

# ATS480C14Y

Altivar Soft Starter ATS480, 140 A, 208...690V AC, control supply 110...230V AC



## Main

|                                |  |
|--------------------------------|--|
| Range of Product               | Altivar Soft Starter ATS480  |
| Product or Component Type      | Soft starter   |
| Product destination            | Asynchronous motors  |
| Product Specific Application   | Process and infrastructures  |
| Device short name              | ATS480   |
| Phase                          | 3 phase  |
| Utilisation category           | AC-3A<br>AC-53A  |
| Ue power supply voltage        | 208...690 V - 15...10 %  |
| Power supply frequency         | 50...60 Hz - 20...20 %   |
| [Ie] rated operational current | Normal duty 140.0 A 104 °F (40 °C))  |
| Rated current in heavy duty    | 110.0 A at 104 °F (40 °C) heavy duty   |
| Torque control                 | True   |
| IP Degree of Protection        | IP00   |
| Motor power kW                 | 37.0 KW 230 V in the motor supply line normal duty<br>30.0 KW 230 V in the motor supply line heavy duty<br>75.0 KW 400 V in the motor supply line normal duty<br>55.0 KW 400 V in the motor supply line heavy duty<br>75.0 KW 440 V in the motor supply line normal duty<br>55.0 KW 440 V in the motor supply line heavy duty<br>90.0 KW 500 V in the motor supply line normal duty<br>75.0 KW 500 V in the motor supply line heavy duty<br>90.0 KW 525 V in the motor supply line normal duty<br>75.0 KW 525 V in the motor supply line heavy duty<br>110.0 KW 660 V in the motor supply line normal duty<br>90.0 KW 660 V in the motor supply line heavy duty<br>110.0 KW 690 V in the motor supply line normal duty<br>90.0 KW 690 V in the motor supply line heavy duty<br>75.0 KW 230 V to the motor delta terminals normal duty<br>55.0 KW 230 V to the motor delta terminals heavy duty<br>110.0 KW 400 V to the motor delta terminals normal duty<br>90.0 kW 400 V to the motor delta terminals heavy duty |
| Maximum Horse Power Rating     | 40.0 Hp 208 V normal duty<br>30.0 Hp 208 V heavy duty<br>50.0 Hp 230 V normal duty<br>40.0 Hp 230 V heavy duty<br>100.0 Hp 460 V normal duty<br>75.0 Hp 460 V heavy duty<br>125.0 Hp 575 V normal duty<br>100.0 hp 575 V heavy duty  |
| Option card                    | Communication module Profibus DP V1<br>Communication module PROFINET<br>Communication module Modbus TCP/EtherNet/IP<br>Communication module CANopen daisy chain<br>Communication module CANopen Sub-D<br>Communication module CANopen open style   |

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## Complementary

|   |  |
|---|--|
| Device connection                       | In the motor supply line<br>To the motor delta terminals   |
| [Us] control circuit voltage            | 110...230 V AC 50/60 Hz - 15...10 %  |
| Apparent power                          | 0.09 kVA   |
| Integrated motor overload protection    | True   |
| Motor thermal protection class          | Class 10E  |
| Protection type                         | Phase failure line<br>Integrated thermal protection motor<br>Thermal protection starter<br>Current overload motor<br>Underload motor<br>Excessive starting time, locked rotor motor<br>Motor phase loss motor<br>Line supply phase loss line<br>Line supply phase loss motor<br>Thermal protection motor |
| Current limiting %In (5 x Ie maximum)   | 150...700 %  |
| [In] Rated current pwr loss specifctn   | 140.0 A  |
| Power loss static current independent   | 25.0 W   |
| Power loss per device current dependent | 366.0 W  |
| Standards                               | EN/IEC 60947-4-2<br>UL 60947-4-2<br>IEC 60664-1  |
| Product Certifications                  | CE<br>CULus<br>CCC<br>UKCA<br>RCM<br>EAC<br>DNV<br>ABS<br>BV<br>CCS  |
| Marking                                 | CE<br>CCC<br>UKCA<br>EAC<br>RCM<br>CULus   |
| [Uc] control circuit voltage            | 24 V DC  |
| Discrete input number                   | 4  |
| Discrete input type                     | STOP) logic inputs, 3500 Ohm<br>RUN) logic inputs, 3500 Ohm<br>DI3) programmable as logic input, 3500 Ohm<br>DI4) programmable as logic input, 3500 Ohm  |
| Input compatibility                     | STOP discrete input level 1 PLC EN/IEC 61131-2<br>RUN discrete input level 1 PLC EN/IEC 61131-2<br>DI3 discrete input level 1 PLC EN/IEC 61131-2<br>DI4 discrete input level 1 PLC EN/IEC 61131-2  |
| Discrete input logic                    | Programmable digital input < 5 V   |
| Relay output number                     | 3  |
| Relay output type                       | Relay outputs R1A 1 NO<br>Relay outputs R1B 1 NO<br>Relay outputs RIC NO/NC programmable   |
| Minimum switching current               | 10 mA 24 V DC relay outputs  |
| Maximum switching current               | Relay outputs 2 A 250 V AC<br>Relay outputs 2 A 30 V DC<br>Relay outputs   |
| Discrete output number                  | 2  |
| Discrete output type                    | DQ1) programmable digital output <= 30 V<br>DQ2) programmable digital output <= 30 V   |
| Output compatibility                    | Open collector level 1 PLC IEC 65A-68  |
| Analogue input number                   | 1  |
| Analogue input type                     | AI1/PTC PTC/Pt 100 temperature probe<br>PTC2 PTC/Pt 100 temperature probe<br>PTC3 PTC/Pt 100 temperature probe   |

