

ENGLISH

## Getting started with ATV312



### ⚠️ DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Only appropriately trained persons who are familiar with and understand the contents of this manual and all other pertinent product documentation and who have received safety training to recognize and avoid hazards involved are authorized to work on and with this drive system. Installation, adjustment, repair, and maintenance must be performed by qualified personnel.
- The system integrator is responsible for compliance with all local and national electrical code requirements as well as all other applicable regulations with respect to grounding of all equipment.
- Many components of the product, including the printed circuit boards, operate with mains voltage. Do not touch. Use only electrically insulated tools.
- Do not touch unshielded components or terminals with voltage present.
- Motors can generate voltage when the shaft is rotated. Prior to performing any type of work on the drive system, block the motor shaft to prevent rotation.
- AC voltage can couple voltage to unused conductors in the motor cable. Insulate both ends of unused conductors of the motor cable.
- Do not short across the DC bus terminals or the DC bus capacitors or the braking resistor terminals.
- Before performing work on the drive system:
  - Disconnect all power, including external control power that may be present.
  - Place a "Do Not Turn On" label on all power switches.
  - Lock all power switches in the open position.
  - Wait 15 minutes to allow the DC bus capacitors to discharge. The DC bus LED is not an indicator of the absence of DC bus voltage that can exceed 800 Vdc.
  - Measure the voltage on the DC bus between the DC bus terminals (PA/+ and PC/-) using a properly rated voltmeter to verify that the voltage is <math>\leq 42\text{ Vdc}</math>.
  - If the DC bus capacitors do not discharge properly, contact your local Schneider Electric representative. Do not repair or operate the product.
- Install and close all covers before applying voltage.

Failure to follow these instructions will result in death or serious injury.

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this product.

Information below is designed to use single drive connected to single motor with a motor cable length less than 50 meters (164 ft). For more information, consult the ATV312 installation manual (BBV46391) and programming manual (BBV46385) on [www.schneider-electric.com](http://www.schneider-electric.com).

## 1 Verify the delivery of the drive

- Remove ATV312 from the packaging and verify that it has not been damaged.

### ⚠️ WARNING

#### DAMAGED DRIVE EQUIPMENT

Do not operate or install any drive or drive accessory that appears damaged.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

- Verify that the drive catalog number printed on the label is the same as that on the purchase order.  
Write the drive Model catalog number: \_\_\_\_\_ and Serial Number: \_\_\_\_\_

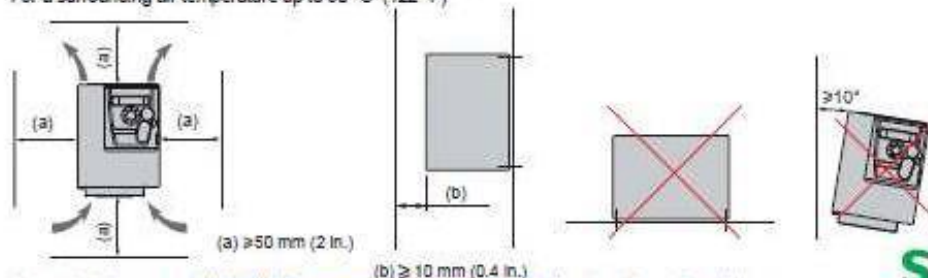


## 2 Verify the Supply Mains compatibility

- Verify that the supply mains is compatible with the drive.  
Supply mains \_\_\_\_\_ Volts / Drive mains voltage \_\_\_\_\_ Volts  
Drive range: ATV312.....M2 = 200/240 V single phase / ATV312.....M3 = 200/240 V three-phase  
ATV312.....N4 = 380/500 V three-phase / ATV312.....S6 = 525/600 V three-phase

## 3 Mount the drive vertically

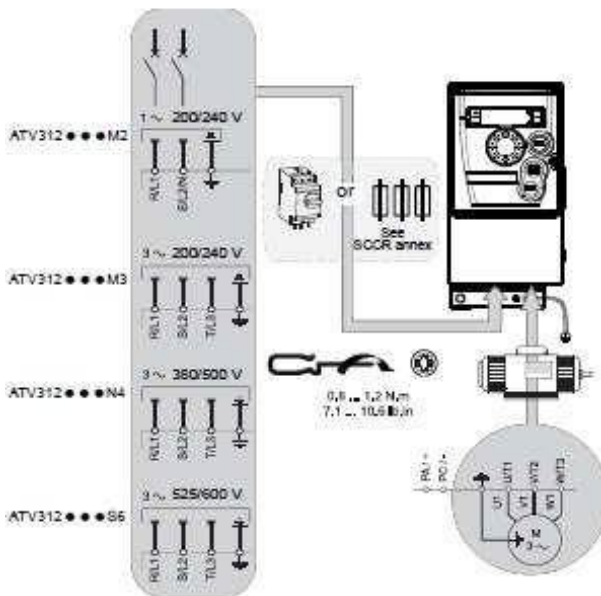
For a surrounding air temperature up to 50 °C (122 °F)



See installation manual (BBV46391) on [www.schneider-electric.com](http://www.schneider-electric.com) for other thermal conditions.

