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# CONTENT OF EU DECLARATION OF CONFORMITY

**No. doc-0009550\_R03**

**Manufacturers name:** Domino UK Limited

**Mnufacturers Address:** Bar Hill, Cambridge CB23 8TU.

**Object of the declaration:** Domino G130i, G230i from Serial Number 1610461

**The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:**

2014/35/EU : Low Voltage Directive

2014/30/EU : EMC Directive

2011/65/EU : RoHS Directive

**EN 60950-1:2006/ A2:2013** Information technology equipment - safety - Part 1: General requirements.

**EN 61326-1:2013** Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

# CONTENT OF EU DECLARATION OF CONFORMITY

**No. doc-0013097\_R01**

**Manufacturers name:** Domino UK Limited

**Mnufacturers Address:** Bar Hill, Cambridge CB23 8TU.

**Object of the declaration:** Domino G320i, including a Gx20i controller, from serial number 1731125.

**The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:**

2014/35/EU : Low Voltage Directive

2014/30/EU : EMC Directive

2011/65/EU : RoHS Directive

**EN 60950-1:2006/ A2:2013** Information technology equipment - safety - Part 1: General requirements.

**EN 61326-1:2013** Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

## **FCC NOTICE**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communication Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orientate or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## **Health and Safety**

- Read the relevant Safety Data Sheet (SDS) before storing, handling, transporting or using the ink cartridges
- Ensure the power switch on the underside of the printer is OFF before connecting the power cord to the printer or to the power source
- Protect the printer electronics from electrical surges or low voltage conditions by using a UPS (Uninterruptible Power Source)
- Disconnect the power before opening the printer cabinet
- Disconnect the power before making any wiring connections

- To maintain the environmental rating of the cabinet, route external wiring cables through the cable glands and strain relief provided on the underside of the cabinet
- Ensure all cables are secured away from moving production line components
- Switch OFF or disconnect the power before inserting a Compact Flash memory card
- Switch OFF or disconnect the power before connecting or disconnecting a print head
- Disconnect the power before changing the memory backup battery
- Switch OFF the print group before removing and/or installing a print cartridge
- Use only lint free wipes when cleaning the cartridge nozzles
- Clean cartridge nozzles according to the enclosed recommendations
- Protect the print heads from impact with proper adjustment and alignment of side rails and product guides
- Do not open any enclosed components of the printer or print heads. They contain no user-serviceable parts.

## G-Series Symbols

The following symbols are used in this manual. Where they appear next to a procedure or instruction, they have the significance and importance of written warnings and cautions.



The equipment must be switched off and power removed.



Beware of Electrostatic Discharge (ESD). Electrostatic precautions must be used.

- Switch off machine first
- Wear a wristband connected to the ESD connector provided
- Avoid wearing clothing which can build up electrostatic voltages
- Use ESD protective bags to transport PCBs
- Only place PCBs on a mat made from a material which will dissipate electrostatic voltages and which is connected to ground.

## **Ink and Fluids Information**

Domino supplies Safety Data Sheets (SDS) giving specific safety information with each of its inks. The following are general basic requirements:

- Proper standards of industrial practice relating to cleanliness and tidiness must be maintained
- Smoking or the use of naked flames (or other sources of ignition) in the vicinity of any inks or solvents is highly dangerous and therefore strictly inadvisable.
- All who come into contact with inks must be properly instructed in their use.

Directions for safe working practices vary according to the environment. The following are broad principles so that necessary precautions may be taken:

- Contact with the mouth must be avoided. Therefore eating, drinking or smoking, or any personal habits or actions which may transfer ink to the mouth, must be avoided
- Contact with the eyes must be avoided. If ink does get into the eyes, first aid treatment is to flood the affected eye for 15 minutes with saline solution, (or clean water if saline solution is not available), taking care not to allow the water to run into an unaffected eye. Medical aid must be obtained immediately. Eyewash is available from Domino (Pt.No. 99200)
- Most inks contain solvents which may injure the skin. Good working practice must always be employed and risk assessments carried out. Safety Data Sheets are available that give advice on personal protective equipment. Most gloves only offer limited and short term exposure protection and must be changed after any splashing and on a frequent basis
- Many inks contain materials which vaporise easily and can be inhaled. Good ventilation is necessary
- Any used cleaning materials, e.g. rags, paper wipes, are a potential fire hazard. They must be collected for safe disposal after use.

## Storage

Printing inks must be stored in well ventilated buildings, in areas set aside for the purpose and chosen for safety in case of fire. All fluids must be stored in accordance with local regulations.

## Fire Risk

For an electrical fire, do not use water. If water must be used the power **MUST BE DISCONNECTED** first.

Fire risk is a most important consideration where printing inks are stored and used. The degree of fire hazard will vary considerably from one type of ink or wash to another.

Water-based inks will not burn, although inks based on water-alcohol mixtures may burn if there is sufficient alcohol present. Prolonged exposure of water-based systems to high temperatures may evaporate the water to give a flammable residue.

Solvent-based inks offer a greater degree of hazard depending on the particular solvent or solvent combination. When there is a particular hazard the appropriate information is given on the SDS.

If there is a fire, there is a likelihood that dangerous fumes will arise from printing inks. For this reason ink must be stored where it can be reached quickly by the fire fighting service, and where it will not spread beyond the store.

## Spillages and Disposal

**WARNING:**                    **Some dried inks are highly flammable. Clean up all ink spillages immediately. Do not allow the ink to dry or allow any build-up of dried ink spills.**

Spillages must be cleaned up as soon as possible with the appropriate solvent materials and with regard to the safety of personnel. Care must be taken to prevent spillages or residue from cleaning up entering drains or sewage systems.

# INTRODUCTION

This document contains basic operation instructions for Domino G-Series printers.

For detailed operation and maintenance information, refer to the G-Series Product Manual.

## Intended Use

Domino G-Series printers are industrial thermal inkjet printers, intended for printing variable data on manufacturing production lines.

## General Description

### Print Head

The print head is connected to the controller unit via an electrical cable. There are three cable lengths available: 5, 10 and 25 metres.

Depending upon the controller unit, a number of different print head configurations are possible:

- G130i can have up to 2 print heads in 2 print groups. (two counters, no bitmaps or barcodes, limited to arial & courier fonts, no external communications).
- G230i can have up to 2 print heads in 2 print groups (no limitations on barcodes, fonts, counters, external communications).
- G220i and G320i can have up to 4 print heads.

It is possible to stitch multiple print heads together to give a larger printed message.

Both low profile and standard size print heads are available.

### Controller

There are two types of controller:

- G130i/G230i
- G220i/G320i.

The controller is switched on via the black (G130i/G230i) or green (G220i/G320i) switch on the controller. Operation of the controller is via the front panel.

# OPERATION

## Start-Up

Turn the printer on using the black On/Off button (G130i/G230i) on the front right underside; or, green On/Off button (G220i/G320i) on the front right-hand side, of the printer.

The printer will start in the **View screen** and will show the last loaded message when the machine was turned off.

## Shut Down

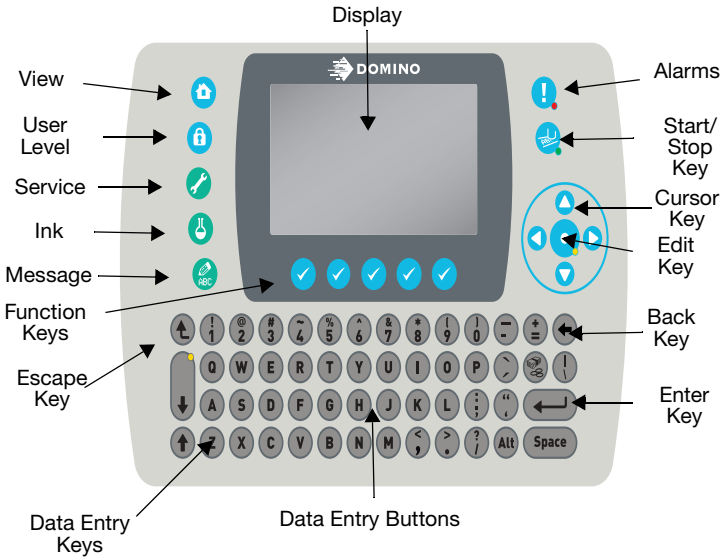
Turn the printer off using the same black (G130i/G230i); or, Green (G220i/G320i) On/Off button.

