# **NV150**

QUICK START AND CONFIGURATION GUIDE

INTELLIGENCE IN VALIDATION



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## **NV150 Quick Start and Configuration Guide**

| 1 |       | INTRODUCTION                                   | 3  |
|---|-------|--|----|
| 2 |       | ASSEMBLY                                       | 4  |
|   | 2.1   | Separate the Baseplate from the Validator head | 5  |
|   | 2.2   | Install the baseplate                          | 6  |
|   | 2.3   | Fit the bezel to the validator                 | 8  |
|   | 2.4   | Mount the validator                            | 10 |
|   | 2.5   | Connections                                    | 11 |
| 3 |       | CONFIGURATION                                  | 12 |
|   | 3.1   | Configuration Button Functions                 | 12 |
|   | 3.2   | Flash Counts (Interface Type)                  | 13 |
| 4 |       | CONNECTORS AND PINOUTS                         | 14 |
|   | 4.1   | Operational Connection                         | 14 |
|   | 4.2   | Programming and Dataset loading                | 14 |
| 5 |       | TECHNICAL SPECIFICATIONS                       | 15 |
|   | 5.1   | Electrical Specification                       | 15 |
|   | 5.2   | Interface Specification                        | 15 |
|   | 5.3   | Dimensions                                     | 16 |
|   | 5.3.1 | Outline Dimensions                             | 16 |
|   | 5.3.2 | Mounting Face Dimensions                       | 16 |
|   | 5.3.3 | Mounting Screws                                | 17 |
| 6 |       | NV150 FAULT CODES                              | 18 |
|   | 6.1.1 | Bezel Flash Fault Codes                        | 18 |
| 7 |       | FREQUENTLY ASKED QUESTIONS                     | 19 |

2

#### **1 INTRODUCTION**

This manual is intended to help with first setup and installation of the NV150.

This section contains the essential information that a user needs to quickly assemble and configure the NV150 validator ready for installation into the host machine or for testing on the bench.



The NV150 validator (baseplate connector) is pin for pin compatible with the NV7 / NV8 / NV9 / NV10 series of validators, but **NOT** with earlier versions of the product (NV2 – NV5).

3

## 2 ASSEMBLY

| Install:      | Horizontally on baseplate                          |
|---------------|--|
| Machine Type: | Front Opening – mandatory in order to allow access |
| Entry:        | NV9/11/150/200 Bezel                               |



## 2.1 Separate the Baseplate from the Validator head

If the validator head and baseplate are not separate already:

- 1. Lift the catch
- 2. Slide the baseplate off



#### 2.2 Install the baseplate

Ensure that the mounting position and note exit hole meets the dimensional requirements as shown below (all dimensions are in millimetres mm):



The notes fall from the exit guide and are intended to be caught in the host machine cashbox or note store.

The maximum thickness of the shelf (on to which the baseplate is mounted) is 10mm – including any items which protrude below it (such as nuts, washers, screws etc.).



Ensure that there is space below the note exit to allow the notes to fall clear of the note exit.

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Secure the baseplate in position using the screw holes provided. See the Specification section at the end for a specification on the screws to be used.



Do not allow screw heads to foul the validator.

7

Ensure baseplate mounting screws are flush with the surface of the baseplate.



## 2.3 Fit the bezel to the validator



Slide the latch forward and then lift the top half of the validator to open it



Lower the bezel into the slots provided



#### **NV150 Quick Start and Configuration Guide**

Connect the bezel by plugging in the lead provided into the front of the validator



Close the validator





## 2.4 Mount the validator

Lower the validator on to the baseplate and slide it towards the rear to lock it into place.





#### **2.5 Connections**

There is only one connecting plug on the NV150 for use by the host. It is located on the rear of the baseplate.



Pins are numbered as shown (see Operational Connection below) :





Do not attempt to disassemble the NV150 validator head – trying to do this could cause personal injury and will damage the unit beyond repair.

#### **3 CONFIGURATION**

The NV150 does not use DIP switches to configure the unit – configuration and setting is carried out by using a Configuration Button on the front of the NV150 body (below/left of the note entry slot):



There are several functions available when using the Configuration Button, and these are listed in the next table:



When in programming mode, do not turn off the power before the operation is complete as this will make the unit unusable.

## 3.1 Configuration Button Functions

| Action   | Power Status        | Function   |  |
|--|---------------------|--|--|
| Press and hold (more than<br>2 seconds) until the bezel<br>illuminates, then release | Powered ON          | Sets validator to Programming mode (SSP)                                       |  |
| Press once (less than 1 second)  | Powered ON          | Enables Configuration Card<br>programming — press again to<br>cancel this mode |  |
| Press twice (within half a second)   | Powered ON          | Shows current interface type (see flash count table below)                     |  |
| Press and hold as validator is powered up  | Powered OFF /<br>ON | Resets to factory settings   |  |

1

12

## 3.2 Flash Counts (Interface Type)

| Flash Count | Interface |
|-------------|-----------|
| 1           | SSP       |
| 6           | ccTalk    |

The NV150 Validator leaves the factory pre-set to at least one currency and one interface so that it is ready for immediate installation. The dataset and interface used are shown on the label fixed to the top of the validator head.

