

Air handling with focus on LCC

Examples of useful BACnet object addresses

For AHU in general (Rotary heat exchanger, Cooling unit etc.)

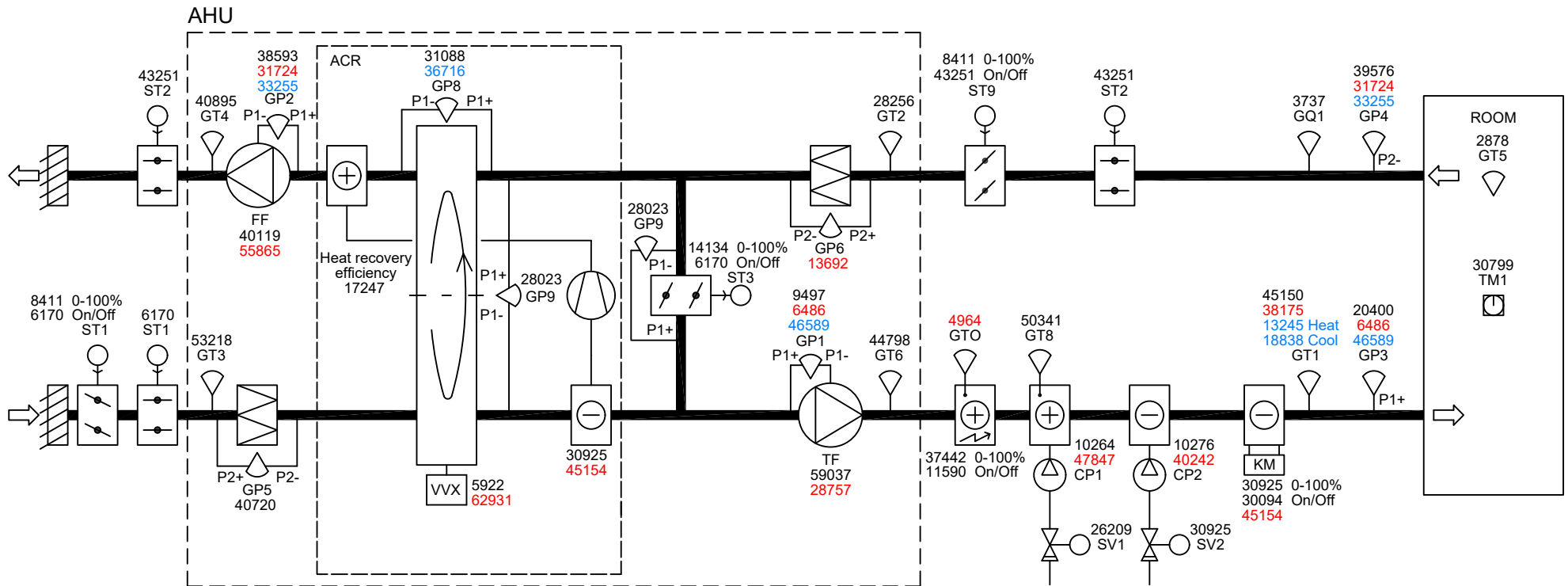
For EcoHeater in general (EHP - Extract air Heat Pump)

For EcoCooler and Zon

For ThermoCooler HP

For Counter-flow, Plate and Run-around coil heat exchangers

Examples of useful BACnet object addresses for AHU in general (Rotary heat exchanger, Cooling unit etc.)



