BACnet Interface Description

Belimo Sensors
22DTH-..6.., 22UTH-..60X, 22DTM-..6, 22ADP-..6..

Edition 2024-03 / V4.2

Contents

Protocol Implementation Conformance Statement – PICS

General information

Date	02.08.2022	
Vendor Name	BELIMO Automation AG	
Vendor ID	423	
Product Name	Sensor	
Product Model Number	22DTM-16	22ADP-164
	22DTM-56	22ADP-164L
	22DTH-16M	22ADP-56Q
	22DTH-56M	22ADP-56QB
	22UTH-160X	22ADP-564L
	22UTH-560X	22ADP-566L
Application Software Version	2.3	
Firmware Revision	2.3	
BACnet Protocol Revision	1.14	
Product Description	BACnet Smart sensor (B-SS)	
BACnet Standard Device Profile	BACnet Application Specific Controller (B-ASC)	
Segment Capability	No	
Data Link Layer Options	MS/TP Master	
Device Addressing Binding	No static device binding supported	
Networking Options	None	
Character Sets Supported	UTF-8	

BACnet Interoperability Building Blocks supported (BIBBs)

Data sharing – ReadProperty-B (DS-RP-B)
Data sharing – ReadPropertyMultiple-B (DS-RPM-B)
Data sharing – WriteProperty-B (DS-WP-B)
Data sharing – COV Unsubscribed-B (DS-COVU-B)
Device management – DynamicDeviceBinding-B (DM-DDB-B)
Device management – DynamicObjectBinding-B (DM-DOB-B)
Device management – DeviceCommunicationControl-B (DM-DCC-B)

BACnet MS/TP

Baud Rates	9'600, 19'200, 38'400, 76'800
Number of Nodes	Max. 32 (without repeater)

Depending on the sensor type and the version, not all the measured values and configuration parameters listed in this document are available. The values available for the respective sensor, can be taken from the respective sensor data sheet, or via the "Out of Service" flag of the corresponding object via BACnet.

Standard object types supported

Object processing

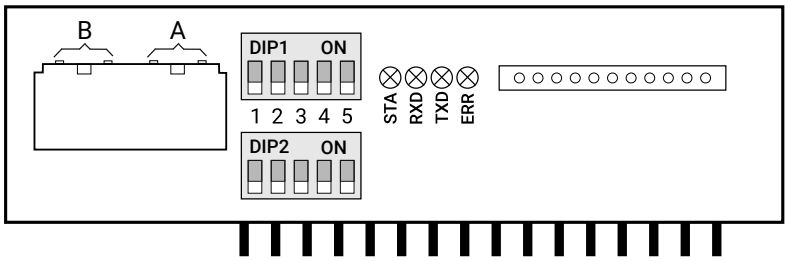
Object type	Optional properties	Writeable properties
Device	Description Max Manager Max Info Frames	Description
Analog Input [AI]	Description COV Increment	COV Increment
Analog Value [AV]	Description	Present Value
Binary Input [BI]	Description Active Text Inactive Text	–
Binary Value [BV]	Description Active Text State Text	Present Value
Multi-state Value [MV]	Description State Text	Present Value

The specified maximum length of writable strings in the Device Object are based on single byte characters and support up to 32 characters.

Operating elements for addressing and parametrisation

RS 485 module

In addition to the basic board, each BACnet sensor is equipped with a RS-485 module. The BACnet communication lines A (D +) and B (D -) are connected to the module. Furthermore, on the two DIP switches, the MAC address of the BACnet sensor can be selected and the communication parameters can be set.

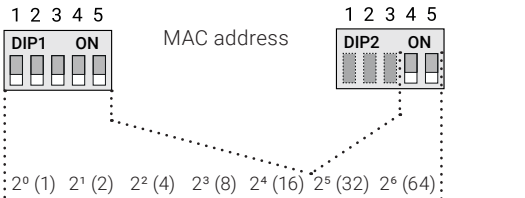


Functions of DIP switch 1 and DIP switch 2

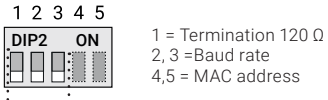
DIP switch **DIP1** (switch 1–5) is used to set the MAC address together with switch **DIP2** (switch 4 and 5) binary coded in a range of 1...127 (Address 0 is reserved and can't be set).

