2

ULTIMHEAT®

THERMOSTATS WITH INGRESS PROTECTION HOUSINGS

and connection boxes for heating elements

The professional solution: an extended, rational and consistent range of products

Technical catalogue for R&D department

Edition 02/04/2013

E-Mail: info@ultimheat.com Web: www.ultimheat.com

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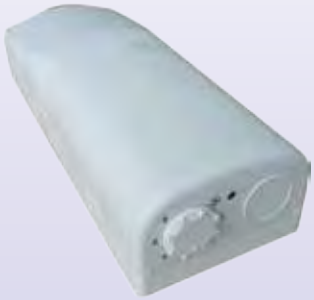
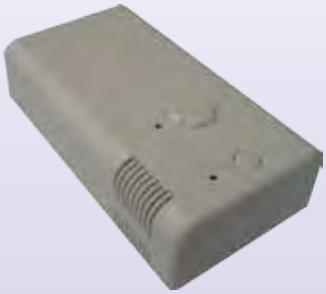
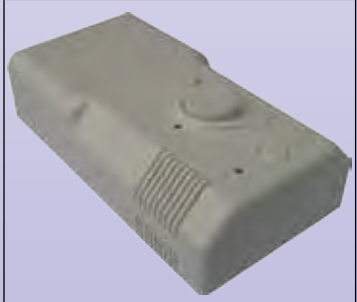
Type Y0
Housings and thermostats with IP20 to IP44 housings

Main products

Serie Y01 P 17	Serie Y01 P 17	Serie Y01 P 17	Serie Y01 P 17
			
200x77x58 mm for oil filled electrical radiator. IP22. External temperature sensing probe. Exist with one or 2 knobs	200 x 77 x 50 mm for oil filled electrical radiator. IP22. One knob	200 x 77x 50 mmfor oil filled electrical radiator.IP22. 2 knobs	150x80x37 mm for oil filled electrical radiator. IP33. Rounded design

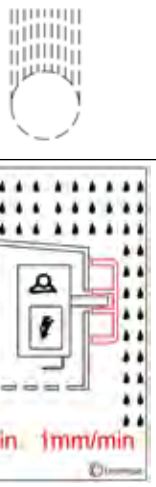
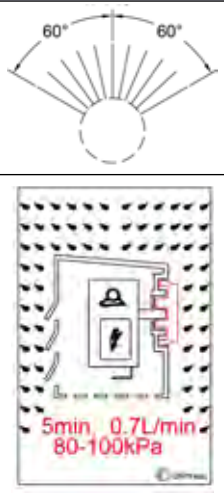
Serie Y01 P 17	Serie Y01 P 17	Serie Y02N P 18	Serie Y02M P 19
			
150x80x40 mm for oil filled electrical radiator. IP30. 45° design	150x80x40 mm for oil filled electrical radiator. IP30. Staggered design	Miniature ambient temperature thermostat for electrical cabinets, Din rail mounting. IP30. 67x50x35mm	Miniature wall mounting ambient temperature thermostat. IP30.67x50x31mm

Serie Y03 P 20	Serie Y04 P 21	Serie Y05 P 22
		
Bulb and capillary distance temperature control thermostat , wall mounting, 77,5x54x53 mm, IP44	Central heating or commercial heating rod thermostat, brass or stainless steel pocket, 77,5x54x53 mm, IP44	Swimming pool or corrosive water commercial rod thermostat, plastic pocket, 77,5x54x53 mm, IP44

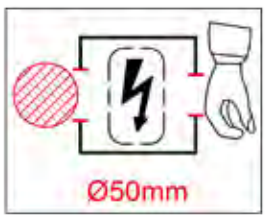
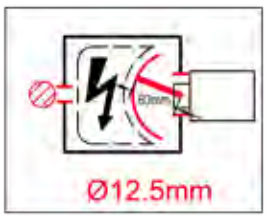
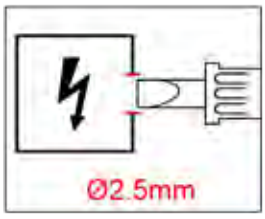
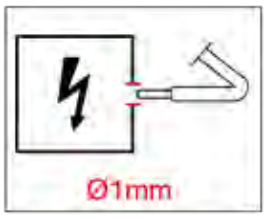
Design concept of the Y0 types

The design of the Y0 enclosures was made to provide a starting range with a particular selection of low cost solutions. The plastic used is PC-ABC compound, with or without fiberglass reinforcement. This material combines good mechanical strength, good resistance to deformation under load according to ASTM D648 (98 °C for the version without fiberglass and 125 ° C for the 20% fiberglass version), fire resistance UL94-V0 and a glow wire test 650 ° C to meet the major specifications of EN60335 relating to domestic heating units.
The covers are snapped or use self-tapping screws. Cable glands, when present, are made of polyamide.
Shafts and buttons wall crossings comply IPX0, IPX1 or IPX2, IPX3, IPX4 class, depending on the model.
The housings for oil filled radiators or convectors are supplied without control and are designed to receive standard electronic controls of French suppliers (Cotherm, Watts, Delta Dore etc ...)
Caution: Protection class IP is given for a specified enclosure position. Installation and assembly of electronic cards by customer can modify this class of protection
For industrial applications: products should be defined according to the specific application and its specific environmental constraints.

