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DRIVE-TECH / DRIVE-TECH MINI
QUICK INSTALLATION GUIDE FOR SYNCHRONOUS PERMANENT MAGNET MOTORS OPERATION

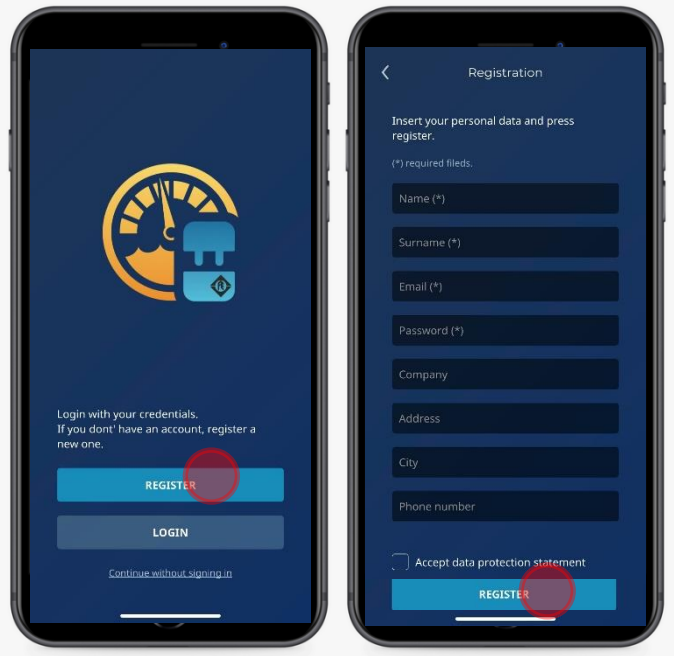
Thank you for choosing DrivE-Tech / DrivE-Tech MINI.
In order to grant the best functioning performances with synchronous Franklin Electric permanent magnet motors, it is required to complete the following steps to set up the frequency drive DrivE-Tech and DrivE-Tech MINI.

Please download App **FE Connect Drive-Tech** from your Apple Store or Google Play.
The App is available for iOS and Android devices.
Once installed in your device please follow the instruction below.

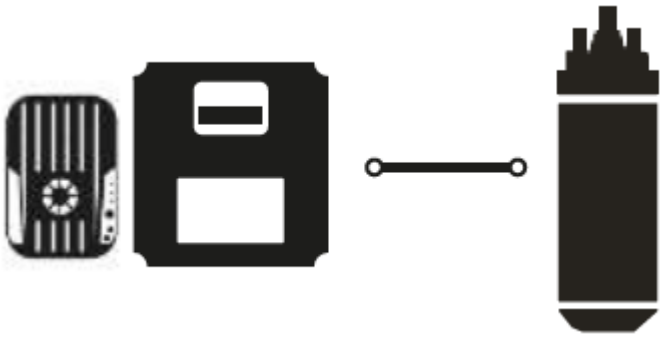
Important: only one device can be connected to DrivE-tech at a time, no simultaneous connections are allowed.

1. Open settings on your device and allow BLUETOOTH connection.

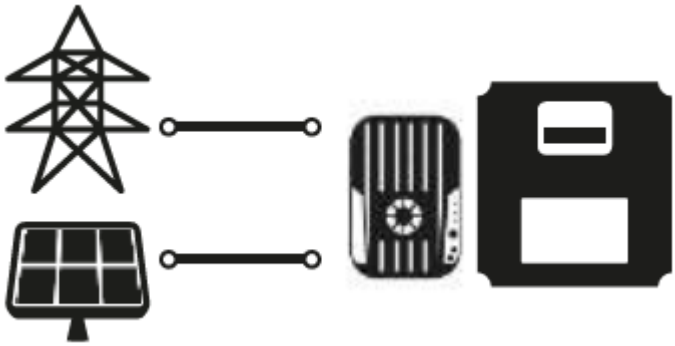
2. Open App FE Connect DrivE-tech and create an account clicking on “REGISTER”. You will receive an email to confirm the registration.