Status and alarm

- 6080 Actual operating mode
- 28279 Actual fan step
- 31604 Manual operation (terminal service switch)
- 30799 External control (Dig.Input, timer switch)
- 24616 0=Winter (Supply air temp. control)
1=Summer (Room/Exhaust temp. control)
- 46769 Alarm class Danger (A)
- 42640 Alarm class Critical (A)
- 38643 Alarm class Low (B)
- 34514 Alarm class Warning (C)

Black	Value/Status
Green	Setpoint/Command
Red	Alarm
Blue	Actual setpoint-value

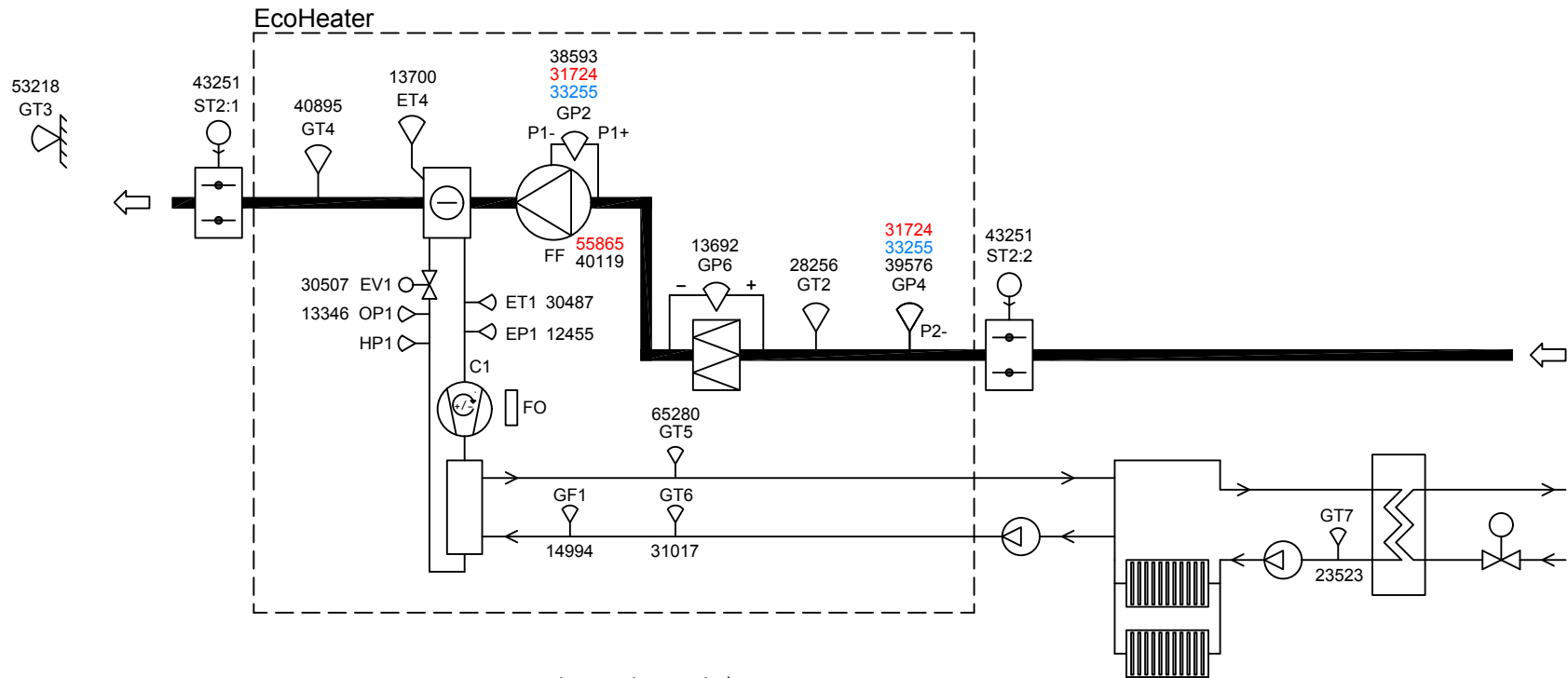
Setpoints

- 8442 BMS control unit (override internal time switch program)
- 22817 Setpoint heating
- 65251 Deadzone (creates cooling setpoint, Ex 21°C + 2°C = 23°C)
- 7989 Supply temp. compensation (Exhaust/Supply alternative)
- 52572 Supply fan setpoint step 1 (low) TF (% Pa, l/s)
- 22144 Supply fan step 2 (normal) TF (% Pa, l/s)
- 8244 Supply fan step 3 (high) TF (% Pa, l/s)
- 45030 Exhaust fan setpoint step 1 (low) FF (% Pa, l/s)
- 13370 Exhaust fan step 2 (normal) FF (% Pa, l/s)
- 17038 Exhaust fan step 3 (high) FF (% Pa, l/s)
- 22649 Setpoint air quality, CO²
- 39130 Alarm reset
- 28514 Fire Alarm
- 9864 Emergency stop input

