

# Productinformatieblad

Specificaties



## Altivar ATS490 softstarter, 210 A, 208 tot 690 V AC, stuurspanning 110 tot 230 V AC, Bypass, STO

ATS490C21Y

EAN Code: 3606486948866

### Hoofd

range of product	Altivar Soft Starter ATS490
product or component type	Soft starter
bestemming product	Asynchrone motoren
productspecifieke toepassing	Processen en infrastructuur
device short name	ATS490
aantal fasen in netwerk	3 fasen
utilisation category	AC-3A AC-53A
Ue power supply voltage	208...690 V AC (- 15...10 %)
power supply frequency	50...60 Hz - 20...20 %
le toegekende bedrijfstrom	Normale werking: 210 A in line (bij <40 °C)
Service factor at le	100
rated current in heavy duty	170 A at 40 °C voor heavy duty
IP-beschermingsgraad	IP00
motorvermogen kW	55 kW bij 230 V op de voedingslijn van de motor normale werking 110 kW bij 400 V op de voedingslijn van de motor normale werking 110 kW bij 440 V op de voedingslijn van de motor normale werking 132 kW bij 500 V op de voedingslijn van de motor normale werking 132 kW bij 525 V op de voedingslijn van de motor normale werking 160 kW bij 660 V op de voedingslijn van de motor normale werking 200 kW bij 690 V op de voedingslijn van de motor normale werking 45 kW bij 230 V op de voedingslijn van de motor heavy duty 90 kW bij 400 V op de voedingslijn van de motor heavy duty 90 kW bij 440 V op de voedingslijn van de motor heavy duty 110 kW bij 500 V op de voedingslijn van de motor heavy duty 110 kW bij 525 V op de voedingslijn van de motor heavy duty 132 kW bij 660 V op de voedingslijn van de motor heavy duty 160 kW bij 690 V op de voedingslijn van de motor heavy duty 110 kW bij 230 V op de delta-terminals van de motor normale werking 160 kW bij 400 V op de delta-terminals van de motor normale werking 90 kW bij 230 V op de delta-terminals van de motor heavy duty 132 kW bij 400 V op de delta-terminals van de motor heavy duty
motorvermogen pk	60 hp bij 208 V normale werking 75 hp bij 230 V normale werking 150 hp bij 460 V normale werking 200 hp bij 575 V normale werking 50 hp bij 208 V heavy duty 60 hp bij 230 V heavy duty 125 hp bij 460 V heavy duty 150 hp bij 575 V heavy duty
Met veiligheidsfunctie Veilige koppeluitschakeling (STO)	True
Safe Torque Off (STO)	STO (safe torque off): SIL 1 conforming to IEC 61508 STO (safe torque off): PL c/category 2 conforming to ISO 13849
Cybersecurity functions	True

De weergegeven prijs is de adviesprijs in euro excl. BTW. Deze kan onderhevig zijn aan korting. Neem contact op met uw lokale distributeur of detailhandel voor de daadwerkelijke prijs

<b>Cybersecurity level and standard</b>	Security level (SL) 1 conform aan IEC 62443-4-2
<b>protocol communicatiepoort</b>	Seriële modbus Modbus TCP/EtherNet/IP
<b>optiekaart</b>	Communicatiemodule voor CANopen doorlussen Communicatiemodule voor CANopen SUB-D Communicatiemodule voor CANopen open stijl Communicatiemodule voor Profibus DP V1 Communicatiemodule voor Profinet

## Complementair

<b>aansluiting apparaat</b>	Op de voedingslijn van de motor Inside delta
<b>Overload current profile</b>	400 % I <sub>e</sub> for 13 s
<b>on-load factor</b>	50 %
<b>Operating cycles/hour</b>	10 cyc/u
<b>[Us] control circuit voltage</b>	110...230 V AC 50...60 Hz - 15...10 %
<b>schijnbaar vermogen</b>	90 VA
<b>Geïntegreerde beveiliging tegen motoroverbelasting</b>	True
<b>motor thermal protection class</b>	Klasse 10E
<b>type bescherming</b>	Fase-uitval: mains Thermische beveiliging: starter Thermische beveiliging: motor Stroomoverbelasting: motor Motor underload: motor Excessive acceleration time: motor Motor phase loss detection: motor Protection against line phase inversion: mains External thermal protection: motor Protection delta inside wiring: starter Kortsluitingen tussen motorfase en aarding: motor
<b>current limiting %I<sub>n</sub> (5 x I<sub>e</sub> maximum)</b>	150...700 %
<b>[In] Rated current pwr loss specifctn</b>	210 A
<b>Aantal door stroommodule gevulde sleuven</b>	19 W
<b>Vermogensverlies per pool afhankelijk van stroom</b>	48 W
<b>Power loss during starting</b>	2725 W during starting at 40 °C at 400% I <sub>e</sub>
<b>standards</b>	EN/IEC 60947-4-2 UL 60947-4-2 IEC 60664-1
<b>product certifications</b>	CE cULus UKCA RCM CCC DNV ATEX EAC KC
<b>markering</b>	CE CULus UKCA RCM CCC ATEX EAC KC
<b>spanning stuurkring</b>	24 V DC