DIP switch **DIP2** (switch 1, 2, 3) is used to parametrise termination (120 Ω) and baud rate.

All DIP switches are factory set to the OFF position.



2^0 (1)	2^1 (2)	2^2 (4)	2^3 (8)	2^4 (16)	2^5 (32)	2^6 (64)	
1_{DIP1}	2_{DIP1}	3_{DIP1}	4_{DIP1}	5_{DIP1}	4_{DIP2}	5_{DIP2}	**Address**
OFF	OFF	OFF	OFF	OFF	OFF	OFF	**0**
ON	OFF	OFF	OFF	OFF	OFF	OFF	**1**
OFF	**ON**	OFF	OFF	OFF	OFF	OFF	**2**
ON	**ON**	OFF	OFF	OFF	OFF	OFF	**3**
OFF	OFF	**ON**	OFF	OFF	OFF	OFF	**4**
ON	OFF	**ON**	OFF	OFF	OFF	OFF	**5**
OFF	**ON**	**ON**	OFF	OFF	OFF	OFF	**6**
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
ON	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**127**



1_{DIP2}	2_{DIP2}	3_{DIP2}	**Function**
OFF			Termination **OFF**
ON			Termination **ON**
	OFF	OFF	Baud rate **9'600**
	ON	OFF	Baud rate **19'200**
	OFF	**ON**	Baud rate **38'400**
	ON	**ON**	Baud rate **76'800**

LED functions

The four LEDs on the RS-485 module show the actual operating status of the RS-485 module.

STA During normal operation the LED is flashing.
LED is turned ON during sensor initialization after Power ON of the device.

RXD LED is turned ON if bus telegrams are received by the RS-485 module.

TXD LED is turned ON if bus telegrams are sent by the RS-485 module.

ERR LED is turned ON in case of a faulty bus configuration or in case of internal errors.

BACnet object descriptions

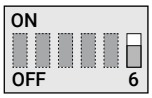
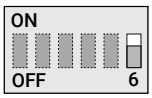
Information

Depending on the device type or version, not all measured values or configuration parameters listed in this document are available. Which values are available for your device can be found in the relevant device data sheet, or via the "Out of Service" flag of the corresponding object via BACnet.

Sensor values

Via the objects analog inputs AI[0]...AI[11] the various sensor measuring values can be read out.
→ Selection of unitary system SI or Imperial see description of object analog value AV[38].

Object type [Instance]	Description Comment, Status_Flags	COV increment	Values	Access
Device [x]	**Device Object**	–	–	R
AI[0]	**Value temperature SI in °C and Imperial in °F**	0...250 °C [0...480 °F]	-50°C...+250°C [-30°F...+480°F]	R
AI[1]	**Value relative humidity in % RH**	0...100%	0...100% RH	R
AI[2]	**Value absolute humidity SI in g/m³ and Imperial in gr/ft³**	0...80 g/m³ [0...35 gr/ft]	0...80 g/m³ [0...35 gr/ft]	R
AI[3]	**Value enthalpy SI in kJ/kg and Imperial in BTU/lb**	0...85 kJ/kg [0...40 BTU/lb]	0...85 KJ/kg [0...40 BTU/lb]	R
AI[4]	**Value dew point SI in °C and Imperial in °F**	0...80°C [0...200°F]	-20°C...+80°C [0°F...+200°F]	R
AI[5]	**Value CO_2 in ppm**	0...5'000 ppm	0...5'000 ppm	R
AI[6]	**Value VOC in %**	0...100 %	0...100 %	R
AI[7]	**Value CO_2 VOC Mix in %**	0...100 %	0...100 %	R
AI[8]	**Differential pressure 1** Selection Pa (SI) via 6th DIP switch (OFF) of sensor main board 22ADP Selection **inchWC** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP cfm / m³/s / m³/h — ON / OFF 6 — Inch WC (Imperial) / Pa (SI) **S1**	0...7'000 Pa [0...28 inchWC]	According to measuring range 22ADP (DIP switch)	R
AI[9]	**Volumetric flow 1** Selection **m³/h** (SI) via 6th DIP switch (OFF) of sensor main board 22ADP If object analog value AV[41] is set to 0 or 1 a value in m³/h is shown. If object analog value AV[41] is set to 2 a value in m³/s is shown. Selection **cfm** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP cfm / m³/s / m³/h — ON / OFF 6 — Inch WC (Imperial) / Pa (SI) **S1**	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	R