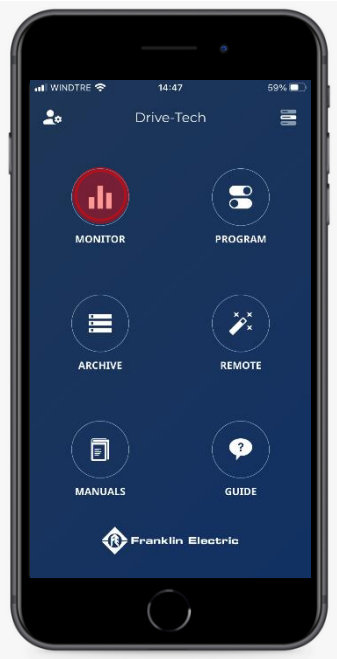
3. Connect DrivE-Tech / DrivE-Tech MINI to the Franklin Electric synchronous permanent magnet motor. For more details, please refer to the operating manual.



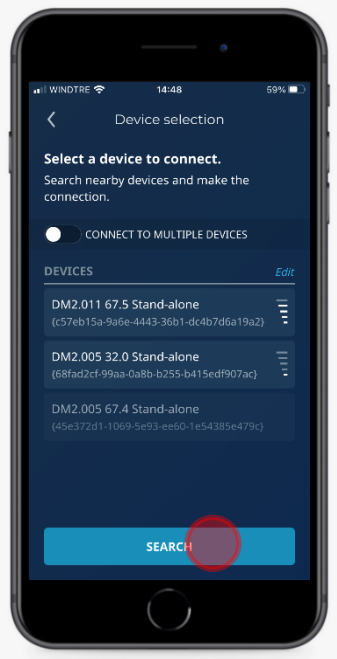
4. Connect DrivE-Tech / DrivE-Tech MINI to main supply. For more details, please refer to the operating manual.



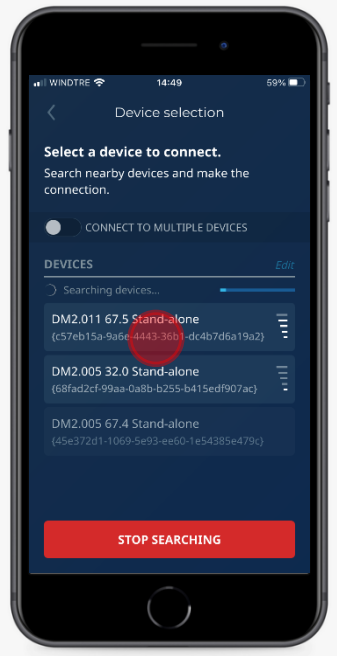
5. Open FE DrivE-Tech Connect App and click “MONITOR”.



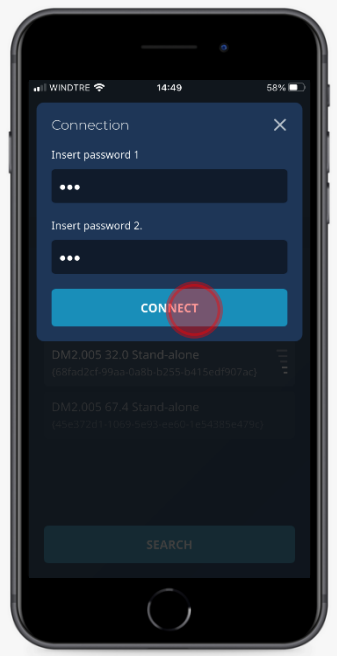
6. Click “SEARCH” to enable the device to detect a DrivE-Tech / DrivE-Tech MINI.