Y0 enclosures with external shaft or button: Water ingress protection ratings

			
IPX1	**IPX2**	**IPX3**	**IPX4**
Protection against dripping water (condensation), the enclosure being in its normal position. Examples of construction: - Openings in the housing at the bottom or louvres on side are possible. - The adjustment shaft is covered by a handle or protected by a rib on the housing	Protection against falling of drops of water, whereby the enclosure can be inclined by 15 ° relative to its normal position. Examples of construction: - Openings in the housing at the bottom or louvres on side having at least an angle of 30° are possible. - The adjustment shaft is protected by a cap or knob with a flanged bezel with cover or a rib on the housing	Protection against rainwater, as long as it has not at an angle greater than 60 ° to the vertical Examples of construction: - Openings in the housing at the bottom or louvres on side having at least an angle of 60 ° are possible. - The adjustment shaft is protected by a screw cap or a knob with labyrinth	Protection against splashing water splashes in all directions. Examples of construction: - Openings in the housing are not possible, even at the bottom if they are not protected by a seal or appropriate labyrinth. - The adjustment shaft is protected by a screw cap or a knob with triple labyrinth. Louvres are possible but difficult.

Y0 enclosures with outside adjustment or button: Protection of persons against access to hazardous parts and protection of equipment against ingress of solid objects

			
IP1X	IP2X	IP3X	IP4X
Protected against solid objects bigger than 50 mm (eg accidental contact of the hand) Examples of construction: Enclosures or covers whose output does not have cable gland, if its bore has a diameter ≥ ISO M12 or> PG7	Protected against solid objects bigger than 12 mm (eg finger) Examples of construction: Enclosures or covers whose output does not have cable gland, if its bore has a diameter less than or equal to 12mm (<or ISO M12 <PG7)	Protected against solidobjets bigger than 2.5 mm (eg tools, wires) Examples of construction: Enclosures with air circulation holes smaller than 2.5mm (Room thermostats, room humidistats, temperature sensors and humidity sensors)	Protected against solid objects bigger than 1 mm (eg small tools, small wires) Examples of construction: Closed enclosures, without gasket between cover and base, and seamless adjustment shaft, or without protection cap on external buttons .

Examples of standards which we recommend you refer to define technical needs for domestic appliances: Room heaters (IEC60335-2-30), Heaters that are built into air conditioners (IEC 60335-2-40); Clothes dryers and towel rails (IEC 60335-2-43); Heaters for saunas (IEC 60335-2-53); Thermal-storage room heaters (IEC 60335-2-61); Heating appliances for breeding and rearing animals (IEC 60335-2-71); Foot warmers and heating mats (IEC 60335-2-81); Flexible sheet heating elements for room heating (IEC 60335-2-96); Heating cables (IEC 60800).

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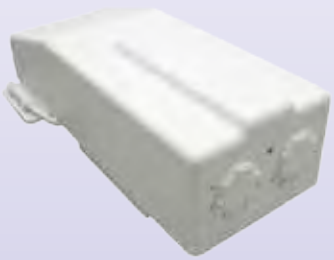
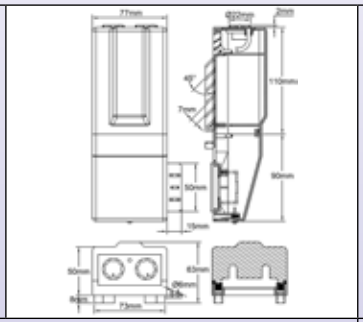
Empty enclosure for oil filled electric radiators, with single tube heating element and electronic temperature control, Type Y01

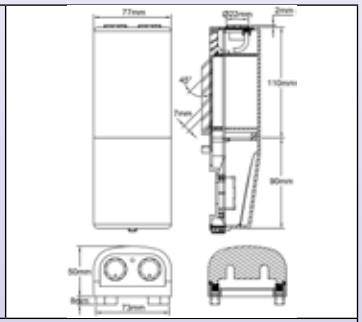
These boxes are mounted on the outer threaded ½ " single tube heating elements in oil filled radiators. They are designed to accommodate existing electronic cards from manufacturers such as Cotherm, Delta Dore etc ...
Their IP protection class allows them to be mounted in most domestic applications.
They are designed to respond to a class II insulation: creepage distances and clearances between the metal parts or live parts are greater than or equal to 8mm (Indicative values, which may vary according to internal electronic circuits)
The minimum plastic wall thickness is 1.6 mm.
They can be supplied with mains cable with pull out force greater than 10 daN.
The development of these boxes is on customer specifications.
Contact us for reference and suppliers of compatible electronic circuit board





