Produktdatablad

Spesifikasjoner

Mykstarter, Altivar Soft Starter ATS490, 47A, 208 til 690 V AC, kontrollforsyning 110 til 230 V AC

ATS490D47Y

EAN: 3606486948798

Produktdata

Produktspekter	Altivar Soft Starter ATS490
Produkt eller type komponent	Mykstarter
Produsert i	Asynkrone motorer
Produktspesifikk applikasjon	Process and infrastructures
Kortnavn utstyr	ATS490
antall faser i nettverket	3 faser
Driftskategori	AC-3A AC-53A
Ue power supply voltage	208...690 V AC (- 15...10 %)
power supply frequency	50...60 Hz - 20...20 %
[Ie] nominell driftsstrøm	Normal duty: 47 A in line 40 °C)
Service factor at Ie	100
rated current in heavy duty	38 A at 40 °C for heavy duty
Torque control	True
IP-grad	IP20
Motoreffekt kW	11 kW på 230 V i motorforsyningsledningen normal duty 22 kW på 400 V i motorforsyningsledningen normal duty 22 kW på 440 V i motorforsyningsledningen normal duty 30 kW på 500 V i motorforsyningsledningen normal duty 30 kW på 525 V i motorforsyningsledningen normal duty 37 kW på 660 V i motorforsyningsledningen normal duty 37 kW på 690 V i motorforsyningsledningen normal duty 9 kW på 230 V i motorforsyningsledningen heavy duty 18,5 kW på 400 V i motorforsyningsledningen heavy duty 18,5 kW på 440 V i motorforsyningsledningen heavy duty 22 kW på 500 V i motorforsyningsledningen heavy duty 22 kW på 525 V i motorforsyningsledningen heavy duty 30 kW på 660 V i motorforsyningsledningen heavy duty 30 kW på 690 V i motorforsyningsledningen heavy duty 22 kW på 230 V til motordeltaterminaler normal duty 45 kW på 400 V til motordeltaterminaler normal duty 18,5 kW på 230 V til motordeltaterminaler heavy duty 30 kW på 400 V til motordeltaterminaler heavy duty
Motoreffekt hk	15 hp på 230 V normal duty 30 hp på 460 V normal duty 40 hp på 575 V normal duty 10 hp på 208 V heavy duty 10 hp på 230 V heavy duty 25 hp på 460 V heavy duty 30 hp på 575 V heavy duty
With safety function Safe torque off (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
Cybersecurity level and standard	Security level (SL) 1 i samsvar med IEC 62443-4-2
Kommunikasjonsport protokoll	Modbus serial Modbus TCP / Ethernet / IP
funksjonskort	Kommunikasjons modul for CANopen daisy chain Kommunikasjons modul for CANopen Sub-D Kommunikasjons modul for CANopen åpen stil Kommunikasjons modul for Profibus DP V1

Teknisk data

Tilkopling av utstyr	I motorforsyningsledningen Inside delta
Overload current profile	400 % Ie for 13 s
"on-load" -faktor	50 %
Operating cycles/hour	10 cyc/h
[Us] control circuit voltage	110 - 230 V AC 50...60 Hz - 15...10 %
Tilsynelatende effekt	70 VA
Integrated motor overload protection	True
motor thermal protection class	Class 10E
beskyttelsestype	Fase feil: mains Thermal protection: Starter Thermal protection: Motor Current overload: 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 Short-circuit between motor phase and earth: Motor
current limiting %In (5 x Ie maximum)	150…700 %
[In] Rated current pwr loss specifctn	47 A
Power loss static current independent	19 W
Power loss per device current dependent	17 W
Power loss during starting	560 W during starting at 40 °C at 400% Ie
Standarder	EN/IEC 60947-4-2 UL 60947-4-2 IEC 60664-1
Produktsertifikater	CE cULus UKCA RCM CCC DNV ATEX
Merking	CE CULus UKCA RCM CCC ATEX
Styrespenning	24 V DC
digital inngangsnummer	5

