

DRUM HEATING DEVICES

The drum heating devices designed by ACIM JOUANIN are meant :

- either to maintain the temperature of a product stored in a drum, in order to keep it viscous enough for its use
- or to rise the temperature of a product stored in a drum, within a given period, in order to give it the required state for its use. The required wattages are in this case quite high and ACIM JOUANIN is the only manufacturer offering heating belts of 3600W with voltages of 230V single phase or 400V three phase.

The heating drum devices can be either movable or static, and can be fitted on metal drums or plastic drums.

They can be used in different fields of activity such as : chemistry, petrochemistry, pharmaceutical industry, storage of viscous products, oil, resins, glue...

According to the application and the type of product to be heat up, the heating process can be achieved either with a heating belt placed around the outside surface of the drum, or with an immersion heater directly introduced in the liquid.

Depending on the thermal requirements and the material of the drum, the following range is available :

- o Heating of plastic drums, vertical** Flexible heating belts, teflon polyester coated
- o Heating of metallic drums, vertical**
 - o Outdoors or in a protected but non heated place :** Mica insulated belts, watertight or not
Tubular elements belt
 - o Inside a building :**
 - Quick temperature rise :** Mica insulated belts, watertight or not
Tubular elements belt.
 - Normal temperature rise :** Mica belts
 - Temperature holding :** Silicone belts
 - Heating up of fluted drums :** Heating hand truck, drum heater, base drum heater.
- o Heating of metallic drums, horizontal**
 - Position making the emptying easier :** Heating hand truck
- o Heating of 1000 L bulk container :** Flexible heating jacket



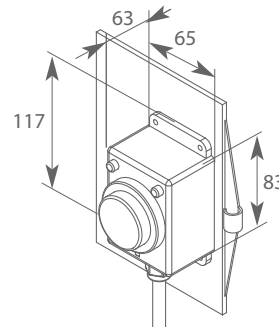
BELTS	
Silicone belts	p 4
Tubular elements belt	p 5
Mica insulated belt	p 5
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FLEXIBLE SILICONE BELT

- Flat flexible heater, 2.5 mm thick.
- Low loading, allowing heating up of sensitive products (0.3 to 0.5 W/cm²)
- Heating circuit insulated by glass fibre layers with silicone rubber.
- Double insulated construction, which does not require any earth cable
- Twin core rubber insulated power cable, neoprene sheathed. Cable length : 2000 mm, except CEINT2 : 2500 mm.
- Temperature control with 20° to 120° adjustable bulb thermostat
Note : the sensor measures the temperature between the surface of the belt and the drum, but not the temperature of the content of the drum
- Fixing method : steel spring and clip arrangement that ensures good surface contact with the drum
- Manufacturing according to the EEC, EMC and CE standards for low voltage. Tolerance on power : +/-7.5%



- Dimensions of the connection box :



ABS connection box enclosing :
 - power light,
 - heating light
 - thermostat

Drum capacity * (Liters)	Drum diameter Ø (mm)	Height of belt H (mm)	Wattage (W)	Voltage (V)	Weight (kg)	Stock item	Non stock item
25 liters	270 to 280	125	300	220 V	1,5	CEINT21	-
60 liters	313 to 340	125	500		2	CEINT22	-
120 liters	456 to 500	125	800		2	CEINT23	-
200 to 225 liters	575 to 625	125	1000	240 V single phase	2,5	CEINT24	-
200 to 225 liters	575 to 625	180	1000		2,5	-	CEINT25
200 to 225 liters	575 to 625	180	1500		2,5	CEINT2	-

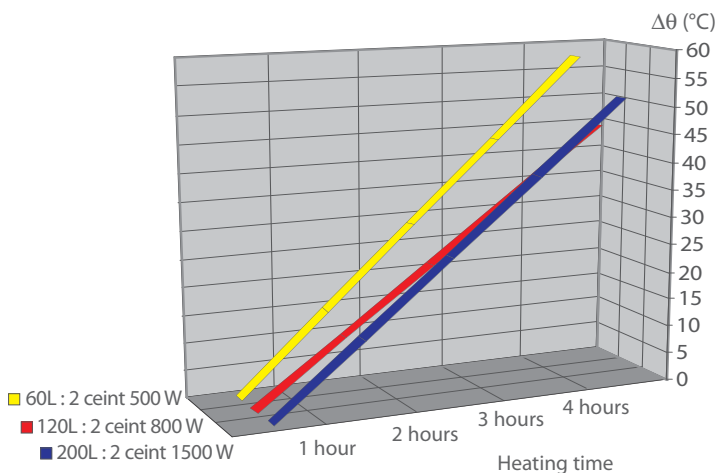
*Estimated volume - non-contractual information.

