

XBOXER THERMAL WHEEL HEAT RECOVERY UNITS

HIGH EFFICIENCY ROTARY WHEEL - HELPING TO SAVE ENERGY AND
REDUCE CARBON EMISSIONS.



BENEFITS

HIGH EFFICIENCY

Up to 85% efficient wheel combined with high efficiency motors and backward curved impellers.

OPTIONAL ENERGY EFFICIENT CONTROLS

Full Ecosmart control compatibility provides a simple 'plug & go' control solution with BMS interface and trickle and boost as standard.

DUAL FANS/MOTORS

Lower profile units with more uniform air distribution over heater batteries/ exchangers.

NO CONTROL OPTION

For control integration by others.

SPACE SAVING SOLUTION

Stacked configuration reduces overall space requirements and is ideal for plant room, or roof top applications.

QUIETEST SOLUTION

The range has 25mm double skinned infill panels, helping to keep breakout noise to the lowest possible levels.

HIGH PERFORMANCE RANGE

6 case options available as standard with performance up to 10m³/s. Contact Nuair for other duties or refer to AHU catalogue.

QUICK COMMISSIONING*

Integrated supply and extract fan control allows precise system duty adjustment and can be quickly and accurately set *Ecosmart models only.

EASY MAINTENANCE

The unit provides access to both right and left sides. It is recommended that clear space left be the full width of the stacked unit.

INTEGRATED REGENERATION CONTROL

Operates automatically by shutting the wheel rotation down.

WEATHERPROOF DETAIL

Can be factory fitted or fitted on site, please refer to page 128 for details.

FILTER OPTIONS

G4 fitted as standard. Higher grade integrated filters available or as a duct mounted ancillary. Contact Nuair for details.

CONSTANT PRESSURE CONTROL AVAILABLE

For further information contact Nuair.

DX COIL & CHILLED WATER COOLING OPTIONS

Please refer to page 134.

FLEXIBLE RANGE

Models 4, 5 and 6 include LPHW or no heater. Models 1, 2 and 3 include LPHW, no heater and electric heater options. For further details please contact Nuair.

ANCILLARIES

A range of ancillaries are available including manometers, bulkhead lights, view ports, drain trays and traps. For further details please contact Nuair.

WARRANTY

Models with Ecosmart control have a 5 year warranty. No control models have a 2 year warranty*. *Contact Nuair for further details.

Note: Thermal wheels have specific maintenance requirements. Refer to installation and maintenance manual.

FEATURES INCLUDE:



With LPHW.



Constant Pressure control option.



Pressure independent balancing control (T1 & T2 LPHW models only).



Filter options.



Frost coil option. (See page 00).

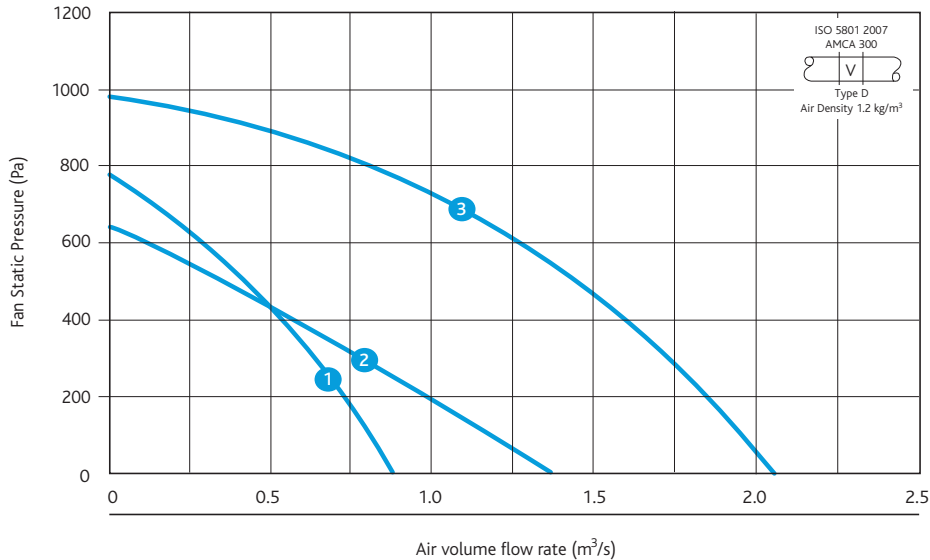
AIR HANDLING UNITS (AHU'S)

XBOXER THERMAL WHEEL

TECHNICAL INFORMATION

PERFORMANCE - XBOXER THERMAL WHEEL

Xboxer Thermal wheel sizes 1, 2 and 3



Casing



Code description (Example)

T1NC - TWB - L L 2 WP

1 2 3 4 5 6 7

- 1. = Type/Curve Ref.
- 2. = Ecosmart control as standard
NC = No control
- 3. = Thermal wheel box
- 4. = Component layout
L = Left hand
R = Right hand
(Handings in direction of supply air)
- 5. = Type of heater
L = LPHW, N = No heater, E = Electric
- 6. = 2 row coil
- 7. = Optional Weather Roof

PERFORMANCE - XBOXER THERMAL WHEEL

ELECTRICAL, SOUND & WEIGHT

Curve	Code	Phase	Speed (RPM)	Motor power (kW)	Start current (amps)	Full load current (amps)	LPHW Heater (kW)		Induct Sound Power Levels dB re 1pW								Breakout dBA @3m	Weight Kg***
									63	125	250	500	1K	2K	4K	8K		
1	T1-TWB-**	1	1710	1.8	11.6	11.6	*	Intake	75	74	76	72	73	71	66	69	45	395
								Supply	79	79	81	78	79	77	73	66		
								Discharge	79	79	81	78	79	77	73	66		
								Extract	75	74	76	72	73	71	66	69		
								Breakout	72	68	71	61	57	55	56	50		
2	T2-TWB-**	3	2140	2.1	3.5	3.5	*	Intake	84	84	78	71	69	65	57	60	46	395
								Supply	88	89	83	77	75	71	64	57		
								Discharge	88	89	83	77	75	71	64	57		
								Extract	84	84	78	71	69	65	57	60		
								Breakout	81	78	73	60	53	49	47	41		
3	T3-TWB-**	3	2412	0.8	2.7	2.7	*	Intake	60	69	72	72	66	65	60	69	47	847
								Supply	69	78	82	82	82	80	77	66		
								Discharge	68	75	78	79	74	73	69	66		
								Extract	64	73	78	76	77	74	68	69		
								Breakout	64	73	78	76	77	74	68	69		

Units are supplied c/w with 2 No. G4 filters as standard. (F5 & F7 filters are available as integrated options on supply).

Motor power and current loads are the total for both fans running together. Ecosmart models have a soft start function therefore the starting current is identical to the full load.

** Add relevant code for heater type.

* For details on coils, codes refer to page 130.

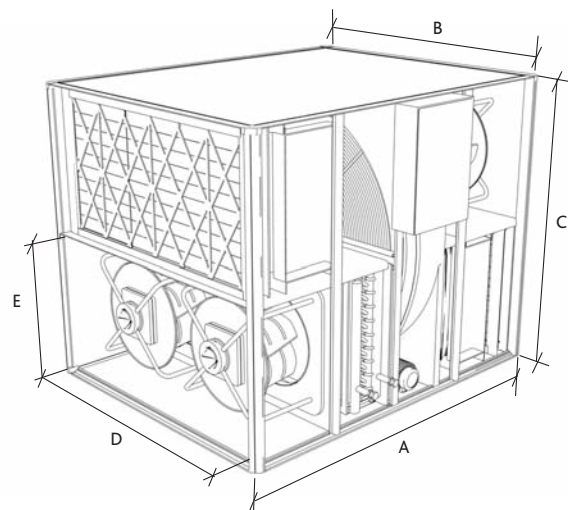
***Weights of units are for guidance and include control and no weather roof.

DIMENSIONS AND CONFIGURATIONS

Xboxer Thermal wheel sizes 1, 2 and 3

DIMENSIONS (mm)

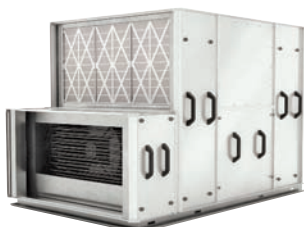
Code	A	B	C	Duct size D X E
T1-TWB	1470	1070	1163	949 X 494
T2-TWB	1470	1070	1163	949 X 494
T3-TWB	2000	1200	1676	1440 X 740



Model shown: T1-3NC-TWB-L (LPHW). No Ecosmart control.



Model shown: T1-3-TWB-L (LPHW). Includes Ecosmart control.



Model shown: T1-3NC-TWB-E (Electric heater). No Ecosmart control.



Model shown: T1-3-TWB-E (Electric heater). Includes Ecosmart control.



Model shown: T1-3NC-TWB-N (No heater). No Ecosmart control.



Model shown: T1-3-TWB-N (No heater). Includes Ecosmart control.



Model shown: T1-3NC-TWB-DX (With DX coil). No Ecosmart control.



Model shown: T1-3-TWB-DX (With DX coil). Includes Ecosmart control.

Note: Control box is integral.

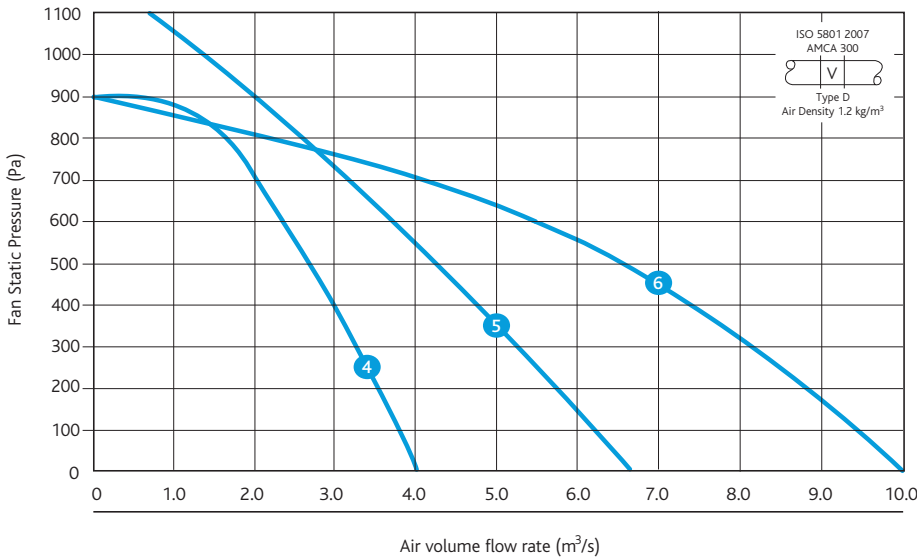
AIR HANDLING UNITS (AHU'S)

XBOXER THERMAL WHEEL

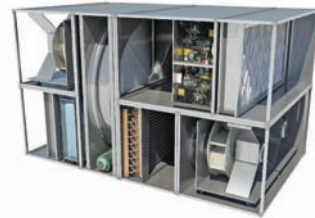
TECHNICAL INFORMATION

PERFORMANCE - XBOXER THERMAL WHEEL

Xboxer Thermal wheel sizes 4, 5 and 6



Casing



Code description (Example)

