# IPS INTELLIGENT PUMP STARTER

50/60 Hz, 1Ø & 3Ø, 120~600 VAC, 1/3 - 300 hp
Integrated electronic pump protection overload
Power metering and data logging options


NEMA

## More Protection, Less Nuisance Trips

### Integrated Tru-power™ electronic motor and pump protection

- Eliminates need for costly pump protection relays
- Dry pump detection using power (nuisance trip-free); automatic restart for well recovery mode
- Wide range class 5-30 electronic overload eliminates call backs due to mid-sized heaters
- Advanced protective features include over/under voltage, phase loss, phase unbalance, stalled/locked rotor, cycle fault, and UL 1053 ground fault
- Tru-power™ sensing protects pumps from dry pump, dead head, runout, and jammed impeller conditions - keeping you online and preventing costly premature pump failure. Along with superior protection, measuring underload using power allows for a more flexible trip range, as opposed to measuring by current, which requires a more precise set point. The end result is the elimination of nuisance trips.

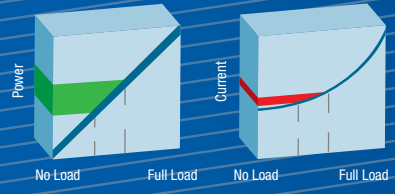
  Adjustable over/under voltage is included. Plus you get phase unbalance, loss, anti-cycling, phase sequence, and warm start protection. Our overload is wide range - so you never have the wrong sized heaters.

### Built-in power monitoring and fault logging for easy troubleshooting

- View voltage, current, power factor, and more through an intuitive display
- Last 5 fault types are recorded (all power condition values are stored)
- Quickly identify common power problems such as phase imbalance, voltage drop, and over/undercurrent conditions to ensure proper pump operation

### Optional Ethernet card provides time-stamped data logging, ending utility power disputes

- Download and display up to 100 faults and alarms, including operational mode and values of operation at the time
- All power condition values are stored by phase for voltage, current, and power factor per fault
- Data is easily displayed and saved on any web browser using an Ethernet connection. Starter incorporates internal web-server. No programming required
- Time and date stamped for utility documentation




Power is linear for superior load monitoring

*Get up to100 faults - even utility power quality - on any web-browser!*

## Easy to setup and use

- Inside, the display shows an easy to use menu for setting a wealth of parameters. Adjust any protective or control setting in seconds. For example, choose how long to allow for dry well recovery, set run time periods and On/Off delays. All this with just a few intuitive keystrokes. The IPS ships with factory default settings pre-programmed for optimal submersible pump protection.

## Internal keypad menu for easy operation

- All control and protective functions are easily programmable
- LEDs indicate Hand/Off/Auto modes, run and fault conditions

## Industrial grade construction for long life

- Door mounted pilot devices include HOA switch
- UL/NEMA 3R outdoor rating
- Multi-tap transformer accommodates common voltages; no fuse(s) required
- 120 V control power for field devices
- Magnetic contactors feature 2.5 million contactor electrical cycles at full rated current

## Advanced programmable pump control options

- Auto-restart with well recovery timer
- Backspin delay prevents start-ups into draining system
- On delay and off delay settings
- Minimum run time based on last input
- 12-120 V auto run terminal for remote start/stop
- Dry contact terminal for remote start/stop
- Analog input for transducer for use with pressurized tanks (under development - consult factory for availability)

## Main circuit breaker disconnect rated for service entrance

- UL 489 circuit breaker provides branch and short circuit protection
- No fuses required – saves time and money
- Lockable handle for safety

