# Product datasheet

Specifications



## Soft starter, Altivar Soft Starter ATS430, 47A, 208 to 600V AC, control supply 110 to 230V AC

ATS430D47S6

## Main

| | |
|---|---|
| **Range of product** | Altivar Soft Starter ATS430 |
| **Product or component type** | Soft starter |
| **Product destination** | Asynchronous motors |
| **Product specific application** | Standard industrial machines |
| **Device short name** | ATS430 |
| **Network number of phases** | 3 phases |
| **Utilisation category** | AC-3A<br>AC-53A |
| **Ue power supply voltage** | 208...600 V AC (- 15...10 %) |
| **power supply frequency** | 50...60 Hz - 20...20 % |
| **[Ie] rated operational current** | Normal duty: 47 A in line (at <40 °C) |
| **Service factor at Ie** | 100 |
| **IP degree of protection** | IP20 |
| **Motor power kW** | 11 kW at 230 V in line normal duty<br>22 kW at 400 V in line normal duty<br>22 kW at 440 V in line normal duty<br>30 kW at 500 V in line normal duty<br>30 kW at 525 V in line normal duty |
| **Motor power hp** | 15 hp at 230 V normal duty<br>30 hp at 460 V normal duty<br>40 hp at 575 V normal duty |
| **Communication port protocol** | Modbus serial |

## Complementary

| | |
|---|---|
| **Device connection** | In line |
| **Overload current** | 400 % Ie for 13 s |
| **On-load factor** | 50 % |
| **Operating cycles/hour** | 10 cyc/h |
| **[Us] control circuit voltage** | 110...230 V AC 50...60 Hz - 15...10 % |
| **Apparent power** | 70 VA |
| **Integrated motor overload protection** | True |
| **motor thermal protection class** | Class 10E |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

| | |
|---|---|
| **Protection type** | Phase failure: mains<br>Thermal protection: mains<br>Thermal protection: starter<br>Current overload: motor<br>Motor underload: motor<br>Excessive acceleration time: motor<br>Motor phase loss detection: motor<br>Protection against line phase inversion: mains<br>External thermal protection: motor<br>Short-circuit between motor phase and earth: motor |
| **current limiting %In (5 x Ie maximum)** | 150…700 % |
| **Rated current pwr loss specification** | 47 A |
| **Power loss static current independent** | 19 W |
| **Power loss per device current dependent** | 12 W |
| **Power loss during starting** | 375 W during starting at 40 °C at 400% In |
| **Standards** | EN/IEC 60947-4-2<br>UL 60947-4-2<br>IEC 60664-1 |
| **Product certifications** | cULus<br>CE<br>UKCA<br>CCC<br>RCM<br>EAC<br>KC |
| **Marking** | CULus<br>CE<br>UKCA<br>CCC<br>RCM<br>EAC<br>KC |
| **[Uc] control circuit voltage** | 24 V DC |
| **Discrete input number** | 4 |
| **Discrete input type** | (STOP) digital input, 4.4 kOhm<br>(RUN) digital input, 4.4 kOhm<br>(DI3) digital input, 4.4 kOhm<br>(DI4) digital input, 4.4 kOhm |
| **Input compatibility** | STOP: digital input level 1 PLC conforming to EN/IEC 61131-2<br>RUN: digital input level 1 PLC conforming to EN/IEC 61131-2<br>DI3: digital input level 1 PLC conforming to EN/IEC 61131-2<br>DI4: digital input level 1 PLC conforming to EN/IEC 61131-2 |
| **Discrete input logic** | Digital input STOP at State 0: 0...< 5 V and <= 2 mA at State 1: > 11 V, >= 5 mA<br>Digital input RUN at State 0: 0...< 5 V and <= 2 mA at State 1: > 11 V, >= 5 mA<br>Digital input DI3 at State 0: 0...< 5 V and <= 2 mA at State 1: > 11 V, >= 5 mA<br>Digital input DI4 at State 0: 0...< 5 V and <= 2 mA at State 1: > 11 V, >= 5 mA |
| **Relay output number** | 2 |
| **Relay output type** | Relay outputs R1A, R1C NO<br>Relay outputs R1B, R1C NC<br>Relay outputs R2A, R2C NO |
| **Minimum switching current** | 100 mA at 12 V DC for relay outputs |
| **Maximum switching current** | Relay outputs 2 A / 250 V AC for AC-15 100000 cycles following IEC 60947-5-1<br>Relay outputs 2 A / 30 V DC for DC-13 150000 cycles following IEC 60947-5-1 |
| **Analogue input number** | 1 |
| **Analogue input type** | PTC1 : PTC temperature probe<br>PTC2 : PTC temperature probe |
| **Analogue output number** | 1 |

