

CVI3 Tightening Controllers

Installation and Upgrade Manual



Model	Part number
CVI3 Essential	6159326950
CVI3 Function	6159326900
CVI3 Function eSTOP	6159326930
CVI3 Vision	6159326910
CVI3 Vision eSTOP	6159326940
TWINCVI3	6159326970
TWINCVI3 eSTOP	6159326980


	⚠ WARNING
	Read all safety warnings and instructions
	Failure to follow the safety warnings and instructions may result in electric shock, fire and/or serious injury. Save all warnings and instructions for future reference

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Introduction

Description

Controllers

CVI3 Essential can drive 1 hand-held cord tool.

CVI3 Function can drive 1 hand-held or 1 fixtured cord tool.

CVI3 Vision can manage 1 cord or 1 fixtured tool and 1 cordless tool. It is possible to extend the number of cordless tools by using an ePOD.

TWINCVI3 can drive 2 cord tools in a synchronous or asynchronous mode.

CVI3 Essential	6159326950
CVI3 Function	6159326900
CVI3 Vision	6159326910
TWINCVI3	6159326970

Power cord

Area	Length (m)	Length (ft)	Part number
Europe	2.5	8.20	6159170690
USA NEMA 5-15	2.5	8.20	6159170600
UK	2.5	8.20	6159170700
China	2.5	8.20	6159170610

List of compatible tightening tools

Most of Desoutter electric tools can be connected to CVI3 controllers.

- CVI II tools range (by using the CVI II adaptor)
- ERP nutrunners (by using the CVI II adaptor)
- ERS screwdrivers (by using the ERS / ERPHT adaptor)
- ERP high torque nutrunners are intended to be connected to CVI3 Essential / CVI3 Function / CVI3 Vision controller (by using the ERS / ERPHT adaptor). It is not possible to connect this tool to a TWINCVI3 controller in synchronous mode.

Contact your Desoutter representative to get more information and support.

Optional accessories

Table mounting kit	6153973995
Wall mounting kit for CVI3 Essential, CVI3 Function, CVI3 Vision	6153976315
Wall mounting kit for TWINCVI3	6158118970
ERS / ERPHT adapter	6159365370
CVI II tool adapter	6159360700

eSTOP controllers

eSTOP controllers are equipped with an additional safety system which immediately stops the tool when the emergency system of the workstation is activated.

eSTOP stands for "Emergency stop".

When the eSTOP button is pushed, the tool stops immediately and the user info code "E918" is displayed on the controller screen.

Two conditions are required to release the tool:

- the tool must receive a "RESET" signal from the PLC (min. duration: 10 ms)
- the eSTOP button must be pressed again.

The message will then disappear from the screen and the tool will be ready to use again.

i The eSTOP signal is available on the I/O 24V, Fieldbus and eBUS.

CVI3 Function eSTOP	6159326930
CVI3 Vision eSTOP	6159326940
TWINCVI3 eSTOP	6159326980

eSTOP controllers cables

i Always make sure to use the cables supplied with the controller.

Description	Length (m)	Length (ft)	Part number
Cable - 2 M8 male plugs	0.5	1.64	6159176260
Cable - 2 M8 male plugs	1	3.28	6159176330
Cable - 2 M8 male plugs	2	6.56	6159176340
Cable - 2 M8 male plugs	5	16.40	6159176350
Terminal plugs kit	-	-	6159176075

ePOD

- ePOD1 enables to have a complete backup of the controller configuration.
- ePOD2 enables to have or activate:
 - A complete backup of the configuration.
 - An increased storage of results, curves, events.
 - Advanced features such as advanced tightening strategies (seating detection and zero torque angle), the management of positioning arms without any extra device.
 - Desoutter protocol.
 - CVILOGIX (Embedded PLC of CVI3 controllers).
- ePOD2 eCompass enables to activate eCompass support for EAD20-1300/EAD32-900/EAD50-900/EAD70-800.
- ePOD3 enables to have or activate:
 - an increased number of steps in the tightening process (for cord tools)
 - the "Workgroup" configuration
- ePOD2C, ePOD3C, ePOD4C additionally allow to have more cordless tools connected to CVI3 Vision (up to 4 cordless tools maximum with ePOD4C).
- ePOD Essential is dedicated to CVI3 Essential controller and enables to have or activate:
 - A complete backup of the configuration.
 - An increased storage of results (OK,NOK) and events.
 - CVILOGIX (Embedded PLC of CVI3 controllers).

ePOD1	6159360750
ePOD2	6159360760
ePOD2 eCompass	6159363330
ePOD3	6159360770
ePOD2C	6159363110
ePOD3C	6159363180
ePOD4C	6159363120
ePOD Essential	6159368360

eBUS accessories

Up to 15 eBUS accessories can be daisy-chained to the eBUS port of the system.

The **socket tray** is designed for holding up to 4 sockets.

A bit module can be mounted on the socket tray and used as an alternative for screwdriver bits.

The **bit tray** is designed for holding up to 8 bits.

The **stacklight** is a high-visibility signaling device that reports the status of the tightening operation.

It contains four light modules and a buzzer and is controlled by inputs/outputs.

The **operator panel** is a flexible lamp and switch box designed to interface with the system.

The **I/O expander** has been designed to increase the number of I/Os of your system by adding 8 inputs and 8 outputs. It allows to bring the I/O closer to the operator position.

Socket tray	6159360710
Socket tray with tubes and pawns	6159360950
Tubes and pawns kit for socket tray	6153980355
Bit module for screwdriver bits	6153980835
Bit tray	6159360800
Stacklight	6159360730
Operator panel	6159360720
IO expander	6159360740

Desoutter range of TRA and D53 **positioning arms** can be connected to the eBUS port of systems.

CVI CONFIG wizard will help to calculate all data needed to correctly position the arm in the tightening area. The **Learning mode** feature included in the system will help you to determine precisely the tightening positions.

eBUS cables

Length (m)	Length (ft)	Part number
1	3.3	6159176070
3	9.9	6159176080
5	16.4	6159176090
15	49.2	6159176100

eBUS termination plug: 6159176250

Fieldbus modules

Desoutter Fieldbus modules are as follows.

ModbusTCP	AB6446	6159276150
DeviceNet	AB6424	6159275990
Ethernet/IP	AB6430	6159275940
Profibus	AB6422	6159275950
Profinet I/O Class A (1 port)	AB6425	6159275960
Profinet I/O Class B (2 ports)	AB6431	6159275970
Profinet I/O Class C (2 ports IRT/MRP)	AB6918	6159270700
CC-Link	AB6432	6159275980

WIFI Access point

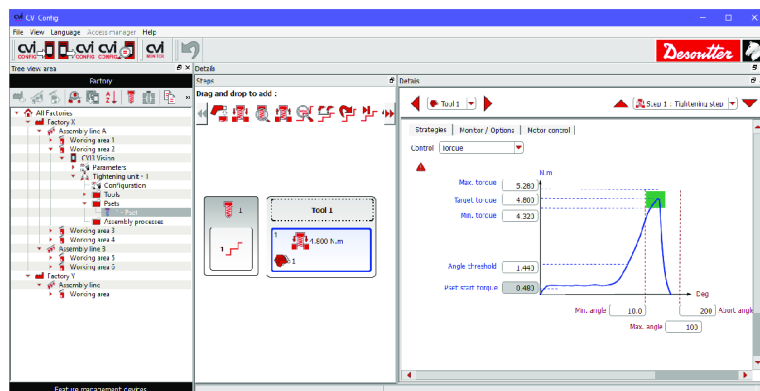
A WI-FI access point is required to enable cordless tools to communicate with systems.

Desoutter models are as follows:

WI-FI access point 802.11N-US	6158114175
WI-FI access point 802.11N-EU	6158114195
WI-FI access point 802.11N-A	6158116505

There are no instructions in this manual about how to install a WI-FI access point. If you are not familiar with this type of installation, we recommend you to contact your Desoutter representative.

CVI CONFIG



CVI CONFIG is designed to set your systems point to point or via network with an intuitive and guided interface. From your computer, you can set up Desoutter tightening products, cord tools, cordless tools, WI-FI cordless tools, accessories, peripherals and tightening processes. You can also configure Fieldbus, protocols, backup and you can send data to CVINET WEB for traceability.

CVIMONITOR

CVIMONITOR is included in CVI CONFIG and is intended to monitor and diagnostic in live your systems.

- Check directly Inputs/Outputs and Fieldbus for an easy commissioning.
- View in real-time tightening results and curves.
- Monitor your system by viewing and analyzing all actions performed by the system (user infos).
- Set preventive alarms for tools, test LEDs and triggers, calibrate tools, get all information about tools.

CVIMONITOR can also be used in standalone and launched directly from the desktop launch bar.

In that case, tightening products must be connected to the PC via an Ethernet cable.

And cordless tools must be connected to the PC by using eDOCK.

- Collect and display the last 100 results executed by tools.
- Set up network configurations and WI-FI settings of cordless tools.
- Perform maintenance tasks.

About Installation and Upgrade manual

This manual describes how to install and upgrade the CVI3 System.

- ① Before starting, you **must** read and understand the safety instructions given in the booklet supplied in the packaging box of products.

At the end of installation, the tool status is "Tool locked", awaiting the selection of the tightening operation named "Pset".

To test and validate the system is properly working, follow the procedure described in this manual.

Warranty

- Product warranty will expire 12 months after the product is first taken into use, but will in any case expire at the latest 13 months after delivery.
- Normal wear and tear on parts is not included within the warranty.
 - Normal wear and tear is that which requires a part change or other adjustment/overhaul during standard tools maintenance typical for that period (expressed in time, operation hours or otherwise).
- The product warranty relies on the correct use, maintenance, and repair of the tool and its component parts.

- Damage to parts that occurs as a result of inadequate maintenance or performed by parties other than Desoutter or their Certified Service Partners during the warranty period is not covered by the warranty.
- To avoid damage or destruction of tool parts, service the tool according to the recommended maintenance schedules and follow the correct instructions.
- Warranty repairs are only performed in Desoutter workshops or by Certified Service Partners.

Desoutter offers extended warranty and state of the art preventive maintenance through its Tool Care contracts. For further information contact your local Service representative.

For electrical motors:

- Warranty will only apply when the electric motor has not been opened.

Installation restrictions

Checking the line voltage

Before connecting the controllers to the main supply, check that the line voltage is appropriate.

Line voltage (V)	100-120 / 200-240 V~
------------------	----------------------

The symbol ~ means "alternating current".

Note that controllers can support 100-240 V~ single phase. However, the system works correctly at 100-120V or 200-240V~.

Earthing the controller

Controllers must be plugged into an outlet properly installed and grounded in accordance with all relevant codes and ordinances.

Never remove the grounding prong or modify the plug in any way.

Do not use any adaptor plugs.

Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.

Read before installing

⚠ WARNING Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

Refer to the "Safety Information" booklet provided in the product box.

⚠ WARNING All locally legislated safety rules regarding installation, operation and maintenance shall be respected at all times.

Hardware installation

Installing controllers, tools and accessories

Technical data

Environment restrictions

Refer to the Safety Instructions booklet supplied in the packaging box of controllers.

Line protection

Controllers have a JVL6-32 residual current circuit breaker with over-current protection which provides protection against earth leakage faults (30mA), overloads, short-circuits and over-current in the installation.



There is no fuse.

The over-current protection of the JVL6-32 uses “D” tripping characteristics.

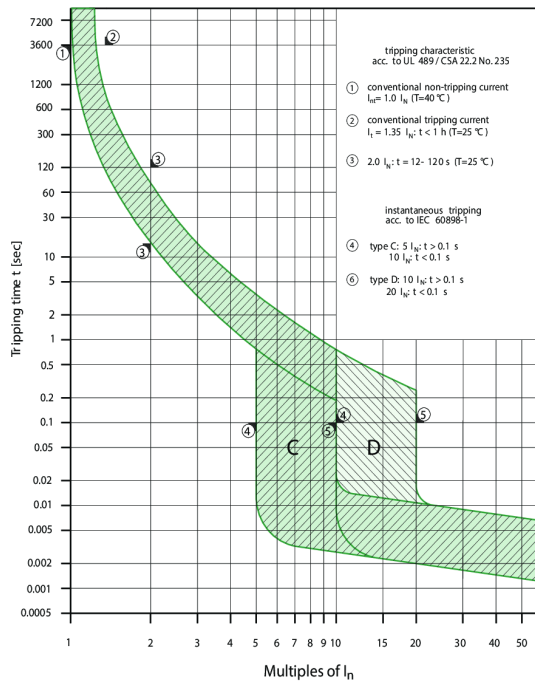


Figure 1 - Curve C and D

Never replace the circuit breaker by a model of higher value.
Never replace the circuit breaker by a short-circuit.

Voltage	200-240 V
Max. current	16 A
Curve	D
Differential sensitivity	30 mA
GFI type	A

- The standby consumption is 17 W.
- The max power available supplied via the 24V power supply (between pins 2 and 3 of the I/O connector) is as follows.

CVI3 Essential	1 A (24V)
CVI3 Function	1 A (24V)
CVI3 Vision	1 A (24V)
TWINCVI3	2 A (24V)

Power supply

50/60 Hz

Single-phase

eBUS accessories power consumption

- ⓘ 24V-1A maximum is supplied from the controller to power eBUS accessories and I/O connectors. We recommend to use an external power supply box to power all eBUS accessories connected.

Table of maximum current value per accessory

Socket tray	90 mA @ 24V DC
Bit tray	110 mA @ 24V DC
Stacklight	270 mA @ 24V DC
Operator panel	110 mA @ 24V DC
I/O expander	400 mA @ 24V DC

Power consumption calculation

CVI Essential / CVI3 Function / CVI3 Vision

The mean apparent power is always ≤ 1 kVA.

@230V < 4.35 A

@110V < 8.7 A

TWINCVI3

The mean apparent power is always ≤ 2 kVA.

@230V < 8.7 A

@110V < 17.4 A

External power consumption

The decision to install an external differential circuit-breaker depends on the type of internal electric network in the customer's plant.

This device detects any insulation defect between one of the phases of the network and the earth, immediately stops the tool by automatic power cutoff and protects the operator from any electric shock.

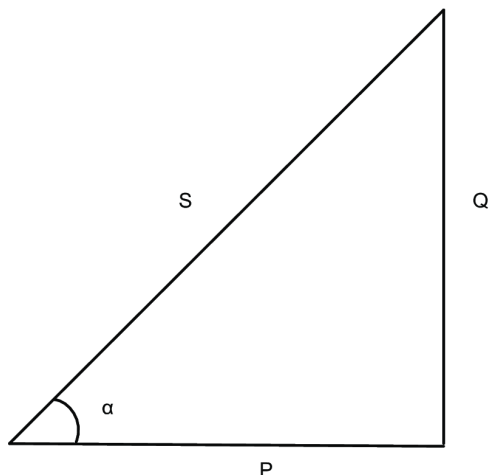
Should circuit-breakers be installed at the line head, we recommend that you select equipment with the following specifications:

Single-phased 240V 16A - curve D

Single-phased 110V 32A - curve D.

Controller power consumption: current inlet

Power triangle



S = apparent power measured in VA.
P = true power measured in Watts.
Q = reactive power measured in VAR.
α = impedance phase angle.

$$P = \frac{1}{T} \int_0^T u(t) \times i(t) dt$$

where T is the period of the signal.

In a CVI3 controller, the power peak is 5kW.

