



EOLO Star 23 kW

Wall-mounted instant boilers



EOLO Star 23 kW is the wall-mounted room sealed fan-assisted boiler that Immergas has designed specifically for use in new buildings.

It is lightweight, compact (measuring only 25 cm in depth) and elegantly designed making it easy and pleasant to install.

Thanks to the bithermal heat exchanger, abundant domestic hot water is heated quickly to the temperature required.

The operating parameters can be adjusted by way of a digital interface with display and push buttons.

EOLO Star 23kW can be controlled remotely by connecting it to the new optional Digital Remote Control that also integrates the timer/room thermostat, boiler diagnostics and thermoregulation of the delivery temperature.

The appliance has an IPX4D electrical insulation level (protection against spurts of water).

Thanks to their low consumptions, all the boilers in the EOLO Star 23 kW series have obtained 3-star markings (★★★), in compliance with European Directive.

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SPECIFICATIONS

Wall-hung room-sealed fan-assisted boiler for central heating and the instant production of domestic hot water (appliance type $C_{12} / C_{32} / C_{42} / C_{52} / C_{82}$) with a nominal heat output of 23.8 kW (20,485 kcal/h) together with high efficiency and forced circulation.

The boiler consists of:

- a 12-ramp multigas burner with air intake made in stainless steel, featuring an ignition electrode and ionisation detection electrode and a dual-shutter electric gas valve with built-in modulation coil;
- high efficiency gas/water bithermal heat exchanger made in copper with tubes inserted in a lamellar battery protected by a corrosive proof alloy;
- combustion chamber in steel plate insulated internally with ceramic panels;
- sealed chamber in steel plate with fixed speed fan to eliminate fumes, a pressure switch for verifying correct operation of the fan and of the air intake/flue exhaust circuit;
- hydraulic unit consisting of a water manifold, d.h.w. circuit flow switch, absolute pressure switch on the system side, circulating pump, automatic by-pass, filling valve;
- a 6-litre diaphragm expansion tank with a preload pressure of 1 bar, a 3 bar system safety valve and a manometer;
- overheating safety thermostat;
- electronic ignition with ionisation control;
- push buttons (+ and -) for adjusting the central heating temperature, push buttons (+ and -) for adjusting the domestic hot water temperature, a general "function" switch (Stand-by, Summer, Winter) and a reset button;

- control panel with microprocessor controlled p.c.b. with continuous 2-sensor flame modulation (d.h.w. and central heating) with modulation range of 23.8 to 9.5 kW (7.0 kW in d.h.w.);
- keys for setting and adjusting boiler operating parameters;
- self-diagnosis system with digital visualisation of the temperature, status, functioning mode and error codes on the display;
- central heating ignition delay device, antifreeze protection system (up to -5°C), circulator antiblock function, d.h.w. postcirculation function, post-ventilation function, chimney sweep function, anti-leak function, circulation functioning mode selection;
- set for connection to the Remote Digital Control, to a timer/room thermostat or to a wireless radio timer/room thermostat;
- IPX4D electrical insulation level;
- connection set (optional) with adjustable fittings on hydraulic couplings and cold domestic water/gas shutoff cocks;
- polyphosphate dispenser kit(optional), recommended where the hardness of the water can mean scale deposits

Supplied with holes for combustion analysis and a bottom protective casing.

II_{2H3+} category appliance, works with natural gas and LPG CE marked.

