

CONDENSING TECHNOLOGY CASCADE SYSTEMS

System condensing boilers:

- ECOCONDENS CRYSTAL PLUS-50
- ECOCONDENS CRYSTAL-80
- ECOCONDENS CRYSTAL-100

ECOCONDENS-50

CRYSTAL PLUS


TECHNICAL FEATURES

- modulating pump (PWM signal) with automatic air vent
- modern heat exchanger made of stainless steel
- modulating fan
- new generation **BLUEJET®** burner:
 - wide range of modulation: 11%-100%
 - improved flame detection
 - reduced pollutant emissions
- weather regulation available
- **OPEN-THERM** system available
- cylinder burner made of stainless steel with **low level of NOx emissions (NOx - 5 class)**
- modern control panel with electronic display
- hydraulic group (hydroblock) assembled on quick-connectors
- full self-diagnostics

CASCADE SYSTEM

- from 2 to 4 boilers with cascade manager AX 1203SQ and **OPEN-THERM** regulator CR 11011
- from 2 to 5 boilers with cascade manager AX 5200 SQ (maximum 3 managers - 15 boilers)

TECHNICAL DATA

PARAMETERS		50 kW
Seasonal space heating energy efficiency class		A
Rated heat output	P_{rated} kW	45
Annual energy consumption	Q_{HE} GJ	93,1
Seasonal space heating energy efficiency	η_s %	91
Sound power level	L_{WA} dB	65
Nominal heat load	kW	5,7-46,2
Efficiency of the boiler at partial load and return water temperature 30°C	%	107,7
Max temperature (central heating)	°C	95
Standard adjustable temperature	°C	20-80
Reduced adjustable temperature	°C	20-55
Pump head	kPa (bar)	70 (0,7)
NOx emission	class	5
Max. amount of condensate (natural gas)	l/h	4,7
Max. water pressure	bar	3
Expansion vessel capacity	l	8
Air pressure in expansion vessel	bar	0,8 _{-0,2}
Supply voltage	V	~230±10%/50Hz
Protection class	-	IP-44
Power consumption	W	250
Heating water flow/return	inch	G3/4
Chimney connection	mm	Concentric Ø60/Ø100/Ø80/Ø125 or 2 single Ø80 x Ø80
Dimensions (height x width x depth)	mm	730x400x440
Net weight	kg	36



ACCESSORIES



FUME SYSTEM

Flue gas exhaust from 2 to 5 boilers working in cascade (quantity of elements - according to the project)

HEATING ZONE MANAGER AX 5100ZN

- control of 2 heating zones
- compatible with manager type AX 5200SQ
- appliance is equipped with outdoor temperature sensor and supply water temperature sensor

CASCADE MANAGER AX 5200SQ

- cascade control from 2 to 5 boilers
- possibility to connect max 3 managers, and to control a cascade consisting of 15 boilers
- appliance is equipped with outdoor temperature sensor and supply water temperature sensor
- management zones with zone heating controller type AX 5100ZN (see below)

CASCADE MANAGER AX 1203SQ

- cascade control from 2 to 4 boilers
- Consist of:
 - Cascade manager type AX 1203SQ
 - Open-therm regulator type CR 11011
- equipped with outdoor temperature sensor and supply temperature sensor

OUTDOOR TEMPERATURE SENSOR

HYDRAULIC COUPLING

ECOCONDENS CRYSTAL-80 ECOCONDENS CRYSTAL-100



TECHNICAL FEATURES

- modern DUO heat exchanger made of stainless steel:
 - low pollutant emissions (NOx - 5 class)
- electronically controlled burner
- primary modulating pump PWM H-7 m. built-in
- **control board with cascade manager function (max 6 boilers)**
- control of heating zones by zone manager
- **OPEN-THERM** system available
- system weather regulation in option

CASCADE SYSTEM

- combining from 2 to 6 boilers allows to achieve power up to 600 kW
- boilers cooperating in the cascade system are connected in series with using the cable attached to the boiler. The first boiler has a function master boiler MASTER (performs the function of a manager), others they work as subordinate to SLAVE

AKCESORIA

OPEN-THERM CR 11011



OUTDOOR TEMPERATURE SENSOR



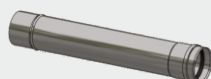
THREE-WAY VALVE G1" (230 V)



NTC SENSOR (12kΩ)



AIR-FLUE GAS SYSTEM



TECHNICAL DATA

PARAMETERS		80	100
Sound power level	L_{WA} dB	62	62
Nominal heat load	kW	18,0-82,0	18,0-103,0
Efficiency of the boiler at partial load and return water temperature 30°C	%	up to 109	
Efficiency of the boiler at partial load and return water temperature 70°C	%	up to 98	
Max temperature (central heating)	°C	80	
Standard adjustable temperature	°C	80	
Reduced adjustable temperature	°C	20	
Range of modulation	%	21-100	17-100
Pump head	kPa (bar)	80 (0,8)	
NOx emission	klasa	5	
Max. amount of condensate (natural gas)	l/h	12	15
Max. water pressure	bar	4	
Supply voltage	V	~230±10%/50Hz	
Protection class	-	IPX4D	
Power consumption	W	350	
Heating water flow/return	cale	G5/4"-G1"	
Chimney connection	mm	2 single 2 x Ø100	
Dimensions (height x width x depth)	mm	810x540x545	
Net weight	kg	82	



