

Warmth of nature



termet®

Investment catalogue



**Termet Heat
Academy**

Product catalogue 2026



INVESTMENT CATALOGUE 2026/1

LOW AND MEDIUM POWER HEAT PUMPS	7
1. INVERTER HEAT PUMPS TERMET HEAT GOLD	9
Technical data	9
Installation dimensions	10
Technical data of recommended equipment	11
Minimum buffer size	11
2. INVERTER HEAT PUMPS TERMET HEAT PLATINUM	12
Technical data	12
Installation dimensions	13
Technical data of recommended equipment	14
Minimum buffer size	14
3. CONTROLLING THE OPERATION OF THE HEAT PUMP AND THE INSTALLATION	15
Automatics	15
Example hydraulic diagram	16
4. CONNECTING HEAT PUMPS INTO CASCADE SYSTEMS	18
Example hydraulic diagram of heat pump cascade with heat buffer and DHW tank	18
Installation distances for Termet Heat Gold and Platinum heat pump cascade	19
HIGH-POWER HEAT PUMPS	20
5. HEAT PUMPS TERMET HEAT POWER	22
Technical data	22
Mounting dimensions / mounting distances in cascade systems	23
Technical data of recommended equipment	24
Minimum buffer size	24
6. CONTROLLING THE OPERATION OF THE HEAT PUMP AND THE INSTALLATION	25
Automatics	25
Example hydraulic diagram	26
7. CONNECTING HEAT PUMPS INTO CASCADE	27
Example hydraulic diagram of heat pump cascade with heat buffer and DHW tank	27
HIGH-POWER CONDENSING BOILERS	28
8. BOILER OPTIMA INOX II	30
Technical specifications	30
The most important information about Optima Inox II boilers	31
9. BOILER ECOCONDENS CRYSTAL PLUS 50 KW	32
Technical specifications	32

Optional equipment when combining boilers EcoCondens Crystal Plus 50 into cascade systems	33
Cascade of 2 boilers EcoCondens Crystal Plus 50 + independent air/flue system	34
Cascade of 3 boilers EcoCondens Crystal Plus 50 + independent air/flue system	36
Cascade of 4 boilers EcoCondens Crystal Plus 50 + independent air/flue system	38
Cascade of 2 boilers EcoCondens Crystal Plus 50 + concentric air-flue system	40
Cascade of 3 boilers EcoCondens Crystal Plus 50 + concentric air-flue system	42
Cascade of 4 boilers EcoCondens Crystal Plus 50 + concentric air-flue system	44
Air/flue gas systems for connection behind of the collector manifold	46
10. BOILER CRYSTAL CASCADE 59 KW	50
Technical specifications	50
Optional equipment when combining boilers Crystal Cascade 59 into cascade systems	51
Cascade of 2 boilers Crystal Cascade 59 + independent air/flue system	52
Cascade of 3 boilers Crystal Cascade 59 + independent air/flue system	54
Cascade of 4 boilers Crystal Cascade 59 + independent air/flue system	56
Cascade of 5 boilers Crystal Cascade 59 + independent air/flue system	58
Cascade of 6 boilers Crystal Cascade 59 + independent air/flue system	60
Cascade of 2 boilers Crystal Cascade 59 + concentric air-flue system	62
Cascade of 3 boilers Crystal Cascade 59 + concentric air-flue system	64
Cascade of 4 boilers Crystal Cascade 59 + concentric air-flue system	66
Cascade of 5 boilers Crystal Cascade 59 + concentric air-flue system	68
Cascade of 6 boilers Crystal Cascade 59 + concentric air-flue system	70
11. ADAPTERS/CONNECTORS AIR/FLUE FOR BOILER ECOCONDENS CRYSTAL PLUS 50	72
12. ADAPTERS/CONNECTORS AIR/FLUE FOR BOILER ECOCONDENS CRYSTAL PLUS 50	72
13. CONDENSATE NEUTRALIZERS	73
14. BOILERS ECOCONDENS CRYSTAL 80, ECOCONDENS CRYSTAL 100 KW	74
Technical specifications	74
Optional equipment when combining boilers	
EcoCondens Crystal 80 or EcoCondens Crystal 100 kW into cascade systems	75
Cascade of 2 boilers Ecocondens Crystal 80 or Ecocondens Crystal 100	76
Cascade of 3 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100	78
Cascade of 4 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100	80
Cascade of 5 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100	82
Cascade of 6 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100	84
Air/flue gas systems for connect behind of the collector manifold	86
15. BASKET STRAINER FOR CASCADE SYSTEMS	90
Basket strainer DN65 (for cascade boilers Ecocondens Crystal Plus 50 and cascade 2, 3 and 4 boilers Crystal Cascade 59)	90
Basket strainer DN80 (for cascade boilers of 2 and 3 Ecocondens Crystal 80 or 100)	92
Basket strainer DN100 (for cascade boilers of 4 and 5 Ecocondens Crystal 80 or 100 and cascade 5 and 6 boilers Crystal Cascade 59)	94
Basket strainer DN125 (for cascade boilers of 6 Ecocondens Crystal 80 or 100)	96
16. CONDENSATE NEUTRALIZERS	98
17. CONTROL OF THE INSTALLATION BEHIND THE HYDRAULIC COUPLING	99
Automatics	99

Example diagram showing boiler room with solar system	100
An example diagram showing a boiler room with a DHW tank	101
18. OPTIONAL ACCESSORIES	102
19. MAXIMUM LENGTHS OF AIR-FLUE PIPES	103
Optima Inox II boilers	103
Ecocondens Crystal Plus 50, Crystal Cascade 59, Crystal 80, Crystal 100 boilers	104
20. SCHEMATIC DIAGRAMS OF CASCADES – TERMET HEAT POWER HEAT PUMPS	106
2 x Termet Heat Power 35 kW + c.h. buffer	106
2 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. tank	107
2 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer	108
2 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer (two pumps)	109
3 x Termet Heat Power 35 kW + c.h. buffer	110
3 x Termet Heat Power 35 kW + c.h. buffer + d.h.w. tank	111
3 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer	112
3 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer (two pumps)	113
4 x Termet Heat Power 35 kW + c.h. buffer	114
4 x Termet Heat Power 35 kW + c.h. buffer + d.h.w. tank	115
4 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer	116
4 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer (two pumps)	117
2 x Termet Heat Power 70 kW + c.h. buffer	118
2 x Termet Heat Power 70 kW + c.h. buffer+ d.h.w. hygienic buffer	119
3 x Termet Heat Power 70 kW + c.h. buffer	120
3 x Termet Heat Power 70 kW + c.h. buffer+ d.h.w. hygienic buffer	121
21. SCHEMATIC DIAGRAMS OF CASCADES - TERMET HEAT POWER HEAT PUMPS + HIGH-POWER BOILERS	122
2 x Termet Heat Power 35 kW + Crystal Plus 50 + c.h. buffer	122
2 x Termet Heat Power 35 kW + Crystal Plus 50 + c.h. buffer + d.h.w. hygienic buffer	123
3 x Termet Heat Power 35 kW + Crystal 80 + c.h. buffer	124
3 x Termet Heat Power 35 kW + Crystal 80 + c.h. buffer + d.h.w. hygienic buffer	125
4 x Termet Heat Power 35 kW + Crystal 100 + c.h. buffer	126
4 x Termet Heat Power 35 kW + 2 x Crystal Plus 50 + c.h. buffer + d.h.w. hygienic buffer	127
4 x Termet Heat Power 35 kW + Crystal 100 + c.h. buffer + d.h.w. hygienic buffer	128
2 x Termet Heat Power 45 kW + Crystal Plus 50 + c.h. buffer	129
3 x Termet Heat Power 45 kW + 2 x Crystal Plus 50 + c.h. buffer	130
4 x Termet Heat Power 45 kW + 2 x Crystal 80 + c.h. buffer	131
2 x Termet Heat Power 70 kW + Crystal 80 + c.h. buffer	132
2 x Termet Heat Power 70 kW + Crystal 80 + c.h. buffer + d.h.w. hygienic buffer	133
3 x Termet Heat Power 70 kW + 2 x Crystal 80 + c.h. buffer	134
3 x Termet Heat Power 70 kW + Crystal 80 + c.h. buffer + d.h.w. hygienic buffer	135
3 x Termet Heat Power 70 kW + 2 x Crystal 80 + c.h. buffer + d.h.w. hygienic buffer	136

TERMET S.A. reserves the right to make changes to the catalogue without notice. All changes are introduced on an ongoing basis in the electronic version of the catalogue available at www.termet.com.pl, which may differ from the paper version. The manufacturer also reserves the right to introduce changes to the construction of the device that do not significantly affect the functional and technical characteristics of the product.



Solutions inspired by investors needs

We offer our customers a range of highly efficient and environmentally friendly equipment for heating large areas and preparing domestic water with a wide range of applications, including gas condensing boilers and heat pumps.

We are constantly expanding our product portfolio to meet market demands. From equipment that provides heat for apartments or single-family homes to solutions found in commercial buildings with larger areas.



Differentiated

When designing our equipment, we think about all the needs of our customers, so we offer **diversified technologies** to ensure the most efficient operation both in new construction and in buildings to be modernized.

Systemic approach

As experts in heating equipment, we know that when looking for the best solutions for buildings with a large area, we should think systemically, combining devices into **cascade and hybrid systems**, guaranteeing consistent management of such systems.

01.

Low and medium power heat pumps



Heat pump
selection program



1. Inverter heat pumps Termet Heat Gold

Technical data



Index	Name
TPP9910000000/PL	TERMET HEAT GOLD 6 DC with electric heater
TPP9900000000/PL	TERMET HEAT GOLD 9 DC
TPP9901000000/PL	TERMET HEAT GOLD 12 DC
TPP9902000000/PL	TERMET HEAT GOLD 15 DC
TPP9903000000/PL	TERMET HEAT GOLD 18 DC
TPP9904000000/PL	TERMET HEAT GOLD 20 DC

Maximum outlet temperature: 60 °C

Maximum heating capacities for units (up to 5 units)	A7/W35	A7/W55
TERMET HEAT GOLD 6 DC with electric heater	6,7-33,5 kW	5,6-28,0 kW
TERMET HEAT GOLD 9 DC	8,8-44,0 kW	8,5-42,5 kW
TERMET HEAT GOLD 12 DC	12,0-60,0 kW	11,8-59,0 kW
TERMET HEAT GOLD 15 DC	17,6-88,0 kW	14,8-74,0 kW
TERMET HEAT GOLD 18 DC	22,1-110,5 kW	21,4-107,0 kW
TERMET HEAT GOLD 20 DC	23,0-115,0 kW	22,7-113,5 kW

Heat pump model			Termet Heat Gold 6 DC	Termet Heat Gold 9 DC	Termet Heat Gold 12 DC	Termet Heat Gold 15 DC	Termet Heat Gold 18 DC	Termet Heat Gold 20 DC
Type			EV-DCM6	EV-DCM9	EV-DCM12	EV-DCM15	EV-DCM18	EV-DCM20
Efficiency class (A7/W35)			A+++	A+++	A+++	A+++	22,1	23,0
Efficiency class (A7/W55)			A++	A++	A++	A++	21,4	22,7
Heating A7/W35 A7/W55	Heating power [kW]	A7/W35	6,7	8,8	12,0	17,6	5,2	5,1
		A7/W55	5,6	8,5	11,8	14,8	5,3	5,2
	Input power [kW]	A7/W35	1,8	2,1	3,0	4,7	4,3	4,4
		A7/W55	2,3	2,2	3,1	4,8	2,8	2,9
	COP	A7/W35	4,7	4,5	4,6	4,4	19,8	21,7
		A7/W55	2,7	2,8	2,8	2,9	20,3	22,2
Heating A0/W35 A0/W55	Heating power [kW]	A0/W35	6,0	7,8	11,0	15,8	5,0	4,9
		A0/W55	5,4	8,0	11,1	16,2	5,0	4,9
	Input power [kW]	A0/W35	1,8	2,0	2,9	4,5	5,1	5,0
		A0/W55	2,3	2,1	3,0	4,6	4,1	4,2
	COP	A0/W35	4,7	4,1	4,1	4,1	2,2	2,2
		A0/W55	2,7	2,2	2,2	2,2	15,0	16,3
Heating A-7/W35 A-7/W55	Heating power [kW]	A-7/W35	4,5	5,9	8,2	12,0	14,2	15,4
		A-7/W55	5,8	5,6	7,8	11,4	7,4	7,2
	Input power [kW]	A-7/W35	2,6	3,0	4,4	6,7	4,9	4,8
		A-7/W55	2,1	2,5	2,9	4,4	2,9	3,0
	COP	A-7/W35	3,0	3,0	2,9	2,9	2,0	2,1
		A-7/W55	1,9	2,0	2,0	2,0	13,9	15,5
Cooling (A35/W18)	Cooling power [kW]	A35/W18	4,7	6,8	9,5	11,6	3,6	4,1
	Input power [kW]	A35/W18	1,2	1,8	2,4	3,0	3,8	3,8
	EER	A35/W18	3,9	3,8	3,9	3,8	5,0	4,9
Power supply		V/phases/Hz	230/1/50 / 230/2/50**	230/1/50	230/1/50	400/3/50	400/3/50	400/3/50
Max. input power		kW	6.2 / 3.1+3.1**	4.3	6.05	6.2	8.5	8.5
Max. input current		A	31 / 16+16**	21	27.5	12	16	16
Ambient temperature range		°C	-25 – 43					
Maximum temperature (CH circuit)		°C	60					
Maximum temperature (DHW circuit)		°C	55					
Compressor			Mitsubishi inverter					
Evaporator			Finned heat exchanger with a hydrophilic coating					
Expansion valve			Electronic expansion valve					
IP			IPX4					
Electric shock protection class			I					
Refrigerant R32 (GWP: 675)		kg	0.9	1.2	2.1	2.3	2.3	2.8
Minimum water flow rate		m³/h	1	1.50	1.90	2.60	3.10	3.2
Water pressure drop		kPa	18	22	24	28	30	35
Installation pipe diameter (internal)		DN	25	25	25	25	25	32
Housing dimensions (W*D*H)		mm	1120x480x712	1120x480x712	1120x480x1230	1120x480x1230	1120x480x1230	1365x565x1415
Packaging dimensions (W*D*H) (polywood)		mm	1180x540x850	1180x540x850	1180x540x1370	1180x540x1370	1180x540x1370	1405x575x1555
Net weight		kg	71	80	110	117	128	170
Sound power level		dB(A)	50	64	65	66	69	69

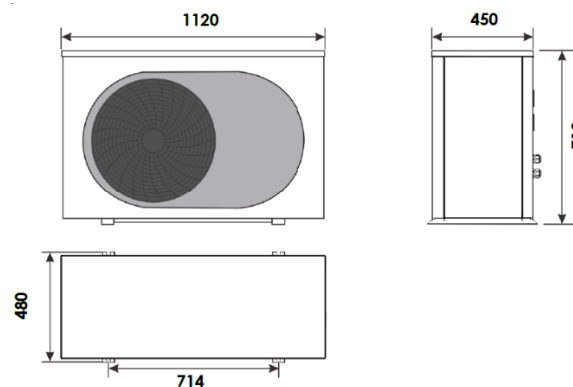
** - Input power and input current depend on connection of internal heater on separate or common phase with heat pump

Warning:

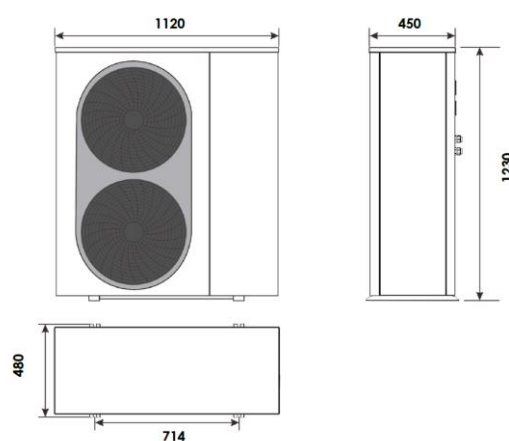
- Due to continuous improvement of the device, the above-described design and technical parameters may change without notice,
- The heat pump contains fluorinated greenhouse gases covered by the Kyoto Protocol. The refrigerant circuit is hermetically closed.

Installation dimensions

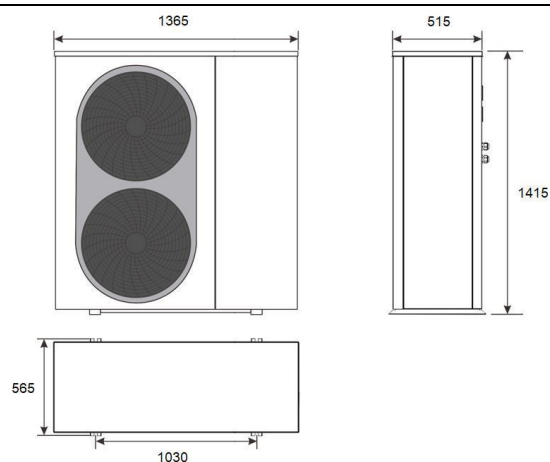
Termet Heat Gold 6 with electric heater Termet Heat Gold 9



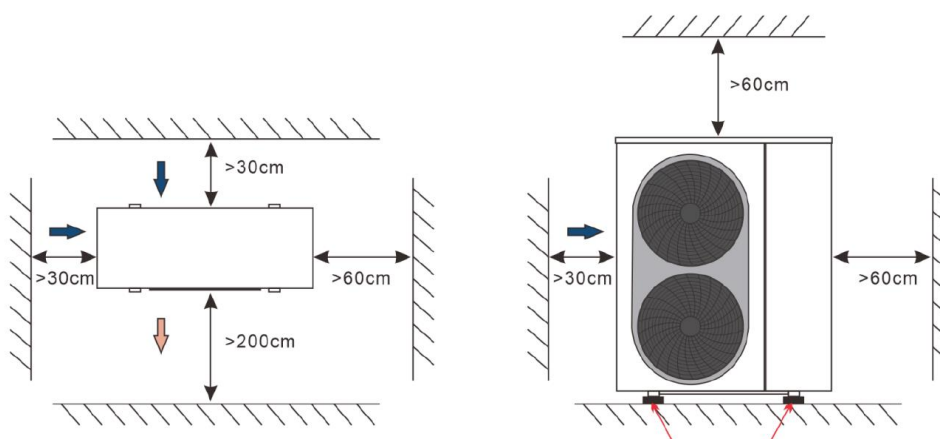
Termet Heat Gold 12 Termet Heat Gold 15 Termet Heat Gold 18



Termet Heat Gold 20



Installation distances



Technical data of recommended equipment

Heat pump	Model of heat pump					
	Termet Heat Gold 6 DC <i>with 3 kW heater</i>	Termet Heat Gold 9 DC	Termet Heat Gold 12 DC	Termet Heat Gold 15 DC	Termet Heat Gold 18 DC	Termet Heat Gold 20 DC
Buffer (min. 10 liters*kW of pump power at A7/W35)	Minimum capacity [L]					
	100	100	200	200	300	500
DHW storage tank. (with steel coil) (Heat pump output at A7/W35*0.26)	Minimum capacity [L]					
	200	200	300	400	500	500
	Min. Coil Surface Area [m ²]					
	1,8	2,30	3,20	4,60	5,70	5,90
Peak source	Required					
	Electric heater/additional condensing boiler					
3-way diverter valve [DN]	Necessary for the realization of DHW					
	25	25	32	32	32	32
Water pump [boiler circuit]	Required; length of water pipe to buffer: ≤ 5 m/5-10 m					
	25/40	25/40 / 25/60	25/60 / 25/80	25/80 / 32/80	25/80 / 32/80	32/80
Required min. water/glycol flow [m ³ /h].	1	1,5	1,9	2,6	3,2	3,3
Pipeline diameters [DN]	25	25	25	32	32	32
Recommended pressure of water/glycol	≥ 1,5 bar; max 2 bar					
Anti-freeze protection	UPS/Glycol Solution					

Minimum buffer size

The minimum size of the buffer (the minimum amount of water circulating in the heating system) should be selected as follows:						
	Termet Heat Gold 6 DC with electric heater	Termet Heat Gold 9 DC	Termet Heat Gold 12 DC	Termet Heat Gold 15 DC	Termet Heat Gold 18 DC	Termet Heat Gold 20 DC
100 L	X	X				
200 L			X	X		
300 L					X	
500 L						X

2. Inverter heat pumps Termet Heat Platinum

Technical data



Index	Name
TPP9906000000/PL	TERMET HEAT PLATINUM 8 EVI/DC
TPP9907000000/PL	TERMET HEAT PLATINUM 13 EVI/DC
TPP9908000000/PL	TERMET HEAT PLATINUM 18 EVI/DC
TPP9909000000/PL	TERMET HEAT PLATINUM 23 EVI/DC

	Maximum heating capacities for units (up to 5 units)	A7/W35	A7/W55
Maximum outlet temperature: 65 °C	TERMET HEAT PLATINUM 8 EVI/DC	8,4-42 kW	7,8-39 kW
	TERMET HEAT PLATINUM 13 EVI/DC	13-65 kW	12-60 kW
	TERMET HEAT PLATINUM 18 EVI/DC	18,2-91 kW	16,8-84 kW
	TERMET HEAT PLATINUM 23 EVI/DC	23-115 kW	21,3-106,5 kW

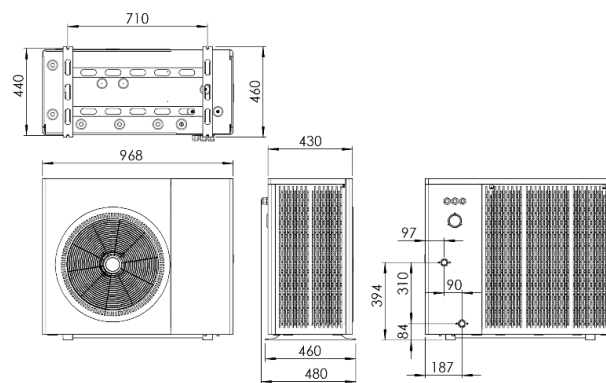
Heat pump model			TERMET HEAT PLATINUM 8 EVI/DC	TERMET HEAT PLATINUM 13 EVI/DC	TERMET HEAT PLATINUM 18 EVI/DC	TERMET HEAT PLATINUM 23 EVI/DC
Type			PW030-DKZLRS-A	PW040-DKZLRS-A	PW050-DKZLRS-A	PW060-DKZLRS-A
Efficiency class (A7/W35)			A+++	A+++	A+++	A+++
Efficiency class (A7/W55)			A++	A++	A++	A++
Heating	Heating power [kW]	A7/W35	8,4	13,0	18,2	23,0
		A7/W55	7,8	12,0	16,8	21,3
	Electric power [kW]	A7/W35	1,9	3,0	4,1	5,2
		A7/W55	2,5	4,0	5,4	6,9
	COP	A7/W35	4,5	4,3	4,43	4,40
		A7/W55	3,2	3,0	3,10	3,08
	Heating power [kW]	A2/W35	7,5	11,6	16,2	20,5
		A2/W55	6,9	10,7	15,0	19,0
	Electric power [kW]	A2/W35	1,7	2,8	3,8	4,9
		A2/W55	2,3	3,7	5,0	6,4
	COP	A2/W35	4,3	4,12	4,2	4,21
		A2/W55	3,0	2,89	3,0	2,95
	Heating power [kW]	A-2/W35	6,8	10,6	14,8	17,7
		A-2/W55	6,3	9,8	13,7	16,4
	Electric power [kW]	A-2/W35	1,7	2,7	3,7	4,6
		A-2/W55	2,2	3,5	4,8	6,1
	COP	A-2/W35	4,12	3,94	4,0	4,0
		A-2/W55	2,88	2,76	2,8	2,8
	Heating power [kW]	A-7/W35	6,1	9,5	13,3	13,3
		A-7/W55	5,7	8,8	12,3	12,3
	Electric power [kW]	A-7/W35	1,6	2,6	3,5	4,5
		A-7/W55	2,1	3,4	4,6	5,9
	COP	A-7/W35	3,84	3,7	3,8	3,8
		A-7/W55	2,69	2,6	2,7	2,6
Cooling	Cooling power [kW]	A35/W18	6,5	8,6	12,1	15,3
	Electric power [kW]	A35/W18	1,7	2,3	3,2	4,0
	EER	A35/W18	3,8	3,8	3,8	3,8
DHW	Heating power range(kW)			7,1÷16,4	9,9÷23,0	12,5÷28,9
	Electric (input) power range (kW)			3,9÷4,8	5,3÷6,5	6,8÷8,4
	COP range			1,8÷3,4	1,9÷3,5	1,8÷3,4
Power supply			230 V/1 phase/50-60 Hz	400 V/3 phases/50-60 Hz		
Ambient temperature range during operation			-25~43°C			
Maximum temperature (CH circuit)			65°C			
Maximum temperature (DHW circuit)			55°C			
Refrigerant R32 (GWP: 675) [kg]			1.3	1.6	2.7	2.7
Compressor			Panasonic inverter			
Evaporator			Finned heat exchanger with a hydrophilic coating			
Expansion valve			Electronic			
IP degree (protection level)			IPX4	IPX4	IPX4	IPX4
Electric shock protection class			I	I	I	I
Sound power level (dB(A))			≤53	≤55	≤57	≤58
Water pressure drop (kPa)			31	25	35	45
Minimum water flow rate (m³/h)			1,4	2,2	3,1	4,0
Installation pipe diameter (internal) [mm] *			25	25	25	32
Housing dimensions (W*D*H) (mm)			968×431×819	1100×431×970	1050×407×1378	1050×407×1378
Packaging dimensions (W*D*H) (polywood)			1048×520×974	1140×515×1110	1120×530×1470	1120×530×1470
Net weight/Gross weight (kg)			92/102	110/120	170/180	180/190

Warning:

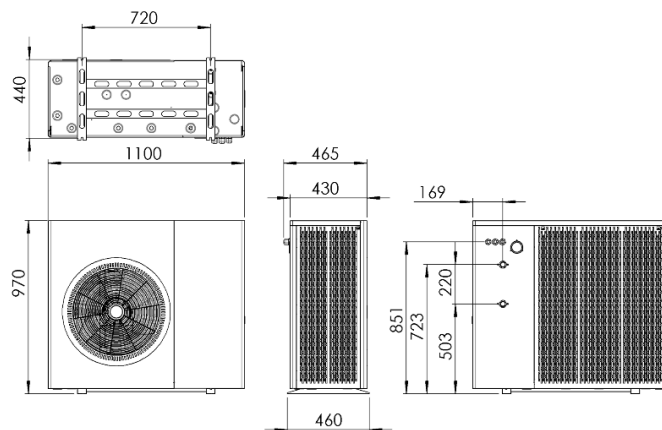
- Due to continuous improvement of the device, the above-described design and technical parameters may change without notice,
- The heat pump contains fluorinated greenhouse gases covered by the Kyoto Protocol. The refrigerant circuit is hermetically closed.

Installation dimensions

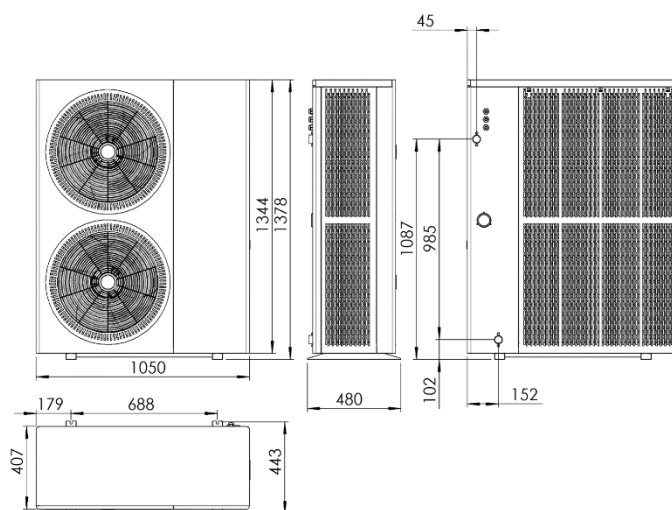
Termet Heat Platinum 8 EVI/DC



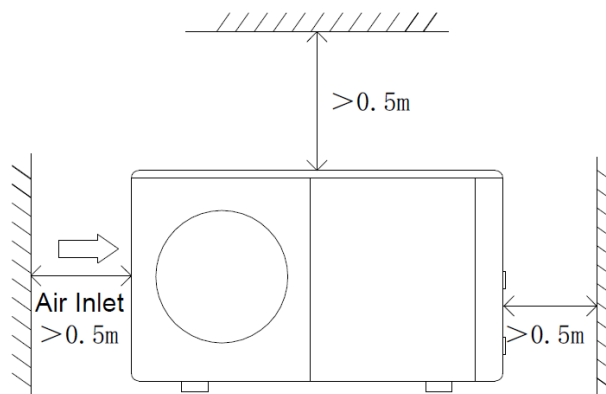
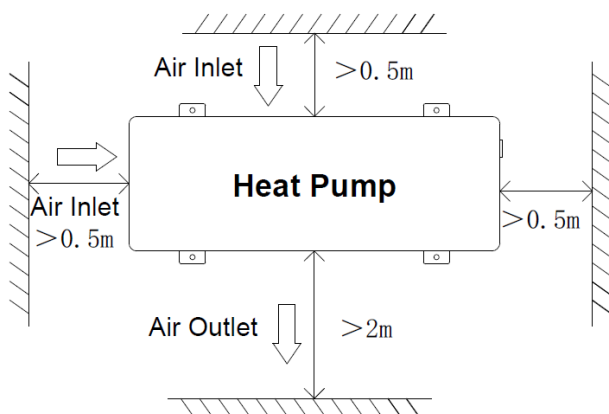
Termet Heat Platinum 13 EVI/DC



Termet Heat Platinum 18 EVI/DC Termet Heat Platinum 23 EVI/DC



Installation distances



Technical data of recommended equipment

Heat pump	Model of heat pump			
	TERMET HEAT PLATINUM 8 EVI/DC	TERMET HEAT PLATINUM 13 EVI/DC	TERMET HEAT PLATINUM 18 EVI/DC	TERMET HEAT PLATINUM 23 EVI/DC
Buffer (min. 10 liters*kW of pump power at A7/W35)	Minimum capacity [L]			
	100	200	200	300
DHW tank. (with steel coil) (Heat pump output at A7/W35*0.26)	DHW tank with coil			
	200	300	500	500
	Min. Coil Surface Area [m ²]			
	2,2	3,20	4,60	5,90
Peak source	Required			
	Electric heater/additional condensing boiler			
3-way diverter valve [DN]	Necessary for the realization of DHW			
	25	25	32	32
Water pump [boiler circuit]	Required; length of water pipe to buffer: ≤ 5 m/5-10 m			
	25/40	25/40 / 25/60	25/60 / 25/80	25/80 / 32/80
Required min. water/glycol flow [m ³ /h]	1,6	2,6	2,6	3,1
Pipeline diameters [DN]	25	25	25	32
Recommended pressure of water/glycol	≥ 1,5 bar; max 2 bar			
Internet module	Recommended			
Anti-freeze protection	UPS/Glycol Solution/Release Valves			

Minimum buffer size

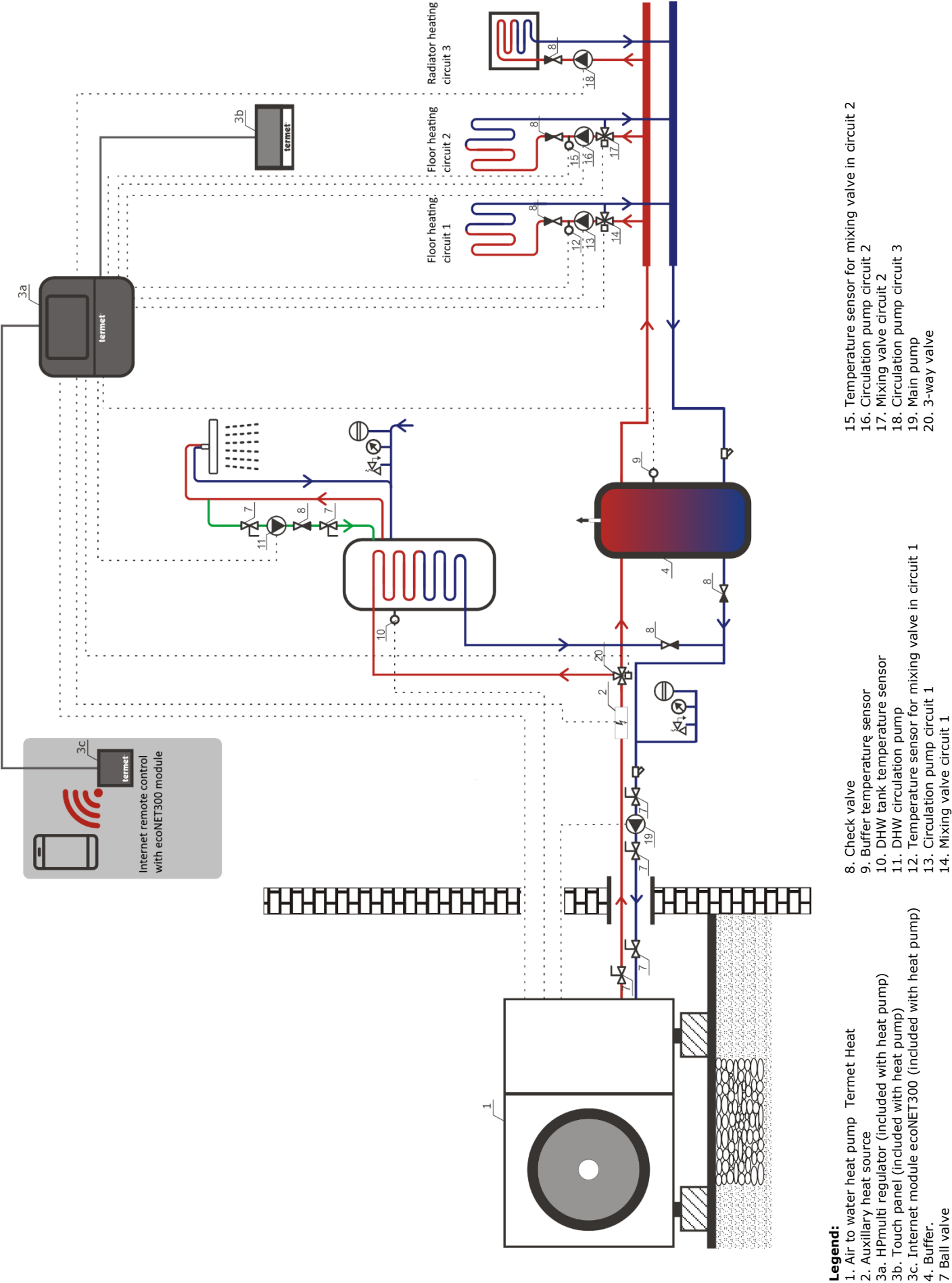
The minimum size of the buffer (the minimum amount of water circulating in the heating system) should be selected as follows:				
	TERMET HEAT PLATINUM 8 EVI/DC	TERMET HEAT PLATINUM 13 EVI/DC	TERMET HEAT PLATINUM 18 EVI/DC	TERMET HEAT PLATINUM 23 EVI/DC
100 L	X			
200 L		X	X	
300 L				X

3. Controlling the operation of the heat pump and the installation

Automatics

Photo	Name
	HP Multi Controls: • touch color display • controlling the operation of 3 heating circuits (1 direct (radiator) circuit, 2 circuits with mixer) • control of operation of the domestic hot water circuit and circulation pump • creation of time schedules separately for heat pump as heat source, heating circuits and domestic hot water • clear and easy-to-use menu • cooperation with additional devices e.g. dedicated room thermostat eSTERX40 • intuitive and simple operation of the graphical menu for the user • clear transmission of information about the status of the heating, cooling and hot water system • pump controller with SmartGrid function enables intelligent management of cooperation of the heat pump with photovoltaic panels • possibility of cooperation with additional heat source • possibility to regulate the operation of the system depending on the outside temperature (weather function) • parental control (allows locking the touch screen against children)
	Internet module ecoNET 300 The Internet module allows remote online management by the service www.econet24.com heat pumps. Using a computer, tablet or phone, the user can remotely monitor operation and modify operating parameters. The most important advantages of the module ecoNET are: • cooperation with the external server www.econet24.com, so that it is possible to access the controller via the Internet, • support of wireless Wi-Fi networks, • the ability to view current operating parameters of the regulator • in readable and clear "tiles", • visualization through a clear hydraulic diagram of the operating status of the hydraulic system, • possibility to view and edit most of the regulator parameters, • registration of key parameters of the regulator's operation and alarm states, • possibility of e-mail notification about the occurrence of alarm condition of the regulator.
	Radio module ISM xSMART Radio module for connecting wireless room thermostats eSTERx40 with the HP Multi controller.
	Wireless room thermostat eSTERx40 Battery-operated room thermostat with LCD display. Two-way radio communication allows transmission of information from the HP Multi controller to the eSTERx40.e thermostat.

Example hydraulic diagram



Legend:

- 1. Air to water heat pump Termet Heat
- 2. Auxiliary heat source
- 3a. HPmulti regulator (included with heat pump)
- 3b. Touch panel (included with heat pump)
- 3c. Internet module ecoNET300 (included with heat pump)
- 4. Buffer.
- 7 Ball valve

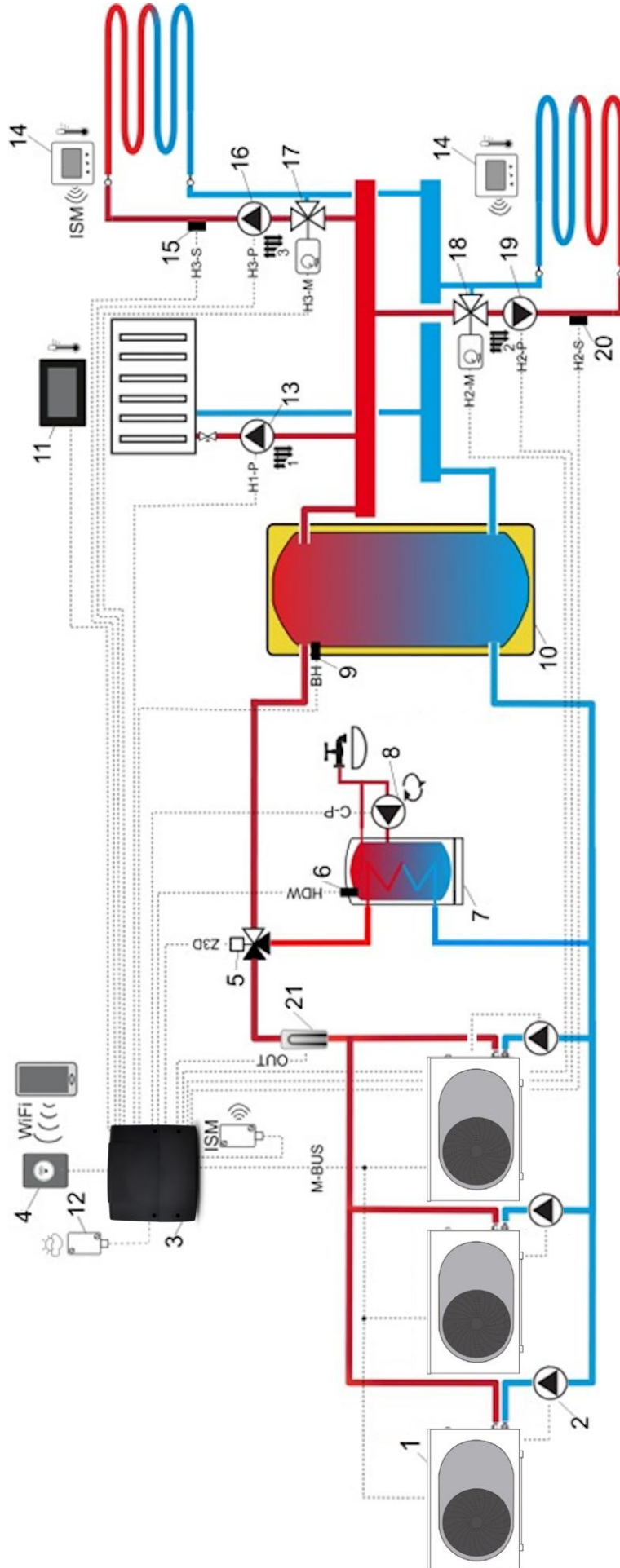
- 8. Check valve
- 9. Buffer temperature sensor
- 10. DHW tank temperature sensor
- 11. DHW circulation pump
- 12. Temperature sensor for mixing valve in circuit 1
- 13. Circulation pump circuit 1
- 14. Mixing valve circuit 1

- 15. Temperature sensor for mixing valve in circuit 2
- 16. Circulation pump circuit 2
- 17. Mixing valve circuit 2
- 18. Circulation pump circuit 3
- 19. Main pump
- 20. 3-way valve

Illustrative diagram showing the possibilities of managing a cascade based on Termet Heat heat pumps - the diagram does not constitute a boiler room design .

4. Connecting heat pumps into cascade systems

Example hydraulic diagram of heat pump cascade with heat buffer and DHW tank

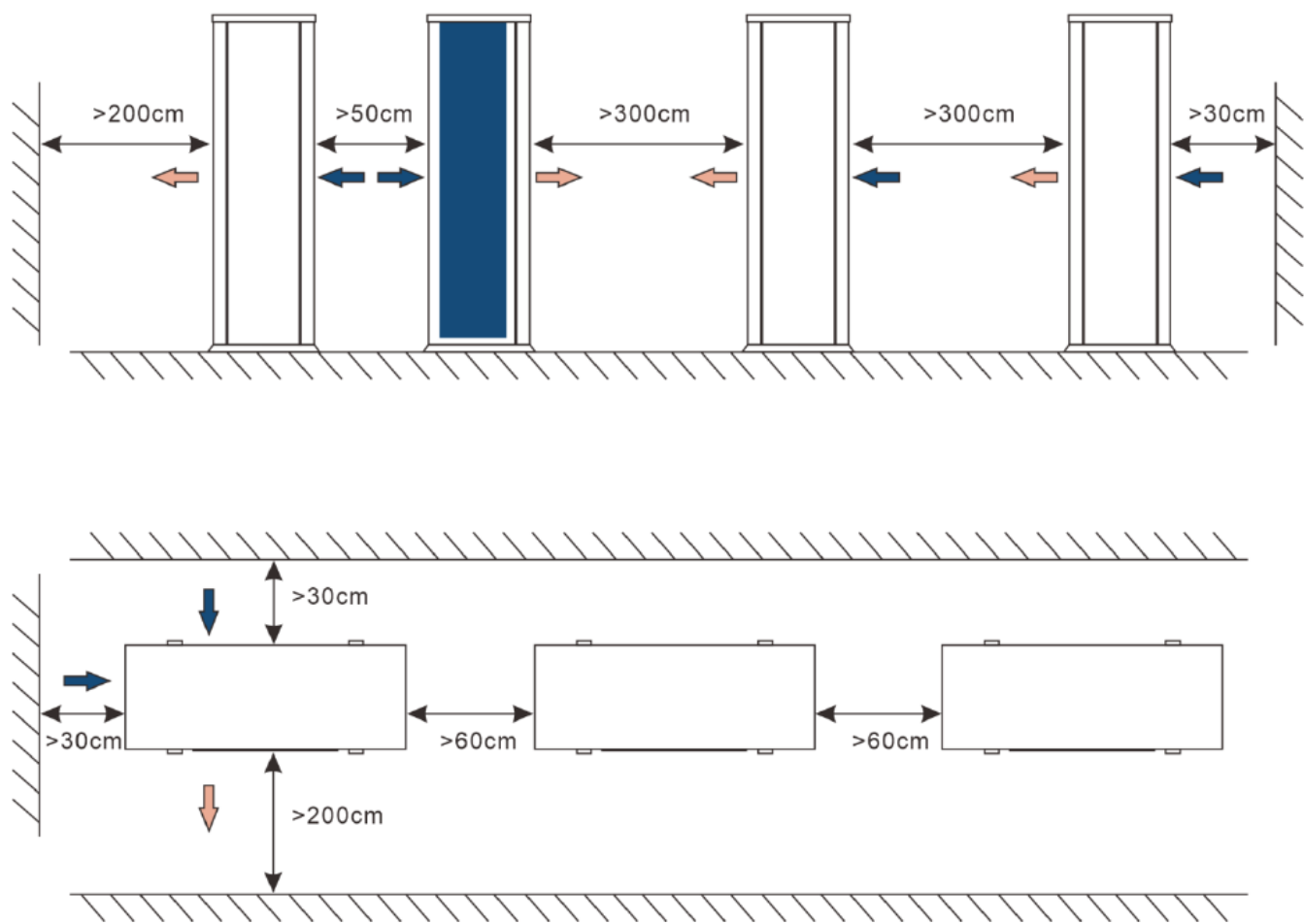


Legend:

- 1. Heat pumps cascade
- 2. Main pumps
- 3. HPmulti regulator (included with heat pump)
- 4. Internet module econET300 (included with heat pump)
- 5. 3-way valve
- 6. DHW tank temperature sensor.
- 7. DHW tank
- 8. DHW circulation pump
- 9. Buffer temperature sensor
- 10. Buffer
- 11. Touch panel (included with heat pump)
- 12. Outside sensor
- 13. Pump in circuit 1
- 14. Radio module ISM xSMART
- 14a. Wireless room thermostat eSTERx40
- 15. Temperature sensor for mixing valve in circuit 3
- 16. Pump in circuit 3
- 17. Mixing valve circuit 3
- 18. Mixing valve circuit 2
- 19. Pump in circuit 2
- 20. Temperature sensor for mixing valve in circuit 2
- 21. Auxiliary heat source

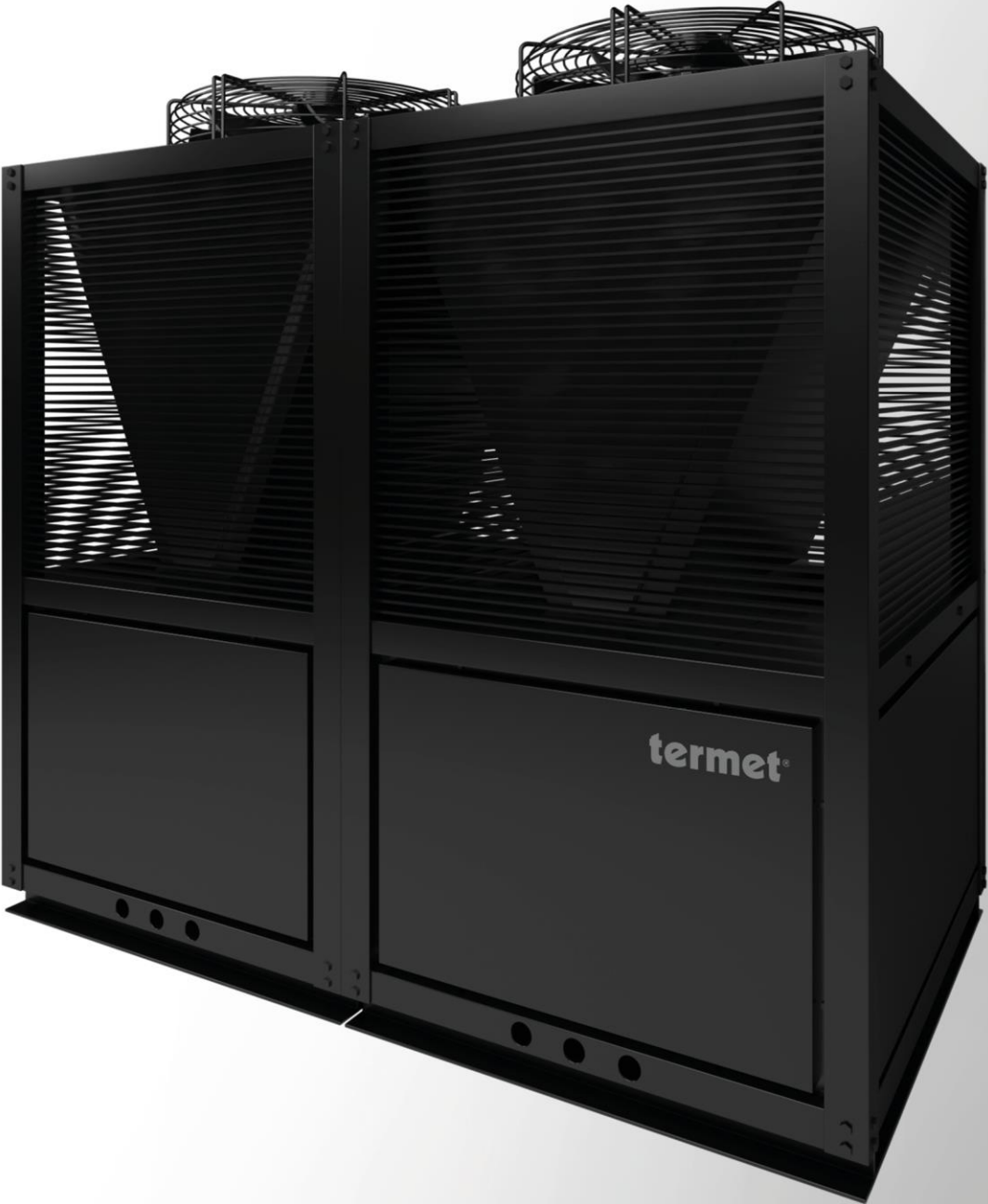
Illustrative diagram showing the possibilities of managing a cascade of Termet Heat pumps - the diagram does not constitute a boiler room design.

Installation distances for Termet Heat Gold and Platinum heat pump cascade



02.

High power heat pumps



5. Heat pumps Termet Heat Power

Technical data



Index	Name
TPP 9911 00 00 00/PL	TERMET HEAT POWER 35
TPP 9912 00 00 00/PL	TERMET HEAT POWER 45
TPP 9913 00 00 00/PL	TERMET HEAT POWER 70

	Maximum heating capacities for units (up to 5 units)	A7/W35	A7/W55
Maximum outlet temperature: 55 °C	TERMET HEAT POWER 35	29,0 - 145,0 kW	29,0 - 145,0 kW
	TERMET HEAT POWER 45	39,0 - 195,0 kW	38,0 - 195,0 kW
	TERMET HEAT POWER 70	58,7 - 290,0 kW	58,2 - 295,0 kW

Model	Unit	HEAT POWER 35	HEAT POWER 45	HEAT POWER 70
Efficiency class (A7/W35)	-	A+	A+	A+
Efficiency class (A7/W55)	-	A+	A+	A+
COP*[A7/W35]	-	4,17	4,16	4,18
COP [A-7/W35]	-	2,64	2,65	2,65
COP [A7/W55]	-	2,79	2,8	2,78
COP [A-7/W55]	-	2,02	2,07	2,03
SCOP [W35]	-	3,24	3,11	2,97
Maximum temperature (DHW circuit)	°C	55		
Maximum temperature (CH circuit)	°C	60		
Input power Rated*/Max	kW	7,5/14,3	9,7/19,7	15,0/28,6
Max. input current	A	25,5	35,3	51,0
Power supply	V/PH/Hz	400V/3Ph/50Hz		
Compressor	Type	1x Scroll Copeland		2 x Scroll Copeland
Evaporator		Highly efficient heat exchanger		
Expansion valve		Electronic expansion valve		
Fan	Type	Quiet, highly efficient axial fan		
	System	Axial		
	Quantity	1	2	2
	Power [W]	1100	850	2 x 1100
	Speed [l/min]	900	1350	900
Ambient temperature range	°C	[-25 °C] - [+43°C]		
Refrigerant		R407C (GWP: 1774) 4,2 kg	R410A (GWP: 2088) 7,0 kg	R407C (GWP: 1774) 8,4 kg
Noise within 1 m	dB(A)	65	65	68
Installation pipe diameter (internal)	DN	DN40	DN50	2 x DN40
Minimum water flow rate	m³/h	5,5	7,2	11
Case		Powder-coated steel		
Low/high pressure protection	-	Yes/Yes		
Water flow sensor	-	Option		
Defrosting	-	Yes		
Housing dimensions (W*D*H)	mm	1100/950/1850	950/1680/1865	1100/1847/1850
Net weight	kg	380	440	760

* Test conditions: A7/W10-35: Temp. Outdoor (DB/WB) = 6°C/ 7°C, Temp. water inlet/outlet = 10°C/35°C. According to EN14511

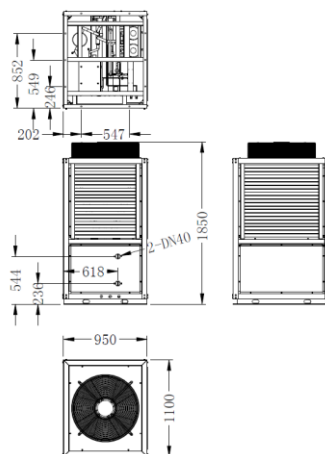
** Maximum power for A12/W10-35 conditions

Warning:

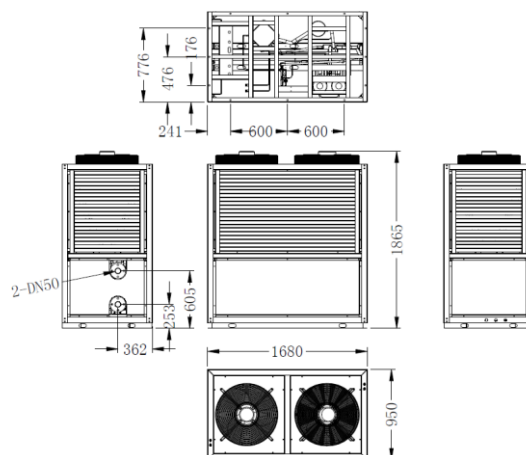
- Due to continuous improvement of the device, the above-described design and technical parameters may change without notice,
- The heat pump contains fluorinated greenhouse gases covered by the Kyoto Protocol. The refrigerant circuit is hermetically closed.

