KON^{m}

EVOLUTION IN THE CONDENSATION

Unical®

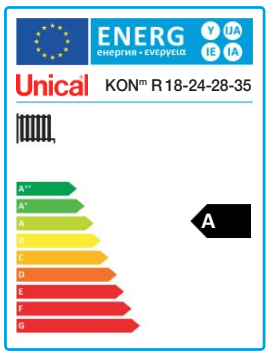
Try the Best

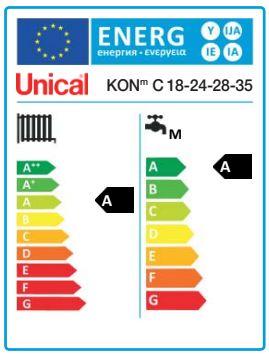
KON the last generation of domestic condensing boilers of Unical, available in version:

- combi instantaneous
- heating only for combination with DHW stainless steel storage tank DSP 110 inox

KON introduces all the “Quality Stars” to satisfy every type of demand:

- Exceptional actual modulation ratio 1:8
- Efficiency between **106,2 and 107,2%**
- **Ultrathin primary heat exchanger** in **Al/Si/Mg**
- Electronic PCB with HWS function **“Hot Water Speed”** (C version)
- **Low NO_x** (class 5 according to EN 297 and EN 483) thanks to the premix modulating burner
- **“Pit stop”** service
- Simple and intuitive panel board
- Domestic Hot Water production up to **18,3 l/min** with Δt 25 K, with special 12 plates stainless steel heat exchangers (for all the C models)





	Main features								for OUTDOOR installations	
									At sight	Built-in
Modelli		CLASS ErP		CLASS ErP	ROOM SEALED	MONOTHERMAL HEAT EXCHANGER	3 WAY VALVE	PLATE HEAT EXCHANGER	In combination with OUTDOOR KIT & MOUNTING JIG *	in BOX
KONm RTFS 24 INC	☺	A		-	☺	☺				☺
KONm CTFS 24 INC	☺	A	☺	A	☺	☺	☺	☺		☺
KONm RTFS 18	☺	A		-	☺	☺			☺	
KONm CTFS 18	☺	A	☺	A	☺	☺	☺	☺	☺	
KONm RTFS 24	☺	A		-	☺	☺			☺	
KONm CTFS 24	☺	A	☺	A	☺	☺	☺	☺	☺	
KONm RTFS 28	☺	A		-	☺	☺			☺	
KONm CTFS 28	☺	A	☺	A	☺	☺	☺	☺	☺	
KONm RTFS 35	☺	A		-	☺	☺			☺	
KONm CTFS 35	☺	A	☺	A	☺	☺	☺	☺	☺	

* Accessories for the completion of KONe for OUTDOOR installations (optional): place the order for KONm + OUDOOR KIT + MOUNTING JIG.

Management of 2 zones with 2 thermostats
KON is also synonymous of flexibility of installation. Ideal for all the installations, thanks to the electroni\ cs that allows to manage 2 zones at different heating temperature (high for radiators and fan-coils, low for floor heating) checking them with on-off or modulating thermostats

Over-run circulation of 15 seconds to avoid overheating: it checks in every condition the thermal equilibrium between flow and return, also after intense D.H.W. drawings, while, in heating mode, with a duration of 5 minutes, allows to dissipate the whole residual thermal inertia

