

Jornada IX AFAR: 21-03-19: "HORIZONTE 2020"

Situación Actual y Evolución Sector C&R

Respuesta Tecnológica

SOLUCION 1: EEV Package

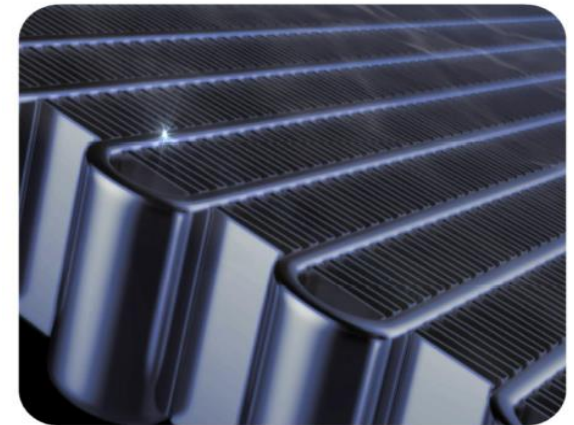
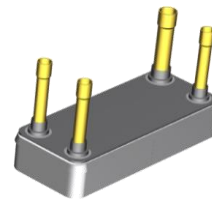
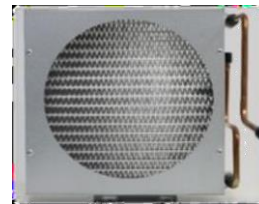
EEV Controller SEC 60

EEV: LPF model

Pressure & Temp Sensors



SOLUCION 2: MCHE Heat Exchanger



SOLUCION 1: EEV Package

EEV Controller SEC 60

EEV: LPF model

Pressure & Temp Sensors



March 2019

Overview

The SEC60 is

- An easy unipolar valves controller
- Controlling the superheat in the evaporator
- Mainly for residential applications (mini chillers, heat pumps), small capacity units, or food retails application (cabinets)
- Already a released product

Associated with EEV and Sensors, this controller is an alternative to Thermostatic Expansion Valves

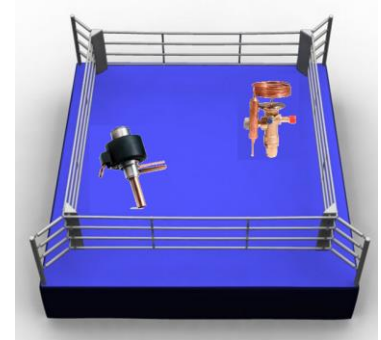


EEV Controller – SEC60



EEV vs TXV

- Wide capacity range for the same model
From 10 to 100%, suitable for variable speed compressors
- One model for different refrigerants
Less products in stock / Ready for F-gas regulation / Suitable for old&new installations
- Very stable superheat (PID algorithm)
Increase the performance during transitory changes / allow to have a constant SH (optimal evaporator filling) whatever the running conditions
- Precise capacity regulation
Increase seasonal performances
- Additional level of system protection
monitoring and remote control



EEV Controller – SEC60



Components overview

Controller



Electronic Expansion Device



Sensors



Pressure transmitters
Ratio (YCQB) or Current (YCQC)

