

MANUAL

OJ DV GEN II LOCAL USER INTERFACE



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OJ Drives®

A DRIVES PROGRAM DEDICATED TO VENTILATION SOLUTIONS



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1. Symbols/definitions



Warning

- This symbol is used where there is a risk of serious or fatal injury.



Caution

- This symbol is used where potentially dangerous situations may result in minor or moderate injury. The symbol is also used to warn against unsafe and hazardous conditions.



Note

- This symbol is used to indicate important information in situations that may result in serious damage to equipment and property.

1.1 Safety information

- Ensure safety before installation.
- Create a safe work environment to minimize any potential risk of injury to personnel and damage to equipment.
- Read and follow guidelines concerning the OJ-DV in the OJ-DV Manual.
- Before installing the DV Local User Interface, make sure there is no damage to the Local User Interface unit or wire.
- Cut off the power to the drive and wait 10 seconds before removing the lid and installing the Local User Interface.

1.2 Warnings regarding electrical installations



Warning

Safety precautions when carrying out electrical installation

- The OJ DV Local User Interface must only be installed and commissioned by trained/qualified personnel.
- Incorrect electrical installation may lead to serious or fatal injury.

2. Safety information

2.1 Ensuring safety before installation

- The Local user interface must only be installed by qualified personnel or people who have received the appropriate training towards qualification.
- Qualified personnel are familiar with the installation practices and can perform installation in accordance with relevant local and international requirements, laws and regulations.
- Qualified personnel are familiar with the instructions and safety precautions described in this manual.
- The OJ DV is charged with high voltage when connected to a mains source, which is why mains voltage must always be disconnected before any installation, service or maintenance tasks are performed on the product.
- When the OJ DV is connected to the mains, there is a risk that the motor could start unintentionally, which could potentially lead to dangerous situations and injuries to people.
- An unintentional start during programming, service or maintenance may result in serious injury or damage to equipment and property.
- The motor/fan can be started via an external input signal, RS-485 interface or a connected control panel.
- Before connecting mains voltage, all the OJ DV, motor and fan components must be properly fitted.
- Before supplying mains voltage to the OJ DV, all covers and cable glands must be properly fitted and closed. Unused cable glands must be replaced with blind glands.

2.2 Prohibition on use

- The OJ DV must not be operated until the machine or product that it is incorporated into has been declared as fully conforming with all relevant national and international regulations.
- The product must not be energized until the entire installation complies with ALL relevant directives.
- The manufacturer’s warranty for this product is valid only if it is installed in accordance with these instructions and all applicable installation regulations.
- If the product has been damaged in any way, e.g. during transport, it must be inspected and repaired by authorized personnel before being connected to the power supply.
- If the local user interface is built into machinery with rotating parts, e.g. a ventilation system, transport system etc., then the entire system must comply with the Machinery Directive.

3. Introduction to the DV Local User Interface option - LUI.

The DV Local User Interface has been developed for easy monitoring of operations and for changes to the setup of the OJ DV.

It consists of a 2” touchscreen interface, which allows for setup changes and monitoring of status and operations.

The Local User Interface can be purchased together with the drive or later as an add-on.

The DV Local User Interface can be acquired as a built-in Local User Interface or as a remote version for mounting on a DIN rail.

Throughout these instructions, the display will be referred to as the “Local user interface” or "LUI" when mounted in the lid of the drive and as the “Remote user interface” or "RUI" when mounted outside of the drive.

3.1 Approvals and certifications.

Installing the local or remote user interface does not diminish or affect the OJ DV’s overall approval rating and certification levels.

It is fully compatible with the approvals and certifications of the OJ DV.

- Please see the OJ-DV manual for approvals and certifications.

3.2 Environment, area of use and IP sealing grade.

Installing the local user interface does not alter the permitted environment, area of use or the IP sealing grade of the OJ DV.