## Front Panel

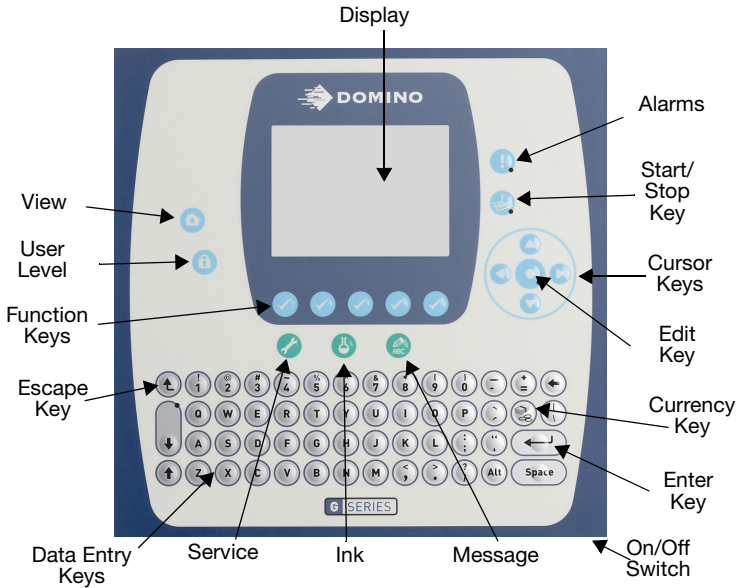
The printer is controlled through the front panel. There are two types of keys:

- Permanent keys with fixed functions (majority of keys)
- Function keys with functions that can change.

The main areas of the front panel are identified in the two illustrations on the following pages.

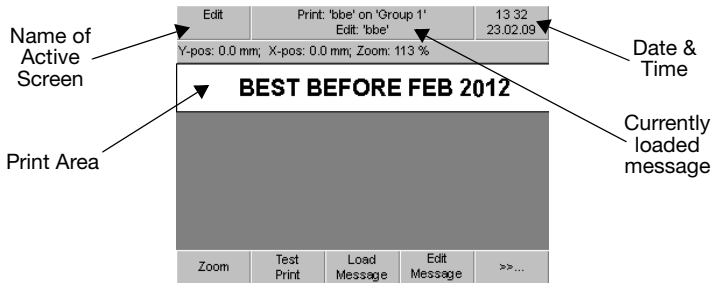


*G130i / G230i  
Front Panel*

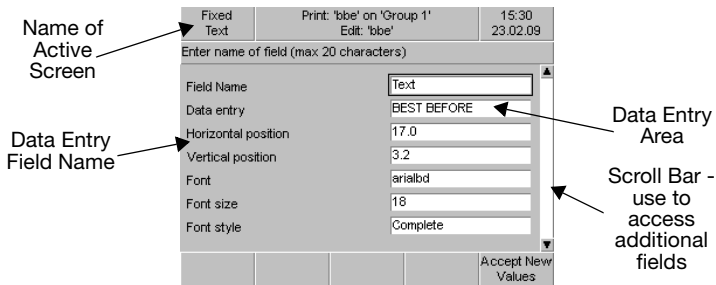


G220i / G320i  
Front Panel

The Display area has the following basic structure:



Display Area



## Navigation and Data Entry

- Use the cursor keys to move from one field to another.
- Use the edit key to select a field for data entry or edit.
- Use the edit key or the “Enter” key, to validate data entry/edit in a field.
- In the data area use the Alt key to enter special character. For example, to enter an “à”, press on the “a” key and then three times on the Alt key. For a full list of available special characters, please see [“Entering Special Characters” on page 40](#).
- The row of characters to edit can be seen in the file key.cfg
- In some fields, use the cursor keys to activate the scrolling menu.
- Select “Accept New Values” to save changes”.
- Use the “Escape key to return to the previous page and abandon changes.
- Use the “Currency” key (\$) to insert a .currency symbol in a message: - press the “Currency” key once to insert the \$ sign. Press & keep down the “Currency” key while pressing “Alt” once, twice or three times to insert, respectively: “£”, “¢” or “¥”.

## Changing User Level

Select the User Level menu to open the “User Level” screen.

In this screen the current user type can be changed. Each user type grants a different level of menu and function rights.

|                   |  |                   |
|-------------------|--|-------------------|
| User Level        | Print: 'kg1' on 'Group 1'<br>Edit: 'new' | 12:12<br>20.01.09 |
| Select user type  |  |                   |
| Current user type | <input type="text" value="User"/>        |                   |
| User type         | <input type="text" value="Settings"/>    |                   |
| Password          | <input type="text"/>                     |                   |
| User Reset        |  | User Change       |

There are three user types:

- **User** - allows access to the normal functions required for printing operations. This is the default user type when the printer is switched on and there is no password for this level. To return to this user type from another user type press “User Reset”.
- **Settings** - allows access to further menu settings related to messages and printing functions
- **Service** - provides greater access and is intended for Domino personnel and specifically trained customer employees.

To change the User Type:

- (1) Select the required User type (i.e. Settings or Service)
- (2) Enter the appropriate password
- (3) Select *User Change*.

A message will be displayed to confirm the user type has been changed.

## Passwords

| Level    | Password |
|----------|----------|
| Settings | gseries  |

## Printing Messages

Before a message can be printed it must be loaded in a group.

A group is an assembly of print heads. Depending on the G-Series model, the printer can have up to 4 groups and one group can combine 1, 2, 3 or 4 print heads, with a maximum of 4 heads per controller.

For printing, a group is linked to a message (including parameters: resolution, margin/offset, print area, alignment, print direction and print speed), to a start signal and to a speed (fixed or measures by a shaft encoder). Each group is set up during the printer installation.

Once a message is loaded in a group, the group must be activated for printing.

*Note: If required, the confirmation messages displayed when a message is put online to print and when a message is loaded, can be inhibited from appearing. This option can be selected through Service > Config > Assign Groups.*

### Printing a Message Already Loaded in a Group

- (1) Press the “Start/Stop” button to open the “Print” screen

|                  |  |                   |        |              |
|------------------|--|-------------------|--------|--------------|
| Print            | Print: 'batch' on 'Group 1'<br>Edit: '...' | 09 56<br>10.02.09 |        |              |
|                  |  |                   |        |              |
| Group name       | Message name                               | Print             | Status |              |
| 1                | Group 1                                    | batch             | Off    | Off          |
| 2                | Group 2                                    | batch             | Off    | Off          |
|                  |  |                   |        |              |
| Print<br>Group 1 | Print<br>Group 2                           |                   |        | Print<br>All |

- (2) Select the group to be activated for printing. For example, to activate Print Group 1, press the “Print Group 1” button and confirm. When only one group is installed, messages are loaded on Group 1 by default.

The “Print” field will then display “On” and the “Status” field “Ready”.

The message can now be printed.

If other groups are installed, they may be activated for printing in the same way.

All available groups may be activated for printing by pressing the “Print All” button.

When printing is active the “Start/Stop” button LED is lit green.

## Loading and Printing a Message from the Library

If there is only one Group installed you will know that Group is activated for printing if the “Start/Stop” button LED is lit green.

### Deactivating the Group:

- (1) Press the “Start/Stop” button to open the “Print” screen
- (2) Press the “Print Group 1” button and confirm that you wish to deactivate the print head Group.

### Loading the message:

- (1) In the Message menu select the required message
- (2) Press the “Load Message” button
  - (a) If only one Group is installed, confirm you wish to load and receive conformation that the message has been loaded
  - (b) If more than one Group is installed, the “Group” screen will be displayed; press the relevant button to select the Group into which you wish to load the message  
Press the “Select All Groups” button to load the message in all Groups.

### Printing the message:

With the message now loaded to one or more Groups, proceed to print the message by following the procedure in the previous section: [“Printing a Message Already Loaded in a Group” on page 16](#)”.

## Stopping a Print

Either deactivate the group(s) currently activated for printing see [“Deactivating the Group:” on page 17](#); or switch off the printer.