To dimension an installation, the apparent power consumption (S) is the only needed information.

$$S = U_{rms} \times I_{rms}$$

The apparent power peak is 6kVA.

The duration of the peak is < 0.5 s

The mean apparent power is always ≤ 1 kVA.

At 230 V

$$\rightarrow I_{rms} \times 230 \leq 1 \text{ kVA}$$

$$\rightarrow I_{rms} \leq 1000 \times \frac{1}{230} \text{ A}$$

$$\rightarrow I_{rms} \leq 4.35 \text{ A}$$

We recommend to use a circuit breaker 10A Curve D.

At 110 V

$$\rightarrow I_{rms} \times 110 \leq 1 \text{ kVA}$$

$$\rightarrow I_{rms} \leq 1000 \times \frac{1}{110} \text{ A}$$

$$\rightarrow I_{rms} \leq 8.7 \text{ A}$$

We recommend to use a circuit breaker 20A Curve D.

Power consumption

Model	A at 110 V	A at 240 V
CVI3 Essential	8	4
CVI3 Function	8	4
CVI3 Function eSTOP	8	4
CVI3 Vision	8	4
CVI3 Vision eSTOP	8	4
TWINCVI3	16	8
TWINCVI3 eSTOP	16	8

IP rating

40

Weight

Controller	Weight (kg)	Weight (lb)
CVI3 Essential	9.4	20.7
CVI3 Function	9.4	20.7
CVI3 Function eSTOP	9.4	20.7

Controller	Weight (kg)	Weight (lb)
CVI3 Vision	9.3	20.5
CVI3 Vision eSTOP	9.3	20.5
TWINCVI3	13	33.1
TWINCVI3 eSTOP	15	33.1

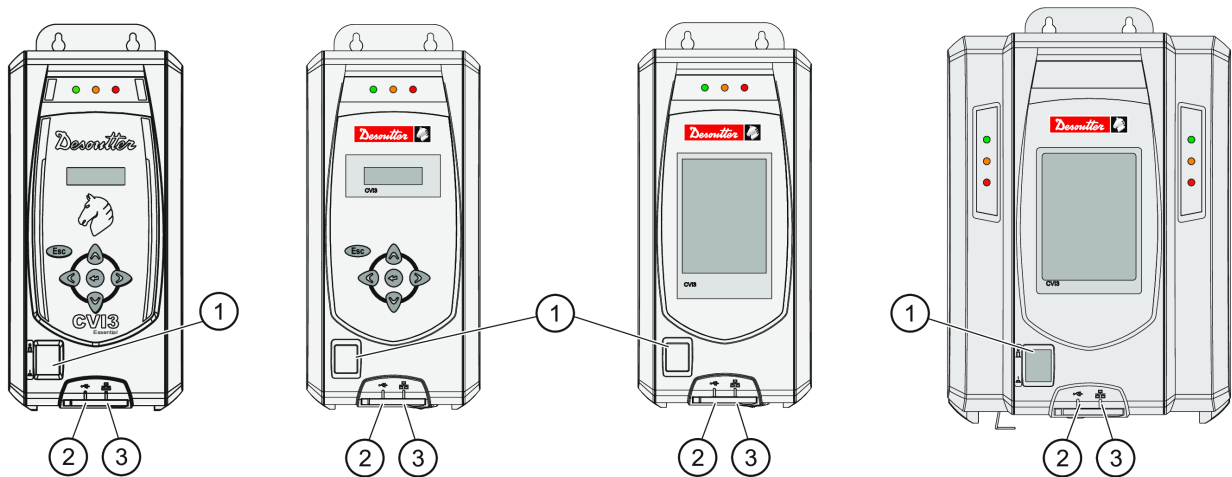
Recommended installation order

Respect the following order.

1. Install the controller.
2. Connect the quick-stop if required.
3. Connect the eSTOP controllers to a safety relay if required.
4. Install and connect tools.
5. Install and connect eBUS accessories, ePOD, Fieldbus modules and other peripherals.
6. Power on the controller.
7. Install a complete solution connected to Ethernet.

Installing controllers

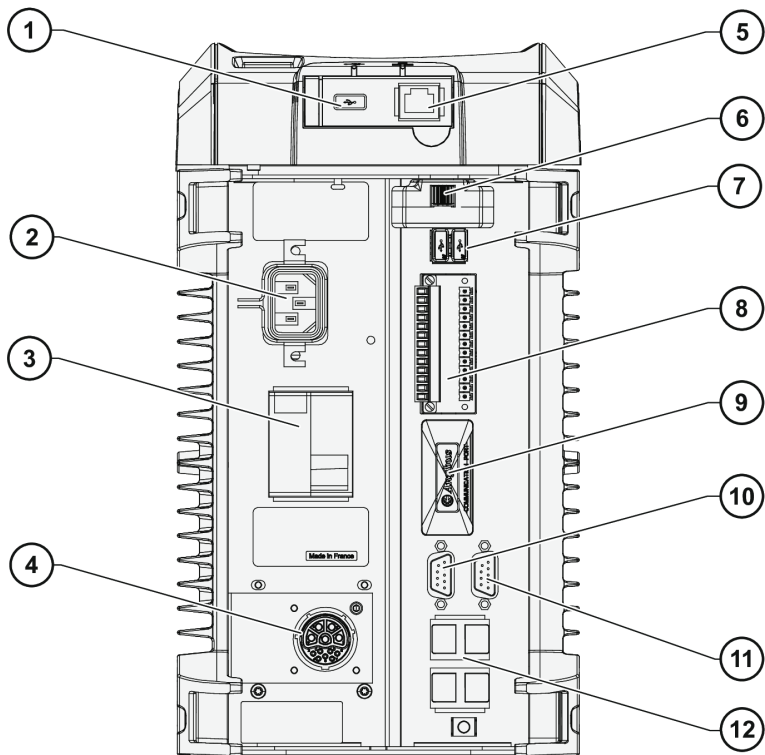
Front panel



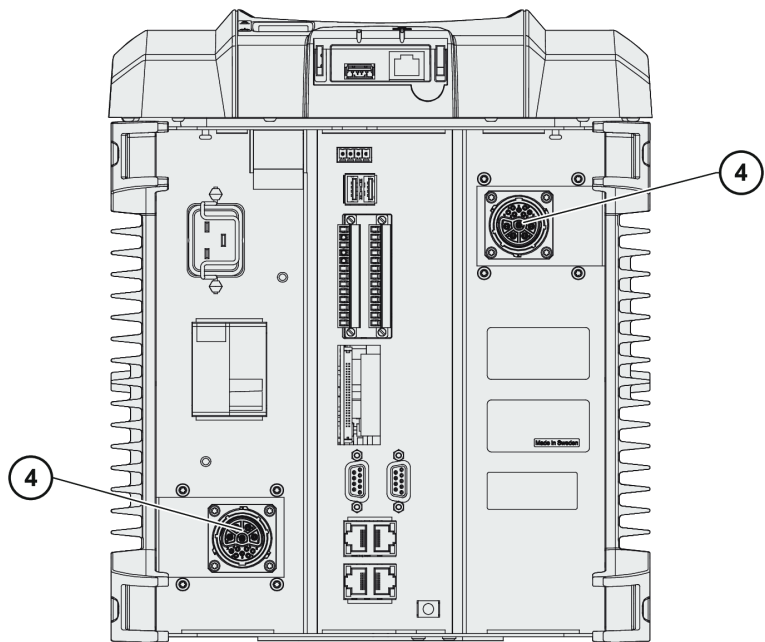
- | | |
|---|---------------|
| 1 | On/Off switch |
| 2 | USB port |
| 3 | Ethernet port |

Bottom panel

CVI3 Essential / CVI3 Function / CVI3 Vision



TWINCVI3



- | | |
|---|--|
| 1 | USB port |
| 2 | Auto-sensing input voltage mains connector |
| 3 | Ground Fault Interruptor: earth fault and overcurrent protection |
| 4 | Tool connector |
| 5 | Ethernet port |
| 6 | ePOD |
| 7 | 2 USB ports |

8	2 x 8 Input/Output connector
9	Fieldbus slot
10	eBUS
11	RS232 port (2 serial ports)
12	4 Ethernet ports

Dimensions

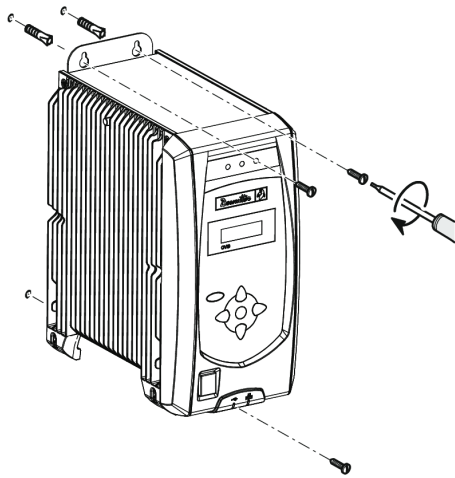
Refer to the CAD 3D models and 2D views available at <https://www.desouttertools.com/resource-centre>.

Mounting of controllers

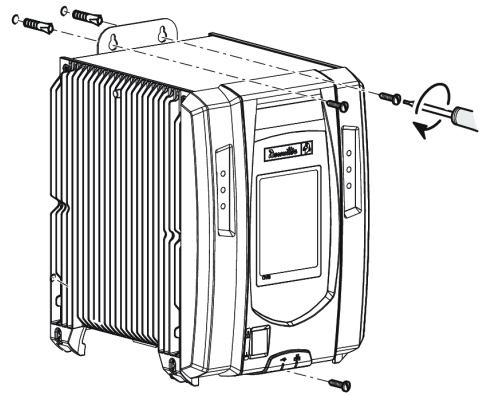
WARNING Electrical Hazard

Risk of electric shock.

- Place the controller in such a way the blue Ground Fault Interruptor located on the controller bottom panel can be easily switched off.



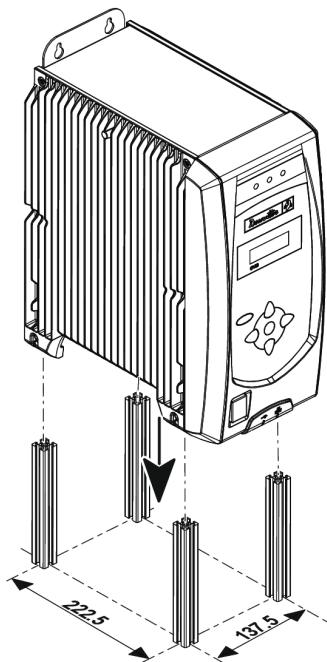
CVI3 Essential
CVI3 Function
CVI3 Vision



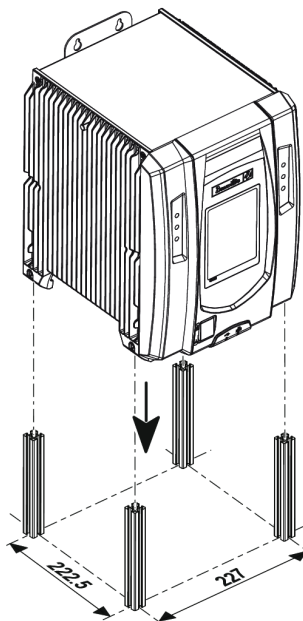
TWINCVI3

Install the controllers as shown above or use the following kits below.

Installing the table mounting kit



CVI3 Essential / CVI3 Function / CVI3 Vision

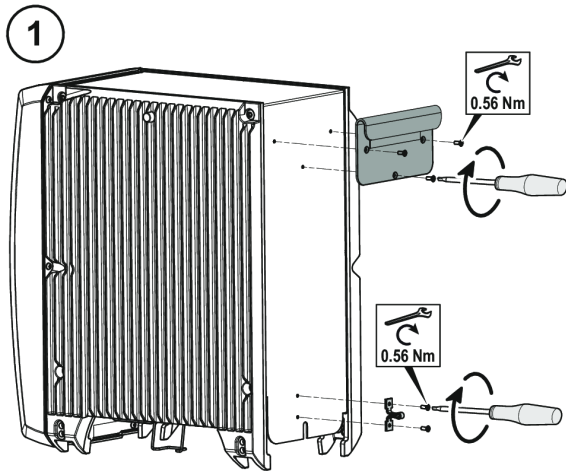


TWINCVI3

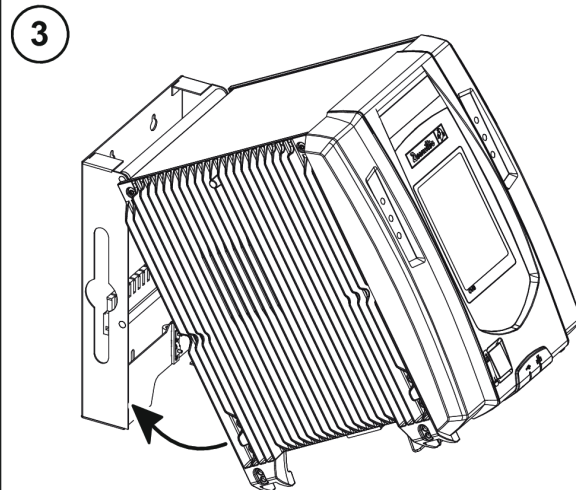
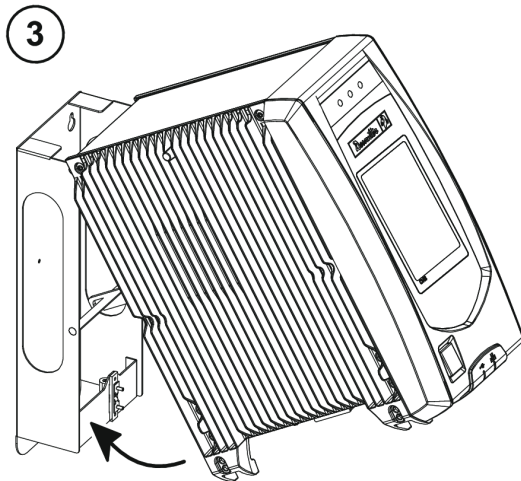
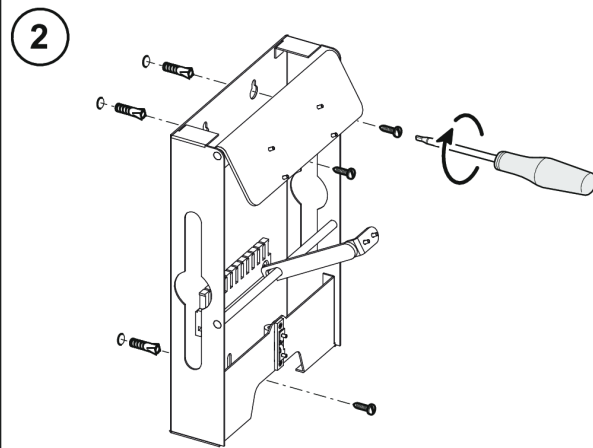
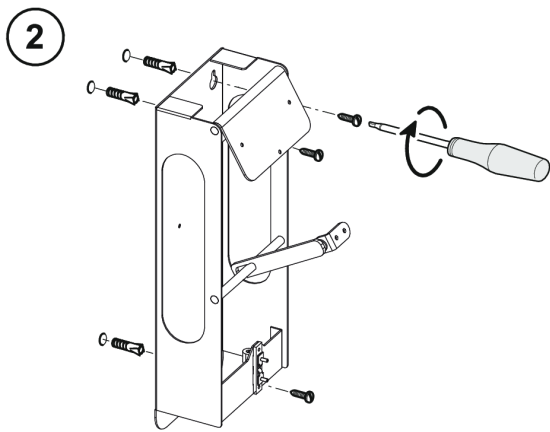
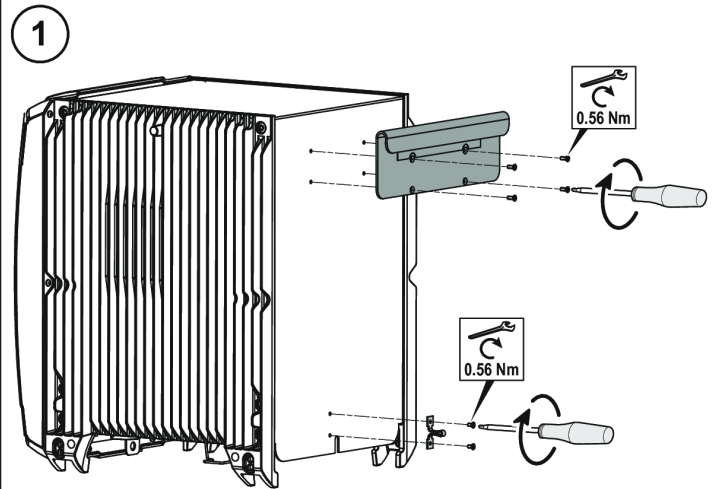
See the drilling template delivered in the kit box.