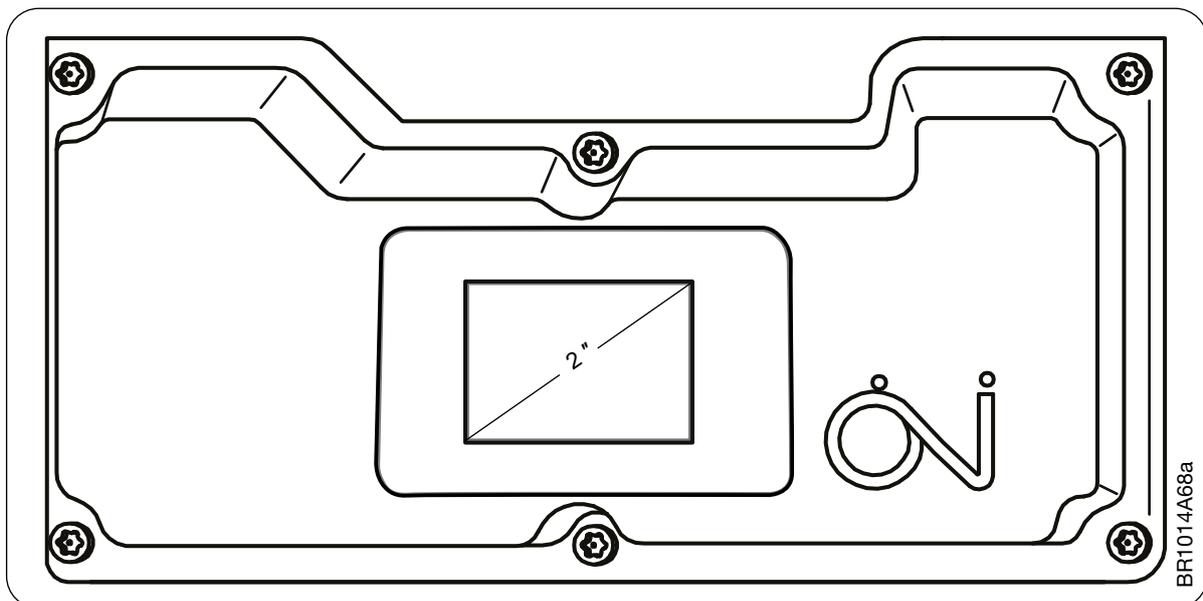
It is fully compatible with the high standards of the OJ DV

- Please see the OJ-DV manual for more detailed information.

4. Mechanical dimensions

For the local user interface's dimensions, please see fig. 4.1

Fig. 4.1 - H4 Frame Size



5. Handling the Local User Interface

The OJ Local User Interface must not be subjected to high force. It can withstand a force of max. 6.8N as required by the UL standard when mounted in the drive as an LUI.

Regarding an electrical connection between the LUI and the drive, the cable must not be pulled or bent with any force to the point where it could be damaged.

6. Operating conditions.

The OJ DV Local User Interface has been tested as effective in a wide temperature span, following the OJ DV specifications.

Additionally, the Local User Interface operations have been tested with a selection of oils, greases and other substances to ensure the best possible operation under every circumstance.

The LUI can also be operated using nitrile gloves and gloves with rubber finger tips.

Please contact OJ Electronics A/S for further information.

7. The OJ-DV Local User Interface - Unit

The LUI is designed to be easily installed.

When used as an LUI, the original lid must be exchanged for the lid containing the LUI.

The cable from the LUI must be connected to port “C” on the drive. The cable for connecting the LUI is attached to the Local User Interface.

The 6 mounting screws in the lid must be tightened to 2 Nm.

If it is not tight enough, the correct sealing grade will not be achieved.

If it is tightened above the maximum Nm stated, there is a risk of damage to the lid, which can make it impossible to achieve the correct sealing grade.

8. The OJ-DV Local User Interface – Use

The DV Local User Interface is built with a graphical colour touchscreen and an easy-to-use menu structure.

It allows the user to monitor drive operations and obtain a status overview that includes speed, temperature, operation time and more.

In the menu, users also have access to a chosen set of parameters which allows for setup or adjustments of the most common parameters, see the table “Parameter overview.” in section 11.

Navigation through the menu and parameters consists of the menu selection, the back, up and down arrows, and the home button.