### 4 Wire power part

- Wire the drive to the ground.
- Verify circuit breaker rating or fuse rating (see SOCR annex)
- Verify that the motor voltage is compatible with the drive voltage.  
Motor voltage \_\_\_\_\_ Volts.
- Wire the drive to the motor.
- Wire the drive to the supply mains.

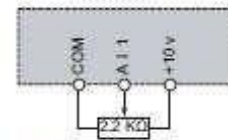


### 5 Wire control part and select control configuration:

51 or 52

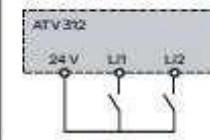
#### 51 [REMOTE configuration] (Control by external reference)

- Ensure SW1 = "SOURCE"
- Wire the speed reference:



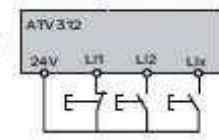
- Wire the command:

Control command 2-wire:



L1: forward  
L2: reverse

Control command 3-wire:



L1: stop  
L2: forward  
Lix: reverse

- Next steps, do: 6, 7, 8, 9

#### 52 [LOCAL configuration] (control by internal reference).



Do: 6, 7, 8, 9

### 6 Apply power to the drive

- Ensure that Logic Inputs are not active (see L1, L2, Lix).
- Apply power to the drive.
- At first power up, the drive displays *n5b* (3-wire control) or *rdy* (2-wire control), after pushing drive displays *bFr*.
- On next start-ups, the drive displays *n5b* or *rdy*.

### 7 Set motor parameters

- Refer to the motor nameplate for the following parameter settings.

Menu	Code	Description	Factory setting	Customer setting
<i>drE</i> [MOTOR CONTROL]	<i>bFr</i>	[Standard mot. freq.]: Standard motor frequency (Hz)	50.0	
	<i>un5</i>	[Rated motor volt.]: Nominal motor voltage on motor nameplate (V)	drive rating	
	<i>Frs</i>	[Rated motor freq.]: Nominal motor frequency on motor nameplate (Hz)	50.0	
	<i>nCr</i>	[Rated mot. current]: Nominal motor current on motor nameplate (A)	drive rating	
	<i>n5P</i>	[Rated motor speed]: Nominal motor speed on motor nameplate (rpm)	drive rating	
	<i>Ca5</i>	[Motor 1 Cosinus Phi]: Nominal motor cos φ on motor nameplate	drive rating	

## 7 Set motor parameters (continued)

- Set *bun* parameter to *UES*.

Menu	Code	Description	Factory setting	Customer setting
<i>drc</i> - [MOTOR CONTROL]	<i>bun</i>	[Auto Tuning]: Auto-Tuning for <i>un5</i> , <i>Fr5</i> , <i>nCr</i> , <i>n5P</i> and <i>Co5</i>	<i>na</i>	

**⚠⚠ DANGER**

HAZARD OF ELECTRIC SHOCK OR ARC FLASH

- During auto-tuning, the motor operates at rated current.
- Do not service the motor during auto-tuning.

Failure to follow these instructions will result in death or serious injury.

**⚠ DANGER**

UNINTENDED EQUIPMENT OPERATION

- The Nominal Motor Parameters *un5*, *Fr5*, *nCr*, *n5P* and *Co5* must be correctly configured before starting auto-tuning.
- If one or more of these parameters is modified after auto-tuning has been performed, *bun* will return to *na* and the procedure must be repeated.

Failure to follow these instructions will result in death or serious injury.

## 8 Set basic parameters

Menu	Code	Description	Factory setting	Customer setting
<i>Set</i> - [SETTINGS]	<i>acc</i>	[Acceleration]: Acceleration time (s)	<i>3.0</i>	
	<i>dec</i>	[Deceleration]: Deceleration time (s)	<i>3.0</i>	
	<i>l5P</i>	[Low speed]: Motor frequency at minimum reference (Hz)	<i>0.0</i>	
	<i>h5P</i>	[High speed]: Motor frequency at maximum reference (Hz)	<i>50.0</i>	
	<i>inh</i>	[Mot. therm. current]: Nominal current on motor nameplate (A)	drive rating	
<i>ra</i> - [INPUTS / OUTPUTS CFG]	<i>rr5</i>	[Reverse assign]: Reverse assignment	<i>L,2</i>	
<i>Fun</i> -> <i>P5S</i> - [PRESET SPEEDS]	<i>P52</i>	[2 preset speeds]: Preset speeds	<i>L,3</i>	
	<i>P54</i>	[4 preset speeds]: Preset speeds	<i>L,4</i>	
<i>Fun</i> -> <i>SAI</i> - [SUMMING INPUTS]	<i>SA2</i>	[Summing ref. 2]: Analog input	<i>R,2</i>	