*UL/NEMA Type 3R enclosure*

# Ordering & Sizing Information

***Intelligent Pump Starter (Combination)***
***UL/NEMA 3R Enclosure*** *(Electronic Overload)*

| Model No. | HP | | | | | | Max. Amps | NEMA Size | Wt. (lbs) | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| | Single-Phase | | Three-Phase | | | | | | | |
| | 120 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | |
| IPS3R-S1-J-G15-8 | 1/3 | 1 | 2 | 2 | 5 | - | 8A | 1 | 46 | N3R IPS, S1, 8A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-J-G20-11 | 1/2 | 1.5 | 3 | 3 | 7.5 | - | 11A | | 46 | N3R IPS, S1, 11A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G20-11 | - | - | - | - | - | 10 | | | 46 | N3R IPS, S1, 11A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S1-J-G30-17 | 1 | 3 | - | 5 | 10 | - | 17A | | 46 | N3R IPS, S1, 17A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G30-17 | - | - | - | - | - | 15 | | | 46 | N3R IPS, S1, 17A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S1-J-G40-22 | - | - | - | 7.5 | 15 | - | 22A | | 46 | N3R IPS, S1, 22A w/ SCM, MCCB Disc, HOA, 50VA CPT |
| IPS3R-S1-6J-G40-22 | - | - | - | - | - | 20 | | | 46 | N3R IPS, S1, 22A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S1-J-G50-28 | 2 | 5 | 7.5 | 10 | 20 | - | 28A | | 46 | N3R IPS, S1, 28A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G50-28 | - | - | - | - | - | 25 | | | 46 | N3R IPS, S1, 28A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-6J-G30-17 | - | - | - | - | - | 15 | 17A | 2 | 50 | N3R IPS, S2, 17A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G40-22 | - | - | - | 7.5 | 15 | - | 22A | | 50 | N3R IPS, S2, 22A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G40-22 | - | - | - | - | - | 20 | | | 50 | N3R IPS, S2, 22A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G50-28 | 2 | 5 | 7.5 | 10 | 20 | - | 28A | | 50 | N3R IPS, S2, 28A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G50-28 | - | - | - | - | - | 25 | | | 50 | N3R IPS, S2, 28A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G60-34 | 3 | 5 | 10 | 10 | 25 | - | 34A | | 50 | N3R IPS, S2, 34A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G60-34 | - | - | - | - | - | 30 | | | 50 | N3R IPS, S2, 34A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G80-42 | - | 7.5 | - | 15 | 30 | - | 42A | | 50 | N3R IPS, S2, 42A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G80-42 | - | - | - | - | - | 40 | | | 50 | N3R IPS, S2, 42A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S3-6J-G60-34 | - | - | - | - | - | 30 | 34A | 3 | 66 | N3R IPS, S3, 34A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G80-42 | - | 7.5 | - | 15 | 30 | - | 42A | | 66 | N3R IPS, S3, 42A w/ SCM, MCCS Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G80-42 | - | - | - | - | - | 40 | | | 66 | N3R IPS, S3, 42A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G100-56 | 5 | 10 | 15 | 20 | 40 | - | 56A | | 66 | N3R IPS, S3, 56A w/ SCM, MCCS Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G100-56 | - | - | - | - | - | 50 | | | 66 | N3R IPS, S3, 56A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G125-68 | 5 | 15 | 20 | 25 | 50 | - | 68A | | 66 | N3R IPS, S3, 68A w/ SCM, MCCS Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G125-68 | - | - | - | - | - | 60 | | | 66 | N3R IPS, S3, 68A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G150-80 | 7.5 | 15 | 25 | 30 | 60 | - | 80A | | 66 | N3R IPS, S3, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G150-80 | - | - | - | - | - | 75 | | | 66 | N3R IPS, S3, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-6J-G125-68 | - | - | - | - | - | 60 | 68A | 4 | 85 | N3R IPS, S4, 68A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-J-G150-80 | 7.5 | 15 | 25 | 30 | 60 | - | 80A | | 85 | N3R IPS, S4, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S4-6J-G150-80 | - | - | - | - | - | 75 | | | 85 | N3R IPS, S4, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-J-G200-104 | 10 | 25 | 30 | 40 | 75 | - | 104A | | 85 | N3R IPS, S4, 104A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S4-6J-G200-104 | - | - | - | - | - | 100 | | | 85 | N3R IPS, S4, 104A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-J-G250-136 | 15 | 30 | 40 | 50 | 100 | - | 136A | | 85 | N3R IPS, S4, 136A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S5-6J-G250-125 | - | - | - | - | - | 125 | 125A | 5 | 240 | N3R IPS, S5, 125A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5-J-G300-156 | - | - | 50 | 60 | 125 | - | 156A | | 240 | N3R IPS, S5, 156A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5-6J-G300-150 | - | - | - | - | - | 150 | 150A | | 240 | N3R IPS, S5, 150A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5-J-G400-221 | - | 50 | 75 | 75 | 150 | - | 221A | | 240 | N3R IPS, S5, 221A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5-6J-G400-200 | - | - | - | - | - | 200 | 200A | | 240 | N3R IPS, S5, 200A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5-J-G500-248 | - | - | 75 | 100 | 200 | - | 248A | | 240 | N3R IPS, S5, 248A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5P-6J-G500-250 | - | - | - | - | - | 250 | 250A | 5+ | 382 | N3R IPS, S5P, 250A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5P-J-G600-312 | - | - | 100 | 125 | 250 | - | 312A | | 382 | N3R IPS, S5P, 312A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5P-6J-G600-300 | - | - | - | - | - | 300 | 300A | | 382 | N3R IPS, S5P, 300A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5P-J-G800-361 | - | - | 150 | 150 | 300 | - | 361A | | 382 | N3R IPS, S5P, 361A w/ SCM, MCCB Disc, HOA, 200 VA CPT |