<b>aantal digitale ingangen</b>	5
<b>discreet inputtype</b>	(DI1) digital input, 4.4 kOhm (DI2) digital input, 4.4 kOhm (DI3) digital input, 4.4 kOhm (DI4) digital input, 4.4 kOhm (STO) digital input, > 1 kOhm
<b>inputcompatibiliteit</b>	DI1: discrete input niveau 1 PLC conform aan EN/IEC 61131-2 DI2: discrete input niveau 1 PLC conform aan EN/IEC 61131-2 DI3: discrete input niveau 1 PLC conform aan EN/IEC 61131-2 DI4: discrete input niveau 1 PLC conform aan EN/IEC 61131-2 STO: discrete input niveau 1 PLC conform aan EN/IEC 61131-2
<b>discrete inputlogica</b>	Digital input DI1 bij Status 0: 0...< 5 V en <= 2 mA bij Status 1: > 11 V, >= 5 mA Digital input DI2 bij Status 0: 0...< 5 V en <= 2 mA bij Status 1: > 11 V, >= 5 mA Digital input DI3 bij Status 0: 0...< 5 V en <= 2 mA bij Status 1: > 11 V, >= 5 mA Digital input DI4 bij Status 0: 0...< 5 V en <= 2 mA bij Status 1: > 11 V, >= 5 mA Digital input STO bij Status 0: 0...< 5 V en <= 2 mA bij Status 1: > 11 V, >= 5 mA
<b>relaisuitgang nummer</b>	3
<b>relaisuitgang type</b>	Relaisoutputs R1A, R1C NO Relaisoutputs R2A, R2C NO Relaisoutputs R3A, R3C NO
<b>minimale schakelstroom</b>	100 mA bij 12 V DC voor relais outputs
<b>maximale schakelstroom</b>	Relaisoutputs 2 A / 250 V AC for AC-15 100000 cycles following IEC 60947-5-1 Relaisoutputs 2 A / 30 V DC for DC-13 150000 cycles following IEC 60947-5-1
<b>aantal digitale uitgangen</b>	2
<b>discreet uitgangstype</b>	Programmeerbare digitale uitgang DQ1 <= 30 V 100 mA Programmeerbare digitale uitgang DQ2 <= 30 V 100 mA
<b>Uitgangscompatibiliteit</b>	Open collector niveau 1 PLC conform aan IEC 65A-68
<b>aantal analoge ingangen</b>	1
<b>analoog inputtype</b>	AI1/PTC1 : PTC/PT 100/PT 1000/KTY84 temperature probe PTC2 : PTC/PT 100/PT 1000/KTY84 temperature probe PTC3 : PTC/PT 100/PT 1000/KTY84 temperature probe
<b>aantal analoge uitgangen</b>	1
<b>analoog outputtype</b>	Huidige output AQ1 : 0...20 mA / 4...20 mA , impedance< 500 Ohm Spanningsuitgang AQ1 : 0...10 V , impedance> 470 Ohm
<b>protocol communicatiepoort</b>	Seriële modbus Modbus TCP/EtherNet/IP
<b>type connector</b>	1 RJ45 for connecting Modbus serial 1 RJ45 for connecting Modbus TCP/EtherNet/IP
<b>fysieke interface</b>	2-draads RS485 100-BASE-TX category 5 or industrial Ethernet
<b>transmissieframe</b>	RTU TCP/UDP
<b>transmissiesnelheid</b>	4.8...38.4 kbps 100 BASE TX
<b>dataformaat</b>	8 bits, configurable odd, even or no parity 1or 2 stop
<b>aantal adressen</b>	0...247 voor seriële modbus
<b>toegangsmethode</b>	Slave seriële modbus
<b>type polarisatie</b>	Geen impedantie voor seriële modbus
<b>Beschikbaar display</b>	True
<b>werkingspositie</b>	Vertikaal +/- 10 graden
<b>height</b>	443 mm
<b>width</b>	206 mm

depth	265 mm
net weight	19 kg
interne bypass	True
beschikbarefunctie	Voorverwarming Rook-extractie Tweede motorset Deceleration with torque control Braking Boost Line contactor control Reverse contactor control Anti-jam Jog Borehole pump starting Condition monitoring Power monitoring Cyberveilige firmware-update
materiaalaangifte	True