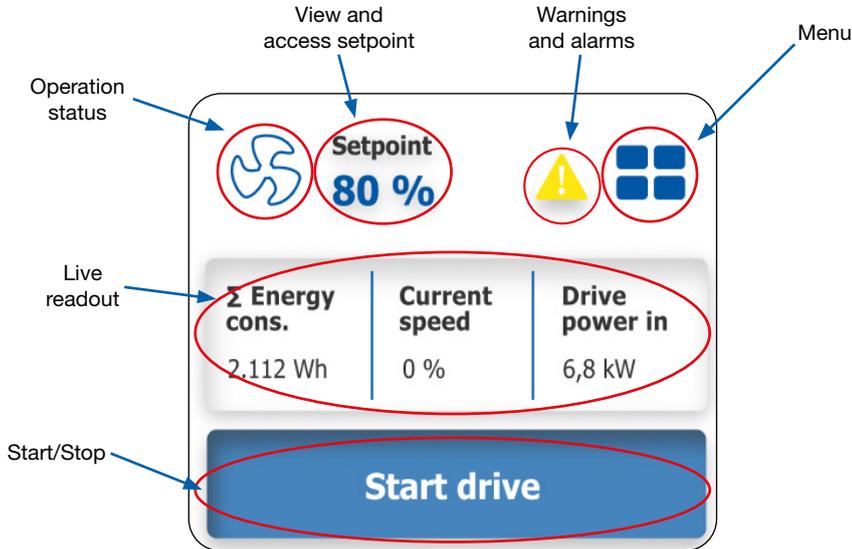
Navigating the menu or parameters is done by using the menu buttons and the up and down arrows.

Pressing on the “back” arrow causes the previous menu to be shown while pressing on the home button causes you to exit the menu.

9. Menu structure

9.1 Home screen.

The home screen provides the user with a quick overview of running conditions, alarms and warnings. The menu can be accessed from the home screen and you can also select the setpoint here. Starts and stops are also controlled from the home screen.
 -> See the picture below for guidance.



9.2 Navigation and description.

The first menu screen you will see upon entering lets you access the following menus:

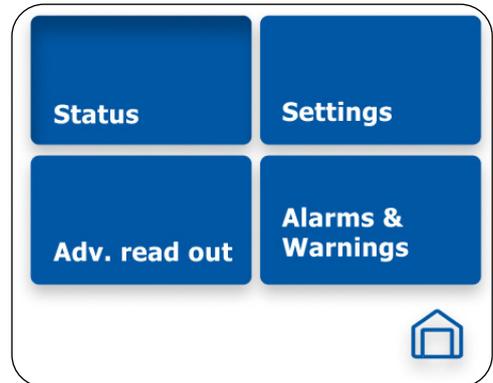
- Status (Read only)
- Adv. read out (Read only)
- Settings (Read/Write)
- Alarms & Warnings (Read/Reset)

The status and adv. read out menus are read only and are only used to view the setup.

“Status” lets you see the drive’s operating status, while “Adv. read out” lets you view the drive’s settings.

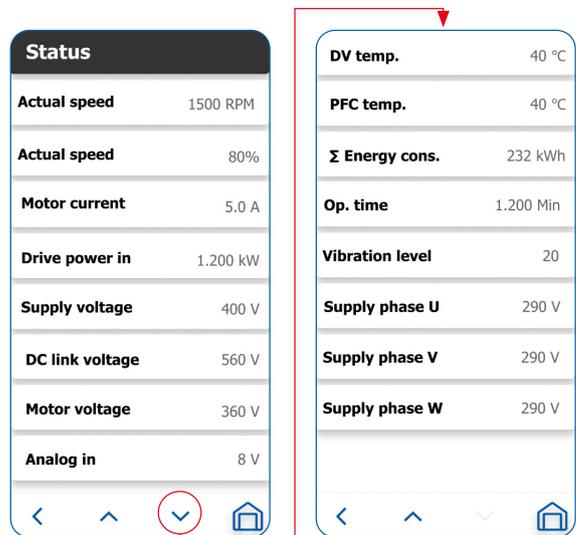
“Settings” lets you change a predefined set of parameters in the current setup.

“Alarms & Warnings” lets you view any alarms and reset the alarms.