Object type [Instance]	Description Comment, Status_Flags		COV increment	Values	Access
AI[10]	**Differential pressure 2** (@dual ADP only) Selection **Pa** (SI) via 6th DIP switch (OFF) of sensor main board 22ADP Selection **inchWC** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP	cfm m³/s m³/h  Inch WC (Imperial) Pa (SI) **S2**	0...7'000 Pa [0...28 inWC]	According to measuring range 22ADP (DIP switch)	R
AI[11]	**Volumetric flow 2** (@dual ADP only) Selection **m³/h** (SI) via 6th DIP switch (OFF) of sensor main board 22ADP If object analog value AV[41] is set to 0 or 1 a value in m³/h is shown. If object analog value AV[41] is set to 2 a value in m³/s is shown. Selection **cfm** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP	cfm m³/s m³/h  Inch WC (Imperial) Pa (SI) **S2**	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	R

Description Access: R = Read, W = Write

Offset and correction values

Via the objects analog outputs AV[0]...AV[5] offset and correction values for the individual measuring values can be defined.
→ Selection of unitary system SI or Imperial see description of object analog value AV[38].

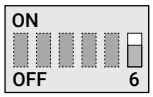
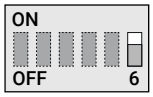
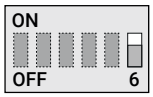
Object type [Instance]	**Description** Comment, Status_Flags	**Values**	**Access**
AV[0]	**Offset temperature SI in °C and Imperial in °F**	-3°C...+3°C [-6°F...+6°F]	R / W
AV[1]	**Offset relative humidity in %**	-5% RH...+5% RH	R / W
AV[2]	**Offset CO_2 in ppm**	-150 ppm...+150 ppm	R / W
AV[3]	**Offset VOC in %**	-15 %...+15 %	R / W
AV[4]	**Offset Differential pressure 1** Selection **Pa** (SI) via 6th DIP switch (OFF) of sensor main board 22ADP Selection **inchWC** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP. The values for inchWC are given in 1000ths. For example, to set the value 0.01 inchWC, 10 (1000*0.01 inchWC) must be written. cfm / m³/s / m³/h — ON / OFF 6 — Inch WC (Imperial) / Pa (SI) **S1**	-50 Pa...+50 Pa [-0.2 inchWC...+0.2 inchWC]	R / W
AV[5]	**Offset Differential pressure 2** (@dual ADP only) Selection **Pa** (SI) via 6th DIP switch (OFF) of sensor main board 22ADP Selection **inchWC** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP. The values for inchWC are given in 1000ths. For example, to set the value 0.01 inchWC, 10 (1000*0.01 inchWC) must be written. cfm / m³/s / m³/h — ON / OFF 6 — Inch WC (Imperial) / Pa (SI) **S2**	-50 Pa...+50 Pa [-0.2 inchWC...+0.2 inchWC]	R / W

Description Access: R = Read, W = Write

Upper / lower limit of measuring values

Via the objects analog outputs AV[6]...AV[25] upper / lower limits of measuring values can be set in a certain range.
Furthermore the scaling of the two analogue 0–10 V outputs of the sensor are defined via these objects analog outputs.
→► Selection of unitary system SI or Imperial see description of object analog value AV[38].

