# BT AHU Control Logic Strategy Table

AHU LEAD STAGE 1

AHU Control Logic

Logic Key:
A = AHU override activated
B = Outside Air present
C = Outside air ((< min outside air) or (> max outside air))
D = Valid reference temperature
E = Is reference temperature > max reference temperature set point
F = Is reference temperature > DX cooling set point and ((reference temperature – outside air temperature) >= differential value))

Default AHU LEAD – Stage 1 Set Points:
Min out side air = -15
Max out side air = 27
Max reference temperature >=33
Reference against outside air differential value >=10
AHU Shut Down <15
AHU Fan Low Speed >=16
AHU Full Speed >=24
AHU Lead DX cooling set point >=29
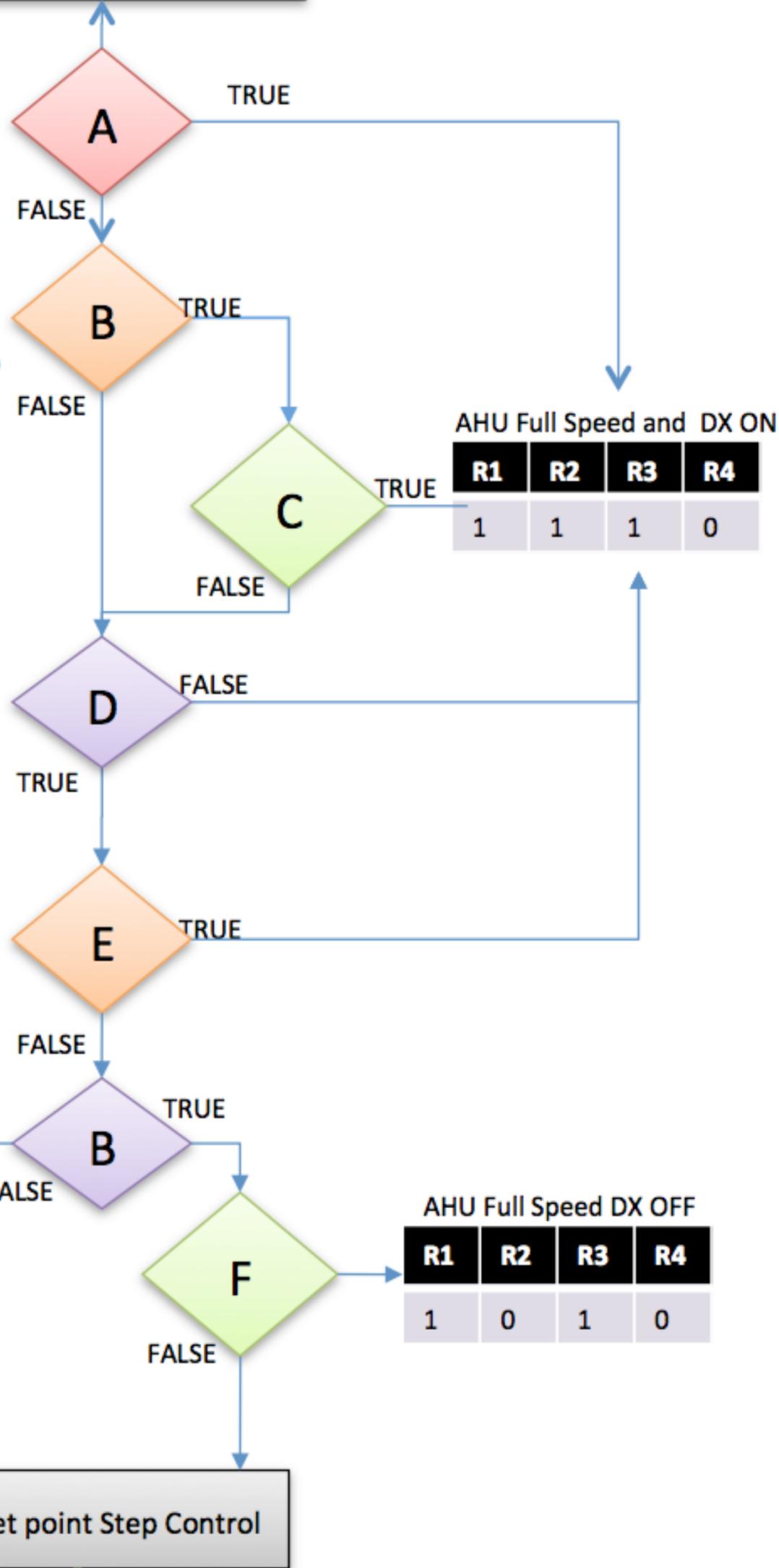
A — TRUE / FALSE

