English

Electrical installation manual for conditioner of 404 Broken tool detector

www.detector-france.com

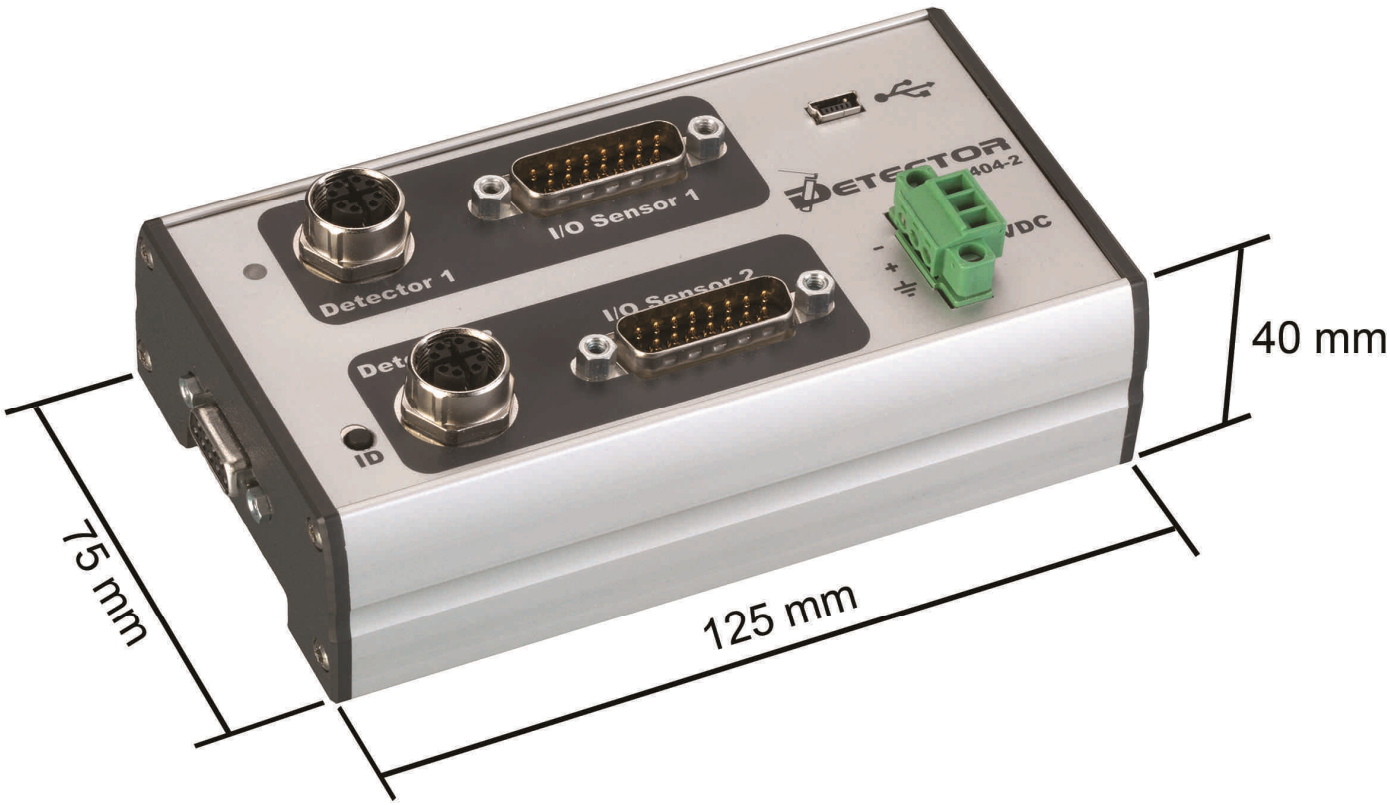
INSELE404CDT-404-2-EN – Index C

1. Location of the electronic conditioner

The electronic conditioner must be placed in the electric cabinet or in a protection enclosure to protect it from the aggressive workshop environment (oil vapors, steam, etc…). It is best to fix it on a 35mm Din rail.
The electronic conditioner must be installed more than 10 cm from all switches, relays or other electric gear liable to disturb its operation..
The device's operating temperature must not be greater than +50°C and not less than 0°C.
The device's storage temperature (not in operation) must not be greater than +85°C and not less than -20°C.