## 9 Set control choice

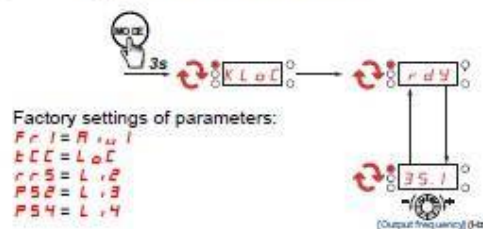
Menu	Code	Description	5.1 [REMOTE configuration]	5.2 [LOCAL configuration]	Customer Setting
<i>CEL</i> - [COMMAND]	<i>Fr1</i>	[Ref.1 channel]: Reference control	<i>AL1</i> (factory setting), <i>AL2, AL3</i>	<i>ALu1</i>	
<i>ra</i> - [INPUTS / OUTPUTS CFG]	<i>bCC</i>	[2/3 wire control]: Command control	<i>2C</i> : 2-wire (factory setting) <i>3C</i> : 3-wire	<i>LoC</i>	

### 91 REMOTE configuration] (Factory setting)

Factory settings of parameters:

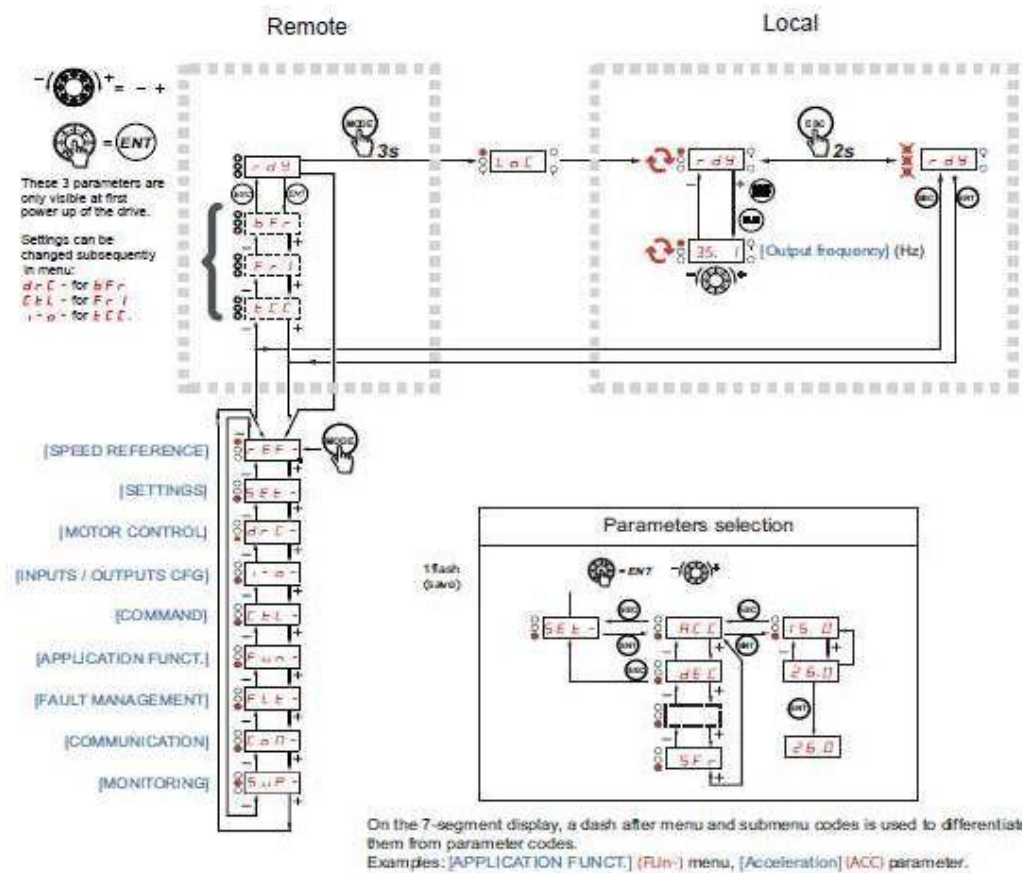
*Fr1* = *R,1*  
*bCC* = *2C*

### 92 [LOCAL configuration]



## 10 Start the motor

## Menus structure



**Note:** The drive goes back to REMOTE configuration after a factory setting operation ([Restore config.] (FCS)) or by modifying the macro configuration ([Macro configuration] (CFG)).