Mounting dimensions / mounting distances in cascade systems

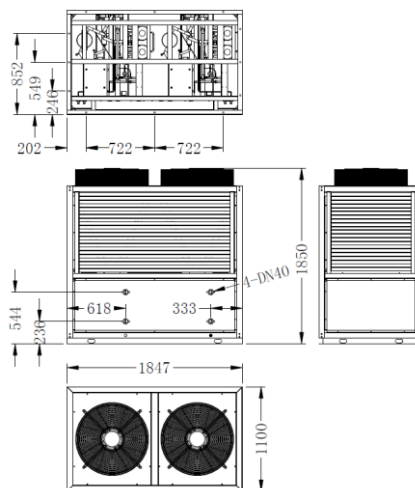
Termet Heat Power 35



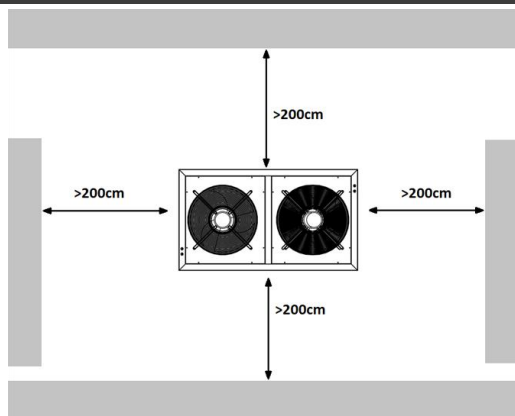
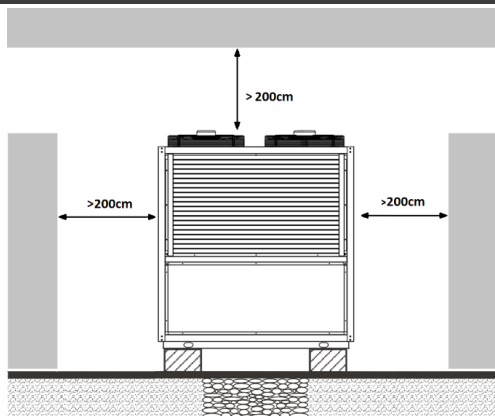
Termet Heat Power 45



Termet Heat Power 70



Mounting distances / mounting distances in cascade systems



Technical data of recommended equipment

Heat pump	Model of heat pump		
	TERMET HEAT POWER 35	TERMET HEAT POWER 45	TERMET HEAT POWER 70
Buffer (min. 20 liters*kW of pump power at A7/W35)	Minimum capacity [L]		
	600	800	1000
DHW tank. (with steel coil)	DHW tank with coil		
	600	1000	1500
	Min. Coil Surface Area [m ²]		
	6,5	11,5	17,5
Peak source	Required		
	Electric heater/additional condensing boiler		
3-way diverter valve [DN]	Necessary for the realization of DHW		
	40	50	65
Water pump [Boiler circuit]	Required; length of water pipe to buffer: ≤ 5 m/5-10 m		
	32/100	50/120	65/150
Required min. water/glycol flow [m ³ /h]	5,5	7,2	11,0
Pipeline diameters [DN]	40	50	2 x 40 or 1 x 65
Recommended pressure of water/glycol	≥ 1,5 bar; max 2 bar		
Anti-freeze protection	UPS/Glycol solution/antifreeze relief valves		

Minimum buffer size

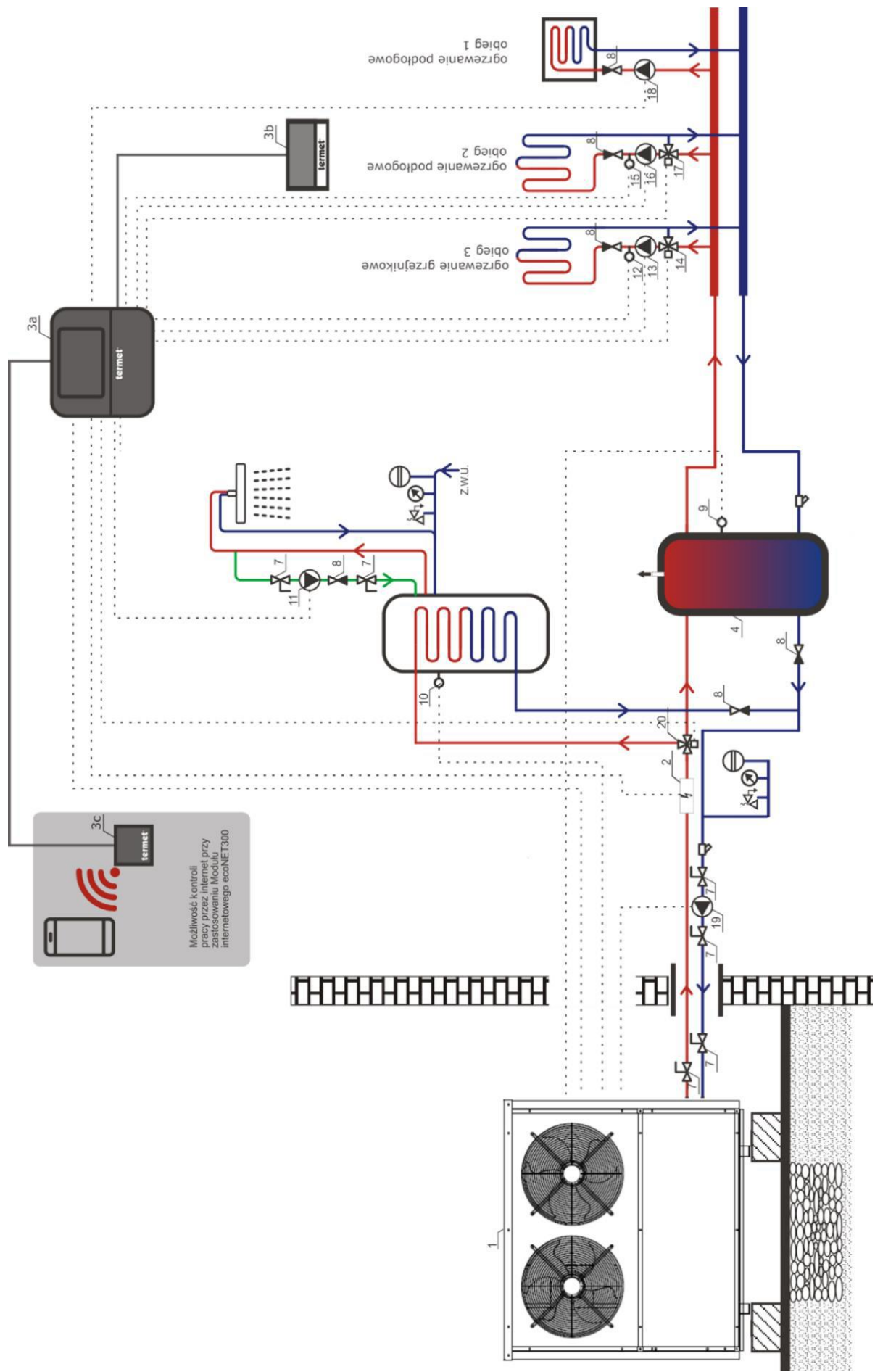
The minimum size of the buffer (the minimum amount of water circulating in the heating system) should be selected as follows:			
	TERMET HEAT POWER 8 EVI/DC	TERMET HEAT POWER 13 EVI/DC	TERMET HEAT POWER 18 EVI/DC
600 L	X		
800 L		X	
1000 L			X

6. Controlling the operation of the heat pump and the installation

Automatics

Photo	Name
	HP Multi Controls: • touch color display • controlling the operation of 3 heating circuits (1 direct (radiator) circuit, 2 circuits with mixer) • control of operation of the domestic hot water circuit and circulation pump • creation of time schedules separately for heat pump as heat source, heating circuits and domestic hot water • clear and easy-to-use menu • cooperation with additional devices e.g. dedicated room thermostat eSTERX40 • intuitive and simple operation of the graphical menu for the user • clear transmission of information about the status of the heating, cooling and hot water system • pump controller with SmartGrid function enables intelligent management of cooperation of the heat pump with photovoltaic panels • possibility of cooperation with additional heat source • possibility to regulate the operation of the system depending on the outside temperature (weather function) • parental control (allows locking the touch screen against children)
	Internet module ecoNET 300 The Internet module allows remote online management by the service www.econet24.com heat pumps. Using a computer, tablet or phone, the user can remotely monitor operation and modify operating parameters. The most important advantages of the module ecoNET are: • cooperation with the external server www.econet24.com, so that it is possible to access the controller via the Internet, • support of wireless Wi-Fi networks, • the ability to view current operating parameters of the regulator • in readable and clear "tiles", • visualization through a clear hydraulic diagram of the operating status of the hydraulic system, • possibility to view and edit most of the regulator parameters, • registration of key parameters of the regulator's operation and alarm states, • possibility of e-mail notification about the occurrence of alarm condition of the regulator.
	Radio module ISM xSMART Radio module for connecting wireless room thermostats eSTERx40 with the HP Multi controller.
	Wireless room thermostat eSTERx40 Battery-operated room thermostat with LCD display. Two-way radio communication allows transmission of information from the HP Multi controller to the eSTERx40.e thermostat.

Example hydraulic diagram



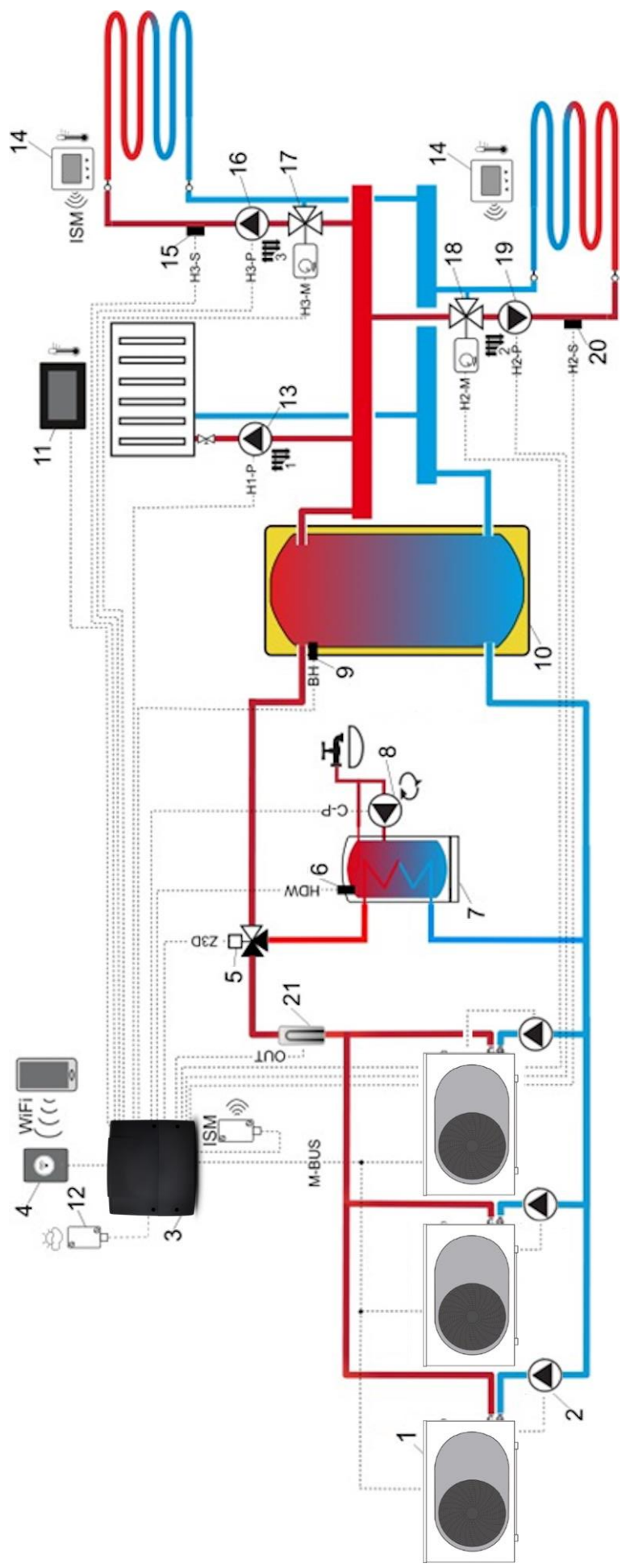
Legend:

- 1. Air to water heat pump Termet Heat
- 2. Auxiliary heat source
- 3a. HPmulti regulator (included with heat pump)
- 3b. Touch panel (included with heat pump)
- 3c. Internet module ecoNET300 (included with heat pump)
- 4. Buffer
- 7 Ball valve
- 8. Check valve
- 9. Buffer temperature sensor
- 10. DHW tank temperature sensor
- 11. DHW circulation pump
- 12. Temperature sensor for mixing valve in circuit 1
- 13. Circulation pump circuit 1
- 14. Mixing valve circuit 1
- 15. Temperature sensor for mixing valve in circuit 2
- 16. Circulation pump circuit 2
- 17. Mixing valve circuit 2
- 18. Circulation pump circuit 3
- 19. Main pump
- 20. 3-way valve

Illustrative diagram showing the possibilities of managing a cascade based on Termet Heat pumps - the diagram does not constitute a boiler room design .

7. Connecting heat pumps into cascade

Example hydraulic diagram of heat pump cascade with heat buffer and DHW tank



Legend:

- 1. Heat pumps cascade
 - 2. Main pumps
 - 3. HPmulti regulator (included with heat pump)
 - 4. Internet module econET300 (included with heat pump)
 - 5. 3-way valve
 - 6. DHW tank temperature sensor.
 - 7. DHW tank
 - 8. DHW circulation pump
- 9. Buffer temperature sensor
 - 10. Buffer
 - 11. Touch panel (included with heat pump)
 - 12. Outside sensor
 - 13. Pump in circuit 1
 - 14. Radio module ISM xSMART
 - 14a. Wireless room thermostat eSTERx40
 - 15. Temperature sensor for mixing valve in circuit 3
- 16. Pump in circuit 3
 - 17. Mixing valve circuit 3
 - 18. Mixing valve circuit 2
 - 19. Pump in circuit 2
 - 20. Temperature sensor for mixing valve in circuit 2
 - 21. Auxiliary heat source

Illustrative diagram showing the possibilities of managing a cascade of heat pumps - the diagram does not constitute a boiler room design .

03.

High power condensing boilers



8. Boiler Optima Inox II

Technical specifications



Index	Trade name	Gas type*
WKJ 6151 00 00 00/PL2T	OPTIMA INOX II 20 kW (system version)	Natural gas: 2H-G20*
WKJ 6111 00 00 00/PL2T	OPTIMA INOX II 25 kW (system version)	Natural gas: 2H-G20*
WKJ 6131 00 00 00/PL2T	OPTIMA INOX II 35 kW (system version)	Natural gas: 2H-G20*
WKD 6141 00 00 00/PL2T	OPTIMA INOX II 20 kW (combi version)	Natural gas: 2H-G20*
WKD 6101 00 00 00/PL2T	OPTIMA INOX II 25 kW (combi version)	Natural gas: 2H-G20*
WKD 6121 00 00 00/PL2T	OPTIMA INOX II 35 kW (combi version)	Natural gas: 2H-G20*

* Adjustable for other gases: 3P-G31, 2Lw-G27, 2Ls-G2.350.

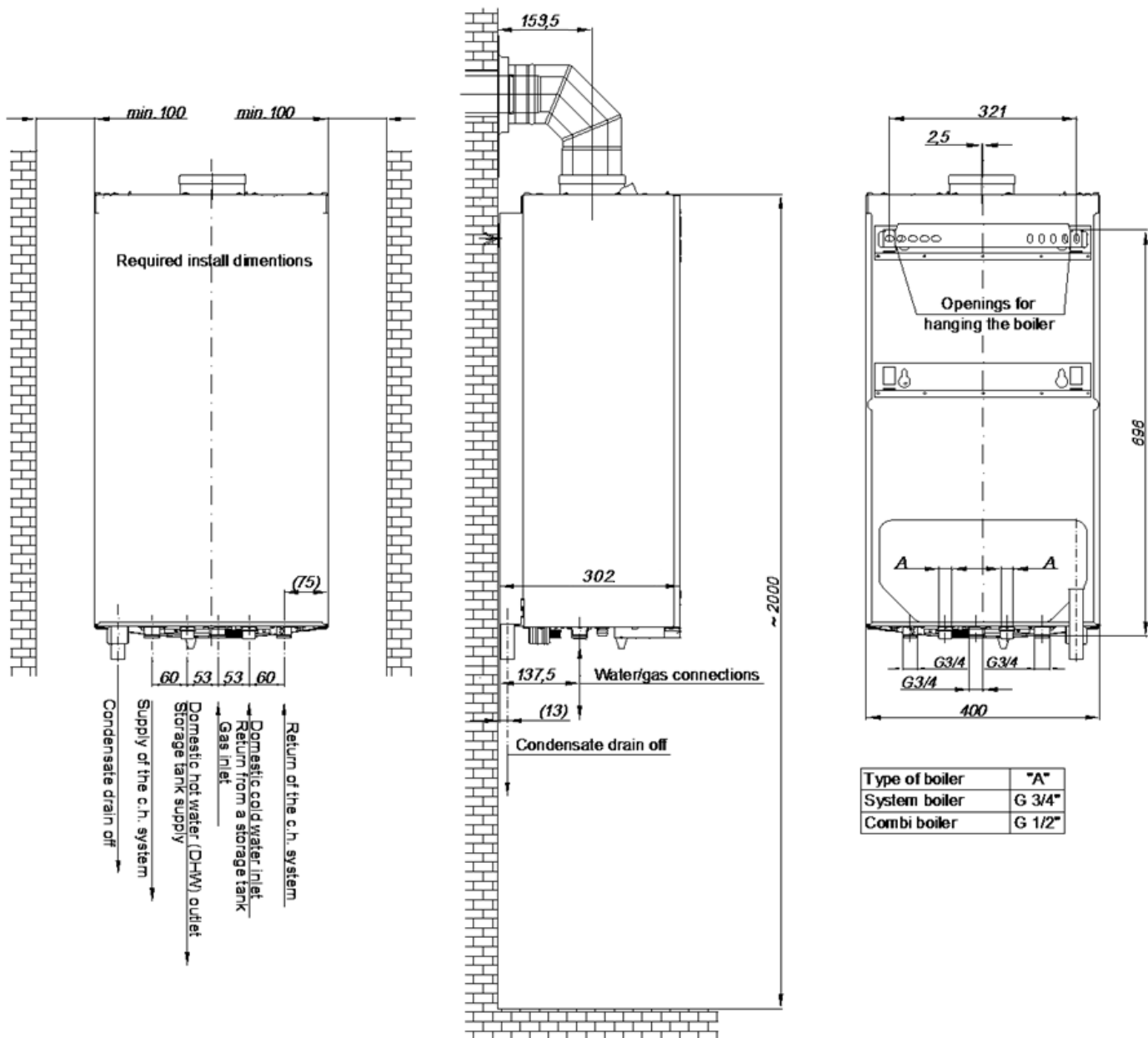
Other types of gas depend on the country of destination.

The manufacturer reserves the right to make changes in the construction of the boiler, which are not mentioned herein and have no influence on the technical and functional characteristics of the product.

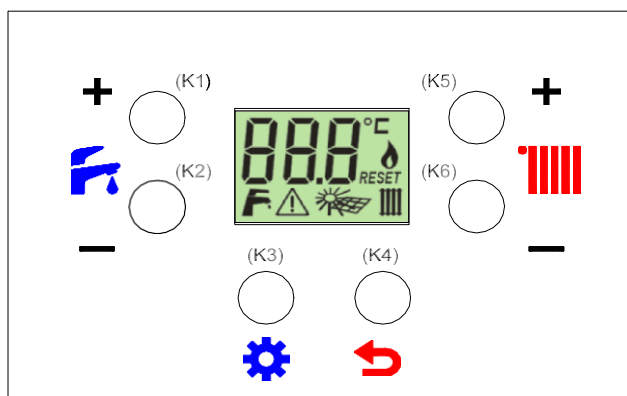
Parameter	Unit	Optima Inox II					
		20	25	35	20	25	35
			system version			combi version	
CH Circuit							
Seasonal space heating energy efficiency class (D -> A+++)		A	A	A	A	A	A
Boiler thermal power at 80/60°C (modulating)	kW	3.4 ÷ 20.1	3.7 ÷ 24.0	5.5 ÷ 34.5	3.4 ÷ 20.1	3.7 ÷ 24.0	5.5 ÷ 34.5
Boiler thermal power at 50/30°C (modulating)	kW	3.8 ÷ 22.1	4.1 ÷ 26.5	6.0 ÷ 38.0	3.8 ÷ 22.1	4.1 ÷ 26.5	6.0 ÷ 38.0
Heat load	kW	3.5 ÷ 20.5	3.8 ÷ 24.5	5.6 ÷ 35.2	3.5 ÷ 20.5	3.8 ÷ 24.5	5.6 ÷ 35.2
The useful efficiency of the boiler at nominal load and average boiler water temp. 70 °C	%	98,0	98,0	98,0	98,0	98,0	98,0
Utility efficiency of the boiler for partial load and return water temp. 30 °C	%	108,0	108,0	108,0	108,0	108,0	108,0
Modulation range	%	13-100	16-100	12-100	13-100	16-100	12-100
Seasonal energy efficiency of space heating η_s	%	94	95	94	94	95	94
Utility heat generated:							
- at rated heat output P4	kW	20.0	24.3	35.0	20.0	24.3	35.0
- at 30% of rated capacity P1	kW	6.6	8.0	11.6	6.6	8.0	11.6
Utility efficiency:							
- η_4	%	89.2	88.9	88.5	89.2	88.9	88.5
- η_1	%	98.4	99.7	98.5	98.4	99.7	98.5
Gas consumption ⁽¹⁾ :							
natural: 2H-G20	m³ / h	0,28-2,21	0,40-2,59	0,44-3,78	0,28-2,21	0,40-2,59	0,44-3,78
natural: 2Lw-G27	m³ / h	0,35-2,64	0,49-3,16	0,55-4,62	0,35-2,64	0,49-3,16	0,55-4,62
natural: 2Ls-G2.350	m³ / h	0,40-3,00	0,57-3,63	0,62-5,26	0,40-3,00	0,57-3,63	0,62-5,26
liquid: 3P-G31	kg / h	0,21-1,54	0,28-1,84	0,31-2,68	0,21-1,54	0,28-1,84	0,31-2,68
Nominal kinetic pressure in front of the boiler for gas 2H-G20, 2Lw-G27; 2Ls-G 2.350; 3P-G31	Pa (mbar)	2000 (20); 2000 (20); 1300 (13) 3700 (37)					
Maximum water pressure	MPa (bar)	0,3 (3)					
Max CH operating temperature.	°C	95					
Set temperature standard (reduced)	°C	40 ÷ 80 (25 ÷ 55)					
Pump head at flow rate of 0	kPa (bar)	60 (0,6)	60 (0,6)	70 (0,7)	60 (0,6)	60 (0,6)	70 (0,7)
DHW Circuit							
Boiler thermal power at 80/60°C (modulated)	kW	-			3.4 ÷ 25.0	3.7 ÷ 30.0	5.5 ÷ 40.0
Nominal heat load	kW	-			3.5 ÷ 25.5	3.8 ÷ 30.6	5.6 ÷ 40.8
The efficiency of the boiler at nominal load and average boiler water temp. 70°C	%	-			98,0	98,0	98,0
Gas consumption ⁽¹⁾ :							
natural: 2H-G20	m³ / h	-			0,28-2,73	0,40-3,26	0,44-4,35
natural: 2Lw-G27	m³ / h	-			0,35-3,28	0,49-3,94	0,55-5,32
natural: 2Ls-G2.350	m³ / h	-			0,40-3,76	0,57-4,52	0,62-6,02
liquid: 3P-G31	kg / h	-			0,21-1,54	0,28-2,30	0,31-3,09
Water heating energy efficiency class		-			A	A	A
Load profile		-			L	XL	XL
Water pressure	MPa (bar)	-			0,01 (0,1) - 0.6(6)		
Min water flow	l/min	-			2,0		
Range of water temperature regulation	°C	30 – 60					
Flow of domestic water for Dt=30K	dm³/min	-			12	14	19
Environmental protection							
Nitrogen oxides emission level	mg/kWh	39	38	36	39	38	36
NOx emissions (natural gas)	class	6					
Condensate pH factor		Natural gas - 5					
Sound power level L _{WA}	dB	48	49	51	48	49	51
Hydraulic parameters							
Expansion vessel capacity	dm³	8					
Pressure in the expansion vessel	MPa (bar)	0,08-0.02 (0.8-0.2)					
Electrical parameters							
Type and voltage of electricity	V	~ 230 ±10%/ 50Hz					
IP degree (protection level)		IPX4D					
Power consumed	W	110					
Power consumption in standby mode P _{SB}	kW	0.001	0.004	0.001	0.001	0.004	0.001
Electricity consumption:							
- at full load e _{lmax}	kW	0.077	0.077	0.098	0.077	0.077	0.098
- at partial load e _{lmin}	kW	0.060	0.059	0.063	0.060	0.059	0.063
Nominal current value of output terminals	A	2					
Parameters for exhaust gas							
Mass flow of exhaust gas at full load	kg/h	34.7	41.8	59.0	34.7	41.8	59.0
Part load exhaust mass flow	kg/h	5.2	6.4	8.7	5.2	6.4	8.7
Minimum flue gas temperature at minimum power	°C	44	34.3	34.3	44	34.3	34.3
Maximum flue gas temperature at maximum power	°C	61	66.9	66.7	61	66.9	66.7
Installation dimensions							
Connection to the chimney duct	mm	Coaxial Ø80/Ø125, Coaxial Ø60/Ø100 or 2 separate Ø80 x Ø80					
Connection of heating water (CH) and gas	inch	G3/4			G3/4		
Connection of DHW	inch	G3/4			G1/2		
Dimensions	mm	775x400x 300			775x400x 300		
Boiler weight	kg	32.5	33.5	32.5	33.5	32.5	33.5

⁽¹⁾ Individual gas consumption was given for reference gases in normal conditions (15°C, pressure 1013 mbar) considering useful efficiency of the boiler with 30°C of return water temperature. The values are indicative.

The most important information about Optima Inox II boilers

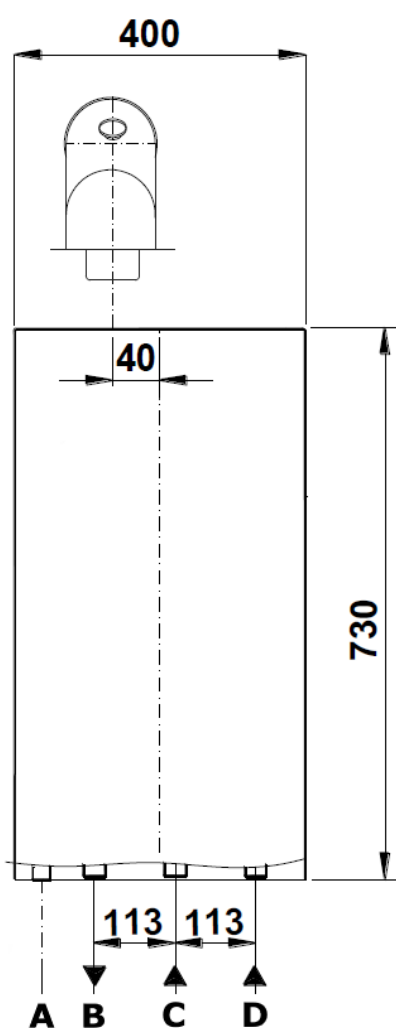


- K1** – DHW water temperature setting button +
- K2** – DHW water temperature setting button –
- K3** – controller operating mode change button
- K4** – RESET
- K5** – CH water temperature setting button +
- K6** – CH water temperature setting button –
- K4+K2** – information mode



9. Boiler Ecocondens Crystal Plus 50 kW

Technical specifications



- A** – (Ø 25) – Condensate drain
B – (G3/4") – Supply of CH system.
C – (G3/4") – Gas connections
D – (G3/4") – Return from the CH

Index	Trade name	Gas type*
WKJ 5001 00 00 00/EU	ECOCONDENS CRYSTAL PLUS 50 (system version)	Natural gas: 2H-G20*

* Adjustable for other gases: 3P-G31.

Other types of gas depend on the country of destination

Possibility of operation boilers ECOCONDENS CRYSTAL PLUS 50 boilers in cascade systems of up to 4 units.

The boiler is equipped with a **non-return flap**, which protects against back draught of flue gases. The use of a backwater flap makes it possible to joining multiple boilers to a collective chimney system.



Parameter	Unit	Ecocondens Crystal Plus 50
CH Circuit		
Boiler thermal power at 80/60°C (modulating)	kW	5,5 ÷ 45,0
Boiler thermal power at 50/30°C (modulating)	kW	6,1 ÷ 49,6
Heat load	kW	5,7 ÷ 46,2
The useful efficiency of the boiler at nominal load and average boiler water temp. 70 °C	%	97,4
Utility efficiency of the boiler for partial load and return water temp. 30 °C	%	107,7
Modulation range	%	11 - 100
Seasonal energy efficiency of space heating η_s	%	91
Class of seasonal energy efficiency of space heating		A
Utility heat generated:		
- at rated heat output P4	kW	45,0
- at 30% of rated capacity P1	kW	14,6
Utility efficiency:		
- η_4	%	88
- η_1	%	97,5
Gas consumption ⁽¹⁾		
Natural: 2E-G20 – 20mbar	m ³ / h	0,60-4,86
Liquefied: 3P-G31-37mbar	kg / h	0,60-3,63
Nominal kinetic pressure in front of the boiler for gas :	Pa (mbar)	2000 (20); 3700 (37)
Maximum water pressure	MPa (bar)	0,3 (3)
Max CH operating temperature.	°C	95
Set temperature	°C	20 ÷ 80
Pump head at flow rate of 0	kPa (bar)	70 (0,7)
DHW Circuit		
Water temperature control range	°C	30 - 60
Environmental protection		
Nitrogen oxides emission level	mg/kWh	50
NOx emissions (natural gas)	class	6
Condensate pH factor		Natural gas - 5
Max. amount of condensate (natural gas)	l/h	4,7
Sound power level L _{WA}	dB	69
Hydraulic parameters		
Expansion vessel capacity	dm ³	8
Pressure in the expansion vessel	MPa (bar)	0,08-0,02 (0.8-0.2)
Electrical parameters		
Type and voltage of electricity	V	~ 230 ±10%/ 50Hz
IP degree (protection level)		IPX4D
Power consumed	W	200
Power consumption in standby mode P _{SB}	kW	0,005
Electricity consumption:		
- at full load e _{lmax}	kW	0,11
- at partial load e _{lmin}	kW	0,06
Nominal current value of output terminals	A	2
Type of flame sensor		ionization
Parameters for exhaust gas		
Mass flow of exhaust gas at full load	kg/h	78,5
Part load exhaust mass flow	kg/h	11,7
Minimum flue gas temperature at minimum power	°C	46,6
Maximum flue gas temperature at maximum power	°C	70,4
Installation dimensions		
Connection to the chimney duct	mm	Concentric - Ø80/Ø125, Ø60/Ø100 or 2 single Ø80 x Ø80
W.g. central heating and gas joiningion	inch	G3/4
Overall dimensions	mm	730x400x 440
Boiler weight	kg	38

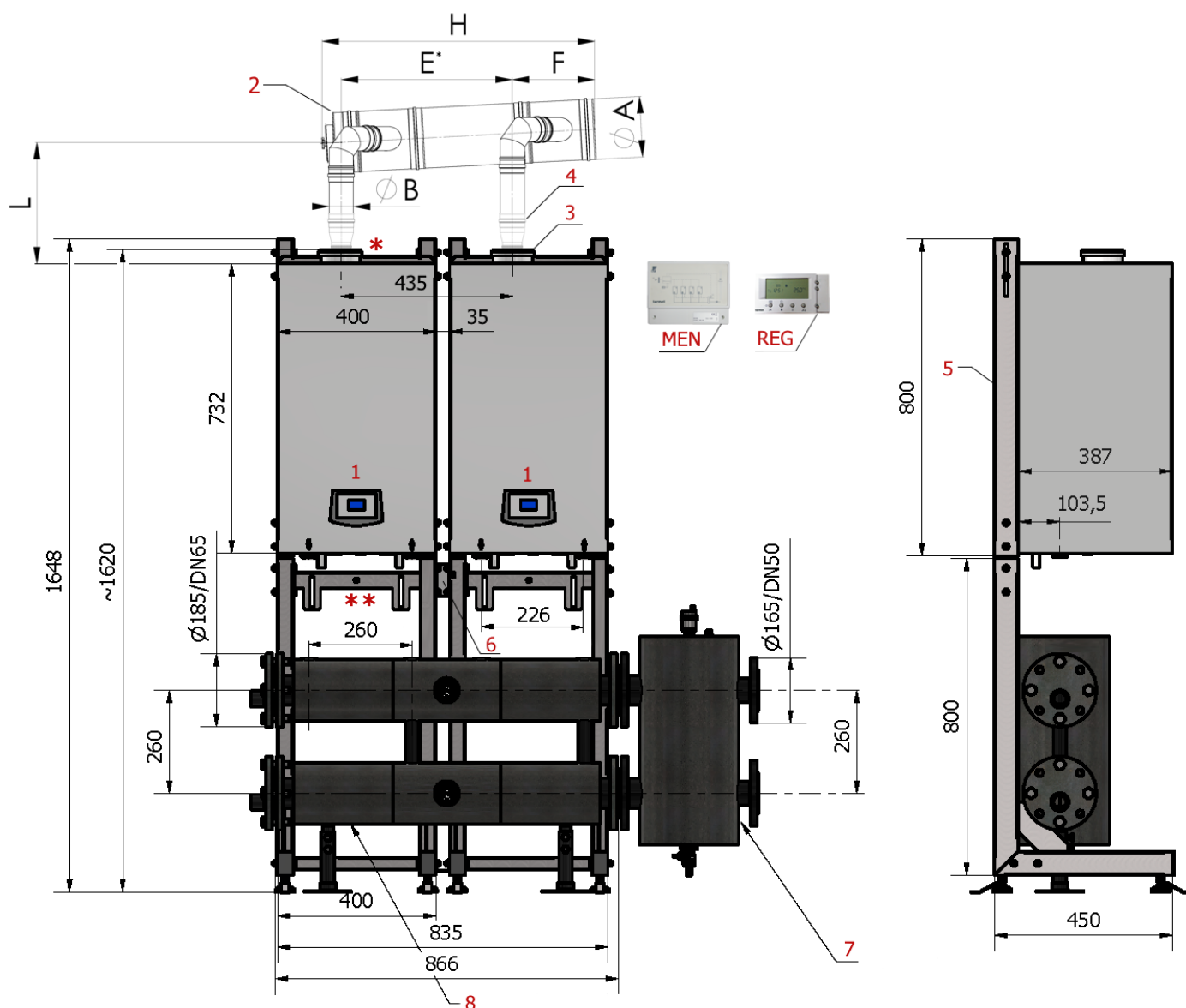
⁽¹⁾ Individual gas consumption was given for reference gases in normal conditions (15°C, pressure 1013 mbar) considering useful efficiency of the boiler with 30°C of return water temperature. The values are indicative.

The manufacturer reserves the right to make changes in the construction of the boiler, which are not mentioned herein and have no influence on the technical and functional characteristics of the product.

Optional equipment when combining boilers EcoCondens Crystal Plus 50 into cascade systems

Photo	Index	Name
	The elements are part of dedicated packages, the detailed scope of which is presented on the following pages.	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
		Hydraulic coupling CPN 150 - DN65/DN50 Hydraulic coupling CPN 150 - DN 65/DN 50 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of boilers in a cascade of up to 130 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
		Hydraulic coupling CPN 150 - DN65 Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 210 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
		Collector MK 65 2F - DN 65 for two boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet
		Collector MK 65 3F - DN 65 for three boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.
	T 9260 14 08 00	Angle connectors DN 65 without insulation (set of 2 pieces) The angle couplings are made of steel. They were designed to joining the hydraulic coupling to the MK manifold. The couplings include a set of screws and gaskets for assembly.

Cascade of 2 boilers EcoCondens Crystal Plus 50 + independent air/flue system



* - built-in air/flue adapter 60/100, **must be changed** to an 80/125 adapter

** - the connection of the boiler with the collector is made by the installer - individually at the investment site

Quantity	No.	Index	Name
2 pc.	1	WKJ 5001 00 00 00 /EU	Condensing boiler EcoCondens Crystal Plus 50
1 pc.	2	T 9000 04 05 08 or T 9000 04 05 09	Air/flue system for cascade of two boilers (Ø150mm) or Air/flue system for cascade of two boilers (Ø180mm)
2 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
2 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
2 pc.	5	PT92601403/050/2	Stand for boiler EcoCondens Crystal Plus 50
1 pc.	6		A set of screws and plates to joining two stands
1 pc.	7		Hydraulic coupling CPN 150 - DN65/DN50
1 pc.	8		Collector MK 65 2F - DN 65

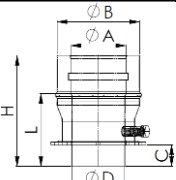
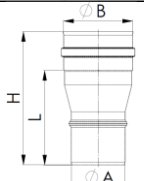
OBLIGATORY EQUIPMENT when combining boilers EcoCondens Crystal Plus 50 into cascade systems.

Quantity	No.	Index	Name
1 pc.	MEN	WKM 0623 00 00 00	Cascade boiler manager type AX 1203SQ: • cascade control of 2 to 4 boilers, • cooperates with the CR11011 controller • equipped with an outdoor temperature sensor, a supply temperature sensor
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication) working directly with cascade manager type AX 1203SQ

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal Plus 50	WKJ 5001 00 00 00/EU	Wall-mounted condensing boilers ECOCONDENS CRYSTAL PLUS 50 are ideal for heating large areas (large detached houses, blocks of flats, townhouses). The devices belong to the group of ecological and extremely economical heating units. The operation of all units joined in cascade is tied together by one master cascade manager.

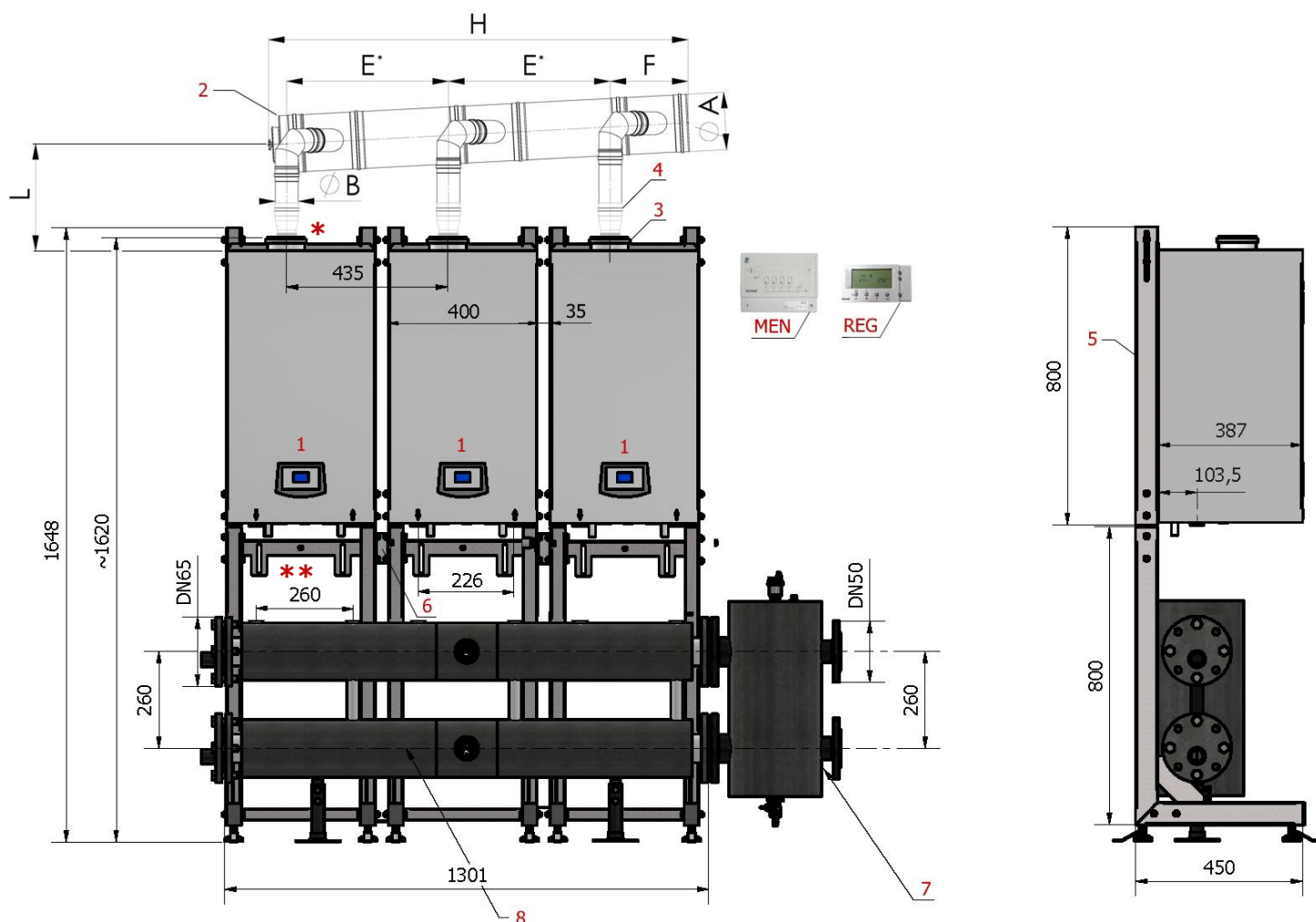
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue gas system for a cascade of two boilers	T 9000 04 05 08	Ø150	150	100	714	344	1138	~480
			T 9000 04 05 09	Ø180	180	100	714	344	1138	~480

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler EcoCondens Crystal Plus 50	PT92601403/050/2	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
6		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
7		Hydraulic coupling CPN 150 - DN65/DN50		Hydraulic coupling CPN 150 - DN 65/DN 50 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of boilers in a cascade of up to 130 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
8		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Cascade of 3 boilers EcoCondens Crystal Plus 50 + independent air/flue system



* - built-in air/flue adapter 60/100, **must be changed** to an 80/125 adapter

** - the connection of the boiler with the collector is made by the installer - individually at the investment site

Quantity	No.	Index	Name
3 pc.	1	WKJ 5001 00 00 00/EU	Condensing boiler EcoCondens Crystal Plus 50
1 pc.	2	T 9000 04 05 10 or T 9000 04 05 11 or T 9000 04 05 73	Air/flue system for cascade three boilers (Ø180mm) or Air/flue system for cascade three boilers (Ø200mm) or Air/flue system for cascade three boilers (Ø250mm)
3 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
3 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
3 pc.	5	PT92601403/050/3	Stand for boiler EcoCondens Crystal Plus 50
2 pc.	6		A set of screws and plates to joining two stands
1 pc.	7		Hydraulic coupling CPN 150 - DN65
1 pc.	8		Collector MK 65 3F - DN 65

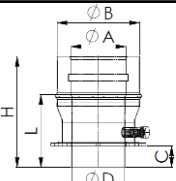
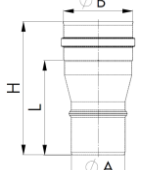
OBLIGATORY EQUIPMENT when combining boilers EcoCondens Crystal Plus 50 into cascade systems

Quantity	No.	Index	Name
1 pc.	MEN	WKM 0623 00 00 00	Cascade boiler manager type AX 1203SQ: • cascade control of 2 to 4 boilers, • cooperates with the CR11011 controller • equipped with an outdoor temperature sensor, a supply temperature sensor
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication) working directly with cascade manager type AX 1203SQ

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal Plus 50	WKJ 5001 00 00 00/EU	Wall-mounted condensing boilers ECOCONDENS CRYSTAL PLUS 50 are ideal for heating large areas (large detached houses, blocks of flats, townhouses). The devices belong to the group of ecological and extremely economical heating units. The operation of all units joined in cascade is tied together by one master cascade manager.

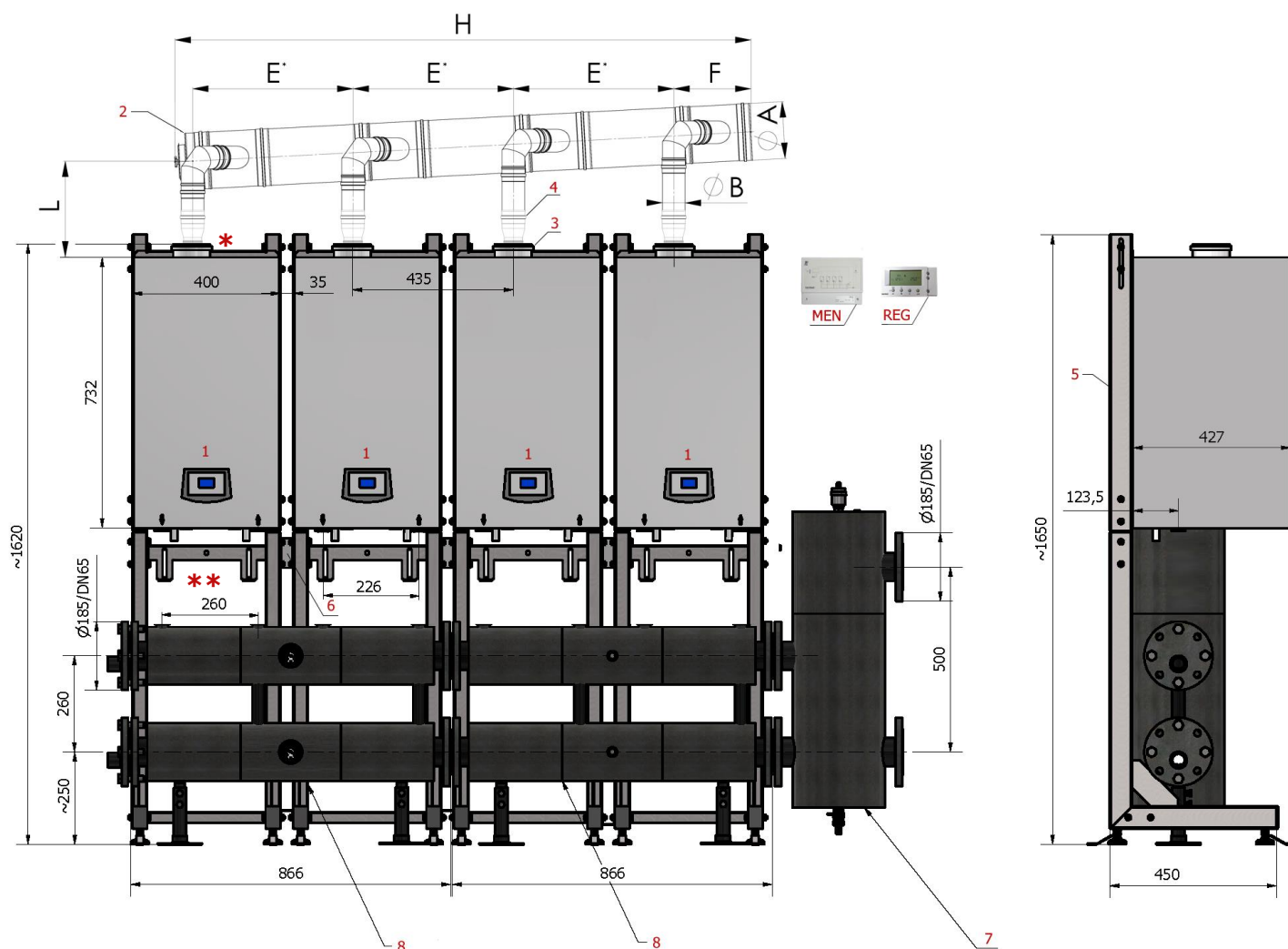
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue gas system for a cascade of three boilers	T 9000 04 05 10	Ø180	180	100	714	344	1847	~480
			T 9000 04 05 11	Ø200	200	100	714	344	1847	~480
			T 9000 04 05 73	Ø250	250	100	714	344	1847	~480

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler EcoCondens Crystal Plus 50	PT92601403/050/3	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
6		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
7		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 210 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
8		Collector MK 65 3F - DN 65		Collector MK 65 3F - DN 65 for three boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets..

Cascade of 4 boilers EcoCondens Crystal Plus 50 + independent air/flue system



* - built-in air/flue adapter 60/100, **must be changed** to an 80/125 adapter

****** - the connection of the boiler with the collector is made by the installer - individually at the investment site

Quantity	No.	Index	Name
4 pc.	1	WKJ 5001 00 00 00/EU	Condensing boiler EcoCondens Crystal Plus 50
1 pc.	2	T 9000 04 05 12 or T 9000 04 05 13	Air/flue system for cascade of four boilers (Ø200mm) or Air/flue system for cascade of four boilers (Ø250mm)
4 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
4 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
4 pc.	5	PT92601403/050/4	Stand for boiler EcoCondens Crystal Plus 50
3 pc.	6		A set of screws and plates to joining two stands
1 pc.	7		Hydraulic coupling CPN 150 - DN65
2 pc.	8		Collector MK 65 2F - DN 65

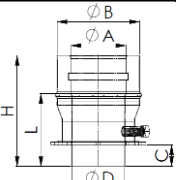
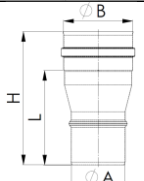
OBLIGATORY EQUIPMENT when combining boilers EcoCondens Crystal Plus 50 into cascade systems

Quantity	No.	Index	Name
1 pc.	MEN	WKM 0623 00 00 00	Cascade boiler manager type AX 1203SQ: • cascade control of 2 to 4 boilers, • cooperates with the CR11011 controller • equipped with an outdoor temperature sensor, a supply temperature sensor
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication) working directly with cascade manager type AX 1203SQ

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal Plus 50	WKJ 5001 00 00 00/EU	Wall-mounted condensing boilers ECOCONDENS CRYSTAL PLUS 50 are ideal for heating large areas (large detached houses, blocks of flats, townhouses). The devices belong to the group of ecological and extremely economical heating units. The operation of all units joined in cascade is tied together by one master cascade manager.

