

Druck Limited
Fir Tree Lane
Groby
Leicester LE6 0FH
United Kingdom
Tel: +44 116 231 7100

SPECIFICATION

NEXT GENERATION 3000 SERIES

MILLIVOLT CONFIGURATION

CUSTOM PART MARKING

173M6849

Copyright 2023 Druck Ltd, a Baker Hughes business

BAKER HUGHES CONFIDENTIAL. This document and the information contained herein is confidential to and the sole property of Druck Limited and Baker Hughes. It may not be reproduced, used, disclosed, or made public without the express written consent of Druck limited and/or Baker Hughes. The use of this document and the information contained therein may be subject to the terms of a separate agreement with Druck limited and/or Baker Hughes. (Druck and logo are registered trademarks of Baker Hughes in the United States and other countries. All product and company names are trademarks of their respective holders)

Dogo 1 of 0	PUBLIC UNCONTROLLED WHEN PRINTED OR TRANSMITTED	Document	173M6849
Page 1 of 9	ELECTRONICALLY	Revision	-

Amendment Record

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

Approvals

Checked	Engineering	Chief Engineer
STEPHEN BUTTERWORTH	IAN JONES	JIM SMALLEY
AME	Quality	Project Management
LEWIS LUNN	LEE BOTTRILL	FRANCIS DE CORT
Commercial	Product Management	
JUSTIN WAND	BEN ELLARD	

Contents

1	INTRODUCTION	4
2	REFERENCES	4
3	CUSTOM PART MARKING	4
4	SPECIFICATION	4
4.1	Dimensions	4
4.2	Part Marking Location	4
4.3	Font and Font Size	
4.4	Mandatory Data	
5	OPTION A – TEXT ONLY	
5.1	Part Marking Example – Option A	
6	OPTION B – TEXT WITH LOGO AND DATA MATRIX (CUSTOMER SUPPLIED DRAWING)	
6.1	Customer Logo	
6.2	Data Matrix	
6.3	Part Marking Example - Option B	
7	DESIGN APPROVAL PROCESS	7
	Figures	
Figure 1.	Custom Part Maximum Dimensions	4
	Part Marking Example – Option A	
Figure 3.	Part Marking Example – Option B	6
•	Custom Part Marking Approval Process	
94.0		
	Tables	
Table 1. A	Applicable Documentation	4
	Custom Part Marking Example (Option A – Text Only)	
	- · · · · · · · · · · · · · · · · · · ·	
	Appendices	
APPEND	IX A - CUSTOM PART MARKING REQUEST FORM	8

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	Docume	ntation
I able 1.	ADDIICADIC	DOCUITE	HILALIUII

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.

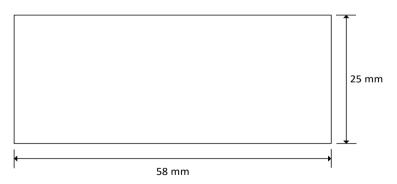


Figure 1. Custom Part Maximum Dimensions

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.

Daga 4 of 0	PUBLIC UNCONTROLLED WHEN PRINTED OR TRANSMITTED	Document	173M6849
Page 4 of 9	ELECTRONICALLY	Revision	

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	UO247	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

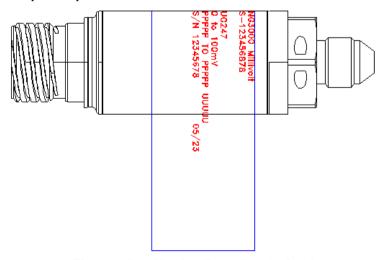


Figure 2. Part Marking Example - Option A

Daga 5 of 0	PUBLIC UNCONTROLLED WHEN PRINTED OR TRANSMITTED	Document	173M6849
Page 5 of 9	ELECTRONICALLY	Revision	-

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 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

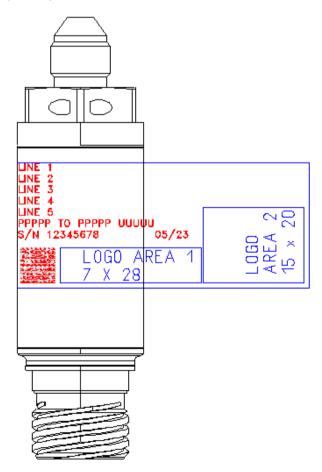


Figure 3. Part Marking Example - Option B

Daga 6 of 0	PUBLIC UNCONTROLLED WHEN PRINTED OR TRANSMITTED	Document	173M6849
Page 6 of 9	ELECTRONICALLY	Revision	-

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.

