ENGLISH

Getting started with ATV312

S1A1094204

⚠ 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 <42 Vdc.
  - 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.

❶ Verify the delivery of the drive

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

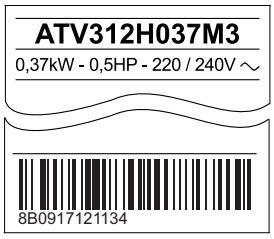
⚠ WARNING

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: _____

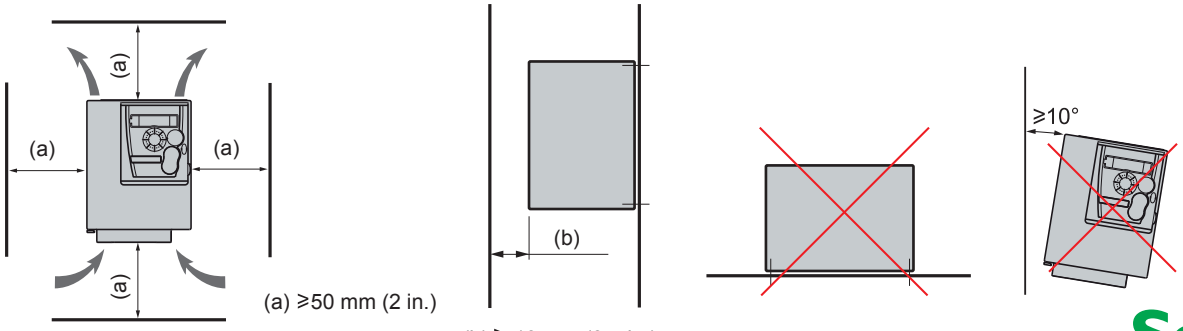


❷ Verify the Supply Mains compatibility

- 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

❸ Mount the drive vertically

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



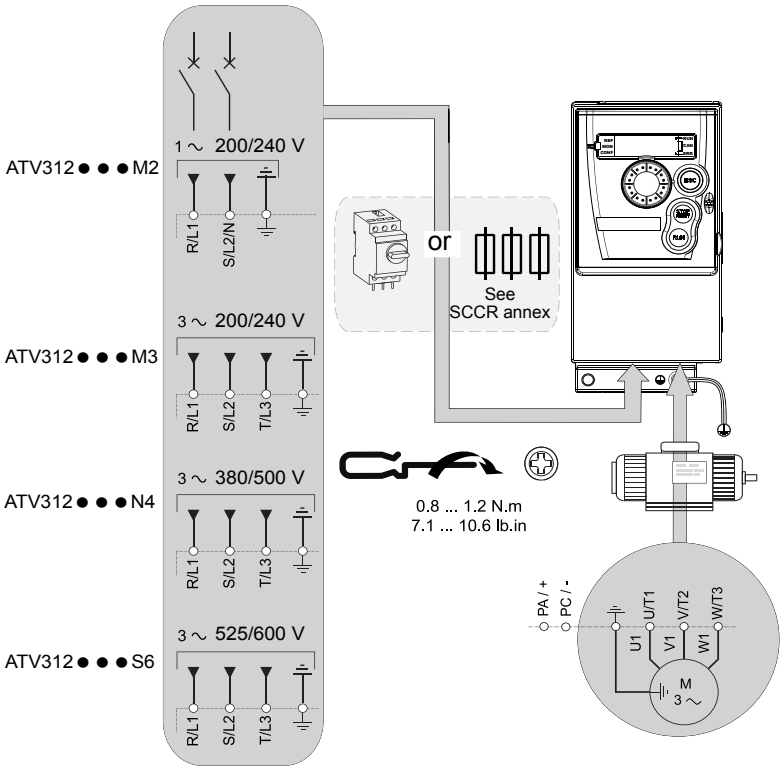
(a) ≥50 mm (2 in.)

(b) ≥ 10 mm (0.4 in.)

See installation manual (BBV46391) on www.schneider-electric.com for other thermal conditions.

❹ Wire power part

- Wire the drive to the ground.
- Verify circuit breaker rating or fuse rating (see SCCR 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.