Energy Watch

- 12177 SFP-Value
- 39394 Heat recovery Actual rec. power (kW)
- 35832 Heat recovery day (kWh)
- 43587 Heat recovery month (kWh)
- 10992 Heat recovery year (MWh)
- 51997 Heat recovery last year (MWh)
- 46842 Added heat Actual Power (kW)
- 43989 Added heat Energy today (kWh)
- 22890 Added heat Energy month (kWh)
- 55769 Added heat Energy year (MWh)
- 15713 Added heat Energy last year (MWh)
- 49812 Fans Actual Power (kW)
- 11618 Fans Energy added today (kWh)
- 16232 Fans Energy added month (kWh)
- 49115 Fans Energy added year (MWh)
- 13057 Fans Energy added last year (MWh)

Examples of useful BACnet Objects for EcoHeater in general (EHP - Extract air Heat Pump)



EcoHeater

- 8442 BMS control (override time switch program) (1=Av, 3=steg2)
- 45030 Exhaust fan step 1 (low) FF (Pa, l/s)
- 13370 Exhaust fan step 2 (normal) FF (Pa, l/s)
- 17038 Exhaust fan step 3 (high) FF (Pa, l/s)
- 39130 Alarm reset
- 28514 Fire Alarm
- 57702 Heatpump block compressor
- 6080 Actual operation mode
- 28279 Actual fan step
- 31604 Manual operation (Service)
- 30799 Actual Opmode External control
- 2486 Exhaust temperature fire alarm
- 46769 Alarm class Danger alarm (A) status
- 42640 Alarm class Critical alarm (A) status
- 38643 Alarm class Low alarm (B) status
- 34514 Alarm class Warning alarm (C) status

temperature control external radiator curve

- 54182 Heatpump ext. control signal

temperature control internal radiator curve

- 48643 Heatpump OutT. setpoint X2
- 26666 Heatpump SupplyT. setpoint Y2
- 13557 Heatpump OutT. setpoint X3
- 54156 Heatpump SupplyT. setpoint Y3
- 17426 Heatpump OutT. setpoint X4
- 41835 Heatpump SupplyT. setpoint Y4
- 21555 Heatpump OutT. setpoint X5
- 45898 Heatpump SupplyT. setpoint Y5
- 32709 Heatpump OutT. setpoint X6
- 43500 Heatpump SupplyT. setpoint Y6

Compressor

- 41403 Heatpump Heating demand input
- 24097 Heatpump Inverter signal output
- 5078 Heatpump Evaporation temp
- 65171 Heatpump Condensing temperature
- 20527 Heatpump compressor run time
- 23306 Heatpump alarm

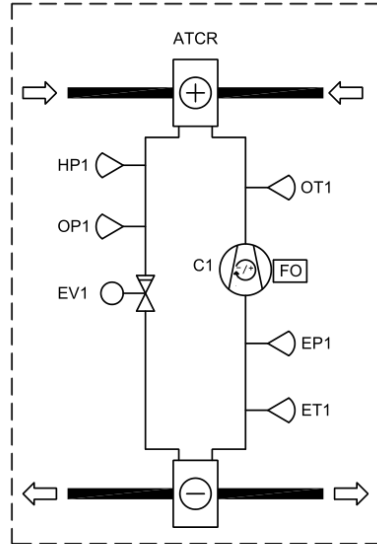
Black	Value/Status
Green	Setpoints/Command
Red	Alarm
Blue	Actual setpoint-value