## Omgeving

elektromagnetische compatibiliteit	Geleide en uitgestraalde emissies niveau A conforming to IEC 60947-4-2 Gedempte oscillerende golven level 3 conforming to IEC 61000-4-18 Elektrostatische ontlading level 3 conforming to IEC 61000-4-2 Immunititeit voor elektrische transiënten level 4 conforming to IEC 61000-4-4 Immunititeit voor gestraalde radio-elektrische interferentie level 3 conforming to IEC 61000-4-3 Spanning/stroomimpuls level 3 conforming to IEC 61000-4-5 Immunititeit voor geleide interferentie, geïnduceerd door radio-elektrische velden level 3 conforming to EN/IEC 61000-4-6
pollution degree	Niveau 3
[Uimp] rated impulse withstand voltage	6 kV
[Ui] rated insulation voltage	690 V
Omgevingsklasse (tijdens werking)	Klasse 3C3 volgens IEC 60721-3-3 Klasse 3S3 volgens IEC 60721-3-3
omgevingsluchttemperatuur voor werking	-25...40 °C (zonderverlies) 40...60 °C (with current derating of 1 % per °C above 40 °C)
ambient air temperature for storage	-40...70 °C
Analoge uitgangsstroom	-40...70 °C
bedrijfshoogte	<= 2000 m zonderverlies > 2000...4800 m with current derating 1 % per 100 m above 2000 m
relatieve vochtigheid	5...95 % zonder condensatie of waterdruppels conform aan EN/IEC 60068-2-3
Maximale vervorming onder trillende belasting (tijdens werking)	1,5 mm bij 2...13 Hz
Maximale vervorming onder trillende belasting (tijdens opslag)	1,75 mm bij 2...9 Hz
Maximale doorbuiging onder trillende belasting (tijdens transport)	1,75 mm bij 2...9 Hz
Maximale versnelling onder trillingsspanning (tijdens werking)	1 gn at 13...200 Hz
Maximale versnelling onder trillende belasting (tijdens opslag)	1 gn at 9...200 Hz 1.5 gn at 200...500 Hz
Maximale versnelling onder trillende belasting (tijdens transport)	1 gn at 9...200 Hz 1.5 gn at 200...500 Hz
Maximale versnelling bij schok (tijdens bedrijf)	15 gn at 11 ms
Maximale versnelling onder schokbelasting (tijdens opslag)	10 gn at 11 ms

---

Maximale versnelling onder  
schokbelasting (tijdens transport) 10 gn at 11 ms

## Verpakkingseenheid

---

Unit Type of Package 1	PCE
------------------------	-----

---

Number of Units in Package 1	1
------------------------------	---

---

Package 1 Height	50,6 cm
------------------	---------

---

Package 1 Width	25 cm
-----------------	-------

---

Package 1 Length	48 cm
------------------	-------

---

Package 1 Weight	26,8 kg
------------------	---------

---

Unit Type of Package 2	P06
------------------------	-----

---

Number of Units in Package 2	3
------------------------------	---

---

Package 2 Height	61 cm
------------------	-------

---

Package 2 Width	60 cm
-----------------	-------

---

Package 2 Length	80 cm
------------------	-------

---

Package 2 Weight	88,9 kg
------------------	---------

## Environmental Data

Schneider Electric wil tegen 2050 de Net Zero-status hebben bereikt via partnerschappen in de toeleveringsketen, materialen met een lagere impact en circulariteit via onze doorlopende campagne "Use Better, Use Longer, Use Again" om de levensduur van producten en de recycleerbaarheid te verlengen.

[Uitleg van Environmental Data](#) >

[Hoe evalueren we de duurzaamheid van producten?](#) >

### Milieuoetafdruk

Totale levenscyclus ecologische voetafdruk 2414

Milieuprofiel van product (PEP) [Milieuprofiel van het product](#)

### Use Better

#### Materialen en verpakking

Pakket met gerecycleerd karton Ja

Verpakkingen zonder kunststof Nee

EU-richtlijn RoHS Voldoet niet

SCIP-nummer 3ee57eb8-2f7e-42fb-8475-4ef5ed73311b

REACH-regelgeving [REACH-verklaring](#)

PVC-vrij Ja

### Use Again

#### Herverpakken en herfabriceren

Circulair Profiel [Informatie over einde levensduur](#)

Terugname No

WEEE Label  Het product moet op markten van de Europese Unie worden afgevoerd volgens specifieke afvalinzamelingsregels en mag nooit in een gewone vuilnisbak terechtkomen.