9.3 Status

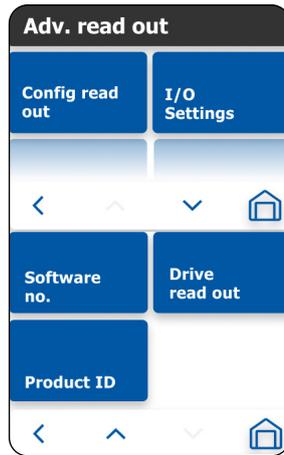
“Status” lets you view the operating conditions of the drive, e.g. speed, supply voltage, temperature, among others. See the picture of the “Status” menu for an overview.



9.4. Advanced read out.

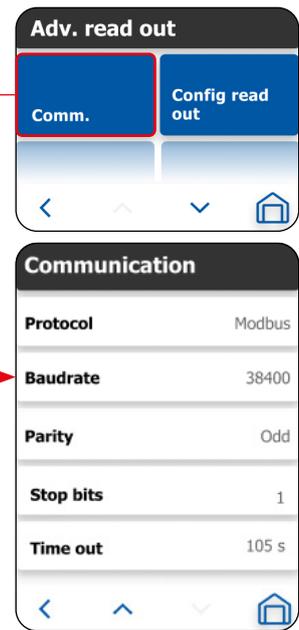
9.4.1 Adv. read out.

The “Adv. read out” menu gives you an overview of the drive’s settings.



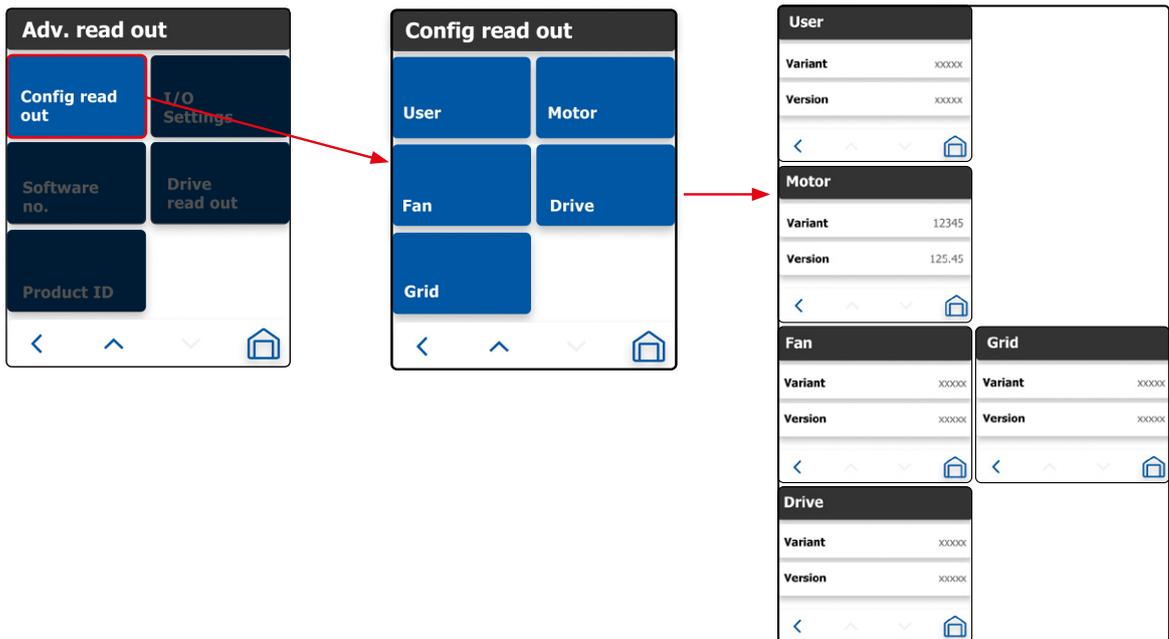
9.4.2 Adv. read out. - Comm. ID

If RS485 communication is used for control, an extra menu for communication settings will be available.



