



## Product overview and comparison tables

Easy selection of the right components

# Reliability and quality for professionals

## Components of the market leader in many areas



Honeywell's business unit „Cooling Solutions“ is specialized in the development and production of high quality cooling components.

For our customers that means: a broad choice of many innovative and well established expansion valves, solenoid valves and filter driers as well as a good range of other cooling components.

In Mosbach, Germany product managers, the sales department, development engineers and the production are working close together focusing on the highest level of customer satisfaction through optimal products.

To achieve this goal, H.O.S., the Honeywell Operating System, was developed. H.O.S. stands for a big bundle of methods, principles and procedures which are defining operating standards and processes for all staff members.

Thereby we work extremely

- **CUSTOMER ORIENTED:**  
We guarantee highest German and International quality standards as well as a fast delivery performance.
- **FLEXIBLE:**  
Through our modular system we are able to efficiently produce large numbers of customized variants.
- **FAST:**  
We also produce with minimal order quantities and short tooling times.

Put us on the test and start the comparison.

To facilitate this you can find complete comparative tables with products of different manufacturers on the following sites of this brochure.

# Content



And because we know how important fast and qualitative advices are especially when you need them the most we offer a direct line to our experienced specialists.

Here you get firsthand advices without long waiting times for your contact person.

Call us for questions at any time:

**+49 6261 81-475**

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+49 6261 81-461

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# Expansion valves

## Mature valves for various conditions

**Expansion Valves are used to** expand liquid refrigerant from a higher pressure and a higher temperature to a lower pressure and a lower temperature. As a controller for superheat, Expansion Valves control the refrigerant mass flow depending on evaporating pressure and temperature at the outlet of the evaporator. They adjust the quantity of the injected refrigerant exactly and guarantee an economic function by optimal use of the evaporator surface.

### Automatic Expansion Valves

Automatic Expansion Valves expand the refrigerant and keep the adjusted evaporation pressure at a constant level. They are typically used for plants with single injected evaporators and without liquid receiver, such as air conditioners, dehumidifiers, air driers, water coolers and ice-making machines.

- Constant pressure valves
- Flexible construction - customer specific adjustments possible
- Honeywell - one of the few suppliers for Automatic Expansion Valves

### Thermostatic Expansion Valves with fixed orifice

Thermostatic Expansion Valves with fixed orifice are used preferentially for serial produced systems. Typical applications are e.g. heat pumps, chiller units, refrigerated cabinets, deep freezers, freezers, fermentation interrupters, ice and cream machines, compact units for cooling and air-conditioning.

- Modular system with flexible construction - customized versions possible
- No charge migration - all valves with warm thermo head
- Optimized capacity adjustment due to small orifice graduation

### Thermostatic Expansion Valves with interchangeable orifice cartridges

Thermostatic Expansion Valves with interchangeable orifice cartridges are used preferentially for general refrigeration and for serial produced systems. They are typically used in plants with one or more refrigerant circuits such as refrigerated cabinets, ice and cream machines, milk cooling units, cold stores, air conditioning systems and heat pumps.

- High flexibility due to modular system
- No charge migration - valves with adsorber charge or warm thermo head
- Optimized capacity adjustment due to small orifice graduation

### Series AEL

Adjustable evaporating pressure, solder connections, internal pressure equalization, fixed orifice, bypass optional.

### Series AMV(X)

Adjustable evaporating pressure, flare connections, internal pressure equalization, interchangeable orifice cartridges.

### Series TLK 0.3 - 2

Internal pressure equalization, MOP charge, warm thermo head, fixed superheat setting, solder connections, fixed orifice, orifice size 0.3 to 2.0, bypass optional.

### Series TLE(X) 0.5 - 4.5

Internal pressure equalization, combi adsorber charge for several refrigerants, MOP charge at deep freeze applications, warm thermo head, adjustable superheat setting, solder connections, fixed orifice, orifice size 0.5 to 4.5. Customized versions possible, bypass optional.

### Series TLESX 4.75 - 6

External pressure equalization, MOP charge, warm thermo head, adjustable superheat setting, Single Port, solder connections, fixed orifice, orifice size 4.75 to 6.

## Series TLEX 4.75 - 11

External pressure equalization, MOP charge, warm thermal head, adjustable superheat setting, Balanced Port, solder connections, fixed orifice, orifice size 4.75 to 11.

## Series TMV(X)

External pressure equalization, combi adsorber charge for several refrigerants, adjustable superheat set., flare connections, interchangeable orifice cartridges.

## Series TMV(X)BL

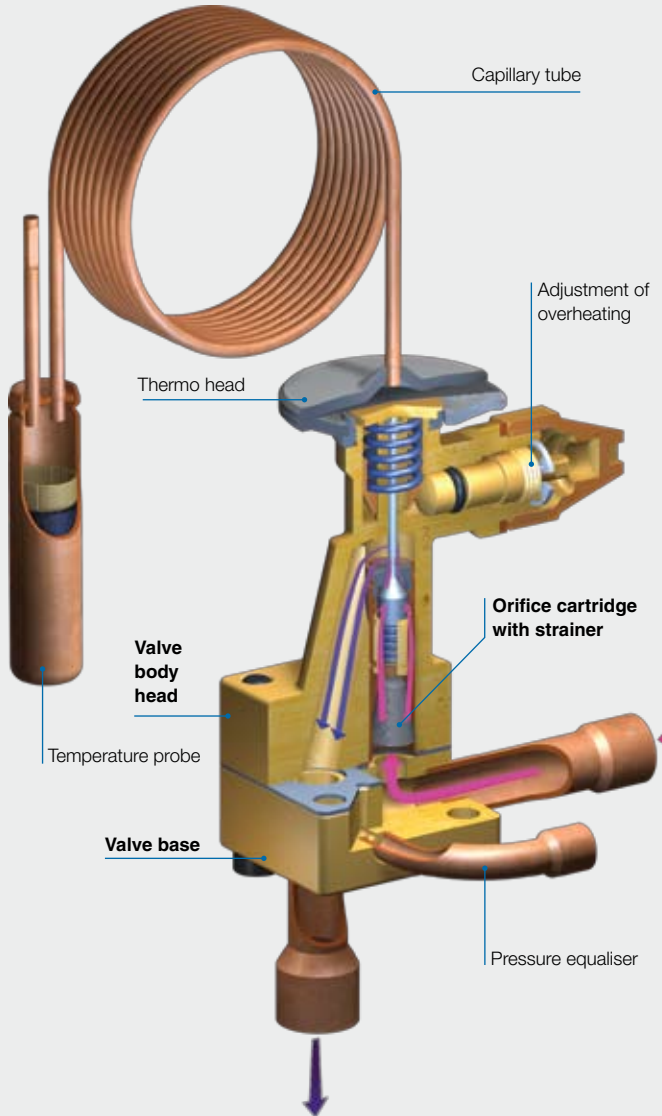
Internal or external pressure equalization, combi adsorber charge for several refrigerants, adjustable superheat setting, inlet flare connection with optional soldering adapter, outlet solder connection, interchangeable orifice cartridges.

## Series TMVL(X)

Part programme valve, one valve body head for solder base with internal or external pressure equalization, combi adsorber charge for several refrigerants, adjustable superheat setting, interchangeable orifice cartridges.

## Series TMX

Part programme valve, valve body head to be combined with various bases and orifice cartridges, MOP- or liquid charge, warm thermo head, external pressure equalization in the valve body head, adjustable superheat setting, with Balanced Port, interchangeable orifice cartridges.



**Expansion valve TMVL(X)**

# Comparative table expansion valves

Series TLK / TLE / TLEX / TLESX with fixed orifice

Capacity at:  $t_0 = +5^\circ\text{C}$ ,  $t_c = +32^\circ\text{C}$ , subcooling = 4 K

Refrigerant	Danfoss				Honeywell			
	Series	Orifice size	Capacity [kW]	Capacity [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*
R 134a	TUB TUBE TUC TUCE	1	0.7	0.19	0.5	0.66	0.19	TLK TLE TLEX
		2	1.0	0.28	0.7	0.91	0.26	
		3	1.4	0.39	1	1.3	0.38	
		4	2.1	0.59	1.5	2.1	0.61	
		5	2.7	0.78	2	2.7	0.78	
		6	4.1	1.20	2.5	3.9	1.10	
		7	5.5	1.60	3	6.3	1.79	
		8	8.2	2.30	3.5	8.3	2.37	
		9	12.0	3.50	4.5	11.3	3.21	
R 407C	TUB TUBE TUC TUCE	1	0.9	0.26	0.5	0.92	0.26	TLK TLE TLEX
		2	1.4	0.38	0.7	1.3	0.36	
		3	1.9	0.53	1	1.8	0.53	
		4	2.8	0.80	1.5	3.0	0.84	
		5	3.8	1.10	2	3.7	1.06	
		6	5.7	1.60	2.5	5.4	1.53	
		7	7.5	2.10	3	8.6	2.46	
		8	11.0	3.20	3.5	11.4	3.24	
		9	17.0	4.80	4.5	15.8	4.51	
R 404A R 507A	TUB TUBE TUC TUCE	1	0.7	0.19	0.5	0.69	0.20	TLK TLE TLEX
		2	1.0	0.28	0.7	0.99	0.28	
		3	1.4	0.39	1	1.4	0.41	
		4	2.1	0.60	1.5	2.3	0.65	
		5	2.8	0.79	2	2.9	0.82	
		6	4.2	1.20	2.5	4.2	1.18	
		7	5.6	1.60	3	6.6	1.89	
		8	8.4	2.40	3.5	8.7	2.48	
		9	12.0	3.50	4.5	12.2	3.47	