## Message Management

Before creating messages you should set the message parameters that will be applied, by default, by all new messages (Global Print definition).

However, you can set message parameters for a message that will apply only for that message used (Local Print Definition).

## Global Message Print Definition

To view/edit the message parameters that are applied, by default, to all new messages:

- (1) Ensure “User Type” is set to “Settings”.
- (2) In the Service menu, select *Production* > *Default Print Definition* to open the “Default Print Definition” screen
- (3) Edit the default settings, as required
- (4) Select “Accept New Values”.

## Local Message Print Definition

|   |  |                   |
|---|--|-------------------|
| Default Print Definition                      | Print: 'kg1' on 'Group 1'<br>Edit: 'kg1' | 12 15<br>20.01.09 |
| Enter maximum message width (1.0 to 2500.0mm) |  |                   |
| Message height                                | 12.7                                     | Yes               |
| Message width                                 | 45.0                                     | No                |
| Forward margin                                | 0.0                                      | Yes               |
| End margin                                    | 0.0                                      | Yes               |
| Delay after int. micropurge input             | 0.0                                      | Yes               |
| Print start mode                              | External                                 | Yes               |
| Print speed mode                              | Internal                                 | Yes               |
|   |  | Accept New Values |

For each property you can use the default value set in the “Print Definition” screen in the “Service” menu.

However, to change the printing properties for an individual message:

- (1) Ensure “User Type” is set to “Settings”.
- (2) In the Message menu, select the required message from the list of messages or, if required, open a new message
- (3) Select >> > *Definition* to display the “Default Print Definition” screen
- (4) Edit the default settings, as required

When a default print property is changed, the adjacent field’s “Yes” value will change to “No”, to indicate that the value is no longer set to the default.

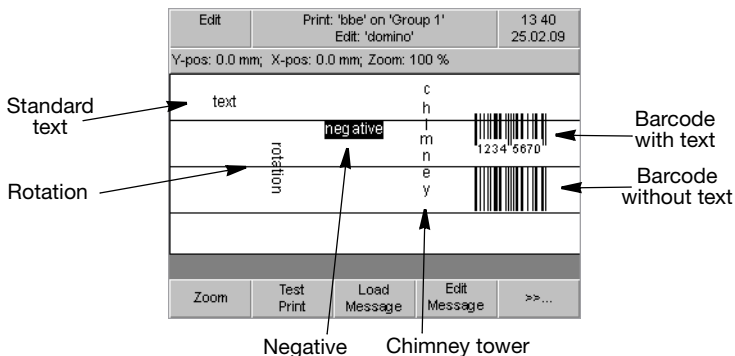
The value can be returned to the default by selecting “Yes” in the adjacent field.

- (5) Press “Accept New Values” to confirm changes.

## Creating a Message

In the User Level menu, set the User Type to “Settings”.

A message is made of one or more fields. Each field can contain one of: fixed text, variable text, date/time, shift code, counter, logo or barcode. Each field has its own display parameters (position, rotation, font, etc.) defined during creation.



In the Message menu, select *New Message* > *Edit Message* to open the “Field” screen.

## Creating a New Field

Select *New* and select the required field type:

Fixed Text, Date Time, Counter, Logo - press >> to scroll across to access: Shift Code, Barcode, Variable Text.

## Fixed Text

**Field Name:** enter the name of the field, if required.

**Data entry:** enter required text.

**Horizontal and vertical position:** position field within the print area.

**Font:** font to be used (arial, courier, etc.).

**Font size:** size of the character in points.

**Font style:** format of the font (complete, Block, etc.).

**Rotation:** rotates field (0°, 90°, 180°, 270° to 270°).

**Negative printing:** to reverse the printed text and text field. The text field will be printed whilst the text will not be printed.

**Chimney-Tower print:** to print field content with characters stacked one below the other.

**Visible print:** to make the field printable or not.

Press “Accept New Values” to confirm changes and to return to the “Field” screen.

## Date Time

|   |   |                   |
|---|---|-------------------|
| Date<br>Time                            | Print: 'kg 1' on 'Group 1'<br>Edit: 'kg 1'    | 12:36<br>13.01.09 |
| Enter name of field (max 20 characters) |   |                   |
| Field Name                              | <input type="text" value="date"/>             |                   |
| Date/Time elements                      | <input type="text" value="Year 4-digit"/>     |                   |
| Formating text                          | <input type="text" value="%d / %m / %Y"/>     |                   |
| Offset unit                             | <input type="text" value="Days"/>             |                   |
| Offset value                            | <input type="text" value="0"/>                |                   |
| First calendar week                     | <input type="text" value="First 4-day-week"/> |                   |
| Data display language                   | <input type="text" value="English"/>          |                   |
|   |   | Accept New Values |

**Field Name:** enter the name of the field, if required.

**Date/Time elements** and **Formating text:** these fields are used in conjunction with each other:

- Select the Date/Time field, press the “Edit” button and then press the Up and Down buttons to select the required Date/Time element. Finally, press the “Edit button again
- The data in the step above will appear in the “Formating text” field’. At this stage, insert required separating characters such as / or - using the keyboard.

## Example

In order to enter the date in the format DD/MM/YY:

- In the “Data/Time element” field select “Day (1-31)”
- Go to the “Formatting text” field and enter “/” as a separator (can also be a space, a dash, etc.)
- Return to the “Date/Time element” field and select “Month (1-12)”
- Go to “Formatting text field” and enter “/”
- Return to the “Date/Time element” field and select “Year 2-Digit”
- To accept a format it is essential to enter and exit the date/time element field.

**Offset unit:** the unit of the date offset (days, weeks, months, etc.).

**Offset value:** number of offset units to apply (e.g. 0, 10, 52, etc.).

**Update Mode:** Sets the required roll-over time for a date/time field. The available options depend on the update mode selected; for example, with the ‘Every Day’ mode selected you can select the roll-over hour, minute and second.

**First calendar week:** the format of the start of the year.

**Data display language:** language of displayed text.

**Horizontal and vertical position:** allows positioning of the field within the print area.

**Font:** font to be used (arial, courier, etc.).

**Font size:** size of the character in points.

**Font style:** format of the font (complete, Block, etc.).

**Rotation:** rotates field (0°, 90°, 180°, 270° to 270°).

**Negative printing:** to reverse the printed text and text field. The text field will be printed whilst the text will not be printed.

**Visible print:** to make the field printable or not.

Press “Accept New Values” to confirm changes and to return to the “Field” screen.

**To set up or update the date and time:** in the Service menu, select *Set-up > Date Time* to open the *Data Time* screen and set the date/time as required.

## Counter

|   |   |                   |
|---|---|-------------------|
| Counter                                 | Print: '...' on 'Group 1'<br>Edit: 'kg 1' | 08:27<br>14.01.09 |
| Enter name of field (max 20 characters) |   |                   |
| Field Name                              | <input type="text" value="counter"/>      | ▲                 |
| Counter name                            | <input type="text" value="Zaehler0"/>     |                   |
| Number of digits                        | <input type="text" value="3"/>            |                   |
| Start value                             | <input type="text" value="0"/>            |                   |
| End value                               | <input type="text" value="999"/>          |                   |
| Increment                               | <input type="text" value="1"/>            |                   |
| Suppress leading zeroes                 | <input type="text" value="Yes"/>          |                   |
|   |   | ▼                 |
|   |   | Accept New Values |

*Note: Before adding a counter to a message, counters must have been initially configured in the Service > Config > Counters menu, please see ["Fault Finding" on page 52](#)*

**Field Name:** enter the name of the field, if required.

**Counter name:** select a counter from the counter list.

**Number of digits:** size of the counter in digits.

**Start and End value:** the minimum and maximum value of the counter. These can be negative values.

**Increment:** the value the counter should increment for each product detection.

**Suppress Leading zeroes:** to remove the first zero(s) of the counter (e.g.: 000102 becomes 102).

**Horizontal and vertical position:** position the field within the print area.

**Font:** font to be used (arial, courier, etc.).

**Font size:** size of the character in points.

**Font style:** format of the font (complete, Block, etc.).

**Visible print:** to make the field printable or not.

**Alignment:** layout of the counter in the field.

**Rotation:** rotates field (0°, 90°, 180°, 270° to 270°).

**Negative printing:** to reverse the printed text and text field. The text field will be printed whilst the text will not be printed.

