

SANHUA

Electronic Expansion Valve Controller SEC Quick Selection Guide



ORDERING METHOD

To have a complete package you need in your selection



The controller

+



Temperature sensor

+



Pressure transmitter

+



EEV



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.

CONTROLLER



>> The SEC61 is able to control the superheat, be used also as a driver, or be controlled by another master controller (as a slave).



Model	Part Number	Details	
SEC611-R4	10680001002	Voltage pressure sensor	°C/Bar
SEC613-R4	10680001202		°F/Psi
SEC612-R4	10680001102	Current pressure sensor	°C/Bar
SEC614-R4	10680001302		°F/Psi

Operating temperature:
-30 ~ 55°C

Power supply:
24Vac +10%/-15%, 50/60Hz (SEC611 & SEC613)
24Vdc +10%/-15% (Suitable for all the SEC models)

	Designation	Connector type
Input	24 Volt	Screw
	Digital Input (Run signal)	Screw
	Pressure sensor	XHP-3
	Temperature sensor	XHP-2
Output	Auxiliary Relay	Screw
	EEV	XHP-5
	Communication	Screw

For more details about the SEC technical features, please use the [SEC61 datasheet](#).

TEMPERATURE SENSOR

Temperature sensors below are NTC5K type



Model	Part Number	Details
NTC2A1	10665000102	2m Temp. Sensor
NTC5A1	10665000202	5m Temp. Sensor
NTC9A1	10665000402	9m Temp. Sensor

For more details about the NTC technical features, please use the [SEC61 datasheet](#).

PRESSURE TRANSMITTER

2 pressure types are suitable with the SEC61 :

YCQB : Voltage output signal (0.5 – 3.5V)

YCQC : Current output signal (4-20mA)



YCQB with 0.5 to 3.5V output signal

Model Name	Part Number	Solder / Flare*	Pressure range [bar]	Electrical connection Type
YCQB02H01-01	10185001502	Solder	0-20	2m wires +XHP
YCQB02H18-1	10185015402		0-20	4.9m wires +XHP
YCQB03H05	10185046602		0-30	2m wires +XHP
YCQB05H01	10185004802		0-50	2m wires +XHP
YCQB02L12-1	10185015502	Flare	0-20	2m wires +XHP
YCQB02L28-1	10185015602		0-20	4.9m wires +XHP
YCQB03L156	10185046302		0-30	2m wires +XHP

*Flare = 7/16-20UNF-2B connector / Solder = 1/4" connector



YCQB for high pressure application

Model Name	Part Number	Pressure connector	Pressure range [bar]	Max Working pressure [bar]	Electrical connection Type
YCQB09L02	10185044102	G 1/4	0-90	225	2m wires +XHP



YCQC with 4-20mA signal output

Model Name	Part Number	Solder / Flare*	Pressure range [bar]	Max Working pressure [bar]	Electrical connection Type
YCQC03L04	10185011002	Flare	0-30	75	Hirschmann
YCQC01L13	10185015202		-0.5-7	52.5	Packard
YCQC02L18	10185017102		-1-12	52.5	Packard
YCQC03L05	10185009302		0-30	75	Packard
YCQC03L06 ¹	10185009402		0-30	75	Packard
YCQC05L25	10185047002		0-50	75	Packard

*Flare = 7/16-20UNF-2B connector / Solder = 1/4" connector

¹ Model with 7/16-20 UNF-A (Male), others are 7/16UNF-B (Female)



YCQC for high pressure application

Model Name	Part Number	Mechanical connection	Pressure range [bar]	Max Working pressure [bar]	Electrical connection Type
YCQC09L02	10185042402	Flare	0-90	135	Packard + 10cm cable

YCQC with G 3/8A connector

Model Name	Part Number	Pressure range [bar]	Max Working pressure [bar]	Electrical connection Type
YCQC02L04	10185009902	-1 - 12	52.5	Hirschmann
YCQC02L05	10185009802	-1 - 20	52.5	Hirschmann



Packard Cables IP 67 with 2 wires

Model Name	Part Number	Connector Type	Cable Length
YCQC02-013037	20185051102	Packard	2000 mm
YCQC02-013038	20185051202	Packard	5000 mm
YCQC02-013039	20185051302	Packard	9000 mm

For more details about the YCQ technical features, please use the [YCQ datasheet](#).