CONTROL OPTIONS

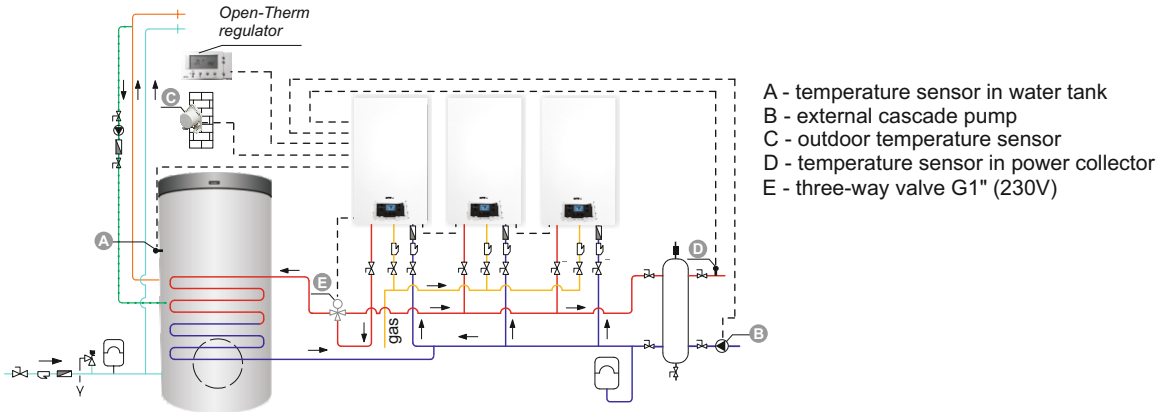
EXAMPLE CONNECTION DIAGRAM

ECOCONDENS CRYSTAL PLUS-50 or
ECOCONDENS CRYSTAL-80 and 100

SCHEME 1

Example connection diagram

ECOCONDENS CRYSTAL-80 LUB ECOCONDENS CRYSTAL-100

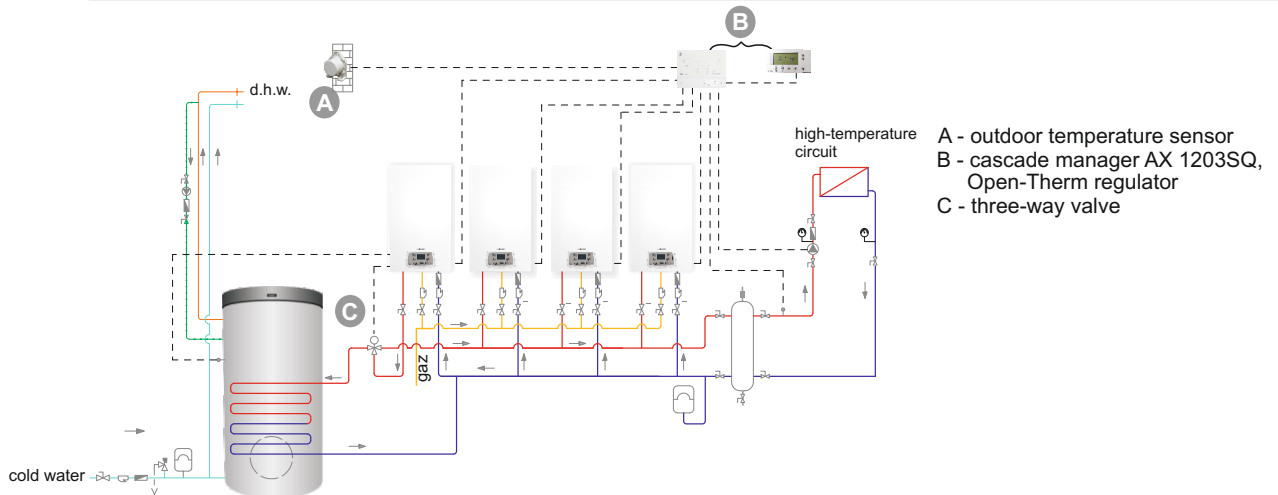


SCHEME 2

Example connection diagram - ECOCONDENS CRYSTAL PLUS-50

One heating circuit (high-temperature), d.h.w. circuit is operated by one boiler

Working with cascade manager type AX 1203SQ - possibility to combine max 4 boilers in cascade (to one manager)



SCHEME 3

Example connection diagram - ECOCONDENS CRYSTAL PLUS-50

Three heating circuits (two high-temperature, one low-temperature) and one d.h.w. circuit

Working with cascade manager type AX5200SQ - possibility to combine max 5 boilers (to one manager)

