Climasys Thermal Management System

Schneider Electric Universal Enclosures

2009

Schneider Electric

Schneider Electric Universal Enclosures
The specialist in sealed equipment

What is the mission of Schneider Electric Universal Enclosures?

> Schneider Electric Universal Enclosures has the mission to develop and be in charge of the Universal Enclosure Business for the Schneider Electric Group.

> Schneider Electric Universal Enclosures is based on two historical companies created in 1958, Himel with origin in Spain and Sarel with origin in France. Both companies have developed more than 50 years of experience in the design, manufacturing and marketing of universal enclosures systems.

> Himel and Sarel brands are going to migrate within Schneider Electric which is an ambitious corporate project that will make everyone's day-to-day work easier, both clients and collaborators.

Why do we migrate our brands?

Here are some of the benefits of working with a single brand:

> Our daily work will be simpler, it is easier to deal with a single brand and with common documentation and resources.

> Your clients will recognize our product offer and ranges better thanks to a single packing and communication focused on Schneider Electric.

> It will be much easier to create solutions based on the products of a single brand.

What is good for Schneider Electric is also good for our clients and collaborators!

> **The scope of this guide is limited to the ranges migrating last quarter of 2009. These ranges are Floor Standing, Control Desks, Thermal offer, Stainless Steel and Plastic Industrial Boxes.**

Customer needs + **Brand migration** = **Schneider Electric** Solutions

How will be the migration process?

The migration process of the ranges in the scope of this guide will be conducted in a range-by-range basis during the last quarter of 2009, and each one of the range migrations will be performed in two phases:

Phase 1: new packing

This phase began in the second half of 2009, and will focus on harmonizing the packing with Schneider Electric.

Phase 2: new product marking

As of the fourth quarter of 2009, some product families will start to carry the Schneider Electric logo. This process will be performed progressively range by range.

> To guarantee a global offer and a harmonized coding and marking system, we are also going to change our references for all our ranges.

Thermal management system

Thermal conditioning of electric and electronic switchboards: a need

What is thermal control?

Technological evolution

The miniaturisation of components, the generalisation of electronics and the appearance of new electronically powered products have made temperature management into a growing need which must necessarily be considered when designing electrical and/or electronic switchboards.

What are the advantages of efficient thermal management?

Thermal management of electrical switchboards is a major factor for industrial maintenance.
Many risks are incurred by not having a suitable thermal solution, which can affect the service life of the components and the performance of the facilities to the extent of causing a halt in production.
The service life of the components also depends on the temperature and humidity conditions inside the enclosure. The ideal values range from +25 to +35 ºC for the temperature and 40 to 60 % for the relative humidity (RH).

Cooling, heating, controlling

For the same reasons as the IP/IK protection ratings, equipment installed in enclosures requires suitable thermal protection.
Various solutions to these problems have been put forward. They will be chosen according to environmental conditions, the type of components in the electrical switchboard, etc.
In certain cases, it is sufficient to oversize the enclosure, use fans or air-air exchangers, etc. In other cases, where the ambient temperature is higher, it becomes necessary to install air-water exchangers or cooling units.

A solution for each need

We provide a complete Thermal offer to secure your installations.

Cooling	1. Forced ventilation systems 2. Air-air exchangers 3. Air-water exchangers 4. Cooling units
Heating	5. Resistance heaters
Controlling	6. Thermal control accessories
Calculating	7. New Spacial.clim software

Choose the solution

A thermal solution for every environment

Ventilation systems with filters

Specially recommended for installations in which:
- The ambient temperature is lower than the desired temperature inside the enclosure.
- A high protection rating is required: IP 54 or IP 55.
- The surrounding environment is relatively clean, allowing air to enter the enclosure.

Large range of solutions

- 42 possible combinations.
- Colours: RAL 7035 as standard, with the option of changing to RAL 7032 (with replacement grille **NSYCAG●●●LPC**).
- 38 to 850 m^3/h.
- According to 5 input voltages:
  AC: 400/440 V, 230 V, 115 V (50/60 Hz),
  DC: 48 V and 24 V.
- Broad range of accessories (filters, IP 55 & EMC covers, anti-vandalism kit).