Installing the wall mounting kit

**CVI3 Essential /CVI3 Function
CVI3 Vision**



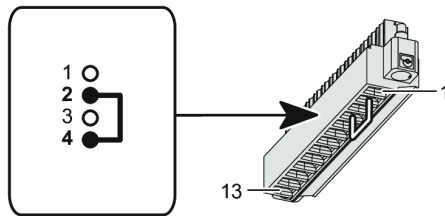
TWINCVI3



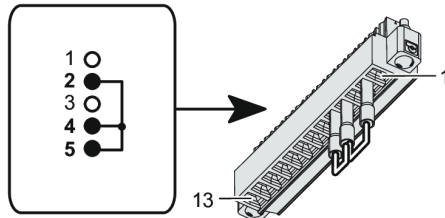
How to install a quick-stop system

On delivery, I/O connectors are mounted in the controller and a shunt has been wired as shown. This means that the controller is continuously powered.

CVI3 Essential
CVI3 Function
CVI3 Vision



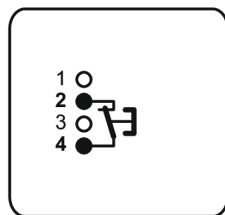
TWINCVI3



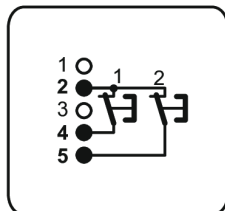
If you require a quick-stop system, replace the existing shunt by the quick-stop wiring as shown below.

(i) Before removing the I/O connectors, switch off the GFI blue interruptor located on the bottom panel.

CVI3 Essential
CVI3 Function
CVI3 Vision



TWINCVI3



Place the I/O connectors back in the controller as shown below.



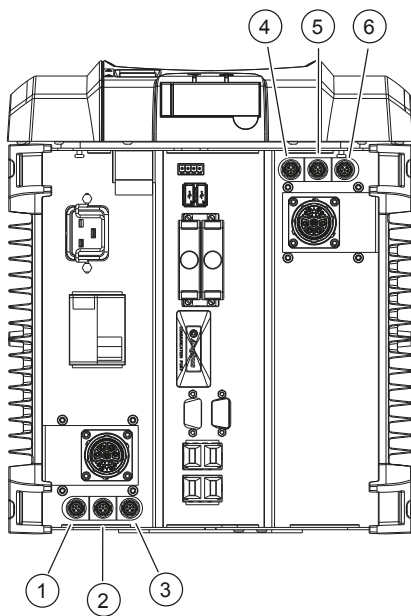
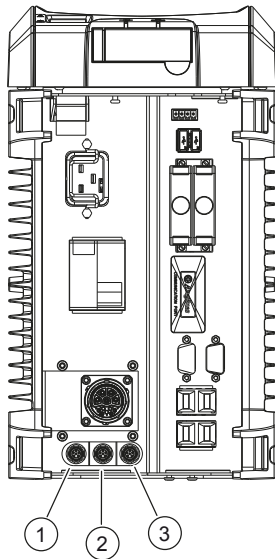
eSTOP controllers cables

(i) Always make sure to use the cables supplied with the controller.

Description	Length (m)	Length (ft)	Part number
Cable - 2 M8 male plugs	0.5	1.64	6159176260
Cable - 2 M8 male plugs	1	3.28	6159176330
Cable - 2 M8 male plugs	2	6.56	6159176340
Cable - 2 M8 male plugs	5	16.40	6159176350
Terminal plugs kit	-	-	6159176075

eSTOP controllers connection

Bottom panel of eSTOP controllers

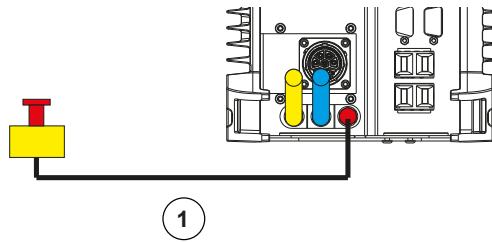


- 1 Yellow connector
- 2 Blue connector
- 3 Red connector
- 4 Red connector
- 5 Blue connector
- 6 Yellow connector



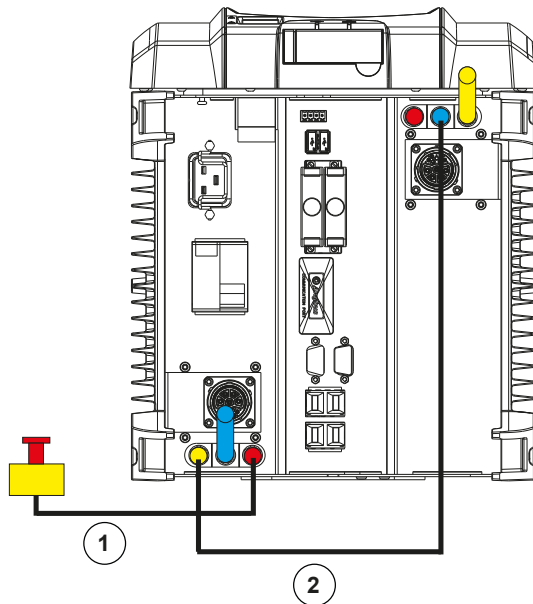
Connect the terminal plug of the same color (supplied with the controller) when the connector is not used.

CVI3 Function / CVI3 Vision - Tool stop



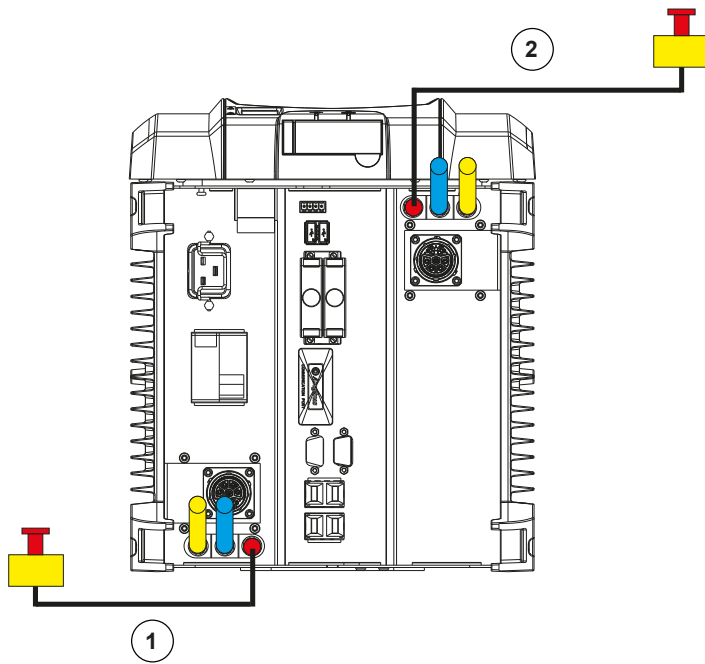
- 1 Cable - 1 M8 male plug

TWINCVI3 - Stop of both tools at the same time



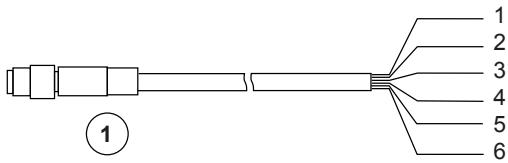
- 1 Cable - 1 M8 male plug
- 2 Cable - 2 M8 male plugs

TWINCVI3 - Stop of each tool separately



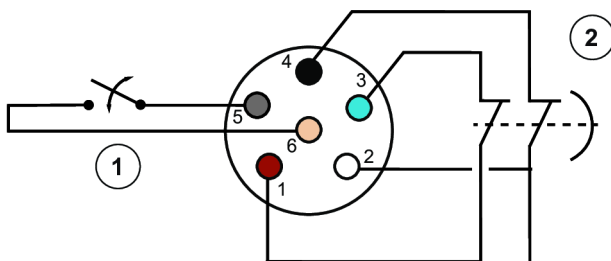
- 1 Cable - 1 M8 male plug
- 2 Cable - 1 M8 male plug

How to connect the eSTOP plug to a safety relay



- 1 Cable - 1 M8 male plug
- 1 brown
- 2 white
- 3 blue
- 4 black
- 5 grey
- 6 pink

Emergency stop, light curtain and RESET connection - category 1 - Level C

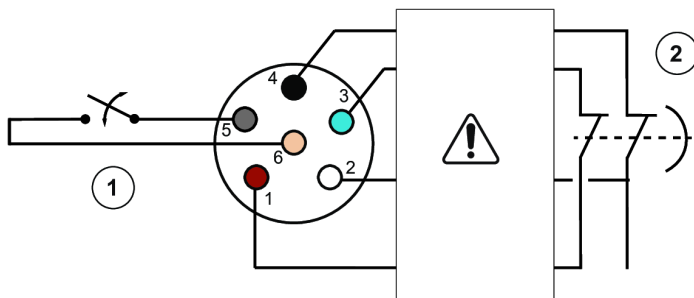


- 1 Reset
- 2 Emergency stop
- 1 brown

2	white
3	blue
4	black
5	grey
6	pink

Safety-related characteristic data	Value for 1 controller	Value for 2 controllers
PL in accordance with EN ISO 13849-1:2015	PL c	PL c
Category in accordance with EN 13849-1:2015	Cat. 1	Cat. 1
PFH in accordance with EN ISO 13849-1:2015 (test every year)	1.11E-07	1.80E-07
B10d	20.000.000	20.000.000
DC	45%	45%
MTTFd [hours] in accordance with EN ISO 13849-1:2015	HIGH – 93 years	HIGH – 93 years
TM in accordance with EN ISO 13849-1:2015	20 years	20 years

Emergency stop, light curtain and RESET connection - category 3 - Level D



i Add a safety relay between the controller and the emergency stop.

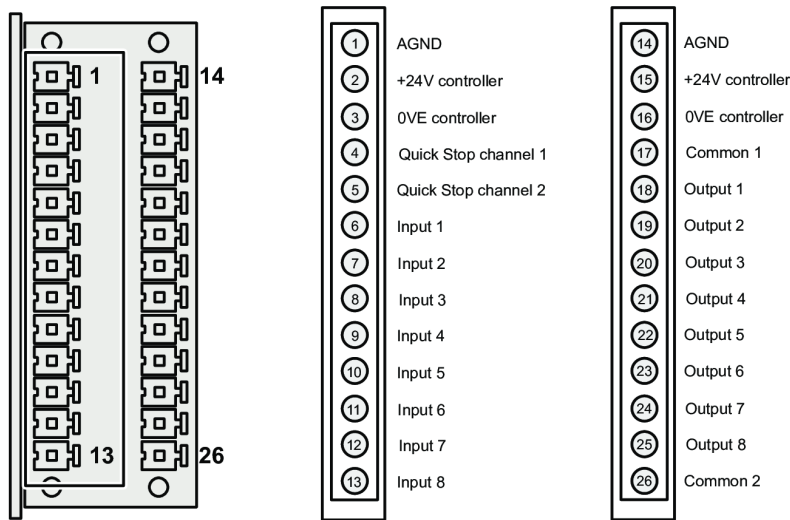
1	Reset
2	Emergency stop
1	brown
2	white
3	blue
4	black
5	grey
6	pink

Safety-related characteristic data	Value for 1 controller	Value for 2 controllers
PL in accordance with EN ISO 13849-1:2015	PL d	PL d
Category in accordance with EN 13849-1:2015	Cat. 3	Cat. 3
PFH in accordance with EN ISO 13849-1:2015 (test every year)	8.57E-09	7.73 E-08
B10d	20.000.000	20.000.000

Safety-related characteristic data	Value for 1 controller	Value for 2 controllers
DC	99%	99%
MTTFd [hours] in accordance with EN ISO 13849-1:2015	HIGH – 93 years	HIGH – 93 years
TM in accordance with EN ISO 13849-1:2015	20 years	20 years

Input/Output connection

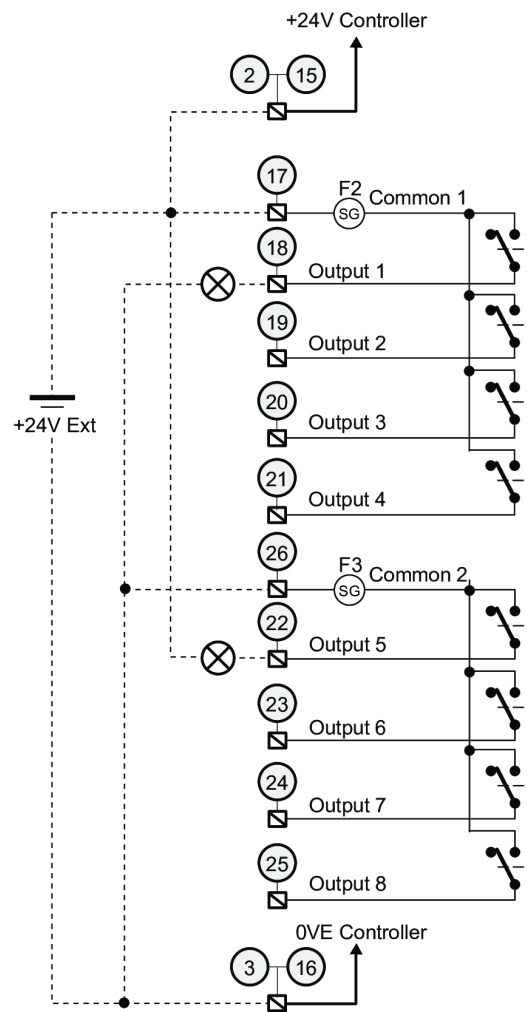
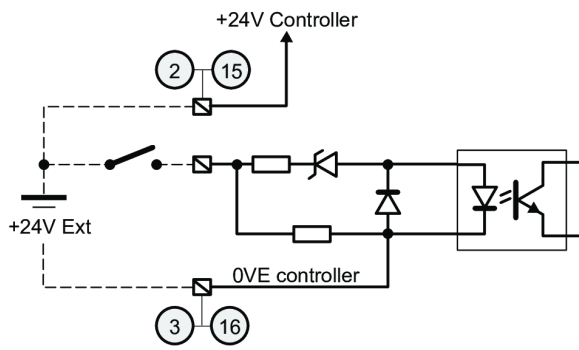
Description



