

Communication protocol description

Profibus DP for weighing displays

NDI xxx/x W Profibus DP display is a SLAVE type of device connected into Profibus DP interface.

Conventions:

- 9999 decimal number
- 9999h hexadecimal number
- 11111111b binary number
- "ABCabc" text string
- 'A' ASCII character

1. Communication description

Communication features are specified by GSD file [NdiW08DB.GSD](#). Communication is made of two modules, DATA and STATUS.

2. DATA module

Performs transmission of data which should be displayed and decimal points information.

Byte (offset)	0 – 4	5
Bit No	Display data part (7 bit. ASCII)	DP
0. (LSB)	X	1. DP
1.	X	2. DP
2.	X	3. DP
3.	X	4. DP
4.	X	5. DP
5.	X	0
6.	X	0
7. (MSB)	0	0

Display data part

Contains data to be displayed. Display is primarily suitable for displaying numerical data. The following characters can be used in 7-segment digit displays:

- Digits: '0','1','2','3','4','5','6','7','8','9'
- Alphabet: 'A','b','C','d','E','F','G','H','I','J','L','n','O','P','r','S','t','U','Y'
- Other characters: '-' (dash), '?', '@', '_' (underscore), '|', '°' (degree)

Decimal point (DP)

DP represents lighting of decimal points of the display. DP works in binary mode, meaning 0x00 will not light any point, 0x01 will light up 1. point, 0x04 will light up 3. point and 0x05 will light up 3. and 1. point.

3. STATUS module

Performs transmission of additional display data.

Byte (offset)	0	1	2	3
Bit No	Message before display data part	Message after display data part	Flash	Brightness 2 – 100
0. (LSB)	NET	Z	Data part	J
1.	-0-	Z	NET	J
2.	X	X	-0-	J
3.	X	X	After data part	J
4.	X	X	X	J
5.	X	X	X	J
6.	X	X	X	J
7. (MSB)	0	0	0	0

Message before display data part

Messages "-0-" and "NET" are before display data part. These are binary controlled – 0x01 will light up "NET" and 0x02 will light up "-0-".

Message after display data part

Value	Message
0x00	
0x01	"g"
0x02	"kg"
0x03	"t"

Flashing

Flashing controls individual parts of display.

Brightness

Brightness of display can be controlled in the range of 2 – 100%.

4. Message example

Displaying "NET" 123.45 kg without flashing, 100% brightness.

DATA

Offset	0	1	2	3	4	5
Value	0x31	0x32	0x33	0x34	0x35	0x04

STATUS

Offset	0	1	2	3
Value	0x01	0x02	0x00	0x64