



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 a few 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)

Industry Best Lead Times

- 3-7 Business Days

Table Of Contents

Section	Page #
Nomenclature.....	2
Optional Installed Accessories.....	2
Enclosure Overview.....	2
Technical Specifications.....	3
Feature Set.....	4

Section	Page #
Breaker Recommendations.....	4
Accommodated Wire Size.....	4
Line Drawings.....	5
Wiring Diagram.....	6
Appendix A: System Level Schematic	7

Nomenclature

ES Essential Series

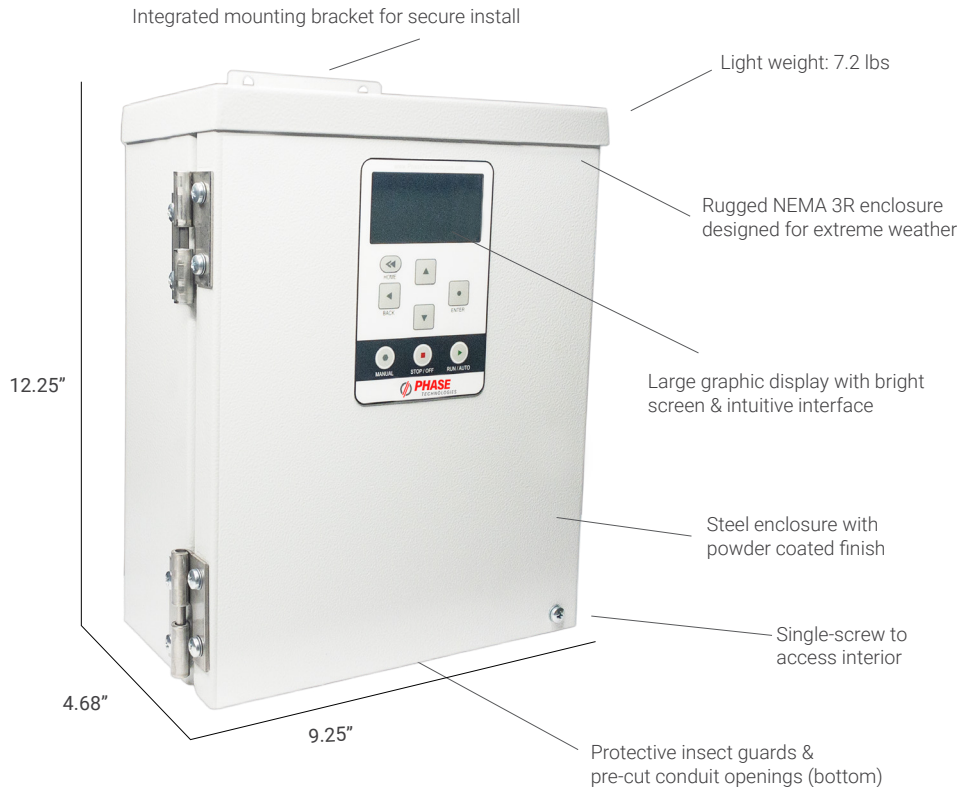
Example Part Number
ES3R-A

Model Series	Enclosure Rating	Option
ES3 115V 230V (Choose Option In Software) 1/3 HP to 2 HP	R 3R Rated Outdoor Type Rain / Bug Proof	-- <i>Included</i> 60psi (Default Setting) Digital Pressure Switch (25 - 150 psi range)
ES3 115V 230V (Choose Option In Software) 1/3 HP to 2 HP	R 3R Rated Outdoor Type Rain / Bug Proof	A <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