Air-air exchangers

Specially recommended for installations in which:
- The ambient temperature is lower than the desired temperature inside the enclosure.
- A high protection rating is required: IP 54 or IP 55.
- The outside environment is highly polluted.

Large range of solutions

- 4 models.
- Two installation versions: top-mounting model and side-mounting model.
- Cooling power from 15 to 70 W/ºK .
- According to the input voltage: 230 V (50/60 Hz).

Air-water exchangers

Specially recommended for installations in which:
- The ambient temperature is higher than the desired temperature inside the enclosure.
- The outside environment is corrosive, the internal and external air circuits are independent.
- The outside environment is highly polluted, the temperature is controlled by cold water without requiring the use of an external air circuit.
- It is necessary to extract the heat produced by the industrial site.

Large range of solutions

- 3 models.
- Two installation versions: top-mounting model and side-mounting model.
- Cooling power of 2,100 W and 3,150 W.
- According to the input voltage: 230 V (50/60 Hz).

Choose the solution
A thermal solution for every environment

Cooling units

They control the temperature inside the enclosure in order to guarantee the correct operation of the components, regardless of the outside temperature, by separating the internal and external air circuits and reducing the humidity of the enclosure.

A very broad range of solutions

- 32 models.
- Two versions: top-mounting model and side-mounting model.
- Cooling power from 240 to 4,000 W.
- Two control versions: electronic and mechanical.
- According to the input voltage: 230 V (50/60 Hz); 3 × 400/440 V (50/60 Hz); 115 V (50/60 Hz).
- Three installation types: surface, flush and partial flush (SLIM version).
- RAL 7035 and stainless steel.

Resistance heaters

With a double objective:
- To prevent the formation of condensation inside the enclosure.
- To reheat the electrical switchboard when the temperature is too low for the components to operate correctly.

Large range of solutions

- 30 models.
- Insulated or aluminium versions.
- Versions with natural convection or fan.
- Cooling power from 10 to 1,200 W.
- According to the input voltage: 12 V to 450 V AC/DC.

Thermal control

Thermostats maintain the temperature inside the enclosure and send a signal when certain defined values are exceeded:
- Maximum value (cooling action).
- Minimum value (reheating action).

Range of solutions

- 11 models.
- Temperature control: adjustable thermostats; single or double.
- Relative humidity control: adjustable or fixed hygrostat.
- Temperature and relative humidity control: adjustable hygrotherm.

Calculation assistance: Spacial.clim

We offer our customers and users a software application to help them select thermal accessories.
The programme draws up a heat balance and defines the best ventilation or cooling solution for the inside of the enclosure.

