

# Section 28

## Universal Enclosures



Spacial Steel Enclosures



Thalassa Polyester Enclosures



Ventilation Systems with Filters

<b>Product Summary</b>	<b>28-2</b>
<hr/>	
Spacial™ Steel Enclosures	28-2
Thalassa™ Polyester Enclosures	28-2
ClimaSys™ Thermal Management System	28-3
Our Software Suite	28-3
NEMA® and UL Enclosure Ratings	28-3
UL Listing	28-3
<b>Product Selection</b>	<b>28-4</b>
<hr/>	
Spacial™ Steel Enclosures	28-4
Steel Floor-Standing Enclosures	28-4
Stainless Steel Floor-Standing Enclosures	28-5
Steel Wall-Mounting Enclosures	28-6
Thalassa™ Polyester Enclosures	28-7
Polyester Wall-Mounting Enclosures	28-7
ClimaSys™ Thermal Management System	28-7
Ventilation Systems with Filters	28-7
Thermal Control	28-8

## Spacial™ Steel Enclosures

### Metal enclosures and boxes



From our small boxes to large modular floor-standing enclosures, with the Spacial range you can find the optimal fit for your applications. Our extensive range of easy-to-use accessories helps you save time during your projects.

Select between steel or stainless steel to better suit the installation environment. In our stainless-steel offer you can find the optimal solution where cleanliness or protection in highly corrosive environments are required.

#### Steel: Indoor non-clean industrial environment

The environment in industrial plants can subject electric and electronic components to dust, splashing oil, and impacts. Such environments require a range of enclosures that are suited to harsh conditions yet are easy to install.

- **Universal range**, for industry.
- **EMC (electromagnetic compatibility) range**, against electromagnetic disturbances (treated with Aluzinc).

#### 304L - 316L stainless steel: Demanding industrial environment

Food and beverage, pharmaceutical, petrochemical, and infrastructure industries have particularly demanding hygiene and corrosion resistance requirements. Our Spacial range is available in two grades of stainless steel:

- **304L stainless steel**, for resistance to corrosion and ease of cleaning (often used in food production environments).
- **316L stainless steel, also known as "marine stainless steel,"** for very high resistance to corrosion (used in saline or chlorinated environments).
- **Range of ATEX enclosures**, for potentially explosive atmospheres.

#### Product family names:

Spacial S3DC: *Steel wall-mounting enclosures*

Spacial SM: *Compact metal enclosures*

Spacial SF: *Modular metal enclosures*

Spacial S3X: *Stainless-steel wall-mounting enclosures*

Spacial SMX: *Stainless-steel monobloc floor-standing enclosures*

Spacial SFX: *Stainless-steel modular enclosures*

## Thalassa™ Polyester Enclosures

### Insulated enclosures and boxes

Without the right protection, harsh environments can expose your installation to chemicals or other substances.

Developed to help protect your equipment in outdoor applications or harsh conditions, our Thalassa offer ranges from boxes to floor-standing enclosures made from fiberglass reinforced polyester.

Our Thalassa industrial boxes in ABS or polycarbonate are strong, easy to install, and designed to be used in highly demanding environments.

#### Insulating polyester and plastic materials (ABS, polycarbonate): Outdoor infrastructures and severe industrial environments

Outdoor infrastructures and electrical installations are exposed to direct sunlight, rain, saline mist, extreme temperatures, oil splashes, chemical and corrosive agents, and are in contact with the public.

- **Universal range**, for industry.
- **Range of ATEX enclosures**, for potentially explosive atmospheres.

#### Product family names:

Thalassa PLM: *Polyester wall-mounting enclosures*

Thalassa PLA: *Polyester floor-standing enclosures*



**ClimaSys™ Thermal Management System Thermal Management**

Preserving and keeping the right temperature inside your enclosure is vital for maximizing the average service life of your installed devices. With our ClimaSys offer you can find the right solution, be it ventilation, cooling or heating, including control units for temperature, humidity and much more.

