Flexible silicone rubber heating pads



Safety instructions for all industrial flat silicone rubber heaters described in this catalogue section

- Read the user manual before any use

- Protect the power supply circuit by a differential circuit breaker of 20mA sensitivity, with rating adapted to the model that must be connected to it.

- This supply circuit must be carried out by a qualified electrician and according to the local standards in force.

- The earth circuit must be compliant and connected.

- Don't use silicone rubber heaters with surface power higher than 0.2 W/cm² on plastic material.

- The heater must be disconnected when not used

- The heater must be disconnected during installation or de-installation.

-The heater must be stored in a dry place and protected from rodents and other animals during periods when it is not used.

- In some applications it may be mandatory to connect the heated surface directly to a grounding conductor.

- Do not cut or punch the surface

- These appliances are not suitable for permanent outdoor use, and, upon their ingress protection rating (IP), must be protected from rain, dust and condensation.

- Do not operate above the rated safety temperature

- The silicone heater must be in perfect contact with the surface to be heated, <u>without superimposing</u> <u>heating parts</u>. The superposition of two heating parts doubles the surface power and can cause melting of the silicone heater and initiate a fire in the most severe cases.

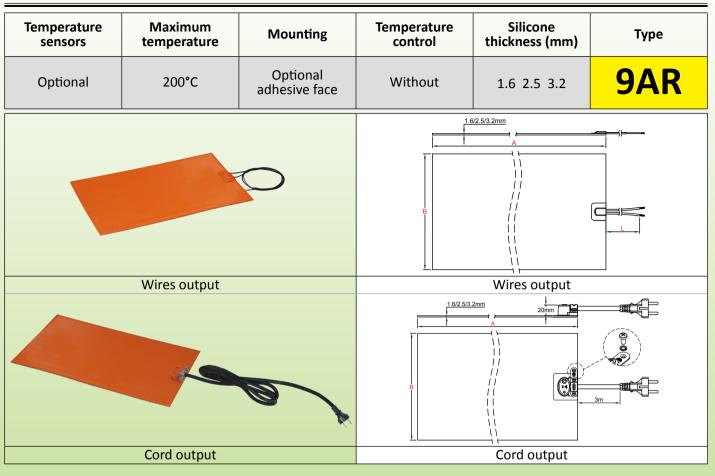
- Silicone heaters with an adhesive face have their maximum safety temperature limited by the adhesive layer used.

- Silicone heaters are not suitable for prolonged exposure to oils.

- These devices are not suitable for use in flammable or explosive areas.

NT3000SPH039A

Flexible silicone rubber heating pads, without temperature control



Main features

Flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability without sacrificing flexibility.

Silicone is used because of its high temperature resistance (permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10⁻⁴W/cm.K) and good electrical insulation properties (~12KV/mm)

This compact and economical series is intended to be integrated into a device. The temperature control is carried out by the integrator. Sensors or temperature limiters can be incorporated into the heating surface. Other general particularities of these heaters are:

- Not affected by vibration or flexing,
- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,
- Low smoke and low toxicity,
- Silicone is non-toxic, and moisture and chemical resistant.
- Very thin profile.

Main applications

Combining high surface power and flexibility, flexible silicone heating elements are a simple and economical solution for heating surfaces. They are light, thin, heat quickly and evenly because they are in direct contact with the surface to be heated. Their construction is rugged, and they do not change dimensions during heating. They can be mounted on flat or cylindrical surfaces. Their bonding to the surfaces can be made by vulcanization, room temperature vulcanizable resin (RTV), or by application of a pressure-sensitive adhesive (PSA).

Some typical examples of applications are:

Autoclaves, Surveillance cameras, Mold heaters for polymerization of resins, Poultry incubators, Diesel fuel filters, Defrost, Cash Machines, Laboratory Equipment, Gyroscopes, Laminators, Heated Mirrors, Animal Feeders,

Photocopiers, Food heating Trays, Heat Presses, Battery Heaters, Tanks for liquids, etc.