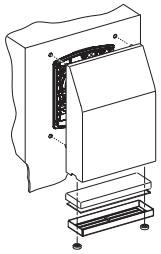
Ventilation system
Selection guide

Ventilation systems with filters

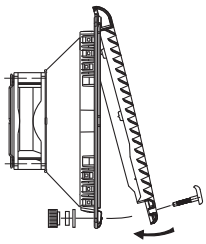
	Fan flow rate (m³/h)			Voltage	Dimensions (mm)		Reference		
	Free with filter	With 1 outlet grille	With 2 outlet grilles						
	50 Hz	50 Hz	50 Hz		Total (external)	Cut-out	Fan with filter RAL 7035	Outlet grille	Colour kit RAL 7032
IP 54	38	25	33	230 V	137 × 117	92 × 92	NSYCVF38M230PF	NSYCAG92LPF	NSYCAG92LPC
	38	27	35	115 V			NSYCVF38M115PF		
	58	39	47	24 V CC			NSYCVF38M24DPF		
	44	34	41	48 V CC			NSYCVF38M48DPF		
IP 54	85	63	71	230 V	170 × 150	125 × 125	NSYCVF85M230PF	NSYCAG125LPF	NSYCAG125LPC
	79	65	73	115 V			NSYCVF85M115PF		
	80	57	77	24 V CC			NSYCVF85M24DPF		
	79	59	68	48 V CC			NSYCVF85M48DPF		
IP 54	165	153	161	230 V	268 × 248	223 × 223	NSYCVF165M230PF	NSYCAG223LPF	NSYCAG223LPC
	164	153	161	115 V			NSYCVF165M115PF		
	188	171	179	24 V CC			NSYCVF165M24DPF		
	193	171	179	48 V CC			NSYCVF165M48DPF		
	302	260	268	230 V			NSYCVF300M230PF		
	302	263	271	115 V			NSYCVF300M115PF		
	262	221	229	24 V CC			NSYCVF300M24DPF		
	247	210	218	48 V CC			NSYCVF300M48DPF		
IP 54	562	473	481	230 V	336 × 316	291 × 291	NSYCVF560M230PF	NSYCAG291LPF	NSYCAG291LPC
	582	485	494	115 V			NSYCVF560M115PF		
	838	718	728	230 V			NSYCVF850M230PF		
	983	843	854	115 V			NSYCVF850M115PF		
	931	798	809	400/440 V			NSYCVF850M400PF		
IP 20	65			115 V	124 × 124	Ø 108	NSYCVF65M115PF (1)	NSYCAG108LP (1)	
				230 V			NSYCVF65M230PF (1)		
IP 33		54		230 V	120 × 120	94 × 96	NSYCVF54M230MM2	(2)	

(1) Black colour.
(2) Integrated in the kit.

Sealing cover IP 55 and EMC



Dimensions (mm)		Cover reference		EMC Cover reference
External	Cut-out	Aluzinc RAL 7035	Stainless steel 304	Aluzinc RAL 7035
240 × 180 × 60	125 × 125	NSYCAP125LZF	NSYCAP125LXF	NSYCAP125LE
350 × 305 × 80	223 × 223	NSYCAP223LZF	NSYCAP223LXF	NSYCAP223LE
350 × 305 × 80	223 × 223	NSYCAP223LZF	NSYCAP223LXF	NSYCAP223LE
430 × 373 × 105	291 × 291	NSYCAP291LZF	NSYCAP291LXF	NSYCAP291LE
430 × 373 × 105	291 × 291	NSYCAP291LZF	NSYCAP291LXF	NSYCAP291LE



Anti-vandalism kit

- Prevents the grille from being opened from the outside.
- The unlocking thumbwheel is accessed from the inside of the wall-mounting enclosure.
- RAL 7011 colour (same material as the grille: ASA PC).

Minor packaging	Reference
2	NSYCAAPV

Ventilation systems
Natural airing

Anti-insect filters for metal louvre plate, square

- Installation is made between the enclosure and the metal louvre.
- Material: Stainless steel 304L ∅ 0.32 mm wire mesh, of 1.07 mm, thickness 0.6 mm.
- Increases protection rating to IP 33.
- Weight: 0.8 kg/m^2.
- Supply: one anti-insect filter.

Louvre plate reference	External dimensions (mm)	Filter reference
NSYCAG104X95LM	98 × 115	**NSYCAF104X95X**
NSYCAG130X110LM	133 × 158	**NSYCAF130X110X**
NSYCAG170X190LM	197 × 215	**NSYCAF170X190X**

NSYCAG45LP **NSYCAG33LP**

Plastic ventilation louvres

- Four models available according to IP rating, in vertical position.
- Supply: 2 plastic ventilation louvres.

cut-out ∅	IP	Reference
45.5 mm	22	**NSYCAG45LP**
35 mm	30/44 (1)	**NSYCAG35LP**
38 mm	45	**NSYCAG38LP**
33 mm	44	**NSYCAG33LP**
19 mm	45	**NSYCAG19LP**

(1) According to installation in the Thalassa enclosure.

Hood for natural airing, IP 54

- Natural airing device for coupling to the top of metal floor-standing enclosures.
- Solution for combining with the ventilation slots.
- Fixing to the top by means of caged nuts and special screws.
- Material: steel.
- Finish: painted with epoxy-polyester resin, textured RAL 7035 grey.
- Protection rating: IP 54.
- Weight: 4.6 kg.
- Supply: one hood for natural airing and fixing elements.

