

# Build Your Heat Pump with **SANHUA**



## Regulations and Rules for R290 HP-Components

All the electromechanical valves present in the Sanhua R290 Product Line Series ensure a protection against the electric shock respecting the appropriate mounting described in the installation manual. Each electronic driven valve and coil respect, the prescription of the EU Directive 2014-35-EU (Low Voltage Directive). An additional third part certification

Regulations and Rules related to heatpump components						
Standard Global	IEC60335-2-40	ISO60730-1/ -2		ISO5149-1, -2,-3,-4	ISO14903-2017	
Standard Europe	EN60335-2-40	EN60730-1/ -2	EN 60079-0, -1,-7,-11, -14,-15.	EN378-1,-2, -3,-5 :2016	EN14903-2017	EN 21922:2022 (NEW) EN 12284-2004 (OLD)
Scope	Particular Requirements for factory made air conditioners, heatpumps and dehumidifiers	Requirments for automatic electrical controls and sensing elements for household and similar use.	General requirements on parts for explosive atmospheres	Commercial and industrial refrigeration, air condition and heatpump units - safety and environmental requirements.	Refrigerating systems and heat pumps - Qualification of tightness of components and joints	Refrigerating systems and heat pumps - Valves - Requirements, testing and marking
Related components to the Regulations						
4 Way Valves SHF / SQ coil	X	X	X	X	X	X
Elec. Expansion Valve DPF / PQ coil	X	X	X	X	X	X
Elec. Expansion Valve DBF / PQ coil	X	X	X	X	X	X
Solenoid Valves MDF-Dxxx / MQ coil	X	X	X	X	X	X
Solenoid Valves MDF / HQ coil	X	X	X	X	X	X
Pressure Switch MPS	X	X	X	X	X	
Pressure Sensor YCQB	X	X	X	X	X	
Pressure Sensor YCQC	X	X	X	X	X	
Float Switch YKG	X	X	X	X	X	
Variable Speed Drive SD	X	X	X	X	X	
Check Valve CCV	X			X	X	X
Check Valve YCVS	X			X	X	X
Filter Drier DTG	X			X	X	
Filter Drier STG	X			X	X	
Strainer KGQ	X			X	X	
Accumulator ACM	X			X	X	
Liquid Receiver LRA	X			X	X	
Service Valve FSV	X			X	X	X
Muffler YXQ	X			X	X	
BPHE S40	X			X	X	
BPHE S60	X			X	X	
BPHE S??	X			X	X	

guarantees the respect of the prescriptions indicated in the LVD and in the standards listed below, ensuring a safety usage of the product in systems operating with flammable refrigerants (A2L ref.) and (A3 ref.): EN 60335-2-40; EN 60335-2-40 + A11:2004 + A12:2005 + A1:2006 + A2:2009 + A13:2012 + A13:2012/AC:2013 subclause 22.116 (no electrical component, which could be a

source of ignition in case of normal operation or in the event of a leak); subclause 22.117 (Annex BB).

All products of Sanhua respect the pressure equipment (2014/68/EU) and material safety (2011/65/EU & 2006/1907/EU) directives and can be shown to customer by self-declarations or 3rd party certificates very needed.

							ISO9227
EN 12263	EN 14276-1:2020	2014/30/EU / EN 55014	2014/35/EU	2014/68/EU	2011/65/EU	2006/1907/EU	
Refrigerating systems and heat pumps - Safety switching devices for limiting the pressure - Requirements and tests.	Pressure equipment for refrigeration systems and heat pumps.	Electromagnetic Compatibility	Low voltage directive	Pressure equipment directive	Restriction of hazardous substances directive (RoHS)	Registration, Evaluation, Authorisation and Restriction of Chemicals Directive 2006/1907/EU (REACH).	Corrosion tests in artificial atmospheres -- Salt spray tests
	X		X	X	X	X	X
	X		X	X	X	X	X
	X		X	X	X	X	X
	X		X	X	X	X	X
	X		X	X	X	X	X
X	X	X	X	X	X	X	X
	X		X	X	X	X	X
	X		X	X	X	X	X
		X	X		X	X	X
		X	X		X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X
	X			X	X	X	X

