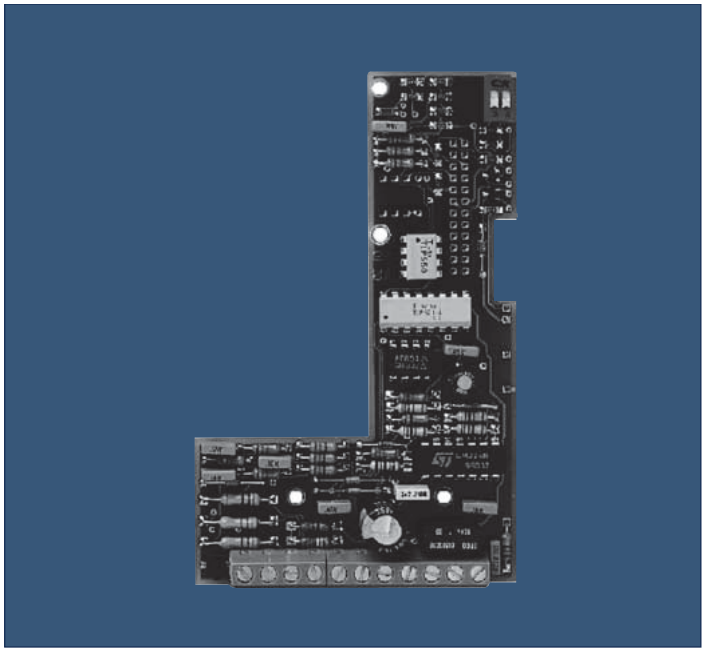

ALTIVAR® 16

Carte métier
Usage couple variable

Dedicated board
Variable torque

Anwendungsspezifische Optionkarte
Variables Drehmoment

Carta aplicación
Par variable

VW3-A16202

Guide d'exploitation
User's manual
Bedienungsanleitung
Guía de explotación

Telemecanique
GROUPE SCHNEIDER

Altivar 16

Read this document carefully to achieve the optimum performance from the speed controller.

The descriptions and outline diagrams are intended for experienced personnel. Changing the adjustments or configuration of the speed controller will affect its functions and performance. Ensure that any modifications carried out do not expose personnel or the hardware to any risk.

In local control mode, check that the starting and stopping of the machine is not dangerous.

ATTENTION

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Although every care has been taken in the preparation of this document, Schneider Electric SA cannot guarantee the contents and cannot be held responsible for any errors it may contain or for any damage which may result from its use or application.

The products and options described in this document may be changed or modified at any time, either from a technical point of view or in the way they are operated. Their description can in no way be considered contractual.