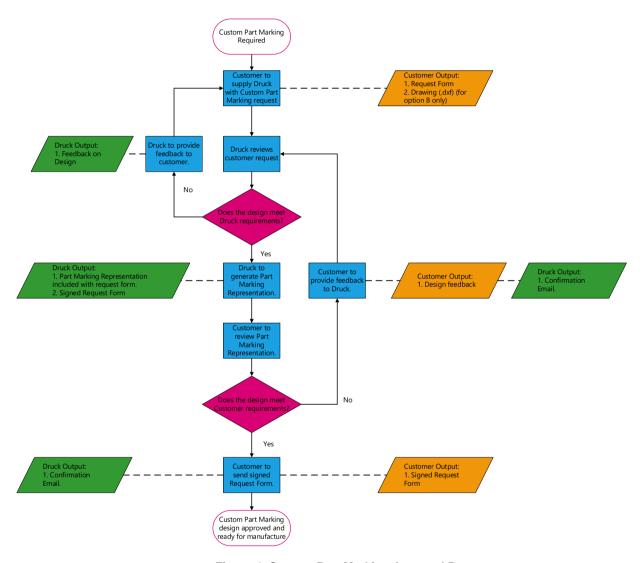


Figure 4. Custom Part Marking Approval Process

PUBLIC UNCONTROLLED WHEN PRINTED OR TRANSMITTED	Document	173M6849
ELECTRONICALLY	Revision	-

APPENDIX A - CUSTOM PART MARKING REQUEST FORM

NG3000 Millivolt Customer Part Marking Request Form																																											
Customer Part Number:	\perp																																										
Company:																																											
Contact Detail:	╙																																										
Email:																																											
Contact Number:																																				_							
Configuration String:																																				_			_	_	_		
formation Format: Text Only Text with Logo and Data Matrix																																											
Information Format: Option A – Text Option Only																																											
All mandatory data listed belo - Serial Number, location for t	he	the	se	rial	nu	mb	er	' is	inc	lica	ite	d w	ith	th	e n	ota	itio	n "	'S/N	V #	###	###	##"																				
- Operational Pressure Range/						•												•				_			un	its i	s ir	ndio	cate	ed \	wit	h th	ne c	cha	rac	ter	'P'	and	J'U	,•			
respectively. The length of the										_											_																						
- Date of manufacture (month	an	d y	ear), lo	ocat	ioi	n fo	or t	he	dat	e c	of m	nar	ufa	acti	ure	İSİ	ind	ica	tec	w	ith	the	e n	ota	atio	n "	MN	Λ/Y	Υ".													
Please refer to Section 4.4 of d	locu	ume	ent	17	3M6	84	9 f	or r	noi	re i	nfo	rm	ati	on.																													
Line 1 (44 char. max.)																																											
Line 2 (44 char. max.)																																				L						\perp	
Line 3 (44 char. max.)																																										\perp	
Line 4 (44 char. max.)																																										\perp	
Line 5 (44 char. max.)																																											
Line 6 (44 char. max.)	Р	Р	Р	Р	Р		Т	O		Р	Р	Р	Р	P		U	U	U	U	U																							
Line 7 (44 char. max.)	S	/	N		#	#	#	#	#	#	#	#									М	М	/	Υ	Υ															\prod	\prod	\perp	
			Ple	ase	ful	ly	cor	npl	ete	e ar	nd e	em∈	ail	for	m t	to a	ero	osp	ace	e.aı	nd.	mil	lita	iry	.cc	@b	ake	erhu	ugh	es.	cor	m											

Sheet 1 of 2

Page 8 of 9	PUBLIC UNCONTROLLED WHEN PRINTED OR TRANSMITTED ELECTRONICALLY	Document	173M6849
		Revision	-
CDG/173M6849/000/00			

Information Format: Option B - 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 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.) PPPP T O ululululu Line 6 (27 char. max.) Line 7 (27 char. max.) Logo Position: Logo Area 1 Logo Area 2 Part Marking Representation (to be completed by Druck Ltd) UNE 2 UNE 3 LINE 4 PPPPP TO PPPPP UUUUU S/N 12345678 05/23 LOGO AREA 7 X 28 **Druck Approvals** Sign Function Name Date Druck Design Office **Customer Approvals** Function Name Sign Date Please fully complete and email form to aerospace.and.military.cc@bakerhughes.com

Sheet 2 of 2

Page 9 of 9

UNCONTROLLED WHEN PRINTED OR TRANSMITTED
ELECTRONICALLY

CDG/173M6849/000/00

Document 173M6849

Revision -