- To define your drum heating material, please see p11.
- For information, please see below, an example of temperature rise according wattage.

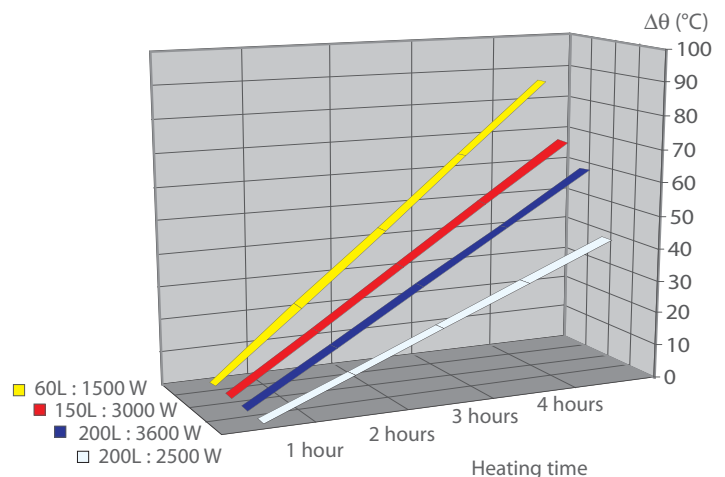
INFORMATION

Difference between initial temperature and final temperature, according heating time. Drums filled with water.

- **Silicone belts :**
Temperature rise for 60, 120 and 200 litre drums, with appropriate heating belts.



- **Tubular elements belts and mica belts :**
Temperature rise for metal drums, with different types of heating belts.



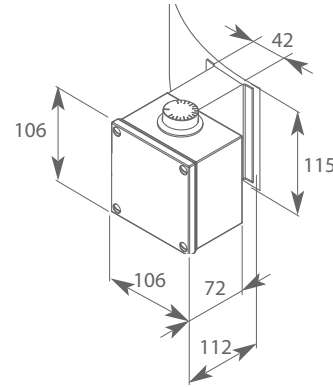
Theoretical values, to balance according using conditions and heating losses

Our products specifications are subject to change without notice. We reserve the right to modify them according to the technical evolution

- Low loading : 1W/cm²
- Stainless steel belt, IP 55 watertight, with tubular heating element.
- Belt equipped with handles.
- Connection box equipped with thermostat, compression gland for cable and ceramic terminal block for electrical connecting. Voltage 230V single phase, 400V single phase upon request
- Temperature control with 50° to 300° adjustable bulb and capillary thermostat. (CEINT10 supplied without thermostat) Thermostats with other temperature range available upon request. Note : the sensor measures the temperature between the surface of the belt and the drum, but not the temperature of the content of the drum
- Tightening with quick release fasteners, allowing to easily fit the belt on the drum.
- Manufacturing according EN 60335-1 standards
- To define your drum heating material, please see p11



- Dimensions of the connection box :



- For information, please see p4 an example of temperature rise according wattage

Drum capacity *	Diameter Ø (mm)	Height H (mm)	Wattage (W)	Thermostat	Stock reference
200 liters	560 to 600	120	2500	Oui	CEINT9
				Non	CEINT10

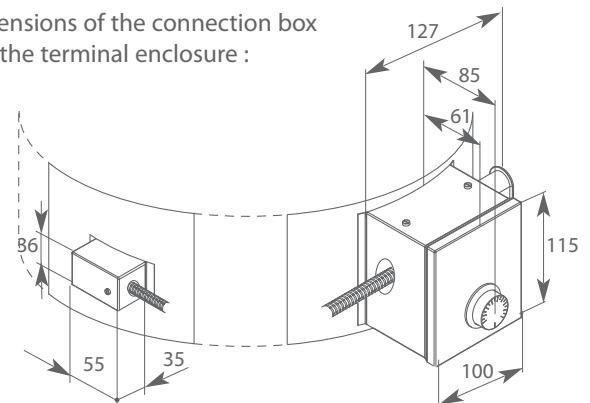
*Estimated volume - non-contractual information.