| | |
|---|---|
| **Analogue output type** | Current output AQ1 : 0...20 mA/4...20 mA , impedance< 500 Ohm<br>Voltage output AQ1 : 0...10 V , impedance> 470 Ohm |
| **Communication port protocol** | Modbus serial RJ45<br>Modbus serial open style (DO, D1, PE, COM) |
| **Connector type** | 1 RJ45<br>Open style |
| **Physical interface** | 2-wire RS 485 - connector(s): RJ45<br>2-wire RS 485 - connector(s): open style (DO, D1, PE, COM) |
| **Transmission frame** | RTU : 1 RJ45<br>RTU : open style (DO, D1, PE, COM) |
| **Transmission rate** | 4.8…38.4 kbps for Modbus serial RJ45<br>0.3...115.2 kbps for Modbus serial open style (DO, D1, PE, COM) |
| **Data format** | 8 bits, odd, even or no parity, 1 or 2 bits to stop for Modbus serial RJ45<br>8 bits, configurable odd, even or no parity for Modbus serial open style (DO, D1, PE, COM) |
| **Number of addresses** | 0…247 for Modbus serial |
| **Method of access** | Slave Modbus serial |
| **Type of polarization** | No impedance for Modbus serial |
| **Display screen available** | True |
| **Operating position** | Vertical +/- 10 degree |
| **Height** | 273 mm |
| **Width** | 130 mm |
| **Depth** | 194 mm |
| **Net weight** | 3.40 kg |
| **internal bypass** | True |
| **Function available** | Single direction<br>Pre-heating<br>Power monitoring<br>Condition monitoring<br>User management<br>Ports and services hardening<br>Security event logging<br>Cybersecure firmware update<br>Small motor test |
| **material declaration** | True |

# Environment

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|---|---|
| **Electromagnetic compatibility** | Conducted and radiated emissions level A conforming to IEC 60947-4-2<br>Electrostatic discharge level 3 conforming to IEC 61000-4-2<br>Immunity to radiated radio-electrical interference level 3 conforming to IEC 61000-4-3<br>Immunity to electrical transients level 4 conforming to IEC 61000-4-4<br>Voltage/current impulse level 3 conforming to IEC 61000-4-5<br>Damped oscillating waves level 3 conforming to IEC 61000-4-18<br>Immunity to conducted disturbances radio-frequency level 3 conforming to IEC 61000-4-6 |
| **Pollution degree** | Level 3 |
| **[Uimp] rated impulse withstand voltage** | 6 kV |
| **[Ui] rated insulation voltage** | 600 V |
| **Environmental class (during operation)** | Class 3C3 according to IEC 60721-3-3<br>Class 3S3 according to IEC 60721-3-3 |
| **Ambient air temperature for operation** | -25…40 °C (without derating)<br>40…60 °C (with current derating of 1 % per °C above 40 °C) |
| **Ambient air temperature for storage** | -40…70 °C |

| | |
|---|---|
| **Ambient air transport temperature** | -40…70 °C |
| **Operating altitude** | <= 2000 m without derating<br>> 2000...4800 m with current derating 1 % per 100 m above 2000 m |
| **Relative humidity** | 5…95 % without condensation or dripping water conforming to EN/IEC 60068-2-3 |
| **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)** | 1 gn at 13…200 Hz |
| **Maximum acceleration under vibratory load (during storage)** | 1 gn at 9…200 Hz<br>1.5 gn at 200…500 Hz |
| **Maximum acceleration under vibratory load (during transport)** | 1 gn at 9…200 Hz<br>1.5 gn at 200…500 Hz |
| **Maximum acceleration under shock impact (during operation)** | 15 gn at 11 ms |
| **Maximum acceleration under shock load (during storage)** | 10 gn at 11 ms |
| **Maximum acceleration under shock load (during transport)** | 10 gn at 11 ms |