		*ASHRAE HBP (R290) = tc54,5°C/t07,2°C/tliq46,2°C/tsuc35°C					
		Heatpump 5kW (massflow 55kg/h*)		Heatpump 7,5kW (massflow 82kg/h*)		Heatpump 10kW (massflow 110kg/h*)	
		Compressor Displ. ~ 20ccm		Compressors Displ. ~ 30ccm		Compressor Displ. ~ 40ccm	
Group	Components	Type	Detail 1	Type	Detail 1	Type	Detail 1
Flow Regulation	4 Way Valves (AC)	SHF(L)-7H-34-52	SQ-A4722G-000001(230V)	SHF(L)-7H-34-52	SQ-A4722G-000001(230V)	SHF-11H-45D1-52	SQ-A4722G-000001
	4 Way Valves (DC)	SHF(L)-7H-34-52	SQ-D4412G-000001(DC12V)	SHF(L)-7H-34-52	SQ-D4412G-000001(DC12V)	SHF-11H-45D1-52	SQ-D4412G-000001(D-C12V)
	EEV	DPF(TS1)-1.3	PQ-M10012-001002	DPF(TS1)-1.65	PQ-M10012-001002	DPF(TS1)-1.8	PQ-M10012-001002
	Solenoid [HGD] 1	MDF-D03-6H 005	MQ-D03024-00002	MDF-D03-6H 005	MQ-D03024-00002	MDF-D03-6H 005	MQ-D03024-00002
	Solenoid [HGD] 2	MDF6H02	HQ1K11 /HQ1G11	MDF6H02	HQ1K11 /HQ1G11	MDF6H02	HQ1K11 /HQ1G11
Electronics	Pressure Switch [LP]	MPS01AH13	0,3/1,2bar / wire	MPS01AH13	0,3/1,2bar / wire	MPS01AH13	0,3/1,2bar / wire
	Pressure Switch [HP]	MPS02AH29	24/31bar / wire	MPS02AH29	24/31bar / wire	MPS02AH29	24/31bar / wire
	Pressure Sensor [LP] Volt	YCQB01H156	0-8bar/Packard	YCQB01H156	0-8bar/Packard	YCQB01H156	0-8bar/Packard
	Pressure Sensor [HP] Volt	YCQB04H152	0-34bar/Packard	YCQB04H152	0-34bar/Packard	YCQB04H152	0-34bar/Packard
	Pressure Sensor [LP] Amp	YCQC02H03	0-16bar/M16 con	YCQC02H03	0-16bar/M16 con	YCQC02H03	0-16bar/M16 con
	Pressure Sensor [HP] Amp	YCQC04H304	0-34bar/M16 con	YCQC04H304	0-34bar/M16 con	YCQC04H304	0-34bar/M16con
	Floatswitch	YKG-B01010-015	14mm level diff.	YKG-B01010-015	14mm level diff.	YKG-B01010-015	14mm level diff.
	Variable Speed Drive	SD2015A2		SD2015A2		SD2020A2	
	Check valve	CCV10-021		CCV10-021		CCV10-021	
	Check valve	YCVS5-22GSHC-1		YCVS5-22GSHC-1		YCVS8-33GSHC-1	
	Line Components	Filter	DTG-M02030-901	uniflow	DTG-M02030-901	uniflow	DTG-M02030-901
Filter		STG-B05030-901	biflow	STG-B05030-901	biflow	STG-B05030-901	biflow
Strainer		KGQ-W11000-176	uniflow	KGQ-W11000-176	uniflow	KGQ-W11000-176	uniflow
Accumulator [Monoblock]*		ACM-P00076-555	1,5ltr	ACM-P00076-555	1,5ltr	ACM-P00076-555	1,5ltr
Accumulator [Split Unit]*		ACM-P00101-586	2,1ltr	ACM-P00101-586	2,1ltr	ACM-P00101-586	2,1ltr
Receiver [Monoblock]*		LRA-D00076-001	0,5ltr	LRA-D00076-001	0,5ltr	LRA-D00076-001	0,5ltr
Receiver [Split Unit]*		LRA-B04076-901	1,2ltr	LRA-B04076-901	1,2ltr	LRA-B04076-901	1,2ltr
Service valves (Liquid)		FSV-A2GVL-2	1/4" solder	FSV-A2GVL-2	1/4" solder	FSV-A2GVL-2	1/4" solder
Service valves (Gas)		FSV-JA4GVL-2	1/2" solder	FSV-JA4GVL-2	1/2" solder	FSV-JA4GVL-2	1/2" solder
Muffler		XYQ-C80040-003	9,66mm solder	XYQ-C80050-002	12,85mm solder	XYQ-C80050-002	12,85mm solder
Heatexchangers		BPHX Evaporator S40A	S40AH-22HZ	Tin14.7°C/Tout 9.7°C	S40AH-32HZ	Tin14.7°C/Tout 9.7°C	S40AH-44HZ
	S40AH-12HZ		Tin15.7°C/Tout 10.7°C	S40AH-16HZ	Tin15.7°C/Tout 10.7°C	S40AH-22HZ	Tin15.7°C/Tout 10.7°C
	BPHX Evaporator S60B	S60BH-12HZ	Tin14.7°C/Tout 9.7°C	S60BH-18HZ	Tin14.7°C/Tout 9.7°C	S60BH-24HZ	Tin14.7°C/Tout 9.7°C
		S60BH-8HZ	Tin15.7°C/Tout 10.7°C	S60BH-12HZ	Tin15.7°C/Tout 10.7°C	S60BH-16HZ	Tin15.7°C/Tout 10.7°C
	BPHX Condenser S40A	S40AH-22HZ	Tin48.5°C/Tout 53.5°C	S40AH-32HZ	Tin48.5°C/Tout 53.5°C	S40AH-44HZ	Tin48.5°C/Tout 53.5°C
		S40AH-16HZ	Tin47.5°C/Tout 52.5°C	S40AH-24HZ	Tin47.5°C/Tout 52.5°C	S40AH-30HZ	Tin47.5°C/Tout 52.5°C
		S40AH-12HZ	Tin46.5°C/Tout 51.5°C	S40AH-18HZ	Tin46.5°C/Tout 51.5°C	S40AH-24HZ	Tin46.5°C/Tout 51.5°C
	BPHX Condenser S60B	S60BH-16HZ	Tin48.5°C/Tout 53.5°C	S60BH-24HZ	Tin48.5°C/Tout 53.5°C	S60BH-32HZ	Tin48.5°C/Tout 53.5°C
		S60BH-10HZ	Tin47.5°C/Tout 52.5°C	S60BH-16HZ	Tin47.5°C/Tout 52.5°C	S60BH-20HZ	Tin47.5°C/Tout 52.5°C
		S60BH-8HZ	Tin46.5°C/Tout 51.5°C	S60BH-10HZ	Tin46.5°C/Tout 51.5°C	S60BH-14HZ	Tin46.5°C/Tout 51.5°C

The products suggested in above list are general proposals and might not the perfect fit for your application. For detailed support please use the Sanhua selection software or contact your local technical support.