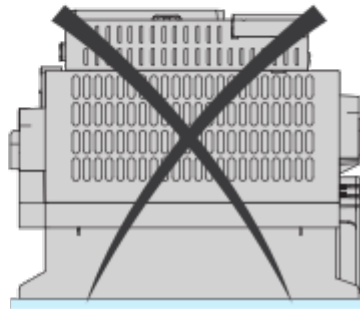
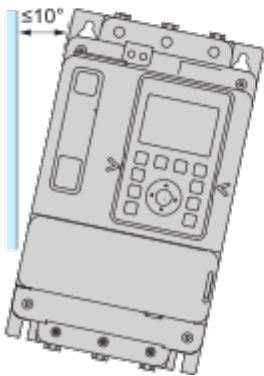
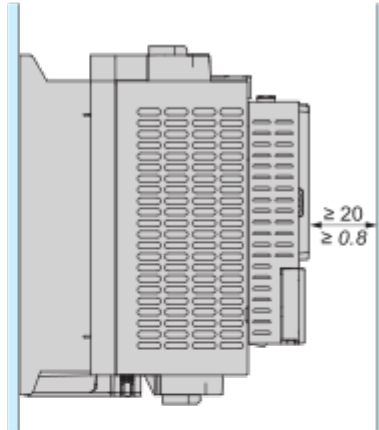
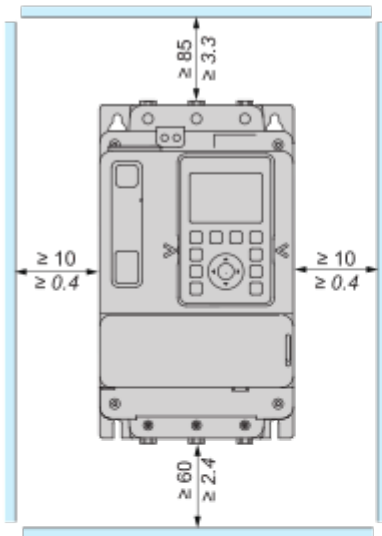
Mounting and Clearance

**Mounting Position**

---

The soft starter is designed to be mounted inside cabinets vertically at  $\pm 10^\circ$  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.