## Packing Units

| | |
|---|---|
| **Unit Type of Package 1** | PCE |
| **Number of Units in Package 1** | 1 |
| **Package 1 Height** | 22.000 cm |
| **Package 1 Width** | 24.000 cm |
| **Package 1 Length** | 34.500 cm |
| **Package 1 Weight** | 4.518 kg |
| **Unit Type of Package 2** | S06 |
| **Number of Units in Package 2** | 10 |
| **Package 2 Height** | 75.000 cm |
| **Package 2 Width** | 60.000 cm |
| **Package 2 Length** | 80.000 cm |
| **Package 2 Weight** | 55.000 kg |

## Contractual warranty

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|---|---|
| **Warranty (in months)** | 18 |

# Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

## Environmental footprint

| | |
|---|---|
| Total lifecycle Carbon footprint | 2438 |
| Environmental Disclosure | Product Environmental Profile |

## Use Better

### Materials and Packaging

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|---|---|
| Packaging made with recycled cardboard | No |
| Packaging without single use plastic | No |
| EU RoHS Directive | Compliant with Exemptions |
| SCIP Number | Ed195529-33c5-462a-870c-43a39537bf01 |
| REACh Regulation | REACh Declaration |

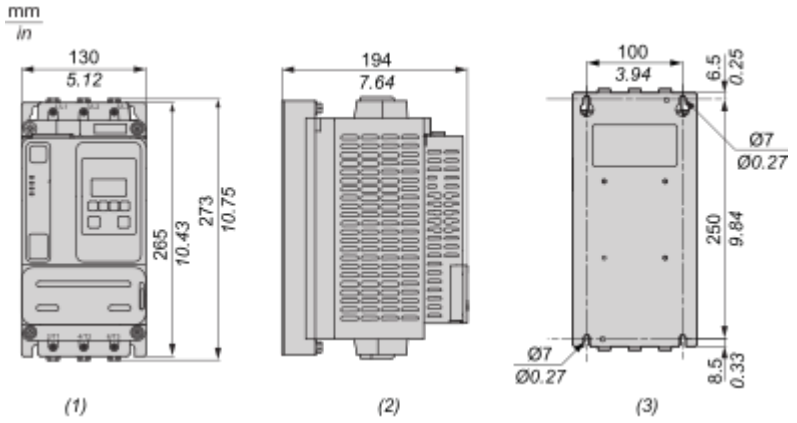
## Use Again

### Repack and remanufacture

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|---|---|
| End of life manual availability | End of Life Information |
| Removable battery | Yes |
| Take-back | No |
| WEEE Label | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

