

CONNECTING
EXPERTS.

CHILLVENTA eSPECIAL

Refrigeration | AC & Ventilation | Heat Pumps

13.–15.10.2020

NÜRNBERG MESSE



SANHUA Electronic Expansion Valve Controller Kit

Simple & affordable solution for CO₂ and TXV replacement for A2L/A3 refrigerants



Presenter

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SANHUA International

SANHUA HOLDING GROUP OVERVIEW

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Headquarter location
Hangzhou, Zhejiang, China

Established in
1984

Employees Year 2019
23.000 employees

Total turnover Year 2019
3.93 Billion USD

SANHUA HOLDING GROUP OVERVIEW

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15

Production Bases

China, India, Mexico, U.S, Poland, Turkey

37

Sales Companies

Globally

4000+

Patents

23,000

Employees

Globally



SANHUA EUROPE OVERVIEW

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Established in 2008, HQ in Madrid

Local Commercial Teams:

Iberia	Poland
Nordic	Russia
France & Benelux	Eastern Europe
Italy	Turkey
DACH	Middle East

Global Portfolio Management

Technical Portfolio Managers all over Europe



SANHUA EUROPE OVERVIEW

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eSPECIAL

Sanhua's strengths

Expertise in HVAC system and components.

Industry leading process technology and quality control.

Strong R&D both in HVAC&R and Automobile HVAC.

Sustainable Growth.

Added Value to Customers

Better technical partner for your engineers.

Optimized component designs.

Cost effective system solutions.

Local support with global footprint.

Safety stock.



The graphic features a Sanhua refrigeration truck on the left and a map of Europe on the right. The truck has 'SANHUA' written on its side. The map shows a central point in Poland labeled 'Tychy, POLAND' with lines radiating to various European locations. The text 'GLOBAL FOOTPRINT & LOCAL SUPPORT' is overlaid on the truck. Below the map, it says 'EMEA CENTRAL WAREHOUSE' and 'LOCATION: TYCHY (POLAND)'. At the bottom left, a small text block reads: 'Global producer of high-quality refrigeration components and leading supplier in HVAC/R industries since 1984'.

GLOBAL FOOTPRINT &
**LOCAL
SUPPORT**

Tychy, POLAND

**EMEA CENTRAL
WAREHOUSE**

• LOCATION: TYCHY (POLAND)

*Global producer of high-quality
refrigeration components and
leading supplier in HVAC/R
industries since 1984*

SANHUA EUROPE DISTRIBUTION OVERVIEW

CHILLVENTA
eSPECIAL



SANHUA products are delivered in Europe by over 40 wholesalers with over 400 active sales points...



... including very strong partners in DACH region.

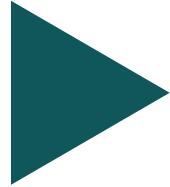
FISCHER
KÄLTEKLIMA

Frigotechnik

SCHIESSL

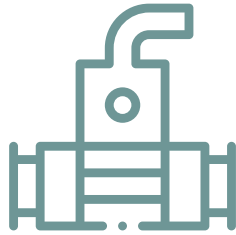
Expansion device technology evolution in HVACR business

CHILLVENTA
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Expansion device technology evolution in HVACR business

CHILVENTA
eSPECIAL



Air Conditioners & Chillers

Heat Pumps

Refrigeration



20%



80%



30%



70%



80%



20%



What is slowing down EEV revolution in refrigeration?

Two Main Reasons



Too Small Quantities
= High Costs of EEV Solutions



Difficult selection, installation
and startup

How to reach cost level that will speed up EEV revolution in refrigeration?

CHILLVENTA
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SANHUA is No.1 in EEV market share globally



35 Years of experience in EEV production/development



Most advanced and fully automatized production



More than 40.000.000 pcs. shipped every year



Global EEV leader in automotive, heat pump and AC applications



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SEK KIT

Simple and still highly efficient!