Energy Watch (EWA-02)

- 13472 COP
- 47207 HP Capacity kW
- 36797 HP out Day kWh
- 45391 HP out Month kWh
- 54214 HP out Year MWh
- 33579 HP out Last Year MWh
- 57948 HP out Trip MWh
- 11946 HP in Power kW
- 25290 HP in Day kWh
- 55761 HP in Month kWh
- 34885 HP in Year MWh
- 60341 HP in Last Year MWh
- 47583 HP in Trip MWh
- 42936 Fan in Power kW
- 10517 Fan Day kWh
- 12917 Fan Month kWh
- 44778 Fan Year MWh
- 17 Fan Last Year MWh
- 40816 Fan Trip MWh
- 38740 SFP

Examples of useful BACnet addresses for EcoCooler and Zon

EcoCooler TOP (ATCR)



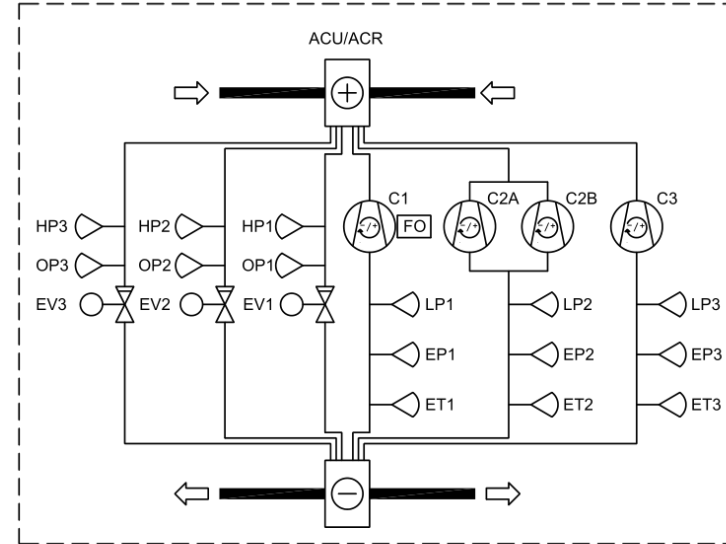
ATCR 04, 16 and 21

- 30925 Cooling output signal
- 6698 Carel Inverter signal output C1
- ET1 1908 Carel Suction temp C1
- OT1 32303 Carel Evaporation temp C1
- EP1 29868 Carel Low pressure C1
- Calc. 33386 Carel Superheat C1
- OP1 4242 Carel High pressure C1 (ATCR 04)
- Calc. 18709 Carel Exp. C1 valve output signal
- Calc. 30946 Carel Condensing temp C1
- 51166 Carel Compressor 1

ATCR 06 and 10

- 30925 Cooling output signal
- 41285 Danfoss VSD actual cooling output sigal
- OP1 16789 Danfoss VSD High pressure
- EP1 722 Danfoss VSD Low pressure
- EP1 14793 Danfoss VSD Compressor 1 command
- OT1 65355 Danfoss VSD Discharge temp
- Calc. 52221 Danfoss VSD Evaporation temp
- Calc. 51293 Danfoss VSD Superheat
- 45899 Communication modbus alarm Danfoss
- 13212 Cooler Alarm (High Pressure)

EcoCooler FLEX (ACU/ACR)



ACU/ACR

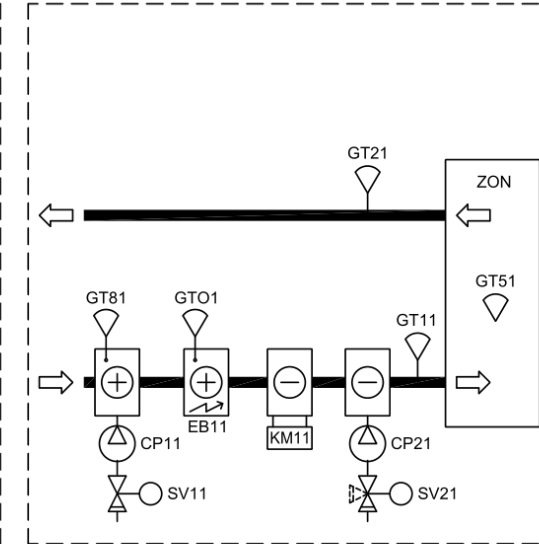
- 5922 Cooling output signal
- 6698 Carel inverter signal output C1