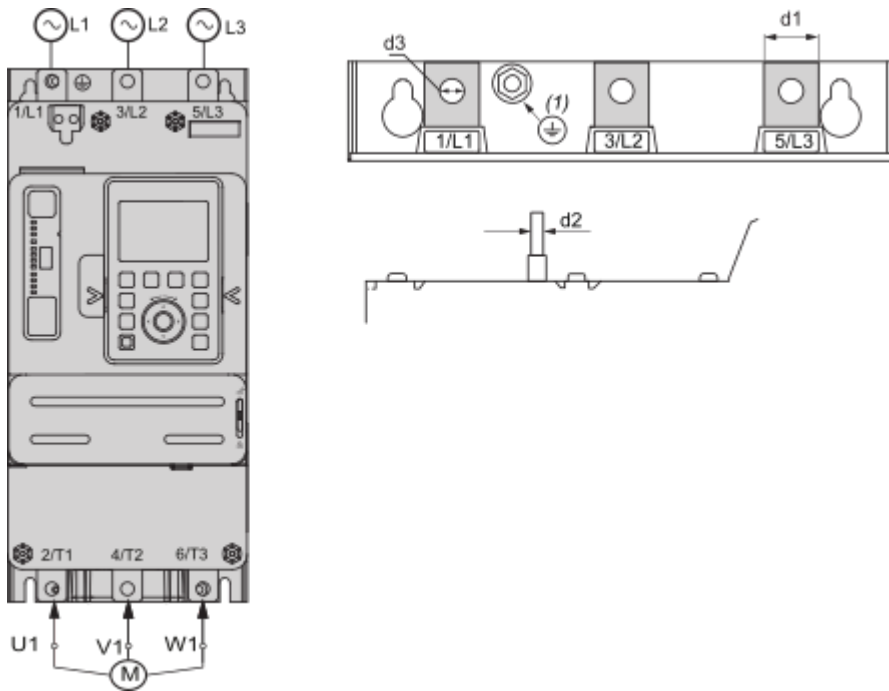
mm  
in



Connections and Schema

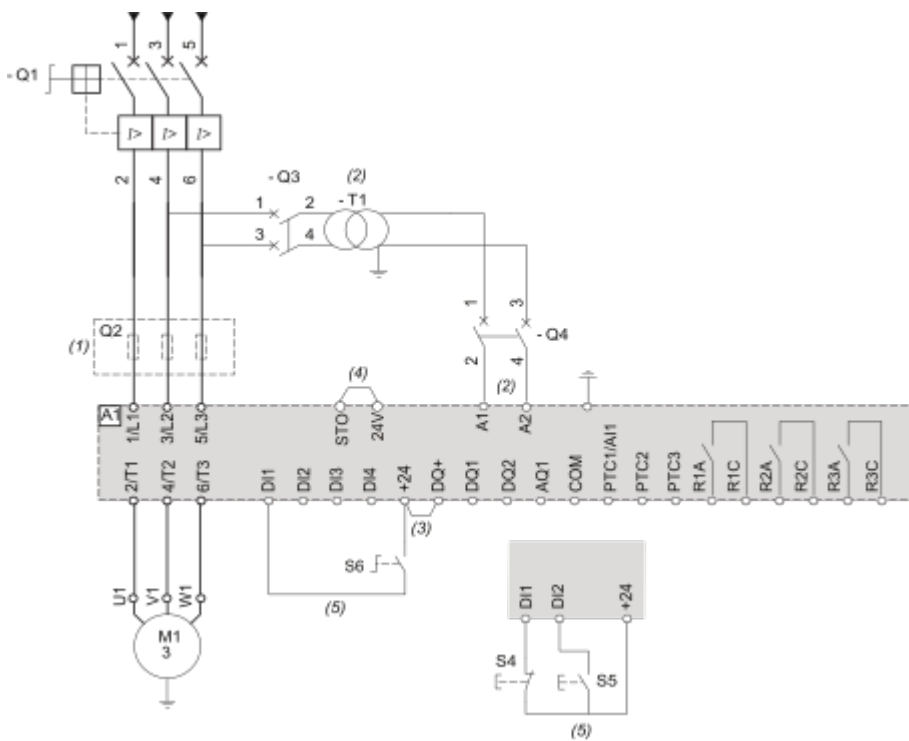
Wiring

Wiring the Power Part



1/L1, 3/L2, 5/L3 : Mains supply inputs  
 2/T1, 4/T2, 6/T3 : Outputs to motor  
 (1) : Ground connection

Connection In Line, No Line Contactor, Type 1 or 2 Coordination, 2-wire or 3-wire control

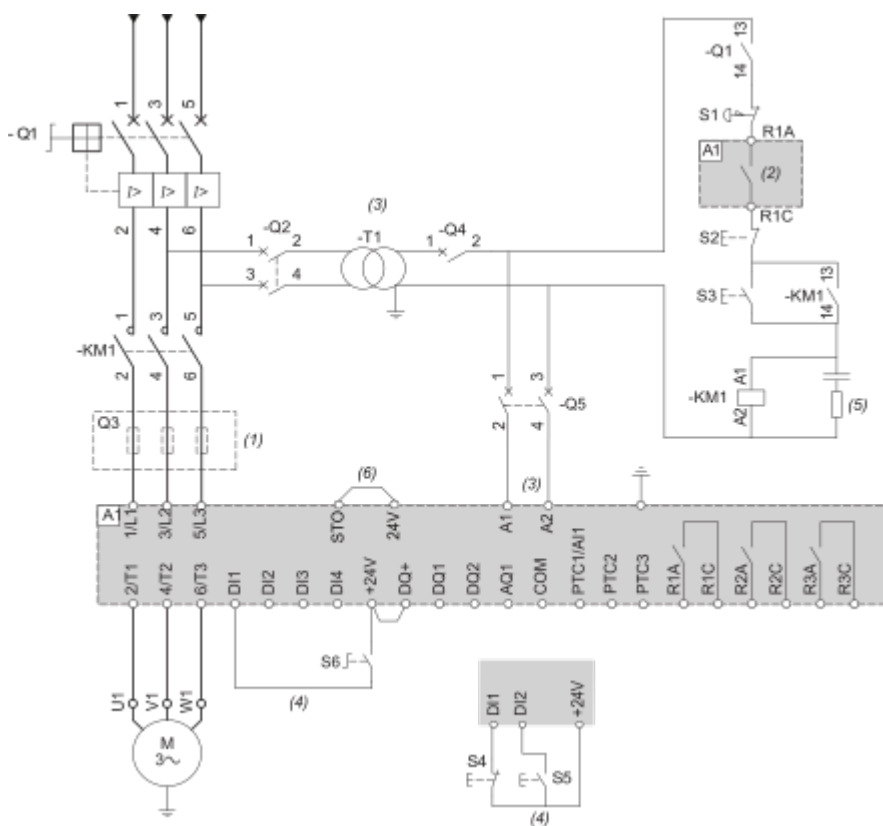


- (1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947-4-2.
- (2) : The transformer must supply 110...230 Vac +10% - 15%, 50/60Hz.
- (3) : 24Vdc supply on DQ+ if usage of DQ outputs.
- (4) : STO Safe Torque Off
- (5) : 3-wire control and 2-wire control.