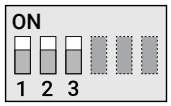
Object type [Instance]	**Description** Comment, Status_Flags	**Values**	**Access**
AV[6]	**Lower limit temperature SI in °C and Imperial in °F**	-50°C...+250°C [-30°F...+480°F]	R / W
AV[7]	**Upper limit temperature SI in °C and Imperial in °F**	-50°C...+250°C [-30°F...+480°F]	R / W
AV[8]	**Lower limit relative humidity in %**	0...100% RH	R / W
AV[9]	**Upper limit relative humidity in %**	0...100% RH	R / W
AV[10]	**Lower limit absolute humidity in SI in g/m³ and Imperial in gr/ft³**	0...80 g/m³ [0...35 gr/ft]	R / W
AV[11]	**Upper limit absolute humidity SI in g/m³ and Imperial in gr/ft³**	0...80 g/m³ [0...35 gr/ft]	R / W
AV[12]	**Lower limit enthalpy SI in kJ/kg and Imperial in BTU/lb**	0...85 KJ/kg [0...40 BTU/lb]	R / W
AV[13]	**Upper limit enthalpy SI in kJ/kg and Imperial in BTU/lb**	0...85 KJ/kg [0...40 BTU/lb]	R / W
AV[14]	**Lower limit dew point SI in °C and Imperial in °F**	-20°C...+80°C [0°F...+200°F]	R / W
AV[15]	**Upper limit dew point SI in °C and Imperial in °F**	-20°C...+80°C [0°F...+200°F]	R / W
AV[16]	**Lower limit CO_2 in ppm**	0...5'000 ppm	R / W
AV[17]	**Upper limit CO_2 in ppm**	0...5'000 ppm	R / W
AV[18]	**Lower limit VOC in %**	0...100 %	R / W
AV[19]	**Upper limit VOC in %**	0...100 %	R / W
AV[20]	**Lower limit CO_2 VOC Mix in %**	0...100 %	R / W
AV[21]	**Upper limit CO_2 VOC Mix in %**	0...100 %	R / W
AI[22]	**Lower limit volumetric flow 1** Selection m³/h (SI) via 6th DIP switch (OFF) of sensor main board 22ADP. If object analog value AV[41] is set to 0 or 1 a value in m³/h is shown. If object analog value AV[41] is set to 2 a value in m³/s is shown. Selection **cfm** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP cfm / m³/s / m³/h — ON / OFF / 6 — Inch WC (Imperial) / Pa (SI) **S1**	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	R / W

Object type [Instance]	Description Comment, Status_Flags		Values	Access
AI[23]	**Upper limit volumetric flow 1** Selection m³/h (SI) via 6th DIP switch (OFF) of sensor main board 22ADP If object analog value AV[41] is set to 0 or 1 a value in m³/h is shown. If object analog value AV[41] is set to 2 a value in m³/s is shown. Selection **cfm** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP	cfm m³/s m³/h  Inch WC (Imperial) Pa (SI) **S1**	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	R / W
AI[24]	**Lower limit volumetric flow 2** (@dual ADP only) Selection m³/h (SI) via 6th DIP switch (OFF) of sensor main board 22ADP. If object analog value AV[41] is set to 0 or 1 a value in m³/h is shown. If object analog value AV[41] is set to 2 a value in m³/s is shown. Selection **cfm** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP	cfm m³/s m³/h  Inch WC (Imperial) Pa (SI) **S2**	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	R / W
AI[25]	**Upper limit volumetric flow 2** (@dual ADP only) Selection m³/h (SI) via 6th DIP switch (OFF) of sensor main board 22ADP If object analog value AV[41] is set to 0 or 1 a value in m³/h is shown. If object analog value AV[41] is set to 2 a value in m³/s is shown. Selection **cfm** (Imperial) via 6th DIP switch (ON) of sensor main board 22ADP	cfm m³/s m³/h  Inch WC (Imperial) Pa (SI) **S2**	0...999'999 m³/s 0...999'999 m³/h [0...999'999 cfm]	R / W

Description Access: R = Read, W = Write

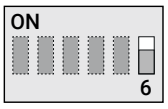
Limit differential pressure 1 + 2

Pressure range can be set with DIP switch 1–3 of sensor main board 22ADP. For the specific values, please refer to the product data sheet of the respective device.