B — TRUE / FALSE

C — TRUE / FALSE

AHU Full Speed and DX ON

R1	R2	R3	R4
1	1	1	0

D — FALSE / TRUE

E — TRUE / FALSE

B — TRUE / FALSE

F — FALSE

AHU Full Speed DX OFF

R1	R2	R3	R4
1	0	1	0

AHU Set point Step Control

Continue on page two
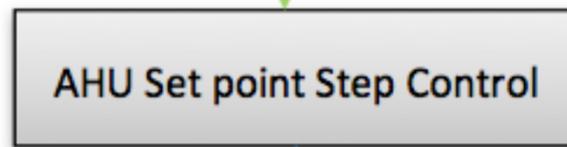
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AHU LEAD STAGE 1

AHU Set point Step Control

Temperature Ascending   **Temperature Descending**

Temperature Ascending

>A
>29   TRUE

AHU Full Speed and DX ON

R1	R2	R3	R4
1	1	1	0

FALSE

>C
>24   TRUE

AHU Full Speed DX OFF

R1	R2	R3	R4
1	0	1	0

FALSE

>E
>16   TRUE

AHU Low Speed DX OFF

R1	R2	R3	R4
1	0	1	1

FALSE

AHU Shut Down

R1	R2	R3	R4
0	0	0	0

Temperature Descending

>A
>29   TRUE

AHU Full Speed and DX ON

R1	R2	R3	R4
1	1	1	0

FALSE

<B
<28   FALSE

TRUE

>C
>24   TRUE

AHU Full Speed DX OFF

R1	R2	R3	R4
1	0	1	0

FALSE

<D
<23   FALSE

TRUE

>E
>16   TRUE

AHU Low Speed DX OFF

R1	R2	R3	R4
1	0	1	1

FALSE

<F
<15   FALSE

TRUE

AHU Shut Down

R1	R2	R3	R4
0	0	0	0
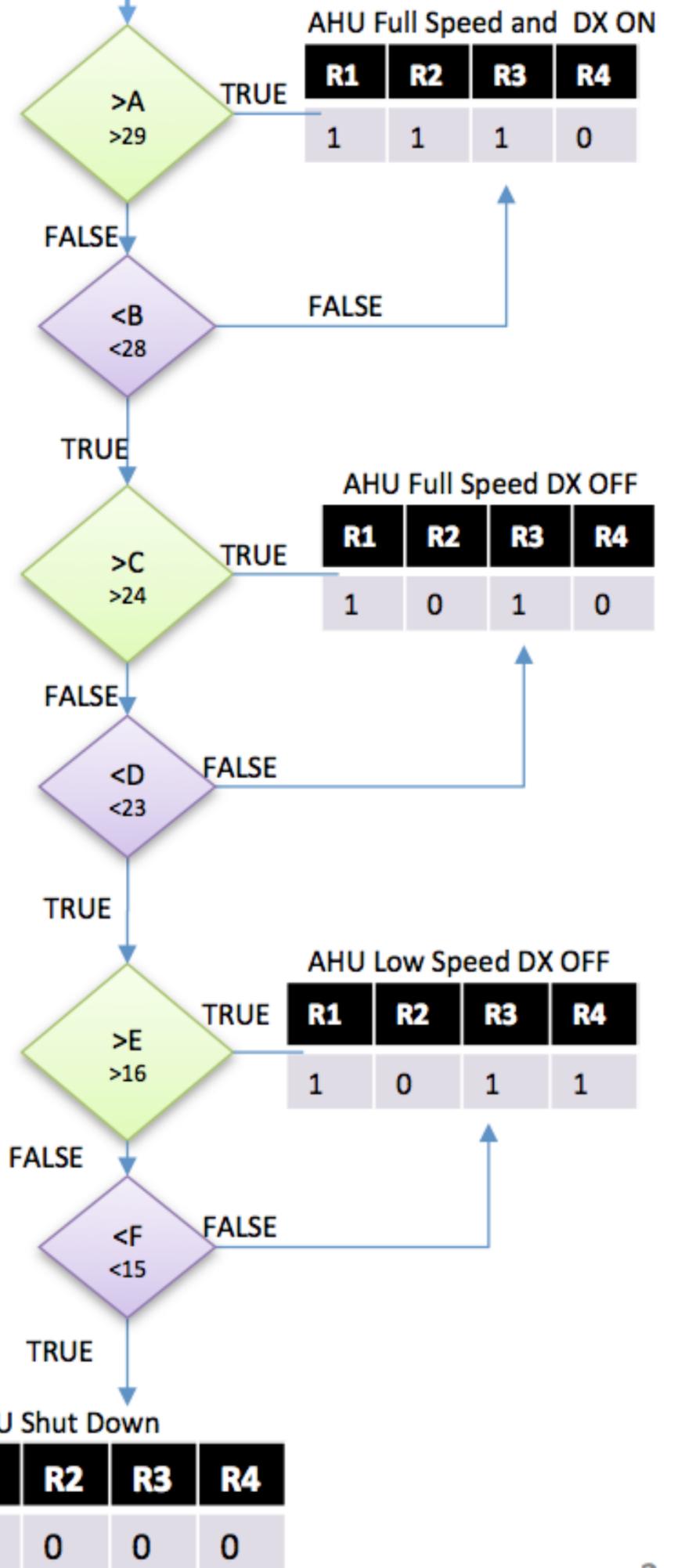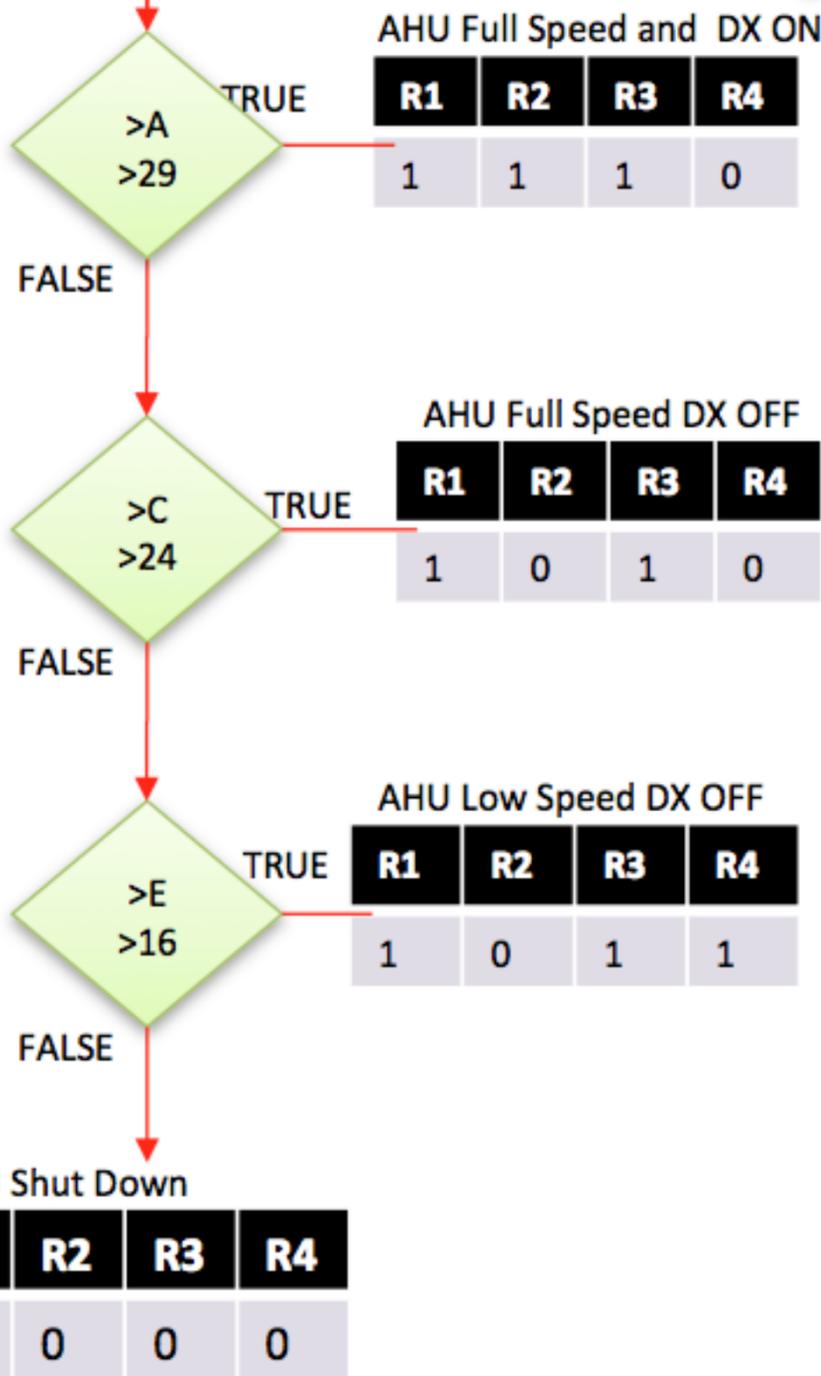
Logic Key:

A = DX Cooling Set Point
B = (DX Cooling Set Point – Hysteresis 1)
C = Fan Full Speed Set Point
D = (Fan Full Speed Set Point – Hysteresis 1)
E = Fan Low Speed Set Point
F = (Fan Low Speed Set Point – Hysteresis 1)

BT AHU Control Logic Strategy Table

AHU STAGE 2

AHU Control Logic

A — TRUE →
FALSE ↓

B — TRUE →
FALSE ↓

C — TRUE →

Logic Key:

A = AHU override activated

B = Outside Air present

C = Outside air ((< min outside air) or (> max outside air))

D = Valid reference temperature

E = Is reference temperature > max reference temperature set point

F = Is reference temperature > DX cooling set point and ((reference temperature – outside air temperature) >= differential value))

Default AHU Stage 1 Set Points:

Min out side air = -15

Max out side air = 28

Max reference temperature >=33

Reference against outside air differential value >=10

AHU Shut Down <21

AHU Fan Low Speed >=22

AHU Full Speed >=25

AHU Lead DX cooling set point >=30

AHU Full Speed and DX ON

R1	R2	R3	R4
1	1	1	0

D — FALSE →
TRUE ↓

E — TRUE →
FALSE ↓

B — TRUE →
FALSE ↓

F — FALSE ↓

AHU Full Speed DX OFF

R1	R2	R3	R4
1	0	1	0

AHU Set point Step Control

AHU STAGE 2

AHU Set point Step Control

Temperature Ascending

Temperature Descending

AHU Full Speed and DX ON

R1	R2	R3	R4
1	1	1	0

>A
>30 TRUE

FALSE

AHU Full Speed DX OFF

R1	R2	R3	R4
1	0	1	0

>C
>25 TRUE

FALSE

AHU Low Speed DX OFF

R1	R2	R3	R4
1	0	1	1

>E
>22 TRUE

FALSE

AHU Shut Down

R1	R2	R3	R4
0	0	0	0

AHU Full Speed and DX ON

R1	R2	R3	R4
1	1	1	0

>A
>30 TRUE

FALSE

<B
<29 FALSE

TRUE

AHU Full Speed DX OFF

R1	R2	R3	R4
1	0	1	0

>C
>25 TRUE

FALSE

<D
<24 FALSE

TRUE

AHU Low Speed DX OFF

R1	R2	R3	R4
1	0	1	1

>E
>22 TRUE

FALSE

<F
<21 FALSE

TRUE

AHU Shut Down

R1	R2	R3	R4
0	0	0	0

Logic Key:

A = DX Cooling Set Point
B = (DX Cooling Set Point – Hysteresis 1)
C = Fan Full Speed Set Point
D = (Fan Full Speed Set Point – Hysteresis 1)
E = Fan Low Speed Set Point
F = (Fan Low Speed Set Point – Hysteresis 1)

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