Designation	Component	Description
Q1	Circuit breaker	Short circuit protection device for the motor
Q2	Fast acting fuses	Short circuit protection device of the soft starter to be used only when type 2 coordination
Q3	Circuit breaker	Short circuit protection device for the primary of the transformer
Q4	Circuit breaker	Short circuit protection device for the secondary of the transformer
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 control**

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



- (1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947-4-2.

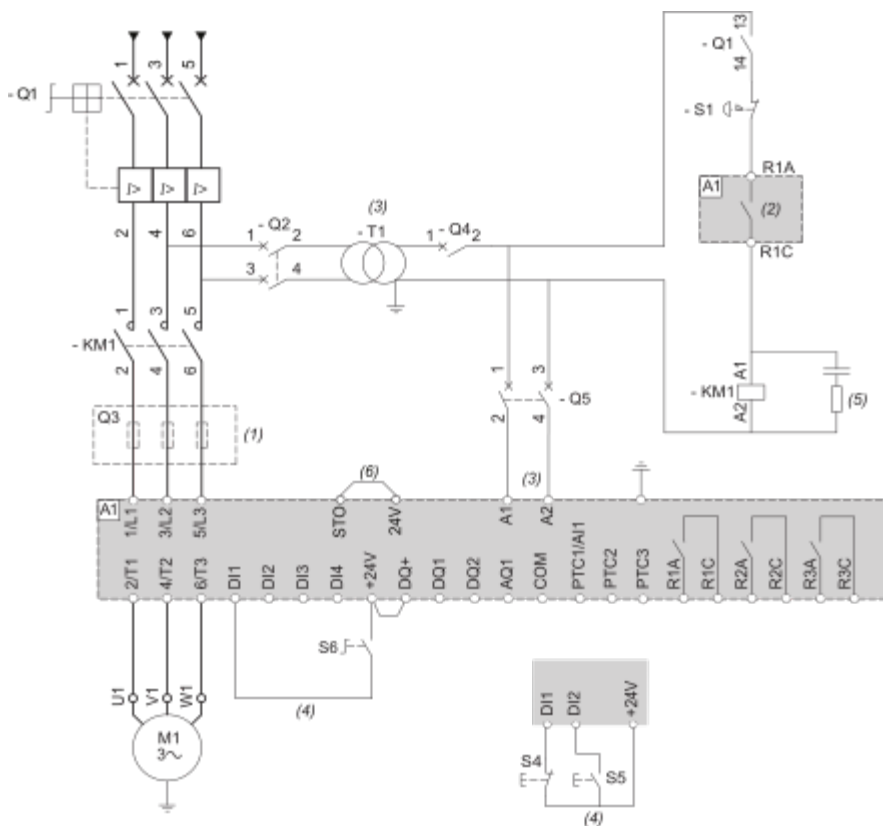
- (2) : Take into account the electrical characteristics of the relays.
- (3) : The transformer must supply 110...230 Vac +10% - 15%, 50/60Hz.
- (4) : 3-wire control and 2-wire control.
- (5) : Select the appropriate voltage surge suppressor.
- (6) : STO Safe Torque Off

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	Contacteur	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

**Connection In Line, With Line Contactor, Type 1 or 2 Coordination, 2-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 +10% - 15%, 50/60Hz.
- (4) : 2-wire control and 3-wire control.
- (5) : Select the appropriate voltage surge suppressor.
- (6) : STO Safe Torque Off.

