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Product Conformity Certificate

Numero / *Number* 15500 — Sostituisce / *Replaces* –

Emesso / *Issued* 27/06/2007 — Scopo / *Scope* Directive 90/396/CEE

Allegato / *Annex* 5 pagine / *pages*

Rapporto / *Report*: 300610

Kiwa Gastec Italia certifica che
Kiwa Gastec Italia hereby declares that

i prodotti riportati nelle pagine seguenti, costruiti da
the products mentioned in the following pages, made by

Brahma S.p.A.

di / *in* Legnago (VR), Italia

soddisfano i requisiti riportati nella
meet the essential requirements as described in the
Direttiva Apparecchi a Gas (90/396/CEE)
Directive on appliances burning gaseous fuels (90/396/CEE)

La conformità è basata sull'esame della **EN 298** (settembre 2003)
The compliance is based on examination to ***EN 298*** *(September 2003)*

Kiwa Gastec Italia Spa.

Daniël Vangheluwe
Vice Presidente

E' permessa la pubblicazione del certificato.
Publication of the certificate is allowed.

Kiwa Gastec Italia Spa.
Via Treviso, 32/34
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GASTEC

Notified Body

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CE

Product Conformity Certificate

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Numero / *Number* 1 5500 — Sostituisce / *Replaces* –

Emesso / *Issued* 27/06/2007 — Scopo / *Scope* Directive 90/396/CEE

Allegato / *Annex* 5 pagine / *pages*

Rapporto / *Report* : 300610

sistemi di controllo fiamma automatico, tipo
automatic burner control system, type

Marchio / *trade mark:* **Brahma**

Serie/ *series:* **Digital Microflat N, D(M/E)N... and DT(M/E)N...**

Fare riferimento alle pagine allegate per la lista completa dei modelli
Refer to next pages for complete models list

costruiti da /
made by
di / *in*

Brahma S.p.A.
Legnago (VR), Italia

NIP/ *PIN* : 0694BP0610
Rapporto / *report* : 300610

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

AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR e/*and* EFTA paesi/*countries*

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EC type-examination certificate I5500 – Annex 1

Information on the EC type-examination certificate, issued by
Kiwa Gastec Italia Spa., Via Treviso 32/34, I-31020 San Vendemiano (TV), Italy

File no.:	0694/I5500/300610	dated: 01-10-2004
Updated:	0694/I5500/300931	dated: 30-09-2005
Updated:	0694/I5500/301433	dated: 28-11-2006
Updated:	0694/I5500/301530	dated: 22-06-2007

Brahma S.p.A. automatic burner control system(s),

Series Digital Microflat N
models D(M/E)N... and DT(M/E)N...

Scope:
The Brahma S.p.A. automatic burner control system(s), Series Digital Microflat N, D(M/E)N... and DT(M/E)N..., are intended for use on gas-fired appliances and non-permanent operation, as stated in clause 9 of EN 298 (September 2003).

The control(s) are provided with an enclosure and are intended for installation within an appliance enclosure.

List of available types: *1

Internal ignition transformer	External ignition device	Lock-out	atm / fan	Direct main ignition or IP application
DEN11...	DEN11PR...	volatile	atm	Direct main ignition
DEN12...	DEN12PR...	volatile	atm	Intermittent pilot
DEN31...	DEN31PR...	volatile	fan	Direct main ignition
DEN32...	DEN32PR...	volatile	fan	Intermittent pilot
DMN11...	DMN11PR...	non-volatile	atm	Direct main ignition
DMN12...	DMN12PR...	non-volatile	atm	Intermittent pilot
DMN31...	DMN31PR...	non-volatile	fan	Direct main ignition
DMN32...	DMN32PR...	non-volatile	fan	Intermittent pilot
DTEN11...	DTEN11PR...	volatile	atm	Direct main ignition
DTEN12...	DTEN12PR...	volatile	atm	Intermittent pilot
DTEN31...	DTEN31PR...	volatile	fan	Direct main ignition
DTEN32...	DTEN32PR...	volatile	fan	Intermittent pilot
DTMN11...	DTMN11PR...	non-volatile	atm	Direct main ignition
DTMN12...	DTMN12PR...	non-volatile	atm	Intermittent pilot
DTMN31...	DTMN31PR...	non-volatile	fan	Direct main ignition
DTMN32...	DTMN32PR...	non-volatile	fan	Intermittent pilot

*1 = each type has programmed timings as marked on the housing and several parameter options; see next page.