T4NC - TWB - L L 2 WP

1 2 3 4 5 6 7

- 1. = Type/Curve Ref.
- 2. = Ecosmart control as standard
NC = No control
- 3. = Thermal wheel box
- 4. = Component layout
L = Left hand
R = Right hand
(Handings in direction of supply air)
- 5. = Type of heater
L = LPHW, N = No heater, E = Electric
- 6. = 2 row coil
- 7. = Optional Weather Roof

PERFORMANCE - XBOXER THERMAL WHEEL

ELECTRICAL, SOUND & WEIGHT

Curve	Code	Phase	Speed (RPM)	Motor power (kW)	Start current (amps)	Full load current (amps)	LPHW Heater (kW)	Induct Sound Power Levels dB re 1pW								Breakout dBA @3m	Weight Kg***	
								63	125	250	500	1K	2K	4K	8K			
4	T4-TWB-**	3	1440	8.8	18	18	*	Intake	83	93	89	82	77	80	80	61	53	1185
	Supply							87	90	89	90	84	85	71				
	Discharge							88	90	90	91	83	85	58				
	Extract							86	92	92	85	80	83	74				
								Breakout	80	79	81	67	53	54	63	43		
5	T5-TWB-**	3	1440	16	37	37	*	Intake	87	88	85	83	83	82	81	79	52	2335
	Supply							88	96	84	83	90	90	85	84			
	Discharge							90	98	86	85	92	92	87	86			
	Extract							89	90	87	85	85	84	83	81			
								Breakout	82	84	76	61	61	61	64	61		
6	T6-TWB-**	3	960	22	45.6	45.6	*	Intake	83	95	86	75	79	81	78	64	50	3565
	Supply							88	92	87	83	86	86	83	64			
	Discharge							88	92	87	83	86	86	83	64			
	Extract							84	96	87	76	80	82	79	65			
								Breakout	80	82	76	59	55	55	60	40		

Units are supplied c/w with 2 No. G4 filters as standard. (F5 & F7 filters are available as integrated options on supply).

Motor power and current loads are the total for both fans running together. Ecosmart models have a soft start function therefore the starting current is identical to the full load.

** Add relevant code for heater type.

* For details on coils, codes refer to page 130.

***Weights of units are for guidance and include control and no weather roof. Please contact Nuair for further details.

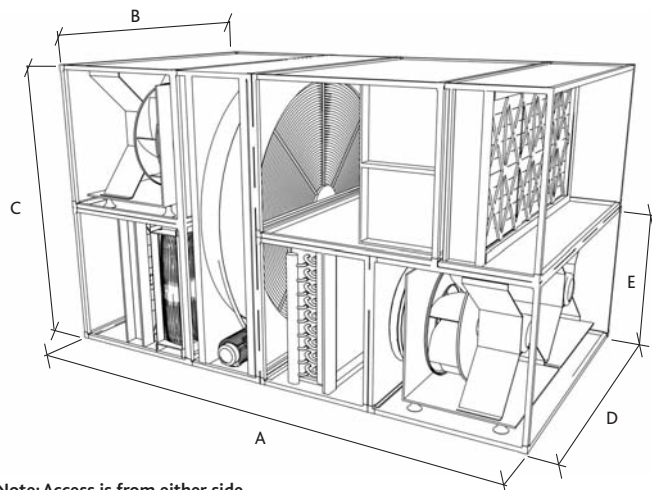
DIMENSIONS AND CONFIGURATIONS

Xboxer Thermal wheel sizes 4, 5 and 6

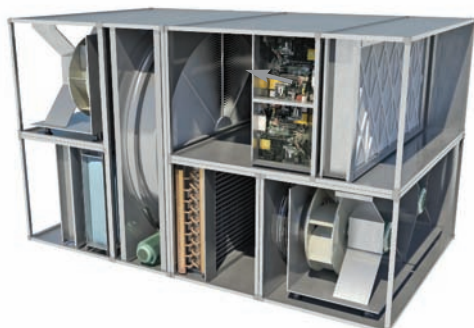
DIMENSIONS (mm)

Code	A	B	C	Duct size D X E
T4-TWB	2800	1600	1600	1540 X 740
T5-TWB	3200	2000	2000	1940 X 940
T6-TWB	3800	2600	2600	2540 X 1240

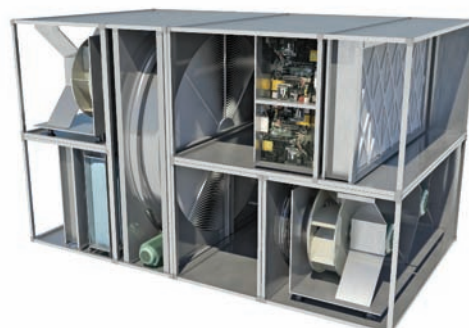
N.B If CW or DX modules are included add 600mm to overall length.



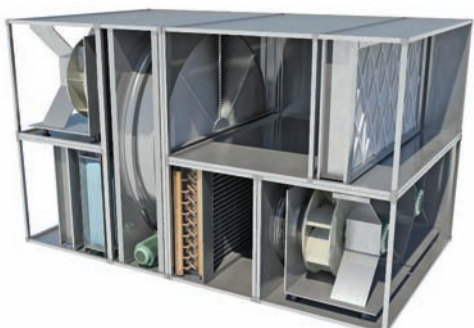
Note: Access is from either side.



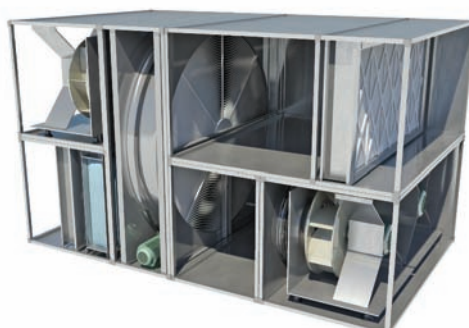
Model shown: T4-6-TWB-L (LPHW). Includes Ecosmart control.



Model shown: T4-6-TWB-N (No heater). Includes Ecosmart control.



Model shown: T4-6NC-TWB-L (LPHW). No Ecosmart control.



Model shown: T4-6NC-TWB-N (No heater). No Ecosmart control.

XBOXER RUN AROUND COIL HEAT RECOVERY

NO CROSS CONTAMINATION, MAKES UNITS IDEAL FOR HYGIENE SPECIFIC APPLICATIONS.



Note: for detailed drawings contact Nuaire.



BENEFITS

ENERGY SAVINGS

Nuaire's high-performance, run-around energy exchanger can provide heat recovery efficiencies typically up to 60%.

IDEAL FOR NEW BUILDING DESIGN AND REFURBISHMENT

The run-around coil as part of a system can help reduce peak heating and cooling loads as well as total heating and cooling loads.

SYSTEM EFFECTIVENESS

A system's overall effectiveness can be much higher than in the past (heat recovery efficiencies typically up to 60%) using run-around-coil-tube heat exchanger systems that are accurately designed for maximum cost-effective performance.

SEPARATION ADVANTAGE

There is no possibility of cross contamination with this type of heat recovery. Ideal for hygiene specific applications.

OPTIONAL ENERGY EFFICIENT CONTROLS

Full Ecosmart control compatibility provides a simple 'plug & go' control solution with BMS interface and trickle and boost as standard

NO CONTROL OPTION

For control integration by others.

SPACE SAVING SOLUTION

Stacked configuration reduces overall space requirements and is ideal for plant room, or roof top applications.

QUIETEST SOLUTION

Units have 25mm double skinned infill panels helping to keep breakout noise to the lowest possible levels. (See page 144 for 50mm double skinned infill panels on the custom made units).

HIGH PERFORMANCE RANGE

3 case options available as standard with performance up to 10m³/s. Contact Nuaire for other duties.

QUICK COMMISSIONING*

Integrated supply and extract fan control allows precise system duty adjustment and can be quickly and accurately set.

*Ecosmart models only.

EASY INSTALLATION

All RAC models are supplied in sections for delivery, ready for site assembly.
RAC = Run around coil.

EASY MAINTENANCE

The unit provides access to both right and left sides. It is recommended that clear space left be the full width of the stacked unit.

INTEGRATED RAC CONTROL OUTPUT

RAC control output can interface with RAC pump system (by others) to minimise energy usage.

WEATHERPROOF PROTECTION

Can be factory fitted or fitted on site, please refer to page 128 for further details.

FILTER OPTIONS

G4 fitted as standard. Higher grade integrated filters available or as a duct mounted ancillary. Contact Nuaire for details.

DX COIL & CHILLED WATER COOLING OPTIONS

Please refer to pages 134-137.

FLEXIBLE RANGE

Range includes LPHW or no heater. Constant pressure control is available*. *Contact Nuaire.

ANCILLARIES

A range of ancillaries are available including manometers, bulkhead lights, view ports, drain trays and traps. For further details please contact Nuaire.

WARRANTY

Models with Ecosmart control have a 5 year warranty. No control models have a 2 year warranty*. *Contact Nuaire for further details.

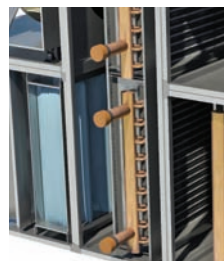
FEATURES INCLUDE:



With LPHW.



Without heater.



Run around energy exchanger.



Constant Pressure control option.



Frost coil option. (See page 132).

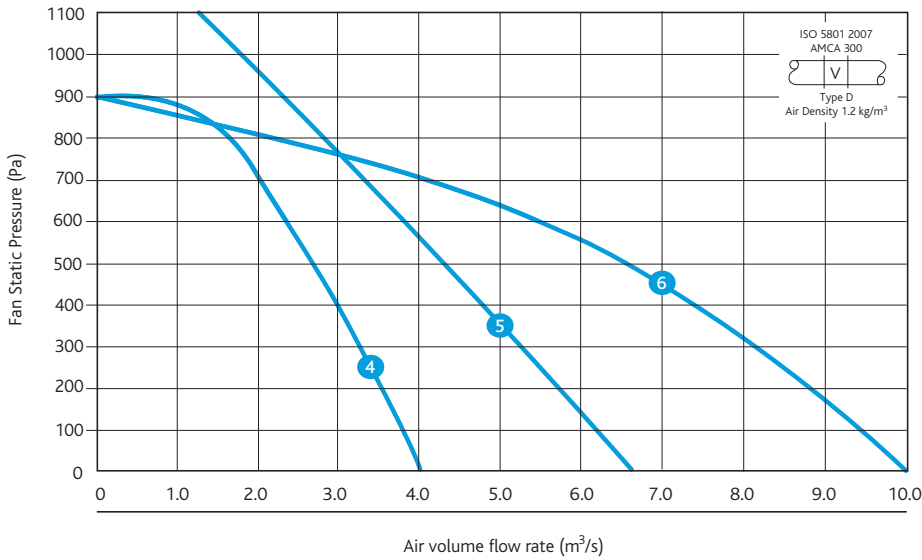
AIR HANDLING UNITS (AHU'S)

XBOXER RUN AROUND COIL

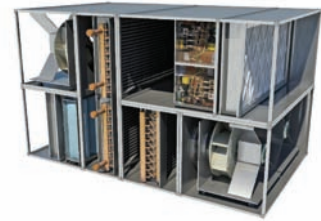
TECHNICAL INFORMATION

PERFORMANCE - XBOXER RUN AROUND COIL

Xboxer Run around coil sizes 4, 5 and 6



Casing



Code description (Example)