Press "Accept New Values" to confirm changes and to return to the "Field" screen.

If required, press the Escape key for the option to return to previous screen without saving.

The counter preview will be represented by a field containing “1234...” with the number of digits, as defined above. When a message is loaded and viewed, the counter is previewed with its current value.

**To set up and update the starting value of the counter:**

In the Service menu, select *Production > Set Counters* and enter the starting value of the counter; note that values can be negative.

**Logo**

**Field Name:** enter the name of the field, if required.

**Field entry:** select logo to be printed from the list stored the memory.

**Horizontal and vertical position:** position the field within the print area.

**Rotation:** rotates field (0°, 90°, 180°, 270° to 270°).

**Negative printing:** to reverse the printed logo and logo field. The logo field will be printed whilst the logo will not be printed.

Press “Accept New Values” to confirm changes and to return to the “Field” screen.

If required, press the Escape key for the option to return to previous screen without saving.

## Shift code

**Field Name:** enter the name of the field, if required.

**Horizontal and vertical position:** position the field within the print area.

**Font:** font to be used (arial, courier, etc.).

**Font size:** size of the character in points.

**Font style:** format of the font (complete, Block, etc.).

**Rotation:** rotates field (0°, 90°, 180°, 270° to 270°).

**Negative printing:** to reverse the printed text and text field. The text field will be printed whilst the text will not be printed.

**Chimney-Tower print:** to print field content with characters stacked one below the other.

**Visible print:** to make the field printable or not.

Press “Accept New Values” to confirm changes and to return to the “Field” screen.

Shift codes will be visible **only** once shifts are set up or updated.

## To set up and update shift codes:

- (1) If currently printing, deactivate the active group(s)
- (2) Ensure the user type is 'settings'
- (3) In the Service menu, select *Set-up > Work Shifts*
- (4) Enter the number of shifts to be created (max. 5)
- (5) Select *Save Setting*.

The red alarm led will flash because the configuration has changed; however, this alarm can be ignored as the printer will be manually rebooted later.

- (6) Select *Work Shifts*

| Shift                                     | Print: 'kg1' on 'Group 1'                  | 13 37        |
|---|--|--------------|
|   | Edit: 'kg1'                                | 14.01.09     |
| Enter shift code name (max 20 characters) |  |              |
| Shift name 1                              | <input type="text" value="morning shift"/> |              |
| Monday                                    | 6 : 0                                      | to 13 : 59   |
| Tuesday                                   | 6 : 0                                      | to 13 : 59   |
| Wednesday                                 | 6 : 0                                      | to 13 : 59   |
| Thursday                                  | 6 : 0                                      | to 13 : 59   |
| Friday                                    | 6 : 0                                      | to 13 : 59   |
| Saturday                                  | 6 : 0                                      | to 13 : 59   |
|   |  | Save Setting |

- (7) Enter a name for shift 1 (this will appear in the message)
- (8) Enter the start and end time for each day of the week of shift 1
- (9) Repeat steps 7, 8 and 9 for shift 2, shift 3, etc.
- (10) Select *Save Setting*
- (11) Return to the Message menu and select >> and *Save* or *Save As* the message
- (12) Reboot the printer.

## Barcode

Select one of the four available barcode menus (Fixed, Variable, 2D, Extended)

The parameters will be similar for each family of barcodes (1D fixed, 1D variable, 2D)

|   |   |                        |
|---|---|------------------------|
| Barcode variable                        | Print: 'kg1' on 'Group 1'<br>Edit: 'kg1''     | 14:42<br>14.01.09      |
| Enter name of field (max 20 characters) |   |                        |
| Field Name                              | <input type="text" value="variable barcode"/> | ▲                      |
| Barcode type                            | <input type="text" value="EAN-128"/>          |                        |
| Data entry                              | <input type="text" value="1234567890123"/>    |                        |
| Display human readables                 | <input type="text" value="Below barcode"/>    |                        |
| Optional checksum                       | <input type="text" value="Yes"/>              |                        |
| Horizontal position                     | <input type="text" value="0.0"/>              |                        |
| Vertical position                       | <input type="text" value="0.0"/>              |                        |
|   |   | ▼<br>Accept New Values |

**Field Name:** enter the name of the field, if required.

**Barcode type:** name as per the UCC/EAN specifications.

**Data entry:** enter the data to be encoded in the barcode)

**Display human readables:** choose whether or not to print the human readable characters of the barcode. If yes, choose the position of the human readable (right, above or below barcode).

**Optional checksum:** for variable barcodes (Yes or No).

**Horizontal and vertical position:** position the field within the print area.

**Coding mode and symbol size:** for 2D barcodes.

**Font:** font to be used (arial, courier, etc.).

**Font size:** size of the character in points.

**Barcode height:** size of the bar code in mm.

**Barcode text distance:** distance from the human readable to barcode in mm.

**Modify bar height:** customising of barcode by changing the height of the bars (2D barcodes only).

**Modify bar width and Module width:** customising of barcode by changing the width of the bars and the spacing between the bars.

**Module width ratio:** enter the required width ratio between the barcode "thin" and "wide" bars (not applicable to 2D).

**Rotation:** rotates field (0°, 90°, 180°, 270° to 270°).

**Negative printing:** to reverse the printed barcode and barcode field. The barcode field will be printed whilst the barcode will not be printed. Press “Accept New Values” to confirm changes and to return to the “Field” screen.

The process and information is the same for all available barcodes. Some barcode specifications restrict certain data and checksum.

## **Variable Text**

The variable text feature allows change of the content of a fixed text field without editing the message itself.

**Field name:** Specify the name of the variable field.

*Note: This is referred to when linking fields.*

**Horizontal and vertical position:** Position field within the print area.

**Font:** Font to be used (arial, courier, etc.).

**Font size:** Size of the character in points.

**Font style:** Format of the font (complete, Block, etc.).

**Rotation:** Rotates field (0°, 90°, 180°, 270°).

**Negative printing:** to reverse the printed text and text field. The text field will be printed whilst the text will not be printed.

**Chimney-Tower print:** To print field content with characters stacked one below the other.

**Visible print:** To make the field printable or not.

**Default size:** To set default number of characters in variable data.

**Mandatory data for vtext:** Whether or not to make it compulsory to enter a vtext value before putting the message online to print.

Press “Accept New Values” to confirm changes and to return to the “Field” screen.

## To update a variable text field:

To be updated the message containing the variable text field must have been loaded for printing at least once.

There are two ways to modify the contents of the variable field:

(1) **Using the Service menu:**

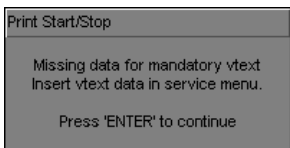
(a) In the Service menu, select *Production > Variable Text > Text Edit*.

(a) Modify the contents of field, as required.

The Variable Text is immediately updated in the printed message.

Repeat this sequence each time the message is modified and loaded for printing.

If it has been set to make it mandatory to enter a value in one or more variables in a message and this has not been done then a warning will be displayed when you attempt to put that message online:



(2) **Using the Automatic Variable Prompt:**

(a) Navigate to *Service > Config > Assign Group*.

|                                     |  |              |
|-------------------------------------|--|--------------|
| Installation                        | Print: 'domino_logo' on 'Group 1'                | 10:59        |
|                                     | Edit: 'domino_logo'                              | 03.10.13     |
| Enable variable text window, YES/NO |  |              |
| No. of printheads                   | <input type="text" value="1"/>                   |              |
| Message selection mode              | <input type="text" value="internal (standard)"/> |              |
| Inhibit confirmation message        | <input type="text" value="Yes"/>                 |              |
| Variable text window                | <input type="text" value="Yes"/>                 |              |
| Install Group                       |  | Save Changes |

(b) Enable the Automatic Variable Prompt by setting “Variable text window” to “Yes”.

