

ALTISTART® 48 Soft Starts



ALTISTART® 48 Family

ALTISTART® 48 Soft Starts

The ALTISTART 48 soft start offers advanced electronic soft start, soft stop performance through the exclusive torque control system (TCS). By controlling motor torque, the ALTISTART 48 soft start provides enhanced control for a wide variety of applications versus traditional voltage ramp or current limit soft starters. TCS optimizes ramp control during soft starting and stopping, minimizes motor temperature during acceleration and requires minimal adjustment for most applications. With TCS, unscheduled downtime is reduced, and motor and machine life extended.

Additional advanced features of the ALTISTART 48 soft start, including PTC probe motor protection, POWERSUITE™ software and MODBUS® protocol, meet the high demands of automated facilities for advanced motor protection and communication capabilities. The compact ALTISTART 48 accommodates ranges for low powered (2 to 1200 hp) and low voltage (208 V to 575 V) motors.

Key Benefits

Torque Control System

- Torque control system (TCS) provides linear acceleration and deceleration independent of motor loading.
- Controlled acceleration for high inertia loads and air supply fans.
- Provides the ability to control motors oversized for applications by up to 30%.

Ease of use

- Dual ramp makes external changeover circuit unnecessary.
- Factory settings conform to a majority of installations without adjustment.
- Preset for quick and easy set-up and installation.
- PC commissioning software provides an intuitive graphical method of testing and commissioning.
- Digital keypad allows quick modification of factory settings, accurate setting, and prediction of acceleration and deceleration times, start configuration and motor performance monitoring.

Reliability

- Meets UL requirement for motor overload and ground fault protection without extra options.
- Designed to conform to the electromagnetic compatibility (EMC)

standards for immunity, including IEC 801-2 Level 3, IEC 801-3 Level 3, IEC 801-4 Level 4 and IEC 801-5 Level 3.

- Meets more applications – a pump-specific version is not required to handle water hammer problems.

Ease of Selection

- Available in 21 current ratings from 17 to 1200 A.
- $\pm 5\%$ frequency tolerance for Class 3 Generator market reduces nuisance tripping.
- One ALTISTART 48 available for every standard motor rating from 10 to 1000 hp at 460 VAC.
- All motor loads rated for use at 208, 230, 380, 460 or 575 VAC at 50 or 60 Hz are self-adjusting for greater flexibility.

Options

- Operator interface developed for quick and easy programming and real-time monitoring of motor and soft start performance
- Remote mount kit
- POWERSUITE™ products for easy testing and commissioning
- Remote terminal option available for increased input and output capability
- Communication options include:
 - Web-based Ethernet
 - FIPIO
 - MODBUS® Plus
 - DEVICENET™



Details Make a Difference — ALTISTART® 48 Soft Starts

- Performance with exclusive torque control system (TCS)
- 30% smaller than the ALTISTART 46
- 208 to 575 V
- Three seven-segment displays
- IP20 and IP00 design
- Thermal protection by I²t calculation
- Thermal protection with PTC probes
- Simplified wiring with top and bottom connections
- Integrated MODBUS® Protocol
- RJ45 “RS 485” communication port
- POWERSUITE™ software
- Three current sensors
- Overload detection function
- Bypass available on all ratings
- Automatic restart
- Integrated functional keypad
- SCRs designed with 1800 V PIV ratings
- Frequency tolerance ±5%
- Rated up to 60°C



Selection Guide — ALTISTART® 48 Soft Starts

Open Style Soft Starters 50/60 Hz, Three Phase, 208/575 V Maximum

Motor (Maximum Power)