digital inngangstype	(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
ingangskompatibilitet	DI1: discrete input nivå 1 PLC i samsvar med EN/IEC 61131-2 DI2: discrete input nivå 1 PLC i samsvar med EN/IEC 61131-2 DI3: discrete input nivå 1 PLC i samsvar med EN/IEC 61131-2 DI4: discrete input nivå 1 PLC i samsvar med EN/IEC 61131-2 STO: discrete input nivå 1 PLC i samsvar med EN/IEC 61131-2
Diskrét inngangs logikk	Digital input DI1 ved Tilstand 0: 0...< 5 V og <= 2 mA ved Tilstand 1: > 11 V, >= 5 mA Digital input DI2 ved Tilstand 0: 0...< 5 V og <= 2 mA ved Tilstand 1: > 11 V, >= 5 mA Digital input DI3 ved Tilstand 0: 0...< 5 V og <= 2 mA ved Tilstand 1: > 11 V, >= 5 mA Digital input DI4 ved Tilstand 0: 0...< 5 V og <= 2 mA ved Tilstand 1: > 11 V, >= 5 mA Digital input STO ved Tilstand 0: 0...< 5 V og <= 2 mA ved Tilstand 1: > 11 V, >= 5 mA
relé utgang nummer	3
reléutgangstype	Reléutganger R1A, R1C Nei Reléutganger R2A, R2C Nei Reléutganger R3A, R3C Nei
minimum brytestrøm	100 mA på 12 V DC for reléutganger
Maximum svitsjestrøm	Reléutganger 2 A / 250 V AC for AC-15 100000 sykluser following IEC 60947-5-1 Reléutganger 2 A / 30 V DC for DC-13 150000 sykluser following IEC 60947-5-1
antall digitale utganger	2
Digitale utganger	Programmable digital output DQ1 <= 30 V 100 mA Programmable digital output DQ2 <= 30 V 100 mA
adgangskontroll	Open collector nivå 1 PLC i samsvar med IEC 65A-68
Antall analoge innganger	1
analogue input type	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
analog utgangsnummer	1
analog utgangstype	Utgangsstrøm AQ1 : 0...20 mA/4...20 mA , impedance< 500 Ohm Spenningsutgang AQ1 : 0...10 V , impedance> 470 Ohm
kommunikasjonsport protokoll	Modbus serial Modbus TCP / Ethernet / IP
type konnektor	1 RJ45 for connecting Modbus serial 1 RJ45 for connecting Modbus TCP/EtherNet/IP
Fysisk interface	2-tråds RS 485 100-BASE-TX category 5 or industrial Ethernet
ramme for overføring	RTU TCP/UDP
Overføringshastighet	4.8…38.4 kbps 100 BASE TX
dataformat	8 bits, configurable odd, even or no parity 1or 2 stop
Antall adresser	0…247 for modbus serial
Tilgangsmetode	Slave modbus serial
Polarisasjonstype	Ingen impedans for modbus serial
Display screen available	True
driftsposisjon	Vertikal +/- 10 grader
Høyde	289 mm
Bredde	160 mm
Dybde	234 mm

Vekt	6 kg
internal bypass	True
Mulige funksjoner	Pre-heating Smoke extraction Second motor set Deceleration with torque control Braking Boost Line contactor control Reverse contactor control Anti-jam Jog Borehole pump starting Condition monitoring Power monitoring Cybersecure firmware update
material declaration	True

