



Emotron FDU 2.0 AC drive

Using the function keys

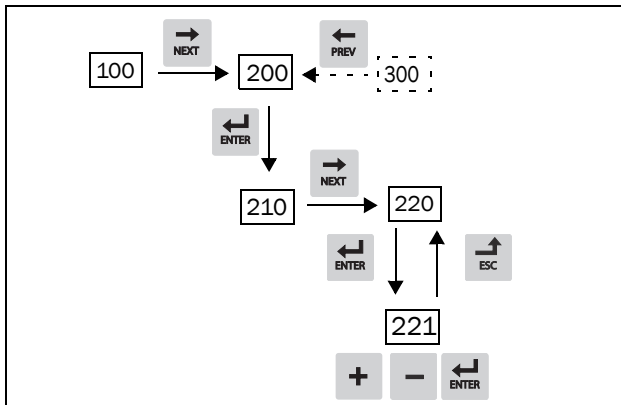


Fig. 1 Example of menu navigation when entering motor voltage

	step to lower menu level or confirm changed setting
	step to higher menu level or ignore changed setting
	step to next menu on the same level
	step to previous menu on the same level
	increase value or change selection
	decrease value or change selection
	Toggle between menus in the toggle loop Change the sign of a value Switching between local and remote control

Remote control

In this example external signals are used to control the AC drive/motor.

A standard 4-pole motor for 400 V, an external start button and a reference value will also be used.

Switch on the mains

Once the mains is switched on, the internal fan in the AC drive will run for 5 seconds.

Set the Motor Data

Enter correct motor data for the connected motor. The motor data is used in the calculation of complete operational data in the AC drive.

Change settings using the keys on the control panel.

Menu [100], Preferred View is displayed when started.

1. Press to display menu [200], Main Setup.
2. Press and then to display menu [220], Motor Data.

3. Press to display menu [221] and set motor voltage.
4. Change the value using the and keys. Confirm with .
5. Set motor frequency [222].
6. Set motor power [223].
7. Set motor current [224].
8. Set motor speed [225].
9. Set power factor (cos φ) [227].
10. Select supply voltage level used [21B]
11. Set Motor type[22I].
12. [229] Motor ID run: Choose Short, confirm with ENTER and give start command .

The AC drive will now measure some motor parameters. The motor makes some beeping sounds but does not rotate. When the ID run is finished after about one minute ("Test Run OK!" is displayed), press to continue.

13. Use AnIn1 as input for the reference value. The default range is 4-20 mA. If you need a 0-10 V reference value, change switch (S1) on control board.
14. Switch off power supply.
15. Connect digital and analogue inputs/outputs as in figure below.

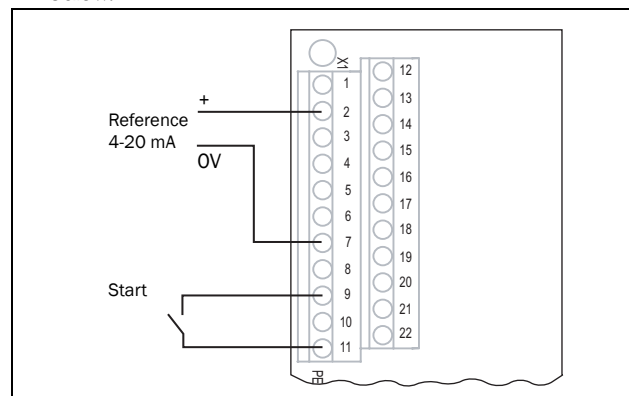


Fig. 2 Connecting reference signal

16. Ready!
17. Switch on power supply.

Run the AC drive

Now the installation is finished, and you can press the start button to start the motor.

This example will show that the main connections are OK and that the motor will run with the load.

Default toggle loop

Figure 3 shows the default toggle loop. This loop contains the necessary menus that need to be set before starting. Press Toggle to enter menu [211] then use the Next key to enter the sub menus [212] to [21A] and enter the parameters. When you press the Toggle key again, menu [221] is displayed.

