

Features

- High quality materials and processes for high reliability and long lifetime

ACP

- Internal equalization
- Compact size

CPHE

- Superior partial load performance due to double seat orifice design (CPHE3 to CPHE6)
- Modular design for economical logistics and easy assembly and servicing
- External equalization
- Specific connection sizes and flanges available on request.



ACP

CPHE

Selection

Type	Nominal Bypass Capacity Q _n kW				Orifice	Standard Flange Solder/ODF		Power Assembly
	R 134a	R 22	R 407C	R 404A/507		mm	inch	
CPHE - 1X	3,5	5	5,8	4,5	X 22440-B5B	C 501 - 7 mm 12 x 16	C 501 - 7 1/2 x 5/8	X7818 - 1
CPHE - 2X	6,4	9	10,4	8,1	X 22440-B8B	A 576 mm 16 x 22 (22 x 28 ODM)	A 576 5/8 x 7/8 (7/8 x 1-1/8 ODM)	
CPHE - 3X	12	17	20	15	X 11873-B5B	10331 22 x 22	10331 7/8 x 7/8 (1-1/8 x 1-1/8 ODM)	
CPHE - 3,5X	13	19	22	17	X 9117-B7B	9153 mm 22 x 22	9153 7/8 x 7/8	
CPHE - 4X	16	23	27	21	X 9117-B9B			
CPHE - 5X	21	29	34	26	X 9166-B10B	9149 22 x 22	9149 7/8 x 7/8	
CPHE - 6X	35	50	58	45	X 9144-B13B			

Type	Part No.	Connection, Angle Solder/ODF inch	Nominal Bypass Capacity* Q _n			
			R 134a	R 22	R 407C	R 404A / R 507
ACP 1	047 680	1/4 x 3/8	0,21	0,35	0,41	0,30
ACP 3	047 283	1/4 x 3/8	0,50	0,77	0,89	0,68
ACP 5	053 374	3/8 x 3/8	1,18	1,83	2,12	1,59

Nominal capacities at +38°C condensing temperature, +4°C evaporating temperature (saturated temperatures / dew point) and 1 K liquid sub cooling at the inlet of the expansion valve.

CPHE Selection for other operating conditions

For other evaporating temperatures the bypass capacity Q_{Byp} shall be multiplied with the correction factor K_{Byp} .

$$Q_{Byp} \times K_{Byp} = Q_n$$

Q_{Byp}: Required bypass capacity

K_{Byp}: Correction factor for evaporating temperature

Q_n: Nominal valve capacity

Refrigerant	Condensing Temperature °C	Correction Factor K_{Byp} Evaporating Temperature °C					
		10	0	-10	-20	-30	-40
R 134a	50	0,78	0,77	0,78	0,8		
	40	0,99	0,94	0,93	0,94		
	30	1,35	1,21	1,15	1,14		
R 22	50	0,8	0,77	0,77	0,77	0,79	0,82
	40	1	0,93	0,91	0,91	0,92	0,95
	30	1,34	1,19	1,12	1,1	1,09	1,12
R 407C	50	0,83	0,82	0,83	0,86		
	40	0,99	0,95	0,95	0,97		
	30	1,26	1,17	1,13	1,13		
R 404A / R 507	50	0,86	0,85	0,87	0,91	0,97	1,06
	40	0,99	0,95	0,94	0,96	1	1,05
	30	1,26	1,13	1,09	1,08	1,1	1,14

**Technical Data
ACP**

Adjustment Range:	0 ... 5 bar
Factory Setting:	2,7 bar
Max. allowable Pressure PS:	31 bar
Operating Temperature Range TS:	-40°C ... 120°C
Ambient Temperature Range:	-40 ... 50°C
Transport Temperature Range:	-40 ... 70°C

CPHE

Adjustment Range:	-0,4 ... 5 bar
Factory Setting:	1,4 bar
Max. allowable Pressure PS:	35 bar
Operating Temperature Range TS:	-40°C ... 120°C
Ambient Temperature Range:	-40 ... 50°C
Transport Temperature Range:	-40 ... 70°C

**Introduction
Capacity regulators**

Regulator series ACP and CPHE are hot gas bypass regulators and serve the purpose of compensating excess compressor capacity. Thus they prevent the generation of evaporator pressures below predetermined levels.

