



# !IDEA

SIMPLY...UNIQUE

**Unical**

# Pure technology



Clean design and practical panel board with wide "Power save" display

The idea of !DEA was born from three concepts:

- *Maximum easiness of use*
- *Extreme reliability*
- *Highest installation speed*

The range consists of **25 wall hung gas** boilers (14 for indoor installation and 11 for outdoor installation) for heating only or for heating and D.H.W. production, both, in *room sealed* or *natural draught* versions, with electronic ignition and conventional combustion.

!DEA can operate with natural gas or LPG.

Electrical protection degree is IPX5D (IPX4D for natural draught version).

It has been conceived both, for the first installation and for replacement of existing boilers in a very simple way.

Thanks to the electronics, developed together with Honeywell, and to the rationalization of the assembly, that make it unique, impresses for the maintenance simplicity and for its sturdiness.

Elements that reinforce this imagine:

- *completely metallic casing*
- *epoxy-polyester painting*
- *sound and thermal insulation with 8 mm thick material*
- *thermal reflecting layer*
- *completely metallic hydraulic connections*

The aesthetics of the front panel has simple, engraved, curved lines, that confer great solidity to the whole assembly and integrate pleasantly the panel board, including:

- two knobs
- a time-controlled back lighted display for the maximum electric saving
- boiler pressure gauge

!DEA disposes of a complete catalogue of accessories, smoke pipes, modulating or ON/OFF thermostats, outer sensor, allowing to solve any installation problem.

Models	INDOOR installation								OUTDOOR installation	
			natural draught	room sealed fan assisted	bithermal heat exchanger	mono thermal heat exchanger	electric diverting valve	DHW plates heat exchanger	on WALL	in CABINET
!DEA AR 23										
!DEA AC 23										
!DEA RS 24										
!DEA RS 18 - 32										
!DEA RS 28										
!DEA CS 24										
!DEA CS 18 - 32										
!DEA CS 28										
!DEA AC 23 PLUS										
!DEA CS 24 PLUS										
!DEA CS 28 - 32 PLUS										
!DEA CS 28 INC										

# The mechatronics of !IDEA



Bi-thermal copper heat exchanger for !IDEA AC 23, CS 18-24-28-32, CS 24-28 EXT, CS 24-28 INC (with different lengths)



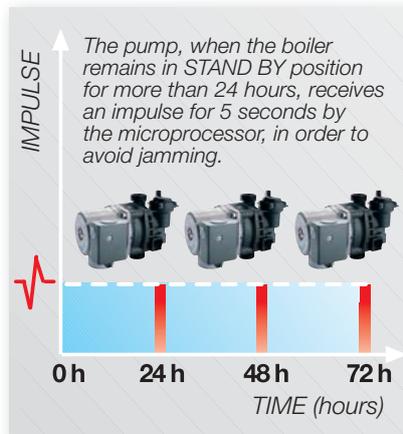
Mono-thermal copper heat exchanger for !IDEA AR 23, AC 23 PLUS, RS 18-24-28-32, RS 24-28 EXT, RS 24 INC, CS 24-28-32 PLUS, CS 24-28 PLUS EXT, CS 32 PLUS EXT, CS 24 PLUS INC



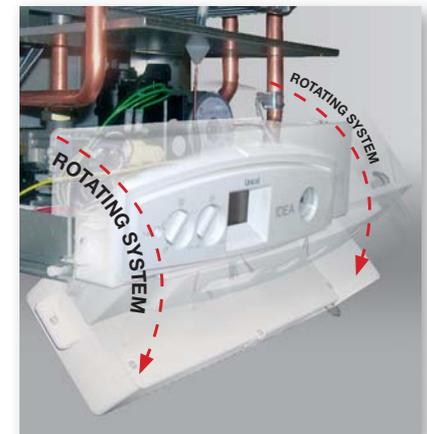
Panel board with back lighted, multifunctional, "Power save" display



Pump body with built-in air vent



Pump anti-jamming function timer



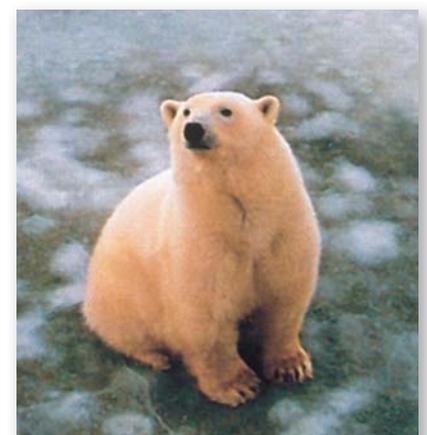
Frontward rotating panel board for an easy access to the internal components



HONEYWELL electronic PCB with microprocessor



Built-in flow switch



Anti-frost protection for high reliability

# The components quality

## The copper heat exchangers

Under the same casing are foreseen, according to the model, **different types of heat exchangers**, with fast connections, in order to speed up the maintenance, carefully studied.