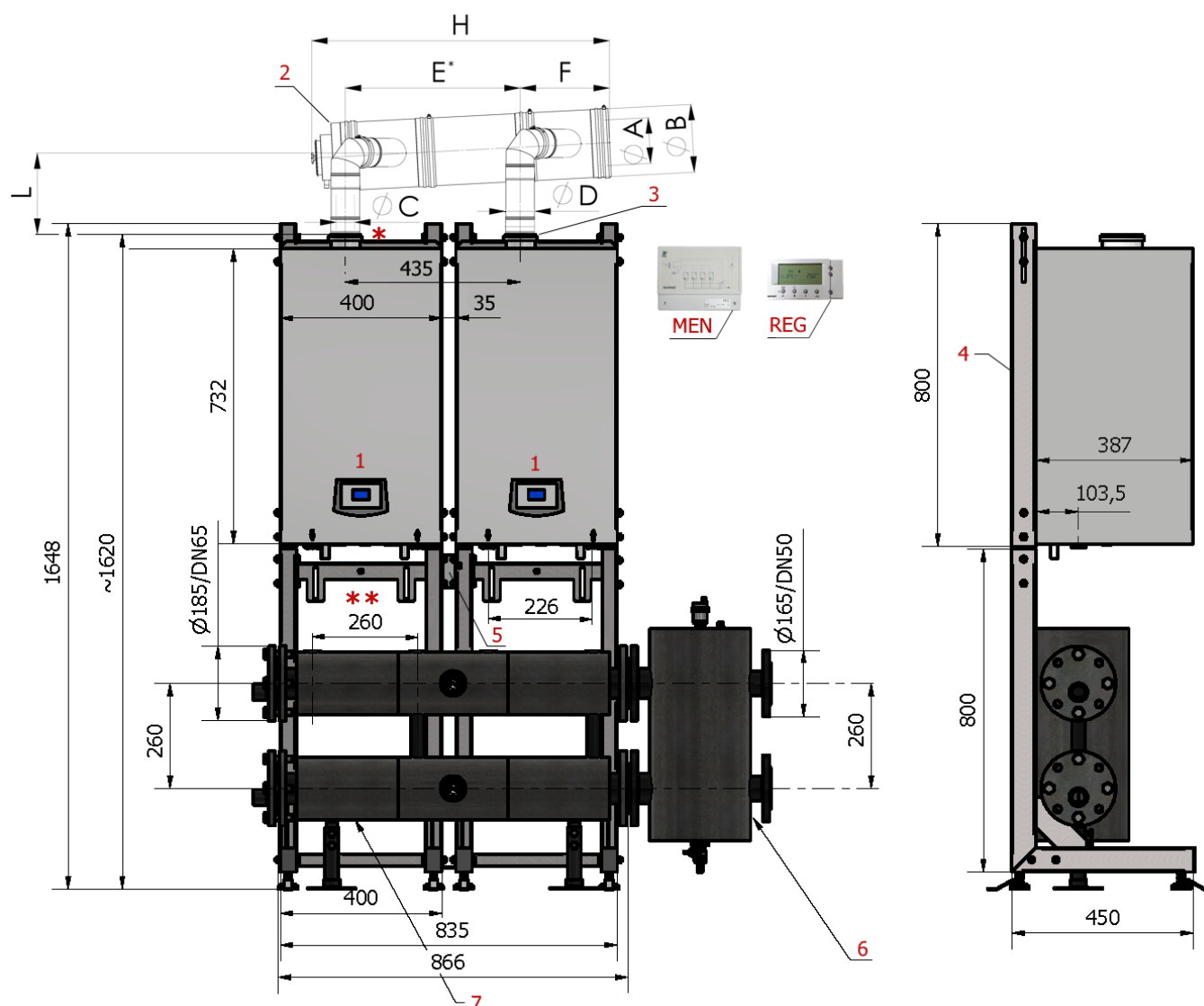
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air and flue gas system for a cascade of four boilers	T 9000 04 05 12	Ø200	200	100	714	344	2565	~480
			T 9000 04 05 13	Ø250	250	100	714	344	2565	~480

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler EcoCondens Crystal Plus 50	PT92601403/050/4	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
6		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
7		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 210 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
8		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Cascade of 2 boilers EcoCondens Crystal Plus 50 + concentric air-flue system



* - built-in air/flue adapter 60/100, **must be changed** to an 80/125 adapter

** - the connection of the boiler with the collector is made by the installer - individually at the investment site

Quantity	No.	Index	Name
2 pc.	1	WKJ 5001 00 00 00/EU	Condensing boiler EcoCondens Crystal Plus 50
1 pc.	2	T 9000 04 04 01 or T 9000 04 04 03 or T 9000 04 04 05 or T 9000 04 04 09	Concentric air-flue system for cascade two boilers (Ø150/Ø200mm) or Concentric air-flue system for cascade two boilers (Ø180/Ø250mm) or Concentric air-flue system for cascade two boilers (Ø180/Ø290mm) or Concentric air-flue system for cascade two boilers (Ø200/Ø300mm)
2 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
2 pc.	4	PT92601403/050/2	Stand for boiler EcoCondens Crystal Plus 50
1 pc.	5		A set of screws and plates to joining two stands
1 pc.	6		Hydraulic coupling CPN 150 - DN65/DN50
1 pc.	7		Collector MK 65 2F - DN 65

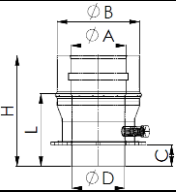
OBLIGATORY EQUIPMENT when combining boilers EcoCondens Crystal Plus 50 into cascade systems

Quantity	No.	Index	Name
1 pc.	MEN	WKM 0623 00 00 00	Cascade boiler manager type AX 1203SQ: • cascade control of 2 to 4 boilers, • cooperates with the CR11011 controller • equipped with an outdoor temperature sensor, a supply temperature sensor
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication) working directly with cascade manager type AX 1203SQ

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal Plus 50	WKJ 5001 00 00 00/EU	Wall-mounted condensing boilers ECOCONDENS CRYSTAL PLUS 50 are ideal for heating large areas (large detached houses, blocks of flats, townhouses). The devices belong to the group of ecological and extremely economical heating units. The operation of all units joined in cascade is tied together by one master cascade manager.

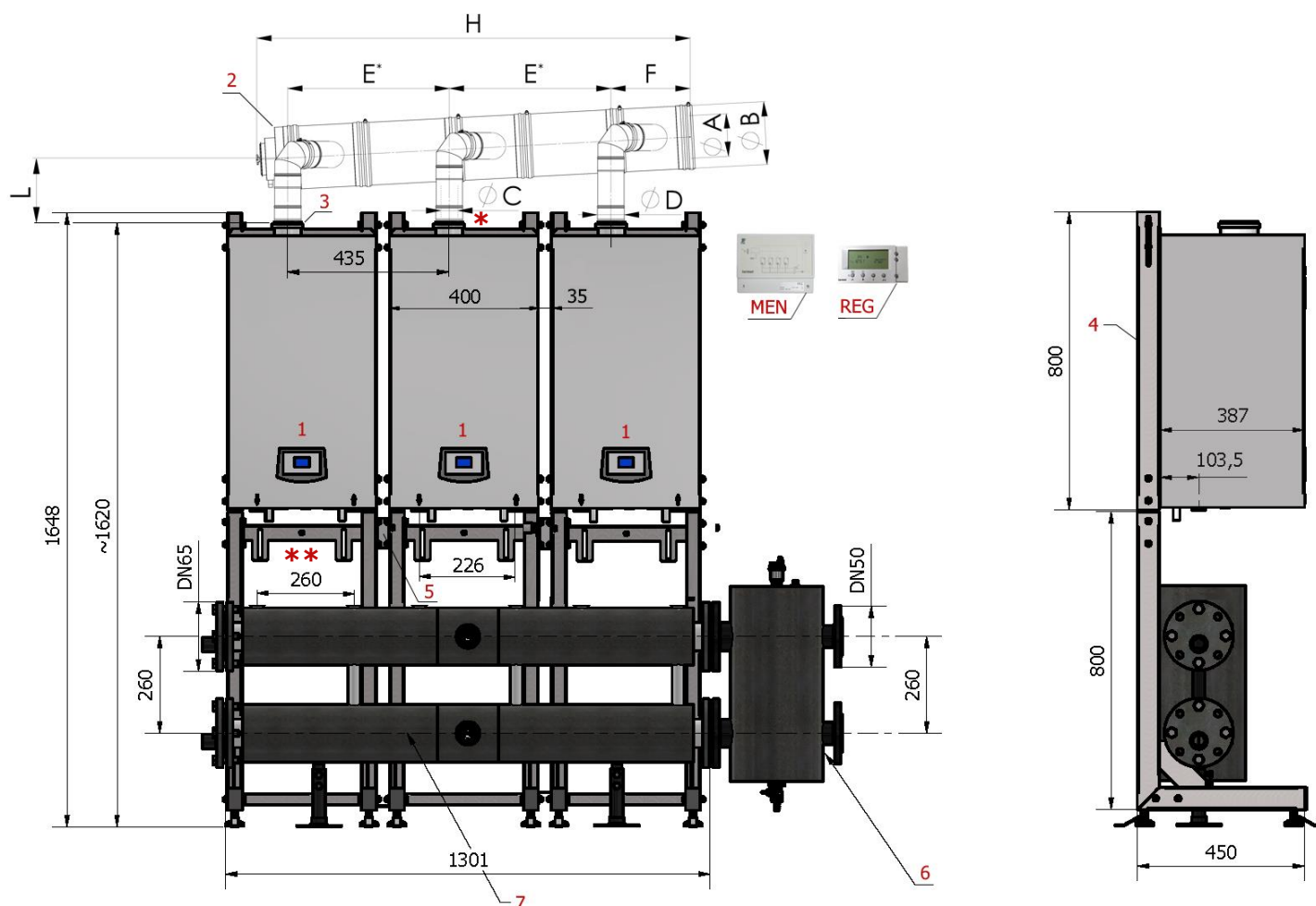
Lp.	Photo	Name	Index	Diameter	A	B	C	D	E*	F	H	L
					mm	mm	mm	mm	mm	mm	mm	mm
2		Air/flue gas system for a cascade of two boilers	T 9000 04 04 01	Ø150/Ø200	150	200	80	125	775	382	1309	275
			T 9000 04 04 03	Ø180/Ø250	180	250	80	125	775	382	1312	275
			T 9000 04 04 05	Ø180/Ø290	180	290	80	125	835	387	1312	275
			T 9000 04 04 09	Ø200/Ø300	200	300	80	125	775	387	1312	275

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/Ø125	80	125	38	344	887	320

Lp.	Photo	Name	Index	Description
4		Stand for boiler EcoCondens Crystal Plus 50	PT92601403/050/2	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
5		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
6		Hydraulic coupling CPN 150 - DN65/DN50		Hydraulic coupling CPN 150 - DN 65/DN 50 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of boilers in a cascade of up to 130 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
7		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Cascade of 3 boilers EcoCondens Crystal Plus 50 + concentric air-flue system



* - built-in air/flue adapter 60/100, **must be changed** to an 80/125 adapter

** - the connection of the boiler with the collector is made by the installer - individually at the investment site

Quantity	No.	Index	Name
3 pc.	1	WKJ 5001 00 00 00/EU	Condensing boiler EcoCondens Crystal Plus 50
1 pc.	2	T 9000 04 04 04 or T 9000 04 04 07 or T 9000 04 04 10 or T 9000 04 04 12	Concentric air-flue system for cascade three boilers (Ø180/Ø250mm) or Concentric air-flue system for cascade three boilers (Ø180/Ø290mm) or Concentric air-flue system for cascade three boilers (Ø200/Ø300mm) or Concentric air-flue system for cascade three boilers (Ø250/Ø350mm)
3 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
3 pc.	4	PT92601403/050/3	Stand for boiler EcoCondens Crystal Plus 50
2 pc.	5		A set of screws and plates to joining two stands
1 pc.	6		Hydraulic coupling CPN 150 - DN65
1 pc.	7		Collector MK 65 3F - DN 65

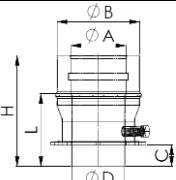
OBLIGATORY EQUIPMENT when combining boilers EcoCondens Crystal Plus 50 into cascade systems

Quantity	No.	Index	Name
1 pc.	MEN	WKM 0623 00 00 00	Cascade boiler manager type AX 1203SQ: • cascade control of 2 to 4 boilers, • cooperates with the CR11011 controller • equipped with an outdoor temperature sensor, a supply temperature sensor
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication) working directly with cascade manager type AX 1203SQ

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal Plus 50	WKJ 5001 00 00 00/EU	Wall-mounted condensing boilers ECOCONDENS CRYSTAL PLUS 50 are ideal for heating large areas (large detached houses, blocks of flats, townhouses). The devices belong to the group of ecological and extremely economical heating units. The operation of all units joined in cascade is tied together by one master cascade manager.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	E*	F	H	L
					mm	mm	mm	mm	mm	mm	mm	mm
2		Air/flue gas system for a cascade of three boilers	T 9000 04 04 04	Ø180/Ø250	180	250	80	125	775	382	2082	275
			T 9000 04 04 07	Ø180/Ø290	180	290	80	125	775	382	2087	275
			T 9000 04 04 10	Ø200/Ø300	200	300	80	125	775	387	2087	275
			T 9000 04 04 12	Ø250/Ø350	250	350	80	125	775	387	2087	275

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

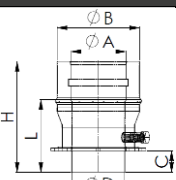
Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/Ø125	80	125	38	344	887	320

Lp.	Photo	Name	Index	Description
4		Stand for boiler EcoCondens Crystal Plus 50	PT92601403/050/3	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
5		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
6		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 210 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent..
7		Collector MK 65 3F - DN 65		Collector MK 65 3F - DN 65 for three boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal Plus 50	WKJ 5001 00 00 00/EU	Wall-mounted condensing boilers ECOCONDENS CRYSTAL PLUS 50 are ideal for heating large areas (large detached houses, blocks of flats, townhouses). The devices belong to the group of ecological and extremely economical heating units. The operation of all units joined in cascade is tied together by one master cascade manager.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	E*	F	H	L
					mm	mm	mm	mm	mm	mm	mm	mm
2		Air and flue gas system for a cascade of four boilers	T 9000 04 04 11	Ø200/Ø300	200	300	80	125	775	387	2862	275
			T 9000 04 04 13	Ø250/Ø350	250	350	80	125	775	387	2862	275
			T 9000 04 04 14	Ø300/Ø400	300	400	80	125	775	387	2862	275

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/Ø125	80	125	38	344	887	320

Lp.	Photo	Name	Index	Description
4		Stand for boiler EcoCondens Crystal Plus 50	PT92601403/050/4	Stand for boiler ECOCONDENS CRYSTAL PLUS 50 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
5		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL PLUS 50
6		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 210 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
7		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers ECOCONDENS CRYSTAL PLUS 50 Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Air/flue gas systems for connection behind of the collector manifold

Index	Diameter	Name
T9000 04 06 01	ø125	Flue pipe SP-N length L = 1000 mm Diameter D125
T9000 04 06 02	ø150	Flue pipe SP-N length L = 1000 mm Diameter D150
T9000 04 06 03	ø180	Flue pipe SP-N length L = 1000 mm Diameter D180
T9000 04 06 04	ø200	Flue pipe SP-N length L = 1000 mm Diameter D200
T9000 04 06 05	ø250	Flue pipe SP-N length L = 1000 mm Diameter D250
T9000 04 06 06	ø300	Flue pipe SP-N length L = 1000 mm Diameter D300
T9000 04 06 07	ø125	Flue pipe SP-N length L = 500 mm Diameter D125
T9000 04 06 08	ø150	Flue pipe SP-N length L = 500 mm Diameter D150
T9000 04 06 09	ø180	Flue pipe SP-N length L = 500 mm Diameter D180
T9000 04 06 10	ø200	Flue pipe SP-N length L = 500 mm Diameter D200
T9000 04 06 11	ø250	Flue pipe SP-N length L = 500 mm Diameter D250
T9000 04 06 12	ø300	Flue pipe SP-N length L = 500 mm Diameter D300
T9000 04 06 13	ø125	Flue pipe SP-N length L = 250 mm Diameter D125
T9000 04 06 14	ø150	Flue pipe SP-N length L = 250 mm Diameter D150
T9000 04 06 15	ø180	Flue pipe SP-N length L = 250 mm Diameter D180
T9000 04 06 16	ø200	Flue pipe SP-N length L = 250 mm Diameter D200
T9000 04 06 17	ø250	Flue pipe SP-N length L = 250 mm Diameter D250
T9000 04 06 18	ø300	Flue pipe SP-N length L = 250 mm Diameter D300
T9000 04 06 19	ø125	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D125
T9000 04 06 20	ø150	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D150
T9000 04 06 21	ø180	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D180
T9000 04 06 22	ø200	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D200
T9000 04 06 23	ø250	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D250
T9000 04 06 24	ø300	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D300
T9000 04 06 25	ø125	Flue elbow SP-N 90 dg. Diameter D125
T9000 04 06 26	ø150	Flue elbow SP-N 90 dg. Diameter D150
T9000 04 06 27	ø180	Flue elbow SP-N 90 dg. Diameter D180
T9000 04 06 28	ø200	Flue elbow SP-N 90 dg. Diameter D200
T9000 04 06 29	ø250	Flue elbow SP-N 90 dg. Diameter D250
T9000 04 06 30	ø300	Flue elbow SP-N 90 dg. Diameter D300
T9000 04 06 31	ø125	Flue elbow SP-N 45 dg. Diameter D125
T9000 04 06 32	ø150	Flue elbow SP-N 45 dg. Diameter D150
T9000 04 02 99	ø180	Flue elbow SP-N 45 dg. Diameter D180
T9000 04 08 01	ø200	Flue elbow SP-N 45 dg. Diameter D200
T9000 04 08 02	ø250	Flue elbow SP-N 45 dg. Diameter D250
T9000 04 08 03	ø300	Flue elbow SP-N 45 dg. Diameter D300
T9000 04 06 33	ø125	Flue elbow SP-N 90 dg. with bracket Diameter D125
T9000 04 06 34	ø150	Flue elbow SP-N 90 dg. with bracket Diameter D150
T9000 04 06 35	ø180	Flue elbow SP-N 90 dg. with bracket Diameter D180
T9000 04 06 36	ø200	Flue elbow SP-N 90 dg. with bracket Diameter D200
T9000 04 06 37	ø250	Flue elbow SP-N 90 dg. with bracket Diameter D250
T9000 04 06 38	ø300	Flue elbow SP-N 90 dg. with bracket Diameter D300
T9000 04 06 39	ø125	Flue elbow SP-N 90 dg. with revision Diameter D125
T9000 04 06 40	ø150	Flue elbow SP-N 90 dg. with revision Diameter D150
T9000 04 06 41	ø180	Flue elbow SP-N 90 dg. with revision Diameter D180
T9000 04 06 42	ø200	Flue elbow SP-N 90 dg. with revision Diameter D200
T9000 04 06 43	ø250	Flue elbow SP-N 90 dg. with revision Diameter D250
T9000 04 06 44	ø300	Flue elbow SP-N 90 dg. with revision Diameter D300

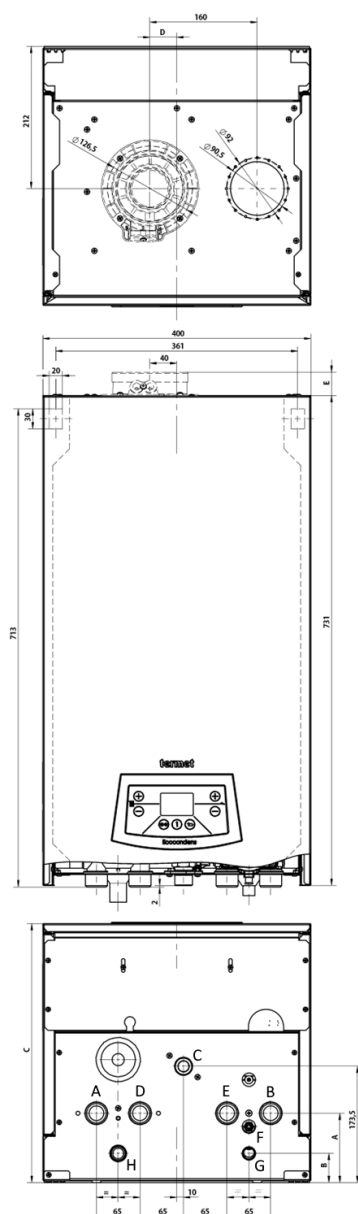
Index	Diameter	Name
T9000 04 06 45	ø125	Flue gasket SP-N Diameter D125
T9000 04 06 46	ø150	Flue gasket SP-N Diameter D150
T9000 04 06 47	ø180	Flue gasket SP-N Diameter D180
T9000 04 06 48	ø200	Flue gasket SP-N Diameter D200
T9000 04 06 49	ø250	Flue gasket SP-N Diameter D250
T9000 04 06 50	ø300	Flue gasket SP-N Diameter D300
T9000 04 06 51	ø125	Distance clamp Diameter D125
T9000 04 06 52	ø150	Distance clamp Diameter D150
T9000 04 06 53	ø180	Distance clamp Diameter D180
T9000 04 06 54	ø200	Distance clamp Diameter D200
T9000 04 06 55	ø250	Distance clamp Diameter D250
T9000 04 06 56	ø300	Distance clamp Diameter D300
T9000 04 06 57	ø125	Straight roof plate + rain flange Diameter D125
T9000 04 06 58	ø150	Straight roof plate + rain flange Diameter D150
T9000 04 06 59	ø180	Straight roof plate + rain flange Diameter D180
T9000 04 06 60	ø200	Straight roof plate + rain flange Diameter D200
T9000 04 06 61	ø250	Straight roof plate + rain flange Diameter D250
T9000 04 06 62	ø300	Straight roof plate + rain flange Diameter D300
T9000 04 06 63	ø125	Silicone gasket Diameter D125
T9000 04 06 64	ø150	Silicone gasket Diameter D150
T9000 04 06 65	ø180	Silicone gasket Diameter D180
T9000 04 06 66	ø200	Silicone gasket Diameter D200
T9000 04 06 67	ø250	Silicone gasket Diameter D250
T9000 04 06 68	ø300	Silicone gasket Diameter D300
T9000 04 06 69	ø125/175	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ 125/175
T9000 04 06 70	ø150/200	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ150/200
T9000 04 06 71	ø180/230	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ180/230
T9000 04 06 72	ø200/250	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ200/250
T9000 04 06 73	ø250/300	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ250/300
T9000 04 06 74	ø300/350	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ300/350
T9000 04 06 75	ø125/175	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ125/175
T9000 04 06 76	ø150/200	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ150/200
T9000 04 06 77	ø180/230	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ180/230
T9000 04 06 78	ø200/250	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ200/250
T9000 04 06 79	ø250/300	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ250/300
T9000 04 06 80	ø300/350	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ300/350
T9000 04 06 81	ø125/175	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ125/175
T9000 04 06 82	ø150/200	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ150/200
T9000 04 06 83	ø180/230	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ180/230
T9000 04 06 84	ø200/250	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ200/250
T9000 04 06 85	ø250/300	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ250/300
T9000 04 06 86	ø300/350	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ300/350
T9000 04 06 87	ø125/175	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ125/175
T9000 04 06 88	ø150/200	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ150/200
T9000 04 06 89	ø180/230	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ180/230
T9000 04 06 90	ø200/250	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ200/250
T9000 04 06 91	ø250/300	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ250/300
T9000 04 06 92	ø300/350	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ300/350
T9000 04 06 93	ø125/175	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ125/175

Index	Diameter	Name
T9000 04 06 94	ø150/200	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ150/200
T9000 04 06 95	ø180/230	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ180/230
T9000 04 06 96	ø200/250	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ200/250
T9000 04 06 97	ø250/300	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ250/300
T9000 04 06 98	ø300/350	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ300/350
T9000 04 06 99	ø125/175	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ125/175
T9000 04 07 01	ø150/200	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ150/200
T9000 04 07 02	ø180/230	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ180/230
T9000 04 07 03	ø200/250	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ200/250
T9000 04 07 04	ø250/300	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ250/300
T9000 04 07 05	ø300/350	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ300/350
T9000 04 07 06	ø125/175	Closing of insulation with gasket IZO SP-N Diameter DW/DZ125/175
T9000 04 07 07	ø150/200	Closing of insulation with gasket IZO SP-N Diameter DW/DZ150/200
T9000 04 07 08	ø180/230	Closing of insulation with gasket IZO SP-N Diameter DW/DZ180/230
T9000 04 07 09	ø200/250	Closing of insulation with gasket IZO SP-N Diameter DW/DZ200/250
T9000 04 07 10	ø250/300	Closing of insulation with gasket IZO SP-N Diameter DW/DZ250/300
T9000 04 07 11	ø300/350	Closing of insulation with gasket IZO SP-N Diameter DW/DZ300/350
T9000 04 07 12	ø125/175	Transition support insulated with gasket IZO SP-N Ø. DW/DZ125/175
T9000 04 07 13	ø150/200	Transition support insulated with gasket IZO SP-N Ø. DW/DZ150/200
T9000 04 07 14	ø180/230	Transition support insulated with gasket IZO SP-N Ø. DW/DZ180/230
T9000 04 07 15	ø200/250	Transition support insulated with gasket IZO SP-N Ø. DW/DZ200/250
T9000 04 07 16	ø250/300	Transition support insulated with gasket IZO SP-N Ø. DW/DZ250/300
T9000 04 07 17	ø300/350	Transition support insulated with gasket IZO SP-N Ø. DW/DZ300/350
T9000 04 07 18	ø125/175	Final element IZO SP-N Ø. DW/DZ125/175
T9000 04 07 19	ø150/200	Final element IZO SP-N Ø. DW/DZ150/200
T9000 04 07 20	ø180/230	Final element IZO SP-N Ø. DW/DZ180/230
T9000 04 07 21	ø200/250	Final element IZO SP-N Ø. DW/DZ200/250
T9000 04 07 22	ø250/300	Final element IZO SP-N Ø. DW/DZ250/300
T9000 04 07 23	ø300/350	Final element IZO SP-N Ø. DW/DZ300/350
T9000 04 07 24	ø125/175	Roof passage 0 dg. + rain flange Ø. DW/DZ125/175
T9000 04 07 25	ø150/200	Roof passage 0 dg. + rain flange Ø. DW/DZ150/200
T9000 04 07 26	ø180/230	Roof passage 0 dg. + rain flange Ø. DW/DZ180/230
T9000 04 07 27	ø200/250	Roof passage 0 dg. + rain flange Ø. DW/DZ200/250
T9000 04 07 28	ø250/300	Roof passage 0 dg. + rain flange Ø. DW/DZ250/300
T9000 04 07 29	ø300/350	Roof passage 0 dg. + rain flange Ø. DW/DZ300/350
T9000 04 07 30	ø125/175	Roof passage + rain flange 5-15 dg. Ø. DW/DZ125/175
T9000 04 07 31	ø150/200	Roof passage + rain flange 5-15 dg. Ø. DW/DZ150/200
T9000 04 07 32	ø180/230	Roof passage + rain flange 5-15 dg. Ø. DW/DZ180/230
T9000 04 07 33	ø200/250	Roof passage + rain flange 5-15 dg. Ø. DW/DZ200/250
T9000 04 07 34	ø250/300	Roof passage + rain flange 5-15 dg. Ø. DW/DZ250/300
T9000 04 07 35	ø300/350	Roof passage + rain flange 5-15 dg. Ø. DW/DZ300/350
T9000 04 07 36	ø125/175	Roof passage + rain flange 15-25 dg. Ø. DW/DZ125/175
T9000 04 07 37	ø150/200	Roof passage + rain flange 15-25 dg. Ø. DW/DZ150/200
T9000 04 07 38	ø180/230	Roof passage + rain flange 15-25 dg. Ø. DW/DZ180/230
T9000 04 07 39	ø200/250	Roof passage + rain flange 15-25 dg. Ø. DW/DZ200/250
T9000 04 07 40	ø250/300	Roof passage + rain flange 15-25 dg. Ø. DW/DZ250/300
T9000 04 07 41	ø300/350	Roof passage + rain flange 15-25 dg. Ø. DW/DZ300/350
T9000 04 07 42	ø125/175	Roof passage + rain flange 25-35 dg. Ø. DW/DZ125/175
T9000 04 07 43	ø150/200	Roof passage + rain flange 25-35 dg. Ø. DW/DZ150/200

Index	Diameter	Name
T9000 04 07 44	ø180/230	Roof passage + rain flange 25-35 dg. Ø. DW/DZ180/230
T9000 04 07 45	ø200/250	Roof passage + rain flange 25-35 dg. Ø. DW/DZ200/250
T9000 04 07 46	ø250/300	Roof passage + rain flange 25-35 dg. Ø. DW/DZ250/300
T9000 04 07 48	ø125/175	Roof passage + rain flange 35-45 dg. Ø. DW/DZ125/175
T9000 04 07 49	ø150/200	Roof passage + rain flange 35-45 dg. Ø. DW/DZ150/200
T9000 04 07 50	ø180/230	Roof passage + rain flange 35-45 dg. Ø. DW/DZ180/230
T9000 04 07 51	ø200/250	Roof passage + rain flange 35-45 dg. Ø. DW/DZ200/250
T9000 04 07 52	ø250/300	Roof passage + rain flange 35-45 dg. Ø. DW/DZ250/300
T9000 04 07 53	ø300/350	Roof passage + rain flange 35-45 dg. Ø. DW/DZ300/350
T9000 04 07 54	ø175	Angle roof clamp Ø. D175
T9000 04 07 55	ø200	Angle roof clamp Ø. D200
T9000 04 07 56	ø230	Angle roof clamp Ø. D230
T9000 04 07 57	ø250	Angle roof clamp Ø. D250
T9000 04 07 58	ø300	Angle roof clamp Ø. D300
T9000 04 07 59	ø350	Angle roof clamp Ø. D350
T9000 04 07 60	ø175	Construction clamp with adjustment range L 50-100 mm Ø. D175
T9000 04 07 61	ø200	Construction clamp with adjustment range L 50-100 mm Ø. D200
T9000 04 07 62	ø230	Construction clamp with adjustment range L 50-100 mm Ø. D230
T9000 04 07 63	ø250	Construction clamp with adjustment range L 50-100 mm Ø. D250
T9000 04 07 64	ø300	Construction clamp with adjustment range L 50-100 mm Ø. D300
T9000 04 07 65	ø350	Construction clamp with adjustment range L 50-100 mm Ø. D350
T9000 04 07 66	ø175	Construction clamp with adjustment range L 150-250 mm Ø. D175
T9000 04 07 67	ø200	Construction clamp with adjustment range L 150-250 mm Ø. D200
T9000 04 07 68	ø230	Construction clamp with adjustment range L 150-250 mm Ø. D230
T9000 04 07 69	ø250	Construction clamp with adjustment range L 150-250 mm Ø. D250
T9000 04 07 70	ø300	Construction clamp with adjustment range L 150-250 mm Ø. D300
T9000 04 07 71	ø350	Construction clamp with adjustment range L 150-250 mm Ø. D350
T9000 04 05 64	ø250	Bracket with adjustment range L 100-200 mm Ø. D250
T9000 04 05 63	-	Type II chimney bracket (500mm) 2pc.
T9000 04 05 62	-	Type III chimney bracket (750 mm) 2pc.
T9000 04 08 13	ø130	Foundation plate Ø130mm for intermediate supports
T9000 04 08 14	ø150	Foundation plate Ø150mm for intermediate supports
T9000 04 08 15	ø180	Foundation plate Ø180mm for intermediate supports
T9000 04 08 16	ø200	Foundation plate Ø200mm for intermediate supports
T9000 04 08 17	ø250	Foundation plate Ø250mm for intermediate supports
T9000 04 08 18	ø300	Foundation plate Ø300mm for intermediate supports

10. Boiler Crystal Cascade 59 kW

Technical specifications



- A - (G1")** – Power supply of the CH installation
B - (G1") – return from the CH installation
C - (G3/4") – Gas connection
D - (G1") – DHW tank supply
E - (G1") – DHW tank return
F – Drain valve
G – Drain from the safety valve
H – Condensate drain

Index	Trade name	Gas type*
WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 (system version)	2E-G20 (natural GZ-50)*

* Adjustable for other gases: 3P-G31.

Other types of gas depend on the country of destination

The boiler is equipped with a **non-return flap**, which protects against back draught of flue gases. The use of a backwater flap makes it possible to joining multiple boilers to a collective chimney system.

Possibility of operation boilers CRYSTAL CASCADE 59 boilers in cascade systems of up to **6** units.

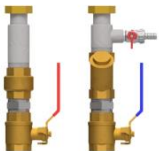
Boilers cooperating in a cascade system are joined in series using a cable attached to the boiler. The first boiler acts as the **MASTER** boiler (acts as a manager), the others work as subordinate **SLAVE**.

The three-way valve, tank NTC sensor and other accessories are available in our website: www.termet.com.pl.

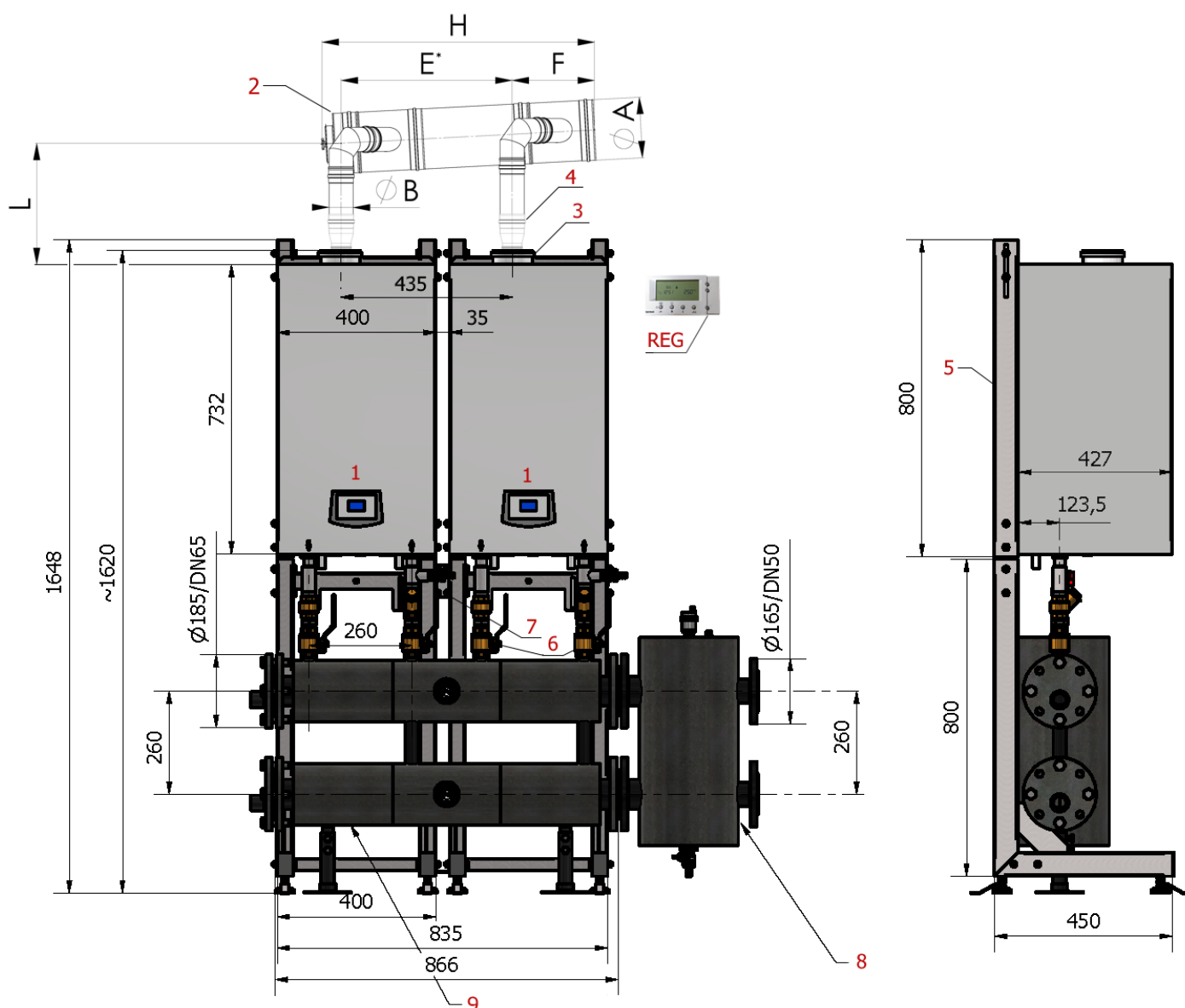


Parameter	Unit	Crystal Cascade 59
CH Circuit		
Class of seasonal energy efficiency of space heating– (D -> A+++)		A
Boiler thermal power at 80/60°C (modulating) * In case of cooperation with Ls-G2.350 gas, the nominal thermal power at 80/60°C of the CRYSTAL CASCADE 59 boiler is 47.5kW	kW	8,2 – 57,2
Boiler thermal power at 50/30°C (modulating) * In case of cooperation with Ls-G2.350 gas, the nominal thermal power at 50/30°C of the CRYSTAL CASCADE 59 boiler is 51.5kW	kW	9,1 – 62,0
Heat load * In case of cooperation with Ls-G2.350 gas, the maximum declared load of the CRYSTAL CASCADE 59 boiler is 49kW	kW	85 – 59,0
The useful efficiency of the boiler at nominal load and average boiler water temp. 70 °C	%	97
Utility efficiency of the boiler for partial load and return water temp. 30 °C	%	105
Modulation range	%	15 – 100
Gas consumption ¹⁾ natural : liquefied :	m ³ / h m ³ /h (kg/h)	3,5 1,1 (1,9)
¹⁾ Consumption of individual gas types is given for reference gases under reference conditions (dry gas 15°C, pressure 1013 mbar) taking into account 107% boiler efficiency and partial load (arithmetic mean of min and max load) at return water temperature of 30°C.		
Nominal kinetic pressure in front of the boiler for gas :	Pa (mbar)	2000 (20) 3700 (37)
Max CH operating temperature	°C	80
Set temperature	°C	20 ÷ 80
Pump head at flow rate of 0	kPa (bar)	80 (0,8)
Environmental protection		
NOx emissions (natural gas)	klasa	Klasa NO _x – 6
Nitrogen oxides emission level	mg/KWh	≤ 50
Condensate pH factor (natural gas)		5
Max. amount of condensate (natural gas)	l/h	8,9
Hydraulic parameters		
Hydraulic resistance of the boiler at the heating water flow rate 10 dm ³ /min	kPa (mbar)	
Operating pressure	MPa (bar)	0,3 (3)
Amount of water in the boiler	l	6
Electric parameters		
Type and supply voltage	V	~ 230 ±10%/ 50Hz
Degree of protection		IPX4D
Maximum nominal current value of output terminals	A	2,0
Power consumption	W	200
Type of flame sensor		ionization
Parameters for exhaust gas		
Type of flue gas-air installation (wg PN-EN 483)	---	B23, C13, C33, C43, C53, C63, C83, C93
Max. flue gas flow	kg/h	92
Min. flue gas flow	kg/h	13
Max. flue gas temperature / limiter temperature	°C	85 / 115
Min. flue gas temperature	°C	40
Installation dimensions		
Connection to the chimney duct	mm	Ø80/ Ø125, 2 x Ø80
Connection of CH - DHW -- gas	inch	G1 - G1 – G3/4
Dimensions (width x height x depth)	mm	400 x 730 x 430
Boiler weight	kg	48,5
Parameters required by regulation 813/2013		
Efficiency: – η ₄ – η ₁	%	87 97
Sound power level L _{WA}	dB	57
⁽¹⁾ Individual gas consumption was given for reference gases in normal conditions (15°C, pressure 1013 mbar) considering useful efficiency of the boiler with 30°C of return water temperature. The values are indicative.		
The manufacturer reserves the right to make changes in the construction of the boiler, which are not mentioned herein and have no influence on the technical and functional characteristics of the product.		

Optional equipment when combining boilers Crystal Cascade 59 into cascade systems

Photo	Index	Name
	The elements are part of dedicated packages, the detailed scope of which is presented on the following pages.	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
		Set of bolts and sheets for joining two stands for boilers CRYSTAL CASCADE 59
		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
		Hydraulic coupling CPN 150 - DN65 Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 210 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
		Hydraulic coupling CPN300 - DN100 Hydraulic coupling CPN 300 - DN 100 is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
		Collector MK 65 2F - DN 65 for two boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.
		Collector MK 65 3F - DN 65 for three boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.
		Collector MK 100 2F - DN 100 for two boilers CRYSTAL CASCADE 59 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100.
		Collectors MK 100 3F - DN 100 for three boilers CRYSTAL CASCADE 59 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 EPDM gaskets DN 100.
	T 9260 14 08 00	Angle connectors DN 65 without insulation (set of 2 pieces) The angle couplings are made of steel. They were designed to joining the hydraulic coupling to the MK manifold. The couplings include a set of screws and gaskets for assembly.
	T 9260 14 18 00	Angle connectors DN 100 without insulation (set of 2 pieces) The angle couplings are made of steel. They were designed to joining the hydraulic coupling to the MK manifold. The couplings include a set of screws and gaskets for assembly.

Cascade of 2 boilers Crystal Cascade 59 + independent air/flue system



Quantity	No.	Index	Name
2 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
1 pc.	2	T 9000 04 05 08 or T 9000 04 05 09	Air/flue system for cascade two boilers (Ø150mm) or Air/flue system for cascade two boilers(Ø180mm)
2 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
2 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
2 pc.	5	PT92601403/059/2	Stand for boiler Crystal Cascade 59
2 pc.	6		Connection kit boiler - collector
1 pc.	7		A set of screws and plates to joining two stands
1 pc.	8		Hydraulic coupling CPN 150 - DN65/DN50
1 pc.	9		Collector MK 65 2F – DN 65

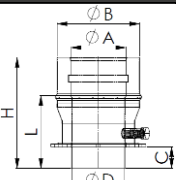
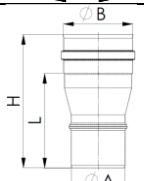
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

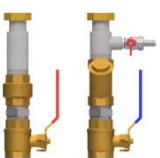
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

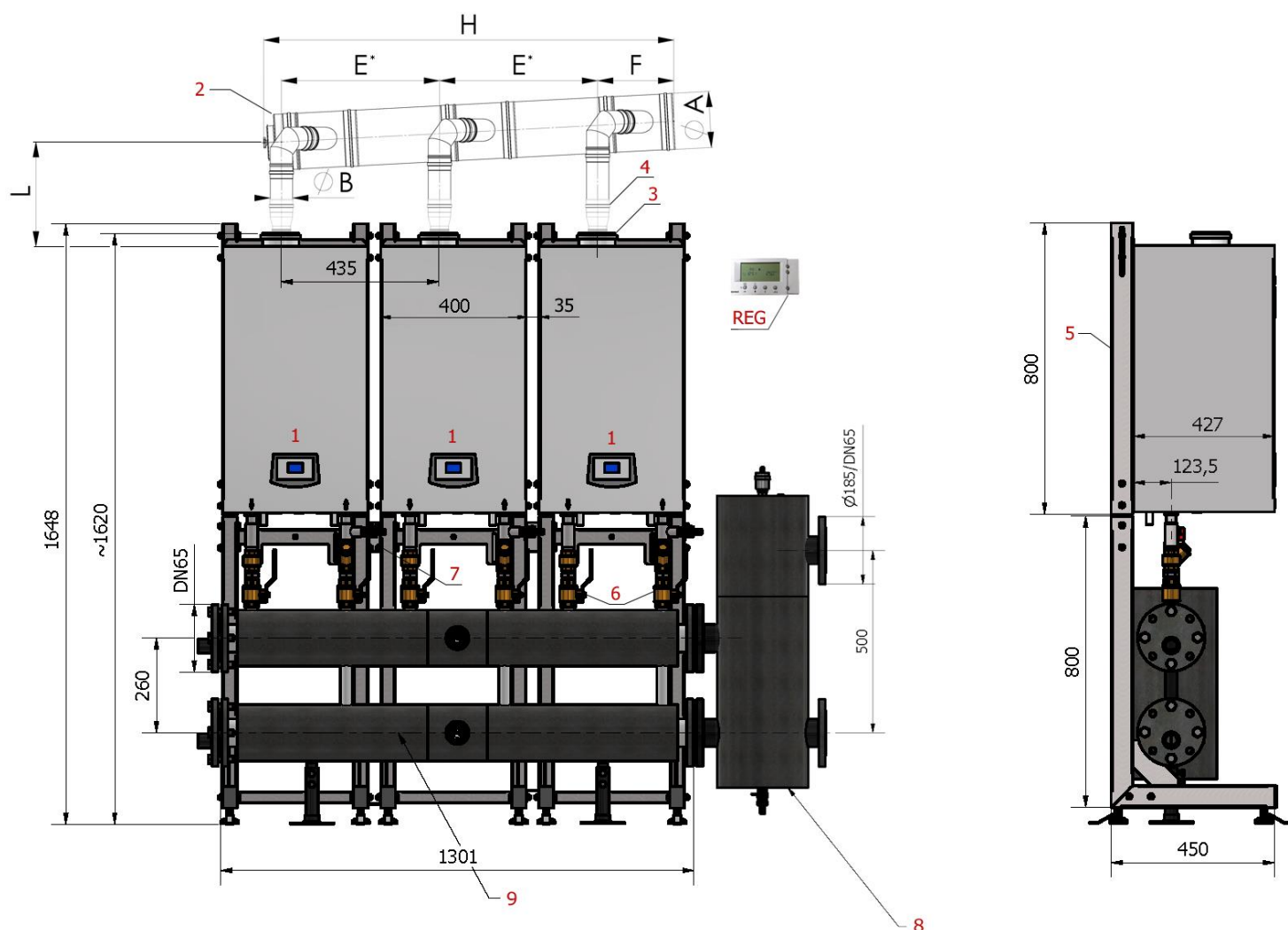
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade two boilers	T 9000 04 05 08	Ø150	150	100	714	344	1138	~480
			T 9000 04 05 09	Ø180	180	100	714	344	1138	~480

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler Crystal Cascade 59	PT92601403/ 059/2	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
6		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
7		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
8		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 240 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
9		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Cascade of 3 boilers Crystal Cascade 59 + independent air/flue system



Quantity	No.	Index	Name
3 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
1 pc.	2	T 9000 04 05 10 or T 9000 04 05 11 or T 9000 04 05 73	Air/flue system for cascade three boilers (Ø180mm) or Air/flue system for cascade three boilers (Ø200mm) or Air/flue system for cascade three boilers (Ø250mm)
3 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
3 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
3 pc.	5	PT92601403/059/3	Stand for boiler Crystal Cascade 59
3 pc.	6		Connection kit boiler - collector
2 pc.	7		A set of screws and plates to joining two stands
1 pc.	8		Hydraulic coupling CPN 150 - DN65
1 pc.	9		Collector MK 65 3F - DN 65

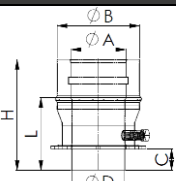
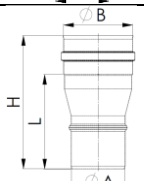
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

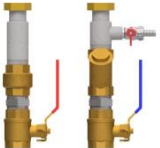
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

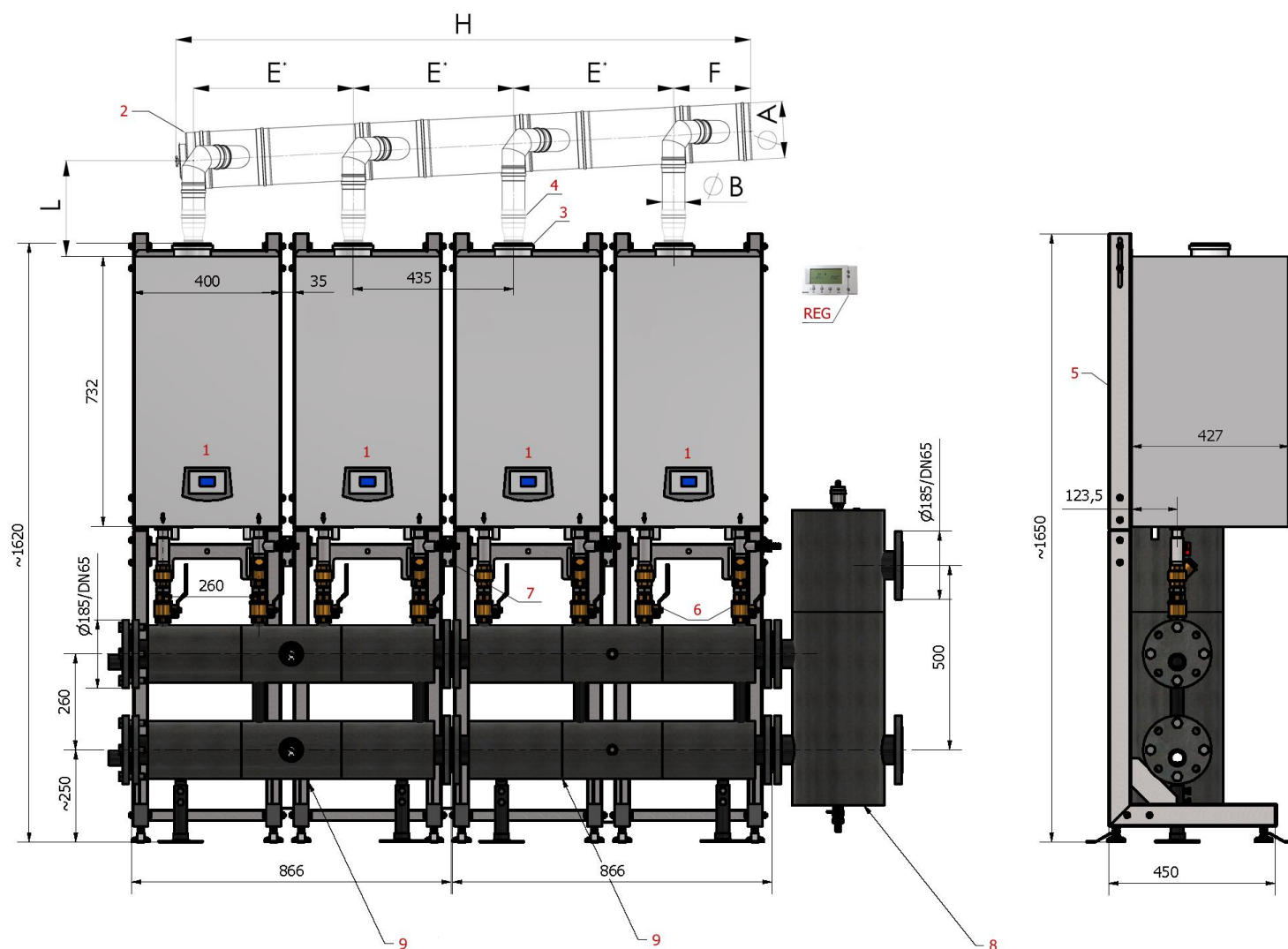
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade three boilers	T 9000 04 05 10	Ø180	180	100	714	344	1847	~480
			T 9000 04 05 11	Ø200	200	100	714	344	1847	~480
			T 9000 04 05 73	Ø250	250	100	714	344	1847	~480

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler Crystal Cascade 59	PT92601403/ 059/3	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
6		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
7		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
8		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 240 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
9		Collector MK 65 3F - DN 65		Collector MK 65 3F - DN 65 for three boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Cascade of 4 boilers Crystal Cascade 59 + independent air/flue system



Quantity	No.	Index	Name
4 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
1 pc.	2	T 9000 04 05 12 or T 9000 04 05 13	Air/flue system for cascade four boilers (Ø200mm) or Air/flue system for cascade four boilers (Ø250mm)
4 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
4 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
4 pc.	5	PT92601403/059/4	Stand for boiler Crystal Cascade 59
4 pc.	6		Connection kit boiler - collector
3 pc.	7		A set of screws and plates to joining two stands
1 pc.	8		Hydraulic coupling CPN 150 - DN65
2 pc.	9		Collector MK 65 2F - DN 65

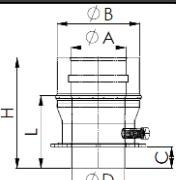
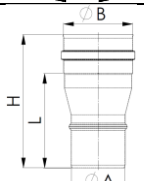
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

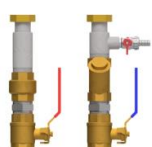
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