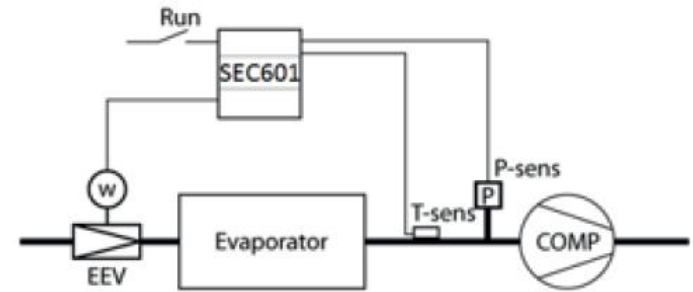
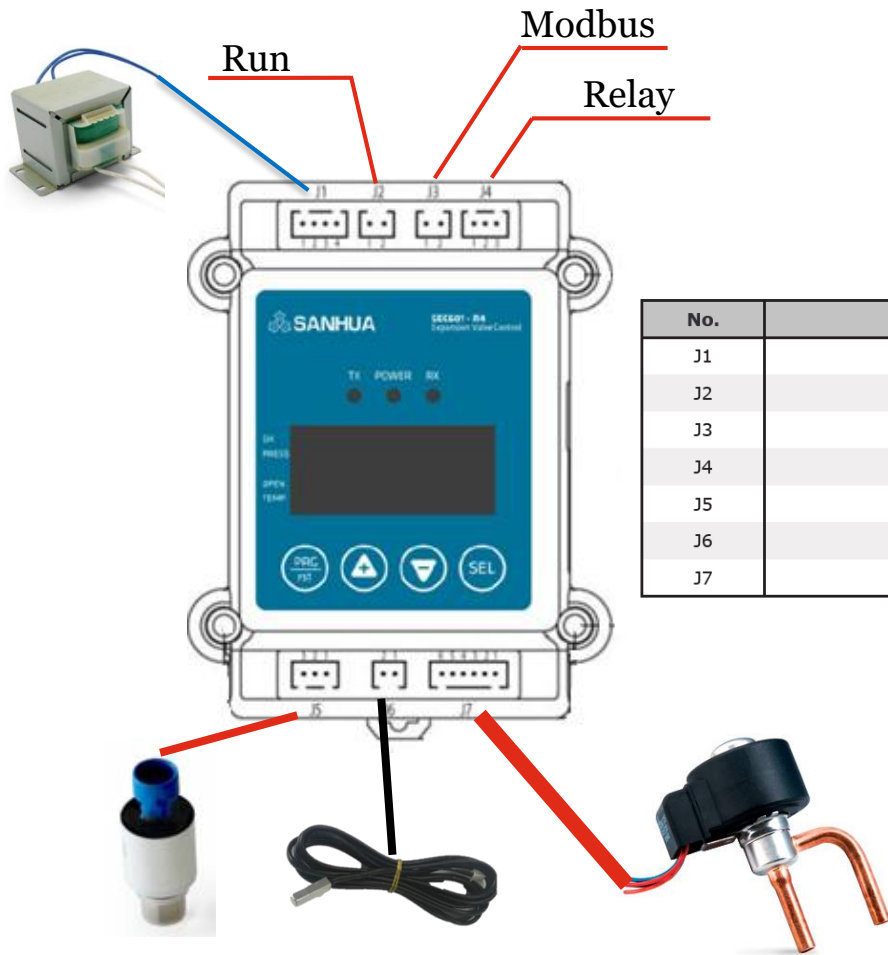


Temperature sensor
NTC 5K

EEV Controller – SEC60



Connections



No.	Function	Description
J1	AC/DC 24V	Power input port (AC/DC 24V)
J2	RUN	RUN signal input port
J3	RS485	RS485 comm. Input/output port
J4	AUX-RLY	Auxiliary relay output port
J5	P-SENS	Pressure sensor input port
J6	T-SENS	Temperature sensor input port
J7	EEV	EEV output port

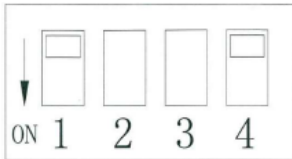
EEV Controller – SEC60



Operation mode

Superheat Control

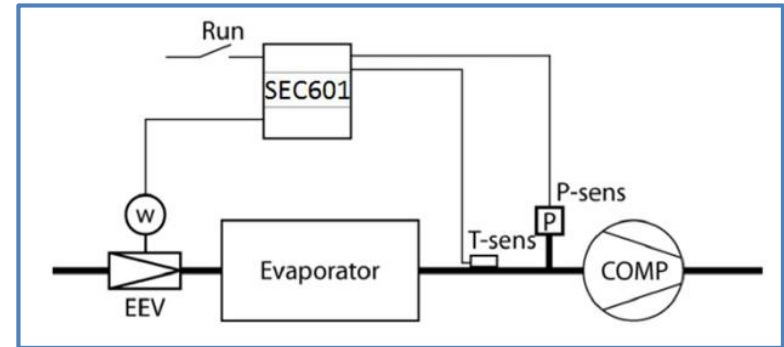
The controller is stand alone and control the SH via the input from Pressure & Temp sensors, the algorithm and the setting point