SANHUA ELECTRONIC Kit

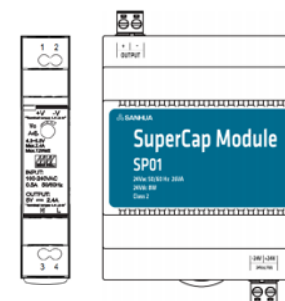


YCQC – current pressure sensor
4-20mA; -1 to 12bar, shielded cable
with Packard connector

NTC2A – temperature sensor
New design, fast and precise

LPF – stepper valve + coil
500 steps, new zero internal
leakage design, coil and cable
included

SEC-612 – superheat controller
Advanced PID algorithm, RS485
MODBUS communication



Optional accesories

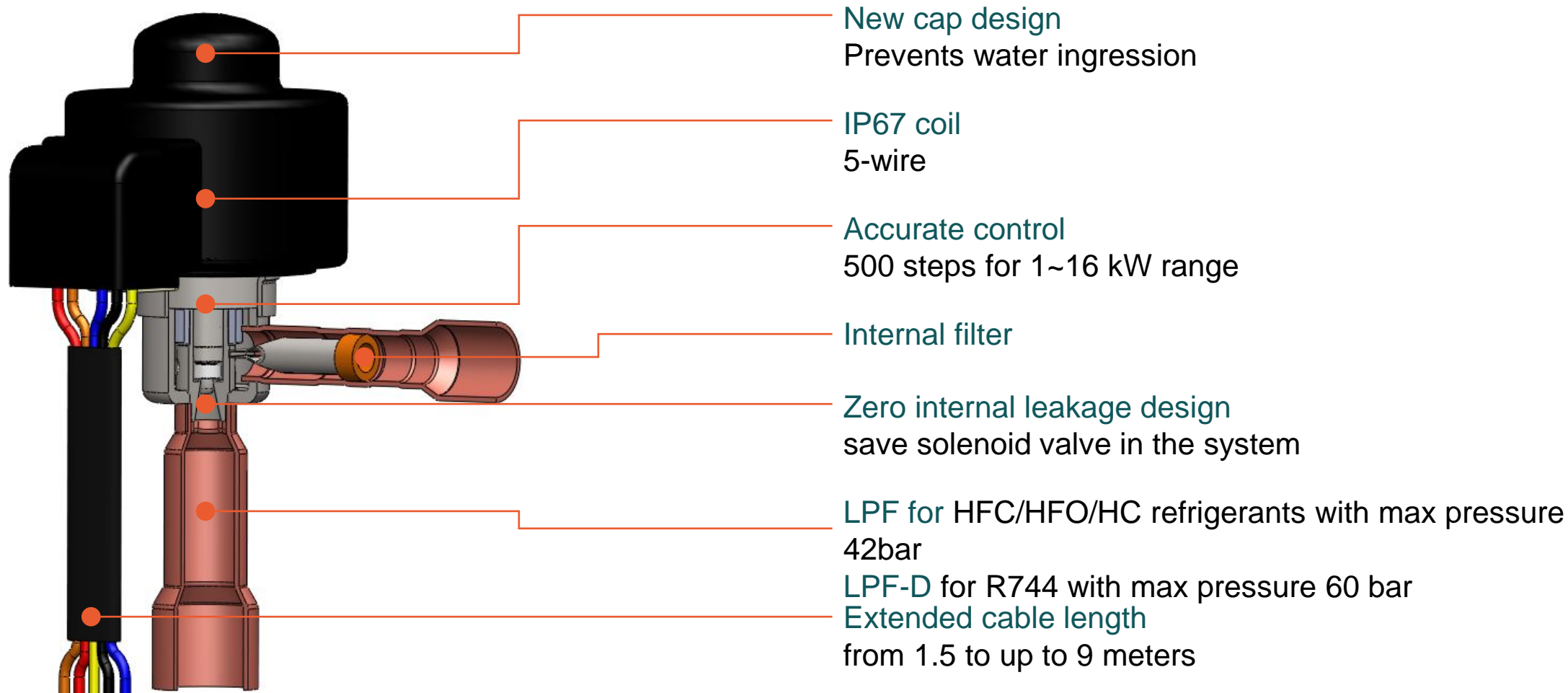
- SP01 - Ultracapacitor SuperCap Module
- TM01/TM02 – DIN Transformer
24V/230V
- MDE Remote Display/Copy Key