NOTE

Contents

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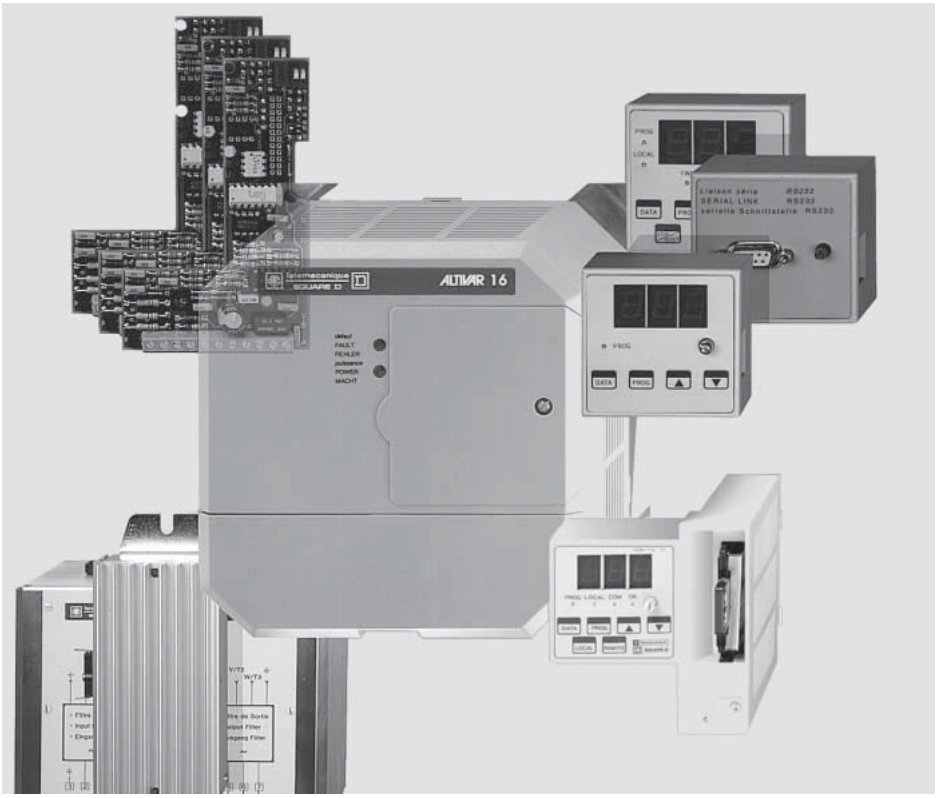
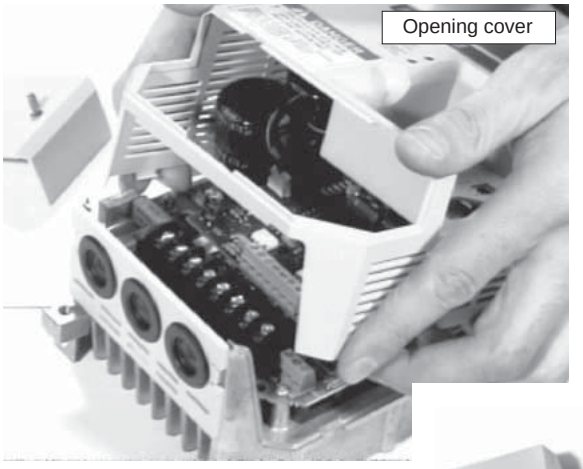
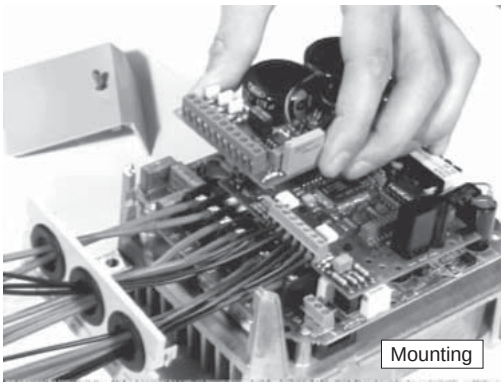
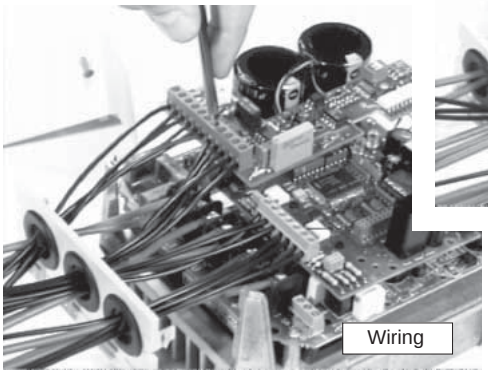


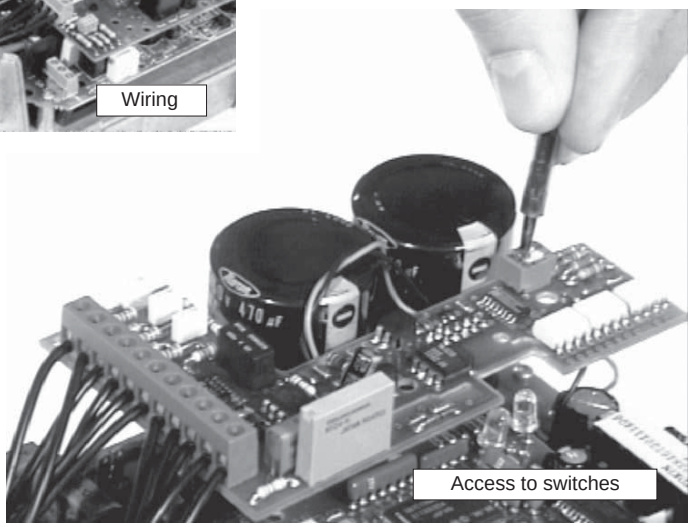
A wide range of options and accessories is available for the Altivar 16, to meet the needs of various applications.

Installation









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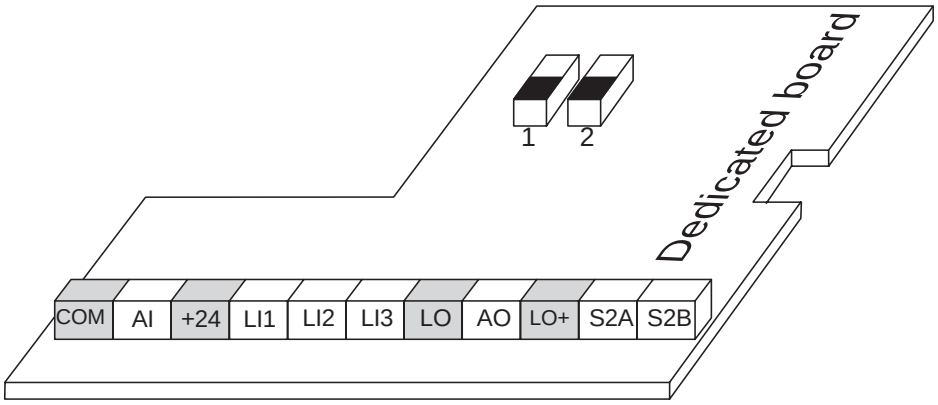
Connection

