



reventon

INDUSTRIAL SOLUTIONS

Technical documentation

MIXING CHAMBER MC COOPERATING
WITH AIR WATER HEATERS HC-3S SERIES

MODELS:

MIXING CHAMBER MC FOR HC 20-45
MIXING CHAMBER MC FOR HC 50-80



2.4 DEVICE TECHNICAL DATA

TECHNICAL DATA		MC + HC 20-3S MCHC2045-1782 + WHHC20-3S-1759	MC + HC 30-3S MCHC2045-1782 + WHHC30-3S-1760	MC + HC 35-3S MCHC2045-1782 + WHHC35-3S-1761	MC + HC 45-3S MCHC2045-1782 + WHHC45-3S-1762	MC + HC 50-3S MCHC5080-2016 + WHHC50-3S-2006	MC + HC 70-3S MCHC5070-1783 + WHHC70-3S-1764	MC + HC 80-3S MCHC5080-2016 + WHHC80-3S-1956
Nominal heating capacity [kW] *	III STAGE	17.1	20.9	22.9	31.0	37.4	44.7	50.4
	II STAGE	13.0	14.3	15.0	18.5	34.2	24.4	44.7
	I STAGE	8.79	8.97	9.83	11.6	25.0	19.3	30.0
Heating capacity range [kW] **		1.08 – 22.7	1.11 – 27.8	1.31-30.4	1.85 – 41.0	3.66-49.3	3.08 – 59.2	4.62-66.7
Maximum airflow [m³/h]	III STAGE	2100	2050	1700	1600	3000	2200	2600
	II STAGE	1300	1100	900	800	2600	1000	2200
	I STAGE	700	550	500	450	1600	750	1300
Maximum temperature of working fluid [°C]		120	120	120	120	120	120	120
Maximum working pressure [MPa]		1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection diameter ["]		3/4	3/4	3/4	3/4	3/4	3/4	3/4
Supply voltage [V] / Supply frequency [Hz]		230/50	230/50	230/50	230/50	230/50	230/50	230/50
Rated motor current [A]	III STAGE	0.84	0.84	0.84	0.84	2.20	1.08	2.20
	II STAGE	0.65	0.65	0.65	0.65	1.70	0.86	1.70
	I STAGE	0.54	0.54	0.54	0.54	1.50	0.70	1.50
Motor speed [rpm]	III STAGE	1400	1400	1400	1400	1350	1360	1350
	II STAGE	1050	1050	1050	1050	1200	1050	1200
	I STAGE	750	750	750	750	750	750	750
Motor power [W]	III STAGE	190	190	190	190	480	240	480
	II STAGE	150	150	150	150	350	190	350
	I STAGE	120	120	120	120	280	160	280
Protection degree IP [-]		54	54	54	54	54	54	54
Net weight [kg]		31.5	32	32.5	34	40.5	39.5	44.5

* for parameters 90/70°C and 0°C inlet

** max. 120/90°C, 0°C inlet, III stage // min. 40/30°C, 20°C inlet, I stage

Parameters	MC + HC 20-3S - 3 stage 2100 m³/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	22.7	21.2	19.8	18.5	17.1
Dry bulb air outlet temperature [°C]	30.0	33.6	37.2	40.8	44.3
Water flow [m³/h]	0.67	0.63	0.59	0.55	0.51
Pressure drop in the heat exchanger [kPa]	3	3	2	2	2

Parameters	MC + HC 20-3S - 3 stage 2100 m³/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	17.1	15.7	14.4	13.1	11.8
Dry bulb air outlet temperature [°C]	22.7	26.2	29.8	33.3	36.8
Water flow [m³/h]	0.75	0.69	0.63	0.58	0.52
Pressure drop in the heat exchanger [kPa]	4	3	3	2	2

Parameters	MC + HC 20-3S-3 stage 2100 m³/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	14.5	13.1	11.8	10.5	9.27
Dry bulb air outlet temperature [°C]	19.2	22.7	26.2	29.7	33.2
Water flow [m³/h]	0.64	0.58	0.52	0.46	0.41
Pressure drop in the heat exchanger [kPa]	3	2	2	2	1