Other available options

- LPF-D valve for 60bar CO₂ applications
- DPF-R valve for 140bar CO₂ applications
- DPF valve for AC/HP applications
(including R32)
- Wide range of YCQB/YCQC sensos
- Personalized customizations
for OEM customers

LPF

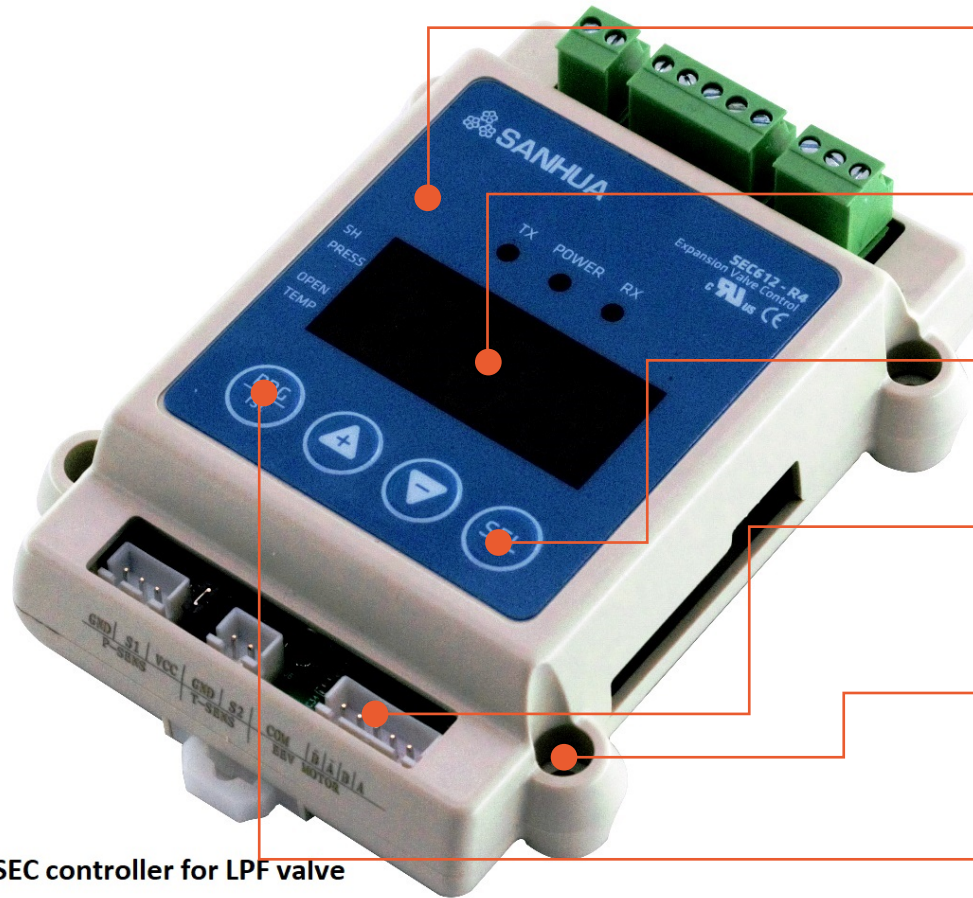
Unipolar stepper valve



SEC-61x

Superheat controller

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SEC controller for LPF valve

Advanced PID algorithm
Ensures accurate automatic adjust of superheat.

Simple and visible display
Easy programming

26 refrigerants
Including A2L, R290 and CO2

Unique connectors
Screw wires without any mistake

Small size
DIN rail or screw mounting options

Pre-defined standard settings
Just choose refrigerant type!

