iVAC Pro Tool Plus User Guide

Rev 2 Date 28 May 2014

This User Guide is intended to cover the programming, setup and use of the 'iVAC Pro Tool Plus' ('Tool Plus').
It also covers the General Description and Features of the 'IVAC Pro System'.

Table of Contents

1. Warnings

Please read the operating instructions before use.
The 'Tool Plus' is intended for indoor use, in dry locations only.
The 'Tool Plus' is powered from an AC to DC 5V USB adapter
The USB Adapter should only be connected to AC mains circuits at the rated voltage.

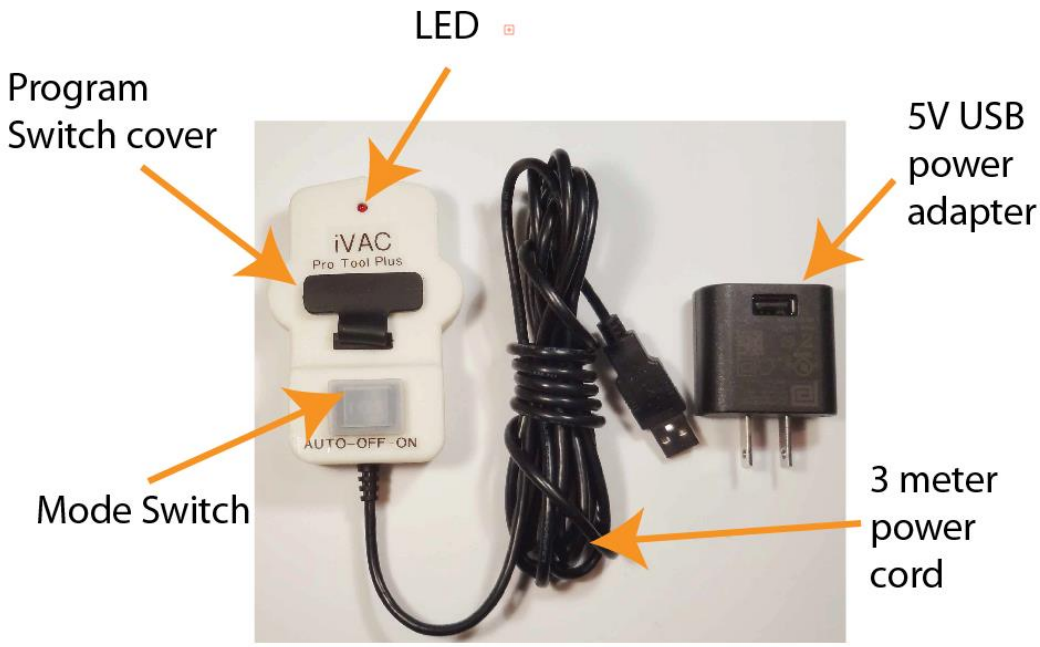
2. General Description of 'iVAC Pro System'

The 'iVAC Pro System' consists of two groups of product.
The first group consists of units that transmit information and a second group of units that receive the transmitted information. At the present time the first group that transmit information are the 'iVAC Pro Remote' and three versions of the 'iVAC Pro Tool' units. The 'iVAC Pro Tool Plus', the 'iVAC Pro Tool', and the 'iVAC Pro Tool HP'. The 'Tool' units.
The units that receive the information are the 'iVAC Pro Switch' which controls the Dust Collector and the 'iVAC Pro Blast Gate'.
The 'Tool' units monitor the status of its associated power tool. When the power tool turns on it sends a digital wireless signal instructing the 'iVAC Pro Switch' to turn on the Dust Collector and the 'iVAC Pro Blast Gate' to open. .The following discussions relate to communications with an 'iVAC Pro Switch' although the same actions/response apply to the 'iVAC Pro Blast Gate'.
This User Guide will focus on the 'Tool Plus'.

3 ‘iVAC Pro Tool Plus’ (‘Tool Plus’)

The ‘Tool Plus’ unit is used to identify the powered on state of its associated power tool.
The ‘Tool Plus’ is physically clamped to the power cord of the power tool.
The method of detecting the status of the power tool is by means of sensing the magnetic field around the power cord when the power tool is turned on or off.
The ‘Tool Plus’ is powered by +5VDC. This power is obtained from either a UL FCC approved AC to DC 5volt USB adaptor, or an associated ‘iVAC Pro System’ unit.
If a ‘Tool Plus’ unit is in the Auto Mode when the associated power tool is powered on, the ‘Tool Plus’ unit will transmit an instruction, by means of a digital wireless signal, to the ‘iVAC Pro Switch’ instructing it to turn on and apply power to the Dust Collector.
When the power tool has been turned off, the ‘Tool Plus’ units will transmit an instruction to the ‘iVAC Pro Switch’ telling it to turn off.
The range for radio communications between the ‘Tool Plus’ and the ‘iVAC Pro Switch’ is forty feet.
When mounting the ‘iVAC Pro units’ they should not be mounted on large metal objects, since this can affect the communication range.

