



# 60Hz Water cooled semi-hermetic condensing units

Product catalogue

**COPELAND™**

  
**EMERSON™**

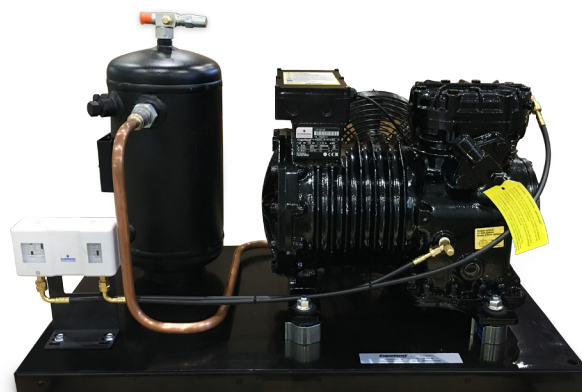
# Water-cooled condensing units

## General information

The WH range of water cooled condensing units are suitable for medium and low temperature refrigeration applications:

Medium Temperature	R134a
Low Temperature	R404a

The high side heat exchangers are specifically designed for chilled water loops.



## Features

### Copeland semi-hermetic compressor

- Suction and discharge valves
- Oil sight Glass
- Mounting springs
- Motor protection by INT69 thermistor module
- Discharge vibration eliminator
- Side mounted compressor fan for optimal compressor cooling
- POE Oil
- Internal oil pump for enhanced lubrication
- External oil pump and OPS for 2D model and 3D SH models.

### Compressor cooling fan, K and L model

- External rotor, axial fan with guard grill ( Form V )
- 230V single phase
- Power / Current Input: 67 W / 0.46 A
- Fan pre-wired to compressor terminal box

### Tube in Shell Hermetic Condenser

- Shell and connections : carbon steel
- Tube : copper
- Built in receiver
- Refrigerant side connections : rotalock type
- 1/2" NPT provision for safety relief valve
- Compliant to PED 97/23/EC Directive
- Maximum Pressure Limits  
: Refrigerant side 30 bar  
: Water side 10 bar

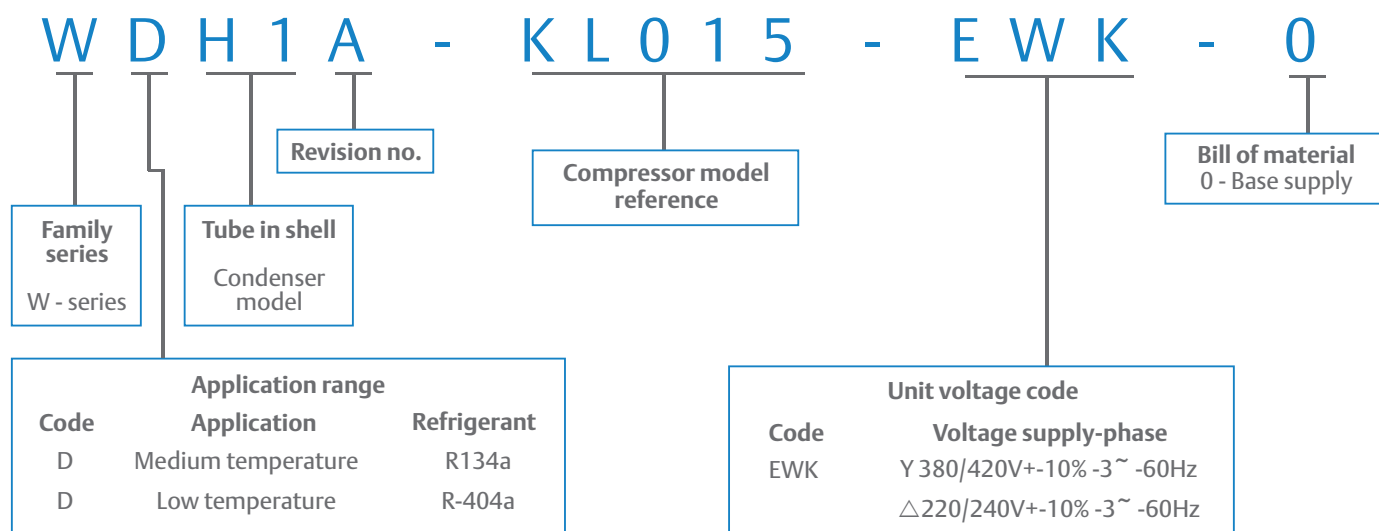
### Accessories

- HP/LP dual pressure safety switch, auto reset

### Capacity Data

- Units are rated at 30 °C Condensing, 3K Sub Cooling, 20°C Suction Gas Return, 7 °C Water Inlet Temperature