Heatpump 15kW (massflow 170kg/h*)		Heatpump 20kW (massflow 230kg/h*)		Heatpump 30kW (massflow 350kg/h*)		Heatpump 50kW (massflow 580kg/h*)	
Compressor Displ. = 60ccm		depends on technology		depends on technology		depends on technology	
Type	Detail 1	Type	Detail 1	Type	Detail 1	Type	Detail 1
SHF-20D-46-02	SQ-A4722G-000001	SHF-20D-46-02	SQ-A4722G-000001	SHF-35B-47-04	SQ-A4722G-000001	SHF-50A-79	SQ-A4722G-000001
SHF-20D-46-02	SQ-D4412G-000001(D-C12V)	SHF-20D-46-02	SQ-D4412G-000001(DC12V)	SHF-35B-47-04	SQ-D4412G-000001(DC12V)	SHF-50A-79	SQ-D4412G-000001(DC12V)
DPF(TS1)-2.2	PQ-M10012-001002	DPF(TS1)-2.4	PQ-M10012-001002	DPF(TS1)-3.2	PQ-M10012-001002	DBF 04H100	PQ-M10012-001002
MDF-D03-10H 005	MQ-D03024-00002	MDF-D03-15H 005	MQ-D03024-00002	MDF-A03-20H 001	MQ-A03024-00001	MDF-A03-25H003	MQ-A03024-00001
MDF10H02	HQ1K11 /HQ1G11	MDF15H02	HQ1K11 /HQ1G11	MDF20H11	HQ1K11 /HQ1G11	MDF22H11	HQ1K11 /HQ1G11
MPS01AH13	0,3/1,2bar / wire	MPS01AH13	0,3/1,2bar / wire	MPS01AH13	0,3/1,2bar / wire	MPS01AH13	0,3/1,2bar / wire
MPS02AH29	24/31bar / wire	MPS02AH29	24/31bar / wire	MPS02AH29	24/31bar / wire	MPS02AH29	24/31bar / wire
YCQB01H156	0-8bar/Packard	YCQB01H156	0-8bar/Packard	YCQB01H156	0-8bar/Packard	YCQB01H156	0-8bar/Packard
YCQB04H152	0-34bar/Packard	YCQB04H152	0-34bar/Packard	YCQB04H152	0-34bar/Packard	YCQB04H152	0-34bar/Packard
YCQC02H03	0-16bar/M16 con	YCQC02H03	0-16bar/M16 con	YCQC02H03	0-16bar/M16 con	YCQC02H03	0-16bar/M16 con
YCQC04H304	0-34bar/M16con	YCQC04H304	0-34bar/M16con	YCQC04H304	0-34bar/M16con	YCQC04H304	0-34bar/M16con
YKG-B01010-015	14mm level diff.	YKG-B01010-015	14mm level diff.	YKG-B01010-015	14mm level diff.	YKG-B01010-015	14mm level diff.
SD2030B4	plus 3x LE76-0825-XT(Choke)	Coming soon		Coming soon		Coming soon	
CCV10-019		CCV10-019		CCV17-001		CCV17-018	
YCVS8-33GSHC-1		YCVS8-33GSHC-1		YCVS10-44GSHC-1		YCVS13-55GSHC-1	
DTG-M02030-901	uniflow	DTG-M02040-901	uniflow				
STG-B05030-901	biflow	STG-B08040-901	biflow	STG-B08040-901	biflow	STG-B08040-901	biflow
KGQ-W11000-176	uniflow	KGQ-W11000-176	uniflow	KGQ-W11000-112	uniflow	KGQ-W11000-059	uniflow
ACM-P00101-586	2,1ltr	ACM-P00127-616	2,3ltr	ACM-P32127-901	2,9ltr, no PED Cat2	ACM-P32127-901	2,9ltr, no PED Cat2
ACM-P00101-579	2,5ltr	ACM-P32127-901	2,9ltr, no PED Cat2	ACM-P32127-901	2,9ltr, no PED Cat2	ACM-P35127-901	3,4ltr, no PED Cat2
LRA-D00076-002	0,75ltr	LRA-D00076-003	0,9ltr	LRA-B04076-901	1,2ltr	LRA-B04076-901	1,2ltr
LRA-B04076-901	1,2ltr	LRA-B05127-901	2,1ltr	LRA-B05127-901	2,1ltr	LRA-B05127-901	2,1ltr
FSV-A3GVL-2	3/8" solder	FSV-A3GVL-2	3/8" solder	FSV-JA4GVL-2	1/2" solder	FSV-JA4GVL-2	1/2" solder
FSV-JA5GVL-3	5/8" solder	FSV(A)-JA6GVL-1	3/4" solder	FSV(A)-JA6GVL-1	3/4" solder	FSV(A)-JA6GVL-1	3/4" solder
XYQ-C80050-003	16mm solder	XYQ-C80050-003	16mm solder	projected	TBD in project	projected	TBD in project
S40AH-64HZ	Tin14.7°C/Tout 9.7°C	S40AH-86HZ	Tin14.7°C/Tout 9.7°C	N/A	Tin14.7°C/Tout 9.7°C	N/A	Tin14.7°C/Tout 9.7°C
S40AH-32HZ	Tin15.7°C/Tout 10.7°C	S40AH-44HZ	Tin15.7°C/Tout 10.7°C	S40AH-64HZ	Tin15.7°C/Tout 10.7°C	S40AH-106HZ	Tin15.7°C/Tout 10.7°C
S60BH-34HZ	Tin14.7°C/Tout 9.7°C	S60BH-46HZ	Tin14.7°C/Tout 9.7°C	S60BH-68HZ	Tin14.7°C/Tout 9.7°C	S60BH-114HZ	Tin14.7°C/Tout 9.7°C
S60BH-22HZ	Tin15.7°C/Tout 10.7°C	S60BH-30HZ	Tin15.7°C/Tout 10.7°C	S60BH-44HZ	Tin15.7°C/Tout 10.7°C	S60BH-74HZ	Tin15.7°C/Tout 10.7°C
S40AH-64HZ	Tin48.5°C/Tout 53.5°C	S40AH-86HZ	Tin48.5°C/Tout 53.5°C	N/A	Tin48.5°C/Tout 53.5°C	N/A	Tin48.5°C/Tout 53.5°C
S40AH-46HZ	Tin47.5°C/Tout 52.5°C	S40AH-62HZ	Tin47.5°C/Tout 52.5°C	S40AH-92HZ	Tin47.5°C/Tout 52.5°C	N/A	Tin47.5°C/Tout 52.5°C
S40AH-36HZ	Tin46.5°C/Tout 51.5°C	S40AH-48HZ	Tin46.5°C/Tout 51.5°C	S40AH-70HZ	Tin46.5°C/Tout 51.5°C	S40AH-106HZ	Tin46.5°C/Tout 51.5°C
S60BH-48HZ	Tin48.5°C/Tout 53.5°C	S60BH-64HZ	Tin48.5°C/Tout 53.5°C	S60BH-96HZ	Tin48.5°C/Tout 53.5°C	N/A	Tin48.5°C/Tout 53.5°C
S60BH-30HZ	Tin47.5°C/Tout 52.5°C	S60BH-40HZ	Tin47.5°C/Tout 52.5°C	S60BH-60HZ	Tin47.5°C/Tout 52.5°C	S60BH-100HZ	Tin47.5°C/Tout 52.5°C
S60BH-20HZ	Tin46.5°C/Tout 51.5°C	S60BH-28HZ	Tin46.5°C/Tout 51.5°C	S60BH-40HZ	Tin46.5°C/Tout 51.5°C	S60BH-66HZ	Tin46.5°C/Tout 51.5°C

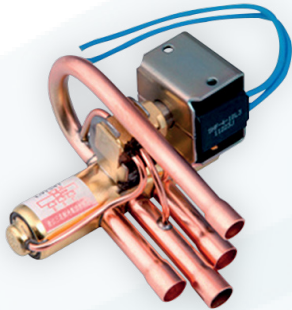
## Table of Content

<i>Application Overview</i>	<i>10</i>
<i>Reversing Valve</i>	<i>16</i>
<i>Electronic Expansion Valve</i>	<i>26</i>
<i>Solenoid Valve</i>	<i>30</i>
<i>Pressure Switch, Pressure Transmitter</i>	<i>34</i>
<i>Float Switch, Inverter</i>	<i>42</i>
<i>Check Valve</i>	<i>48</i>
<i>Filter Drier</i>	<i>54</i>
<i>Strainer</i>	<i>58</i>
<i>Accumulator, Liquid Receiver</i>	<i>10</i>
<i>Service Valve, Muffler</i>	<i>16</i>
<i>Brazed Plate Heat Exchanger</i>	<i>26</i>
<i>Service Valve Muffler</i>	<i>30</i>
<i>Tools for Selection</i>	<i>34</i>

### **SANHUA – Reliable supplier of energy efficient solutions**

Discover cutting-edge heat pump solutions with Sanhua. As a leading innovator in the HVAC industry, Sanhua offers a comprehensive range of advanced technologies designed to revolutionize heat pump performance. From innovative expansion valves to electronic control solutions, Sanhua's offerings are tailored to elevate heat pump efficiency, reliability, and sustainability.

Note: Sanhua accepts no responsibility for any errors that may occur in this catalogue. Sanhua accepts no responsibility for any product selection made from this material, it is the customers sole responsibility to ensure the correct selection of any components.