| Standard Duty | | | | | | |
|---------------|-------------|-------------|-------------|-------------|------------|-------------------|
| 208 V HP | 230 V HP | 400 V kW | 460 V HP | 575 V HP | Rated Amps | Catalog Number |
| 3 | 5 | 7.5 | 10 | 15 | 17 | ATS48D17Y |
| 5 | 7.5 | 11 | 15 | 20 | 22 | ATS48D22Y |
| 7.5 | 10 | 15 | 20 | 25 | 32 | ATS48D32Y |
| 10 | – | 18.5 | 25 | 30 | 38 | ATS48D38Y |
| – | 15 | 22 | 30 | 40 | 47 | ATS48D47Y |
| 15 | 20 | 30 | 40 | 50 | 62 | ATS48D62Y |
| 20 | 25 | 37 | 50 | 60 | 75 | ATS48D75Y |
| 25 | 30 | 45 | 60 | 75 | 88 | ATS48D88Y |
| 30 | 40 | 55 | 75 | 100 | 110 | ATS48C11Y |
| 40 | 50 | 75 | 100 | 125 | 140 | ATS48C14Y |
| 50 | 60 | 90 | 125 | 150 | 170 | ATS48C17Y |
| 60 | 75 | 110 | 150 | 200 | 210 | ATS48C21Y |
| 75 | 100 | 132 | 200 | 250 | 250 | ATS48C25Y |
| 100 | 125 | 160 | 250 | 300 | 320 | ATS48C32Y |
| 125 | 150 | 220 | 300 | 350 | 410 | ATS48C41Y |
| 150 | – | 250 | 350 | 400 | 480 | ATS48C48Y |
| – | 200 | 315 | 400 | 500 | 590 | ATS48C59Y |
| 200 | 250 | 355 | 500 | 600 | 660 | ATS48C66Y |
| 250 | 300 | 400 | 600 | 800 | 790 | ATS48C79Y |
| 350 | 350 | 500 | 800 | 1000 | 1000 | ATS48M10Y |
| 400 | 450 | 630 | 1000 | 1200 | 1200 | ATS48M12Y |

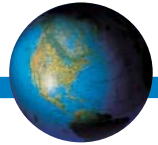
Specifications — ALTISTART® 48 Soft Starts

Environment

| | |
|---|--|
| Degree of protection | IP20 for ATS48 D17Y to C11Y IP00 for ATS48 C14Y to M12Y |
| Shock resistance | Conforms to IEC 60068-2-27: 15 g, 11 ms |
| Vibration resistance | Conforms to IEC 60068-2-6, NCF 20706 and BV1: 1.5 mm peak from 2 to 13 Hz 1 gn from 13 to 200 Hz |
| Starter audible noise level | Audible noise measurements taken 1 m away. The noise levels may change depending on the fan characteristics: ATS48D17Y to D47Y: 52 dBA ATS48D62Y to C11Y: 58 dBA ATS48C14Y to C17Y: 50 dBA ATS48C21Y to C32Y: 54 dBA ATS48C41Y to C66Y: 55 dBA ATS48C79Y to M12Y: 60 dBA |
| Resistance to electrostatic discharges | Conforms to IEC 61000-4-2, Level 3 |
| Immunity to radio-electric interference | Conforms to IEC 61000-4-3, Level 3 |
| Immunity to rapid electrical transients | Conforms to IEC 6100-4-4, Level 4 |
| Ambient air temperature | Storage: -13 to +158°F (-25 to +70°C) Operation: 14 to +104°F (-10°C to +40°C) without derating 14 to +122°F (-10°C to +50°C) with user provided shorting/bypass contactor without derating Up to +140°F (+60°C), derate the current by 2% for each°C above 40°C |
| Maximum relative humidity | 95% without condensation or dripping water conforming to IEC 60068-2-3 |
| Maximum ambient pollution | Conforms to IEC 60664-1, Pollution Degree 3 |
| Maximum operating altitude | 3,300 ft. without derating Above this, derate the nominal current by 2.2% for each additional 100 m to a maximum of 2000 m |
| Operating position | Maximum inclination $\pm 10^\circ$ with respect to vertical |