Miljø

elektromagnetisk kompatibilitet	Strålt og ledet elektromagnetisme nivå A conforming to IEC 60947-4-2 Dempede oscillerende bølger nivå 3 conforming to IEC 61000-4-18 Elektrostatisk utlading nivå 3 conforming to IEC 61000-4-2 Immunitet til elektriske overgangsspenninger nivå 4 conforming to IEC 61000-4-4 Immunitet til rettet radioelektrisk interferens nivå 3 conforming to IEC 61000-4-3 Spenning/strømimpuls nivå 3 conforming to IEC 61000-4-5 Immunitet til ledet interferens forårsaket av radioelektriske felt nivå 3 conforming to EN/IEC 61000-4-6
Forurensninggrad	Nivå 3
[Uimp] nominell impulsspenning	6 kV
[Ui] isolasjonsspenning	690 V
miljøklasse (under drift)	Class 3C3 according to IEC 60721-3-3 Class 3S3 according to IEC 60721-3-3
omgivelsestemperatur for drift	−25…40 °C (uten lastreduksjon) 40…60 °C (with current derating of 1 % per °C above 40 °C)
Omgivelsestemperatur for lagring	−40…70 °C
omgivningens lufttransportstemperatur	−40…70 °C
driftshøyde	<= 2000 m uten lastreduksjon > 2000...4800 m with current derating 1 % per 100 m above 2000 m
relativ fuktighet	5…95 % uten kondensering eller dryppvann i samsvar med 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 1.5 gn at 200…500 Hz
Maximum acceleration under vibratory load (during transport)	1 gn at 9…200 Hz 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

Forpakningsinformasjon

Enhetstype pakke 1	PCE
Antall enheter i pakke 1	1
Pakke 1 Høyde	27,500 cm
Pakke 1 Bredde	23,500 cm
Pakke 1 Vekt	35,500 cm
Package 1 Weight	6,925 kg
Enhetstype pakke 2	S06
Antall enheter i pakke 2	8
Pakke 2 Høyde	75,000 cm
Pakke 2 Bredde	60,000 cm
Pakke 2 Lengde	80,000 cm
Pakke 2 Vekt	65,500 kg

Garantiperiode

Garanti	18 måneder

Environmental Data

Schneider Electric tar sikte på å oppnå Net Zero-status innen 2050 gjennom partnerskap med leverandørkjeden, materialer med lavere slagkraft og sirkularitet via vår pågående "Use Better, Use Longer, Use Again"-kampanje for å forlenge produktlevetiden og resirkulerbarheten.

Environmental Data forklart >

Hvordan vi vurderer produktets bærekraft >

Miljøfotavtrykk

Karbonavtrykk (kg CO2 ekv.)	**1036**
Miljøinformasjon	**Produktmiljøprofil**

Use Better

Materialer og emballasje

EUs RoHS-direktiv	**Oppfyller kravene med unntak**
REACH-forordningen	**REACh-erklæring**
PVC-fri	**Ja**

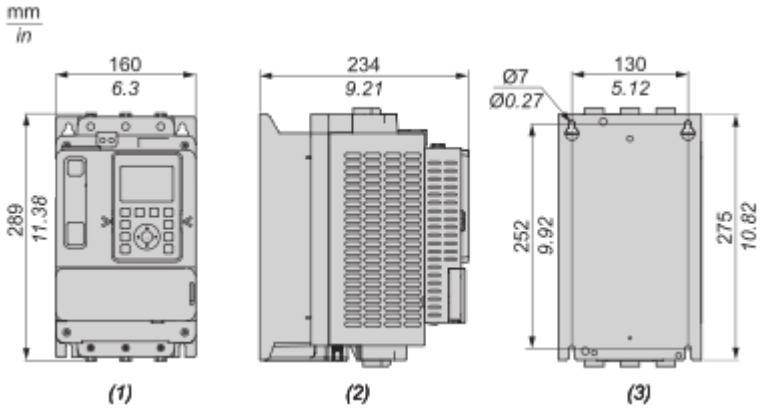
Use Again

Ompakking og reproduksjon

Sirkularitetsprofil	**Informasjon om levetidsslutt**
WEEE	**Produktets avhending må skje i overensstemmelse med EUs avfallsforskrifter, og produktet skal aldri deponeres i restavfallsstrømmen.**
Tilbaketakning	**No**