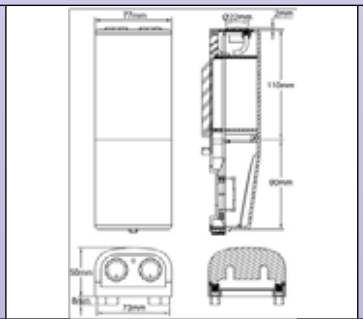
Dimensions: 200x77x58 (excluding knob and bracket)
Setting: One or two knobs, one pilot light
IP Rating: IP22 (vertical mounting only)
Weight: 192 gr.
Color: RAL1010
Material: PC-ABS
Ventilation: Electronic area is ventilated by louver

Reference with two knobs setting	Y019ETE200502162
Reference with one knob setting	Y019ETE200502161



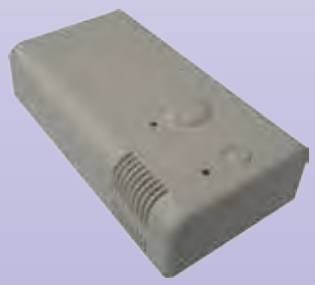
Dimensions: 200x77x50 (excluding knob and bracket)
Setting: One knobs, one pilot light
IP Rating: IP22 (vertical mounting only)
Weight: 195 gr.
Color: RAL1010
Material: PC-ABS
Ventilation: Electronic area is ventilated by louver style air inlet of 7 mm, for triac output temperature control

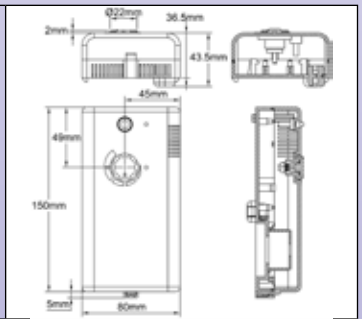
Reference	Y019ETE200511212



Dimensions: 200x77x50 (excluding knob and bracket)
Setting: Two knobs, one pilot light
IP Rating: IP22 (vertical mounting only)
Weight: 195 gr.
Color: RAL1010
Material: PC-ABS
Ventilation: Electronic area is ventilated by louver style air inlet of 7 mm, for triac output temperature control.

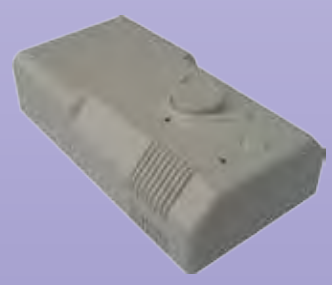
Reference	Y019ETE200511211(One Knob)

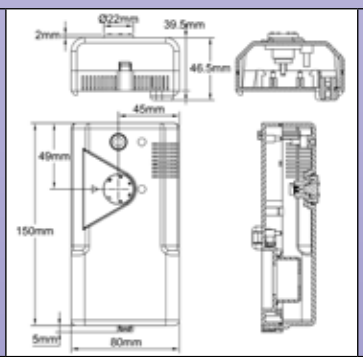




Dimensions: 150x80x37 (excluding knob and bracket)
Setting: One knob, one button, two pilot lights
IP Rating: IP33 (vertical mounting only)
Weight: 130 gr.
Color: RAL1010
Material: PC-ABS
Ventilation: For relay output electronic controls . Not suitable for triac.

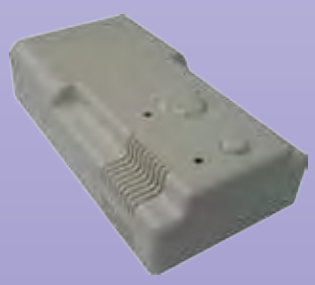
Reference	Y019ET020090604A

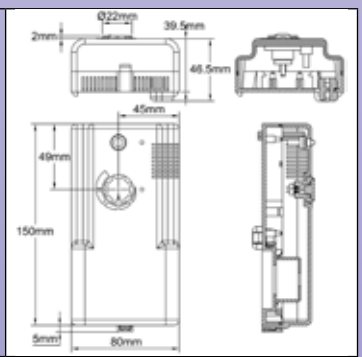




Dimensions: 150x80x40 (excluding knob and bracket)
Setting: One knob, one button, two pilot lights
IP Rating: IP33 (vertical mounting only)
Weight: 130 gr.
Color: RAL1010
Material: PC-ABS
Ventilation: For relay output electronic controls . Not suitable for triac.