ACU/ACR 060-300 One circuit
 ACU/ACR 360-600 Two circuits
 ACU/ACR 740-980 Three circuits
 Circ. 1 Circ. 2(A) Circ. 3 Circ. 2B

ET1, 2, 3	1908	14103	10038	
Calc	32303	20044	24173	
EP1, 2, 3	46813	17615	21742	
Calc.	29868	45577	41512	
OP1, 2, 3	4242	8433	12496	
EV1, 2, 3	18709	12783	59814	
Calc.	30946	18884	22822	
C1, 2A, 3, 2B	60189	1487	44958	51274
C1, 2A, 3, 2B	51166	23554	10934	31643

- Carel Suction temp
- Carel Evaporation temp
- Carel Low pressure
- Carel Superheat
- Carel High pressure
- Carel Exp. valve output signal
- Carel Condensing temp
- Carel Compressor command
- Carel Compressor

ZON

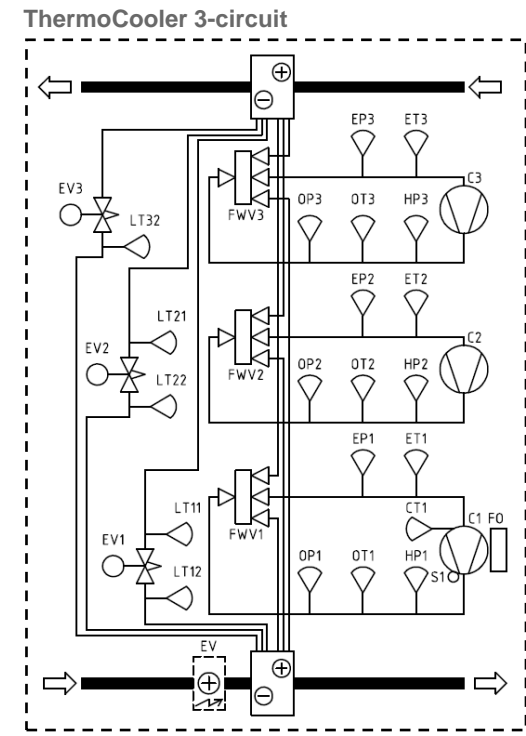
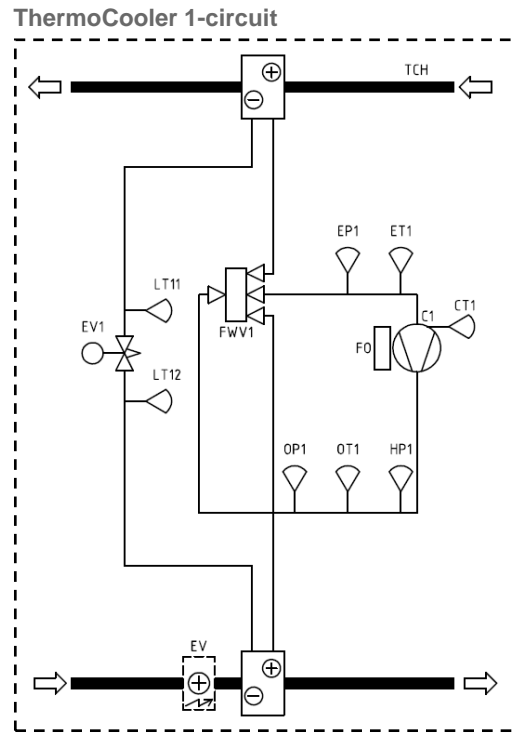


