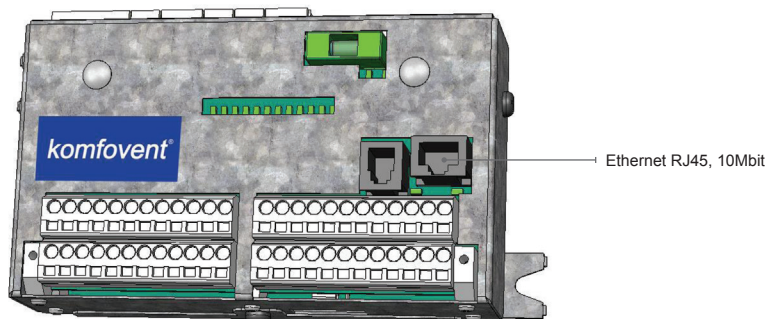


# BACnet connection C5

## BACNET CONNECTION AND SETTINGS

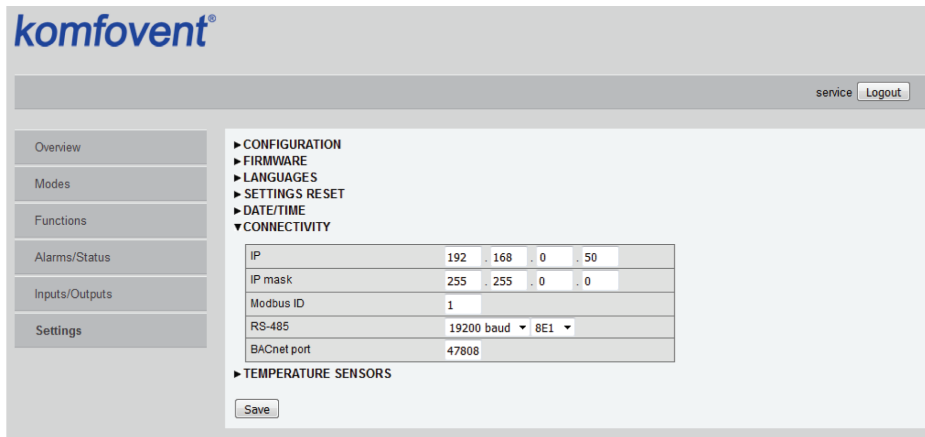
BACnet is a standard communication protocol for Building Automation and Control (BAC) networks that can be used to monitor and control Komfovent air handling units with C5 controller. The supported Data Link Layer is BACnet / IP<sup>1</sup>

BACnet protocol works via Ethernet interface, connection is provided to RJ-45 socket (Pic.1) on the C5 controller (CAT5 cable is recommended):



Picture 1. C5 controller board

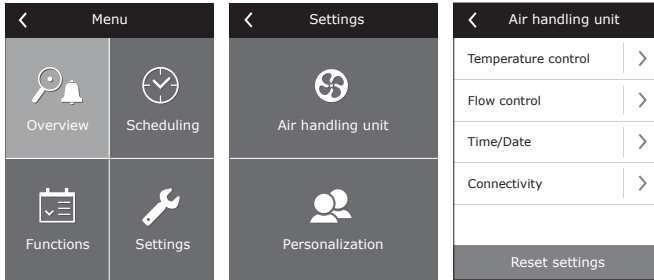
Below is default network settings of the C5 controller. These can be changed according to the building network software requirements. To do so, it is needed to connect a laptop to the integrated webserver of C5 controller:



Picture 2. Connectivity settings

<sup>1</sup> More information about protocol standards can be found in the additional C5\_BACnet\_PICS document.

C5 controller IP can also be viewed and changed on the control panel – from *Main menu* go to *Settings->Air handling unit->Connectivity*:



**Picture 3. Connectivity settings on C5.1 control panel display**

**BACnet Interoperability Building Blocks Supported:**

Data Sharing	DS-RP-B	Data Sharing-Read Property-B
	DS-RPM-B	Data Sharing-Read Property Multiple-B
	DS-WP-B	Data Sharing-Write Property-B
Device Management	DM-DDB-B	Device Management-Dynamic Device Binding-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B

