



## **Installation requirements**

### <u>General</u>

The Installation Manual supplied with the product and the connection diagram are used for installing the product correctly in the dental unit. It is imperative to follow these instructions to meet the functional and safety requirements.

The manufacturer reserves the right to make technical improvements to this product and change the Installation Manual without notice. Always download the latest manual by scanning the QR code on the product before installation.

Store the product at room temperature for 24 hours before operation.

The system assembler must instruct the user to download and follow the <u>electronic User Manual</u> supplied with the product.

### **Installation**

The product may only be installed by qualified and authorized personnel.

Check the product for damaged parts before installation. Do not use the product if any damage is observed. The product is not suitable for use in potentially explosive atmospheres or with potentially explosive mixtures of anesthetic substances containing oxygen or nitrous oxide or for use in rooms enriched with oxygen according to IEC 60601-1 (EN 60601-1) and IEC 60601-1-2 (EN 60601-1-2) Do not install any part of the product close to strong heat source

Installation location

The electrical installation of the medical location must comply with the regulations specified in IEC 60364-7-710:2021 so as to provide safety of patients and medical staff.

### Fig. 1

### General block diagram



Fig. 2

## Power driver - electric supply and arm select connection



## Electrical supply source requirements

The electrical supply for the product must conform to IEC 60601-1 (EN 60601-1) µ IEC 60601-1-2 (EN 60601-1-2) and must meet the following requirements:

- double insulation (2-MOPP) for the maximum anticipated supply voltage between the primary and the secondary circuit

- the compliance with the leakage currents of the applied part must be guaranteed by the system assembler.

- double insulation for the maximum anticipated secondary voltage and the protective earth.

- the secondary circuit must be protected against short-circuit and overload.

In the first error case the product's electrical supply voltage must not exceed 42V DC or 29.7 Vpeak under any circumstances!

Maximum 1kV transient voltage spike on the secondary side with a test voltage of 4kV and 1.2/50 us wave form (in acc. with IEC 61180-1) on the primary side.

Always connect the dental unit ground (GND) to the Power Driver ground (GND) on the PUMP connector Disconnect the dental unit electricity supply before opening.

### **CALLIDUS - Installation Manual by Oviron Ltd.**



### Fig. 3 Power driver - motors connection



### REMARK:

\* - Use only one Motor Start Type connection for a channel - Drive Air / Voltage Motor Start \*\* - Both connected motors must be with the same light source type - LED / Bulb \*\*\* - Both connected motors can be with different type and parameters. The installer should configure each one parameters by the software after installation. \*\*\*

Fig. 4

# Motors connection - color coding

		Pneumatic			Brand and Model	Motor / Light					Position Sensor		
		Drive Air *	Cool Air	Cool Water	CALLIDUS	GND	LED	А	В	С	VCC	CLK	DATA
C /HS)	(2)	clear	yellow	blue	MM CM63	blue	brown	black	red	white	red	black	white
	5 [	clear	yellow	blue	NSK NLX Nano / NL400	yellow	orange	red	brown	black	×	×	×
0,0	5	clear	blue	green	W&H EM7 / EM11 / EM12	black	blue	orange	yellow	red	×	x	×
LES	3 [	clear	blue	green	BIEN AIR XM3	white	white	black	brown	red	×	×	×
	5				BIEN AIR MCX	orange	brown	blue	red	black	×	×	×
		clear	yellow	green	PUMA, MIKATA	black	red	yellow	blue	green	×	х	×
Ê	ŝ	clear	yellow	blue	NSK M40	blue	brown	×	black	red	×	×	×
D (	Ϊ	clear	×	x	MM CM30	×	x	x	black	red	×	x	×
U T													

#### REMARK:

\* DRIVE AIR pipe of each motor should be branched and connected to the corresponding AIR1 / AIR2 pneumatic sensor



# Fig. 5 Touch panel connection

### Diagnostic Module Status LED Indicator States

	Status LED Light	Status Meaning				
OK	Blinking Green	Ready, mode AL / CP				
	Continuous Green	Measuring, mode AL				
	Blinking Red Fast	Ready, mode VS / IO / GL				
	Blinking Red Slow	Measuring, mode VS / IO / GL				
١LT	Continuous Red	Module Fault				
FAI	No Light / Black	Module Fault / Power Supply Low				

# Diagnostic Module Working Modes AL Apex Locator VS Vitality Scanner IO Ionophoresys CP Corrosion Potential GL Gehlen Test



# Fig. 6

### Scaler interface adaptor - dental unit connection





# Scaler interface adaptor to Woodpecker UDS-N2



 $^{\ast\ast}$  After installation while the scaler is activated check the DC voltage between GND and VCC. It should be in the range DC [5.0+5.1]V. If the voltage drops below 5.0V

\*\*\* After installation while the scaler is activated check the DC voltage between GND and VOL.It is determined by the absolute power setting on the screen and should be 0Vdc for MIN (5%) and 5Vdc for MAX (100%)

### Fig. 8

Fig. 7

# Scaler interface adaptor to Woodpecker UDS-N3 LED



\* Existing potentiometer should be disconnected

\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VCC. It should be in the range [5.0+5.1]Vdc. If the voltage drops below 5.0Vdc

\*\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VOL.It is determined by the absolute power setting on the screen and should be 0Vdc for MIN (5%) and 5Vdc for MAX (100%) CALLIDUS



# Fig. 9 Scaler interface adaptor to NSK Varios 170



\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VCC. It should be in the range [5.0+5.1]Vdc If the voltage drops below 5.0Vdc connect the 10K resistor R between VRECTIFIED (CN6-1) Varios 170 and Potentiometer VCC

\*\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VOL.It is determined by the absolute power setting on the screen and should be 0Vdc for MIN (5%) and 5Vdc for MAX (100%)

# Fig. 10 Scaler interface adaptor to W&H Piezo Built-in Kit PC-1.0

### W&H Piezo Built-in Kit PC-1.0

### CALLIDUS Scaler interface adapter



\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VCC. It should be in the range [5.0+5.1]Vdc

\*\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VOL.It is determined by the absolute power setting on the screen and should be 0Vdc for MIN (5%) and 5Vdc for MAX (100%)



### Fig. 11 Scaler interface adaptor to EMS (PIEZON) type E



\* Existing potentiometer should be disconnected

\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VCC. It should be in the range DC [5.0-5.1]V. If the voltage drops below 5.0V connect the 10K resistor R between VRECTIFIED (CN6-1) Varios 170 and Potentiometer VCC

\*\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VOL.It is determined by the absolute power setting on the screen and should be 0V for MIN (5%) and 5V for MAX (100%)

\*\*\*\* For DC power supply check EMS installation diagram

### Scaler interface adaptor to EMS (PIEZON) type F \*\*\*\*\*\* Fig. 12



### CALLIDUS Scaler interface adapter

\* Existing potentiometer should be disconnected

\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VCC. It should be in the range DC [5.0-5.1]V. If the voltage drops below 5.0V connect the 10K resistor R between VRECTIFIED (CN6-1) Varios 170 and Potentiometer VCC

\*\*\* After installation while the scaler is activated check the DC voltage between Potentimeter GND and Potentimeter VOL.It is determined by the absolute power setting on the screen and should be 0V for MIN (5%) and 5V for MAX (100%)

\*\*\*\* For DC power supply check EMS installation diagram

\*\*\*\*\* For EMS type F (Immediate ON) connect CALLIDUS Scaler RUN to Potentiometer GND

\*\*\*\*\*\* For EMS type F (Immediate ON) Arm Select Connection "VOLTAGE" only supported. Check fig. 5