7. Select your DrivE-Tech / MINI clicking on the active device.

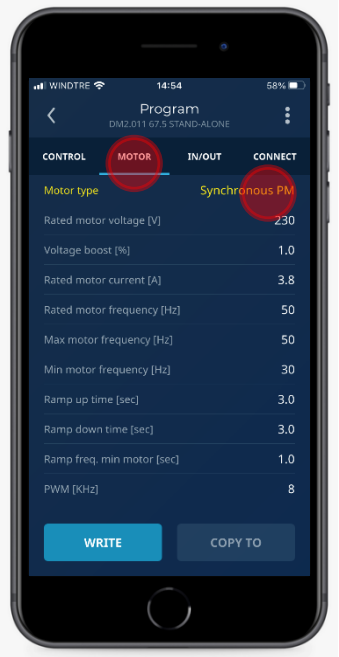


8. Store the User Password and click on “CONNECT”.
   Passwords are available below or inside the operating manual.
   Standard:
   Password 1: 001
   Password 2: 002

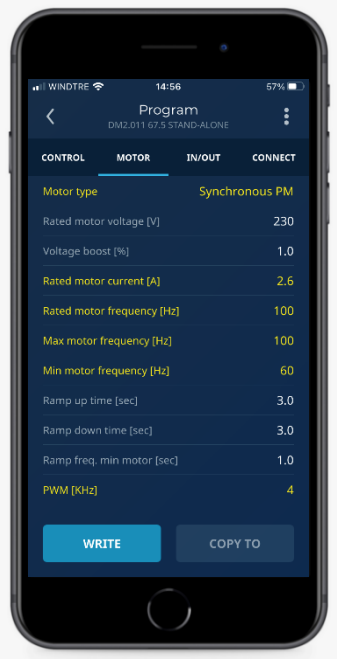


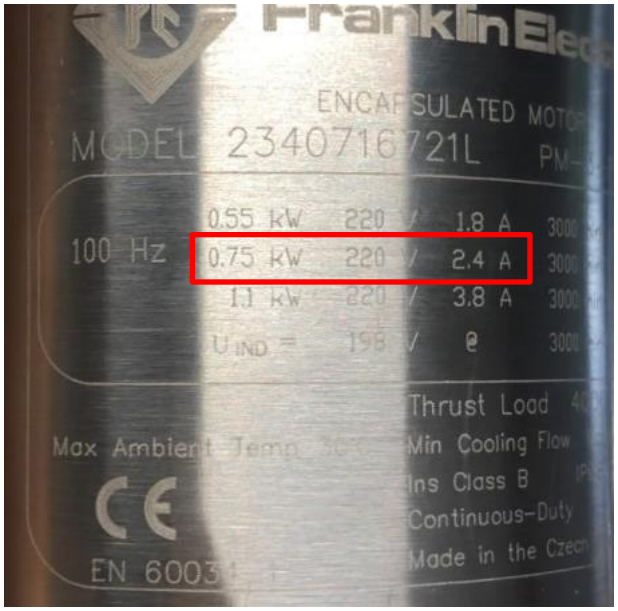
9. Open the menu, clicking on the upper right corner of main panel, then click on “PROGRAM”.

10. Select “MOTOR” parameter and then click “Motor Type” and select “Synchronous PM”.



11. Store motor data power according to the pump installed (*), clicking on each parameter.
    Rated motor voltage [V] : see motor label data
    Rated motor current [A] : see motor label data and increase it of + 10% (*).
    Rated motor frequency [Hz] 100
    Max motor frequency [Hz] : 100
    Min motor frequency [Hz] : 60