The following model is available:

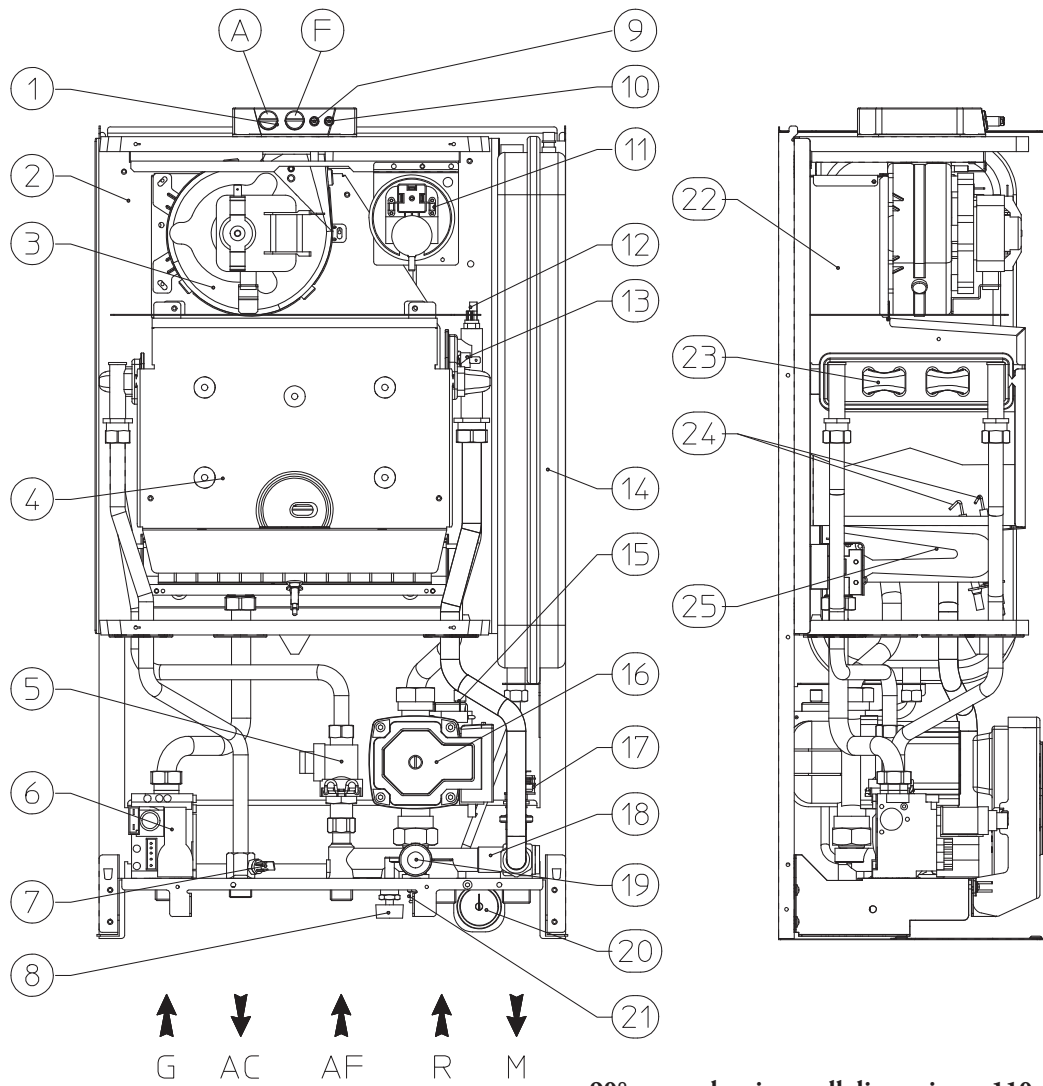
- **EOLO Star 23 kW EXPORT** code 3.016170



EOLO Star 23 kW

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MAIN COMPONENTS



90° gas cock axis – wall dimension = 110 mm

LEGEND:

- 1 - Intakes (air A) - (flues F)
- 2 - Sealed chamber
- 3 - Fan
- 4 - Combustion chamber
- 5 - Domestic water flow switch
- 6 - Gas valve
- 7 - Domestic water probe
- 8 - System filling cock
- 9 - Positive signal pressure point
- 10 - Negative signal pressure point
- 11 - Flue pressure switch
- 12 - Delivery probe