**Product family names:**

- ClimaSys CV: *Ventilation systems*
- ClimaSys CR: *Insulated resistance heaters*
- ClimaSys CC: *Thermal control*



**Our Software Suite**

**Spacial.pro**

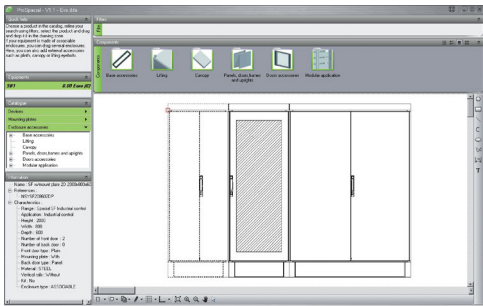
Spacial.pro allows you to make switchboard proposals based on the standard Spacial™ offer. A full project with several sets of switchboards is quoted in minutes, with automatic creation of the bill of material and 2D drawings for front and side views.

**ProClima**

Calculate the right choice for your thermal management requirements, according to the environment and the electrical/electronic devices installed inside the enclosure.

**Spacial.ref and Thalassa.ref**

These digital rules assist you in selecting the appropriate components for your application from our extensive product range. The tool automates product and accessory selection to help save you time and money.



**NEMA® and UL Enclosure Ratings**

**Table 28.1: NEMA and UL Enclosure and Component Ratings**

Enclosures		Type of protection [1]												
		1	2	3	3R	3S	4	4X	5	6	6P	12	12K	13
Steel wall-mounting enclosures	S3DC	•	•	• [2]	• [2]		• [2]	• [2]				• [3]	• [3]	• [3]
	CRN	•	• [2]	• [2]	• [2]		• [2]		• [2]			•		•
Stainless-steel wall-mounting enclosures	S3X	•	• [2]	• [2]	• [2]		• [2]	• [2]	• [2]			•	• [3]	• [2]
Steel floor-standing enclosures	SM	•	• [2]	• [2]	• [2]		• [2]		• [2]			•	•	• [2]
Steel modular enclosures	SF	•										•	•	
Stainless-steel floor-standing enclosures	SMX	•	• [2]	• [2]	• [2]		• [2]	• [2]	• [2]			•	•	• [2]
Stainless-steel modular enclosures	SFX	•										•	•	
Thermoplastic boxes	TBS - TBP	•		•		•	•	•						
Polyester modular boxes	PLS	•	•	•	•	•	•	•				•		•
Polyester wall-mounting enclosures	PLM	•	•	•	•	•	•	•				•		•
Polyester floor-standing enclosures	PLA	•	•	• [2]	• [2]		• [2]	• [2]	• [2]			•		•

Components		Type of protection [1]												
		1	2	3	3R	3S	4	4X	5	6	6P	12	12K	13
Ventilation system	CV													
Thermal regulation system	CC											•	•	

**UL Listing**





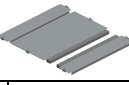
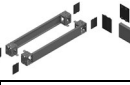

**Table 28.2: UL File Numbers for Enclosures**

Standard Enclosure Type	UL File Number
NSYSM	E103582
NSYSF	E80264
NSYSMX	E103582
NSYSFX	UL Certification pending
NSYSRNG	E103582
NSYSRNG	E80264
NSYS3DC	E80264
NSYS3X	E103582
NSYSPLA	E103582
NSYSPLM	E103582

[1] In some ranges the classification depends on the model and version. The detailed protection types are indicated in the UL certifications.  
 [2] 1 door  
 [3] 2 doors