Reference	Y019ET020091231A

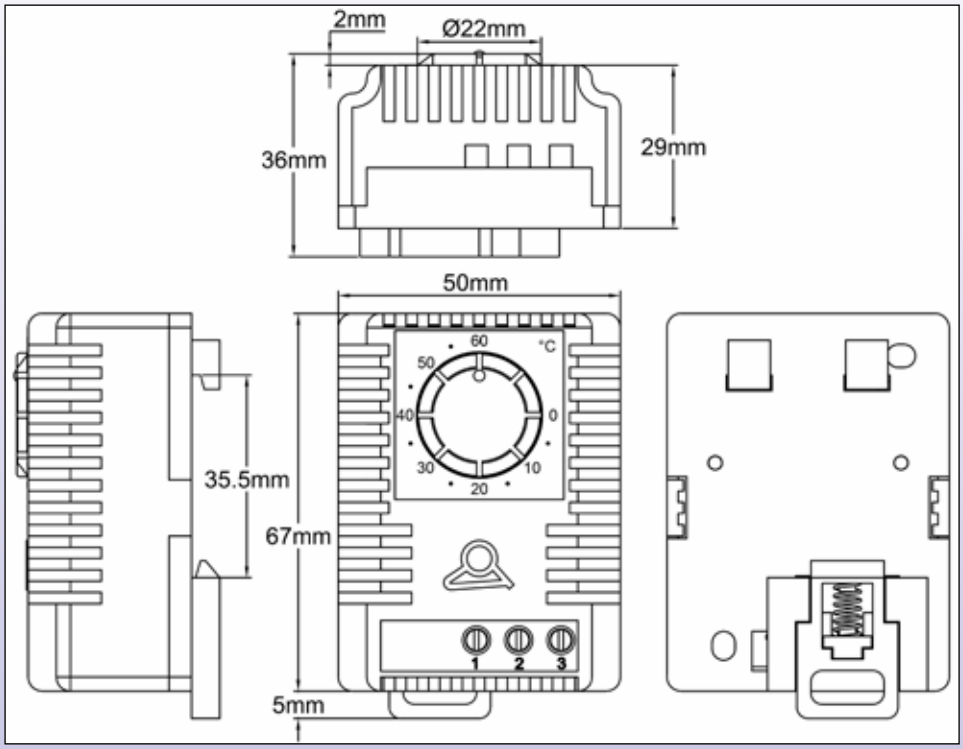




Dimensions: 150x80x40 (excluding knob and bracket)
Setting: One knob, one button, two pilot lights
IP Rating: IP33 (vertical mounting only)
Weight: 125 gr.
Color: RAL1010
Material: PC-ABS
Ventilation: For relay output electronic controls . Not suitable for triac.

Reference	Y019ET020100525A

Electrical cabinet ambient temperature thermostats, Din Rail mounting, type Y02N



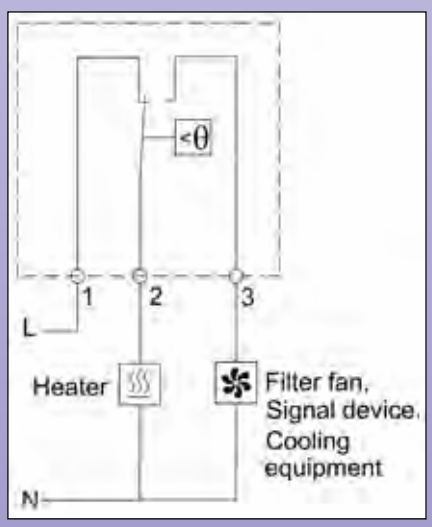
Main use:
These models have been designed to control the temperature inside electrical cabinets, being mounted on their DIN rail. Their SPDT contact allows their use to control a cabinet heater, a fan or a filter fan, or a cooling system.
Temperature ranges: -10+20°C (14+68°F) ; -10+50°C (14+122°F) ;0-60°C (32-140°F) ;5-35°C (41-95°F) ; 20+80°C (68-176°F)
Set point adjustment: knob
Sensing element: bimetal
Contact type: snap-action contact, open or close on temperature rise, 10(2)A 250VAC, 15(2)A 120VAC
Electrical life: > 10.000 cycles at rated values
Contact resistance: < 10mOhm
Electrical connection: 3 screw terminals, for 1.5 mm² wires
Mounting: Clip for 35mm DIN rail, EN50022
Casing: UL94 V0, PC-ABS, RAL 1010 light grey
Dimensions: 67 x 50 x 35 mm
Operating temperature range: -20 to +80°C (-4+176°F)
Ingress protection: IP30