- **!DEA AC 23 - !DEA CS 18-24-28-32**  
**!DEA CS 24 Ext - !DEA CS 24-28 Inc**

**Bi-thermal ultracompact heat exchanger**, with a large finned surface made of six copper pipes of oval section, where inside are inserted the pipes for sanitary water circulation (up to 17,83 l/min) with a temperature difference between inlet and outlet of 25K, assures the maximum rapid heat exchange.

- Combustion efficiency up to 94,4% at full load.
- High combustion quality with CO<sub>2</sub> up to 8.5% and CO at 58 ppm.
- Effective air venting thanks to the oversized manifolds, that assure an easy water circulation and a remarkable noise reduction thanks to the reduced internal pressure losses.
- Maximum thermal exchange speed due to the large number of exchange fins.
- Drastic reduction of the scaling deposits.
- Fast hydraulic connections.
- Immediate hot water production if compared to the traditional instantaneous boilers.
- Quick answer to the temperature variations, thanks to the very low inertia as result of materials and shape.
- Sensible energy saving.

- **!DEA AR 23/RS 18-24-28/AC 23 Plus/CS 24-28-32 Plus**  
**!DEA RS 24 Ext - !DEA RS 24 Inc**

**Mono thermal ultra-compact heat exchanger** with finned surface that winds six oval-shaped copper pipes.

- Combustion efficiency of 94.6% at full load.
- High combustion quality with CO<sub>2</sub> up to 8.4% and CO at 60 ppm.
- Fast hydraulic connections.

## The high comfort combi

- **DHW stainless steel plate heat exchanger**  
(n°12 plates for 23 and 24 kW - n°14 for 28 kW n°16 for 32 kW)

This choice gives an higher exchange surface, so, with the same water temperature and needed quantities, it's possible to let the boiler work with lower temperatures, obtaining:

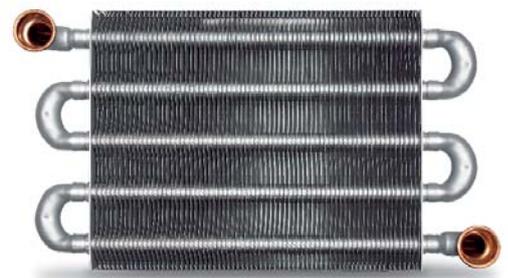
- Constant water temperature during the drawings
- DHW production up to 18,47 l/min with  $\Delta t$  25 K.

- **Monothermic primary heat exchanger**  
(for AC 23 Plus and CS Plus 24-28-32):  
it guarantees all the necessary capacity and the ideal efficiency at all load conditions.

- **Motorized diverting valve** (for all Plus models), of new conception, result of Unical technologic study, its part of a brass hydraulic group, very compact and, thanks to the powerful electric motor, allows quickly and safely to divert the hot water produced by the primary heat exchanger, to the plate heat exchanger or in loop to the heating circuit, optimizing the operation in temperature modulation.



Bi-thermal copper heat exchanger



Mono thermal copper heat exchanger



# Technology for the comfort

## Supplied as standard for all the range

The design has particularly cured the internal positioning of all the components together with the search of the best compromise between compactness and ease of maintenance.

- **The wide burner in stainless steel**  
with 11 ramps (for 18 - 23 and 24 kW), 13 ramps (for 28 kW) and 15 ramps (for 32 kW) produces a silent and well distributed combustion.
- **The digital electronic ignition**  
with three flame ignition attempts, exalts its reliability in every climatic condition, both "at cold and hot start".
- **The continuous proportional/integral modulation of the gas** managed by the HONEYWELL driving PCB, both in CH and DHW mode, through two temperature control sensors (for DHW and CH), determines, with a precision close to 1 K, the certitude of the pre-set adjustments.