Once it is enabled the user will be prompted, when attempting to set the message to print, to enter variable data in the vtext elements of a message:

|  |  |                   |
|--|--|-------------------|
| Variable Text                            | Print: '1a_vtext' on 'Group 1'<br>Edit: '1a_vtext' | 14:40<br>09.10.13 |
| Enter variable text (max 200 characters) |  |                   |
| Group 1                                  |  |                   |
| variable1                                | <input type="text"/>                               | M                 |
| variable2                                | <input type="text"/>                               |                   |
|  |  | Save and Start    |

- (c) If multiple variable elements are displayed, use the Up/Down arrows to select the element required.
- (d) Press the “Edit” button and use the keyboard to enter the relevant alpha/numeric data.

An “M” to the right of a variable indicates that it has been set so it is compulsory to enter data in that variable.

If no data is entered the message cannot be set to print and a warning message will be displayed.

|  |  |                   |
|--|--|-------------------|
| Variable Text                            | Print: '1a_vtext' on 'Group 1'<br>Edit: '1a_vtext' | 14:44<br>09.10.13 |
| Enter variable text (max 200 characters) |  |                   |
| Group 1                                  |  |                   |
| variable1                                | <input type="text"/>                               | M                 |
| variable2                                | <input type="text"/>                               |                   |
|  |  | Save and Start    |

Save variable text and start

At least one mandatory variable text is not set.

Press 'Enter' to continue

*Note: Variable text can be updated both internally, as described above, and externally through a PC application using the modbus protocol.*

## Editing a Field

- (1) Open the required message
- (2) Press “Edit Message”
- (3) Use the cursor keys to select the field to be edited
- (4) Press “Edit”
- (5) Select data fields and edit the content
- (6) Accept the changes and save or save as.

Alternatively:

- (1) Open the required message
- (2) Press “Edit Message”
- (3) Press >> > *Selection* and select the field to be edited
- (4) Press “Edit”
- (5) Select data fields and edit the content
- (6) Accept the changes and save or save as the data.

## Deleting a field

- (1) Open the required message
- (2) Press “Edit Message”
- (3) Use the cursor keys to select the field to be deleted
- (4) Select >> > *Delete*
- (5) Confirm that you wish to delete the field and save or save as the data.

Or, select the field to be deleted from the list of fields, as above.

## Copying a field

- (1) Open the required message
- (2) Press “Edit Message”
- (3) Use the cursor keys to select the field to be copied
- (4) Select “Copy” and confirm that you wish to copy the field

The field will be copied and pasted into the message.

- (5) Save or save as the data.

## Arranging Fields in Print Layout

- (1) Open the required message
- (2) Press “Edit Message”

One field can be hidden behind another; therefore it may be necessary to move one field to access another.

- (3) Press “Move”
- (4) Use “Left”, “Right”, “Up” and “Down” to move the field in 1mm increments
- (5) Use the cursor keys to switch from one field to another
- (6) Press the Escape key to exit.

## Saving a Message

### First saving / saving as:

- (1) From the “Edit” screen select >> > Save As and edit the “File name”.

### Subsequent saving:

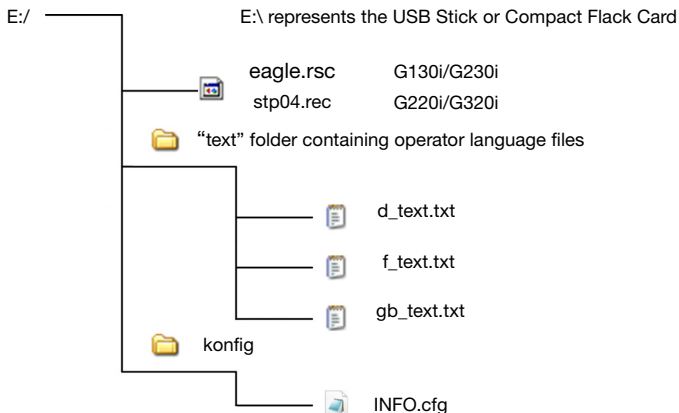
- (1) From the “Edit” screen select >> > Save.

## Opening and Editing a Message

- (1) Select the message to be opened from the Message menu library
- (2) Follow the procedure used to create a message (see [“Creating a Message” on page 19](#)).

## Updating Firmware

- (1) In the User Level menu, set the User Type to “Service”.
- (2) Unzip the update file into the main root of a Compact Flash Card (G220i/G320i) or USB memory stick (G130i/G230i), as below:



- Notes:
- (1) *If updating a G220i or G320i, the flash card should have the file stpo4.rsc located in main root of the flash card.*
  - (2) *If updating a G130i or G230i, the USB stick should have the file eagle.rsc located in main root of the USB stick.*
  - (3) *There should be a folder named “text” containing text files as shown above.*
  - (4) *There should be a folder named “konfig” containing an INFO.cfg file as shown above.*
  - (5) *Keep only these files on the flash card or USB stick to minimize the risk of overwriting files and losing initial printer configuration.*

- (3) Turn off any current printing job.
- (4) Insert the flash card into the printer’s external slot.
- (5) In the Service menu, select *Diagnosis > Version*

The printer will read the contents of the Flash card and two new menu keys, “Update Firmware” and “Update Config” will be displayed.

- (6) Press “Update Config”.

- (7) Select “Enter” to confirm overwriting.
- (8) The red alarm led will flash because the configuration has changed; press “Enter” to reboot.
- (9) After reboot, set the User Type to “Service”, navigate back to *Service > Diagnosis > Version* and press “Update Firmware”.
- (10) Select “Enter” to confirm overwriting.
- (11) Again the red alarm led will flash; press “Enter” to reboot.
- (12) After the reboot, verify the new version, correct operation and new functionality before restarting production.

## Importing and Exporting

In the following sections instructions are given for importing files to and from a PC to a printer.

- Notes:
- (1) *It is also possible to copy files from one G-Series printer to another. To do this, access the Service > Memory menu and copy the required files from "Internal Memory" to "External memory". Then copy to another G-Series printer using the procedure detailed in the relevant "Importing Files" sections below"*
  - (2) *A USB memory stick is required to import or export files on a G130i or G230i printer.*
  - (3) *A compact flash card is required to import or export files on a G220i or G320i printer.*

## Messages

### Importing Message Files

- (1) Copy the required message(s) from your PC to a USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into a folder named "messages".
- (2) Start the printer and insert the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into the printer.
- (3) In the Service menu, select *Service > Memory > Message Files*.
- (4) Use "Select Memory" to select "External Memory" as memory type.
- (5) Select "Copy Selection" to copy only the selected message to the printer's internal memory.
- (6) Select "Copy All" to copy all listed messages to the printer's internal memory.
- (7) When prompted, press "Enter" to copy the file(s).
- (8) Remove the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) from the printer.

The imported message is now available for use and can be selected through the Message Editor menu.

### Exporting Message Files

Messages may be exported from internal memory to a memory card by following the above procedure but at step 4 use "Select Memory" to select "Internal Memory" as memory type.

## Logos

The logo file names should be a maximum of 10 characters, without spaces and specific characters such as “% / +.- ( ) ...”. An underscore character is allowed.

Logo files must be monochrome with a .bmp extension.

A logo designed to fit to a full head size has a height of 300 pixels.

*Note: More than 1 print head is required to print logo designs higher than 300 pixels.*

Logos have no practical width limit as printing length capability is 2.5 meters.

- Notes:
- (1) A logo of width of 600 pixels requires two print heads
  - (2) A logo of width of 900 pixels requires three print heads
  - (3) A logo of width of 1200 pixels requires four print heads.

Dimension in between these limits are acceptable.

### Importing Logos

- (1) Copy the required logos from your PC to a USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into a folder named “logos”.
- (2) Start the printer and insert the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into the printer.
- (3) In the Service menu, select *Service > Memory > Logo Files*.
- (4) Use “Select Memory” to select “External Memory” as memory type.
- (5) Select “Copy Selection” to copy only the selected logo to the printer’s internal memory.
- (6) Select “Copy All” to copy all listed logos to the printer’s internal memory.
- (7) When prompted, press “Enter” to copy the file(s).
- (8) Remove the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) from the printer.

The imported logo is now available for use and can be selected through the Message Editor menu.

### Exporting Logos

Logos may be exported from internal memory to a USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) by following the above procedure but at step 4 use “Select Memory” to select “Internal Memory” as memory type.