Dimensions Drawings

Dimensions

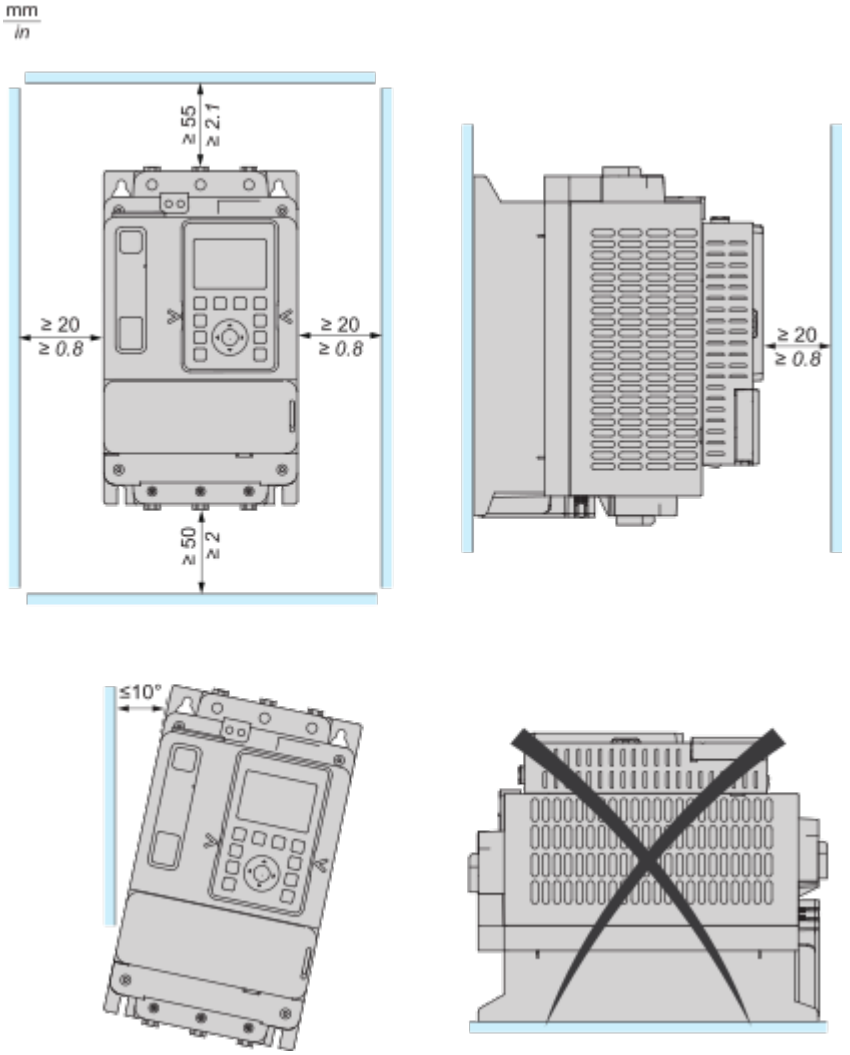


(1) : Front
(2) : Side
(3) : Rear

Mounting and Clearance

Mounting Position

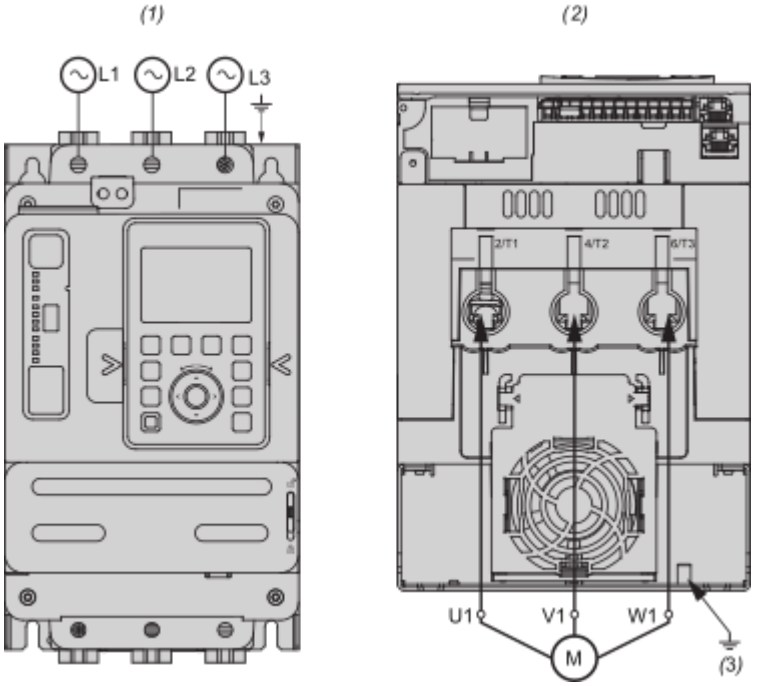
The soft starter is designed to be mounted inside cabinets vertically at ± 10° for cooling purposes.
Respect the minimum clearances so that the cooling air can circulate from the bottom to the top of the soft starter. The minimum clearances apply to any device close to the soft starter such as circuit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