1	AGND	14	AGND
2	+24V controller	15	+24V controller
3	OVE controller	16	OVE controller
4	Quick Stop channel 1	17	Common 1
5	Quick Stop channel 2	18	Output 1
6	Input 1	19	Output 2
7	Input 2	20	Output 3
8	Input 3	21	Output 4
9	Input 4	22	Output 5
10	Input 5	23	Output 6
11	Input 6	24	Output 7
12	Input 7	25	Output 8
13	Input 8	26	Common 2

Example of connection

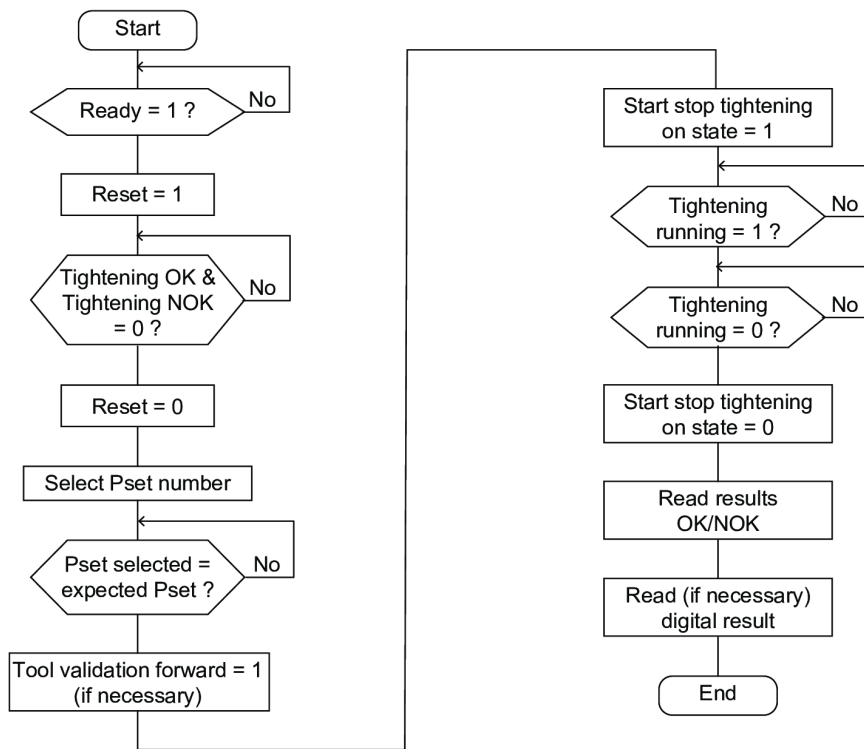
It is possible to connect a 24V external supply in parallel of the 24V delivered by the controller.



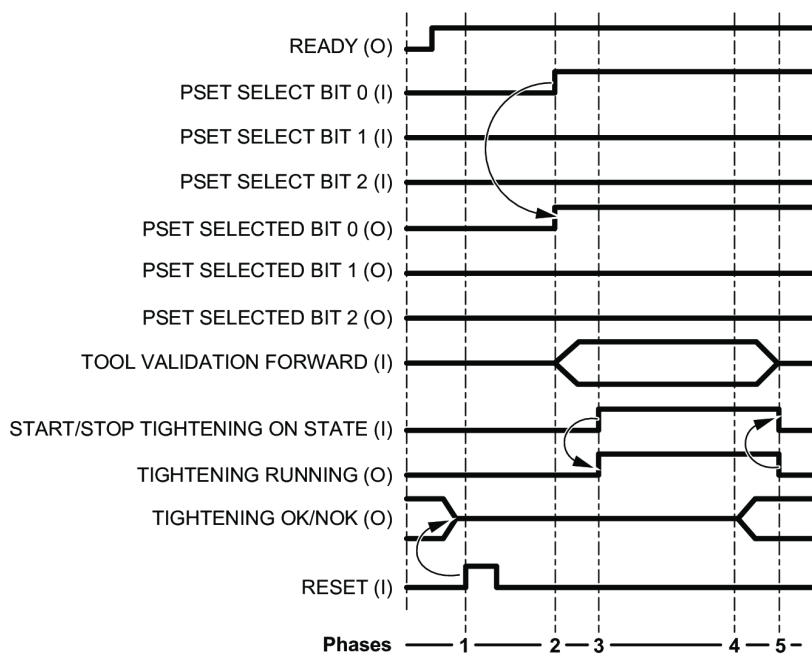
Example of tightening process through IO flowchart

Input/Output defined by default can be used to control the tightening process from a PLC or any other electronic device.

Here is an example of a standard exchange between a CVI3 controller and a PLC.



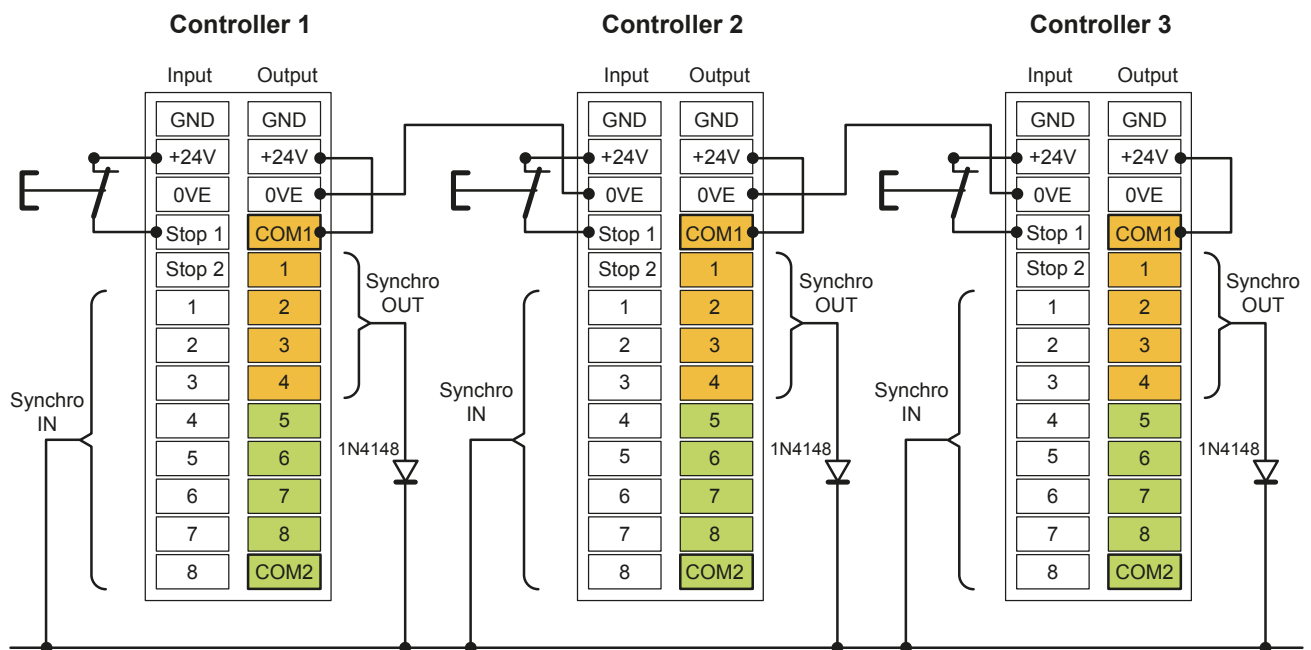
Example of tightening process through IO timing chart



1. "Reset" signal is sent by the PLC. This leads to reset the report ("Tightening OK/NOK").
2. The controller receives the selection of Pset 1. The command is acknowledged by "Pset Selected" signal.
3. The controller detects the "Start/Stop Tightening On State" signal transition. The tightening operation starts and "Tightening Running" signal is set to 1.
4. At the end of the tightening process, the controller sets "Tightening OK" or "Tightening NOK" signals.
5. "Tightening Running" signals returns to zero when all operations are over.

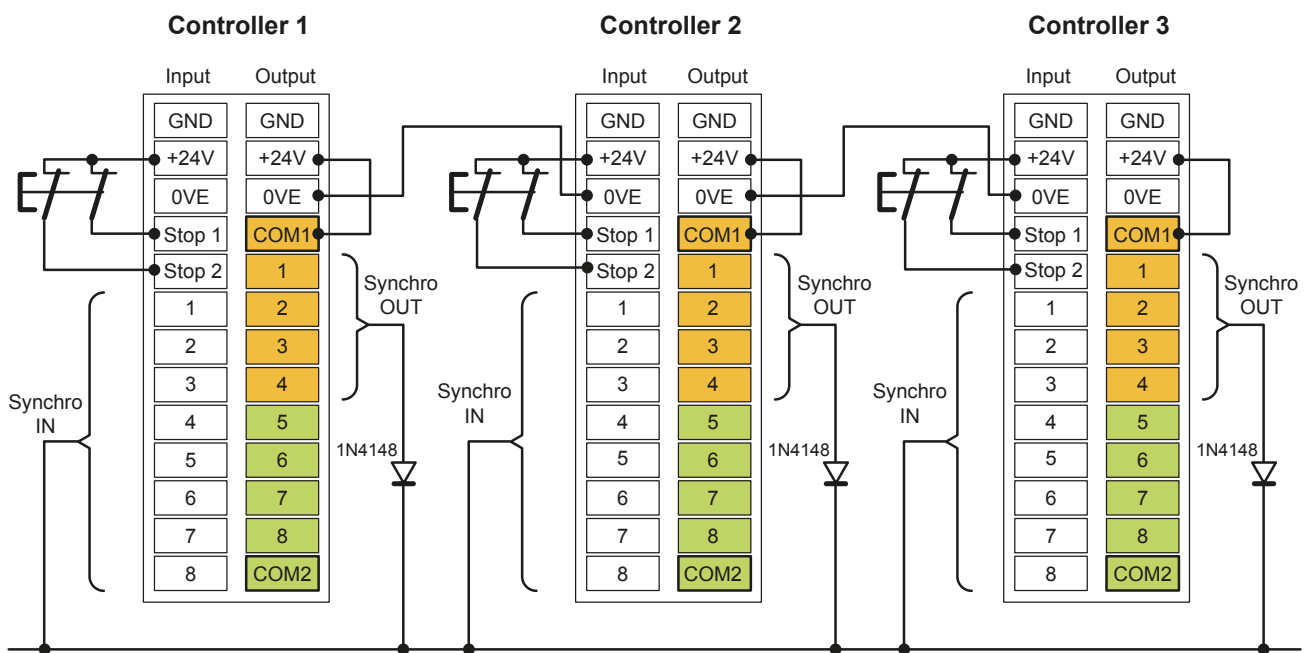
Synchronizing CVI3 Essential, CVI3 Function or CVI3 Vision via I/O

i It is necessary to wire a diode 1N4148 in serial with each "Synchro OUT" signal.



Synchronizing TWINCVI3 via I/O

i It is necessary to wire a diode 1N4148 in serial with each "Synchro OUT" signal.

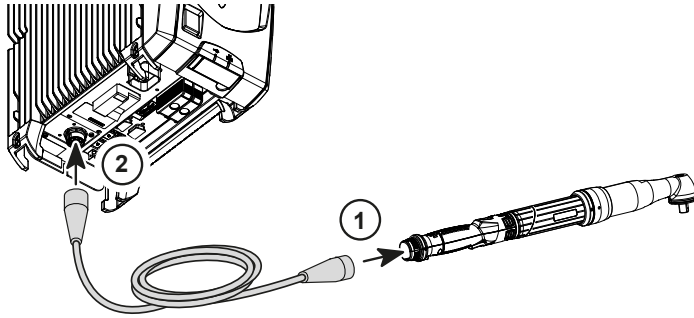


Connecting cord tools

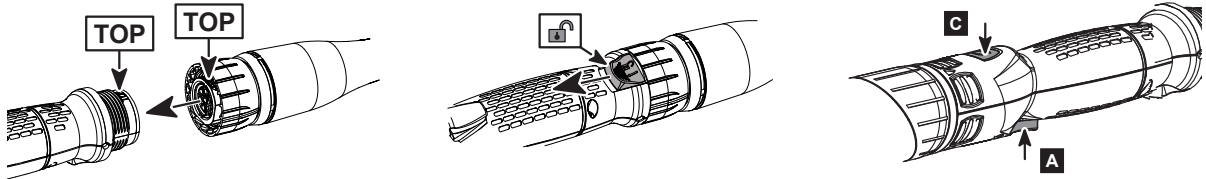
⚠ WARNING Risk Of Injury

As the reaction force increases in proportion to the tightening torque, there is a risk of severe bodily injury of the operator as a result of unexpected behavior of the tool.

- Make sure that the tool is in perfect working order and the system is programmed correctly.



1. Connect the cable to the tool.

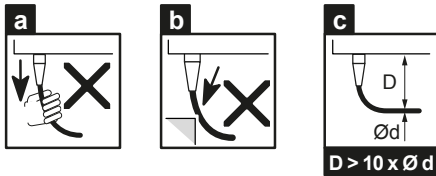


Plug the cable with help of TOP indication.
Tighten the nut. No need to tighten it too much.
The locking system will prevent any loosening.
To enable the loosening of the cable, actuate the locking trigger at the bottom of the handle.

2. Connect the cable to the controller.

Read before installing tool cables

- i** Do not connect several extension cables together. Preferably use the longest length of extension cable and the shortest length of tool cable.



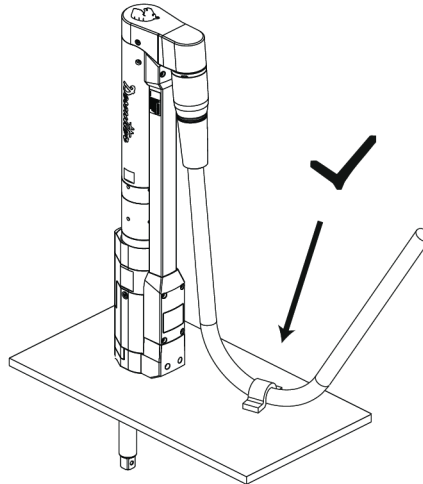
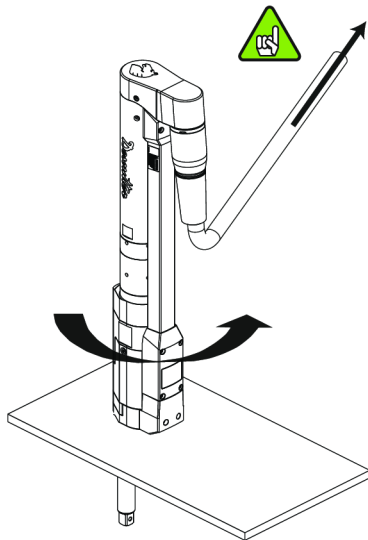
Although our tool cables are designed to work under drastic conditions, we recommend that you check the following points for longer service life:

- a - Any direct pull on the cable should be avoided.
- b - Friction with the outer sheath should be restricted.
- c - Bending radii should not be lower than 10 times the cable diameter.