They can be made in multiple shapes, receive cutouts or holes. They can receive temperature sensors, temperature limiters, thermal fuses and thermostats.

Technical Features

Mounting: By a pressing system on the surface made by the user or by bonding with a room temperature vulcanizing silicone resin (RTV), or by adhesive.





Length (Dimension A): Upon customer request. Width (dimension B): Upon customer request. Silicone foil minimum bending radius: 3.2 mm (0.125) Ingress protection: IP65. Minimum ambient temperature: -10° C (+15° F) Voltage: 220-240VAC. Power tolerance: ±10% at 20°C Temperature control: none **Power density:** - 0.2 w/cm² (1.3W/in²) for plastic materials.
- 0.75 w/cm² (4.8 w/inch²), for usual applications. -1 w/cm^2 (6.5 w/inch²) for fast heating applications. Other values on request. Thickness of the flexible silicone foil: - 1.6mm for light application and small surfaces - 2.5mm for usual industrial applications - 3.2mm, for heavy duty applications requiring strong mechanical strength and reinforced insulation. Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards. See technical introduction. Dielectric Strength: 1750V AC. Insulation resistance: ≥ 10 Megohms. **Operating temperature:**

See in the technical introduction examples of the temperatures reached by silicone heating belts. They represent the temperature that may reach the silicone heater if it is not correctly installed.

Connection cable:

There are 2 types available in standard

- FEP insulated wires, AWG 18 (0.8mm²) for power up to 1800W in 230V. Wire gauge is increased for higher ratings.
- Insulated rubber power supply cable, for industrial environments, 3 x 1.5mm² (AWH15), length 3m, Euro plug. UL plug on request.

Options:

- Customer design shape, with or without holes
- Power supply 110/115V
- Power cord with industrial plug 2-pole + earth 16A CEE (IEC60309).
- Surface mounted temperature limiter.
- Surface mounted temperature sensor (Pt100, NTC, thermocouple)
- Grounded mesh wire shield layer
- Silicone foam insulation layer vulcanized on the external surface

Safety standards:

The heaters have been designed in compliance with EEC Low Voltage Directive (LVD) 2006/95/EC and EMC directive 2004/108/EC. They must be installed in accordance with all local applicable instructions, codes, and regulations.

Main parts numbers in 220/240V, with 0.75W/cm² (4.8 w/inch2), surface power*

These references are incomplete. Full part number are issued when order is received. These heaters are manufactured only on order. Specify length and width

THAT I						
Connection	1.6mm thickness without adhesive	2.5mm thickness without adhesive	3.2mm thickness without adhesive	1.6mm thickness with adhesive	2.5mm thickness with adhesive	3.2mm thickness with adhesive
2 FEP insulated conductors, AWG18, (0.8mm ²) length 500mm	9ARA808450	9ARB808450	9ARC808450	9ARF808450	9ARG808450	9ARH808450
3x1mm ² cable rubber insulation, length 3m, euro plug **	9ARA808C30	9ARB808C30	9ARC808C30	9ARF808C30	9ARG808C30	9ARH808C30

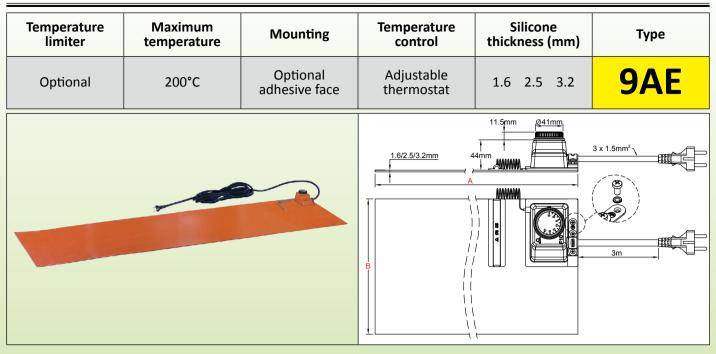
NB: the characters "-" in the part numbers are updated after selection of the length and the width of the silicone rubber heater

* - For surface load 0.2 w/cm² (1.3W/in²), replace 80 with 20 in the reference.