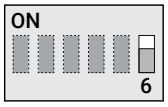
Selection of **Pa** via 6th DIP switch (OFF) of sensor main board 22ADP.

S1 + S2



Pa (m³/h)

Selection **InchWC** via 6th DIP switch (ON) of sensor main board 22ADP.

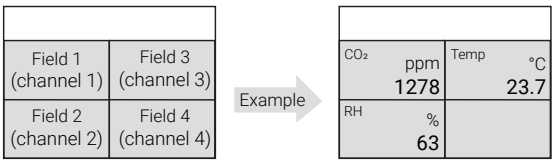


Inch WC (cfm)

Selection of sensor channels of measuring values

Via objects analog outputs AV[26]...AV[37] the individual measured values can be assigned to channels. This can be used to assign the two analog outputs to the corresponding measured value (channel # 1 = AOU1, channel # 2 = AOU2). In addition, 4 fields of the LCD display (optional) can be assigned to measured values by using the corresponding channel #.

Default settings		Object type [Instance]	Description	Access
Channel temperature	**Default value channel #**			
Sensor 22DTH-..6..	**2 (AOU2)**			
Sensor 22UTH-..60X	**2 (AOU2)**	AV[26]		R / W
Sensor 22DTM-..6	**2 (AOU2)**			
Sensor 22ADP-..6..	0			
Channel relative humidity	**Default value channel #**			
Sensor 22DTH-..6..	**1 (AOU1)**			
Sensor 22UTH-..60X	**1 (AOU1)**	AV[27]	**Channel Selection #** **Valid values 1, 2, 3 or 4** The channels with channel #1 and #2 are output both via BACnet objects analog inputs AI[0]...AI[9] and via the analog outputs AOU1 and AOU2.	R / W
Sensor 22DTM-..6	**3**			
Sensor 22ADP-..6..	0			
Channel absolute humidity	**Default value channel #**		**4 fields of the LCD-display** (optional) can be assigned to measured values by using the corresponding channel #.	
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[28]	Unused channels are set to zero.	R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0		Assignment: LCD fields to channel #	
Channel enthalpy	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[29]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0			
Channel dew point	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[30]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0			
Channel CO_2	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[31]		R / W
Sensor 22DTM-..6	**1 (AOU1)**			
Sensor 22ADP-..6..	0			



Default settings		Object type [Instance]	Description	Access
Channel VOC	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[32]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0		**Channel Selection #** **Valid values 1, 2, 3 or 4** The channels with channel #1 and #2 are output both via BACnet objects analog inputs AI[0]...AI[9] and via the analog outputs AOU1 and AOU2. **4 fields of the LCD-display** (optional) can be assigned to measured values by using the corresponding channel #. Unused channels are set to zero. Assignment: LCD fields to channel # Field 1 (channel 1) / Field 3 (channel 3) / Field 2 (channel 2) / Field 4 (channel 4) Example 22DTM-..Sensor CO₂ ppm 1278 / Temp °C 23.7 / RH % 63	
Channel CO_2 VOC Mix	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[33]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0			
Channel differential pressure 1	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[34]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	**1 (AOU1)**			
Sensor 22ADP-..6.. (dual aDP)	**1 (AOU1)**			
Channel volumetric flow 1	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[35]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	**2 (AOU2)**			
Sensor 22ADP-..6.. (dual aDP)	**3**			
Channel differential pressure 2	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[36]	Assignment: LCD fields to channel # Field 1 (channel 1) / Field 3 (channel 3) / Field 2 (channel 2) / Field 4 (channel 4) Example Dual ADP dp Pa / Flow m³/h / dp Pa / Flow m³/h	R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0			
Sensor 22ADP-..6.. (dual aDP)	**2 (AOU2)**			
Channel volumetric flow 2	**Default value channel #**			
Sensor 22DTH-..6..	0			
Sensor 22UTH-..60X	0	AV[37]		R / W
Sensor 22DTM-..6	0			
Sensor 22ADP-..6..	0			
Sensor 22ADP-..6.. (dual aDP)	**4**			

Description Access: R = Read, W = Write

Channel Selection
Valid values 1, 2, 3 or 4

The channels with channel #1 and #2 are output both via BACnet and via the analog outputs AOU1 and AOU2. **4 fields of the LCD display** (optional) can be assigned to measured values by using the corresponding channel #.

