TECHNICAL INFORMATION COMMUNICATION

Quality and Continuous Improvement

Number: TIC2019-0020 **Date:** 9/9/2019

Title: RTU Open Controls with Vain Axial Fan

Product Category: Light Commercial

Products Affected

48/50GC units with Factory Installed RTU Open
48/50FC units with Factory Installed RTU Open
559K/582K units with Factory Installed RTU Open
551K/581K units with Factory Installed RTU Open

Technical Information

The Vane Axial RTU Open units currently do not have an available service manual. In an effort to close this gap until the release of the service manual. This TIC will provide the field with sufficient information to allow the units to be setup correctly.

How it works:

- It is set up to control the voltage out to the IDF and determines the speed based on SAT (like the LC6-23ton).
- The UCB fan control is not in play so do not worry about setting it up. Because the fan is ramping for SAT in cooling you do not need to set anything unless there is min and max values you want to stay in. If the performance is not good enough they can lower the SAT set points. In if heating gives them issues they would adjust the heat speed or max heat SAT accordingly.
- If the CFM is too High at MAX Speed or too low at minimum speed these voltages can be adjusted via the following points on the BACnet point TAB. Refer to the UPC voltage table for your unit for Voltage CFM to Total Static settings. HT speed and Min Speed should typically be set the same RTU_OPEN will ramp the fan speed as the SAT rises.
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HP Rev Cycle Lockout Temp	hp_rev_cycle_lockout	(BAV)	-3 °F	0	hp_rev_cycle_lockout	Analog Value 2, #9004	bacnet://1610101/AV:9004	✓
IAQ Override Value	iaq_ovrde_val	(BAV)	0 ppm	0	iaq_ovrde_val	Analog Value 2, #29	bacnet://1610101/AV:29	
IDF Heat Speed Voltage	ht_spd_volt	(BAV)	4.4 V	0	ht_spd_volt	Analog Value 2, #83010	bacnet://1610101/AV:83010	✓
IDF Max Speed Voltage	max_spd_volt	(BAV)	10 V	0	max_spd_volt	Analog Value 2, #83011	bacnet://1610101/AV:83011	✓
IDF Min Speed Voltage	min_spd_volt	(BAV)	5.2 V	0	min_spd_volt	Analog Value 2, #83012	bacnet://1610101/AV:83012	✓
Indoor Air CO2	link_iaq	(BAV)	-999 ppm		link_iaq	Analog Value 2, #2607	bacnet://1610101/AV:2607	
Indoor Air Quality CO2 (ppm)	iaq	(BAV)	-999 ppm		iaq	Analog Value 2, #1009	bacnet://1610101/AV:1009	✓

- The factory should have it set up for the proper settings but you can find those in drawing or sheet 48TC002500. See attached

Setting attachment

Only trained and qualified personnel should design, install, repair and service HVAC systems and equipment. All national standards and safety codes must be followed when designing, installing, repairing and servicing HVAC systems and equipment. It is the responsibility of the Dealer to ensure local codes, standards, and ordinances are met.

TECHNICAL INFORMATION COMMUNICATION

	Point Name	BACnet Object	BACnet Object ID	Range	ALC Default	Factory Default (for literature)
Y	Input 2 Function	ai2_function	MSV:81002	1=No Sensor 2=IAQ Sensor 3=OAQ Sensor 4=Space RH Sensor	1	1 (No IAQ FIOP) 2 (IAQ FIOP)
Y	Input 5 Switch Configuration	di5_type	MSV:81015	NO / NC	NC	NO
	Input 8 Function	di8_function	MSV:81008	1=No Function 2=Enthalpy Switch 3=Fan Status 4=Filter Status 5=Remote Occupancy 6=Door Contact	2	1 (No Enthalpy FIOP) 2 (Enthalpy FIOP)
	Input 9 Function	di9_function	MSV:81009	1=No Function 2=Humidistat 3=Fan Status 4=Filter Status 5=Remote Occupancy 6=Door Contact	2	1 (No Filter Status FIOP) 2 (Filter Status FIOP)
	Unit Type	unit_type	MSV:9018	1=Heat/Cool 2=HP O/B Ctrl 3=HP Y1/W1 Ctrl	1	1 (YAC/PAC) 3 (HP)
	Compressor Stages	comp_stages	MSV:91003	One Stage / Two Stages	One Stage	One Stage (single compressor) Two Stages (2 stage compressor)
	Economizer Exists	econ_exist	BV:99001	No / Yes	No	No (No FIOP) Yes (FIOP)

(cont.)	Point Name	BACnet Object	BACnet Object ID	Range	ALC Default	Factory Default (for literature)
	Heat Type	heat_type	BV:99002	Electric / Gas	Electric	Electric (50 Series) Gas (48 Series)
	Number of Heat Stages	heat_stages	MSV:91004	1/2/2000	2	0 (50 series electric no heat units) 1 (50GC 04-06 low heat) 1 (50GC 04-05 Med heat) 1 (50GC 04 high heat 230v 3 phase or 460v) 1 (50GC 06 med heat 460v or 575v) 1 (50GC 05 high heat 460v) 1 (All heatpumps, Low Nox, and single phase gas units) 1 (48FC 04-07 low heat) 1 (48FC 05-07 med heat) 2 (50GC 04-06 high heat 230v 1phase or 575v) 2 (50GC 06 med heat 230v 3 phase) 2 (50GC 05 high heat 230v 3 phase) 2 (50GC 06 high heat) 2 (48GC 04-06 230v 3 phase, 460v, or 575v) 2 (48FC 05-07 high heat 230v 3 phase, 460v, or 575v) 2 (48FC 04 med heat 230v 3 phase, 460v, or 575v)

(cont.)	Point Name	BACnet Object	BACnet Object ID	Range	ALC Default	Factory Default (for literature)
	Fan Control	fan_type	MSV:9031	1: Single Speed 2: Two Speed 3: Variable Speed	1	3: Variable Speed
	Stage 1 SAT Stpt	stg_1_sat	AV:83013	45 to 75	57	57
	Stage 2 SAT Stpt	stg_2_sat	AV:83014	45 to 75	57	55
	Fan Off Delay	fan_delay_off	AV:9024	0 to 180	90	30 (6 ton) 60 (FC05) 75 (FC04 & 06, GC04 & 05) 90 (GC06)
	Show VFD Congfig as	vfd_spd_cfg	BV:1030	0: Percentage 1: Voltage	0	1: Voltage
	VFD Input	vfd_in_type	BV:91010	0: 0 to 10vdc 1: 2 to 10vdc	1: 2 to 10vdc	0: 0 to 10vdc
	IDF Heat Speed Voltage	ht_spd_volt	AV:83010	0 to 10.0	4.4	5.2
	SA Tempering	sa_tempering_en	BV:83016	0: Disable 1: Enable	0	0: Disable