- For surface load 1 w/cm² (6.5 w/in²), replace 80 with B0 in the reference.

** For UL plug instead of Euro plug, replace C3 with D3 in the part number.

Flexible silicone rubber heating pads, with surface mounted adjustable thermostat



Main features

Flat and flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability without sacrificing flexibility.

Silicone is used because of its high temperature resistance (Permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10⁻⁴ W/cm.K) and good electrical insulation properties (~12KV/mm)

This series is distinguished by the use of a conventional thermostat mounted on the surface of the heating part, in a compact and economical design.

Other general particularities of these heaters are:

- Not affected by vibration or flexing,

- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,

- Low smoke and low Toxicity,

- Silicone is non-toxic, and moisture and chemical resistant.
- Very thin profile.

Main applications

Combining high surface power and flexibility, flexible silicone heating elements are a simple and economical solution for heating surfaces. They are light, thin, heat quickly and evenly because they are in direct contact with the surface to be heated. Their construction is rugged, and they do not change dimensions during heating. They can be mounted on flat or cylindrical surfaces. Their bonding to the surfaces can be made by vulcanization, room temperature vulcanizable resin (RTV), or by application of a pressure-sensitive adhesive (PSA).

Some typical examples of applications are:

Autoclaves, Surveillance cameras, Mold heaters for polymerization of resins, Poultry incubators, Diesel fuel filters,

Defrost, Cash Machines, Laboratory Equipment, Gyroscopes, Laminators, Heated Mirrors, Animal Feeders, Photocopiers, Food heating Trays, Heat Presses, Battery Heaters, Tanks for liquids, etc.

They can be made in multiple shapes, receive cutouts or holes. They can receive temperature sensors, temperature limiters, thermal fuses and thermostats.

Technical Features

Mounting: By a pressing system on the surface made by the user or by bonding with a room temperature vulcanizing silicone resin (RTV), or by adhesive.

Length (Dimension A): Upon customer request.

Width (dimension B): Upon customer request (minimum 100mm).

Silicone foil minimum bending radius: 3.2 mm (0.125)

Ingress protection: IP65.

Minimum ambient temperature: -10° C (+15° F)

Voltage: 220-240VAC. Power tolerance: ±10% at 20°C

Temperature control:

Single pole bulb and capillary thermostat, adjustable from 20°C to 110°C (+50~230°F) or from 50 to 200°C (120-390°F). Rating 16A 230V.

Contact us



Cat25-2-6-5

Power density:

- 0.2 w/cm² (1.3W/in²) for plastic materials
- 0.75 w/cm^2 (4.8 w/inch²), for usual applications.
- 1 w/cm² (6.5 w/inch²) for fast heating applications

Other values on request.

Thickness of the flexible silicone foil:

- 1.6mm for light application and small surfaces
- 2.5mm for usual industrial applications

- 3.2mm, for heavy duty applications requiring strong mechanical strength and reinforced insulation.

Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards. See technical introduction.

Dielectric Strength: 1750V AC.

Insulation resistance: ≥ 10 Megohms.

Operating temperature:

See in the technical introduction examples of the temperatures reached by flexible silicone heaters. They represent the temperature that may reach the heating belt if it is not correctly installed.

Connection cable:

Insulated rubber power supply cable, for industrial environments, 3 x 1.5mm² (3xAWG15) length 3m, Euro plug. UL plug on request.

Options:

- Customer design shape, with or without holes
- Power supply 110/115V
- Power cord with industrial plug 2-pole + earth 16A CEE (IEC60309).
- Surface mounted temperature limiter.
- Surface mounted temperature sensor (Pt100, NTC, thermocouple)
- Grounded mesh wire shield layer
- Silicone foam insulation layer vulcanized on the external surface

Safety standards:

The heaters have been designed in compliance with EEC Low Voltage Directive (LVD) 2006/95/EC and EMC directive 2004/108/EC. They must be installed in accordance with all local applicable instructions, codes, and regulations.