Reference
NSYCAC228RMF

Top hood with top fan IP 54

- Fan with hood, for floor-standing enclosures.
- Device delivered with fixings and connection terminal block.
- Electric power: 85 W.
- A flow rate of 350 m^3/h is obtained with an outlet grille ref. **NSYCAG291LPF**, (cut-out 291 × 291 mm).
- Noise level: 64 dB (A).
- Installation and removal from the outside.

Flow rate* (m^3/h)	Voltage (V)	Weight (kg)	Reference
570	115	5.8	**NSYCVF570M115MF**
575	230	5.8	**NSYCVF575M230MF**

* Flow rate measured without counter-pressure.

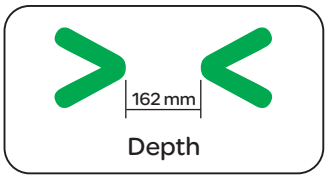
Cooling unit
SLIM electronic control

SLIM for perfect integration

1 bloc:
- 4 power levels
- 3 voltage levels

1 cover:
- Flush
- Partial-flush
- Surface

66 models, from 1,100 to 2,700 W, 115 to 460 V, flush mounting, partial-flush mounting or surface mounting, with or without electronic display, IP 55, UL compliant.



Minimum depth

All the models of the SLIM range have a depth of 162 mm to maximise the volume inside the enclosure.

Modular system

- There are 66 possible combinations with only 17 catalogue references.
- Three different installation types are possible with the same air-conditioning unit (surface, partial flush and flush).

Power ranges

1,100 W, 1,500 W, 2,200 W and 2,700 W.

Versions

- RAL 7035 and stainless steel.
- Option to provide other colours on demand.

Internal IP 55

The SLIM range is supplied as standard with an expanded polyurethane gasket, ensuring optimum sealing with IP 55 throughout the enclosure.

Cooling unit
Selection guide

SLIM electronic control models (modular)

- Flush mounting.
- Partial-flush mounting.
- Surface mounting.

	Power	1,100 W	1,500 W	2,200 W	2,700 W
Cooling unit block	230 V	NSYCUB1100W230S	NSYCUB1500W230S	NSYCUB2200W230S	NSYCUB2700W230S
	400-460 V (50-60 Hz)	NSYCUB1100W400S	NSYCUB1500W400S	NSYCUB2200W400S	NSYCUB2700W400S
	115 V	NSYCUB1100W115S	NSYCUB1500W115S	NSYCUB2200W115S	

Covers	Side-mounting type	Reference
RAL 7035	Surface-mounting	NSYCUCL
	Partial flush-mounting	NSYCUCH
	Flush-mounting	NSYCUCF
Stainless-steel	Surface-mounting	NSYCUCLX
	Partial flush-mounting	NSYCUCHX
	Flush-mounting	NSYCUCFX

Modular version: Always order one SLIM cooling unit reference plus one cover reference.

Side-mounting models

External dimensions (mm)	Cooling power EN 14511 L35 - L35 (50 Hz)	Input voltage Vol-Hz	Control	Reference
450 × 350 × 140	240 W (819 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU240W230VL
620 × 300 × 170	370 W (1263 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU370W230VL
800 × 350 × 195	760 W (2594 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU760W230VL
900 × 400 × 195	1,050 W (3584 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU1050W230VL
1,010 × 400 × 240	1,100 W (3755 Btu/h)	230 V - 50/60 Hz	Electronic controller	NSYCUE1100W230L
1,010 × 400 × 240	1,400 W (4780 Btu/h)	230 V - 50/60 Hz	Electronic controller	NSYCUE1400W230L
1,010 × 400 × 240	1,400 W (4780 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Electronic controller	NSYCUE1400W400L
1,000 × 400 × 220	1,650 W (5631 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU1650W230VL
1,000 × 400 × 220	1,800 W (6143 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Thermostat	NSYCU1800W400VL
1,010 × 400 × 240	1,800 W (6145 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Electronic controller	NSYCUE1800W400L
1,406 × 502 × 300	2,500 W (8533 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Thermostat	NSYCU2500W400VL
1,406 × 502 × 300	4,000 W (13652 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Thermostat	NSYCU4000W400VL