|                             |   |
|-----------------------------|---|
| Analogue output number      | 1   |
| Analogue output type        | Current output AQ1 0...20 mA or 0...10 V 500 Ohm  |
| Communication port protocol | Modbus serial   |
| Connector Type              | 1 RJ45  |
| Communication data link     | Serial  |
| Physical interface          | 2-wire RS 485   |
| Transmission Rate           | 1200...256000 bit/s   |
| Transmission frame          | RTU   |
| Data format                 | 8 bits, configurable odd, even or no parity   |
| Type of polarization        | No impedance Modbus serial  |
| Number of addresses         | 0...227 Modbus serial   |
| Method of access            | Slave Modbus serial   |
| Function Available          | External bypass control<br>Pre-heating<br>Smoke extraction<br>Multi-motor cascade<br>Second motor set<br>User management<br>Ports and services hardening<br>Security event logging<br>Cybersecure firmware update<br>Single direction |
| Display screen available    | True  |
| Operating position          | Vertical +/- 10 degree  |
| Height                      | 13.39 in (340.0 mm)   |
| Width                       | 7.87 in (200.0 mm)  |
| Depth                       | 10.71 in (272.0 mm)   |
| Product Weight              | 27.34 lb(US) (12.4 kg)  |

## Environment

|  |   |
|--|---|
| Electromagnetic compatibility                                    | Conducted and radiated emissions level A IEC 60947-4-2<br>Conducted and radiated emissions with bypass level B IEC 60947-4-2<br>Damped oscillating waves level 3 IEC 61000-4-12<br>Electrostatic discharge level 3 IEC 61000-4-11<br>Immunity to electrical transients level 4 IEC 61000-4-4<br>Immunity to radiated radio-electrical interference level 3 IEC 61000-4-3<br>Voltage/current impulse level 3 IEC 61000-4-5 |
| Pollution degree   | Level 3   |
| [Uimp] rated impulse withstand voltage                           | 6 kV  |
| [Ui] rated insulation voltage                                    | 690 V   |
| Environmental class (during operation)                           | Class 3C3 according to IEC 60721-3-3<br>Class 3S2 according to IEC 60721-3-3  |
| Relative humidity  | 0...95 % without condensation or dripping water EN/IEC 60068-2-3  |
| Ambient air temperature for operation                            | 104...140 °F (40...60 °C) with current derating of 2 % per °C)<br>5...104 °F (-15...40 °C) without derating)  |
| Ambient Air Temperature for Storage                              | -13...158 °F (-25...70 °C)  |
| Operating altitude   | <= 3280.84 ft (1000 m) without derating<br>> 3280.84...13123.36 ft (> 1000...4000 m) with current derating 1 % per 100 m  |
| Maximum deflection under vibratory load (during operation)       | 1.5 mm at 2...13 Hz   |
| Maximum deflection under vibratory load (during storage)         | 1.75 mm at 2...9 Hz   |
| Maximum deflection under vibratory load (during transport)       | 1.75 mm at 2...9 Hz   |
| Maximum acceleration under vibrational stress (during operation) | 10 m/s <sup>2</sup> at 13...200 Hz  |
| Maximum acceleration under vibratory load (during storage)       | 15 m/s <sup>2</sup> at 200...500 Hz<br>10 m/s <sup>2</sup> at 9...200 Hz  |
| Maximum acceleration under vibratory load (during transport)     | 15 m/s <sup>2</sup> at 200...500 Hz<br>10 m/s <sup>2</sup> at 9...200 Hz  |
| Maximum acceleration under shock impact (during operation)       | 150 m/s <sup>2</sup> at 11 ms   |

|  |                               |
|--|-------------------------------|
| Maximum acceleration under shock load (during storage)   | 100 m/s <sup>2</sup> at 11 ms |
| Maximum acceleration under shock load (during transport) | 100 m/s <sup>2</sup> at 11 ms |