Dimensions Drawings

## Dimensions

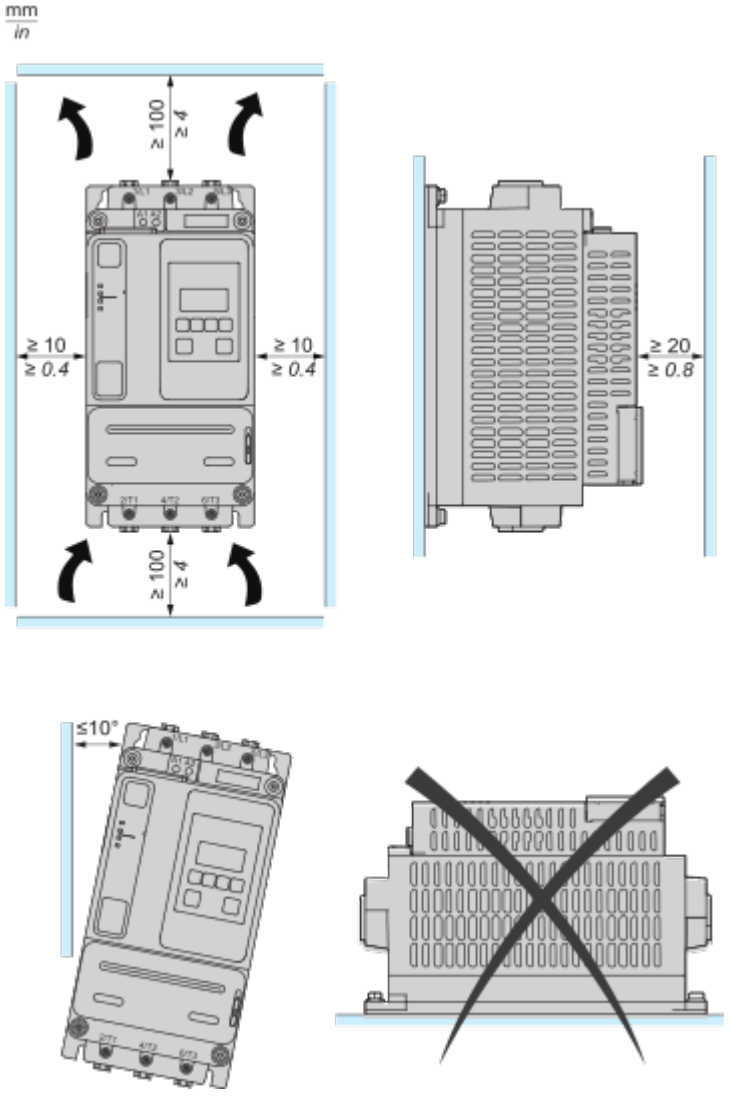



**(1)** : Front
**(2)** : Side
**(3)** : Rear

## Mounting and Clearance

### Mounting Position

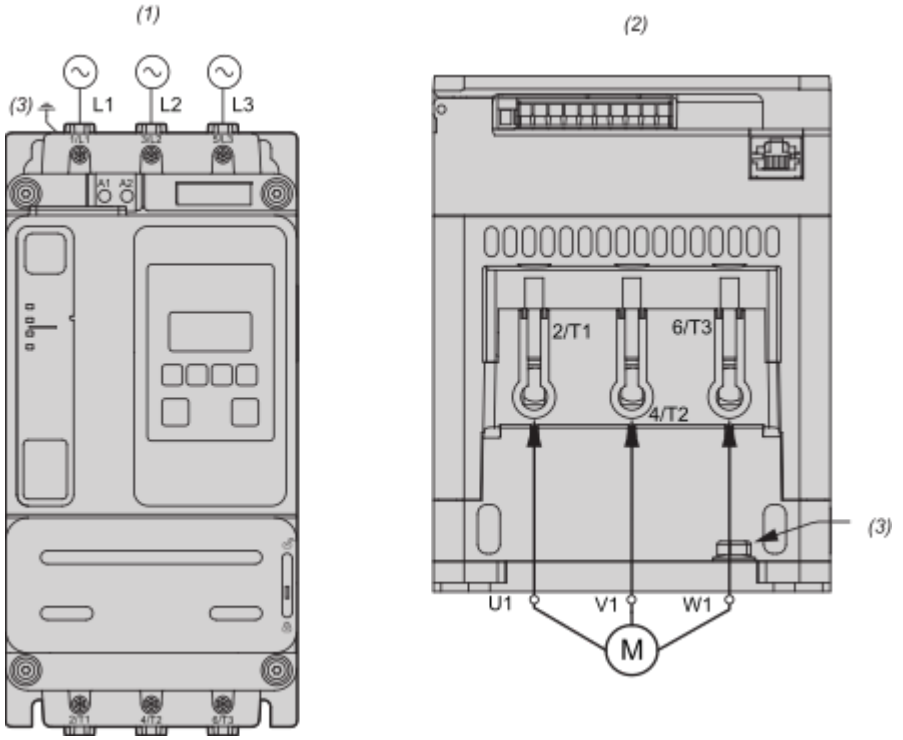
The soft starter is designed to be mounted inside cabinets vertically at ± 10° for cooling purposes.Respect the minimum clearances so that the cooling air can circulate from the bottom to the top of the soft starter. The minimum clearances apply to any device close to the soft starter such as circuit breakers, fuses and contactors.Do not install the soft starter above heating elements.