DIP SW1: OFF, DIP SW4: OFF

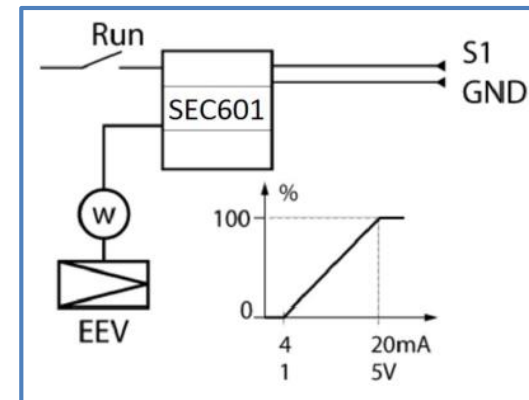
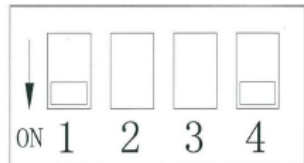
-Superheat control

-Automatic or use RS485



Drive function

The controller can be used as a driver. The customer can control the OD% with an analog signal on J5-2/3 (0-10V or 4-20mA) or with the Modbus



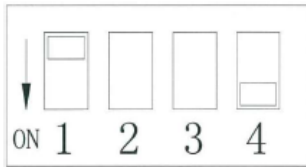
EEV Controller – SEC60



Operation mode

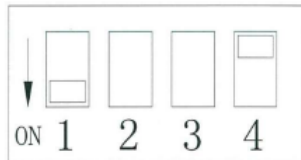
Temperature Control

The controller is stand alone and control the SH via the input from Pressure & Temp sensors, the algorithm and the setting point

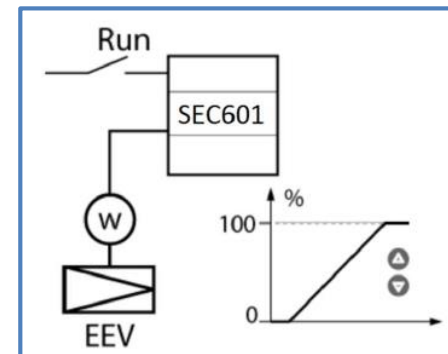
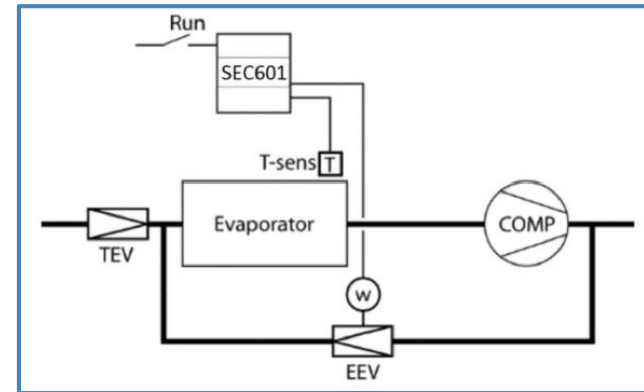


Manual Mode

The user can control manually the OD% via the up/down buttons



Nota : the manual mode can be done via the Modbus



Major Features of SEC60

PID regulation

MOP function

Forced opening during startup

Manual control

Hot gas bypass function

Pump down function

Alarm with delay or not

24VAC or 24DC

Ratiometric/Current pressure transmitter

Display or not

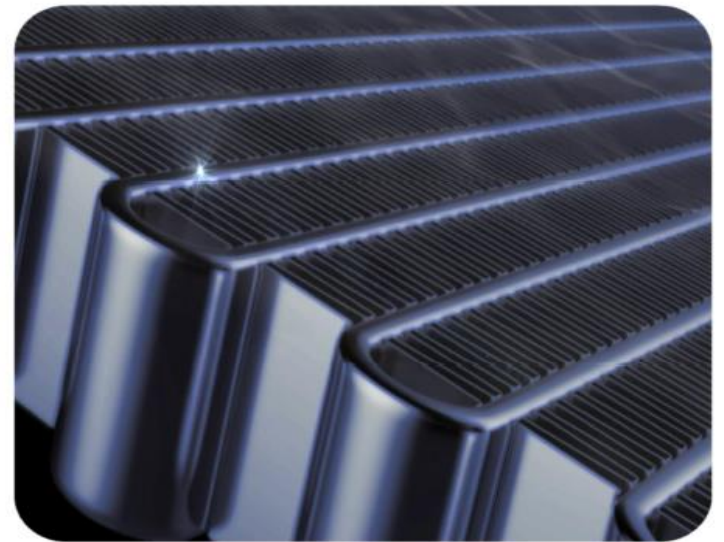
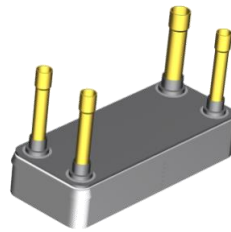
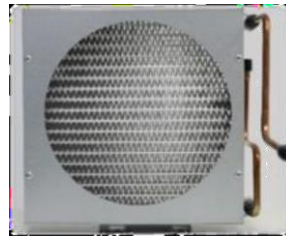
Fast connections