## Nomenclature



# Performance data

Condensing Unit Model		R404a					R134a				
		Evaporating Temperature (°C)									
		-40	-35	-30	-25	-20	-15	-10	-5	0	5
WDH1A-KJ007-EWK	Capacity (kW)	0.88	1.21	1.60	2.07	2.61	1.76	2.25	2.82	3.48	4.26
	Power Input (kW)	0.78	0.86	0.94	1.01	1.08	0.69	0.73	0.77	0.79	0.79
	Flowrate (l/s)	0.03	0.04	0.05	0.06	0.07	0.04	0.06	0.07	0.09	0.11
	Pressure Drop (kPa)	0.14	0.22	0.37	0.56	0.93	0.33	0.51	0.86	1.38	2.12
WDH1A-SJ010-EWK	Capacity (kW)	1.18	1.59	2.07	2.63	3.29	2.15	2.73	3.41	4.20	5.13
	Power Input (kW)	1.00	1.11	1.21	1.32	1.42	0.84	0.90	0.95	0.97	0.98
	Flowrate (l/s)	0.04	0.05	0.06	0.08	0.10	0.06	0.07	0.09	0.12	0.15
	Pressure Drop (kPa)	0.22	0.37	0.62	1.07	1.73	0.51	0.86	1.38	2.22	3.62
WDH1A-KL015-EWK	Capacity (kW)	1.38	1.84	2.39	3.04	3.80	2.50	3.17	3.95	4.87	5.94
	Power Input (kW)	1.09	1.21	1.34	1.46	1.57	1.03	1.10	1.16	1.20	1.22
	Flowrate (l/s)	0.04	0.06	0.07	0.10	0.12	0.07	0.09	0.11	0.14	0.19
	Pressure Drop (kPa)	0.30	0.51	0.86	1.56	2.54	0.73	1.22	2.02	3.36	5.64
WDH2A-SL020-EWK	Capacity (kW)	1.70	2.29	2.99	3.82	4.80	3.17	4.02	5.03	6.21	7.59
	Power Input (kW)	1.25	1.45	1.66	1.86	2.06	1.26	1.37	1.47	1.54	1.59
	Flowrate (l/s)	0.04	0.06	0.08	0.10	0.13	0.07	0.09	0.12	0.16	0.20
	Pressure Drop (kPa)	0.41	0.70	1.24	2.15	3.56	1.07	1.71	2.87	4.79	7.95
WDH3A-LF020-EWK	Capacity (kW)	1.80	2.64	3.63	4.79	6.16	4.24	5.44	6.86	8.53	10.45
	Power Input (kW)	1.37	1.66	1.95	2.24	2.53	1.55	1.69	1.80	1.88	1.92
	Flowrate (l/s)	0.04	0.06	0.08	0.11	0.15	0.09	0.11	0.15	0.19	0.26
	Pressure Drop (kPa)	0.43	0.84	1.71	3.00	5.34	1.82	2.99	5.15	8.52	14.72
WDH3A-LJ020-EWK	Capacity (kW)	2.15	3.17	4.38	5.81	7.49	4.83	6.14	7.69	9.50	11.60
	Power Input (kW)	1.60	1.95	2.29	2.63	2.96	1.96	2.10	2.21	2.29	2.35
	Flowrate (l/s)	0.05	0.07	0.10	0.14	0.20	0.10	0.13	0.17	0.23	0.31
	Pressure Drop (kPa)	0.61	1.29	2.57	4.97	9.50	2.44	4.09	6.95	11.84	20.63
WDH4A-LL030-EWK	Capacity (kW)	2.97	4.26	5.78	7.58	9.68	6.09	7.83	9.88	12.25	15.05
	Power Input (kW)	2.04	2.46	2.87	3.28	3.68	2.35	2.55	2.73	2.87	2.97
	Flowrate (l/s)	0.06	0.09	0.12	0.16	0.22	0.11	0.14	0.19	0.24	0.32
	Pressure Drop (kPa)	1.25	2.47	4.66	8.26	14.49	3.86	6.46	10.85	18.17	30.54
WDH4A-DL040-EWK	Capacity (kW)	4.19	5.72	7.58	9.80	12.40	7.86	10.20	12.95	16.15	
	Power Input (kW)	2.73	3.20	3.66	4.10	4.52	2.83	3.04	3.19	3.28	
	Flowrate (l/s)	0.10	0.13	0.18	0.26	0.36	0.16	0.22	0.30	0.41	
	Pressure Drop (kPa)	3.40	6.30	11.20	20.70	38.80	8.90	15.30	27.30	49.40	
WDH5A-DB050-EWK	Capacity (kW)	5.10	6.93	9.20	11.95	15.15	9.84	12.65	16.00	19.90	24.50
	Power Input (kW)	3.19	3.75	4.34	4.91	5.44	3.25	3.52	3.72	3.84	3.87
	Flowrate (l/s)	0.11	0.15	0.20	0.27	0.36	0.19	0.24	0.32	0.42	0.55
	Pressure Drop (kPa)	1.20	2.10	3.60	6.30	10.70	3.20	5.20	8.50	14.00	23.10
WDH5A-DC075-EWK	Capacity (kW)	7.61	10.10	13.05	16.55	20.60	13.60	17.30	21.70	26.80	
	Power Input (kW)	4.83	5.58	6.30	6.97	7.58	4.40	4.72	4.96	5.09	
	Flowrate (l/s)	0.18	0.24	0.33	0.44	0.60	0.28	0.37	0.50	0.67	
	Pressure Drop (kPa)	3.00	5.20	9.00	15.60	27.20	6.60	11.30	19.20	33.40	