MICA ECONOMIC BELT

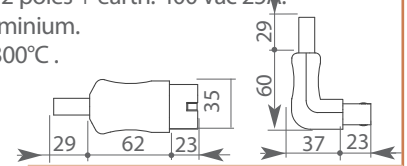
- Low loading (1W/cm²) to avoid carbonization of delicate products.
- IP32 belt, equipped with hinge in the middle and handles on both sides for better prehension
- Aluminized steel inside sheet and stainless steel tightening sheet
- Mica insulated heating elements
- Connecting cable between connection box and linking box protected with flexible metallic conduit.
- Connection box equipped with thermostat and connection plug : male plug with 2 pins 6 mm, 19 mm spaced out + earth Voltage 230V single phase
- Temperature control with 30° to 110° adjustable bulb thermostat. Thermostats with other temperature range available upon request Note : the sensor measures the temperature between the surface of the belt and the drum, but not the temperature of the content of the drum.
- Fast adjustable tightening thanks to a wing nut
- Manufacturing according EN 60335-1 standards
- For information, please see p4 an example of temperature rise according wattage.
- To define your drum heating material, please see p11.



- Dimensions of the connection box and the terminal enclosure :



Option : Female plug with 2 poles + earth. 400 Vac 25A.
Head : ceramic. Shell : aluminium.
Max. using temperature : 300°C.



Kind of plug	Condit.	Stock
Straight plug	1 piece	FFRE8/1
Plug with right angle	1 piece	FFTE8/1



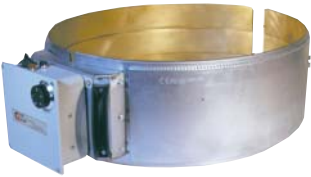
Drum capacity *	Diameter Ø (mm)	Height H (mm)	Wattage (W)	Weight (kg)	Stock reference
200 to 225 l	560 à 600	120	2500	5	CEINT.7

*Estimated volume - non-contractual information.

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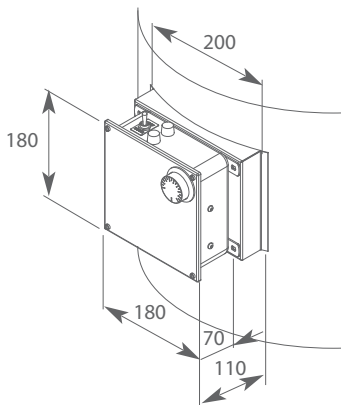
MICA BELTS

- Belts equipped with 2 handles. Available in 2 types :
 - Standard, insulated or not insulated,
 - Watertight, insulated
- Sheet manufacturing : - Standard belt : aluminized steel
 - Watertight belt : heating elements under brass, IP 54, with aluminized steel clamping sheet
- Insulated type : insulation with fiber placed around the belt
- Mica insulated heating elements
- Temperature control with 30° to 110° adjustable bulb thermostat.
 - Note : the sensor measures the temperature between the surface of the belt and the drum, but not the temperature of the content of the drum.
 - Thermostats with other temperature range available upon request
- Belt supplied in 230/400V threephase, switchable with shunts. Can be supplied in 230V single phase upon request, for all belts except CEINTET1
- Manufacturing according EN 60335-1 standards
 - Tolerance on wattage : +5% -10%
 - Leakage current < 0,75 mA/kW

Type of belts	Drum capacity * (Liters)	Diameter Ø (mm)	Height H (mm)	Wattage (W)	Watertight degree	Hinge	Weight (kg)	Stock item	Non stock item
Standard belt 	40 to 60 l	285 to 315	180	1500	IP32	No	6	-	CEINT113000
	40 to 60 l	360 to 395	200	1500	IP32	Non	6	-	CEINT114000
	80 to 100 l	430 to 475	200	3000	IP32	No	7	-	CEINT115000
	120 to 165 l	470 to 515	200	3000	IP32	No	7	-	CEINT116000
	200 to 225 l	560 to 615	200	3600	IP32	No	7	CEINT112000	-
Standard insulated belt 	40 to 60 l	285 to 315	180	1500	IP32	No	8	-	CEINT3
	40 to 60 l	360 to 395	200	1500	IP32	No	8	-	CEINT4
	80 to 100 l	430 to 475	200	3000	IP32	No	8	-	CEINT5
	120 to 165 l	470 to 515	200	3000	IP32	No	8	-	CEINT6
	200 to 225 l	560 to 615	200	3600	IP32	No	8	CEINT1	-
Watertight insulated belt 	200 to 225 l	560 to 615	200	3600	IP54	Yes	9	-	CEINTET1

*Estimated volume - non-contractual information.