Parameters	MC + HC 20-3S-3 stage 2100 m³/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	11.8	10.5	9.22	7.98	6.75
Dry bulb air outlet temperature [°C]	15.6	19.2	22.7	26.1	29.6
Water flow [m³/h]	0.52	0.46	0.40	0.35	0.30
Pressure drop in the heat exchanger [kPa]	2	2	1	1	1

Parameters	MC + HC 20-3S-3 stage 2100 m³/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	6.48	5.27	4.09	2.94	1.84
Dry bulb air outlet temperature [°C]	8.6	12.1	15.6	19.1	22.6
Water flow [m³/h]	0.28	0.23	0.18	0.13	0.08
Pressure drop in the heat exchanger [kPa]	1	0	0	0	0

Parameters	MC + HC 20-3S-3 stage 2100 m³/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	6.69	5.45	4.24	3.07	1.94
Dry bulb air outlet temperature [°C]	8.9	12.4	15.8	19.3	22.8
Water flow [m³/h]	0.58	0.47	0.37	0.27	0.17
Pressure drop in the heat exchanger [kPa]	3	2	1	1	0

Parameters	MC + HC 30-3S-3 stage 2050 m³/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	27.8	26.0	24.3	22.6	20.9
Dry bulb air outlet temperature [°C]	37.7	40.9	44.1	47.3	50.4
Water flow [m³/h]	0.82	0.77	0.72	0.67	0.62
Pressure drop in the heat exchanger [kPa]	4	4	3	3	2

Parameters	MC + HC 30-3S-3 stage 2050 m³/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	20.9	19.3	17.6	16.0	14.4
Dry bulb air outlet temperature [°C]	28.4	31.6	34.7	37.9	41
Water flow [m³/h]	0.92	0.85	0.78	0.7	0.63
Pressure drop in the heat exchanger [kPa]	5	5	4	3	3

Parameters	MC + HC 30-3S-3 stage 2050 m³/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	17.7	16.0	14.4	12.9	11.3
Dry bulb air outlet temperature [°C]	24.0	27.2	30.3	33.4	36.5
Water flow [m³/h]	0.78	0.70	0.63	0.56	0.50
Pressure drop in the heat exchanger [kPa]	4	3	3	2	2

Parameters	MC + HC 30-3S-3 stage 2050 m³/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	14.4	12.8	11.3	9.70	8.22
Dry bulb air outlet temperature [°C]	19.5	22.7	25.8	28.9	32.0
Water flow [m³/h]	0.63	0.56	0.49	0.42	0.36
Pressure drop in the heat exchanger [kPa]	3	2	2	1	1

Parameters	MC + HC 30-3S-3 stage 2050 m³/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	7.85	6.37	4.93	3.53	2.18
Dry bulb air outlet temperature [°C]	10.6	13.8	16.9	20.0	23.2
Water flow [m³/h]	0.34	0.28	0.21	0.15	0.09
Pressure drop in the heat exchanger [kPa]	1	1	0	0	0

Parameters	MC + HC 30-3S-3 stage 2050 m³/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	8.15	6.63	5.16	3.72	2.33
Dry bulb air outlet temperature [°C]	11.1	14.2	17.3	20.3	23.4
Water flow [m³/h]	0.71	0.57	0.45	0.32	0.20
Pressure drop in the heat exchanger [kPa]	4	2	2	1	0

Parameters	MC + HC 35-3S-3 stage 1700 m3/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	30.4	28.4	26.5	24.7	22.9
Dry bulb air outlet temperature [°C]	49.7	52.4	55	57.7	60.3
Water flow [m³/h]	0.90	0.84	0.78	0.73	0.68
Pressure drop in the heat exchanger [kPa]	3	2	2	2	2

Parameters	MC + HC 35-3S-3 stage 1700 m3/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	22.9	21.1	19.3	17.5	15.8
Dry bulb air outlet temperature [°C]	37.5	40.1	42.7	45.3	47.8
Water flow [m³/h]	1.01	0.93	0.85	0.77	0.7
Pressure drop in the heat exchanger [kPa]	3	3	3	2	2