Refer to the programming manual (BBV46385) for comprehensive menu descriptions.

ProPar in 23520.xls

Parameter Menu VFD			
Param #	Param Name	Range of Adjustment	Setting

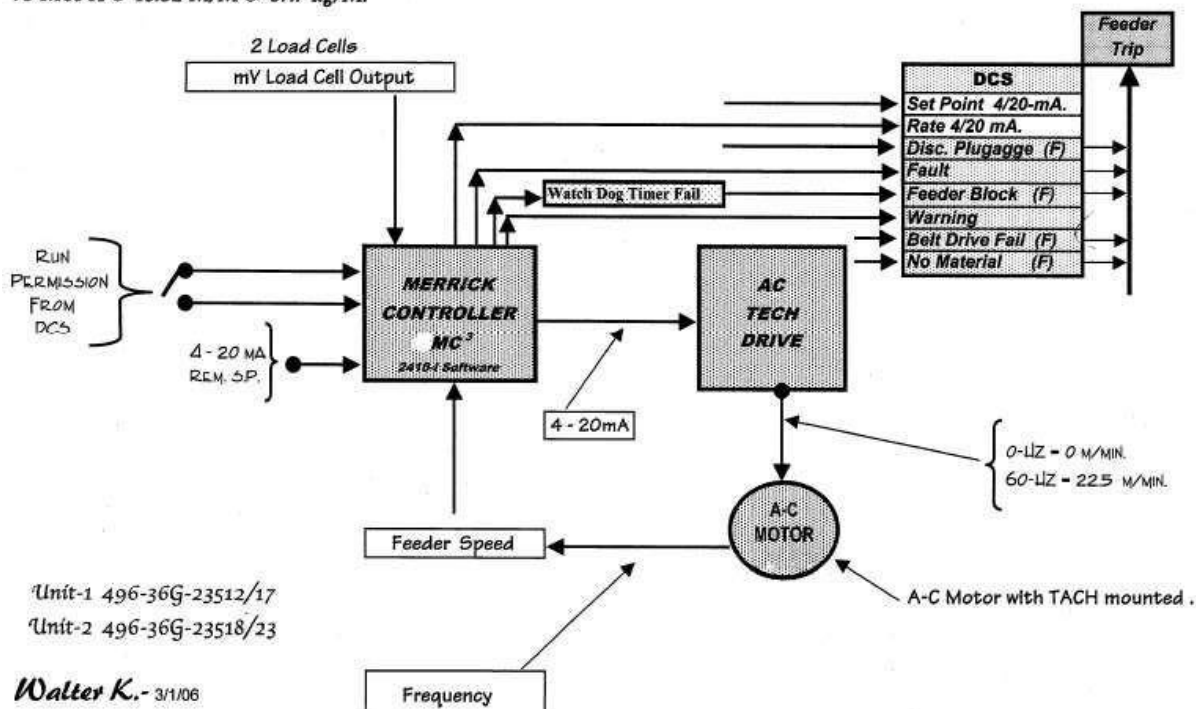


CLOSED - LOOP DIAGRAM.

TANJUNG - JAT - B @ JEPARA, INDONESIA.

MERRICK COAL - FEEDERS.

70-MTPH @ 16.82-M/M @ 67.7-kg/M.



Unit-1 496-36G-23512/17

Unit-2 496-36G-23518/23

Walter K.- 3/1/06

		X.XXX, .XXXX	
34	Load MLT	95-139%	100%
35	Contrast	Low, Med, High	High
39	TB5 Min	.00-360.0 Hz (note 2)	.00 Hz
40	TB5 Max	.00-360.0 Hz (note 2)	75 hz
42	TB10A OUT	None, 0-10V, 2-10V	None
43	@TB10A	3.00-360.0 Hz (note 2)	None
44	TB10B OUT	None, 0-10V, 2-10V	None
45	@TB10B	10-200%	125%
47	TB13A	None, 0-10VDC, 4-20MA Seppes#1, Local Sel, Dec Freq	Loc Sel
48	TB13B	None, 0-10VDC, 4-20MA Seed #2, Inc Freq, Jog Fwd, Jog Rev	4-20MA
49	TB13C	None, 0-10VDC, 4-20MA Seppes#1, Local Sel, Run Rev, Strt Rev	Run Rev
50	TB13D	Ext Fault, Ext/Fault, Ext Clear	Ext/Fault