## Fonts

### Importing Logos

- (1) Copy the required font(s) from your PC to a USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into a folder named “fonts”.
- (2) Start the printer and insert the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into the printer.
- (3) In the Service menu, select *Service > Memory > Font Files*.
- (4) Use “Select Memory” to select “External memory” as memory type.
- (5) Select “Copy Selection” to copy only the selected font to the printer’s internal memory.
- (6) Select “Copy All” to copy all listed fonts to the printer’s internal memory.
- (7) When prompted, press “Enter” to copy the file(s).
- (8) Remove the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) from the printer.

Imported fonts are now available for use and can be selected through the Message Editor menu.

### Exporting Fonts

Fonts may be exported from internal memory to a USB memory stick by following the above procedure but at step 4 use “Select Memory” to select “Internal Memory” as memory type.

## System Files

### Importing System Files

- (1) Copy the required system files from the PC to the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) to a folder named “Konfig”.
- (2) Start the printer and insert the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) into the printer.
- (3) In the Service menu, select *Service > Memory > System Files*.
- (4) Use “Select Memory” to select “External memory” as memory type.
- (5) Select “Copy Selection” to copy only the selected system file to the printer’s internal memory.
- (6) Select “Copy All” to copy all listed system files to the printer’s internal memory.
- (7) When prompted, press “Enter” to copy the file(s).
- (8) Remove the USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) from the printer.

### Exporting System Files

System files may be exported from internal memory to a USB memory stick (G130i/G230i) or compact flash card (G220i/G320i) by following the above procedure but at step 4 use “Compact Flash Memory” to select “Internal Memory” as memory type.

## Counter Configuration

Select *Service > Config > Counters*:

|   |  |                           |
|---|--|---------------------------|
| Counters                                | Print: 'counter' on 'Group 1'<br>Edit: '-' | 11:11<br>23.02.09         |
| Enter counter name (max: 20 characters) |  |                           |
| Counter:                                | 1  | Counter1                  |
| Type incr-source.                       |  | After each message group  |
| Incr-source                             |  | 1                         |
| Type reset-source.                      |  | No reset source           |
| Reset-source                            |  | 0                         |
| Set counter output                      |  | Do not set counter output |
| Reset counter output                    |  | With the next reset       |
|   |  | Save Changes              |

**Counter:** a name can be given to counter. This name will be used when programming messages using this counter.

**Type incr-source:** select the type of source to be used to increment the value of the counter:

- **No increment source:** the counter is not activated in the machine
- **Digital input:** the counter increments each time the digital input is activated
- **After each message group:** the counter increments after each message is printed
- **After each element of message group:** when using the repeat print feature (i.e. one print start = several prints or “elements” in the same message) the counter is incremented after each printing of the element
- **Counter overrun:** the incrementation of this counter will be linked to the overrun of another counter.

**Incr-source:** defining the source of incrementation based on the source type selected above. If the type of incremental source is:

- **Digital input:** select the input number
- **After each message group:** select the group on which the message is loaded
- **After each element of message group:** select the group on which the message is loaded
- **Counter overrun:** select the counter to which it will be linked.

**Type reset-source:** a counter can be reset externally using the following methods:

- **No reset source:** no external counter reset
- **After each message group:** after the print of a message the counter is reset
- **Counter overrun:** it is used to reset a counter when it is linked to another counter (e.g. lot numbering)
- **Digital input:** to reset a counter using an external signal (e.g. sensor, external button, etc).

**Reset-source:** defining the source of reset based on the type of source selected above. If the type of incremental source is:

- **Digital input:** select the input number
- **Counter overrun:** select the counter to which it will be linked
- **After each message group:** select the group on which the message is loaded.

**Set counter output:** this function is used when the counter interacts with an external output of the machine. Here you can select with which output you want the counter to interact.

**Reset counter output:** once the output has been activated, this function allows you to select the method by which it will be reset:

- **With the next reset:** the operator will need to activate the reset
- **With the next increment:** no action is needed; the reset is done automatically.

## Entering Special Characters

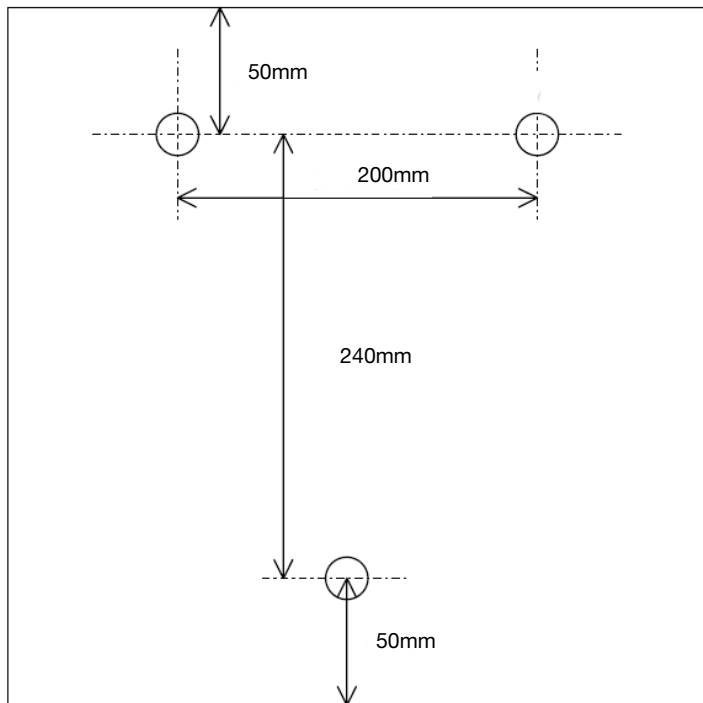
Pressing repetitively on the Alt key after pressing onto certain keys will generate special characters, as listed below. For example, in English, pressing once on “U” and 3 times on Alt will generate a Û.

| English           | German            | French            |
|-------------------|-------------------|-------------------|
| a & Alt = äáàâãäå | a & Alt = äáàâãäå | a & Alt = äáàâãäå |
| A & Alt = ÄÁÀÂÃÄÅ | A & Alt = ÄÁÀÂÃÄÅ | A & Alt = ÄÁÀÂÃÄÅ |
| c & Alt = ©ç      | c & Alt = ç       | c & Alt = ç       |
| C & Alt = Ç       | C & Alt = Ç       | C & Alt = Ç       |
| e & Alt = éèêë    | e & Alt = éèêë    | e & Alt = éèêë    |
| E & Alt = ÉÊËĚ_   | E & Alt = ÉÊËĚ_   | E & Alt = ÉÊËĚ_   |
| i & Alt = ïî      | i & Alt = ïî      | i & Alt = ïî      |
| I & Alt = ÎÏ      | I & Alt = ÎÏ      | I & Alt = ÎÏ      |
| n & Alt = ñ       | n & Alt = ñ       | n & Alt = ñ       |
| N & Alt = Ñ       | N & Alt = Ñ       | N & Alt = Ñ       |
| o & Alt = öóòôõø  | o & Alt = öóòôõø  | o & Alt = öóòôõø  |
| O & Alt = ÖÓÒÔÕØ  | O & Alt = ÖÓÒÔÕØ  | O & Alt = ÖÓÒÔÕØ  |
| r & Alt = ®       |                   |                   |
| u & Alt = üúûü    | u & Alt = üúûü    | u & Alt = üúûü    |
| U & Alt = ÜÚÛÛ    | U & “alt” = ÜÚÛÛ  | U & Alt = ÜÚÛÛ    |

| Default            |
|--------------------|
| + & Alt = ¼½¾±²³«» |
| - & Alt = .:\,÷×_  |
| \$ & Alt = £¢¥     |
| 8 & Alt = °        |

# MOUNTING THE PRINTER

The Controller can be mounted vertically on a stand or fixed to a vertical surface; a hole drilling template is supplied with the kit. The rear of the printer is provided with three, 6mm diameter, pre-drilled holes.