Parameters	MC + HC 35-3S-3 stage 1700 m3/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	19.5	17.7	15.9	14.2	12.6
Dry bulb air outlet temperature [°C]	31.8	34.4	37.0	39.5	42.1
Water flow [m³/h]	0.85	0.78	0.70	0.62	0.55
Pressure drop in the heat exchanger [kPa]	3	2	2	1	1

Parameters	MC + HC 35-3S-3 stage 1700 m3/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	16.0	14.3	12.6	10.9	9.27
Dry bulb air outlet temperature [°C]	26.2	28.8	31.3	33.8	36.3
Water flow [m³/h]	0.70	0.62	0.55	0.48	0.41
Pressure drop in the heat exchanger [kPa]	2	1	1	1	1

Parameters	MC + HC 35-3S-3 stage 1700 m3/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	9.01	7.39	5.79	4.24	2.72
Dry bulb air outlet temperature [°C]	14.8	17.3	19.8	22.3	24.8
Water flow [m³/h]	0.39	0.32	0.25	0.18	0.12
Pressure drop in the heat exchanger [kPa]	1	0	0	0	0

Parameters	MC + HC 35-3S-3 stage 1700 m3/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	9.08	7.43	5.83	4.27	2.75
Dry bulb air outlet temperature [°C]	14.9	17.4	19.9	22.4	24.8
Water flow [m³/h]	0.79	0.64	0.51	0.37	0.24
Pressure drop in the heat exchanger [kPa]	2	2	1	1	0

Parameters	MC + HC 45-3S-3 stage 1600 m3/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	41.0	38.5	36	33.6	31.3
Dry bulb air outlet temperature [°C]	71.3	73.2	75	76.7	78.4
Water flow [m³/h]	1.21	1.14	1.06	0.99	0.93
Pressure drop in the heat exchanger [kPa]	12	11	10	8	7

Parameters	MC + HC 45-3S-3 stage 1600 m3/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	31	28.6	26.3	24.0	21.8
Dry bulb air outlet temperature [°C]	53.9	55.6	57.4	59.1	60.7
Water flow [m³/h]	1.37	1.26	1.16	1.06	0.96
Pressure drop in the heat exchanger [kPa]	16	14	12	10	8

Parameters	MC + HC 45-3S-3 stage 1600 m3/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	26.7	24.4	22.1	19.9	17.8
Dry bulb air outlet temperature [°C]	46.5	48.3	49.9	51.6	53.1
Water flow [m³/h]	1.17	1.07	0.97	0.88	0.78
Pressure drop in the heat exchanger [kPa]	12	10	9	7	6

Parameters	MC + HC 45-3S-3 stage 1600 m3/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	22.5	20.2	18.0	15.8	13.7
Dry bulb air outlet temperature [°C]	39.1	40.8	42.4	44.0	45.5
Water flow [m³/h]	0.98	0.88	0.79	0.69	0.60
Pressure drop in the heat exchanger [kPa]	9	7	6	5	4

Parameters	MC + HC 45-3S-3 stage 1600 m3/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	13.8	11.6	9.48	7.36	5.23
Dry bulb air outlet temperature [°C]	24.00	25.6	27.1	28.5	29.8
Water flow [m³/h]	0.60	0.50	0.41	0.32	0.23
Pressure drop in the heat exchanger [kPa]	4	3	2	1	1

Parameters	MC + HC 45-3S-3 stage 1600 m3/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	12.9	10.7	8.64	6.59	4.57
Dry bulb air outlet temperature [°C]	22.4	24.0	25.6	27.1	28.5
Water flow [m³/h]	1.12	0.93	0.75	0.57	0.40
Pressure drop in the heat exchanger [kPa]	12	9	6	4	2

Parameters	MC + HC 50-3S-3 stage 3000 m3/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	49.3	46.3	43.4	40.5	37.7
Dry bulb air outlet temperature [°C]	45.8	48.8	51.7	54.6	57.5
Water flow [m³/h]	1.46	1.37	1.28	1.20	1.11
Pressure drop in the heat exchanger [kPa]	9	8	7	7	6

Parameters	MC + HC 50-3S-3 stage 3000 m3/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	37.4	34.5	31.7	28.9	26.2
Dry bulb air outlet temperature [°C]	34.6	37.6	40.5	43.3	46.1
Water flow [m³/h]	1.65	1.52	1.40	1.28	1.16
Pressure drop in the heat exchanger [kPa]	12	11	9	8	6