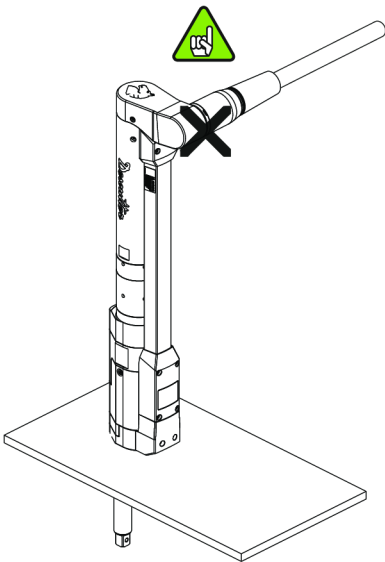
Instructions for cables of fixtured tools

The cable shall not apply any traction to the tool. Any traction force on the cable (even low intensity depending on the cable orientation) can generate a torque signal on the transducer.

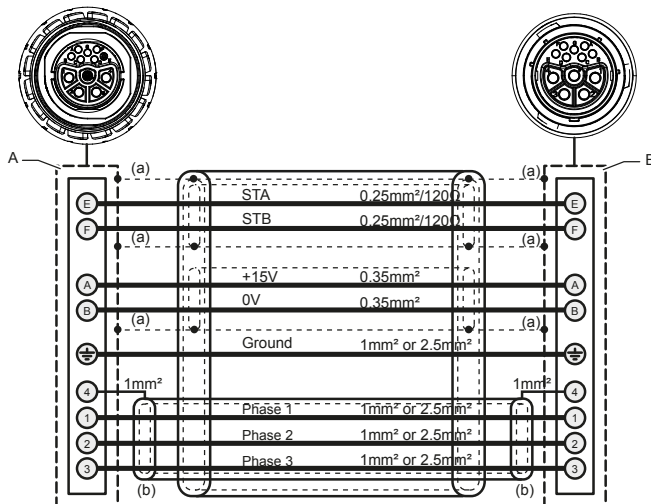
Check the cables are long enough or clamp the tool cable on the mounting plate as shown below.



Do not set up the tool cable as shown below.



Tool connector wiring diagram



A	Connector 12 pts Male
B	Connector 12 pts Female
a	Ground shielded cable
b	WARNING : Shielded insulate
STA	Twisted pairs: 2x0.25 mm ² at 10 MHz 65 Ω
STB	
STA	Red
STB	Red / Blue
+15V	Black / Blue
0V	Black
Ground	Yellow / Green
Phase 1	Black
Phase 2	Brown
Phase 3	Blue

Connecting CVI II tools range

It is required to mount an adaptor between CVI II tool cable and the CVI3 controller.

Refer to the user manual (printed matter: 6159922480) available at <https://www.desouttertools.com/resource-centre>.

Connecting ERS screwdrivers and ERP High Torque nutrunners

It is required to mount an adaptor between ERS and ERP High Torque tools and the CVI3 controller.

Refer to the user manual (printed matter: 6159921160) available at <https://www.desouttertools.com/resource-centre>.

Connecting cordless tools to CVI3 Vision

- i** Ensure to have the last version of firmware and software for controllers and CVI CONFIG.
 To get the last versions, go to <https://www.desouttertools.com/resource-centre> or contact your Desoutter representative for support.
 To install them, go to the chapter "Upgrade" in this manual.

There are 2 typical configurations:

- You have just received new Desoutter products (CVI3 Vision, cordless tool and WI-FI access point) and you want to create a basic workstation. The only thing to do is to declare the cordless tool in the controller by creating a new tightening unit.
- You want to add one cordless tool in an existing installation or add a second cordless tool in your installation. You will have to change the communication parameters of the cordless tool by using CVI MONITOR or the easy-pairing feature.

Creating a basic workstation with a cordless tool

On delivery, Desoutter products (CVI3 Vision controller, cordless tool and WI-FI access point) are already programmed to communicate together.

The tool communicates with the controller via the WI-FI access point.

Example of installation with settings by default.



1. Connect the WI-FI access point to any Ethernet port of the controller bottom panel.
2. Plug a full-loaded battery pack to the cordless tool.
3. Declare the cordless tool into CVI3 Vision controller.

When the connection is done, the top left icon on the tool display is green and steady.



Declaring a cordless tool in CVI3 Vision controller

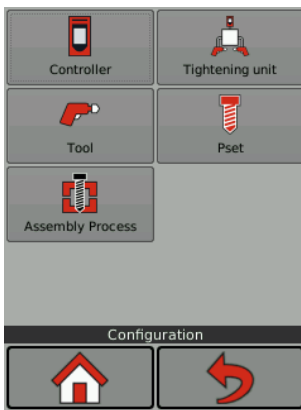
Go to the controller start screen.



Tap this icon to enter the main menu.



Tap this icon.



Tap this icon.



Tap this icon to add the tightening unit 51.



Tap this icon to save.



Tap this icon to quit.

How to change communication parameters of cordless tools

Easy-pairing via eDOCK and CVI MONITOR

Create first a tightening unit "51" in the controller for the cordless tool.

Plug the eDOCK to the tool and connect it to the USB port of the computer.

Plug a battery pack to the tool.

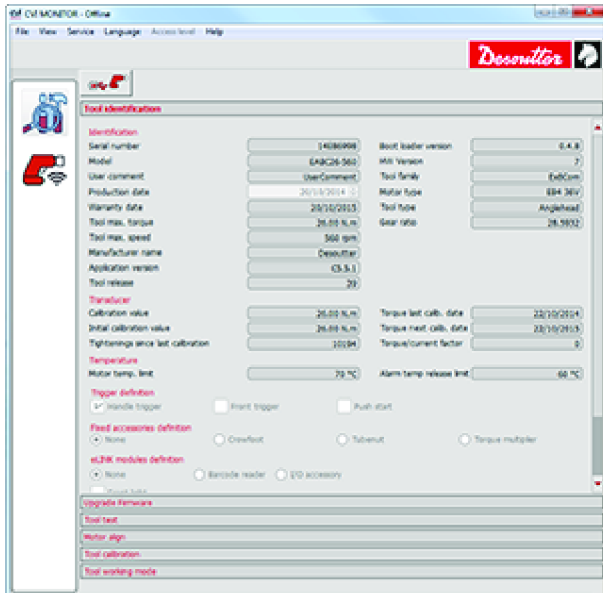
Keep the tool awake.

Launch CVI MONITOR and click the tab "Tool".

Click **Select**.

When the tool is connected to the computer, the icon on the top left is as follows:





Click this icon.



Click this icon to display the current parameters of the tool.

Change the parameters.

Check that IP address, subnet mask and port number of the controller are correct.



Click this icon to write the new parameters into the tool.

The tool display shows **Boot loader** written in blue.



If the message is red, check the parameters and restart the procedure from the beginning.

When the connection is done, the top left icon on the tool display is green and steady.

Easy-pairing via CVI CONFIG

Launch CVI CONFIG.



Go to the working area, click this icon to add a CVI3 Vision. Enter the IP address of the controller and click "Finish".

Go in the tree view area on the left, expand **Parameters** and click **Networks**.

In the box "TCP/IP - Ethernet" check the IP address and subnet mask of the controller.

In the box "WIFI access point", enter the wireless parameters of the WI-FI access point.

Go to "Tightening unit - 51" and expand it. Click "Tools" and expand it. Click the tab "Setup".

In the box "Network", enter the parameters for the cordless tool.

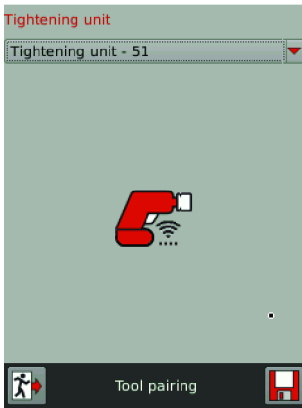
You have 3 choices:

- 1 - Keep original IP address (no change). Warning: the tool IP address must be already compliant with both WI-FI access point and controller.
- 2 - Static IP address. Enter manually the IP address, subnet mask and gateway of the tool.
- 3 - DHCP. Use this choice if the WI-FI access point or network includes a DHCP server. The IP address may change at each connection.



Click this icon to update CVI CONFIG.

Plug the eDOCK to the tool and connect it to the USB port of the controller bottom panel.
Plug a battery pack to the tool.
Keep the tool awake.
Go to the controller, tap "Maintenance / Tool / Pairing".



Tap this icon to start.

The tool display shows **Boot loader** written in blue. If the message is red, check the wireless parameters and restart the procedure from the beginning.

When the connection is done, the top left icon on the tool display is green and steady.

What if the connection is not done?

1. **Check that the tool communicates with the WI-FI access point.**

On the tool display, press the button below the red arrow during 3 seconds.

Use the red arrows to go to "Maintenance", press OK, go to "Network" and press OK.

Press the right arrow many times until you get "RSSI".

If the value is displayed in green, orange or red depending on the RSSI signal quality, this means that the tool is communicating with the WI-FI access point.

If the RSSI value is -100 dB in red, go back to CVI MONITOR to change the wireless parameters and write them into the tool again.

2. **In a second step, check that the tool communicates with the controller.**

Connect the access point to the same Ethernet network as the controller.

Check that firmware versions of both tool and controllers are the most recent.

If not, contact your Desoutter representative.

Check that subnet masks are correct in the controller, tool and WI-FI access point.

For example, when all IP address are 192.168.5.xxx, the subnet mask is 255.255.255.0. If one of them is 192.168.7.xxx, the subnet mask could be 255.255.0.0).

Adding a cordless tool in an existing installation

Ensure you have a CVI3 Vision controller and a new or existing WI-FI access point.

Do as follows:

1. If the WI-FI access point is new, install it and connect it to any port of the controller bottom panel via an Ethernet cable or to the same Ethernet network as the controller.
2. Consult your IT department to get the communication parameters of the installation (IP address and port of the controller and wireless parameters of the existing WI-FI access point. *Click here [How to set up networks \[Page 47\]](#)*).
3. Declare the cordless tool in CVI3 Vision controller.
4. Change the communication parameters of the cordless tool as described previously.

Installing eBUS accessories

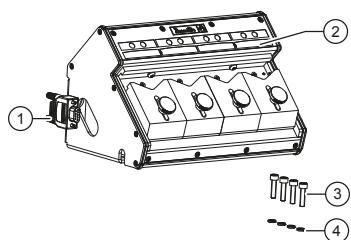
Dimensions

Refer to the CAD 3D models and 2D views available at <https://www.desouttertools.com/resource-centre>.

Mounting eBUS accessories

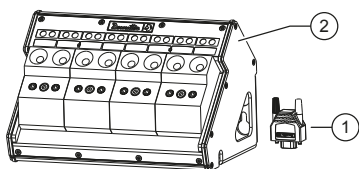
Checking the contents of boxes

Socket tray



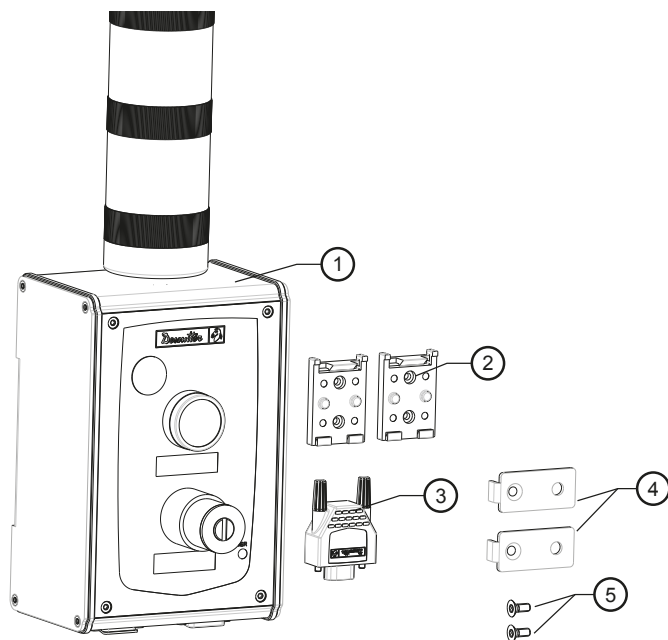
1	Termination plug SubD 9-pt
2	Socket tray
3	4 screws M5x20
4	4 washers

Bit tray



1	Termination plug SubD 9-pt
2	Bit tray

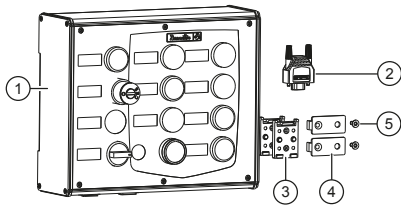
Stacklight



1	Stacklight
2	2 DIN Rail holders + 4 screws
3	Termination plug SubD 9 pt

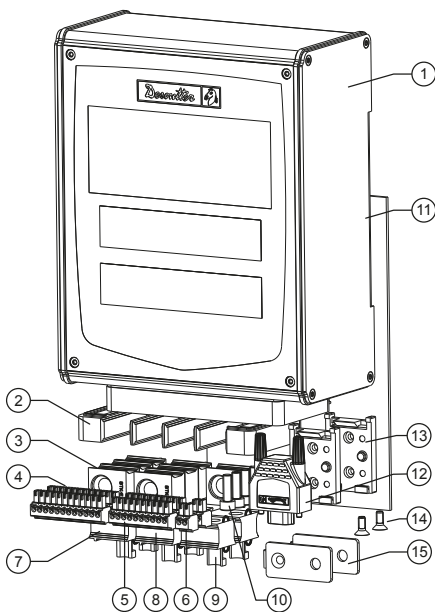
4	2 mounting plates
5	2 screws M4x10
6	Keys

Operator panel



1	Operator panel
2	Termination plug SubD 9-pt
3	Support rails DIN TSH 35-2
4	Mounting plate accessories
5	2 screws M4x10

I/O expander

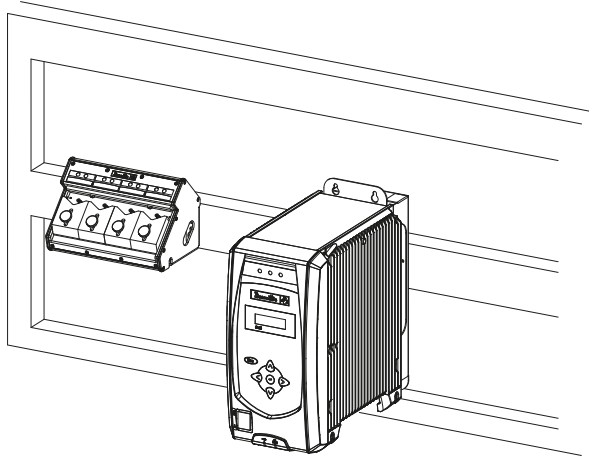


1	I/O expander	x 1
2	Cable entry system	x 1
3	Termination grommet Ø 0	x 7
4	Connector 12-pt - pitch 3.81	x 2
5	Connector 10-pt - pitch 3.81	x 2
6	Connector 2-pt - pitch 3.81	x 2
7	Grommet Ø 4.8 to 5.8 mm	x 2
8	Grommet Ø 5.8 to 6.8 mm	x 2
9	Grommet Ø 6.8 to 7.8 mm	x 2
10	4 screws Hex. M5x15	x 4
11	Plastic bag	-
12	Termination plug SubD 9-pt	x 1

13	2 holders for DIN rail + 4 screws	x 1
14	Screw M4x10	x 2
15	Mounting plate	x2

Wall mounting

Any eBUS accessory can be mounted on a wall.
See example below.