## Reversing Valve – SHF

Cooling capacity range (R290): 4kW-650kW

Maximum operation pressure: 45bar

Medium Temperature: -30°C/+135°C

Ambient Temperature: -30°C/+50°C

Certificates: PED Art.4.3 , LVD (VDE)

## TECHNICAL PARAMETERS OF 4-WAY-VALVES

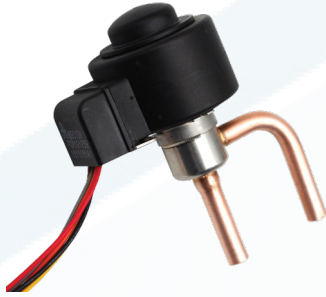
Valve Model	Product Number	Cooling Capacity (Tc=54,4°C,t0=7,2°C, tsuper=5K, tsub=5K)		Connections ODF		OPD	
		R290		ØD	ØE/S/C	Max.	Min.
		ΔP: 0,1 bar	ΔP: 0,2 bar				
		[kW]	[kW]	[inch]	[inch]	[MPa]	[MPa]
SHF(L)-3H-12U-52	10180953202	3,8	5,3	1/4	5/16	4	0,1
SHF(L)-4H-23U-52	10180952502	4	5,7	5/16	3/8	4	0,1
SHF(L)-7H-34U-52	10180952602	7,3	10,3	3/8	1/2	4	0,1
SHF(L)-7H-34-52	10180953302	7,3	10,3	3/8	1/2	4	0,1
SHF(L)-11H-35U-52	10180952402	11,3	16	3/8	5/8	4	0,1
SHF(L)-11H-45D1-52	10180950102	11,3	16	1/2	5/8	4	0,1
SHF-14A-46	10325051402	16,6	23,5	1/2	3/4	4	0,1
SHF-20D-57-02	10325060202	23,9	33,8	5/8	7/8	4	0,1
SHF-35B-47-04	10325058802	37	52,3	1/2	7/8	4	0,1
SHF-50A-79	10325059702	46	65,1	7/8	1,125	4	0,1
SHF(L)-70-810-20	10325049401	71,7	101,3	1	1,25	4	0,15

\* Shown valves in above table are selected types. In case of other needed port size or design check our standard catalogue or contact your local support, please.

## TECHNICAL PARAMETERS OF COIL

Coil Model	Product Number	Connection Type	Cable Length	Power Supply	Rated Voltage
			[mm]	[-]	[V]
SQ-A25 22G-00 0870	10805240702	Lead Wires	1500	AC	220-240
SQ-A25 11A-00 0840	10805240802	Lead Wires	1500	AC	110-120
SQ-A25 024-00 0161	10805023002	Lead Wires	1500	AC	24
SQ-A47 22G-00 0001	10805263402	Spade (Faston) <sup>3)</sup>	-	AC	220-240
SQ-A47 11B-00 0001	10805273302	Spade (Faston) <sup>3)</sup>	-	AC	120
SQ-A47 024-00 0001	10805263302	Spade (Faston) <sup>3)</sup>	-	AC	24

## Electronic Expansion Valve – DPF/DBF



### DPF (TS1) - Valve

Cooling capacity range (R290): 4kW-32kW

Maximum operation pressure: 49bar

Flow direction: bi-directional

IP class: 67

Full Stroke: 500 steps

Medium Temperature: -40°C/+85°C

Ambient Temperature: -30°C/+60°C

Certificates: PED Art. 4.3, LVD (VDE)

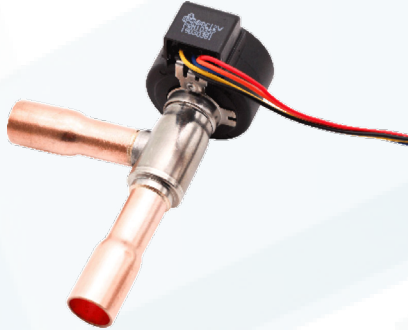
## TECHNICAL PARAMETERS OF EEV

General Characteristics DPF(TS1)						
Valve Model	Part Number <sup>1)</sup>	Design Type	Cooling Capacity @5°C/38°C/5K/5K	Kv	MOPD Direct	MOPD Reverse
			[kW]	[m <sup>3</sup> /h]	[Bar]	[Bar]
DPF(TS1)1.0C-15	10130391602	n	4,2	0,03	35	≥25
DPF(TS1)1.3C-21	10130389302	n	6	0,05		
DPF(TS1)1.65C-36	10130391702	n	10,2	0,08		
DPF(TS1)1.8C-69	10130391802	n	12,1	0,1		
DPF(TS1)2.0C-33	10130392402	n	14,9	0,16		
DPF(TS1)2.2C-24	10130392702	n	16	0,2		
DPF(TS1)2.4C-40	10130392602	n	18,8	0,23		
DPF(TS1)3.0C-29	10130389902	L	31,4	0,39		
DPF(TS1)3.2C-30	10130389502	L	34,4	0,43x		

\* Shown valves in above table are selected types. In case of other needed port size or design check our standard catalogue or contact your local support, please.



## Electronic Expansion Valve – DPF/DBF



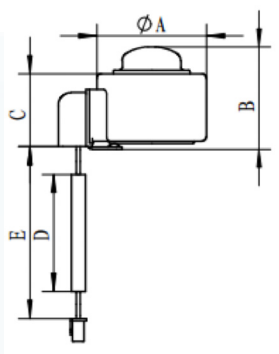
### DBF - Valve

Cooling capacity range (R290): 56kW-105kW  
 Max- operation pressure: 49bar  
 Flow direction: bi-directional  
 IP class: 67  
 Full Stroke: 500 steps  
 Medium Temperature: -30°C/+80°C  
 Ambient Temperature: -30°C/+60°C  
 Certificates: PED Art. 4.3, LVD (VDE)

### TECHNICAL PARAMETERS OF EEV

Valve Model	Part Number <sup>1)</sup>	Design Type	Cooling Capacity @5°C/38°C/5K/5K	Kv	MOP <sup>2)</sup>	MOPD	MOPD
			[kW]	[m <sup>3</sup> /h]	[Bar]	[Bar]	[Bar]
DBF04H100	10132000702	L	56,2	0,5	49	35	35
DBF05H100	10132000602	L	75,2	0,7			
DBF06H100	10132000802	L	87,1	0,9			
DBF07H100	10132000502	L	105,9	1,1			

\* Shown valves in above table are selected types. In case of other needed port size or design check our standard catalogue or contact your local support, please.



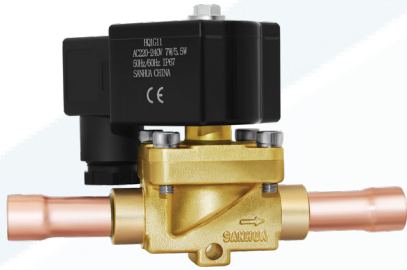
### PQ - Coil

...