## Ordering and shipping details

|                       |                             |
|-----------------------|-----------------------------|
| Category              | 22588-OPEN ATS480 ALTISTART |
| Discount Schedule     | CP1G                        |
| GTIN                  | 3606481089083               |
| Nbr. of units in pkg. | 1                           |
| Package weight(Lbs)   | 31.72 lb(US) (14.386 kg)    |
| Returnability         | Yes                         |

## Packing Units

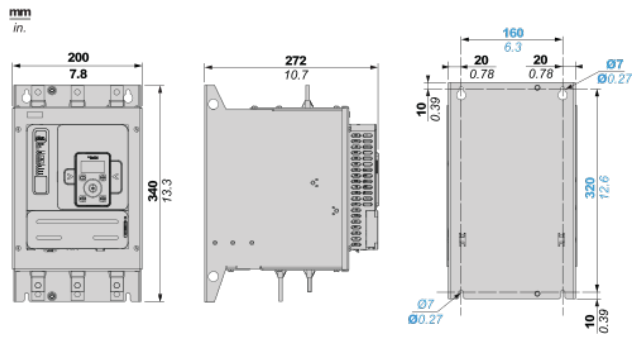
|                              |                          |
|------------------------------|--------------------------|
| Unit Type of Package 1       | PCE                      |
| Package 1 Height             | 16.93 in (43 cm)         |
| Package 1 width              | 12.60 in (32 cm)         |
| Package 1 Length             | 17.91 in (45.5 cm)       |
| Unit Type of Package 2       | S06                      |
| Number of Units in Package 2 | 2                        |
| Package 2 Weight             | 92.10 lb(US) (41.775 kg) |
| Package 2 Height             | 29.53 in (75 cm)         |
| Package 2 width              | 23.62 in (60 cm)         |
| Package 2 Length             | 31.50 in (80 cm)         |

## Offer Sustainability

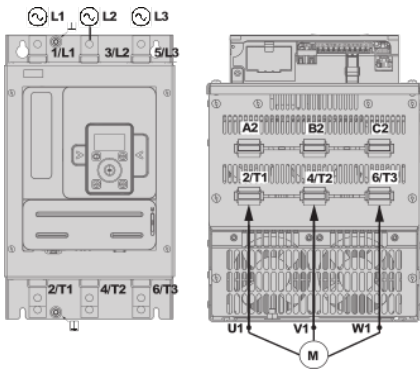
|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| REACH Regulation           |  <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)  <a href="#">EU RoHS Declaration</a>  |
| Mercury free               | Yes   |
| RoHS exemption information |  <a href="#">Yes</a>   |
| China RoHS Regulation      |  <a href="#">China RoHS Declaration</a>  |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.  |
| Upgradeability             | Upgraded components available   |

## Dimensions

### Front, Side and Rear View

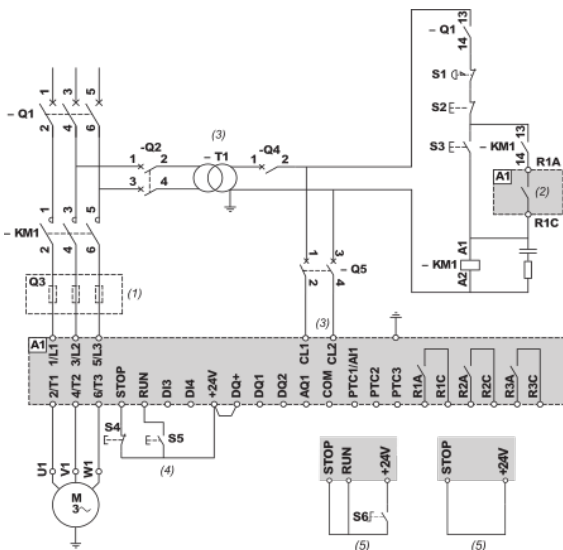


Power Connections



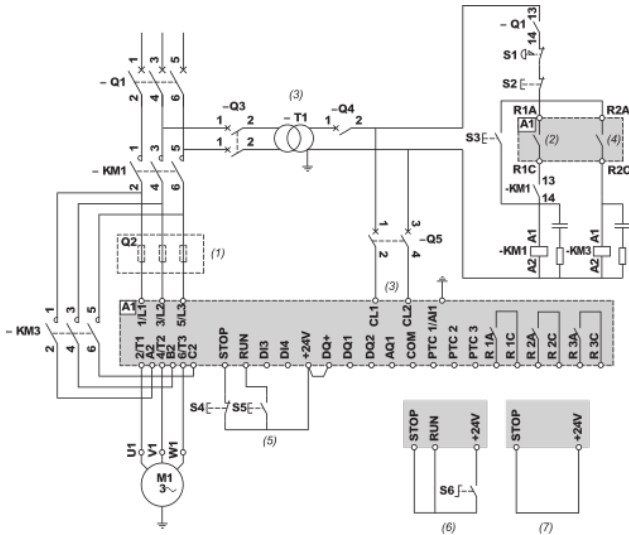
- (1) : Mains side
- (2) : Motor side
- 1/L1, 3/L2, 5/L3 : Mains supply inputs
- 2/T1, 4/T2, 6/T3 : Outputs to motor
- A2, B2, C2 : Soft starter bypass