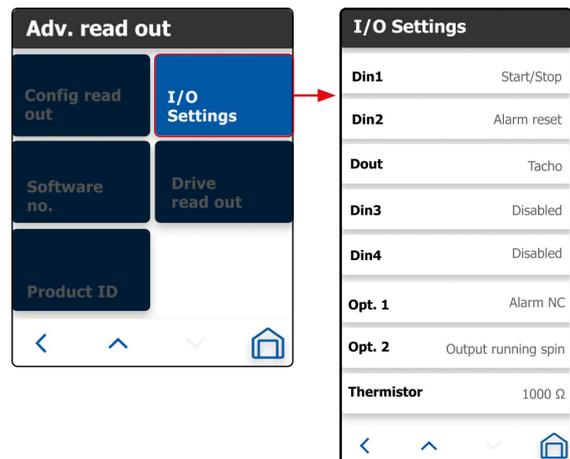
9.4.3 Adv. read out - Config. read out.

“Config. read out” lets you read the different configuration variants and versions, as shown below.



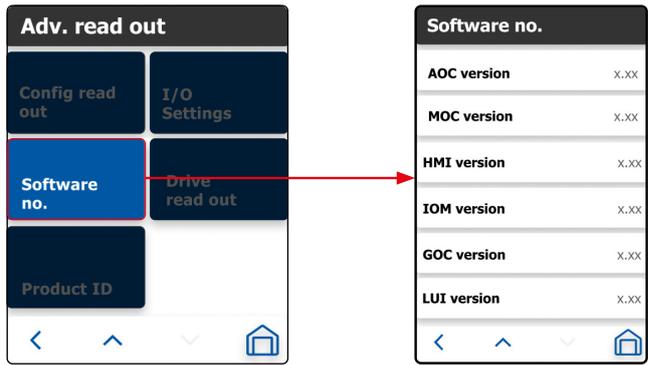
9.4.4 Adv. read out - I/O Settings.

“I/O Settings” allows you to view the chosen setting.



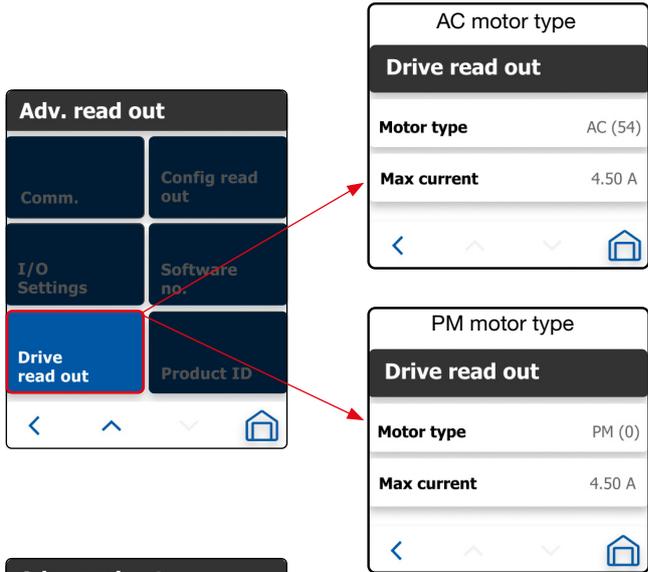
9.4.5 Adv. read out - Software no.

“Software no.” shows the software versions currently installed on the drive, along with software versions of attached OJ accessories.



9.4.6 Adv. read out - Drive read out.

This menu parameter gives a quick view of motor type and max. current.



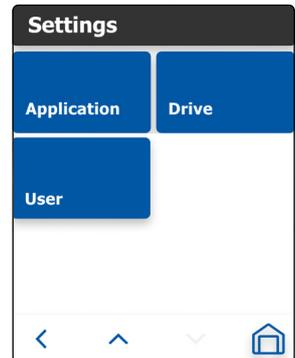
9.4.7 Adv. read out - Product ID.

Lets you view the product ID.