- Dimensions of connection box :



Box equipped with compression gland for cable, power light, heating light and thermostat

- Tightening system



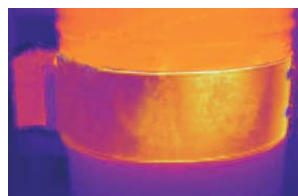
Nickered steel spring tightening system

- Thermography of heating belts :

Not insulated belt



Insulated belt



Measured after 2 hours heating



Measured after 1 hour heating

Examples of infrared thermographies showing the surface temperatures of an insulated belt and a non insulated belt mounted on drums of 200 litres water (Note : temperature scale corresponding to the values recorded on the belts)

- Teflon coated polyester jacket, on the heated face. Outside jacket in Cordura, tear-resistant.
- Flexible heater is stitched into the jacket.
- Glass filament blanket insulation.
- Adjustable quick release buckles.
- Temperature control with 0-90°C capillary thermostat.
- 3 meters power cable, silicone insulated.
- Manufacturing according to EEC, EMC and CE standards for low voltage.
- Dimensions of the connection box : 65 x 114x 63 mm thick. Please see drawing on page 2.
- Options : Thermostat range : -5°C to +40°C
 Voltage : 110 V single phase.



Drum capacity*	Length L (mm)	Height H (mm)	Wattage (W)	Voltage (V)	Stock reference
25 liters	1020	400	200	230 V mono	CFPL25
50 liters	1250	460	250		CFPL50
105 liters	1650	370	400		CFPL105
200 liters	1950	450	450		CFPL200

*Estimated volume - non-contractual information.

HEATERS FOR 1000 L CONTAINERS

Heaters designed to heat products stored in 1000 liters containers.
(Overall dimensions of the container : 1200 x 1000 x 1000 mm)

- Low watt density for the heating of fragile products.
(Loading lower than 0,1 W/cm²)
- Heating element stitced into an teflon coated polyester jacket, water-resistant.
- 2 separate heating circuits of 1000 W each, with separate thermostatic control.
Non heating length : 500 mm, on the thermostat side.
- Overall dimensions of the heater : H x l : 1000 x 4400 mm.
- Each heating circuits is controlled by bulbe and capillary thermostat, adjustable.
- Thermostat protected in ABS connection box
Range of the thermostat : See the tabel below
Note : the thermostat mesures the temperature of the surface of the container and not the temperature of the product inside.
- Class II with double insulation.
Voltage : standard 230 Vac.
Supply lead with 2 conductors, rubber insulated, neoprene sheathed. Length : 3000 mm.
- Clamping with quick release buckles .
- Manufacturing according to EEC, EMC directives and standards for CE low voltage.
- Insulated lid, non heated, ref COUV.CFPL.
- Options and special manufacturing :
- Voltage : 110 Vac.
- Insulated lid, with cutouts for easier emptying. Special manufacturing.

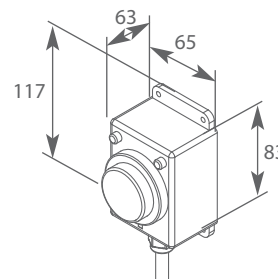


1000 l container equipped with the jacket CFPL1001 and the lid COUV.CFPL

Connection box :

Plastic box equipped with:

- power light
- heating light
- thermostat



Drum capacity*	Wattage (W)	Thermostat	Weight (kg)	Stock reference
1000 liters	2000	-5°C à +40°C	15	CFPL1001
1000 liters	2000	+20°C à +90°C	15	CFPL1002
Insulated lid - Dim.1000 x 1200 mm				COUV.CFPL

*Estimated volume - non-contractual information.

LEVEL DETECTOR

- Applications :
 - As a heating element doesn't have to work in a empty drum, the level detector enables to cut the power in case of critical liquid level in the drum.
 - It can also be used to avoid the emptying pump runs in neutral.
- Pressure controller with commutation level preadjusted to 3 mbar (3 cm of liquid corresponds to a density of 1).
- Cut power : 6A 250 Vac.
- IP65 enclosure protected against water ejections.
- Immersion tube : 3 types of protection depending on the type of product and its working temperature : polypropylène (50°C), PVDF or stainless steel (120°C max). Length of tube = 1500 mm, to be cut as requested.