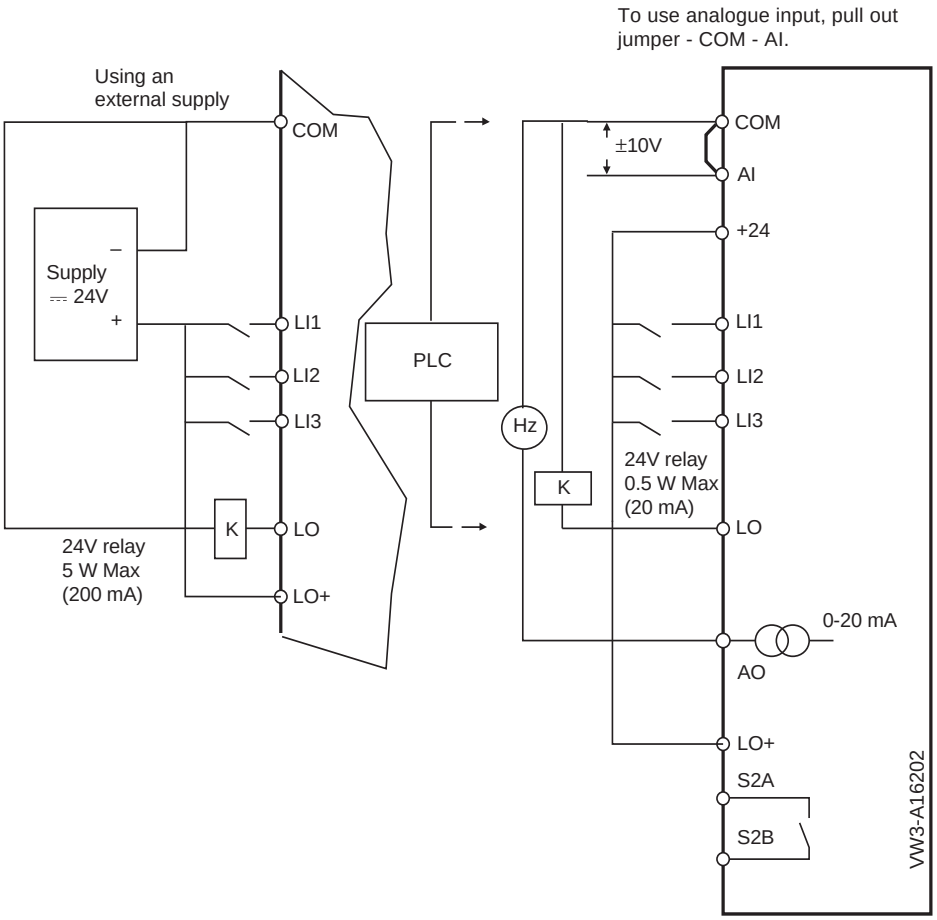


ENGLISH

Terminal label	Function	Characteristics	Terminal capacity mm^2
COM	Common for logic and analogue I/O	0 Volt	1.5
AI	Analogue input	Resolution 10 bits ± 10 V Z = 40 kΩ	1.5
+24		⎓ 24 V	1.5
LI1	Logic input	Rated : 24 V - 16.5 mA state 1 : U > 11 V - I > 6 mA state 0 : U ≤ 5 V - I ≤ 2.5 mA Z = 1.5 kΩ	1.5
LI2	Logic input		
LI3	Logic input		
LO	Logic output	PLC compatible open collector Max : ⎓ 24V - 200 mA. 20 mA max if connected to +24V of internal source	1.5
AO	Analogue output	0 - 20 mA (500 Ω - 10 V) Resolution 8 bits	1.5
LO+	Supply for logic output	Internal 24 V - 20 mA External 24 V - 200 mA	1.5
S2A	N/O volt free contact	min : 10 mA - ⎓ 1 V max : 1 A - ≃ 250 V and ⎓ 30 V of inductive load	1.5
S2B			

The I/O are electrically isolated.

Connection diagram



To avoid interference in the unit it is recommended that you :

- separate the control circuits and the power circuits.

- use a twisted pair cable for the control circuits, with a pitch of 25 to 50 mm, or a screened twisted pair cable.