Parameters	MC + HC 50-3S-3 stage 3000 m3/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	32.1	29.3	26.6	23.9	21.3
Dry bulb air outlet temperature [°C]	29.8	32.7	35.6	38.4	41.2
Water flow [m³/h]	1.41	1.29	1.17	1.05	0.93
Pressure drop in the heat exchanger [kPa]	9	8	7	5	4

Parameters	MC + HC 50-3S-3 stage 3000 m3/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	26.9	24.1	21.4	18.8	16.2
Dry bulb air outlet temperature [°C]	24.9	27.8	30.6	33.4	36.2
Water flow [m³/h]	1.18	1.06	0.94	0.82	0.71
Pressure drop in the heat exchanger [kPa]	7	6	5	4	3

Parameters	MC + HC 50-3S-3 stage 3000 m3/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	16.2	13.6	11.1	8.51	5.96
Dry bulb air outlet temperature [°C]	15.1	17.9	20.6	23.3	25.9
Water flow [m³/h]	0.71	0.59	0.48	0.37	0.26
Pressure drop in the heat exchanger [kPa]	3	2	1	1	0

Parameters	MC + HC 50-3S-3 stage 3000 m3/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	15.4	12.8	10.3	7.77	5.32
Dry bulb air outlet temperature [°C]	14.3	17.1	19.9	22.6	25.3
Water flow [m³/h]	1.34	1.11	0.89	0.67	0.46
Pressure drop in the heat exchanger [kPa]	9	7	4	3	1

Parameters	MC + HC 70-3S-3 stage 2200 m3/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	59.2	55.5	52.0	48.6	45.2
Dry bulb air outlet temperature [°C]	74.8	76.5	78.1	79.8	81.3
Water flow [m³/h]	1.75	1.64	1.54	1.43	1.33
Pressure drop in the heat exchanger [kPa]	10	9	8	7	6

Parameters	MC + HC 70-3S-3 stage 2200 m3/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	44.7	41.3	37.9	34.6	31.4
Dry bulb air outlet temperature [°C]	56.5	58.1	59.7	61.2	62.7
Water flow [m³/h]	1.97	1.82	1.67	1.53	1.39
Pressure drop in the heat exchanger [kPa]	13	11	9	8	7

Parameters	MC + HC 70-3S-3 stage 2200 m3/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	38.6	35.3	32.0	28.8	25.7
Dry bulb air outlet temperature [°C]	48.9	50.4	51.9	53.4	54.9
Water flow [m³/h]	1.70	1.55	1.40	1.27	1.13
Pressure drop in the heat exchanger [kPa]	10	8	7	6	5

Parameters	MC + HC 70-3S-3 stage 2200 m3/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	32.5	29.2	26.0	22.9	19.8
Dry bulb air outlet temperature [°C]	41.1	42.6	44.1	45.6	46.9
Water flow [m³/h]	1.42	1.28	1.14	1.00	0.87
Pressure drop in the heat exchanger [kPa]	7	6	5	4	3

Parameters	MC + HC 70-3S-3 stage 2200 m3/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	20.1	16.9	13.8	10.8	7.68
Dry bulb air outlet temperature [°C]	25.4	26.8	28.1	29.4	30.4
Water flow [m³/h]	0.87	0.73	0.60	0.47	0.33
Pressure drop in the heat exchanger [kPa]	3	2	1	1	0

Parameters	MC + HC 70-3S-3 stage 2200 m3/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	18.6	15.5	12.5	9.56	6.65
Dry bulb air outlet temperature [°C]	23.5	25.0	26.4	27.7	29.0
Water flow [m³/h]	1.61	1.35	1.08	0.83	0.58
Pressure drop in the heat exchanger [kPa]	10	7	5	3	1

Parameters	MC + HC 80-3S-3 stage 2600 m3/h				
Supply/return water temperature [°C]	120/90				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	66.7	62.6	58.6	54.7	50.9
Dry bulb air outlet temperature [°C]	71.3	73.2	74.9	76.7	78.4
Water flow [m³/h]	1.97	1.85	1.73	1.62	1.50
Pressure drop in the heat exchanger [kPa]	12	11	10	9	7

