Special Documentation
Tagging

Level and pressure measuring instruments

Endress+Hauser [EH]

People for Process Automation

Table of contents

1   Manufacturer

Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany

Place of manufacture: See nameplate.

2   About this document

These instructions describe how the "Device Tag" is automatically created from the Marking info and how the tag name is visualized in the display of HART 7 devices.

This is shown using the following tagging example:
Feature 895 "Marking", option: Z1 "Tagging (TAG)"

In addition, the conversion of the Marking info into a HART Tag is described, and the special aspects of the tagging for devices with Profibus PA and Profinet over Ethernet-APL are explained as well.

The physical tie plate is referred to as the **TAG** in this manual. This can be an adhesive label or a metal plate on the device.

3   Explanation

The automated programming of the Device Tag and HART Tag by the production equipment of E+H LP allows a maximum length of 18 characters. Although some HART control systems allow a longer maximum length, the maximum length of 18 characters only applies due to the automated programming by the E+H LP production equipment. This ensures automated handling of the labeling and programming of the TAG information.

Standardized handling of the physical labeling and programming of the TAG information are simplified:
• The contents are generated from your entry in the product feature 895 "Marking", option Z1 "Tagging (TAG)".
• The first line of the TAG is always used for the Device Tag information.
• The Device Tag information must be entered in line 1 of the TAG. All of the information in line 2 and 3 of the TAG is not considered as Device Tag information.

- If the Device Tag is 18 characters or shorter, you can proceed as described in the following examples, and the Device Tag is programmed automatically in the device during production.
- The ISO Latin 1 character set is used, see Section 5.3 on permitted characters.
- A maximum of 32 characters are shown for HART long tag, PROFIBUS PA and PROFINET over Ethernet-APL.

Please contact Endress+Hauser Service if there are any additional, special requirements.

Additional requirements may include, for example:

- The Device Tag is longer than 18 characters.
- Chinese characters, Japanese characters, Korean characters, Russian characters and Arabic characters can be displayed in the TAG.
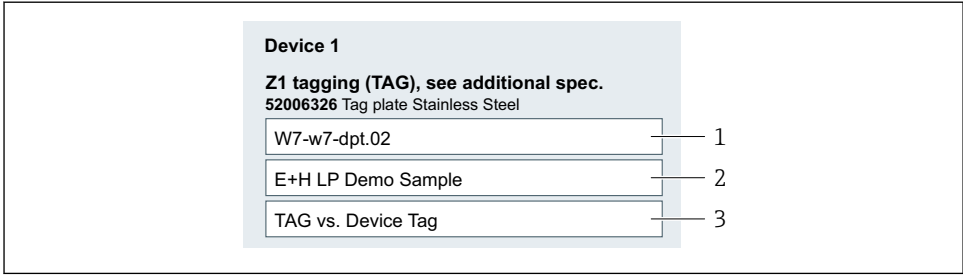- The Device Tag is different from the HART long tag.

4   Examples

The examples illustrate how incorrect entries for the Marking affect the TAG, Device Tag and HART short tag.

All of the examples apply to the following configuration: **Code 895 "Marking", option: Z1 "Tagging (TAG)"**

The physically attached tag plate [TAG] uses all three input lines from the Endress+Hauser Product Configurator. All characters are printed identically in size and shape in three lines and lasered on, or programmed into an RFID TAG attached to the device.

4.1   Example 1

ℹ️ The following is an example of where the TAG, Device Tag and the way they are shown on the display are not restricted in any way.
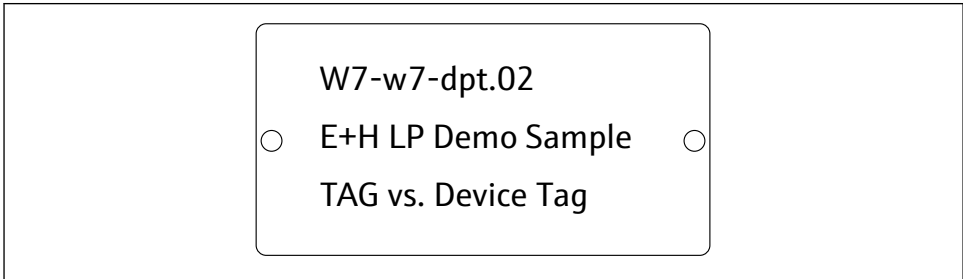
Device 1