ZON

- 58394 Extra Sequence sepoint
- 1172 Extra Sequence deadzone
- 20915 Supply temp Extra sequence
- 39209 Room/Exhaust temp Extra sequence
- GT81 4854 Heating 2 frost temp
- GT81 4854 Heating 2 frost temp
- SV11 46994 Heating 2 output signal
- CP11 31944 Heating 2 pump command
- CP11 23306 Heating 2 pump alarm
- EB11 45777 El heating 2 output signal
- EB11 30897 El heating 2 command
- EB11 23132 El heating 2 alarm
- KM11/SV21 60283 Cooling 2 output signal
- KM11 27550 Cooling 2 DX command
- KM11 48824 Cooling 2 DX alarm
- CP21 63601 Cooling 2 pump command
- CP21 31967 Cooling 2 pump alarm

Black	Value/State
Red	Alarm
Green	Setpoint/Command

Examples of useful BACnet addresses for ThermoCooler



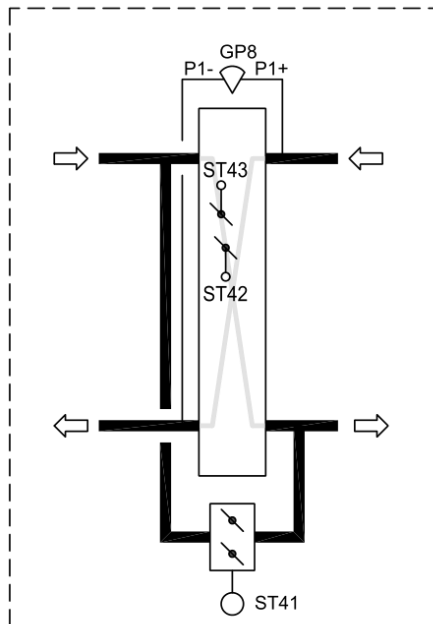
- 26209 Heating output signal
- 30925 Cooling output signal
- 30094 Cooling DX command
- 6698 Carel Inverter signal output C1
- 1908 Carel Suction temp ET1 C1
- 14103 Carel Suction temp ET2 C2
- 10038 Carel Suction temp ET3 C3
- 32303 Carel Evaporation temp C1
- 20044 Carel Evaporation temp C2
- 24173 Carel Evaporation temp C3
- 29868 Carel Low pressure EP1 C1
- 17615 Carel Low pressure EP2 C2
- 21742 Carel Low pressure EP3 C3
- 33386 Carel Superheat C1
- 45577 Carel Superheat C2
- 41512 Carel Superheat C3
- 4242 Carel High pressure OP1 C1
- 8433 Carel High pressure OP2 C2
- 12496 Carel High pressure OP3 C3
- 18709 Carel Exp. C1 valve EV1 out. signal
- 12783 Carel Exp. C2 valve EV2 out. signal
- 59814 Carel Exp. C3 valve EV3 out. signal
- 30946 Carel Condensing temp C1
- 18884 Carel Condensing temp C2
- 22822 Carel Condensing temp C3
- 60189 Carel Compressor command C1
- 1487 Carel Compressor command C2
- 44958 Carel Compressor command C3
- 51166 Carel Compressor alarm C1
- 23554 Carel Compressor alarm C2
- 10934 Carel Compressor alarm C3
- 46177 Carel Discharge temp OT1 C1
- 57536 Carel Discharge temp OT2 C2
- 61665 Carel Discharge temp OT3 C3
- 22226 Carel Liquid line temp LT11/12 C1
- 424 Carel Liquid line temp LT21/22 C2
- 4489 Carel Liquid line temp LT32 C3
- 57493 Carel Sub cooling C1
- 36128 Carel Sub cooling C2
- 40193 Carel Sub cooling C3