Modbus via RS485 port

Added Value to customers

Sanhua SEC-60 + EEV	Customers value
Multi refrigerants	Stock reduction
Optimized superheat control	Energy savings
Wider capacity range	Improve part load for variable speed units
Precision of flow control	Compressor protection
High Quality	Long and reliable operation
High MOPD	Broader application range
Quick cables	Time saving

SOLUCION 2: MCHE Heat Exchanger



MCHE – Key Benefits



Dado que las tendencias en gases refrigerantes son:

- Gases Bajo GWP: A2L, HFO, etc..
- Gases “Naturales”: CO2, NH3, Hidrocarburos (bajo GWP)
- **Reducción de carga de refrigerante** en la instalación. (precio elevado y tasa ecológica en refrigerantes con alto GWP).
- **Reducción de la potencia frigorífica** por equipamiento. (Normativa F-Gas).

Tenemos una tecnología a nuestro alcance que engloba y conecta varias de estas tendencias:

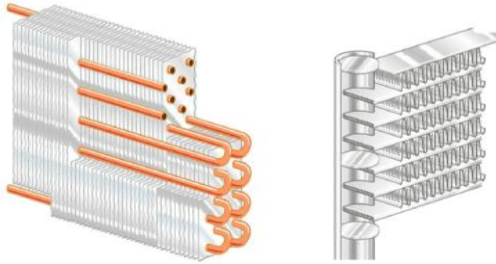
Intercambiadores de Calor por Microcanal (MCHE)



MCHE – Key Benefits



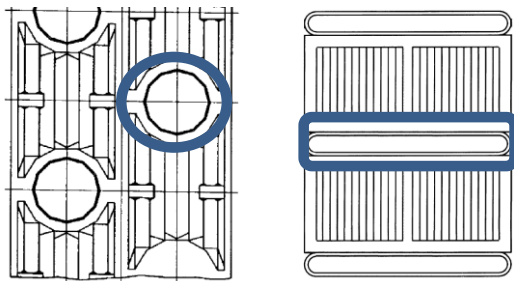
SANHUA MCHE: TECHNICAL SALES ARGUMENTS



1. En base a unas mismas dimensiones, las baterías MCHE tienen un **coeficiente de transferencia térmica más alto** en comparación con las baterías de aletas y tubos.



2. Un **mayor coeficiente de transferencia térmica interno**: las lamas o tubos de aluminio proporcionan mayor velocidad al refrigerante y una mayor turbulencia, además de tener una superficie interna mayor.



3. Un **mayor coeficiente de transferencia térmica externo**: la superficie en general de los tubos, en contacto con el aire, es mucho mayor en las baterías MCHE que en las baterías de tubo y aletas.

MCHE – Key Benefits



SANHUA MCHE: TECHNICAL SALES ARGUMENTS

- Comparando baterías con la misma capacidad frigorífica (mismo COP/SEER), la batería MCHE tiene una sensible **reducción de dimensiones** respecto a la de aleta y tubos.

VRF Systems: Coil Reduction in Height

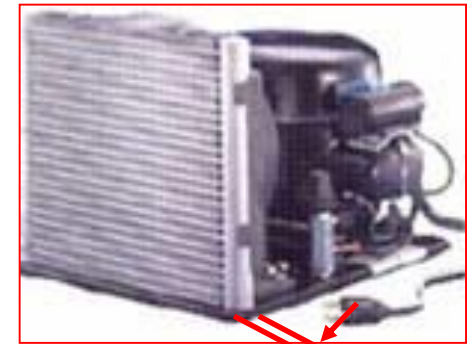
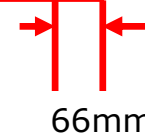


T&F



MCHE

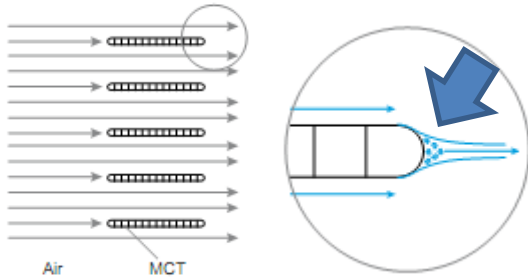
MOTOCONDENSER Units: Coil Reduction in Depth