4. Physical Features



5 Modes of Operation

The 'Tool Plus' has three modes of operation;
AUTO – OFF – ON, as set by the Mode Switch.
In the AUTO mode the 'Tool Plus' transmits information to an 'iVAC Pro Switch' each time the connected power tool is turned on or off.
When in AUTO Mode the 'Tool Plus' senses the current in the power cable of the power tool it is attached to.
If the power tool is ON, the LED will be ON, and the LED will be OFF if the power tool is OFF
When the power tool turns ON or OFF the led will flash for about 3 seconds indicating it is transmitting the appropriate ON or OFF command

As the Mode Switch is transferred from AUTO to OFF, a transmission is sent to the 'iVAC Pro Switch', instructing it to turn off. The LED will flash during the RF transmission

As the Mode Switch is moved from OFF to ON, a transmission is sent to the 'iVAC Pro Switch', instructing it to turn on. The LED will flash during the RF transmission.

As the Mode Switch is transferred from ON to OFF, a transmission is sent to the 'iVAC Pro Switch', instructing it to turn off. The LED will flash during the RF transmission.

As the Mode Switch is moved from OFF to AUTO, a transmission is sent to the 'iVAC Pro Switch'. The command sent will be an ON command IF the power tool is ON or an OFF command if the power tool is OFF.. The LED will flash during the RF transmission.

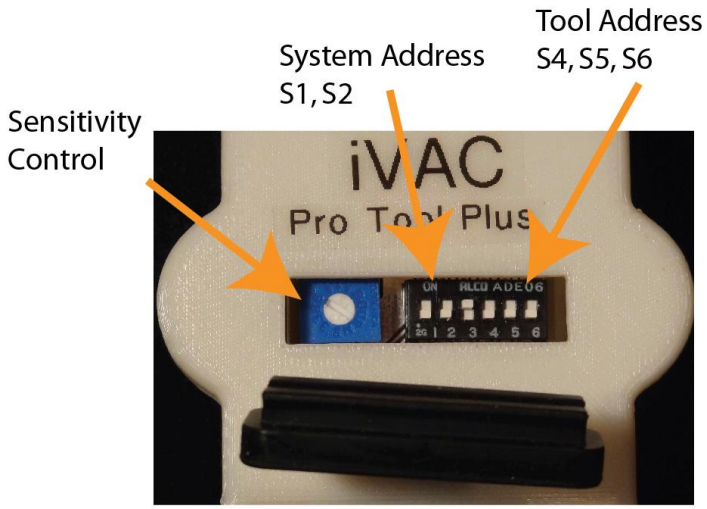
CAUTION:
It is important to NOT change the Mode Switch while the 'Tool Plus' is transmitting. You must wait until the LED stops flashing before moving the Mode Switch from Auto to OFF, OFF to ON, ON to OFF or OFF to AUTO.

NOTE
When in OFF or ON Mode the LED indicates how much current is flowing to the power tool. This indication is dependent on the setting of the Sensitivity control. Once the Sensitivity of the 'Tool Plus' has been properly set up, see section 11 below,
LED = Off Power tool is Off
LED Flashing The LED has two flash rates, both rates are faster than the flash rate when the 'Tool Plus' is transmitting RF commands.
LED = ON Power tool is On

6 Program Switch

The Program Switch is accessed through the Program Switch Cover located in the top surface of the unit. It enables the programming of the System Address and the Tool Address.
Changes to the Program Switch must be performed with the Mode Switch in the OFF position.

Changes to the Program switch with the Mode switch in AUTO mode will be ignored.



7 System Address

A System consists of up to eight 'Tool Plus' units that can control one 'iVAC Pro Switch'
By means of the Program Switch, the 'Tool Plus' can be assigned to work on one of four System Addresses, A, B, C or D.
The System Address is to enable up to four systems to operate independently while within communication range of each other.
All units required to operate as a System must be set to the same System Address.

System Address	S1	S2
A *	off	off
B	on	off
C	off	on
D	on	on

* factory setting

8 Multi Tool Operation

The 'iVAC Pro' System has been designed so that up to eight 'Tool Plus' units can communicate with one 'iVAC Pro Switch' on the same System Address.
Several 'Tool Plus' units can be in operation at the same time.
The first 'Tool Plus' unit to turn on, will turn on the 'iVAC Pro Switch'. The last 'Tool Plus' unit to turn off, will turn off the 'iVAC Pro Switch'.

9 Tool Address

Each 'Tool Plus' unit should be assigned an independent one of eight tool address.
This is important in a workshop where more than one power tool is being used at the same time.
This information is used by the 'iVAC Pro Switch' to enable it to know the status of each individual power tool in a system.
The Tool Address is set by means of the Program Switches 4, 5 and 6.