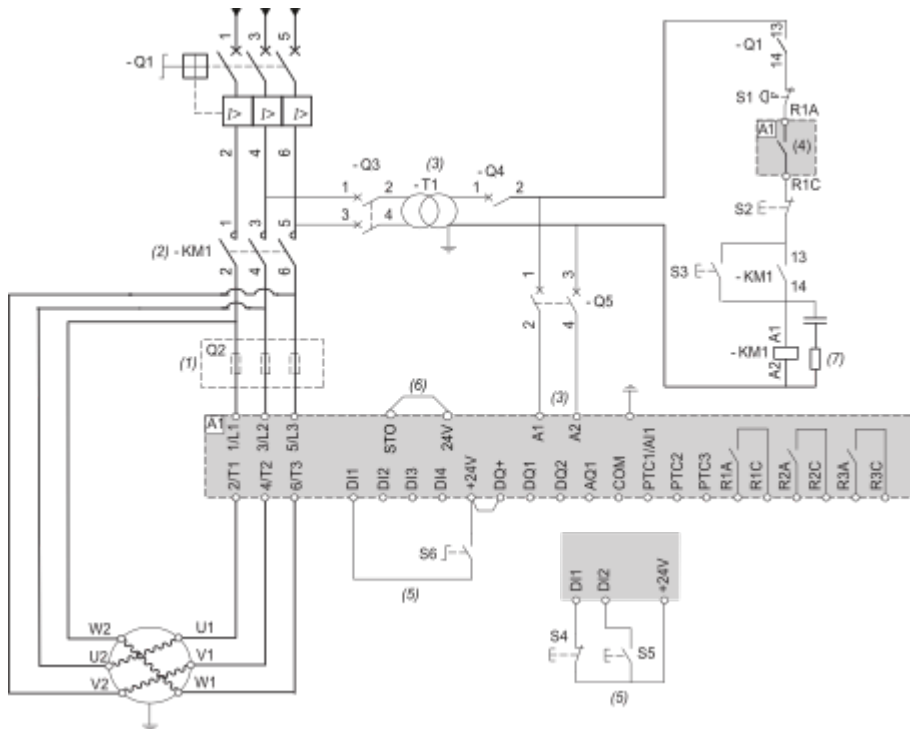
Designation	Component	Description
Q1	Circuit breaker	Short circuit protection device for the motor
Q2	Circuit breaker	Short circuit protection device for the primary of the transformer
Q3	Fast acting fuses	Short circuit protection device of the soft starter to be used only when type 2 coordination according 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	Contacteur	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 Inside the Delta, Type 1 and 2 Coordination, 2-wire or 3-wire**

Line contactor controlled based on RUN and STOP command or detected error

Use relay output R1 set to [Operating State Fault] (factory setting).



- (1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947-4-2.
- (2) : KM1 is mandatory to avoid uncontrolled voltage on the motor.
- (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.
- (5) : 3-wire control, 2-wire control.
- (6) : STO Safe Torque Off.
- (7) : Select the appropriate voltage surge suppressor.

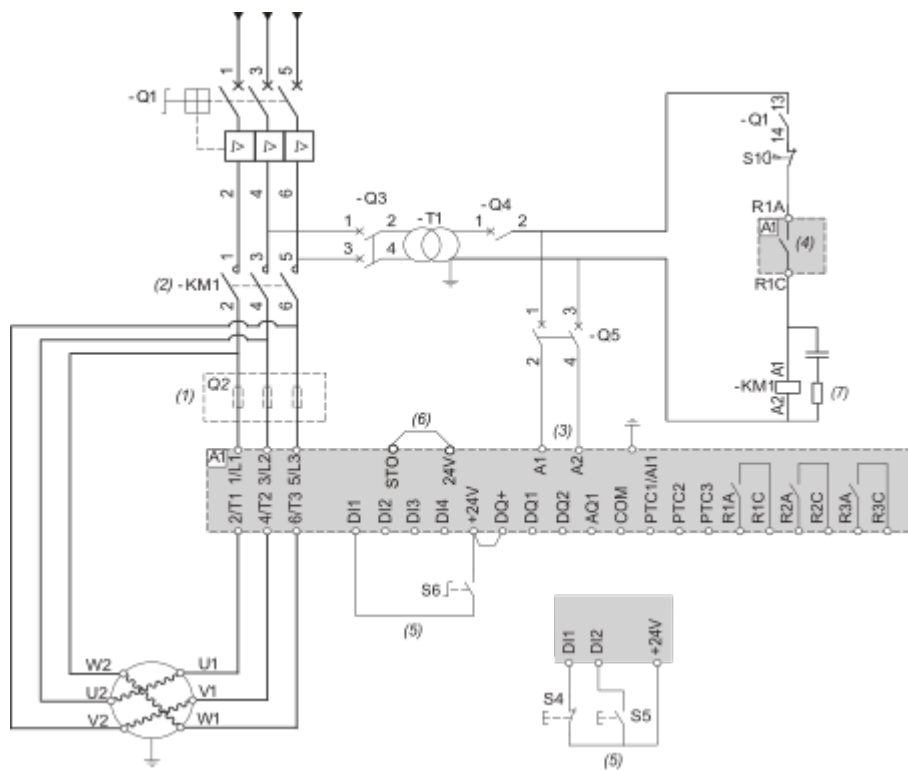
Designation	Component	Description
Q1	Circuit breaker	Short circuit protection device for the motor
Q2	Fast acting fuses	Short circuit protection device of the soft starter to be used only when type 2 coordination according to IEC 60947-4-2 is required
Q3	Circuit breaker	Short circuit protection device for the primary of the transformer
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	Contacteur	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