Danfoss				Honeywell				Refrigerant
Series	Orifice size	Capacity [kW]	Capacity [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*	R 410A
TUB TUBE TUC TUCE	1	1.3	0.40	0.7	1.3	0.37	TLK TLE TLEX	
	2	2.1	0.60	1	2.3	0.66		
	3	2.9	0.80	1.5	3.7	1.06		
	4	4.5	1.30	2	4.7	1.34		
	5	5.9	1.70	2.5	6.8	1.93		
	6	9.0	2.50	3	10.9	3.10		
	7	12.0	3.40	3	10.9	3.10		
				3.5	14.3	4.07		
	8	18.0	5.00	4.5	19.9	5.67		
9	26.0	7.50	4.75	26.3	7.49	TLESX		
Series	Orifice size	Capacity [kW]	Capacity [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*	R 22
TUB TUBE TUC TUCE	1	0.9	0.25	0.5	0.90	0.27	TLK TLE TLEX	
	2	1.3	0.36	0.7	1.3	0.36		
	3	1.8	0.50	1	1.9	0.53		
	4	2.6	0.75	1.5	3.0	0.85		
	5	3.5	1.00	2	3.8	1.08		
	6	5.3	1.50	2.5	5.5	1.55		
	7	7.0	2.00	3	8.8	2.49		
	8	11.0	3.00	3.5	11.5	3.28		
	9	16.0	4.50	4.5	16.0	4.56		

\* For explanations on these series see page 4-5. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.)

tons = tons (US) --> 1 ton (US) = 3.513 kW

# Comparative table expansion valves

Series TLESX / TLEX with fixed orifice

Capacity at:  $t_0 = +4\text{ }^\circ\text{C}$ ,  $t_c = +38\text{ }^\circ\text{C}$ , subcooling = 1 K

Refrigerant	ALCO				Honeywell		
	Series	Type without MOP	Type with MOP	Capacity [kW]	Orifice size	Capacity [kW]	Series*
R 134a	TX6	TX6-M02	TX6-M12	10.3	4.5	11.8	TLESX TLEX
		TX6-M03	TX6-M13	18.4	4.75	15.9	
		TX6-M04	TX6-M14	25.6	5	20.0	
		TX6-M05	TX6-M15	32.5	6	27.6	
		TX6-M06	TX6-M16	48.1	7	35.3	
		TX6-M07	TX6-M17	62.8	8	43.3	
					10	51.0	
					11	65.0	
R 407C	TX6	TX6-N02	TX6-N12	14.4	4.5	16.4	TLESX TLEX
		TX6-N03	TX6-N13	25.6	4.75	21.6	
		TX6-N04	TX6-N14	35.7	5	28.0	
		TX6-N05	TX6-N15	45.2	6	40.8	
		TX6-N06	TX6-N16	66.9	6	40.8	
		TX6-N07	TX6-N17	87.3	7	52.5	
					8	61.8	
					10	72.3	
			11	92.3			
R 410A	TX6	-	TX6-Z12	16.0	3.5	14.6	TLESX TLEX
		-	TX6-Z13	28.0	4.5	20.3	
		-	TX6-Z14	40.0	4.75	26.8	
		-	TX6-Z15	50.0	5	34.8	
		-	TX6-Z16	74.0	6	50.8	
		-	TX6-Z17	97.0	6	50.8	
					7	65.3	
					8	76.9	
R 22	TX6	TX6-H02	TX6-H12	13.3	3.5	12.2	TLESX TLEX
		TX6-H03	TX6-H13	23.7	4.5	17.0	
		TX6-H04	TX6-H14	33.0	4.75	22.4	
		TX6-H05	TX6-H15	41.8	5	29.1	
		TX6-H06	TX6-H16	61.9	6	42.4	
		TX6-H07	TX6-H17	80.8	7	54.5	
					8	64.1	
					10	75.1	



## Series TLESX / TLEX with fixed orifice

Capacity at:  $t_0 = +5\text{ }^\circ\text{C}$ ,  $t_c = +32\text{ }^\circ\text{C}$ , subcooling = 4 K

Danfoss			Honeywell			Refrigerant
Series	Orifice size	Capacity [kW]	Orifice size	Capacity [kW]	Series*	
TDE TDEB	3	10.5	3.5	11.5	TLEX TLESX	R 134a
	4	14.0	4.5	16.0		
	6	21.0	4.75	21.2		
	7.5	26.0	5	27.4		
	8	28.0	5	27.4		
	11	38.5	6	40.0		
	12.5	44.0	6	40.0		
	16	56.0	7	51.4		
	19	66.5	8	60.6		
	20	70.0	10	70.9		
	26	91.0	11	90.5		
Series	Orifice size	Capacity [kW]	Orifice size	Capacity [kW]	Series*	
TDE TDEB	3	10.5	3.5	11.4	TLEX TLESX	R 407C
	4	14.0	4.5	15.8		
	6	21.0	4.75	20.9		
	7.5	26.0	5	27.1		
	8	28.0	5	27.1		
	11	38.5	6	39.5		
	12.5	44.0	7	50.8		
	16	56.0	7	50.8		
	19	66.5	10	70.0		
	20	70.0	10	70.0		
	26	91.0	11	89.4		

\* For explanations on these series see page 4-5. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.)

# Comparative table expansion valves

Series TMV / TMVL with changeable orifice

Capacity at:  $t_0 = +5^{\circ}\text{C}$ ,  $t_c = +32^{\circ}\text{C}$ , subcooling = 4 K

Refrigerant	Danfoss				Honeywell			
	Series	Orifice size	Capacity [kW]	Capacity [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*
R 134a	TN 2 TEN 2	0X	0.4	0.11	0.3	0.35	0.10	TMV(X) TMV(X)BL TMVL(X)
		00	0.9	0.25	0.5	0.66	0.19	
		01	1.8	0.5	0.7	0.91	0.26	
		02	2.6	0.8	1.0	1.3	0.38	
		03	4.6	1.3	1.5	2.1	0.61	
		04	6.7	1.9	2.0	2.7	0.78	
		05	8.6	2.5	2.5	3.9	1.10	
		06	10.5	3.0	3.0	6.3	1.79	
					3.5	8.3	2.37	
					4.5	11.3	3.21	
			4.75	15.2	4.34			
R 404A	TS 2 TES 2	0X	0.38	0.11	0.3	0.37	0.10	TMV(X) TMV(X)BL TMVL(X)
		00	0.7	0.21	0.5	0.69	0.20	
		01	1.6	0.45	0.7	0.99	0.28	
		02	2.1	0.6	1.0	1.4	0.41	
		03	4.2	1.2	1.5	2.3	0.65	
		04	6.0	1.7	2.0	2.9	0.82	
		05	7.7	2.2	2.5	4.2	1.18	
		06	9.1	2.6	3.0	6.6	1.89	
					3.5	8.7	2.48	
					4.5	12.2	3.47	
			4.75	16.1	4.57			
R 22	TX 2 TEX 2	0X	0.5	0.15	0.3	0.49	0.14	TMV(X) TMV(X)BL TMVL(X)
		00	1.0	0.3	0.5	0.94	0.27	
		01	2.5	0.7	0.7	1.28	0.36	
		02	3.5	1.0	1.0	1.87	0.53	
		03	5.2	1.5	1.5	3.0	0.85	
		04	8.0	2.3	2.0	3.8	1.08	
		05	10.5	3.0	2.5	5.5	1.55	
		06	15.5	4.5	3.0	8.8	2.49	
					3.5	11.5	3.28	
					4.5	16.0	4.56	
			4.75	21.2	6.02			

## Series TMV / TMVL with changeable orifice

Capacity at:  $t_0 = +4^\circ\text{C}$ ,  $t_c = +38^\circ\text{C}$ , subcooling = 1 K

ALCO				Honeywell				Refrigerant
Series	Orifice size	Capacity [kW]	Capacity [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*	
TI-MW TIE-MW TIS-MW TISE-MW	00	0.3	0.09	0.3	0.36	0.10	TMV(X) TMV(X)BL TMVL(X)	R 134a
	0	0.8	0.23	0.5	0.69	0.20		
	1	1.9	0.54	0.7	0.96	0.27		
	2	3.1	0.88	1.0	1.4	0.39		
	3	5.0	1.42	1.5	2.2	0.63		
	4	8.3	2.36	2.0	2.9	0.82		
	5	10.1	2.88	2.5	4.0	1.15		
	6	11.7	3.33	3.0	6.6	1.87		
			3.5	8.7	2.48			
			4.5	11.8	3.35			
			4.75	15.9	4.53			
Series	Orifice size	Capacity [kW]	Capacity [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*	
TI-SW TIE-SW TIS-SW TISE-SW	00	0.4	0.11	0.3	0.36	0.10	TMV(X) TMV(X)BL TMVL(X)	R 404A
	0	1.0	0.28	0.5	0.68	0.19		
	1	2.3	0.65	0.7	0.97	0.28		
	2	3.9	1.11	1.0	1.4	0.40		
	3	6.2	1.76	1.5	2.2	0.64		
	4	10.1	2.88	2.0	2.8	0.80		
	5	12.3	3.50	2.5	4.1	1.17		
	6	14.2	4.04	3.0	6.5	1.86		
			3.5	8.6	2.44			
			4.5	12.0	3.41			
			4.75	15.8	4.49			
Series	Orifice size	Capacity [kW]	Leistung [tons]	Orifice size	Capacity [kW]	Capacity [tons]	Series*	
TI-HW TIE-HW TIS-HW TISE-HW	00	0.5	0.14	0.3	0.52	0.15	TMV(X) TMV(X)BL TMVL(X)	R 22
	0	1.3	0.37	0.5	0.99	0.28		
	1	3.2	0.91	0.7	1.4	0.39		
	2	5.3	1.51	1.0	2.0	0.56		
	3	8.5	2.42	1.5	3.2	0.90		
	4	13.9	3.96	2.0	4.0	1.14		
	5	16.9	4.81	2.5	5.8	1.65		
	6	19.5	5.55	3.0	9.3	2.64		
			3.5	12.2	3.47			
			4.5	17.0	4.83			
			4.75	22.4	6.37			