Sensor configuration

Via objects analog outputs AV[38]...AV[44] the required unitary system (SI or Imperial) can be selected and further.
Sensor parameters can be chosen.

Object type [Instance]	Description Comment, Status_Flags	Values		Access
AV[38]	**Selection of the unitary system** (SI or Imperial) **Note:** For sensors with differential pressure / volumetric flow (22ADP), this value is only readable and is instead set via the 6th DIP switch (ON = Imperial / OFF = SI) cfm / m³/s / m³/h — ON / OFF 6 — Inch WC (Imperial) / Pa (SI)	1 = SI 2 = Imperial		R / W
AV[39]	**Height above sea level** Input always in m and not in ft	1...5000 m 330 (default)		R / W
AV[40]	**Input k-factor volumetric flow 1** According to manufacturer's (without unit)	scaling factor: 0.1 Input: 3...50'000 15'000 (default) k-value: 0.3...5'000		R / W
AV[41]	**Selection off the fan manufacturer 1, volumetric flow** (The fan model has influence on the formula to calculate the volumetric flow)	Rosenberg Comefri Gebhart Nicotra	0 (Default)	R / W
		Ziehl-Abegg EBM-Papst AIR-CONCEPTS	1	
		Fläkt-Woods	2	
AV[42]	**Input k-factor volumetric flow 2** (@dual ADP only) According to manufacturer's (without unit)	scaling factor: 0.1 Input: 3...50'000 15'000 (default) k-value: 0.3...5'000		R / W
AV[43]	**Selection off the fan manufacturer, volumetric flow 2** (@dual ADP only) (The fan model has influence on the formula to calculate the volumetric flow) [Default value = 0]	Rosenberg Comefri Gebhart Nicotra	0 (Default)	R / W
		Ziehl-Abegg EBM-Papst AIR-CONCEPTS	1	
		Fläkt-Woods	2	
AV[44]	**Response time for volumetric flow 1**	4...30 s		R / W
AV[45]	**Response time for volumetric flow 2** (@dual ADP only)	4...30 s		R / W
..	–	–		–
AV[85]	**Zeroing differential pressure 1**	0 = No zeroing 1 = Start zeroing		R / W
AV[86]	**Zeroing differential pressure 2** (@dual ADP only)	0 = No zeroing 1 = Start zeroing		R / W

Description Access: R = Read, W = Write

Equations of manufacturers

Each manufacturer has its own Equation, k-factor range and unit of Equation (see tables). By selecting a manufacturer AV[41] / AV[43] and corresponding plant-specific k-factor AV[40] / AV[42] correct settings for each manufacturer will be automatically in use.

Note: If the unitary system is set to Imperial the output is shown in objects analog input AI[9] in cfm

Manufacturer	Equation	k factor range	Unit
Fläkts Woods	$q = \frac{1}{k} \cdot \sqrt{\Delta P}$	0.3...99	m^3/s
Rosenberg	$q = k \cdot \sqrt{\frac{2 \cdot \Delta P}{\rho}}$	37...800	m^3/h
Nicotra-Gebhardt	$q = CPFN \cdot \sqrt{\frac{2 \cdot \Delta P}{\rho}}$	10...1500	m^3/h

Manufacturer	Equation	k factor range	Unit
Ziehl-Abegg	$q = k \cdot \sqrt{\Delta P}$	10...1500	m^3/h
Comefri	$q = k \cdot \sqrt{\frac{2 \cdot \Delta P}{\rho}}$	10...2000	m^3/h
EBM - Papst	$q = k \cdot \sqrt{\Delta P}$	10...1500	m^3/h
Gebhardt	$q = k \cdot \sqrt{\frac{2 \cdot \Delta P}{\rho}}$	50...4700	m^3/h

General device information

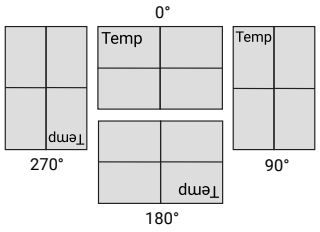
Via objects analog outputs AV[46]...AV[51] general device information can be read out or can be written.