R4NC - RAC - L 2 WP

1 2 3 4 5 6

- 1. = Type/Curve Ref.
- 2. = Ecosmart control as standard
NC = No control
- 3. = Run around coil
- 4. = Unit type
L = LPHW, N = No heater
- 5. = 2 row coil or 3 = 3 row coil
- 6. = Optional Weather Roof

PERFORMANCE - XBOXER RUN AROUND COIL

ELECTRICAL, SOUND & WEIGHT

Curve	Code	Phase	Speed (RPM)	Motor power (kW)	Start current (amps)	Full load current (amps)	LPHW Heater	Induct Sound Power Levels dB re 1pW								Breakout dBA @3m	Weight Kg***	
								63	125	250	500	1K	2K	4K	8K			
4	R4-RAC-**	3	1440	8.8	18	18	*	Intake	83	93	89	82	77	80	80	61	53	1020
	Supply							87	90	89	90	84	85	71				
	Discharge							88	90	90	91	83	85	58				
	Extract							86	92	92	85	80	83	74				
	Breakout							80	79	81	67	53	54	63	43			
5	R5-RAC-**	3	1440	16	37	37	*	Intake	87	88	85	83	83	82	81	79	52	2335
	Supply							88	96	84	83	90	90	85	84			
	Discharge							90	98	86	85	92	92	87	86			
	Extract							89	90	87	85	85	84	83	81			
	Breakout							82	84	76	61	61	61	64	61			
6	R6-RAC-**	3	960	22	45.6	45.6	*	Intake	83	95	86	75	79	81	78	64	50	3565
	Supply							88	92	87	83	86	86	83	64			
	Discharge							88	92	87	83	86	86	83	64			
	Extract							84	96	87	76	80	82	79	65			
	Breakout							80	82	76	59	55	55	60	40			

Units are supplied c/w with 2 No. G4 filters as standard. (F5 & F7 filters are available as integrated options on supply).

Motor power and current loads are the total for both fans running together. Ecosmart models have a soft start function therefore the starting current is identical to the full load.

** Add relevant code for heater type.

* For details on coils, codes refer to page 130.

***Weights of units are for guidance and include control and no weather roof. Please contact Nuair for further details.

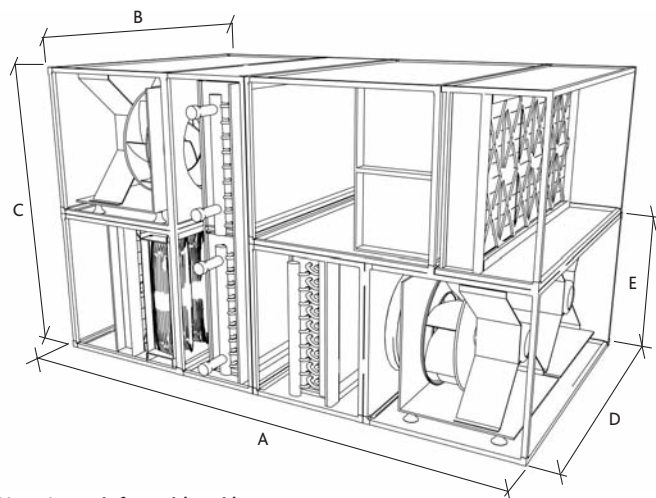
DIMENSIONS AND CONFIGURATIONS

Xboxer Run around coil sizes 4, 5 and 6

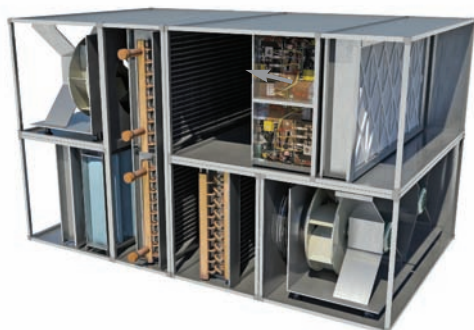
DIMENSIONS (mm)

Code	A	B	C	Duct size D X E
R4-RAC	2800	1600	1600	1540 X 740
R5-RAC	3200	2000	2000	1940 X 940
R6-RAC	3800	2600	2600	2540 X 1240

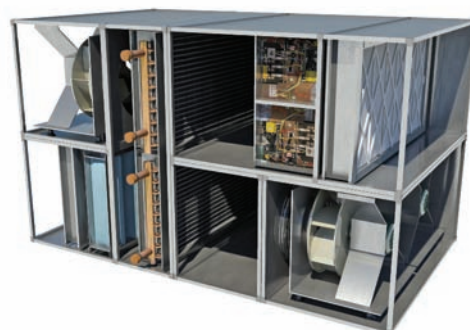
N.B If CW or DX modules are included add 600mm to overall length.



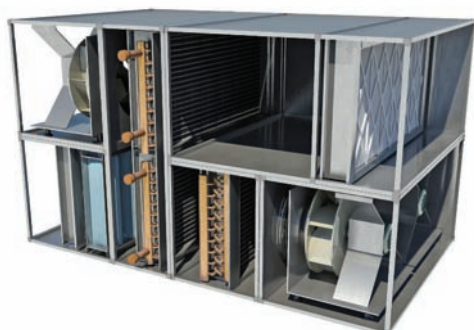
Note: Access is from either side.



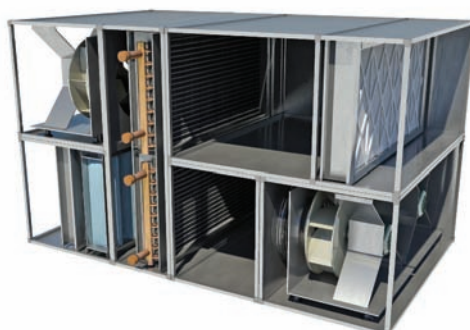
Model shown: R4-6-RAC-L (LPHW). Includes Ecosmart control.



Model shown: R4-6-RAC-N (No heater). Includes Ecosmart control.



Model shown: R4-6NC-RAC-L (LPHW). No Ecosmart control.



Model shown: R4-6NC-RAC-N (No heater). No Ecosmart control.

AIR HANDLING UNITS (AHU'S)

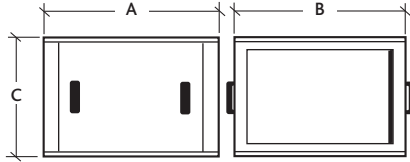
XBOXER ANCILLARIES

TECHNICAL INFORMATION

XBOXER ANCILLARIES

ATTENUATOR MODULES

Attenuators are faced with perforated sheet lined to prevent particle migration and filled with high density mineral wool. Suitable for internal/external use.



DIMENSIONS (mm)

Unit Code	A	B	C	Weight (Kg)
SIL-TR-4	900	1600	800	190
SIL-TR-5	1200	2000	1000	350
SIL-TR-6	1200	2600	1300	384

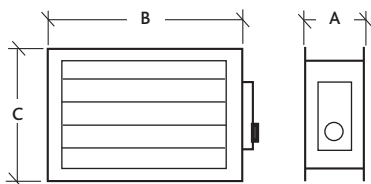
*Please contact Nuair for further details and for options for T1-3.

DYNAMIC INSERTION LOSS (dB)

Length	125	250	500	1K	2K	4K	8K
900	6	8	18	22	20	16	15

MOTORISED DAMPER

Opposed blade design with quick fit flanges. 240V Open/ Shut model for efficient back draught protection. (24V modulating version for balancing and control available on request).



DIMENSIONS (mm)

Unit	A	B	C	Weight (Kg)
MD-TR-1	165	760	395	15
MD-TR-2	165	960	494	20
MD-TR-3	165	1200	590	40
MD-TR-4	165	800	800	19
MD-TR-5	165	1000	1000	28
MD-TR-6	165	1300	1300	34

Note: Dimensions B & C are to suit unit supplied.

NON MOTORISED DAMPER

Non motorised dampers are available, contact Nuair.

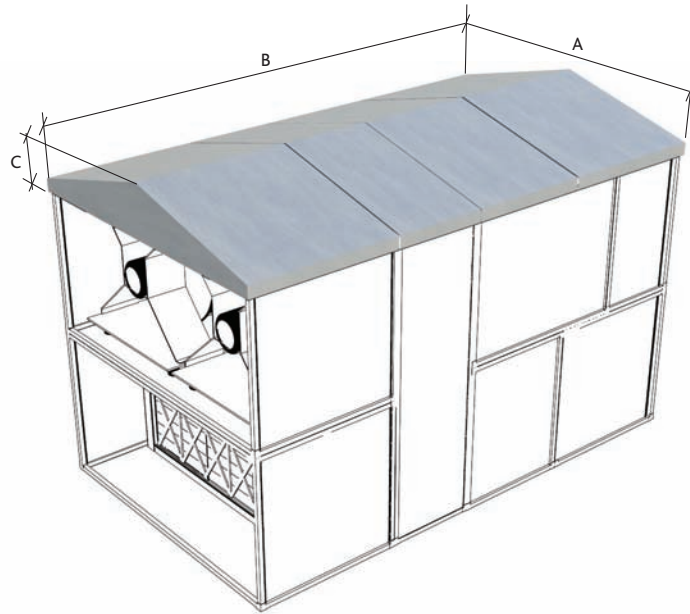
Please contact Nuair for manometers, gauges, sensors, traps and drains, condensate pumps, access panels, view ports and bulkhead lights.

WEATHER PROTECTION ROOF FOR XBOXER THERMAL WHEEL & RUN AROUND COIL UNITS - SIZES 4, 5 AND 6*

*Note: Weather protection is also available for other stacked and horizontal units in the XBOXER range. For further information contact Nuair.

An example of a stacked unit with weather roof is shown below. Note: These roofs do not provide frost protection.

For Weather Protection add 'WP' to end of unit code i.e. R4-RAC-L WP.



TWB & RAC WEATHER PROTECTION

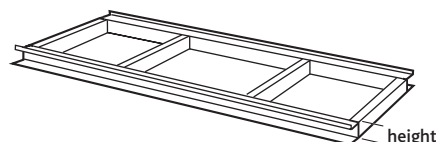
DIMENSIONS (mm)

Unit Code	A	B	C	Weight (Kg*)
T/1 -TWB-*WP	1070	1470	112	40
T/2-TWB-*WP	1070	1470	112	50
T/3-TWB-*WP	1200	2000	100	60
T/R4-RAC/T4 TWB-*WP	1600	2800	160	56
T/R5-RAC/T5 TWB-*WP	2000	3200	195	91
T/R6-RAC/T5 TWB-*WP	2600	3800	248	138

*Weight of weather roof only.

BASE FRAME

Base Frame is included.



DIMENSIONS (mm)

Unit Code	Height of base frame
T1, T2 and T3	100
T4	80
T5 and T6	125

CONDENSATE PUMP



DIMENSIONS (mm)

Unit Code	L x W x H	Weight (Kg)
XB-CON-DR	267 x 51 x 64	1

RUN AROUND COIL PERFORMANCE

Run around coil 20% ethylene glycol						
Intake Air temp. -3 deg C Return Air temp. 22 deg C	Q m³/s	effy %	Supply air temp* C	Power transferred kW	Flow rate l/s	Coil dp kPa Ex/Sup
R6-RAC	7.5	51	9.9	117	2	31 / 38
R6-RAC	5	58	11.5	88	2	31 / 38
R5-RAC	5	51	9.8	78	3	40 / 50
R5-RAC	3	54	10.6	49	2	20 / 25
R4-RAC	3	48	9	44	3.5	30 / 37
R4-RAC	2	55	10.8	34	2.5	22 / 26

* before main heating coil.