\* For explanations on these series see page 4-5. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.) Subject to change without notice · EN3H-0375GE23 R0709

# Comparative table expansion valves

Series **TMX** with changeable orifice

Capacity at:  $t_0 = +4\text{ }^\circ\text{C}$ ,  $t_c = +38\text{ }^\circ\text{C}$ , subcooling = 1 K

Refrigerant	ALCO				Honeywell					
	Series	Type	Capacity [kW]	Valve cartridge	Type	Cap. [kW]	Orifice cartridge	Series*		
R134a	TCLE	200 MW	9.3	X 22440-B3,5B	TMX R134a MOP +10 °C	11.8	XD 4.5	TMX		
		250 MW	13.5	X 22440-B4B	TMX R134a MOP +10 °C	15.9	XD 4.75			
		350 MW	17.3	X 22440-B5B	TMX R134a MOP +10 °C	19.9	XD 5			
		550 MW	23.6	X 22440-B6B	TMX R134a MOP +10 °C	27.6	XD 6			
		750 MW	32.0	X 22440-B7B	TMX R134a MOP +10 °C	35.3	XD 7			
		900 MW	37.2	X 22440-B8B	TMX R134a MOP +10 °C	43.3	XD 8			
	TJRE	11 MW	45.0	X 11873-B4B	TMX R134a MOP +10 °C	50.9	XD 10			
		13 MW	57.0	X 11873-B5B						
	R407C	TCLE	400 NW	18.7	X 22440-B4B	TMX R407C MOP +15 °C	16.4		XD 4.5	TMX
			550 NW	24.0	X 22440-B5B	TMX R407C MOP +15 °C	21.6		XD 4.75	
750 NW			32.9	X 22440-B6B	TMX R407C MOP +15 °C	28.0	XD 5			
1000 NW			44.4	X 22440-B7B	TMX R407C MOP +15 °C	40.8	XD 6			
1150 NW			51.7	X 22440-B8B	TMX R407C MOP +15 °C	52.5	XD 7			
TJRE		14 NW	62.0	X 11873-B4B	TMX R407C MOP +15 °C	61.8	XD 8			
		17 NW	80.0	X 11873-B5B	TMX R407C MOP +15 °C	72.3	XD 10			
R404A	TCLE	250 SW	12.2	X 22440-B4B	TMX R404A MOP +10 °C	12.0	XD 4.5	TMX		
		400 SW	15.7	X 22440-B5B	TMX R404A MOP +10 °C	15.8	XD 4.75			
		600 SW	21.5	X 22440-B6B	TMX R404A MOP +10 °C	20.5	XD 5			
		850 SW	29.0	X 22440-B7B	TMX R404A MOP +10 °C	29.8	XD 6			
		1000 SW	33.8	X 22440-B8B	TMX R404A MOP +10 °C	38.3	XD 7			
	TJRE	12 SW	40.0	X 11873-B4B	TMX R404A MOP +10 °C	45.1	XD 8			
		14 SW	51.0	X 11873-B5B	TMX R404A MOP +10 °C	52.8	XD 10			
R507A	TCLE	250 SW	12.2	X 22440-B4B	TMX R507 MOP +10 °C	12.1	XD 4.5	TMX		
		400 SW	15.7	X 22440-B5B	TMX R507 MOP +10 °C	15.9	XD 4.75			
		600 SW	21.5	X 22440-B6B	TMX R507 MOP +10 °C	20.7	XD 5			
		850 SW	29.0	X 22440-B7B	TMX R507 MOP +10 °C	30.1	XD 6			
		1000 SW	33.8	X 22440-B8B	TMX R507 MOP +10 °C	38.7	XD 7			
	TJRE	12 SW	40.0	X 11873-B4B	TMX R507 MOP +10 °C	45.6	XD 8			
		14 SW	51.0	X 11873-B5B	TMX R507 MOP +10 °C	53.3	XD 10			
R22	TCLE	300 HW	17.3	X 22440-B4B	TMX R22 MOP +10 °C	16.9	XD 4.5	TMX		
		500 HW	22.2	X 22440-B5B	TMX R22 MOP +10 °C	22.4	XD 4.75			
		750 HW	30.4	X 22440-B6B	TMX R22 MOP +10 °C	29.1	XD 5			
		1000 HW	41.1	X 22440-B7B	TMX R22 MOP +10 °C	42.4	XD 6			
		1200 HW	47.8	X 22440-B8B	TMX R22 MOP +10 °C	54.5	XD 7			
	TJRE	14 HW	58.0	X 11873-B4B	TMX R22 MOP +10 °C	64.1	XD 8			
		18 HW	74.0	X 11873-B5B	TMX R22 MOP +10 °C	75.1	XD 10			

## Series TMX with changeable orifice

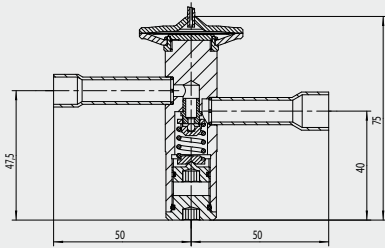
Capacity at:  $t_0 = +5^\circ\text{C}$ ,  $t_c = +32^\circ\text{C}$ , subcooling = 4 K

Danfoss				Honeywell			Refrigerant	
Series	Valve type	Orifice size	Capacity [kW]	Orifice size	Capacity [kW]	Series*		
TE 5	TEN 5-3.7	01	12.9	4.75	15.2	TMX	R134a	
	TEN 5-5.4	02	19.1	5	19.1			
	TEN 5-8.3	03	29.1	6	26.4			
	TEN 5-11.2	04	39.6	8	41.5			
TE 12	TEN 12-4.7	01	16.7	4.75	15.2			
	TEN 12-7.7	02	27.2	6	26.4			
	TEN 12-11.4	03	40.0	8	41.5			
TE 20	TEN 12-15	04	53.0	10	48.8			
	TEN 20-18	01	65.0	11	62.2			
TE 5	TEZ 5-3.7	01	21.3	4.75	20.9		TMX	R407C
	TEZ 5-5.0	02	29.1	5	27.1			
	TEZ 5-8.0	03	41.9	6	39.5			
	TEZ 5-13	04	59.7	8	59.8			
TE 12	TEZ 12-5.0	01	28.9	5	27.1			
	TEZ 12-8	02	46.9	7	50.8			
	TEZ 12-13	03	69.1	10	70.0			
	TEZ 12-19.5	04	91.2	11	89.4			
TE 5	TES 5-3.7	01	13.0	4.75	16.0	TMX		R404A R507A
	TES 5-5.0	02	17.6	4.75	16.0			
	TES 5-7.2	03	25.3	6	30.3			
	TES 5-10.3	04	36.2	7	38.9			
TE 12	TES 12-4.2	01	14.8	4.75	16.0			
	TES 12-6.8	02	23.9	6	30.3			
	TES 12-10.0	03	35.2	7	38.9			
TE 20	TES 12-13.4	04	47.1	8	45.9			
	TEN 20-16.5	01	59.0	10	53.7			
TE 5	TEX 5-3	01	19.7	4.75	21.2		TMX	R22
	TEX 5-4.5	02	26.9	5	27.4			
	TEX 5-7.5	03	38.8	6	40.0			
	TEX 5-12	04	55.3	7	51.4			
TE 12	TEX 12-4.5	01	26.8	5	27.4			
	TEX 12-7.5	02	43.4	6	40.0			
	TEX 12-12	03	64.0	8	60.6			
	TEX 12-18	04	84.4	11	90.5			

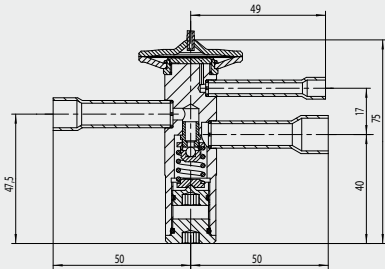
\* For explanations on these series see page 4-5. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.).