Top-mounting models

External dimensions (mm)	Cooling power EN 14511 L35 - L35 (50 Hz)	Input voltage Vol-Hz	Control	Reference
340 × 600 × 350	760 W (2594 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU760W230VR
400 × 700 × 400	1,050 W (3584 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU1050W230VR
415 × 750 × 412	1,400 W (4780 Btu/h)	230 V - 50/60 Hz	Electronic controller	NSYCUE1400W230R
400 × 700 × 400	1,460 W (4983 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU1460W230VR
430 × 700 × 400	1,650 W (5631 Btu/h)	230 V - 50/60 Hz	Thermostat	NSYCU1650W230VR
415 × 750 × 412	1,800 W (6145 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Electronic controller	NSYCUE1800W400R
430 × 700 × 400	2,000 W (6826 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Thermostat	NSYCU2000W400VR
470 × 800 × 450	2,450 W (8362 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Thermostat	NSYCU2450W400VR
470 × 800 × 450	3,100 W (10580 Btu/h)	3 × 400 V 50 Hz / 440 V 60 Hz	Thermostat	NSYCU3100W400VR

Air-water exchanger
Side and top-mounting models

General characteristics

- Main components: thermostatic adjustment system, exchange cassette, fans for the internal circuit of the enclosure, safety device against possible leaks.
- The desired temperature inside the enclosure can be adjusted over a range of +25...+50 °C.
- The alarm which detects an interruption in the water circuit is activated by closing a switch. This can be used to activate a light or a siren, connected to the input of an automation device. The water supply is automatically cut.
- System for evacuating condensation water to the outside.
- RAL 7035 grey.

Conditions of use

- Air-water exchangers can be used even when the outside temperature is higher than the desired temperature inside the enclosure.
- The enclosure must be sealed to prevent the entry of external air: at least IP 54.

	Reference		
	NSYCEW2100W230VR (top)	NSYCEW2100W230VL (side)	NSYCEW3150W230VL (side)
Cooling characteristics			
Specific power A 35 W 10-200 l/h	2,100 W	2,100 W	3,150 W
Maximum water pressure	1 MPa	1 MPa	1 MPa
Air flow of the external circuit	250 m^3/h	350 m^3/h	820 m^3/h
Adjustment	Yes	Yes	Yes
Type	Thermostatic	Thermostatic	Thermostatic
Temperature setting range	+25...+50 °C	+25...+50 °C	+8...+50 °C
Nature of the fluid	Water	Water	Water
Electric characteristics			
Input voltage	230 V - 50/60 Hz	230 V - 50/60 Hz	230 V - 50/60 Hz
Starting/rated current	1/0.5 A	1/0.5 A	1.3/1.7 A
Electrical energy absorbed	90 W	90 W	295 W/385 W
Type of switching alarm	Inverter contact	Inverter contact	Inverter contact
Physical characteristics			
External dimensions A x B x C (mm)	310 × 600 × 365	830 × 360 × 113	950 × 400 × 190
IP-DIN 40050	IP 54	IP 54	IP 55
Weight of unit	26 kg	19 kg	21 kg
Noise level	64 dB (A)	62 dB (A)	54 dB (A)

Air-air exchanger
Side and Top-mounting models

General characteristics

- Main components: thermostatic adjustment system, exchange cassette, circulation fans for internal and external circuits.
- The desired temperature inside the enclosure can be adjusted over a range of +25 ... +50 °C.
- The internal and external air circuits are completely separated (IP 54). Two fans guarantee air circulation in each of these circuits. The one on the internal circuit (which circulates the air inside the enclosure) is permanently on to avoid the appearance of hot spots in the electric circuits or components.
- The devices are delivered with a cut-out template, an instruction sheet and a sealing gasket to be placed between the exchanger and the enclosure.
- RAL 7035 grey.
- Voltages on demand with 400 V AC, three phase or single phase.

Conditions of use

- The exchangers can only be used if the outside temperature is at least 5 ºC lower than the desired temperature inside the enclosure.
- The enclosure must be sealed to prevent the entry of external air: at least IP 54.