## High performances

- **Highly effective pump**  
among the most reliable ones, complete with fast removable air vent, has been selected to compose a redoubtable hydraulic group, suitable for all the models.  
At last, an assembly of electronic functions exalts the completeness of its performances.
- **The anti-overheating post-circulation**  
of 15 seconds controls, in every condition, the thermal equilibrium between flow and return, also after strong drawings of DHW, whilst, in CH mode, with a lasting of 5 min, allows to exploit all the residual heat.
- **The anti-frost protection**  
intervenes at 5°C and is activated both, in DHW and in CH mode, increasing the boiler temperature at 15°C. The risk that !DEA could freeze, if the low temperature, where the boiler is installed, persists, is avoided.  
If there is lack of gas, the lockout of the boiler will be shown on the display.
- **The pump anti-jamming function**  
also after long inactivity periods, sends an impulse to the pump for 5 seconds, every 24 h stop, that makes the pump in operation, thus avoiding the oxidation could block it.
- **The technical service function**  
makes easier the combustion adjustment operations.  
By depressing the reset button for more than 3 seconds, it is possible to obtain the boiler operation, at min. or max. output, for 15 min, so that the necessary gas valve adjustments can be made.
- **The air pressure switch**  
has been selected in order not to be influenced by the external climatic conditions that could make its function fruitless.



### Dimensions of the models for indoor installation:

- height: 700 mm
- width: 420 mm
- depth 255 mm  
(345 mm for all 28 and 32 kW models)

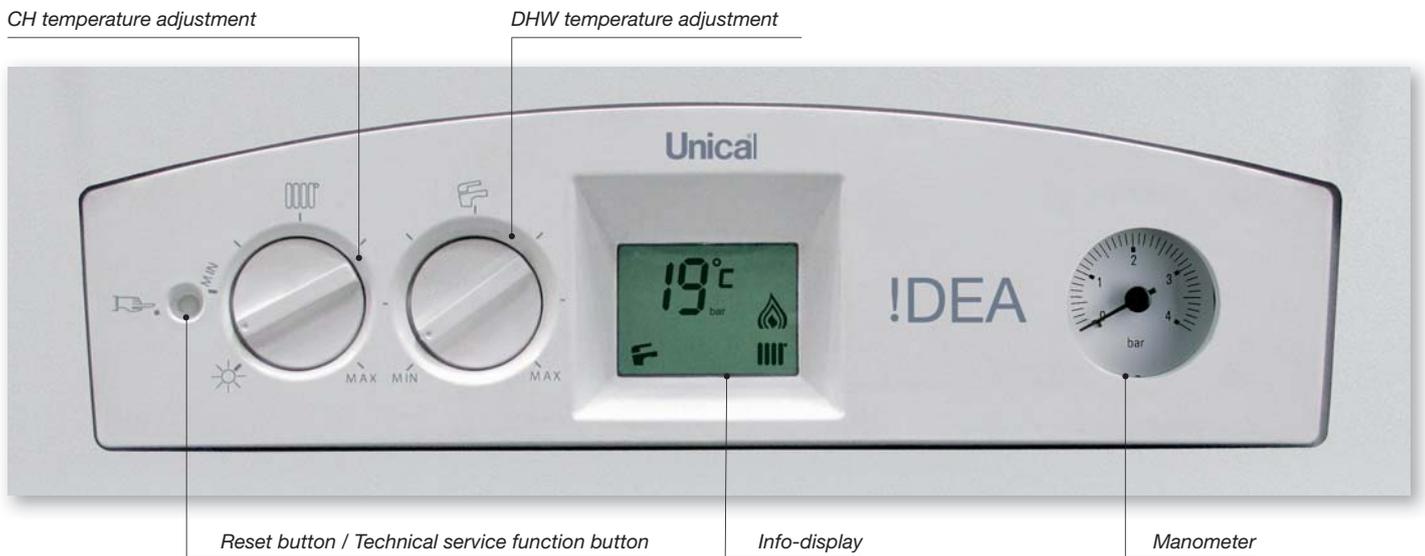
The **on wall mounting** of the **outdoor installation** models have the same dimensions of the correspondent indoor models. The only difference, for the on wall mounting boilers on the outdoor installations is the addition of a special rubber top to protect the boiler from the rain.

The cabinet for the **in cabinet mounting models (Inc)** have the following **dimensions:**

- height 1140 mm
- width 550 mm
- depth 260 mm

The model !DEA CS 28 Inc is less deep than the correspondent indoor model because the expansion vessel is placed beside, instead of behind the boiler, within the cabinet.