Connections and Schema

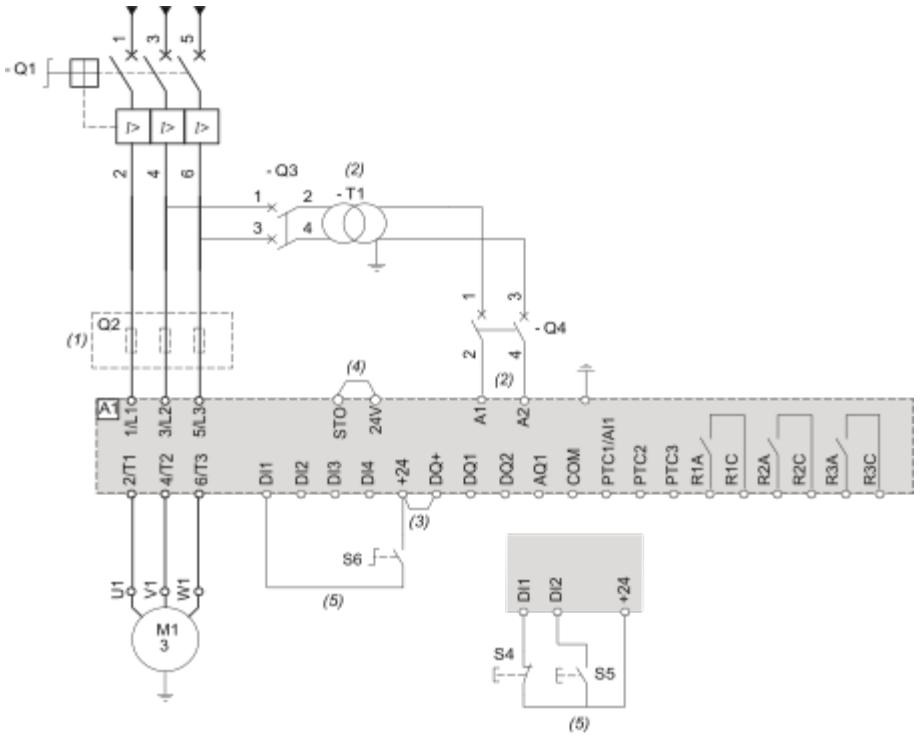
Wiring

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

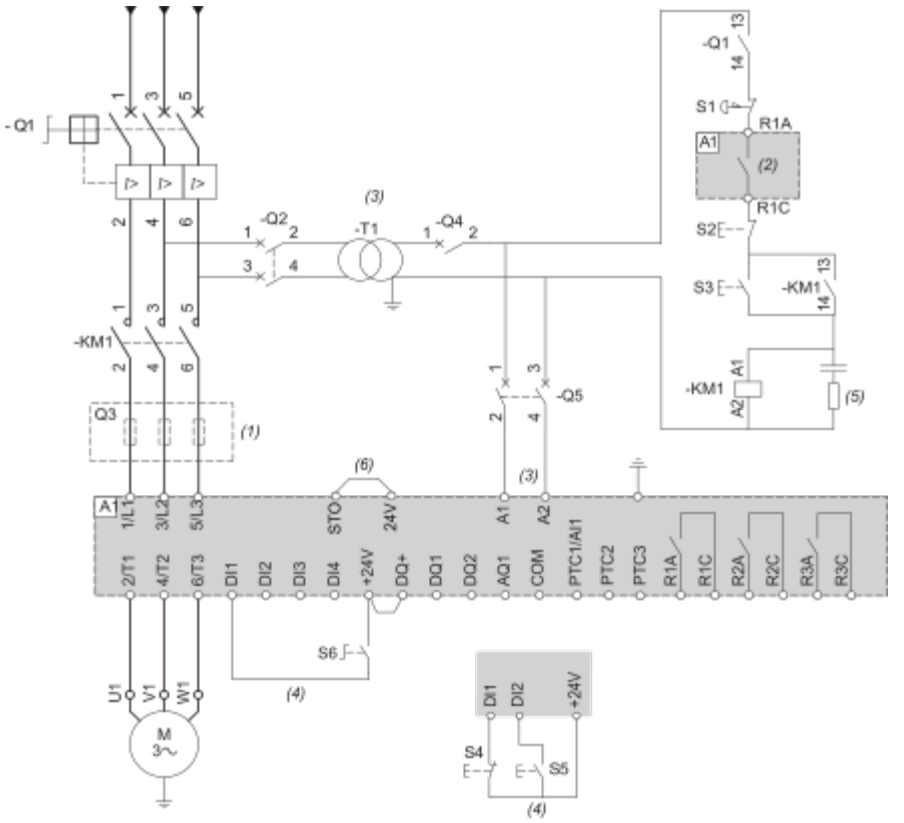


(1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947–4–2.
(2) : The transformer must supply 110...230 Vac +10% - 15%, 50/60Hz.
(3) : 24Vdc supply on DQ+ if usage of DQ outputs.
(4) : STO Safe Torque Off