Z1 tagging (TAG), see additional spec.
52006326 Tag plate Stainless Steel

W7-w7-dpt.02 —————— 1

E+H LP Demo Sample —————— 2

TAG vs. Device Tag —————— 3

A0052210

🖼 *1   Input screen in the Product Configurator*

1   12 characters used
2   18 characters used
3   18 characters used

TAG:

W7-w7-dpt.02

E+H LP Demo Sample

TAG vs. Device Tag
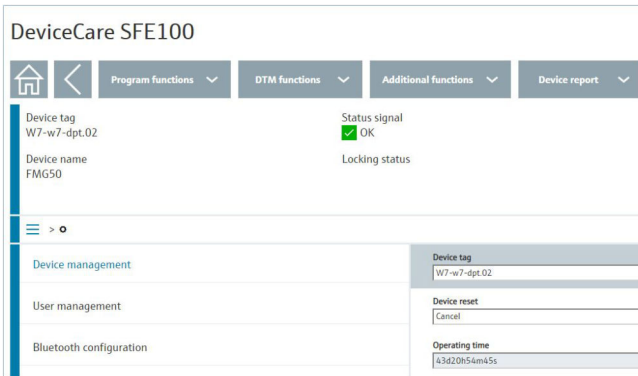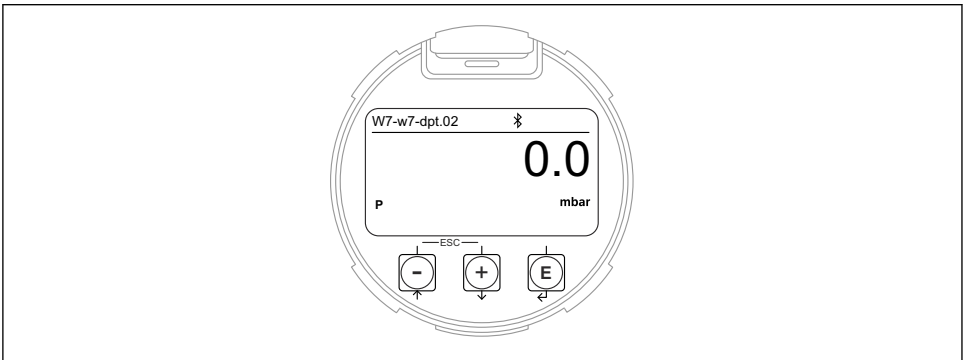
A0052196

🖼 *2   Tag plate [TAG]*

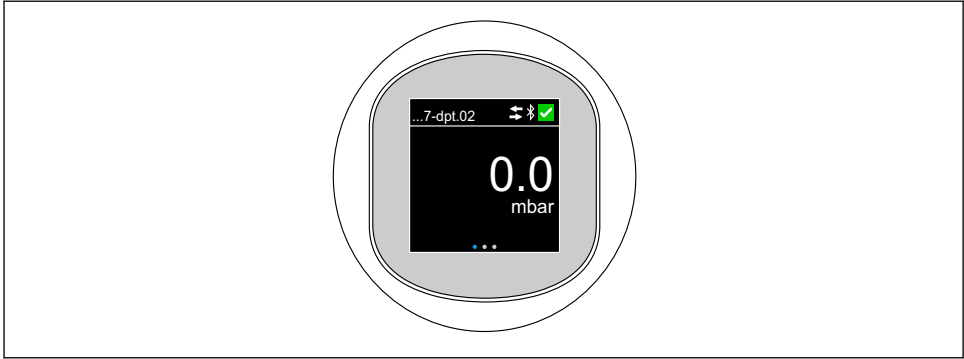**Device Tag:**

Result: Device Tag = "W7-w7-dpt.02"

 3   Device Tag display

 4   Device Tag shown on the display with product feature "Display; Operation", option E "Graphic display with keys", option F "Graphic display with keys + Bluetooth"