# Dimensional drawings expansion valves

## Series TLE(X)

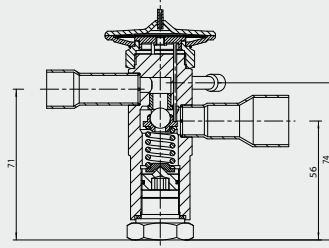


TLE 0.5-4.5

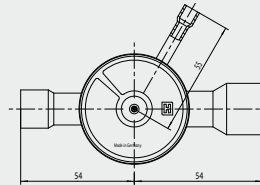


TLEX 0.5-4.5

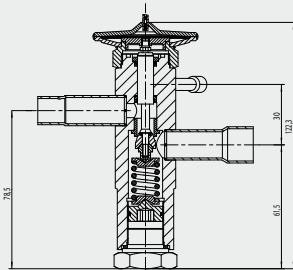
## Series TLESX 4.75-6



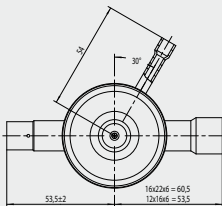
TLESX 4.75-6



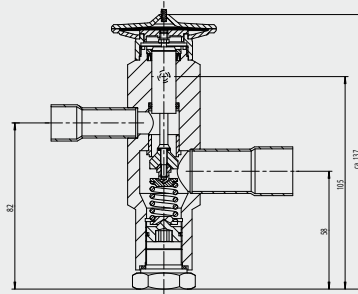
## Series TLEX 4.75-7



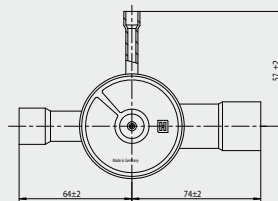
TLEX 4.75-7



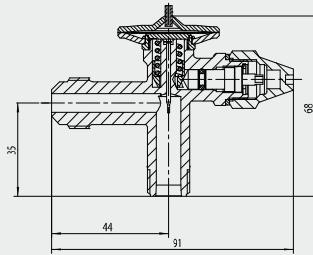
## Series TLEX 8-11



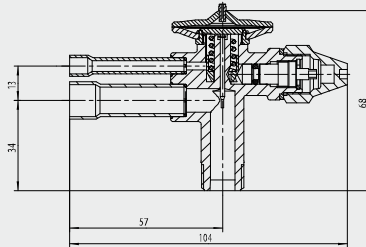
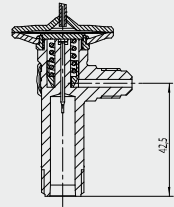
TLEX 8-11



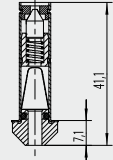
## Series TMV



TMV/TMVX

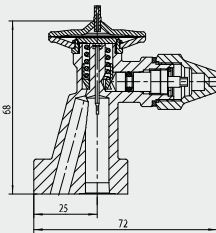


TMVBL/TMVXBL

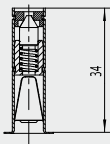
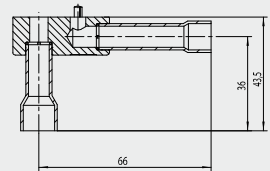
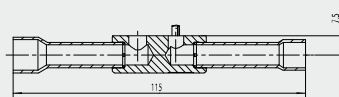


Orifice cartridge VD

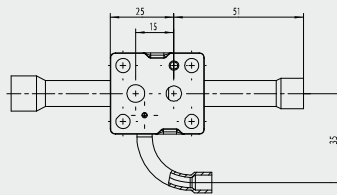
## Series TMVL



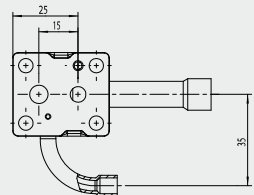
Valve body head TMVL



Orifice cartridge VD



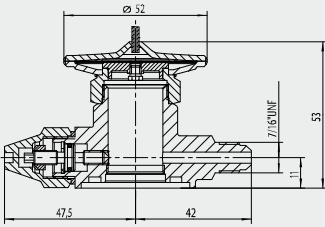
Valve base VLS(X)  
Throughway



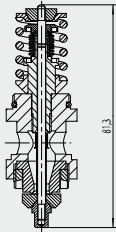
Valve base VLS(X)  
Angle

# Dimensional drawings expansion valves

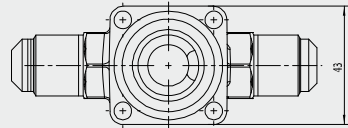
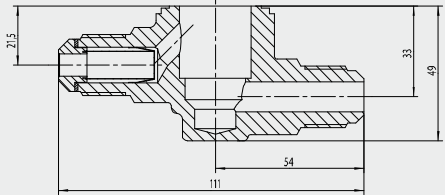
## Series TMX



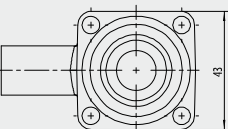
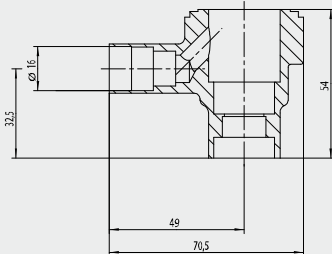
Valve body head TMVL



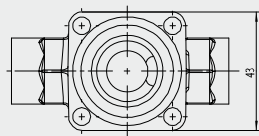
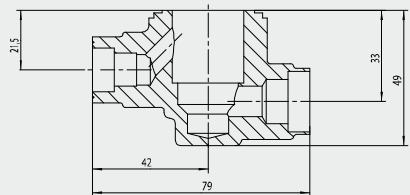
Orifice cartridge VD



Valve base XBS Throughway

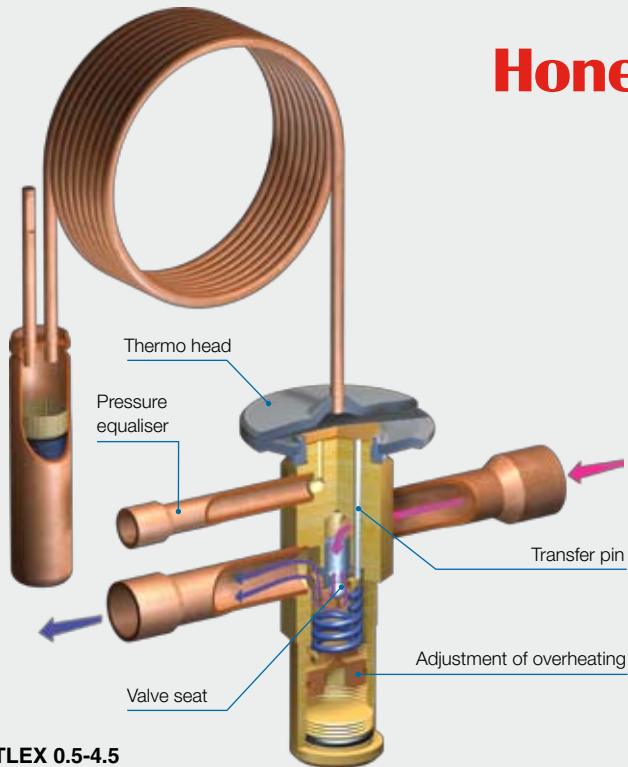


Valve base XLS Angle



Valve base XLS Throughway

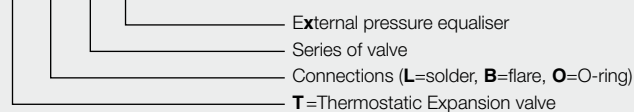




**Expansion valve TLEX 0.5-4.5**

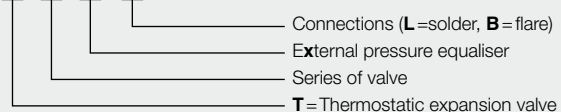
- T L K
- T L E
- T L E X
- T L ES X

**Nomenclature**  
**Thermostatic expansion valves (fixed orifices)**



- T MV
- T MV X
- T MV BL
- T MV X BL
- T MV L
- T M X - B
- T M X - L

**Nomenclature**  
**Thermostatic expansion valves (changeable orifices)**



# Solenoid valves

## Practice proven design with extreme long lifetime

**Solenoid Valves** are used in general refrigeration and for original equipment as reliable and demand-oriented barrier of line sections. They are suitable for installation into liquid line, hot gas line and suction line of a refrigerating unit.

Honeywell Solenoid Valves impress by following advantages:

- High durability - minimum 1.5 million alternations of load
- Solid protection against humidity by special sealing of the coil
- Modular system: valve housing to be combined with various coil voltages

- Normally closed
- Direct operated: no minimum pressure differential required to open the valve
- Pilot operated: minimum pressure differential of 0.05 bar required to open the valve
- Solder and flare connections possible

### Series MA

Solenoid Valve, normally closed, direct operated, angle construction, solder connections, kv-value = 0.17 m<sup>3</sup>/h.

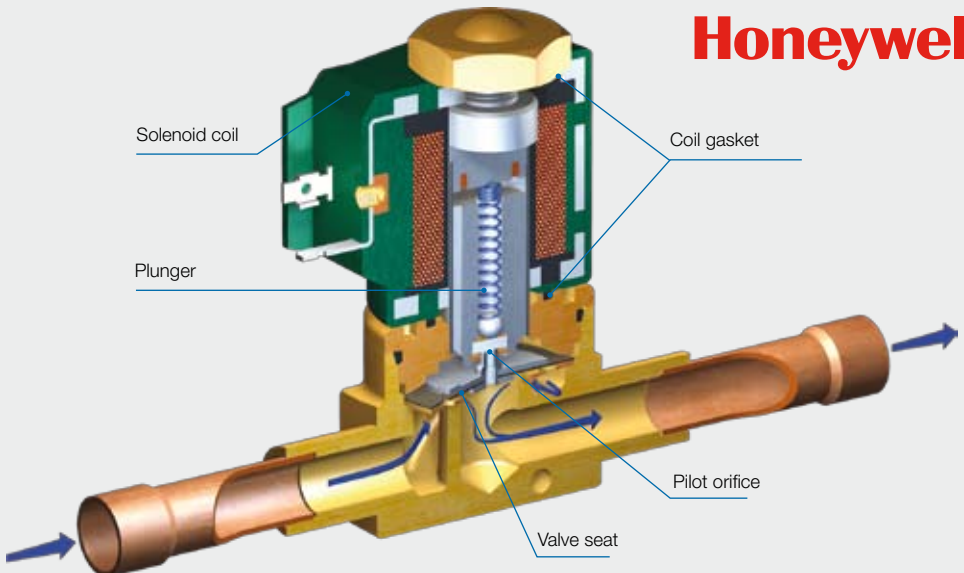
### Series MD

Solenoid Valve, normally closed, direct operated, two-way construction, solder or flare connections, kv-value = 0.17 - 0.23 m<sup>3</sup>/h, valve complete with coil for 230 V AC or as part programme valve without coil.