- 13 - Safety thermostat
- 14 - System expansion vessel
- 15 - Automatic air vent
- 16 - Boiler circulator
- 17 - System pressure switch
- 18 - Water manifold
- 19 - 3-bar safety valve
- 20 - Manometer
- 21 - System draining cock
- 22 - Draught diverter
- 23 - Quick type bithermal heat exchanger
- 24 - Ignition and detection electrodes
- 25 - Burner

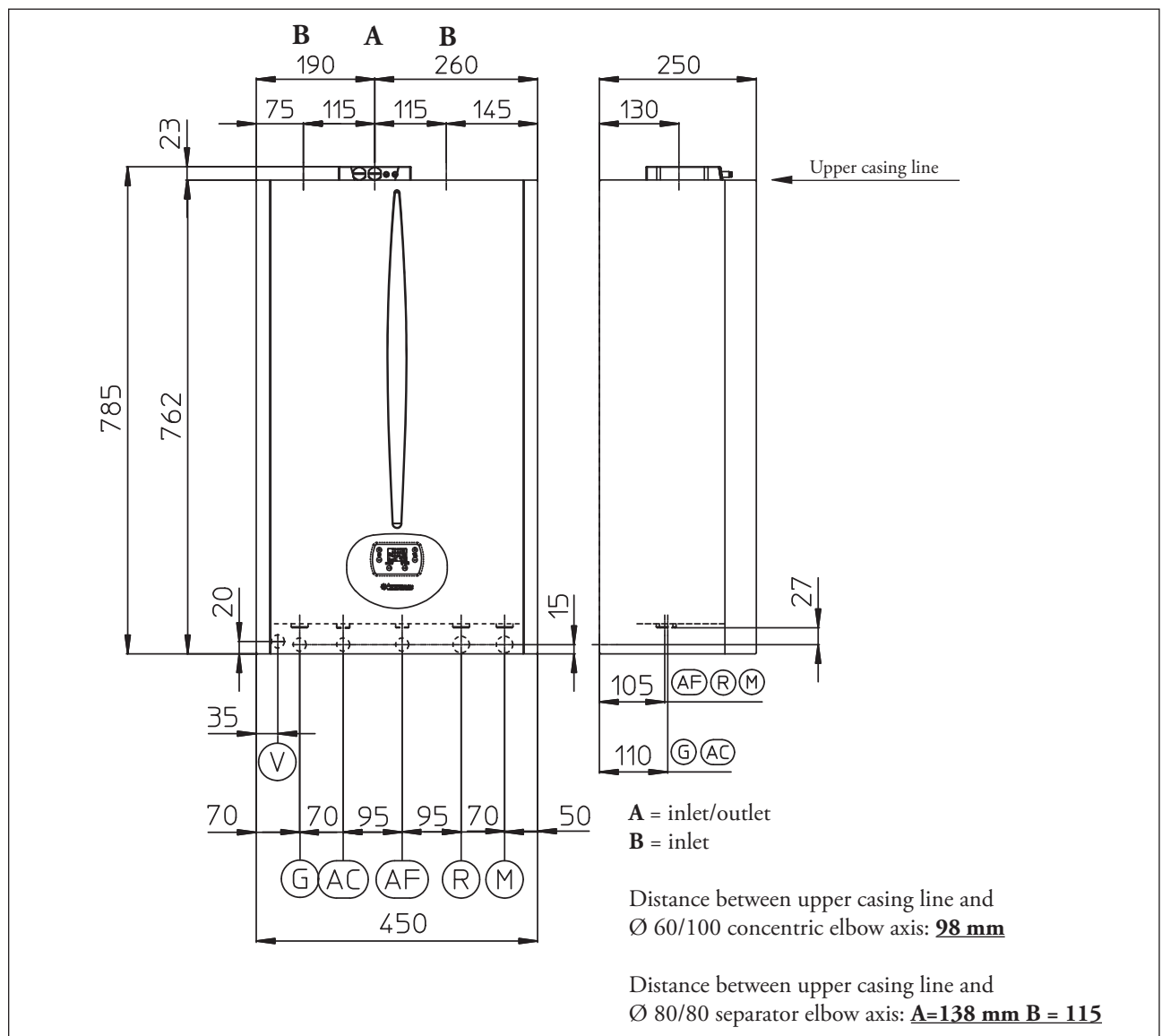


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3 MAIN DIMENSIONS

Model	Height mm	Width mm	Depth mm	inlet/outlet Ø mm
EOLO Star 23 kW	785	450	250	100/60