EC type-examination certificate I5500 – Annex 1

Specifications for series **Digital Microflat N**:

Type	Options
D (1) (2) N (3) (4) (5)	(6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26)

Type description

(1) Safety thermostat:
- no letter: connection of the safety thermostat not available
- T: prearranged for safety thermostat connection

(2) Lock-out:
- E: volatile lock-out
- M: non-volatile lock-out

(3) Burner designation:
- 1: atmospheric (without fan motor)
- 3: fanned

(4) 1st stage type:
- 1: direct ignition of the main burner
- 2: intermittent first stage (pilot flame)

(5) Ignition transformer:
- no letter: integrated ignition device
- PR: prearranged for external ignition transformer

Option description

(6) Ignition mode: *10
- no letter: ignition spark operates for TSP time (TS-1).
- A: ignition spark operate for TS.
- B: ignition spark is switch off when flame presence is detected.

(7) Ignition voltage: *11
- no letter: 15 kV.
- H: 18 kV.

(8) Spark repetition rate:
- no letter: 25 Hz.
- nn: nn = frequency repetition (in Hz).

(9) EV1 type: *12
- no letter: conventional gas valve supplied with a.c. voltage
- C1: gas valve supplied at 230V_{DC} (with internal full-wave rectifier and protection resistor against over-current peaks)
- C2: prearranged for Brahma gas valve, type VCM0x
- C3: prearranged for Brahma gas valve, type VCM0x, with soft-start control during ignition
- C4: prearranged for Brahma gas valve, type VCM0x, with soft-start control during ignition and during lapse of time previous to achieve second stage (Hi-Low appliances)

*10 = options "A" and "B" are available only in version with separate ignition electrodes and detection probe;
*11 = only for with integrated ignition device;
*12 = soft-start function allow to control the modulating current value so that it remains within a certain range. Possible faults can be detected by this function-control. In the event that the modulation current value is not within the foreseen range, the burner control moves to lock-out;

	C5:	prearranged for Brahma gas valve, type VCM0x, with soft-start control during ignition, during lapse of time previous to achieve second input value and running condition (modulating appliances)
	C6:	generic gas valve supplied at $230V_{ac}$ driven by an internal modulating circuit
(10)	EV1 method of use (only for Brahma gas valve, type VCM0x)	
	no letter:	Brahma gas valve, type VCM0x not foreseen
	M1:	to be used for applications with intermittent 1st stage
	M2:	to be used for applications with soft-start
	M3:	two valve use for applications with intermittent 1st stage
	M4:	two valve use for applications with soft-start
(11)	Either EV2 opening or auxiliary fan motor supplying with flame presence: *13	
	no letter:	immediate opening/supplying without delay
	X:	opening/supplying at the end of safety time TS
	Wnn:	nn = delay (in seconds) prior to open/supply
(12)	Lock-out for flame simulation:	
	no letter:	not available (control remains in continuous waiting/pre-purge state)
	K:	immediate lock-out
	Knn:	nn = delay time (in seconds) prior to reach lock-out
(13)	Lack or insufficient air flow at starting:	
	no letter:	safety shut-down followed by stand-by condition
	Qnn:	nn = delay time (in seconds) prior to reach lock-out
(14)	Lack or insufficient air flow at running:	
	no letter:	safety shut-down followed by stand-by condition
	S:	immediate lock-out (without delay)
	Snn:	nn = lock-out after a preset number of air pressure switch signal failures
(15)	Flame failure at running:	
	no letter:	recycling
	V:	immediate lock-out (without delay)
	Vnn:	nn = lock-out after a preset number of flame signal failures
(16)	Connection to the mains supply:	
	no letter:	Live-Neutral polarized (phase sensitive control)
	N:	not polarized
(17)	Post-purge:	
	no letter:	without post-purge
	Pnn:	nn = post-purge duration (in seconds). Post-purge is not stopped even if heat request signal is restored
	PTnn:	nn = post-purge duration (in seconds). Once heat request signal is restored post-purge is stopped
(18)	Post-purge for auxiliary fan motor (available only in combination with option "T1"):	
	no letter:	without post-purge
	Onn:	nn = post-purge duration (in seconds). Post-purge is not stopped even if heat request signal is restored