This table gives example values for a Run around Coil heat recovery system based on the overall airway dimensions for the units listed.

This type of system has many variables that may be selected to match the required result, and therefore other output conditions may readily be achieved.

An example of this is where a run-around coil arrangement is selected to provide frost protection, giving a system effectively independent of the building's main heating provision.

STANDARD THERMAL WHEEL PERFORMANCE

Thermal Wheel				
Intake Air temp. -3 deg C Return Air temp. 22 deg C	Q m³/s	effy %	Supply air temp* C	Power transferred kW
T6-TWB	10.1	63	15.8	228
T6-TWB	7.5	69	16.7	184
T6-TWB	5	76	17.8	129
T5-TWB	6.6	56	14.5	131
T5-TWB	4.5	64	15.9	102
T5-TWB	3	71	17.1	74
T4-TWB	4	54	14.2	77
T4-TWB	3	61	15.3	65
T4-TWB	2	69	16.7	49
T3-TWB	1.9	66	13.6	55
T3-TWB	1.4	71	14.9	43
T3-TWB	0.9	77	16.3	30
T2-TWB	1.2	67	13.8	35
T2-TWB	0.9	72	14.9	28
T2-TWB	0.6	77	16.3	20
T1-TWB	0.8	64	13.1	22
T1-TWB	0.5	72	15.1	16
T1-TWB	0.2	82	17.5	6.8

* before main heating coil.

This table gives a range of performance values for the standard thermal wheel models offered.

The principal variable in the thermal wheel performance is the airflow velocity, but wheels having alternative physical properties may be selected in some cases if necessary.

The values in the table above have been calculated using the following air conditions:

Intake Air Temperature -3 Deg / 80% Relative Humidity; Return Air 22 Deg / 30% Relative Humidity.

AIR HANDLING UNITS (AHU'S)

XBOXER COIL PERFORMANCE

TECHNICAL INFORMATION

STANDARD COIL PERFORMANCE

Size 1 Air Volume Flow rate (m³/s)		0.72				0.36				
LPH Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Flow & Return Connection size
82/71	-3	23	24	0.52	9.2	17	37	0.38	5.4	0.75" / 22mm
	3	21	28	0.48	8	16	39	0.35	4.6	0.75" / 22mm
	10	19	32	0.43	6.6	14	43	0.32	3.9	0.75" / 22mm
	15	18	35	0.4	5.7	13	45	0.3	3.4	0.75" / 22mm
80/60	-3	20	20	0.24	3	15	31	0.18	3	0.75" / 22mm
	3	18	24	0.22	3	13	34	0.165	3	0.75" / 22mm
	10	16	28	0.2	3	12	37	0.15	3	0.75" / 22mm
	15	14	31	0.18	3	11	40	0.13	3	0.75" / 22mm
60/40	-3	13	12	0.16	3	10	20	0.12	3	0.75" / 22mm
	3	11	15	0.14	3	8.5	22	0.1	3	0.75" / 22mm
	10	9	20	0.11	3	7	26	0.09	3	0.75" / 22mm
	15	7	24	0.09	3	6	28	0.07	3	0.75" / 22mm

Size 2 Air Volume Flow rate (m³/s)		1.1				0.75				0.5				
LPH Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Flow & Return Connection size
82/71	-3	32.52	21.5	0.724	23.2	28.97	26.4	0.645	18.9	24.25	33.9	0.54	31.7	0.75" / 22mm
	3	29.9	25.9	0.665	20	26.55	30.5	0.591	16.1	22.2	37.5	0.494	11.7	0.75" / 22mm
	10	26.86	30.9	0.598	16.4	23.76	35.2	0.529	13.2	19.84	41.6	0.442	9.6	0.75" / 22mm
	15	24.7	34.4	0.55	14.1	21.79	38.5	0.485	11.3	18.18	44.5	0.405	12	0.75" / 22mm
80/60	-3	28.57	18.3	0.349	6.4	25.43	22.8	0.31	5.2	21.39	29.5	0.261	3.8	0.75" / 22mm
	3	25.96	22.6	0.317	5.4	23.04	26.9	0.281	4.4	19.37	33.1	0.236	3.2	0.75" / 22mm
	10	22.93	27.6	0.28	4.3	20.27	31.5	0.247	3.5	17.04	37.1	0.208	3	0.75" / 22mm
	15	20.77	31.2	0.253	3.7	18.32	34.8	0.224	3	15.39	40	0.188	3	0.75" / 22mm
60/40	-3	19.69	11.3	0.238	3.4	17.41	14.6	0.211	3	14.69	19.3	0.178	3	0.75" / 22mm
	3	17.07	15.6	0.207	3	15.05	18.6	0.182	3	12.7	22.7	0.154	3	0.75" / 22mm
	10	14.02	20.5	0.17	3	12.32	23.1	0.149	3	10.4	26.6	0.126	3	0.75" / 22mm
	15	11.82	24	0.143	3	10.38	26.2	0.126	3	8.76	29.2	0.106	3	0.75" / 22mm

Size 3 Air Volume Flow rate (m³/s)		1.8				0.9				
LPH Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Flow & Return Connection size
82/71	-3	81	34	1.81	8.7	56	49	1.26	4.9	1.25" / 35mm
	3	75	37	1.66	7.5	52	51	1.15	4.3	1.25" / 35mm
	10	67	41	1.49	6.3	46	53	1.04	3.6	1.25" / 35mm
	15	61	43	1.36	5.5	43	54	0.95	3.2	1.25" / 35mm
80/60	-3	65	27	0.8	3	46	39	0.56	3	1.25" / 35mm
	3	59	30	0.72	3	42	41	0.51	3	1.25" / 35mm
	10	51	33	0.62	3	36	43	0.44	3	1.25" / 35mm
	15	45	36	0.55	3	32	44	0.39	3	1.25" / 35mm
60/40	-3	37	15	0.47	3	27	22	0.33	3	1.25" / 35mm
	3	32	17	0.38	3	22	23	0.26	3	1.25" / 35mm
	10	22	20	0.27	3	11	20	0.13	3	1.25" / 35mm
	15	10	20	0.12	3	9	23	0.11	3	1.25" / 35mm

The thermal outputs in these tables represent the results that may be achieved with the range of standardised coils offered in this range of equipment. Heating coils may of course be individually selected to meet project specific requirements.

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*Please note that the pressure drops shown are for the bare coil only. Please contact Nuair for further information.



STANDARD COIL PERFORMANCE

Size 4 Air Volume Flow rate (m ³ /s) (2 row as standard)		4				3				2				Flow & Return Connection size
LPH Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	
82/71	-3	119	21.6	2.7	6.9	108	26.7	2.4	5.9	90.3	34.3	2	4.4	2" / 54mm
	3	110	25.6	2.5	6	99.5	30.3	2.2	5.1	81	38.4	1.8	3.7	2" / 54mm
	10	96	30	2.14	4.8	87	35.8	1.92	4.1	75	40.9	1.7	3.3	2" / 54mm
	15	90	33.6	2	4.4	89	34.6	2	4.3	69	43.4	1.53	3	2" / 54mm
80/60	-3	98.5	17.3	1.3	3	89.3	21.7	1.1	3	74	28.5	0.91	3	2" / 54mm
	3	89	21.4	1.09	3	80.5	25.5	0.98	3	67	31.7	0.82	3	2" / 54mm
	10	77	26.2	0.95	3	70	29.8	0.86	3	58	35.3	0.71	3	2" / 54mm
	15	69	29.7	0.84	3	62	33	0.76	3	52	38	0.64	3	2" / 54mm
60/40	-3	63	9.5	0.77	3	57	12.2	0.69	3	48	16.4	0.58	3	2" / 54mm
	3	52.4	13.6	0.64	3	48	15.9	0.58	3	40	19.4	0.49	3	2" / 54mm
	10	40.4	18.3	0.49	3	37	20.1	0.45	3	31	22.8	0.37	3	2" / 54mm
	15	31	21.5	0.38	3	28.5	22.9	0.35	3	23	25	0.28	3	2" / 54mm

Size 5 Air Volume Flow rate (m ³ /s) (3 row as standard)		6.6				4.5				3				Flow & Return Connection size
LPH Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	
82/71	-3	287	30	6.4	11.1	249	39.1	5.5	8.9	180	51.9	4	5.4	2.5" / 67mm
	3	267	34.4	5.94	9.9	227	42.2	5.06	7.7	166	53.8	3.7	4.7	2.5" / 67mm
	10	238	38.7	5.29	8.2	202	45.8	4.5	6.4	149	55.9	3.3	4	2.5" / 67mm
	15	217	41.7	4.84	7.2	185	48.2	4.1	5.6	137	57.4	3.04	3.5	2.5" / 67mm
80/60	-3	239	27.6	2.92	3.4	213	32.9	2.6	3	173	40.8	2.1	3	2.5" / 67mm
	3	216	31	2.64	3	191	36	2.34	3	156	43.3	1.9	3	2.5" / 67mm
	10	189	34.8	2.31	3	167	39.5	2.04	3	136	46	1.65	3	2.5" / 67mm
	15	174	36.4	2.13	3	149	41.9	1.83	3	121	47.8	1.48	3	2.5" / 67mm
60/40	-3	162	15.7	1.97	3	140	20.6	1.7	3	114	25.9	1.38	3	2.5" / 67mm
	3	138	19.2	1.7	3	119	23.5	1.44	3	97	28.1	1.17	3	2.5" / 67mm
	10	109	23.3	1.33	3	94	26.6	1.14	3	77	30.4	0.93	3	2.5" / 67mm
	15	89	25.9	1.08	3	76	28.7	0.93	3	62	31.8	0.75	3	2.5" / 67mm

Size 6 Air Volume Flow rate (m ³ /s) (2 row as standard)		10.1				7.5				5				Flow & Return Connection size
LPH Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	
82/71	-3	443	30.3	9.86	33.8	392	36.7	8.7	27.7	319	45.4	7.09	19.8	2.5" / 67mm
	3	405	34.1	9	29.2	358	40.1	8	23.9	291	48.1	6.5	17.1	2.5" / 67mm
	10	361	38.5	8.1	24.2	319	43.9	7.1	19.8	259	51.2	5.75	14.2	2.5" / 67mm
	15	330	41.5	7.35	20.9	291	46.5	6.48	17.2	236	53.3	5.25	12.3	2.5" / 67mm
80/60	-3	378	25.5	4.62	10.2	337	31.1	4.1	8.6	276	38.9	3.37	6.4	2.5" / 67mm
	3	341	29.1	4.2	8.7	303	34.4	3.7	7.3	248	41.6	3.03	5.5	2.5" / 67mm
	10	298	33.5	3.64	7.2	265	38.1	3.2	6	217	44.6	2.65	4.5	2.5" / 67mm
	15	268	36.5	3.27	6.1	238	40.7	2.9	5.1	195	46.6	2.38	3.9	2.5" / 67mm
60/40	-3	251	15.9	3.1	5.7	224	19.7	2.71	4.8	185	25	2.24	3.6	2.5" / 67mm
	3	215	19.5	2.6	4.5	191	22.8	2.32	3.8	158	27.5	1.91	3	2.5" / 67mm
	10	172	23.6	2.1	3.3	154	26.3	1.86	3	127	30.2	1.54	3	2.5" / 67mm
	15	142	26.4	1.72	3	127	28.7	1.54	3	105	32	1.27	3	2.5" / 67mm

The thermal outputs in these tables represent the results that may be achieved with the range of standardised coils offered in this range of equipment. Heating coils may of course be individually selected to meet project specific requirements.