3.1 CONNECTIONS



Model	Delivery M	Return R	Hot outlet AC	Cold inlet AF	Gas G	Expansion vessel Litres
EOLO Star 23 kW	3/4"	3/4"	1/2"	1/2"	3/4"	6 (real 3.95)



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CIRCULATOR HEAD AND FLOW RATE GRAPH

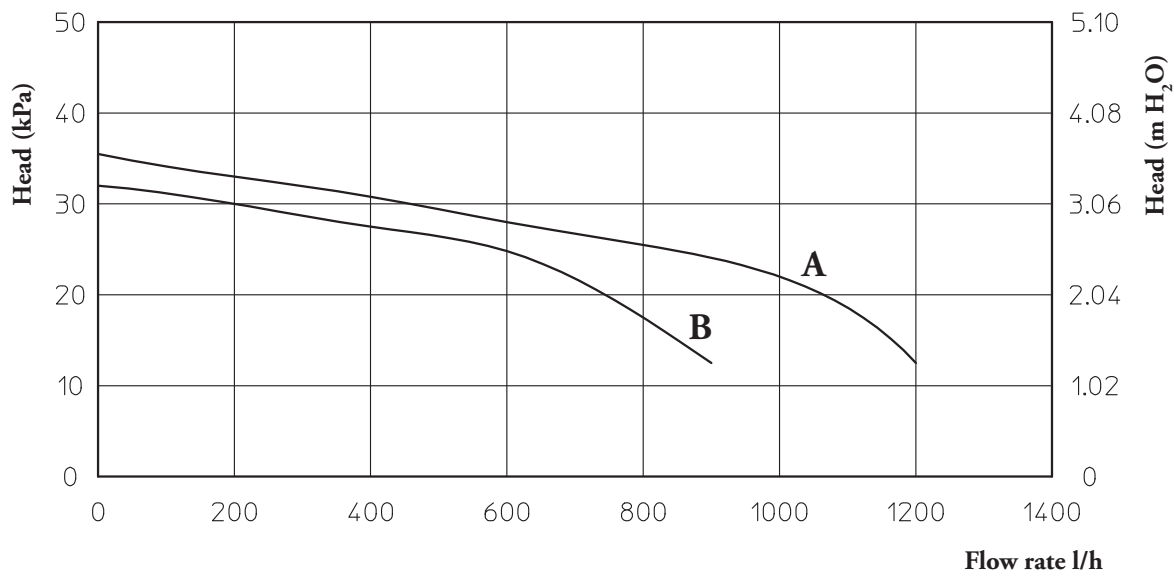
The “EOLO Star 23 kW” boilers are supplied with the circulator incorporated.

The circulator is already fitted with a condenser.

The graph shows the system’s available head (with automatic by-pass) which depends on the flow rate.

To optimize boiler operation, the circulation pump in new systems (single-pipe and module) should be used at top speed.

GRUNDFOS UPS 15-50 AO



A = System’s available head at third speed (with automatic by-pass).

B = System’s available head at second speed (with automatic by-pass).