	Circ. 1	Circ. 2	Circ. 3	
ET1, 2, 3	1908	14103	10038	Carel Suction temp
Calc	32303	20044	24173	Carel Evaporation temp
EP1, 2, 3	29868	17615	21742	Carel Low pressure
Calc.	33386	45577	41512	Carel Superheat
OP1, 2, 3	4242	8433	12496	Carel High pressure
EV1, 2, 3	18709	12783	59814	Carel Exp. valve output signal
Calc.	30946	18884	22822	Carel Condensing temp
C1, 2, 3	60189	1487	44958	Carel Compressor command
C1, 2, 3	51166	23554	10934	Carel Compressor
OT1, 2, 3	46177	57536	61665	Carel Discharge temp
LT11/12, 21/22, 32	22226	424	4489	Carel Liquid line temp
Calc.	57493	36128	40193	Carel Sub cooling

Black	Value/State
Red	Alarm

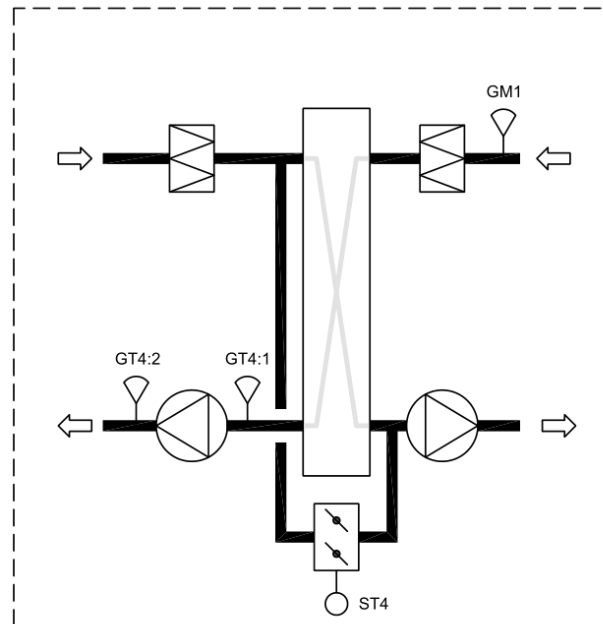
Examples of useful BACnet addresses for Counter-flow, Plate and Run-around coil heat exchangers

Counter-flow heat exchanger



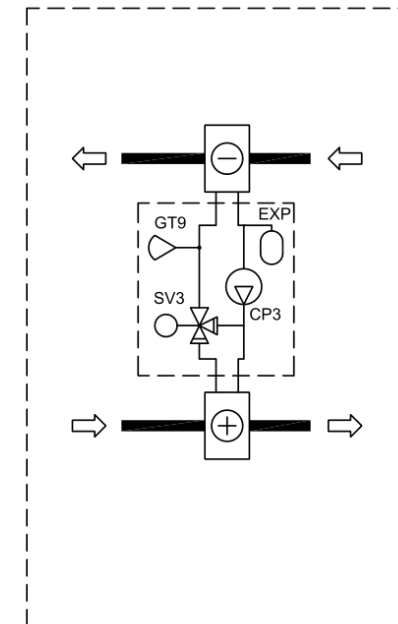
ST4 1	5922	Heat recovery output signal
ST42	11521	Heat recovery output signal defrost damper
ST43	46813	Heat recovery output signal defrost damper
GP8	31088	Act.pressure over Counterflow heat exchanger
	46503	Defrost Active
	64168	Normal pressure calculated
	41115	Actual start pressure defrost
	36716	Actual stop pressure defrost

Plate heat exchanger



ST4	5922	Heat recovery output signal
GM1	37799	Room humidity relative (%)
GT4:1	33725	Cold corner
GT4:2	40895	Extract air temperature

Coil heat exchanger (Run-around coil)



SV3	5922	Heat recovery output signal
CP3	59969	Heat recovery (pump) command
GT9	12446	Heat recovery water temperature
CP3	18003	Heat recovery pump alarm

Black	Value/State
Red	Alarm