Sanhua Electronic Kit Simple Selection



SELECT
THE RIGHT
PRODUCT



Model	Part Number	Valve Connection	Common products	Valve type
SEK10-01	10142000102	3/8" – 1/2"	SEC612-R4 -> Controller YCQC02L18 -> Pressure Transmitter YCQC02-013022 -> Packard Cable NTC2A1 -> Probe PQ-M24012-000008 -> EEV coil	LPF10-002
SEK14-01	10142000302			LPF14-002
SEK18-01	10142000502			LPF18-002
SEK24-01	10142000702			LPF 24-002
SEK10-02	10142000202	10 -12 mm		LPF10-003
SEK14-02	10142000402			LPF14-003
SEK18-02	10142000602			

File

Options

Language

Help

Back

Copy

Conditions

Refrigerant

Condensing Temperature

Evaporating Temperature

R410A

40 °C

-10 °C

Cooling Capacity

5 kW

Superheat

7 K

Subcooling

5 K

Discharge Temperature

70.71 °C

Upstream line pressure drop

0.2 bar

Downstream line pressure drop

0 bar

Search

Model select the position: Liquid Line

Choose the Product Series (LPP10)

Ratio	Series	Max. Capacity(kW)	Min. Capacity(kW)	Load	Discharge(bar)	PS(MMPa)	Max. QPO(bar)	MOOP(bar)	MOOP(bar)	Max. Step	Message
1.0	LPP10	5.0	0	100%	17.1	42	28	21	638		
0.8	LPP10	4.0	0	100%	17.1	42	28	21	638		
0.6	LPP10	3.0	0	100%	17.1	42	28	21	638		
0.4	LPP10	2.0	0	100%	17.1	42	28	21	638		
0.2	LPP10	1.0	0	100%	17.1	42	28	21	638		

Product Family: LPP

Choose the Product Model

Ratio	Series	Model	Connection Type	Inlet S	Outlet S	Velocity(m/s)
1.0	LPP10	LPP10-002	Subco	3/8	1/2	0.30
0.8	LPP10	LPP10-003	Subco	1/2	3/8	0.30
0.6	LPP10	LPP10-004	Subco	3/8	1/2	0.30
0.4	LPP10	LPP10-005	Subco	1/2	3/8	0.30

Valve Model	Evap Temp. (°C)	Max cooling capacity [kW]				
		Cond. Temp. @ 45°C, MHEK, SEC-2K				
LPP10	-30	R404A	R449A	R452A	R513A	R455A
	-30	3.0	4.3	3.2	2.8	4.0
	-20	3.1	4.4	3.3	2.9	4.2
	-10	3.2	4.5	3.4	3.0	4.3
	0	3.2	4.5	3.4	3.0	4.3
LPP14	-30	3.1	4.3	3.3	2.9	4.2
	-20	5.7	8.2	6.0	5.3	7.7
	-20	6.0	8.4	6.2	5.6	7.9
	-10	6.1	8.5	6.4	5.7	8.1
	0	6.1	8.4	6.4	5.7	8.2
LPP18	-30	5.9	8.2	6.3	5.5	8.0
	-30	7.9	11.4	8.3	7.4	10.6
	-20	8.2	11.6	8.6	7.7	11.0
	-10	8.4	11.8	8.8	7.9	11.2
	0	8.4	11.7	8.9	7.9	11.3
LPP24	-30	8.1	11.3	8.7	7.7	11.1
	-30	10.8	15.5	11.3	10.1	14.5
	-20	11.3	15.9	11.8	10.5	15.0
	-10	11.5	16.1	12.1	10.8	15.3
	0	11.5	16.0	12.1	10.8	15.4
	10	11.1	15.5	11.9	10.5	15.2