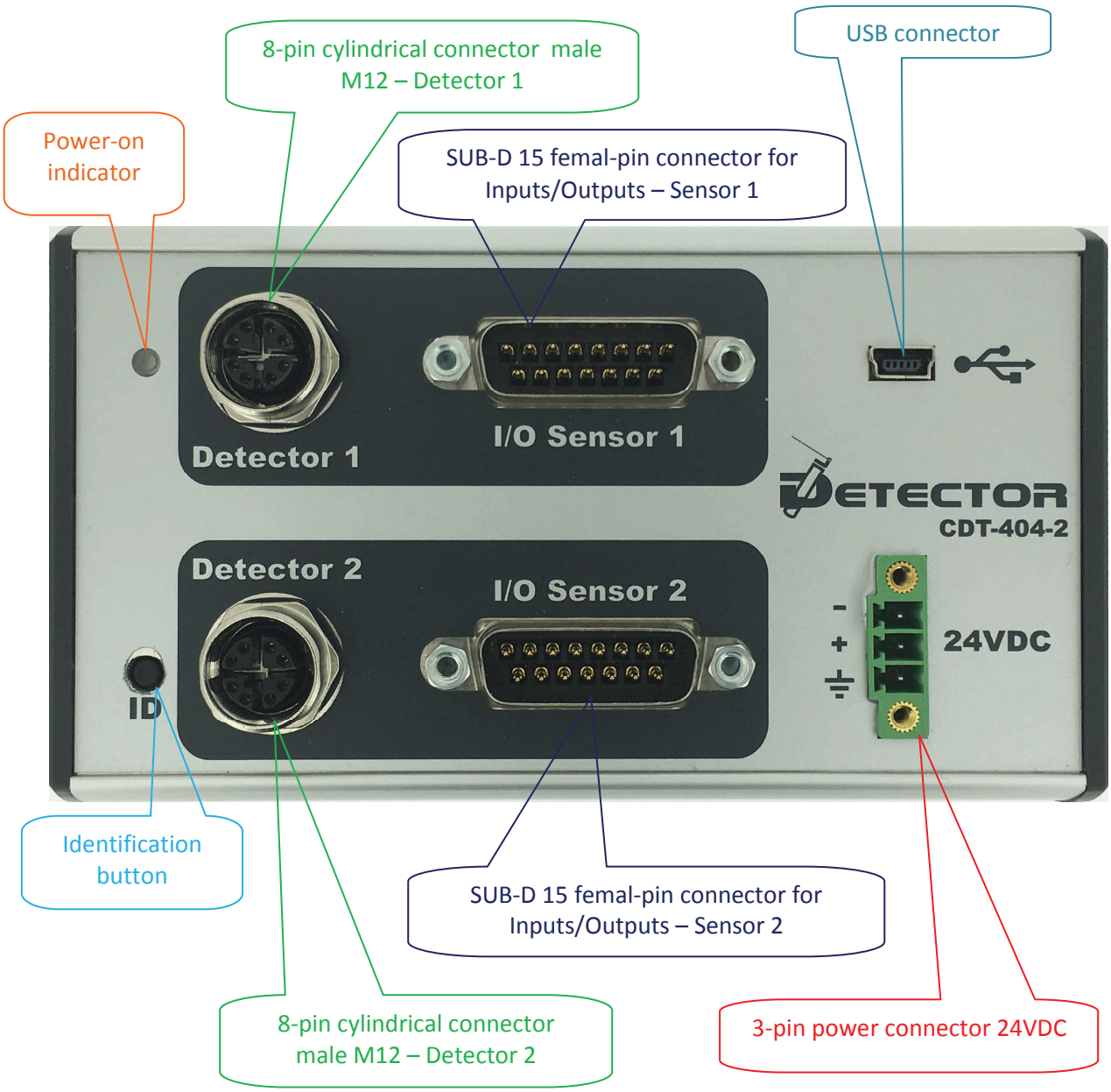
The CDT-404-2 complies with and respects the standards described below:
Electromagnetic Compatibility – Requirements for home appliances, electric toolings and analog devices -
- Part 1 : Emission : NF EN 55014-1 February 2002.
- Part 2 : Immunity : NF EN 55014-2 April 2002.
Information processing devices – Radio interference characteristics – Limits and measurement methods. NF EN 55022 April 2001.
Low voltage standard NF EN 61010-1 June 2001.