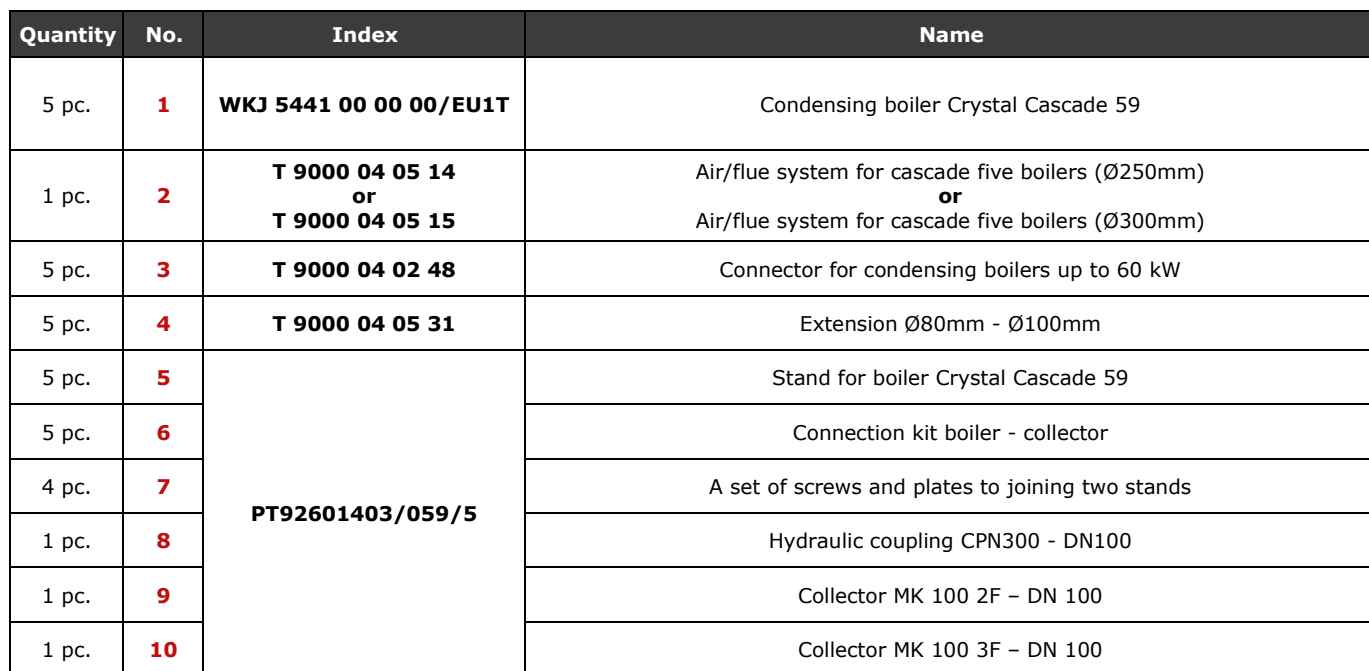
Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade four boilers	T 9000 04 05 12	Ø200	200	100	714	344	2565	~480
			T 9000 04 05 13	Ø250	250	100	714	344	2565	~480

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler Crystal Cascade 59	PT92601403/ 059/4	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
6		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
7		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
8		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 240 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
9		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

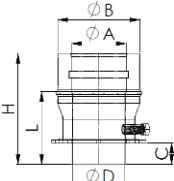
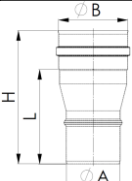


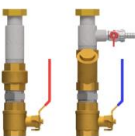
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

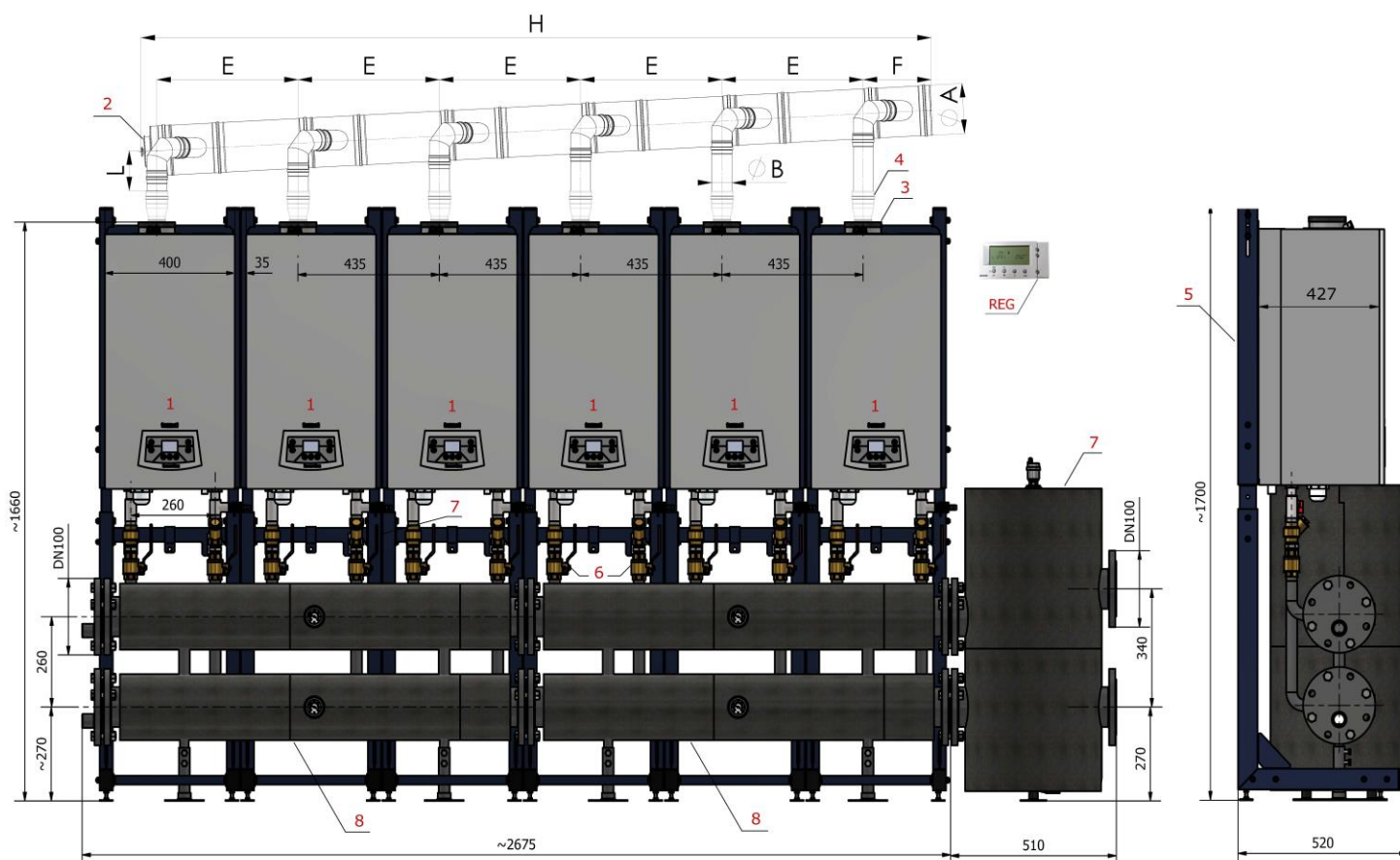
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade five boilers	T 9000 04 05 14	Ø250	250	100	714	344	3275	200
			T 9000 04 05 15	Ø300	300	100	714	344	3275	200

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler Crystal Cascade 59	PT92601403/ 059/5	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates).
6		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
7		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
8		Hydraulic coupling CPN300 - DN100		Hydraulic coupling CPN 300 - DN 100 is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
9		Collector MK 100 2F - DN 100		Collector MK 100 2F - DN 100 for two boilers CRYSTAL CASCADE 59 It includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100.
10		Collector MK 100 3F - DN 100		Collectors MK 100 3F - DN 100 for three boilers CRYSTAL CASCADE 59 It includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 EPDM gaskets DN 100.

Cascade of 6 boilers Crystal Cascade 59 + independent air/flue system



Quantity	No.	Index	Name
6 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
1 pc.	2	T 9000 04 05 16 or T 9000 04 05 17	Air/flue system for cascade six boilers (Ø250mm) or Air/flue system for cascade six boilers (Ø300mm)
6 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
6 pc.	4	T 9000 04 05 31	Extension Ø80mm - Ø100mm
6 pc.	5	PT92601403/059/6	Stand for boiler Crystal Cascade 59
6 pc.	6		Connection kit boiler - collector
5 pc.	7		A set of screws and plates to joining two stands
1 pc.	8		Hydraulic coupling CPN300 - DN100
2 pc.	9		Collector MK 100 3F – DN 100

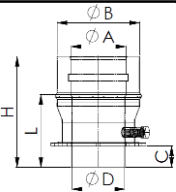
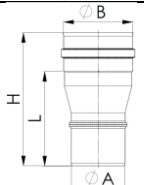
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

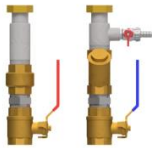
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

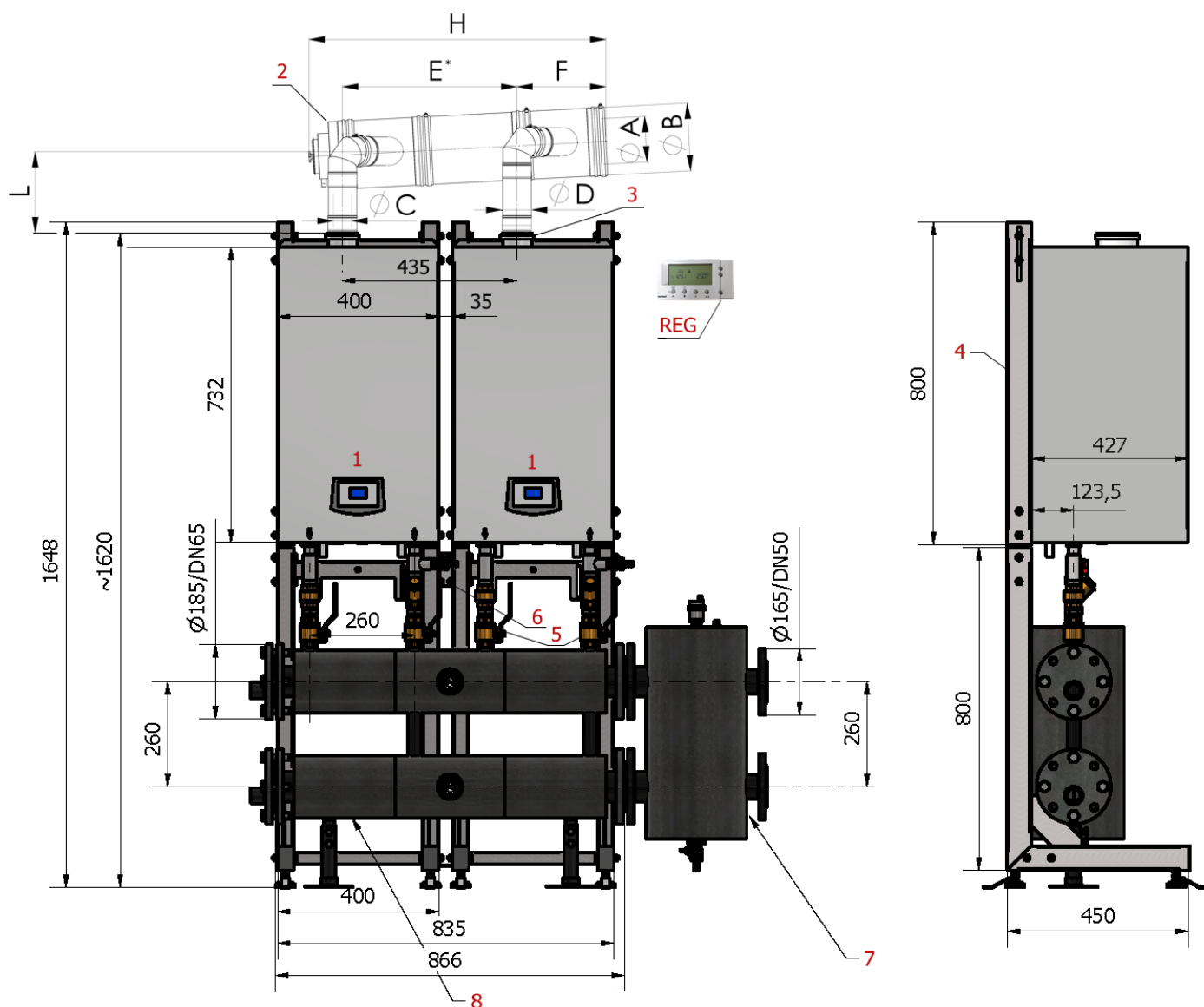
Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade six boilers	T 9000 04 05 16	Ø250	250	100	714	344	3995	200
			T 9000 04 05 17	Ø300	300	100	714	344	3995	200

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320
4		Extension Ø80mm - Ø100mm	T 9000 04 05 31	Ø80 - Ø100	80	100	-	-	200	142

Lp.	Photo	Name	Index	Description
5		Stand for boiler Crystal Cascade 59	PT92601403/ 059/6	Stand for boiler CRYSTAL CASCADE 59 Stojak zaprojektowany został w celu ułatwienia montażu wiszącego kotła z serii Crystal. Budowa stojaka umożliwia jego szybki montaż (za pomocą dołączonych zestawów śrub montażowych) na miejscu docelowym instalacji. System otworów pozwala na dokładną regulację wysokości kotła. Stojaki łączyć można szeregowo z zachowaniem odpowiedniego rozstawu kominowego (za pomocą dodatkowego zestawu śrub i blach). Rama dostępna jest w kolorze grafitowym.
6		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
7		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
8		Hydraulic coupling CPN300 - DN100		Hydraulic coupling CPN 300 - DN 100 is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
9		Collector MK 100 3F - DN 100		Collectors MK 100 3F - DN 100 for three boilers CRYSTAL CASCADE 59 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 EPDM gaskets DN 100.

Cascade of 2 boilers Crystal Cascade 59 + concentric air-flue system



Quantity	No.	Index	Name
2 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
1 pc.	2	T 9000 04 04 01 or T 9000 04 04 03 or T 9000 04 04 05 or T 9000 04 04 09	Concentric air-flue system for cascade two boilers (Ø150/Ø200mm) or Concentric air-flue system for cascade two boilers (Ø180/Ø250mm) or Concentric air-flue system for cascade two boilers (Ø180/Ø290mm) or Concentric air-flue system for cascade two boilers (Ø200/Ø300mm)
2 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
2 pc.	4	PT92601403/059/2	Stand for boiler Crystal Cascade 59
2 pc.	5		Connection kit boiler - collector
1 pc.	6		A set of screws and plates to joining two stands
1 pc.	7		Hydraulic coupling CPN 150 - DN65/DN50
1 pc.	8		Collector MK 65 2F - DN 65

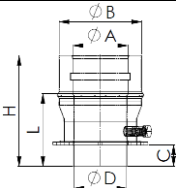
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

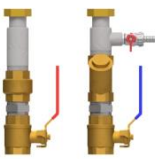
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	E*	F	H	L
					mm	mm	mm	mm	mm	mm	mm	mm
2		Concentric air-flue system for cascade two boilers	T 9000 04 04 01	Ø150/ Ø200	150	200	80	125	775	382	1309	275
			T 9000 04 04 03	Ø180/ Ø250	180	250	80	125	775	382	1312	275
			T 9000 04 04 05	Ø180/ Ø290	180	290	80	125	835	387	1312	275
			T 9000 04 04 09	Ø200/ Ø300	200	300	80	125	775	387	1312	275

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

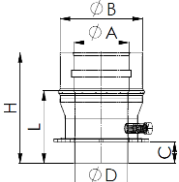
Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320

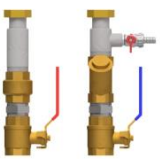
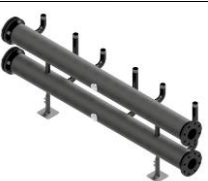
Lp.	Photo	Name	Index	Description
4		Stand for boiler Crystal Cascade 59	PT92601403/ 059/2	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
6		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłó CRYSTAL CASCADE 59
7		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 240 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
8		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

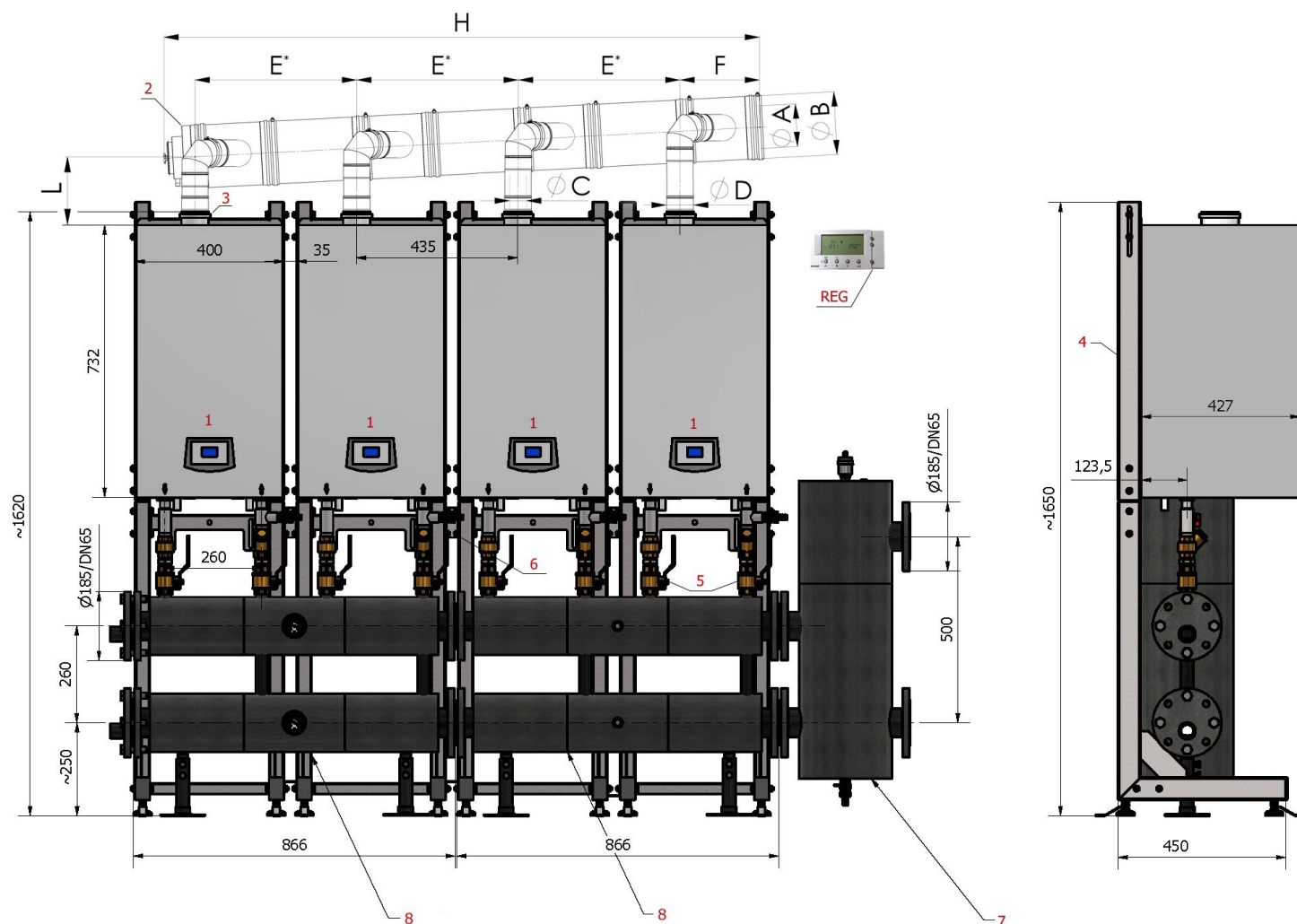
Lp.	Photo	Name	Index	Diameter	A	B	C	D	E*	F	H	L
					mm	mm	mm	mm	mm	mm	mm	mm
2		Concentric air-flue system for cascade three boilers	T 9000 04 04 04	Ø180/ Ø250	180	250	80	125	775	382	2082	275
			T 9000 04 04 07	Ø180/ Ø290	180	290	80	125	775	382	2087	275
			T 9000 04 04 10	Ø200/ Ø300	200	300	80	125	775	387	2087	275
			T 9000 04 04 12	Ø250/ Ø350	250	350	80	125	775	387	2087	275

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320

Lp.	Photo	Name	Index	Description
4		Stand for boiler Crystal Cascade 59	PT92601403/ 059/3	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
6		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
7		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 240 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
8		Collector MK 65 3F - DN 65		Collector MK 65 3F - DN 65 for three boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

Cascade of 4 boilers Crystal Cascade 59 + concentric air-flue system



Quantity	No.	Index	Name
4 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
1 pc.	2	T 9000 04 04 11 or T 9000 04 04 13 or T 9000 04 04 14	Concentric air-flue system for cascade four boilers (Ø200/Ø300mm) or Concentric air-flue system for cascade four boilers (Ø250/Ø350mm) or Concentric air-flue system for cascade four boilers (Ø300/Ø400mm)
4 pc.	3	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
4 pc.	4	PT92601403/059/4	Stand for boiler Crystal Cascade 59
4 pc.	5		Connection kit boiler - collector
3 pc.	6		A set of screws and plates to joining two stands
1 pc.	7		Hydraulic coupling CPN 150 - DN65
2 pc.	8		Collector MK 65 2F - DN 65

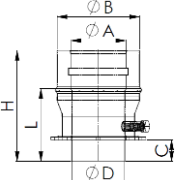
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

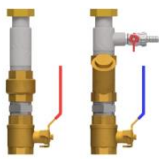
Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

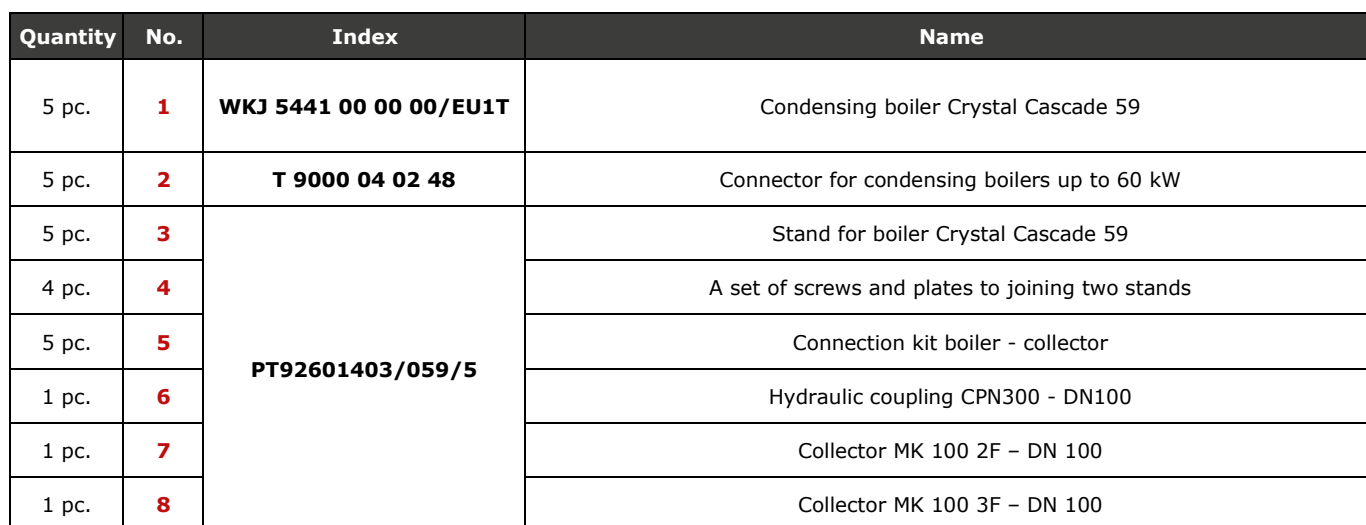
Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	E*	F	H	L
					mm	mm	mm	mm	mm	mm	mm	mm
2		Concentric air-flue system for cascade four boilers	T 9000 04 04 11	Ø200/ Ø300	200	300	80	125	775	387	2862	275
			T 9000 04 04 13	Ø250/ Ø350	250	350	80	125	775	387	2862	275
			T 9000 04 04 14	Ø300/ Ø400	300	400	80	125	775	387	2862	275

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
3		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320

Lp.	Photo	Name	Index	Description
4		Stand for boiler Crystal Cascade 59	PT92601403/ 059/4	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
6		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłóW CRYSTAL CASCADE 59
7		Hydraulic coupling CPN 150 - DN65		Hydraulic coupling CPN 150 - DN 65 is made of steel It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds for a total output of boilers in a cascade up to 240 kW. The coupling includes insulation, drain valve, temperature sensor sleeve and automatic air vent.
8		Collector MK 65 2F - DN 65		Collector MK 65 2F - DN 65 for two boilers CRYSTAL CASCADE 59 (to 240 kW) Hydraulic manifold made of steel. It was designed to joining boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 EPDM DN 65 gaskets.

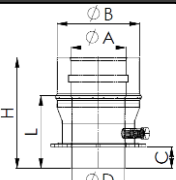


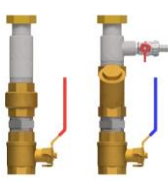
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

68

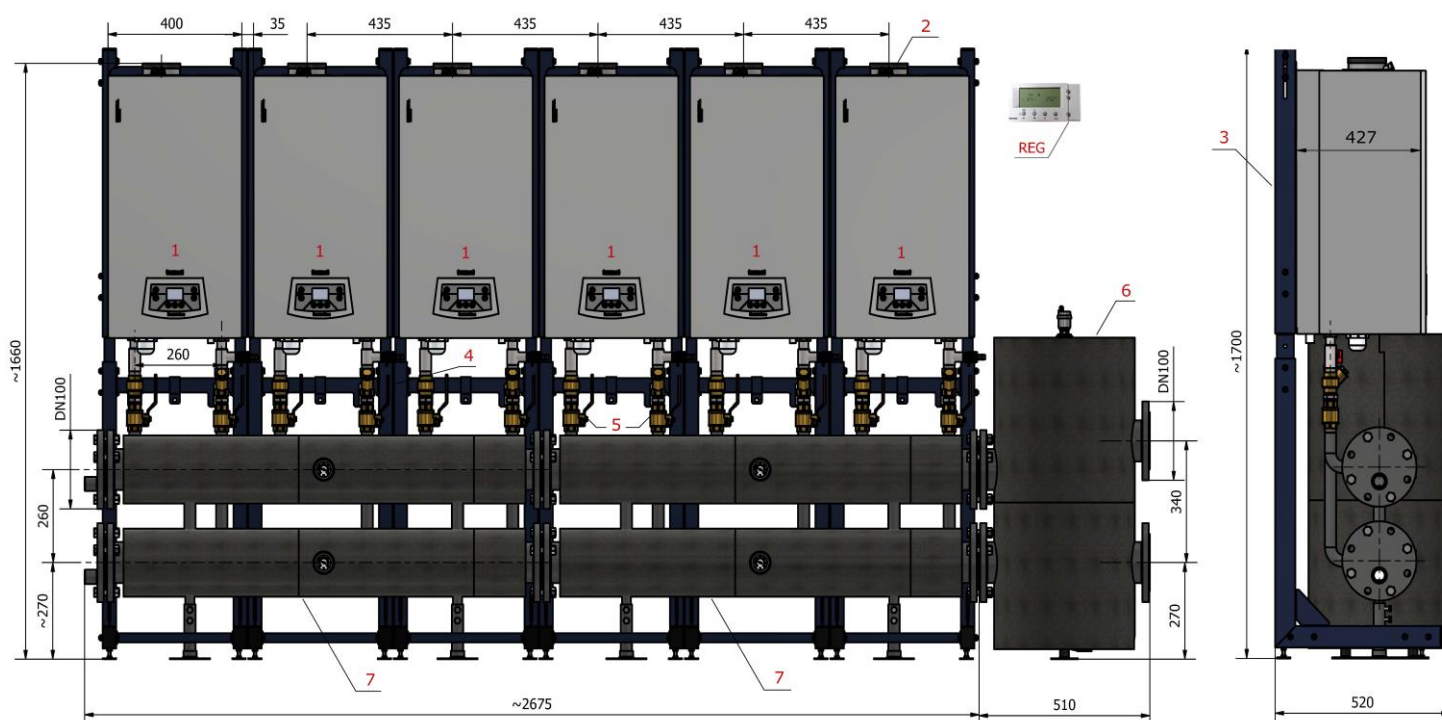
Lp.	Index	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photos	Name	Description
		Concentric air-flue system for cascade five boilers	Available only by special order. Delivery time depends on the specifics of the order and the availability of components. To select and determine the delivery time, please contact us at: export@termet.com.pl

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
2		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320

Lp.	Zdjęcie	Nazwa	Numer indeksu	Opis produktu
3		Stand for boiler Crystal Cascade 59	PT92601403/ 059/5	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłów CRYSTAL CASCADE 59
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
6		Hydraulic coupling CPN300 - DN100		Hydraulic coupling CPN 300 - DN 100 is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 100 2F - DN 100		Collector MK 100 2F - DN 100 for two boilers CRYSTAL CASCADE 59 At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100.
8		Collector MK 100 3F - DN 100		Collectors MK 100 3F - DN 100 for three boilers CRYSTAL CASCADE 59 At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 EPDM gaskets DN 100.

Cascade of 6 boilers Crystal Cascade 59 + concentric air-flue system



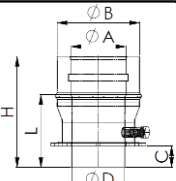
Quantity	No.	Index	Name
6 pc.	1	WKJ 5441 00 00 00/EU1T	Condensing boiler Crystal Cascade 59
6 pc.	2	T 9000 04 02 48	Connector for condensing boilers up to 60 kW
6 pc.	3	PT92601403/059/6	Stand for boiler Crystal Cascade 59
5 pc.	4		A set of screws and plates to joining two stands
6 pc.	5		Connection kit boiler - collector
1 pc.	6		Hydraulic coupling CPN300 - DN100
2 pc.	7		Collector MK 100 3F - DN 100

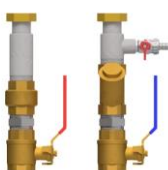
OPTIONAL EQUIPMENT when combining boilers Crystal Cascade 59 into cascade systems.

Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

Lp.	Photo	Name	Index	Description
1		Crystal Cascade 59	WKJ 5441 00 00 00/EU1T	CRYSTAL CASCADE 59 wall-hung condensing boilers are the ideal solution for heating large areas (large single-family homes, apartment buildings, and tenement houses). Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

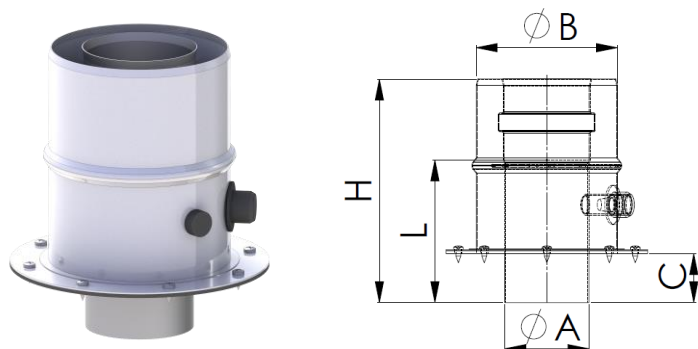
Lp.	Photo	Name	Description
		Concentric air-flue system for cascade six boilers	Available only by special order. Delivery time depends on the specifics of the order and the availability of components. To select and determine the delivery time, please contact us at: export@termet.com.pl

Lp.	Photo	Name	Index	Diameter	A	B	C	D	H	L
					mm	mm	mm	mm	mm	mm
2		Connector for condensing boilers up to 60 kW	T 9000 04 02 48	Ø80/ Ø125	80	125	38	344	887	320

Lp.	Photo	Name	Index	Description
3		Stand for boiler Crystal Cascade 59	PT92601403/ 059/6	Stand for boiler CRYSTAL CASCADE 59 The stand is designed to facilitate the installation of the Crystal series hanging boiler. The design of the stand allows it to be quickly installed (using the included sets of mounting screws) on the target installation site. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		A set of screws and plates to joining two stands dla kotłůw CRYSTAL CASCADE 59
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1" for boilers CRYSTAL CASCADE 59 The set includes: two 1" ball valves, a 1" beveled mesh filter, two 1" cast iron nipples, a drain valve, and two 1" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly.
6		Hydraulic coupling CPN300 - DN100		Hydraulic coupling CPN 300 - DN 100 is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 100 3F - DN 100		Collectors MK 100 3F - DN 100 for three boilers CRYSTAL CASCADE 59 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 EPDM gaskets DN 100.

11. Adapters/connectors air/flue for Boiler EcoCondens Crystal Plus 50

T 9000 04 02 47 – CONNECTOR OF ECOCONDENS CRYSTAL PLUS 50 BOILER

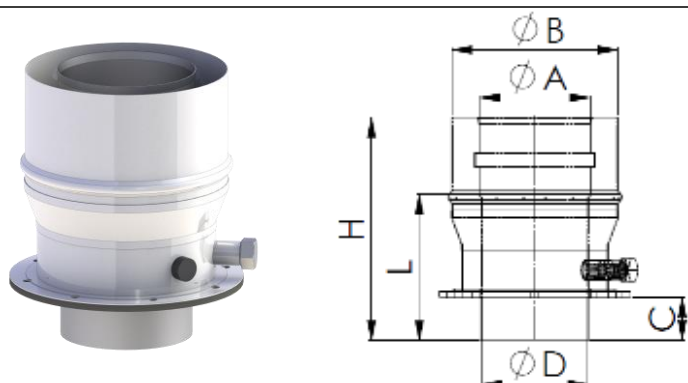


**CONNECTOR
OF ECOCONDENS CRYSTAL PLUS 50 BOILER**

T 9000 04 02 47	
Ø60/Ø100	
A	60
B	100
C	35
H	160
L	102

12. Adapters/connectors air/flue for boiler EcoCondens Crystal Plus 50 and Crystal Cascade 59

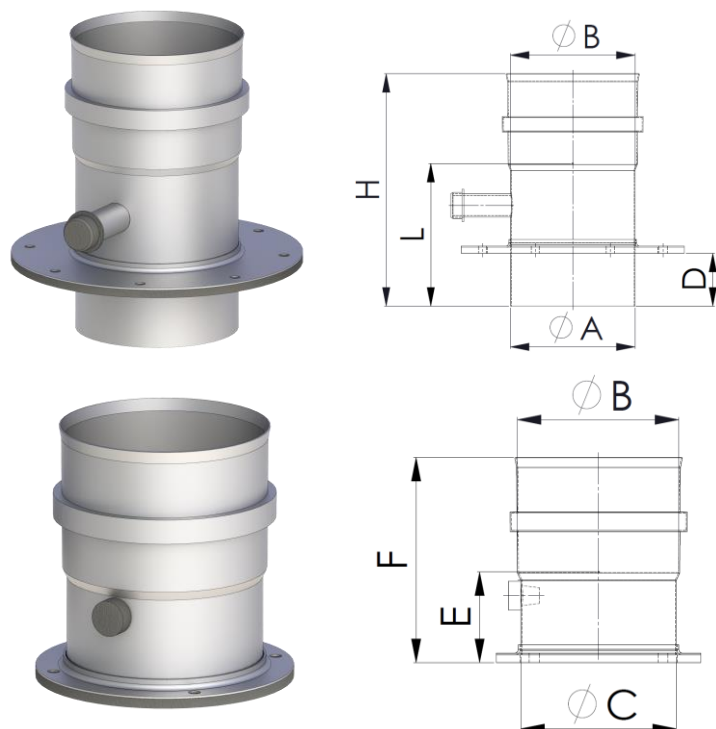
T 9000 04 02 48 – CONNECTOR FOR CONDENSING BOILERS UP TO 60 KW



**CONNECTOR
FOR CONDENSING BOILERS UP TO 60 kW**

T 9000 04 02 48	
Ø80/Ø125	
A	80
B	125
C	38
H	168
L	110
D _{zew}	80

T 9000 04 02 98 – KIT OF CONNECTIONS FOR INDEPENDENT SYSTEM 2x80 MM (WITH MEASURING STUBS)



FLUE SYSTEM 80 MM

T 9000 04 02 98	
Ø80	
A _{zew}	80,4
B	80
D	34
H	150
L	92

AIR SYSTEM 80 MM

T 9000 04 02 98	
Ø80	
B	80
C _{wew}	79
E	46
F	104

13. Condensate neutralizers

Neutralizers of the NEUTRA series are professional devices designed to neutralize condensate discharged from high-power condensing boilers:

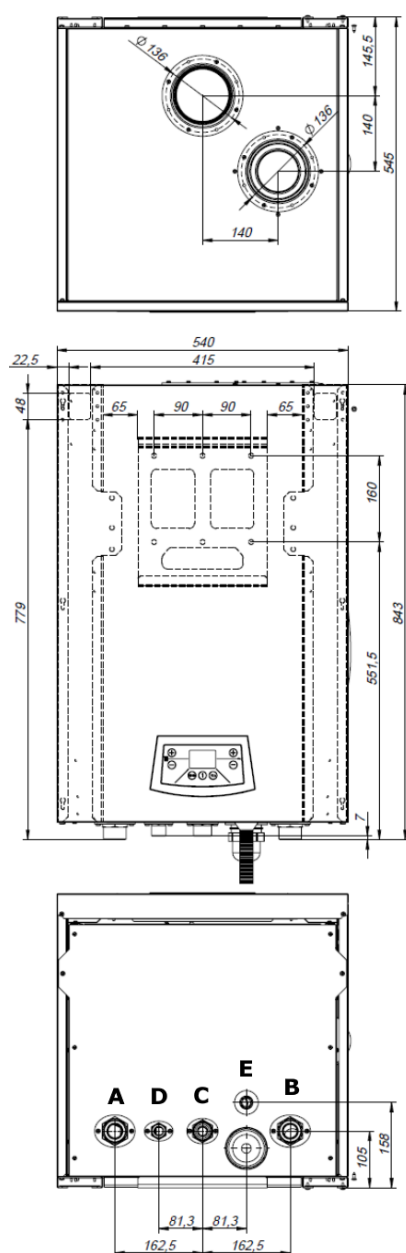
- EcoCondens **Crystal Plus 50**
- **Crystal Cascade 59**
- EcoCondens **Crystal 80**
- EcoCondens **Crystal 100**

or a cascade system consisting of high-power boilers.

Photo	Trade name	Index	Description
	NEUTRA 200	T 9000 04 05 32	NEUTRA 200 made of ARTIFICIAL PLASTICS Condensate neutralizer designed for high-power condensing boiler or cascade systems with a maximum output of up to 200 kW (max. condensate flow 60l/h)
	NEUTRA 350	T 9000 04 05 33	NEUTRA 350 made of ARTIFICIAL PLASTICS Condensate neutralizer designed for high-power condensing boiler or cascade systems with a maximum output of up to 350 kW
	NEUTRO 70	T 9000 04 05 55	NEUTRO 70 STEEL Condensate neutralizer designed for high-power condensing boiler or cascade systems with maximum power up to 700 kW (max. condensate flow 70l/h)
	NEUTRA 5	T 9000 04 05 58	NEUTRA 5 Refill of 2 kg
	NEUTRA 6	T 9000 04 05 59	NEUTRA 6 Refill of 3 kg
	NEUTRA 1	T 9000 04 05 60	NEUTRA 1 Refill of 8 kg

14. Boilers Ecocondens Crystal 80, Ecocondens Crystal 100 kW

Technical specifications



- A** - (G5/4") - Supply of CH system.
B - (G5/4") - Return from the CH system.
C - (G1") - Gas connection
D - (G3/4") - Safety valve drain / draining the boiler
E - (Ø 25) - Condensate drain

Index	Trade name	Gas type*
WKJ 5191 00 00 00/EU1T	ECOCONDENS CRYSTAL-80 (system version)	Natural gas: 2H-G20*
WKJ 5141 00 00 00/EU1T	ECOCONDENS CRYSTAL-100 (system version)	Natural gas: 2H-G20*

* Adjustable for other gases: 3P-G31.

Other types of gas depend on the country of destination

It is possible to operate ECOCONDENS CRYSTAL-80 and ECOCONDENS CRYSTAL-100 boilers in cascade systems of up to 6 units.

Boilers cooperating in a cascade system are joined in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

The three-way valve, tank NTC sensor and other accessories are available in our website: www.termet.com.pl.

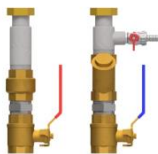
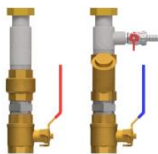
Technical specifications:

Parameter	Unit	Ecocondens Crystal 100	Ecocondens Crystal 80
CH Circuit			
Nominal heat output of the boiler at 80/60°C (modulated)	kW	17-100	17-80
Nominal heat output of the boiler at 50/30°C (modulating)	kW	19 – 110	19-88
Nominal heat load	kW	18 – 103	18-82
The useful efficiency of the boiler at nominal load and average central heating water temperature. 70°C	%	97	
Utility efficiency of the boiler for partial load and return water temperature 30°C	%	107	
Modulation range	%	17 – 100	21 – 100
Gas category	---	II2E3P; II2E3B/P	
Gas consumption ¹⁾ natural : 2E-G20 – 20mbar liquefied : 3P-G31 – 37mbar	m ³ / h m ³ /h (kg/h)	6,5 2,5 (4,7)	5,6 2,2 (4,1)
1) The consumption of each type of gas is given for gases under reference conditions (dry gas 15°C, pressure 1013 mbar) taking into account 107% boiler efficiency and part load (arithmetic average of min and max load) at return water temperature 30°C.			
Nominal kinetic pressure in front of the boiler for gas : 2E-G20 3P-G31	Pa (mbar)	2000 (20) 3700 (37)	
Max temperature CH	°C	80	
Adjustable temperature	°C	20 ÷ 80	
Head of the pump (at flow = 0 m3/h)	kPa (bar)	80 (0,8)	
Environmental protection			
Emission NO _x (natural gas)	klasa	NO _x Class – 6	
Emission of nitrogenoxides	mg/KWh	≤ 50	
Factor pH condensate (natural gas)		5	
Max. amount of condensate (natural gas)	l/h	15	12
Hydraulic parameters			
The hydraulic resistance of the boiler at a heating water flow of 10 dm ³ /min.	kPa (mbar)		
Maximum working pressure	MPa (bar)	0,4 (4)	
Amount of water in boiler	l	10	
Electrical parameters			
Type and voltage of electric current	V	~ 230 ±10%/ 50Hz	
Degree of protection		IPX4D	
Built-in fuse	A	3,15	
Consumed power	W	350	
Type of flame sensor		ionization	
Flue gas parameters			
Type of design of the air and flue gas installation (according to EN 483)	---	B23, C13, C33, C43, C63, C93	
Maximum flue gas flow	kg/h	157	120
Minimum flue gas flow	kg/h	32	
Max. flue gas temperature / limiter tripping temperature	°C	85 / 115	
Minimum flue gas temperature	°C	40	
Installation dimensions			
Connection to the chimney duct	mm	Ø100	
Connection to CH. -- gas	inch	G5/4" -- G1"	
Overall dimensions (width x height x depth)	mm	540 x 810 x 545	
Weight of the boiler	kg	84	
Parameters required by the regulation 813/213			
Utility efficiency : - η ₄ - η ₁	%	87 95	
Sound power level L _{WA}	dB	65	62
(1) Individual gas consumption was given for reference gases in normal conditions (15°C, pressure 1013 mbar) considering useful efficiency of the boiler with 30°C of return water temperature. The values are indicative.			
The manufacturer reserves the right to make changes in the construction of the boiler, which are not mentioned herein and have no influence on the technical and functional characteristics of the product.			

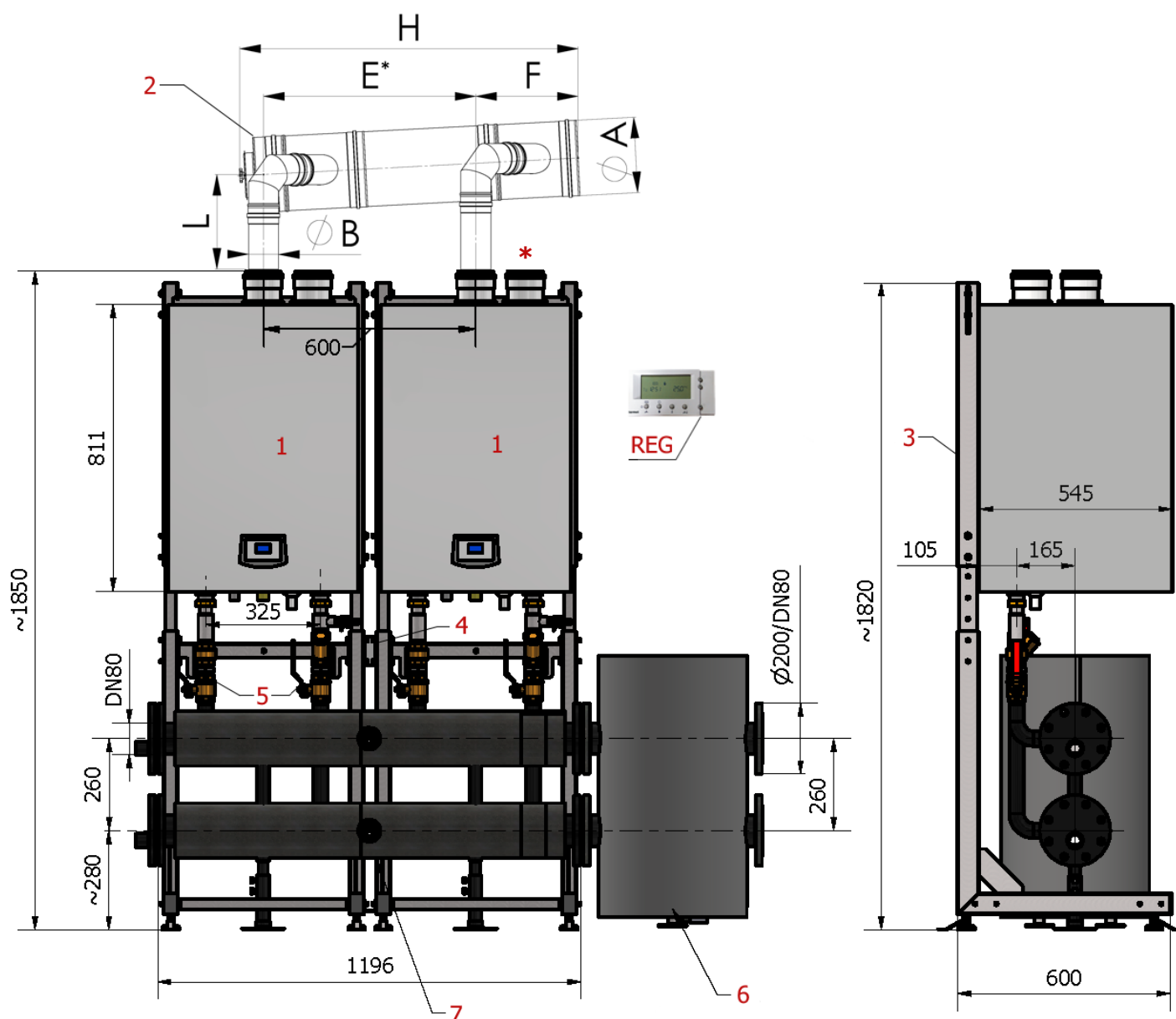
(¹⁾ Individual gas consumption was given for reference gases in normal conditions (15°C, pressure 1013 mbar) considering useful efficiency of the boiler with 30°C of return water temperature. The values are indicative.

The manufacturer reserves the right to make changes in the construction of the boiler, which are not mentioned herein and have no influence on the technical and functional characteristics of the product.

Optional equipment when combining boilers EcoCondens Crystal 80 or EcoCondens Crystal 100 kW into cascade systems

Photo	Index	Name			
	The elements are part of dedicated packages, the detailed scope of which is presented on the following pages.	Stand for boiler ECOCONDENS CRYSTAL 80 or 100 kW The stand is designed to facilitate the installation of a hanging boiler from the Crystal series. The design of the stand allows for its quick installation (using the included sets of Mounting Screws) on the target site of the installation. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of Screws and plates). The frame is available in graphite color.			
		Set of bolts and sheets for joining two stands boilers of ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100			
		Connection set boiler - manifold connection 1 1/4" for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 The set includes: two 1 1/4" ball valves, a 1 1/4" brass check valve, a 1 1/4" beveled mesh filter, two 1 1/4" cast iron nipples, a drain valve, and two 1 1/4" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly			
		<table><tr><td> Hydraulic coupling CPN 250 - DN80 </td><td rowspan="2"> Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency. </td></tr><tr><td> Hydraulic coupling CPN300 - DN100 </td></tr></table>	Hydraulic coupling CPN 250 - DN80	Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.	Hydraulic coupling CPN300 - DN100
Hydraulic coupling CPN 250 - DN80		Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.			
Hydraulic coupling CPN300 - DN100					
		Collector MK 80 2F - DN 80 for two boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold made of steel. It was designed to connect boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 mounting screws and 4 gaskets EPDM DN 80.			
		Collector MK 80 3F - DN 80 for three boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold made of steel. It was designed to connect boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, set of 16 Mounting Screws and 4 EPDM gaskets DN 80.			
		Collector MK 100 2F - DN 100 for two boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100.			
		Collector MK 100 3F - DN 100 for three boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 EPDM gaskets DN 100.			
	T 9260 14 17 00	Angle connectors DN 80 without insulation (set of 2 pieces) The angle couplings are made of steel. They were designed to connect the hydraulic coupling to the MK manifold. The couplings include a set of screws and gaskets for assembly.			
	T 9260 14 18 00	Angle connectors DN 100 without insulation (set of 2 pieces) The angle couplings are made of steel. They were designed to connect the hydraulic coupling to the MK manifold. The couplings include a set of screws and gaskets for assembly.			