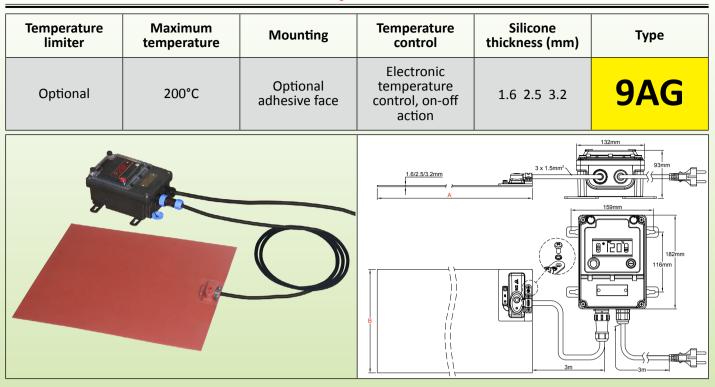
Main parts numbers in 220/240V, with 0.75W/cm² (4.8 w/inch2), surface power*

These references are i	hese references are incomplete. Full part number are issued when order is received. These heaters are manufactured only on order. Specify length and width								
Thermostat setting range	1.6mm thickness without adhesive	2.5mm thickness without adhesive	3.2mm thickness without adhesive	1.6mm thickness with adhesive	2.5mm thickness with adhesive	3.2mm thickness with adhesive			
20~110°C*** (+50~230°F)	9AEA8G8F30	9AEB8G8F30	9AEC8G8F30	9AEF8G8F30	9AEG8G8F30	9AEH8G8F30			
50 ~ 200°C*** (120~390°F)	9AEA8L8F30	9AEB8L8F30	9AEC8L8F30	9AEF8L8F30	9AEG8L8F30	9AEH8L8F30			

NB: the characters "-" in the part numbers are updated after selection of the length and the width of the silicone rubber heater

- * For surface load 0.2 w/cm² (1.3W/in²), replace 8G with 2G or 8L with 2L in the reference.
- For surface load 1 w/cm² (6.5 w/in²), replace 8G with BG or 8L with BL in the reference.
- ** For UL plug instead of Euro plug, replace F3 with E3 in the part number.
- *** For knob printed in °F instead of °C, replace G with F or L with K in the reference.

Flexible silicone rubber heating pads, with remote electronic temperature control, on-off action.



Main features

Flat and flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability without sacrificing flexibility.

Silicone is used because of its high temperature resistance (Permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10⁻⁴ W/cm.K) and good electrical insulation properties (~12KV/mm)

This series is distinguished by the use of a remote electronic control system, on-off action, <u>simple to use</u>, with digital display of the measured value, connection by waterproof connector for easy disconnection of the heater, and IP65 ingress protection class for the whole assembly. This allows its use in most of industrial applications

- Other general particularities of these heaters are:
- Not affected by vibration or flexing,
- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,
- Low smoke and low Toxicity,
- Silicone is non-toxic, and moisture and chemical resistant
- Very thin profile

Main applications

Combining high surface power and flexibility, flexible silicone heating elements are a simple and economical solution for heating surfaces. They are light, thin, heat quickly and evenly because they are in direct contact with the surface to be heated. Their construction is rugged, and they do not change dimensions during heating. They can be mounted on flat or cylindrical surfaces. Their bonding to the surfaces can be made by vulcanization, room temperature vulcanizable resin (RTV), or by application of a pressure-sensitive adhesive (PSA).

Some typical examples of applications are:

Autoclaves, Surveillance cameras, Mold heaters for polymerization of resins, Poultry incubators, Diesel fuel filters,

Defrost, Cash Machines, Laboratory Equipment, Gyroscopes, Laminators, Heated Mirrors, Animal Feeders, Photocopiers, Food heating Trays, Heat Presses, Battery Heaters, Tanks for liquids, etc.