Main references

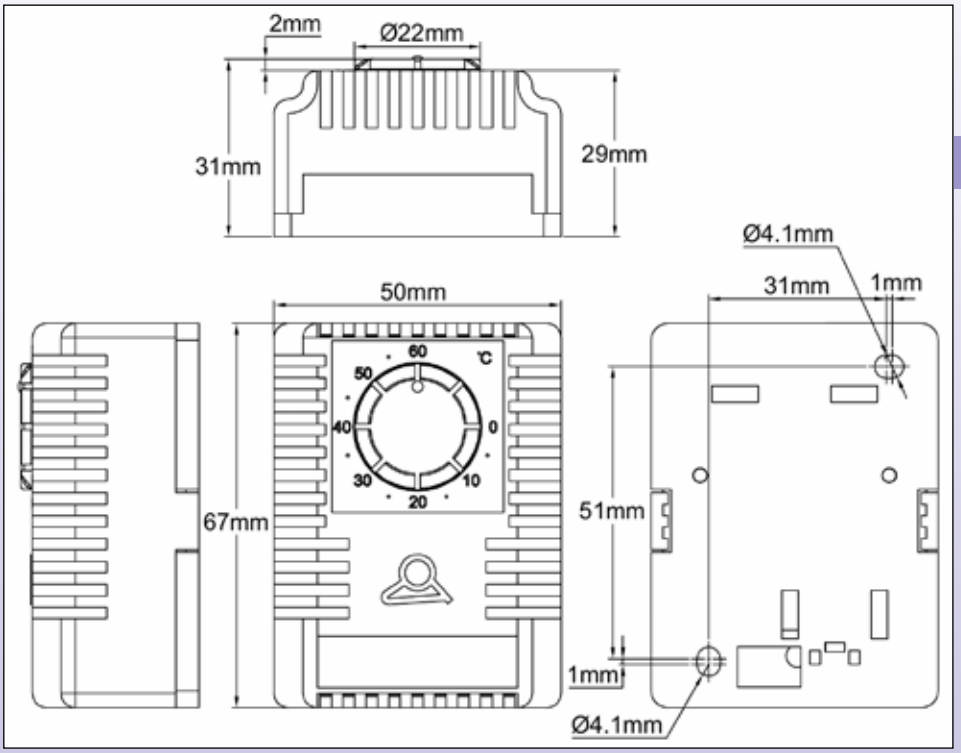
°C		
Temperature range (°C)	**Differential (°C)**	**References**
-10+50°C	4°C±2°C	Y02NAC-10050114L
-10+20°C	4°C±2°C	Y02NAC-10020114L
+5+35°C	4°C±2°C	Y02NAC005035114L
0+60°C	4°C±2°C	Y02NAC000060114L
+20+80°C	4°C±2°C	Y02NAC020080114L

°F		
Temperature range (°F)	**Differential (°F)**	**References**
15-120°F	7±3°F	Y02NAC-10050114P
15-70°F	7±3°F	Y02NAC-10020114P
40-95°F	7±3°F	Y02NAC005035114P
30-140°F	7±3°F	Y02NAC000060114P
70-180°F	7±3°F	Y02NAC020080114P

Wiring diagram



Miniature room temperature thermostats wall mounting, home appliance style, type Y02M



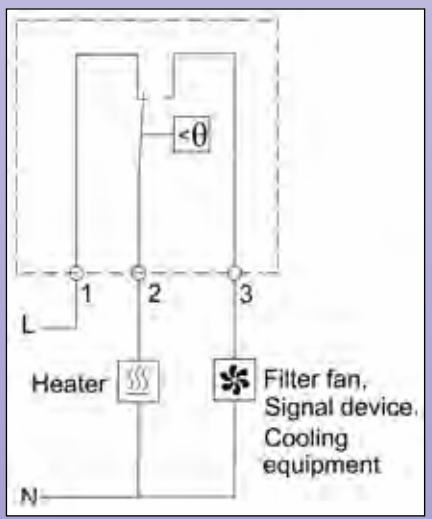
Main use:
These models have been designed to control electrical equipment temperature. They are designed for wall mounting with 2 backside screws. Their SPDT contact allows their use to control a cabinet heater, afan or a filter fan,or a cooling system.
Temperature ranges: -10+50°C (14+ 122°F) ; 0-60°C (32-140°F) ; 20+80°C (68-176°F)
Set point adjustment: screw driver knob, red color for open on rise models, blue color for close on rise models
Sensing element: bimetal
Contact type: snap-action contact, open or close on temperature rise, 10(2)A 250VAC, 15(2)A 120VAC
Electrical life: > 100 000 cycles at rated values
Contact resistance: < 10mOhm
Electrical connection: 4 screw terminals, for 1.5 mm² wires
Mounting: Clip for 35mm DIN rail (EN50022)
Casing: UL94 V0, PC-ABS, RAL 1010 light grey
Dimensions: 67 x 50 x 46 mm
Operating temperature range: -20 to +80°C
Ingress protection: IP30

