

**MP**  **BUS**<sup>®</sup>

## Room Sensors

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## Data-Pool General Notes

- General information**
- The device supports the MP Data-Pool functional profile. All available data points are managed in a data pool and accessible with MP read/write commands.
  - This document describes all public data pool values of the device. It's divided into process values and configuration values.
  - The MP Data-Pool functional profile is specified in the MP Cooperation Documentation. The document is provided to Belimo MP-Partners.
  - See the technical datasheet for technical information about the device itself.

**Power-on behaviour** The initialization of sensor data takes up to 20 seconds. The sensor values remain 0 during power-on. The initialization status can be read with ID 30.

**Identification** The connected type can be identified by its series number:

Prefix	Profile Type	Profile Category	Type
2	2	11	22RT-19-1
2	3	11	22RH-19-1
2	4	11	22RTM-19-1

**Configuration** Configuration data are not password protected. No Login is required.

**Timing of MP-Bus queries** Master implementations typically poll the slaves in cycles (MP1, MP2, MP3, ...). Reading all data pool values of a node in one cycle is not recommended, because it would reduce the overall MP-Bus performance

Recommendation:

- Split up the queries into several cycles (e.g. 3 queries per cycle).
- Adjust repetition rates (reading values) according to the rate of change of the value
- Prevent from reading unused data pool values

**Signed integer** Signed integers are represented as two's complement.

Example Value of ID40 =  $1111'1101'1111'0010_2 = -526_{10}$

Actual Value = Value \* Scaling factor \* Unit =  $-526 * 0.01 * ^\circ\text{C} = -5.26\text{ }^\circ\text{C}$

## Data-Pool Values Overview

	ID	Name	R/W
Process	11	Error State	R
	14	SensTemp [UnitSel]	R
	16	SensRelHumid [%]	R
	17	SensCO2 [ppm]	R
	23	DigitalIn	R
	30	Status Device	R
	33	DewPointTemp [UnitSel]	R
Configuration			
	100	<b>Position</b>	RW
	110	<b>OffsetTemp [UnitSel]</b>	RW
	111	<b>OffsetHumidity [%]</b>	RW
	112	<b>OffsetCO2 [ppm]</b>	RW
	113	<b>OffsetDewPointTemp [UnitSel]</b>	RW
	153	<b>Unit Selection Temp Communication</b>	RW

## Data-Pool Values

Nr	Description	Unit	Scaling	Values	Size	R/W
11	Error State Error status of the device	-	1	Bit 0: temperature sensor fault Bit 1: rH sensor fault Bit 2: CO <sub>2</sub> sensor fault  The flag is reset automatically, if the condition disappears.	1	R
14	SensTemp [UnitSel] Temperature in unit selected (ID 153)	UnitSel	0.01	0...50 °C (32...122 °F)	2	R
16	SensRelHumid Relative humidity in percent	%	0.01	0...100	2	R
17	SensCO2 CO <sub>2</sub> content in ppm	ppm	1	0...2000	2	R
23	DigitalIn Digital input (e.g. presence detector)	-	-	0 (open) 1 (closed)	1	R
30	Status Device	-	1	Bit0: reserved Bit1: reserved Bit2: Sensors summary error (see ID11 for details) Bit3: reserved Bit4: reserved Bit5: reserved Bit6: Sensors initializing (up to 20 s after power-up)  The flag is reset automatically, if the condition disappears.	2	R
33	DewPointTemp [UnitSel] Temperature of calculated dew point in unit selected (ID 153)	UnitSel	0.01	0...50 °C (32...122 °F)	2	R
100	<b>Position</b> Alphanumeric character string to store the location of the device (optional, helpful for maintenance and troubleshooting)	-	-	One byte per character The string is not null terminated. Fill up unused bytes with 0x20 (space character).	64	RW
110	<b>OffsetTemp [UnitSel]</b> Offset applied to measured temperature in unit selected	UnitSel	0.01	-15...15 °C (-27...27 °F)	2	RW
111	<b>OffsetHumidity [%]</b> Offset applied to measured relative humidity in percent	%	0.01	-20...20	2	RW
112	<b>OffsetCO2 [ppm]</b> Offset applied to measured CO <sub>2</sub> content in ppm	ppm	1	-500...500	2	RW
113	<b>OffsetDewPointTemp [UnitSel]</b> Offset applied to calculated dew point temperature in unit selected	UnitSel	0.01	-15...15 °C (-27...27 °F)	2	RW
153	<b>Unit Selection Temp Communication</b> Unit applied for temperature values	-	1	0 = °C 1 = °F Default: 0 = °C	1	RW