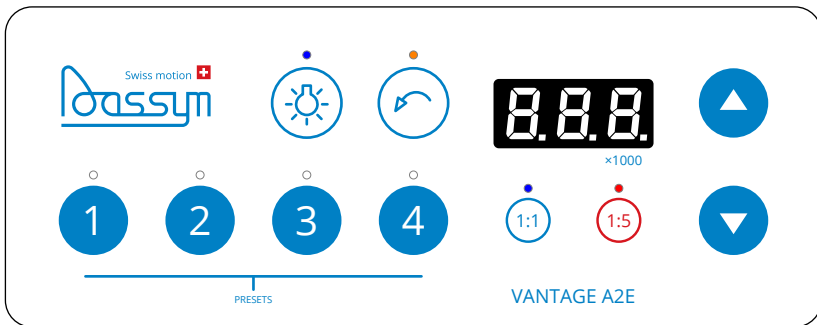


# 1 Introduction

The Dassym Vantage A2E system is an integrated solution intended to provide the latest brushless electric motor technology in the dental place.

The Dassym Vantage A2E system consists of an easy to use yet full featured control panel and provides a complete solution to drive a high end brushless electric motor.

## 1.1 Front panel



## 1.2 Features


- Compact table top module with pneumatic control.
- Brushless motors with patented controller technology.
- Three-digit seven-segments display with dimmer.
- Ability to set speed boundary, maximum torque, light intensity and delay.
- Ability to set reverse rotation mode and blue light mode.
- Four user memories for quick setup store and recall.

## 2 Functionality

### 2.1 Display



When not in **selection** mode or **error** mode, the board displays a **speed**, either the boundary speed or the actual tool speed. When in selection mode, the current mode value is displayed.



#### 2.1.1 Standby





Display	Description
	This situation occurs when no motor is connected, for example when the motor is on its holder.

#### 2.1.2 Speed

The speed boundary, or maximum speed the tool is allowed to run at, is displayed whenever:

- The speed boundary is being modified by the  &  buttons.
- During 1.5 second after the last modification to the speed boundary.
- During 1.5 second after a memory has been recalled.
- The motor is stopped.








In all other cases, the actual tool speed is displayed. The displayed speed depends on the hand piece multiplication factor, either  or .

Minimum	Maximum	Name	Description
		Speed [krpm]	Actual motor speed is displayed when the motor is running.
		Boundary [krpm]	When the motor is stopped, the boundary is displayed.

## 2.2 Keypad

### 2.2.1 Primary and alternate functions



The primary functions are accessed by directly pressing the corresponding button. Some buttons have an alternate function when they are pressed for a longer time.

Button	Function	Description
	Multiply	Selects one to five hand piece. The displayed tool speed is five times the motor speed.
	Straight	Selects one to one hand piece. The displayed tool speed is the actual motor speed.
	Increase	Increases the displayed value. A long pressure quickly increases the displayed value.
	Decrease	Decreases the displayed value. A long pressure quickly decreases the displayed value.
	Light	A short pressure toggles the light color, when applicable. A long pressure toggles light activation.
	Reverse	A short pressure toggles the motor direction. A long pressure cancels an eventual error.
	Memory	A short pressure recalls the memory. A long pressure stores the current setup into memory.

### 2.2.2 Maximum and minimum






The maximum and minimum for displayed value are set by holding the  logo and then pressing  &  buttons.




Button	Description
 	Sets the displayed value to its maximum, respectively to its minimum.
















### 2.2.3 Selection modes



The selection modes are accessed by holding the  and then pressing another button.

When in selection mode, values can be adjusted with  & , just as in other modes.


The selection modes are exited automatically after 5 seconds. They also can be exited by pressing any button other than  or  & .