Cascade of 2 boilers Ecocondens Crystal 80 or Ecocondens Crystal 100



* - in the boiler built-in air and flue adapters with a diameter of 100 mm

Quantity	No.	Index	Name
2 pc.	1	WKJ 5191 00 00 00/EU1T or WKJ 5141 00 00 00/EU1T	Condensing boiler EcoCondens Crystal 80 or Condensing boiler EcoCondens Crystal 100
1 pc.	2	T 9000 04 05 08 or T 9000 04 05 09	Air/flue system for cascade two boilers (Ø150mm) or Air/flue system for cascade two boilers (Ø180mm)
2 pc.	3	PT92601404/100/2	Stand for boiler EcoCondens Crystal 80 or 100 kW
1 pc.	4		A set of screws and plates to joining two stands
2 pc.	5		Connection kit boiler - collector
1 pc.	6		Hydraulic coupling CPN 250 - DN80
1 pc.	7		Collector MK 80 2F - DN 80

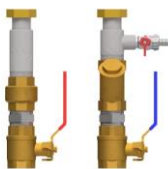
OPTIONAL EQUIPMENT when combining boilers EcoCondens Crystal 80 or 100 into cascade systems

Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

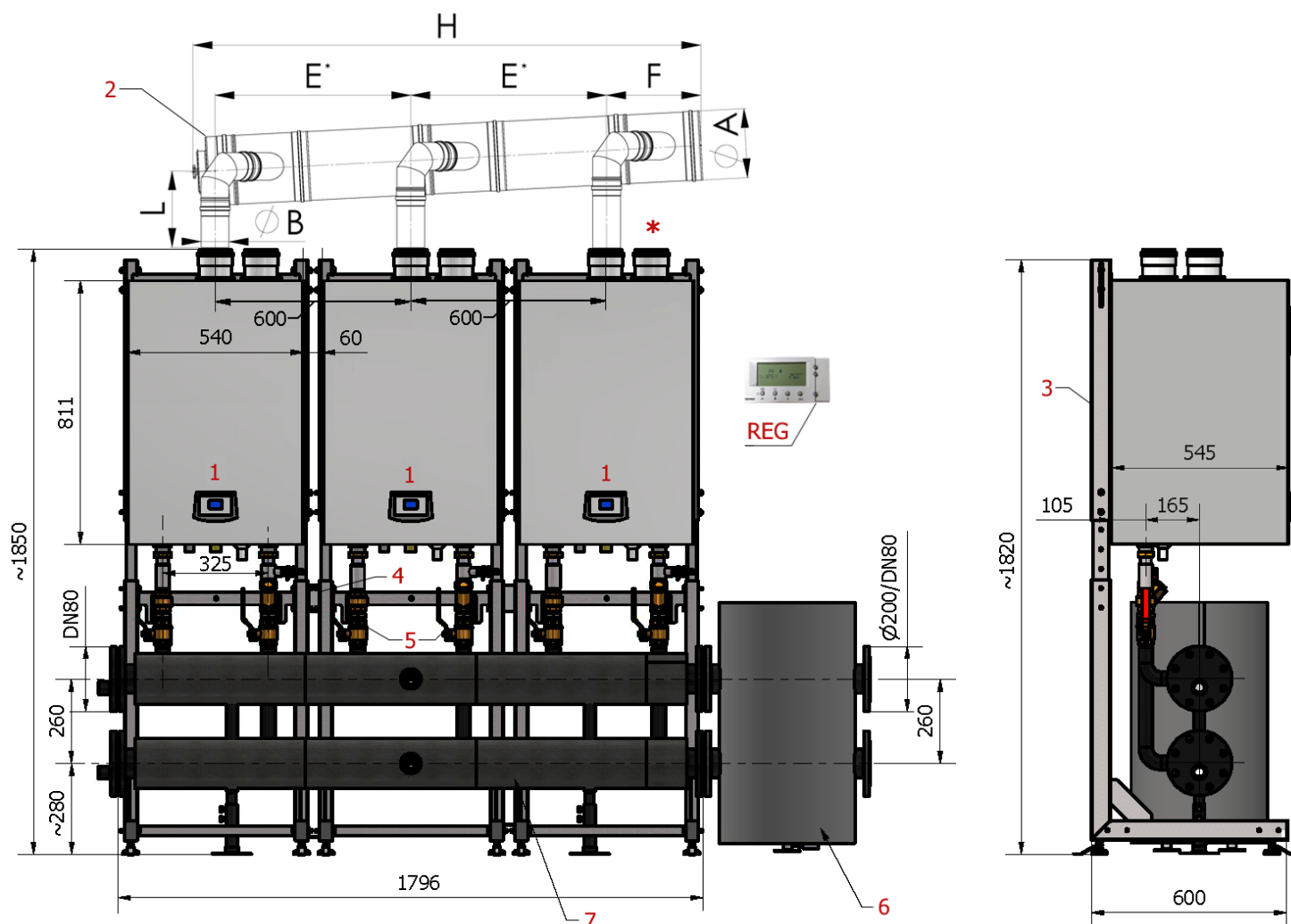
Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal 80	WKJ 5191 00 00 00/EU1T	ECOCONDENS CRYSTAL 80 or 100 wall-mounted condensing boilers are ideal for heating multi-family buildings, boarding houses or office buildings.
		Ecocondens Crystal 100	WKJ 5141 00 00 00/EU1T	Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade two boilers	T 9000 04 05 08	Ø150	150	100	714	344	1138	320
			T 9000 04 05 09	Ø180	180	100	714	344	1138	320

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Description
3		Stand for boiler EcoCondens Crystal 80 or 100 kW	PT92601404/100/2	Stand for boiler ECOCONDENS CRYSTAL 80 or 100 kW The stand is designed to facilitate the installation of a hanging boiler from the Crystal series. The design of the stand allows for its quick installation (using the included sets of Mounting Screws) on the target site of the installation. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of Screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1 1/4" for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 The set includes: two 1 1/4" ball valves, a 1 1/4" brass check valve, a 1 1/4" beveled mesh filter, two 1 1/4" cast iron nipples, a drain valve, and two 1 1/4" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly
6		Hydraulic coupling CPN 250 - DN80		Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 470 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 80 2F - DN 80		Collector MK 80 2F - DN 80 for two boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold made of steel. It was designed to connect boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet mounting feet, a set of 16 mounting screws and 4 gaskets EPDM DN 80.

Cascade of 3 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100



* - in the boiler built-in air and flue adapters with a diameter of 100 mm

Quantity	No.	Index	Name
3 pc.	1	WKJ 5191 00 00 00/EU1T or WKJ 5141 00 00 00/EU1T	Condensing boiler EcoCondens Crystal 80 or Condensing boiler EcoCondens Crystal 100
1 pc.	2	T 9000 04 05 10 or T 9000 04 05 11 or T 9000 04 05 73	Air/flue system for cascade three boilers (Ø180mm) or Air/flue system for cascade three boilers (Ø200mm) or Air/flue system for cascade three boilers (Ø250mm)
3 pc.	3	PT92601404/100/3	Stand for boiler EcoCondens Crystal 80 or 100 kW
2 pc.	4		A set of screws and plates to joining two stands
3 pc.	5		Connection kit boiler - collector
1 pc.	6		Hydraulic coupling CPN 250 - DN80
1 pc.	7		Collector MK 80 3F - DN 80

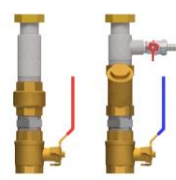
OPTIONAL EQUIPMENT when combining boilers EcoCondens Crystal 80 or 100 into cascade systems

Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

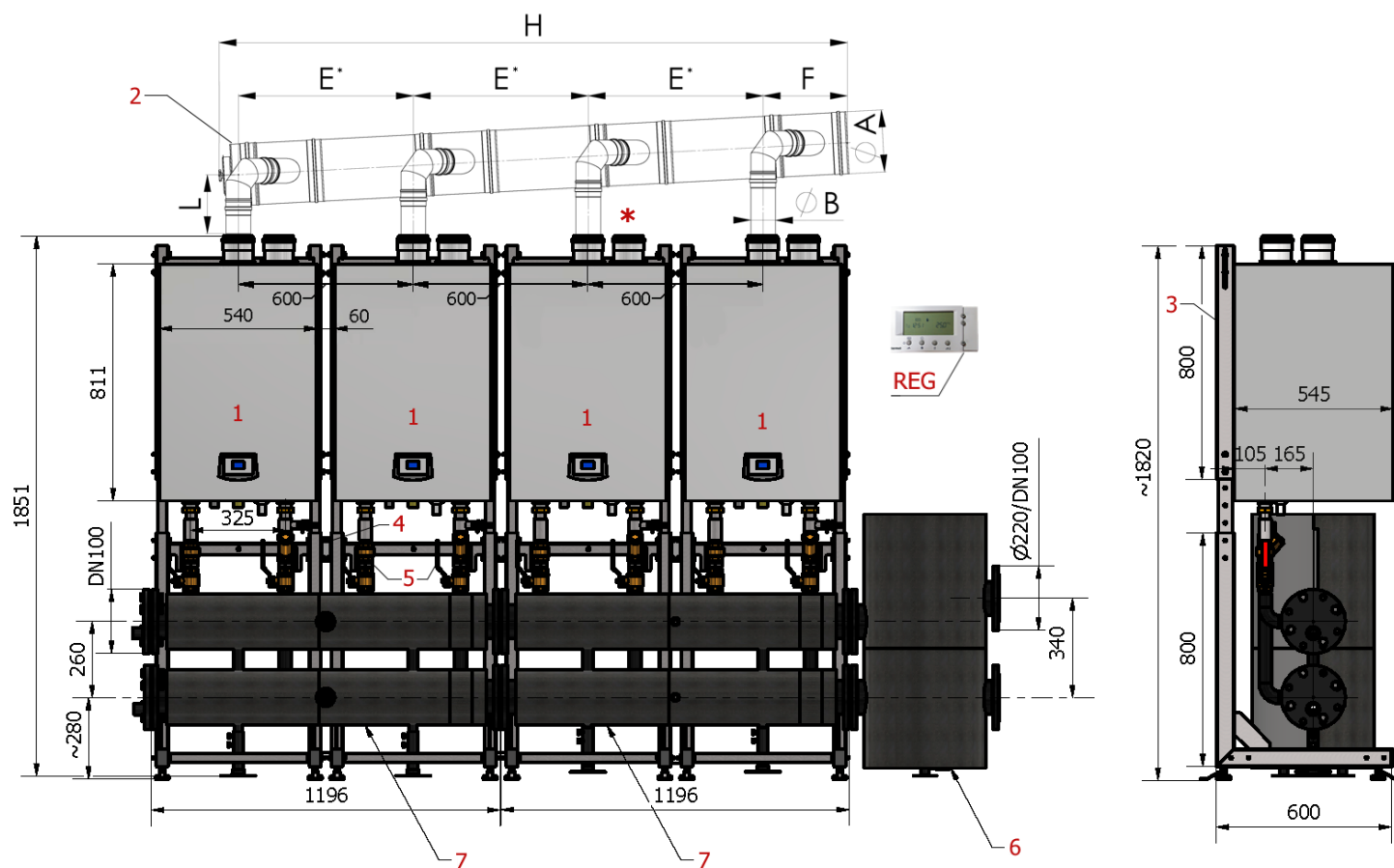
Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal 80	WKJ 5191 00 00 00/EU1T	ECOCONDENS CRYSTAL 80 or 100 wall-mounted condensing boilers are ideal for heating multi-family buildings, boarding houses or office buildings.
		Ecocondens Crystal 100	WKJ 5141 00 00 00/EU1T	Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for cascade three boilers	T 9000 04 05 10	Ø180	180	100	714	344	1847	280
			T 9000 04 05 11	Ø200	200	100	714	344	1847	280
			T 9000 04 05 73	Ø250	250	100	714	344	1847	280

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Description
3		Stand for boiler EcoCondens Crystal 80 or 100 kW	PT92601404/100/3	Stand for boiler ECOCONDENS CRYSTAL 80 or 100 kW The stand is designed to facilitate the installation of a hanging boiler from the Crystal series. The design of the stand allows for its quick installation (using the included sets of Mounting Screws) on the target site of the installation. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of Screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1 1/4" for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 The set includes: two 1 1/4" ball valves, a 1 1/4" brass check valve, a 1 1/4" beveled mesh filter, two 1 1/4" cast iron nipples, a drain valve, and two 1 1/4" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly
6		Hydraulic coupling CPN 250 - DN80		Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 470 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 80 3F - DN 80		Collector MK 80 3F - DN 80 for three boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold made of steel. It was designed to connect boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, set of 16 Mounting Screws and 4 EPDM gaskets DN 80.

Cascade of 4 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100



* - in the boiler built-in air and flue adapters with a diameter of 100 mm

Quantity	No.	Index	Name
4 pc.	1	WKJ 5191 00 00 00/EU1T or WKJ 5141 00 00 00/EU1T	Condensing boiler EcoCondens Crystal 80 or Condensing boiler EcoCondens Crystal 100
1 pc.	2	T 9000 04 05 12 or T 9000 04 05 13	Air/flue system for cascade four boilers (Ø200mm) or Air/flue system for cascade four boilers (Ø250mm)
4 pc.	3	PT92601404/100/4	Stand for boiler EcoCondens Crystal 80 or 100 kW
3 pc.	4		A set of screws and plates to joining two stands
4 pc.	5		Connection kit boiler - collector
1 pc.	6		Hydraulic coupling CPN300 - DN100
2 pc.	7		Collector MK 100 2F – DN 100

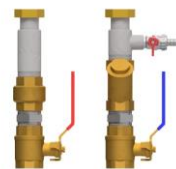
OPTIONAL EQUIPMENT when combining boilers EcoCondens Crystal 80 or 100 into cascade systems

Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

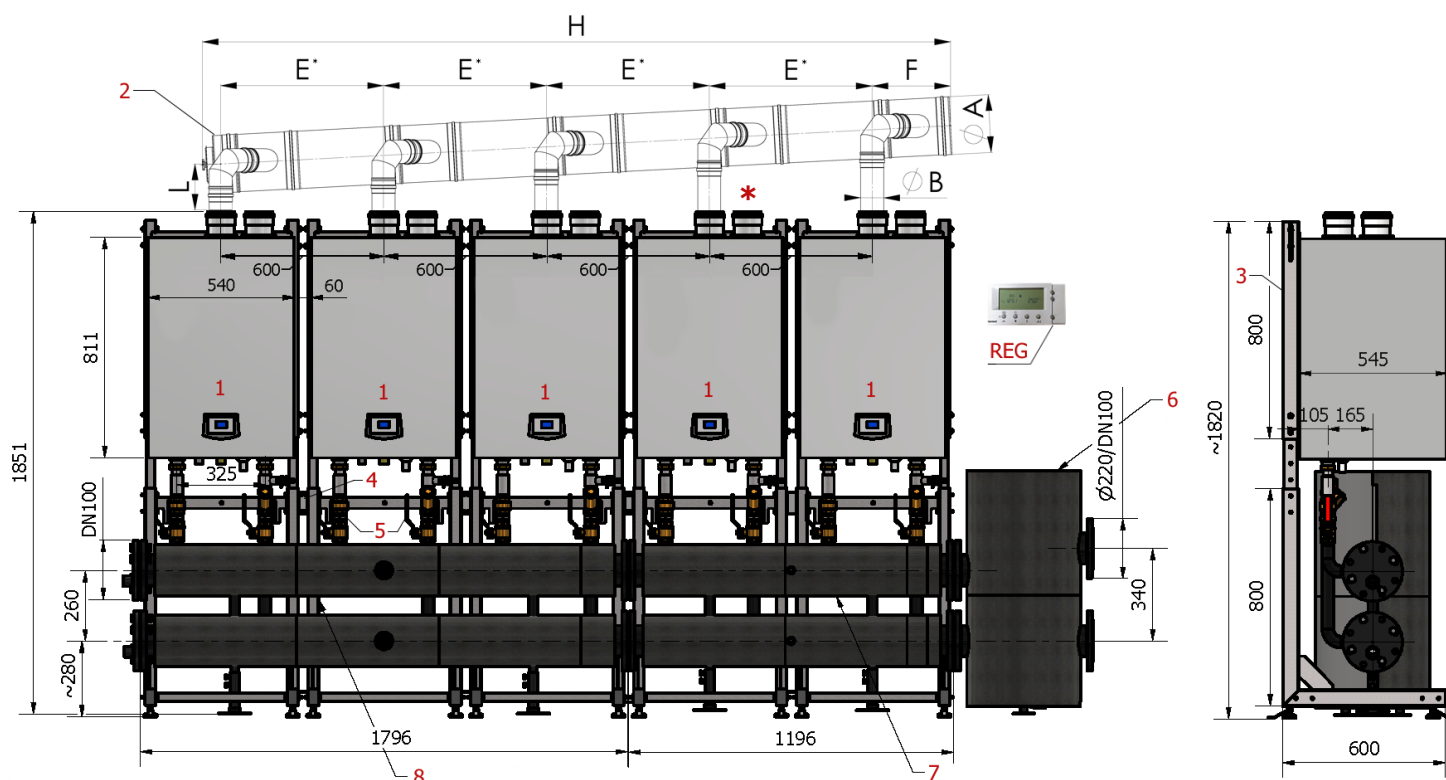
Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal 80	WKJ 5191 00 00 00/EU1T	ECOCONDENS CRYSTAL 80 or 100 wall-mounted condensing boilers are ideal for heating multi-family buildings, boarding houses or office buildings.
		Ecocondens Crystal 100	WKJ 5141 00 00 00/EU1T	Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for a cascade four boilers	T 9000 04 05 12	Ø200	200	100	714	344	2565	240
			T 9000 04 05 13	Ø250	250	100	714	344	2565	240

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Description
3		Stand for boiler EcoCondens Crystal 80 or 100 kW	PT92601404/100/4	Stand for boiler ECOCONDENS CRYSTAL 80 or 100 kW The stand is designed to facilitate the installation of a hanging boiler from the Crystal series. The design of the stand allows for its quick installation (using the included sets of Mounting Screws) on the target site of the installation. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of Screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1 1/4" for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 The set includes: two 1 1/4" ball valves, a 1 1/4" brass check valve, a 1 1/4" beveled mesh filter, two 1 1/4" cast iron nipples, a drain valve, and two 1 1/4" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly
6		Hydraulic coupling CPN300 - DN100		Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 100 2F - DN 100		Collector MK 100 2F - DN 100 for two boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100 Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. At the factory it includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100.

Cascade of 5 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100



* - in the boiler built-in air and flue adapters with a diameter of 100 mm

Quantity	No.	Index	Name
5 pc.	1	WKJ 5191 00 00 00/EU1T or WKJ 5141 00 00 00/EU1T	Condensing boiler EcoCondens Crystal 80 or Condensing boiler EcoCondens Crystal 100
1 pc.	2	T 9000 04 05 14 or T 9000 04 05 15	Air/flue system for cascade five boilers (Ø250mm) or Air/flue system for cascade five boilers (Ø300mm)
5 pc.	3	PT92601404/100/5	Stand for the boiler EcoCondens Crystal 80 or 100 kW
4 pc.	4		A set of screws and plates to joining two stands
5 pc.	5		Connection kit boiler - collector
1 pc.	6		Hydraulic coupling CPN300 - DN100
1 pc.	7		Collector MK 100 2F - DN 100
1 pc.	8		Collector MK 100 3F - DN 100

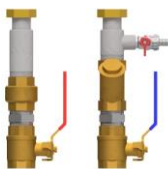
OPTIONAL EQUIPMENT when combining boilers EcoCondens Crystal 80 or 100 into cascade systems

Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (Open-Therm communication)

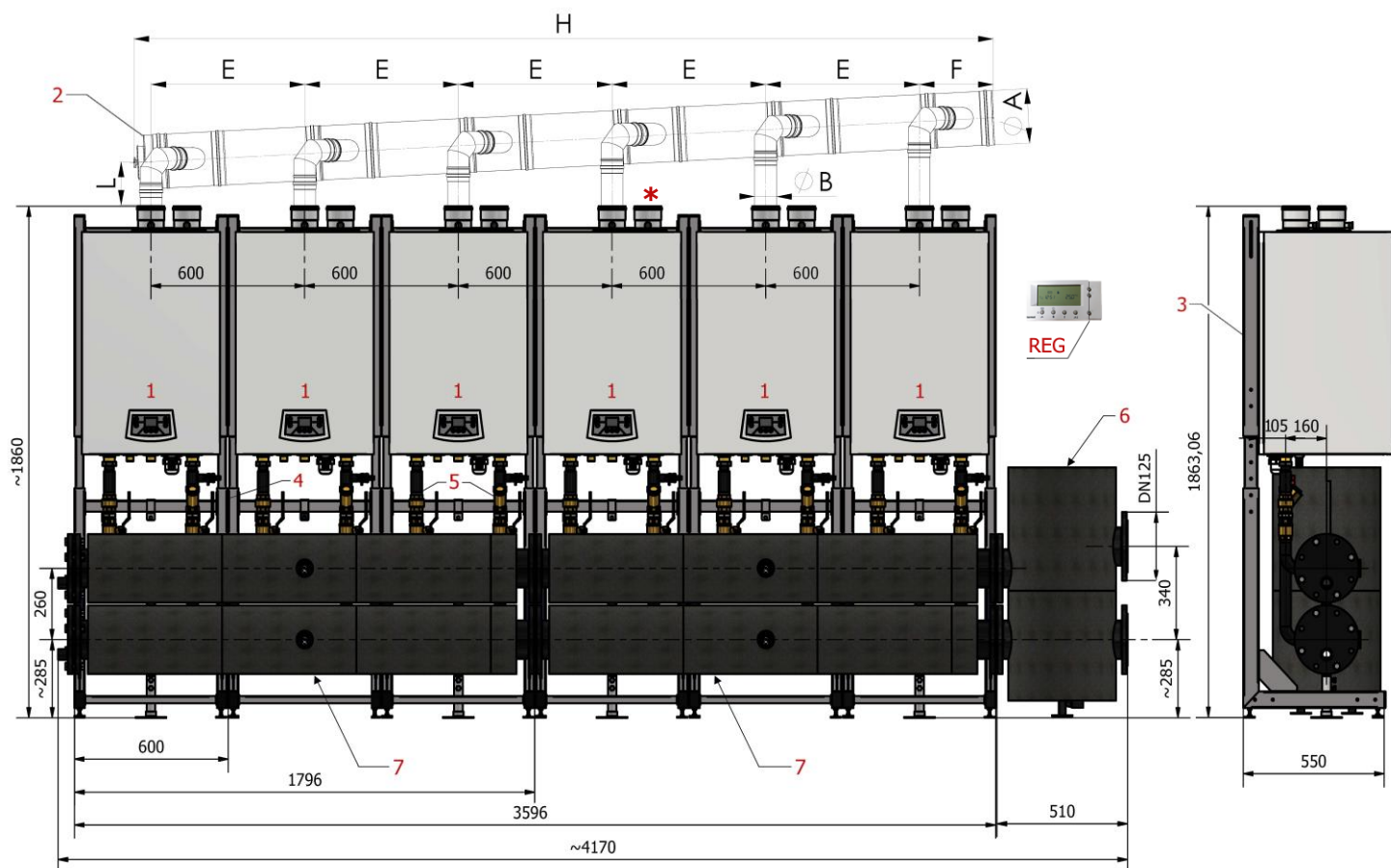
Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal 80	WKJ 5191 00 00 00/EU1T	ECOCONDENS CRYSTAL 80 or 100 wall-mounted condensing boilers are ideal for heating multi-family buildings, boarding houses or office buildings.
		Ecocondens Crystal 100	WKJ 5141 00 00 00/EU1T	Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for a cascade five boilers	T 9000 04 05 14	Ø250	250	100	714	344	3275	200
			T 9000 04 05 15	Ø300	300	1100	714	344	3275	200

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Description
3		Stand for boiler EcoCondens Crystal 80 or 100 kW	PT92601404/100/5	Stand for boiler ECOCONDENS CRYSTAL 80 or 100 kW. The stand is designed to facilitate the installation of a hanging boiler from the Crystal series. The design of the stand allows for its quick installation (using the included sets of Mounting Screws) on the target site of the installation. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of Screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1 1/4" for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100. The set includes: two 1 1/4" ball valves, a 1 1/4" brass check valve, a 1 1/4" beveled mesh filter, two 1 1/4" cast iron nipples, a drain valve, and two 1 1/4" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly
6		Hydraulic coupling CPN300 - DN100		Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 500 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 100 2F - DN 100		Hydraulic manifold MK 100 - DN 100 was made of steel. It was designed to connect boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100
8		Collector MK 100 3F - DN 100		

Cascade of 6 boilers EcoCondens Crystal 80 or EcoCondens Crystal 100



* - in the boiler built-in air and flue adapters with a diameter of 100 mm

Quantity	No.	Index	Name
6 pc.	1	WKJ 5191 00 00 00/EU1T or WKJ 5141 00 00 00/EU1T	Condensing boiler Ecocondens Crystal 80 or Condensing boiler Ecocondens Crystal 100
1 pc.	2	T 9000 04 05 16 or T 9000 04 05 17	Air/flue system for a cascade six boilers (Ø250mm) or Air/flue system for a cascade six boilers (Ø300mm)
6 pc.	3	PT92601404/100/6	Stand for the boiler EcoCondens Crystal 80 or 100 kW
5 pc.	4		A set of screws and plates to joining two stands
6 pc.	5		Connection kit boiler - collector
1 pc.	6		Hydraulic coupling CPN300 - DN125
1 pc.	7		Collector MK 125 3F – DN 125

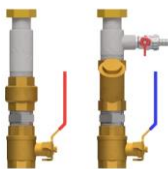
OPTIONAL EQUIPMENT when combining boilers EcoCondens Crystal 80 or 100 into cascade systems

Quantity	No.	Index	Name
1 pc.	REG	WKZ 0624 00 00 00	Regulator CR 11011 (komunikacja Open-Therm)

Lp.	Photo	Name	Index	Description
1		Ecocondens Crystal 80	WKJ 5191 00 00 00/EU1T	ECOCONDENS CRYSTAL 80 or 100 wall-mounted condensing boilers are ideal for heating multi-family buildings, boarding houses or office buildings.
		Ecocondens Crystal 100	WKJ 5141 00 00 00/EU1T	Boilers working together in a cascade system are connected in series using a cable attached to the boiler. The first boiler acts as the MASTER boiler (acts as a manager), the others work as subordinate SLAVE.

Lp.	Photo	Name	Index	Diameter	A	B	E*	F	H	L
					mm	mm	mm	mm	mm	mm
2		Air/flue system for a cascade six boilers	T 9000 04 05 16	Ø250	250	100	714	344	3995	200
			T 9000 04 05 17	Ø300	300	100	714	344	3995	200

E* - factory length. Straight sections, between tees, should be cut to the required lengths.

Lp.	Photo	Name	Index	Description
3		Stand for boiler EcoCondens Crystal 80 or 100 kW	PT92601404/100/6	Stand for boiler ECOCONDENS CRYSTAL 80 or 100 kW. The stand is designed to facilitate the installation of a hanging boiler from the Crystal series. The design of the stand allows for its quick installation (using the included sets of Mounting Screws) on the target site of the installation. The system of holes allows for accurate height adjustment of the boiler. The racks can be joined in series with proper chimney spacing (using an additional set of Screws and plates). The frame is available in graphite color.
4		A set of screws and plates to joining two stands		Set of bolts and sheets for joining two stands for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100
5		Connection kit boiler - collector		Connection set boiler - manifold connection 1 1/4" for boilers ECOCONDENS CRYSTAL 80 or ECOCONDENS CRYSTAL 100. The set includes: two 1 1/4" ball valves, a 1 1/4" brass check valve, a 1 1/4" beveled mesh filter, two 1 1/4" cast iron nipples, a drain valve, and two 1 1/4" steel connectors with a nut, including one with a socket. The kit is not bolted together, the carton contains the components of the kit for self-assembly
6		Hydraulic coupling CPN300 - DN125		Hydraulic coupling is made of steel. It is designed to separate the boiler pump from the pumps in the system. The coupling is designed for installation with MK hydraulic manifolds up to a total output of up to 700 kW. The coupling includes insulation and mounting feet. The coupling includes a system of built-in nets and baffles to help precipitate air bubbles and sediment thus increasing its functionality and efficiency.
7		Collector MK 125 3F - DN 125		Hydraulic manifold MK 125 - DN 125 was made of steel. It was designed to connect boilers in cascade systems. Factory includes insulation, 2 blanking flanges with socket, 2 bimetallic thermometers, 2 1/2" blanking plugs, mounting feet, a set of 16 Mounting Screws and 4 gaskets EPDM DN 100

Air/flue gas systems for connect behind of the collector manifold

Index	Diameter	Name
T9000 04 06 01	ø125	Flue pipe SP-N length L = 1000 mm Diameter D125
T9000 04 06 02	ø150	Flue pipe SP-N length L = 1000 mm Diameter D150
T9000 04 06 03	ø180	Flue pipe SP-N length L = 1000 mm Diameter D180
T9000 04 06 04	ø200	Flue pipe SP-N length L = 1000 mm Diameter D200
T9000 04 06 05	ø250	Flue pipe SP-N length L = 1000 mm Diameter D250
T9000 04 06 06	ø300	Flue pipe SP-N length L = 1000 mm Diameter D300
T9000 04 06 07	ø125	Flue pipe SP-N length L = 500 mm Diameter D125
T9000 04 06 08	ø150	Flue pipe SP-N length L = 500 mm Diameter D150
T9000 04 06 09	ø180	Flue pipe SP-N length L = 500 mm Diameter D180
T9000 04 06 10	ø200	Flue pipe SP-N length L = 500 mm Diameter D200
T9000 04 06 11	ø250	Flue pipe SP-N length L = 500 mm Diameter D250
T9000 04 06 12	ø300	Flue pipe SP-N length L = 500 mm Diameter D300
T9000 04 06 13	ø125	Flue pipe SP-N length L = 250 mm Diameter D125
T9000 04 06 14	ø150	Flue pipe SP-N length L = 250 mm Diameter D150
T9000 04 06 15	ø180	Flue pipe SP-N length L = 250 mm Diameter D180
T9000 04 06 16	ø200	Flue pipe SP-N length L = 250 mm Diameter D200
T9000 04 06 17	ø250	Flue pipe SP-N length L = 250 mm Diameter D250
T9000 04 06 18	ø300	Flue pipe SP-N length L = 250 mm Diameter D300
T9000 04 06 19	ø125	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D125
T9000 04 06 20	ø150	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D150
T9000 04 06 21	ø180	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D180
T9000 04 06 22	ø200	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D200
T9000 04 06 23	ø250	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D250
T9000 04 06 24	ø300	Telescopic flue pipe SP-N adjustable L = 270 - 350 mm Diameter D300
T9000 04 06 25	ø125	Flue elbow SP-N 90 dg. Diameter D125
T9000 04 06 26	ø150	Flue elbow SP-N 90 dg. Diameter D150
T9000 04 06 27	ø180	Flue elbow SP-N 90 dg. Diameter D180
T9000 04 06 28	ø200	Flue elbow SP-N 90 dg. Diameter D200
T9000 04 06 29	ø250	Flue elbow SP-N 90 dg. Diameter D250
T9000 04 06 30	ø300	Flue elbow SP-N 90 dg. Diameter D300
T9000 04 06 31	ø125	Flue elbow SP-N 45 dg. Diameter D125
T9000 04 06 32	ø150	Flue elbow SP-N 45 dg. Diameter D150
T9000 04 02 99	ø180	Flue elbow SP-N 45 dg. Diameter D180
T9000 04 08 01	ø200	Flue elbow SP-N 45 dg. Diameter D200
T9000 04 08 02	ø250	Flue elbow SP-N 45 dg. Diameter D250
T9000 04 08 03	ø300	Flue elbow SP-N 45 dg. Diameter D300
T9000 04 06 33	ø125	Flue elbow SP-N 90 dg. with bracket Diameter D125
T9000 04 06 34	ø150	Flue elbow SP-N 90 dg. with bracket Diameter D150
T9000 04 06 35	ø180	Flue elbow SP-N 90 dg. with bracket Diameter D180
T9000 04 06 36	ø200	Flue elbow SP-N 90 dg. with bracket Diameter D200
T9000 04 06 37	ø250	Flue elbow SP-N 90 dg. with bracket Diameter D250
T9000 04 06 38	ø300	Flue elbow SP-N 90 dg. with bracket Diameter D300
T9000 04 06 39	ø125	Flue elbow SP-N 90 dg. with revision Diameter D125
T9000 04 06 40	ø150	Flue elbow SP-N 90 dg. with revision Diameter D150
T9000 04 06 41	ø180	Flue elbow SP-N 90 dg. with revision Diameter D180
T9000 04 06 42	ø200	Flue elbow SP-N 90 dg. with revision Diameter D200
T9000 04 06 43	ø250	Flue elbow SP-N 90 dg. with revision Diameter D250
T9000 04 06 44	ø300	Flue elbow SP-N 90 dg. with revision Diameter D300

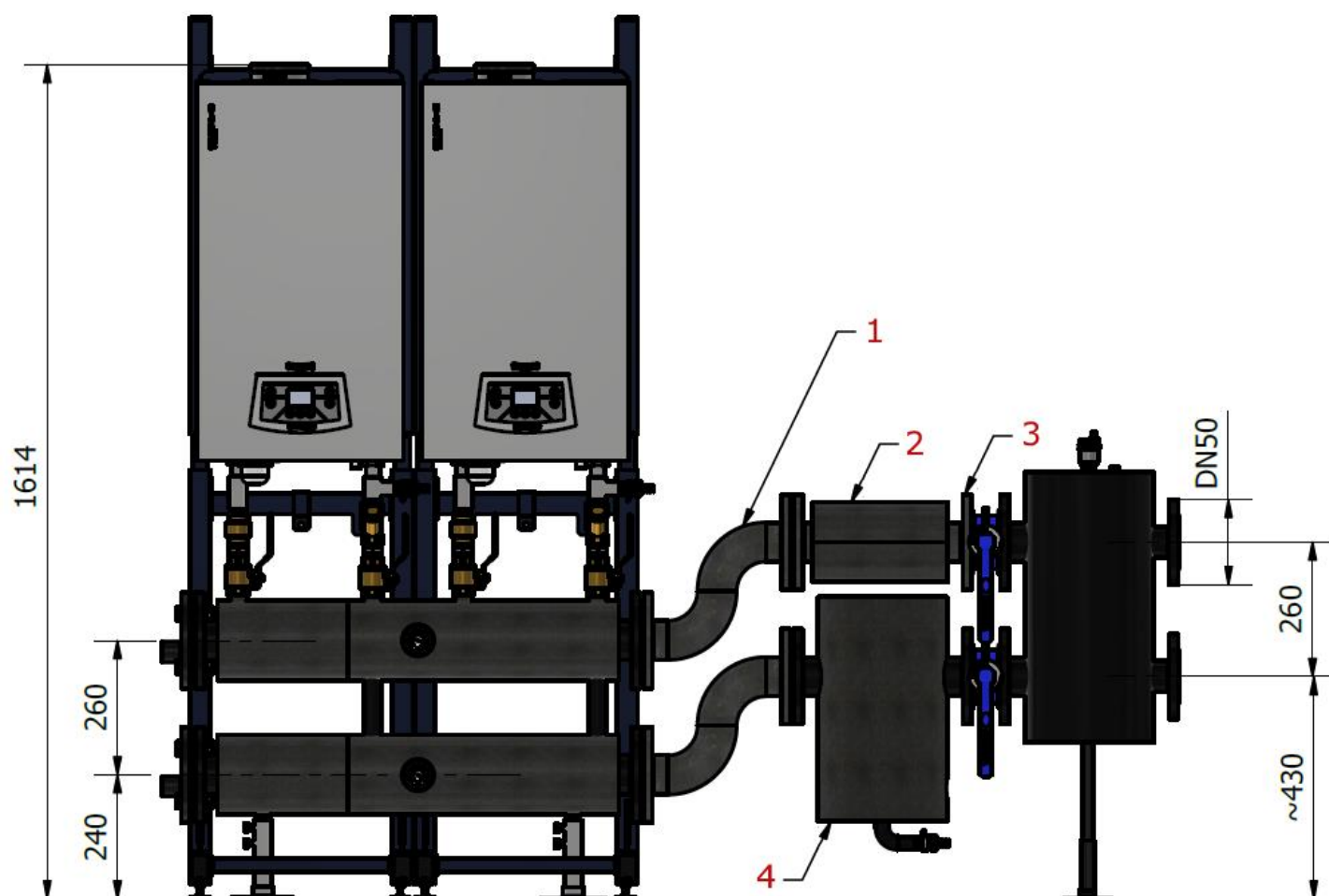
Index	Diameter	Name
T9000 04 06 45	ø125	Flue gasket SP-N Diameter D125
T9000 04 06 46	ø150	Flue gasket SP-N Diameter D150
T9000 04 06 47	ø180	Flue gasket SP-N Diameter D180
T9000 04 06 48	ø200	Flue gasket SP-N Diameter D200
T9000 04 06 49	ø250	Flue gasket SP-N Diameter D250
T9000 04 06 50	ø300	Flue gasket SP-N Diameter D300
T9000 04 06 51	ø125	Distance clamp Diameter D125
T9000 04 06 52	ø150	Distance clamp Diameter D150
T9000 04 06 53	ø180	Distance clamp Diameter D180
T9000 04 06 54	ø200	Distance clamp Diameter D200
T9000 04 06 55	ø250	Distance clamp Diameter D250
T9000 04 06 56	ø300	Distance clamp Diameter D300
T9000 04 06 57	ø125	Straight roof plate + rain flange Diameter D125
T9000 04 06 58	ø150	Straight roof plate + rain flange Diameter D150
T9000 04 06 59	ø180	Straight roof plate + rain flange Diameter D180
T9000 04 06 60	ø200	Straight roof plate + rain flange Diameter D200
T9000 04 06 61	ø250	Straight roof plate + rain flange Diameter D250
T9000 04 06 62	ø300	Straight roof plate + rain flange Diameter D300
T9000 04 06 63	ø125	Silicone gasket Diameter D125
T9000 04 06 64	ø150	Silicone gasket Diameter D150
T9000 04 06 65	ø180	Silicone gasket Diameter D180
T9000 04 06 66	ø200	Silicone gasket Diameter D200
T9000 04 06 67	ø250	Silicone gasket Diameter D250
T9000 04 06 68	ø300	Silicone gasket Diameter D300
T9000 04 06 69	ø125/175	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ 125/175
T9000 04 06 70	ø150/200	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ150/200
T9000 04 06 71	ø180/230	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ180/230
T9000 04 06 72	ø200/250	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ200/250
T9000 04 06 73	ø250/300	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ250/300
T9000 04 06 74	ø300/350	Insulated pipe with gasket IZO SP-N length L= 1000 mm Ø. DW/DZ300/350
T9000 04 06 75	ø125/175	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ125/175
T9000 04 06 76	ø150/200	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ150/200
T9000 04 06 77	ø180/230	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ180/230
T9000 04 06 78	ø200/250	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ200/250
T9000 04 06 79	ø250/300	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ250/300
T9000 04 06 80	ø300/350	Insulated pipe with gasket IZO SP-N length L= 500 mm Ø. DW/DZ300/350
T9000 04 06 81	ø125/175	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ125/175
T9000 04 06 82	ø150/200	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ150/200
T9000 04 06 83	ø180/230	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ180/230
T9000 04 06 84	ø200/250	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ200/250
T9000 04 06 85	ø250/300	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ250/300
T9000 04 06 86	ø300/350	Insulated pipe with gasket IZO SP-N length L= 250 mm Ø. DW/DZ300/350
T9000 04 06 87	ø125/175	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ125/175
T9000 04 06 88	ø150/200	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ150/200
T9000 04 06 89	ø180/230	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ180/230
T9000 04 06 90	ø200/250	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ200/250
T9000 04 06 91	ø250/300	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ250/300
T9000 04 06 92	ø300/350	Insulated elbow with gasket IZO SP-N 90 dg. Diameter DW/DZ300/350
T9000 04 06 93	ø125/175	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ125/175

Index	Diameter	Name
T9000 04 06 94	ø150/200	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ150/200
T9000 04 06 95	ø180/230	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ180/230
T9000 04 06 96	ø200/250	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ200/250
T9000 04 06 97	ø250/300	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ250/300
T9000 04 06 98	ø300/350	Insulated elbow with gasket IZO SP-N 45 dg. Diameter DW/DZ300/350
T9000 04 06 99	ø125/175	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ125/175
T9000 04 07 01	ø150/200	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ150/200
T9000 04 07 02	ø180/230	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ180/230
T9000 04 07 03	ø200/250	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ200/250
T9000 04 07 04	ø250/300	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ250/300
T9000 04 07 05	ø300/350	Insulated elbow with gasket IZO SP-N 90 dg. Bracket Ø. DW/DZ300/350
T9000 04 07 06	ø125/175	Closing of insulation with gasket IZO SP-N Diameter DW/DZ125/175
T9000 04 07 07	ø150/200	Closing of insulation with gasket IZO SP-N Diameter DW/DZ150/200
T9000 04 07 08	ø180/230	Closing of insulation with gasket IZO SP-N Diameter DW/DZ180/230
T9000 04 07 09	ø200/250	Closing of insulation with gasket IZO SP-N Diameter DW/DZ200/250
T9000 04 07 10	ø250/300	Closing of insulation with gasket IZO SP-N Diameter DW/DZ250/300
T9000 04 07 11	ø300/350	Closing of insulation with gasket IZO SP-N Diameter DW/DZ300/350
T9000 04 07 12	ø125/175	Transition support insulated with gasket IZO SP-N Ø. DW/DZ125/175
T9000 04 07 13	ø150/200	Transition support insulated with gasket IZO SP-N Ø. DW/DZ150/200
T9000 04 07 14	ø180/230	Transition support insulated with gasket IZO SP-N Ø. DW/DZ180/230
T9000 04 07 15	ø200/250	Transition support insulated with gasket IZO SP-N Ø. DW/DZ200/250
T9000 04 07 16	ø250/300	Transition support insulated with gasket IZO SP-N Ø. DW/DZ250/300
T9000 04 07 17	ø300/350	Transition support insulated with gasket IZO SP-N Ø. DW/DZ300/350
T9000 04 07 18	ø125/175	Final element IZO SP-N Ø. DW/DZ125/175
T9000 04 07 19	ø150/200	Final element IZO SP-N Ø. DW/DZ150/200
T9000 04 07 20	ø180/230	Final element IZO SP-N Ø. DW/DZ180/230
T9000 04 07 21	ø200/250	Final element IZO SP-N Ø. DW/DZ200/250
T9000 04 07 22	ø250/300	Final element IZO SP-N Ø. DW/DZ250/300
T9000 04 07 23	ø300/350	Final element IZO SP-N Ø. DW/DZ300/350
T9000 04 07 24	ø125/175	Roof passage 0 dg. + rain flange Ø. DW/DZ125/175
T9000 04 07 25	ø150/200	Roof passage 0 dg. + rain flange Ø. DW/DZ150/200
T9000 04 07 26	ø180/230	Roof passage 0 dg. + rain flange Ø. DW/DZ180/230
T9000 04 07 27	ø200/250	Roof passage 0 dg. + rain flange Ø. DW/DZ200/250
T9000 04 07 28	ø250/300	Roof passage 0 dg. + rain flange Ø. DW/DZ250/300
T9000 04 07 29	ø300/350	Roof passage 0 dg. + rain flange Ø. DW/DZ300/350
T9000 04 07 30	ø125/175	Roof passage + rain flange 5-15 dg. Ø. DW/DZ125/175
T9000 04 07 31	ø150/200	Roof passage + rain flange 5-15 dg. Ø. DW/DZ150/200
T9000 04 07 32	ø180/230	Roof passage + rain flange 5-15 dg. Ø. DW/DZ180/230
T9000 04 07 33	ø200/250	Roof passage + rain flange 5-15 dg. Ø. DW/DZ200/250
T9000 04 07 34	ø250/300	Roof passage + rain flange 5-15 dg. Ø. DW/DZ250/300
T9000 04 07 35	ø300/350	Roof passage + rain flange 5-15 dg. Ø. DW/DZ300/350
T9000 04 07 36	ø125/175	Roof passage + rain flange 15-25 dg. Ø. DW/DZ125/175
T9000 04 07 37	ø150/200	Roof passage + rain flange 15-25 dg. Ø. DW/DZ150/200
T9000 04 07 38	ø180/230	Roof passage + rain flange 15-25 dg. Ø. DW/DZ180/230
T9000 04 07 39	ø200/250	Roof passage + rain flange 15-25 dg. Ø. DW/DZ200/250
T9000 04 07 40	ø250/300	Roof passage + rain flange 15-25 dg. Ø. DW/DZ250/300
T9000 04 07 41	ø300/350	Roof passage + rain flange 15-25 dg. Ø. DW/DZ300/350
T9000 04 07 42	ø125/175	Roof passage + rain flange 25-35 dg. Ø. DW/DZ125/175
T9000 04 07 43	ø150/200	Roof passage + rain flange 25-35 dg. Ø. DW/DZ150/200

Index	Diameter	Name
T9000 04 07 44	ø180/230	Roof passage + rain flange 25-35 dg. Ø. DW/DZ180/230
T9000 04 07 45	ø200/250	Roof passage + rain flange 25-35 dg. Ø. DW/DZ200/250
T9000 04 07 46	ø250/300	Roof passage + rain flange 25-35 dg. Ø. DW/DZ250/300
T9000 04 07 48	ø125/175	Roof passage + rain flange 35-45 dg. Ø. DW/DZ125/175
T9000 04 07 49	ø150/200	Roof passage + rain flange 35-45 dg. Ø. DW/DZ150/200
T9000 04 07 50	ø180/230	Roof passage + rain flange 35-45 dg. Ø. DW/DZ180/230
T9000 04 07 51	ø200/250	Roof passage + rain flange 35-45 dg. Ø. DW/DZ200/250
T9000 04 07 52	ø250/300	Roof passage + rain flange 35-45 dg. Ø. DW/DZ250/300
T9000 04 07 53	ø300/350	Roof passage + rain flange 35-45 dg. Ø. DW/DZ300/350
T9000 04 07 54	ø175	Angle roof clamp Ø. D175
T9000 04 07 55	ø200	Angle roof clamp Ø. D200
T9000 04 07 56	ø230	Angle roof clamp Ø. D230
T9000 04 07 57	ø250	Angle roof clamp Ø. D250
T9000 04 07 58	ø300	Angle roof clamp Ø. D300
T9000 04 07 59	ø350	Angle roof clamp Ø. D350
T9000 04 07 60	ø175	Construction clamp with adjustment range L 50-100 mm Ø. D175
T9000 04 07 61	ø200	Construction clamp with adjustment range L 50-100 mm Ø. D200
T9000 04 07 62	ø230	Construction clamp with adjustment range L 50-100 mm Ø. D230
T9000 04 07 63	ø250	Construction clamp with adjustment range L 50-100 mm Ø. D250
T9000 04 07 64	ø300	Construction clamp with adjustment range L 50-100 mm Ø. D300
T9000 04 07 65	ø350	Construction clamp with adjustment range L 50-100 mm Ø. D350
T9000 04 07 66	ø175	Construction clamp with adjustment range L 150-250 mm Ø. D175
T9000 04 07 67	ø200	Construction clamp with adjustment range L 150-250 mm Ø. D200
T9000 04 07 68	ø230	Construction clamp with adjustment range L 150-250 mm Ø. D230
T9000 04 07 69	ø250	Construction clamp with adjustment range L 150-250 mm Ø. D250
T9000 04 07 70	ø300	Construction clamp with adjustment range L 150-250 mm Ø. D300
T9000 04 07 71	ø350	Construction clamp with adjustment range L 150-250 mm Ø. D350
T9000 04 05 64	ø250	Bracket with adjustment range L 100-200 mm Ø. D250
T9000 04 05 63	-	Type II chimney bracket (500mm) 2pc.
T9000 04 05 62	-	Type III chimney bracket (750 mm) 2pc.
T9000 04 08 13	ø130	Foundation plate Ø130mm for intermediate supports
T9000 04 08 14	ø150	Foundation plate Ø150mm for intermediate supports
T9000 04 08 15	ø180	Foundation plate Ø180mm for intermediate supports
T9000 04 08 16	ø200	Foundation plate Ø200mm for intermediate supports
T9000 04 08 17	ø250	Foundation plate Ø250mm for intermediate supports
T9000 04 08 18	ø300	Foundation plate Ø300mm for intermediate supports

15. Basket strainer for cascade systems

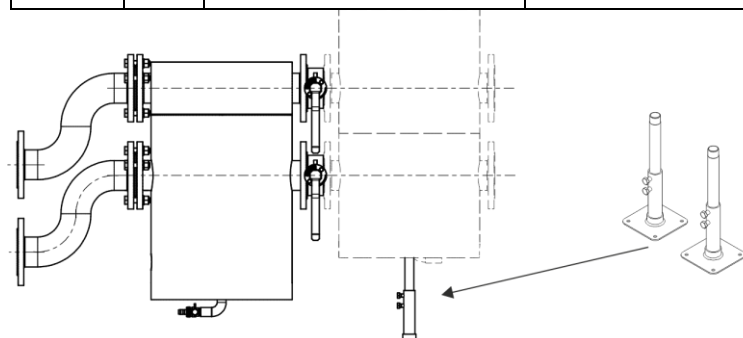
Basket strainer DN65 (for cascade boilers Ecocondens Crystal Plus 50 and cascade 2, 3 and 4 boilers Crystal Cascade 59)



Quantity	No.	Index	Name
2 pc.	1	T 9260 14 20 00	Coupling S - DN 65 for basket strainer FMK+ 150 - DN65 (for assembly with coupling CPN 150 - DN65 and CPN 150 - DN 65/DN 50, without insulation)
1 pc.	2	T 9260 14 21 00	Straight spacer DN 65 (L-350mm) for sludge trap FMK 150 - with 4 assembly screws and EPDM gasket DN 65 , with insulation
2 pc.	3	T 9260 14 28 00	Butterfly valve with handle WX65, with set of 4 mounting screw
1 pc.	4	T 9260 14 19 00	Basket strainer FMK + 150 - DN65 with accessories, with insulation, painted

OPTIONAL EQUIPMENT

Quantity	No.	Index	Name
1 pc.	-	T 9260 14 31 00	Magnetic insert ½" for sludge trap FMK 150 - DN 65

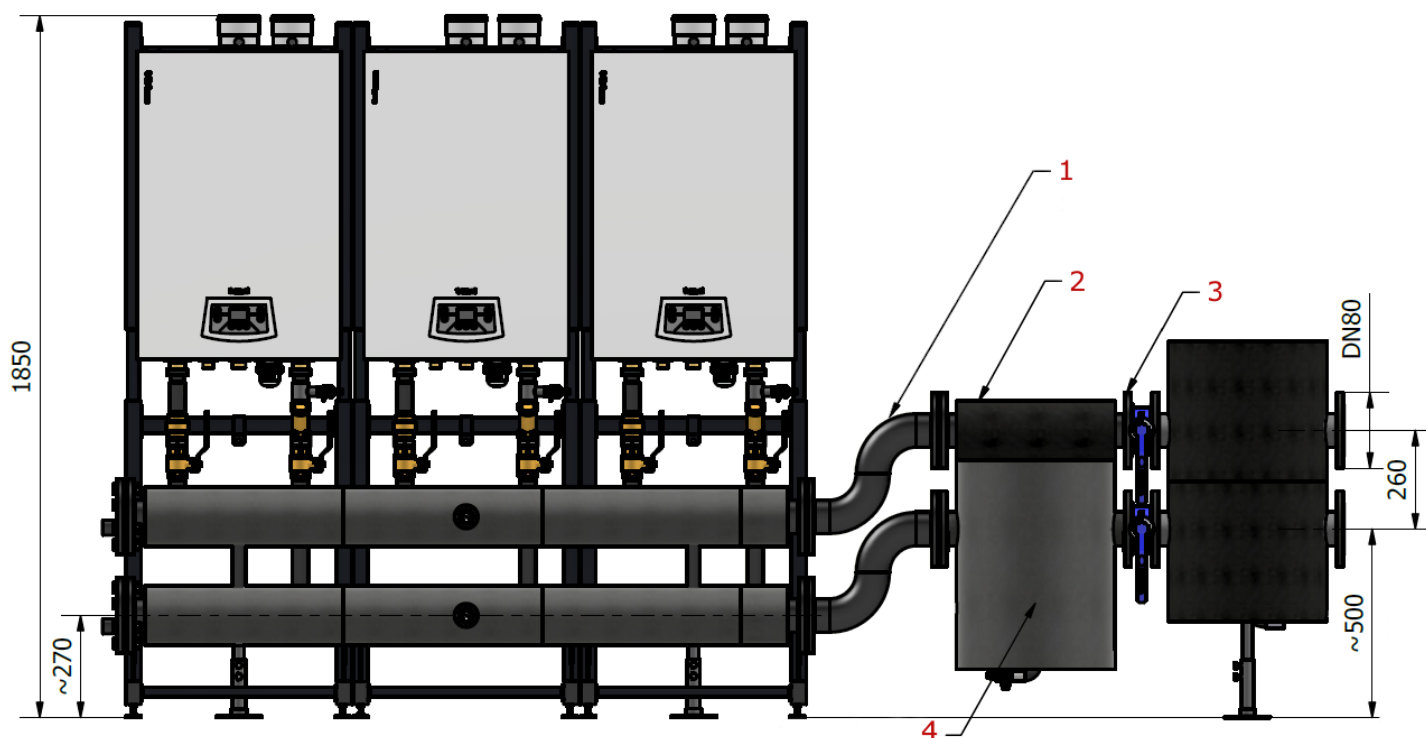


When installing the filter sludge trap in the configuration shown in the figure, the feet supplied with the basket strainer must be fitted to the hydraulic coupling!