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AIR HANDLING UNITS (AHU'S)

XBOXER COIL PERFORMANCE

TECHNICAL INFORMATION

FROST COIL PERFORMANCE

Size 1 Maximum Air Volume			4				3				2				Connection size	
Flow rate (m ³ /s)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Connection size		
82/71	-3	119	21.6	2.7	6.9	108	26.7	2.4	5.9	90.3	34.3	2	4.4	00"/00mm		
80/60	-3	98.5*	17.3	1.3	3	89.3**	21.7	1.1	3	74**	28.5	0.91	3	*00"/35mm **0"/00mm		
60/40	-3	63*	9.5	0.77	3	57**	12.2	0.69	3	48**	16.4	0.58	3	*00"/35mm **0"/00mm		

Size 2 Maximum Air Volume			6.6				4.5				3				Connection size	
Flow rate (m ³ /s)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Connection size		
82/71	-3	287	30	6.4	11.1	249	39.1	5.5	8.9	180	51.9	4	5.4	*0"/00mm **00"/00mm ***00"/00mm		
80/60	-3	239	27.6	2.92	3.4	213	32.9	2.6	3	173	40.8	2.1	3	*00"/00mm ** 00"/00mm		
60/40	-3	162	15.7	1.97	3	140	20.6	1.7	3	114	25.9	1.38	3	*00"/00mm ** 00"/00mm		

Size 3 Maximum Air Volume			10.1				7.5				5				Connection size	
Flow rate (m ³ /s)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Connection size		
82/71	-3	443	30.3	9.86	33.8	392	36.7	8.7	27.7	319	45.4	7.09	19.8	*0"/00mm **00"/00mm		
80/60	-3	378	25.5	4.62	10.2	337	31.1	4.1	8.6	276	38.9	3.37	6.4	*00"/00mm **00"/00mm		
60/40	-3	251	15.9	3.1	5.7	224	19.7	2.71	4.8	185	25	2.74	3.6	*00"/00mm **00"/00mm		

The thermal outputs in these tables represent the performance of coils selected to achieve our recommended operational specifications for a frost protection coil. Alternative coil specifications may be provided on request.

*Please note: above tables are based on indicative selections. For more specific selection, contact Nuair.

*Please note that the pressure drops shown are for the bare coil only. Please contact Nuair for further information.

Code descriptions

FC TR 1 - 82/71 - 4

| | | | | |
 1 2 3 4 5 6

- 1. = Frost coil
- 2. = Suitable for Thermal wheel (TWB) & (RAC) Run around coil units
- 3. = Unit size
- 4. = Flow temperature
- 5. = Return temperature
- 6. = Maximum volume flow rate (m³/s)



FROST COIL PERFORMANCE

Size 4 Maximum Air Volume															
Flow rate (m ³ /s)		4					3				2				
LPH	Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Connection size
82/71		-5	53	5	1.18	9.2	40	5	0.89	12.3	26.5	5	0.59	11.8	1.25"/35mm
80/60		-5	53*	5	0.65	14.2	40**	5	0.49	9.5	26.5**	5	0.33	12.2	*1.25"/35mm **1"/28mm
60/40		-5	53*	5	0.64	10.4	40**	5	0.48	13.6	26.5**	5	0.32	12.8	*1.25"/35mm **1"/28mm

Size 5 Maximum Air Volume															
Flow rate (m ³ /s)		6.6					4.5				3				
LPH	Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Connection size
82/71		-5	87.5*	5	1.95	12.3	60**	5	1.33	8	40**	5	0.89	4.4	*2"/54mm **1.5"/42mm ***1.25"/35mm
80/60		-5	87.5*	5	1.07	7.4	60*	5	0.73	13.6	40**	5	0.49	14.5	*1.25"/35mm **1"/28mm
60/40		-5	87.5*	5	1.06	9.2	60*	5	0.73	14.2	40**	5	0.48	8.2	*1.25"/35mm **1"/28mm

Size 6 Maximum Air Volume															
Flow rate (m ³ /s)		10.1					7.5				5				
LPH	Water Flow & Return Temp. (C)	Entering Air Temp (C)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Heat Output (kW)	Air Off temp (C)	Water Flow rate (l/s)	Water dp (kPa)	Connection size
82/71		-5	134*	5	2.98	7.8	99*	5	2.21	11.7	66**	5	1.48	6.6	*2"/54mm **1.5"/42mm
80/60		-5	133*	5	1.63	9.9	99*	5	1.21	12.9	66**	5	0.81	14.9	*1.5"/42mm **1.25"/35mm
60/40		-5	134*	5	1.62	12.4	99*	5	1.2	13.7	66**	5	0.8	8.3	*1.5"/42mm **1.25"/35mm

The thermal outputs in these tables represent the performance of coils selected to achieve our recommended operational specifications for a frost protection coil. Alternative coil specifications may be provided on request.

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AIR HANDLING UNITS (AHU'S)

XBOXER COIL PERFORMANCE

TECHNICAL INFORMATION

COOLING COIL AND CHILLED WATER PERFORMANCE

Size T1

Max Air Volume Flow Rate (m³/s)		0.722				18 Pa				0.36		26 Pa	
CWater Flow and Return Temp. (C)		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa				
6 / 12	Entering Air Conditions db (deg C) /Rh (%)												
	25 / 50	9.5 / 7*	17 / 72.5	0.38	16.3	4.9 / 3.5**	17 / 72	0.193	10.6				
		Connection size		3/4" / 22mm		Connection size		3/4" / 22mm					

Size T2

Max Air Volume Flow Rate (m³/s)		1.1				0.75			
CWater Flow and Return Temp. (C)		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
6 / 12	Entering Air Conditions db (deg C) /Rh (%)								
	25 / 50	13.6 / 9.8	17.61 / 70.3	0.541	20.3	10.1 / 7.3	17.02 / 72.2	0.399	12.1
		Connection size		3/4" / 22mm		Connection size		3/4" / 22mm	

Size T3

Max Air Volume Flow Rate (m³/s)		1.8				0.9			
CWater Flow and Return Temp. (C)		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
6 / 12	Entering Air Conditions db (deg C) /Rh (%)								
	25 / 50	23 / 17	17 / 73	0.93	12	12.1 / 8.7	17 / 72	0.48	19
		Connection size		1/4" / 35mm		Connection size		1/4" / 35mm	

DX COIL PERFORMANCE

Size T1

Max Air Volume Flow Rate (m³/s)		0.72				0.36			
R407C Liq. Temp. before TEV °C Average Evap. Temp. °C Superheat °K		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
45.0	10.0								
		7	17 / 82	163	0.19 / 0.9	3.5	17 / 82	82	0.04 / 0
Connection size (mm) twin coil interlaced		2 x 12.7 2 x 15.9 Gas 5 m/s				2 x 12.7 2 x 15.9 Gas 2.5 m/s			

Size T2

Max Air Volume Flow Rate (m³/s)		1.1				0.75			
R407C Liq. Temp. before TEV °C Average Evap. Temp. °C Superheat °K		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
45.0	10.0								
		12.4 / 10.9	16.8 / 80	293	0.82 / 3.9	10.2 / 8.1	16 / 80	240	0.55 / 2.6
Connection size (mm) twin coil interlaced		1 x 12.7mm Liquid line and 1 x 28 Gas line							

Size T3

Max Air Volume Flow Rate (m³/s)		7.4				5.4			
R407C Liq. Temp. before TEV °C Average Evap. Temp. °C Superheat °K		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
45.0	10.0								
		17.4	17 / 82	408	0.12 / 0.5	8.7	17 / 82	204	0.06 / 0
Connection size (mm) twin coil interlaced		2 x 12.7 2 x 22 Gas 6 m/s				2 x 12.7 2 x 15.9 Gas 6.2 m/s			

*Please note: above tables are based on indicative selections. For more specific selection, contact Nuair.

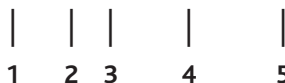


Size T2 continued

0.5				0.25			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
7.1 / 5.1	16.52 / 73.9	0.283	6.8	3.8 / 2.8	15.85 / 76.8	0.151	3
Connection size 3/4" / 22mm				Connection size 3/4" / 22mm			

Code description for Chilled Water or Cooling Coils

CW TR 1 - 6/12 - 2.6



- 1. = Chilled water or (CC) = Cooling coil
- 2. = Suitable for Thermal wheel (TWB) & (RAC) Run around coil units
- 3. = Unit size
- 4. = Flow and return temperature
- 5. = Return temperature
- 6. = Maximum air flow rate (m³/s)

Size T2 continued

0.5				0.4			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
7.7 / 5.8	15.4 / 80	182	0.31 / 1.5	4.1 / 3.9	17 / 80	97	0.07 / 0
1 x 12.7mm Liquid line and 1 x 28 Gas line							

Code description for DX Coil

DX TR 1 - 2.6



- 1. = Type of coil
- 2. = Suitable for Thermal wheel (TWB)
- 3. = Unit size
- 4. = Maximum air flow rate (m³/s)

AIR HANDLING UNITS (AHU'S)

XBOXER COIL PERFORMANCE

TECHNICAL INFORMATION

COOLING COIL AND CHILLED WATER PERFORMANCE

Size T4

Max Air Volume Flow Rate (m³/s)		2.6				1.9			
CWater Flow and Return Temp. (C)		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
6 / 12	Entering Air Conditions db (deg C) /Rh (%)								
	28 / 50	58 / 38*	16 / 82.5	2.32	14	44 / 28**	16 / 80.4	1.75	23.8
Connection size		*2" / 54mm				Connection size **1.5" / 42mm			

Size T5

Max Air Volume Flow Rate (m³/s)		4.7				3.4			
CWater Flow and Return Temp. (C)		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
6 / 12	Entering Air Conditions db (deg C) /Rh (%)								
	28 / 50	108 / 68*	16 / 81.3	4.27	26.7	78 / 49**	16 / 81	3.1	18.5
Connection size		*2.5" / 67mm				Connection size **2" / 54mm			

Size T6

Max Air Volume Flow Rate (m³/s)		7.4				5.4			
CWater Flow and Return Temp. (C)		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
6 / 12	Entering Air Conditions db (deg C) /Rh (%)								
	28 / 50	167 / 108*	16 / 82	6.64	22.4	125 / 78.5**	16 / 80.4	5	27
Connection size		*3" / 76mm				Connection size **2.5" / 67mm			

DX COIL PERFORMANCE

Size T4

Max Air Volume Flow Rate (m³/s)		2.6				1.9			
R407C Liq. Temp. before TEV °C Average Evap. Temp. °C Superheat °K		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
45.0 10.0 5.0	Entering Air Conditions db (deg C) /Rh (%)								
	28 / 50	48.4 / 37.8	16 / 93	1134	0.16 / 0.7	36.6 / 28	16 / 91	858	0.25/1.1
Connection size (mm) twin coil interlaced		2 x 15.9 2 x 35 Gas 6.7 m/s				2 x 12.7 2 x 28 Gas 7.5 m/s			

Size T5

Max Air Volume Flow Rate (m³/s)		4.7				3.4			
R407C Liq. Temp. before TEV °C Average Evap. Temp. °C Superheat °K		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
45.0 10.0 5.0	Entering Air Conditions db (deg C) /Rh (%)								
	28 / 50	86.3 / 68.3	16 / 94	2020	0.12 / 0.5	66.1 / 49.4	16 / 91	1548	0.28/1.2
Connection size (mm) twin coil interlaced		2 x 22 2 x 42 Gas 8.0 m/s				2 x 15.9 2 x 35 Gas 9.1 m/s			

Size T6

Max Air Volume Flow Rate (m³/s)		7.4				5.4			
R407C Liq. Temp. before TEV °C Average Evap. Temp. °C Superheat °K		Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
45.0 10.0 5.0	Entering Air Conditions db (deg C) /Rh (%)								
	28 / 50	139.6 / 108	16 / 93	3267	0.3 / 1.4	104.7 / 78.5	16 / 91	2449	0.16/0.7
Connection size (mm) twin coil interlaced		2 x 22 2 x 54 Gas 7.9 m/s				2 x 22 2 x 42 Gas 9.7 m/s			

*Please note: above tables are based on indicative selections. For more specific selection, contact Nuair.