Object type [Instance]	**Object type** [Instance]	**Values**	**Access**
AV[46]	**Offset device ID** Valid range: 0...4'194'175 Device ID = Offset device ID + MAC address	–	R / W
AV[47]	**Unconfirmed COV**	0 = Disabled 1 = Enabled	R / W
AV[48]	**Minimum output voltage in volt**	0...10 V	R / W
AV[49]	**Operating hours [h]**	uint32_t (0...4'294'967'295)	R / W
AV[50]	**Set a maintenance time in hours [h]** after which sensor shall be checked: After countdown time has expired a new countdown value in hours [h] has to be set.	uint32_t (0...999'999 h)	R / W
AV[50]	**Set a maintenance time in hours [h]** after which sensor shall be checked: After countdown time has expired a new countdown value in hours [h] has to be set.	uint32_t (0...999'999 h)	R / W

Description Access: R = Read, W = Write

LCD-display configuration

Via objects analog outputs AV[52]...AV [67] display parameters of the optional LCD can be adjusted and the values to be displayed can be specified.

Object type [Instance]	Object type [Instance]	Values	Access
AV[52]	**Enable LCD**	0 = Disabled 1 = Enabled	R / W
AV[53]	**Brightness LCD**	0...100%	R / W
AV[54]	**Rotation LCD** 	0 = 0° 1 = 90° 2 = 180° 3 = 270°	R / W
AV[55]	**Enable LCD traffic light function**	0 = Disabled 1 = Enabled	R / W
AV[56]	**Enable symbol maintenance on LCD** If the countdown time set value of AV[50] has expired, the symbol will be shown on the LCD-display.	0 = Disabled 1 = Enabled	R / W
AV[57]	**Enable symbol symbol maintenance on LCD** If the countdown time set value of AV[50] has expired, the symbol will be shown on the LCD-display.	0 = Disabled 1 = Enabled	R / W
AV[58]	**Enable LCD channel 1**	0 = Disabled 1 = Enabled	R / W
AV[59]	**Enable LCD channel 2**	0 = Disabled 1 = Enabled	R / W
AV[60]	**Enable LCD channel 3**	0 = Disabled 1 = Enabled	R / W
AV[61]	**Enable LCD channel 4**	0 = Disabled 1 = Enabled	R / W
AV[62]	**Channel assignment for traffic light function** Input AV[26] to AV[35] (Example: channel temperature AV[26])	0 = Off 1 = Green 2 = Yellow 3 = Red 4 = Blue 5 = Magenta 6 = Cyan 7 = White	R / W
AV[63]	**Traffic light function color range 1** Definition of color of LCD back lightning		R / W
AV[64]	**Traffic light function color range 1** Definition of color of LCD back lightning		R / W
AV[65]	**Traffic light function color range 1** Definition of color of LCD back lightning		R / W
AV[66]	**Setting for threshold** (range 1 –► 2) For color change of LCD back lightning. The value input is done in the basic unit based on the value of objects analog inputs AI[0]...AI[9]	–	R / W
AV[67]	**Setting for threshold** (range 1 –► 2) For color change of LCD back lightning. The value input is done in the basic unit based on the value of objects analog inputs AI[0]...AI[9]	–	R / W

Description Access: R = Read, W = Write

All inclusive.

Belimo as a global market leader develops innovative solutions for the controlling of heating, ventilation and air-conditioning systems. Damper actuators, control valves, sensors and meters represent our core business.

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BELIMO Automation AG
Brunnenbachstrasse 1, 8340 Hinwil, Switzerland
+41 43 843 61 11, info@belimo.ch, www.belimo.com

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