# Intuitive controls



## Panel board

The electronic panel board will result familiar immediately. And last, but not least, all the harness and intervention operations are easily made by the frontward rotation of the panel board.

The multifunction LCD display, with time controlled back lighting, allows:

- The reading of the CH and DHW temperatures
- The showing of the burner lockout due to lack of flame
- The operation/stand-by status
- The diagnostics with indication of 11 possible faults
- L.H. side knob with double function: ON-OFF switch and CH temperature setting between 45 and 78°C
- R.H. side knob with DHW temperature setting between 35 and 57°C

## Accessories (optional)



REMOTE CONTROL  
**REGOLAFACILE**  
modulating, weekly  
Code 00361971



ON-OFF  
CHRONOTHERMOSTAT  
**REGOLAFACILE**  
Code 00362905



CHRONOTHERMOSTAT  
**GA 240**  
Code 00362968



REMOTE CONTROL  
**SIM-CRONO P**  
modulating, weekly  
Code 00362904



**OUTER  
TEMPERATURE  
SENSOR**  
Code 00362077



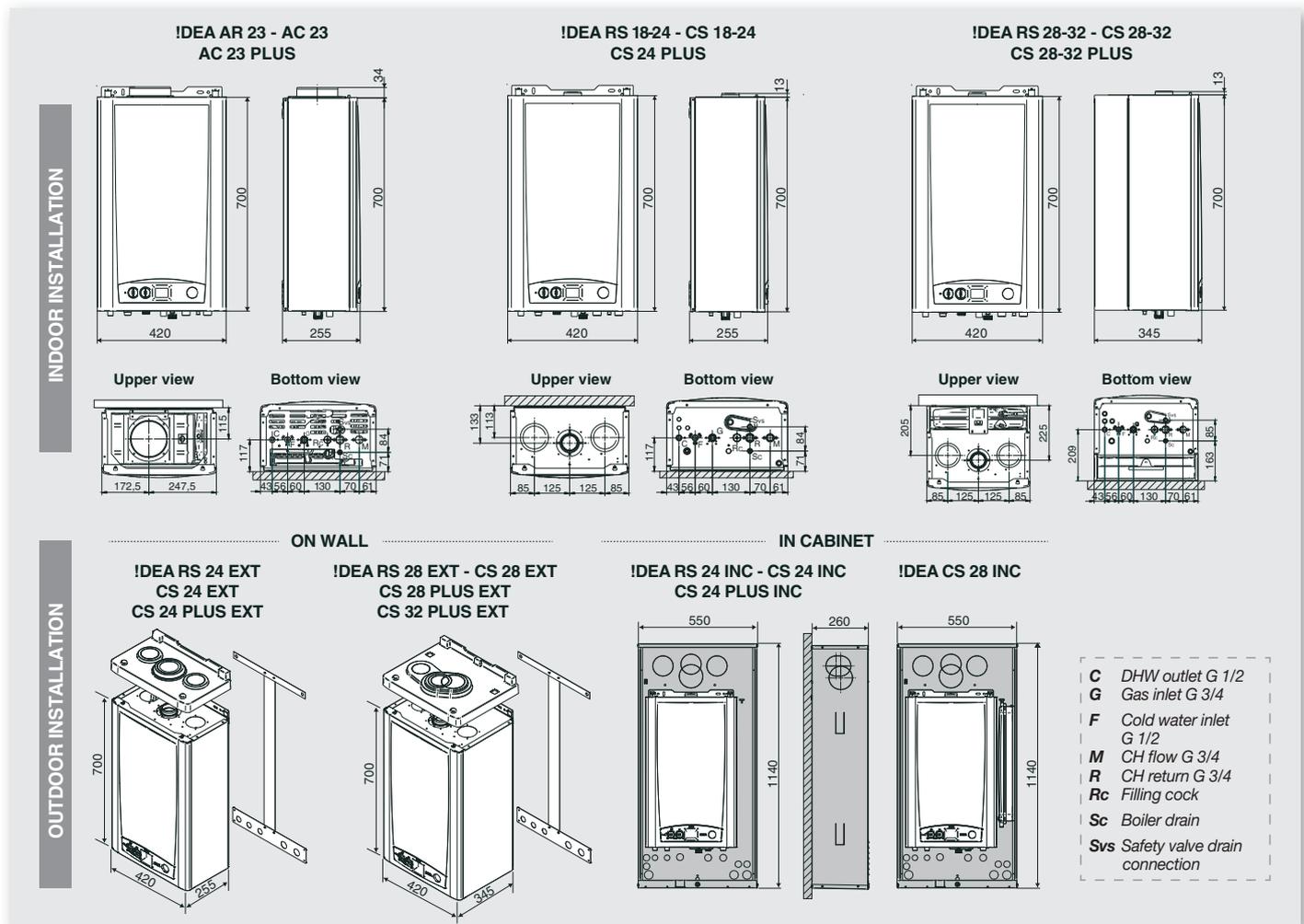
**RUBBER TOP FOR  
PROTECTION AGAINST RAIN**  
Code 00362524 (mod. 24)  
Code 00363187 (mod. 28 e 32)