### TECHNICAL PARAMETERS OF COILS

Coil Model	Part Number	Cable length	Terminal
		mm	
PQ-M10012-001059	10810138802	700	XHP-5
PQ-M10012-001016	10810134602	1500	XHP-5
PQ-M10012-001002	10810130702	2000	XHP-5
PQ-M10012-001268	10810160602	5000	XHP-5

## Solenoid Valves



### Solenoid Valve – MDF (DC Voltage)

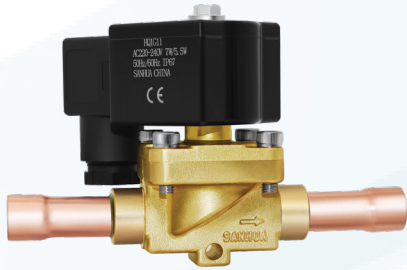
Maximum operation pressure: 45bar  
 Flow direction: uni-directional  
 IP class: 67  
 Normally closed (NC)  
 Medium Temperature: -30°C/+105°C (MDF2H...22H)  
 Ambient Temperature: -30°C/+55°C  
 El. Connection: Coil with DIN-plug  
 Certificates: PED Art. 4.3, LVD (VDE)

## TECHNICAL PARAMETERS OF SOLENOID VALVES

Valve Body	Kv	Max. OPD	Min. OPD	Solder Connection metric		Solder Connection imperial	
	[m <sup>3</sup> /h]	[bar]	[bar]	[mm]	U11	[Inch]	U11
MDF-A03-2H	0,16	31	0	6	10125028502	1/4	10125031102
MDF-A03-3H	0,26	31	0	6	10125028602	1/4	10125031402
MDF-D03-6H	0,8	28	0,05	10	10125028702	3/8	10125020602
MDF-D03-10H	1,9	28	0,05	12	10125020102	1/2	10125020702
MDF-D03-15H	2,3	28	0,05	16	10125020802	5/8	10125020802
MDF-A03-20H	5	31	0,02	22	10125030202	7/8	10125030202
MDF-A03-22H	5,9	31	0,2	28	10125030802	1-1/8	10125030902

## TECHNICAL PARAMETERS OF COIL

Model	U11	Type	Power Supply	Power [W]
MQ-D03012-000002	10820001302	DIN <sup>2)</sup> Plug	12V DC	15
MQ-D03024-000002	10820001002	DIN <sup>2)</sup> Plug	24V DC	15



## Solenoid Valve – MDF (AC Voltage)

Maximum operation pressure: 45bar

Flow direction: uni-directional

IP class: 67

Normally closed (NC)

Medium Temperature: -30°C/+105°C (MDF2H...22H)

Ambient Temperature: -30°C/+55°C

El. Connection: Coil with DIN-plug

Certificates: PED Art. 4.3, LVD (VDE)

## TECHNICAL PARAMETERS OF SOLENOID VALVES

Valve Body	Kv	Max. OPD	Min. OPD	Solder Connection metric		Solder Connection imperial	
	[m <sup>3</sup> /h]	[bar]	[bar]	[mm]	U11	[Inch]	U11
MDF2	0,16	31	0	6	10125028502	1/4	10125031102
MDF3	0,26	31	0,07	6	10125028602	1/4	10125031402
MDF6	0,8	31	0,07	10	10125028702	3/8	10125020602
MDF10	1,9	31	0,05	12	10125020102	1/2	10125020702
MDF15	2,6	31	0,05	16	10125020802	5/8	10125020802
MDF16	3,3	31	0,05	22	10125030202	7/8	10125030202
MDF20	5	31	0,2	28	10125030802	1-1/8	10125030902
MDF22	6	31	0,2	35	10125030402	1-3/8	10125030402

## TECHNICAL PARAMETERS OF COIL

Model	U11	Type	Power Supply	Power [W] [50Hz/ 60Hz]
HQ1G11	10780000402	DIN <sup>2)</sup> Plug	220~240V AC	7/5.5
HQ1D11	10780000602		120V AC	5-Jun
HQ1K11	10780000702		24V AC	5-Jun

## Pressure Switches



### Pressure Switch – MPS

Switch Function: Automatic Reset

El. Connection: Various

IP class: 67

Medium Temperature: -35°C/+135°C

Ambient Temperature: -30°C/+65°C

Certificates: PED Cat. IV, EMC, Cat.IV, LVD (VDE)

### TECHNICAL PARAMETERS OF PRESSURE SWITCH (AUTOMATIC)

Type	Pressure OFF	Tolerance OFF	Pressure ON	Tolerance ON	Port Size	Cable
	[bar]	[bar]	[bar]	[bar]	[mm]	[cm]
MPS1AH03	0,6	+0,25/0	1,8	+0,25/2	6,35	100
MPS2AH29	31	+/-1	24	+/-1,5	6	150
MPS1AH07	0,10	+0.3/0	0,90	+0.3/-0.3	6	100
MPS1AH13	0,20	+0.2/-0.2	1,20	+0.3/-0.3	6	200
MPS1AH05	0,60	+0.25/-0	1,80	0.25/0	6	300
MPS2AH07	26	+0/-1.6	20	0/-2	6	450
MPS2AH22	29	±1	25	±1,5	8	10
MPS2AH13	31,5	+0.7/-1.3	23	+3/-3	6,35	100
MPS2AH01	41,5	0/-1.5	32	+2/-2	6,35	100
MPS2AH08	46	+0.7/-1.3	35	+3/-3	6,35	100

For specific pressure switch types please contact your local Sanhua representative



## Pressure Sensor - YCQ

Maximum operation pressure: Depends on type

IP class: 65/67

Current Consumption (0,5-4,5V): Max. 10mA

Supply Voltage (0-20mA): 10VDC-30VDC

El. Connection: depends on type

Certificates: PED Art. 4.3, LVD (VDE)

## TECHNICAL PARAMETERS OF PRESSURE TRANSMITTER

STANDARD / CUSTOM	Model	Min Pressure (bar)	Max Pressure (bar)	Output signal	Accuracy	Work Temp range (°C)	Mech connection	Electrical connection
Standard	YCQB02H163	0	16	0,5 to 4,5V	±0,8% FS	-30 / 80	Solder 1/4	Molex
Standard	YCQB02H50	0	13,8	0,5 to 4,5V	±2% FS	-30 / 120	Solder 1/4	Packard connector
Standard	YCQB02H63	0	16	0,5 to 4,5V	±0,8% FS	-30 / 120	Solder 1/4	Molex
Standard	YCQB03H06	0	30	0,5 to 4,5V	±0.8% FS	-40 / 120	Solder 1/4	2000mm wires + XHP
Standard	YCQB04H151	0	33	0,5 to 4,5V	±1% FS	-30 / 120	Solder 1/4	Packard connector
Standard	YCQB04H50	0	34,5	0,5 to 4,5V	±2% FS	-30 / 120	Solder 1/4	Packard connector
Standard	YCQB05H11	0	50	0,5 to 4,5V	±2% FS	-40 / 150	Solder 1/4	2000mm wires + XHP
Standard	YCQC01H01	-1	9	4 - 20 mA	±0,8% FS	-40 / 80	Solder 1/4	2000mm wires + XHP
Standard	YCQC06H101	0	60	4 - 20 mA	±1% FS	-40 / 80	Solder 1/4	Packard connector
Standard	YCQC06H102	0	60	4 - 20 mA	±1% FS	-40 / 80	Solder 6mm	Packard connector
Standard	YCQC06H103	0	60	4 - 20 mA	±1% FS	-40 / 80	Solder 1/4	M12 connector
Standard	YCQC06H104	0	60	4 - 20 mA	±1% FS	-40 / 80	Solder 6mm	M12 connector