Main references

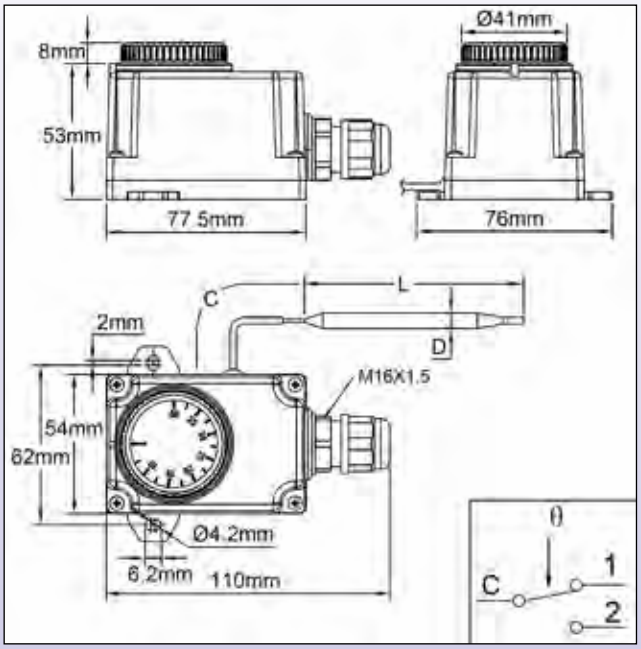
°C		
Temperature range (°C)	**Differential (°C)**	**References**
-10+50°C	4°C±2°C	Y02MAC-10050114M
-10+20°C	4°C±2°C	Y02MAC-10020114M
+5+35°C	4°C±2°C	Y02MAC005035114M
0+60°C	4°C±2°C	Y02MAC000060114M
+20+80°C	4°C±2°C	Y02MAC020080114M

°F		
Temperature range (°F)	**Differential (°F)**	**References**
15-120°F	7±3°F	Y02MAC-10050114N
15-70°F	7±3°F	Y02MAC-10020114N
40-95°F	7±3°F	Y02MAC005035114N
30-140°F	7±3°F	Y02MAC000060114N
70-180°F	7±3°F	Y02MAC020080114N

Wiring diagram



Bulb and capillary thermostat, IP44 commercial style enclosure, type Y03



Housing: IP44, 77,5 x 54 x 53 mm, (Knob and cable gland not included), black PC-ABS, UL94V0. High impact and UV resistance. 2 removable wall mounting lugs.
Electrical input: M16 cable gland.
Temperature Adjustment: With °C printed knob.
°F printed knobs available in option
Sensing element: Liquid filled bulb, distance measurement with capillary.
Adjustment ranges: -35+35°C (-30+95°F), 4-40°C (40-105°F), 30-90°C (85-195°F), 30-110°C (90-230°F), 50-200°C (120-390°F), 50-300°C (120-570°F)
Capillary length: 1.5 m
Electrical connections: screw terminals
Mounting: Wall mounting, by two side lugs with holes for dia.4 mm screws, 62 mm distance.
Contact: SPDT
Electrical rating:
- Open on temperature rise contact (C-1) 16A(2.6) 250VAC
- Close on temperature rise contact (C-2) 6A(0.6) 250VAC
- Electrical life >**100.000 cycles.**

Cannot be used in 400VAC

°C		°F		Bulb diameter (D, mm)	Bulb length (L, mm)	Differential °C (°F)	Max temperature on bulb °C (°F)
References (°C)	Temperature ranges (°C)	References (°F)	Temperature ranges (°F)				
Y038GA-35035AO6J	-35+35°C	Y038GA-35035AO6K	-30+95°F	6	98	3±2 (5.5±4)	55 (130)
Y038GA004040AO6J	4-40°C	Y038GA004040AO6K	40-105°F	6	140	3±2 (5.5±4)	60 (140)
Y038GA030090AO6J	30-90°C	Y038GA030090AO6K	85-195°F	6	87	4±3 (7±5.5)	120 (250)
Y038GA030110AO6J	30-110°C	Y038GA030110AO6K	90-230°F	6	93	5±3 (9±7)	150 (300)
Y038GA050200AO6J	50-200°C	Y038GA050200AO6K	120-390°F	6	59	8±5 (14±9)	250 (480)
Y038GA050300AO3J	50-300°C	Y038GA050300AO3K	120-570°F	3	165	10±5(18±9)	350 (660)