## External Cable Entry - G220i / G320i

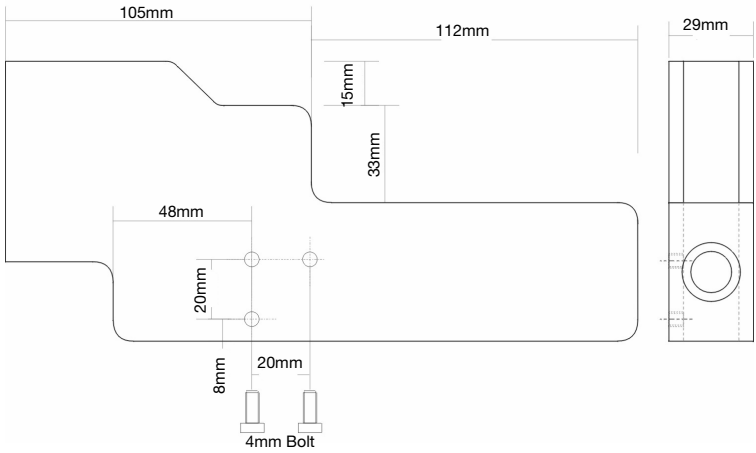
External cabling from the sensor, encoder, alarm and PLC is routed via the bottom of the panel through two rectangular holes.

Two-piece seals are provided to allow connectors to be prepared outside of the cabinet, passed into the cabinet and sealed using the split seals. In this manner the cabinet IP rating is maintained.

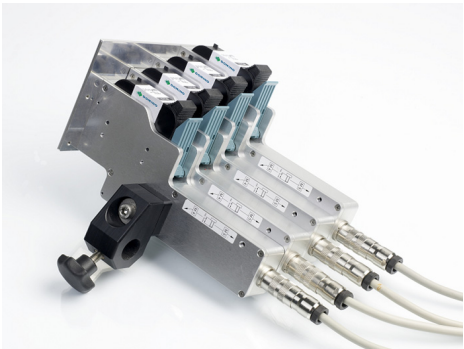
# Print Head Mount for 2-Axis Bracket

Three 4mm threaded holes are provided for mounting the print head in either a vertical or horizontal position. Two 4mm bolts and a mounting bracket are required to attach it to the mounting frame.

Up to four print heads can be joined in a staggered array, utilising the two 3mm threaded countersunk holes provided for the 3mm machine screws.

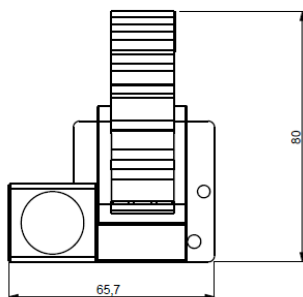
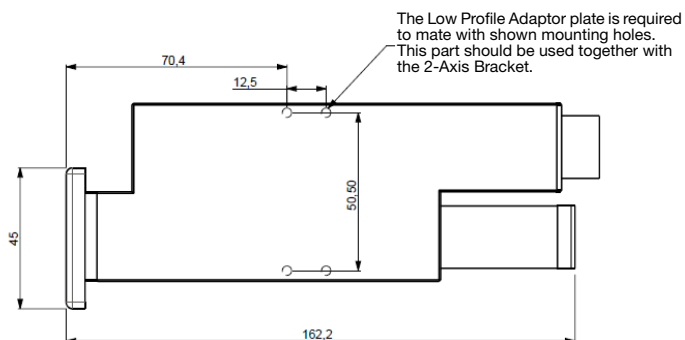
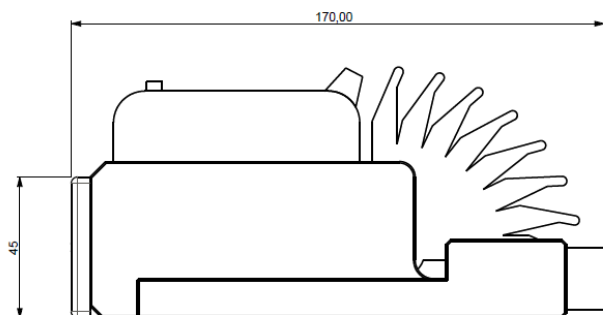


*Print Head Mount*

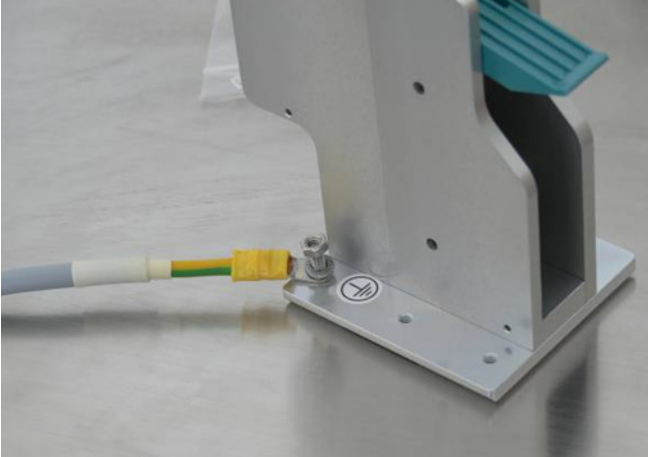


*Print Head Array*

## Low Profile Print Head



## Grounding the Print Head Plate

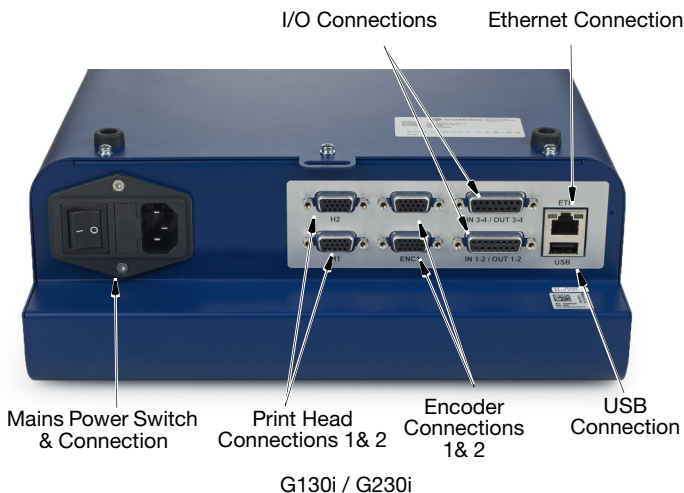


Ground the print head plate to the conveyor. With several print heads and head plates, one head plate can be grounded to the conveyor system and the other plates linked together with the grounding cable.

# Controller Connections

## G130i / G230i

Ensure the mains power outlet socket is installed near the printer in an easily accessible location.



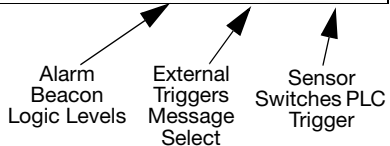
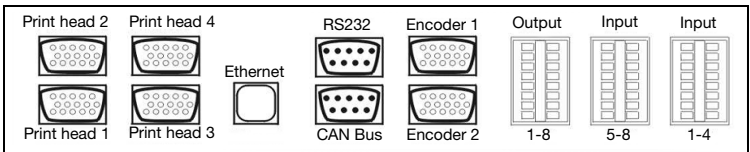
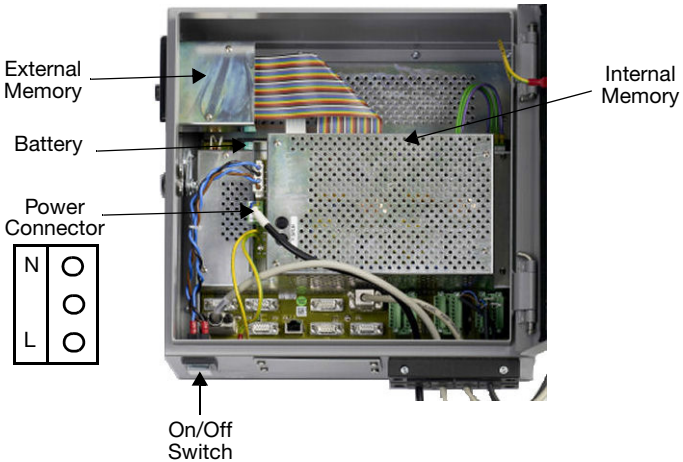
## G220i / G320i

Ensure the mains power outlet socket is installed near the printer in an easily accessible location.