**Connection Inside the Delta, Type 1 or 2 Coordination, 2-wire or 3-wire**

Line contactor controlled based on RUN and STOP command or detected error

Use relay output R1 set to [Mains Contactor]

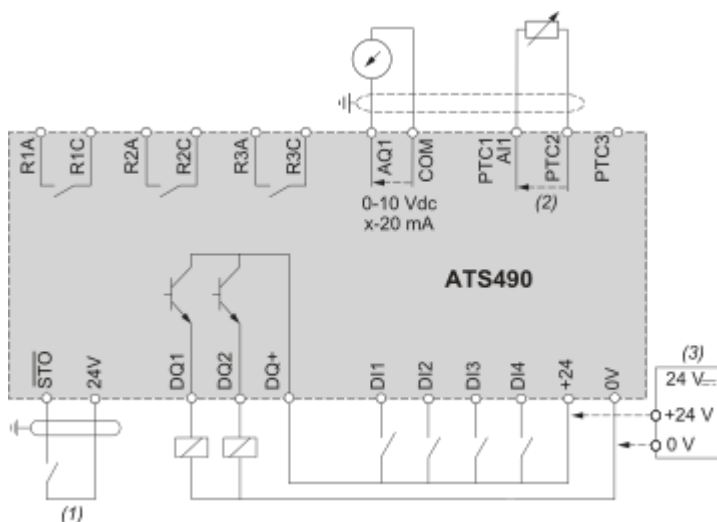


- (1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947-4-2.
- (2) : KM1 is mandatory to avoid uncontrolled voltage on the motor.
- (3) : The transformer must supply 110...230 Vac +10% — 15%, 50/60Hz.
- (4) : Take into account the electrical characteristics of the relays.
- (5) : 3-wire control and 2-wire control.
- (6) : STO Safe Torque Off.
- (7) : 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
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	Contacteur	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 and power Off
S5	Normally open contact push-button	RUN command for 3-wire control and power On
S6	Selector switch, 2 positions, stay-put, normally open contact	RUN/STOP command for 2-wire control

Control Block Wiring Diagram



R1A, R1C, R2A, R2C, R3A, R3C : Programmable NO relays

DI1, DI2, DI3, DI4 : Digital inputs

AQ1 : Analogue output

PTC1/A11, PTC2, PTC3 : Motor thermal sensor connection

DQ1, DQ2, DQ+ : Digital outputs

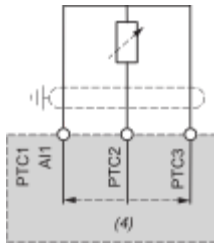
STO : Safety function STO input

(1) : STO Safe Torque Off

(2) : 2 wire PTC/PT100/PT1000/KTY

(3) : Optional, in case of +24 External Supply usage

PT100, PT1000 Thermal Probe 3 Wires :

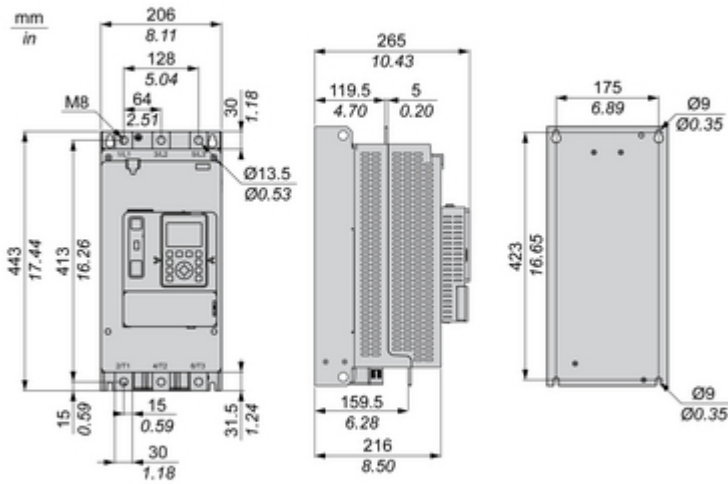


(4) : 3 wire PT100/PT1000

Technical Illustration

Dimensions

---



Technical Illustration

Wiring diagram



Image of product / Alternate images

Alternative

---

