Druck

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SPECIFICATION

NEXT GENERATION 3000 SERIES

MILLIVOLT CONFIGURATION

CUSTOM PART MARKING

173M6849

Amendment Record

Rev. Lev.	Date	Author	Amendments
-	05 JUN 2023	R. Guiris	New document

A	14 JUN 2023	R. Guiris	Amended Section 6.1 to clarify requirement to provide logo drawing to Druck Ltd Customer Service.
			
			Amended Section 5. Changed cage code example to U0427 and updated Figure 2 to reflect new cage code example.
			
			Amended Appendix A
			  Corrected error on header for option B on page 9.
			  Added clarification to indicate that a logo drawing may be required.

Approvals

Checked	Engineering	Chief Engineer
STEPHEN BUTTERWORTH	**IAN JONES**	**JIM SMALLEY**
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1   INTRODUCTION

This document details the capability and requirements for custom part marking option for the NG3000 Millivolt product range. Part marking is laser etched on to the sensor body. See NG3000 Millivolt specification and applicable MED drawings for more information.

When requesting custom part marking, the form attached in Appendix A shall be fully completed and returned to Druck Ltd customer service. A process map is detailed on Section 7 for further information.

2   REFERENCES

The following documents are referenced within this document.

Table 1. Applicable Documentation

Ref	Number	Revision	Description
[1]	158M5591	Latest	NG3000 Millivolt Specification
[2]	158M5591-MED	Latest	Single Channel Absolute, Sealed Gauge and Gauge Master Envelope Drawing
[3]	158M5978-MED	Latest	Dual Channel Absolute, Sealed Gauge and Gauge Master Envelope Drawing
[4]	158M5980-MED	Latest	Single Channel Side Port Differential Master Envelope Drawing

3   CUSTOM PART MARKING

The customer shall supply Druck with the requirements for custom part marking. Druck Ltd will evaluate the marking request and advise if it complies with the requirements set out in this document. The customer can provide Druck Ltd with part marking information in either a text or graphic format.

4   SPECIFICATION

4.1   Dimensions

The maximum dimensions for the custom part marking are 58mm x 25 mm. The circumference of the sensor is nominally 78.5 mm.

25 mm

58 mm
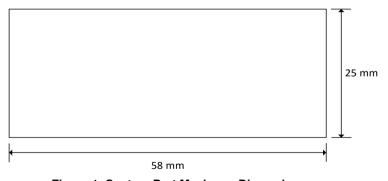
Figure 1. Custom Part Maximum Dimensions

4.2   Part Marking Location

See applicable MED reference drawing for part marking location on sensor body.

4.3   Font and Font Size

All text is supplied in "Roman D" with a fixed text size of 1.4mm. Any special characters available in "Roman D" font are permitted.

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4.4 Mandatory Data

The following information shall be supplied by the customer when requesting custom part marking for NG3000 Millivolt product range. The customer shall supply Druck with a unique part number relating to their sensor configuration. However, customer part number is not required to be included in the part marking profile.

The configuration string shall be supplied as part of the request form, this can be obtained from the NG3000 online configurator and attached to the form to prevent any typing errors.

The part marking profile shall include a location for the following data:
1. Working (Full-scale) pressure range. This is part of the sensor configuration and will match the sensors pressure range and units. The location for this data is fixed to line 6 and indicated with a variable length 'P' for pressure range and variable length 'U' for the units. For example, a 100 bar pressure sensor is indicated in the following format; PPP UUU.

2. A location for an 8-digit serial number. This serial number is generated by Druck and is unique to the sensor. The location for this data is fixed to line 7 and indicated with 'S/N ########' (8 characters).

3. Date of manufacture. This data is generated by Druck and is individual to the sensor batch in 'MM/YY' format. The location for this data is fixed to line 7 and is indicated with a 'MM/YY'.