## Inverters



### Inverter - SD

Compatible for BLDC compressors  
 Voltage = 1Ph,230VAC or 3Ph,400VAC  
 Operation Temperature = -25°C/+65°C  
 Storage Temperature = -40°C/+85°C  
 Wall or Din-Rail mounting  
 Safe Torque Off (STO)  
 Modbus RTU (RS485)  
 Certificates: CE, LVD, EMC, UL

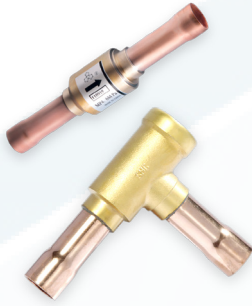
## TECHNICAL PARAMETERS OF INVERTERS

Type	Max. output Current	Model	Cooling Type	SANHUA U11 Code
1PH 2.6KW Inverter IP20	11 A	SD2011A2H2XA000	Horizontal Finned	10501030803
		SD2011A2V2XA000	Vertical Finned	10501031301
		SD2011A2F2XA000	Flat Plate	10501034301
1PH 3.8KW Inverter IP20	15 A	SD2015A2H2XA000	Horizontal Finned	10501030101
		SD2015A2V2XA000	Vertical Finned	10501031401
		SD2015A2F2XA000	Flat Plate	10501034401
1PH 5.0KW Inverter IP20	20 A	SD2020A2H2XA000	Horizontal Finned	10501030201
		SD2020A2V2XA000	Vertical Finned	10501031501
		SD2020A2F2XA000	Flat Plate	10501034101
3PH 3.8KW Inverter IP20	15 A	SD2015B4H2XA000	Horizontal Finned	10501030401
		SD2015B4V2XA000	Vertical Finned	10501031601
		SD2015B4F2XA000	Flat Plate	10501034501
3PH 5.0KW Inverter IP20	20 A	SD2020B4H2XA000	Horizontal Finned	10501030501
		SD2020B4V2XA000	Vertical Finned	10501031701
		SD2020B4F2XA000	Flat Plate	10501034601
3PH 8.0KW Inverter IP20	25 A	SD2025B4H2XA000	Horizontal Finned	10501030601
		SD2025B4V2XA000	Vertical Finned	10501031801
		SD2025B4F2XA000	Flat Plate	10501034701
3PH 11.5KW Inverter IP20	32 A	SD2032B4H2XA000	Horizontal Finned	10501033701
		SD2032B4V2XA000	Vertical Finned	10501033501
		SD2032B4F2XA000	Flat Plate	10501034201

## TECHNICAL PARAMETERS OF CHOKES FOR INVERTER

SD2 drive	Type	Choke Model	SANHUA U11 Code	Dimensions (mm)						Weight [kg]
				A	B	C	D	E	F	
SD2015B4	3PH 3.8KW	LE76-0825-XT	10530500401	64	64	78	76,2	65	5,2	1,5
SD2020B4	3PH 5.0KW	LE105-1325-XTA	10530500501	88	90	105	110	89	6	3,9
SD2025B4	3PH 8.0KW	LE85.8-2503B-XTA	10530500601	64	64	76,2	78	73	4	2
SD2032B4	3PH 11.5KW	R3515	10521007201	79	88	93,2	112,5	73,5	5,8*16	1,86

## Check valves



### Check valves – YCVS / CCV

Forced: by Spring

Maximum operation pressure: 46bar

Medium Temperature: -50°C/+140°C

Certificates: PED Art. 4.3, LVD (VDE)

*Bigger valve sizes and reinforced types available on request*

### TECHNICAL PARAMETERS OF PISTON CHECK VALVES

Model	Connections Ø d ODF				Kv	Min. OPD
	[inch]	U11	[mm]	U11	[m <sup>3</sup> /h]	[kPa]
YCVS2H	1/4	10162001602	6	10162001502	0,56	5
YCVS3H	3/8	10162000402	10	10162000502	1,6	5
YCVS4H	1/2	10161001302	12	10162000802	2,64	5
YCVS5H	5/8	10161001602	16	10161001602	4	5
YCVS6H	3/4	10161001702	18	10162003702	6,8	5
YCVS7H	7/8	10161001802	22	10161001802	6,8	5

In case not the right connectors or voltage mentioned please contact the local Sanhua representative.





## Check valves – CCV

Forced: by Magnets

Maximum operation pressure: 49bar

Medium Temperature: -40°C/+160°C

Certificates: PED Art. 4.3, LVD (VDE)

### TECHNICAL PARAMETERS OF MAGNETIC CHECK VALVES

Model	Product Number	Connections Ø d ODF		Kv	Min. OPD
		[inch]	[mm]	[m <sup>3</sup> /h]	[kPa]
CCV10-021	10160047202	1/4	-	0,8	10
CCV10-019	10160045902	3/8	-	1,2	10
CCV17-001	10160040902	1/2	-	2,7	10
CCV17-017	10160043502	5/8	16	2,9	10
CCV17-018	10160051302	3/4	-	2,9	10
CCV25-020	10160047102	7/8	22	6,5	10
CCV32-001	10160050102	1 1/8	-	11,4	10
CCV38-001	10160050202	1 3/8	35	16,2	10

## Filter Driers



### Filter Driers - DTG / STG

Medium Temperature: -30°C/+120°C  
 Ambient Temperature: -30°C/+55°C  
 Max. Operation pressure: 48,3bar  
 Filter volume = 1,5in<sup>3</sup>  
 Housing: Stainless steel  
 Flow Direction: single flow direction  
 Certificates: PED Art. 4.3, LVD (VDE)

### TECHNICAL PARAMETERS OF DTG FILTER DRIER

Filter	Model	U11	Solder connection	Capacity [kW]	Moisture Absorption (gram H <sub>2</sub> O)	
					R290	
			[inch]	R290	23,9°C	51,7°C
DTGM022s	DTG-M02020-901	10230041401	1/4	2,54	3,00	2,20
DTGM023s	DTG-M02030-901	10230039601	3/8	3,85	3,00	2,20
DTGM024s	DTG-M02040-901	10230041501	1/2	5,13	3,00	2,20