Operating Conditions: 20 °C Suction Gas Return Temperature and 3K Sub Cooling

## Mechanical data

Condensing Unit Model	Compressor Model	Receiver	Width/Depth	Base Mounting Ø	Height	Suction Ø	Liquid Ø	Water	Water	Net	Gross
		Capacity	[ W / D ]	[ b x t ]	[ H ]	[ SL ]	[ LL ]	Inlet	Outlet	Weight	Weight
		(l)	(mm)	(mm)	(mm)	(")	(")	(")	(")	(kg)	(kg)
WDH1A-KJ007-EWK	KJ-7X-EWK	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH1A-SJ010-EWK	KSJ-10X-EWK	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH1A-KL015-EWK	KL-15X-EWK	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH2A-SL020-EWK	KSL-20X-EWK	4.6	680/450	645 x 415 (14)	417	5/8	1/2	G 1/2	G 1/2	61	76
WDH3A-LF020-EWK	LF-20X-EWK	8.1	820/506	785 x 415 (14)	527	7/8	1/2	G 1/2	G 1/2	108	123
WDH3A-LJ020-EWK	LJ-20X-EWK	8.1	820/506	785 x 415 (14)	527	7/8	1/2	G 1/2	G 1/2	108	123
WDH4A-LL030-EWK	LL-30X-EWK	8.1	820/506	785 x 415 (14)	527	1 1/8	1/2	G 1/2	G 1/2	115	130
WDH4A-DL040-EWK	2DL-40X-EWK	8.1	1050/510	1015 x 475 (14)	527	1 3/8	5/8	G 1/2	G 1/2	161	176
WDH5A-DB050-EWK	2DB-50X-EWK	19.0	1050/510	1015 x 475 (14)	562	1 3/8	5/8	G 1 1/2	G 1 1/2	170	185
WDH5A-DC075-EWK	3DC-75X-EWK	19.0	1050/510	1015 x 475 (14)	566	1 3/8	5/8	G 1 1/2	G 1 1/2	189	204

