / 240 VAC
Input Voltage Range	90 V to 160 V 180 V to 260 V
Input Frequency	60 Hz
Output Power	
Output Phase	1 phase
Output Voltage	Equal to input
Output Frequency	5 Hz to 120 Hz
Horsepower	1/3 HP to 2 HP
Output Power	1.5 kW
Switching Frequency	2 kHz 8 kHz
Output	V/f control
Electrical	
Short Circuit Withstand Rating	5 kA RMS Symmetrical Amperes
Efficiency	95%
Startup Ramp Time	0 to 120 s
Shutdown Ramp Time	0 to 120 s or Coast To Stop
Overload Capacity	150% for 2 s
	<i>Rated output current for 2 HP model based on typical full load current for submersible motors.</i>
Digital Inputs	
Quantity	Two Programmable
Ratings	<15 V 7 mA   Galvanically Isolated
Optional Analog Inputs*	
Quantity	Two Programmable
Current Reference	4-20 mA One Input
Voltage Reference	0 to 5 VDC One Input
Terminal Block Size	24 to 16 AWG

## Feature Set



### Power Behind The Pump

AQUAPHASE™ feature set provides complete control capability for all pumping applications

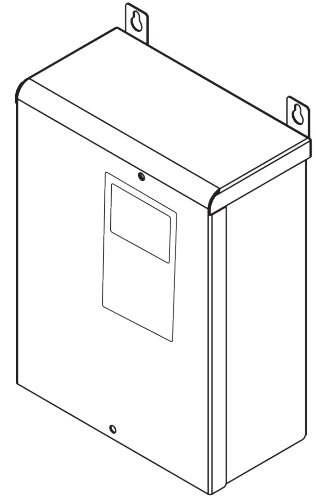
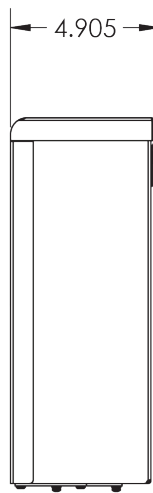
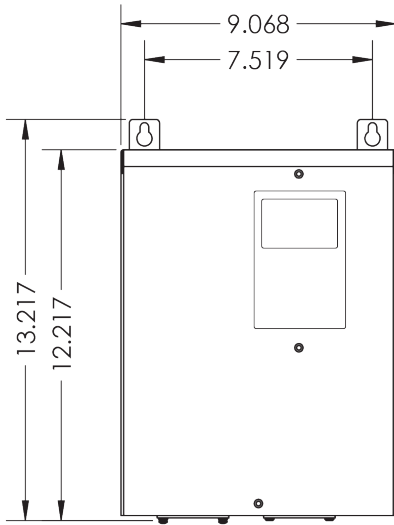
## Breaker Recommendations

Fuse/Breaker Recommendations		
Motor HP	Input Current	Fuse/Breaker
<b>120 V</b>		
1/3	8 A	10 A
1/2	12 A	15 A
1	24 A	30 A
<b>240 V</b>		
1/2	6 A	10 A
3/4	9 A	15 A
1	12 A	15 A
1.5	18 A	25 A
2	24 A	30 A

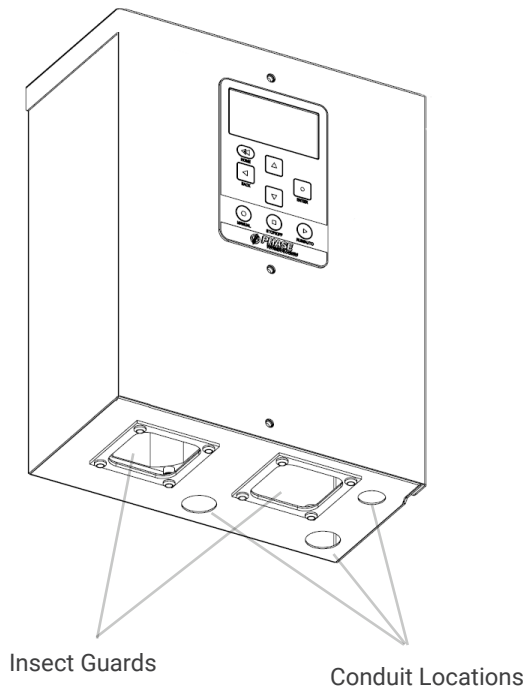
## Accommodated Wire Size

Connecting Load - Accommodated Wire Sizes	
Power Terminal	14 – 6 AWG
Minimum Torque	10.5 in-lb

Line Drawings



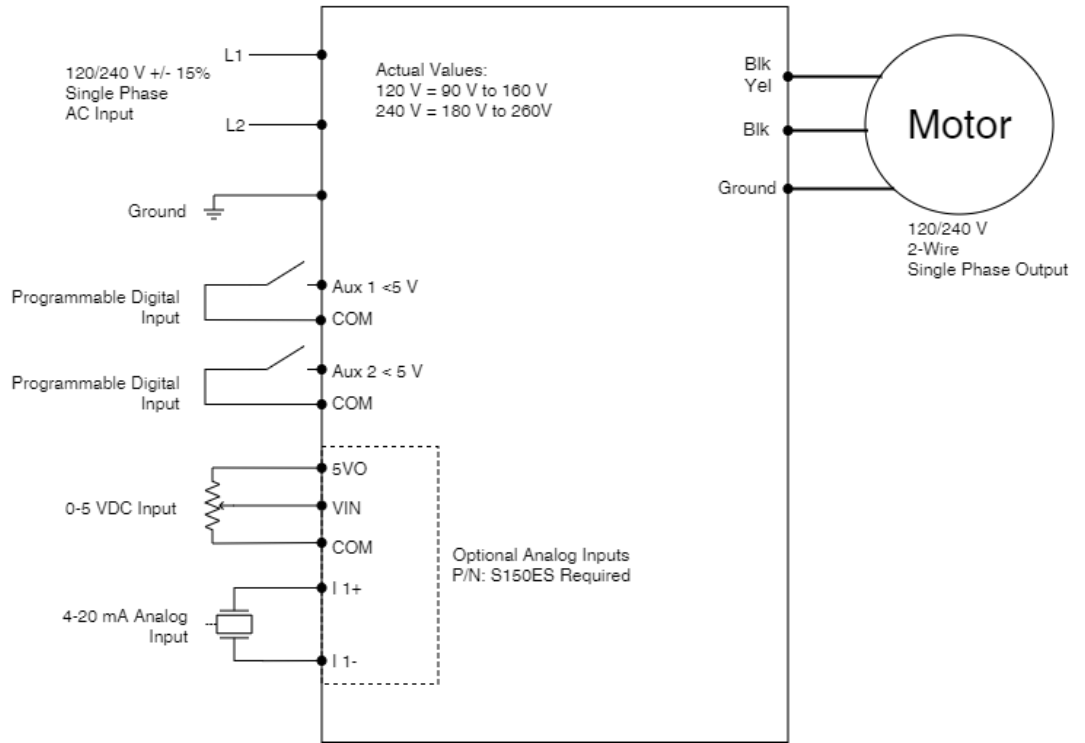
Bottom View



**Wiring Diagram**

2-Wire Motors

**2-Wire Motor**



3-Wire Motors

**3-Wire Motor**