Steel Floor-Standing Enclosures

Table 28.3: Spacial Steel Floor-Standing Enclosures

Height: mm (in)	Width: mm (in)	Depth: mm (in)	# Doors	NSYSM Welded [1]			NSYSF Modular [1]			Accessories, Floor-Standing Enclosures			
				Without mounting plate			Without mounting plate		2 Side panels	Mounting plate	Cable-gland plate, 1 entry	Plinth height 100 mm (3.9 in)	
												Front/back 	Sides 
1200 (47.2)	600 (23.6)	400 (15.7)	1	—	—	—	—	—	—	—	—	—	
1200 (47.2)	600 (23.6)	600 (23.6)	1	—	NSYSF12660	NSY2SP126	NSYMP126	NSYEC661	NSYSFP6100	NSYSPS6100	—	—	
1200 (47.2)	800 (31.5)	300 (11.8)	1	NSYSM12830	—	—	—	—	—	—	—	—	
1200 (47.2)	800 (31.5)	400 (15.7)	1	—	NSYSF12840	NSY2SP124	NSYMP128	NSYEC841	NSYSFP8100	NSYSPS4100	—	—	
1200 (47.2)	800 (31.5)	600 (23.6)	1	—	NSYSF12860	NSY2SP126	NSYMP128	NSYEC861	NSYSFP8100	NSYSPS6100	—	—	
1200 (47.2)	1000 (39.4)	300 (11.8)	2	NSYSM1210302D	—	—	—	—	—	—	—	—	
1200 (47.2)	1200 (47.2)	400 (15.7)	2	NSYSM1212402D	—	—	—	—	—	—	—	—	
1400 (55.1)	600 (23.6)	300 (11.8)	1	NSYSM14630	—	—	—	—	—	—	—	—	
1400 (55.1)	600 (23.6)	400 (15.7)	1	NSYSM14640	NSYSF14640	NSY2SP144	NSYMP146	NSYEC641	NSYSFP6100	NSYSPS4100	—	—	
1400 (55.1)	800 (31.5)	300 (11.8)	1	NSYSM14830	—	—	—	—	—	—	—	—	
1400 (55.1)	800 (31.5)	400 (15.7)	1	NSYSM14840	NSYSF14840	NSY2SP144	NSYMP148	NSYEC841	NSYSFP8100	NSYSPS4100	—	—	
1400 (55.1)	1000 (39.4)	400 (15.7)	2	NSYSM1410402D	—	—	—	—	—	—	—	—	
1400 (55.1)	1200 (47.2)	400 (15.7)	2	NSYSM1412402D	—	—	—	—	—	—	—	—	
1600 (63.0)	600 (23.6)	300 (11.8)	1	NSYSM16630	—	—	—	—	—	—	—	—	
1600 (63.0)	600 (23.6)	400 (15.7)	1	NSYSM16640	—	—	—	—	—	—	—	—	
1600 (63.0)	600 (23.6)	600 (23.6)	1	—	NSYSF16660	NSY2SP166	NSYMP166	NSYEC661	NSYSFP6100	NSYSPS6100	—	—	
1600 (63.0)	600 (23.6)	800 (31.5)	1	—	NSYSF16680	NSY2SP168	NSYMP166	NSYEC681	NSYSFP6100	NSYSPS8100	—	—	
1600 (63.0)	800 (31.5)	300 (11.8)	1	NSYSM16830	—	—	—	—	—	—	—	—	
1600 (63.0)	800 (31.5)	400 (15.7)	1	NSYSM16840	—	—	—	—	—	—	—	—	
1600 (63.0)	800 (31.5)	600 (23.6)	1	—	NSYSF16860	NSY2SP166	NSYMP168	NSYEC861	NSYSFP8100	NSYSPS6100	—	—	