Conditioner dimensions :



2. Description of the upper face

On the upper side of the conditioner is the essential connectors, buttons and indicators :



Power supply – 3-pin power connector 24VDC

The electronic conditioner must be supplied with 24VDC.

Power consumption of Touchscreen ETC1 : **2,5W** (100mA)
Power consumption of Conditioner CDT-404 : **5,5W** (220mA)

A 3-pin screw connector is supplied with the conditioner.

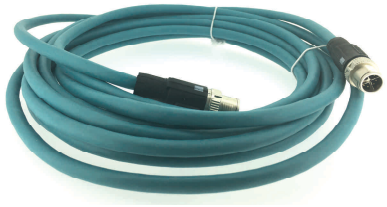
Important : For a good operation of all devices (Screen and conditioners), it is imperative to connect the conditioner to the ground ⏚

Connection with a computer – USB

The miniUSB connector is used to connect the conditioner to a computer for parameterization via software and also for software updates of the conditioner.

8-pin cylindrical connector M12

The connector « Detector1 » and « Detector2 » connect the detectors to the conditioner.



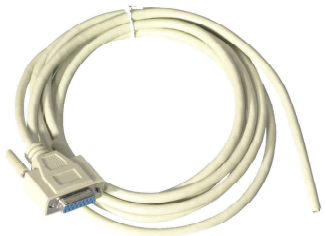
Reference: 404CBL
Designation : Armored cable for detector
Length : 5 meters

Connection is via a 5 m male / male M12 shielded cable.

SUB-D15 femal-pin connector for Inputs/Outputs

The SUB-D15 connectors **I/O Sensor 1** et **I/O Sensor 2** allow the conditioner to communicate with the machine :

- The machine sends informations to the conditioner (Inputs of the conditioner) : « Top Control », « RAZ » or « Teaching reference ».
- The conditioner sends informations to the machine (Outputs of the conditioner) : « Good Control », « Machine Shutdown » or « Chips ».



Reference: PC04
Designation : Câble SUB-D15 Entrée/Sortie
Length : 3 meters

2 Inputs/Outputs cables are supplied with the device. This cable has on one side a female SUB-D15 connector and the other side no connector.

- Inputs pinlist

PINS	SENSOR 1 OR 2 SIGNAL	WIRE COLOR
4	INPUT COMMON	ORANGE
14	RESET TO ZERO	BROWN / WHITE
7	REFERENCE (TEACH)	BLUE
15	CONTROL	RED / WHITE

INPUT COMMON (4) has a potential of 0 volts and is only used for inputs.

RESET TO ZERO (14) allows resetting a broken tool defect.
The connection of this input is optional, because the defect may be reset manually by pressing the Raz icon 

on the touchscreen.
This means that if this inpt is not wired, when a broken tool is detected – the machine will be shutdown at the end of cycle – The operator should manually reset by pressing the Raz icon 

.
This input should be connected to **a dry contact**.