**Standard Object Types Supported:**

Analog Input	Object_Identifier, Object_Name, Object_Type, Present_Value, Status_Flags, Event_State, Out_Of_Service, Units, Description, Reliability,
Analog Output	Object_Identifier, Object_Name, Object_Type, Present_Value, Status_Flags, Event_State, Out_Of_Service, Units, Priority_Array, Relinquish_Default,
Analog Value	Object_Identifier, Object_Name, Object_Type, Present_Value, Status_Flags, Event_State, Out_Of_Service, Units,Description, Priority_Array, Relinquish_Default, Max_Pres_Value, Min_Pres_Value, Resolution,
Binary Input	Object_Identifier, Object_Name, Object_Type, Present_Value, Status_Flags, Event_State, Out_Of_Service, Polarity,Description
Binary Output	Object_Identifier, Object_Name, Object_Type, Present_Value, Status_Flags, Event_State, Out_Of_Service, Polarity,Priority_Array, Relinquish_Default, Active_Text, Inactive_Text,
Binary Value	Object_Identifier, Object_Name, Object_Type, Present_Value, Status_Flags, Event_State, Out_Of_Service, Priority_Array, Relinquish_Default,
Device	Object_Identifier, Object_Name, Object_Type, System_Status, Vendor_Name, Vendor_Identifier, Model_Name, Firmware_Revision, Application_Software_Version, Protocol_Version, Protocol_Revision, Protocol_Services_Supported, Protocol_Object_Types_Supported, Object_List, Max_APDU_Length_Accepted, Segmentation_Supported, APDU_Timeout, Number_Of_APDU_Retries, Device_Address_Binding, Database_Revision, Description,Location,

## Analog input

Name	Object Instance	Range	Unit	Access	Description
<b>Monitoring data</b>					
Supply air temperature	0	-50.0..+120.0	°C	R	
Extract air temperature	1	-50.0..+120.0	°C	R	
Outdoor air temperature	2	-50.0..+120.0	°C	R	
Exhaust air temperature	3	-50.0..+120.0	°C	R	
Water temperature	4	-50.0..+120.0	°C	R	
Air quality	5	0..100	%	R	
Supply air humidity	6	0..100	%RH	R	
Supply air flow	7	0..1000000	variable <sup>1</sup>	R	
Exhaust air flow	8	0..1000000	variable <sup>1</sup>	R	
Outdoor air filter pressure	9	0..5500	Pa	R	
Extract air filter pressure	10	0..5500	Pa	R	
Zone 1 supply air temperature	11	-50.0..+120.0	°C	R	
Zone 1 water temperature	12	-30.0..+120.0	°C	R	
Zone 2 supply air temperature	13	-50.0..+120.0	°C	R	
Zone 2 water temperature	14	-30.0..+120.0	°C	R	
Internal supply air temperature	15	-50.0..+120.0	°C	R	

## Analog output

Name	Object Instance	Range	Unit	Access	Description
<b>Output signals</b>					
Water heater level	0	0..100	%	R	
Water cooler level	1	0..100	%	R	
Humidifier level	2	0..100	%	R	
Heat exchanger level	3	0..100	%	R	
Recirculation level	4	0..100	%	R	
Supply fan level	5	0..100	%	R	
Exhaust fan level	6	0..100	%	R	
Outdoor air damper level	7	0..100	%	R	
Exhaust air damper level	8	0..100	%	R	
El. Heater level	9	0..100	%	R	
DX level	10	-100..+100	%	R	
Heat pump level	11	-100..+100	%	R	
Zone 1 level	12	-100..+100	%	R	
Zone 2 level	13	-100..+100	%	R	

## Digital input

Name	Object Instance	Range	Unit	Access	Description
<b>External contacts</b>					
OVR	0	0..1		R	0-open, 1- closed
External stop	1	0..1		R	0-open, 1- closed

## Digital output

Name	Object Instance	Range	Unit	Access	Description
<b>Water pumps</b>					
Water heating pump	0	0..1		R	0-stop, 1- run
Water cooling pump	1	0..1		R	0-stop, 1- run

<sup>1</sup> See Analog Value Object Instance 72.