1600 (63.0)	800 (31.5)	800 (31.5)	1	—	NSYSF16880	NSY2SP168	NSYMP168	NSYEC881	NSYSFP8100	NSYSPS8100	—	—	
1600 (63.0)	1000 (39.4)	300 (11.8)	2	NSYSM1610302D	—	—	—	—	—	—	—	—	
1600 (63.0)	1000 (39.4)	400 (15.7)	2	NSYSM1610402D	—	—	—	—	—	—	—	—	
1600 (63.0)	1200 (47.2)	300 (11.8)	2	NSYSM1612302D	—	—	—	—	—	—	—	—	
1600 (63.0)	1200 (47.2)	400 (15.7)	2	NSYSM1612402D	—	—	—	—	—	—	—	—	
1800 (70.9)	400 (15.7)	400 (15.7)	1	—	NSYSF18440	NSY2SP184	—	—	—	—	—	—	
1800 (70.9)	400 (15.7)	500 (19.7)	1	—	NSYSF18450	NSY2SP185	—	—	—	—	—	—	
1800 (70.9)	400 (15.7)	600 (23.6)	1	—	NSYSF18460	NSY2SP186	—	—	—	—	—	—	
1800 (70.9)	600 (23.6)	300 (11.8)	1	NSYSM18630	—	—	—	—	—	—	—	—	
1800 (70.9)	600 (23.6)	400 (15.7)	1	NSYSM18640	NSYSF18640	NSY2SP184	NSYMP186	NSYEC641	NSYSFP6100	NSYSPS4100	—	—	
1800 (70.9)	600 (23.6)	500 (19.7)	1	NSYSM18650	NSYSF18650	NSY2SP185	NSYMP186	NSYEC651	NSYSFP6100	NSYSPS5100	—	—	
1800 (70.9)	600 (23.6)	600 (23.6)	1	—	NSYSF18660	NSY2SP186	NSYMP186	NSYEC661	NSYSFP6100	NSYSPS6100	—	—	
1800 (70.9)	600 (23.6)	800 (31.5)	1	—	—	NSY2SP188	NSYMP186	NSYEC681	NSYSFP6100	NSYSPS8100	—	—	
1800 (70.9)	800 (31.5)	300 (11.8)	1	NSYSM18830	—	—	—	—	—	—	—	—	
1800 (70.9)	800 (31.5)	400 (15.7)	1	NSYSM18840	NSYSF18840	NSY2SP184	NSYMP188	NSYEC841	NSYSFP8100	NSYSPS4100	—	—	
1800 (70.9)	800 (31.5)	500 (19.7)	1	NSYSM18850	NSYSF18850	NSY2SP185	NSYMP188	NSYEC851	NSYSFP8100	NSYSPS5100	—	—	
1800 (70.9)	800 (31.5)	600 (23.6)	1	NSYSM18860	NSYSF18860	NSY2SP186	NSYMP188	NSYEC861	NSYSFP8100	NSYSPS6100	—	—	
1800 (70.9)	800 (31.5)	600 (23.6)	2	—	NSYSF188602D	NSY2SP186	NSYMP188	NSYEC861	NSYSFP8100	NSYSPS6100	—	—	
1800 (70.9)	1000 (39.4)	400 (15.7)	1	NSYSM181040	NSYSF181040	NSY2SP184	NSYMP1810	NSYEC1041	NSYSFP10100	NSYSPS4100	—	—	
1800 (70.9)	1000 (39.4)	400 (15.7)	2	NSYSM1810402D	NSYSF1810402D	NSY2SP184	NSYMP1810	NSYEC1041	NSYSFP10100	NSYSPS4100	—	—	
1800 (70.9)	1000 (39.4)	500 (19.7)	1	—	NSYSF181050	NSY2SP185	NSYMP1810	NSYEC1051	NSYSFP10100	NSYSPS5100	—	—	
1800 (70.9)	1000 (39.4)	500 (19.7)	2	NSYSM1810502D	—	—	—	—	—	—	—	—	