Button	Minimum	Maximum	Function	Description
			Intensity [mA]	Light intensity selection. Higher is brighter.
			Torque [Ncm]	Torque limit selection. Higher is stronger.
			Delay [s]	Light off delay selection. Higher is longer.
			Dimmer [mA]	Display dim selection. Higher is brighter.
			Accel [krpm/s]	Acceleration selection. Higher is harsher.

Please note these values depend on the motor board and the connected peripheral. This table shows the values for a standard Dassym MB-30 board with MO-33 motor.

### 2.2.4 Reset



When in **error** mode, pressing the  logo will reset the system, which will return to normal operation if the error condition has disappeared.



### 3 Unexpected conditions

Unexpected conditions are reported by a special hexadecimal number, blinking for warning and errors, steady with all buttons lit for failures.



If the number is not reported in this list, please read [documentation](#) or call support.

<i>Display</i>	<i>Description &amp; Corrective action</i>
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#### 3.1 Warnings

	Motor stopped under torque limitation. Depress foot pedal to cancel the warning.
	Speed reference not null upon startup. Depress foot pedal to cancel the warning.


#### 3.2 Errors

	Light driver overload. Try to <b>reset</b> . If the error doesn't recover or frequently triggers, call support.
	Wrong motor type. Check motor type and try to <b>reset</b> . If the error doesn't recover with right motor type, call support.

#### 3.3 Failures


	Power supply voltage failure. Check power supply, try to <b>reset</b> , otherwise call support.
	General controller board failure. Check connection, try to <b>reset</b> , otherwise call support.


#### 3.4 Communication

	Communication between panel and motor controller broken. Check connection and try to <b>reset</b> , otherwise call support.
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## 4 Pedal calibration



The calibration mode is entered by holding the  button upon power up until the **8.8.8** display is replaced by the actual pedal position.

The calibration mode can be exited at any time by pressing the  during calibration process. Calibration is not altered in this case.

### 4.1 Calibration procedure

Step	Display	Button	Procedure
1.			When entering pedal calibration mode, the actual pedal position is displayed and the <b>1</b> LED blinks.
			Press the pedal for wanted motor start threshold. Press the <b>1</b> button to validate.
2.			After motor start threshold validation, maximum speed position is to be set and the <b>2</b> LED blinks.
			Press pedal for wanted maximum speed position. Press the <b>2</b> button to validate.

### 4.2 Current calibrated values



By pressing **3** when in calibration mode, current calibrated values are displayed and can be toggled by pressing memory buttons. No calibration occurs in this mode.

### 4.3 Notes





1. The actual pedal position is displayed in bars, typically 0.0 – 4.0, for a pneumatic pedal; and in the range 0.0 – 10 for an electric pedal.
2. The motor start threshold is at least 0.5, regardless of calibration. This is to avoid spurious motor startups when pedal is fully depressed.
3. The maximum speed threshold is also bounded at 3.5 for a pneumatic pedal and 9.5 for an electric pedal. Calibrated value may be less, but not more.
4. If the pedal is kept depressed during calibration, the default pedal calibration is reverted (1.0 – 2.7 for a pneumatic pedal, 0.5 – 9.5 for an electric pedal).

## 5 Examples





### 5.1 Set the speed boundary to its maximum

<i>Sequence</i>	<i>Description</i>
 + 	Sets the speed boundary to its maximum. The speed boundary is displayed.

### 5.2 Set the torque limit to a given value

<i>Sequence</i>	<i>Description</i>
 + 	Enters the torque limit selection mode. The reverse LED blinks and the torque limit is displayed.
 	Sets the torque limit the desired value. The current torque limit is displayed.

### 5.3 Set the light intensity to its minimum

<i>Sequence</i>	<i>Description</i>
 + 	Enters the light intensity selection mode. The light LED blinks and the light intensity is displayed.
 + 	Sets the light intensity to its minimum. The minimum light intensity is displayed.

## 6 References

MB-30 installation manual

<https://seafiler.dassym.com/f/72b83983dfd84e75add0/>

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