Connections and Schema

## Wiring

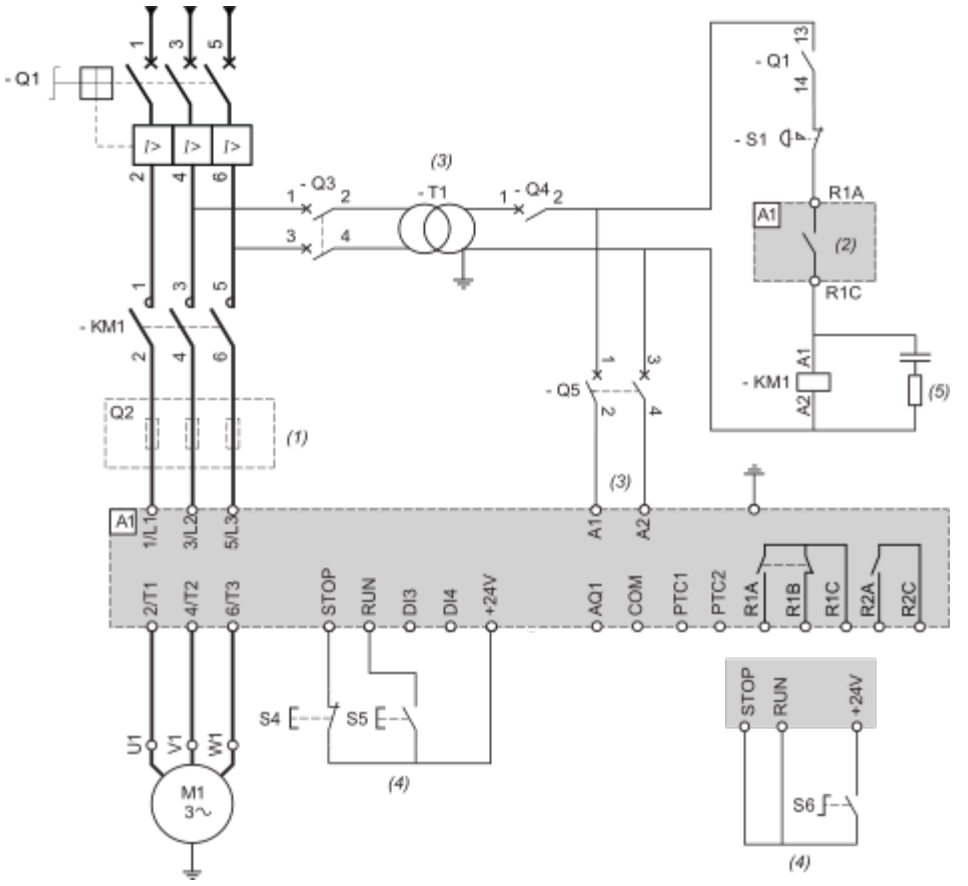
### Wiring the Power Part




Use class C cables for the power connections.
**1/L1, 3/L2, 5/L3** : Mains supply inputs
**2/T1, 4/T2, 6/T3** : Outputs to motor
**(1)** : Mains side
**(2)** : Motor side (bottom)
**(3)** : Ground connection