	Reference			
	NSYCEA15W230VL	NSYCEA35W230VL	NSYCEA35W230VLE	NSYCEA70W230VL
Cooling characteristics				
Specific power (1)	15 W/°K	35 W/°K	35 W/°K	70 W/°K
Air flow of the external circuit	200 m^3/h	450 m^3/h	450 m^3/h	450 m^3/h
Air flow of the internal circuit	200 m^3/h	450 m^3/h	450 m^3/h	450 m^3/h
Exchange surface	1.23 m^2	1.5 m^2	1.5 m^2	6.6 m^2
Adjustment	Yes	Yes	No	Yes
Type	Thermostatic	Thermostatic	Thermostatic	Thermostatic
Temperature setting range	+25...+50 °C	+25...+50 °C	-	+25...+50 °C
Nature of the fluid	Air	Air	Air	Air
Electric characteristics				
Input voltage	230 V - 50/60 Hz	230 V - 50/60 Hz	230 V - 50/60 Hz	230 V - 50/60 Hz
Starting/rated current	2.1/0.7 A	2.1/0.7 A	2.1/0.7 A	2.1/0.7 A
Electrical energy absorbed	150 W	150 W	150 W	150 W
Physical characteristics				
External dimensions A × B × C (mm)	700 × 270 × 144	780 × 325 × 144	780 × 325 × 144	1,480 × 450 × 144
Internal IP / external IP	IP 54/IP 22	IP 54/IP 22	IP 54/IP 22	IP 54/IP 22
Weight of unit	12 kg	15 kg	15 kg	35 kg
Noise level	64 dB	64 dB	64 dB	64 dB

(1) The power in watts is obtained by multiplying the specific power by the difference between inside temperature and outside temperature.
Example: for exchanger ref. **NSYCEA35W230VL** with Δ ºC = 10º, the system power is 35 × 10 = 350 W.

Resistance heaters
Selection guide

Insulated resistance heater with fan

Power (W)	Voltage (V)	Connection type Terminal block	Reference
177	230 AC	•	NSYCR170W230VVC

NSYCR350W230VTVC

Thermofans

Power (W)	Voltage (V)	Connection type Terminal block	Reference
350	230 AC	•	NSYCR350W230VTVC
400/550	120 AC	•	NSYCRP1W120VTVC
400/550	230 AC	•	NSYCRP1W230VTVC

Resistance heaters

Power (W)	Voltage (V)	Connection type		Reference
		Terminal block	Cable	
10	12-24 DC		•	NSYCR10WU1
10	110-250 AC		•	NSYCR10WU2
20	12-24 DC		•	NSYCR20WU1
20	110-250 AC		•	NSYCR20WU2
20	270-420 AC	•		NSYCR20WU3
55	12-24 DC	•		NSYCR55WU1
55	110-250 AC	•		NSYCR55WU2
55	270-420 AC	•		NSYCR55WU3
90	12-24 DC	•		NSYCR100WU1
90	110-250 AC	•		NSYCR100WU2
90	270-420 AC	•		NSYCR100WU3
150	12-24 DC	•		NSYCR150WU1
150	110-250 AC	•		NSYCR150WU2
150	270-420 AC	•		NSYCR150WU3

NSYCRS200W230V

Resistance heaters with fan

Power (W)	Voltage (V)	Connection type Terminal block	Reference
250	115 AC	•	NSYCR250W115VV
250	230 AC	•	NSYCR250W230VV
400	115 AC	•	NSYCR400W115VV
400	230 AC	•	NSYCR400W230VV
200	115 AC	•	NSYCRS200W115V
200	230 AC	•	NSYCRS200W230V

Insulated resistance heaters

Power (W)	Voltage (V)	Connection type Terminal block	Reference
10	12-24 DC	•	NSYCR10WU1C
10	110-250 AC	•	NSYCR10WU2C
21	12-24 DC	•	NSYCR20WU1C
21	110-250 AC	•	NSYCR20WU2C
55	12-24 DC	•	NSYCR55WU1C
55	110-250 AC	•	NSYCR55WU2C
55	270-420 AC	•	NSYCR55WU3C
100	12-24 DC	•	NSYCR100WU1C
100	110-250 AC	•	NSYCR100WU2C
100	270-420 AC	•	NSYCR100WU3C
147	12-24 DC	•	NSYCR150WU1C
147	110-250 AC	•	NSYCR150WU2C