Maximum Water Pressure : 10 Bar

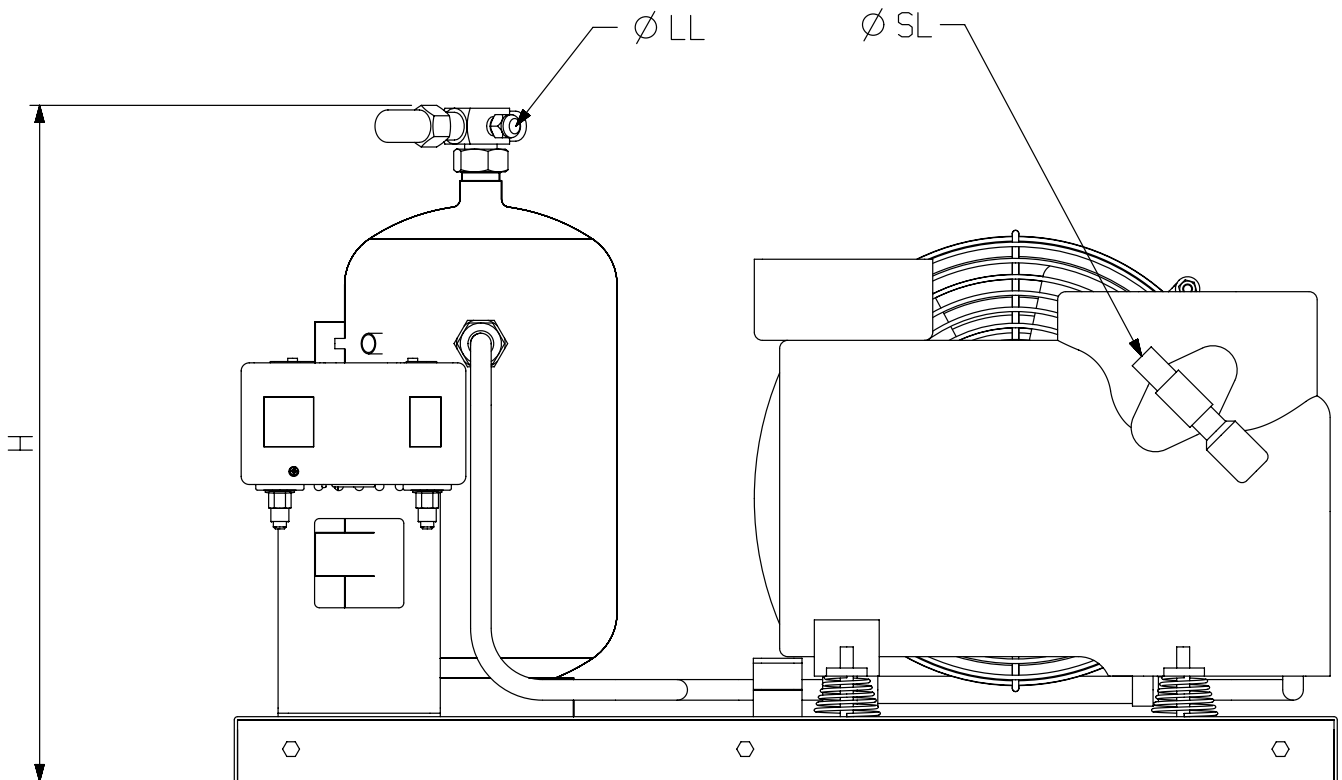