No.	Photo	Name	Index	Description
1		Coupling S - DN 65 for sludge trap FMK+ 150 - DN65	T 9260 14 20 00	The S-connector is made of steel. It is designed to lower the installation height of the cascade manifold. The set includes one connector and a set of 4 mounting screws with gasket. Two pieces of connector are required to connect the manifold to the hydraulic coupling.
2		Straight spacer DN 65 (L-350mm) for sludge trap unit FMK 150	T 9260 14 21 00	The spacer assists in the installation of the sludge trap.
3		Butterfly valve with handle WX65	T 9260 14 28 00	The WX butterfly valve is designed to cut off and regulate the flow of cold and hot water. It is used in heating systems (with a stainless steel disc). Short construction, low pressure losses and simple assembly allow universal use of the throttle.
4		Basket strainer FMK+ 150 - DN65	T 9260 14 19 00	The FMK basket strainer is a device designed to capture solid contaminants carried by water in central heating systems, district heating networks and heat substations. Their use allows for the proper operation of heat exchangers, pumps, boilers and other system equipment, preventing the deposition of impurities that remain in the filter basket and are easy to remove. Cleaning of the medium stream is a process of mechanical separation of solid particles (e.g. grit, particles from pipe corrosion) in the filter element, which is a removable basket. The basket is made of perforated stainless steel and 500 µm filter mesh. The body of the unit is made of powder-coated steel. The filter sludge trap is equipped with a manual air vent and a drain valve. In addition, the unit can be fitted with a magnetic cartridge with the part number T 9260 14 31 00 to ensure the capture of ferromagnetic impurities.

No.	Photo	Name	Index	Description
-		Cartridge Magnetic 1/2" for filter sludge trap FMK 150 - DN 65	T 9260 14 31 00	The magnetic cartridge is used to capture metal particles, preventing the deposition of contaminants in the installation.

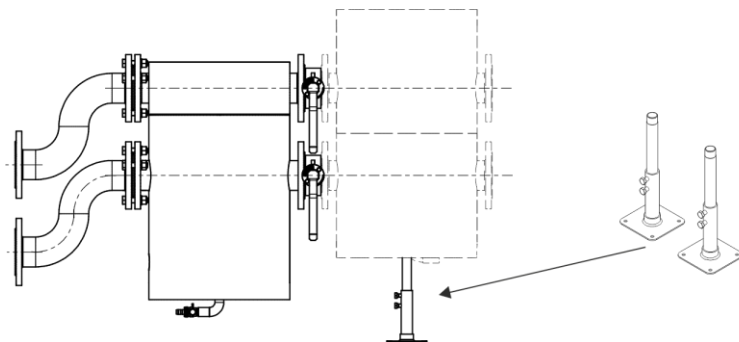
Basket strainer DN80 (for cascade boilers of 2 and 3 Ecocondens Crystal 80 or 100)



Quantity	No.	Index	Name
2 pc.	1	T 9260 14 24 00	Coupling S - DN 80 for the sludge trap FMK+ 250 - DN80 (for assembly with CPN 250 - DN80 coupling, without insulation)
1 pc.	2	T 9260 14 26 00	Straight spacer DN 80 (L-510mm) for sludge trap FMK 250 - with 4 assembly screws and EPDM gasket DN 65 , with insulation
2 pc.	3	T 9260 14 29 00	Inter-flange throttle with handle WX80, with set of 4 mounting screw
1 pc.	4	T 9260 14 22 00	Basket sludge trap FMK+ 250 - DN80 with accessories, with insulation, painted

OPTIONAL EQUIPMENT

Quantity	No.	Index	Name
1 pc.	-	T 9260 14 32 00	Magnetic cartridge 3/4" for sludge trap FMK 250 - DN 125, FMK 300 - DN 100, FMK+ 300 - DN 125.

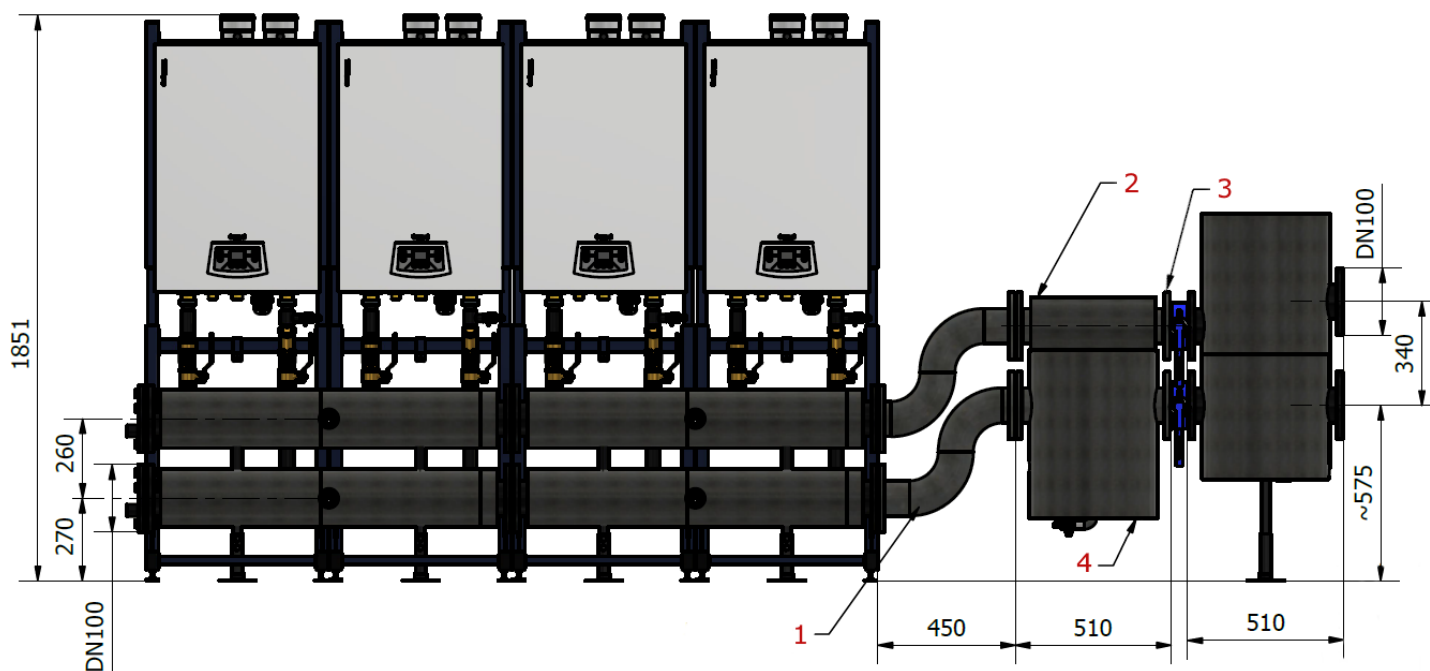


When installing the filter sludge trap in the configuration shown in the figure, the feet supplied with the basket strainer must be fitted to the hydraulic coupling!

Lp.	Photo	Name	Index	Description
1		Coupling S - DN 80 for sludge trap FMK+ 250 - DN80	T 9260 14 24 00	The S-connector is made of steel. It is designed to lower the installation height of the cascade manifold. The set includes one connector and a set of 4 mounting screws with gasket. Two pieces of connector are required to connect the manifold to the hydraulic coupling.
2		Straight spacer DN 80 (L-510mm) for sludge trap unit FMK 250	T 9260 14 26 00	The spacer assists in the installation of the sludge trap.
3		Butterfly valve with handle WX80	T 9260 14 29 00	The WX butterfly valve is designed to cut off and regulate the flow of cold and hot water. It is used in heating systems (with a stainless steel disc). Short construction, low pressure losses and simple assembly allow universal use of the throttle.
4		Basket strainer FMK+ 250 - DN80	T 9260 14 22 00	Basket strainer FMK is a device designed to capture solid contaminants carried by water in central heating systems, district heating networks and heat substations. Their use allows the proper operation of heat exchangers, pumps, boilers and other system equipment, preventing the deposition of impurities that remain in the filter basket and are easily removed. Purification of the medium stream is a process of mechanical separation of particles of solids (e.g. grit, particles from pipe corrosion) in the filter element, which is a removable basket. The basket is made of perforated stainless steel sheet and 500 µm filter mesh. The body of the unit is made of powder-coated steel. The filter-recirculator is equipped with a manual air vent and a drain valve. In addition, to ensure the capture of ferromagnetic impurities, the device can be equipped with a magnetic cartridge with index T 9260 14 32 00 .

Lp.	Photo	Name	Index	Description
-		Cartridge magnetic 3/4" for sludge trap FMK 250 - DN 80, FMK 300 - DN 100, FMK+ 300 - DN 125.	T 9260 14 32 00	The magnetic cartridge is used to capture metal particles, preventing the deposition of contaminants in the installation.

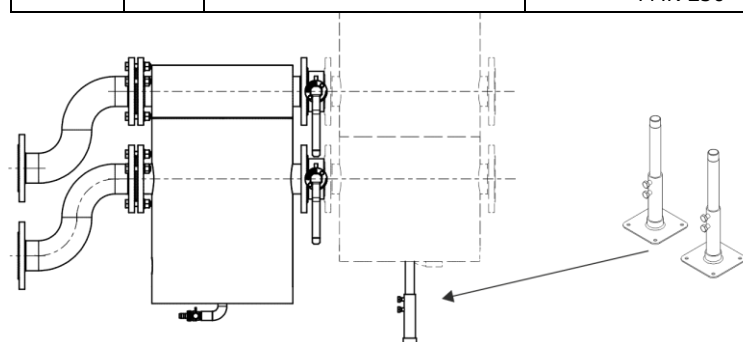
Basket strainer DN100 (for cascade boilers of 4 and 5 Ecocondens Crystal 80 or 100 and cascade 5 and 6 boilers Crystal Cascade 59)



Quantity	No.	Index	Name
2 pc.	1	T 9260 14 25 00	Coupling S - DN 100 for the sludge trap FMK+ 300 - DN100 (for assembly with CPN 300 - DN100 coupling, without insulation)
1 pc.	2	T 9260 14 27 00	Straight spacer DN 100 (L-510mm) for sludge trap FMK 300 - DN 100 with 4 mounting screws and EPDM gasket DN 65 , with insulation
2 pc.	3	T 9260 14 30 00	Butterfly valve with handle WX100, with set of 4 mounting screw
1 pc.	4	T 9260 14 23 00	Basket strainer FMK+ 300 – DN100 with accessories, with insulation, painted

OPTIONAL EQUIPMENT

Quantity	No.	Index	Name
1 pc.	-	T 9260 14 32 00	Magnetic cartridge 3/4" for sludge trap FMK 250 - DN 125, FMK 300 - DN 100, FMK+ 300 - DN 125.

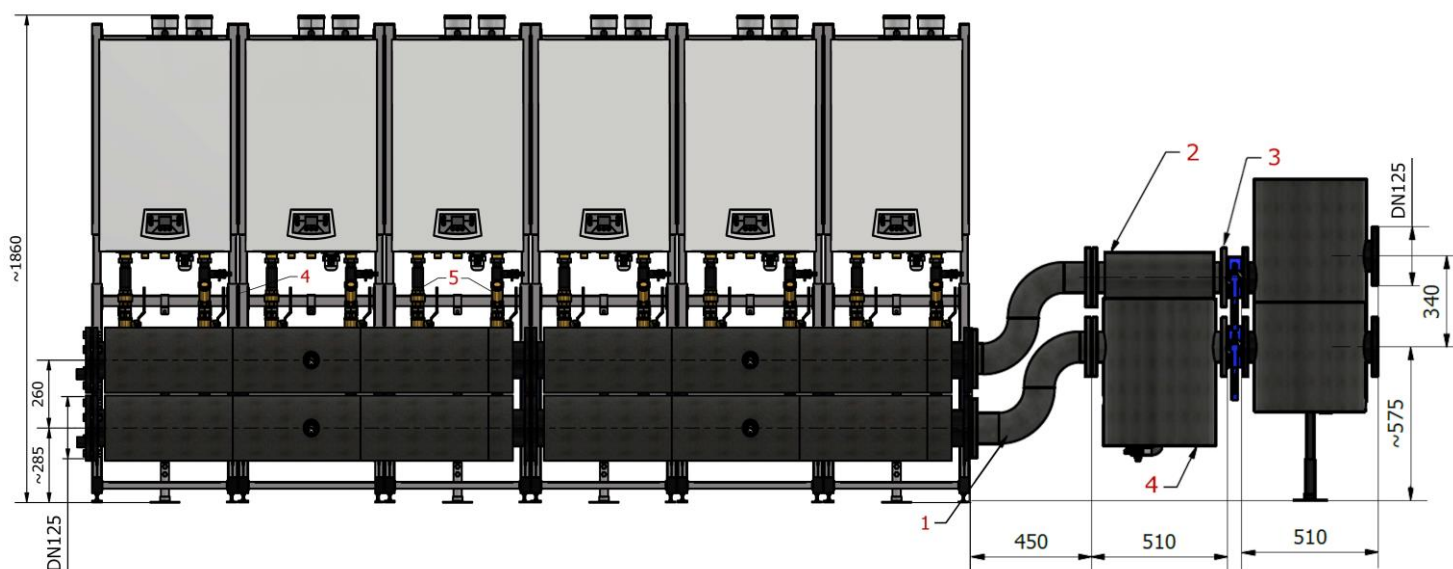


When installing the filter sludge trap in the configuration shown in the figure, the feet supplied with the basket strainer must be fitted to the hydraulic coupling!

Lp.	Photo	Name	Index	Description
1		Coupling S - DN 100 for sludge trap FMK+ 300 - DN100	T 9260 14 25 00	The S-connector is made of steel. It is designed to lower the installation height of the cascade manifold. The set includes one connector and a set of 4 mounting screws with gasket. Two pieces of connector are required to connect the manifold to the hydraulic coupling.
2		Straight spacer DN 100 (L-510mm) for sludge trap unit FMK 300	T 9260 14 27 00	The spacer assists in the installation of the sludge trap.
3		Butterfly valve with handle WX100	T 9260 14 30 00	The WX butterfly valve is designed to cut off and regulate the flow of cold and hot water. It is used in heating systems (with a stainless steel disc). Short construction, low pressure losses and simple assembly allow universal use of the throttle.
4		Basket strainer FMK+ 300 - DN100	T 9260 14 23 00	Basket strainer FMK is a device designed to capture solid contaminants carried by water in central heating systems, district heating networks and heat substations. Their use allows the proper operation of heat exchangers, pumps, boilers and other system equipment, preventing the deposition of impurities that remain in the filter basket and are easily removed. Purification of the medium stream is a process of mechanical separation of particles of solids (e.g. grit, particles from pipe corrosion) in the filter element, which is a removable basket. The basket is made of perforated stainless steel sheet and 500 µm filter mesh. The body of the unit is made of powder-coated steel. The filter-recirculator is equipped with a manual air vent and a drain valve. In addition, to ensure the capture of ferromagnetic impurities, the device can be equipped with a magnetic cartridge with index T 9260 14 32 00 .

Lp.	Photo	Name	Index	Description
-		Cartridge magnetic 3/4" for sludge trap FMK 250 - DN 80, FMK 300 - DN 100, FMK+ 300 - DN 125.	T 9260 14 32 00	The magnetic cartridge is used to capture metal particles, preventing the deposition of contaminants in the installation.

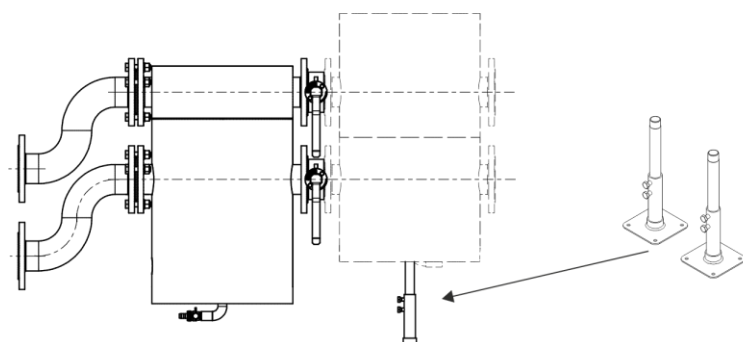
Basket strainer DN125 (for cascade boilers of 6 Ecocondens Crystal 80 or 100)



Quantity	No.	Index	Name
2 pc.	1	T 9260 14 37 00	Coupling S - DN 125 for the sludge trap FMK+ 300 - DN100 (for assembly with CPN 300 - DN125 coupling, without insulation)
1 pc.	2	T 9260 14 36 00	Straight spacer DN 125 (L-510mm) for sludge trap FMK 300 -. DN 125 with 4 mounting screws and EPDM gasket DN 65 , with insulation
2 pc.	3	T 9260 14 35 00	Butterfly valve with handle WX125, with set of 4 mounting screw
1 pc.	4	T 9260 14 39 00	Basket strainer FMK+ 300 – DN125 with accessories, with insulation, painted

OPTIONAL EQUIPMENT

Quantity	No.	Index	Name
1 pc.	-	T 9260 14 32 00	Magnetic cartridge 3/4" for sludge trap FMK 250 - DN 125, FMK 300 - DN 100, FMK+ 300 - DN 125.



When installing the filter sludge trap in the configuration shown in the figure, the feet supplied with the basket strainer must be fitted to the hydraulic coupling!

Lp.	Photo	Name	Index	Description
1		Coupling S - DN 125 for sludge trap FMK+ 300 - DN125	T 9260 14 37 00	The S-connector is made of steel. It is designed to lower the installation height of the cascade manifold. The set includes one connector and a set of 4 mounting screws with gasket. Two pieces of connector are required to connect the manifold to the hydraulic coupling.
2		Straight spacer DN 125 (L-510mm) for sludge trap unit FMK 300	T 9260 14 36 00	The spacer assists in the installation of the sludge trap.
3		Butterfly valve with handle WX100	T 9260 14 35 00	The WX butterfly valve is designed to cut off and regulate the flow of cold and hot water. It is used in heating systems (with a stainless steel disc). Short construction, low pressure losses and simple assembly allow universal use of the throttle.
4		Basket strainer FMK+ 300 - DN125	T 9260 14 39 00	Basket strainer FMK is a device designed to capture solid contaminants carried by water in central heating systems, district heating networks and heat substations. Their use allows the proper operation of heat exchangers, pumps, boilers and other system equipment, preventing the deposition of impurities that remain in the filter basket and are easily removed. Purification of the medium stream is a process of mechanical separation of particles of solids (e.g. grit, particles from pipe corrosion) in the filter element, which is a removable basket. The basket is made of perforated stainless steel sheet and 500 µm filter mesh. The body of the unit is made of powder-coated steel. The filter-recirculator is equipped with a manual air vent and a drain valve. In addition, to ensure the capture of ferromagnetic impurities, the device can be equipped with a magnetic cartridge with index T 9260 14 32 00 .

Lp.	Zdjęcie	Nazwa	Numer indeksu	Opis produktu
-		Cartridge magnetic 3/4" for sludge trap FMK 250 - DN 80, FMK 300 - DN 100, FMK+ 300 - DN 125.	T 9260 14 32 00	The magnetic cartridge is used to capture metal particles, preventing the deposition of contaminants in the installation.

16. Condensate neutralizers

Neutralizers of the NEUTRA series are professional devices designed to neutralize condensate discharged from high-power condensing boilers:

- EcoCondens **Crystal Plus 50**
- **Crystal Cascade 59**
- EcoCondens **Crystal 80**
- EcoCondens **Crystal 100**

or a cascade system consisting of high-power boilers.

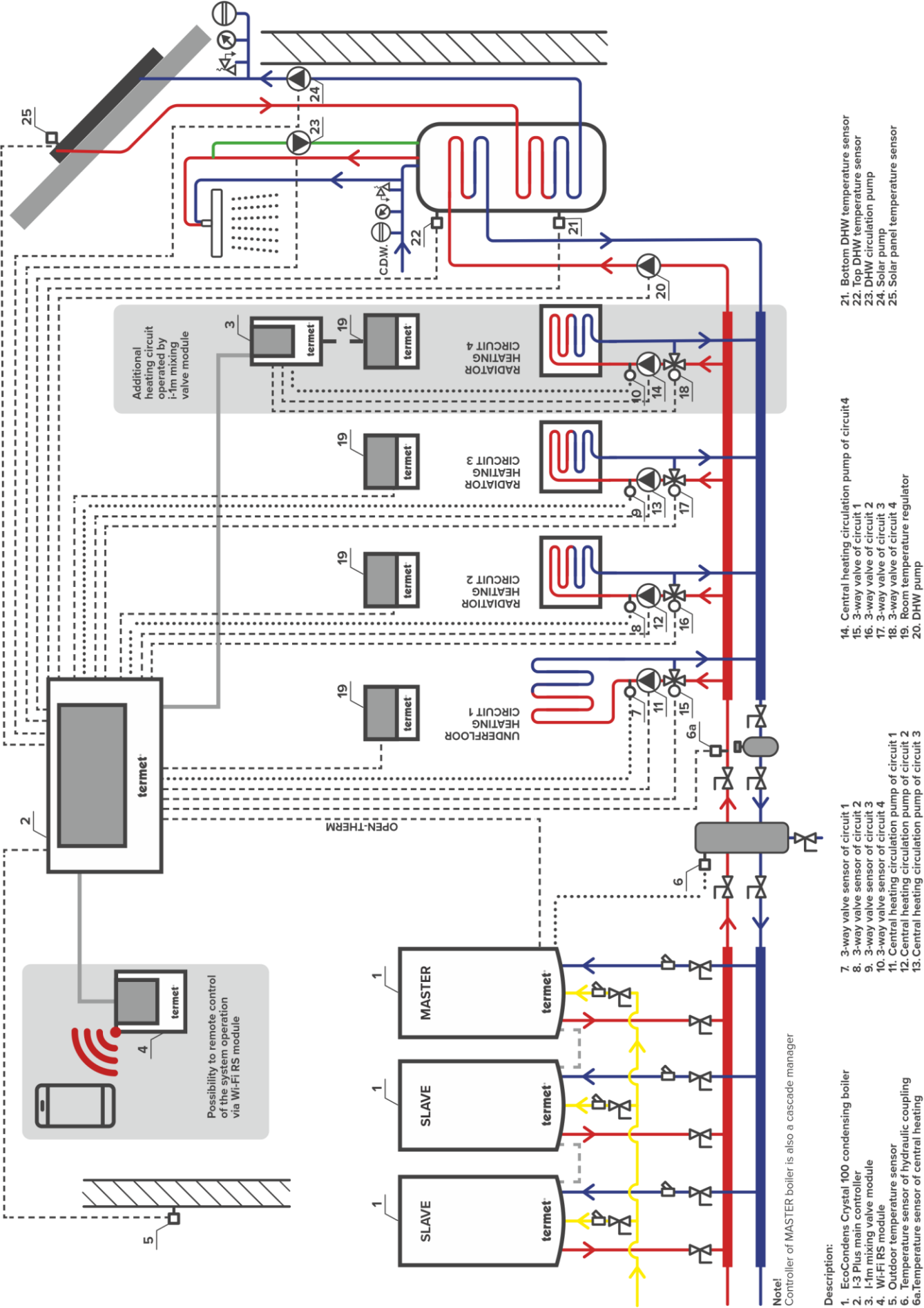
Photo	Product name	Index	Description
	NEUTRA 200	T 9000 04 05 32	NEUTRA 200 made of ARTIFICIAL PLASTICS Condensate neutralizer designed for high-power condensing boiler or cascade systems with a maximum output of up to 200 kW (max. condensate flow 60l/h)
	NEUTRA 350	T 9000 04 05 33	NEUTRA 350 made of ARTIFICIAL PLASTICS Condensate neutralizer designed for high-power condensing boiler or cascade systems with a maximum output of up to 350 kW
	NEUTRO 70	T 9000 04 05 55	NEUTRO 70 STEEL Condensate neutralizer designed for high-power condensing boiler or cascade systems with maximum power up to 700 kW (max. condensate flow 70l/h)
	NEUTRA 5	T 9000 04 05 58	NEUTRA 5 Refill of 2 kg
	NEUTRA 6	T 9000 04 05 59	NEUTRA 6 Refill of 3 kg
	NEUTRA 1	T 9000 04 05 60	NEUTRA 1 Refill of 8 kg

17. Control of the installation behind the hydraulic coupling

Automatics

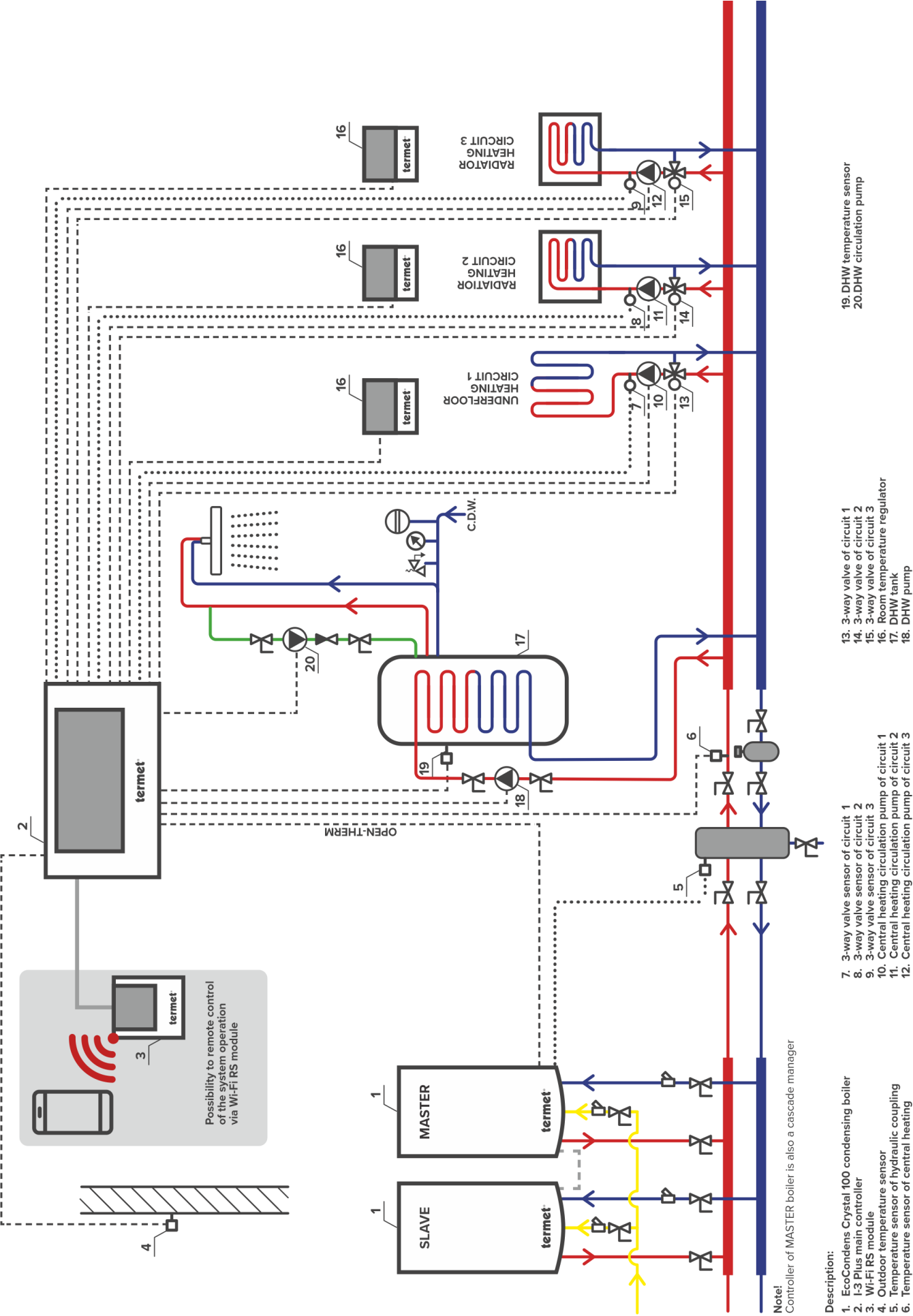
Photo	Index	Product name
	T 9611 00 00 00	Master controller I-3 Plus - modern, multifunctional controller of heating circuits - optimal operation of the system even in the case of extended boiler rooms - large, comfortable to use, color touch screen - graphical representation of the boiler room layout - clear and intuitive "installer menu" - great freedom in the configuration of devices I-3 Plus main controller equipment: - hot water sensor - outdoor temperature sensor - valve temperature sensor - boiler return temperature sensors Functions performed by the I-3 Plus controller: - smooth control of three mixing valves - possibility to connect two additional control modules for mixing valves (Termet I-1m) - possibility to connect Termet Wi-Fi RS module - cooperation with three room regulators with two-state communication - control of the hot water pump - weather control and weekly control - possibility to configure two voltage-free outputs - possibility to configure two voltage outputs - possibility to operate solar panels - possibility to configure two 0-10V outputs - possibility to connect solar collector pump control via PWM output - Open-Therm (OT) communication
	T 9611 01 00 00	Expansion module I-1m is designed to operate a three- or four-way mixing valve with the possibility of connecting an additional valve pump. This controller is equipped with a weather control function and a weekly program Functions performed by the Termet I-1m: - smooth control of the three- or four-way valve - pump operation control - return temperature protection - weather and weekly control Correct operation of the module when using Termet I-3 Plus main controller or room controller with RS communication
	T 9611 02 00 00	Wi-Fi RS Internet module is a device that allows you to remotely control the operation of the system via the Internet. The user controls the status of the components of the central heating system. It is possible to view the temperature history in the form of clear graphs and view the controller's alarm history. Connectivity with the Internet takes place through Wi-Fi signal Features when using Termet I-3 Plus: - remote control of system operation via the Internet - preview of all elements of the system - possibility to edit parameters of the main controller (keeping the structure and order of the menu) - preview of temperature history - preview of the history of events (alarms and parameter changes) - edition of set temperature on the room controller - possibility to operate many modules from one administrative account - e-mail notifications about alarms The eModul app is available for download from the Google Play store (Android) or Apple Store (iOS)

Example diagram showing boiler room with solar system



This scheme is not a project of boiler house.

An example diagram showing a boiler room with a DHW tank



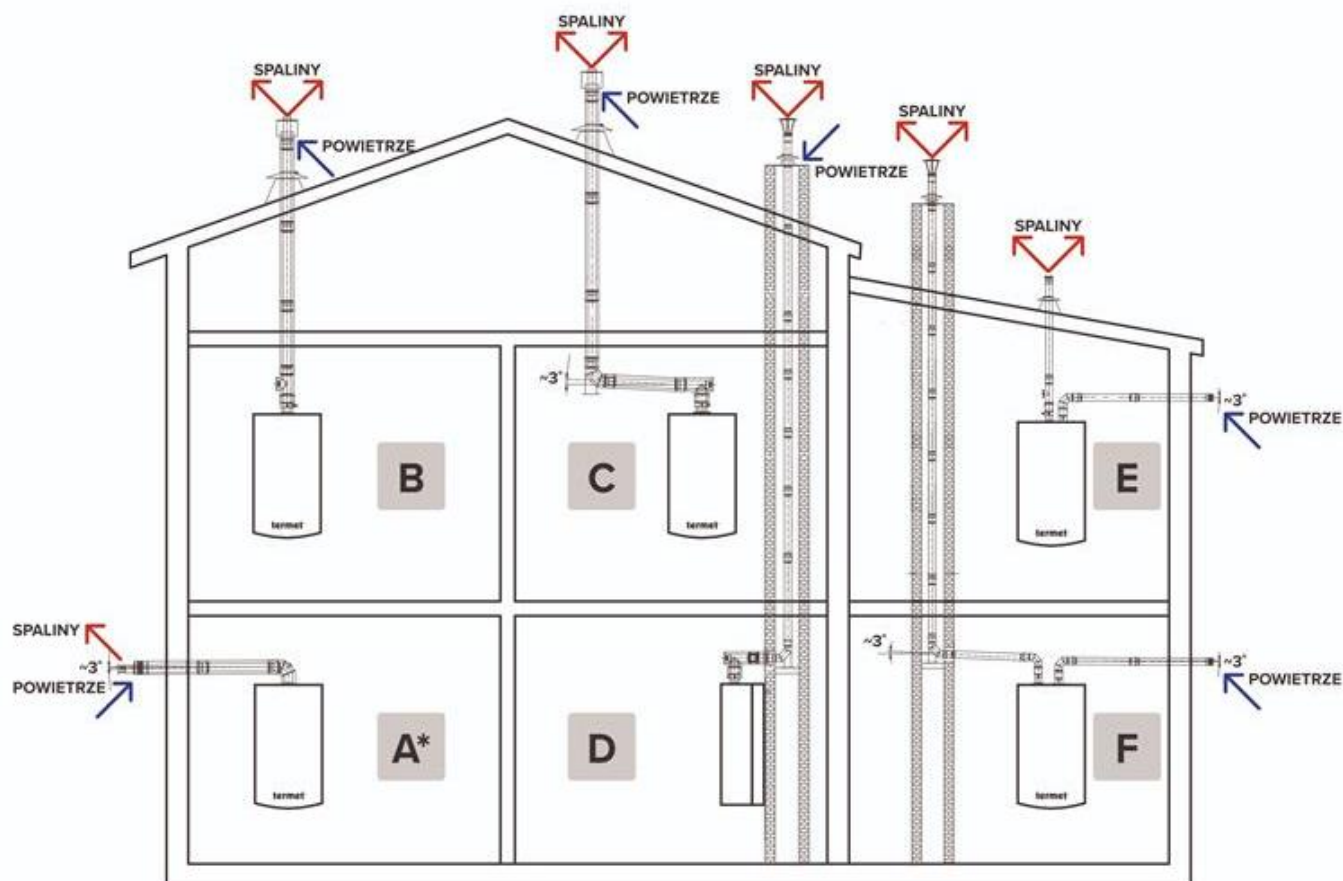
This scheme is not a project of boiler house.

18. Optional accessories

Photo	Index	Product name
	T 9612 00 00 00	TERMET ST-2801 - intelligent maintenance of the room temperature setpoint - intelligent control of the preset temperature of the C.H. - change of the room setpoint based on the outside temperature (weather control) - external temperature preview - weekly programme of room heating and boiler - displaying information about the alarms of the boiler - access to heating device temperature charts - alarm clock - parental blockade Open-Therm protocol
	T 9615 00 00 00	TERMET ST-2801 z Wi-Fi - intelligent maintenance of the room temperature setpoint - intelligent control of the preset temperature of the C.H. - change of the room setpoint based on the outside temperature (weather control) - external temperature preview - weekly programme of room heating and boiler - displaying information about the alarms of the boiler - access to heating device temperature charts - alarm clock - parental blockade Open-Therm protocol - Wi-Fi module allows you to control some parameters
	T 9449 13 00 00	TERMET ST-294 V1 - a wired, daily temperature controller - signaling of boiler operation and battery discharge - temperature control range from 5 °C to 35 °C - temperature setting with an accuracy of 0.1 °C - an LCD display - power supply with 2 AAA batteries On/Off protocol
	T 9449 10 00 00	TERMET ST-292 V2 - manual program - day / night program - weekly control - range of temperature control 5°C - 35°C - touch buttons - temporary backlight of a display - measurement error +/- 1°C - multifunction display of time, day, hour, current temperature and executed program of action On/Off protocol
	T 9449 11 00 00	TERMET ST-292 V3 - manual program - day / night program - weekly control - range of temperature control 5°C - 35°C - touch buttons - temporary backlight of a display - measurement error +/- 1°C - multifunction display of time, day, hour, current temperature and executed program of action On/Off protocol
	WKC 0567 000 000	Outdoor temperature sensor Interchangeable with WKC 0566 00 00 00 wired, requires application two-core cable with a core cross-section of 0.5 mm ² (maximum cable length is 50 m)
	WKZ 5140 12 00 00	Three-way valve G1" (230V) for Ecocondens Crystal 80 i Ecocondens Crystal 100 boilers
	WKC 5140 00 00 91	Tank NTC sensor (12kΩ) for Crystal Cascade 59, Ecocondens Crystal 80 and 100 boilers
	Z 5410 50 04 00	Three-way valve motor additional equipment for Crystal Cascade 59 boilers

19. Maximum lengths of air-flue pipes

Optima Inox II boilers



System	Trade name	Ø60/Ø100	Ø80/Ø125
A*	Optima Inox II 20	18 m	25 m
B lub C	Optima Inox II 20	18 m	25 m
	Optima Inox II 25	12 m	25 m
	Optima Inox II 35	12 m	20 m
D	Optima Inox II 20	18 m	25 m
	Optima Inox II 25	12 m	25 m
	Optima Inox II 35	12 m	20 m
E lub F	Optima Inox II 20	18 m	25 m
	Optima Inox II 25	12 m	25 m
	Optima Inox II 35	12 m	20 m

System	Trade name	Ø80 x Ø80
E lub F	Optima Inox II 20	25 + 25 = 50
	Optima Inox II 25	25 + 25 = 50
	Optima Inox II 35	20 + 20 = 40

* Horizontal exhaust system through a wall (in Poland):

According to the Regulation of the Minister of Infrastructure of April 12, 2002 (Journal of Laws of 2002, No. 75, item 690, as amended), §175.1, this solution may be used in residential buildings if gas appliances with a closed combustion chamber have a nominal thermal output of no more than:

- 21 kW - in detached single-family buildings, farm buildings, and individual recreation buildings,
- 5 kW - in other residential buildings.

Ecocondens Crystal Plus 50, Crystal Cascade 59, Crystal 80, Crystal 100 boilers

Index	Name	Crystal Plus 50 kW	Crystal Cascade 59 kW	Crystal 80 kW	Crystal 100 kW
-	-	m	m	m	m
INDEPENDENT SYSTEM (with check valve - according to local regulations)					
T 9000 04 05 08	Cascade Ø150mm for two boilers	50	50	50	50
T 9000 04 05 09	Cascade Ø180mm for two boilers	30	50	50	50
T 9000 04 05 10	Cascade Ø180mm for three boilers	50	50	50	50
T 9000 04 05 11	Cascade Ø200mm for three boilers	50	50	50	50
T 9000 04 05 73	Cascade Ø250mm for three boilers	50	50	50	50
T 9000 04 05 12	Cascade Ø200mm for four boilers	50	50	50	50
T 9000 04 05 13	Cascade Ø250mm for four boilers	50	50	50	50
T 9000 04 05 14	Cascade Ø250mm for five boilers	50	50	50	50
T 9000 04 05 15	Cascade Ø300mm for five boilers	50	50	50	50
T 9000 04 05 16	Cascade Ø250mm for six boilers	x	25	25	25
T 9000 04 05 17	Cascade Ø300mm for six boilers	x	30	25	25

Index	Name	Crystal Plus 50 kW	Crystal Cascade 59 kW
-	-	m	m
CONCENTRIC SYSTEM (with check valve - according to local regulations)			
T 9000 04 04 01	Concentric cascade Ø150/ Ø200 with outlets Ø80/Ø125 for two boilers	16	16
T 9000 04 04 03	Concentric cascade Ø180/ Ø250 with outlets Ø80/Ø125 for two boilers	50	50
T 9000 04 04 04	Concentric cascade Ø180/ Ø250 with outlets Ø80/Ø125 for three boilers	33	33
T 9000 04 04 05	Concentric cascade Ø180/ Ø290 with outlets Ø80/Ø125 for two boilers	50	50
T 9000 04 04 07	Concentric cascade Ø180/ Ø290 with outlets Ø80/Ø125 for three boilers	50	50
T 9000 04 04 09	Concentric cascade Ø200/ Ø300 with outlets Ø80/Ø125 for two boilers	50	50
T 9000 04 04 10	Concentric cascade Ø200/ Ø300 with outlets Ø80/Ø125 for three boilers	50	50
T 9000 04 04 11	Concentric cascade Ø200/ Ø300 with outlets Ø80/Ø125 for four boilers	50	50
T 9000 04 04 12	Concentric cascade Ø250/ Ø350 with outlets Ø80/Ø125 for three boilers	50	50
T 9000 04 04 13	Concentric cascade Ø250/ Ø350 with outlets Ø80/Ø125 for four boilers	50	50
T 9000 04 04 14	Concentric cascade Ø300/ Ø400 with outlets Ø80/Ø125 for four boilers	50	50

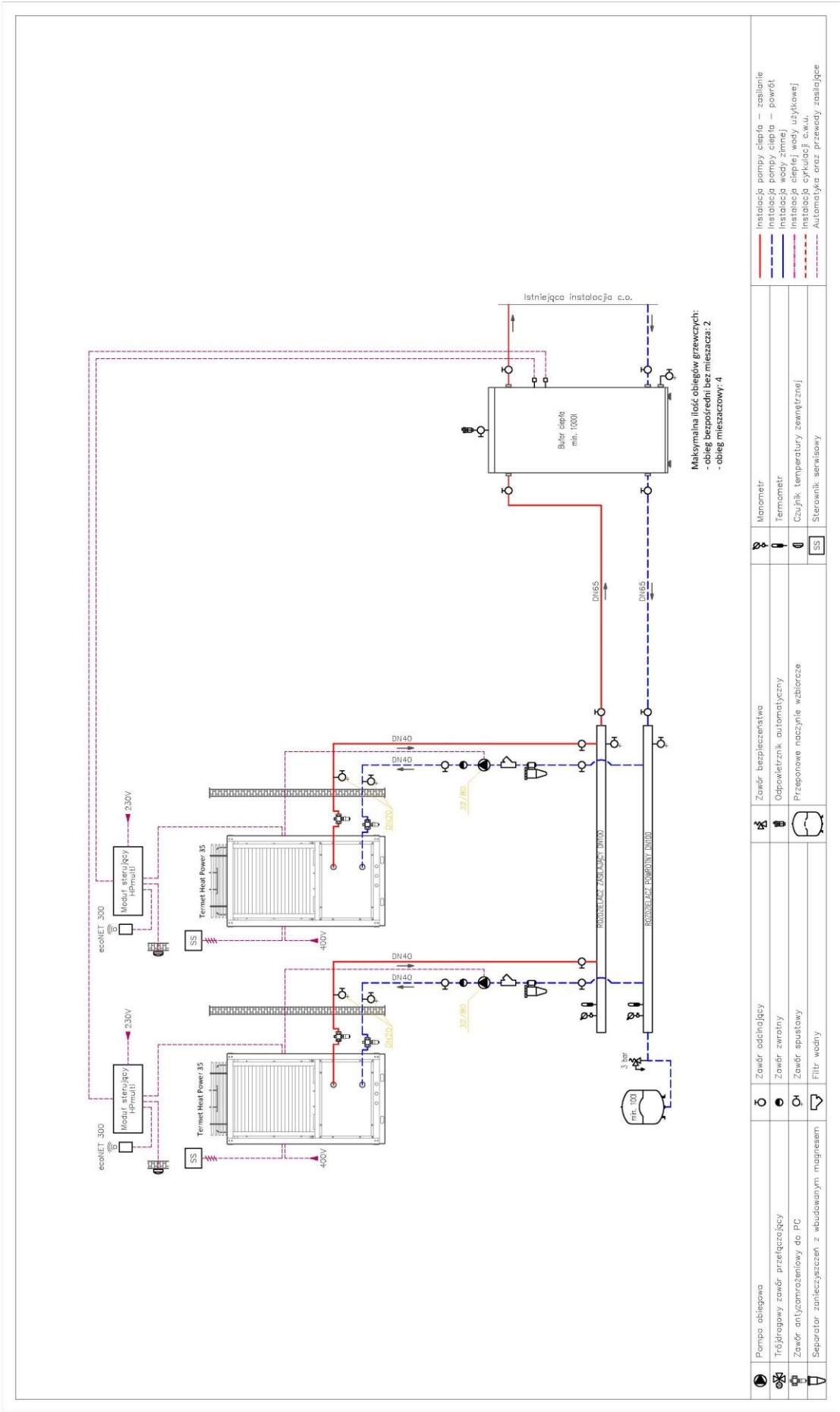
Index	Name	Crystal Plus 50 kW	Crystal Cascade 59 kW	Crystal 80 kW	Crystal 100 kW
-	-	m	m	m	m
INDEPENDENT SYSTEM (without non-return valve - according to local regulations)					
T 9000 04 05 08	Cascade Ø150mm for two boilers	50	50	x	x
T 9000 04 05 09	Cascade Ø180mm for two boilers	50	50	50	50
T 9000 04 05 10	Cascade Ø180mm for three boilers	x	50	x	x
T 9000 04 05 11	Cascade Ø200mm for three boilers	50	50	x	x
T 9000 04 05 73	Cascade Ø250mm for three boilers	50	50	50	50
T 9000 04 05 12	Cascade Ø200mm for four boilers	x	x	x	x
T 9000 04 05 13	Cascade Ø250mm for four boilers	50	50	50	50
T 9000 04 05 14	Cascade Ø250mm for five boilers	50	50	x	x
T 9000 04 05 15	Cascade Ø300mm for five boilers	50	50	50	50
T 9000 04 05 16	Cascade Ø250mm for six boilers	x	25	x	x
T 9000 04 05 17	Cascade Ø300mm for six boilers	x	30	25	x

Index	Name	Crystal Plus 50 kW	Crystal Cascade 59 kW
-	-	m	m
CONCENTRIC SYSTEM (without non-return valve - according to local regulations)			
T 9000 04 04 01	Concentric cascade Ø150/ Ø200 with outlets Ø80/Ø125 for two boilers	16	16
T 9000 04 04 03	Concentric cascade Ø180/ Ø250 with outlets Ø80/Ø125 for two boilers	50	50
T 9000 04 04 04	Concentric cascade Ø180/ Ø250 with outlets Ø80/Ø125 for three boilers	33	50
T 9000 04 04 05	Concentric cascade Ø180/ Ø290 with outlets Ø80/Ø125 for two boilers	50	50
T 9000 04 04 07	Concentric cascade Ø180/ Ø290 with outlets Ø80/Ø125 for three boilers	50	50
T 9000 04 04 09	Concentric cascade Ø200/ Ø300 with outlets Ø80/Ø125 for two boilers	50	50
T 9000 04 04 10	Concentric cascade Ø200/ Ø300 with outlets Ø80/Ø125 for three boilers	50	50
T 9000 04 04 11	Concentric cascade Ø200/ Ø300 with outlets Ø80/Ø125 for four boilers	50	x
T 9000 04 04 12	Concentric cascade Ø250/ Ø350 with outlets Ø80/Ø125 for three boilers	50	50
T 9000 04 04 13	Concentric cascade Ø250/ Ø350 with outlets Ø80/Ø125 for four boilers	50	50
T 9000 04 04 14	Concentric cascade Ø300/ Ø400 with outlets Ø80/Ø125 for four boilers	50	50

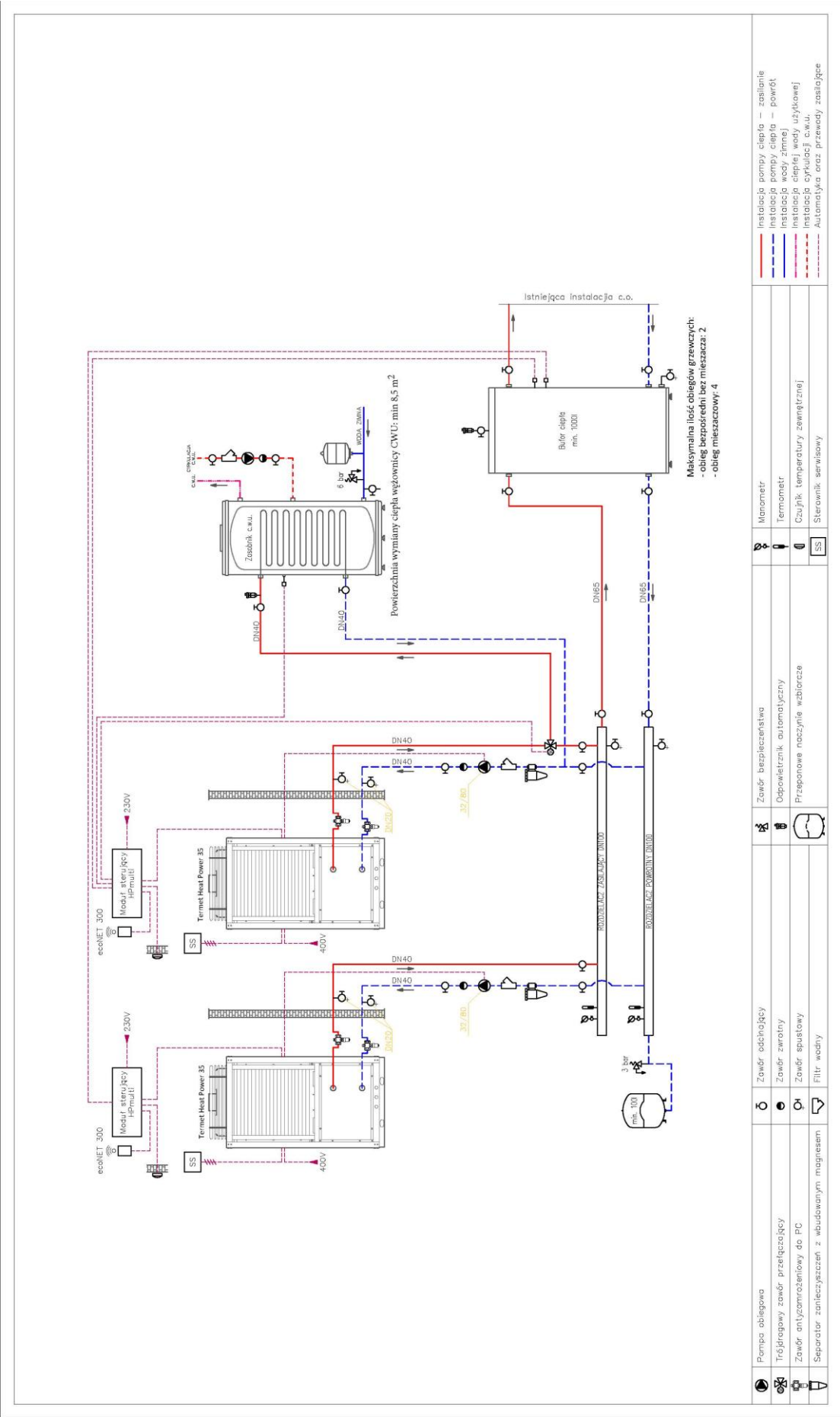
20. Schematic diagrams of cascades – Termet Heat Power heat pumps

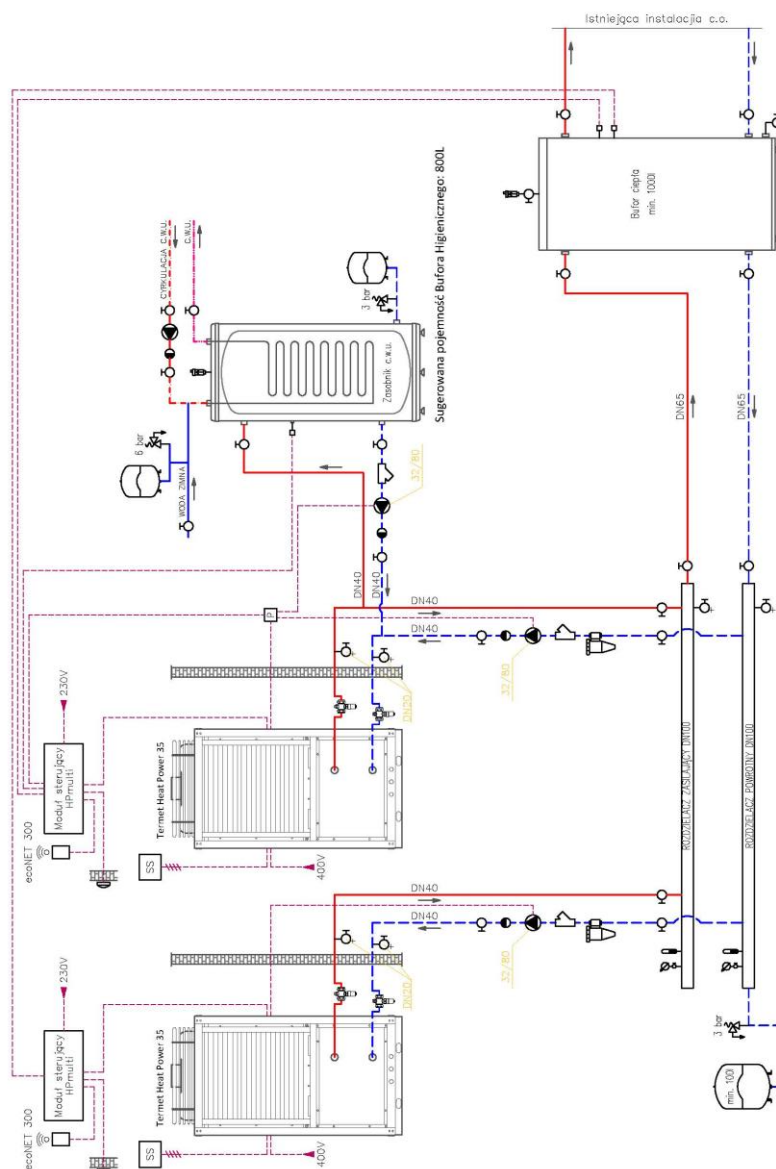
The diagrams show the possibilities of managing a cascade based on Termet Heat heat pumps – the diagrams do not constitute a boiler room project.