## Digital value

Name	Object Instance	Range	Unit	Access	Description
<b>Alarms</b>					
Low supply air flow	0	0..1		R	
Low extract air flow	1	0..1		R	
VAV calibration fail	2	0..1		R	
Change outdoor air filter	3	0..1		R	
Change extract air filter	4	0..1		R	
Electric heater off	5	0..1		R	
High pressure on compressor	6	0..1		R	
Low pressure on compressor	7	0..1		R	
Service time	8	0..1		R	
Service mode	9	0..1		R	
Supply air temp. sensor failure	10	0..1		R	
Extract air temp. sensor failure	11	0..1		R	
Outdoor air temp. sensor failure	12	0..1		R	
Exhaust air temp. sensor failure	13	0..1		R	
Water temp. sensor failure	14	0..1		R	
Return water temp low	15	0..1		R	
Internal fire alarm	16	0..1		R	
External fire alarm	17	0..1		R	
External stop	18	0..1		R	
Heat exchanger failure	19	0..1		R	
Heat exchanger icing	20	0..1		R	
Low supply air temperature	21	0..1		R	
High supply air temperature	22	0..1		R	
Electric heater overheat	23	0..1		R	
Evaporator air temp. sensor failure	24	0..1		R	
Evaporator coil temp. sensor failure	25	0..1		R	
Compressor failure	26	0..1		R	
Supply fan drive failure	27	0..1		R	
Supply fan drive overload	28	0..1		R	
Supply fan motor failure	29	0..1		R	
Supply fan motor overload	30	0..1		R	
Exhaust drive failure	31	0..1		R	
Exhaust fan drive overload	32	0..1		R	
Exhaust fan motor failure	33	0..1		R	
Exhaust fan motor overload	34	0..1		R	
Rotor drive failure	35	0..1		R	
Rotor drive overload	36	0..1		R	
Rotor motor failure	37	0..1		R	
Rotor motor overload	38	0..1		R	
Communication error	39	0..1		R	
Controller failure	40	0..1		R	
Compressor off	41	0..1		R	
Evaporator icing	42	0..1		R	

## Analog value

Name	Object Instance	Range	Unit	Access	Description
Unit On/Off	0	0..1		R/W	0-Off, 1-On
<b>Ventilation modes</b>					
Current mode	1	0..5		R	0-Off/Standby, 1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special
Mode selection	2	1..6		R/W	1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special, 6-Program
Comfort1 Supply flow	3	0..200000	variable <sup>1</sup>	R/W	
Comfort1 Extract flow	4	0..200000	variable <sup>1</sup>	R/W	
Comfort1 Setpoint	5	+5..+40	°C	R/W	
Comfort2 Supply flow	6	0..200000	variable <sup>1</sup>	R/W	
Comfort2 Extract flow	7	0..200000	variable <sup>1</sup>	R/W	
Comfort2 Setpoint	8	+5..+40	°C	R/W	
Economy1 Supply flow	9	0..200000	variable <sup>1</sup>	R/W	
Economy1 Extract flow	10	0..200000	variable <sup>1</sup>	R/W	
Economy1 Setpoint	11	+5..+40	°C	R/W	
Economy2 Supply flow	12	0..200000	variable <sup>1</sup>	R/W	
Economy2 Extract flow	13	0..200000	variable <sup>1</sup>	R/W	
Economy2 Setpoint	14	+5..+40	°C	R/W	
Special Supply flow	15	0..200000	variable <sup>1</sup>	R/W	
Special Extract flow	16	0..200000	variable <sup>1</sup>	R/W	
Special Setpoint	17	+5..+40	°C	R/W	
Special mode Heating	18	0..1		R/W	0-Disable, 1-Enable
Special mode Cooling	19	0..1		R/W	0-Disable, 1-Enable
Special mode Recirculation	20	0..1		R/W	0-Disable, 1-Enable
Special mode Humidifying	21	0..1		R/W	0-Disable, 1-Enable
Special mode Dehumidifying	22	0..1		R/W	0-Disable, 1-Enable
Flow control mode	23	0..2		R/W	0-CAV, 1-VAV, 2-DCV
Temp. control mode	24	0..3		R/W	0-Supply, 1-Extract, 2-Room, 3-Balance

<sup>1</sup> See Analog Value Object Instance 72.