5   Device Tag shown on the display with product feature "Display; Operation", option G, H, J, K with color display
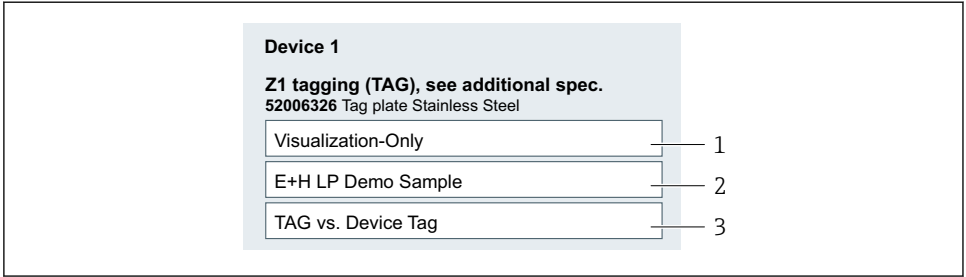
The length of the Device Tag shown on the display is 8 characters maximum. Only the last 8 characters are shown on the display.

Therefore "W7-w7-dpt.02" is shown as "...7-dpt.02" on the display.

4.2   Example 2

ℹ️ In the following example, the Device Tag information > 12 characters will affect the way
    it is shown on the display.

Device 1

Z1 tagging (TAG), see additional spec.
52006326 Tag plate Stainless Steel

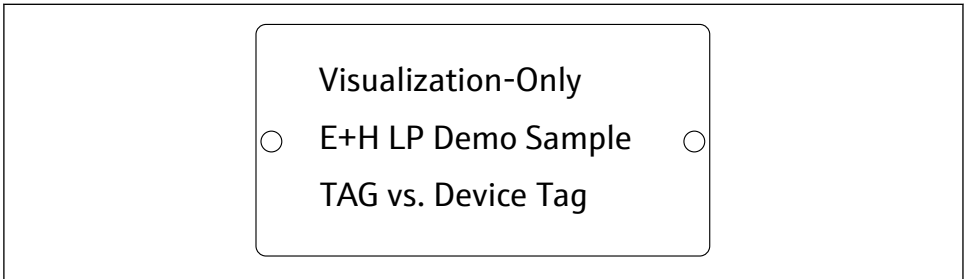|	
Visualization-Only	— 1
E+H LP Demo Sample	— 2
TAG vs. Device Tag	— 3

A0052211

⊡ *6   Input screen in the Product Configurator*

1   18 characters used
2   18 characters used
3   18 characters used

TAG:

Visualization-Only

◯   E+H LP Demo Sample   ◯

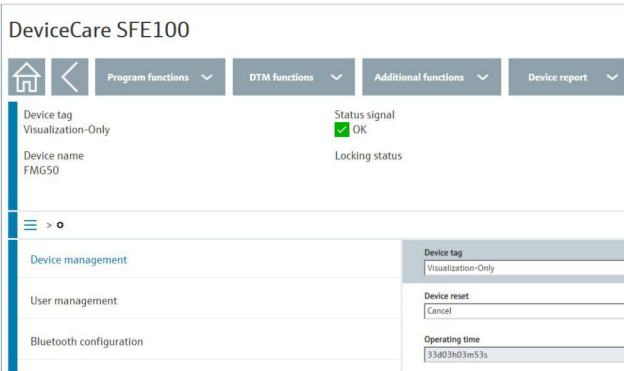TAG vs. Device Tag

A0052197

⊡ *7   Tag plate [TAG]*

1   18 characters displayed
2   18 characters displayed
3   18 characters displayed

Device Tag:

 ⊡ *8   Device Tag displayed in DeviceCare*
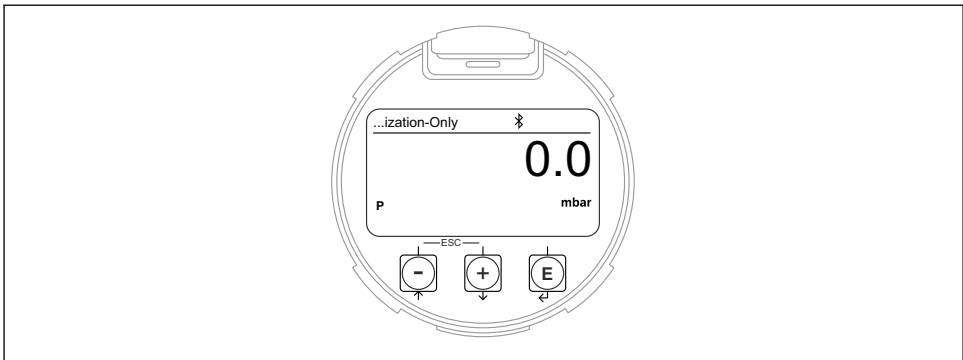
 ⊡ *9   Device Tag shown on the display with product feature "Display; Operation", option E "Graphic display with keys", option F "Graphic display with keys + Bluetooth"*