Size T4 continued

1.6				1			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
37 / 23**	16 / 80.2	1.48	27.2	23 / 14.5***	16 / 80.3	0.92	14
Connection size **1.5" / 42mm				Connection size ***1.25" / 35mm			

Size T5 continued

2.8				1.4			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
64.5 / 41**	16 / 80.7	2.56	21	33 / 20.4***	16 / 79.3	1.31	19
Connection size **2" / 54mm				Connection size ***1.5" / 42mm			

Size T5 continued

4.7				3			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Water flow rate l/s	Water dp kPa
109 / 68**	16 / 80.1	4.34	22	70 / 44***	16 / 80.2	2.77	19
Connection size **2.5" / 67mm				Connection size ***2" / 54mm			

Size T4 continued

1.6				1			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
31.1 / 23.3	16 / 91	734	0.18 / 0.8	20 / 14.5	16 / 90	467	0.19 / 0.9
2 x 12.7 2 x 28 Gas 6.4 m/s				2 x 12.7 2 x 22 Gas 6.9 m/s			

Size T5 continued

2.8				1.4			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
54.2 / 41	16 / 91	1268	0.29 / 1.3	28.6 / 20.4	16 / 88	670	0.27 / 1.2
2 x 15.9 2 x 35 Gas 7.5 m/s				2 x 12.7 2 x 28 Gas 5.9 m/s			

Size T6 continued

4.7				3			
Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k	Cooling Output kW total / sensible	Air Off Condition db (deg C) / Rh (%)	Mass flow rate kg / h	Coil dp bar / k
98 / 68.3	16 / 91	2130	0.2 / 0.9	60.2 / 44	16 / 89	1408	0.19 / 0.9
2 x 22 2 x 42 Gas 8.4 m/s				2 x 22 2 x 35 Gas 8.3 m/s			

Code description for Chilled Water or Cooling Coils

CW TR 4 - 6/12 - 2.6



- 1. = Chilled water or (CC) = Cooling coil
- 2. = Suitable for Thermal wheel (TWB) & (RAC) Run around coil units
- 3. = Unit size
- 4. = Flow and return temperature
- 5. = Return temperature
- 6. = Maximum air flow rate (m³/s)

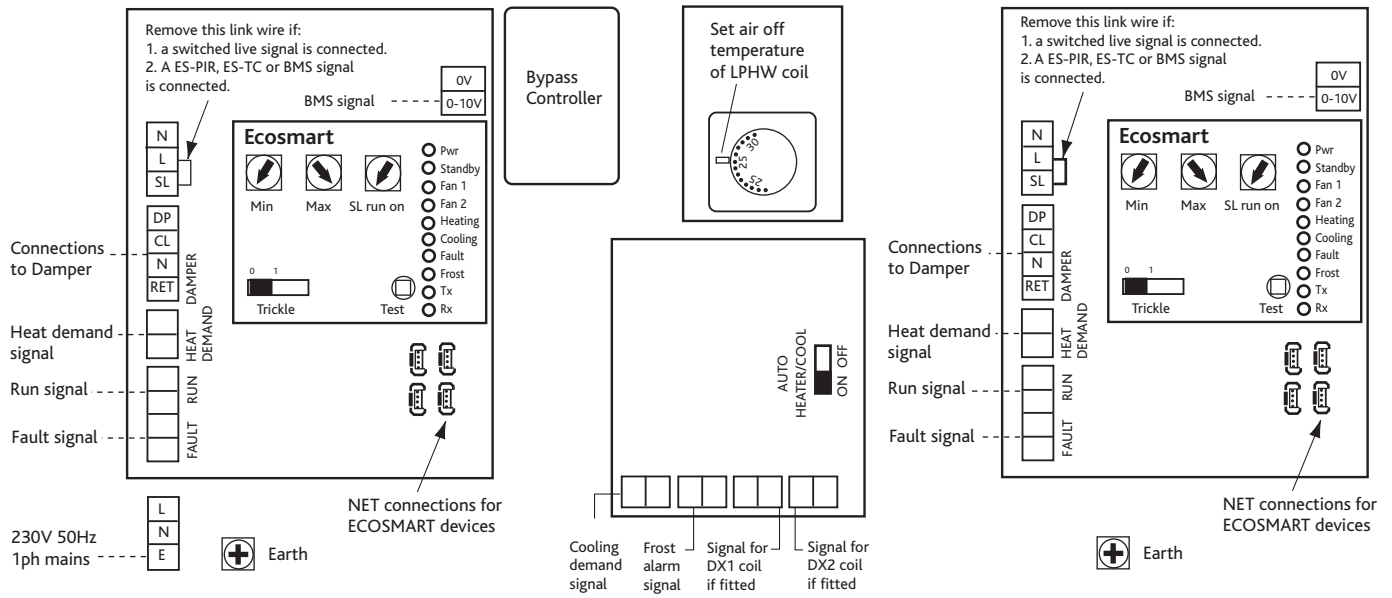
Code description for DX Coil

DX TR 4 - 2.6

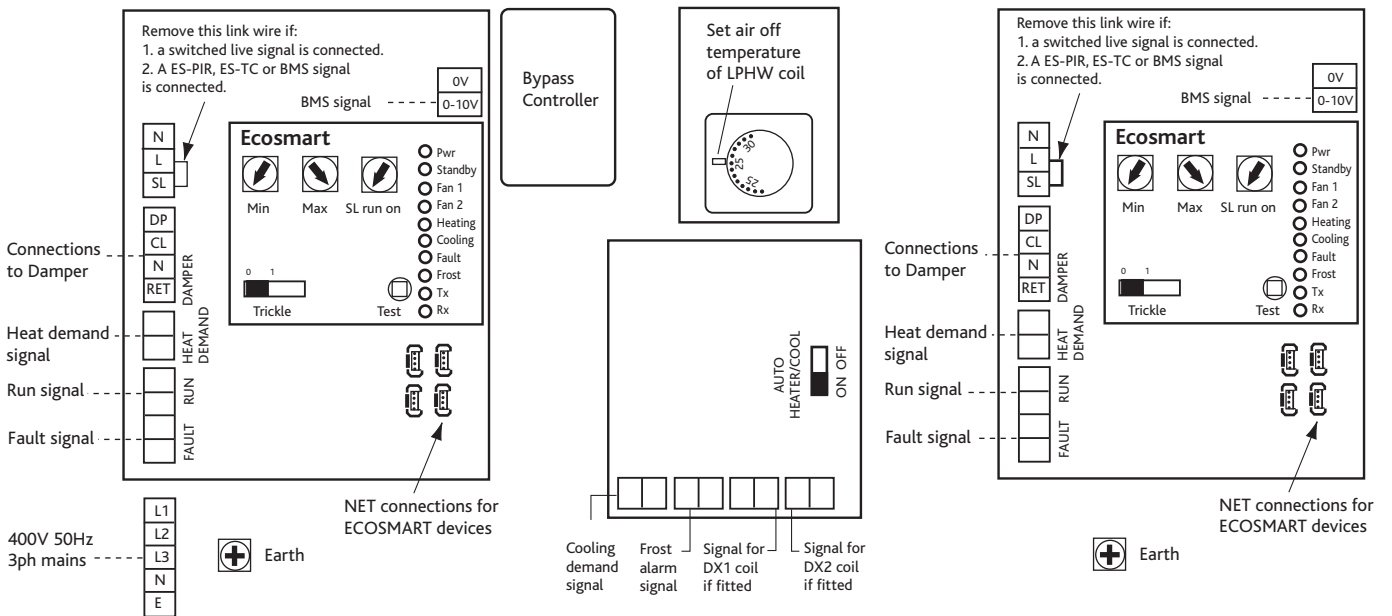


- 1. = Type of coil
- 2. = Suitable for Thermal wheel (TWB) & (RAC) Run around coil units
- 3. = Unit size
- 4. = Maximum air flow rate (m³/s)

WIRING FOR UNITS WITH ECOSMART CONTROL - T1 - TWB 'L' (LPHW)



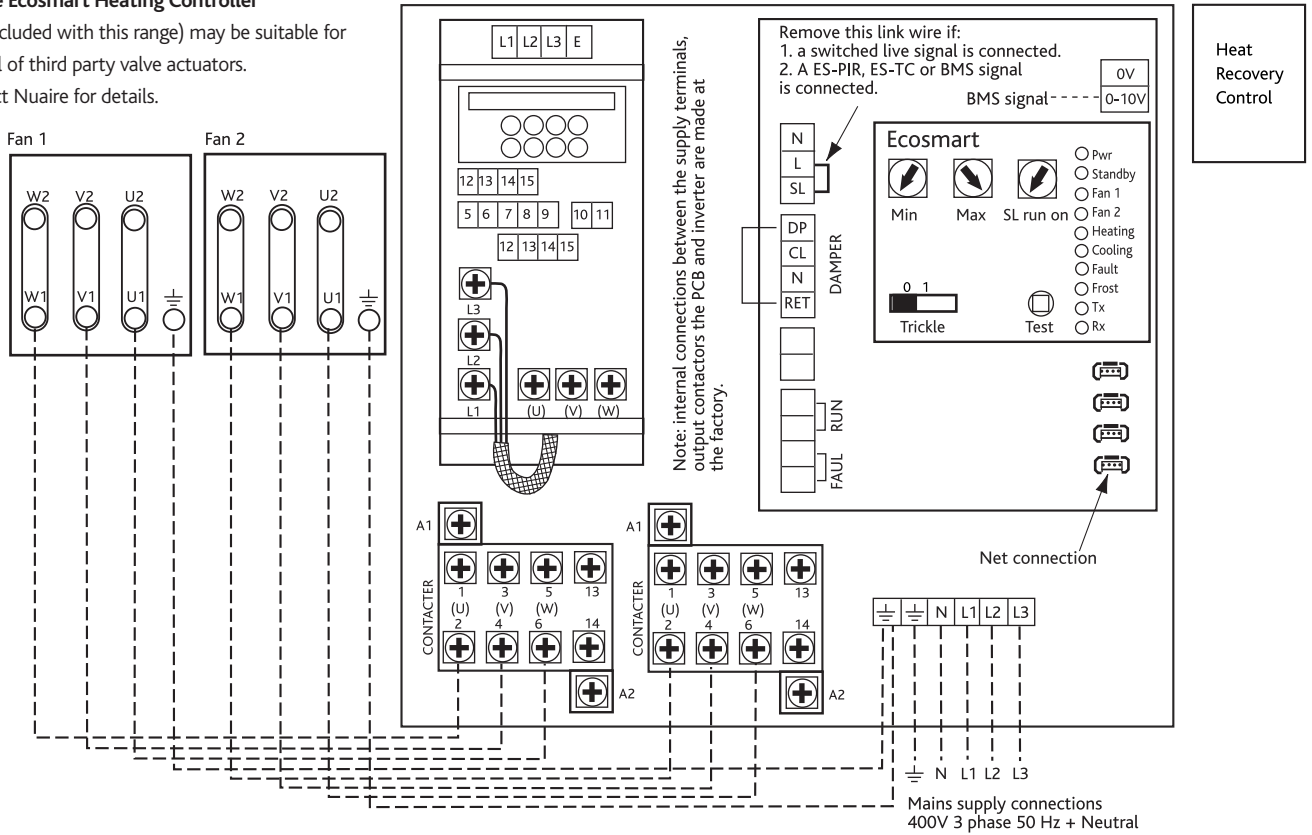
WIRING FOR UNITS WITH ECOSMART CONTROL - T2 - TWB 'L' (LPHW)