❺ Wire control part and select control configuration:

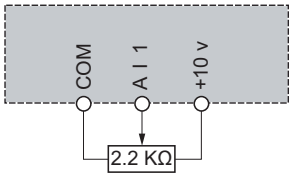
5.1 or 5.2

5.1 [REMOTE configuration] (Control by external reference)

- Ensure SW1 = ''SOURCE''

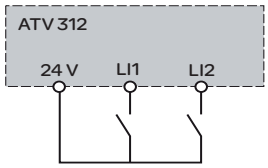


- Wire the speed reference:



- Wire the command:

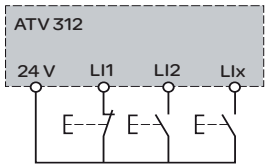
Control command 2-wire:



LI1: forward
LI2: reverse

OR

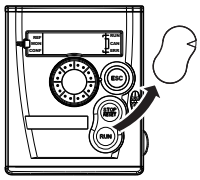
Control command 3-wire:



LI1: stop
LI2: forward
LIx: reverse

- Next steps, do: ❻+❼+❽+9.1

5.2 [LOCAL configuration] (control by internal reference).



Do: ❻+❼+❽+9.2

❻ Apply power to the drive

- Ensure that Logic Inputs are not active (see Li1, Li2, Lix).
- Apply power to the drive.
- At first power up, the drive displays `nSt` (3-wire control) or `rdy` (2 -wire control), after pushing ENT drive displays `bFr`.
- On next start-ups, the drive displays `nSt` or `rdy`.

❼ Set motor parameters

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

Menu	Code	Description	Factory setting	Customer setting
`drC-` [MOTOR CONTROL]	`bFr`	[Standard mot. freq]: Standard motor frequency (Hz)	`50.0`	
	`UnS`	[Rated motor volt.]: Nominal motor voltage on motor nameplate (V)	drive rating	
	`FrS`	[Rated motor freq.]: Nominal motor frequency on motor nameplate (Hz)	`50.0`	
	`nCr`	[Rated mot. current.]: Nominal motor current on motor nameplate (A)	drive rating	
	`nSP`	[Rated motor speed]: Nominal motor speed on motor nameplate (rpm)	drive rating	
	`CoS`	[Motor 1 Cosinus Phi.]: Nominal motor cos j on motor nameplate	drive rating	

7 Set motor parameters (continued)

- Set tun parameter to YES.

Menu	Code	Description	Factory setting	Customer setting
drC - [MOTOR CONTROL]	tun	[Auto Tuning]: Auto-Tuning for unS, FrS, nCr, nSP and CoS	no	

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- 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.

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UNINTENDED EQUIPMENT OPERATION

- The Nominal Motor Parameters unS, FrS, nCr, nSP and CoS must be correctly configured before starting auto-tuning.
- If one or more of these parameters is modified after auto-tuning has been performed, tun will return to no 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
SEt - [SETTINGS]	ACC	[Acceleration]: Acceleration time (s)	3.0	
	dEC	[Deceleration]: Deceleration time (s)	3.0	
	LSP	[Low speed]: Motor frequency at minimum reference (Hz)	0.0	
	HSP	[High speed]: Motor frequency at maximum reference (Hz)	50.0	
	ItH	[Mot. therm. current]: Nominal current on motor nameplate (A)	drive rating	
I-O - [INPUTS / OUTPUTS CFG]	rrS	[Reverse assign.]: Reverse assignment	LI2	
Fun -> PSS - [PRESET SPEEDS]	PS2	[2 preset speeds]: Preset speeds	LI3	
	PS4	[4 preset speeds]: Preset speeds	LI4	
Fun -> SAI - [SUMMING INPUTS]	SA2	[Summing ref. 2] Analog input	AI2	

9 Set control choice

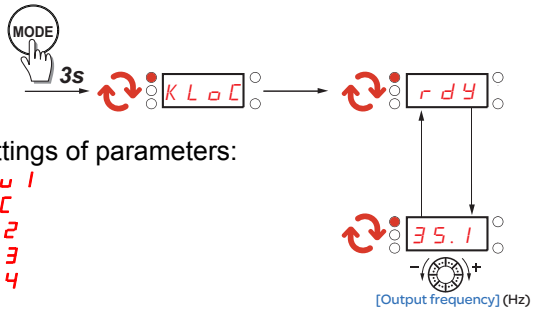
Menu	Code	Description	5.1 [REMOTE configuration]	5.2 [LOCAL configuration]	Customer Setting
CtL - [COMMAND]	Fr1	[Ref.1 channel]: Reference control	AI1 (factory setting), AI2, AI3	AIU1	
I-O - [INPUTS / OUTPUTS CFG]	tCC	[2/3 wire control]: Command control	2C: 2-wire (factory setting) 3C: 3-wire	LoC	