### WARNING:

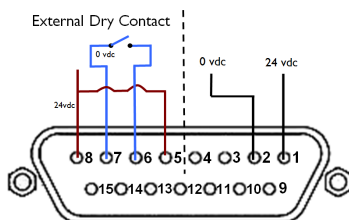
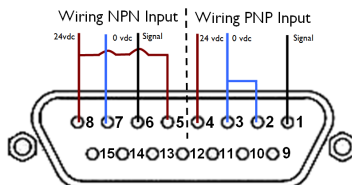
**Ensure the mains power is isolated from the printer when the controller is wired up and connections are made to the panel.**



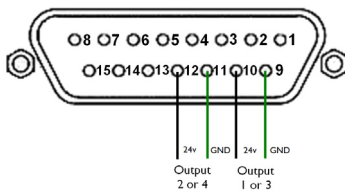
# Sensor Connections G130i / G230i





## Inputs



## Outputs



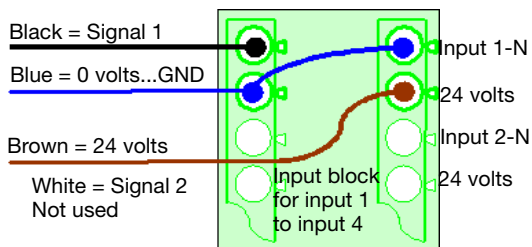
|    |  IN 1-2 / OUT 1-2 |  IN 3-4 / OUT 3-4 |
|----|--|--|
| 1  | In_1_P   | In_3_P   |
| 2  | In_1_N   | In_3_N   |
| 3  | GND  | GND  |
| 4  | 24V  | 24V  |
| 5  | In_2_P   | In_4_P   |
| 6  | In_2_N   | In_4_N   |
| 7  | GND  | GND  |
| 8  | 24V  | 24V  |
| 9  | GND  | GND  |
| 10 | OUT_1  | OUT_3  |
| 11 | GND  | GND  |
| 12 | OUT_2  | OUT_4  |
| 13 | GND  | GND  |
| 14 | Not Used   | Not Used   |
| 15 | Not Used   | Not Used   |

## Sensor Connections G220i / G320i

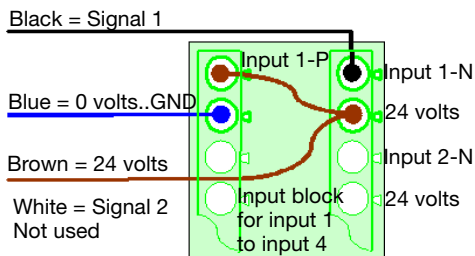


Please note the following two connection methods:

### 3 Wires Sensor Connection (Kit 1)



### 4 Wires Sensor Connection (Kit 2)



## Chipped Ink Cartridge Replacement

*Note: The printer will automatically recognise the replacement chipped cartridge ink type and select the correct ink driver. It will also read and display the ink level of the replacement chipped cartridge.*

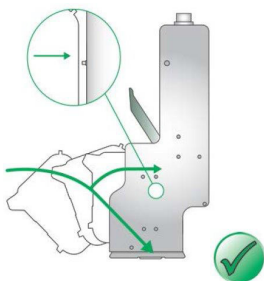
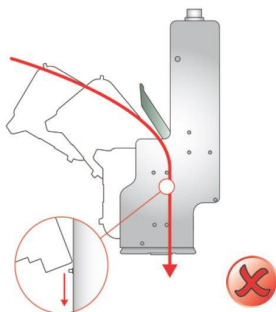
Turn off any current printing job (see [“Stopping a Print” on page 17](#)).

Take care when inserting the ink cartridge; ensure the movement when positioning the cartridge down into the print head is in a controlled manner. Forcibly pushing the cartridge against the electrical contact pins may break them from their position on the circuit board and render them inoperable.

Cartridges should not be inserted, as shown to the right, with the nozzle face high into the print head and running down the back of the print head.

Excessive downward force applied to the cartridge when it hits the contact pins may cause damage.

*Note: The greater the height at which the cartridges are inserted, the greater the risk the cartridge will catch the contact pins.*



Cartridges inserted correctly, as shown to the left, are not at risk of catching the print head contact pins.

The nozzle face is inserted low down into the Print Head in one movement and then positioned against the back face of the print head in a second movement.

Once in position the cartridge latch will draw the cartridge against the electrical contact pins.

# Ink Cartridge Latch Replacement



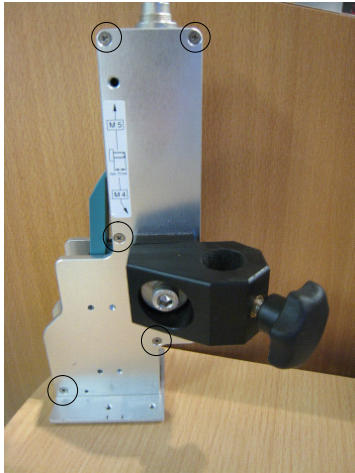
Print Cartridge Latch for  
Standard and Low  
Profile Print Heads  
Part No. GAS1032



Metal Print Cartridge  
Latch for G-Series Print  
Heads  
Part No. EPT021254

To replace the latch:

- (1) Undo the five retaining screws



- (2) Carefully separate the two halves of the assembly, slide out the old latch and replace with the new one
- (3) Rejoin the two halves and replace the five retaining screws.

## Ink Cartridge Cleaning

Dirty working environments can contaminate the print heads and ink cartridges, affecting the quality of printed messages.

It is important to ensure that the print heads and cartridges are kept as clean as possible.

### Check Nozzle Status

Before starting the cleaning regime, check the nozzle status to ascertain the current state of the nozzles. Permanent damage is caused when the DPI value is too high for the printing speed. Any faults to the firing resistors will be displayed here.

- (1) Press the *Ink* button.
- (2) Select the *Cartridge*.
- (3) Check the screen for any faults.

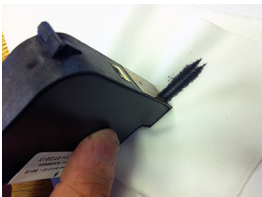
### Cleaning Instructions

Use a soft, lint-free tissue and gently wipe debris from the nozzle face, including the underside of the head plate. Wipe several times, using fresh parts of the tissue to ensure you do not rub debris back into the nozzles.



The cartridge can be removed from the print head and gently pulled across a soft lint-free tissue. This allows a greater amount of ink being drawn from the nozzles, removing debris that might be contained further within the nozzle face.

**CAUTION:** *Too much force can damage the nozzle face.*



## Fault Finding

| No.  | Error Text  | Description   |
|------|---|---|
| 5010 | Cartridge n: Ink empty                              | Ink is empty<br>Error list: application message<br>Message category: alarm<br>Elimination: exchange ink   |
| 5011 | Cartridge n: Ink level low                          | Ink is empty<br>Error list: application message<br>Message category: warning<br>Elimination: exchange ink, test alarm threshold for ink   |
| 5015 | Ink consumption could not be written into smartcard | Recorded ink volume on ink cartridge chip is different to the recorded volume on the controller<br>Message category: Alarm<br>Remedial action: Exchange ink cartridge                 |
| 5030 | Maximum speed exceeded                              | Maximum print speed exceeded<br>Error list: application message<br>Message category: warning<br>Elimination: reduce production speed  |
| 5040 | Image is not ready                                  | Image can not be built up in time<br>Error list: application message<br>Message category: alarm<br>Elimination: reduce production speed or remove variable parts of the print message |
| 5043 | Faulty speed/encoder value                          | Faulty encoder - speed configuration<br>Error list: application message<br>Message category: alarm<br>Elimination: check configuration  |

|      |   |  |
|------|---|--|
| 5044 | Print head %1 not present                     | The print head configured for this print head group is not connected or there are communication errors<br>Error list: application message<br>Message category: alarm<br>Elimination: check configuration |
| 5045 | Error INK parameter                           | Incorrect configuration<br>Error list: application message<br>Message category: alarm<br>Elimination: choose different ink, load new ink file onto the system  |
| 6150 | Configuration has been changed. Reboot system | Control configuration was changed<br>Error list: system message<br>Message category: alarm<br>Elimination: restart   |
| 6210 | No connection to authentication server        | Connection to authentication server broken<br>Error list: System error message<br>Message category: Alarm<br>Remedial action: Restart controller   |