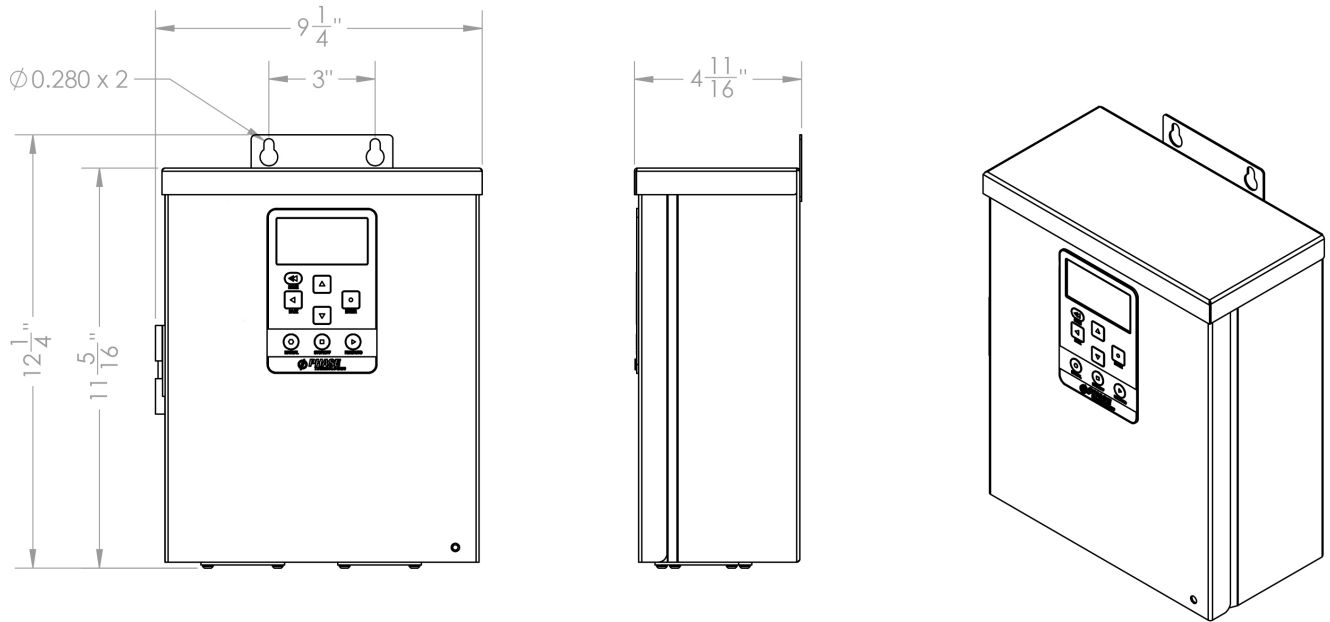
Breaker Recommendations

Fuse/Breaker Recommendations		
Motor HP	Input Current	Fuse/Breaker
120 V		
1/3	8 A	10 A
1/2	12 A	15 A
1	24 A	30 A
240 V		
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