REFERENCE (TEACH) (7) allows to start the learning process (See description 404 programming manual). Enabling this input will have the same effect as pressing the Ref Icon 

on touch screen.
The connection of this input is optional, because this input simply allows to deport with a push button the Ref key 

present on the touchscreen.
This input should be connected to **a dry contact**.

The **VALID (15) must be wired to activate the functionality of the electronic conditioner** because it allows to start the tools control process.
The activation of this input through the machine must be made just after back of tool every cycle.
This input should be connected to **a dry contact**.

IMPORTANT : The signals required for these inputs must be pulsed signals (momentary – 50ms maxi) and must not be continuous signals.

- Outputs pinlist

SIGNAL	PINS	RELAYS	WIRE COLOR
FREE (Not Use)	**1**	NORMALLY OPEN (NO)	BLACK
	2	NORMALLY CLOSED (NC)	BROWN
	9	COMMON	GREY
CHIPS *24V DC MAX 2A MAX*	**11**	NORMALLY OPEN (NO)	PINK
	10	NORMALLY CLOSED (NC)	WHITE
	3	COMMON	RED
GOOD CONTROL *24V DC MAX 120 mA MAX*	**6**	NORMALY OPEN (NO)	DARK GREEN
	13	COMMON	BLACK / WHITE
MACHINE SHUTDOWN *24V DC MAX 120 mA MAX*	**5**	NORMALY CLOSED (NC)	YELLOW
	12	COMMON	LIGHT GREEN

The **CHIPS** output can be wired either **Normally Open (NO)** using pins **11** and **3** (Pink and Red wires) or **Normally Closed (NC)** using pins **10** and **3** (White and Red wires).
At the end of the control process and if the detector has not been able to go to the reference position of the tool, this output switches.
It remains switched until the reset is completed by closing the reset input or by pressing the Raz icon 

on the touchscreen.

IMPORTANT : The voltage used for this output must not exceed **24VDC** with a maximum current of **2A**.

The **GOOD CONTROL** output can be wired only **Normally Opent (NO)** using pins **6** and **13** (Dark Green and Black/White wires).
This output closes instantly at the end of the control process if the tools are not detected broken and the detector has returned to its original position.

The **MACHINE SHUTDOWN** can be wired only **Normally Closed (NC)** using pins **5** and **12** (Yellow and Light Green wires).
This output opens instantly at the end of the control process if the tools are detected broken or if the detector has not returned to its original position.
It remains open until the reset is completed by closing the reset input or by pressing the key RAZ.

IMPORTANT : The voltage used for thesse outputs (Good control and Machine Shutdown) must not exceed **24V DC** with a maximum current of **120mA**.