2 x Termet Heat Power 35 kW + c.h. buffer



2 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. tank

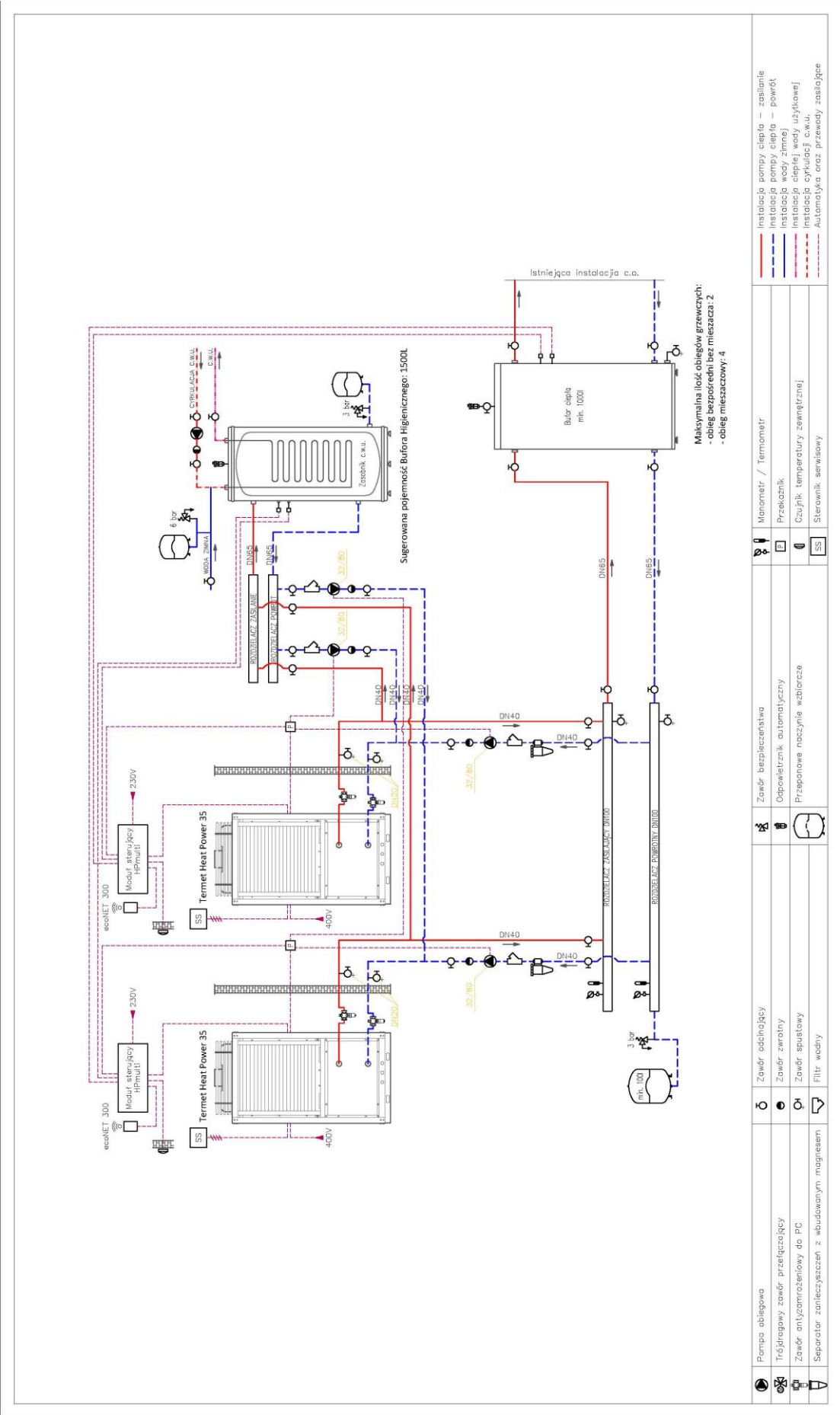




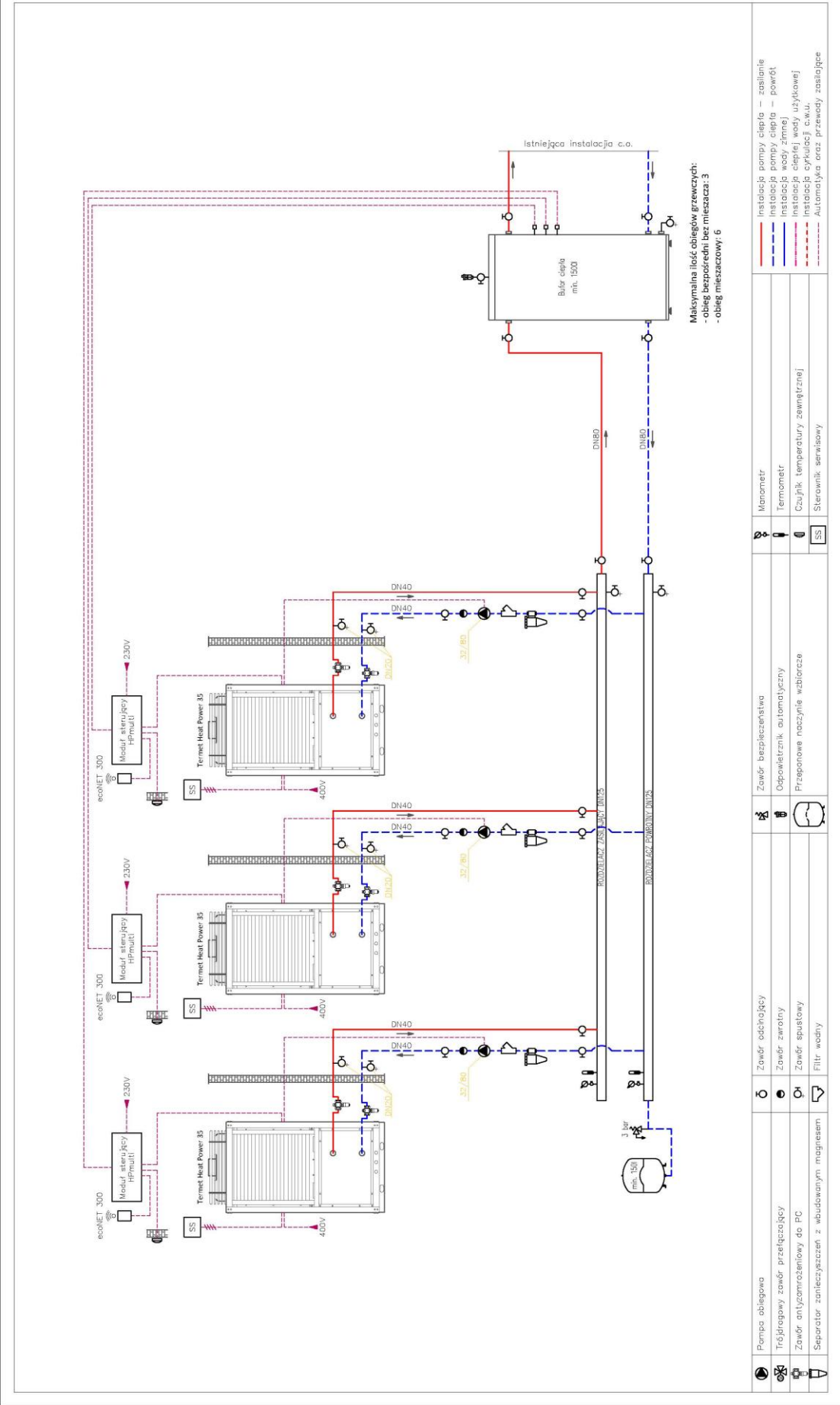
Maksymalna ilość obiegów grzewczych:
obieg bezpośredni bez mieszacza: 2
obieg mieszaczowy: 4

	Pompa obiegowa		Zawór odcinający		Zawór bezpieczeństwa		Instalacja pompy ciepła – zasilanie
	Trójdrogowy zawór przełączający		Zawór zwrotny		Odpowietlnik automatyczny		Instalacja pompy ciepła – powrót
	Zawór anizocentryczowy do PC		Zawór spustowy		Przepływomierz naczyniowy wlotowy		Instalacja wody zimnej
	Sensoryczny przełącznik z wbudowanym monitorowaniem		Elektryczny zawór		Sterownik serwisowy		Instalacja ciepłej wody użytkowej
							Instalacja cyrkulacji c.w.u.
							Automatyczny zawór przełączający zasilanie

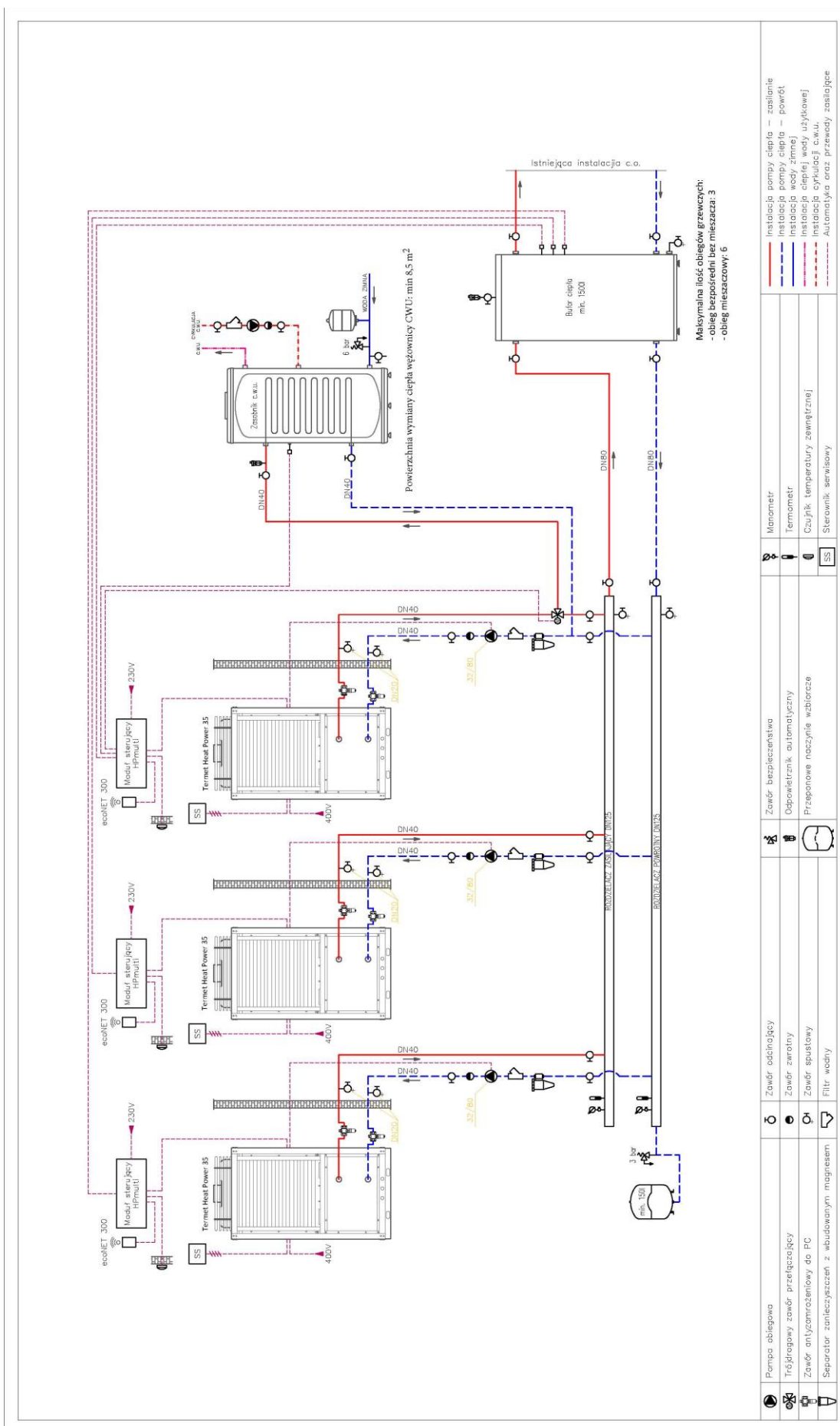
2 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer (two pumps)



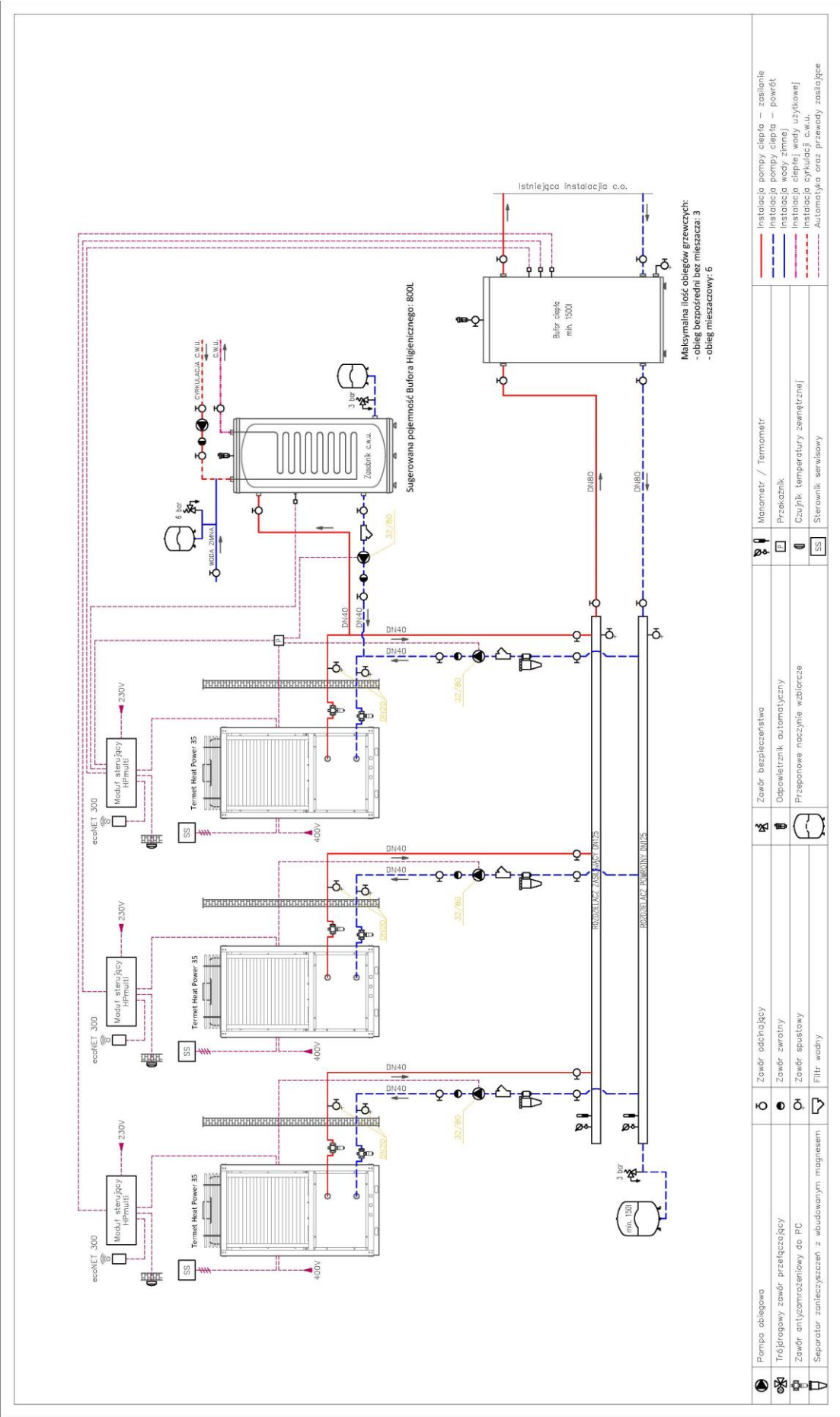
3 x Termet Heat Power 35 kW + c.h. buffer



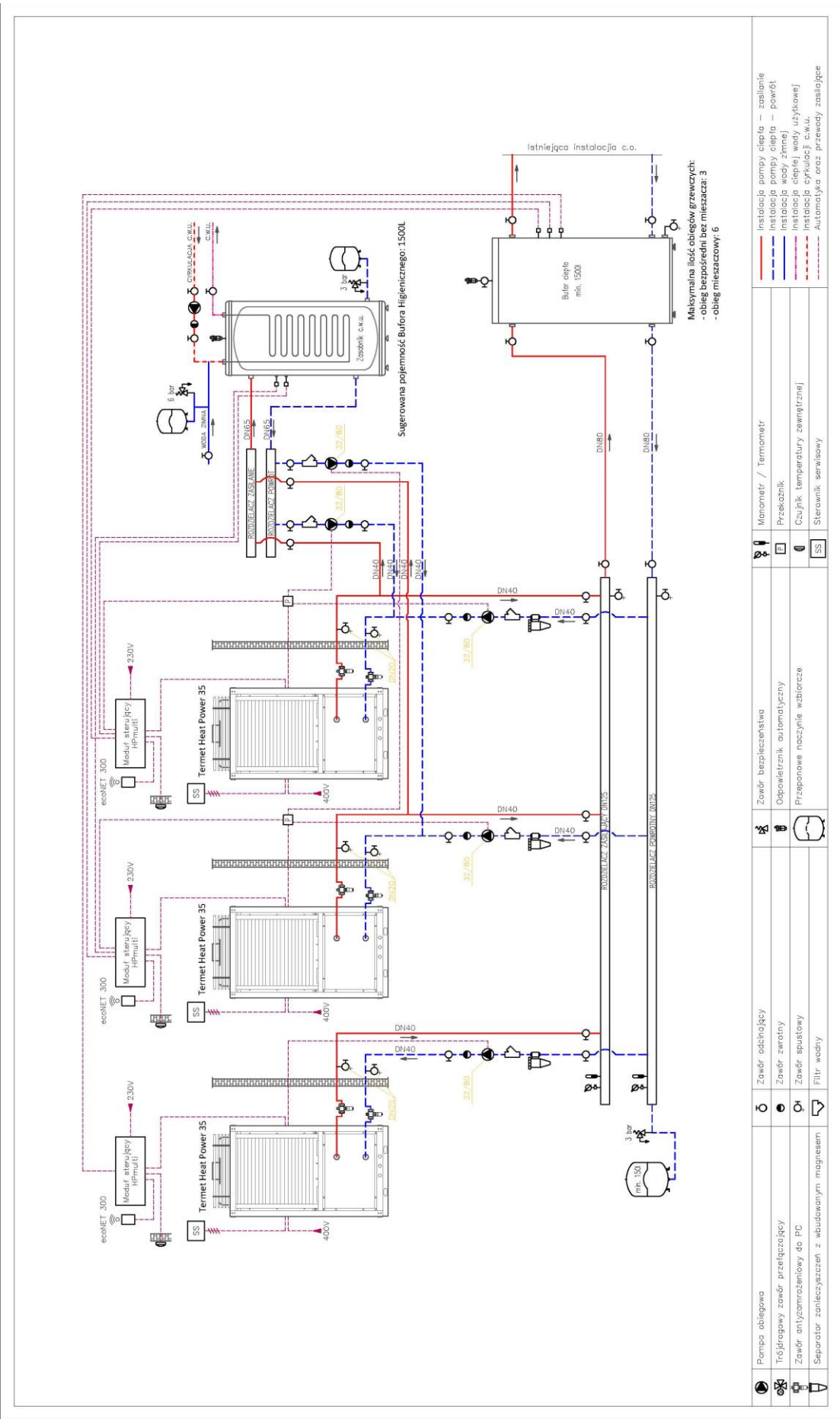
3 x Termet Heat Power 35 kW + c.h. buffer + d.h.w. tank



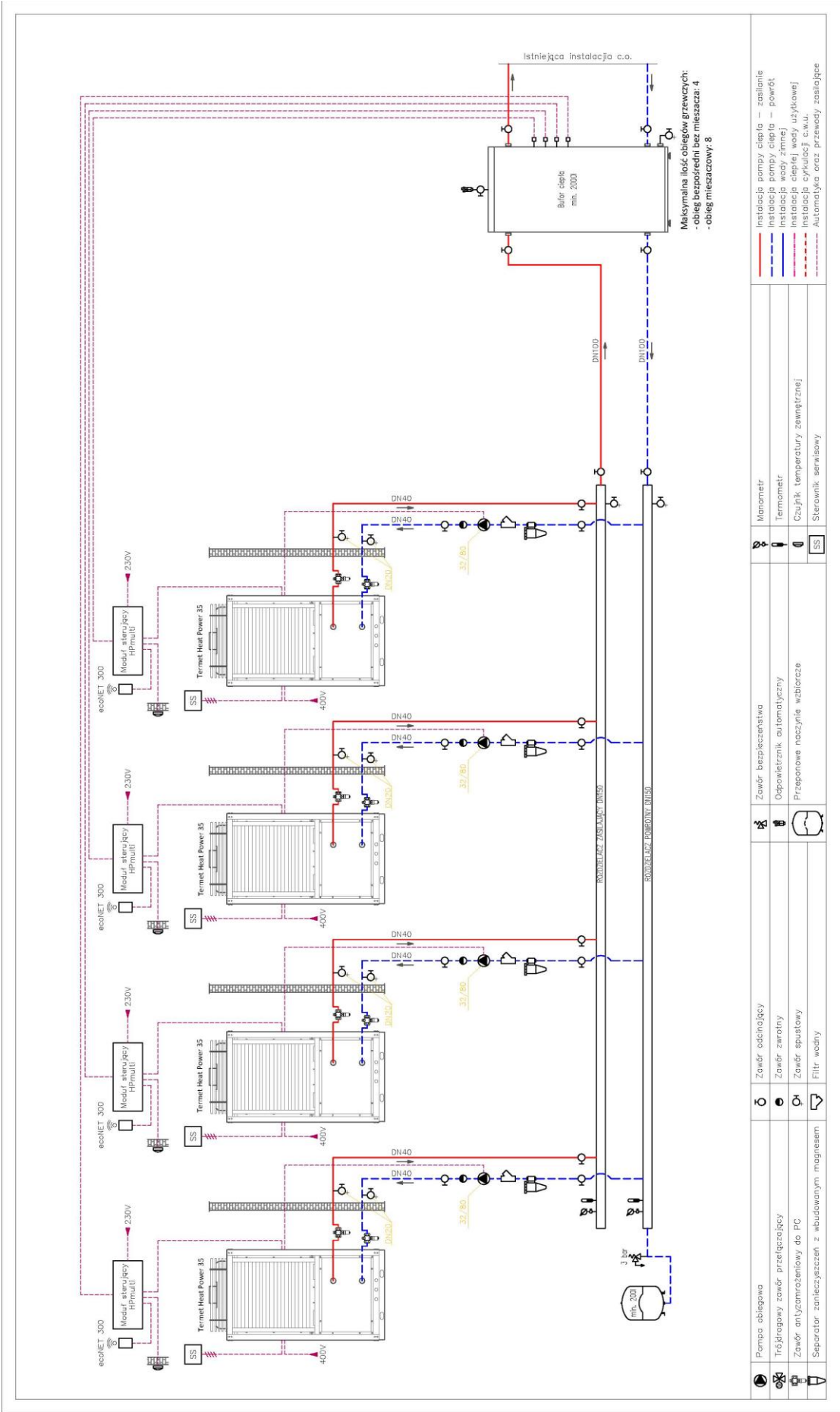
3 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer



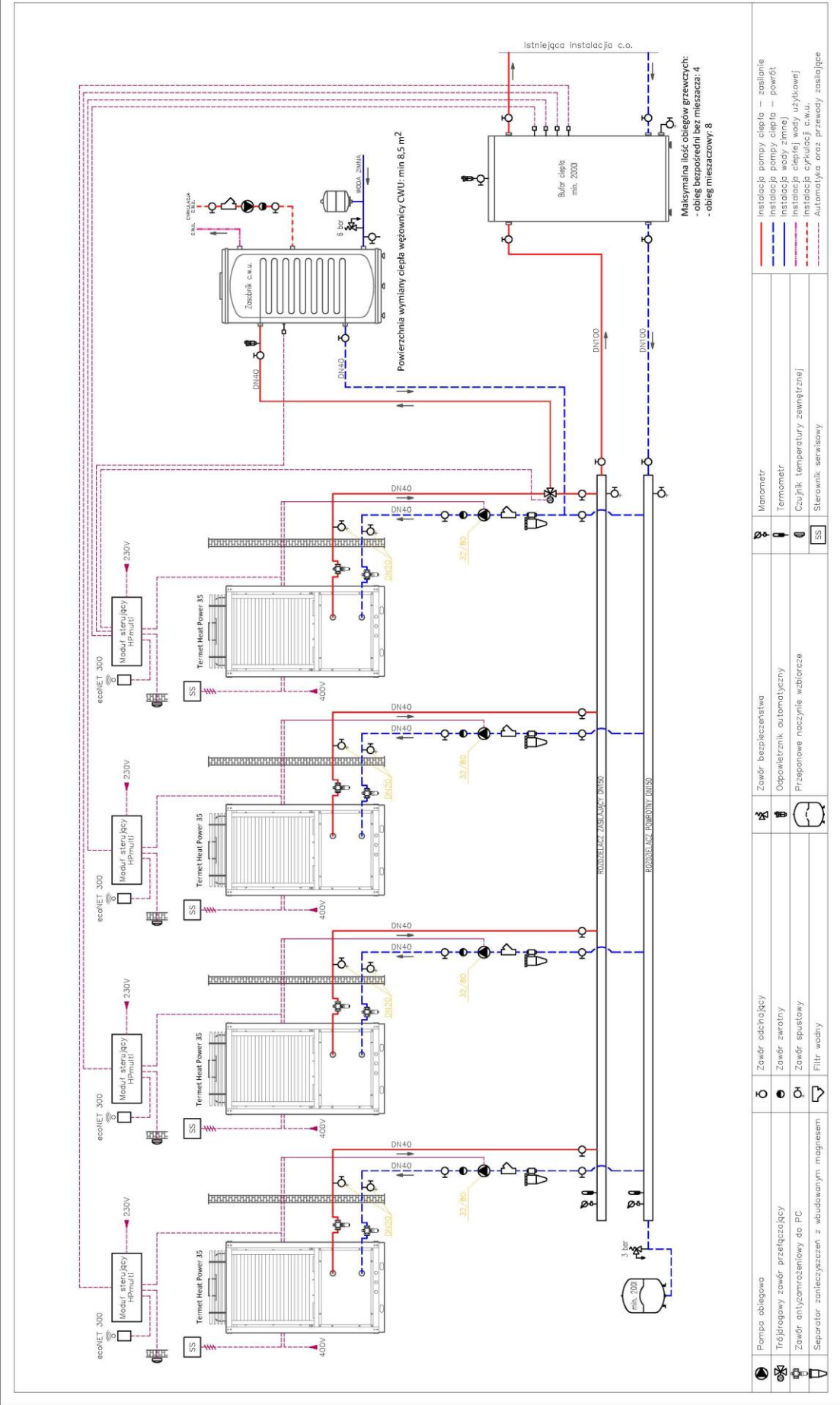
3 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer (two pumps)



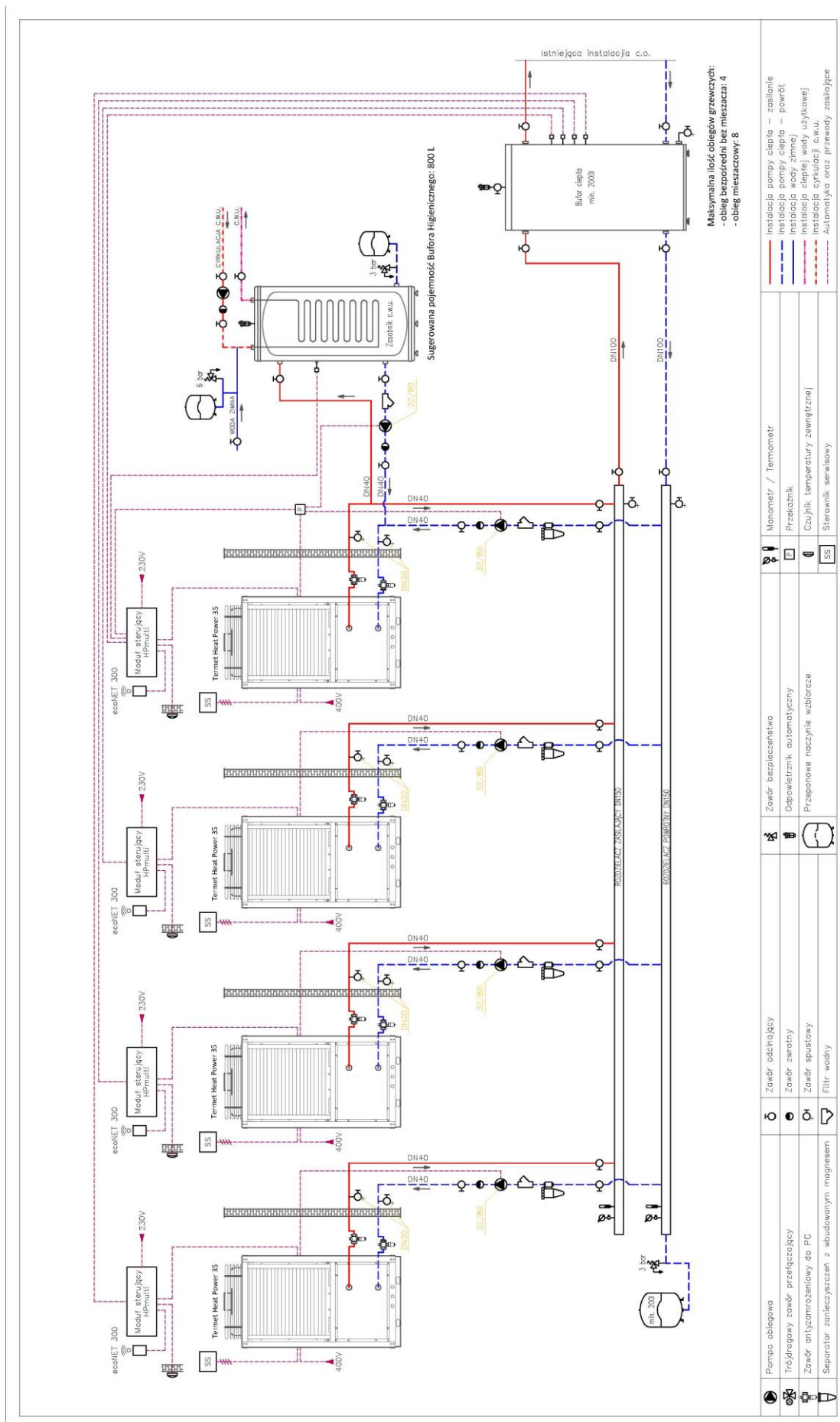
4 x Termet Heat Power 35 kW + c.h. buffer



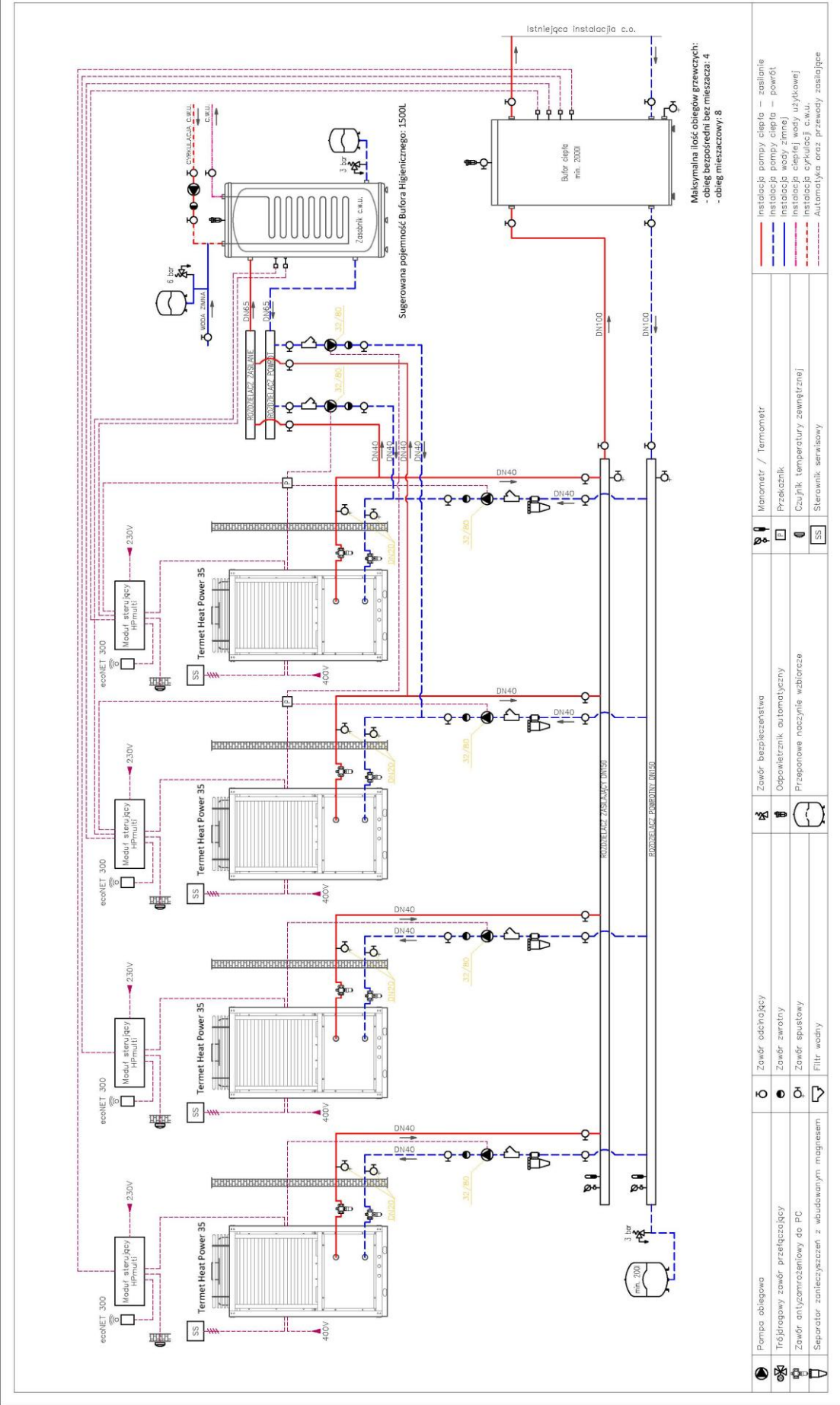
4 x Termet Heat Power 35 kW + c.h. buffer + d.h.w. tank



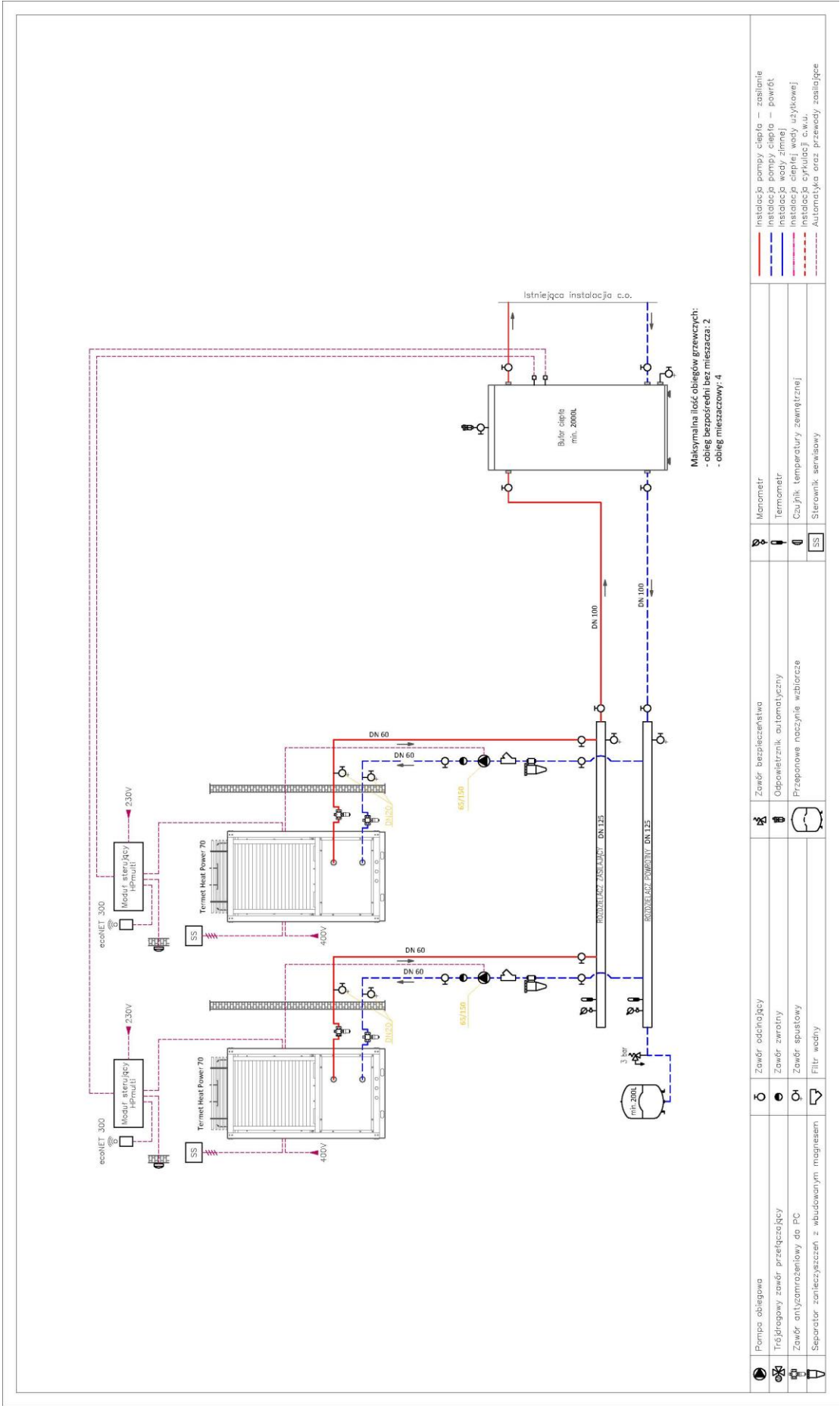
4 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer



4 x Termet Heat Power 35 kW + c.h. buffer+ d.h.w. hygienic buffer (two pumps)



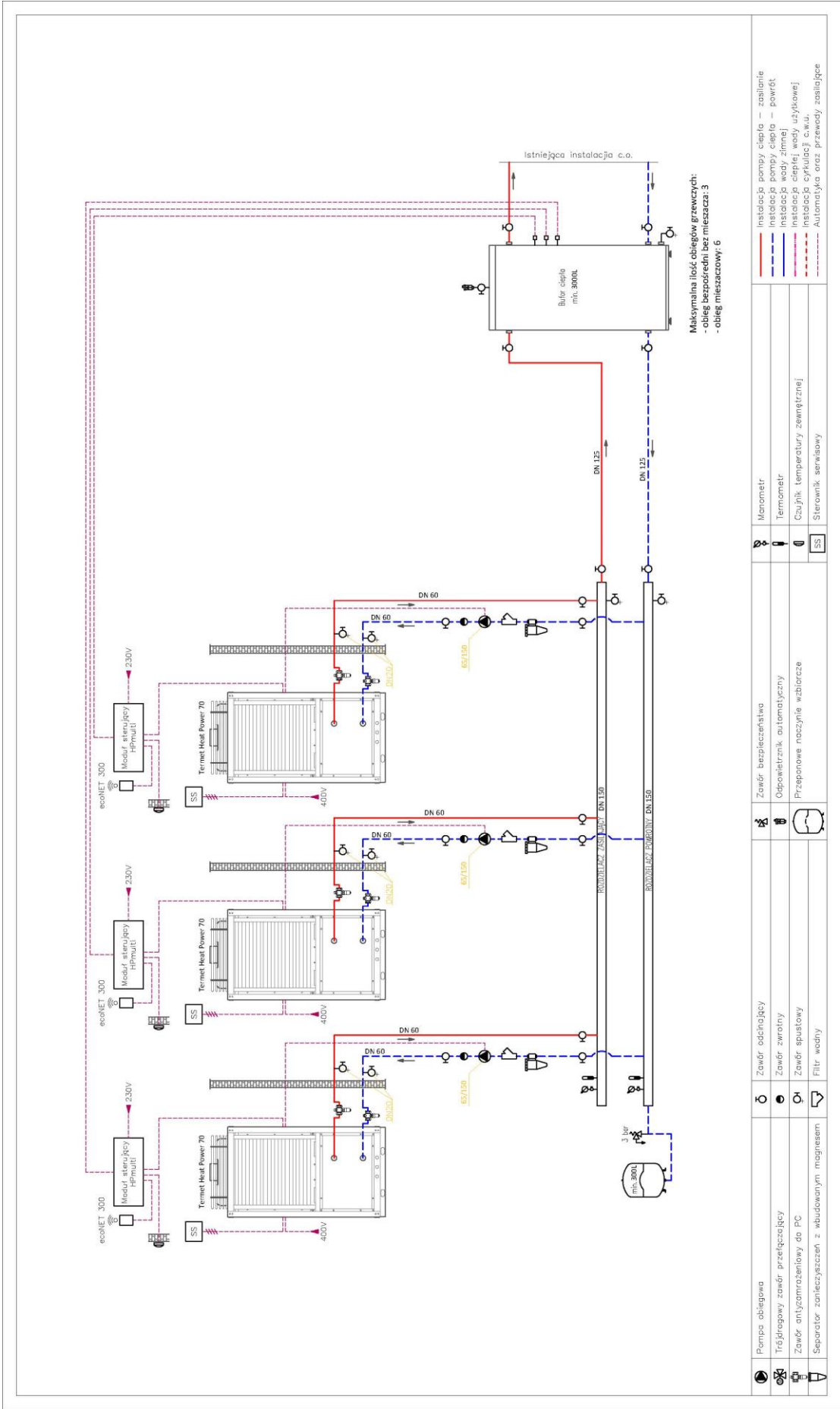
2 x Termet Heat Power 70 kW + c.h. buffer



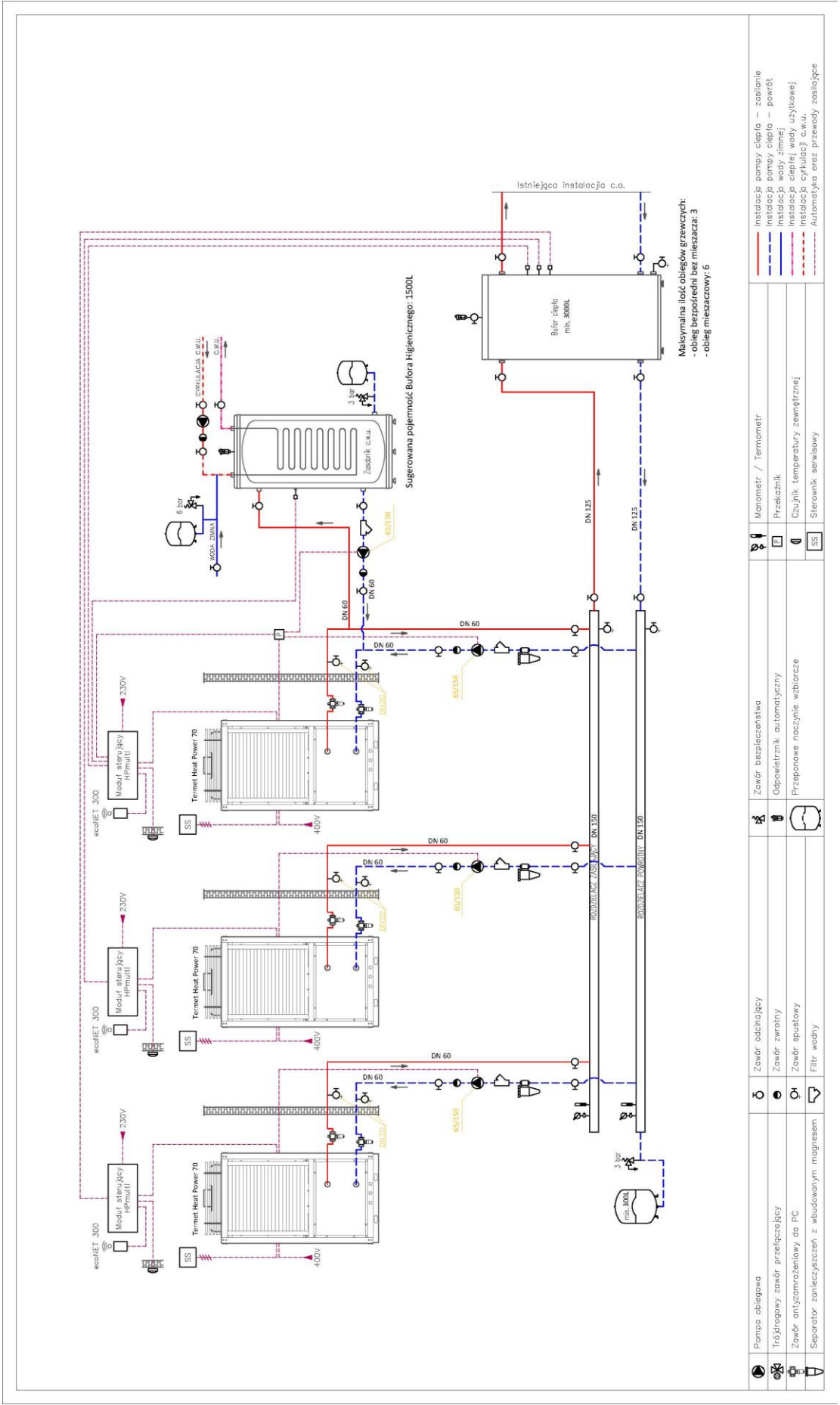
119



3 x Termet Heat Power 70 kW + c.h. buffer



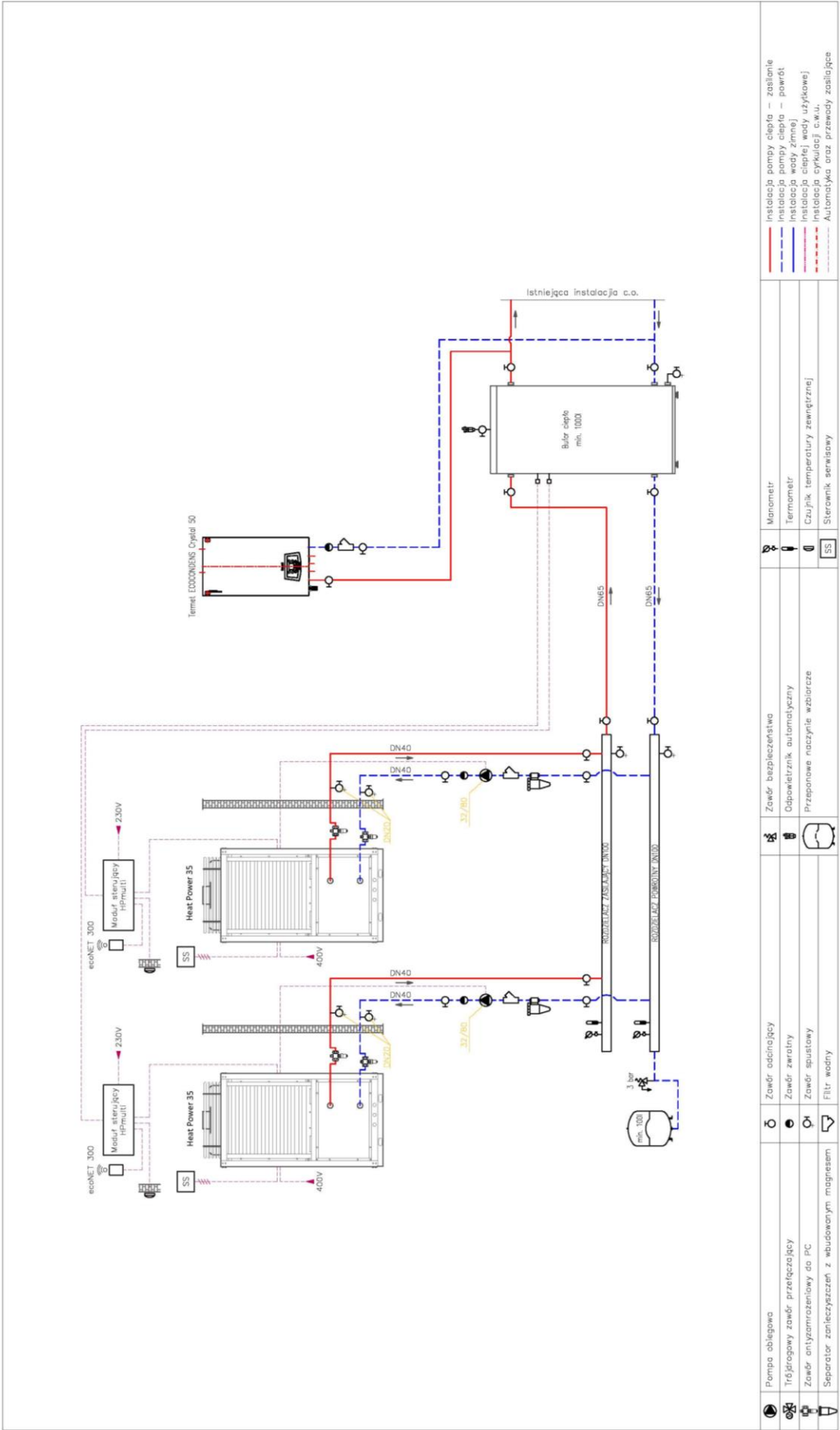
3 x Termet Heat Power 70 kW + c.h. buffer+ d.h.w. hygienic buffer



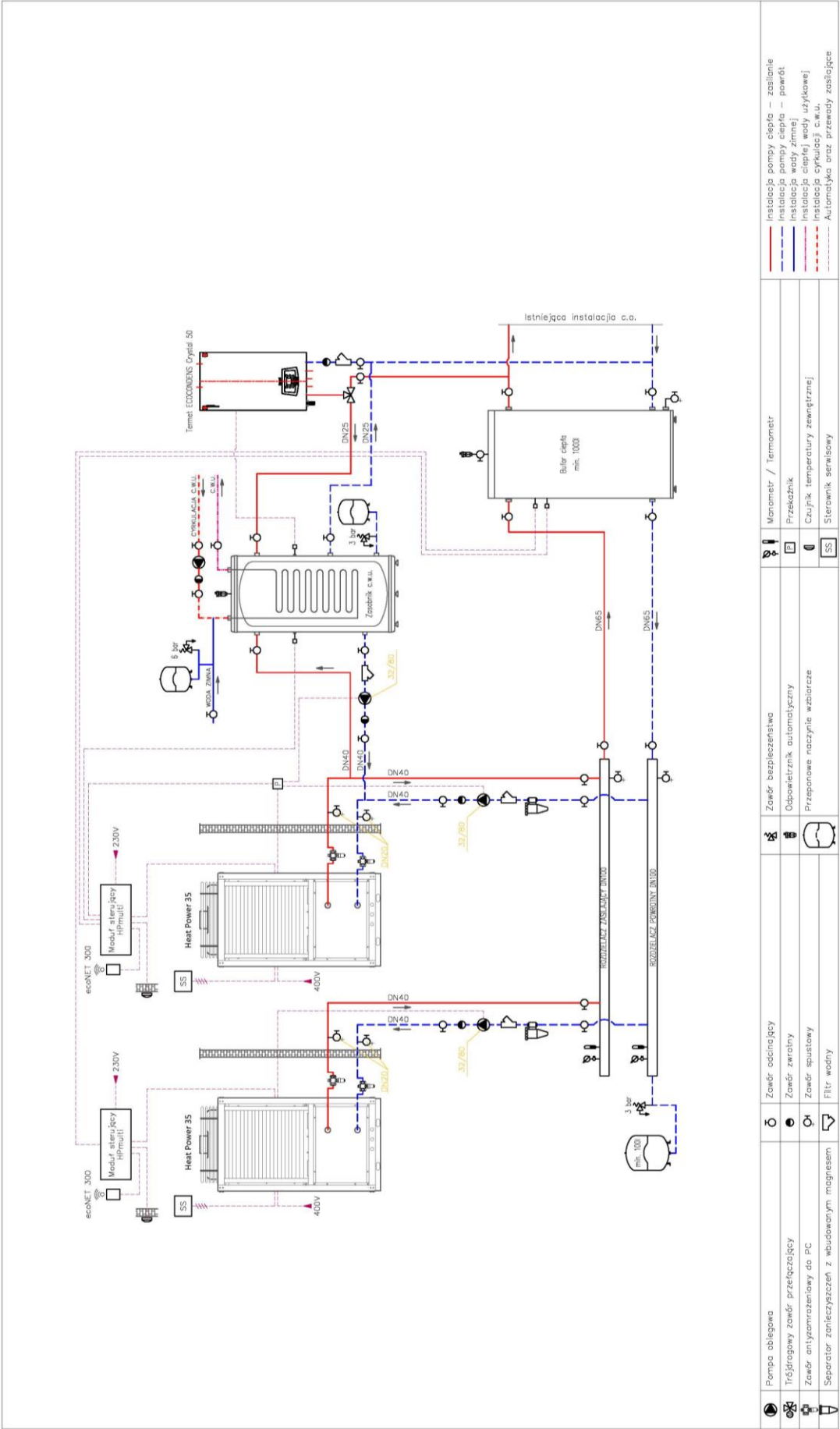
21. Schematic diagrams of cascades - Termet Heat Power heat pumps + high-power boilers

The diagrams show the possibilities of managing a cascade based on Termet Heat heat pumps – the diagrams do not constitute a boiler room project.