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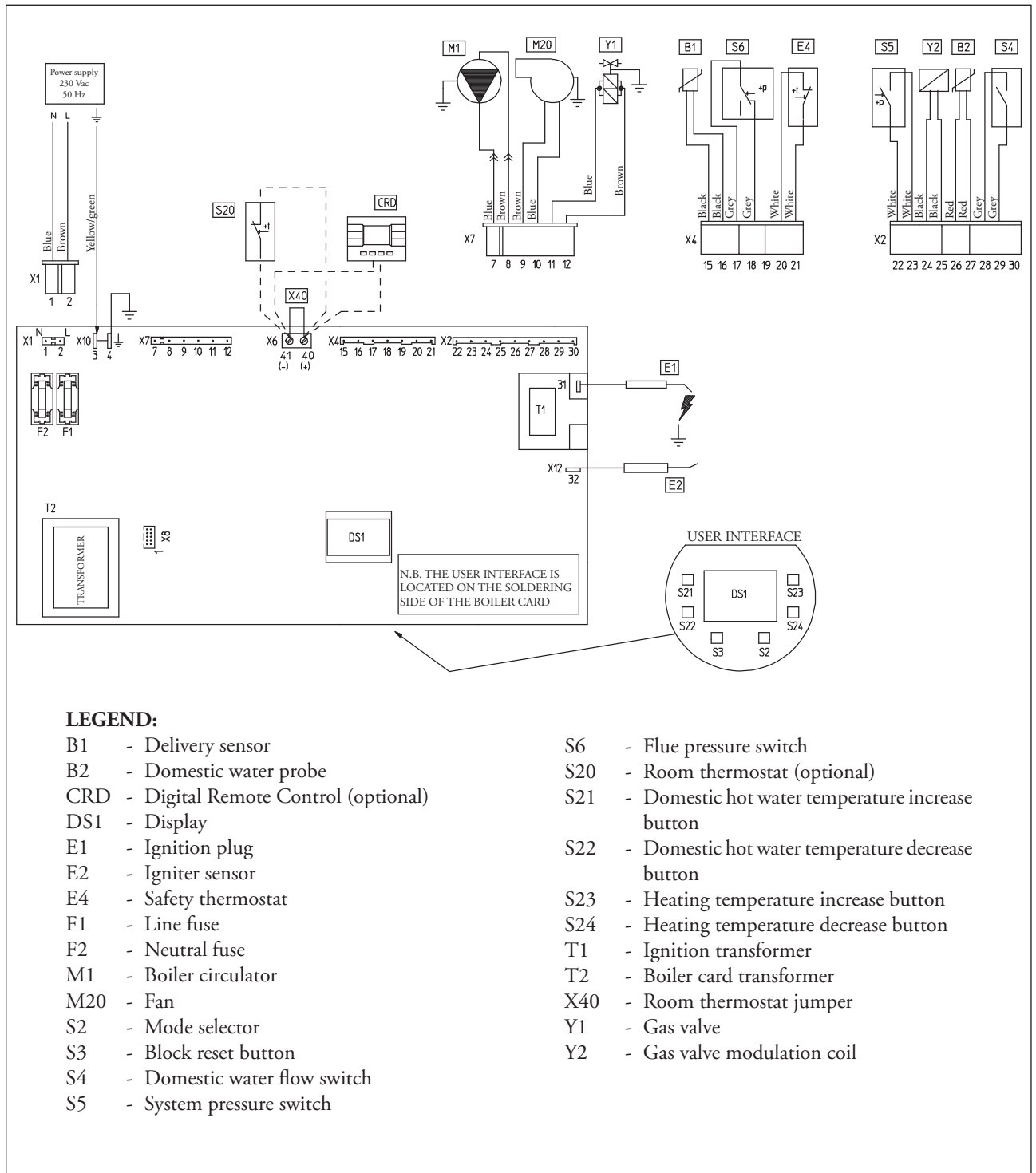
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WIRING DIAGRAM

AMBIENT THERMOSTAT AND DIGITAL REMOTE CONTROL.

The boiler may be connected to a room thermostat (S20), programmable On/Off thermostat, programmable timer or a

Digital Remote Control (CRD), which must be connected to terminals 40 - 41 and remove the jumper X40.