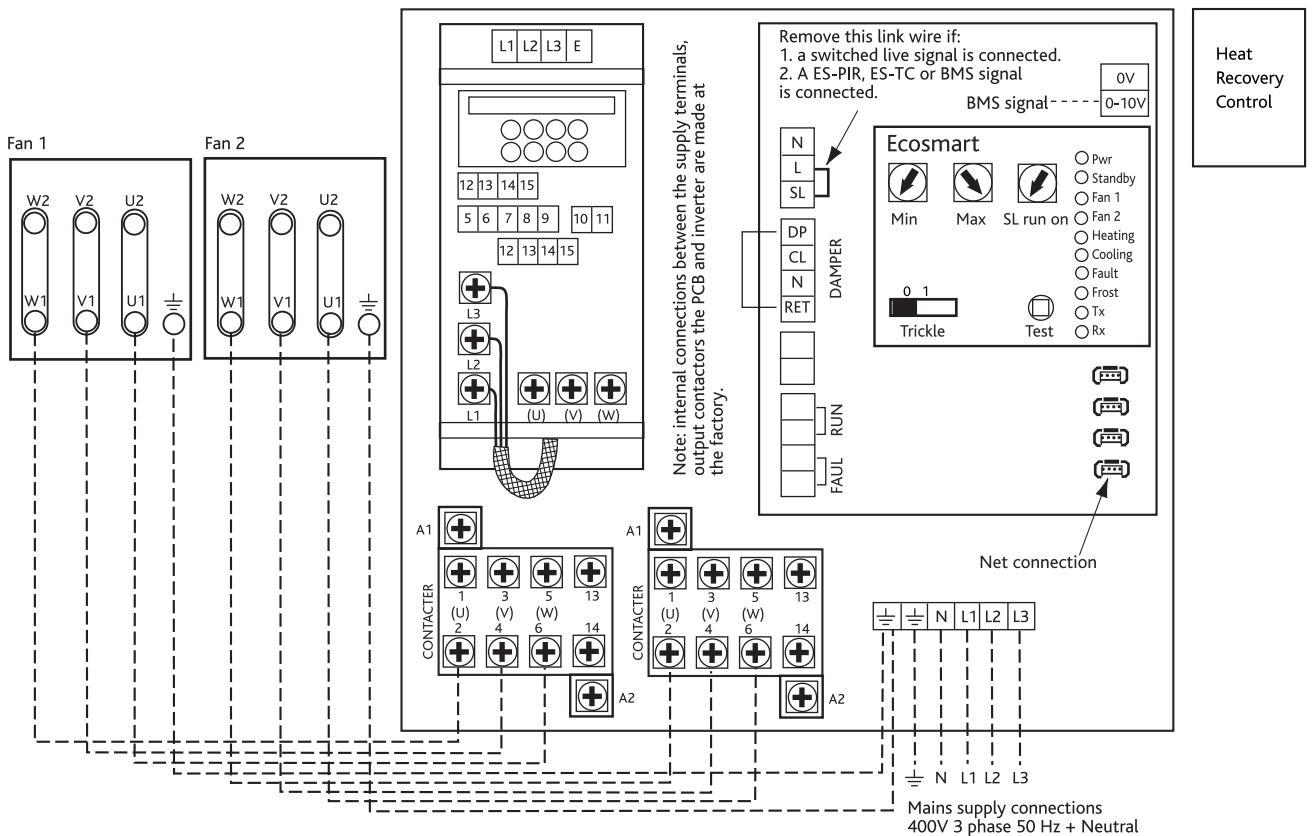
WIRING FOR UNITS WITH ECOSMART CONTROL - T4, 5 & 6 TWB R4, 5 & 6 RAC 'N' (NO HEATER) EXTRACT

Nuaires Ecosmart Heating Controller

(not included with this range) may be suitable for control of third party valve actuators. Contact Nuair for details.



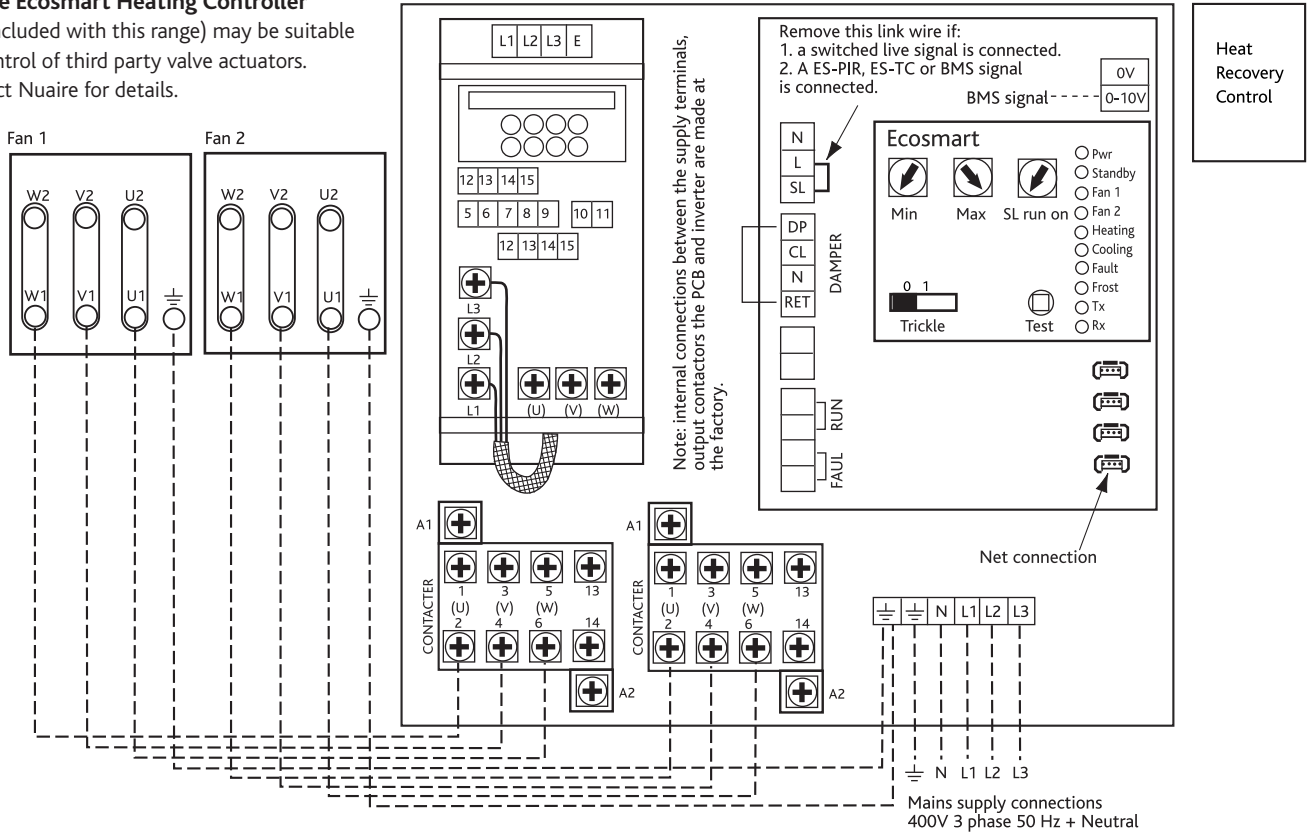
WIRING FOR UNITS WITH ECOSMART CONTROL - T4, 5 & 6 TWB R4, 5 & 6 RAC 'N' (NO HEATER) SUPPLY



WIRING FOR UNITS WITH ECOSMART CONTROL - T4, 5 & 6 TWB R4, 5 AND 6 RAC 'L' (LPHW) EXTRACT

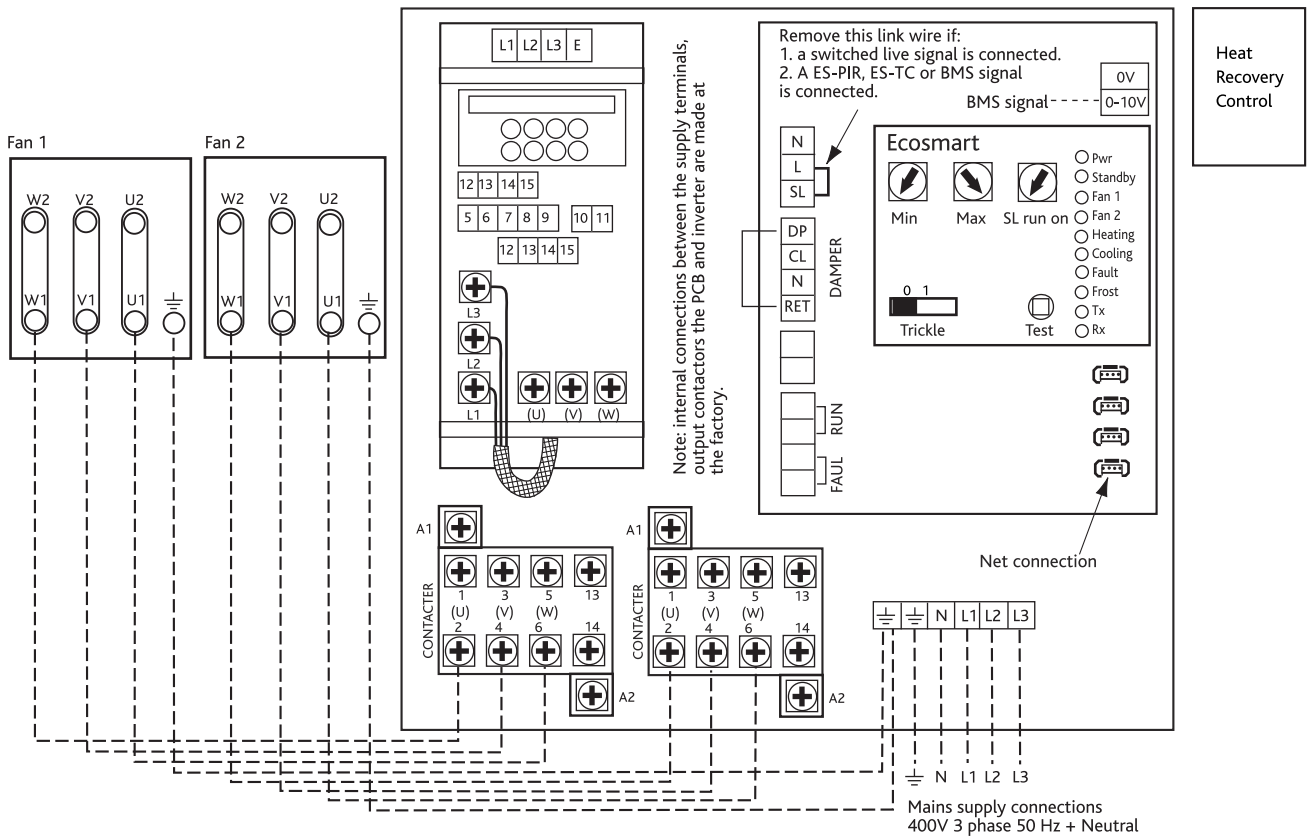
Nuair Ecosmart Heating Controller

(not included with this range) may be suitable for control of third party valve actuators. Contact Nuair for details.