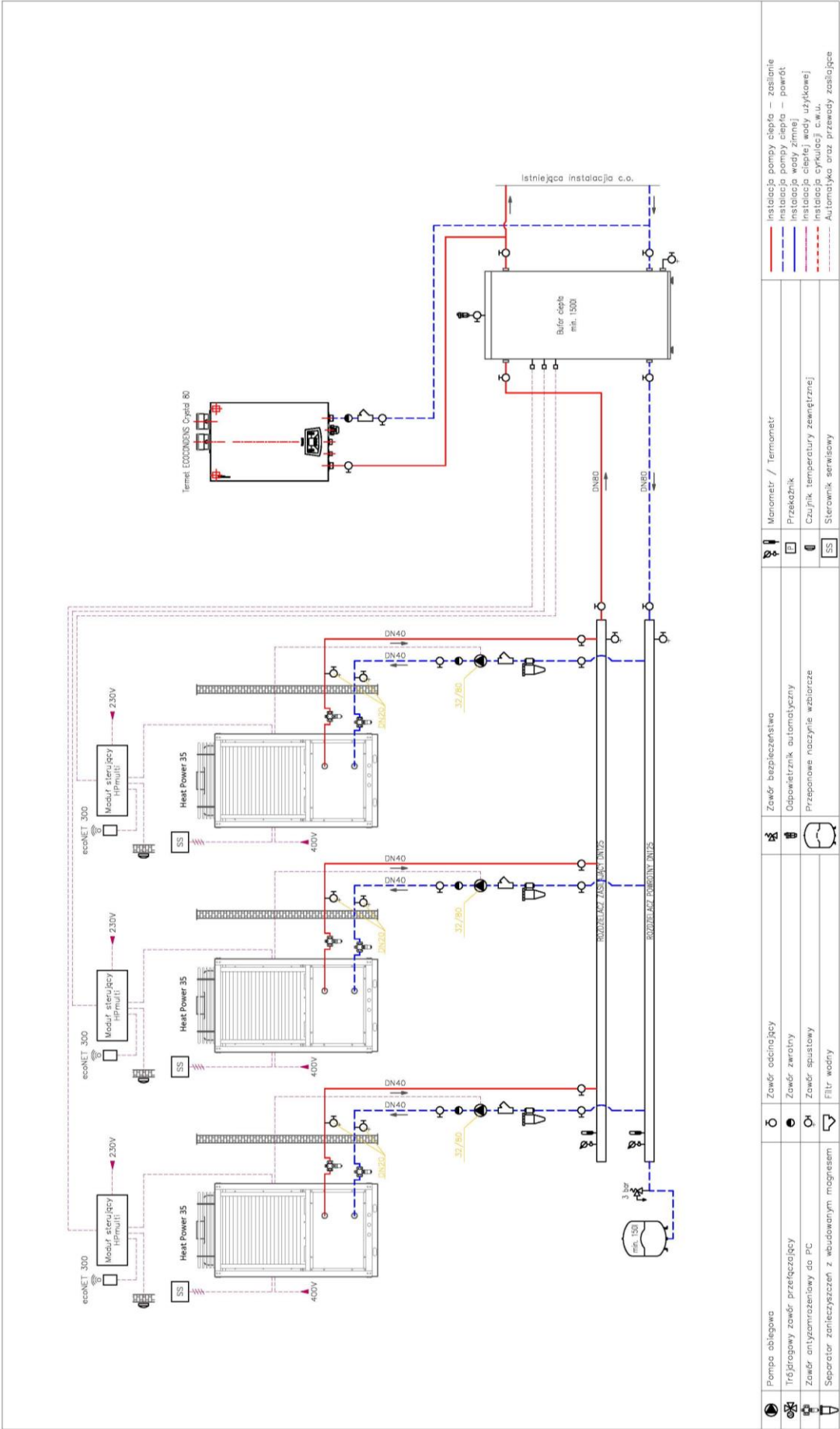
2 x Termet Heat Power 35 kW + Crystal Plus 50 + c.h. buffer



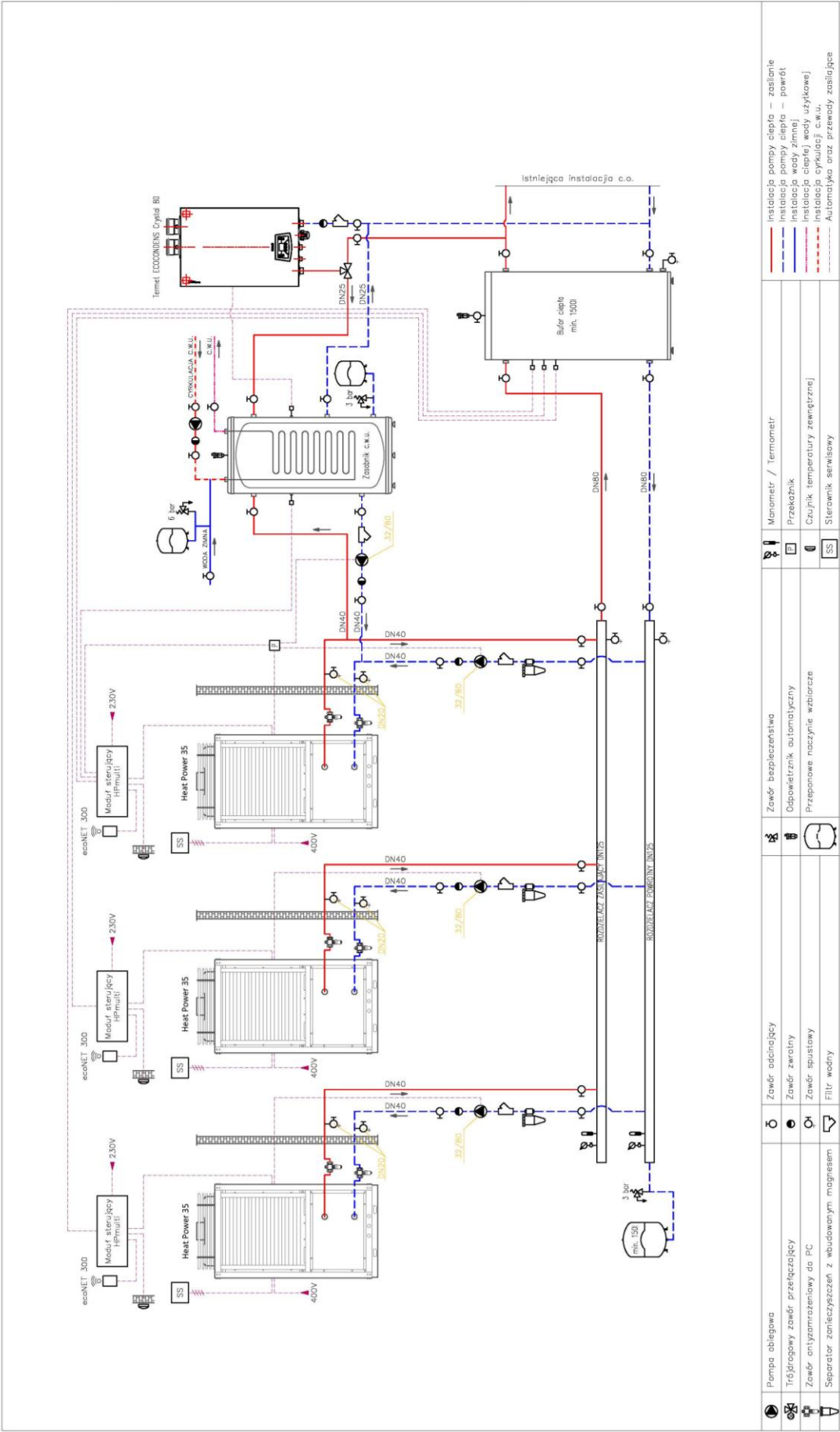
2 x Termet Heat Power 35 kW + Crystal Plus 50 + c.h. buffer + d.h.w. hygienic buffer



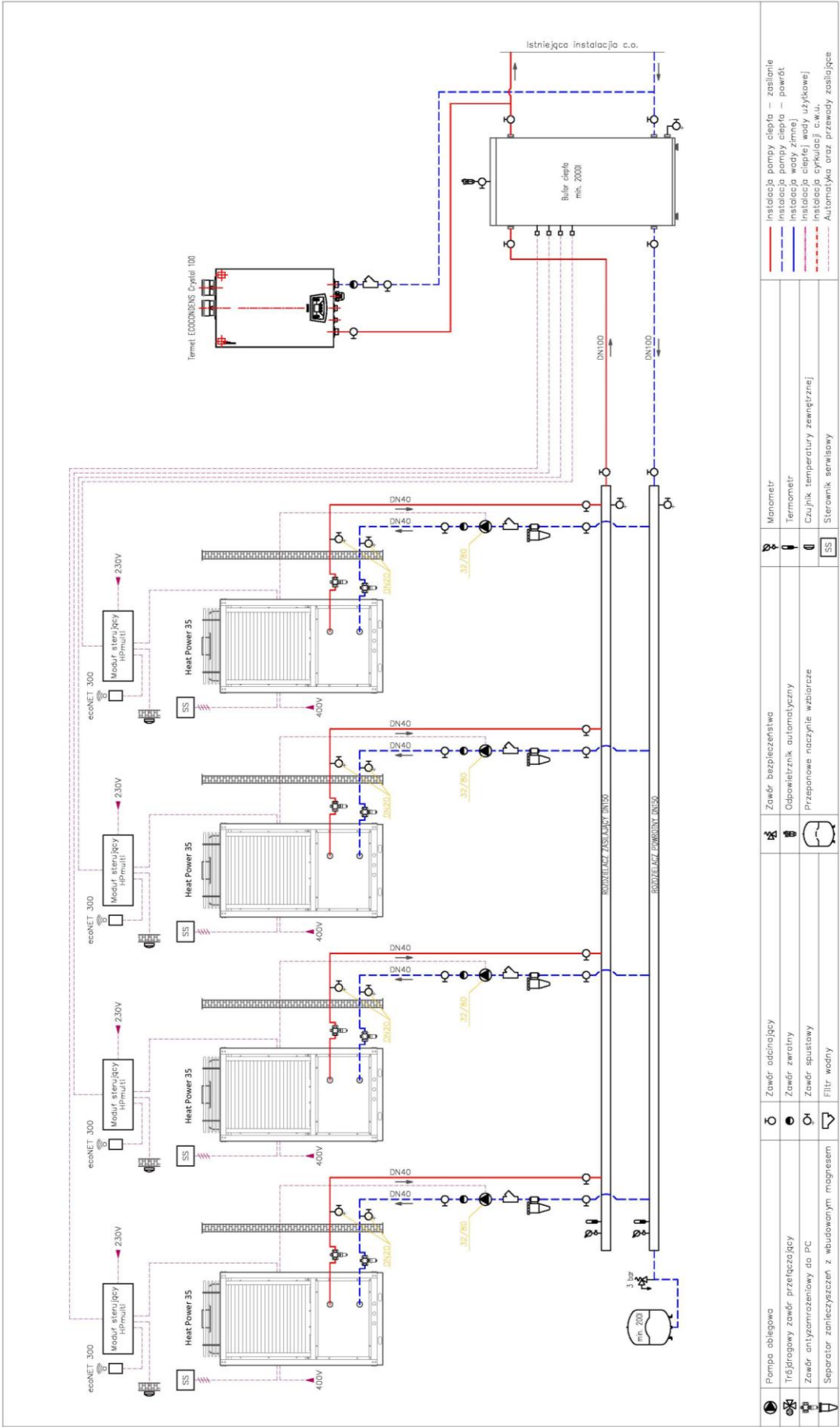
3 x Termet Heat Power 35 kW + Crystal 80 + c.h. buffer



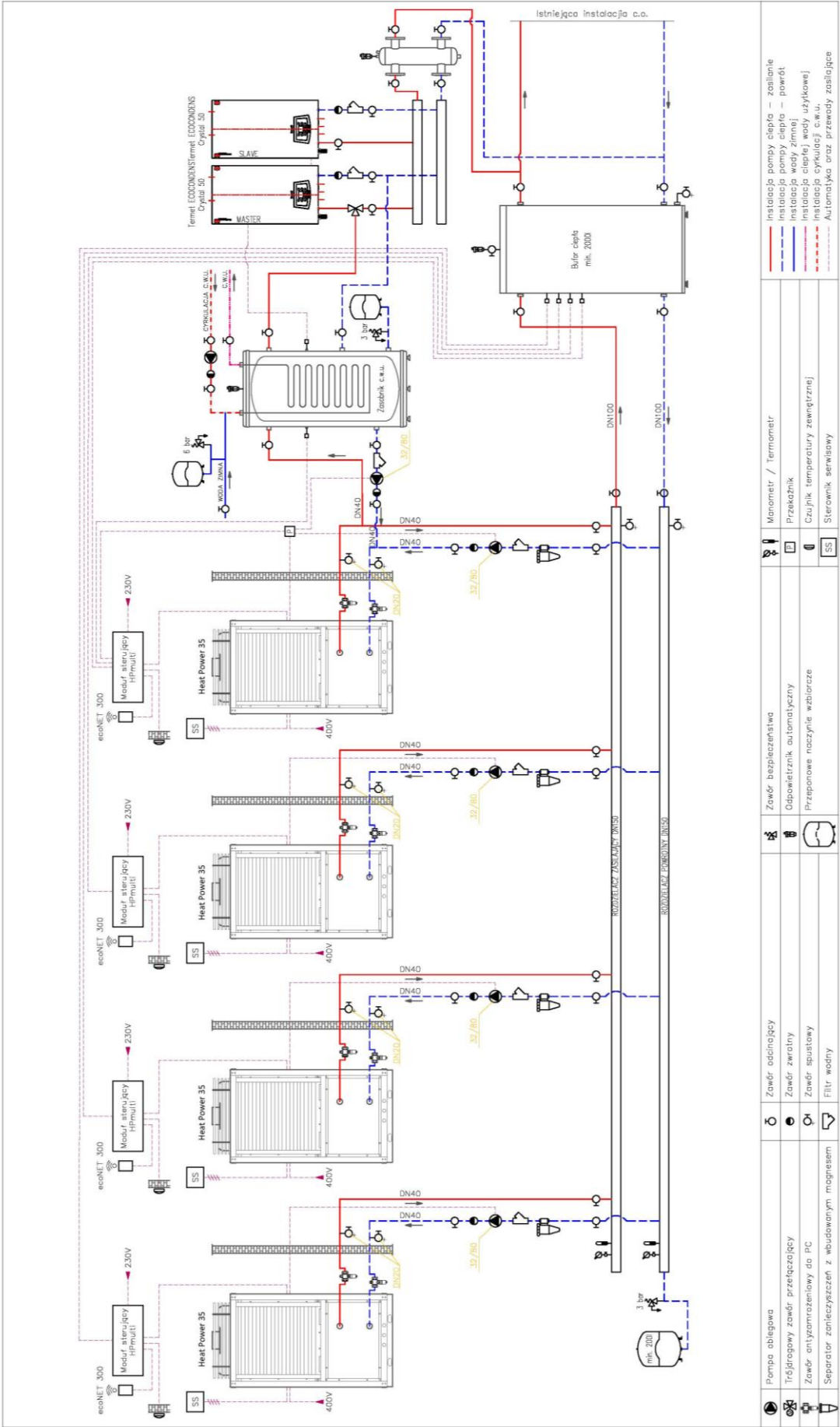
3 x Termet Heat Power 35 kW + Crystal 80 + c.h. buffer + d.h.w. hygienic buffer



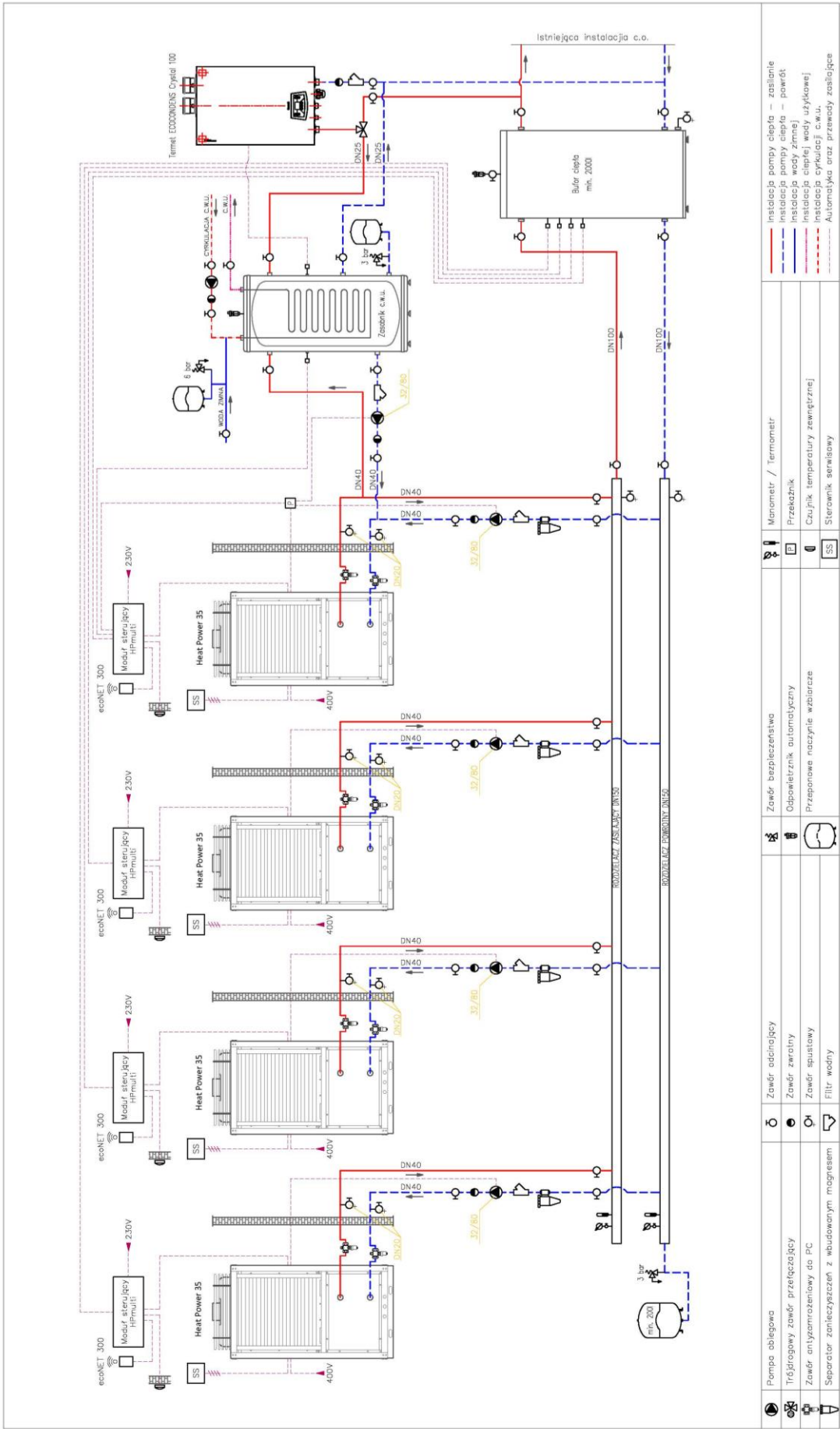
4 x Termet Heat Power 35 kW + Crystal 100 + c.h. buffer



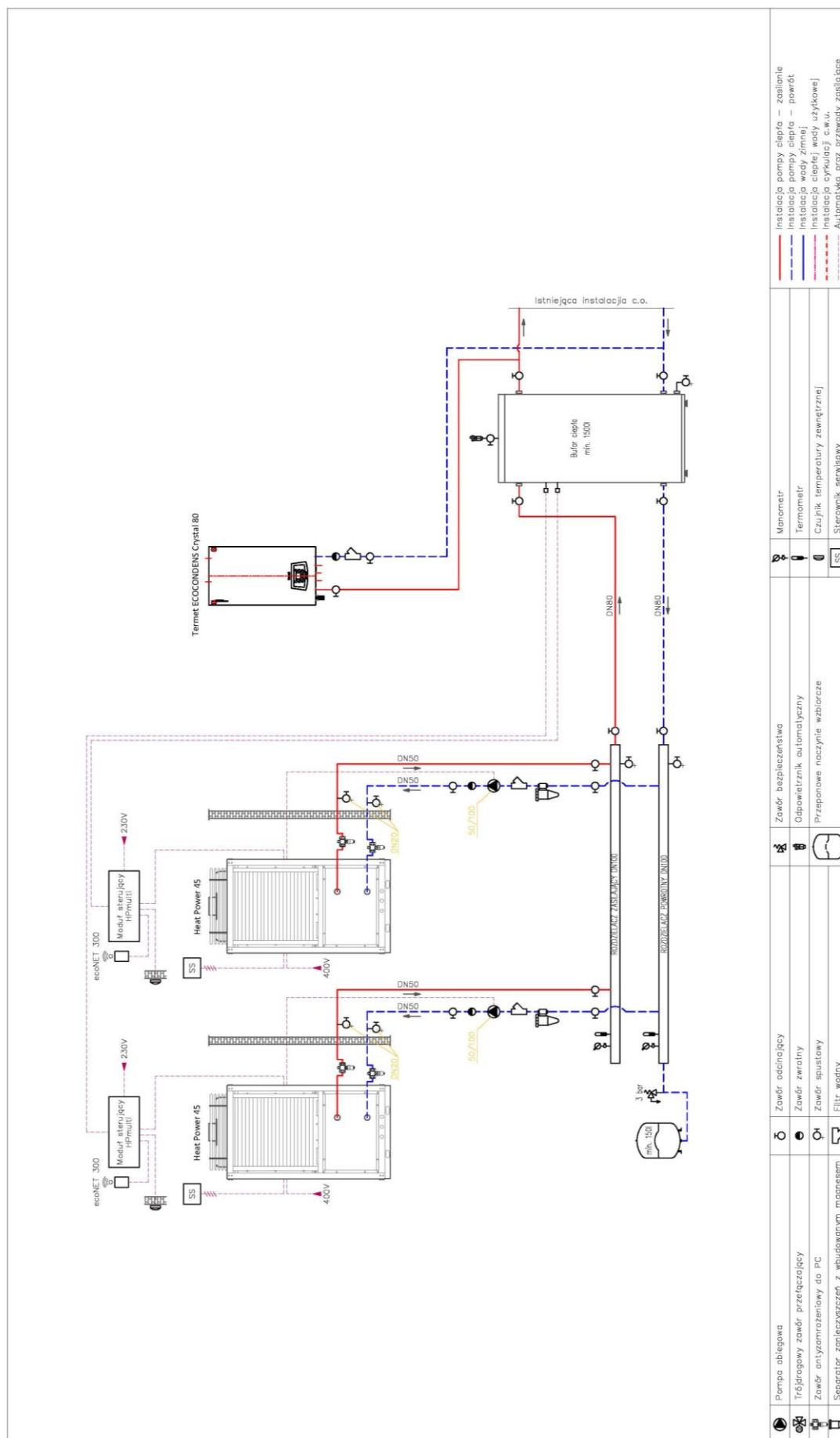
4 x Termet Heat Power 35 kW + 2 x Crystal Plus 50 + c.h. buffer + d.h.w. hygienic buffer



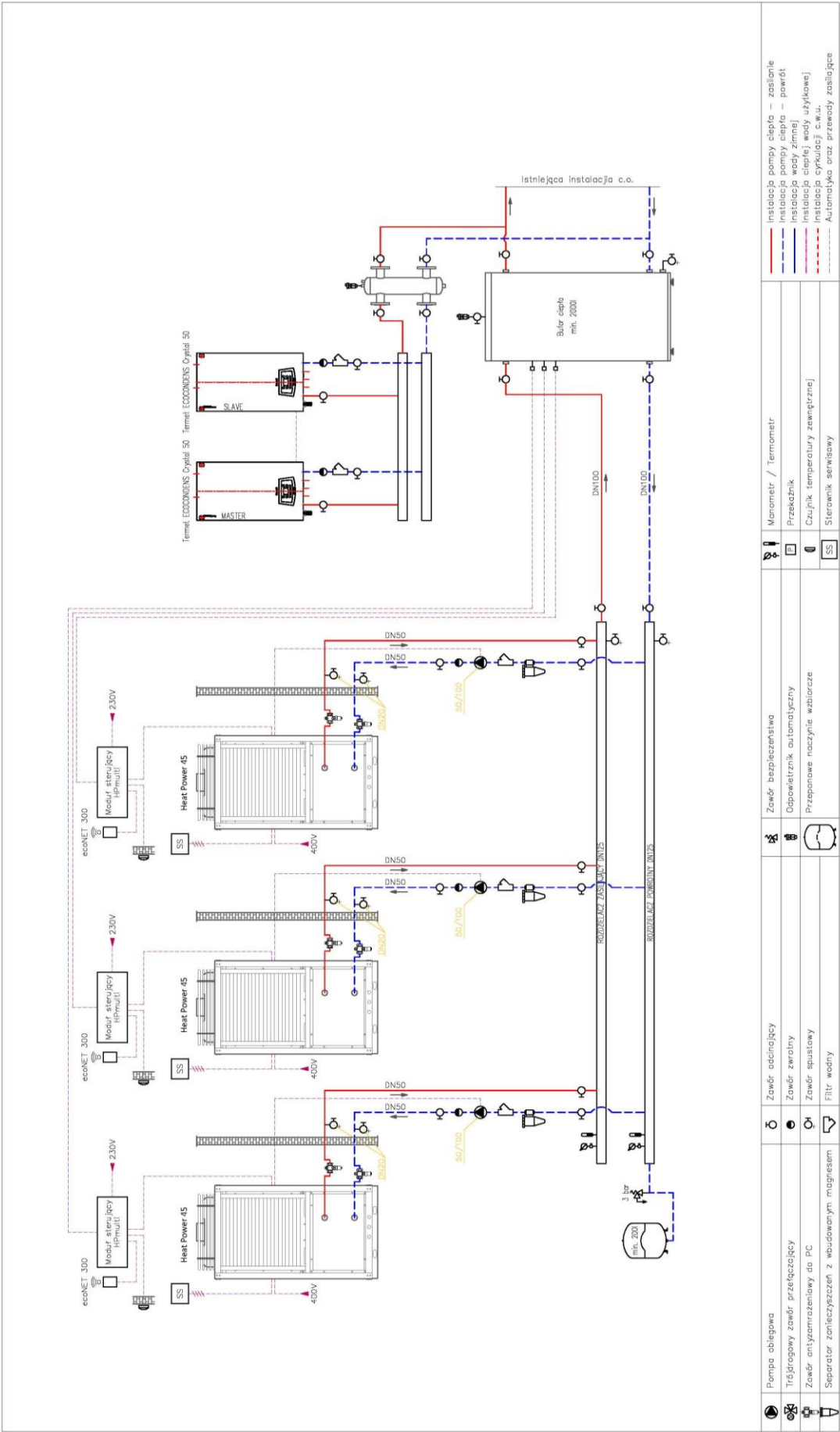
4 x Termet Heat Power 35 kW + Crystal 100 + c.h. buffer + d.h.w. hygienic buffer



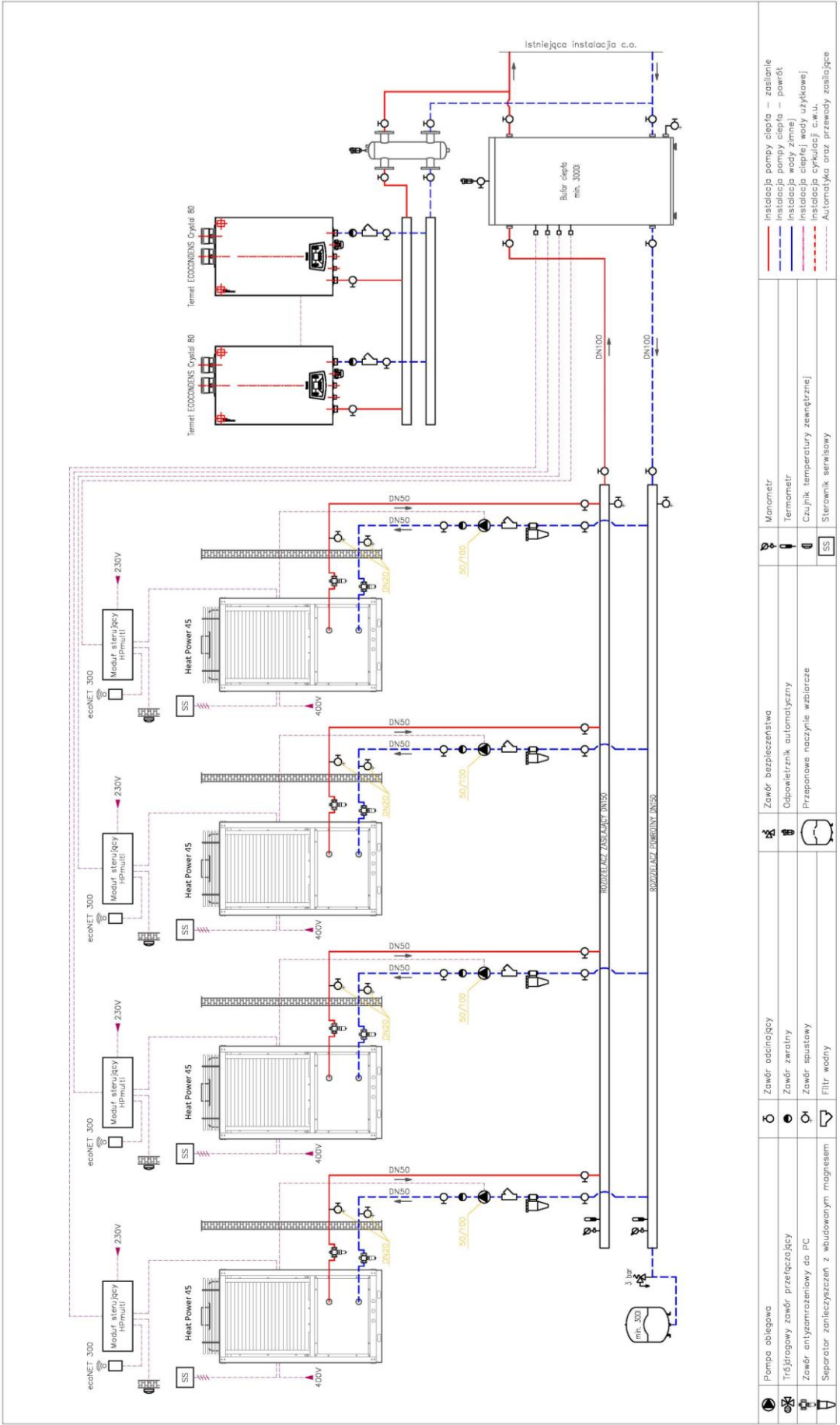
129



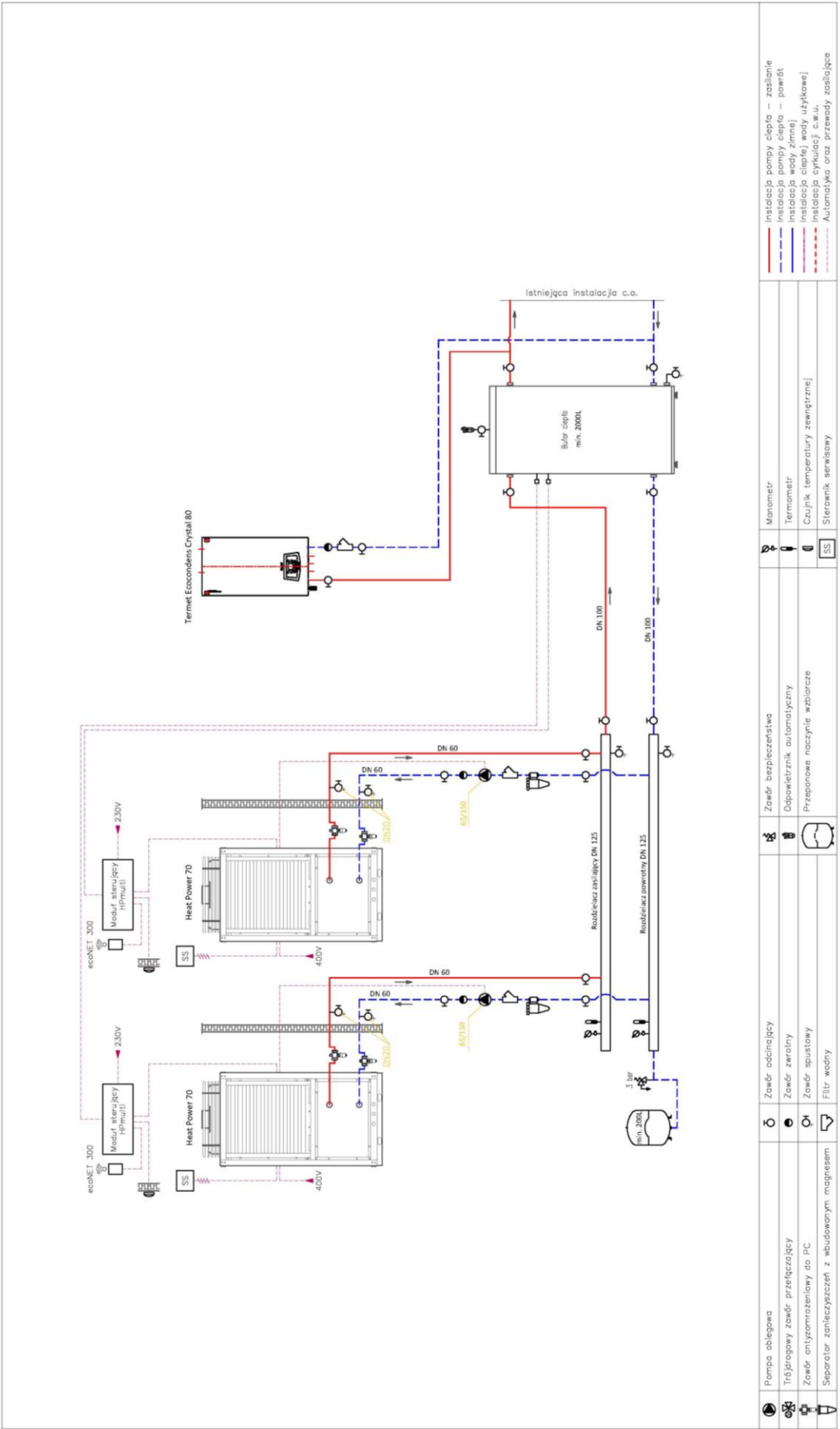
3 x Termet Heat Power 45 kW + 2 x Crystal Plus 50 + c.h. buffer



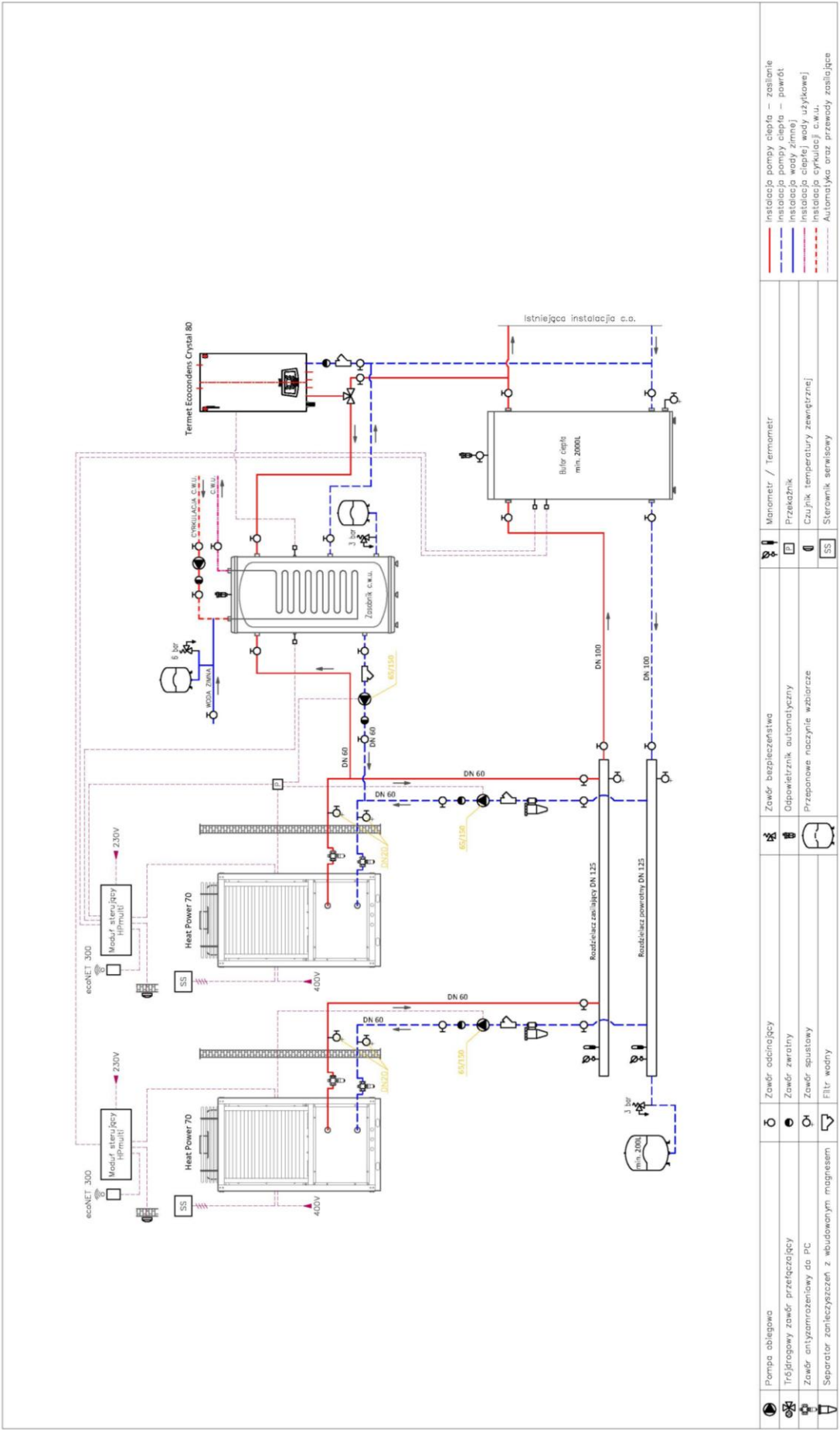
4 x Termet Heat Power 45 kW + 2 x Crystal 80 + c.h. buffer



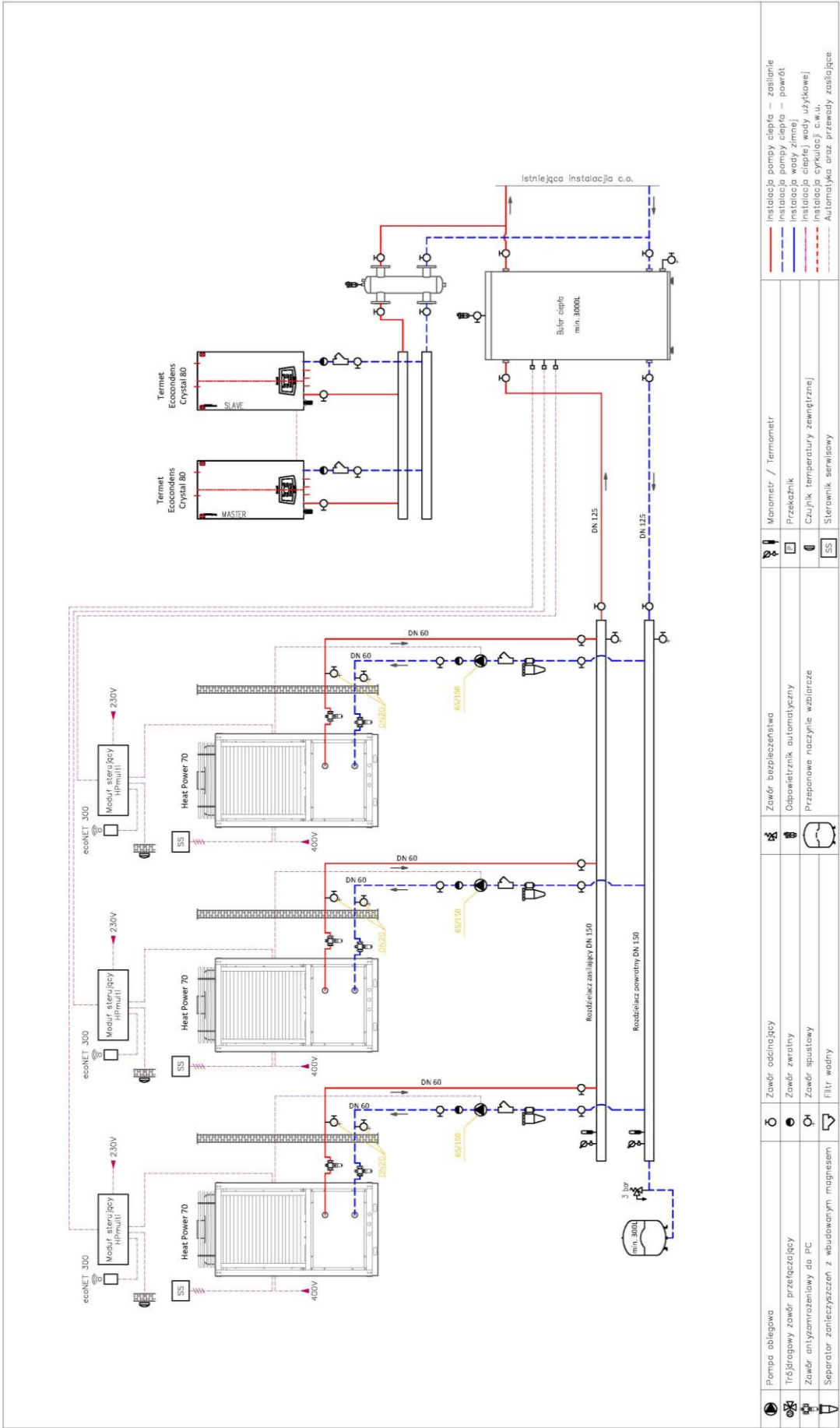
2 x Termet Heat Power 70 kW + Crystal 80 + c.h. buffer



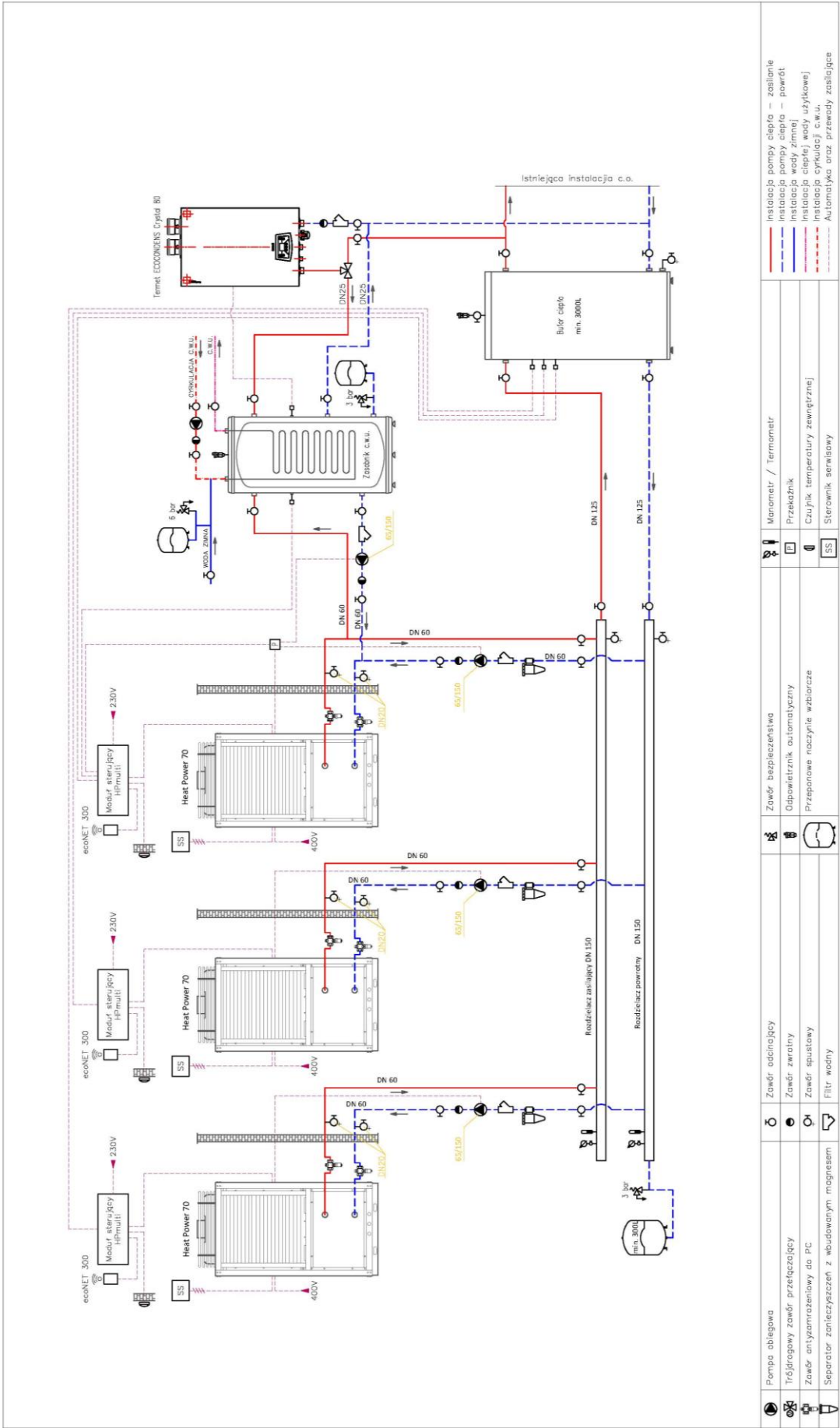
2 x Termet Heat Power 70 kW + Crystal 80 + c.h. buffer + d.h.w. hygienic buffer



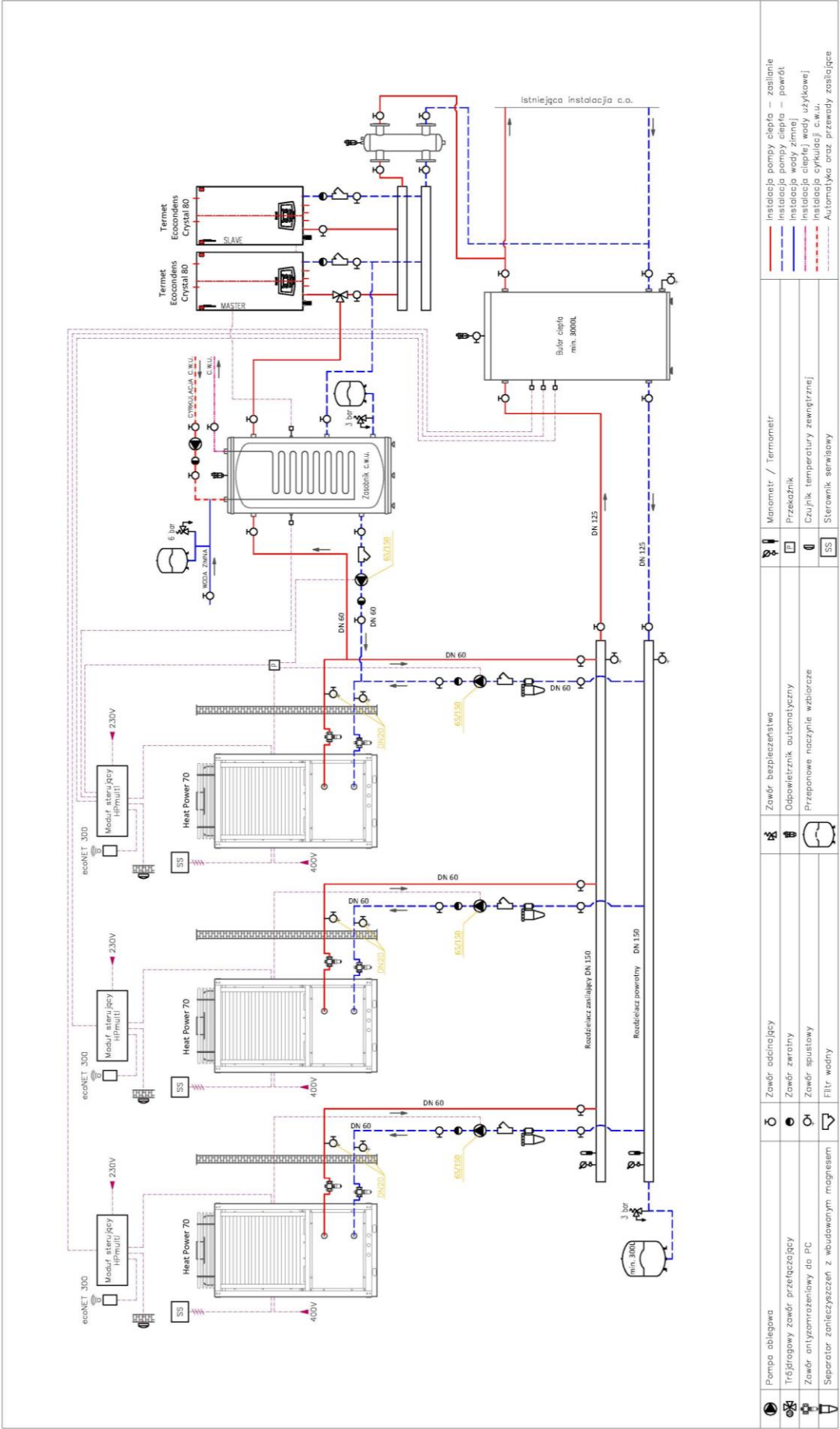
3 x Termet Heat Power 70 kW + 2 x Crystal 80 + c.h. buffer



3 x Termet Heat Power 70 kW + Crystal 80 + c.h. buffer + d.h.w. hygienic buffer



3 x Termet Heat Power 70 kW + 2 x Crystal 80 + c.h. buffer + d.h.w. hygienic buffer



**Termet S.A.**

Długa str. 13
58-160 Świebodzice
Poland

P: +48 74 85 60 801

F: +48 74 85 40 884

E: termet@termet.com.pl

www.termet.com.pl

Export Department

P: +48 74 85 60 675

E: export@termet.com.pl