Detector inserted inside the drum

Description	Material of the immersion tube	Non stock item
Detector	Inox	DETECT.INOX
	PVDF	DETECT.PVC
	Polypropylène	DETECT.PPH

BLANKET FOR DRUM

- Insulated jacket allowing to maintain the temperature after heating up the drum.
Can be used together with the " base drum heater " (see below) to reduce heating up time.
- Thermal insulated reinforced with thick layer of fiber glass.
- Teflon coated polyester on heating face
Thick outside jacket in Cordura®, tear-resistant
- Hole designed to introduce a pump or a thermometer.
This hole can be closed to avoid heating losses
- Other available sizes : for drum of 25 l, 50 l et 105 liters.



*Estimated volume - non-contractual information.

Drum capacity *	Diameter Ø (mm)	Height H (mm)	Stock item
200 liters	650	800	DRC200

BASE DRUM HEATER

- Tubular heating elements protected by steel frame covered with high temperature point.
- Thermal insulation with high density rock wool
- Temperature control with 50-300°C unipolar bulb thermostat. Accessible regulation switch.
- Shifted forward connection box.
- Voltage 230V single phase.
- 3 meter H07RNF power cable, 2 x 1.5 mm² + earth + standard plug.
- Manufacturing according EN 60335-1 standards
Tolerance on wattage : +5% -10%
Leakage current < 0,75 mA/kW
- For special manufacturing please get in touch with us.



Diameter (mm)	Height (mm)	Wattage (W)	Voltage (V)	Stock item	Non stock item
550	80	1800	230 V mono	BASE1800	-
Wheels for easy moving (option)					ROULETTE1800

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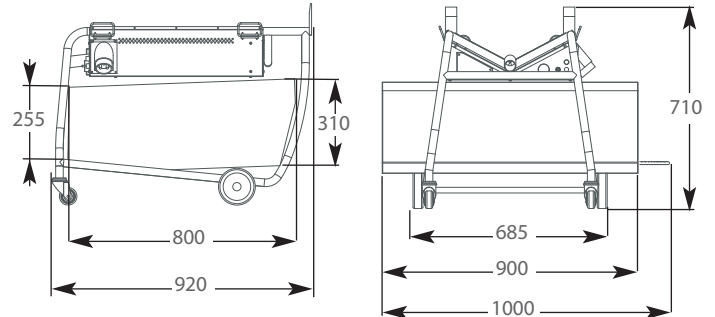
- Heating device mounted on a movable trolley (2 moving wheels + 2 fixed wheels) for metallic drum
- Stainless steel tubular heaters with loading 1W/cm².
- IP44 regulation box included in the heating device. Temperature control with 30 - 110°C adjustable bulb thermostat. Other temperature ranges available .
- Connection with IP44 standard male plug : 3 phases + neutral + earth. (female plug LEG 7000 available upon request).
- Heater supplied with :
 - removable lever arm
 - insulated blanket with straps
- Optional extra : 50 liters retention tub made of steel, fixed to the truck and equipped with a lateral waste outlet.
- Manufacturing according EN 60335-1 standards
- Special manufacturings :
 - Voltage 230V threephase.
 - Customer-made belts for drums with bigger diameters.

Diameter of the drum (mm)	Wattage (W)	Voltage	Stock references
470	4.5 kW	400 V tri	DIABLE
50 liters retention tub			BAC.DIABLE

Heater equipped with retention tub (optional extra)
Drum not supplied



- Dimensions :



DRUM HEATER

- Movable device (4 wheels) for metallic drums, made of 2 parts pivoting on hinges. Alternative to the heating belts, especially when the drum is fluted over the whole height.
- Outside and inside sheets in stainless steel
- Stainless steel tubular heaters
- Rock wool insulation
- Tightening with quick release fasteners
- Temperature control with 30-110°C bulb thermostat placed against the surface of the drum thanks to a sensor 180°C preadjusted safety thermostat. Thermostats with other temperature ranges available upon request
- Manufacturing according EN 60335-1 standards

Using instructions :

- This material is not watertight. It has to be used protected from bad weather and water ejections
- If the drum has a smaller diameter, be sure that it is in contact with the bulb. Please note that if you use small diameters, the heating zone will probably be not homogeneous around the drum.