Electrical Characteristics

| | |
|---|--|
| Operating category | Conforms to IEC 60947-4-2, AC-53a |
| Three-phase supply voltage | 208 VAC - 15% to 690 VAC +10%, 50/60 Hz |
| Frequency | Automatic sensing (preset), $\pm 5\%$: • 60 Hz: 56.6 to 63.8 Hz • 50 Hz: 47.6 to 52.6 Hz Manual selection, $\pm 20\%$: • 50 Hz: 40 to 60 Hz • 60 Hz: 48 to 72 Hz |
| Rated current (ICL) | 17 to 1200 A (21 device ratings) |
| SCRs | 1800 V peak inverse voltage (PIV) rating |
| Motor power | 2 to 1200 hp |
| Motor voltage | 208, 230, 400, 460, 575 and 690 VAC |
| Starter control circuit supply voltage | 110 VAC - 15% to 230 VAC, +10% 50/60 Hz |
| Maximum control circuit consumption (with fans operating) | ATS48D17Y to C17Y: 30W ATS48C21Y to C32Y: 50W ATS48C41Y to M12Y: 80W |
| Protection | <ul style="list-style-type: none"> • Integrated thermal I²t protection for motor (Class 2, 10, 10A, 15, 20, 25, 30 or no protection) and/or thermal protection with PTC probes • Motor underload settings • Current overload settings • Phase reversal • Phase loss • Automatic restart |



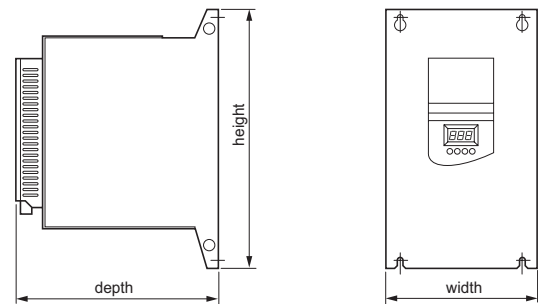
Electromagnetic Compatibility (EMC) [1]

| | Standards | Test Levels | Examples (sources of interference) |
|----------------------------------|---|--------------|--|
| Immunity tests | IEC 61000-4-2, Level 3 Electrostatic discharge: • through contact • through air | 6 kV 8 kV | Contact off an electrically charged individual |
| | IEC 61000-4-3, Level 3 Radiated electromagnetic fields | 10 V/m | Equipment transmitting radio frequencies |
| | IEC 61000-4-4, Level 4 Rapid electrical transients: • Power supply cables • Control supply cables | 4 kV 2 kV | Opening/closing of a contactor |
| | IEC 61000-4-5, Level 3 Shock wave: • Phase to phase • Phase to ground | 1 kV 2 kV | |
| | IEC 61000-4-12, Level 3 Damped oscillating waves | 1 kV - 1 MHz | Oscillating circuit on the line supply |
| Radiated and conducted emissions | IEC 60947-4-2, Class A | | |
| | IEC 60947-4-2, Class B on starters up to 170A (ATS48D17Y to C17Y) Shorting/bypass contactors must be utilized. | | |

[1] The starters conform to IEC 60947-4-2 (EMC). This standard ensures a level of immunity for products and a level of emitted interference.

Dimensions and Weights — ALTISTART® 48 Soft Starts

| | Width (inches) | Height (inches) | Depth (inches) | Weight (lbs.) |
|---------------|----------------|-----------------|----------------|---------------|
| Size 1 | | | | |
| ATS48D17Y | 6.30 | 10.83 | 7.48 | 10.8 |
| ATS48D22Y | | | | |
| ATS48D32Y | | | | |
| ATS48D38Y | | | | |
| ATS48D47Y | | | | |
| Size 2 | | | | |
| ATS48D62Y | 7.48 | 11.42 | 9.25 | 18.3 |
| ATS48D75Y | | | | |
| ATS48D88Y | | | | |
| ATS48C11Y | | | | |
| Size 3 | | | | |
| ATS48C14Y | 7.87 | 13.39 | 10.43 | 27.3 |
| ATS48C17Y | | | | |
| Size 4 | | | | |
| ATS48C21Y | 12.60 | 14.96 | 10.43 | 40.1 |
| ATS48C25Y | | | | |
| ATS48C32Y | | | | |
| Size 5 | | | | |
| ATS48C41Y | 15.75 | 26.38 | 11.81 | 113.3 |
| ATS48C48Y | | | | |
| ATS48C59Y | | | | |
| ATS48C66Y | | | | |
| Size 6 | | | | |
| ATS48C79Y | 30.31 | 35.04 | 12.40 | 253.6 |
| ATS48M10Y | | | | |
| ATS48M12Y | | | | |



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