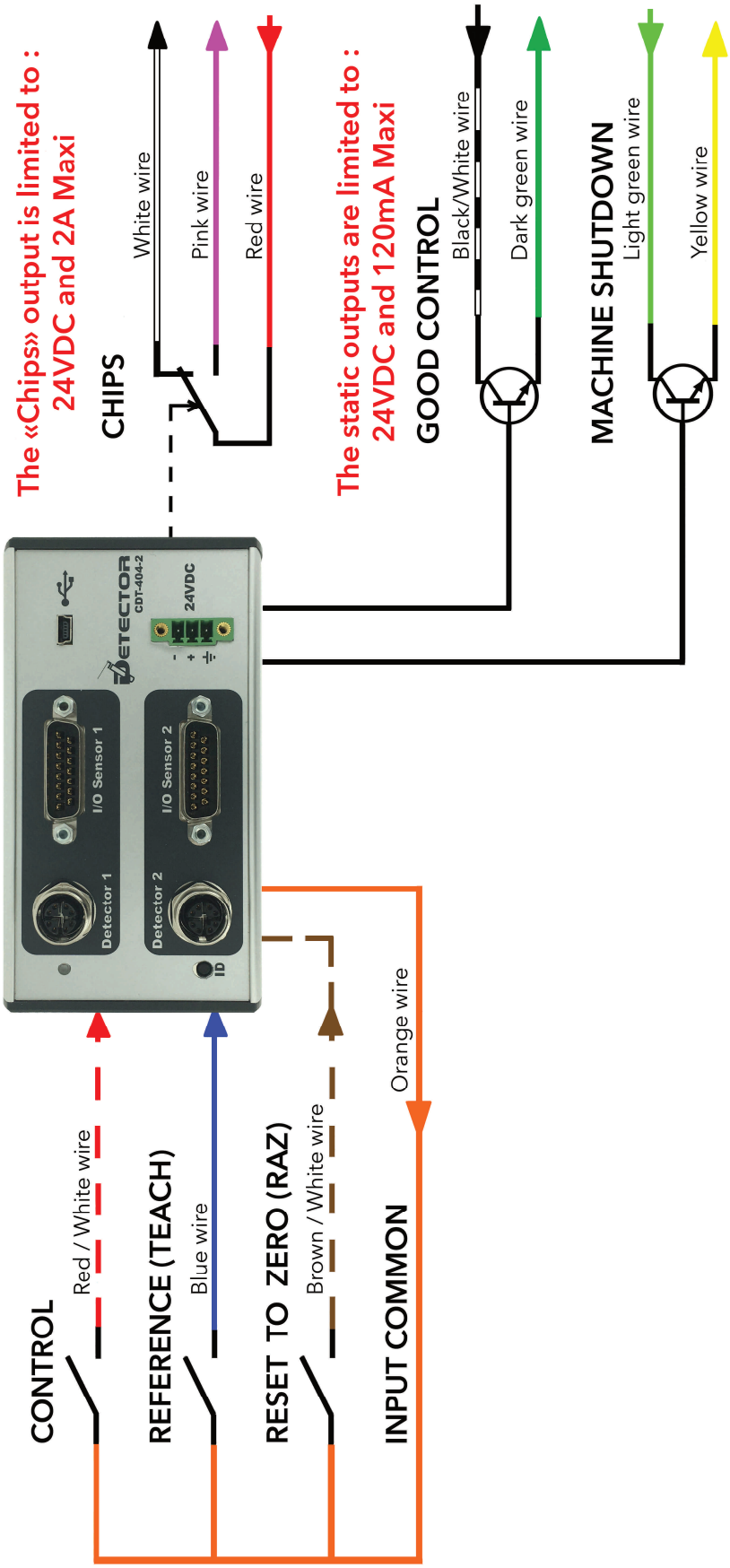
Power-on indicator

This blue light is used to see if the conditioner is switched on and can have several conditions :
- The blue light flashes => the conditioner is not identified with the touchscreen.
- The blue light is fixed => the conditioner is identified and ready for operation.