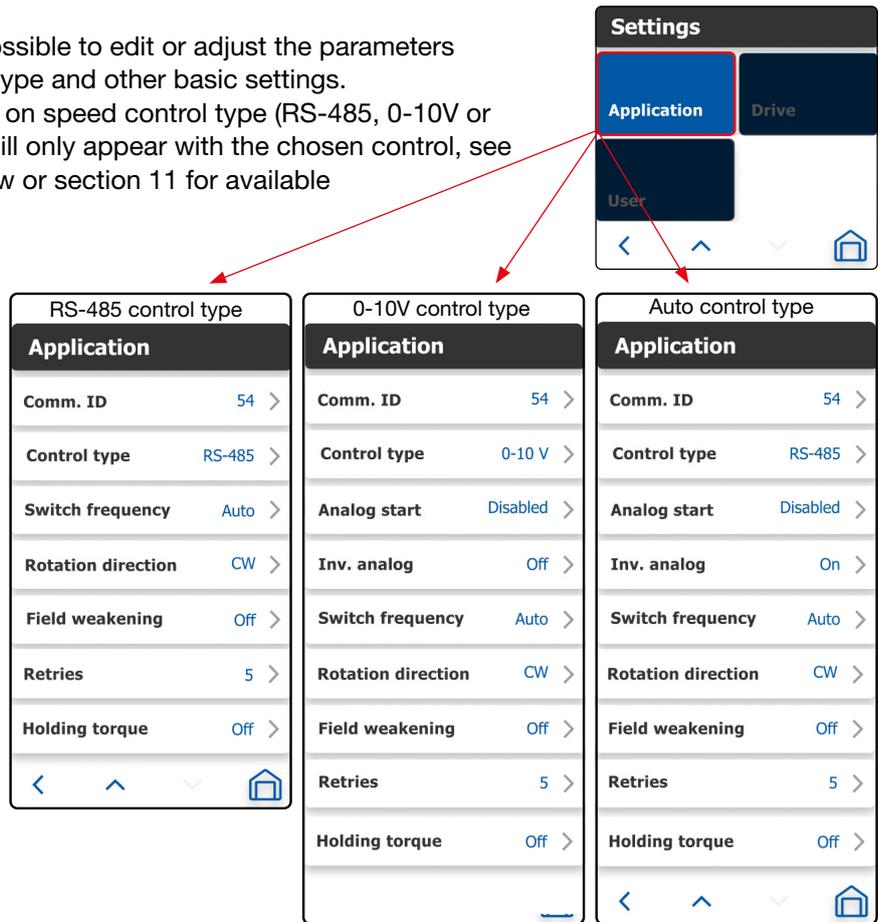
9.5 Settings

The “Settings” menu lets you navigate to a chosen set of parameters within the three different categories, Application, Drive and User.



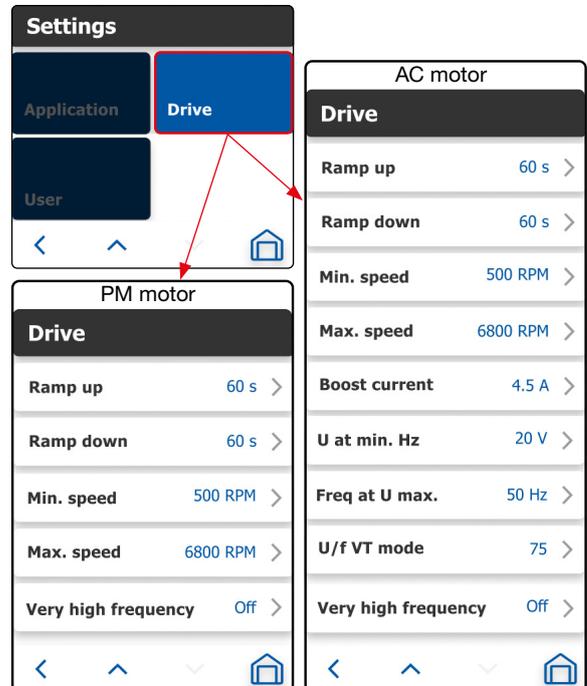
9.5.1 Settings - Application

“Application” makes it possible to edit or adjust the parameters related to speed control type and other basic settings. Some settings are based on speed control type (RS-485, 0-10V or Auto control type), and will only appear with the chosen control, see parameter overview below or section 11 for available parameters.