## Analog value

Name	Object Instance	Range	Unit	Access	Description
<b>Functions</b>					
AQC Enable	25	0..1		R/W	0-Disable, 1-Enable
AQC Setpoint 1	26	variable <sup>1</sup>	variable <sup>1</sup>	R/W	200..1800 ppm, or 10..90 % or 5,0..45,0 °C
AQC Mode 1	27	1..5		R/W	1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special
AQC Setpoint 2	28	variable <sup>1</sup>	variable <sup>1</sup>	R/W	200..1800 ppm, or 10..90 % or 5,0..45,0 °C
AQC Mode 2	29	1..5		R/W	1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special
OCV Enable	30	0..1		R/W	0-Disable, 1-Enable
OCV Winter compensation stop	31	-40.0..+50.0	°C	R/W	
OCV Winter compensation start	32	-40.0..+50.0	°C	R/W	
OCV Summer compensation start	33	-40.0..+50.0	°C	R/W	
OCV Summer compensation stop	34	-40.0..+50.0	°C	R/W	
MTC Enable	35	0..1		R/W	0-Disable, 1-Enable
MTC Setpoint	36	-40.0..+50.0	°C	R/W	
OVR Enable	37	0..1		R/W	0-Disable, 1-Enable
OVR Type	38	0..2		R/W	0-Alltime, 1-If on, 2-If off
OVR Mode	39	0..6		R/W	0-Standby, 1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special, 6-Program
SNC Enable	40	0..1		R/W	0-Disable, 1-Enable
SNC Start temperature	41	15.0..+50.0	°C	R/W	
SNC Stop temperature	42	15.0..+50.0	°C	R/W	
OOD Enable	43	0..1		R/W	0-Disable, 1-Enable
OOD Setpoint	44	variable <sup>1</sup>	variable <sup>1</sup>	R/W	200..1800 ppm, or 10..90 % or 5,0..45,0 °C
REC Enable	45	0..1		R/W	0-Disable, 1-Enable
REC Setpoint 1	46	variable <sup>1</sup>	variable <sup>1</sup>	R/W	200..1800 ppm, or 10..90 % or 5,0..45,0 °C
REC Mode 1	47	1..5		R/W	1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special
REC Setpoint 2	48	variable <sup>1</sup>	variable <sup>1</sup>	R/W	200..1800 ppm, or 10..90 % or 5,0..45,0 °C

<sup>1</sup> Dependent on the value of air quality control sensor type (CO2, VOC, RH, Temperature sensor types supported).

## Analog value

Name	Object Instance	Range	Unit	Access	Description
<b>Functions</b>					
REC Mode 2	49	1..5		R/W	1-Comfort1, 2-Comfort2, 3-Economy1, 4-Economy2, 5-Special
REC Min. Fresh Air 1	50	0..100	%	R/W	
REC Min. Fresh Air 2	51	0..100	%	R/W	
REC Winter end	52	-40.0..+50.0	°C	R/W	
REC Winter start	53	-40.0..+50.0	°C	R/W	
REC Summer start	54	-40.0..+50.0	°C	R/W	
REC Summer end	55	-40.0..+50.0	°C	R/W	
REC Default recirculation	56	0..100	%	R/W	
REC Activated recirculation	57	0..100	%	R/W	
<b>Alarm reset</b>					
Actual alarms reset	58	1		W	1-Reset current alarm
<b>Counters</b>					
Air heater operation	59	0..2^32	hours	R/W	
Supply fan operation	60	0..2^32	hours	R/W	
Exhaust fan operation	61	0..2^32	hours	R/W	
Heat exchanger thermal efficiency	62	1..100	%	R	255-none
Heat exchanger recovery	63	0..2^32	watt	R	
Thermal energy saving	64	0..100	%	R	
Supply SFP	65	0..655		R	
Exhaust SFP	66	0..655		R	
<b>User settings</b>					
Day	67	1..31	days	R/W	
Month	68	1..12	months	R/W	
Year	69	2000..2250	years	R/W	
Hours	70	0..23	hours	R/W	
Minutes	71	0..59	minutes	R/W	
Flow units	72	0..3		R/W	0-m³/h, 1-l/s, 2-m³/s, 3-Pa
External room temperature sensor	73	-50.0..+120.0	°C	R/W	Values outside the range disables override
Zone 1 setpoint	74	-50.0..+40.0	°C	R/W	
Zone 2 setpoint	75	-50.0..+40.0	°C	R/W	
Digital input IN4 override	76	-1..2		R/W	-1 – disabled, 0 – heating, 1 – cooling, 2 – error



