



Galvenā

Produkta sērija	Altivar 12
Produkta vai sastāvdaļas veids	Variable speed drive
Produkta specifiskais pielietojums	Simple machine
Montāžas veids	Cabinet mount
Komunikācijas porta protokols	Modbus
Supply frequency	50/60 Hz +/- 5 %
[Us] rated supply voltage	200...240 V - 15...10 %
Nominal output current	7,5 A
Motor power hp	2 hp
Motor power kW	1,5 kW
Motor power hp	2 hp
EMC filter	Integrated
IP degree of protection	IP20

Papildinošs

Discrete input number	4
Discrete output number	2
Analogue input number	1
Analogue output number	1
Relay output number	1
Fiziskais "interfeiss"	2-wire RS 485
Konektora tips	1 RJ45
Continuous output current	7,5 A 4 kHz
Method of access	Server Modbus serial
Speed drive output frequency	0,5...400 Hz
Speed range	1...20
Sampling duration	20 Ms +/- 1 ms logic input 10 ms analogue input
Linearity error	+/- 0.3 % of maximum value analogue input
Frequency resolution	Analog input converter A/D, 10 bits Display unit 0.1 Hz
Time constant	20 ms +/- 1 ms for reference change
Pārraides ātrums	9.6 kbit/s 19.2 kbit/s 38.4 kbit/s
Transmission frame	RTU
Adrešu skaits	1...247
Data format	8 bits, configurable odd, even or no parity
Communication service	Read holding registers (03) 29 words Write single register (06) 29 words Write multiple registers (16) 27 words Read/Write multiple registers (23) 4/4 words Read device identification (43)
Type of polarization	No impedance
4 quadrant operation possible	False

Asynchronous motor control profile	Sensorless flux vector control Quadratic voltage/frequency ratio Voltage/frequency ratio (V/f)
Maximum output frequency	4 kHz
Transient overtorque	150...170 % of nominal motor torque depending on drive rating and type of motor
Acceleration and deceleration ramps	U S Linear from 0 to 999.9 s
Motor slip compensation	Adjustable Preset in factory
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Nominal switching frequency	4 kHz
Braking to standstill	By DC injection
Brake chopper integrated	False
Line current	17,8 A 100 V heavy duty) 14,9 A 120 V heavy duty)
Maksimālā ieejas strāva	14,9 A
Maximum output voltage	240 V
Apparent power	3,6 kVA 240 V heavy duty)
Maximum transient current	11,2 A 60 s heavy duty) 12,4 A 2 s heavy duty)
Tīkla frekvence	50...60 Hz
Relative symmetric network frequency tolerance	5 %
Prospective line I _{sc}	1 kA
Base load current at high overload	7,5 A
Power dissipation in W	Forced cooling 72,0 W
With safety function Safely Limited Speed (SLS)	False
With safety function Safe brake management (SBC/ SBT)	False
With safety function Safe Operating Stop (SOS)	False
With safety function Safe Position (SP)	False
With safety function Safe programmable logic	False
With safety function Safe Speed Monitor (SSM)	False
With safety function Safe Stop 1 (SS1)	False
With sft fct Safe Stop 2 (SS2)	False
With safety function Safe torque off (STO)	False
With safety function Safely Limited Position (SLP)	False
With safety function Safe Direction (SDI)	False
Protection type	Line supply overvoltage Line supply undervoltage Overcurrent between output phases and earth Aizsardzība pret pārkaršanu Short-circuit between motor phases Against input phase loss in three-phase Thermal motor protection via the drive by continuous calculation of I ² t
Tightening torque	1,2 N.m
Insulation	Electrical between power and control
Daudzums komplektā	Komplektā 1
Platums	105 mm
Augstums	142 mm
Dziļums	156,2 mm
Neto svars	1,4 kg