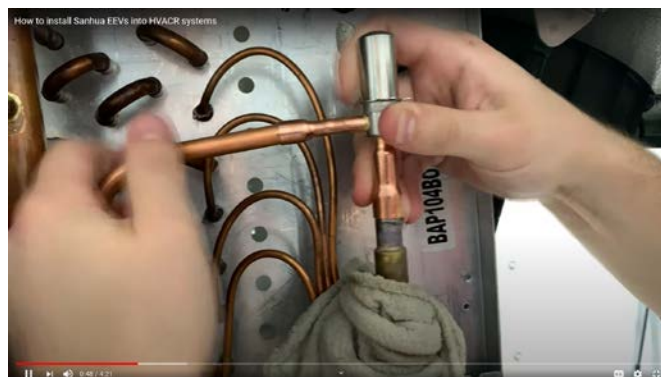
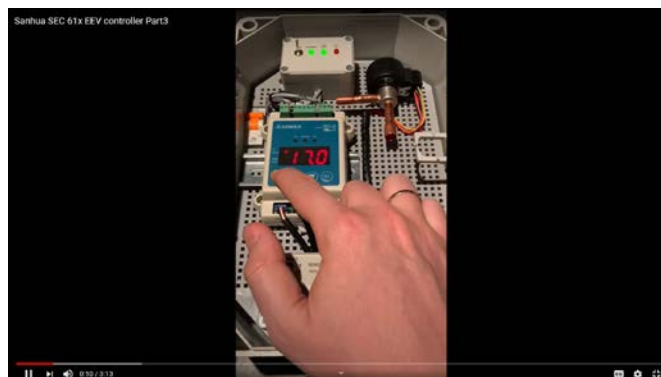
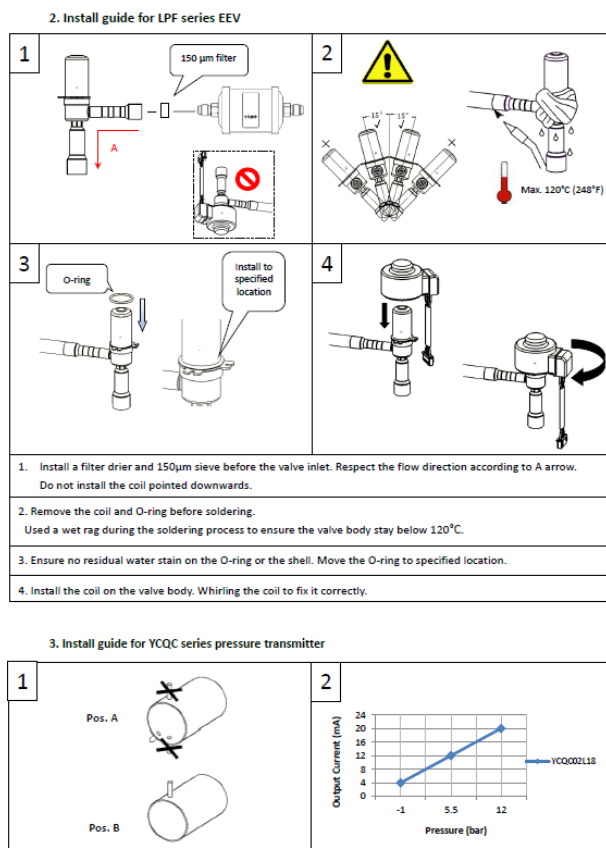
Sanhua Electronic Kit Simple Installation

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New manual, based on graphics

Installation and programming tutorials

Special „training boxes”





Sanhua Electronic Kit

Simple Startup

SEC controller is delivered with default pre-settings able to run installation immediately.



Only one parameter that must be set by installer is refrigerant type. Superheat setpoint is set to 6K.

Refrigerant setting is in **2.P.r** menu, use   to find the parameter **rFy**

Add.	Code	Description	Default
40062	rFy	Refrigerant	0(R22)

Select your refrigerant value in the refrigerants list below :