They can be made in multiple shapes, receive cutouts or holes. They can receive temperature sensors, temperature limiters, thermal fuses and thermostats.

Technical Features

Mounting: By a pressing system on the surface made by the user or by bonding with a room temperature vulcanizing silicone resin (RTV), or by adhesive.

Length (Dimension A): Upon customer request

Width (dimension B): Upon customer request (minimum 100mm) Silicone foil minimum bending radius: 3.2 mm (0.125)

Ingress protection: IP65.





Minimum ambient temperature: -10° C (+15° F)

Voltage: 220-240VAC.

Power tolerance: ±10% at 20°C

Temperature control:

By electronic controller with digital display, On-Off action, set point adjustment range up to 120°C (NTC sensor), or 200°C (Pt100 sensor), relay output, located in an independent waterproof housing, designed for wall mounting. It is connected to the flexible silicone rubber heater by a cable equipped with a 5-pin waterproof quick connector, facilitating the connection and disconnection with the heater. It controls the temperature by means of a probe placed under a silicone boot on the outer surface of the heater.

Maximum rating 16A 230V (3600W).

Power density:

- 0.2 w/cm² (1.3W/in²) for plastic materials - 0.75 w/cm² (4.8 w/inch²), for usual applications.

- 1 w/cm² (6.5 w/inch²) for fast heating applications.

Other values on request.

Thickness of the flexible silicone foil:

-1.6mm for light application and small surfaces.

- 2.5mm for usual industrial applications.

- 3.2mm, for heavy duty applications requiring strong mechanical strength and reinforced insulation.

Quality control routine tests: Each element is 100% tested for continuity, resistance and insulation. Tests are made according to EN 60335-1 and EN 50106 standards. See technical introduction.

Dielectric Strength: 1750V AC.

Insulation resistance: ≥ 10 Megohms.

Operating temperature:

See in the technical introduction examples of the temperatures reached by flexible silicone heaters. They represent the temperature that may reach the heating belt if it is not correctly installed.

Connection cable:

Insulated rubber power supply cable, for industrial environments, 3 x 1.5mm² (3xAWG15) length 3m, Euro plug. UL plug on request.

Options:

- Customer design shape, with or without holes.
- Power supply 110/115V.
- Power cord with industrial plug 2-pole + earth 16A CEE (IEC60309).
- Surface mounted temperature limiter.
- Surface mounted temperature sensor (Pt100, NTC, thermocouple).
- Grounded mesh wire shield layer.
- Silicone foam insulation layer vulcanized on the external surface.

Safety standards:

The heaters have been designed in compliance with EEC Low Voltage Directive (LVD) 2006/95/EC and EMC directive 2004/108/EC. They must be installed in accordance with all local applicable instructions, codes, and regulations.

Main parts numbers in 220/240V, with 0.75W/cm² (4.8 w/inch2), surface power*

These references are incomplete. Full part number are issued when order is received. These heaters are manufactured only on order. Specify length and

Wiath						
Thermostat setting range	1.6mm thickness without adhesive	2.5mm thickness without adhesive	3.2mm thickness without adhesive	1.6mm thickness with adhesive	2.5mm thickness with adhesive	3.2mm thickness with adhesive
Part number with temperature controller adjustable up to 120°C (250°F)	9AGA8A8F30	9AGB8A8F30	9AGC8A8F30	9AGF8A8F30	9AGG8A8F30	9AGH8A8F30
Part number with temperature controller adjustable up to 200°C (390°F)	9AGA8B8F30	9AGB8B8F30	9AGC8B8F30	9AGF8B8F30	9AGG8B8F30	9AGH8B8F30

NB: the characters "-" in the part numbers are updated after selection of the length and the width of the silicone rubber heater