1800 (70.9)	1000 (39.4)	600 (23.6)	1	—	NSYSF181060	NSY2SP186	NSYMP1810	NSYEC1061	NSYSFP10100	NSYSPS6100	—	—	
1800 (70.9)	1000 (39.4)	600 (23.6)	2	—	NSYSF1810602D	NSY2SP186	NSYMP1810	NSYEC1061	NSYSFP10100	NSYSPS6100	—	—	
1800 (70.9)	1200 (47.2)	400 (15.7)	2	NSYSM1812402D	NSYSF1812402D	NSY2SP184	NSYMP1812	NSYEC1241	NSYSFP12100	NSYSPS4100	—	—	
1800 (70.9)	1200 (47.2)	500 (19.7)	2	NSYSM1812502D	NSYSF1812502D	NSY2SP185	NSYMP1812	NSYEC1251	NSYSFP12100	NSYSPS5100	—	—	
1800 (70.9)	1200 (47.2)	600 (23.6)	2	—	NSYSF1812602D	NSY2SP186	NSYMP1812	NSYEC1261	NSYSFP12100	NSYSPS6100	—	—	
1800 (70.9)	1600 (63.0)	400 (15.7)	2	NSYSM1816402D	—	—	—	—	—	—	—	—	
1800 (70.9)	1600 (63.0)	500 (19.7)	2	NSYSM1816502D	—	—	—	—	—	—	—	—	
2000 (78.7)	300 (11.8)	500 (19.7)	1	—	NSYSF20350	NSY2SP205	—	—	—	—	—	—	
2000 (78.7)	300 (11.8)	600 (23.6)	1	—	NSYSF20360	NSY2SP206	—	—	—	—	—	—	
2000 (78.7)	400 (15.7)	400 (15.7)	1	—	NSYSF20440	NSY2SP204	—	—	—	—	—	—	
2000 (78.7)	400 (15.7)	500 (19.7)	1	—	NSYSF20450	NSY2SP205	—	—	—	—	—	—	
2000 (78.7)	400 (15.7)	600 (23.6)	1	—	NSYSF20460	NSY2SP206	—	—	—	—	—	—	
2000 (78.7)	400 (15.7)	800 (31.5)	1	—	NSYSF20480	NSY2SP208	—	—	—	—	—	—	
2000 (78.7)	600 (23.6)	300 (11.8)	1	NSYSM20630	—	—	—	—	—	—	—	—	
2000 (78.7)	600 (23.6)	400 (15.7)	1	NSYSM20640	NSYSF20640	NSY2SP204	NSYMP206	NSYEC641	NSYSFP6100	NSYSPS4100	—	—	
2000 (78.7)	600 (23.6)	500 (19.7)	1	NSYSM20650	NSYSF20650	NSY2SP205	NSYMP206	NSYEC651	NSYSFP6100	NSYSPS5100	—	—	
2000 (78.7)	600 (23.6)	600 (23.6)	1	—	NSYSF20660	NSY2SP206	NSYMP206	NSYEC661	NSYSFP6100	NSYSPS6100	—	—	
2000 (78.7)	600 (23.6)	800 (31.5)	1	—	NSYSF20680	NSY2SP208	NSYMP206	NSYEC681	NSYSFP6100	NSYSPS8100	—	—	
2000 (78.7)	800 (31.5)	300 (11.8)	1	NSYSM20830	—	—	—	—	—	—	—	—	
2000 (78.7)	800 (31.5)	400 (15.7)	1	NSYSM20840	NSYSF20840	NSY2SP204	NSYMP208	NSYEC841	NSYSFP8100	NSYSPS4100	—	—	
2000 (78.7)	800 (31.5)	500 (19.7)	1	NSYSM20850	NSYSF20850	NSY2SP205	NSYMP208	NSYEC851	NSYSFP8100	NSYSPS5100	—	—	
2000 (78.7)	800 (31.5)	600 (23.6)	1	NSYSM20860	NSYSF20860	NSY2SP206	NSYMP208	NSYEC861	NSYSFP8100	NSYSPS6100	—	—	