Connection in line, with line contactor, no bypass, type 1 or 2 coordination, non - reversing, 2-wire or 3-wire control



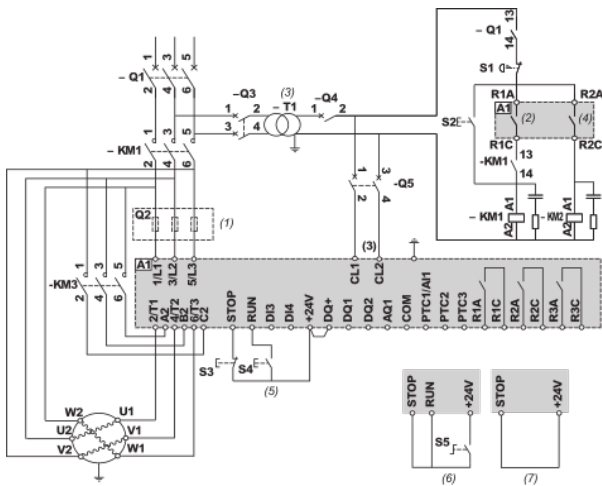
- (1) : Installation of additional fast-acting fuses to upgrade to type 2 coordination according to IEC 60947-4-2.
- (2) : Take into account the electrical characteristics of the relays (Control Terminal Characteristics).
- (3) : The transformer must supply 110...230 VAC +10% — 15%, 50/60Hz.
- (4) : RUN and STOP Management (3-wire control).
- (5) : RUN and STOP Management (2-wire control).

Connection in line, with line and bypass contactor, freewheel or controlled stop, type 1 or 2 coordination, non reversing, 2-wire or 3-wire



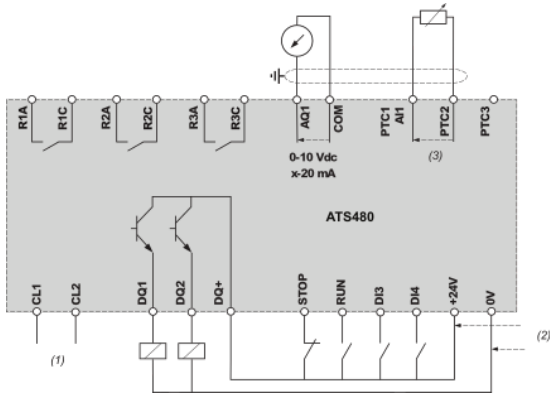
- (1) : Installation of additional fast-acting fuses to upgrade to type 2 coordination according to IEC 60947-4-2.
- (2) : Take into account the electrical characteristics of the relays (Control Terminal Characteristics).
- (3) : The transformer must supply 110...230 VAC +10% – 15%, 50/60Hz.
- (4) : Take into account the electrical characteristics of the relays, especially when connecting to high rating contactor (Control Terminal Characteristics).
- (5) : RUN and STOP Management (3-wire control).
- (6) : RUN and STOP Management (2-wire control).
- (7) : PC or PLC control

Connection inside the delta, with line and bypass contactor, type 1 and 2 coordination, non reversing, 2 wire or 3 wire



- (1) : Installation of additional fast-acting fuses to upgrade to type 2 coordination according to IEC 60947-4-2.
- (2) : Take into account the electrical characteristics of the relays (Control Terminal Characteristics).
- (3) : The transformer must supply 110...230 VAC +10% – 15%, 50/60Hz.
- (4) : Take into account the electrical characteristics of the relays, especially when connecting to high rating contactor (Control Terminal Characteristics).
- (5) : RUN and STOP Management (3-wire control).
- (6) : RUN and STOP Management (2-wire control).
- (7) : PC or PLC control

Control block wiring diagram



(1) : Control power supply 110-230 VAC

(2) : External supply 24 VDC

(3) : 2 Wires PTC/PT100

R1A, R1C, R3A, R3C : Sequence relay

R2A, R2C : End of start

STOP, RUN, DI3, DI4 : Digital inputs

AQ1 : Analogue output

PTC1/A11, PTC2, PTC3 : PTC or PT100 connection

DQ1, DQ2, DQ+ : Digital outputs



Mounting Position