ELECTRONIC EXPANSION VALVES

LPF Selection

LPF series is for refrigeration application, with very low internal leakage.

Max working pressure = 42 bar for LPFxx

Max working pressure = 60 bar for LPFxxD



Valve Model	Part Number	Diameter	
		Øe inlet	Ød outlet
LPF08-002/ LPF08D-002	10136003302/ 10136003802	1/4	1/4
LPF08-001/ LPF08D-001	10136003202/ 10136003702	3/8	1/2
LPF08-003/ LPF08D-003	10136004302/ 10136004402	10mm	12mm
LPF10-002/ LPF10D-002	10136000502/ 10136002002	3/8	1/2
LPF10-003/ LPF10D-003	10136000602/ 10136002102	1/4	3/8
LPF10-004/ LPF10D-004	10136000702/ 10136002202	10mm	12mm
LPF10-005/ LPF10D-005	10136000802/ 10136002302	6mm	10mm
LPF14-002/ LPF14D-002	10136000902/ 10136002402	3/8	1/2
LPF14-003/ LPF14D-003	10136001002/ 10136002502	1/4	3/8
LPF14-004/ LPF14D-004	10136001102/ 10136002602	10mm	12mm
LPF14-005/ LPF14D-005	10136001202/ 10136002702	6mm	10mm
LPF18-002/ LPF18D-002	10136001302/ 10136002802	3/8	1/2
LPF18-003/ LPF18D-003	10136001402/ 10136002902	10mm	12mm
LPF24-002/ LPF24D-002	10136001502/ 10136003002	3/8	1/2
LPF24-003/ LPF24D-003	10136001602/ 10136003102	10mm	12mm
LPF30-001	10136003902	3/8	1/2
LPF30-002	10136004602	10mm	12mm
LPF32-001	10136003402	3/8	1/2
LPF32-002	10136004002	1/4	3/8
LPF32-003	10136004502	10mm	12mm



Coil Model	Part Number	Cable length [mm]
PQ-M24012-000007	10810127602	1500
PQ-M24012-000008	10810129502	3000
PQ-M24012-000009	10810129602	6000
PQ-M24012-000010	10810129702	9000

Conditions : -10°C / 45°C / 6K / 2K (Te/Tc/SH/Sc)

Valve Model	Kv [m ³ /h]	Maximal Cooling Capacity [kW]							
		R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
LPF08 / D	0.025	2.23	1.96	3.15	2.82	2.76	1.94	2.07	1.84
LPF10 / D	0.04	3.64	3.2	5.14	4.60	4.49	3.16	3.37	3.00
LPF14 / D	0.08	6.90	6.08	9.75	8.70	8.51	6.00	6.39	5.69
LPF18 / D	0.12	9.53	8.40	13.47	12.0	11.76	8.29	8.83	7.86
LPF24 / D	0.20	13.04	11.50	18.43	16.45	16.09	11.34	12.1	10.75
LPF30	0.27	19.0	17	26.9	24.1	23.6	16.5	17.8	15.7
LPF32	0.30	20.8	18.7	19.6	26.4	25.9	18.1	19.6	17.2