9.1 REMOTE configuration] (Factory setting)

Factory settings of parameters:

Fr1 = AI1
tCC = 2C

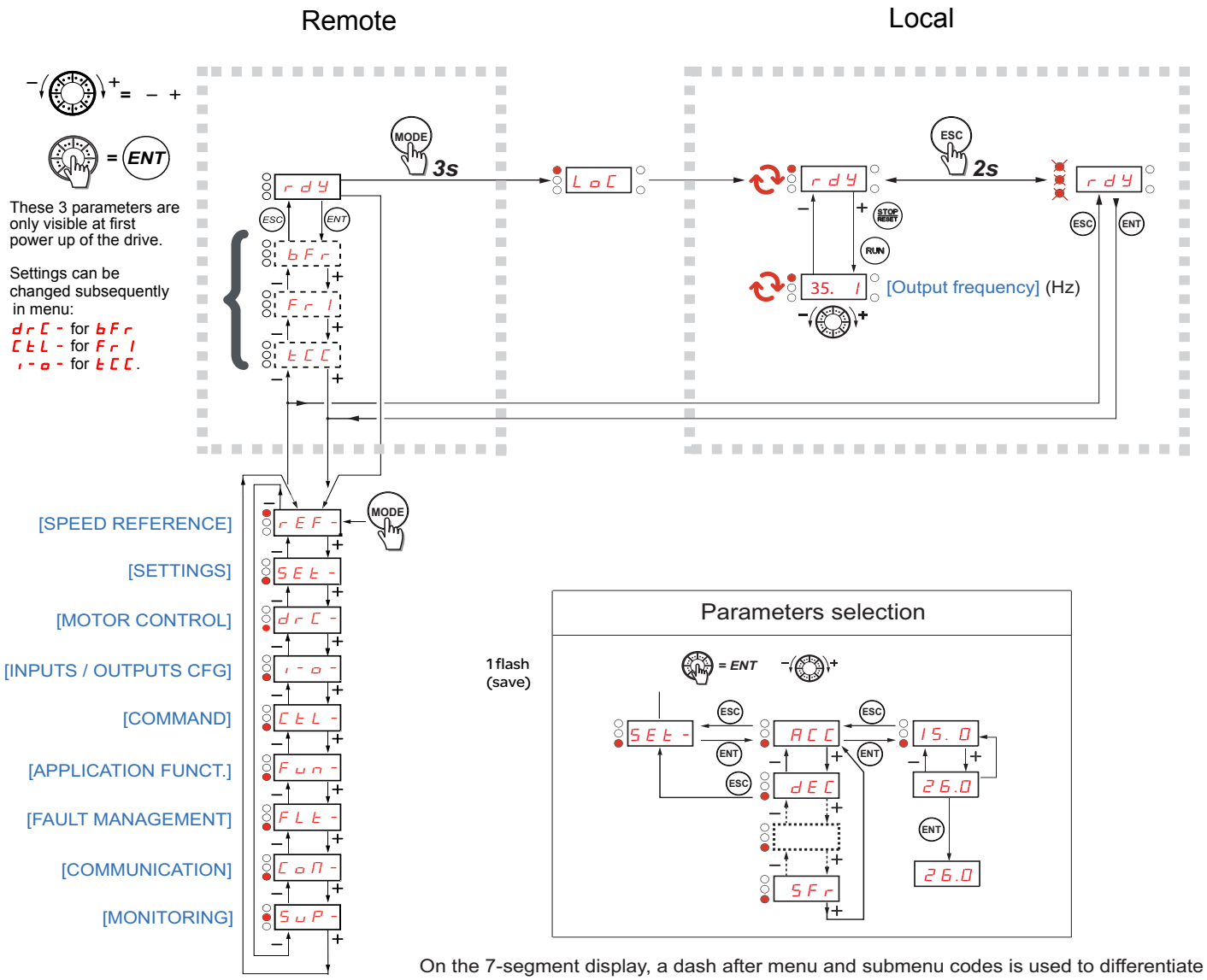
9.2 [LOCAL configuration]



Factory settings of parameters:
Fr1 = AIU1
tCC = LoC
rrS = LI2
PS2 = LI3
PS4 = LI4

10 Start the motor

Menus structure



On the 7-segment display, a dash after menu and submenu codes is used to differentiate them from parameter codes.
Examples: [APPLICATION FUNCT.] (FUn-) menu, [Acceleration] (ACC) parameter.

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.