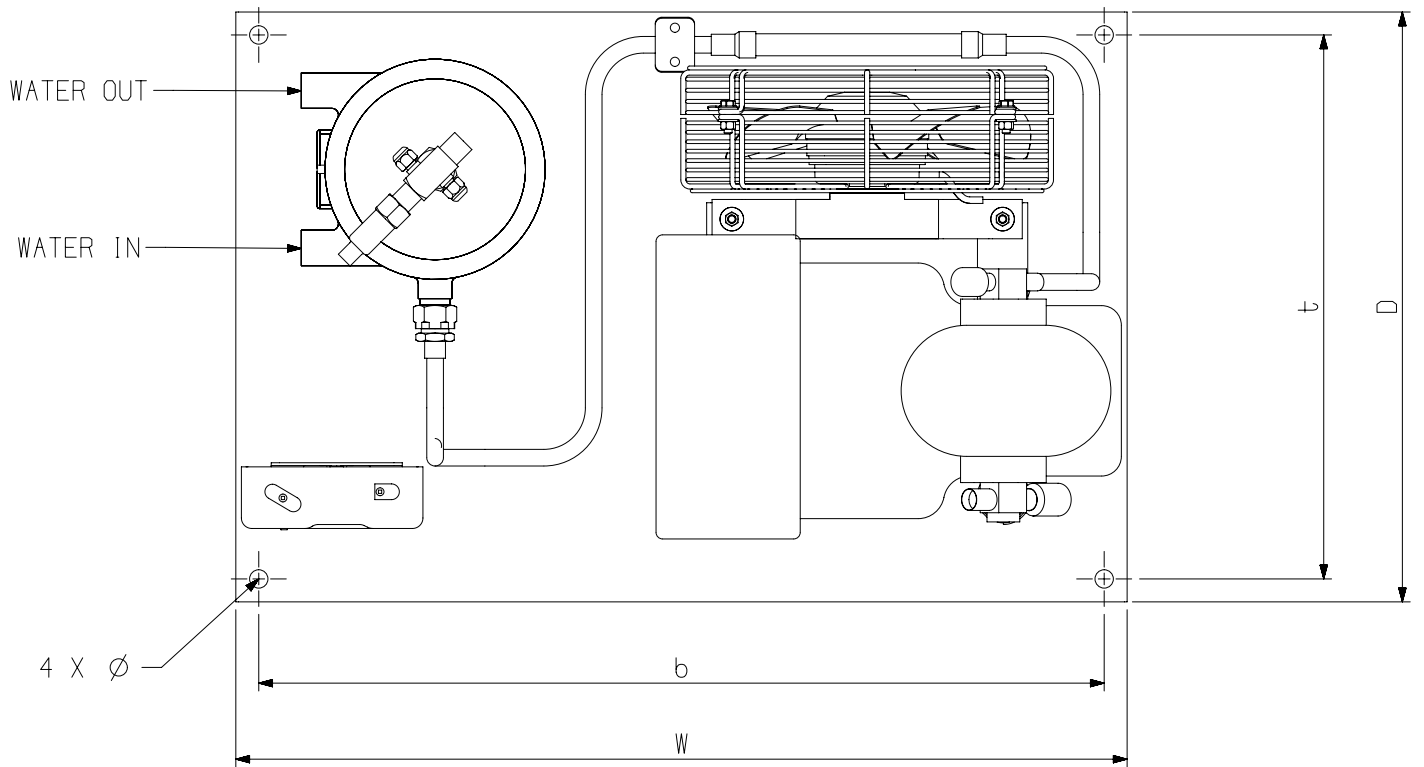
## Electrical data