### Connection In Line, With Line Contactor, Type 1 or 2 Coordination, 2-wire control or 3–wire control

**Line contactor controlled based on RUN & STOP or on detected error.**
Use relay output R1 set to **[Mains Contactor]**



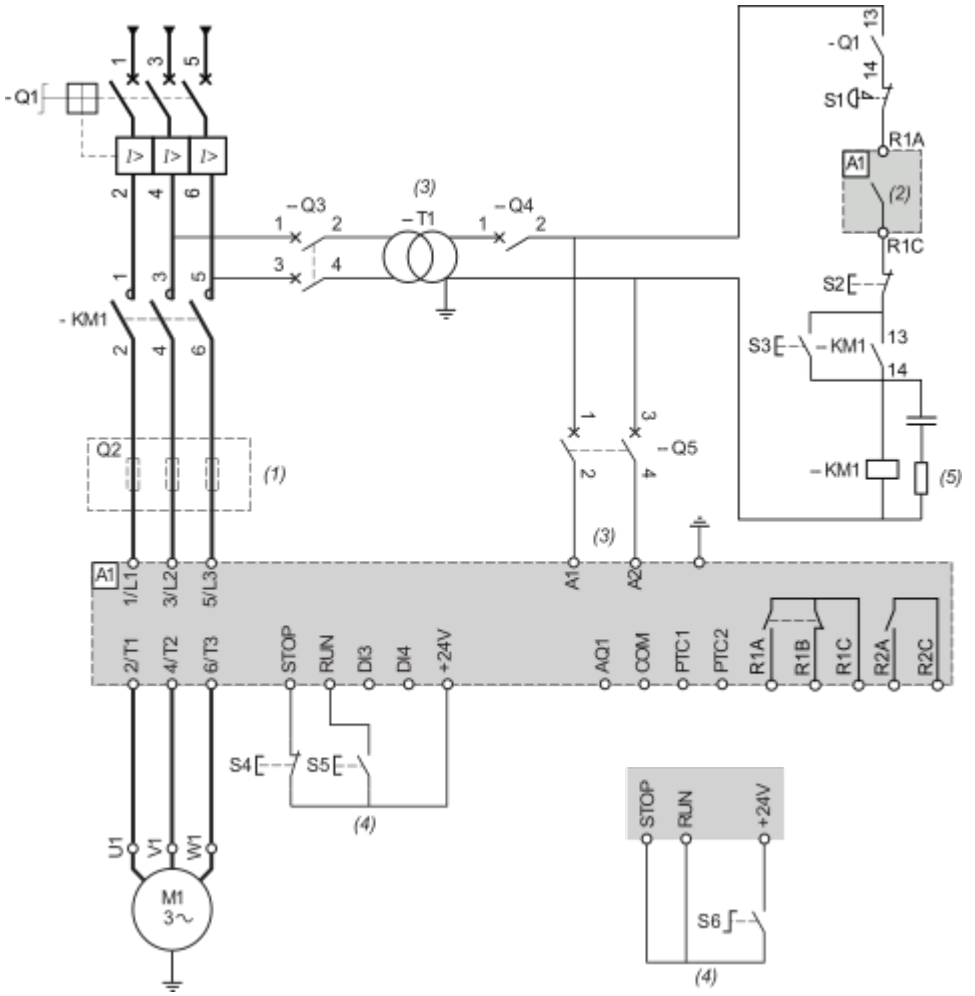

**(1)** : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947–4–2.
**(2)** : Take into account the electrical characteristics of the relays.
**(3)** : The transformer must supply 110...230 Vac –15%...+10%, 50/60Hz.
**(4)** : 3–wire control or 2–wire control.
**(5)** : Select the appropriate voltage surge suppressor.

| Designation | Component | Description |
|---|---|---|
| Q1 | Circuit breaker | Short circuit protection device for the motor |
| Q2 | Circuit breaker | Short circuit protection device for the primary of the transformer |
| Q3 | Fast acting fuses | Short circuit protection device of the soft starter to be used only when type 2 coordination according to IEC 60947-4-2 is required |
| Q4 | Circuit breaker | Short circuit protection device for the secondary of the transformer |
| Q5 | Circuit breaker | Short circuit protection device for the control part of the soft starter |
| KM1 | Contactor | Line contactor |
| S1 | Emergency Stop push-button | Emergency Stop to de-energized KM1 line contactor |
| S4 | Normally close contact push-button | STOP command for 3-wire control |

| | | |
|---|---|---|
| S5 | Normally open contact push-button | RUN command for 3-wire control |
| S6 | Selector switch, 2 positions, stay–put, normally open contact | RUN/STOP. command for 2–wire control |

### Connection In Line, With Line Contactor, Type 1 or 2 Coordination, 2-wire or 3-wire

**Line contactor controlled by Power ON and Power OFF push-buttons or detected error.**
Use relay output R1 set to **[Operating State Fault]** (factory setting)

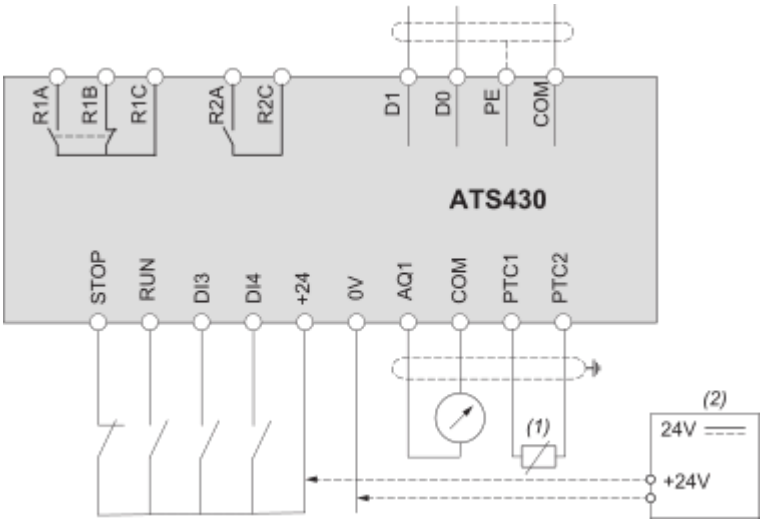



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| Designation | Component | Description |
|---|---|---|
| Q1 | Circuit breaker | Short circuit protection device for the motor |
| Q2 | Circuit breaker | Short circuit protection device for the primary of the transformer |
| Q3 | Fast acting fuses | Short circuit protection device of the soft starter to be used only when type 2 coordination |