Operation in sliding temperatutre for the maximum economy of management

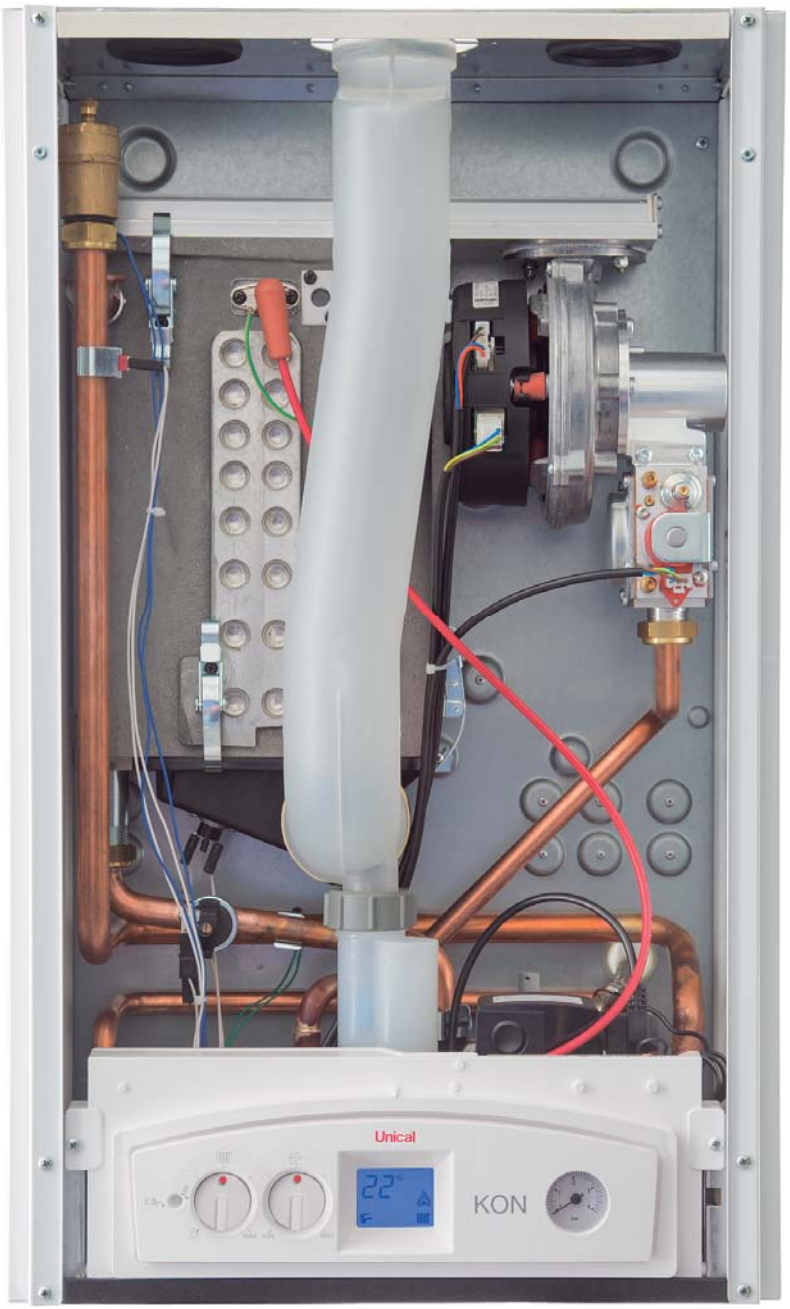
Multigas Operation (Natural Gas or LPG)

Antifreeze protection that intervenes at 5°C and is activated both in DHW production and heating mode, increasing the boiler temperature at 15°C. This avoids the risk that KON can freeze if low temperatures persist where it is installed. If there is a lack of gas a lockout signalling will be shown on the display

Pump anti-jamming function also after long inactivity periods. The electronics of KON put the pump in operation for 5 seconds every 24 hours of standstill, so avoiding that the oxidation could stop it

Chimney sweeper function facilitates the operations of combustion adjustment. By depressing the reset button for more than 5 seconds, the operation of the boiler at minimum or at maximum capacity for 15 minutes can be obtained so that the combustion can be analyzed

Hydraulic connections hiding case (optional)



The Details of KONm

Exclusive Heat Exchanger in Al/Si/Mg Alloy

It is realized in a special Aluminium/Silicon/Magnesium alloy that assures efficiency and resistance. Thanks to the configuration of the internal heat exchanger, in regime of condensation high efficiencies are obtained, Class A, that means, for the consumer, great economic saving and very low environmental impact.

Modulating Pump with Automatic Air Vent

It represents the state of the art in the standard of the high efficiency. In line with the ErP directive 2015, with less than 1 W of consumption in stand-by and only 45 W in operation at maximum speed, thanks to the wide modulation capacity, according to the room thermostat and to the temperatures detected by the temperature sensors placed in flow / return connections, automatically doses the power of the boiler to the demands of the heating system. Particularly silent and compact, it integrates with the safety valve, the bypass and the discharge valve.

Modulating Premix Burner

with electro-pneumatic control and constant combustion ratio.