[1] See Table 28.2 UL File Numbers for Enclosures, page 28-3.

**Table 28.3 Spacial Steel Floor-Standing Enclosures (cont'd.)**

Height: mm (in)	Width: mm (in)	Depth: mm (in)	# Doors	NSYSM Welded [2]	NSYSF Modular [2]		Accessories, Floor-Standing Enclosures			
				Without mounting plate	Without mounting plate	2 Side panels	Mounting plate	Cable-gland plate, 1 entry	Plinth height 100 mm (3.9 in)	
								Front/back	Sides	
2000 (78.7)	800 (31.5)	600 (23.6)	2	—	NSYSF208602D	NSY2SP206	NSYMP208	NSYEC861	NSYSPF8100	NSYSPS6100
2000 (78.7)	800 (31.5)	800 (31.5)	1	—	NSYSF20880	NSY2SP208	NSYMP208	NSYEC881	NSYSPF8100	NSYSPS8100
2000 (78.7)	1000 (39.4)	400 (15.7)	1	—	NSYSF201040	NSY2SP204	NSYMP2010	NSYEC1041	NSYSPF10100	NSYSPS4100
2000 (78.7)	1000 (39.4)	400 (15.7)	2	NSYSM2010402D	NSYSF2010402D	NSY2SP204	NSYMP2010	NSYEC1041	NSYSPF10100	NSYSPS4100
2000 (78.7)	1000 (39.4)	500 (19.7)	1	—	NSYSF201050	NSY2SP205	NSYMP2010	NSYEC1051	NSYSPF10100	NSYSPS5100
2000 (78.7)	1000 (39.4)	500 (19.7)	2	NSYSM2010502D	NSYSF2010502D	NSY2SP205	NSYMP2010	NSYEC1051	NSYSPF10100	NSYSPS5100
2000 (78.7)	1000 (39.4)	600 (23.6)	1	—	NSYSF201060	NSY2SP206	NSYMP2010	NSYEC1061	NSYSPF10100	NSYSPS6100
2000 (78.7)	1000 (39.4)	600 (23.6)	2	—	NSYSF2010602D	NSY2SP206	NSYMP2010	NSYEC1061	NSYSPF10100	NSYSPS6100
2000 (78.7)	1000 (39.4)	800 (31.5)	1	—	NSYSF201080	NSY2SP208	NSYMP2010	NSYEC1081	NSYSPF10100	NSYSPS8100
2000 (78.7)	1200 (47.2)	400 (15.7)	2	NSYSM2012402D	NSYSF2012402D	NSY2SP204	NSYMP2012	NSYEC1241	NSYSPF12100	NSYSPS4100
2000 (78.7)	1200 (47.2)	500 (19.7)	2	NSYSM2012502D	NSYSF2012502D	NSY2SP205	NSYMP2012	NSYEC1251	NSYSPF12100	NSYSPS5100
2000 (78.7)	1200 (47.2)	600 (23.6)	2	NSYSM2012602D	NSYSF2012602D	NSY2SP206	NSYMP2012	NSYEC1261	NSYSPF12100	NSYSPS6100
2000 (78.7)	1200 (47.2)	800 (31.5)	2	—	NSYSF2012802D	NSY2SP208	NSYMP2012	NSYEC1281	NSYSPF12100	NSYSPS8100
2000 (78.7)	1600 (63.0)	400 (15.7)	2	NSYSM2016402D	—	NSY2SP204	NSYMP2016	NSYEC1641	NSYSPF16100	NSYSPS4100
2000 (78.7)	1600 (63.0)	500 (19.7)	2	NSYSM2016502D	NSYSF2016502D	NSY2SP205	NSYMP2016	NSYEC1651	NSYSPF16100	NSYSPS5100
2000 (78.7)	1600 (63.0)	600 (23.6)	2	NSYSM2016602D	NSYSF2016602D	NSY2SP206	NSYMP2016	NSYEC1661	NSYSPF16100	NSYSPS6100
2200 (86.6)	400 (15.7)	600 (23.6)	1	—	NSYSF22460	NSY2SP226	—	NSYEC461	NSYSPF4100	NSYSPS6100
2200 (86.6)	600 (23.6)	600 (23.6)	1	—	NSYSF22660	NSY2SP226	NSYMP226	NSYEC661	NSYSPF6100	NSYSPS6100
2200 (86.6)	600 (23.6)	800 (31.5)	1	—	NSYSF22680	NSY2SP228	NSYMP226	NSYEC681	NSYSPF6100	NSYSPS8100
2200 (86.6)	800 (31.5)	600 (23.6)	1	—	NSYSF22860	NSY2SP226	NSYMP228	NSYEC861	NSYSPF8100	NSYSPS6100
2200 (86.6)	800 (31.5)	800 (31.5)	1	—	NSYSF22880	NSY2SP228	NSYMP228	NSYEC881	NSYSPF8100	NSYSPS8100
2200 (86.6)	1000 (39.4)	600 (23.6)	1	—	NSYSF221060	NSY2SP226	NSYMP2210	NSYEC1061	NSYSPF10100	NSYSPS6100
2200 (86.6)	1200 (47.2)	600 (23.6)	2	—	NSYSF2212602D	NSY2SP226	NSYMP2212	NSYEC1261	NSYSPF12100	NSYSPS6100
2200 (86.6)	1200 (47.2)	800 (31.5)	2	—	NSYSF2212802D	NSY2SP228	NSYMP2212	NSYEC1281	NSYSPF12100	NSYSPS8100