| | | |
|---|---|---|
| Q4 | Circuit breaker | Short circuit protection device for the secondary of the transformer |
| Q5 | Circuit breaker | Short circuit protection device for the control part of the soft starter |
| KM1 | Contactor | Line contactor |
| S1 | Emergency Stop push-button | Emergency Stop to de-energized KM1 line contactor |
| S2 | Normally close push-button | Power OFF |
| S3 | Normally open push-button | Power ON |
| S4 | Normally close contact push-button | STOP command for 3-wire control |
| S5 | Normally open contact push-button | RUN command for 3-wire control |
| S6 | Selector switch, 2 positions, stay–put, normally open contact | RUN/STOP command for 2-wire control |

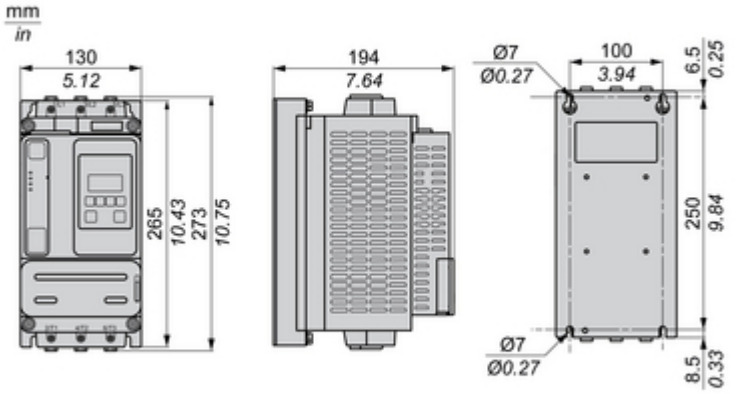
### Control Block Wiring Diagram




**R1A, R1B, R1C** : Programmable relay R1
**R2A, R2C** : Relay assigned to End of starting
**STOP, RUN, DI3, DI4** : Digital inputs
**AQ1**: Analogue output
**PTC1, PTC2** : PTC connection
**D0, D1** : Serial link based on 2-wire Modbus over serial line electrical interface
**(1)** : 2 wire PTC
**(2)** : Optional, in case of +24 External Supply usage

Technical Illustration

**Dimensions**



Technical Illustration

**Wiring diagram**

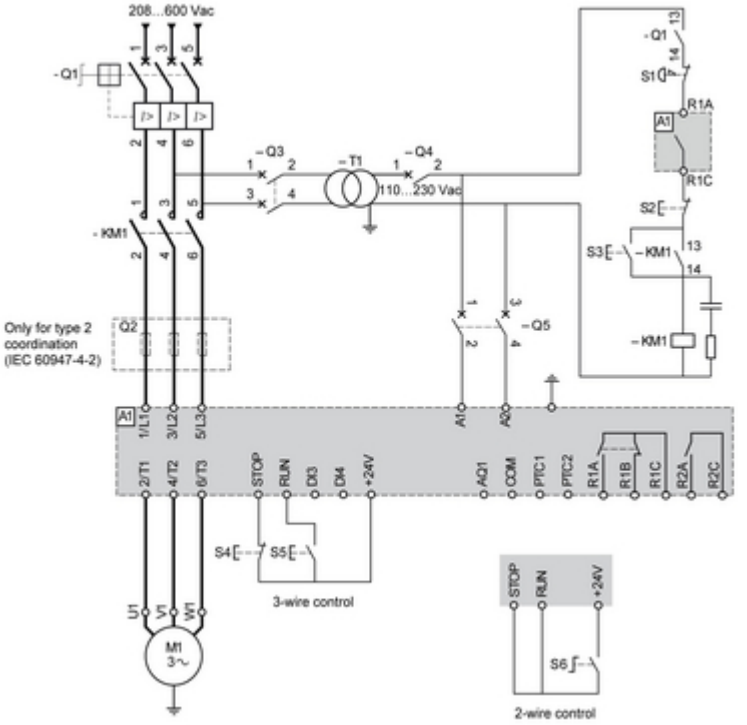


Image of product / Alternate images

**Alternative**