*13 = options "X" and "Wnn" are available only in version with separate ignition electrodes and detection probe;

EC type-examination certificate I5500 – Annex 1

(19) Recycling attempts due to flame failure at start-up:
- no letter: one recycling after a safety shut-down
- Ynn: nn = number of recycling attempts

(20) Recycling attempts due to flame failure at start-up or due to flame loss during running:
- no letter: independent number of recycling
- Dnn: number of recycling attempts related between flame failure and flame loss

(21) Inter-waiting or inter-purge:
- no letter: no inter-waiting or inter-purge time
- Inn: nn = inter-waiting or inter-purge duration (in seconds)

(22) Lock-out indicator output:
- no letter: main output (without protection against wrong connection of reset push-button)
- R: main output (protection against wrong connection of reset push-button by means of resistor)
- F: main output with current rating > 50 mA.

(23) Air-pressure switch control: [#4]
- no letter: air-pressure switch is controlled
- G: without air-pressure switch control

(24) Pre-ignition: [#15]
- no letter: without pre-ignition
- J: nn = pre-ignition time duration (in seconds)

(25) User interface:
- no letter: no Brahma user interface
- Un: Brahma user interface enabled

(26) EV2, auxiliary fan motor, auxiliary contact output:
- no letter: EV2 output (for applications with intermittent 1st stage) [#15]
- T1: auxiliary fan motor output
- T2: normally open auxiliary contact output (not SELV)

[#4] = controls with option 'G' are intended for special applications in which a check of the air flow is not required by the appliance standard;
[#12] = Option 'J' available only in version with separate ignition electrodes and detection probe;
[#15] = EV2 output can be used to signal flame presence;

EC type-examination certificate I5500 – Annex 1

Specifications:

Electrical supply:	220-240 V – 50/60 Hz		
Rate power input:	30 VA		
Ambient temperature:	-20°C to + 70°C		
Protection degree:	IP 00		
Flame detection:	Ionisation		
Applied technology:	Complex electronics		

Outputs:

Room thermostat:	max 0,5 A	cosφ > 0,4	
Gas valve output EV1:	max 0,5 A	cosφ > 0,4	(standard or option C1)
	80 mA$_{DC}$		(option G2)
Gas valve output EV2 or auxiliary fan motor:	max 0,5 A	cosφ > 0,4	
Fan motor output:	max 1,3 A	cosφ > 0,4	
External ignition transformer:	max 1,3 A	cosφ > 0,4	(option PR)
Lock-out lamp:	max 50 mA	cosφ = 1	(standard) [*1,*]
	max 0,5 mA	cosφ = 1	(option R) [*12]
	max 1 A	cosφ = 1	(option F) [*2,5]
User interface output:	max 5 mA		

Times:

Waiting/Pre-purge time:	0 – 60 s [*13]
Safety time:	3 – 120 s [*13]
Delayed EV2 or auxiliary fan motor supplying:	1 – 1800 s [*13]
Inter-waiting/Inter-purge time:	1 – 240 s [*13]
Post-purge time for main fan motor:	0 – 1800 s [*13]
Post-purge time for aux. fan motor:	0 – 500 s [*13]
Delayed lock-out for air flow lack at start-up:	3 – 120 s [*13]
Reaction time:	< 1 s

Recycling:

Recycling attempts:	0 – 10 times [*13]

Behaviour after flame failure:
Recycling (0 – 10 times *) followed by volatile or non-volatile lock-out.

Special conditions:
During appliance approval testing it shall be verified that:
- neither a burner start with pilot and mains valves operating simultaneously nor a burner start at maximal input present no damage or hazard;
- the re-ignition attempts do not overrule the safety thermostat and/or the limit thermostat operation.