The length of the Device Tag shown on the display is 12 characters maximum. Only the last 12 characters are shown on the display.

"Visualization-Only" is therefore shown as "...ization-Only" on the display.

A0054871

⊡ *10 Device Tag shown on the display with product feature "Display; Operation", option G, H, J, K with color display*

The length of the Device Tag shown on the display is 8 characters maximum. Only the last 8 characters are shown on the display.

"Visualization-Only" is therefore shown as "...ion-Only" on the display.

4.3   Example 3

This example applies in the case of communication with a HART 5 control system

ℹ️ This does not take into account that only characters from the "Compressed ASCII table" may be used for the HART short tag. As a result, the name "HART5-versus-HART7" is automatically converted to the HART5-VE "HART short tag" when queried via the bus.

Device 1

Z1 tagging (TAG), see additional spec.
52006326 Tag plate Stainless Steel

HART5-versus-HART7	— 1
E+H LP Demo Sample	— 2
TAG vs. Device Tag	— 3

A0052212

🖼 *11   Input screen in the Product Configurator*

1   18 characters used
2   18 characters used
3   18 characters used

TAG:

HART5-versus-HART7

E+H LP Demo Sample

TAG vs. Device Tag
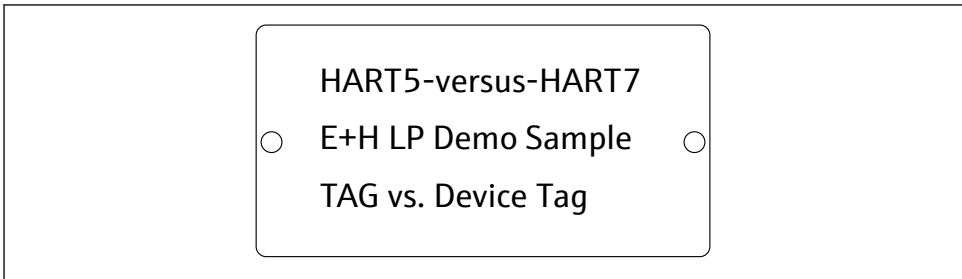
A0052198

🖼 *12   Tag plate [TAG]*

1   18 characters displayed
2   18 characters displayed
3   18 characters displayed

Device Tag:

⊡ *13   Device Tag and HART short tag displayed in DeviceCare*
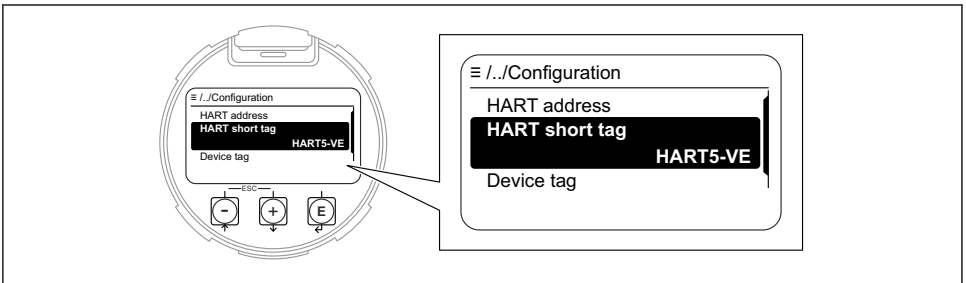
A0052201