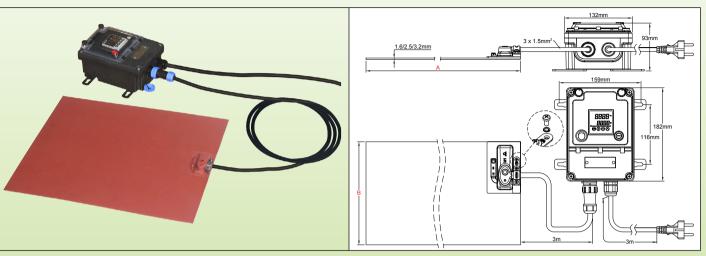
* - For surface load 0.2 w/cm² (1.3W/in²), replace 8G with 2G or 8L with 2L in the reference.

- For surface load 1 w/cm² (6.5 w/in²), replace 8G with BG or 8L with BL in the reference.

** For UL plug instead of Euro plug, replace F3 with E3 in the part number.

Flexible silicone rubber heating pads, with remote electronic temperature control, double display, PID action.

Temperature limiter	Maximum temperature	Mounting	Temperature control	Silicone thickness (mm)	Туре	
Optional	200°C	Optional adhesive face	Electronic temperature control, PID action	1.6 2.5 3.2	9AJ	



Main features

Flat and flexible silicone rubber heaters are made of fiberglass reinforced laminated silicone rubber sheets, vulcanized together through heat and high pressure on both sides of an embedded specially formed heating wire element. Fiberglass-reinforced silicone rubber gives the heater dimensional stability without sacrificing flexibility.

Silicone is used because of its high temperature resistance (Permanent temperature up to 200°C (390°F), high thermal conductivity (~7 10⁻⁴ W/cm.K) and good electrical insulation properties (~12KV/mm)

This series is distinguished by the use of a remote electronic control system, with PID action and automatic adjustment of parameters, with digital display of the measured value and digital display of the set point, connection by waterproof connector for easy disconnection of the heater, and IP65 ingress protection class for the whole assembly. This allows its use in most of industrial applications

- Other general particularities of these heaters are:
- Not affected by vibration or flexing,
- Lightweight,
- Comply with UL94-VO (flame retardant) and ROHS,
- Low smoke and low Toxicity,
- Silicone is non-toxic, and moisture and chemical resistant
- Very thin profile

Main applications

Combining high surface power and flexibility, flexible silicone heating elements are a simple and economical solution for heating surfaces. They are light, thin, heat quickly and evenly because they are in direct contact with the surface to be heated. Their construction is rugged, and they do not change dimensions during heating. They can be mounted on flat or cylindrical surfaces. Their bonding to the surfaces can be made by vulcanization, room temperature vulcanizable resin (RTV), or by application of a pressure-sensitive adhesive (PSA).

Some typical examples of applications are:

Autoclaves, Surveillance cameras, Mold heaters for polymerization of resins, Poultry incubators, Diesel fuel filters, Defrost, Cash Machines, Laboratory Equipment, Gyroscopes, Laminators, Heated Mirrors, Animal Feeders, Photocopiers, Food heating Trays, Heat Presses, Battery Heaters, Tanks for liquids, etc.

They can be made in multiple shapes, receive cutouts or holes. They can receive temperature sensors, temperature limiters, thermal fuses and thermostats.

Mounting: By a pressing system on the surface made by the user or by bonding with a room temperature vulcanizing silicone resin (RTV), or by adhesive.

Length (Dimension A): Upon customer request Width (dimension B): Upon customer request (minimum 100mm) Silicone foil minimum bending radius: 3.2 mm (0.125) Ingress protection: IP65. Minimum ambient temperature: -10° C (+15° F) Voltage: 220-240VAC. Power tolerance: ±10% at 20°C

secause of permanent improvement of our products, drawings, descriptions, features used on these data sheets are for guidance only and can be modified without prior advice



Flexible silicone rubber heating pads, with remote electronic temperature control, double display, PID action.