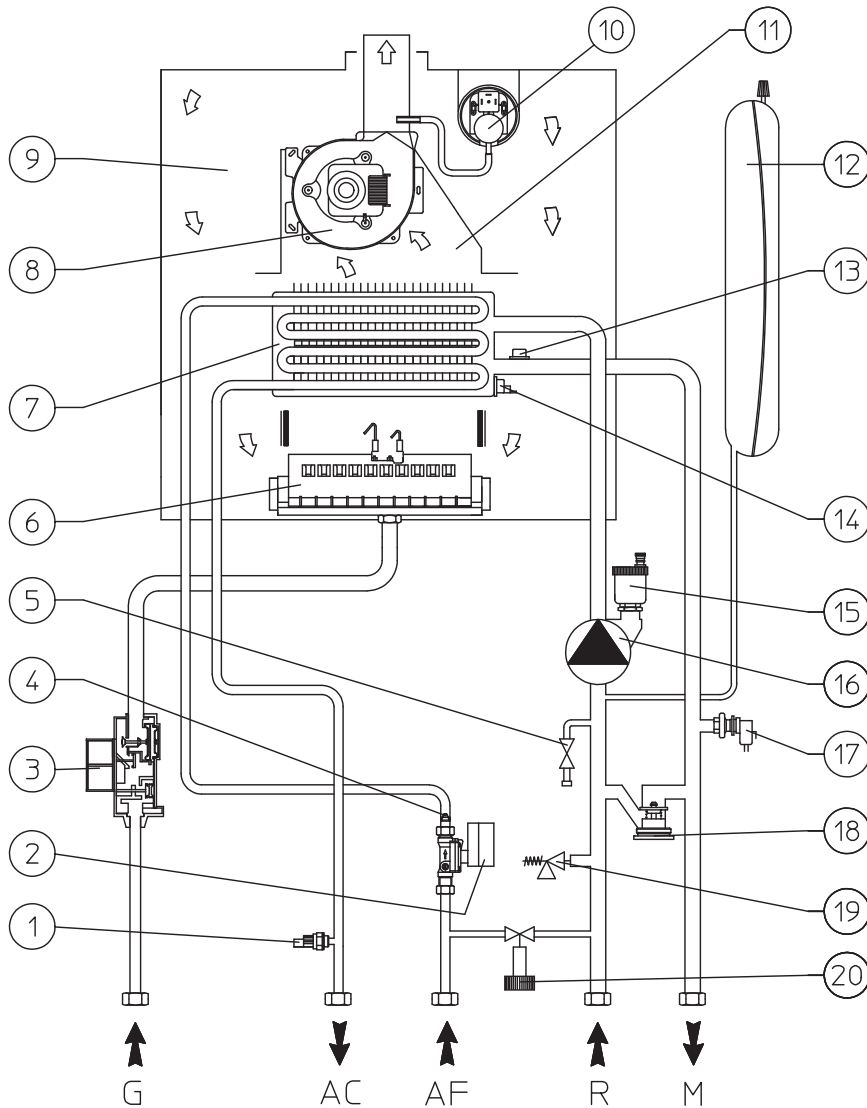




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HYDRAULIC LAYOUT



LEGEND:

- | | |
|---|------------------------------|
| 1 - Domestic water probe | 12 - System expansion vessel |
| 2 - Domestic water flow switch | 13 - Delivery probe |
| 3 - Gas valve | 14 - Safety thermostat |
| 4 - Flow limiter | 15 - Automatic air vent |
| 5 - System draining cock | 16 - Circulator |
| 6 - Burner | 17 - System pressure switch |
| 7 - Quick type bithermal heat exchanger | 18 - Automatic by-pass |
| 8 - Fan | 19 - 3-bar safety valve |
| 9 - Sealed chamber | 20 - System filling cock |
| 10 - Flue pressure switch | |
| 11 - Draught diverter | |