### Series MS

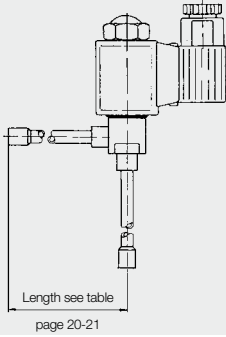
Solenoid Valve, normally closed, pilot operated, two-way construction, solder or flare connections, kv-value = 0.9 - 4 m<sup>3</sup>/h, valve complete with coil for 230 V AC or as part programme valve without coil.

# Honeywell

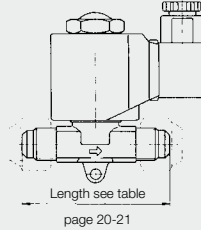


**Direct operated solenoid valve MS**

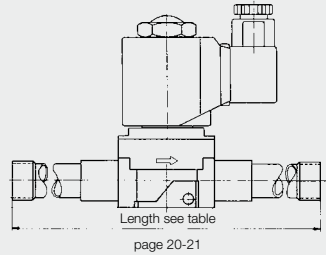
## Series MA



## Series MD

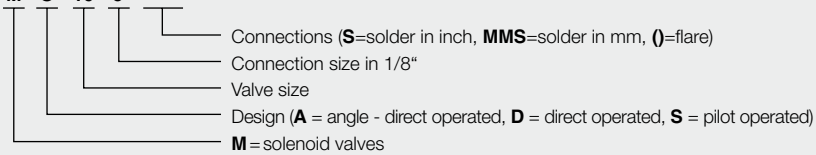


## Series MS



M A 06 2 MMS  
M D 10 3 S  
M S 16 5

### Nomenclature Solenoid valves



## Nominal capacity $Q_N$ (kW)

Type	kv-value (m <sup>3</sup> /h)	Liquid				Hot gas				Suction gas			
		R134a	R22	R407C	R404A R507A	R134a	R22	R407C	R404A R507A	R134a	R22	R407C	R404A R507A
MA 062	0.17	5.21	5.62	5.39	3.87	1.14	1.47	1.45	1.29	-	-	-	-
MD 062	0.17	5.21	5.62	5.39	3.87	1.14	1.47	1.45	1.29	-	-	-	-
MD 102	0.22	6.74	7.27	6.98	5.01	1.48	1.90	1.88	1.67	-	-	-	-
MD 103	0.23	7.05	7.61	7.29	5.24	1.54	1.99	1.96	1.75	-	-	-	-
MS 103/104	0.9	27.6	29.8	28.5	20.5	6.04	7.78	7.67	6.83	1.54	2.06	1.92	1.80
MS 124/125	1.6	49.0	52.9	50.7	36.4	10.7	13.8	13.6	12.1	2.74	3.66	3.42	3.19
MS 165/167	2	61.3	66.1	63.4	45.5	13.4	17.3	17.1	15.2	3.42	4.57	4.27	3.99
MS 227	4	123	132	127	91.1	26.8	34.6	34.1	30.4	6.85	9.14	8.54	7.98

## The nominal capacity $Q_N$ is based on the following conditions:

Medium	Evaporating temperature $t_0$ [°C]	Condensing temperature $t_c$ [°C]	Subcooling $\Delta t_{c2u}$ [K]	Hot gas temperature $t_H$ [°C]	Pressure loss across valve $\Delta p$ [bar]
Liquid	-10	25	1	-	0.40
Hot gas	-10	25	1	25	1.00
Suction gas	-10	25	1	-	0.15

\* For explanations on these series see page 18. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.)

# Comparative table solenoid valves

## Series MA / MD / MS

		ALCO		Honeywell				
Direct operated, no minimum pressure differential required	Type	kv-value [m³/h]	Type	kv-value [m³/h]	Connection	Length [mm]**	Os number	Type*
	110 RB 2	0.2	MA 062MMS	0.17	6 mm ODF angle construction	88	MA-00001	MA MD
			MA 062S	0.17	1/4" ODF angle construction	88	MA-00002	
			MD 062	0.17	7/16" UNF	65	MD-00001	
			MD 062MMS	0.17	6 mm ODF	112	MD-00006	
			MD 062S	0.17	1/4" ODF	112	MD-00007	
			MD 102	0.22	7/16" UNF	68	MD-00014	
			MD 102MMS	0.22	6 mm ODF	118	MD-00024	
			MD 102S	0.22	1/4" ODF	118	MD-00025	
			MD 103	0.23	5/8" UNF	71	MD-00018	
MD 103MMS			0.23	10 mm ODF	118	MD-00026		
MD 103S	0.23	3/8" ODF	118	MD-00027				
Pilot operated, minimum pressure differential of 0.05 bar	Type	kv-value [m³/h]	Type	kv-value [m³/h]	Connection	Length [mm]**	Os number	Type*
	200 RB 4	0.9	MS 103	0.9	5/8" UNF	84	MS-00001	MS
			MS 103MMS	0.9	10 mm ODF	159	MS-00019	
			MS 103S	0.9	3/8" ODF	159	MS-00022	
			MS 104 MMS	0.9	12 mm ODF	159	part program MS-00103 MC-00005	
			MS 104S	0.9	1/2" ODF	159	part program MS-00104 MC-00005	
	200 RB 6	1.6	MS 124	1.6	3/4" UNF	91	MS-00007	
			MS 124MMS	1.6	12 mm ODF	159	MS-00023	
			MS 124S	1.6	1/2" ODF	159	MS-00025	
	200 RB 6	1.6	MS 125S	1.6	16 mm / 5/8" ODF	159	part program MS-00108 MC-00005	
			MS 165	2	7/8" UNF	97	MS-00012	
	240 RA 8	2.3	MS 165S	2	16 mm / 5/8" ODF	159	MS-00026	
			MS 167S	2	22 mm / 7/8" ODF	173	part program MS-00111 MC-00005	
			MS 227S	4	22 mm / 7/8" ODF	262	MS-00031	
	240 RA 9	4.8						
	240 RA 12	5.4						

All valves on this double-page spread include one 230 V coil and are normally closed (NC). In our part program we offer all products also separately (except of the MD 102).

The part program includes a choice of additional coils.

Danfoss		Honeywell						Type*	Direct operated, no minimum pressure differential required	
Type	kv-value [m³/h]	Type	kv-value [m³/h]	Connection	Length [mm]**	Os number				
EVR 2	0.16	MA 062MMS	0.17	6 mm ODF angle construction	88	MA-00001	MA MD	Direct operated, no minimum pressure differential required		
		MA 062S	0.17	1/4" ODF angle construction	88	MA-00002				
		MD 062	0.17	7/16" UNF	65	MD-00001				
		MD 062MMS	0.17	6 mm ODF	112	MD-00006				
EVR 3	0.27	MD 062S	0.17	1/4" ODF	112	MD-00007	MA MD		Direct operated, no minimum pressure differential required	
		MD 102	0.22	7/16" UNF	68	MD-00014				
		MD 102MMS	0.22	6 mm ODF	118	MD-00024				
		MD 102S	0.22	1/4" ODF	118	MD-00025				
		MD 103	0.23	5/8" UNF	71	MD-00018				
		MD 103MMS	0.23	10 mm ODF	118	MD-00026				
MD 103S	0.23	3/8" ODF	118	MD-00027	Pilot operated, minimum pressure differential of 0.05 bar					
Type	kv-value [m³/h]	Type	kv-value [m³/h]	Connection		Length [mm]**	Os number	Type*		
EVR 6	0.8	MS 103	0.9	5/8" UNF		84	MS-00001	MS		Pilot operated, minimum pressure differential of 0.05 bar
		MS 103MMS	0.9	10 mm ODF		159	MS-00019			
		MS 103S	0.9	3/8" ODF		159	MS-00022			
		MS 104 MMS	0.9	12 mm ODF		159	part program MS-00103 MC-00005			
EVR 10	1.9	MS 104S	0.9	1/2" ODF		159	part program MS-00104 MC-00005	MS	Pilot operated, minimum pressure differential of 0.05 bar	
		MS 124	1.6	3/4" UNF		91	MS-00007			
		MS 124MMS	1.6	12 mm ODF		159	MS-00023			
		MS 124S	1.6	1/2" ODF		159	MS-00025			
EVR 15	2.6	MS 125S	1.6	16 mm / 5/8" ODF	159	part program MS-00108 MC-00005	MS	Pilot operated, minimum pressure differential of 0.05 bar		
		MS 165	2	7/8" UNF	97	MS-00012				
		MS 165S	2	16 mm / 5/8" ODF	159	MS-00026				
EVR 20	5	MS 167S	2	22 mm / 7/8" ODF	173	part program MS-00111 MC-00005	MS			Pilot operated, minimum pressure differential of 0.05 bar
		MS 227S	4	22 mm / 7/8" ODF	262	MS-00031				

\* For explanations on these series see page 18. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.)

\*\* see drawing on page 19

# Sight glasses

## Clear view in all installation situations

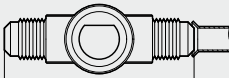
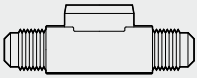
**Sight Glasses** show the condition of the refrigerant flowing through the lines in the refrigerating plant, for example it is possible to see if the refrigerant in the liquid line is free of bubbles. The moisture indicator shows the moisture content of the refrigerant.