Identification Button ID

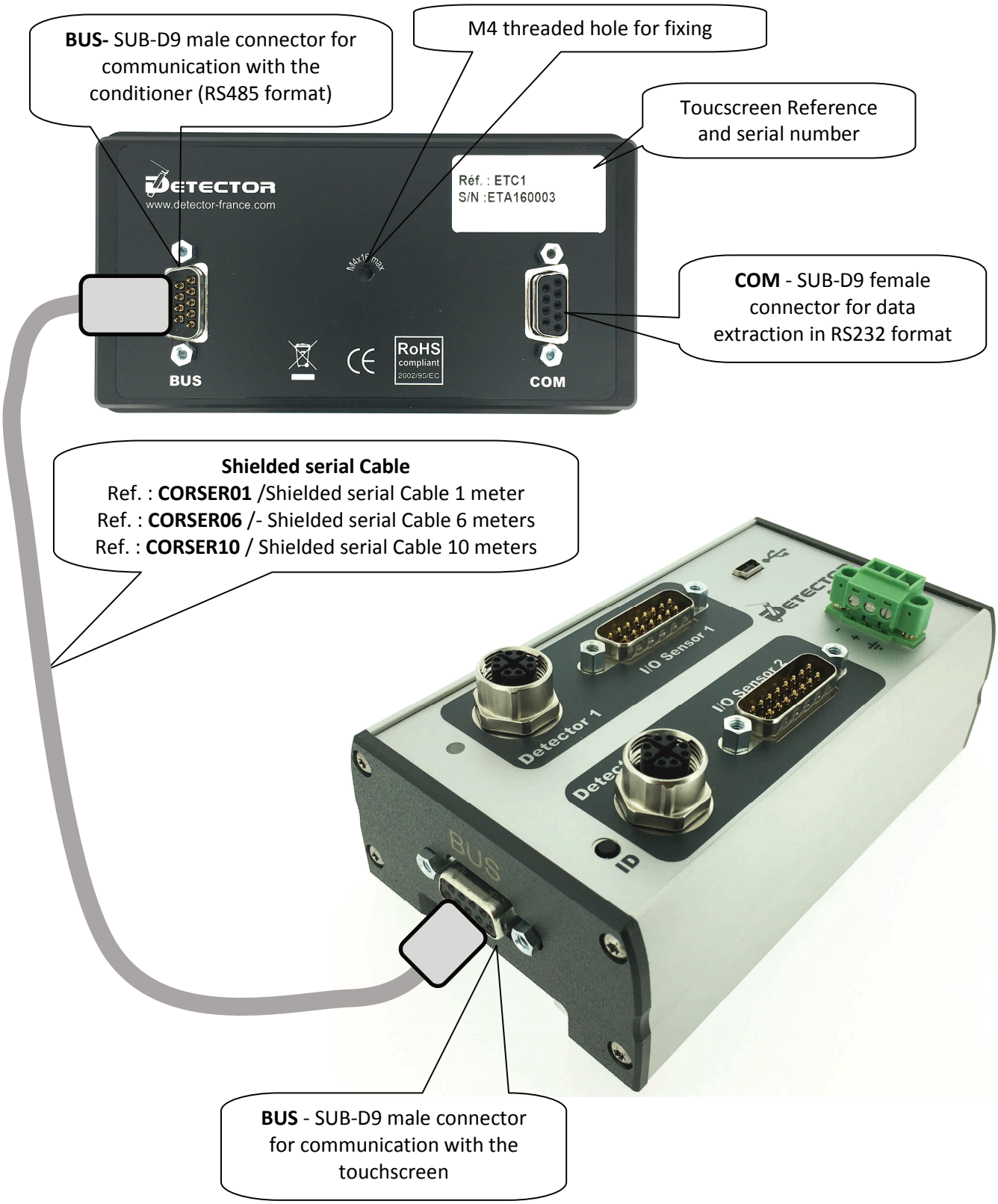
This button is used to identify the conditioner on the touchscreen.
The identification procedure is described in the 404 programming manual.