Thermal control
Selection guide mechanical version

Control temperature

Control a resistance heater or an alarm


NC thermostat

Setting range	Display	Contact	Application	Control element	Interrupting capacity (resistive load)	Reference
0...+60 °C	°C	O	Heat	Bimetal	30 W DC 120 V AC; 15 A 250 V AC; 10 A	**NSYCCOTHC**
+32...+140 °F	°F					**NSYCCOTHCF**

Control a fan or an alarm


NO thermostat

Setting range	Display	Contact	Application	Control element	Interrupting capacity (resistive load)	Reference
0...+60 °C	°C	NO	Ventilate	Bimetal	30 W DC 120 V AC; 15 A 250 V AC; 10 A	**NSYCCOTHO**
+32...+140 °F	°F					**NSYCCOTHOF**

Control a resistance heater and a fan


Double thermostat

Setting range	Display	Contact	Application	Control element	Interrupting capacity (resistive load)	Reference
0…+60 °C	°C	NC + NO	Heat / Ventilate	Bimetal	30 W DC 120 V AC; 15 A 250 V AC; 10 A	**NSYCCOTHD**
+32…+140 °F	°F					**NSYCCOTHDF**

Control a resistance heater or a fan


Thermostat with inverse contact

Setting range	Display	Contact	Application	Control element	Interrupting capacity (resistive load)	Reference
0…+60 °C	°C	Inverse	Heat or ventilate	Bimetal	Closing: 30 W DC 250 V AC; 5 A Opening: 30 W DC 250 V AC; 10 A	**NSYCCOTHI**
+32…+140 °F	°F					**NSYCCOTHIF**

Thermal control
Selection guide electronic version

Control temperature

Control a resistance heater or a fan


Electronic thermostat

Setting range	Display	Power input	Application	Control element	No. of relays	Interrupting capacity (resistive load)	Reference
+5 °C…+50 °C	°C or °F	9-30 V AC/DC	Heat or ventilate	Electronic	2	8 (5) A 230 V AC 5 A 30 V DC	NSYCCOTH30VID
		110-120 V AC					NSYCCOTH120VID
		230 V AC					NSYCCOTH230VID

7 different operating modes.
Option of installing an external sensor.

Control temperature and relative humidity


Electronic hygrotherm

Setting range	Display	Power input	Application	Control element	No. of relays	Interrupting capacity (resistive load)	Reference
+5 °C…+50 °C	°C or °F	9-30 V AC/DC	Heat or ventilate	Electronic	2	8 (5) A 230 V AC 5 A 30 V DC	NSYCCOHYT30VID
		110-120 V AC					NSYCCOHYT120VID
		230 V AC					NSYCCOHYT230VID

3 different operating modes.
Option of installing one or two external sensors.

Control relative humidity


Electronic hygrostat

Setting range	Display	Power input	Application	Control element	No. of relays	Interrupting capacity (resistive load)	Reference
20%…80%	% RH	230 V AC	Heat or ventilate	Electronic	2	8 (5) A 230 V AC 5 A 30 V DC	NSYCCOHY230VID

2 different operating modes.

PTC external temperature sensor (double insulation)


Temperature sensor

- Length: 3 metres.
- Several types of fixings (on DIN rail, on Spacial SF profile, on VDI cross-rail, on mounting plate).
- Sensor operation or reading range: -30 °C…+80 °C.
- Protection rating: IP 67.

Reference
NSYCCAST

Thermostat installation tips:
The thermostat should be installed at the top of the enclosure (the hottest place).
See the various operating modes of each thermostat to choose the one that best meets your needs.

Hygrostat installation tips:
The hygrostat should be installed at the bottom of the enclosure.
60% RH is the optimum value in the enclosure.

Make the most of your energy

Contact:
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