⊡ *14   HART short tag in the operating menu of the display with product feature "Display; Operation", option E "Graphic display with keys", option F "Graphic display with keys + Bluetooth"*
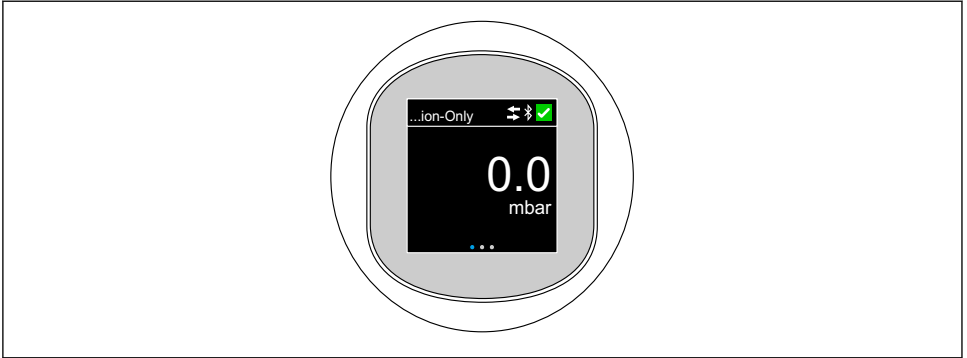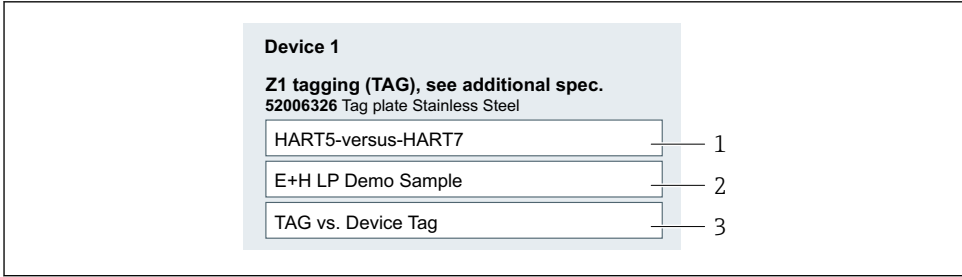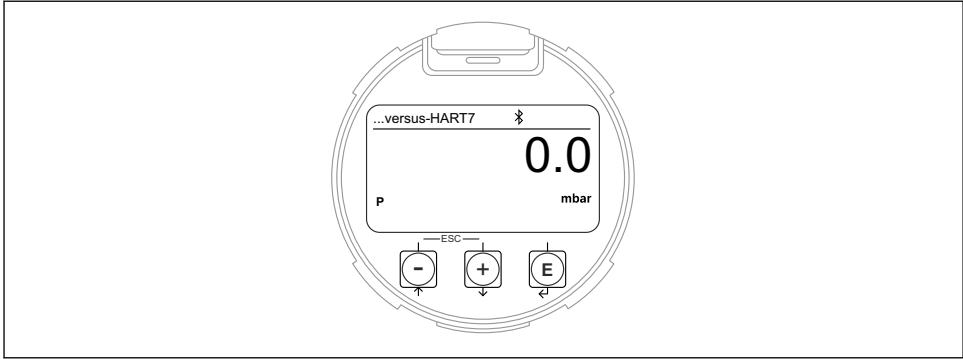
15 *Device Tag shown on the display with product feature "Display; Operation", option E "Graphic display with keys", option F "Graphic display with keys + Bluetooth"*

The length of the Device Tag shown on the display is 12 characters maximum. Only the last 12 characters are shown on the display.