3 Electrical schema of wiring



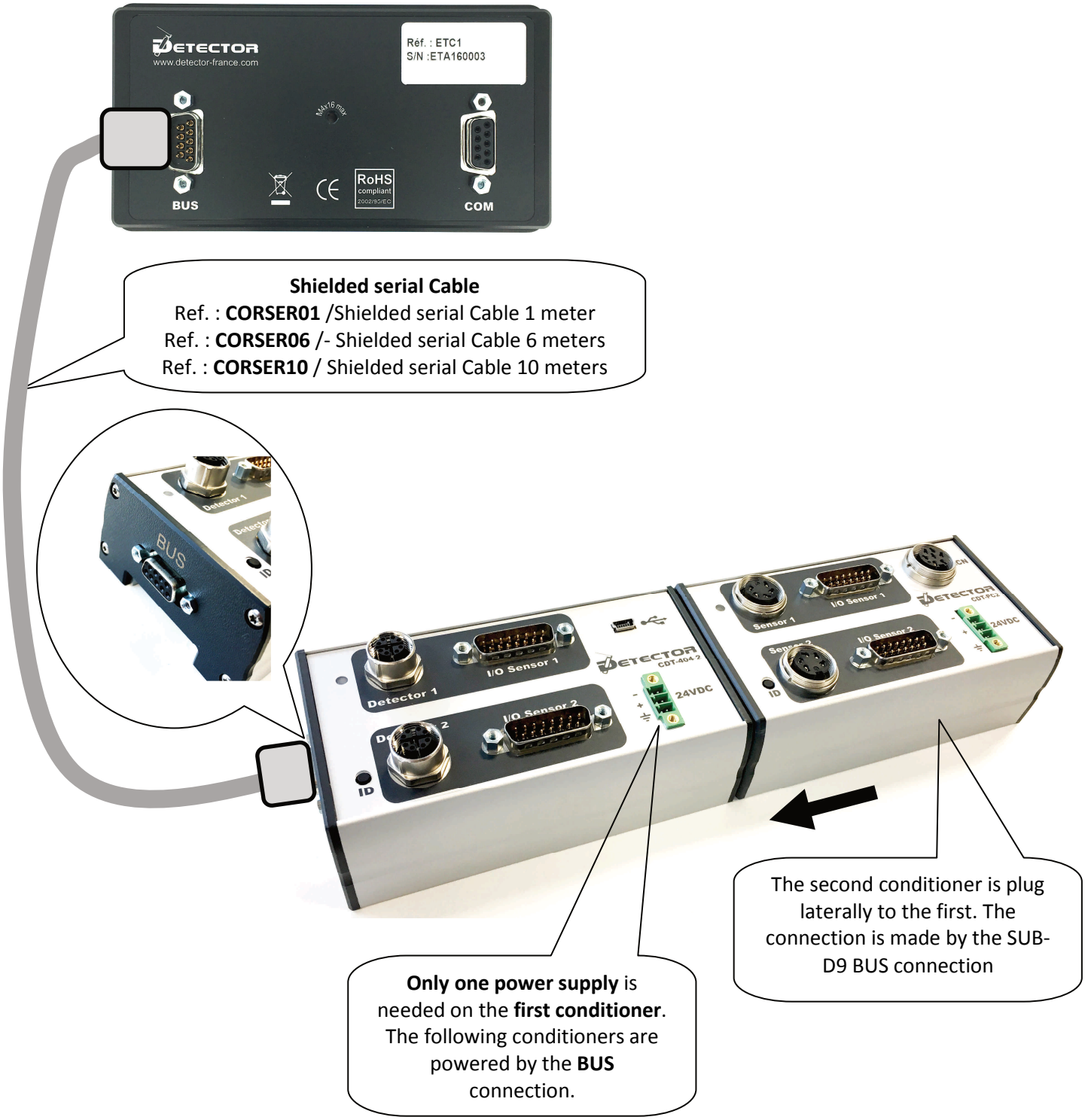
3 Touchscreen connection

The touchscreen is connected to the electronic conditioner via SUB-D9 Shielded cable (**CORSER01**). It connects to the SUB-D9 female **BUS** connector on the left side of the conditioner and to the SUB-D9 male **BUS** connector on the back of the touch screen.