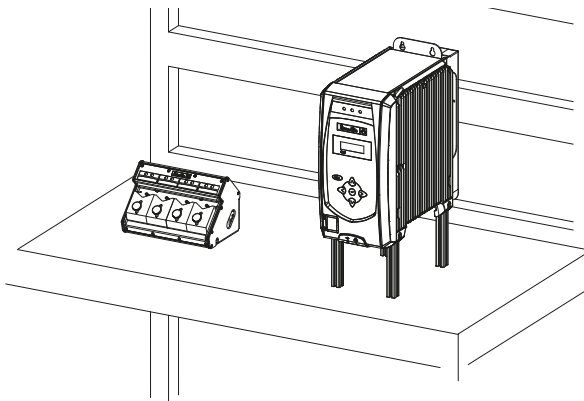
For details, refer to the dimensional drawings.

Secure the accessory by using M6 screws (not supplied).

Table mounting

Socket trays and bit trays can be mounted on a table.

For example.



For details, refer to the dimensional drawings.

Secure the accessory by using M6 screws (not supplied).

Mounting on DIN rail

Stacklight, operator panel, IO expander

These accessories are designed to be mounted on an Ω -type DIN rail.

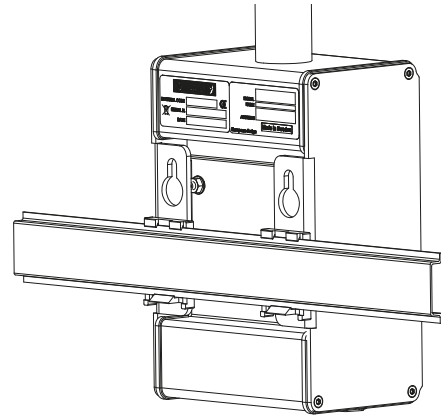
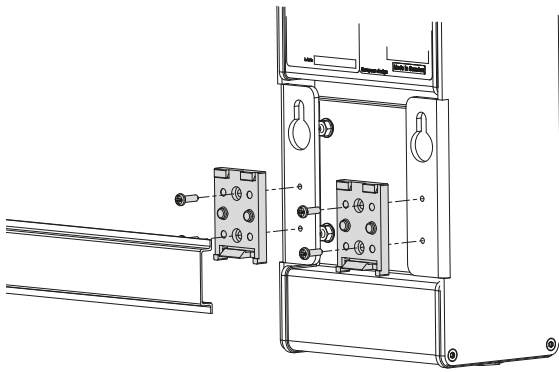
DIN rail TS 35

Length: 115 mm minimum.

For details, refer to the dimensional drawings.

1. First position the 2 holders on the accessory as shown below by using the self tapping screws supplied in the kit.
2. Clip the accessory on the rail.

For example



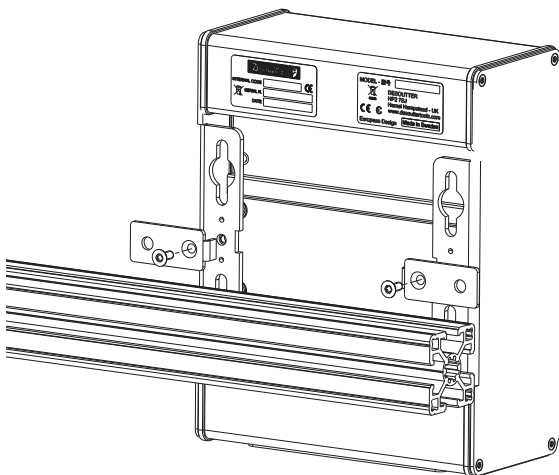
Mounting on aluminium profile

Stacklight, operator panel, IO expander

For details, refer to the dimensional drawings.

1. Position the mounting plates as shown below by using the screws supplied in the kit.
2. Mount the accessory on the aluminium profile.

For example



Positioning the accessory on the eBUS network

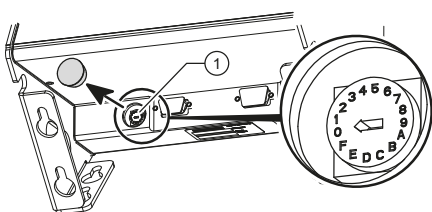
Use the encoding wheel of the accessory to select the position of the accessory on the eBUS cable.

1. Remove the cap from the encoding wheel.
2. By using a screwdriver, select the position number (1-9 and A-F), 1 being the first position, F the last (F=15).

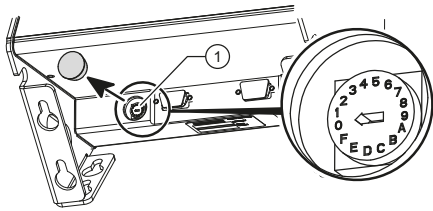
(i) Do not put the accessory in use when the encoding wheel is set to "0".

3. Put the cap back on the wheel.

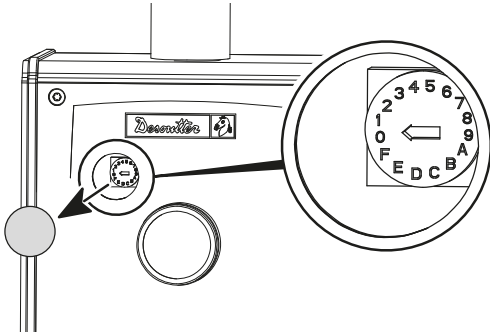
Socket tray (position by default)



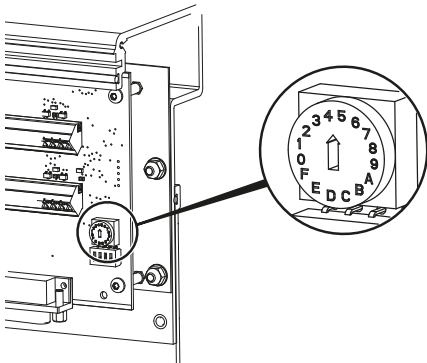
Bit tray (position by default)



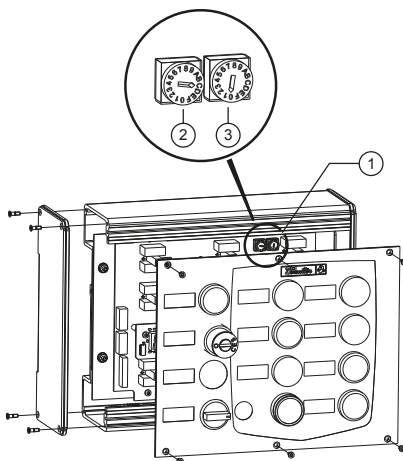
Stacklight (position by default)



IO expander (position by default)



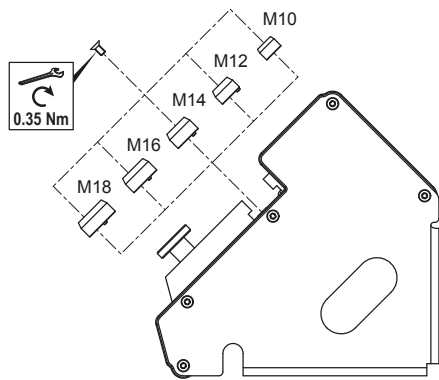
Operator panel (position by default)



1. Remove the front panel to access the encoding wheel
2. Encoding wheel
3. This switch is set to 0. Do not change this setting.

Installing sockets of the socket tray

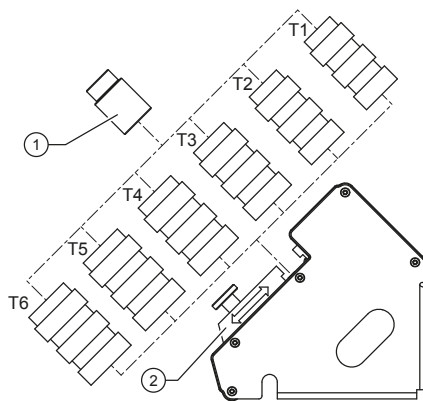
Internal centering



Pawn $\varnothing \leq$ socket M size \varnothing .

Select the pawn and secure it by using the screw mounted on the socket tray.

External guiding

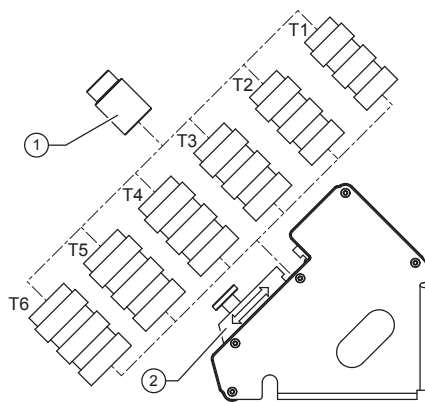
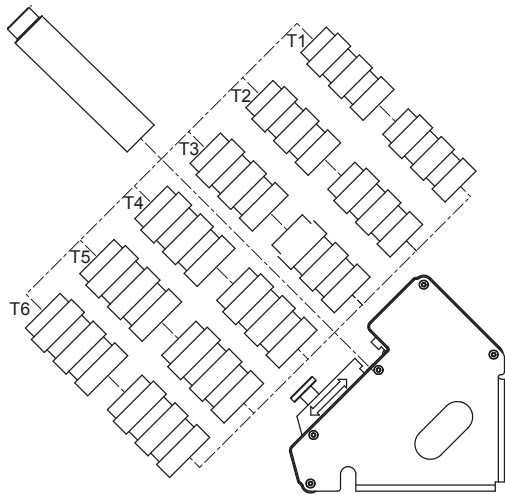


Socket outer $\varnothing \leq$ tube \varnothing .

Tube no.	Tube inner \varnothing (mm)
T1	15
T2	21
T3	24
T4	25
T5	27
T6	30

If the socket is too short, cut the tubes.

If the socket is too long, screw two or more similar tubes together as shown below.



- 1
- 2

Socket
Locking part

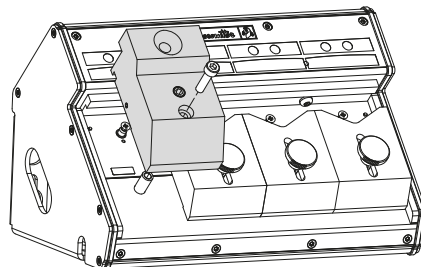
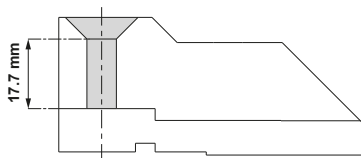
Select the tube, slide the locking part to block it and tighten with the knurled knob or the screw+washer provided in the packing box.

Installing the bit module

Select a bit in the following range:

HEX: 4 to 8

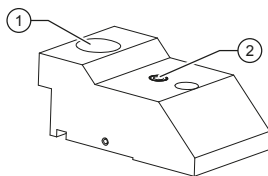
TORX: 25 to 40



Remove the V-shaped part.

Place the bit module and secure it by using the M5x20 screw supplied in the packing box.

Adjusting the bit module setting

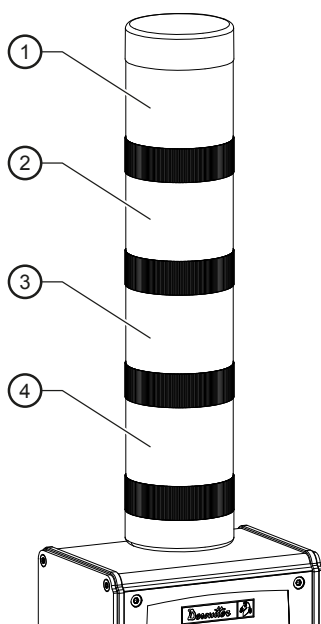


- 1 Bit hole
- 2 Screw

Insert the bit in the hole.
 Turn the screw clockwise for a heavier bit and counter-clockwise for a lighter bit.

Customizing the order of the stacklight LEDs

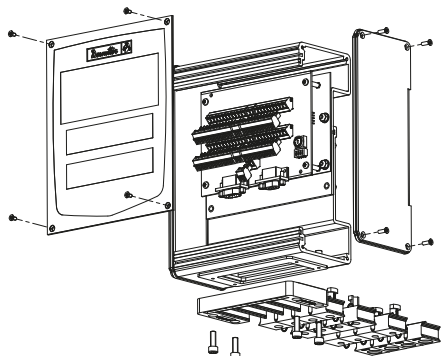
Colors by default are as follows.



- 1. Red
- 2. Orange
- 3. Green
- 4. Blue

To change the order, remove each LED by unscrewing a 1/4 turn right.
 Reassemble the LEDs in the desired order.
 Put the cap back on the top.

Wiring connectors and grommets of the I/O expander



Remove the front and the right side panels by unscrewing the screws.

Wire and connect all connectors.

Pass the cables through the corresponding grommets.

Insert grommets Ø 0 when free space in order to ensure tightness.

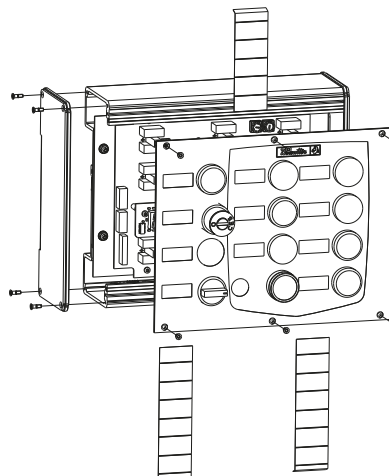
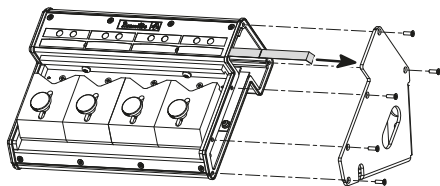
Fit the cable entry system to the I/O expander by using the 4 screws M5x15 supplied in the kit.

i The label marked 1 corresponds to the upper row of connectors.

Labeling

Disassembly

Loosen the screws as shown in the examples below.



Remove the labels and write the description with a pencil.

Reassembly

i Ensure that the seal is correctly mounted.

Add some glue (Loctite 243) to the screws and tighten to 1.5 Nm to the right.

eBUS cables

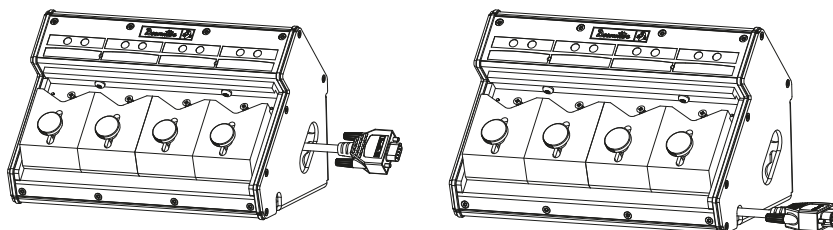
Length (m)	Length (ft)	Part number
1	3.3	6159176070
3	9.9	6159176080
5	16.4	6159176090
15	49.2	6159176100

eBUS termination plug: 6159176250

Connecting eBUS cable to the accessories

eBUS cable routing

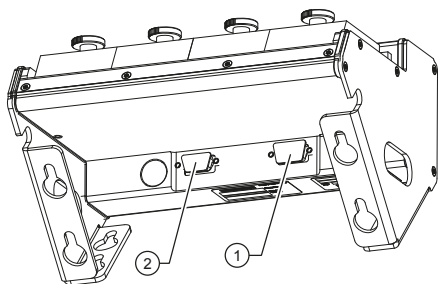
Before connecting socket trays and bit trays, select how to pass the cable as shown below.