(5) : 3–wire control and 2–wire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



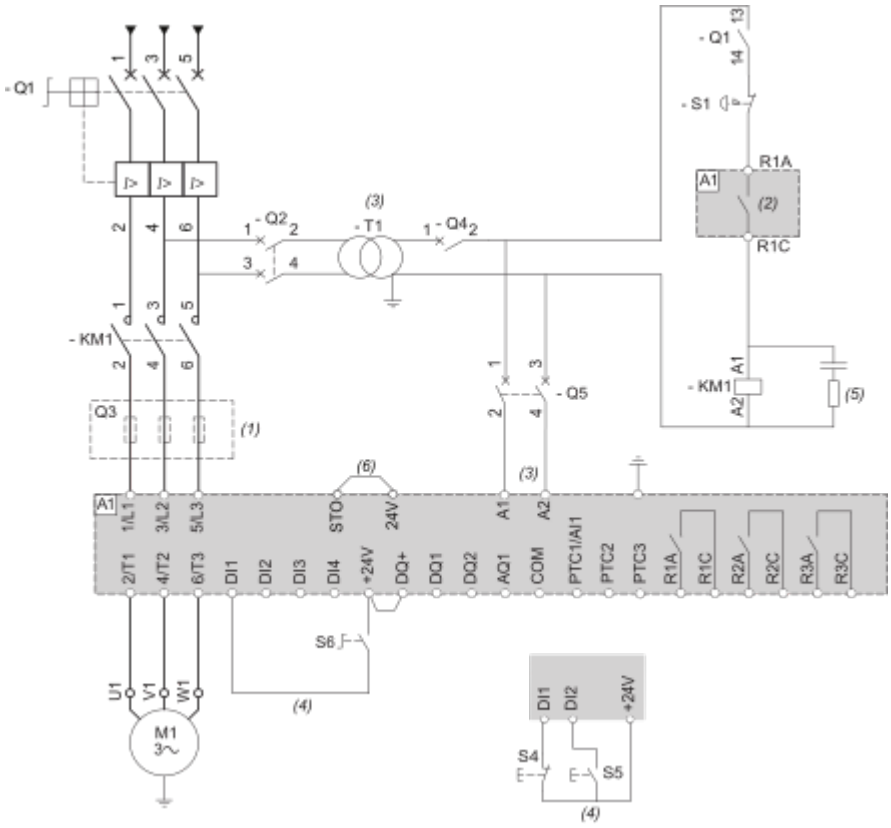
(1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947–4–2.
(2) : Take into account the electrical characteristics of the relays.
(3) : The transformer must supply 110...230 Vac +10% - 15%, 50/60Hz.
(4) : 3–wire control and 2–wire control.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