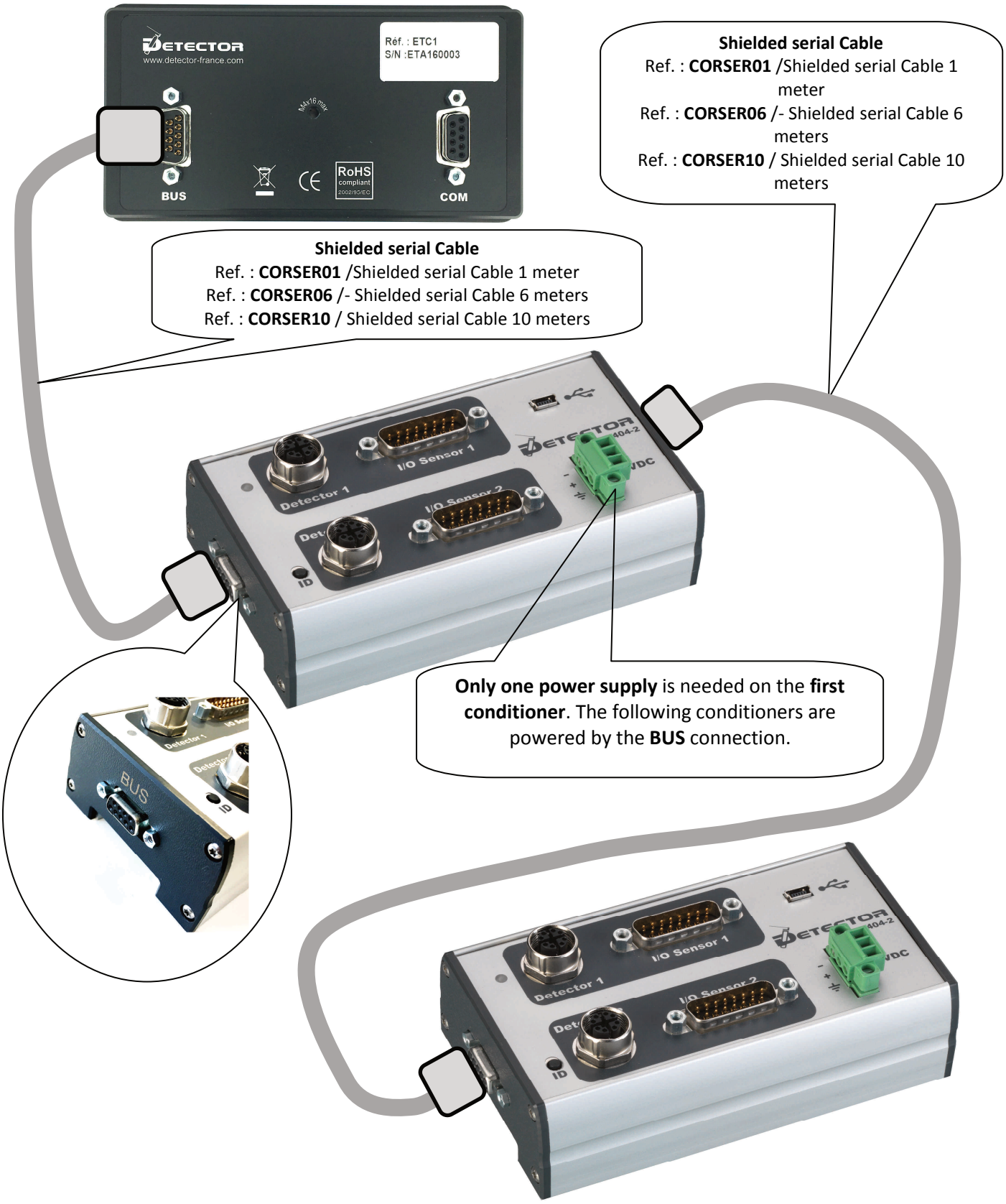


4- Multi-Conditioner connection

The connection of several conditioners can be done in two ways :
1- The first way ; if the configuration of the electrical cabinet allows it ; is to stack the conditioners one after the other. The screen always plugs in the same way with the shielded serial cable, from the **SUB-D9 BUS connector** at the back of the screen to the SUB-D9 **BUS connector** on the left side of the conditioner (see above paragraph 3- Touchscreen connection)



2- The second way is to connect the different conditioners with a shielded serial cable identical to that uses ton connect the screen.
The screen always plugs in the same way through a shielded serial cable, from the **SUB-D9 BUS connector** at the back of the screen to the **SUB-D9 BUS connector** on the left side ofe the conditioner (see above paragraph 3- Touchscreen connection)



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