Honeywell Sight Glasses stand out by the following characteristics:

- Minor pressure loss - optimized construction without internals
- Wide field of vision without reflections at the bottom - Refrigerant flow clearly recognizable
- Suitable for all modern refrigerants
- Solder and flare connections

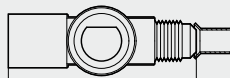
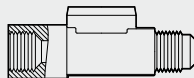
- Most solid with brass body and pressure resistant glass
- Sight glass with moisture indicator to quantify the moisture content in the refrigerant

### Series SBI



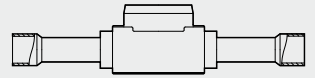
Length see table  
page 24-25

### Series SBIA



Length see table  
page 24-25

### Series SLI



Length see table  
page 24-25

S L I 1/2  
S B I 10  
S B I A 12

### Nomenclature Sight glasses

- Connection size (mm, inch)
- **A** = Inner and outer
- **I** = Indicator
- Connections (**L**=solder, **B**=flare)
- **S** = Sight glasses

## Series SBI

Sight Glass with moisture indicator, flare connections, outside threads



SBI

## Series SBIA

Sight Glass with moisture indicator, flare connections, outside and inside thread



SBIA

## Series SLI

Sight Glass with moisture indicator, solder connections, imperial and metric versions



SLI

## Moisture indicator

The colour of the indicator is a measure for the moisture load of the refrigerant inside the plant. The range of indication depends

on the refrigerant. Due to the humidity in the air, the indicator is yellow on delivery. After the installation inside the plant, the indica-

tor will change to green when filling the system with dry refrigerant.

Refrigerant	Indication Range		
	dry (green)	transition	wet (yellow)
<b>R22</b>	< 30 ppm	30 – 150 ppm	> 150 ppm
<b>R134a</b>	< 60 ppm	60 – 100 ppm	> 100 ppm
<b>R404A</b>	< 20 ppm	20 – 100 ppm	> 100 ppm
<b>R407C</b>	< 20 ppm	20 – 130 ppm	> 130 ppm
<b>R507A</b>	< 20 ppm	20 – 100 ppm	> 100 ppm

Indication temperature: t = 30 °C

### Green colour: Moisture free.

Only a moisture-free refrigerant assures no trouble with the expansion valve coming from humidity.

### Transition:

When the green colour begins to fade, it is an indication that small quantities of moisture are present. It is recommended to change the filter drier.

### Yellow colour: Wet.

The refrigerant is loaded with moisture higher than the stated values. A change of the filter drier is required.

# Comparative table sight glasses

## Series SBI / SBIA / SLI

ALCO					Honeywell				
Series	Type MIA	Type AMI-1 SS	Type AMI-1 TT	Connection	Type	Connection	Os number	Length [mm]***	Type*
MIA AMI-1	MIA M06	SS 2 MM	TT 2 MM	Connection sizes are equal to the ones of Honeywell in the right-hand table	SLI 6	6 mm ODF	SLI-00001	106	SLI
	MIA 014	SS 2	TT 2		SLI 1/4	1/4" ODF	SLI-00002	106	
	MIA M10	SS 3 MM	TT 3 MM		SLI 10	10mm ODF	SLI-00003	119	
	MIA 038	SS 3	TT 3		SLI 3/8	3/8" ODF	SLI-00004	119	
	MIA M12	SS 4 MM	TT 4 MM		SLI 12	12mm ODF	SLI-00005	144	
	MIA 012	SS 4	TT 4		SLI 1/2	1/2" ODF	SLI-00006	144	
	MIA M16	SS 5	TT 5		SLI 15	15mm ODF	SLI-00007	146	
	MIA 058	SS 5	TT 5		SLI 16	16mm/5/8" ODF	SLI-00008	146	
	MIA 078	SS 7	TT 7		SLI 16	16mm/5/8" ODF	SLI-00008	146	
		SS 9 MM	TT 9 MM		SLI 18	18mm ODF	SLI-00010	183	
	SS 9	TT 9	SLI 22	22mm/7/8" ODF	SLI-00011	183			
			SLI 3/4	3/4" ODF	SLI-00012	183			
			SLI 28	28mm ODF	SLI-00014	187			
			SLI 1.1/8	1 1/8" ODF	SLI-00015	178			

ALCO			Honeywell				
Series	Type MIA	Connection size**	Type	Thread size**	Os number	Length [mm]***	Type*
AMI-1	MM 2	6 mm / 1/4"	SBI 6	7/16 UNF	SBI-00001	70	SBI
	MM 3	10 mm / 3/8"	SBI 10	5/8 UNF	SBI-00002	76	
	MM 4	12 mm / 1/2"	SBI 12	3/4 UNF	SBI-00003	88	
	MM 5	16 mm / 5/8"	SBI 16	7/8 UNF	SBI-00004	98	

ALCO			Honeywell				
Series	Type MIA	Connection size**	Type	Thread size**	Os number	Length [mm]***	Type*
AMI-1	FM 2	6 mm / 1/4"	SBIA 6	7/16 UNF	SBIA-00001	60	SBIA
	FM 3	10 mm / 3/8"	SBIA 10	5/8 UNF	SBIA-00002	76	
	FM 4	12 mm / 1/2"	SBIA 12	3/4 UNF	SBIA-00003	74	
			SBIA 16	7/8 UNF	SBIA-00004	78	



Danfoss				
Series	Type MIA	Type AMI-1 SS	Type AMI-1 TT	Connection
SG SGI SGN SGH	SGI 6s	SGN 6s		Connection sizes are equal to the ones of Honeywell in the right-hand table
	SGI 6s	SGN 6s	SGH 6s	
	SGI 10s	SGN 10s		
	SGI 10s	SGN 10s	SGH 10s	
	SGI 12s	SGN 12s		
	SGI 12 / SGI 12s	SGN 12s	SGH 12s	
	SGI 16 / SGI 16s	SGN 16s	SGH 16s	
	SGI 18s	SGN 18s		
	SGI 22s	SGN 22s	SGH 22s	
	SGI 19s	SGN 19s		
		SGN 22s	SGH 22s	

Honeywell				
Type	Connection	Os number	Length [mm]***	Type*
SLI 6	6 mm ODF	SLI-00001	106	SLI
SLI 1/4	1/4" ODF	SLI-00002	106	
SLI 10	10 mm ODF	SLI-00003	119	
SLI 3/8	3/8" ODF	SLI-00004	119	
SLI 12	12 mm ODF	SLI-00005	144	
SLI 1/2	1/2" ODF	SLI-00006	144	
SLI 15	15 mm ODF	SLI-00007	146	
SLI 16	16 mm / 5/8" ODF	SLI-00008	146	
SLI 18	18 mm ODF	SLI-00010	183	
SLI 22	22 mm / 7/8" ODF	SLI-00011	183	
SLI 3/4	3/4" ODF	SLI-00012	183	
SLI 28	28 mm ODF	SLI-00014	187	
SLI 1.1/8	1 1/8" ODF	SLI-00015	178	

Danfoss			
Series	Type SG/SGI	Type SGN/SGH	Connection size**
SG SGI SGN	SGI 6	SGN 6 / SGH 6	6 mm / 1/4"
	SGI 10 / SGI 10	SGN 10	10 mm / 3/8"
	SGI 12	SGN 12	12 mm / 1/2"
	SGI 16	SGN 16	16 mm / 5/8"

Honeywell				
Type	Thread size**	Os number	Length [mm]***	Type*
SBI 6	7/16 UNF	SBI-00001	70	SBI
SBI 10	5/8 UNF	SBI-00002	76	
SBI 12	3/4 UNF	SBI-00003	88	
SBI 16	7/8 UNF	SBI-00004	98	

Danfoss			
Series	Type SG/SGI	Type SGN	Connection size**
SGI SGN	SGI 6	SGN 6	6 mm / 1/4"
	SGI 10	SGN 10	10 mm / 3/8"
	SGI 12	SGN 12	12 mm / 1/2"
	SGI 16	SGN 16	16 mm / 5/8"

Honeywell				
Type	Thread size**	Os number	Length [mm]***	Type*
SBIA 6	7/16 UNF	SBIA-00001	60	SBIA
SBIA 10	5/8 UNF	SBIA-00002	76	
SBIA 12	3/4 UNF	SBIA-00003	74	
SBIA 16	7/8 UNF	SBIA-00004	78	

\* For explanations on these series see page 23. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.)

\*\* Honeywell uses the thread size for flare connections always. Flare connections of competitive products are given here in connection sizes of the tubes.

\*\*\* see drawing on page 22.

# Filter drier

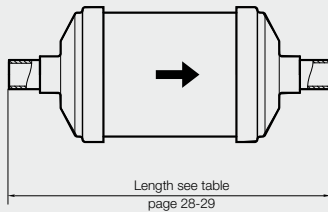
## Premium filters with high filter performance

**Filter Drier** are used for filtering impurities out of the refrigerant and for moisture removal. They are placed in the liquid line of air-conditioning, refrigeration and deep freeze systems.