* Note: The shaded figures represent the maximum horsepower for corresponding NEMA size rating.

# Ordering & Sizing Information

***Intelligent Pump Starter (Combination) with Ethernet Card***

***UL/NEMA 3R Enclosure*** *(Electronic Overload)*

| Model No. | HP | | | | | | Max. Amps | NEMA Size | Wt. (lbs) | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| | Single-Phase | | Three-Phase | | | | | | | |
| | 120 V | 230 V | 200 V | 230 V | 460 V | 575 V | | | | |
| IPS3R-S1-J-G15-8E | 1/3 | 1 | 2 | 2 | 5 | - | 8A | 1 | 46 | N3R IPS, S1, 8A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-J-G20-11E | 1/2 | 1.5 | 3 | 3 | 7.5 | - | 11A | | 46 | N3R IPS, S1, 11A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G20-11E | - | - | - | - | - | 10 | | | 46 | N3R IPS, S1, 11A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S1-J-G30-17E | 1 | 3 | - | 5 | 10 | - | 17A | | 46 | N3R IPS, S1, 17A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G30-17E | - | - | - | - | - | 15 | | | 46 | N3R IPS, S1, 17A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S1-J-G40-22E | - | - | - | 7.5 | 15 | - | 22A | | 46 | N3R IPS, S1, 22A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G40-22E | - | - | - | - | - | 20 | | | 46 | N3R IPS, S1, 22A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S1-J-G50-28E | 2 | 5 | 7.5 | 10 | 20 | - | 28A | | 46 | N3R IPS, S1, 28A w/ SCM, MCCB Disc, HOA, 50 VA CPT |
| IPS3R-S1-6J-G50-28E | - | - | - | - | - | 25 | | | 46 | N3R IPS, S1, 28A w/ SCM, MCCB Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-6J-G30-17E | - | - | - | - | - | 15 | 17A | 2 | 50 | N3R IPS, S2, 17A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G40-22E | - | - | - | 7.5 | 15 | - | 22A | | 50 | N3R IPS, S2, 22A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G40-22E | - | - | - | - | - | 20 | | | 50 | N3R IPS, S2, 22A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G50-28E | 2 | 5 | 7.5 | 10 | 20 | - | 28A | | 50 | N3R IPS, S2, 28A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G50-28E | - | - | - | - | - | 25 | | | 50 | N3R IPS, S2, 28A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G60-34E | 3 | 5 | 10 | 10 | 25 | - | 34A | | 50 | N3R IPS, S2, 34A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G60-34E | - | - | - | - | - | 30 | | | 50 | N3R IPS, S2, 34A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S2-J-G80-42E | - | 7.5 | - | 15 | 30 | - | 42A | | 50 | N3R IPS, S2, 42A w/ SCM, MCCS Disc, HOA, 50 VA CPT |
| IPS3R-S2-6J-G80-42E | - | - | - | - | - | 40 | | | 50 | N3R IPS, S2, 42A w/ SCM, MCCS Disc, HOA, 50 VA CPT, 600V |