Valve Model	Kv [m ³ /h]	Maximal Cooling Capacity [kW]							
		R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744 *
LPF08 / D	0.025	4.0	2.41	2.62	1.57	1.72	3.0	3.43	4.7
LPF10 / D	0.04	6.52	3.93	4.27	2.55	2.81	4.87	5.6	7.6
LPF14 / D	0.08	12.36	7.45	8.10	4.84	5.32	9.23	10.6	14.4
LPF18 / D	0.12	17.08	10.3	11.20	6.69	7.36	12.7	14.64	19.9
LPF24 / D	0.20	23.37	14.1	15.32	9.16	10.07	17.3	20.0	27.2
LPF30	0.27	34.2	20.6	22.5	13.4	14.6	25.4	29.5	-
LPF32	0.30	37.5	22.6	24.7	14.7	16.0	27.9	32.3	-

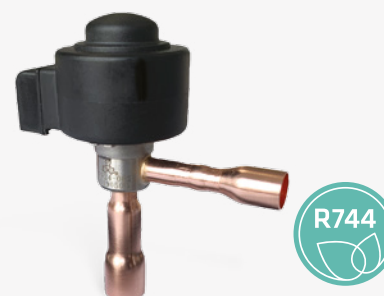
* Conditions for R744 : 0 °C / -20 °C / 2K / 6K

For more details about the LPF technical features, please use the [LPF datasheet](#)

DPF-R Selection

DPF-R series is for CO₂ application.

Max working pressure = 140 bar



Valve Model	Part Number	Diameter [mm]
DPF(R04) 1.0D-04	10130414402	6.35
DPF(R04) 1.5D-07	10130394102	
DPF(R05) 2.4D-03	10130425302	7.94

Coil Model	Part Number	Valve Model	Cable length
PQ-M10012-001059	10810138802	DPF-R 1.0 & 1.5	0.7m
PQ-M10012-001002	10810130702		2m
PQ-M10012-001268	10810160602		5m
PQ-M08012-001301	10810171402	DPF-R 2.4	0.7m

Valve Model	Kv [m ³ /h]	Max Cooling Capacity [kW] -20°C / 0°C / 6K / 2K (Te/Tc/SH/Sc)
DPF(R04) 1.0D	0.027	7,1
DPF(R04) 1.5D	0.057	14,9
DPF(R05) 2.4D	0.136	35,6

For more details about the DPF-R technical features, please use the [DPF-R datasheet](#)

DPF Selection

DPF series is mainly for air conditioning application.

Max working pressure = 49 bar



Valve Model	Part Number	Diameter [mm]
DPF(TS1)1.0C-15	10130391602	6.35
DPF(TS1)1.3C-21	10130389302	
DPF(TS1)1.65C-36	10130391702	
DPF(TS1)1.8C-69	10130391802	
DPF(TS1)2.0C-33	10130392402	
DPF(TS1)2.2C-24	10130392702	
DPF(TS1)2.4C-40	10130392602	7.94
DPF(TS1)3.0C-29	10130389902	
DPF(TS1)3.2C-30	10130389502	15.88
DPF(S03)4.0C-01	10130355702	
DPF(S03)4.5C-01	10130035502	
DPF(S03)5.5C-01	10130355802	
DPF(S03)6.5C-02	10130355902	

Coil Model	Part Number	Valve Model	Cable length [mm]
PQ-M10012-001059	10810138802	DPF 1.0~3.2	700
PQ-M10012-001016	10810134602		1500
PQ-M10012-001002	10810130702		2000
PQ-M10012-001268	10810160602		5000
PQ-M03012-001004	10810141302		DPF 4.0~6.5
PQ-M03012-001041	10810171302	5000	