The “Flat” type burner assures:

- long duration thanks to the low thermal and mechanical stresses and to the physical inalterability of the fibre in FeCr alloy
- ideal propagation of the radiation heat thanks to its chemical-physical structure able to develop a particularly soft and bright flame
- Low NO_x emissions (class 5 according to EN 297 and EN 483)
- “Quick release” of the complete plate. The release allows the complete removal of the combustion system.

Cleaning the Heat Exchanger... in less than 2 Minutes

KONm is fruit of the experience of the international Service and the suggestions of the market, from which the staff of Unical engineers has synthesized a formidable technological complex. Easily assemblable and quickly removable. Thanks to the excellent performances, KONm represents one the top in the sector of the actual and future domestic condensing boilers.

“Quick Release” removal of the combustion system

Opening of the complete combustion system

Removal of the complete combustion system

Inspection burner and component

Intuitive Controls

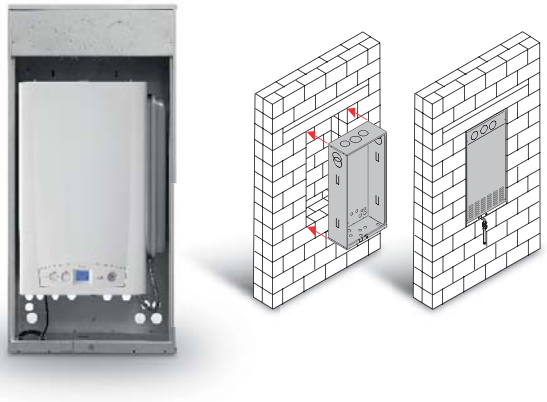
The electronic panel board will immediately result familiar. Not less important: all the wiring and intervention operations are facilitated by the frontwards rotating system.

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

- Reading of the heating and D.H.W. temperatures
- Visualization of the lockout due to lack of flame
- Visualization of the Operation/Stand-by State
- Diagnostic with signalling of 11 possible faults
- L.H. side knob: ON/OFF switch + S/W selector + heating temperature adjust. 30 to 85°C
- R.H. side knob: DHW temperature adjust. 38 to 60°C

EXT e INC (outdoor and inwall) Models

The KON[m] boilers is as standard IPX5D with a outor silikon cover kit (optional) is ready for the outdoor installation



In-wall model version

- 24 kW only heating
- 24 kW combined with D.H.W. production

Accessories (Optional)

HIDRAULIC CONNECTION COVER

REMOTE CONTROL REGOLAFACILE

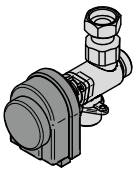
REMOTE CONTROL SIM-CRONO weekly modulating

CHRONOTHERMOSTAT REGOLAFACILE ON-OFF

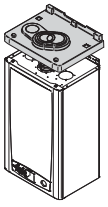
CHRONOTHERMOSTAT GA 240

OUTER TEMPERATURE SENSOR

ZONE MODULE MANAGER OT



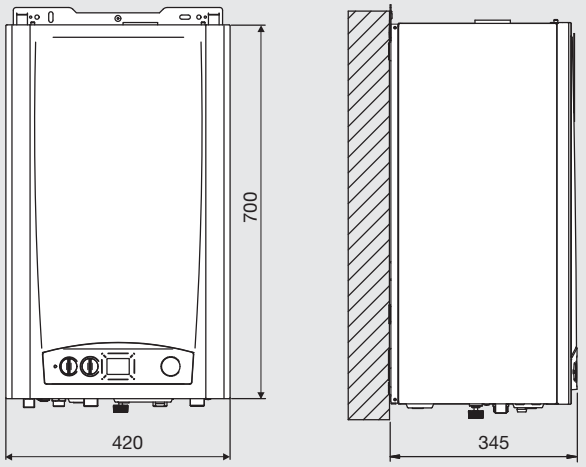
KIT FOR DHW PRAPARATION THROUGH A GENERIC TANK
constituited by:
NTC temperature sensor
Wiring harness
Three way diverting valve