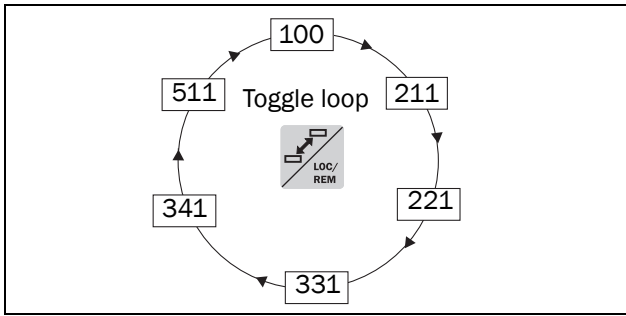


Fig. 3 Default toggle loop

Overview of the main menu

- [100] **Preferred view.** Displayed at power-up. Shows actual values (default: speed and torque).
- [200] **Main Setup.** Main settings to get the inverter operable e.g. motor data, autoreset and language.
- [300] **Process and Application parameters.** Settings more relevant to the application such as Reference Speed, torque limitations, PID control settings, etc.
- [400] **Shaft power monitor and process protection.** The monitor function enables the AC drive to be used as a load monitor to protect machines and processes against mechanical overload and underload.
- [500] **Inputs/outputs and virtual connections.** All settings for analogue and digital inputs and outputs.
- [600] **Logical functions and timers.** All settings for conditional signals are entered here.
- [700] **View operation and status.** Viewing all the operational data like frequency, load, power, current, etc.
- [800] **View Trip log.** Viewing the last 10 trips in the trip memory.
- [900] **Service information and AC drive data.** Electronic type label for viewing the software version and AC drive type.

Control connections

Table 1 Description of used terminals.

Terminal	Name	Function (Default)
2	AnIn 1	Process reference, default: speed
7	Common	Signal ground
9	DigIn 2	RunR; rotation right
11	+24V	+24VDC Supply voltage
12	Common	Signal ground (If desired)
13	AnOut 1	Min speed to max speed (If desired)
14	AnOut 2	0 to max torque (If desired)
22	DigIn 8	Reset

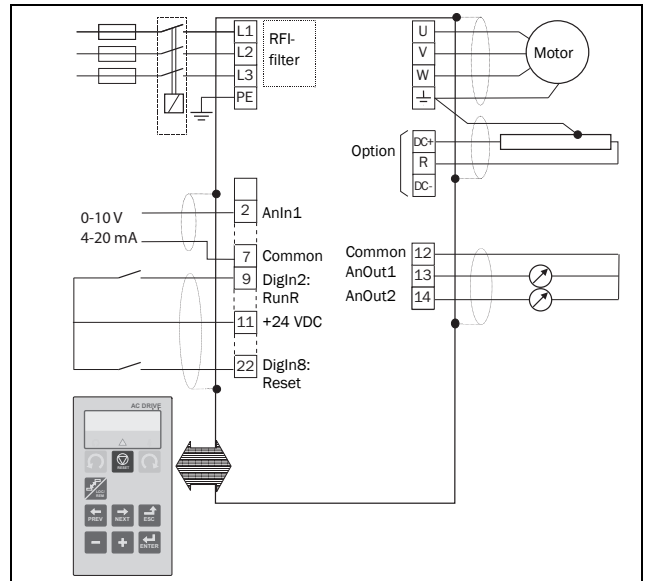


Fig. 4 Connection example.

Input configuration with the switches

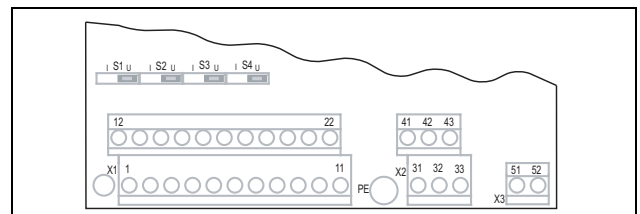


Fig. 5 Location of switches and connectors.

The switches S1 to S4 are used to set the input configuration for the 4 analogue inputs AnIn1, AnIn2, AnIn3 and AnIn4 as described in table 2. See Fig. 5 for the location of the switches.

Table 2 Switch settings

Input	Type	Switch
AnIn1	Voltage	S1
	Current (default)	S1
AnIn2	Voltage	S2
	Current (default)	S2
AnIn3	Voltage	S3
	Current (default)	S3
AnIn4	Voltage	S4
	Current (default)	S4