Vide




Operating altitude	> 1000...2000 m with current derating 1 % per 100 m <= 1000 m without derating
Operating position	Vertical +/- 10 degree
Produkta sertifikācija	NOM[RETURN]CSA[RETURN]C- Tick[RETURN]UL[RETURN]GOST[RETURN]RCM[RETURN]KC
Marķējums	CE
Standarti	UL 508C UL 618000-5-1 EN/IEC 61800-5-1 EN/IEC 61800-3
Assembly style	With heat sink
Electromagnetic compatibility	Electrical fast transient/burst immunity test level 4 EN/IEC 61000-4-4 Electrostatic discharge immunity test level 3 EN/IEC 61000-4-2 Immunity to conducted disturbances level 3 EN/IEC 61000-4-6 Radiated radio-frequency electromagnetic field immunity test level 3 EN/IEC 61000-4-3 Surge immunity test level 3 EN/IEC 61000-4-5 Voltage dips and interruptions immunity test EN/IEC 61000-4-11
Environmental class (during operation)	Class 3C3 according to IEC 60721-3-3 Class 3S2 according to IEC 60721-3-3
Maximum acceleration under shock impact (during operation)	150 m/s ² at 11 ms
Maximum acceleration under vibrational stress (during operation)	10 m/s ² at 13...200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz
Volume of cooling air	16 m ³ /h
Pārsprieguma kategorija	Class III
Regulation loop	Adjustable PID regulator
Electromagnetic emission	Radiated emissions environment 1 category C2 EN/IEC 61800-3 2...16 kHz shielded motor cable Conducted emissions with integrated EMC filter environment 1 category C1 EN/IEC 61800-3 2, 4, 8, 12 and 16 kHz shielded motor cable <5 m Conducted emissions with additional EMC filter environment 1 category C1 EN/IEC 61800-3 4...12 kHz shielded motor cable <20 m Conducted emissions with additional EMC filter environment 1 category C2 EN/IEC 61800-3 4...12 kHz shielded motor cable <50 m Conducted emissions with additional EMC filter environment 2 category C3 EN/IEC 61800-3 4...12 kHz shielded motor cable <50 m Conducted emissions with integrated EMC filter environment 1 category C2 EN/IEC 61800-3 4...16 kHz shielded motor cable <5 m Conducted emissions with integrated EMC filter environment 1 category C2 EN/IEC 61800-3 2, 4, 8, 12 and 16 kHz shielded motor cable <10 m
Vibration resistance	1 gn 13...200 Hz)EN/IEC 60068-2-6 1.5 mm peak to peak 3...13 Hz) - drive unmounted on symmetrical DIN rail - EN/IEC 60068-2-6
Shock resistance	15 gn 11 ms EN/IEC 60068-2-27
Relative humidity	5...95 % without condensation IEC 60068-2-3 5...95 % without dripping water IEC 60068-2-3
Noise level	45 dB
Piesārņojuma pakāpe	2
Ambient air transport temperature	-25...70 °C
Ambient air temperature for operation	-10...50 °C without derating 50...60 °C with current derating 2.2 % per °C
Apkārtējā gaisa temperatūra uzglabāšanai	-25...70 °C

Iepakojšanas vienības

Pirmā iepakojuma vienības tips	PCE
Vienību skaits 1. iepakojumā	1
1. iepakojuma augstums	23,000 cm
1. iepakojuma platums	20,000 cm
1. iepakojuma garums	21,500 cm
1. iepakojuma svars	1,716 kg

Otrā iepakojuma vienības tips	P06
Vienību skaits 2. iepakojumā	30
2. iepakojuma augstums	75,000 cm
2. iepakojuma platums	60,000 cm
2. iepakojuma garums	80,000 cm
2. iepakojuma svars	64,840 kg

Piedāvājiēt ilgtspēju

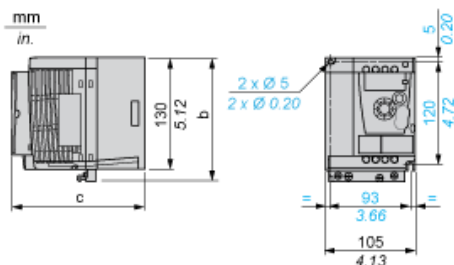
REACH regula	 REACH Deklarācija
ES RoHS direktīva	Proaktīva atbilstība (uz izstrādājumu neattiecas ES RoHS juridiskās saistības)
Nesatur dzīvsudrabu	Jā
Ķīnas RoHS regula	 Ķīnas RoHS Deklarācija
Informācija par RoHS izņēmumiem	 Jā
WEEE	Eiropas Savienības tirgū no šī produkta ir jāatbrīvojas, ievērojot noteiktu atkritumu savākšanas kārtību, un produkts nedrīkst nonākt sadzīves atkritumu tvertnēs.

Līguma garantija

Garantija	18 months
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Dimensions

Drive without EMC Conformity Kit



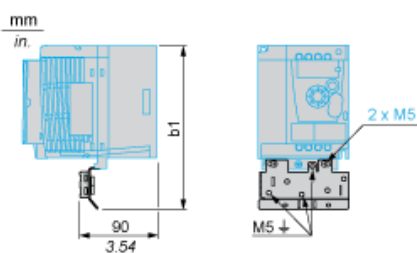
Dimensions in mm

b	c
142	156.2

Dimensions in in.

b	c
5.59	6.15

Drive with EMC Conformity Kit



Dimensions in mm

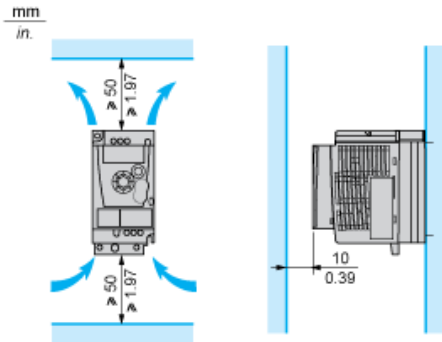
b1
188.2

Dimensions in in.