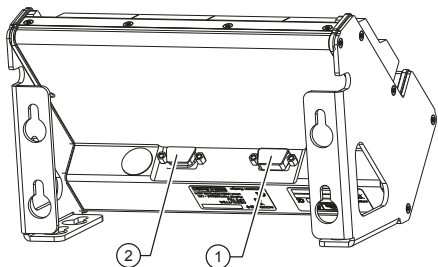
eBUS cable connection and termination plug

1. Plug the eBUS cable to the accessory.
2. Put the termination plug into place as shown below when the accessory is unique on the eBUS network or when the accessory is the last one.

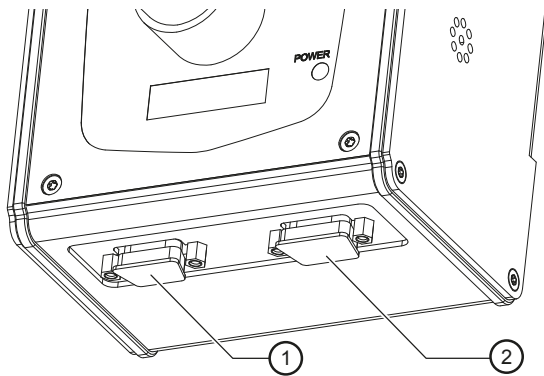
Socket tray



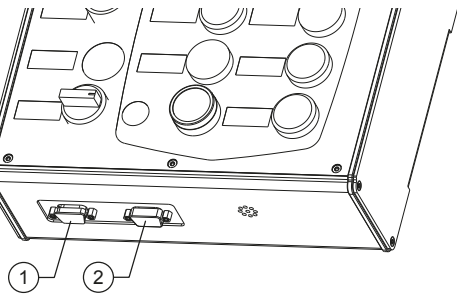
Bit tray



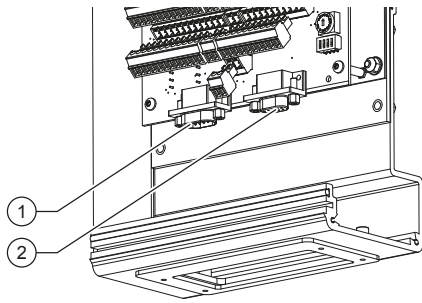
Stacklight



Operator panel



IO expander



TRA and D53 positioning arms

Check that the eBUS cable is connected from the encoder M12 or T-junction in case of 2 encoders.

Connect an ePOD2 or above to the controller.

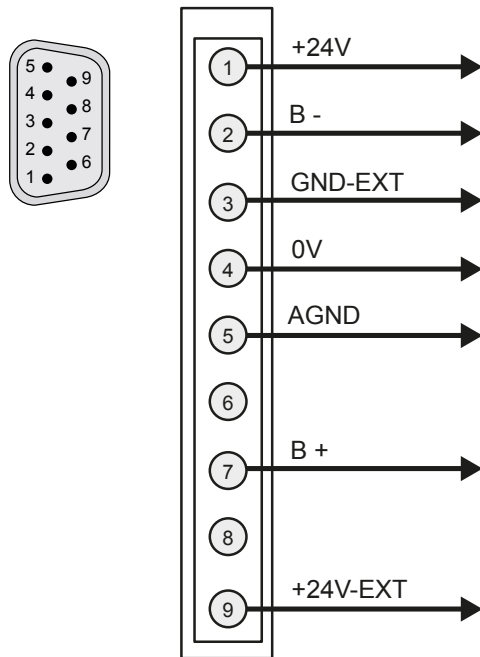
Ensure you have a tape meter and a protractor close at hand to measure the characteristics of your installation.

To get more information, refer to the user manuals of the positioning arms at <https://www.desouttertools.com/resource-centre>.

Connecting eBUS cable to the controller

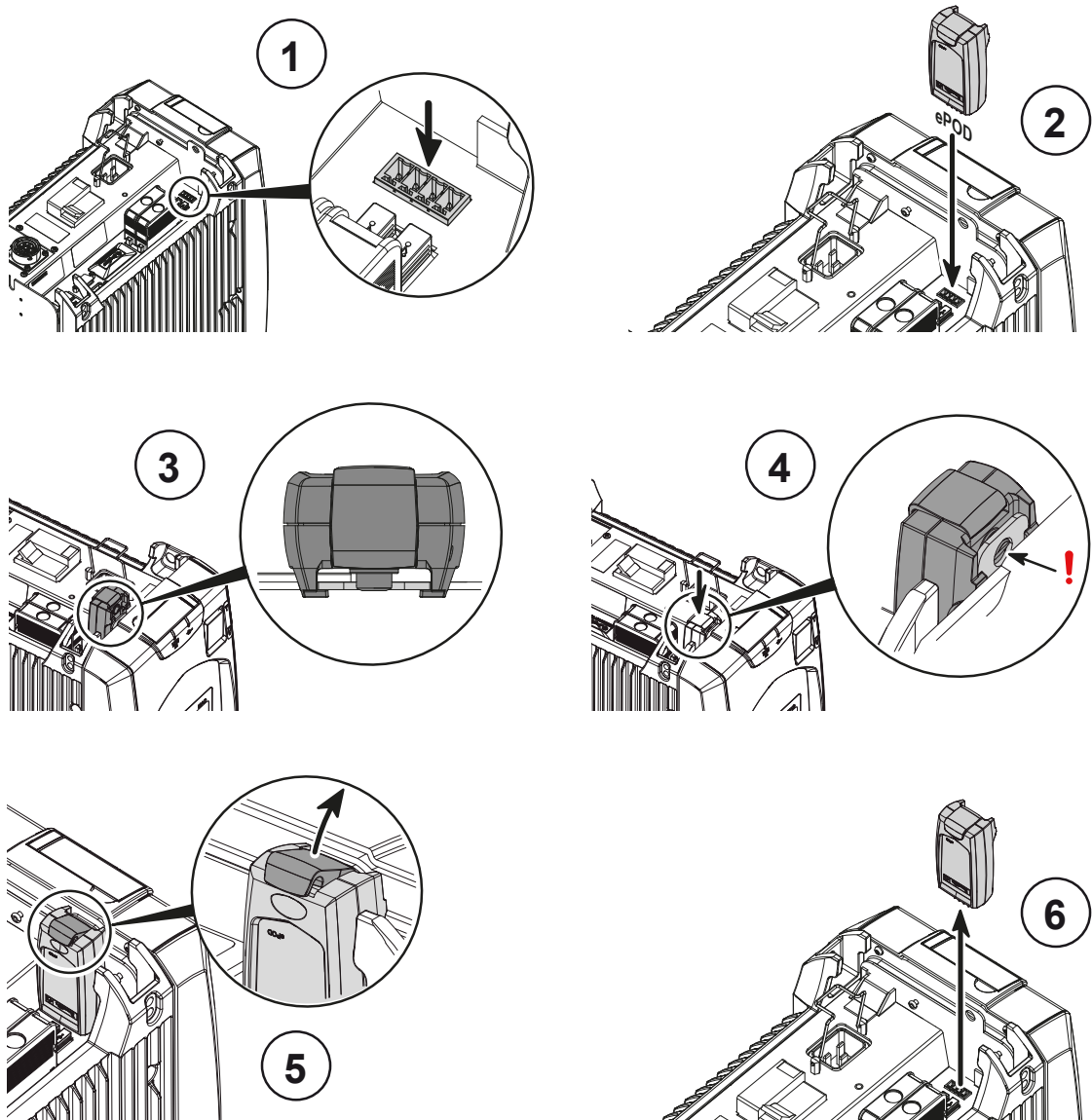
Connect the eBUS cable to the bottom panel of the controller.

eBUS connector wiring diagram



Installing an ePOD

- ⓘ Always use the "Eject" command of the controller before removing the ePOD.



Installing a Fieldbus module

(i) Be aware that errors of manipulation can cause connection problems or a deterioration of electrical contacts.

We strongly recommend that a technician from Desoutter installs the modules.
Contact your Desoutter representative for support.

1. Power off the system.
2. Locate the Fieldbus connector on the bottom panel of the system. The connector is protected by a grey cover.
3. Remove the cover.
4. Carefully drive the Fieldbus module into its location.
5. Tighten the 2 screws by using a T9 Torx screwdriver.
6. Power on the system.

(i) When the Fieldbus module is not present into its location, the cover must remain in place.

Refer to the user manual (printed matter: 6159931440) delivered in the packaging box or available at <https://www.desouttertools.com/resource-centre>.

Installing external peripherals

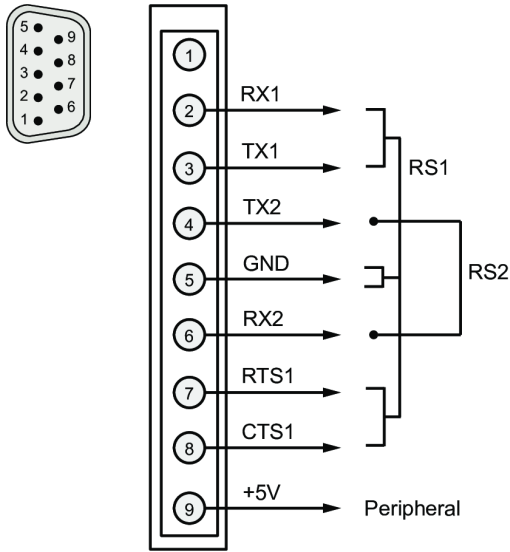
Barcode readers, printers, Delta measuring units, etc... are external peripherals.

They can be connected to either RS232 or USB ports.

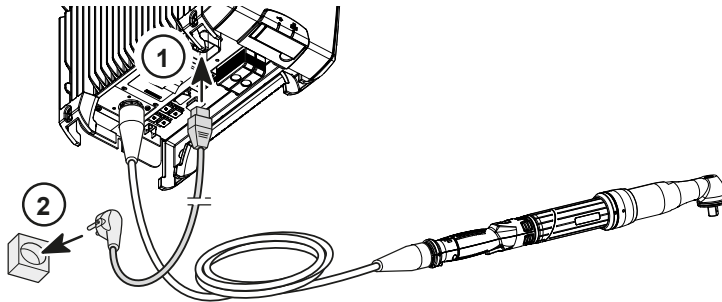
i As there is only one physical RS232 connector on the controller bottom panel, use the Y cable (part number 6159176200) to use serial ports 1 and 2.

Do not configure serial port 2 if the cable is not used.

RS232 connector wiring diagram



Connecting the controller to the power supply



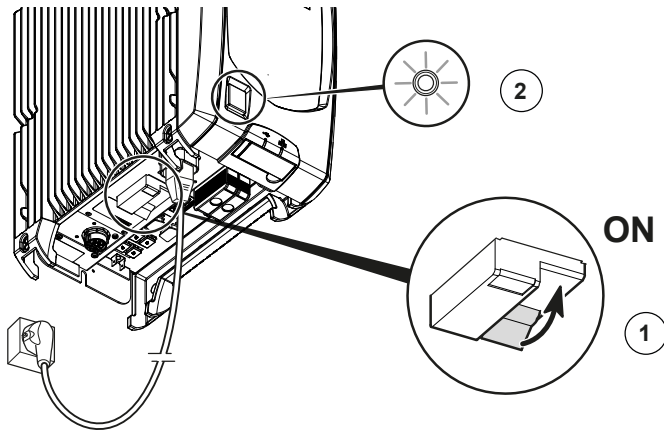
Use only the following power cords.



Do not modify the power cord and do not use it for any other purpose.

Power cord

Area	Length (m)	Length (ft)	Part number
Europe	2.5	8.20	6159170690
USA NEMA 5-15	2.5	8.20	6159170600
UK	2.5	8.20	6159170700
China	2.5	8.20	6159170610

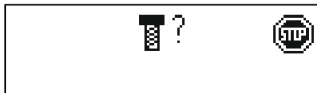
Powering ON/OFF the controller



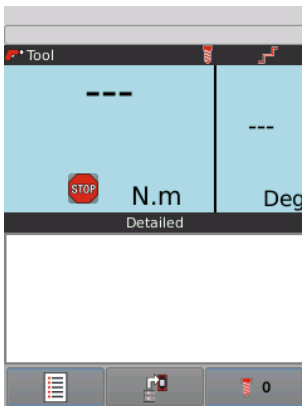
1. Push the GFI yellow button located on the bottom panel to check the earthing of the controller has been correctly done. The controller should turn off. Switch on the GFI blue interruptor.
2.  On the front panel, press the on/off switch to power the controller on.
 On the front panel, press the on/off switch to power the controller off.

The controller LEDs are blinking.
Wait for a few seconds while the firmware is being initialized.

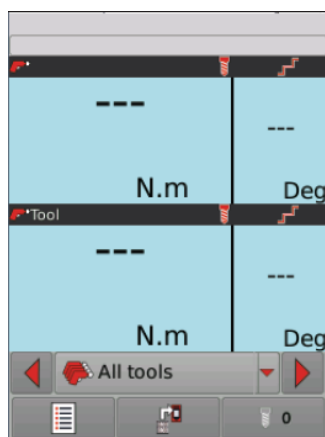
CVI3 Essential / CVI3 Function start screen



CVI3 Vision start screen



TWINCVI3 start screen



How to set up networks

Overview about networks

Desoutter Ethernet 1 is typically the wired network dedicated to production lines.

Desoutter Ethernet 2 is typically the wired network dedicated to offices (company network).

	IP address by default	Subnet mask by default
System connected to Ethernet 1	192.168.5.x	255.255.255.0
System connected to Ethernet 2	192.168.6.x	255.255.255.0

Default systems Ethernet configuration

Item	Desoutter default parameter
IP address (Ethernet 1)	192.168.5.212
Subnet mask	255.255.255.0
Gateway	127.0.0.1

Default Ethernet configuration - External Access Point

Item	Desoutter default parameter	Other possible values
IP address	192.168.5.201	Refer to local settings
Subnet mask	255.255.255.0	Refer to local settings

WI-FI settings

Item	Desoutter default parameter	Other possible values
Network name (SSID)	Desoutter_1	String of 255 characters
Security type	WPA/WPA2 PSK	Open Shared secret LEAP PEAP EAP/TLS
Encryption type	AES/CCMP	none WEP64 WEP168 TKIP
Security key	mydesoutter_1	String of 255 characters
Regulatory domain	Worldwide	ETSI (Europe) FCC (America) TELEC (Japan)

Item	Desoutter default parameter	Other possible values
Radio band	2.4 GHz - Channel 1-11	5 GHz - U-NII-1 5 GHz - U-NII-2 5 GHz - U-NII-2 ext 5 GHz - U-NII-3
Data rate	54 Mbit	1 Mbit 2 Mbit 5.5 Mbit 6 Mbit 9 Mbit 11 Mbit 12 Mbit 18 Mbit 24 Mbit 36 Mbit 48 Mbit 13 Mbit (MCS1) 19.5 Mbit (MCS2) 26 Mbit (MCS3) 39 Mbit (MCS4) 52 Mbit (MCS5) 58.5 Mbit (MCS6) 65 Mbit (MCS7) 6.5 Mbit (MCS0)
Link adaptation	True	-
RSSI (Received Strength Signal Indication) on tool	-	> -65 dBm as a minimum

Regulatory domain

A WLAN regulatory domain can be defined as a bounded area that is controlled by a set of laws or policies. Many countries follow standards set by FCC, ETSI, TELEC or worldwide.