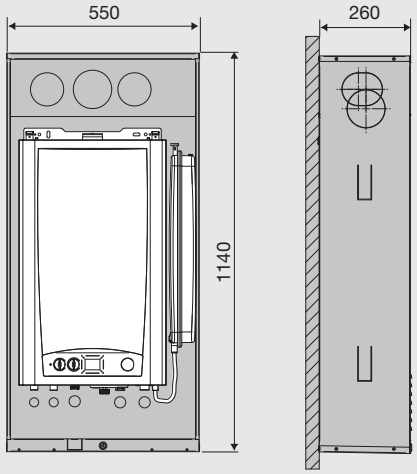
OUTDOOR SILICON COVER

Technical Data and Dimension

KON^{m}



KON^{m} INC



DATA ACCORDING TO ErP DIRECTIVE

KON^{m}			18 R / C	24 - 24 INC R / C	28 R / C	35 R / C
Nominal Heat Output	P_n	*kW*	17	23	27	32
Seasonal space heating energy efficiency	η_s	*%*	93	92	93	93
SEASONAL EFFICIENCY CLASS IN HEATING MODE			**A**	**A**	**A**	**A**
FOR CH ONLY AND COMBINATION BOILERS: USEFUL HEAT OUTPUT						
Useful Heat Output in high-temperature regime (Tr 60°C / Tm 80°C)	P_4	*kW*	10.3	12.7	15.8	18.2
Useful efficiency at nom. heat output in high-temperature regime (Tr 60°C / Tm 80°C)	η_4	*%*	88.1	87.0	88.4	87.5
Useful heat output at 30% of nom. heat output in low-temperature regime (Tr 30°C)	P_1	*kW*	3.4	4.2	5.3	6.1
Useful efficiency at 30% of nom. heat output in low-temperature regime (Tr 30°C)	η_1	*%*	97.8	96.7	97.5	97.5
RANGE-RATED BOILER: YES / NO			YES	YES	YES	YES
AUXILIARY ELECTRICITY CONSUMPTION						
At full load	el_{max}	*kW*	0.126	0.126	0.136	0.136
At part load	el_{min}	*kW*	0.091	0.091	0.093	0.093
In stand-by mode	P_{SB}	*kW*	0.003	0.003	0.003	0.003
OTHER ITEMS						
Stand-by heat loss	P_{stby}	*kW*	0.0824	0.0824	0.1136	0.1136
Emissions of nitrogen oxides	NO_x	*mg/kWh*	37	50	55	43
FOR CH & DHW PRODUCTION BOILERS						
Declared load profile			- / M	- / M	- / M	- / L
Energy efficiency in DHW production mode	η_{WH}	*%*	- / 65	- / 65	- / 69	- / 78
Daily fuel consumptionl	Q_{fuel}	*kWh*	- / 8.98	- / 8.98	- / 8.43	- / 15.00
Inside sound power level	Lwa	*dB(A)*	- / 50.7	- / 51	- / 55.2	- / 55.2
SEASONAL EFFICIENCY CLASS IN DHW PRODUCTION MODE			**- / A**	**- / A**	**- / A**	**- / A**