Valve Model	Kv [m ³ /h]	Max Cooling Capacity [kW] @ 5°C/38°C/5K/5K ((Te/Tc/SH/Sc)												
		R134a	R513A	R407C	R404A R507A	R410A	R452A	R32	R290	R1234yf	R1234ze	R454B	R454C	1R455A
DPF(TS1)1.0C-15	0,03	3.1	2.7	4.3	2.9	4.8	3.1	7.0	4.2	2.3	2.5	5.5	3.6	4.0
DPF(TS1)1.3C-21	0,05	4,5	3.8	6.2	4.2	6,9	4.5	9.9	6.0	3.2	3.4	7.9	5.2	5.7
DPF(TS1)1.65C-36	0,08	7.6	6.4	10.4	7.1	11.6	7.6	16.7	10.2	5.6	5.9	13.1	8.6	9.5
DPF(TS1)1.8C-69	0,1	9	7.7	12.4	8.5	13.8	9.1	19.9	12.1	6.6	7.1	15.7	10.3	11.4
DPF(TS1)2.0C-33	0,16	11.1	9.5	15.3	10.5	17.1	11.2	24.6	14.9	8.2	8.8	19.5	12.8	14.1
DPF(TS1)2.2C-24	0,2	12	10.2	16.4	11.3	18.3	12	26.4	16.0	8.9	9.4	21.0	13.8	15.2
DPF(TS1)2.4C-40	0,23	14.1	12	19.4	13.3	21.6	14.2	31.1	18.8	10.4	11.1	24.6	16.2	17.8
DPF(TS1)3.0C-29	0,39	23.3	19.8	32.1	22	35.8	23.5	51.5	31.4	17.4	18.5	41.1	27.0	29.8
DPF(TS1)3.2C-30	0,43	25,7	21.8	35,3	24.2	39.4	25.9	56.8	34.4	19.0	20.2	45.0	29.5	32.5
DPF(S03)4.0C-01	0,5	42.8	36.3	58.8	40.3	65.5	43.1	94.4	57.2	31.6	33.7	74.9	49.2	54.2
DPF(S03)4.5C-01	0,7	57.2	48.6	78.7	53.9	87.7	57.6	126.3	76.7	42.3	44.9	100.9	66.3	72.5
DPF(S03)5.5C-01	0,9	66.2	56.3	91	62.4	101.5	66.7	146.2	88.6	49.0	52.2	116.0	76.2	84.0
DPF(S03)6.5C-02	1,1	80,5	68.5	110.7	75,9	123.4	81.1	177.9	108.4	59.6	63.3	141.9	93.2	102.7

For more details about the DPF technical features, please use the [DPF datasheet](#)

ACCESSORIES

Power supply

Model	Part Number	Output current	Code reported on the product label
TM01	20680008002	0.63 A	HDR 15
TM02	20680008102	1.5 A	HDR 30

Description	
Supply Voltage	100 ~ 240 VAC
Output Voltage	From 21.6 to 29V, Set at 24 VDC
Output current	0.63 A for TM01 1.5 A for TM02
Operating Temperature	-30 ~ +70°C
Mounting	DIN 35mm



Supercapacitor

Model	Part Number
SP01	10680001702

Description	
Power supply	24Vac +10%/-15%, 50/60Hz 24Vdc+10%/-10%, Class II
Protection Level	IP20
Mounting	DIN 35 mm
Weight	171 g



For more details about the Accessories technical features, please use the [SEC61 datasheet](#)

CONTROLLER



>>

The SEC61 is able to control the superheat, be used also as a driver, or be controlled by another master controller (slave).



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Model	Part Number	Details	
SEC611-R4	10680001002	Voltage pressure sensor	°C/Bar
SEC613-R4	10680001202		°F/Psi
SEC612-R4	10680001102	Current pressure sensor	°C/Bar
SEC614-R4	10680001302		°F/Psi

Operating temperature:
-30 ~ 55°C

Power supply:
24Vac +10%/-15%, 50/60Hz (SEC611 & SEC613)
24Vdc +10%/-10% (Suitable for all the SEC models)

	Designation	Connector type
Input	24 Volt	Screw
	Digital Input (Run signal)	Screw
	Pressure sensor	XHP-3
	Temperature sensor	XHP-2
Output	Auxiliary Relay	Screw
	EEV	XHP-5
	Communication	Screw

For more details about the SEC technical features, please use the SEC61 datasheet.

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