### Filter Driers - STG

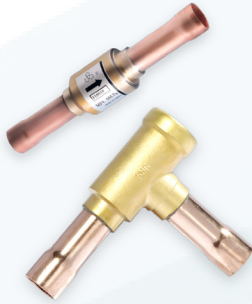
Medium Temperature: -30°C/+120°C  
 Ambient Temperature: -30°C/+55°C  
 Operation pressure: 48,3bar  
 With Acid binding or w/o available  
 Flow Direction: bi-flow direction  
 Certificates: PED Art. 4.3, LVD (VDE)

### TECHNICAL PARAMETERS OF STG FILTER DRIER

Filter	General Characteristics of STG-B Filter								
	Model	Nominal Volume	Capacity (R290)	Moisture Absorption (gram H <sub>2</sub> O) with R290		Mech. Connection			
	[inch <sup>3</sup> ]	[cm <sup>3</sup> ]	[kW]	23,9°C	51,7°C	Inch	U11	[mm]	U11
STGB053s	5	82	9-30	4,45	3,2	3/8	10235006002	10	10235007802
STGB08x	8	131	10-31	8,5	6,2	1/2	10235006402	12	10235008102
STGB16x	16	262	24-51	15,3	11,2	5/8	10235006702	16	10235006702
STGB30x	30	492	30-66	36	26,4	7/8	10235007302	22	10235007302

\*Check catalogue or datasheet for more types with right port sizes and order code

## Strainers



### Strainer KGQ

Body Material: Copper

Port material: Copper / solder connections

Medium Temperature = -30°C/+120°C

Ambient Temperature = -35°C/+55°C

Operation pressure = 42bar

Certificates: CE/PED

Model	U11	Mesh size	Strainer length (G)	Port size
		[mesh/in]	[mm]	[mm ID]
KGQ-W11331-701	on request	100	50	4,86
KGQ-W11441-701	10240013502	100	50	6,45
KGQ-W11442-701	10240014702	100	60	6,45
KGQ-W11551-701	10240013602	100	70	8,1
KGQ-W11661-701	10240013402	100	50	9,62
KGQ-W11881-701	10240018002	100	50	12,8
KGQ-W11882-701	10240013002	100	60	12,8
KGQ-W11000-176	on request	120	75	9,52
KGQ-W11000-082	on request	100	75	12,7
KGQ-W11000-059	on request	100	80	18



## Accumulator ACM

Medium Temperature = -30°C/+120°C  
 Ambient Temperature = -35°C/+55°C  
 Operation pressure = 25bar  
 Inner volume = 0,6 – 8ltr.  
 Certificates: PED for some models

For specific accumulator types please contact your local Sanhua representative



## Liquid Receiver - LRA

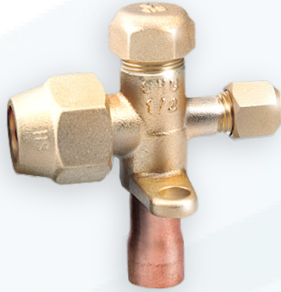
Medium Temperature = -30°C/+120°C  
 Ambient Temperature = -30°C/+55°C  
 Operation pressure = 35bar/49bar  
 Different design available  
 Certificates: Some types with PED certification

## TECHNICAL PARAMETERS OF ACCUMULATORS

Series	Model	U11 Code	Internal Volume [L]	Dimensions (mm)	
				Height with ports [mm]	
B	LRA-B01076-901		0,6	171±4	
	LRA-B02076-901		0,75	210±4	
	LRA-B03076-901		0,9	252±4	
	LRA-B04076-901		1,2	323±4	
	LRA-B05127-9011		2,1	221±5	
D	LRA-D00076-001		0,5	155	
	LRA-D00076-002		0,75	215	
	LRA-D00076-003		0,9	251	

Liquid receiver with bigger inner volume and PED available on request

## Service valves



### Service Valve - FSV

Medium Temperature = -30°C/+120°C

Ambient Temperature = -35°C/+55°C

Operation pressure = 45bar

With or w/o charge port

Certificates: CE/PED declaration

## GENERAL CHARACTERISTICS

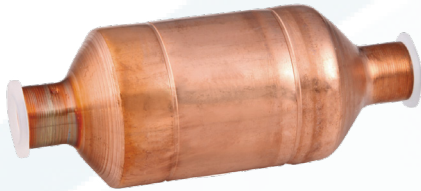
Model	Product Number <sup>1)</sup>	Connections				Nominal Capacity	PED Category
		ØA Flare	Ød ODF	ØI	Charge Port Flare (SAE)		
		[inch]	[inch]	[mm]	[inch]		
FSV-A2GSHC-51	10165423102	7/16-20UNF	1/4	4,8	-	-	Art. 4.3
FSV(S)-JA3GSHC-28	10165258902	5/8-18UNF	3/8	7	1/2-20 UNF	4	Art. 4.3
FSV-JA4GSHC-52	10165423302	3/4-16UNF	1/2	10	1/2-20 UNF	7	Art. 4.3
FSV-JA5GSHC-45	10165423402	7/8-14UNF	5/8	12,5	1/2-20 UNF	11	Art. 4.3
FSV(A)-JA6GSHC-68	On request	1 1/16-14UNS	3/4	Inner 16 Outer 17	1/2-20 UNF	16	Art. 4.3

Note: 1) Extent of delivery:

FSV-JA valve body with schrader valve, cap charge port, cap shut-off valve, nut pipe connection

FSV-A valve body, cap shut-off valve, nut pipe connection, without charge port

## Mufflers



### Muffler - XYQ

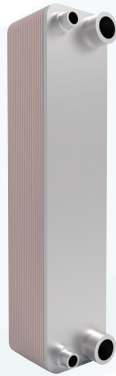
Medium Temperature =  $-30^{\circ}\text{C}/+135^{\circ}\text{C}$   
 Ambient Temperature =  $-30^{\circ}\text{C}/+70^{\circ}\text{C}$   
 Operation pressure = 46bar  
 Certificates: CE/PED declaration

## TECHNICAL PARAMETERS OF ACCUMULATORS

Model	U11	Diameter body	Overall Length	Length Ports	Port Size	Connection type
		[mm]	[mm]	[mm]	[in]	
XYQ-CXX025	*1	25,4	70~330	5~15	1/2, 1/4, 3/8	Solder Connection
XYQ-CXX030	*1	30	70~330	5~15	1/2, 1/4, 3/8	
XYQ-CXX031	*1	31,75	70~330	5~15	1/2, 1/4, 3/8	
XYQ-CXX035	*1	35	70~330	5~15	1/2, 1/4, 3/8	
XYQ-CXX041	*1	41,3	90~330	5~15	1/2, 1/4, 3/8	
XYQ-CXX048	*1	48	90~330	5~15	1/2, 1/4, 3/8	
XYQ-CXX050	*1	50,8	130~330	5~15	1/2, 1/4, 3/8	