Temperature control: Controller with double display, of process value and of set-point, located in an independent waterproof housing, designed for wall mounting. It is connected to the flexible silicone rubber heater by a cable equipped with a 5-pin waterproof quick connector, facilitating the connection and disconnection with the heater. It controls the temperature by means of a probe placed under a silicone boot on the outer surface of the heater. Action: PID with automatic parameters adjustment by auto-tune function.							
Sensor input: Pt100							
Power output: solid state r Alarm: 3A 230V relay.	elay, maximum	16A 230V.					
Display: 4 digits display con	nfigurable in °C	or °F					
Power supply: AC 220-230	V 50-60Hz.						
Accuracy: ±1°C (±2°F) or 0.	3% ES± one digi	it.					
Self-testing: open sensor c							
Ambient temperature: -10		85% relative hu	midity, non-con	densing.			
Temperature display range	e: Configurable						
Resolution: 0.1°							
Read instruction manual be	efore the setting	g of this tempei	ature controlle	r.			
Power density:							
-0.2 w/cm^2 (1.3W/in ²) for	plastic materials	S					
-0.75 w/cm^2 (4.8 w/inch ²),							
- 1 w/cm ² (6.5 w/inch ²) for	last neating ap	plications					
Other values on request.	licono foil:						
Thickness of the flexible si - 1.6mm for light application		faces					
- 2.5mm for usual industria		laces					
- 3.2mm, for heavy duty ap		iring strong mo	chanical strongt	h and reinforce	d insulation		
Quality control routine te						Tests are made	
according to EN 60335-1 a						Tests are made	
Dielectric Strength: 1750V							
Insulation resistance: ≥ 10							
Operating temperature:	Wiegonnis.						
See in the technical introd	luction example	es of the tempe	eratures reache	d by flexible sil	licone heaters.	They represent	
the temperature that may						,	
Connection cable:		0					
Insulated rubber power su	upply cable, for	industrial envi	ronments, 3 x 1	L.5mm² (3xAW)	G15) length 3m	, Euro plug. UL	
plug on request.					, ,		
Options:							
- Customer design shape, v	vith or without	holes					
- Power supply 110/115V							
- Power cord with industria		earth 16A CEE (IEC60309).				
- Surface mounted temperature limiter.							
- Surface mounted tempera		100, NTC, ther	mocouple)				
- Grounded mesh wire shield layer							
- Silicone foam insulation layer vulcanized on the external surface							
			standards:				
The heaters have been de							
2004/108/EC. They must b	e installed in ac	cordance with a	all local applicat	ole instructions	, codes, and reg	gulations.	
		000 (0 (0)		2			
Main parts	s numbers i	n 220/240\	, with 0.75W/c	2 (4.8 w/inch	2), surface pow	er*	
These references are incomplete	. Full part number a	re issued when order	is received. These h	eaters are manufactu	ured only on order. S	pecify length and	
width							
	1.6mm thickness	2.5mm thickness	3.2mm thickness	1.6mm thickness	2.5mm thickness	3.2mm thickness	
Thermostat setting range	without adhesive	without adhesive	without adhesive	with adhesive	with adhesive	with adhesive	
Part number with temperature							
controller adjustable up to 120°C	9AJA8A8F30	9AJB8A8F30	9AJC8A8F30	9AJF8A8F30	9AJG8A8F30	9AJH8A8F30	
(250°F)							
Part number with temperature							
controller adjustable up to 200°C	9AJA8B8F30	9AJB8B8F30	9AJC8B8F30	9AJF8B8F30	9AJG8B8F30	9AJH8B8F30	
(390°F)						SASHOD 0150	

NB: the characters "-" in the part numbers are updated after selection of the length and the width of the silicone rubber heater

* - For surface load 0.2 w/cm² (1.3W/in²), replace 8G with 2G or 8L with 2L in the reference.

- For surface load 1 w/cm² (6.5 w/in²), replace 8G with BG or 8L with BL in the reference.

** For UL plug instead of Euro plug, replace F3 with E3 in the part number.