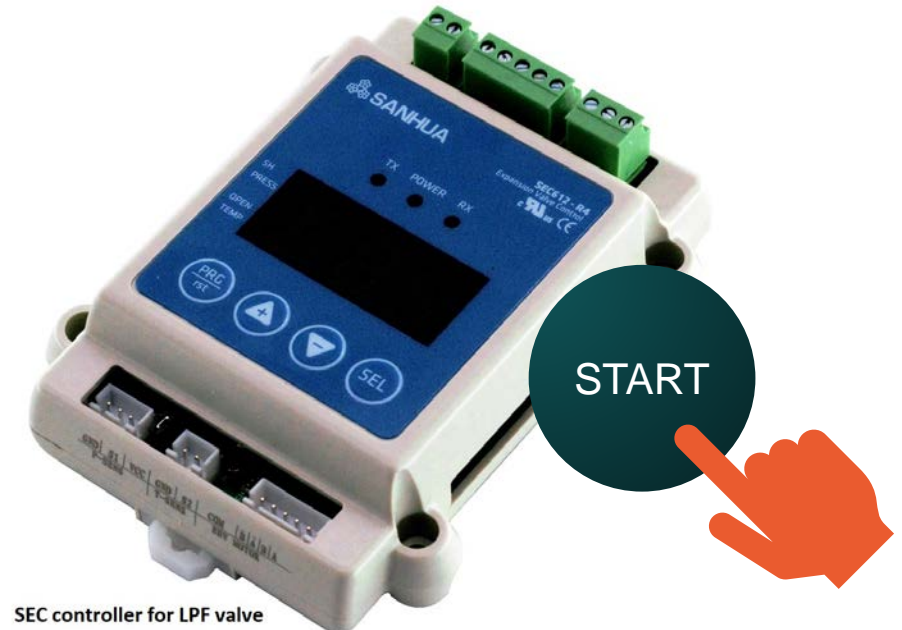
0	R22	7	R1234YF	14	R744(CO2)	21	R124
1	R404A	8	R290	15	R744(N2O)	22	R717
2	R410A	9	R450A	16	R32	23	R407H
3	R134A	10	R513A	17	R245FA	24	R454C
4	R407C	11	R448A	18	R23	25	R455A
5	R507	12	R449A	19	R407A		
6	R1234ZE	13	R452A	20	R407F		

Target superheat is in **1.P.r**, use   to find the parameter **SH** and your wished value.

Add.	Code	Description	Default
40001	SH	Target superheat	6

Trained installers can use advanced settings like:

- Valve pre-positioning (to avoid low pressure cutoff)
- MOP function (to protect compressor)
- Manual control
- PID parameters
- etc.



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and startup

SEK KIT Applications

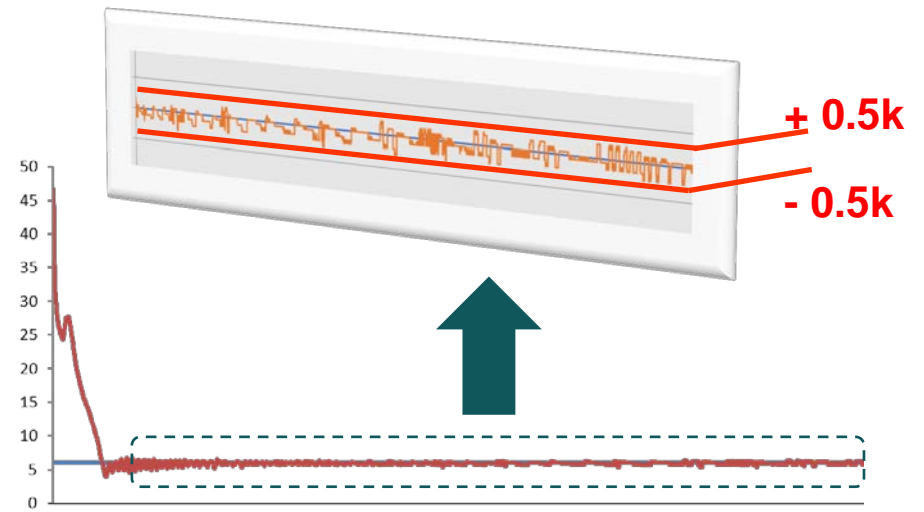
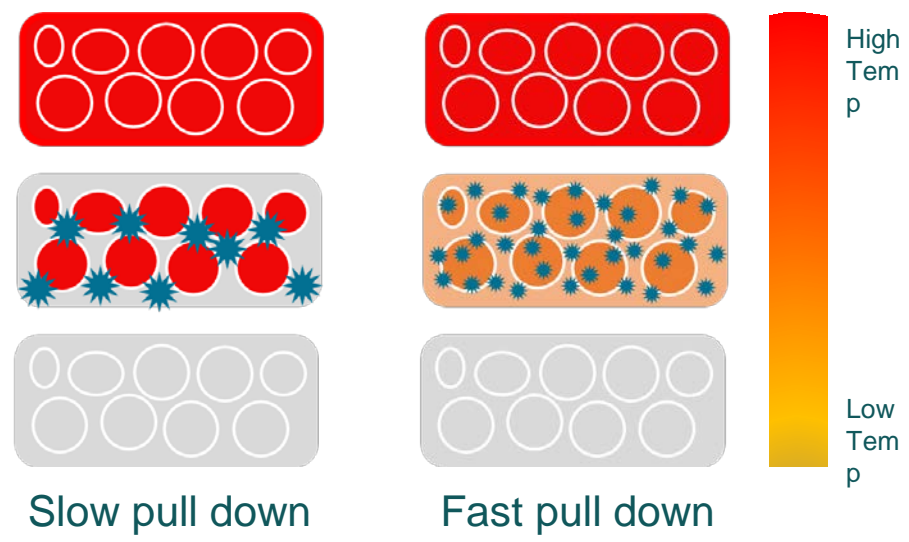
Where is made to be!