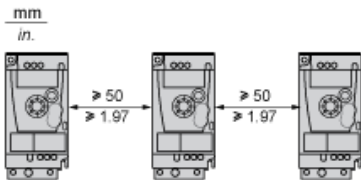
b1
7.41

Mounting Recommendations

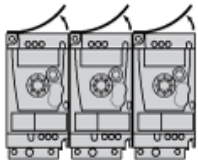
Clearance for Vertical Mounting



Mounting Type A

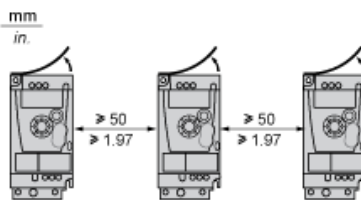


Mounting Type B



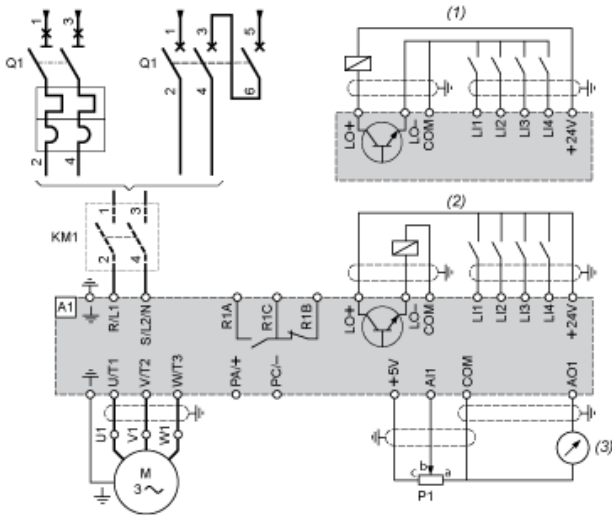
Remove the protective cover from the top of the drive.

Mounting Type C



Remove the protective cover from the top of the drive.

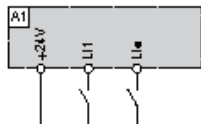
Single-Phase Power Supply Wiring Diagram



- A1 Drive
- KM1 Contactor (only if a control circuit is needed)
- P1 2.2 kΩ reference potentiometer. This can be replaced by a 10 kΩ potentiometer (maximum).
- Q1 Circuit breaker
- (1) Negative logic (Sink)
- (2) Positive logic (Source) (factory set configuration)
- (3) 0...10 V or 0...20 mA

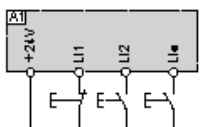
Recommended Schemes

2-Wire Control for Logic I/O with Internal Power Supply



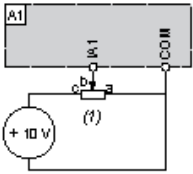
- L11: Forward
- L1•: Reverse
- A1: Drive

3-Wire Control for Logic I/O with Internal Power Supply



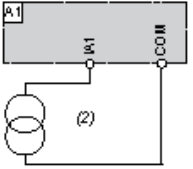
- L11: Stop
- L12: Forward
- L1•: Reverse
- A1: Drive

Analog Input Configured for Voltage with Internal Power Supply



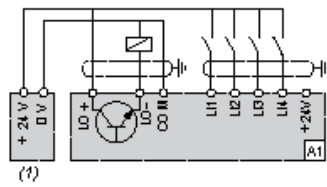
- (1) 2.2 k Ω ...10 k Ω reference potentiometer
A1 : Drive

Analog Input Configured for Current with Internal Power Supply



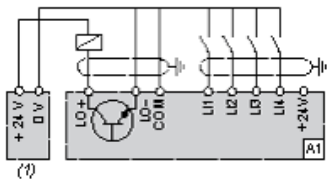
- (2) 0-20 mA 4-20 mA supply
A1 : Drive

Connected as Positive Logic (Source) with External 24 vdc Supply



- (1) 24 vdc supply
A1 : Drive

Connected as Negative Logic (Sink) with External 24 vdc supply



- (1) 24 vdc supply
A1 : Drive

Torque Curves



- 1 : Self-cooled motor: continuous useful torque (1)
- 2 : Force-cooled motor: continuous useful torque
- 3 : Transient overtorque for 60 s
- 4 : Transient overtorque for 2 s
- 5 : Torque in overspeed at constant power (2)

(1) For power ratings ≤ 250 W, derating is 20% instead of 50% at very low frequencies.

(2) The nominal motor frequency and the maximum output frequency can be adjusted from 0.5 to 400 Hz. The mechanical overspeed capability of the selected motor must be checked with the manufacturer.