5 OPTION A – TEXT ONLY

If supplying text data, the customer can use up to a maximum of 7 lines with a 44-character limit per line. The data shall include a serial number, pressure range and date of manufacture (see section 4.4). The Location of mandatory data can be on a single line or spread over 3 as required by the customer. Please refer to Figure 2 for a visual representation and detailed information for this option.

Table 2. Custom Part Marking Example (Option A – Text Only)

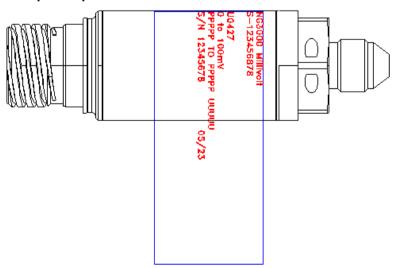| Line	Part Marking	Description
Line 1	NG3000 Millivolt	Non mandatory. Production Description.
Line 2	S-123456878	Non mandatory. Customer Part Number.
Line 3		Empty Line
Line 4	U0427	Non mandatory. Manufacturer Cage Code.
Line 5	0 to 100mV	Non mandatory. Sensor Output Range.
Line 6	PPPPP TO PPPPP UUUUU	Mandatory and Non-Configurable line showing the pressure range.
Line 7	S/N######## MM/YY	Mandatory and Non-Configurable line showing Serial Number and Date of Manufacture.

5.1 Part Marking Example – Option A

Figure 2. Part Marking Example – Option A

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6 OPTION B – TEXT WITH LOGO AND DATA MATRIX (CUSTOMER SUPPLIED DRAWING)

The customer can use up to a maximum of 7 lines with a character limit of 44 maximum per line for the first 3 lines and 27 characters maximum for the last 4 lines. The data shall include a serial number, pressure range and date of manufacture (see section 4.4). The Location of mandatory data can be on a single line or spread over 3 as required by the customer. Please refer to Figure 3 for a visual representation and detailed information for this option.

6.1 Customer Logo

NG3000 millivolt product range provides the capability for the sensor to be configured with a customer logo and a data matrix code. The customer shall select option B on the request form if a logo and/or data matrix is required. The customer shall supply a drawing in .dxf format to Druck Ltd Customer Service to the email specified in Appendix A if a logo is required.

There are two designated locations where the logo can be placed on the sensor, "Logo Area 1" or "Logo Area 2". Please refer to Figure 3 for a visual representation and detailed information regarding these placement options.

6.2 Data Matrix

To include a data matrix, the customer shall indicate the specific lines to be included in the code on the request form. Maximum of 3 lines can be selected. It's important to note that only the text data present on the selected lines can be accommodated. For further clarity on the location and relative size of the data matrix, please refer to Figure 3, which provides a visual representation and detailed information.

The size of the data matrix is 7mm x 7mm square. Druck shall generate the data matrix in IDMatrix EC220 (Quadratic) format.
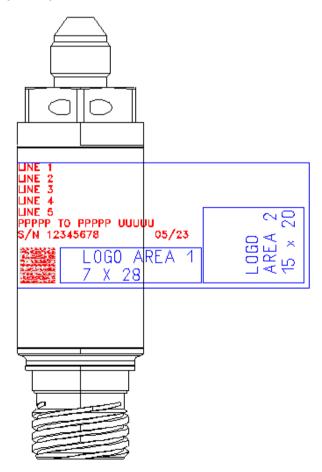
6.3 Part Marking Example - Option B