Condensing Unit Model	Compressor Model	Compressor Maximum	Compressor Locked
		Operating Current	Rotor Current
		(A)	(A)
WDH1A-KJ007-EWK	KJ-7X-EWK	2.9	16.7
WDH1A-SJ010-EWK	KSJ-10X-EWK	3.6	23.3
WDH1A-KL015-EWK	KL-15X-EWK	4.1	25.6
WDH2A-SL020-EWK	KSL-20X-EWK	5.6	26.7
WDH3A-LF020-EWK	LF-20X-EWK	6.6	48.5
WDH3A-LJ020-EWK	LJ-20X-EWK	6.7	48.5
WDH4A-LL030-EWK	LL-30X-EWK	8.8	69.5
WDH4A-DL040-EWK	2DL-40X-EWK	13.3	76.0
WDH5A-DB050-EWK	2DB-50X-EWK	16.1	76.0
WDH5A-DC075-EWK	3DC-75X-EWK	22.0	106.0

Data valid for 380/420-3~ -60 Hz, Y connected compressor  
 For 220/240-3~ -60 Hz, Δ connected compressor, multiply above values by 1.75

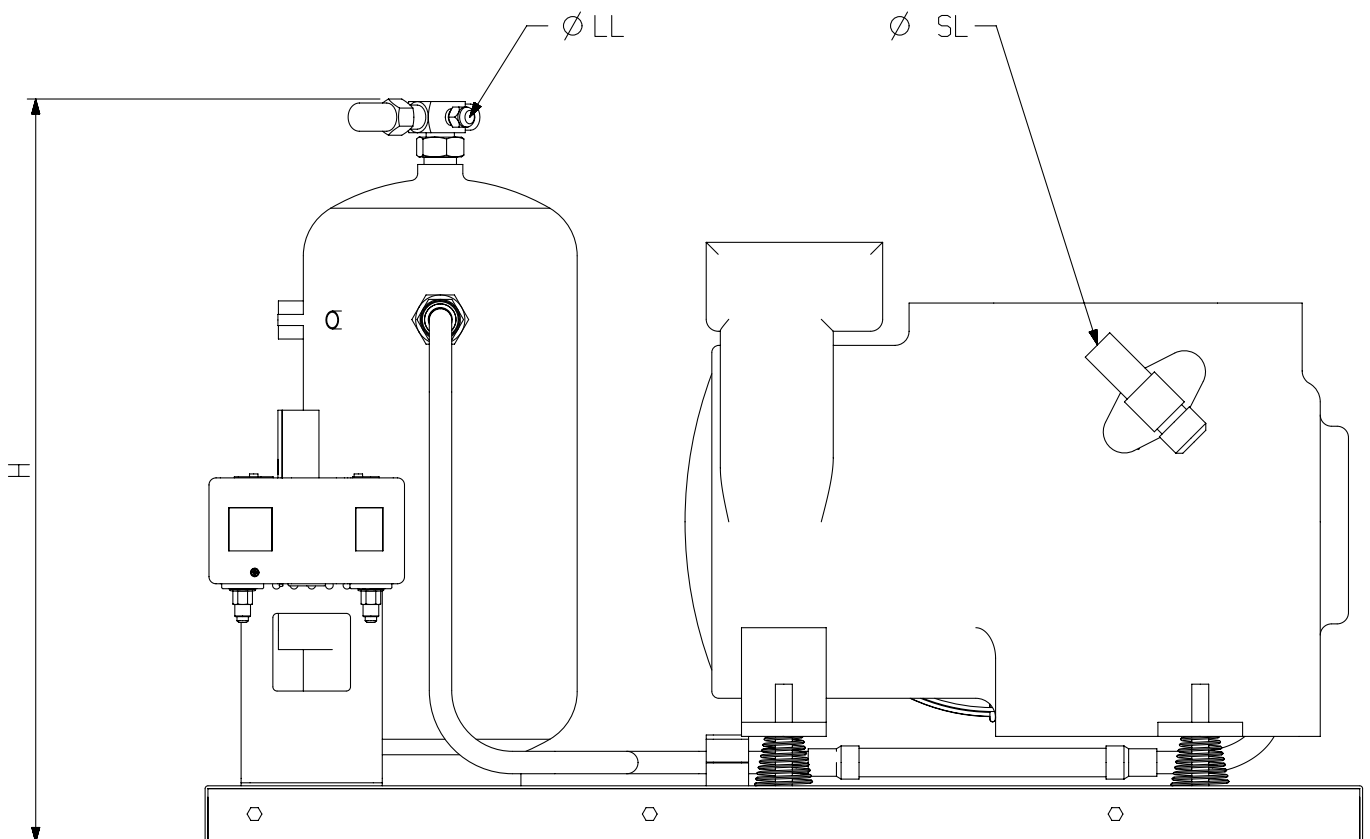
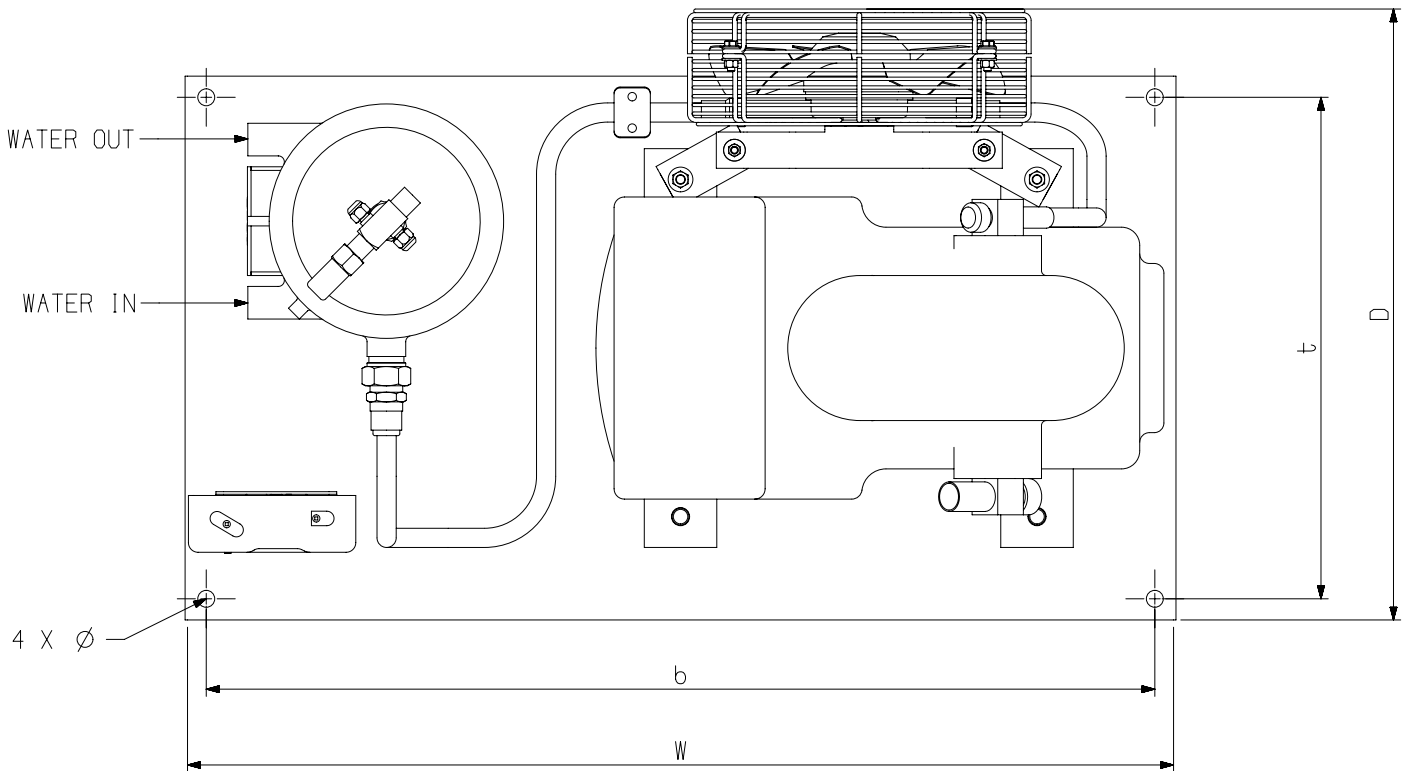
# Dimensional drawing