Parameters	MC + HC 80-3S-3 stage 2600 m3/h				
Supply/return water temperature [°C]	90/70				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	50.4	46.5	42.7	39.0	35.4
Dry bulb air outlet temperature [°C]	53.9	55.6	57.4	59.1	60.7
Water flow [m³/h]	2.22	2.05	1.88	1.72	1.56
Pressure drop in the heat exchanger [kPa]	16	14	12	10	8

Parameters	MC + HC 80-3S-3 stage 2600 m3/h				
Supply/return water temperature [°C]	80/60				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	43.5	39.7	36.0	32.4	28.9
Dry bulb air outlet temperature [°C]	46.4	48.2	49.9	51.6	53.2
Water flow [m³/h]	1.91	1.74	1.58	1.42	1.27
Pressure drop in the heat exchanger [kPa]	12	10	9	7	6

Parameters	MC + HC 80-3S-3 stage 2600 m3/h				
Supply/return water temperature [°C]	70/50				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	36.6	32.8	29.2	25.7	22.3
Dry bulb air outlet temperature [°C]	39.1	40.8	42.4	44.0	45.6
Water flow [m³/h]	1.60	1.44	1.28	1.13	0.97
Pressure drop in the heat exchanger [kPa]	9	7	6	5	4

Parameters	MC + HC 80-3S-3 stage 2600 m3/h				
Supply/return water temperature [°C]	50/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	22.4	18.9	15.4	12.0	8.49
Dry bulb air outlet temperature [°C]	24.0	25.6	27.1	28.5	29.7
Water flow [m³/h]	0.97	0.82	0.67	0.52	0.37
Pressure drop in the heat exchanger [kPa]	4	3	2	1	1

Parameters	MC + HC 80-3S-3 stage 2600 m3/h				
Supply/return water temperature [°C]	40/30				
Dry bulb air inlet temperature [°C]	0	5	10	15	20
Heating capacity [kW]	20.9	17.4	14.0	10.7	7.41
Dry bulb air outlet temperature [°C]	22.4	24.0	25.6	27.1	28.5
Water flow [m³/h]	1.81	1.51	1.22	0.93	0.64
Pressure drop in the heat exchanger [kPa]	12	9	6	3	2

3. ASSEMBLY

The mixing chamber can be mounted on wall or on ceiling. If any components are not included in the kit, you should buy them yourself and make sure they are suitable for this type of installation.

Installation description of the complete device (i. e. mixing chamber, air water heater HC and control set KHC) is in separate instruction "Montage of the mixing chamber MC".

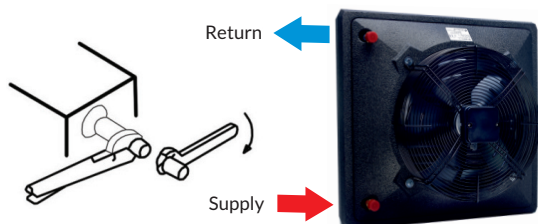
4. INSTALLATION INSTRUCTIONS

4.1. CONNECTION OF THE DEVICE TO THE HYDAULIC SYSTEM

- pipes should be connected as indicated on the heater (supply from below, return from above)

- while plugging the device to the water installation do remember to hold the connectors by pipes spanner

Not keeping to the recommendation may cause the damages of the heating coil.



- it is recommended to use filter on the water supply pipe

- it is recommended to use the following valves:

- vent valve in the highest place on the hydraulic installation
- cut off valve on the supply and return pipes of the device

- installation has to be secured against excessive increase of pressure

- it is recommended to check the leak tightness of the hydraulic system before plugging the electric supply

4.2. CONNECTION OF THE DEVICE TO THE ELECTRICAL SYSTEM

- all works concerning electrical installation should be made by the qualified personnel (who possess required authorizations to install electrical equipment)

- the electrical installation of the building shall have a residual current device

- detailed information concerning electrical connection of the controller are included in separate instruction "Instruction of mixing chamber MC controller"

- it is recommended to check the electric installation and controls before the first start

5. PRECAUTIONS & WARNINGS

The precautions mentioned below must be strictly followed during operation of the device:

- all works concerning electrical installation (disassembly, repair etc.) should be made by the qualified staff, who possess the qualifications due to the domestic and local norms, regarding electrical installations

- if there is a risk of water condensation on the walls of the mixing chamber, it should be thermally insulated

- do not limit or cover the inlet and outlet of the device

- do not install, service the device with wet hands or barefoot

- the device should be kept out of reach of children and animals

- the temperature in the room, where device is installed, should not go below 0°C; if such situation could take place empty the device out of water

- after operating time of the device, please utilize it concerning the local norms and regulations

- don't allow water or any liquid to enter the motor

- maintenance and repair work must be carried out by a qualified personnel familiar with local regulations and standards

- before service or exchange of the device it is obligatory to cut off the current supply

- never use petrol, benzene, thinners or any other chemicals for cleaning the unit

- if the device has no differential pressure switch, filter should be replaced at least two times per year (depending on dirtiness)

- it is recommended to clean the device periodically (at least once a year):

- heating coil blow with compressed air
- fan casing and blades clean from dirt
- casing clean with a soft cloth

- failure to comply with cleaning obligations may have a negative effect on technical parameters of the device

- the flow of the heating medium through the heat exchanger must be dependent on the fan operation

- it is forbidden to keep the flow without the fan motor running

- if the device is not used for a longer time disconnect the voltage supply

- if any abnormality happens, turn off the product immediately and check the problem

- the device is transported with the closed air stators. It is essential to open them in at least for 30% before first start

- opening the air stators must be done by two hands in parallel



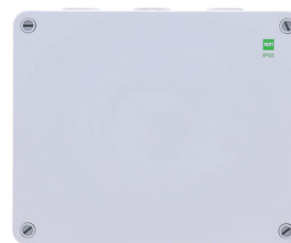
6. CONTROLS

The automatic control dedicated to the mixing chamber MC can be divided into two groups:

a) basic control set KHC

Control cabinet

Setter provides communication with controller. It has inbuilt ambient temperature sensor. Device can be mounted direct on the wall or with using installation box.



Temperature sensors set

Four temperature sensors, which provide necessary information to mixing chamber controller.

- supply temperature sensor

It measures temperature direct after heat exchanger. It is adapted to installation on air stator (see "Montage of the mixing chamber MC").



Measuring element: PT1000 class B
Length of the wire: 1500 mm
Operating temperature: up to 105°C

- room temperature sensor

It is adjusted to installation on wall. Sensor enables to measure room temperature.



Measuring element: PT1000 class B

- outside temperature sensor

Sensor has enhanced IP degree, it is adapted to outer installation.



Measuring element: PT1000 class B
IP protection degree: IP 65

- return water temperature sensor

Contact sensor, which measures return water temperature of the heater. It is a part of mixing chamber freeze protection system.



Measuring element: PT1000 klasa B
Length of the wire: 1500 mm
Operating temperature: up to 105°C
IP protection degree: IP 68

Thermostat with capillary

It is a part of mixing chamber freeze protection. Thermostat controls temperature after heat exchanger and signals, when the temperature is below a set value.



Operating conditions: -40 - 65°C
Range of temperature settings: -30 - 15°C
Capillary length: 2 m
Weight: 568 g

Three-way valve with actuator 3/4"

It regulates operation of device by opening/closing of working fluid loop.



Power supply/ Frequency: 230 V AC / 50 - 60 Hz
Rated current: 7 VA
Kvs coefficient: 6,5 m³/h
Operating conditions: 0 - 60°C
Movement time (motor): 18 s
Movement time (return spring): 5 s
Degree of protection: IP 20

Damper actuator 0-10 V with return spring

The actuator enables to control the air dampers automatically.

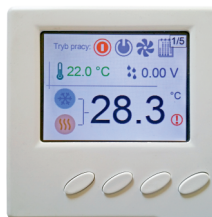


Power supply/ Frequency: AC / DC 24 V 50 / 60 Hz
Operating conditions: -30 - 50°C
Movement time (motor): 150 s / 90°
Degree of protection: IP 54

b) additional accessories

Setter HMIMC

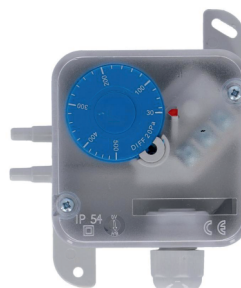
Setter provides communication with controller. It has inbuilt ambient temperature sensor. Device can be mounted direct on the wall or with using installation box.