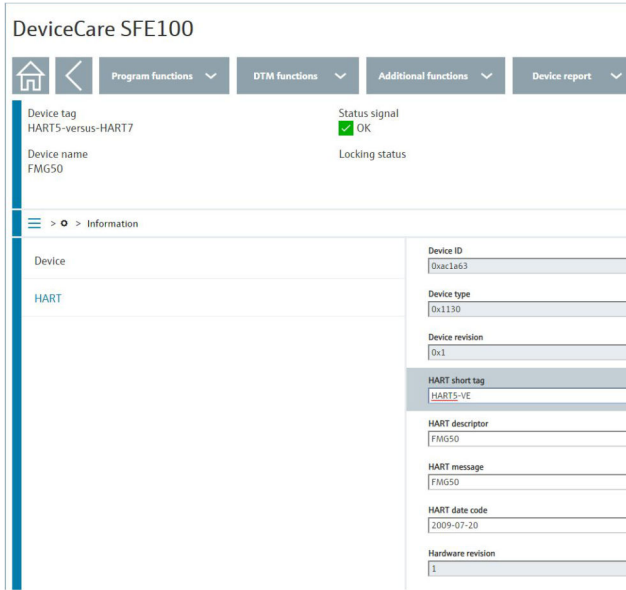Therefore "HART5-versus-HART7" is shown as "...versus-HART7" on the display.
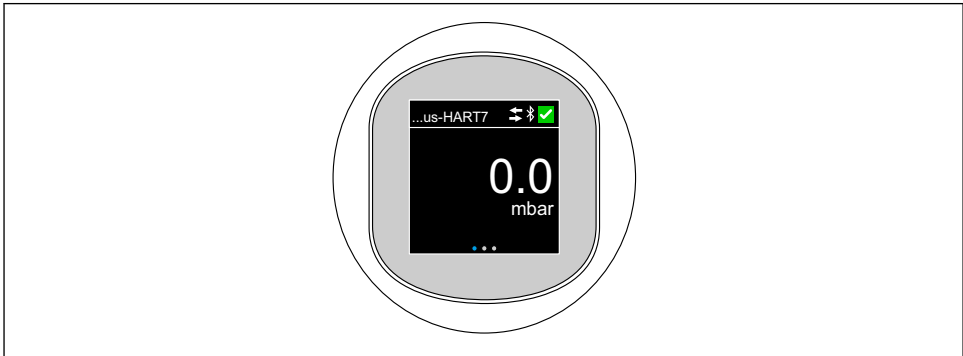
16 *Device Tag shown on the display with product feature "Display; Operation", option G, H, J, K with color display*

The length of the Device Tag shown on the display is 8 characters maximum. Only the last 8 characters are shown on the display.

Therefore "HART5-versus-HART7" is shown as "...us-HART7" on the display.

5   Tagging definitions

5.1   TAG

Device 1

Z1 tagging (TAG), see additional spec.
52006326 Tag plate Stainless Steel

DeviceTagInfoHere	1
E+H LP Demo Sample	2
TAG vs. Device Tag	3
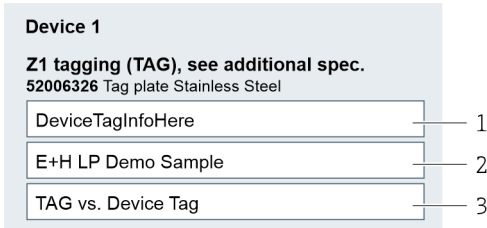
- 3 lines
- Every line is up to 18 characters long
- ISO Latin 1 character table

ℹ️ Please contact Endress+Hauser Service for other character tables (e.g. traditional Chinese). Arabic and Thai character tables are not currently supported.

5.2   Device Tag

ℹ️ Not all ordering options are available for every device.

The Device Tag can be visualized in DeviceCare/FieldCare via the service interface (CDI) or the optional SmartBlue app (only with Bluetooth display).

5.2.1   Product feature 020, "Output"

Option AA "2-wire, 4-20 mA"
- One line, up to 18 characters long
- ISO Latin 1 character set, see the section on permitted characters
- Generated from the first input line of the TAG

Option BA "2-wire, 4-20 mA HART"

Option BB "2-wire, 4-20 mA HART, switch output"

Option BC "2-wire, 4-20 mA HART + 4-20 mA analog"

- **The HART long tag corresponding to the HART specification**
  - One line, up to 18 characters long
  - ISO Latin 1 character set, see the section on permitted characters
  - Generated from the first input line of the TAG

- **HART short tag corresponding to the HART specification**
  - One line, up to 8 characters long
  - "Compressed ASCII table" character set, see the section on HART control system
    - Lower case letters are converted to upper case letters
    - Characters that cannot be displayed are converted to "?"
  - Generated from the first 8 characters of the first input line of the TAG

"Output", option DA "2-wire, PROFIBUS PA"

"Output", option FA "2-wire, PROFINET over Ethernet-APL, 10Mbit/s"