| IPS3R-S3-6J-G60-34E | - | - | - | - | - | 30 | 34A | 3 | 66 | N3R IPS, S3, 34A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G80-42E | - | 7.5 | - | 15 | 30 | - | 42A | | 66 | N3R IPS, S3, 42A w/ SCM, MCCS Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G80-42E | - | - | - | - | - | 40 | | | 66 | N3R IPS, S3, 42A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G100-56E | 5 | 10 | 15 | 20 | 40 | - | 56A | | 66 | N3R IPS, S3, 56A w/ SCM, MCCS Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G100-56E | - | - | - | - | - | 50 | | | 66 | N3R IPS, S3, 56A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G125-68E | 5 | 15 | 20 | 25 | 50 | - | 68A | | 66 | N3R IPS, S3, 68A w/ SCM, MCCS Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G125-68E | - | - | - | - | - | 60 | | | 66 | N3R IPS, S3, 68A w/ SCM, MCCS Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S3-J-G150-80E | 7.5 | 15 | 25 | 30 | 60 | - | 80A | | 66 | N3R IPS, S3, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S3-6J-G150-80E | - | - | - | - | - | 75 | | | 66 | N3R IPS, S3, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-6J-G125-68E | - | - | - | - | - | 60 | 68A | 4 | 85 | N3R IPS, S4, 68A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-J-G150-80E | 7.5 | 15 | 25 | 30 | 60 | - | 80A | | 85 | N3R IPS, S4, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S4-6J-G150-80E | - | - | - | - | - | 75 | | | 85 | N3R IPS, S4, 80A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-J-G200-104E | 10 | 25 | 30 | 40 | 75 | - | 104A | | 85 | N3R IPS, S4, 104A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S4-6J-G200-104E | - | - | - | - | - | 100 | | | 85 | N3R IPS, S4, 104A w/ SCM, MCCB Disc, HOA, 100 VA CPT, 600V |
| IPS3R-S4-J-G250-136E | 15 | 30 | 40 | 50 | 100 | - | 136A | | 85 | N3R IPS, S4, 136A w/ SCM, MCCB Disc, HOA, 100 VA CPT |
| IPS3R-S5-6J-G250-125E | - | - | - | - | - | 125 | 125A | 5 | 240 | N3R IPS, S5, 125A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5-J-G300-156E | - | - | 50 | 60 | 125 | - | 156A | | 240 | N3R IPS, S5, 156A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5-6J-G300-150E | - | - | - | - | - | 150 | 150A | | 240 | N3R IPS, S5, 150A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5-J-G400-221E | - | 50 | 75 | 75 | 150 | - | 221A | | 240 | N3R IPS, S5, 221A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5-6J-G400-200E | - | - | - | - | - | 200 | 200A | | 240 | N3R IPS, S5, 200A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5-J-G500-248E | - | - | 75 | 100 | 200 | - | 248A | | 240 | N3R IPS, S5, 248A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5P-6J-G500-250 | - | - | - | - | - | 250 | 250A | 5+ | 382 | N3R IPS, S5, 250A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5P-J-G600-312E | - | - | 100 | 125 | 250 | - | 312A | | 382 | N3R IPS, S5P, 312A w/ SCM, MCCB Disc, HOA, 200 VA CPT |
| IPS3R-S5P-6J-G600-300E | - | - | - | - | - | 300 | 300A | | 382 | N3R IPS, S5P, 300A w/ SCM, MCCB Disc, HOA, 200 VA CPT, 600V |
| IPS3R-S5P-J-G800-361E | - | - | 150 | 150 | 300 | - | 361A | | 382 | N3R IPS, S5P, 361A w/ SCM, MCCB Disc, HOA, 200 VA CPT |

* Note: The shaded figures represent the maximum horsepower for corresponding NEMA size rating.