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KON m		18 R / C	24 - 24 INC R / C	28 R / C	35 R / C
NOMINAL HEAT INPUT IN CH / DHW MODE	kW	18.0 / 23.4	23.4 / 23.4	28.0 / 28.0	33.0 / 33.0
MINIMUM HEAT INPUT WITH NAT. GAS / PROPANE	kW	3.0 / 4.4	3.0 / 4.4	4.4 / 5.6	4.4 / 5.6
NOMINAL HEAT OUTPUT	kW	17.4	22.6	27.2	32.0
MINIMUM HEAT OUTPUT	kW	2.9	2.9	4.3	4.3
NOMINAL OUTPUT IN CONDENSATION 50/30 °C	kW	18.4	23.6	28.9	33.8
MINIMUM HEAT OUTPUT IN CONDENSATION 50/30 °C	kW	3.2	3.2	4.7	4.7
COMBUSTION EFFICIENCY AT FULL LOAD	%	97.6	97.2	97.6	97.2
COMBUSTION EFFICIENCY AT PART LOAD	%	98.6	98.6	98.1	98.1
HEAT LOSSES THROUGH THE CASING (MIN.-MAX.)	%	2.0 - 0.74	2.0 - 0.7	1.47 - 0.43	1.47 - 0.2
(*) NET FLUE GAS TEMPERATURE TF-TA (MAX.)	°C	49	57.6	48	57
FLUE GAS MASS FLOW RATE (MIN.-MAX)	g/s	1.3 - 7.9	1.3 - 10.3	2.0 - 12.5	2.0 - 14.7
AIR EXCESS	%	20.6	20.6	23.0	23.0
CO_2	%	9.5 - 9.5	9.5 - 9.5	9.3 - 9.3	9.3 - 9.3
CO at 0% OF O_2 (MIN. - MAX)	ppm	20 - 95	20 - 121	19 - 100	19 - 120
MAXIMUM PRODUCTION OF CONDENSATE	kg/h	2.9	3.7	4.5	5.3
NO_x CLASS		5	5	5	5
CHIMNEY HEAT LOSSES WITH BURNER ON (MIN. - MAX.)	%	1.4 - 2.4	1.4 - 2.8	1.9 - 2.4	1.9 - 2.8
CHIMNEY HEAT LOSSES WITH BURNER OFF	%	0.60	0.46	0.41	0.34
MAX. AVAILABLE PRESSURE AT THE CHIMNEY BASE MIN. / MAX.	Pa	2/70	2/70	2 / 70	2 / 70
APPLIANCE CATEGORY		II_{2H3P}	II_{2H3P}	II2H3P	II2H3P
MINIMUM HEAT. CIRCUIT OUTPUT (ΔT 20 °C)	l/min	1.2	1.2	1.7	1.7
MINIMUM HEATING CIRCUIT PRESSURE	bar	0.5	0.5	0.5	0.5
MAXIMUM HEATING CIRCUIT PRESSURE	bar	3	3	3	3
PRIMARY CIRCUIT CONTENT	l	2.2	2.2	2.8	2.8
MAXIMUM OPERATING TEMPERATURE IN HEAT.	°C	85	85	85	85
MINIMUM OPERATING TEMPERATURE IN HEAT.	°C	30	30	30	30
EXPANSION VESSEL TOTAL CAPACITY	l	8	8	8	8
EXPANSION VESSEL PRE-LOAD	bar	1	1	1	1
MAXIMUM SYSTEM CAPACITY (MAX TEMP. CALC.)	l	184	184	184	184
MINIMUM DOMESTIC HOT WATER CIRCUIT FLOW RATE	l/min.	- / 2.0	- / 2.0	- / 2.0	- / 2.0
MINIMUM DOMESTIC HOT WATER CIRCUIT PRESSURE	bar	- / 0.5	- / 0.5	- / 0.5	- / 0.5
MAXIMUM DOMESTIC HOT WATER CIRCUIT PRESSURE	bar	- / 6	- / 6	- / 6	- / 6
DOMESTIC HOT WATER SPECIFIC FLOW RATE (ΔT 30 °C) "D"	l/min.	- / 11.2	- / 11.2	- / 13	- / 16
DOMESTIC HOT WATER FLOW RATE LIMITER	l/min.	- / 10	- / 10	- / 12	- / 15
PRODUCTION OF D.H.W. IN CONTINUOUS OPERATION WITH ΔT 45 K	l/min.	- / 7.34	- / 7.34	- / 8.6	- / 10.1
PRODUCTION OF D.H.W. IN CONTINUOUS OPERATION WITH ΔT 40 K	l/min.	- / 8.26	- / 8.26	- / 9.7	- / 11.4
PRODUCTION OF D.H.W. IN CONTINUOUS OPERATION WITH ΔT 35 K	l/min.	- / 9.44	- / 9.44	- / 11.1	- / 13.0
PRODUCTION OF D.H.W. IN CONTINUOUS OPERATION WITH ΔT 30 K	l/min.	- / 11.0	- / 11.0	- / 12.9	- / 15.2
PRODUCTION OF D.H.W. IN CONTINUOUS OPERATION WITH ΔT 25 K (MIXED)	l/min.	- / 13.2	- / 13.2	- / 15.5	- / 18.3
VOLTAGE/FREQUENCY ELECTRIC POWER SUPPLY	°C	- / 38-60	- / 38-60	- / 38-60	- / 38-60
FUSE ON THE POWER SUPPLY	V-Hz	230 / 50	230 / 50	230 / 50	230 / 50
MAXIMUM ABSORBED OUTPUT	A (F)	4	4	4	4
PROTECTION RATING	IP	X5D	X5D	X5D	X5D
NET WEIGHT	kg	32.5 / 34	32.5 / 34	35 / 36.5	35 / 36.5
GROSS WEIGHT	kg	35.5 / 37	35.5 / 37	38 / 39.5	38 / 39.5

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ABSOLUTELY MADE IN ITALY

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