## WDH1, WDH2



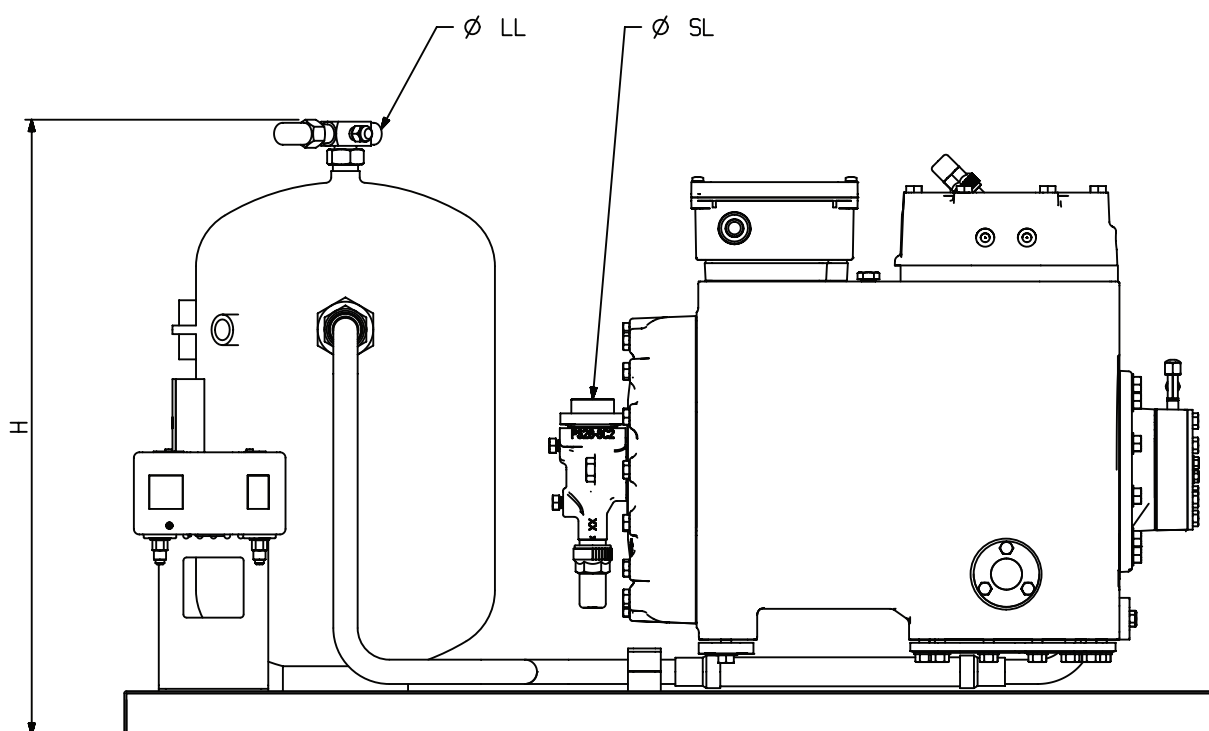
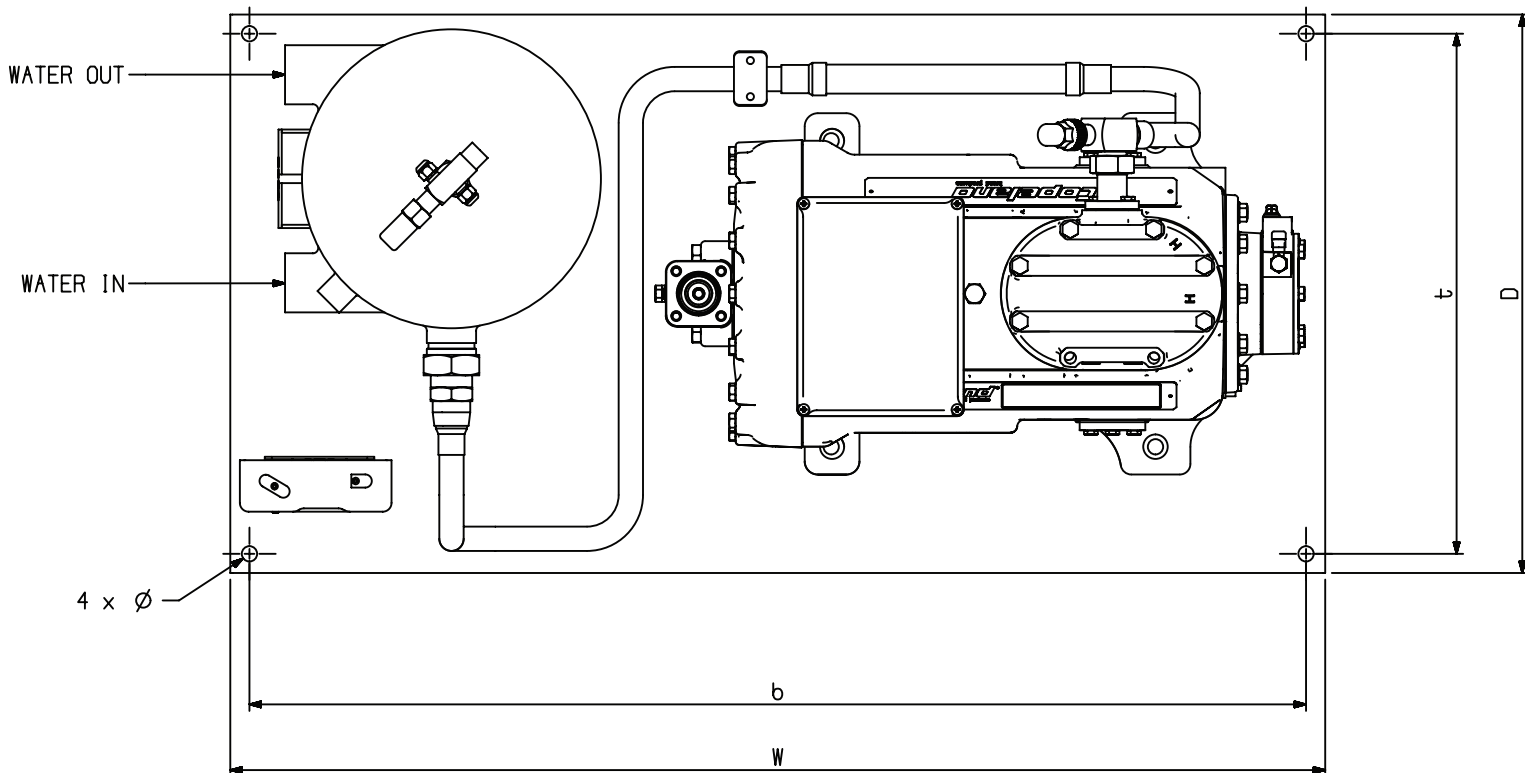
# Dimensional drawing

WDH3, WDH4



# Dimensional drawing

WDH4-DL, WDH5



## About Emerson

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