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.

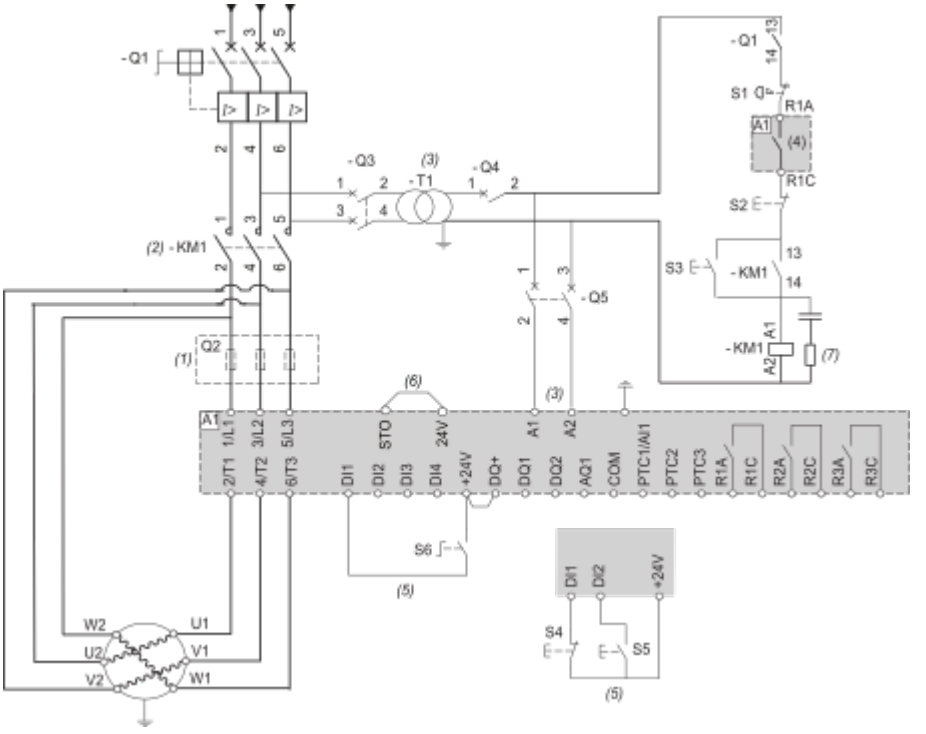
Designation	Component	Description
Q1	Circuit breaker	Short circuit protection device for the motor
Q2	Circuit breaker	Short circuit protection device for the primary of the transformer
Q3	Fast acting fuses	Short circuit protection device of the soft starter to be used only when type 2 coordination according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

