MP-Bus Data-Pool Values

MP BUS

Flow Sensor 22PF-1U..

Edition 2025-10 / V4.2

BELIMO

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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.

Configuration

MP-Bus	Configuration data are not password protected. No login is required.
Tool	Belimo Assistant 2

Identification

The connected type can be identified by its series number:

Prefix	Profile type	Profile category	Type
2	1	36	22PF-..

Timing of MP-Bus queries

Client implementations typically poll the servers in cycles (MP1, MP2, MP3, …). Readingall data pool values of this node in one cycle are 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 * unit
= **-5.26 unit**

Value overview

Operation

ID	Name	Access
15	Sensor 1 Value [mV] [Ω] [-]	R
19	Relative Volumetric Flow [%]	R
20	Absolute Volumetric Flow [l/s]	R
22	Absolute Volumetric Flow [selected unit]	R
26	Glycol Concentration [%]	R
29	Temperature (flowbody) [°C]	R
51	Accumulated Volume [m^3]	R

Service

ID	Name	Access
110	Malfunction & Service information	R
120	Sensor 1 Type	R / W
133	FS (Full scale) [l/s]	R
151	Unit Selection Flow	R / W
200	Flow Meter Serial Number First Digits	R
201	Flow Meter Serial Number Last Digits	R

Access definition: R = Read, W = Write

All writeable datapoints with ID >100 (configuration data) are persistent and are **not** supposed to be written on a regular basis. Designated data points are highlighted in colour in the document.

Value descriptions

Flow

These data-pool values can be used to configure and read values related to Flow control.

No.	Description Comments	Values	Unit	Scaling	Size	Access
19	**Relative volumetric flow** Related to ID 133: "FS" (full scale)	0...15'000	%	0.01	2	R
20	**Absolute volumetric flow** Sensor reading up to 2.5*V'_{nom} possible. Actual measurement range depends on device type (see data sheet).	0...10'000	l/s	0.01	2	R
22	**Absolute volumetric flow in selected unit** Sensor reading up to 2.5*V'_{nom} possible. Actual measuring range depends on device type (see data sheet). → Unit can be selected by ID 151: Unit selection flow.	0....15 0...56'750 0...15'762 0...945'832 0...56'750'000 0...249'862 0...33'400	m^3/s m^3/h l/s l/min l/h gpm cfm	0.001	4	R
133	**FS (full scale)** Nominal volumetric flow	0...10'000	l/s	0.01	2	R
151	**Unit selection flow** The selected unit is valid for ID 22: Absolute volumetric flow in selected unit.	0: m^3/s 1: m^3/h 2: l/s 3: l/min 4: l/h 5: gpm 6: cfm Default: 4	–	–	1	R / W
26	**Glycol concentration** Actual measuring range depends on device type (see datasheet).	0...6'000	%	0.01	2	R
51	**Accumulated volume** (cannot be reset)	0...21'474'836	m^3	0.01	4	R
200	**Flow Meter serial number first digits**	–	–	1	4	R
201	**Flow Meters serial number last digits**	–	–	1	4	R

Definition Access: R = Read, W = Write

Note: According to the present configuration settings of the product (e.g. DN size) the HVAC application may perform a size limitation within the indicated MP-Bus value range. Each product may have different HVAC value size limitations.

Temperature

The measured temperature values can be read out via the data-pool value below.

No.	Description Comments	Values	Unit	Scaling	Size	Access
29	**Temperature (flowbody)**	-2'000...12'000	°C	0.01	2	R

Conversion of sensor signals

These data-pool values can be used to configure the additional Sensor 1 inout on Y3 and related values.

No.	Description Comments	Values	Unit	Scaling	Size	Access
15	**Sensor 1 value** Current value of sensor 1, depending on setting of ID 120: Sensor 1 type	0…65'535	mV –	1	2	R
120	**Sensor 1 type** Additional sensor input	0: None 1: Active 2: – 3: – 4: Switch	–	–	1	R / W

Definition Access: R = Read, W = Write

Note: According to the present configuration settings of the product (e.g. DN size) the HVAC application may perform a size limitation within the indicated MP-Bus value range. Each product may have different HVAC value size limitations.

Health state

These data-pool values allow to determine malfunctions, service information and error states of the Flow sensor.

No.	Description Comments	Values	Unit	Scaling	Size	Access
110	**Malfunction and service information** Value is bit-coded. More than one bit can be set to 1. Not all bits mentioned in the enumeration are used for this product range. 3: Reverse flow is detected. Pump pressure too low; high resistance in the flow circuit; flushing bypass open 6: Actual flow exceeds FS (designed nominal flow) 7: Air in the system, error occured during flow measurement. Water contamination, not specified fluid used. 9: Error with embedded temperature sensor. 11: Measured temperature and glycol concentration indicate that grease ice can build up 12: Medium contains glycol.	Bitmask = 0: – 1: – 2: – 3: Reverse flow 4: – 5: – 6: Flow actual exceeds FS 7: Flow measurement error 8: – 9: Flowbody temperature error 10: – 11: Freeze warning 12: Glycol detected 13: – 14: – 15: –	–	–	2	R

Definition Access: R = Read, W = Write

Note: According to the present configuration settings of the product (e.g. DN size) the HVAC application may perform a size limitation within the indicated MP-Bus value range. Each product may have different HVAC value size limitations.

All inclusive.

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