

CONDENSING TECHNOLOGY CASCADE SYSTEMS

System condensing boilers:

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

ECOCONDENS CRYSTAL PLUS-50


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 - 6 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

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	6
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	-	IPX4D
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	38



ACCESSORIES

FUME SYSTEM

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



ZONE MANAGER i-3 PLUS with Open-Therm communication

- smooth control of three mixing valves
- control of the D.H.W. pump
- operation of the solar system
- pump control with PWM signal
- two 0-10V outputs
- open-therm communication
- two voltage-free outputs configurable
- two voltage outputs configurable
- cooperation with three binary room controllers
- cooperation with the room controller with RS communication
- possibility of connecting Wi-Fi RS module
- control of additional circuit by i-1m module



MIXING VALVE MODULE i-1m

- smooth control of three mixing valves
- control of the D.H.W. pump
- cooperation with i-3 PLUS controller with RS communication
- Controller includes:
 - boiler temperature sensor
 - valve temperature sensor
 - return temperature sensor
 - outside sensor



Wi-Fi RS MODULE

Remote control of zone manager i-3 PLUS operation via Internet



CASCADE MANAGER AX 1203SQ

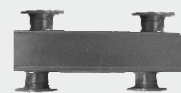
- cascade control from 2 to 4 boilers
- Consist of:
 - Cascade manager type AX 1203SQ
 - Open-therm regulator type CR 11011
- equipped with outdoor temperature sensor and supply temperature sensor



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 - 6 class)
- electronically controlled burner
- primary modulating pump PWM H-8 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

ACCESORIES

OPEN-THERM CR 11011



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Wi-Fi RS MODULE

Remote control of zone manager i-3 PLUS operation via Internet



TECHNICAL DATA

PARAMETERS		80	100
Sound power level	L_{WA} dB	62	65
Nominal heat load	kW	18 - 82	18 - 103
Efficiency of the boiler at partial load and return water temperature 40/30°C (Hi)	%	up to 109	
Efficiency of the boiler at partial load and return water temperature 40/30°C (Hs)	%	up to 98	
Efficiency of the boiler at partial load and return water temperature 50/30°C (Hi)	%	107,5	
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	class	6	
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	inch	G5/4"-G1"	
Chimney connection	mm	2 single 2 x ø100	
Dimensions (height x width x depth)	mm	810x540x545	
Net weight	kg	84	