**HYDRAULIC CONNECTIONS  
CASE**  
Code 00362673 (mod. 24)  
Code 00362674 (mod. 28 e 32)

For further information related to the accessories (smoke evacuation, hydraulic connections, kit of D.H.W. production for versions heating only) compatible with the series !DEA, consult the web site [www.unical.eu](http://www.unical.eu)

# Dimensions - Technical data



!IDEA		AC23	AR23	CS18	RS18	CS24 CS 24 EXT CS 24 INC	RS24 RS 24 EXT RS 24 INC	CS28 CS 28 EXT CS 28 INC	RS28 RS 28 EXT	CS32	RS32	AC23 PLUS	CS24 PLUS CS 24 PLUS EXT CS 24 PLUS INC	CS28 PLUS CS 28 PLUS EXT	CS32 PLUS CS 32 PLUS EXT
NOMINAL HEAT OUTPUT	kW	22.9	22.9	18.5	18.5	24.6	24.6	28	28	31.6	31.6	22.9	24.7	28.1	32.3
NOMINAL HEAT INPUT	kW	25.5	25.5	20.5	20.5	26.5	26.5	30.1	30.1	34.5	34.5	25.5	26.5	30.1	34.5
MINIMUM HEAT OUTPUT	kW	9.9	9.9	7.8	7.8	10.1	10.1	10.2	10.2	11.6	11.6	9.9	10.1	10.2	12.2
WATER EFFICIENCY at part load (30%)	%	89.43	89.43	90.23	90.23	90.23	90.23	90.42	90.42	90.42	90.42	89.43	90.43	90.42	90.42
WATER EFFICIENCY at full load (100%)	%	89.9	89.9	90.4	90.4	92.92	92.92	93.18	93.18	91.69	91.69	89.8	93.05	93.21	93.5
FLUE GAS TEMPERATURE $t_f-t_a$ max.	°C	107.5	107.5	121.5	121.5	109	109	103.5	103.5	120.9	120.9	95.5	119.3	96.3	101.4
EFFICIENCY CLASS (Directive 92/42/CE)		★★	★★	★★	★★	★★★★	★★★★	★★★★	★★★★	★★	★★	★★	★★★★	★★★★	★★★★
WATER PRESSURE IN CH CIRCUIT min./max.	bar	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3	0.5÷3
WATER PRESSURE IN DHW CIRCUIT min./max.	bar	0.5÷6	-	0.5÷6	-	0.5÷6	-	0.5÷6	-	0.5÷6	-	0.5÷6	0.5÷6	0.5÷6	0.5÷6
D.H.W. production *	l/min	14.1	-	10.11	-	13.7	-	16.1	-	17.8	-	14.1	13.2	15.6	18.5
ELECTRICAL SUPPLY / power consumption	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50
MAX. ABSORBED POWER	W	85	85	138	138	138	138	138	138	150	150	85	138	138	150
PROTECTION DEGREE	IP	X4D	X4D	X5D	X5D	X5D	X5D	X5D	X5D	X5D	X5D	X4D	X5D	X5D	X5D
EXPANSION VESSEL TOTAL CAPACITY	l	6	6	6	6	6	6	8	8	10	10	6	6	8	10
NET WEIGHT	kg	27.1	24.6	29.6	28.1	29.6/44.1*	28.1/42.6*	34.7/49.2*	33.2	35.7	34.7	28.6	30.1/44.6*	35.2	36.2
GROSS WEIGHT	kg	30	27.6	32.5	31	32.5/47*	31/45.5*	38/52.5*	36.2	39	37.2	31.5	33/47.5*	38.2	39.2

\* in continuous, with  $\Delta t$  25K - mixed \*\* in cabinet mounting models (Inc)

Unical



AMI

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