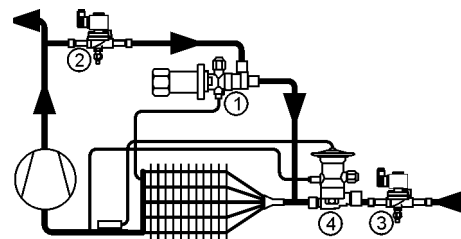
In case of hot gas injection into the suction line, a liquid injection valve in conjunction with a solenoid valve is required to desuperheat the excessively hot suction gas. The capacity should not be reduced below 60 % of maximum in this application to avoid oil return problems.

With hot gas injection at the evaporator inlet, no liquid injection valve is necessary. The injection must be such that the incremental gas volume is taken into account. No problems with oil return should be expected even when regulating 100% of capacity.

Two typical installation applications are possible:

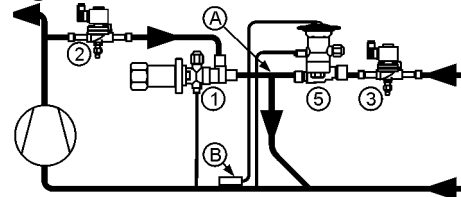
Hot Gas Bypass to the evaporator inlet (with up to 100% of capacity control) per Fig. 1

Fig. 1

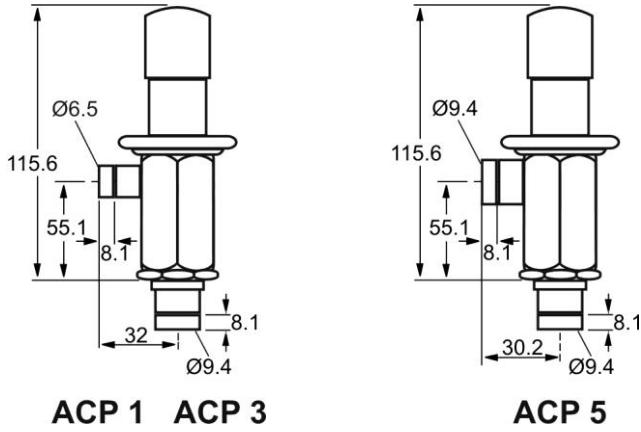


Hot Gas Bypass to the suction line (max. 40% of capacity control because of oil return capability) per Fig. 2

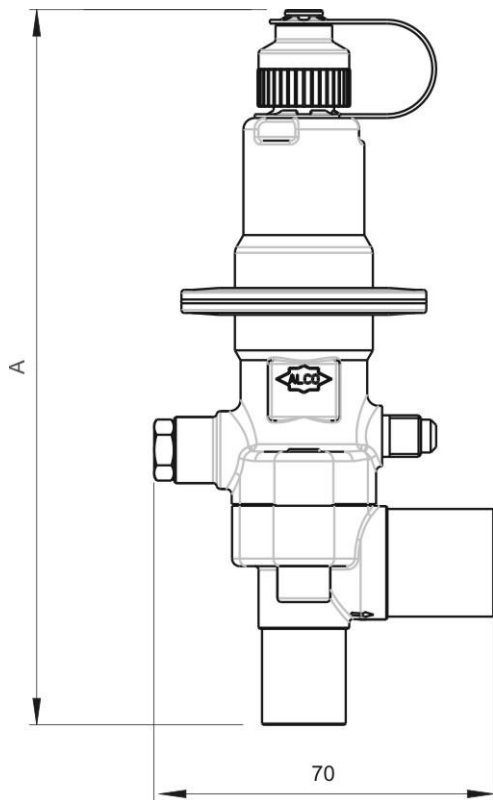
Fig. 2



Dimensions ACP



Dimensions CPHE



Type	A
	mm
CPHE-1X	173
CPHE-2X	192
CPHE-3X	210
CPHE-3,5X	210
CPHE-4X	210
CPHE-5X	210
CPHE-6X	222

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This document replaces all earlier versions.

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