Figure 3. Part Marking Example – Option B

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7   DESIGN APPROVAL PROCESS

When requesting custom part marking on NG3000 Millivolt sensors, the design must be reviewed and approved by the customer and Druck Ltd. The Customer shall provide Druck Ltd with a Custom Part Marking Request from shown in Appendix A. Druck Ltd shall review the information provided by the customer for the custom part marking and respond to the customer with the interpretation of the data for review and approval. The customer shall return a signed copy of the request form to customer care email provided in the request from, if design meets their requirements.
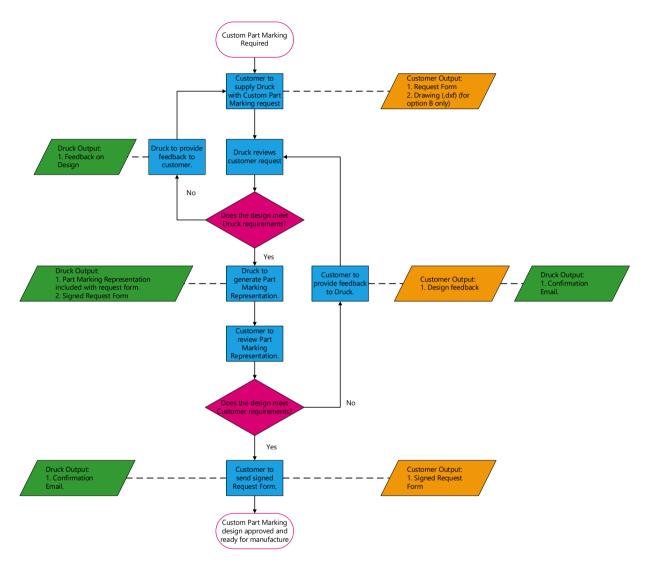

Figure 4. Custom Part Marking Approval Process

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APPENDIX A - CUSTOM PART MARKING REQUEST FORM

NG3000 Millivolt Customer Part Marking Request Form

Customer Part Number:	
Company:	
Contact Detail:	
Email:	
Contact Number:	

Configuration String:	

Information Format:	Text Only	Text with Logo and Data Matrix	

Information Format: Option A – Text Option Only

All mandatory data listed below is included in the part marking profile text and is non-configurable.

- Serial Number, location for the serial number" is indicated with the notation "S/N ########".
- Operational Pressure Range/Maximum with pressure unit, the location for the pressure range and units is indicated with the character 'P' and 'U' respectively. The length of the pressure and units marking will depend on the sensor configuration.
- Date of manufacture (month and year), location for the date of manufacture is indicated with the notation "MM/YY".

Please refer to Section 4.4 of document 173M6849 for more information.

Line 1 (44 char. max.)																																											
Line 2 (44 char. max.)																																											
Line 3 (44 char. max.)																																											
Line 4 (44 char. max.)																																											
Line 5 (44 char. max.)																																											
Line 6 (44 char. max.)	P	P	P	P	P		T	O		P	P	P	P	P		U	U	U	U	U																							
Line 7 (44 char. max.)	S	/	N		#	#	#	#	#	#	#	#								M	M	/	Y	Y																				

Please fully complete and email form to aerospace.and.military.cc@bakerhughes.com

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Information Format: Option B – Text with Logo and Data Matrix Option Only

All mandatory data listed below is included in the part marking profile text and is non-configurable.

- Serial Number, location for the serial number" is indicated with the notation "S/N ########".
- Operational Pressure Range/Maximum with pressure unit, the location for the pressure range and units is indicated with the character 'P' and 'U' respectively. The length of the pressure and units marking will depend on the sensor configuration.
- Date of manufacture (month and year), location for the date of manufacture is indicated with the notation "MM/YY".

Please refer to Section 4.4 of document 173M6849 for more information.

Include Data in Data Matrix? (Please Tick, Maximum 3 Lines)

Line 1 (44 char. max.)		
Line 2 (44 char. max.)		
Line 3 (44 char. max.)		
Line 4 (27 char. max.)		
Line 5 (27 char. max.)		
Line 6 (27 char. max.)	P P P P P T O P P P P P U U U U U	
Line 7 (27 char. max.)	S / N # # # # # # # # M M / Y Y	

Logo Position: Logo Area 1   Logo Area 2

Part Marking Representation (to be completed by Druck Ltd)

Druck Approvals

Function	Name	Sign	Date
Druck Design Office			

Customer Approvals

Function	Name	Sign	Date

Please fully complete and email form to aerospace.and.military.cc@bakerhughes.com. Please include a drawing of the logo in .dxf format, if applicable.

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