ASSET DATA DICTIONARY DEFINITION DOCUMENT (AD4)
L75282 – VENTILATION SYSTEM HEAT EXCHANGER

Learning Legacy Document

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5.0	27-Aug-2015	[redacted]	[redacted]	[redacted]	Labelling Section Updated
6.0	17-Feb-2016	[redacted]	[redacted]	[redacted]	Class name change Attributes added Attributes renamed Class description update
7.0	07-Apr-2016	[redacted]	[redacted]	[redacted]	Attributes renamed

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1 Introduction

1.1 Asset Details

Class Code:	L75282
Class Name:	Ventilation System Heat Exchanger
Class Lineage:	Construction Products>Services>Climate control plant and equipment (HVAC)>Transformation and conversion of energy>Heat exchangers>Cooling Coil

1.2 Description

A ventilation system heat exchanger transfers heat (or coolth) from an airstream in one system to an airstream in a separate system; this allows for heat transfer (or coolth transfer) without mixture of the two airstreams (i.e. air extract and air supply).

The two most common ways of achieving heat transfer between two airstreams is by using an air to air plate heat exchanger (a 'static plate' heat exchanger and a 'thermal wheel' heat exchanger), or an 'air to water to air' heat exchanger (a run around coil).

A Cooling coil refers to a coiled arrangement of pipe or tubing for the transfer of heat between two fluids. The primary coolant will be chilled water or a refrigerant. The secondary fluid will be air.

Cooling Coils should only be identified as assets when they are stand along items and do not form part of a commercial unit.

1.3 Related Functions

All information on the configuration of asset classes (L-Class) to functions is contained within the latest revision of the Asset Data Dictionary Master Configuration document (eB ref: CRL1-XRL-Z3-ADDSD-CR001-50186)

2 Asset Tag Identification Rules

Assets will be identified as required by the Asset Identification Standard (CRL1-XRL-O6-STD-CR001-00031) in the following format:

<LCS Code>-<Function Code>-<Incremental number to ensure uniqueness>

e.g. CR076-BAF-12345

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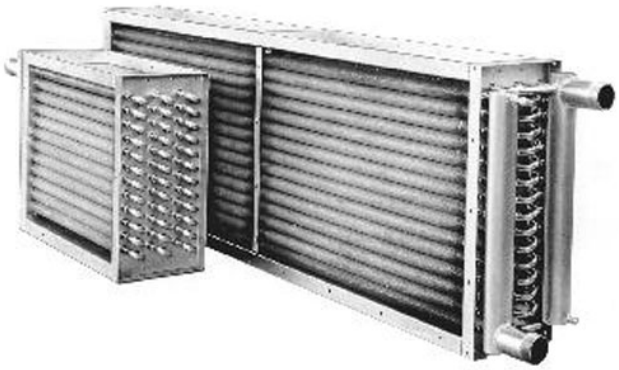
Information and guidance on the standard naming convention for all asset classes is contained within the latest revision of the Asset Naming Convention Document (eB ref: CRL1-XR1-Z3-ADDSD-CR001-50413).

2.1 Example Images



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3 Attributes

3.1 Generic Attributes

All Classes of assets will have a set of Generic Attributes for which data is collected without exception. Full details relating to these assets can be found at:

AD4 – Generic Attributes CRL1-XRL-Z3-ADDSD-CR001-50069

3.2 Class Specific Attributes

Below is a table of the further specific attributes which are associated with this asset class.