MCHE – Key Benefits



SANHUA MCHE: TECHNICAL SALES ARGUMENTS

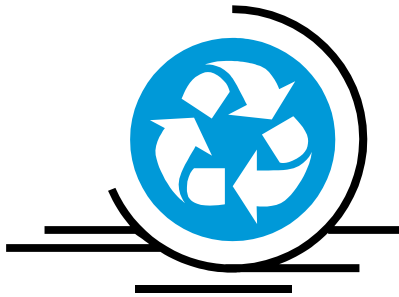


5. Comparando baterías con la misma capacidad frigorífica, la de MCHE tiene **Menor Pérdida de Carga en el lado de Aire**. No hay régimen turbulento, en las lamas/tubos.

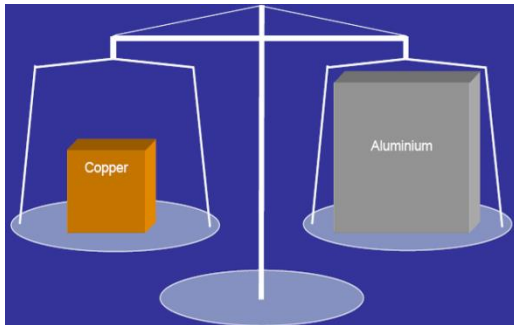
5. Comparando baterías con la misma capacidad frigorífica, la de MCHE tiene un volumen interno menor. La principal ventaja es una reducción de la carga total de refrigerante.

MCHE – Key Benefits

SANHUA MCHE: TECHNICAL SALES ARGUMENTS



7. Las baterías MCHE (tubos, colectores y aletas) están hechas 100% de Aluminio y pueden **ser recicladas con facilidad**.