Knob printings

°C Printing

-35+35°C	4-40°C	30-90°C	30-110°C	50-200°C	50-300°C
					

°F Printing

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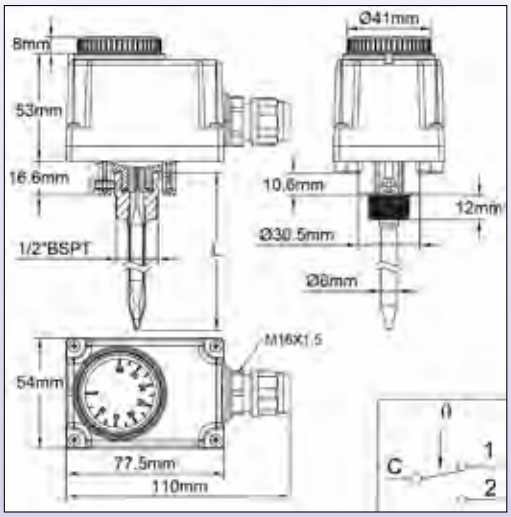
Set point adjustable rod thermostat, IP44 commercial housing type Y04
With general use stainless steel or nickel plated pocket



Housing: IP44, 77,5 x 54 x 536 mm, (Knob and cable gland not included), black PC-ABS, UL94V0. High impact and UV resistance. Stainless steel wall mounting plate, with 2 plastic lugs.
Electrical input: M16 cable gland.
Temperature Adjustment: With °C printed knob.
°F printed knobs available in option
Sensing element: Liquid filled bulb, located inside a backside mounted 304L stainless steel pocket.
Adjustment ranges: -35+35°C (-30+95°F), 4-40°C (40-105°F), 30-90°C (85-195°F), 30-110°C (90-230°F)
Rod length: 90, 230, 300 mm. Other length on request
Electrical connections: screw terminals
Mounting: by the ½"BSPT pocket fitting
Contact: SPDT
Electrical rating:
- Open on temperature rise contact (C-1) 16A(2.6) 250VAC
- Close on temperature rise contact (C-2) 6A(0.6) 250VAC
- Electrical life >**100.000 cycles.**

Cannot be used in 400VAC.

Main references with nickel plated brass pocket*

Temperature ranges (°C)	Temperature ranges (°F)	References in °C with rod length L=90 mm*	References in °C with rod length L=230 mm*	References in °C with rod length L=300 mm*	Differential °C (°F)	Max temperature on rod °C (°F)
-35+35°C	-30+95°F		Y048GA-35035N23C	Y048GA-35035N30C	3±2 (5.5±4)	55 (130)
4-40°C	40-105°F		Y048GA004040N23C	Y048GA004040N30C	3±2 (5.5±4)	60 (140)
30-90°C	85-195°F	Y048GA030090N09C	Y048GA030090N23C	Y048GA030090N30C	4±3 (7±5.5)	120 (250)
30-110°C	90-230°F	Y048GA030110N09C	Y048GA030110N23C	Y048GA030110N30C	5±3 (9±7)	150 (300)

Main references with AISI 304 pocket*

Temperature ranges (°C)	Temperature ranges (°F)	References in °C with rod length L=90 mm*	References in °C with rod length L=230 mm*	References in °C with rod length L=300 mm*	Differential °C (°F)	Max temperature on rod °C (°F)
-35+35°C	-30+95°F		Y048GA-35035I23C	Y048GA-35035I30C	3±2 (5.5±4)	55 (130)
4-40°C	40-105°F		Y048GA004040I23C	Y048GA004040I30C	3±2 (5.5±4)	60 (140)
30-90°C	85-195°F	Y048GA030090I09C	Y048GA030090I23C	Y048GA030090I30C	4±3 (7±5.5)	120 (250)
30-110°C	90-230°F	Y048GA030110I09C	Y048GA030110I23C	Y048GA030110I30C	5±3 (9±7)	150 (300)

Other temperature range, consult us
* Versions with °F printed knobs: replace the last character C by D in the reference