9.5.2 Settings - Drive

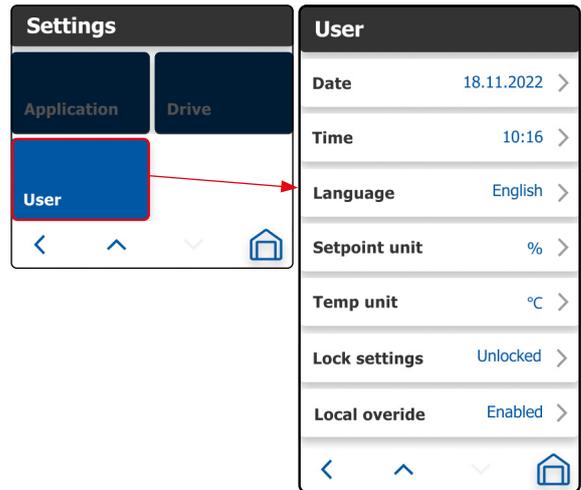
The “Drive” settings menu relates to motor speed ratings and operations. The motor speed control parameters differ depending on the chosen motor type (AC/ PM) , the motor type cannot be changed using the Local User Interface. See the picture of accessible parameters or section 11 for a parameter list.



9.5.3 Settings - User

The “user” menu structure allows the user to set up the interface-related parameters, e.g., Language, Temp. unit, Lock settings and so on.

For the full overview, please see “parameter overview” in section 11.



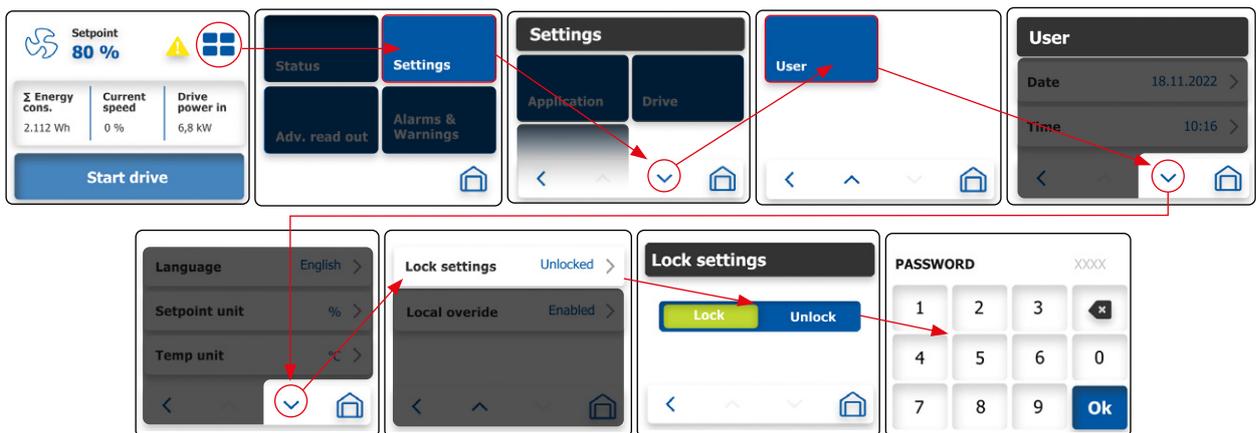
9.6 Password protection.

To protect the setup from being tampered with, password protection can be enabled.

The password consists of a 4-digit code (1112) and is enabled by following the path shown below.

After password protection has been enabled, "Settings" will be locked and is read only. A lock icon will also appear on the menu buttons affected - 

Navigation overview for password protection:



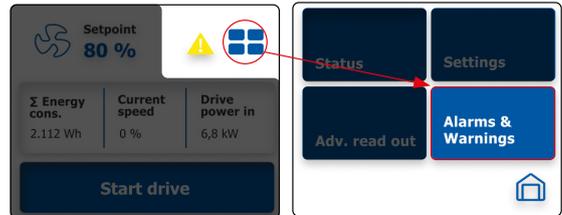
10. Alarms and Warnings

If the drive has experienced an event that led to a warning or an alarm, it will be indicated in the area circled in red on the picture shown here.