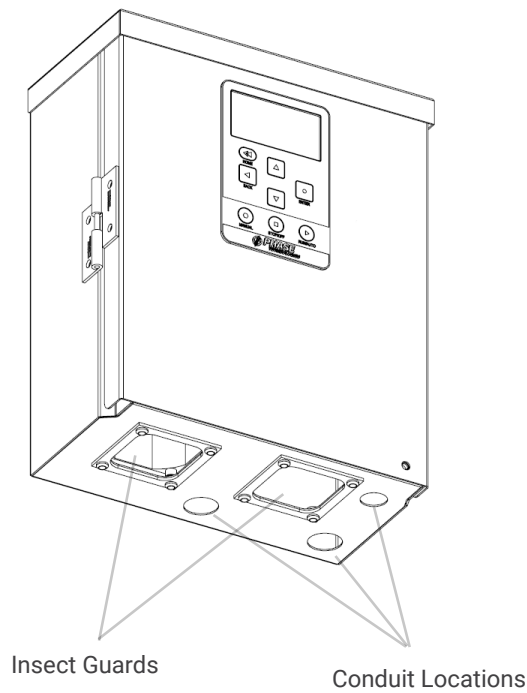
Accommodated Wire Size

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

Line Drawings

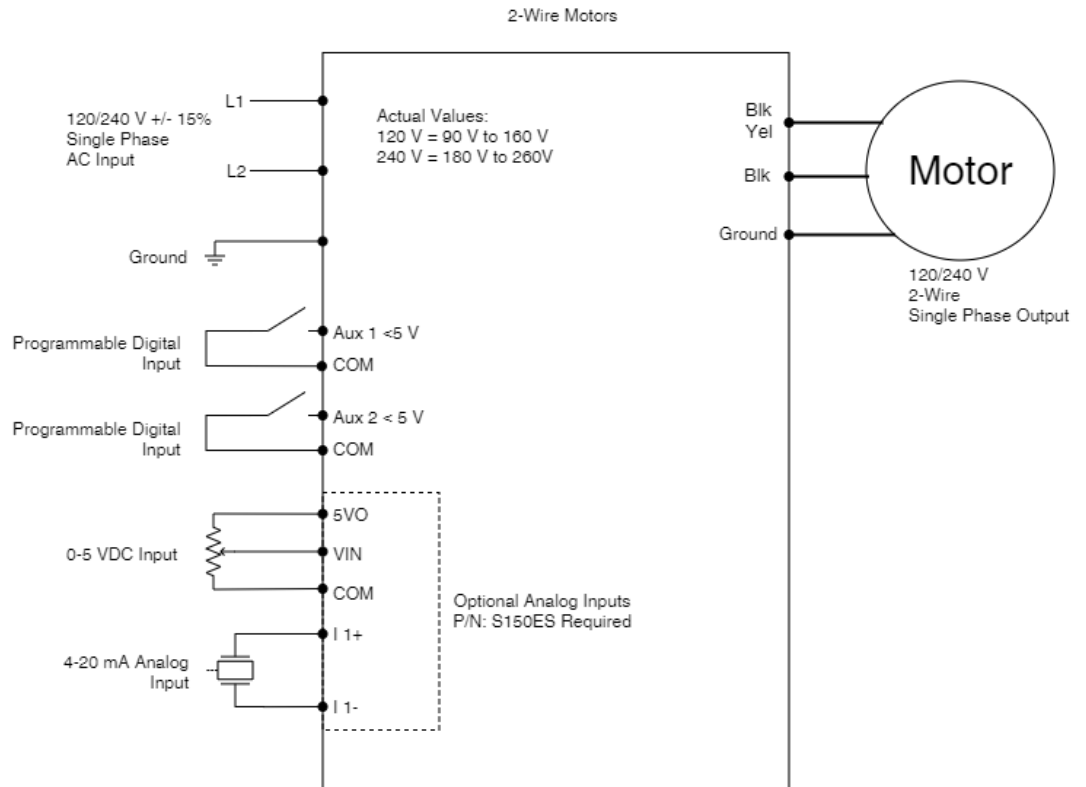


Bottom View

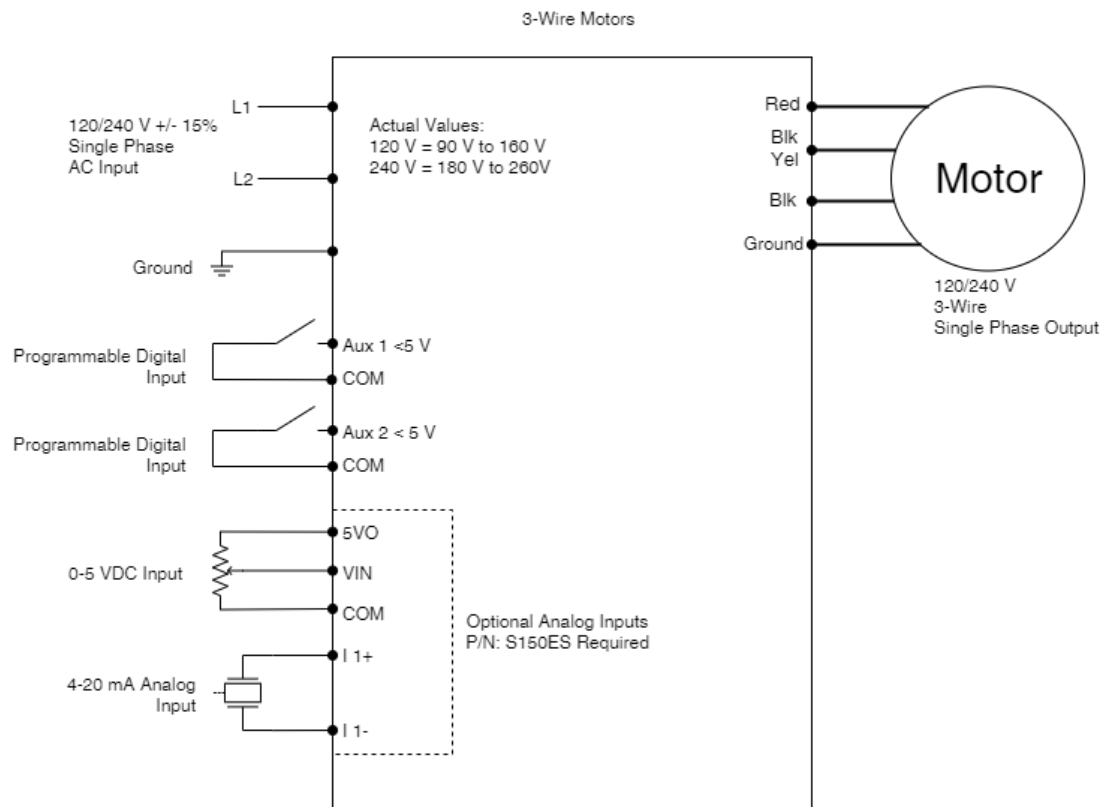


Wiring Diagram

2-Wire Motor



3-Wire Motor



Appendix A: System Level Schematic