## UAB KOMFOVENT

**VILNIUS** Ozo g. 10, LT-08200

Tel. +370 5 277 9701

Mob. +370 685 44 658

el. p. info@komfovent.com

**KAUNAS** Taikos pr. 149, LT-52119

Tel.: +370 37 473 153, +370 37 373 587

Mob. +370 685 63 962

el. p. kaunas@komfovent.com

**KLAIPĖDA** Dubysos g. 25, LT-91181

Mob.: +370 685 93 706, +370 685 93 707

el. p. klaipeda@komfovent.com

**ŠIAULIAI** Metalistų g. 6H, LT-78107

Tel. +370 41 500 090

el. p. siauliai@komfovent.com

**PANEVĖŽYS** Beržų g. 44, LT-36144

Mob. +370 640 55 988

el. p. panevezys@komfovent.com

## EXPORT & SALES DEPARTMENT

Tel.: +370 5 205 1579, +370 5 231 6574

Fax +370 5 230 0588

export@komfovent.com

## GARANTINIO APTARNAVIMO SK. / SERVICE AND SUPPORT

Tel. +370 5 200 8000

Mob. +370 652 03 180

service@komfovent.com

www.komfovent.com

## PARTNERS

AT	J. PICHLER Gesellschaft m. b. H.	www.pichlerluft.at
AU	Pacific HVAC	www.pacificvac.com
BE	Ventilair group	www.ventilairgroup.com
	ACB Airconditioning	www.acbairco.be
CZ	REKUVENT s.r.o.	www.rekuvent.cz
CH	WESCO AG	www.wesco.ch
	SUDCLIMATAIR SA	www.sudclimatair.ch
	CLIMAIR GmbH	www.komfovent.com/en/business/more/contact-us/
DK	UNIQ COMFORT ApS	www.uniqcomfort.dk
	AIR2TRUST	www.air2trust.com
EE	BVT Partners	www.bvtpartners.ee
FR	AERIA	www.aeria-france.fr
GB	ELTA FANS	www.eltafans.com
HR	Microclima	www.microclima.hr
HU	AIRVENT Légtechnikai Zrt.	www.airvent.hu
	Gevent Magyarország Kft.	www.gevent.hu
	Merkapt	www.merkapt.hu
IR	Fantech Ventilation Ltd	www.fantech.ie
IS	Blikk & Tækniþjónustan ehf	www.bogt.is
	Hitataekni ehf	www.hitataekni.is
NL	Ventilair group	www.ventilairgroup.com
	DECIPOL-Vortvent	www.vortvent.nl
NO	Ventistål AS	www.ventistal.no
	Thermo Control AS	www.thermocontrol.no
PL	Ventia Sp. z o.o.	www.ventia.pl
SE	Nordisk Ventilator AB	www.nordiskventilator.se
SI	Agregat d.o.o	www.agregat.si
SK	TZB produkt, s.r.o.	www.tzbprodukt.sk

## ООО «АМАЛБА-Р»

Россия, Москва

ул. Выборгская д. 16,

стр. 1, 2 этаж, 206 офис

Тел./факс +7 495 640 6065

info.msk@komfovent.com

www.komfovent.ru

## ООО «АМАЛБА-ОКА»

390017 г. Рязань

Рязжское шоссе, 20 литера Е, пом Н6

Тел.: +7 4912 950575, +7 4912 950672,

+7 4912 950648

info.oka@komfovent.com

www.komfovent.ru

## ИООО «Комфовент»

Республика Беларусь, 220125 г. Минск,

ул. Уручская 21 – 423

Тел. +375 17 266 5297, 266 6327

info.by@komfovent.com

www.komfovent.by

## Komfovent AB

Ögärdesvägen 12B

433 30 Partille, Sverige

Tel. +46 31 487 752

info\_se@komfovent.com

www.komfovent.se

## Komfovent Oy

Muuntotie 1 C1

FI-01 510 VANTAA

Tel. +358 0 408 263 500

info\_fi@komfovent.com

www.komfovent.com

## Komfovent GmbH

Konrad-Zuse-Str. 2a, 42551 Velbert,

Deutschland

Tel. +49 0 2051 6051180

info@komfovent.de

www.komfovent.de

## Komfovent SIA

Katlakalna iela 9,

LV-1073 Riga

Tel. +371 67 20 1572

Fakss +371 67 20 1570

info@komfovent.lv

www.komfovent.lv