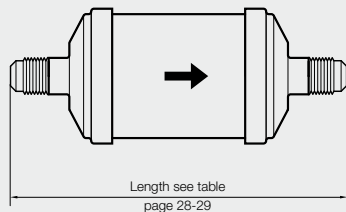
Honeywell Filter Driers stand out by the following characteristics:

- Bulk drier with minor pressure loss – High abrasion resistance
- High cooling capacity
- Drying medium: 3 Å molecular sieve and activated alumina
- High water absorbing capacity
- Reliable filter performance
- Continuous range with solder or flare connections
- Low pressure drop
- Any mounting position in the liquid line possible

### Series FF



FF Solder connection



FF Flare connection

FF 05 2  
FF 08 3 S  
FF 16 4 MMS

#### Nomenclature Filter drier

Connections (**S**=solder in inch, **MMS**=solder in mm, **()**=flare)  
Connection size in 1/8"  
Filter size  
**FF** = filter drier

## Series FF ... S/MMS

Filter Drier with solder connections  
(S = imperial; MMS = metric),  
drying agent in bulk

## Series FF ...

Filter Drier with flare connections,  
drying agent in bulk



FF Flare connection



FF Solder connection

## Water adsorption rate [g]

Refrigerant	R134a		R22		R404A		R407C		R507		
	50 ppm		60 ppm		50 ppm		50 ppm		50 ppm		
Final moisture	50 ppm		60 ppm		50 ppm		50 ppm		50 ppm		
Liquid temperature	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	
	Type	030	4.0	3.7	3.9	3.6	4.3	4.0	3.6	3.1	4.4
050		7.8	7.2	7.5	6.9	8.3	7.7	7.0	5.9	8.5	7.8
080		12.6	11.6	12.1	11.1	13.4	12.4	11.2	9.6	13.7	12.5
160		25.1	23.2	24.1	22.2	26.7	24.8	22.4	19.1	27.4	24.9
300		48.5	44.8	46.7	42.9	51.7	47.9	43.2	37.0	52.9	48.2
410		67.2	62.0	64.6	59.4	71.6	66.4	59.9	51.2	73.3	66.8

# Comparative table filter drier

## Series FF

Bi flow drier / drier receiver and other filters or driers are available on enquiry.

ALCO			Honeywell					
Series	Type	Connection**	Type	Connection**	Os number	Length [mm]***	Type*	
Flare connection	ADK	ADK-032	6 mm / 1/4"	FF 032	7/16" UNF	FF-00201	108.5	FF
		ADK-052	6 mm / 1/4"	FF 052	7/16" UNF	FF-00204	121.5	
		ADK-053	10 mm / 3/8"	FF 053	5/8" UNF	FF-00207	127.5	
		ADK-082	6 mm / 1/4"	FF 082	7/16" UNF	FF-00210	149.5	
		ADK-083	10 mm / 3/8"	FF 083	5/8" UNF	FF-00213	155.5	
		ADK-084	12 mm / 1/2"	FF 084	3/4" UNF	FF-00216	159.5	
		ADK-162	6 mm / 1/4"	FF 162	7/16" UNF	FF-00219	169.0	
		ADK-163	10 mm / 3/8"	FF 163	5/8" UNF	FF-00222	175.0	
		ADK-164	12 mm / 1/2"	FF 164	3/4" UNF	FF-00225	179.0	
		ADK-165	16 mm / 5/8"	FF 165	7/8" UNF	FF-00228	183.0	
		ADK-303	10 mm / 3/8"	FF 303	5/8" UNF	FF-00230	251.5	
		ADK-304	12 mm / 1/2"	FF 304	3/4" UNF	FF-00233	255.5	
		ADK-305	16 mm / 5/8"	FF 305	7/8" UNF	FF-00236	259.5	
		ADK-414	12 mm / 1/2"	FF 414	3/4" UNF	FF-00239	252.5	
ADK-415	16 mm / 5/8"	FF 415	7/8" UNF	FF-00242	273.5			
Solder connection	ADK	ADK-036MMS	6 mm ODF	FF 032MMS	6 mm ODF	FF-00202	98.5	FF
		ADK-032S	1/4" ODF	FF 032S	1/4" ODF	FF-00203	98.5	
		ADK-056MMS	6 mm ODF	FF 052MMS	6 mm ODF	FF-00205	111.5	
		ADK-052S	1/4" ODF	FF 052S	1/4" ODF	FF-00206	111.5	
		ADK-0510MMS	10 mm ODF	FF 053MMS	10 mm ODF	FF-00208	111.5	
		ADK-053S	3/8" ODF	FF 053S	3/8" ODF	FF-00209	111.5	
		ADK-086MMS	6 mm ODF	FF 082MMS	6 mm ODF	FF-00211	139.5	
		ADK-082S	1/4" ODF	FF 082S	1/4" ODF	FF-00212	139.5	
		ADK-0810MMS	10 mm ODF	FF 083MMS	10 mm ODF	FF-00214	139.5	
		ADK-083S	3/8" ODF	FF 083S	3/8" ODF	FF-00215	139.5	
		ADK-0812MMS	12 mm ODF	FF 084MMS	12 mm ODF	FF-00217	139.5	
		ADK-084S	1/2" ODF	FF 084S	1/2" ODF	FF-00218	139.5	
				FF 162MMS	6 mm ODF	FF-00220	159.0	
				FF 162S	1/4" ODF	FF-00221	159.0	
				FF 163MMS	10 mm ODF	FF-00223	159.0	
				FF 163S	3/8" ODF	FF-00224	159.0	
				FF 164MMS	12 mm ODF	FF-00226	159.0	
				FF 164S	1/2" ODF	FF-00227	159.0	
				FF 165S	16 mm / 5/8" ODF	FF-00229	163.0	
				FF 303MMS	10 mm ODF	FF-00231	235.5	
				FF 303S	3/8" ODF	FF-00232	235.5	
				FF 304MMS	12 mm ODF	FF-00234	235.5	
				FF 304S	1/2" ODF	FF-00235	235.5	
				FF 305S	16 mm / 5/8" ODF	FF-00237	239.5	
				FF 307S	22 mm / 7/8" ODF	FF-00238	259.5	
				FF 414MMS	12 mm ODF	FF-00240	232.5	
		FF 414S	1/2" ODF	FF-00241	232.5			
		ADK-415S	5/8" ODF	FF 415S	16 mm / 5/8" ODF	FF-00243	253.5	
		ADK-417S	22 mm / 7/8" ODF	FF 417S	22 mm / 7/8" ODF	FF-00244	273.5	

Danfoss				Honeywell				
Series	Type DCL	Type DML	Connection**	Type	Connection**	Os number	Length [mm]***	Type*
DCL DML	DCL 032	DML 032	6 mm / 1/4"	FF 032	7/16" UNF	FF-00201	108.5	FF
	DCL 052	DML 052	6 mm / 1/4"	FF 052	7/16" UNF	FF-00204	121.5	
	DCL 053	DML 053	10 mm / 3/8"	FF 053	5/8" UNF	FF-00207	127.5	
	DCL 082	DML 082	6 mm / 1/4"	FF 082	7/16" UNF	FF-00210	149.5	
	DCL 083	DML 083	10 mm / 3/8"	FF 083	5/8" UNF	FF-00213	155.5	
	DCL 084	DML 084	12 mm / 1/2"	FF 084	3/4" UNF	FF-00216	159.5	
	DCL 162	DML 162	6 mm / 1/4"	FF 162	7/16" UNF	FF-00219	169.0	
	DCL 163	DML 163	10 mm / 3/8"	FF 163	5/8" UNF	FF-00222	175.0	
	DCL 164	DML 164	12 mm / 1/2"	FF 164	3/4" UNF	FF-00225	179.0	
	DCL 165	DML 165	16 mm / 5/8"	FF 165	7/8" UNF	FF-00228	183.0	
	DCL 303	DML 303	10 mm / 3/8"	FF 303	5/8" UNF	FF-00230	251.5	
	DCL 304	DML 304	12 mm / 1/2"	FF 304	3/4" UNF	FF-00233	255.5	
	DCL 305	DML 305	16 mm / 5/8"	FF 305	7/8" UNF	FF-00236	259.5	
	DCL 414	DML 414	12 mm / 1/2"	FF 414	3/4" UNF	FF-00239	252.5	
	DCL 415	DML 415	16 mm / 5/8"	FF 415	7/8" UNF	FF-00242	273.5	
DCL DML	DCL 032s	DML 032s	6mm ODF	FF 032MMS	6 mm ODF	FF-00202	98.5	FF
	DCL 032s	DML 032s	1/4" ODF	FF 032S	1/4" ODF	FF-00203	98.5	
	DCL 052s	DML 052s	6mm ODF	FF 052MMS	6 mm ODF	FF-00205	111.5	
	DCL 052s	DML 052s	1/4" ODF	FF 052S	1/4" ODF	FF-00206	111.5	
	DCL 053s	DML 053s	10mm ODF	FF 053MMS	10 mm ODF	FF-00208	111.5	
	DCL 053s	DML 053s	3/8" ODF	FF 053S	3/8" ODF	FF-00209	111.5	
	DCL 082s	DML 082s	6mm ODF	FF 082MMS	6 mm ODF	FF-00211	139.5	
	DCL 082s	DML 082s	1/4" ODF	FF 082S	1/4" ODF	FF-00212	139.5	
	DCL 083s	DML 083s	10mm ODF	FF 083MMS	10 mm ODF	FF-00214	139.5	
	DCL 083s	DML 083s	3/8" ODF	FF 083S	3/8" ODF	FF-00215	139.5	
	DCL 084s	DML 084s	12mm ODF	FF 084MMS	12 mm ODF	FF-00217	139.5	
	DCL 084s	DML 084s	1/2" ODF	FF 084S	1/2" ODF	FF-00218	139.5	
	DCL 162s	DML 162s	6mm ODF	FF 162MMS	6 mm ODF	FF-00220	159.0	
	DCL 162s	DML 162s	1/4" ODF	FF 162S	1/4" ODF	FF-00221	159.0	
	DCL 163s	DML 163s	10mm ODF	FF 163MMS	10 mm ODF	FF-00223	159.0	
	DCL 163s	DML 163s	3/8" ODF	FF 163S	3/8" ODF	FF-00224	159.0	
	DCL 164s	DML 164s	12mm ODF	FF 164MMS	12 mm ODF	FF-00226	159.0	
	DCL 164s	DML 164s	1/2" ODF	FF 164S	1/2" ODF	FF-00227	159.0	
	DCL 165s	DML 165s	16 mm / 5/8" ODF	FF 165S	16 mm / 5/8" ODF	FF-00229	163.0	
	DCL 303s	DML 303s	10mm ODF	FF 303MMS	10 mm ODF	FF-00231	235.5	
	DCL 303s	DML 303s	3/8" ODF	FF 303S	3/8" ODF	FF-00232	235.5	
	DCL 304s	DML 304s	12mm ODF	FF 304MMS	12 mm ODF	FF-00234	235.5	
	DCL 304s	DML 304s	1/2" ODF	FF 304S	1/2" ODF	FF-00235	235.5	
	DCL 305s	DML 305s	16 mm / 5/8" ODF	FF 305S	16 mm / 5/8" ODF	FF-00237	239.5	
	DCL 307s	DML 307s	22 mm / 7/8" ODF	FF 307S	22 mm / 7/8" ODF	FF-00238	259.5	
	DCL 414s	DML 414s	12mm ODF	FF 414MMS	12 mm ODF	FF-00240	232.5	
	DCL 414s	DML 414s	1/2" ODF	FF 414S	1/2" ODF	FF-00241	232.5	
DCL 415s	DML 415s	16 mm / 5/8" ODF	FF 415S	16 mm / 5/8" ODF	FF-00243	253.5		
DCL 417s	DML 417s	22 mm / 7/8" ODF	FF 417S	22 mm / 7/8" ODF	FF-00244	273.5		