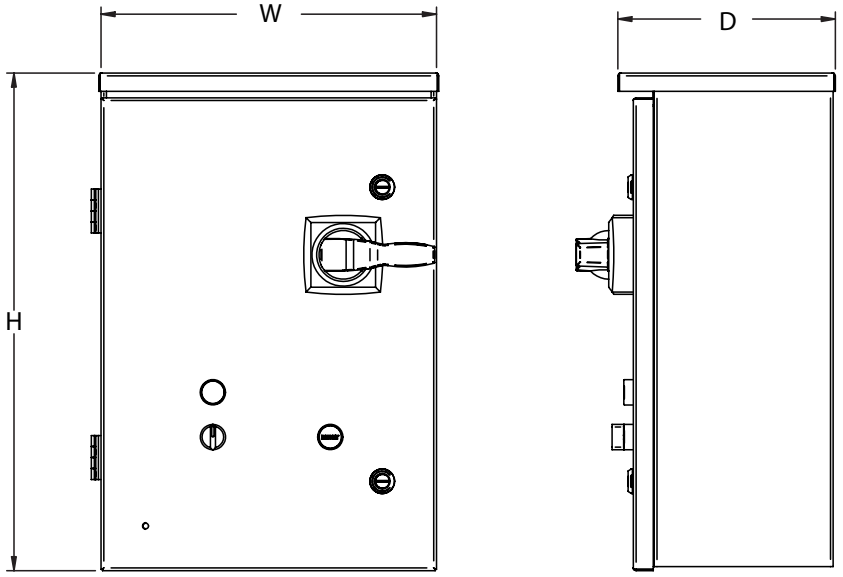
## IPS Accessories

| Model No. | Wt. (lbs) | Description |
|---|---|---|
| IPS-ENET | 0.5 | Data and Fault Logging with Date/Time Stamp, Ethernet Output |
| IPS-LTA | 1 | Lightning/Surge Arrestor |
| IPS-SPB | 1 | Start Push button Control (Door Mounted) |
| IPS-STSP | 1 | Start/Stop Push button Control (Door Mounted) |
| IPS-TMR | 0 | Programmable Timer Functions:  Backspin, On Delay |