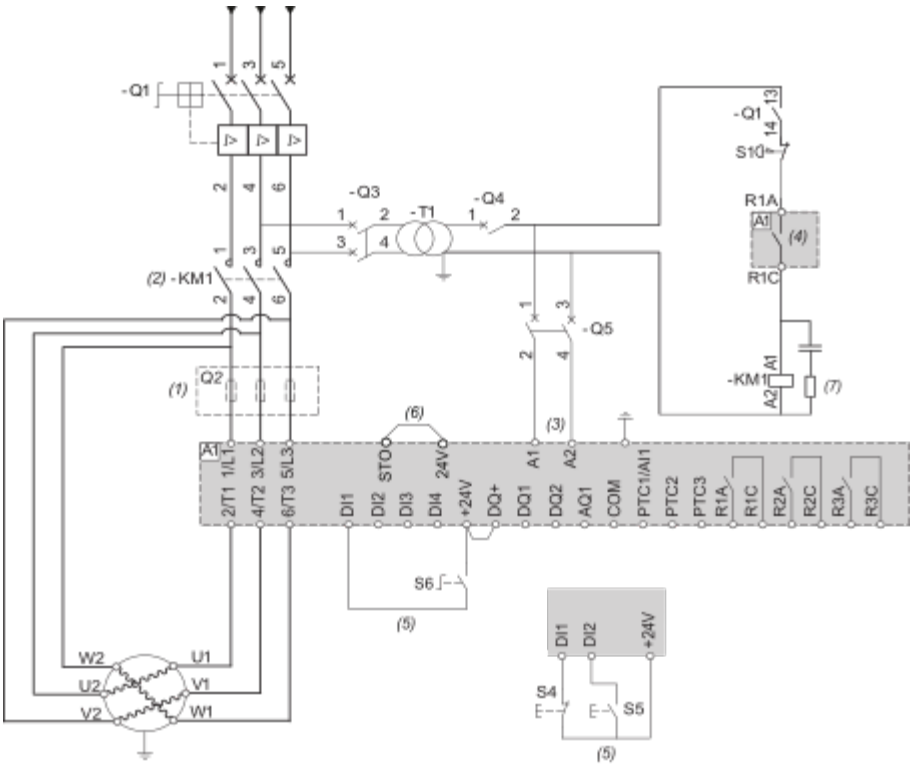
Designation	Component	Description
Q1	Circuit breaker	Short circuit protection device for the motor

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	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

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

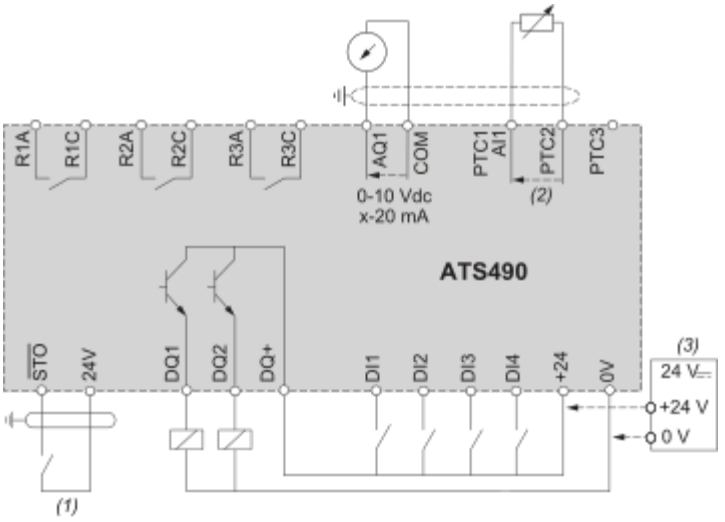
Use relay output R1 set to [Mains Contactor]



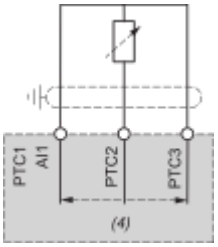
(1) : Installation of additional fast-acting fuses is mandatory to upgrade to type 2 coordination according to IEC 60947–4–2.
(2) : KM1 is mandatory to avoid uncontrolled voltage on the motor.
(3) : The transformer must supply 110...230 Vac +10% — 15%, 50/60Hz.
(4) : Take into account the electrical 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	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 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/AI1, 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