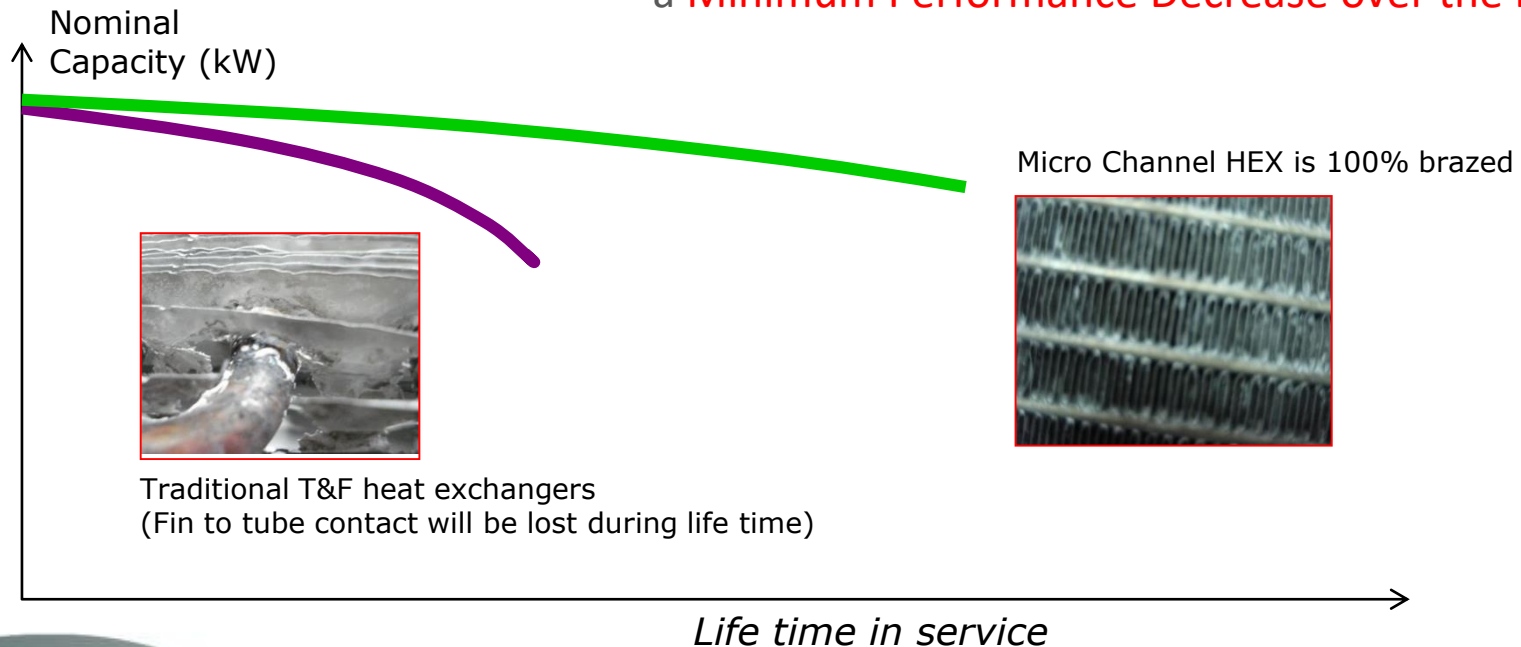


8. Las baterías MCHE tienen un **menor peso**, y pueden ser manejadas y **transportadas con facilidad** (costes logísticos menores).

MCHE – Key Benefits

SANHUA MCHE: TECHNICAL SALES ARGUMENTS

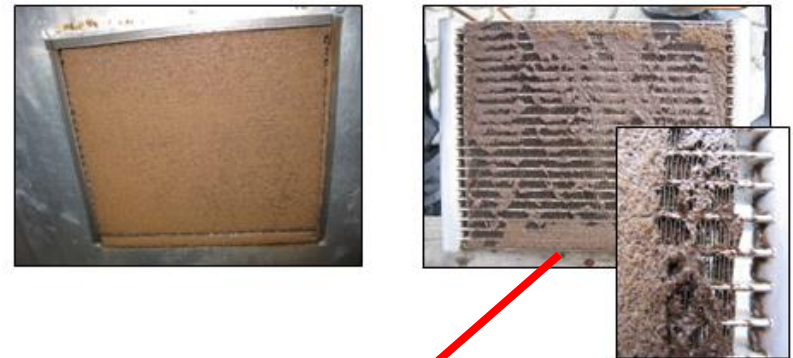
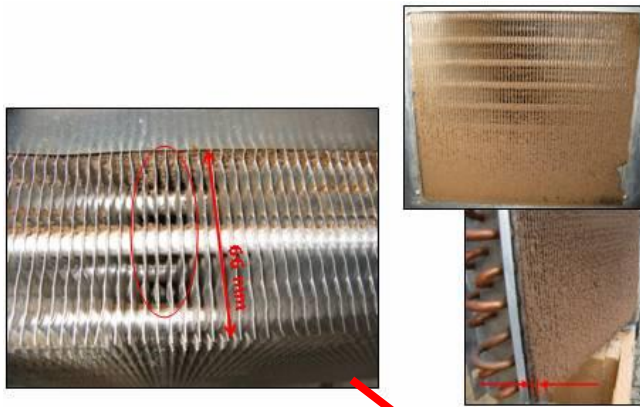
10. MCHE coils are made in 100% aluminum, there is no presence of copper like in F&T coils. For this reason there is **no risk of Galvanic Corrosion**.
11. No corrosion on the Aluminum fins guarantees only a **Minimum Performance Decrease over the life time**



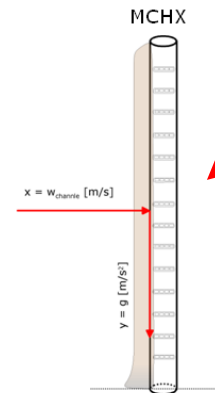
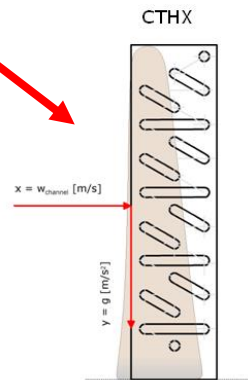
MCHE – Key Benefits

SANHUA MCHE: TECHNICAL SALES ARGUMENTS

12. MCHE coils assures a **better reliability over dust threat** in comparison to similar F&T coils



In F&T coils Difficult to remove dirt without damaging fins



In MCHE coils Dirt accumulates only on front surface & can be removed easily without damaging fins

MCHE – Product Range



Sanhua MCHC: Condensers – Applications



VRV Systems



Split Units



Roof Top



Chillers



Transport refrigeration



Bus Air Conditioning



Commercial retail Refrigeration