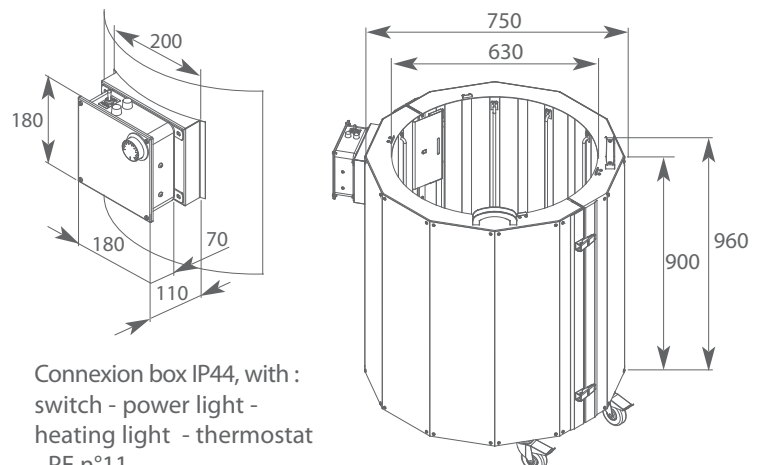
Diameter of the drum (mm)	Wattage (W)	Voltage	Stock references
560 to 615	4000	230 V tri/400 V tri*	RECHAUFFEUR1
	Insulated lid		COUV.RECHAUF

Switchable versions just by moving the coupling strips



Drum heater equipped with insulated lid (option extra)

- Dimensions :



Connexion box IP44, with :
switch - power light - heating light - thermostat - PE n°11.

OVENS

- Tailor-made ovens to heat up metallic drums and designed to receive 1200x1200 mm pallets according to your requirements.
- Inside and outside sheets in zinc coated steel
- Tubular heating elements specially designed according the product to be heat up
- The air is stirred up with a turbine in order to homogenize the temperature inside the whole oven
- Rock wool reinforced insulation
- All our ovens can be equipped with a temperature control device specially adapted to the application, from the self-regulating PID temperature controller, to the complete system designed to drive the oven and its subsidiaries
- The oven is equipped with guidance lanes to facilitate the insertion of trolleys in the oven.
- Stable door mounted on steel hinges allowing a 180° opening
- Closing system with locking bars integrated in the doors, with handle
- Outside coating with anticorrosive polyurethane paint

For any request for oven, please fill in the application form and send it to us.



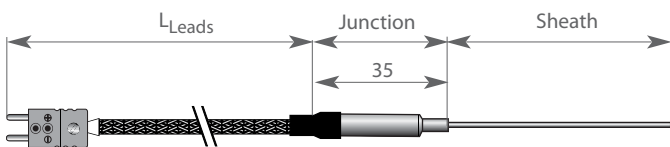
Exemples de réalisation

- Examples of oven dimensions :

(these dimensions correspond to the inside dimensions)

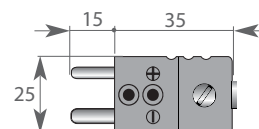
Length (mm)	Height (mm)	Depth (mm)	Useful volume (mm ³)
1740	1500	1630	1,45
1740	2000	1630	2,12
1740	2500	1830	3,36
1740	2500	2330	4,56
1940	2500	2330	5,32

THERMOCOUPLE FOR DRUM HEATING



- Malleable J thermocouple
- 2-core extension cable, 0.22mm².
- Cable insulated with 304L stainless steel braided leads, glass silk insulated, 2000 mm long.
- Hot junction ungrounded
- 304L stainless steel malleable sheath, round tip, diameter 3 mm, length 1000 mm.
- Stainless steel junction protected with a shrink-on-over sleeve sheath.

- Tolerance class : 2 (précision $\pm 2.5^{\circ}\text{C}$, de $-40 \dots + 333^{\circ}\text{C}$. Manufacturing according NF EN 60 584-1, IEC 584-1 et 2)
- Standard plastic male plug with round pins (maximum temperature 220°C) :



Thickness : 12,7 mm

Reference	Non stock reference
Thermocouple	AJ7050 for drum



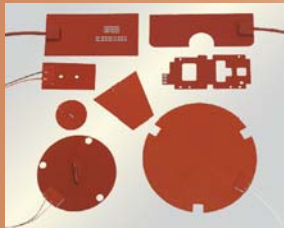
Temperature control



Band heaters



Fan heaters



Flexible heaters



Immersion heaters



Tubular elements



Cartridge heaters



Formable coil heaters



Infrared emitters



Flat (plate) heaters



Ovens



Barrel heating



Cast in heaters



Cables, sheath and accessories

But also other families : Tracing, heaters on cylinder



ACIM JOUANIN
Z.I. N°1 Nétreville
650, Rue Vulcain - B.P. 1725
27017 EVREUX Cedex
FRANCE



Tel : 00 33 2 32 62 34 20
Fax : 00 33 2 32 62 34 29

E-mail : export@acim-jouanin.fr
Web site : www.acim-jouanin.fr

Distributor :