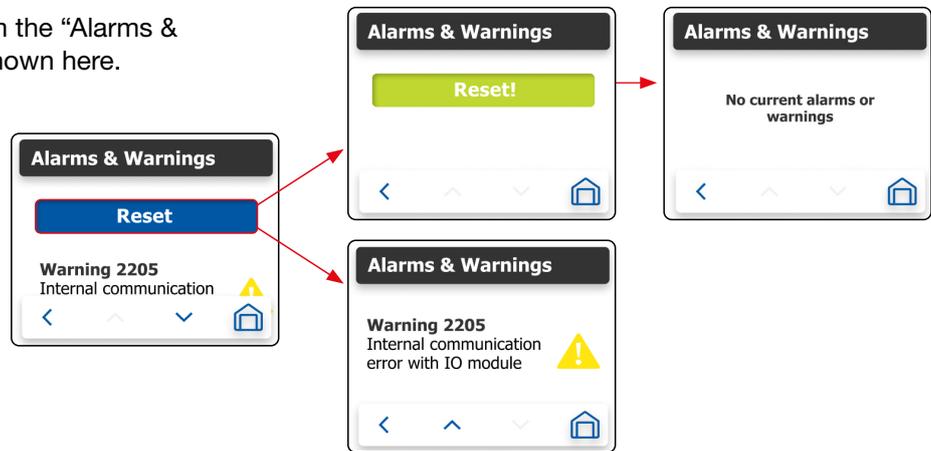
By pressing the icon, the Alarms & Warnings section of the menu structure will be shown.



It is also possible to navigate through the menu to the Alarms & Warnings section.



Alarms can be reset from the “Alarms & Warnings” section, as shown here.



11. Parameter overview

Status menu (Read only)	Parameter name	Units	Settings menu	Parameter name	Factory settings	
Status menu (Read only)	Actual speed	RPM	Settings - Application → RS485 control	Comm. ID	54	
	Actual speed	%		Control type	RS-485	
	Motor current	A		Switch frequency	Auto	
	Drive power in	kW		Rotation direction	CW	
	Supply voltage	V		Field weakening	Off	
	DC link voltage	V		Retries	5	
	Motor voltage	V		Holding torque	Off	
	Status menu (Read only)	Analog in	V	Settings - Application → 0-10V control	Comm. ID	54
		DV temp.	°C		Control type	0-10 V
		PFC temp.	°C		Analog start	Disabled
		Σ Energy cons.	kWh		Inv. analog	Off
		Op. time	Min.		Switch frequency	Auto
		Vibration level			Rotation direction	CW
		Supply phase U	V		Field weakening	Off
Supply phase V	V	Retries	5			
Supply phase W	V	Holding torque	Off			
Adv. Status - Comm. (Read only and only shown with setting RS-485/Auto)	Protocol		Settings - Application → Auto control	Comm. ID	54	
	Baud rate			Control type	Auto	
	Parity			Analog start	Disabled	
	Stop bits			Inv. analog	Off	
	Time out	s		Switch frequency	Auto	
Adv. Status - config. read out (Read only)	User Variant			Rotation direction	CW	
	Motor Variant			Field weakening	Off	
	Fan Variant			Retries	5	
	Drive Variant			Holding torque	Off	
	Grid Variant			Ramp up	60 s	
Adv. Status - I/O Settings (Read only)	Din1			Ramp down	60 s	
	Din2			Min. speed	60 RPM	
	Dout			Max. speed	6800 RPM	
	Din3			Boost current	4.50 A	
	Din4			U at min. Hz	10 V	
	Opt. 1			Freq. at U max.	50Hz	
	Opt. 2			U/f VT mode	75	
	Thermistor	Ω		Very high frequency	Off	
Adv. Status - Software no. (Read only)	AOC version			Settings - Drive → PM motor	Ramp up	60 s
	MOC version		Ramp down		60 s	
	HMI version		Min. speed		60 RPM	
	IOM version		Max. speed		6800 RPM	
	GOC version		Very high frequency		Off	
	LUI version					
Adv. Status - Drive read out AC (Read only) Adv. Status - Drive read out PM (Read only) Adv. Status - Product ID (Read only)	Motor type		Settings - User	Date	DD/MM/YY	
	Max. current	A		Time	12h/24h	
	Motor type			Language	English	
	Max. current	A		Setpoint unit	%	
			Temp unit	°C/°F		
			Lock setting	Unlocked		
			Local override	Enabled		

For in-depth knowledge of parameters and functions, please see the OJ-DV Manual and RS-485 protocols instructions.

Both can be found on the OJ Electronics webpage:

[OJ DV GEN II Dedicated Drives for Ventilation Applications | OJ Electronics - HVAC Controls & Drives](#)