Knob printings

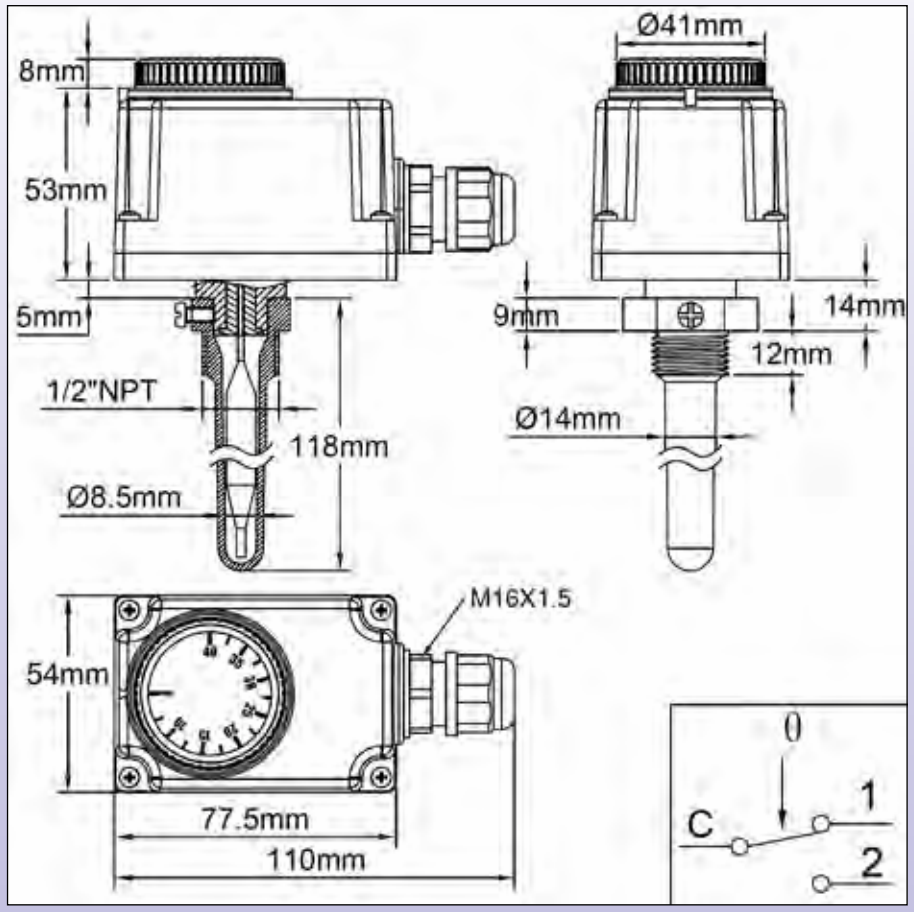
°C Printing

-35+35°C	4-40°C	30-90°C	30-110°C
			

°F Printing

Set point adjustable rod thermostat, IP44 commercial housing type Y05 with plastic pocket, for corrosive water and swimming pools



Housing: IP44, 77,5 x 54 x 53mm, (Knob and cable gland not included), black PC-ABS, UL94V0. High impact and UV resistance. Stainless steel wall mounting plate, with 2 plastic lugs.
Electrical input: M16 cable gland.
Temperature Adjustment: With °C printed knob.
°F printed knobs available in option
Sensing element: Liquid filled bulb, located inside a backside mounted PBT pocket.
Adjustment ranges: 4-40°C(40-105°F)
Rod length: 97 mm
Electrical connections: screw terminals and external ground terminal
Mounting: by the ½"NPT pocket fitting
Contact: SPDT
Electrical rating:
- Open on temperature rise contact (C-1) 16A(2.6) 250VAC
- Close on temperature rise contact (C-2) 6A(0.6) 250VAC
- Electrical life >**100.000 cycles.**

Cannot be used in 400VAC.

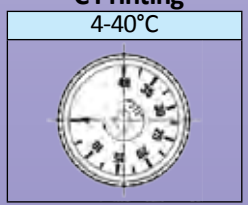
Main references

°C		°F		Differential °C (°F)	Max temperature on rod °C (°F)
Temperature range (°C)	°C knob	Temperature range (°F)	°F knob		
4-40°C	Y057GA004040P10P	40-105°F	Y057GA004040P10Q	1,5 (-0+2) °C 3 (-0+3,5)°F	60°C (140°F)

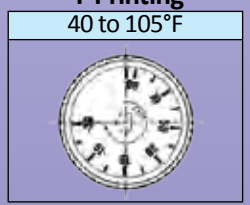
Other temperature range, consult us

Knob printings

°C Printing



°F Printing



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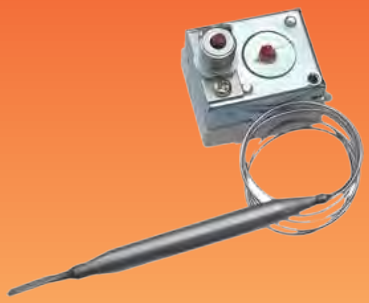
Many other temperature control componentsmade by Ultimheat are used in appliances, commercial and industrial applications

Single pole and 3 poles bulb and capillary thermostats (Catalogue N°1)



Single pole, double pole and 3 polesFail safe manual reset thermostats(Catalogue N°1)

Surface temperature control bimetal thermostats (Catalogue N°1)

3 poles manual reset disc thermostats(Catalogue N°1)

Energyregulators (Catalogue N°1)

Industrial temperature control boxes, with thermostats or electronic controllers (Catalogue N°3)

Simple to use Din Rail electronic temperature controllers (Catalogue N°3)

Electronic temperature controllers, On-Off or PID (Catalogue N°3)

Explosion proof thermostats and “e” increased safety connection boxes (Catalogue N°4)

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