## **4 CONNECTORS AND PINOUTS**

## 4.1 Operational Connection

When in operational mode (in a machine) the only connector available is the 16 way connector on the baseplate.



Power (+V & Ground) is always required on pins 15 and 16 of the 16 way connector.

The pin numbering of the socket is shown below, as well as an overview of the socket connections:



| Pin | Description            |  |
|-----|------------------------|--|
| 1   | Serial Data Out (Tx)   |  |
| 5   | Serial Data In (Rx)    |  |
| 15  | + V Power              |  |
| 16  | 0V / Ground Connection |  |

## 4.2 Programming and Dataset loading

For programming and dataset loading in some cases it may be possible to connect to the unit using one of the USB connectors (front or back) on the NV150.

These connections are NOT for operational use.

## **5 TECHNICAL SPECIFICATIONS**

A brief summarised Technical Specification follows. For the full Specification please see the relevant Technical Manual(s) on our web site.

## 5.1 Electrical Specification

| DC Voltage            | Minimum | Nominal | Maximum         |
|-----------------------|---------|---------|-----------------|
| Absolute limits       | 10.8 V  | 12 V    | 13.2 V          |
| Supply ripple voltage | 0 V     | 0V      | 0.25 V @ 100 Hz |
| Supply Current        |         |         |                 |
| Standby               |         |         | 200 mA          |
| Running               |         |         | 1 A             |
| Peak (motor stall)    |         |         | 1.5 A           |



Ensure that the supply voltage to the NV150 is not lower than 10.8 V and that the power supply can provide sufficient current to avoid incorrect operation and excessive note rejects.

We recommend that your power supply is capable of supplying 12V DC at 3 A.

 For 12V operation, use TDK Lambda model SWS50-12. This power supply is available from a variety of suppliers including Farnell (stock code 1184645) and RS (stock code 466-5869).

## 5.2 Interface Specification

| Interface Logic Levels           | Logic Low                                | Logic High       |
|----------------------------------|--|------------------|
| Inputs                           | 0 V to +0.5 V                            | +3.7 V to +12 V  |
| Outputs (2.2 k $\Omega$ pull-up) | +0.6 V Pull-up voltage of host interface |                  |
| Maximum current sink             |  | 50 mA per output |

## **5.3 Dimensions**

#### 5.3.1 Outline Dimensions





#### 5.3.2 Mounting Face Dimensions



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#### 5.3.3 Mounting Screws

All baseplate mounting screws should be M3 with a maximum head diameter of 7.5mm. They must be countersunk so that the screw head is flush with, or below the baseplate surface.

If the screws (or any other items) protrude below the mounting shelf in the machine, they must be contained within the 10mm shelf space below the baseplate.



## 6 NV150 FAULT CODES

The NV150 Validator has inbuilt fault detection facilities. If there is a configuration or other error the NV150 front bezel will flash in a particular sequence; a summary of the Bezel Flash Codes for the NV150 is shown below.

| Flashes |       | Indicated Error   | Comments  |
|---------|-------|---|---|
| Long    | Short |   |   |
| 0       | 0     | None  |   |
| 1       | 2     | Note path jam   | Remove obstruction and<br>follow the cleaning<br>procedure in Section 2 of<br>this manual set |
|         | 3     | Unit not initialised  | Contact ITL technical<br>support  |
|         | 1     | Firmware checksum<br>error  |   |
| 3       | 2     | Interface checksum<br>error or unable to<br>set programmed<br>interface | Download new firmware   |
|         | 3     | EEPROM checksum<br>error  |   |
|         | 4     | Dataset checksum<br>error   |   |
|         | 1     | Power supply too<br>low   | Check power supply  |
| 4       | 2     | Power supply too<br>high  | спеск ромег зарріу  |

#### 6.1.1 Bezel Flash Fault Codes

## **7 FREQUENTLY ASKED QUESTIONS**

- a. Why are there no DIP switches on the unit?
  - The NV150 has no dipswitches. Configuring the unit is carried out using a configuration button mounted on the front of the unit.
- b. In what orientation can I use the NV150 validator?
  - The NV150 should be mounted horizontally.
- c. How do I check which interface has been set?
  - You can check which interface has been selected by using the configuration button mounted on the front of the unit.
- d. How do I change the interface type?
  - You can change the interface type by using the configuration button mounted on the front of the unit.