Power supply/ Frequency: 24 V AC / DC
Display: 320 x 240 px
BMS Communication: RS485
Dimensions: 86 x 86 x 12 mm

Differential pressure switch DFS

It informs when the filter pressure drop is too high and the filter has to be changed.



Operating conditions: -20 - 60°C
Measurement range: 30 - 500 Pa
Dimensions: 86 mm x 86 mm x 13,3 mm
Weight: 150 g
Degree of protection: IP 54

Control valve with 3-point actuator CV

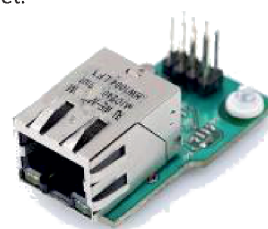
It regulates operation of device by opening / closing of working fluid loop. Three point actuator allows precise control by partial opening / closing the valve.



Power supply/ Frequency: 230 V AC / 50 - 60 Hz
Rated current: 2 VA
Kvs coefficient: 6,3 m³/h
Operating condition: -20 - 50°C
Movement time: 70...90 s
Torque: 5 Nm
Degree of protection: IP 54

Ethernet card EC

Additional module, which enables control of mixing chamber operation by computer or WIFI net.



7. TERMS OF WARRANTY

I. Producer Reventon Group Sp. z o.o. [Ltd.] grants the buyer a 24-month warranty period for the following devices:

- mixing chamber MC for HC20-45
- mixing chamber MC for HC50-80

II. The terms of warranty are valid from purchasing the device (i.e. invoice / another confirming document issue date) but not longer than 30 months from leaving the producer's warehouse.

III. To obtain the service it is needed to provide or send to the producer scans of the warranty card with stamp of installation company, document confirming the purchase (eg. like copy of the invoice) and correctly filled the warranty form.

IV. The producer is committed to consider the claim within 14 working days since the date of reporting (i.e. day when documents given in point III are provided).

V. In the exceptional cases, the producer reserves the right to extend the time limit for examination of warranty, especially if the defect is not permanent and its determination requires a longer period of time. The extension must be notified by the producer before the end of the 14th working day.

VI. Under the guarantee the producer provides a repairment, replacement or refund for the defective device within a specified time limit.

VII. Warranty does not cover the parts of the device subject to normal maintenance and the following cases:

a) mechanical damage of the product

b) defects and damages through:

- improper storage or transport
- improper or non-compliant use and maintenance (i. e. inconsistent with the manual)
- using the device in the improper conditions (too high humidity, too high or too low temperature, impact of the surrounding, sun etc.)
- unauthorized (by the user or other unauthorized persons) repairs, modifications or construction changes
- connecting equipment inconsistent with the technical documentation
- connecting additional equipment, which is not recommended by the producer
- improper power supply

c) elements which wear and tear such as discolor of the housing

If there is any of the above, claimant will be charged for transport and / or repairs.

VIII. Any changes in the Warranty Terms, improper use of the product (careless handling, exposure to liquids, moisture, corrosion), as well as traces of selfrepairing (non by the Reventon Group) or alterations cause, the warranty is not valid.

IX. Not following to any of warranty regulations makes the warranty not valid.

X. All correspondence, returns, complains should be send to the following address: Reventon Group Sp. z o.o. [Ltd.], 556 Wyzwolenia Street, 43-340 Kozy, Poland or email address: serwis@reventongroup.eu.

The producer reserves the rights to make changes to the technical documentation without previous notice.

Warranty card

Factory number of the device:	Address and place of assembly:
Stamp and signature of the installation company:	

Warranty form

The company reporting the complaint:	Date of assembly:	Address and place of assembly the device:
The company installing the device:	Date and circumstances of noticing the defect:	
	Factory number of the device:	Date of declaration the complaint:
Description of the defect:		
Contact Name and Surname, telephone number/ e-mail address:		

Service card

Date of declaration the complaint:	Description of the repair:	Service stamp:
Date of repair:		



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