\* For explanations on these series see page 26-27. Please note also that these series of Honeywell could also come with other technical differences (length, weight, maximum pressures, etc.)

\*\* Honeywell uses the thread size for flare connections always. Flare connections of competitive products are given here in connection sizes of the tubes.

\*\*\* see drawing on page 26.

# Additional cooling components

## Honeywell - Application experience with cooling components

### Hot Gas Bypass Valves

Honeywell Hot Gas Bypass Valves are used to adjust the compressor capacity to the actual evaporator capacity in a refrigerating plant. The Hot Gas Bypass Valve can be installed in a bypass tube between hot gas line and suction line. The suction pressure is downward limited by flowing hot gas from the high pressure to the low pressure side e.g. as freezing protection. The controllers are suitable for plants in general refrigeration and for original equipment such as dehumidifiers, air driers, water coolers or ice machines.

### Liquid Injection Valves

Liquid Injection Valves are used in refrigeration applications to reduce the temperature of the suction gas. Depending on the superheat of the compressor suction gas, liquid refrigerant is injected into the suction line. Thereby the suction gas is cooled down. Honeywell Liquid Injection Valves can be combined optimally with Hot Gas Bypass Valves.

- High flexibility due to modular system
- Interchangeable orifice cartridges
- Optimal adjustment to cooling capacity due to small orifice graduation
- To be used with bases and orifice cartridges of Honeywell Expansion Valves

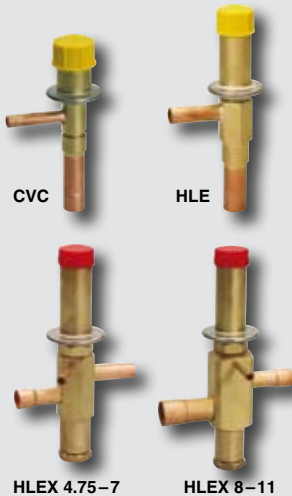
### Check Valves

Check Valves are installed in the liquid, hot gas or suction line of a refrigerated plant. They prevent flow reversion in the circuit e.g. caused by liquid migration. This is realized by a spring loaded piston which opens the valve only in one direction.

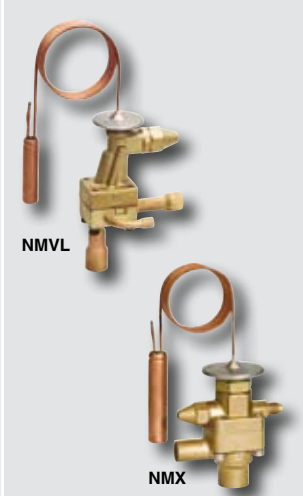
### Vibration Absorbers

Honeywell Vibration Absorbers are used to minimize vibrations on the pipes caused by the compressor. Furthermore they decrease noise and compensate small thermal distensions.

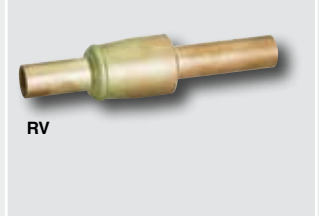
### Hot Gas Bypass Valves



### Liquid Injection Valves



### Check Valves



### Vibration Absorbers



# Electronic cooling components

## Honeywell - Optimal control of refrigerating plants

### Cold Store Controls

Honeywell Cold Store Controls are used for refrigeration and deep freeze systems. They control the cold store temperature by switching the compressor and evaporator fan depending on the adjusted parameters.

### Thermostats

Honeywell Thermostats are used for refrigeration and deep freeze systems, heat pumps as well as for general thermostat applications. The Electronic Thermostats can be used for cooling and heating applications in a temperature range of  $-55\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$ .

### Temperature Displays

Honeywell Electronic Temperature Displays are used in refrigeration and deep freeze systems, in cold stores and as general temperature display.

### Individual Solutions from Honeywell

Honeywell offers a wide range of Electronic Controls for the fail safe operation of cooling, refrigeration, air conditioning and heat pump applications. Temperature Displays, Thermostats and Cold Store Controls show just a small selection of the complete portfolio. We do have much more. Ask us!

### Cold Store Controls



PCR 300



PCR 310

### Thermostats and Temperature Displays



PCR 100



PCR 110



PTI 610

### Individual Solutions from Honeywell



# Overview of types

To shortly give you an overview of how our products are designed we displayed the main types here. More detailed information can be found on our website or by just calling us.

## Automatic Expansion Valves



## Thermostatic Expansion Valves with fixed orifice



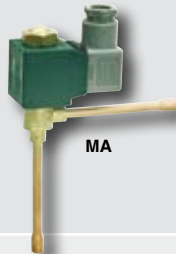
## Thermostatic Expansion Valves with interchangeable orifice



## Filter Drier



## Solenoid Valves



## Sight Glasses



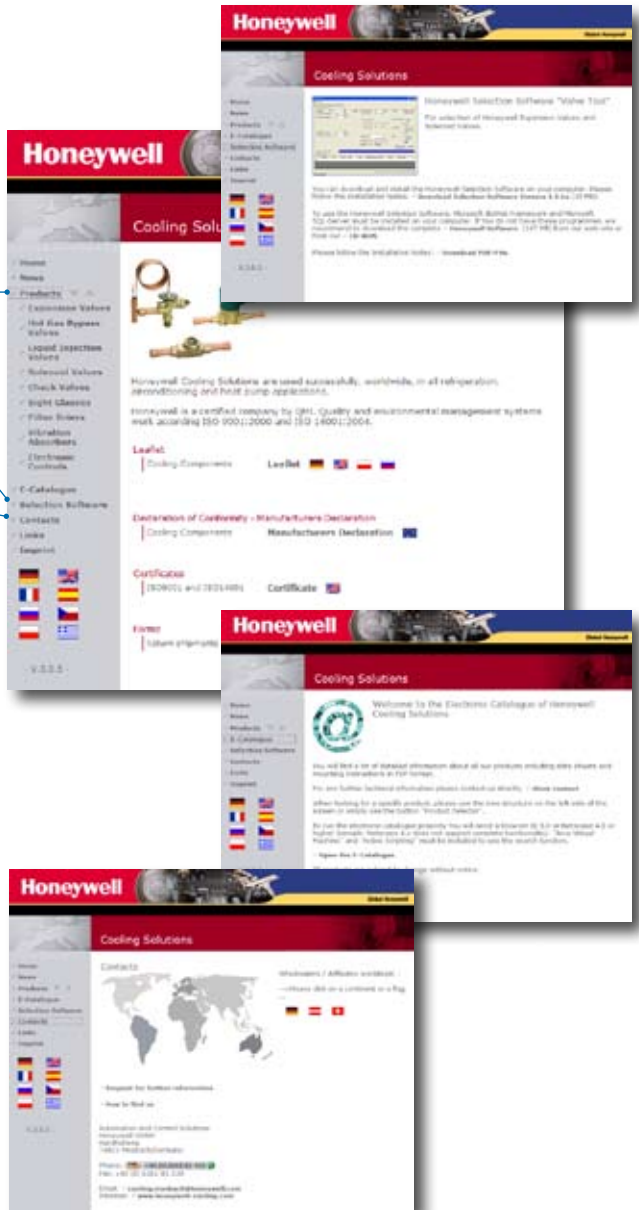


# Our online service

On the internet you can find detailed information about the cooling components of Honeywell.

[www.honeywell-cooling.com](http://www.honeywell-cooling.com)

- Link [Products](#)  
Technical information, data sheets, mounting guidelines and certificates to download
- Link [Selection Software](#)  
Selection software „Valve Tool“ to download and for free usage
- Link [Contacts](#)  
Request of additional information, world-wide contacts



Please note:

Do you prefer to have that information on CD? Then please order your personal copy by sending an E-mail to (do not forget to mention your address):

[cooling.mosbach@honeywell.com](mailto:cooling.mosbach@honeywell.com)

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