Individual muffler types need to be selected with local Sanhua responsible

## Braze Plate Heat Exchangers



### BPHX - S

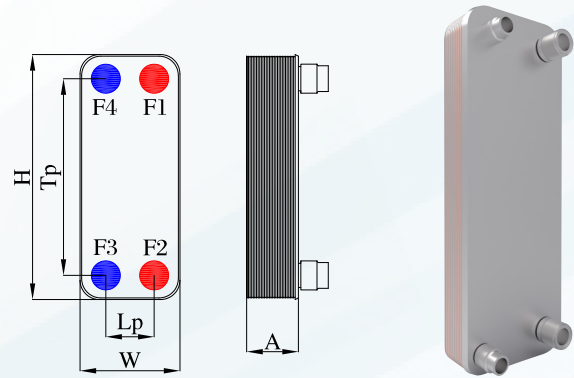
Body Material: Stainless Steel / Solder=Copper  
 Port material: Copper / solder connections  
 Max plates = 120  
 Operation Temperature = -196°C/+225°C  
 Operation pressure = 30/50bar  
 Certificates: CE/PED declaration

### RECOMMENDED APPLICATIONS WITH DIFFERENT MODELS

	S6	S11A	S12B	S14B	S20	S20B	S40A	S60	S60B
550mm									
450mm									
350mm									
250mm									
150mm									
50mm									
	54x119	76x154	77x192	77x213	75x317	76x318	118x332	120x527	120x527[mm]

## INTRODUCTION S40A

SANHUA S40A is widely used as condenser or evaporator in air-cooled chillers (or heat pumps) with capacity up to 50kw. Its high reliable structural design makes it suitable for high-pressure refrigerants such as R410A and R32. The plate adopts optimized asymmetric fishbone design and innovative distributor design, which has high heat transfer efficiency and reduces water side pressure drop. The lower hold-up volume will help to reduce the refrigerant charge.



Size Code	mm	IN
<b>H</b>	332	13.07
<b>W</b>	118	4.65
<b>Tp</b>	279 (F1F2)	10.98
	286 (F3F4)	11.26
<b>Lp</b>	68 (F1F4)	2.68
	75 (F2F3)	2.95
<b>A</b>	11+1.55N	0.433+0.061N

## TECHNICAL DATA (N=NUMBER OF PLATES)

Max. no. of plates	120
Max flow(m <sup>3</sup> /h)	8.8
Max. working pressure(MPa)	5.0
Working temperature(°C)	-196/+225
Volume per channel (L)	0.0486(F1F2)/0.0422(F3F4)
Weight w/o connection(kg)	1.26+0.106N
Flow Direction	Parallel flow
Plate	SUS 316L/SUS 304
Connection	SUS 304
Solder	Copper

## STANDARD CONNECTIONS

F3-F4 Refrigerant side	solder: 1/4", 3/8", 1/2", 5/8", 3/4", 7/8"
F1-F2 Water side	thread: 1/4", 3/8", 1/2", 5/8", 3/4"

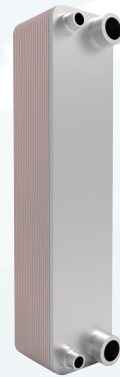
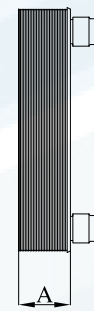
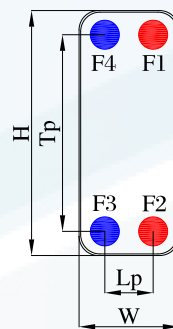
**Note:** The BPHE is used as an evaporator, F3/F4 is the refrigerant inlet/outlet.





## INTRODUCTION S60

SANHUA S60 is widely used in chillers, heat pumps and IT cooling as evaporator or condenser. It is also used as economizer or oil cooler for screw chillers. The optimized plate technology can reduce the water side pressure drop and provide efficient heat transfer performance at the same design temperature.



Size Code	mm	IN
H	527	20.75
W	120	4.72
Tp	470	18.5
Lp	63	2.48
A	9+2.3N	0.354+0.091N

## TECHNICAL DATA (N=NUMBER OF PLATES)

Max. no. of plates	120
Max flow(m <sup>3</sup> /h)	17
Max. working pressure(MPa)	3.0/5.0 (optional)
Working temperature(°C)	-196/+225
Volume per channel (L)	0.11/0.11
Weight w/o connection(kg)	2.6+0.18*N
Flow Direction	Parallel flow
Plate	SUS 316L/SUS 304
Connection	SUS 304
Solder	Copper

## STANDARD CONNECTIONS

F3-F4 Refrigerant side	solder, up to 1"3/8
F1-F2 Water side	thread, up to 1"1/4

**Note:** The BPHE is used as an evaporator, F3/F4 is the refrigerant inlet/outlet.



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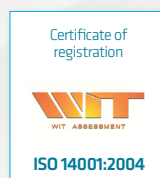
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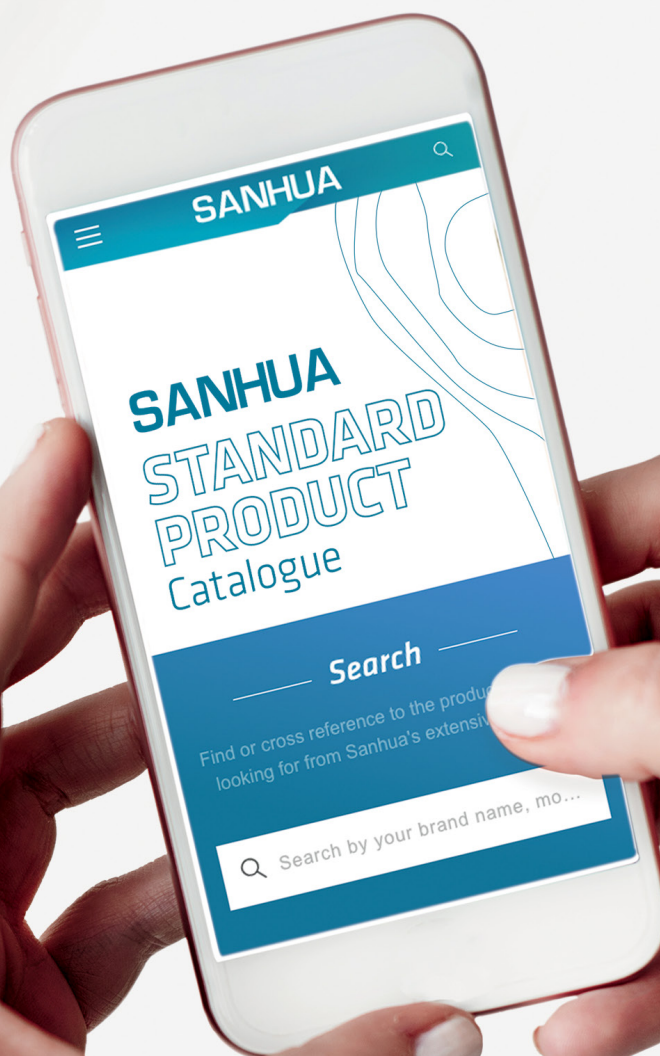


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