Precautions

ENGLISH

Variable torque

I/O automatic configuration

(switch n°2 in lower position)

- automatic assignment of I/O on the board, by basic speed controller, with or without display option.
- I/O cannot be reconfigured (see page 22).
- immediate restart after changing basic speed controller.

Switch n°1 off

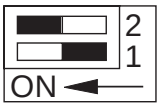
Dedicated board switches

S2A.S2B	HSP reached
AO	Motor frequency
LO	Frequency reference reached
LI3	d.c. injection
LI2	Switching on manual reference
LI1	Freewheel stop
AI	Manual input reference

Terminal label

Variable torque

Additional functions with display and adjustment options



Required switch position for the display and adjustment options VW3-A16101 and VW3-A16102 used for modifying the following functions :

Adjustable functions :

Skip frequency 1 : 1st skip frequency band with a width of 2 Hz.
Factory setting : JF1 = 0 Hz (not used).

Skip frequency 2 : 2nd skip frequency band with a width of 2 Hz.
Factory setting : JF2 = 0 Hz (not used).

Configurable functions :

Automatic restart : function enabling the speed controller to restart following a fault but only after the fault has disappeared.
Factory setting : NO / [YES].

Controlled stop on supply break : control of motor stop on power break, following a self-regulating ramp as a function of restored kinetic energy.
Factory setting : [NO] / YES.

Catching a spinning load : restart the speed controller following a break in the supply. If the speed reference signal and confirmation of the start command have been maintained, the motor accelerates up to its initial speed without resetting the acceleration ramp.
Factory setting : NO / [YES].

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Variable torque

I/O reconfiguration using a PC

Switch 1 : off

Switch 2 :
Position required for reconfiguring the I/O and their function (component panel).

S2A - S2B	HSP reached		
AO	Motor frequency		
LO	Frequency reference reached		
LI3	d.c. injection	Switching between 2 ramps	
LI2	Switching on manual reference	Switching between 2 ramps	
LI1	Freewheel stop	Switching between 2 ramps	
AI	Ref. 2 input summed with AIV	PI feedback	Manual reference input

Terminal label

Factory configuration

- When starting, after changing the basic speed controller or when first reconfiguring the dedicated board I/O, if the red fault LED is flashing or the code OPt appears on the display option, the dedicated board I/O should be reassigned.

Variable torque

Additional functions available with a PC

Configurable functions

Switching frequency	:	5 / 10 kHz (10 kHz)

Adjustable functions

Acceleration ramp 2	:	0.1 to 600 s (12 s)
Deceleration ramp 2	:	0.1 to 600 s (12 s)
Proportional gain	:	0 to 100,00 (1,00)
Integral gain	:	0 to 100,00 (1,00)
d.c. injection validated by LI	:	0.5 to 1.5 I_{EH} for 0 to 5 s, then 0.5 I_{EH} for LI

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Maintenance assistance

Red LED blinking on basic unit, or code OPt indicates that I/O should be reassigned or that switch n°2 on the dedicated board should be switched to off (lower position).

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Documentation

- Product designation	Product reference	Document reference	Document number
- Speed controller	ATV-16	VD0C01Q301	N° 52533
- Adjustment and display	VW3-A16101	VD0C01Q302	N° 52534
- Local control adjustment and display	VW3-A16102	VD0C01Q302	N° 52534
- Remote display option	VW3-A16103	VD0C01N901	N° 99471
- PC connection	VW3-A16104	VD0C01N902	N° 99488
- Braking module	VW3-A16601	VD0C01N906	N° 99474
- Braking resistance	VW3-A16701-04	VD0C01N907	N° 99475
- Attenuating filters	VW3-A16401-07	VD0C01N904	N° 99472
- Inductances	VW3-A16501-04	VD0C01N905	N° 99473
- IP 54	VW3-A16801-02	VD0C01N908	N° 99476

- SERIAL LINK CONNECTION OPTIONS

– Interface for PCMCIA communication card	VW3-A16303	VD0C01B320	N° 62821
– PCMCIA card for UNITELWAY, MODBUS, JBUS, SY/MAX PNIM protocol	VW3-A66301		
– User's manual : PCMCIA communication card protocols UNITELWAY, MODBUS, JBUS		VD0C01B311	N° 54749
– FIPIO protocol kit which includes :	TSX FPV16 V6M		
• two diskettes for integration under XTEL-CONF,	TXT L FPV16V5		
• an installation manual for the ATV16 on FIPIO		TSX DM FPV16V6M	N° 56698
• a PCMCIA communication card	TSX FPP 10		
• a junction box	TSX FP ACC4		

- DEDICATED BOARDS

- General usage/material handling	VW3-A16201	VD0C01Q303	N° 52553
- Variable torque	VW3-A16202	VD0C01Q304	N° 52554
- High speed motors	VW3-A16203	VD0C01Q305	N° 52555

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