Heat Recovery Control

WIRING FOR UNITS WITH ECOSMART CONTROL - T4, 5 & 6 TWB R4, 5 AND 6 RAC 'L' (LPHW) SUPPLY



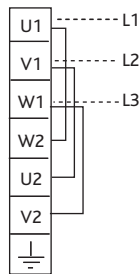
Heat Recovery Control

WIRING FOR UNITS WITHOUT ECOSMART CONTROL

T4NC, T5NC & T6NC TWB - 3 PHASE AND R4NC, 5NC & 6NC RAC - 3 PHASE

THREE PHASE

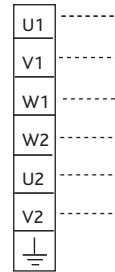
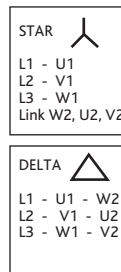
3 phase for DOL STARTING
(4kW and above)



400V 3 phase 50Hz supply

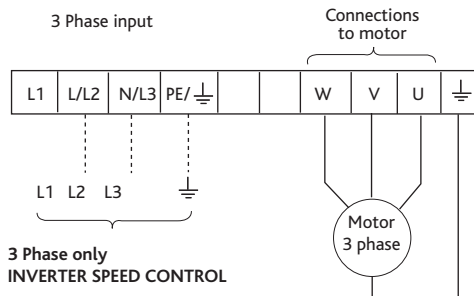
3 phase for connection to a
STAR /DELTA STARTER (4kW and above)

Note:
For all D.O.L. (Direct On Line)
operation or Inverter type Speed Control
wire in DELTA



400V 3 phase 50Hz supply

* Matched Frequency Inverter



3 Phase only
INVERTER SPEED CONTROL

Notes:
Total length of motor leads should not exceed 50 metres.
If a screened motor cable is used, maximum length should
be 25 metres. Consult our Technical Department if you
wish to use longer leads.
Inverters are configured to suit specific fans and control
applications as described on the Customer Order
free of charge.

400V 3 phase 50Hz supply

* Note: by special order. Refers only to Inverters supplied by Nuaire.
Each standard unit uses two motors for both supply and extract operation. (4 in total)

CONSULTANTS SPECIFICATION

XBOXER THERMAL WHEEL & RUN AROUND COIL

OPERATION

The supply and extract ventilation unit shall be as indicated on the drawings and shall be in accordance with the particular fan schedule in the specification. Supply air to the room shall be pre-heated by the extract air via the integrated thermal wheel or run around coil.

Where fitted an integrated heater battery shall raise the temperature of the supply air to the design room temperature after the air has passed through the thermal wheel or run around coil.

The Ecosmart ventilation unit shall automatically vary the ventilation rate, as it receives signals from one of the optional interconnected sensors.

When signals are received, the fan shall either vary its speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via inbuilt minimum and maximum speed adjustment, the fans themselves shall have infinitely variable speed control.

RANGE TYPE - THERMAL WHEEL UNIT

The vertically stacked unit shall be manufactured from aluzinc corrosion resistant steel, with 25mm double skinned infill panels and extruded aluminium frame giving extremely low noise levels. The unit shall include the following items:- Thermal wheel, supply & extract fans, supply and extract filters, G4 grade bag as standard (upgrade to F7 bag if required) and LPHW heating coil (L model). The unit shall be constructed with removable panels allowing maintenance access from either side. Note: T1, T2 & T3 have chosen side access.

RUN AROUND COIL UNIT

The vertically stacked unit shall be manufactured from aluzinc corrosion resistant steel, with 25mm double skinned infill panels and extruded aluminium frame giving extremely low noise levels. The unit shall include the following items:- Run around coil pair, supply & extract fans, condensate drip tray and 22mm drain connection (alternatively a condensate pump shall be provided if specified), supply and extract filters, G4 grade bag as standard (upgrade to F7 bag if required) and LPHW heating coil (L models).

The unit shall be constructed with removable panels allowing full maintenance access from either side.

CONTROL TYPES - ECOSMART - (OPTIONAL)

The Ecosmart control option provides the facility for energy saving via an intelligent stand-alone AHU function, or for convenient integration with client BMS with a minimal coordination requirement.

The factory fitted control includes:- integral infinitely variable (inverter) speed / duty control for the supply and extract fans, with independent minimum and maximum adjustment for accurate commissioning.

A run on timer and "background" ventilation function and is provided as is unit status indication, run / fail relays, and interface connection for Ecosmart sensors/enablers and system dampers.

The unit heat recovery function is facilitated by a dedicated controller and associated sensors. An output signal is provided to control thermal wheel drive or plate heat exchanger bypass operation (included), For Run Around Coil units, the output signal may be used to control the circulation pump system (by others).

BMS. The Ecosmart control module can additionally be pre-configured to provide the following integrated BMS interfaces.

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-
Switch the unit ON/OFF.
Variable speed / duty control Switch from low speed to high speed - trickle and boost principle.
- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.

Please note Ecosmart is fan only control.

NO CONTROL - (OPTIONAL)

Unit provides side access to direct supply and extract fan motor wiring (terminal boxes) for interface to custom built control panels by others. For this option, no sensors are fitted to the unit, but note that in the case of plate heat exchanger units, the bypass damper actuator is included, and for thermal wheel units, the wheel motor and drive unit is included.

ELECTRIC HEATER BATTERY

The electric heater battery shall be factory fitted and pre-wired to an integral closed loop thyristor control. When the unit is switched off, the fan shall continue to run to dissipate heat from the electric heater battery before stopping.

COIL TYPES - LOW PRESSURE HOT WATER COIL & RUN AROUND COILS (OPTIONAL)

The coil casing shall be formed from heavy gauge galvanised sheet steel to BS 2989 to make a rigid assembly. Tube end plates shall have die formed collared holes to allow expansion and contraction of the tubes without damage.

All coils are pressure tested to 16 bar with dry compressed air under water. Standard or duty specific coils are selected to suit customer requirement using specific computer software to give optimum performance with lowest pressure drop.

The coils shall be factory fitted with drain cocks and air vents.

Standard specification coils have copper tubes and aluminium fins.

Coil connections shall be BSP terminated at the exterior of the unit casing.

T1, T2 & T3 will have push fit connections.

CONSULTANTS SPECIFICATION

XBOXER THERMAL WHEEL & RUN AROUND COIL

COOLING COILS - CHILLED WATER (OPTIONAL)

The coil casing shall be formed from heavy gauge galvanised sheet steel to BS 2989 to make a rigid assembly. Tube end plates shall have die formed collared holes to allow expansion and contraction of the tubes without damage. All coils are pressure tested to 16 bar with dry compressed air under water. Standard or duty specific coils are selected to suit customer requirement using specific computer software to give optimum performance with lowest pressure drop. The chilled water coils shall be factory fitted with drain cocks and air vents.

Standard specification coils shall have copper tubes and aluminium fins, and shall be supplied complete with an insulated condensate tray with drain connection, and moisture eliminator. Coil connections shall be BSP terminated at the exterior of the unit casing. T1, T2 & T3 will have push fit connections.

COOLING COILS – DX COIL (OPTIONAL)

The coil casing shall be formed from heavy gauge galvanised sheet steel to BS 2989 to make a rigid assembly. Tube end plates shall have die formed collared holes to allow expansion and contraction of the tubes without damage. All coils are pressure tested to 16 bar with dry compressed air under water. Standard or duty specific coils are selected to suit customer requirement using specific computer software to give optimum performance with the chosen refrigerant.

The DX coils shall be of twin coil interlaced type unless otherwise stated (c/w two pairs of connections). Standard specification coils shall have copper tubes and aluminium fins, and shall be supplied complete with an insulated condensate tray with drain connection, and moisture eliminator. Coil connections shall be BSP terminated at the exterior of the unit casing.

ANCILLARIES FOR RAC & TWB - ATTENUATORS

Attenuator splitters shall be manufactured from using chemically inert, non-combustible, non-hygroscopic and vermin resistant sound absorbing material, with fibre-retaining facing. Attenuator casing shall be manufactured from aluzinc corrosion resistant steel, with 25mm double skinned infill panels and extruded aluminium frame.

Attenuator shall be tested in accordance with BSI 4718: 1971 ASTM E 477 and shall be suitable for external/internal use.

CODE FOR ATTENUATORS

SIL-TR-1 (to fit thermal wheel unit).
 SIL-TR-2 (to fit thermal wheel unit).
 SIL-TR-3 (to fit thermal wheel unit).
 SIL-TR-4 (to fit both thermal wheel and run around coil unit).
 SIL-TR-5 (to fit both thermal wheel and run around coil unit).
 SIL-TR-6 (to fit both thermal wheel and run around coil unit).

MOTORISED DAMPERS

Motorised damper shall be of opposed blade type and come complete with quick fit flanges as standard. Damper is 240V open/shut type designed for efficient back draft protection.

CODE FOR DAMPERS

MD-TR1 (to fit size 1-TWB**)
 MD-TR2 (to fit size 2-TWB**)
 MD-TR3 (to fit size 3-TWB**)
 MD-TR4 (to fit size 4-TWB/RAC**)
 MD-TR5 (to fit size 5-TWB/RAC**)
 MD-TR6 (to fit size 6-TWB/RAC**)

Note: above are suitable for both Thermal wheel and run around coil ranges.

WEATHER KIT

Manufactured from Aluzinc the weather proof enclosure is designed for Nuaire thermal wheel and run around coil ranges. Kit's can be factory fitted or installed on site. Note: enclosure does not provide frost protection.

XBOXER THERMAL WHEEL & RUN AROUND COIL

CODE (FOR THERMAL WHEEL MODELS)

T1-TWB-L L 2 WP
 T2-TWB-R L 2 WP
 T3-TWB-L N WP
 T1-TWB-R N WP
 T2-TWB-L E WP
 T3-TWB-R E WP

T4-TWB-L*WP
 T5-TWB-L*WP
 T6-TWB-L*WP
 T4-TWB-NWP
 T5-TWB-NWP
 T6-TWB-NWP

CODE (FOR RUN AROUND COIL MODELS)

R4-RAC-L*WP
 R5-RAC-L*WP
 R6-RAC-L*WP
 R4-RAC-NWP
 R5-RAC-NWP
 R6-RAC-NWP

* Denotes handing, 'L' = left, 'R' = right.

Models with Ecosmart control will have a 5 year warranty.

Models with no control will have a 2 year warranty.

For further details contact Nuaire.

Note: Thermal wheels have specific maintenance requirements, contact Nuaire for details.