2.4 GHz authorized channel list per regulatory domain

Channel	FCC America	ETSI Europe	TELEC Japan	Worldwide
1	x	x	x	x
2	x	x	x	x
3	x	x	x	x
4	x	x	x	x
5	x	x	x	x
6	x	x	x	x
7	x	x	x	x
8	x	x	x	x
9	x	x	x	x
10	x	x	x	x
11	x	x	x	x
12	N/A	x	x	N/A
13	N/A	x	x	N/A

5 GHz authorized channel list per regulatory domain

Channel	Radio band	FCC North America	ETSI Europe	TELEC Japan	Worldwide
36	U-NII-1	x	x	x	x
40		x	x	x	x
44		x	x	x	x
48		x	x	x	x

Channel	Radio band	FCC North America	ETSI Europe	TELEC Japan	Worldwide	
52	U-NII-2	x	x	x	x	
56		x	x	x	x	
60		x	x	x	x	
64		x	x	x	x	
100		U-NII-2 Ext	x	x	x	x
104			x	x	x	x
108			x	x	x	x
112			x	x	x	x
116			x	x	x	x
120		U-NII-3	N/A	x	x	N/A
124	N/A		x	x	N/A	
128	N/A		x	x	N/A	
132	x		x	x	x	
136	x		x	x	x	
140	U-NII-3	x	x	x	x	
149		x	x	N/A	N/A	
153		x	x	N/A	N/A	
157		x	x	N/A	N/A	
161		x	x	N/A	N/A	
165		x	x	N/A	N/A	

How to ping an IP address

This function is used to check the network connection with any device connected on the network.

Select the IP address to ping. There are 4 attempts.

For CVI3 Essential / CVI3 Function, go to **Configuration > Network**, use the keys up and down to select the IP address to ping and validate.

For CVI3 Vision and TWINCVI3, go to **Maintenance > Controller > Ping**. Tap the box **IP address**, enter the IP address and validate. Tap the red arrow to start. Tap the red square to stop.

How to ping an IP address with CVIMONITOR

This function is used to check the network connection with any device connected on the network.

Launch CVI MONITOR software from the launchbar on your computer desktop.

Type the IP of the relevant system and click "Select".



Click this icon to display the screen.

Select **Ping**.

Type the IP address.

A green tick indicates that the ping is successful.

How to connect a CVI3 controller to a computer

Plug an Ethernet cable to the computer and to the Ethernet port (DHCP server) of the front panel.

Installing a complete solution connected to Ethernet

If you have a lot of tools and controllers to configure, the best way is to connect all controllers to an Ethernet local loop (Ethernet 1).

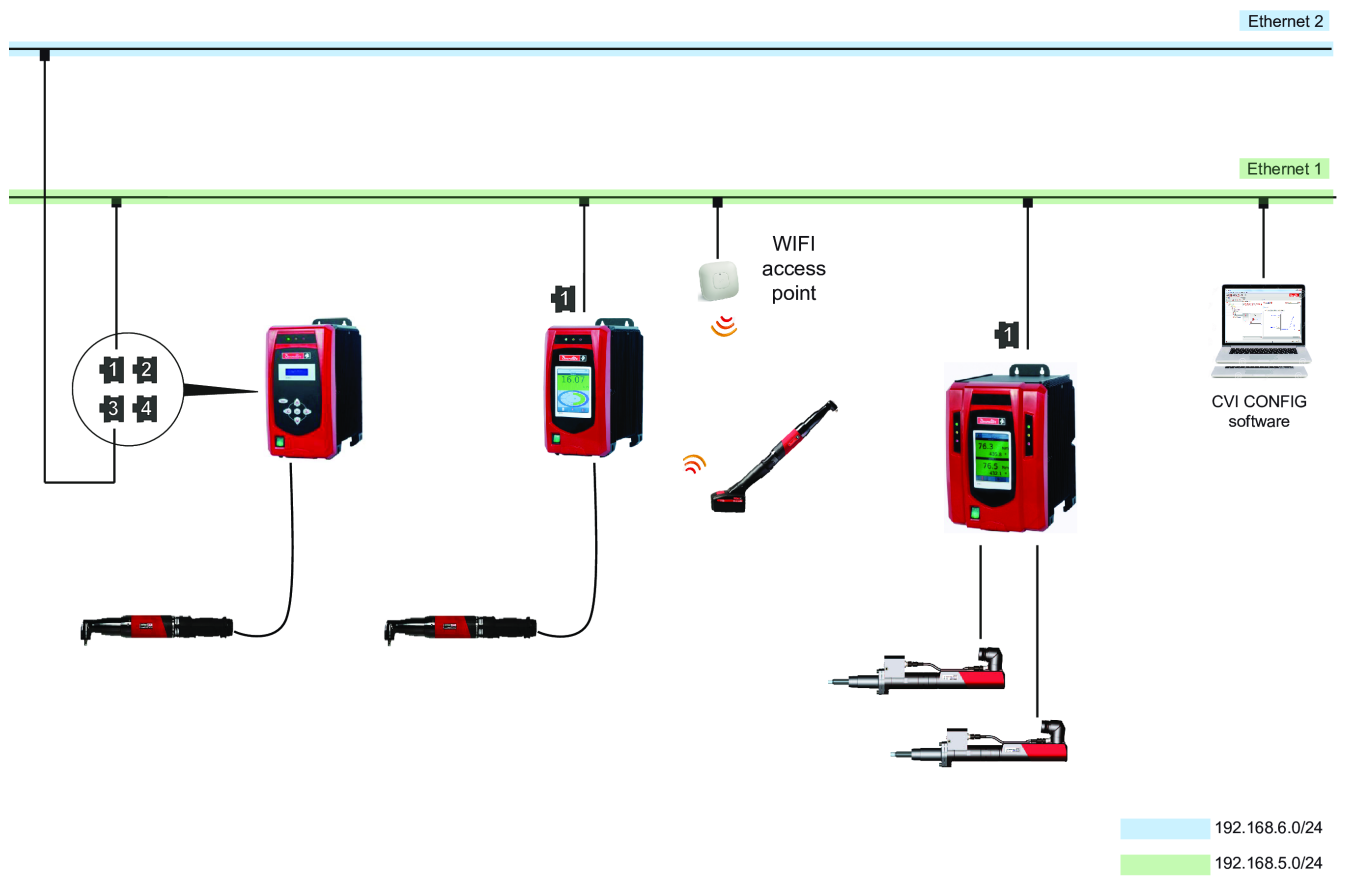
You will then be able to use CVI CONFIG software to set up the whole system.

Controllers are connected to the local loop via Ethernet port 1 of the bottom panel.

Communication parameters of the cordless tool can be changed easily providing they fit with controller and WI-FI access point parameters.

The computer where CVI3 software is installed can be connected to the network via WI-FI or the Ethernet port 2 of any controller.

Example of controllers connected to Ethernet networks



Software installation

Installing software

Read before installing software

Location of Desoutter programs

Once installed, installation programs are located here:
C:\Program Files (x86)\Desoutter.

Computer minimum requirements

General

The computer has to be connected to an Ethernet network.
Check you have the administrative privileges on your computer.

CVI CONFIG / CVI ANALYZER / CVIKEY

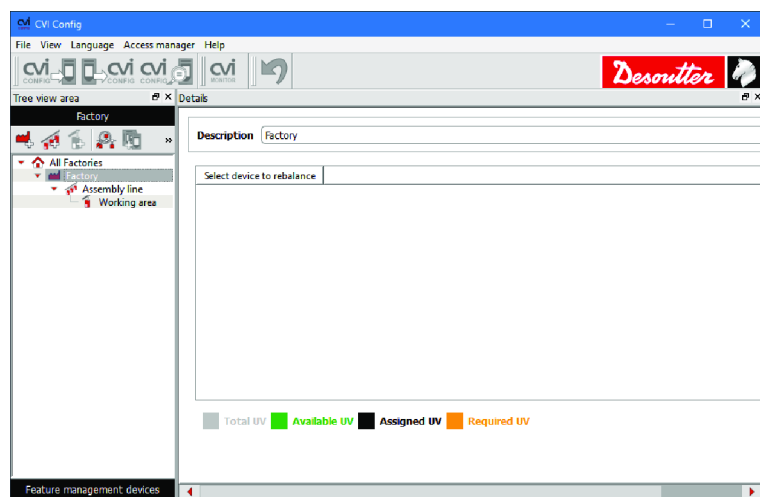
Operating systems	Windows 7 ; Windows 10
Free disk space	150 Mo
Monitor resolution	1280 x 1024

Installing CVI CONFIG

Contact your Desoutter representative to get the last release of the software.

Unzip the file and run the .exe file.

The following start screen is displayed.



Test and validate installation

Testing and validating

The goal is to have a cord tool and a cordless tool running a simple tightening process named "Pset".

In our example, a cord tool and a cordless tool are connected to a CVI3 Vision controller. CVI CONFIG software is installed on the computer.

See the procedure below. Detailed instructions are following.

1. Check that the tool associated to the tightening unit is the correct one.
2. Check the status of the tool.
3. Connect the computer to the controller.
4. Launch CVI CONFIG software and create a Pset for each tool.
5. Transfer the configuration to the controller.
6. Press the trigger to run the tool.
7. Read the results.

Updating the tool information

The parameters of the tool connected **must be updated** in CVI CONFIG before creating a tightening process.

Check that the tool associated to the tightening unit is the correct one.

Go to CVI CONFIG.

Select the product in the tree view.

Select the tightening unit which drives the tool.

Click the tool and if the tool is not the correct one, click the tab **Setup**.

Click the box **Tool model**, scroll the list and select the tool.

Go to the tab **Information**.

Check the information is correct.

Click the button **Update** to update the information. This implies that the product is connected to the system or to the computer.

A green tick confirms that the tool parameters are OK.

A red cross means that the tool is not connected. Check the connections and start again from the beginning.

Alternatively, use the **shortcut** in the tree view. Select the tool, right-click and select **Update**.

See the green tick next to the tool name in the tree view.

Checking the current status of tools

Tool 1 is the cord tool, tool 51 is the cordless tool.



Go to the controller display and tap this icon.



Tap this icon to display the status of tool 1.
The tool is locked, waiting for a Pset selection.
See on the bottom right that the Pset icon is set to 0.

Tap the right or left arrow on the bottom to display the screen for tool 51.



Tap this icon to display the status of the tool.
The tool is not connected to the controller.
Press the trigger to wake up the tool. The connection is done again.

Go to the tool display.



The tool status is **Tool locked**, waiting for a Pset selection.

Creating a Pset in CVI CONFIG

Launch CVI CONFIG from the launchbar on the computer desktop.



Click the icon **Scan**.

In the column **Action**, click **Add to a working area**.

In the next screen, click **OK** and click **Exit** when the transfer is done.

See that the controller has been added in the working area.

Values are already present as the software has uploaded all tools characteristics.

Tightening unit 1 is driving Tool 1 (cord tool), tightening unit 51 is driving Tool 51 (cordless tool).

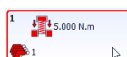
Go to the **Tree view area**, expand **Tightening unit - 1** and click **Psets**.

Right-click **Psets**, add a **Pset** and click **OK**.

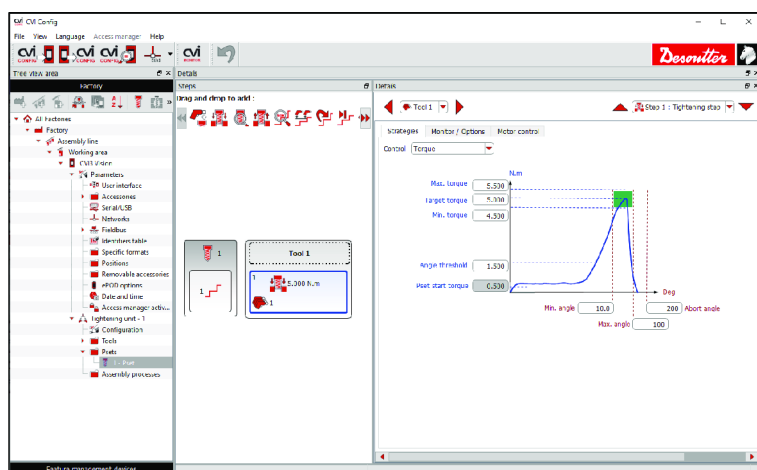
Select "Simple mode".

Change the target torque to 5 Nm.

Click OK to validate.



Use the mouse to point and click this box in the middle pane.



Click this icon to update the product.

i If you get the message **Invalid Pset settings** in the controller, go to CVI CONFIG, adjust torque and angle values in the step **Tightening** and transfer the configuration again into the controller.

Go to the controller display.



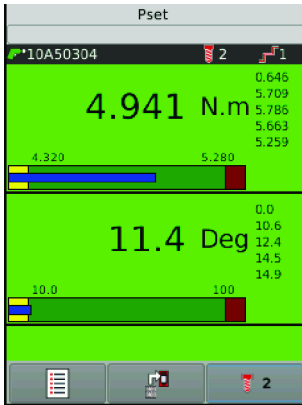
Tap this icon to select the Pset.



Click this icon to validate.
Pset 1 is displayed.

Press the trigger of tool 1 to run the Pset.

The result is displayed on the controller screen.



Hardware upgrade

Upgrading CVI3 controllers

Checking the firmware version with CVIMONITOR

Launch CVI MONITOR software from the launchbar on your computer desktop.

Type the IP of the relevant system and click "Select".



Click this icon to display information about the system.

Upgrading the firmware

Contact your Desoutter representative to get the last version of firmware.

On receipt of the .zip file, copy the content to a USB key. Unzip the file and copy/paste ".evi3" and ".evi3md5" files on the root of the USB key.

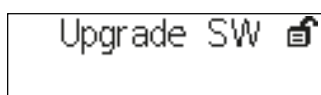
Plug the USB key into the front panel port of the controller.

CVI3 Essential / CVI3 Function

From the start screen, press "Escape" to enter the "Control mode".

Keep pressing "Enter" up to the screen "USB".

Press "Enter" key up to the following screen.



Press "Enter" to validate.

CVI3 Vision / TWINCVI3



From the "Start screen", tap this icon to display the main menu.

Tap "Maintenance / Controller / USB".

Tap "Upgrade SW".

Finishing the procedure

The controller beeps during 2 seconds and starts the process.

Do not switch off the controller. Wait for the automatic reboot.

The update lasts a few minutes.

When the upgrade is finished, the green LED of the controller remains steady.

Software upgrade

Upgrading software

 It is not necessary to backup your configurations before upgrading software.

To get the last release, go to <https://www.desouttertools.com/resource-centre> (path: CAD, Docs & Software / Software / PC and Network Software / Software / CVI3 PC Software).

Select the software, click the box "Actions" and download the .zip file.

Go to the folder "Downloads" of your computer, copy the file and paste it in a safe location.

Unzip the file and run the program.

Contact your Desoutter representative to get more information and support.

Founded in 1914 and headquartered in France, Desoutter Industrial Tools is a global leader in electric and pneumatic assembly tools serving a wide range of assembly and manufacturing operations, including Aerospace, Automotive, Light and Heavy Vehicles, Off-Road, General Industry.

Desoutter offers a comprehensive range of Solutions -tools, service and projects- to meet the specific demands of local and global customers in over 170 countries.

The company designs, develops and delivers innovative quality industrial tool solutions, including Air and Electric Screwdrivers, Advanced Assembly Tools, Advanced Drilling Units, Air Motors and Torque Measurement Systems.

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