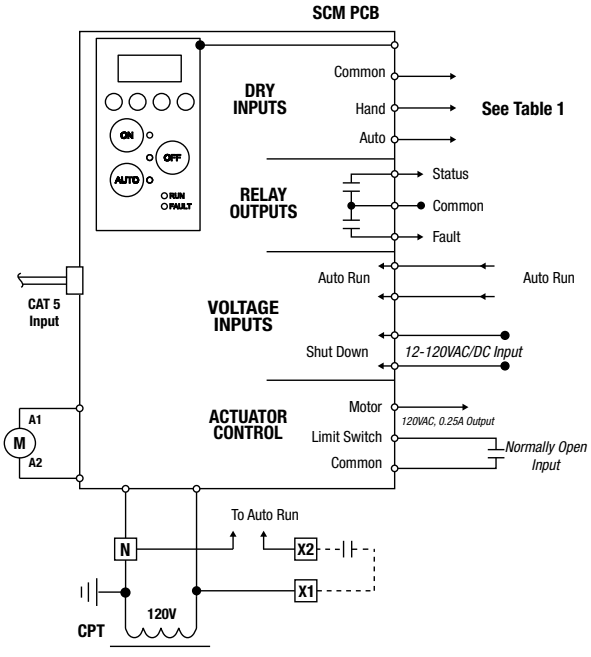
## IPS Dimensions

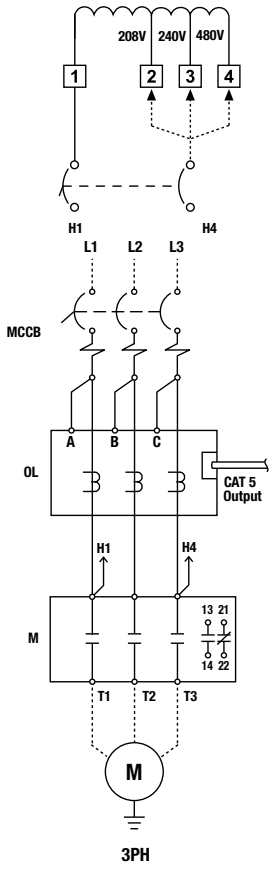
| Starter Size | H | W | D | Description |
|---|---|---|---|---|
| Size 1, Size 2 | 22 | 15 | 10 | UL/NEMA 3R Enclosure |
| Size 3, Size 4 | 32 | 15 | 10 | |
| Size 5 | 42 | 30 | 12 | |
| Size 5+ | 48 | 36 | 16 | |

*All measurements in inches



## Wiring Diagram

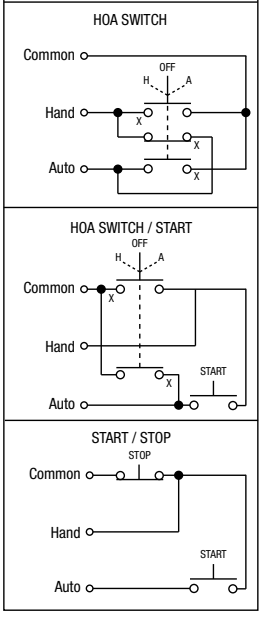



TRANSFORMER PRIMARY CIRCUIT BREAKER SIZING

| VA \ V | 208/230 | 480 |
|---|---|---|
| 50VA | N/A | N/A |
| 100VA | 2A | 1A |

**TABLE 1**




SCHM-IPS3R/C-V2

## IPS Specifications

| | |
|---|---|
| **Starter Type** | |
| Intelligent Pump Starter | |
| Combination, Service Rated | |
| UL Type 3R | |
| **User Interface** | |
| Hand-Off-Auto Keypad with LEDs | Internal |
| Hand-Off-Auto Switch | Door mounted |
| **Standard Control Operations** | |
| Inputs | |
| Voltage Auto Run | Apply 10 - 130 VAC/DC to energize |
| Shutdown | Apply 10 - 130 VAC/DC to energize |
| Actuator position switch | N.O. dry contact closure |
| Dry Auto | N.O. dry contact closure |
| Outputs | |
| Run Status | N.O., 0.3 A@125 VAC; 1 A@24 VAC |
| Fault relay | N.O., 0.3 A@125 VAC; 1 A@24 VAC |
| Actuator motor control | 120VAC, 0.25A max |
| Operational | |
| Overload Type | Electronic; $I^2t$ Thermal Trip Curve |
| Power fail mode | Restart last mode, no delay (default) |
| | Restart with delay |
| | Restart Off - LED flashes last mode |
| On/Off Time Delay | Programmable, selectable from 0.1 to 99 seconds |
| **Environmental** | |
| Ambient Operating Temp | -5 to 140 °F (-20 to 60 °C) |
| Ambient Storage Temp | -5 to 185 °F (-20 to 85 °C) |
| Relative Humidity | 5% to 95% non-condensing |
| **Protective Functions** | |
| Overload | Current Setting: 1-95 A<br>Trip Class: 5-30 (10 default)<br>Reset: Automatic/Manual (manual default) |
| Warm Start Provision | Delays restart based on calculated motor temperature when enabled |
| Locked Rotor / Stall | Trip within 0.5s |
| Ground Fault (UL1053) | Current Setting: 1.0-9.9A (1.0A default) |
| Current Phase Unbalance | Setting: 1-50% (20% default) |
| Over/Under Voltage | Setting: +/- 5-25% (5% default) |
| Voltage Phase Unbalance | Setting: 1-20% (3% default) |
| Voltage Phase Loss | Setting: 1-50% (5% default) |
| Phase Sequence | Trip in 0.1s when enabled |
| Under Power | Setting: 0-99% of nominal hp (20% Default) |
| Over Power | Setting: 101-200% of nominal hp (125% Default) |
| Cycle Fault | Trip if cycle rate exceeds 1200 starts per hour |