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TECHNICAL SPECIFICATIONS

			EOLO Star 23 kW
Maximum nominal heat input		kW (kcal/h)	25.1 (21,586)
Maximum nominal heat output		kW (kcal/h)	23.8 (20,485)
C.H. Minimum nominal heat input		kW (kcal/h)	10.6 (9,094)
D.H.W. Minimum nominal heat input		kW (kcal/h)	7.9 (6,834)
C.H. Minimum nominal heat output		kW (kcal/h)	9.5 (8,147)
D.H.W. Minimum nominal heat output		kW (kcal/h)	7,0 (6.000)
Efficiency at 100% Pn		%	94.9
Efficiency at 30%		%	91.1
Central Heating circuit			
C.H. temperature adjustment		°C	35 - 80
C.H. max temperature		°C	90
C.H. max pressure		bar	3
Nom. / (real) system expansion vessel capacity		litres	6 (3.95)
Expansion vessel preload pressure		bar	1.0
Available pump head with flow 1000 l/h		kPa (m H ₂ O)	25.50 (2.60)
Domestic Hot Water circuit			
D.H.W. nominal heat output		kW (kcal/h)	23.8 (20,485)
D.H.W. temperature adjustment		°C	35 - 55
Minimum D.H.W. pressure		bar	0.3
Maximum D.H.W. circuit pressure		bar	10
Minimum D.H.W. demand		litres/min	1.5
Continuous max D.H.W. production (Δt 30°C)		litres/min	11.1
Gas supply			
NATURAL GAS (G20)	MIN - MAX	mbar	2.78 - 12.13
	nozzles	n° - ø mm	12 x 1.25
LPG (G30)	MIN - MAX	mbar	8.38 - 28.00
	nozzles	n° - ø mm	12 x 0.76
LPG (G31)	MIN - MAX	mbar	10.90 - 36.40
	nozzles	n° - ø mm	12 x 0.76
Electric supply		V/Hz	230 - 50
Nominal absorbtion		A	0.79
Electric power		W	135
Power consumption of the fan		W	73
Power consumption of the pump		W	43
Electric protection	IP		X4D
Water content		litres	3.5
Empty weight		kg	34
Energetic Efficiency Marking (92/42/CEE Directive)	stars		★★★



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COMBUSTION SPECIFICATIONS

		Nat. gas (G20)	LPG (G30)	LPG (G31)
100% P _n combustion efficiency	%	95.3	95.3	95.3
P min combustion efficiency	%	89.9	89.9	89.9
Stack losses with burner on (100% P _n)	%	4.7	4.7	4.7
Stack losses with burner on (P min)	%	10.1	10.1	10.1
Stack losses with burner off	%	0.02	0.02	0.02
Outer casing losses with burner off	%	0.54	0.54	0.54
Outer casing losses with burner on (100% P _n)	%	0.40	0.40	0.40
Outer casing losses with burner on (P min)	%	0.30	0.30	0.30
Exhaust flue temp. at Max. nominal heat input	°C	107	105	109
Exhaust flue temp. at Min. nominal heat input	°C	83	86	83
Fumes flow rate at Max. nominal heat input	kg/h	52	52	54
Fumes flow rate at Min. nominal heat input	kg/h	55	52	55
CO ₂ at Maximum Heat Input	%	6.90	8.00	7.70
CO ₂ at Minimum Heat Input	%	2.60	3.20	3.00
CO at Maximum Heat Input	mg/kWh	57	82	29
CO at Minimum Heat Input	mg/kWh	57	68	16
NO _x at Maximum Heat Input	mg/kWh	109	143	133
NO _x at Minimum Heat Input	mg/kWh	30	36	36
Weighted CO	mg/kWh	89	-	-
Weighted NO _x	mg/kWh	106	-	-
NO _x category	-	3	3	3

The gas flow rates refer to the NHV at 15°C and with 1013 mbar pressure.
The fumes temperature values refer to a 15°C inlet air temperature.