Tool Address	S4	S5	S6
1	on	off	off
2	off	on	off
3	on	on	off
4	off	off	on
5	on	off	on
6	off	on	on
7	on	on	on
8 *	off	off	off

* factory setting

10 Active Current sense level

This is the current level to the power tool where the ‘Tool Plus’ identifies that the power tool is turned on. This current level may vary between power tools and therefore the Current Sense Level is set by means of the Sensitivity Control and the Activity LED.

CAUTION

The Tool Plus senses the magnetic field resulting from current flow in the power cable to which it is attached.

The Tool Plus can be affected if it is mounted too close to motors, transformers or other devices which produce magnetic fields.

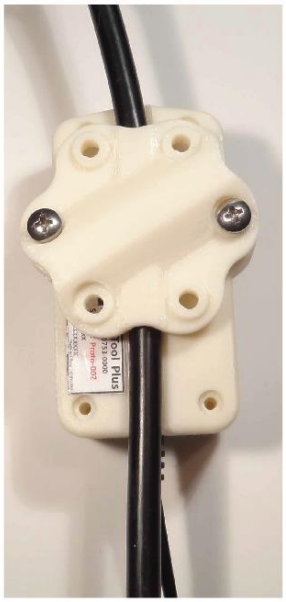
Normally a 12” to 18” distance is sufficient to avoid problems.

It is easy to see if there is magnetic interference. With the ‘Tool Plus’ in OFF mode and the power tool OFF the LED will flash if there is interference.

11 Sensitivity Adjustment.

The ‘Tool Plus’ detects current flowing to a power tool by detecting the magnetic field around the power cord to the power tool. The power cord should not have a metal shield.

The power cord is loosely clamped to the back of the iVAC Pro Tool Plus as shown in the following two pictures.



The rear Clamp Cover has three positions for mounting, to accommodate various sizes of power cord diameter.

The Mode Switch is set to OFF.

The Sensitivity Control is set to mid point.

The power to the power tool is turned ON.

If the ‘Tool Plus’ is detecting the current flow then the Activity LED will turn ON.

If the Activity LED does not turn ON, then the Sensitivity Control should be adjusted counter clockwise until the Activity LED turns ON.

If the Activity LED does not come ON, then the iVAC Pro Tool Plus should be rotated slowly around the cable or moved along the cable until the Activity LED comes ON.

At this point tighten the clamp to the cable.

The Sensitivity Control should now be set to a fully clockwise position.

It should then be rotated slowly clockwise.

Initially the Activity LED will start to flash at a slow rate and then increase until the Activity LED is on permanently. As soon as the Activity LED is on permanently this is the correct setting for this power tool.

Ensure the rear clamp is screwed firmly to the iVAC Pro Tool Plus.

NOTE: For medium and higher Power Tools (Power Tools of more than 200 watts) the Sensitivity Control is set to mid point.should be fine. For lower Power Tools the Sensitivity Control should be adjusted fully counter clockwise and then move or rotate the iVAC Pro Tool Plus until the Activity LED comes ON.

12 System Test

Turn OFF the power tool.
Set the Mode Switch to AUTO.
Turn the power tool ON.
The Activity LED should flash for approximately three seconds and then go to an ON state.
Turn the power tool OFF.
The Activity LED should flash for approximately three seconds and then go to an OFF state.
At this point the 'Tool Plus' should be communicating with the 'iVAC Pro Switch' that in turn controls the dust collector.

13 'Tool Plus' Features

Plastic housing is 3.75" x 2.5" x 1.75" ABS 94V0 plastics.
Input power cord is 10 ft long with a USB power plug.
Three Modes of operation. AUTO – OFF - ON
Programmable System Address.
Programmable Tool Address.
Preset able Sensitivity.
Activity LED.

14 Specification.

Active current sense level is adjustable from approximately 0.3Amps or greater.
Range, forty feet.
Ambient operating temperature range, 0 – 30C
Powered from a UL FCC approved AC to 5VDC Adaptor.

15 Regulatory Compliance:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Any changes or modifications of this product, not approved by manufacturer will void the user's authority to operate the equipment.
FCC ID: YCH- IVACTP.
IC: 8940A-IVACTP
5Volt 1Amp AC to DC Adaptor. UL and FCC approved

16 Warranty

The 'iVAC Pro Tool Plus' is warranted to the original consumer purchaser for a period of one year from the date of purchase, against defects in materials or workmanship. Proof of purchase is required.
The Company, BCTINT Limited, obligation under this warranty shall consist of repair, replacement or credit, at its option; provided that the product has not been misused, abused, altered or damaged, as determined by the company. This warranty does not cover, and is intended to exclude, any liability on the part of BCTINT Limited for incidental damages, consequential damages, labor charges or any other costs incurred in connection with the purchase or use of the 'iVAC Pro Tool Plus'.
This warranty only applies to 'iVAC Pro Tool Plus' units purchased in Canada or the United States of America.

17 Contact

BCTINT Ltd
Unit 108, 120 Iber Road.
Stittsville, ON
K2S 1E9
Canada
WWW.iVACPro.com
email: info@ivacpro.com
Tel 1-613-599-8988
Customer Service Toll Free : 1-800-775-5579