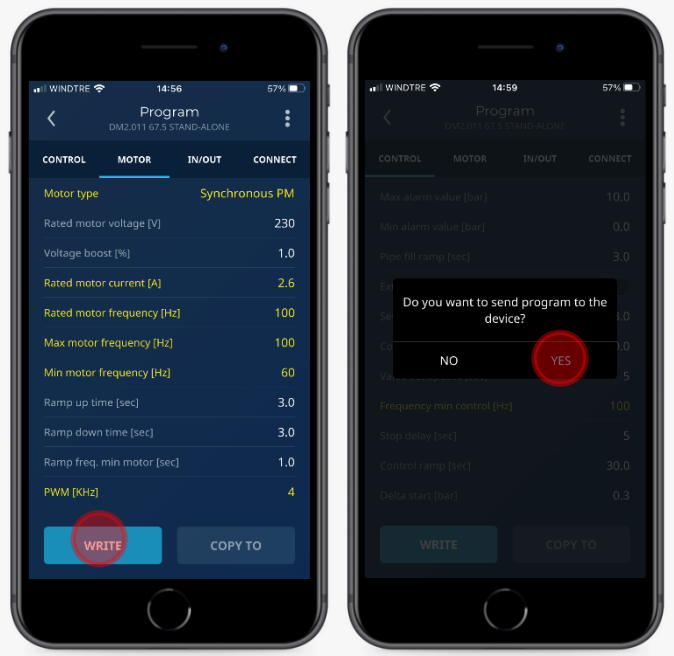




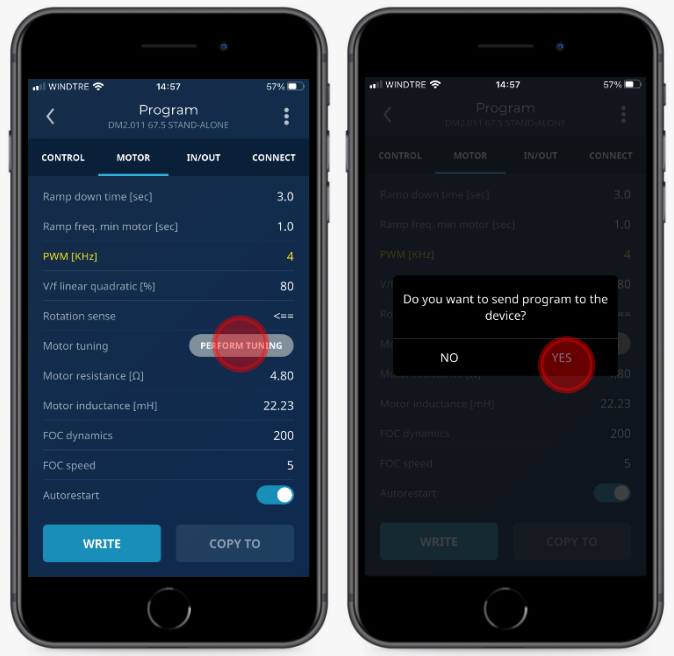
12. In the presence of a filter between VFD and motor, store the following parameters:
    dV/dT filter:
    - Set “FOC Dynamics” at 150 if the motor cable is shorter than 100 mt.
    - Set “FOC Dynamics” at 100 if the motor cable is longer than 100 mt.
    - Set PWM (KHz) at 4 kHz.

    Sinusoidal filter:
    - Set “FOC Dynamics” at 50 or 40.
    - Set PWM (KHz) at 4 kHz.

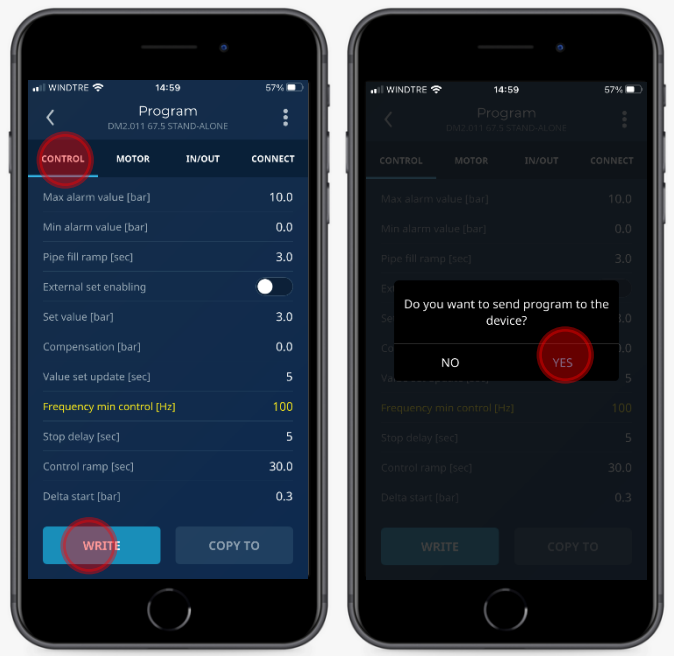
    Save settings clicking on “WRITE”.