The Device Tag is part of the electronic nameplate (ENP). It is used as TAG_DESC in accordance with the PA profile and can be searched via the fieldbus.
- One line, up to 18 characters long
- ISO Latin 1 character set, see the section on permitted characters.
- Generated from the first input line of the TAG

"Output", option KA "4-20 mA/IO-Link"
- One line, up to 18 characters long
- ISO Latin 1 character set, see the section on permitted characters
- Generated from the first input line of the TAG

"Output", option KB "DC PNP, IO-Link"
- One line, up to 18 characters long
- ISO Latin 1 character set, see the section on permitted characters
- Generated from the first input line of the TAG

5.2.2   Product feature 030, "Display; Operation"

Option E "Graphic display with keys"

Option F "Graphic display with keys + Bluetooth"
- Up to 12 characters displayed, see the section with examples.
- ISO Latin 1 character set, see the section on permitted characters
- Generated from the first input line of the TAG
  The (last) 12 characters of the first input line are displayed.

Option C "Color display without keys"

Option G "Color display without touch control"

Option H "Color display without touch control + Bluetooth"

Option J "Color display with touch control"

Option K "Color display with touch control + Bluetooth"
- Up to 8 characters displayed, see the section with examples.
- ISO Latin 1 character set, see the section on permitted characters
- Generated from the first input line of the TAG
  The (last) 8 characters of the first input line are displayed.

5.3   Allowed characters

A plausibility check for "allowed" ASCII characters does not take place during input.

Characters that are not allowed are replaced by a "?" or a "space".

Only characters from the following ASCII/ISO 8859-1 (Latin 1) table are considered "allowed" characters and should be selected for entries. The ASCII table shown also contains what are known as "non-visible characters". "Non-visible characters" such as "white space", "space" or "tab" are allowed and retained within the text, but eliminated outside the text. It is therefore recommended not to use "non-visible characters".

NUL	(Null)	SPACE	@	`
SOH	(Start of Heading)	!	A	a
STX	(Start of Text)	"	B	b
ETX	(End of Text)	#	C	c
EOT	(End of Transmission)	$	D	d
ENQ	(Enquiry)	%	E	e
ACK	(Acknowledge)	&	F	f
BEL	(Bell)	'	G	g
BS	(Backspace)	(	H	h
TAB	(Horizontal Tab)	)	I	i
LF	(NL Line Feed, New Line)	*	J	j
VT	(Vertical Tab)	+	K	k
FF	(NP Form Feed, New Page)	,	L	l
CR	(Carriage Return)	-	M	m
SO	(Shift Out)	.	N	n
SI	(Shift In)	/	O	o
DLE	(Data Link Escape)	0	P	p
Dc1	(Device Control 1)	1	Q	q
Dc2	(Device Control 2)	2	R	r
Dc3	(Device Control 3)	3	S	s
Dc4	(Device Control 4)	4	T	t
NAK	(Negative Acknowledge)	5	U	u
SYN	(Synchronous Idle)	6	V	v
ETB	(End of Transmission Block)	7	W	w
CAN	(Cancel)	8	X	x
EM	(End of Medium)	9	Y	y
SUB	(Substitute)	:	Z	z
Esc	(Escape)	;	[	{
FS	(File Separator)	<	\		
GS	(Group Separator)	=	]	}
RS	(Record Separator)	>	^	~
US	(Unit Separator)	?	_	DEL

⊠ *17   ASCII/ISO 8859-1 (Latin 1) table*

5.3.1   HART control system

The automated programming of the Device Tag and HART Tag by the production equipment of E+H LP allows a maximum length of 18 characters. Although some HART control systems allow a longer maximum length, the maximum length of 18 characters only applies here.

The Device Tag and the HART Tag are automatically generated from the first input line when creating a TAG.

The following limitation applies when a **HART 5 control system** is used:

Only characters from the following "Compressed ASCII table" may be used for the HART short tag.

SP	0	@	P
!	1	A	Q
"	2	B	R
#	3	C	S
$	4	D	T
%	5	E	U
&	6	F	V
'	7	G	W
(	8	H	X
)	9	I	Y
*	:	J	Z
+	;	K	[
,	<	L	\
-	=	M	]
.	>	N	^
/	?	O	_

🖾 *18   Compressed ASCII table*

71654588

www.addresses.endress.com

Endress+Hauser