Controls with option 'G' are intended for special applications in which a check of the air flow is not required by the appliance standard.

[*2] = load supplied by means of opto-triac
[*5] = load supplied by means of triac
[*13] = options and timings are programmable by the manufacturer; actual programming options and timing parameters are printed on the label of the unit.

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Attestato

Costruttore/ *Manufacturer* **Brahma S.p.A.**

Tipo apparecchiature/ *Appliances type* **sistemi di controllo fiamma automatico** *automatic burner control system*

Rapporto di conformità tecnica nr. / *Test report n.* **300610**

Marchio / *trade mark:* **Brahma**

Serie / *series:* Digital Microflat N,
Modello / *models:* D(M/E)N..O and DT(M/E)N..O

Fare riferimento alle pagine allegate per la lista completa dei modelli
Refer to next pages for complete models list

La conformità è basata sull'esame della EN 230 (Giugno 2005)
The compliance is based on examination to EN 230 (June 2005)

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

AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR e/*and* EFTA paesi/*countries.*

Allegato: 4 pagine/ *Annex:4 pages*

San Vendemiano, **16 Settembre 2008**
San Vendemiano, 16 September 2008

Adriaan Besemer
Amministratore delegato

Kiwa Italia S.p.a.
Sede Legale
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ALLEGATO - ANNEX

Annex 1

Issued by
Kiwa Italia S.p.a.
Registered office in Via G. Carducci, 5 20121 Milano, Italy
Administrative and operational office in Via Treviso 32/34, I-31020 San Vendemiano (TV), Italy

Updated: 0694/I5500/301530 dated: 02-09-2008

Brahma S.p.A. automatic burner control system(s),
Series Digital Microflat N
models D(M/E)N..O and DT(M/E)N..O

Scope:
The Brahma S.p.A. automatic burner control system(s), Series Digital Microflat N, D(M/E)N..O and DT(M/E)N..O, are intended for use on oil-burner appliances and non-permanent operation, as stated in clause 9 of EN 230 (June 2005).
The control(s) are provided with an enclosure and are intended for installation within an appliance enclosure.

List of available types: *)

Oil burners application

DEN31O...
DEN32O...
DMN31O...
DMN32O...
DTEN31O...
DTEN32O...
DTMN31O...
DTMN32O...

*) - each type has programmed timings as marked on the housing and several parameter options; see next page;

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Annex 1

Specifications for series **Digital Microflat N** - oil burners applications:

Type — **Options**

D (1) (2) N (3) (4) O — (9) (11) (12) (13) (14) (15) (17) (18) (19) (21) (22) (25) (26)

Type description

(1) Safety thermostat:
- no letter: connection of the safety thermostat not available (standard)
- T: prearranged for safety thermostat connection

(2) Lock-out:
- E: volatile lock-out
- M: non-volatile lock-out

(3) Burner designation:
- 3: fanned

(4) 1st stage type:
- 1: direct ignition of the main burner
- 2: intermittent first stage (pilot flame)

(5) Ignition transformer:
- O: Prearranged for external ignition transformer

Option description

(9) EV1 type:
- no letter: conventional oil valve supplied with a.c. voltage
- C1: Oil valve supplied at 230V_{DC} (with embodied full-wave rectifier and protection resistor against over-current peaks

(11) Opening of EV2 or supplying of auxiliary combustion motor when the flame is present:
- no letter: immediate opening/supplying without delay
- X: opening/supplying at the end of safety time TS
- Wnn: nn = delay (in seconds) prior to open/supply

(12) Lock-out for flame simulation:
- no letter: not available (control remains in continuous pre-purge state)
- K: Lock-out within 10 seconds
- Knn: nn = delay time (in seconds) prior to reach lock-out

(13) No switching of preheater thermostat TC at starting:
- no letter: Lock-out after 10 minutes from cycle start
- Qnn: nn = delay time (in seconds) prior to reach lock-out

(14) Preheater thermostat TC opening at running:
- no letter: Lock-out condition after 10 min from the preheater thermostat opening
- S: immediate lock-out (without delay)
- Snn: nn = lock-out after a preset number "nn" preheater thermostat failures