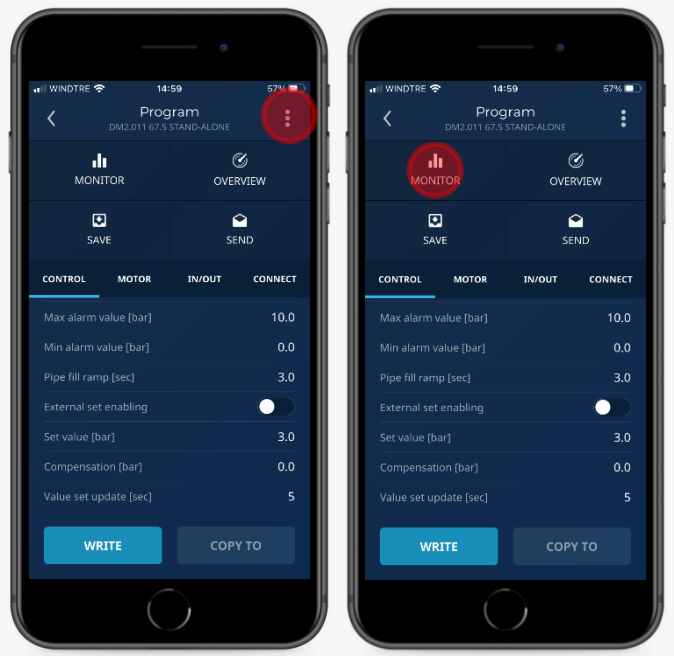
13. On parameter “Motor Tuning” click on “PERFORM TUNING”, to start identification test.



14. Choose parameter “CONTROL” and set value min frequency control at 100Hz.
    This is necessary when controlling the system with the constant pressure mode, to stop the pump when the delivery valve is closed and the flow is zero
    Save the setting clicking “WRITE”



15. Open the menu, clicking on the upper right corner of main panel, then click on “MONITOR”.



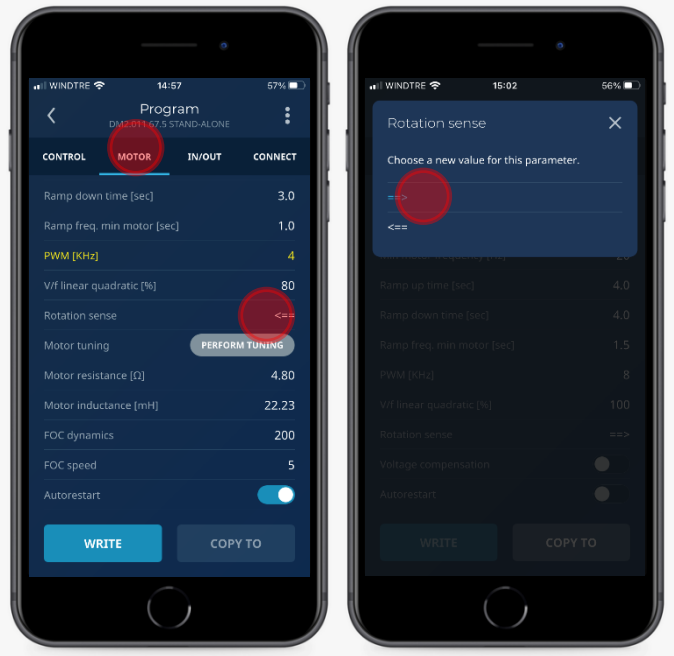
16. Click “START” to run the motor.

Configuration completed.
Verify the correct motor rotation checking pump performances.