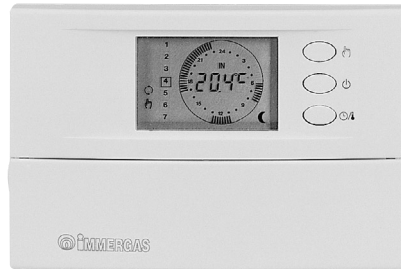


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OPTIONALS

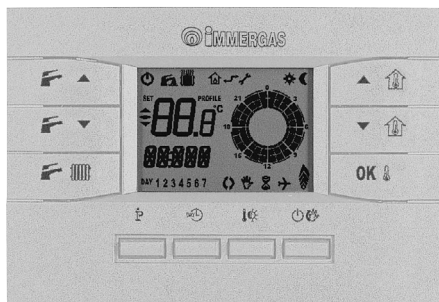
Digital weekly timer-thermostat
cod. 3.014438



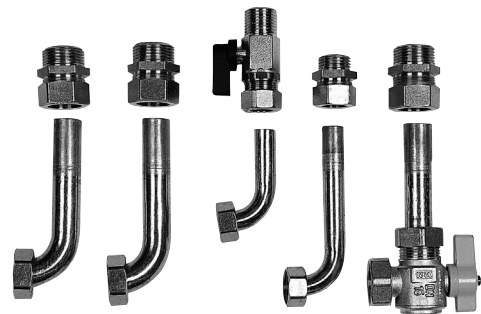
Remote timer-thermostat (wireless)
cod 3.014439



Digital remote control
cod. 3.016362



Connections set kit
cod. 3.015229



On-off valve kit
cod 3.4297



Polyphosphate dispenser kit
cod 3.013860



Nr. contratto / Contract no. **I 6700**

GASTEC Italia certifica che le **caldaie**, tipo
GASTEC Italia hereby declares that the **central heating boilers**, type



Marchio / trade mark:

Immergas

Modelli / models:

Extra intra star
Nike Star 23 kW
Nike Star 23 kW Cina
Nike Star 23 kW Export
Eolo Star 23 kW
Eolo Star 23 kW Cina
Eolo Star 23 kW Export

costruite da /

made by

IMMERGAS S.p.A.,

di / in

Brescia (RE), Italia

soddisfano i requisiti riportati nella

meet the essential requirements as described in the

Direttiva Apparecchi a Gas (90/396/CEE) e Rendimenti
(92/42/CEE)

Directive on appliances burning gaseous fuels (90/396/EEC) and
Efficiency Directive (92/42/EEC)

NIP/ PIN

: 0694BM3453

Rapporto / report

: 163453

Tipi di apparecchi / appliance type


: B_{11BS} (Nike Star 23 kW, Nike Star 23 kW Cina, Nike Star 23 kW Export)
C₁₂, C₃₂, C₄₂, C₅₂, C₈₂, B₂₂, B₃₂ (Extra intra star, Eolo Star 23 kW,
Eolo Star 23 kW Cina, Eolo Star 23 kW Export)

I suddetti prodotti sono stati approvati per
Mentioned products have been approved for

AT	II _{2H3B/P}	DK	II _{2H3B/P}	ES	II _{2H3+}
FI	II _{2H3B/P}	GB	II _{2H3+}	HU	II _{2HS3B/P}
IE	II _{2H3+}	PT	II _{2H3+}	SE	II _{2H3B/P}
CH	II _{2H3+} , II _{2H3B/P}	IT	II _{2H3+} , III _{1o2H3+}	PL	II _{2ELwL3B/P}

San Vendemiano, **28 Febbraio 2005**

San Vendemiano, 28 February 2005


Daniël Vangheluwe,
vice presidente.
vice president

GASTEC

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GASTEC

CERTIFICATO



During their working life, the performances of the products are influenced by external factors such as the hardness of the domestic water, the weather conditions, scaling in the system, etc. The data indicated in this brochure refer to new products, installed and used in compliance with the current standards in force. NOTE: remember to have your appliance periodically serviced.

Immergas reserves the right to make all modifications to the models considered necessary for product development without prior notice.
Code S.0067 rev. 001 - 03/2007 - Immergas Tec. Doc. Dept.





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