Attribute Name	Base Unit or Formula	Value Type (See Below)	Decimal Places (nu Only)	Defined Values List (pd only)	Description
Core/Matrix Material		PD		Aluminium Copper Stainless Steel	Material of exchanger matrix / core
Depth (Metres)	Metres	NU	2		Dimension from front to back of heat exchanger as you face the front of the unit
Exchanger Efficiency (Percentage)	Percentage	NU	0		Heat exchanger efficiency i.e requirement for the cool medium to take on 60% of the heat from the hot medium.
Heat Exchanger Type		PD		Plate Thermal Wheel Run Around Coil Matrix/Core	Type of Heat Exchanger
Height (Metres)	Metres	NU	2		Vertical dimension of heat exchanger as you face the front of the unit
Length (Metres)	Metres	NU	2		Horizontal Length of heat exchanger as you face the front of the unit
Primary Medium		PD		Air Water	Type of heated medium

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Attribute Name	Base Unit or Formula	Value Type (See Below)	Decimal Places (nu Only)	Defined Values List (pd only)	Description
Primary Medium Flow rate (Cubic Metres/Sec)	Cubic Metres/Sec	NU	2		Flow rate of primary medium
Primary Medium Pressure Drop / Resistance (Pa)	Pa	NU	2		Flow resistance / pressure drop of primary medium
Secondary Medium		PD		Air Water	Type of secondary heated medium
Secondary Medium Flow rate (Cubic Metres/Sec)	Cubic Metres/Sec	NU	2		Flow rate of Secondary medium
Secondary Medium Pressure Drop / Resistance (Pa)	Pa	NU	2		Flow resistance / pressure drop of Secondary medium
Weight (Kilograms)	Kilograms	NU	2		The weight of the core section
Coil Type		PD		Direct expansion - R410a Direct expansion - R407c Water	Does the coil use direct expansion or water
Connection Height (Millimetres)	Millimetres	NU	0		The clear height for instance of the connecting duct through which the secondary fluid flows.
Connection Length (Millimetres)	Millimetres	NU	0		The length of the unit between the connection for instance between flanges of ducts with end.
Connection Width (Millimetres)	Millimetres	NU	0		The clear width for instance of the connecting duct through which the secondary fluid flows
Mounting		CH			A description of the mounting
Primary Fluid Design off-coil temperature (Degrees Celsius)	Degrees Celsius	NU	2		The design temperature of the primary fluid leaving the coil
Primary Fluid Design on-coil temperature (Degrees Celsius)	Degrees Celsius	NU	2		The design temperature of the primary fluid entering the coil

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Attribute Name	**Base Unit or Formula**	**Value Type** (See Below)	**Decimal Places** (nu Only)	**Defined Values List** (pd only)	**Description**
Secondary Fluid Design off-coil temperature (Degrees Celsius)	Degrees Celsius	NU	2		The design temperature of the secondary fluid leaving the coil
Secondary Fluid Design on-coil temperature (Degrees Celsius)	Degrees Celsius	NU	2		The design temperature of the secondary fluid entering the coil
Total Cooling Duty (kW)	kW	NU	2		The maximum duty that the coil is designed for
Total Cooling Load (kW)	kW	NU	2		The maximum sensible load that the coil is designed for

pd = Predefined List (Listed Values Only)
nu = Numeric (dp and number format can be stipulated)
ch = Free text (Max 255 Characters)
da = Date (dd-mm-yyyy)
me = Memo (Free text 1GB Limit)

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4 Performance Data

This section is to be used to specify the performance data to be gathered from this Class of asset when in operation. To be populated once the performance measures have been agreed with the Infrastructure Managers.

5 Labelling

Information and guidance on the standard labelling convention for all asset classes is contained within the latest revision of the Asset Naming and Labelling Convention Document (eB ref: CRL1-XR1-Z3-ADDSD-CR001-50413).

6 Other Information

Not Applicable

7 Reference Material

- Asset Data Dictionary Master Configuration - CRL1-XRL-Z3-ADDSD-CR001-50186
- Asset Identification Standard - CRL1-XRL-O6-STD-CR001-00031
- AD4 – Generic Attributes - CRL1-XRL-Z3-ADDSD-CR001-50069
- Asset Naming Convention Document - CRL1-XR1-Z3-ADDSD-CR001-50413

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8 Crossrail Technical Approvals

Name	Role	Date
[redacted]	Lead Mechanical & Electrical Plant (MEP) Engineer	19-Sep-2014

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