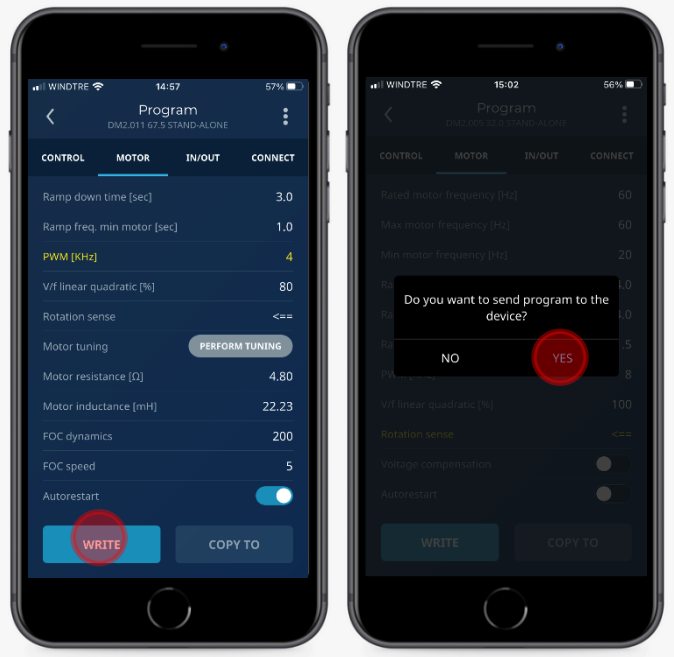
17. If motor rotation is not correct, click “STOP”.

18. Open the menu, clicking on the upper right corner of main panel, then click on “PROGRAM”.

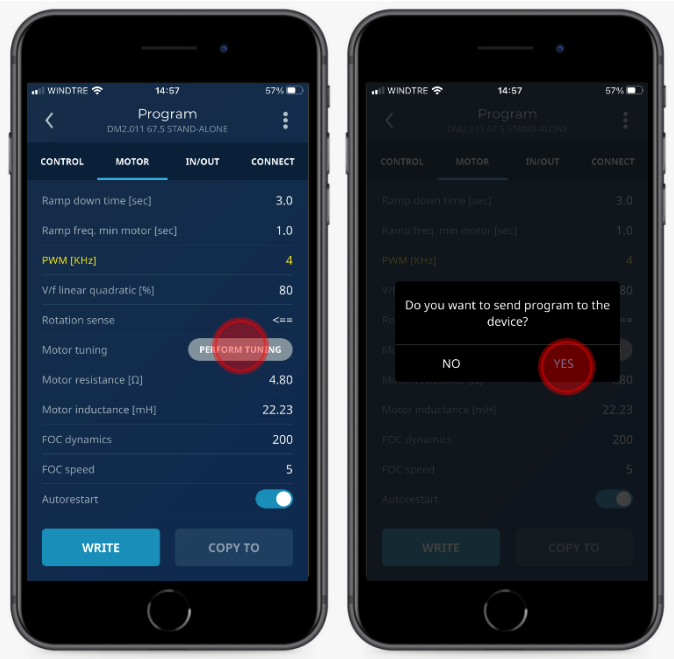
19. Choose “Motor” parameter and click on “Rotation Sense” to select “==>”.



20. Save settings clicking “WRITE”.



21. On parameter “Motor Tuning” click on “PERFORM TUNING”, to start identification test.



22. Continue from point n. 15.

Filter between VFD and Motor

CT Motors / Synchronous PM Motors	
Cable length [m]	**Filter**
0 - 50	NO
50 - 120	dV/dt
120 - ...	Sins

PWM kHz

CT Motors / Synchronous PM Motors		
Filter	**Cable length [m]**	**PWM [KHz]**
NO	0 - 20	8
	20 - 50	2,5
dV/dt	50 - 120	4
Sins	120 - ...	4

FOC Dynamics

Cable length	Filter presence	Value to set
<100 mt.	No	200
<100 mt.	dV/dt	150
>100 mt.	dV/dt	100
-	Sins	50

Sperotto
14 October 2022