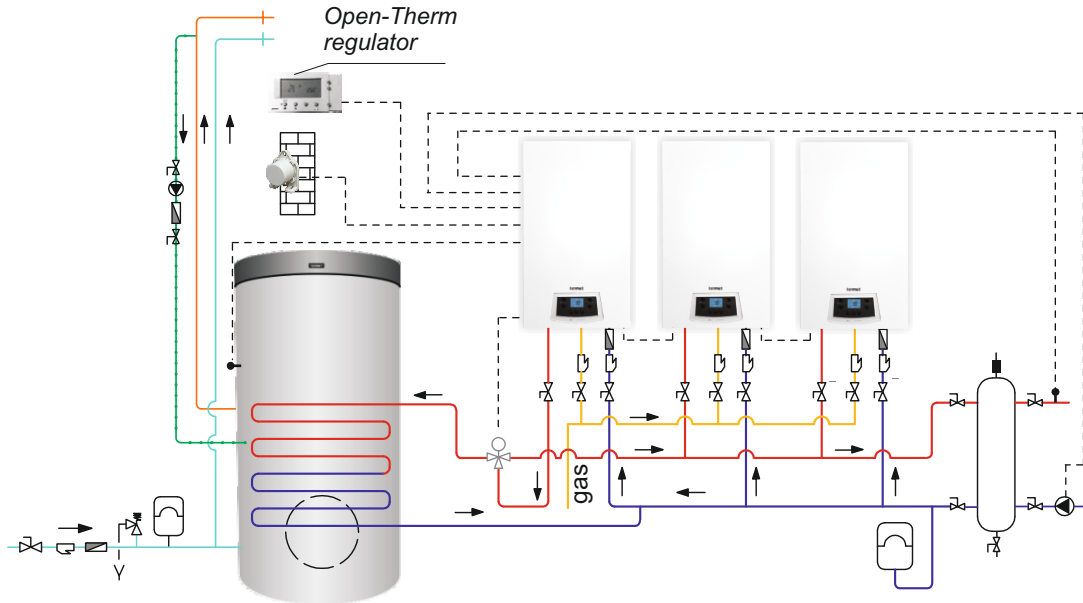
CONTROL OPTIONS

EXAMPLE CONNECTION DIAGRAM

ECOCONDENS CRYSTAL-80/100

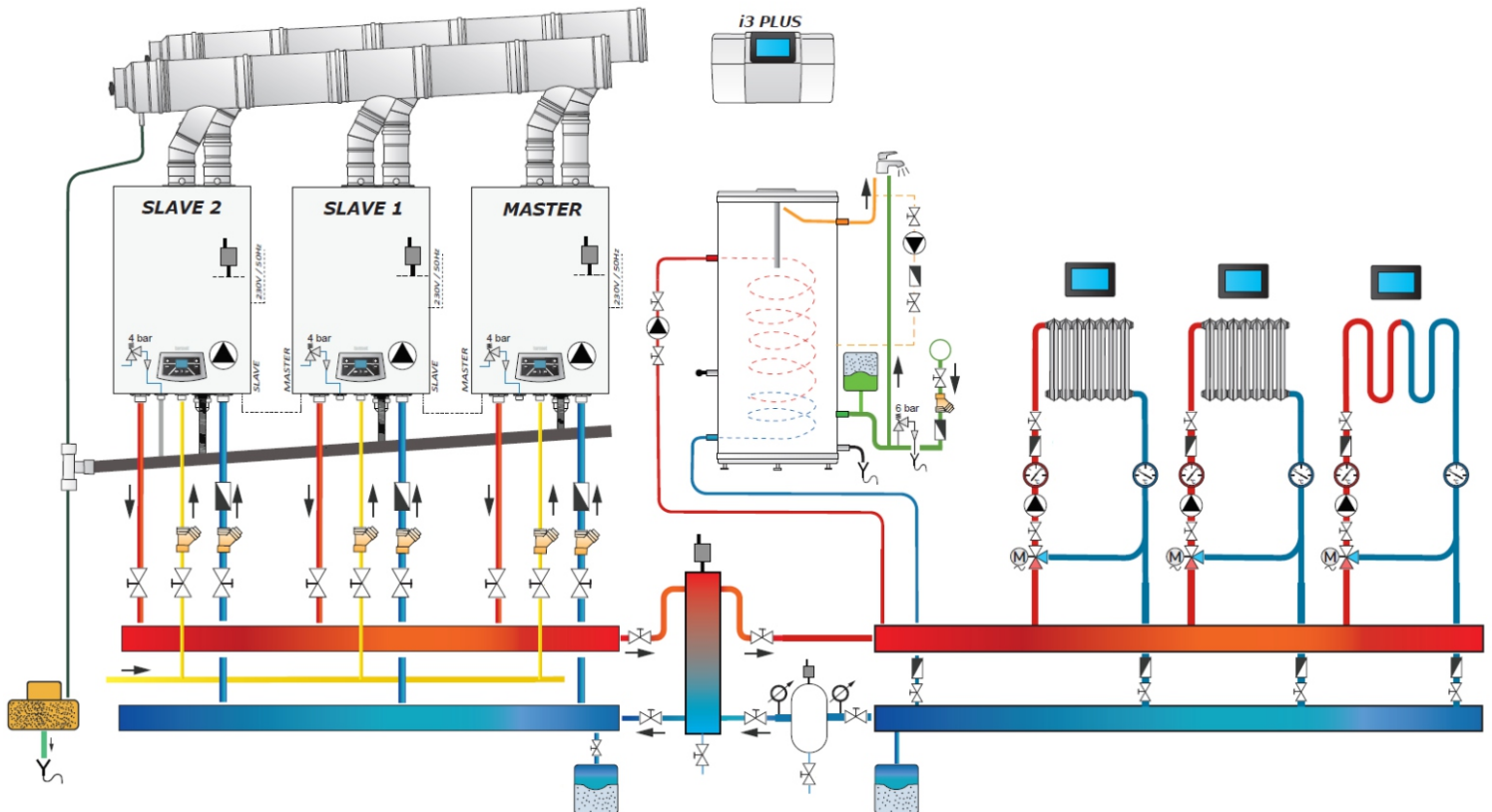
SCHEME 1

Example connection diagram - EcoCONDENS CRYSTAL-80/100
 - one high-temperature heating circuit
 - domestic hot water circuit



SCHEME 2

Example connection diagram - EcoCONDENS CRYSTAL-80/100 with i3-PLUS controller:
 - two high-temperature heating circuits
 - one low-temperature heating circuit
 - domestic hot water circuit



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