Cold Rooms & Food Storage

Precise
Superheat
Control

+40%
Faster
temperature
pull down time



Service & Distribution

CHILLVENTA
eSPECIAL

25 refrigerants to choose

Including A2L/A3 solutions like R455A, R454C, R1234yf, R290 and other....



Different orifices

MOP, refrigerants, LBP versions....



One KIT to rule them all!!








(*) For CO₂ applications dedicated valve (LPF-D (60bar) or DPF-R (140bar) and dedicated pressure sensor (YCQ) need to be selected.

Food retail

CHILLVENTA
eSPECIAL

Sustainable and green solution

-  Perfect solution for plug-in and remote systems
-  Essential for inverter compressors
-  Many advantages vs. TXV with new A2L refrigerants like R455A / R454C / R1234ze
 - Fully sealed valve body
 - Fast reaction for better control of high refrigerant glide
-  Ready to work with new 500g R290 units
-  With LPF-D valve and dedicated YCQ sensor – competitive solution for 60bar CO₂ units.



What more you can get from SANHUA @ Chillventa eSpecial



THE WORLD GREEN TECH
REVOLUTION
OF HVACR SEGMENT



SANHUA HVAC-R offer

CHILLVENTA
eSPECIAL

SANHUA

Go green with SANHUA A2L EEV



Join our presentations
on German:

13h – SANHUA Solutions
for Refrigeration

15h – SANHUA Solutions
for Heat Pumps
Manufacturers



TXV
REPLACEABLE ORIFFICE



TXV
FIXED ORIFFICE



BALL VALVE



SOLENOID
VALVE



SOLENOID
VALVE



SOLENOID VALVE FOR
REFRIGERATOR



SIGHT GLASS



FILTER DRIER



REPLACE
CORE FILTER



COOPER
FILTER DRIER



EEV
CONTROLLER



STEP MOTOR
EEV



REVERSING
VALVE



PRESSURE
SWITCH



PLATE HEAT
EXCHANGER



MCHE



CHECK VALVE



CHARGE VALVE



ANGLE VALVE



SERVICE VALVE



BAR STOCK
VALVE



RECEIVER
VALVE



PRESURE
SENSOR



DRAIN PUMP



PRESSURE
VESSELS



STAINLESS STEEL
ASSEMBLY



ROTARY
COMPRESSOR



INVERTED
CONTROLLER

Thank you for your attention.

**CONNECTING
EXPERTS.**