(15) Flame failure at running:
- no letter: recycling
- V: immediate lock-out (without delay)
- Vnn: nn = lock-out after a preset number of flame signal failures

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P. IVA IT [illegible]
Cod. Fisc. [illegible]
Reg. Impr. MI [illegible]
R.E.A. MI n. [illegible]

Società del gruppo:
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Kiwa N.V.
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Annex 1

(17) Post-purge of main fan motor:

no letter:	without post-purge
Pnn:	nn = post-purge duration (in seconds). Post-purge is not stopped even if heat request signal is restored
PTnn:	nn = post-purge duration (in seconds). Once heat request signal is restored post-purge is stopped

(18) Post-purge for auxiliary fan motor (available only in combination with option "T1"):

no letter:	without post-purge
Onn:	nn = post-purge duration (in seconds). Post-purge is not stopped even if heat request signal is restored

(19) Recycling attempts due to flame failure at start-up:

no letter:	one recycling after a safety shut-down
Ynn:	nn = number of recycling attempts

(21) Inter-purge:

no letter:	no inter-purge time
Inn:	nn = inter-purge duration (in seconds)

(22) Lock-out indicator output:

no letter:	main output (without protection against wrong connection of reset push-button)
R:	main output (protection against wrong connection of reset push-button by means of resistor)
F:	main output with current rating > 50 mA.

(25) User interface:

no letter:	no Brahma user interface
Un*:	interface enabled

** Note: Letter "n" represents the reference number of the user interface. More details are available in user interface paragraph of DMN controllers data sheet.*

(26) EV2, auxiliary fan motor, auxiliary contact output:

no letter:	EV2 output (for applications with intermittent 1st stage) [#18]
T1:	auxiliary fan motor output
T2:	normally open auxiliary contact output (not SELV)

[#18] = EV2 output can be used to signal flame presence;

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Annex 1

Specifications for series **Digital Microflat N** - oil burner applications:

Specifications:

Electrical supply:	220-240 V – 50/60 Hz
Rate power input:	30 VA
Ambient temperature:	-20°C to + 70°C
Protection degree:	IP 00
Flame detection:	FR (photo-resistance sensors according to information in the instruction manual)
Applied technology:	Complex electronics

Outputs:

Room thermostat:	max 0,5 A	cosφ > 0.4	
Oil valve output EV1:	max 0,5 A	cosφ > 0.4	(standard or option C1)
	80 mA_{DC}		(option C2)
Oil valve output EV2 or auxiliary fan motor:	max 0,5 A	cosφ > 0.4	
Fan motor output:	max 0,5 A	cosφ > 0.4	
External ignition transformer:	max 0,5 A	cosφ > 0.4	
Preheater :	max 0,5A	cosφ = 1	
Lock-out lamp:	max 50 mA	cosφ = 1	(standard) [#17]
	max 0,5 mA	cosφ = 1	(option H) [#17]
	max 1 A	cosφ = 1	(option F) [#18]
User interface output:	max 5 mA		

Times:

Pre-purge time:	0 – 60 s [#19]
Safety time:	5 – 10 s [#19]
Delayed EV2 or auxiliary fan motor supplying:	1 – 1800 s [#19]
Inter-purge time:	1 – 240 s [#19]
Post-purge time for main fan motor:	0 – 1800 s [#19]
Post-purge time for aux. fan motor:	0 – 500 s [#19]
Delayed lock-out for preheater thermostat at start-up	3 s – 30min [#19]
Safety time during operation (reaction time)	< 1 s

Recycling:

Recycling attempts: 0 – 10 times [#19]

Behaviour after flame failure:

Recycling (0 – 10 times *) followed by volatile or non-volatile lock-out.

Special conditions:

During appliance approval testing it shall be verified that:

- neither a burner start with pilot and mains valves operating simultaneously nor a burner start at maximal input present no damage or hazard;
- the re-ignition attempts do not overrule the safety thermostat and/or the limit thermostat operation.

#17 = load supplied by means of opto-triac
#18 = load supplied by means of triac
#19 = options and timings are programmable by the manufacturer;
actual programming options and timing parameters are printed on the label of the unit;

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