**Stainless Steel Floor-Standing Enclosures**





**Table 28.4: Spacial Stainless Steel Floor-Standing Enclosures**

Height: mm (in)	Width: mm (in)	Depth: mm (in)	# Doors	NSYSMX [2]	NSYSFX Modular [2]		Accessories, Stainless Steel			
				Without mounting plate	Without mounting plate	2 Side panels	Mounting plate	Plinth height 100 mm (3.9 in)		
								Front/back	Sides	
										
1400 (55.1)	1000 (39.4)	300 (11.8)	2	NSYSMX141030	—	—	NSYMP1410	NSYSPXF10100H	NSYSPXS3100H	
1600 (63.0)	800 (31.5)	400 (15.7)	1	NSYSMX16840	—	—	NSYMP168	NSYSPXF8100H	NSYSPXS4100H	
1800 (70.9)	600 (23.6)	400 (15.7)	1	NSYSMX18640	NSYSFX18640	NSY2SPX184	NSYMP186	NSYSPXF6100H	NSYSPXS4100H	
1800 (70.9)	800 (31.5)	400 (15.7)	1	NSYSMX18840	NSYSFX18840	NSY2SPX184	NSYMP188	NSYSPXF8100H	NSYSPXS4100H	
1800 (70.9)	1200 (47.2)	400 (15.7)	2	NSYSMX181240	NSYSFX181240	NSY2SPX184	NSYMP1812	NSYSPXF12100H	NSYSPXS4100H	
1800 (70.9)	1600 (63.0)	400 (15.7)	2	NSYSMX181640	—	—	NSYMP1813	NSYSPXF16100H	NSYSPXS4100H	
2000 (78.7)	600 (23.6)	500 (19.7)	1	—	NSYSFX20650	NSY2SPX205	NSYMP206	—	—	
2000 (78.7)	800 (31.5)	400 (15.7)	1	—	NSYSFX20840	NSY2SPX204	NSYMP208	—	—	
2000 (78.7)	800 (31.5)	500 (19.7)	1	NSYSMX20850	—	—	NSYMP208	NSYSPXF8100H	NSYSPXS5100H	
2000 (78.7)	800 (31.5)	600 (23.6)	1	—	NSYSFX20860	NSY2SPX206	NSYMP208	—	—	
2000 (78.7)	1000 (39.4)	400 (15.7)	2	NSYSMX201040	—	—	NSYMP2010	NSYSPXF10100H	NSYSPXS4100H	
2000 (78.7)	1000 (39.4)	600 (23.6)	2	—	NSYSFX201060	NSY2SPX206	NSYMP2010	—	—	
2000 (78.7)	1200 (47.2)	500 (19.7)	2	NSYSMX201250	—	—	NSYMP2012	NSYSPXF12100H	NSYSPXS5100H	
2000 (78.7)	1200 (47.2)	600 (23.6)	2	—	NSYSFX201260	NSY2SPX206	NSYMP2012	—	—	
2000 (78.7)	1600 (63.0)	600 (23.6)	2	NSYSMX201660	—	—	NSYMP2016	NSYSPXF16100H	NSYSPXS6100H	

[2] See Table 28.2 UL File Numbers for Enclosures, page 28-3.

Steel Wall-Mounting Enclosures


Table 28.5: Spacial Steel Wall-Mounting Enclosures

	Height: mm (in)	Width: mm (in)	Depth: mm (in)	# Doors [3]	Spacial Steel Wall-Mounting Enclosures [4]			Mounting Plate
					CRN/CRNG	S3DC	S3X Stainless steel	
	200 (7.9)	200 (7.9)	150 (5.9)	1	NSYCRN22150 [5]	—	—	NSYMM22
	200 (7.9)	300 (11.8)	150 (5.9)	1	NSYCRN23150 [5]	—	—	NSYMM32
	250 (9.8)	200 (7.9)	150 (5.9)	1	NSYCRN252150	—	—	NSYMM2520
	300 (11.8)	200 (7.9)	150 (5.9)	1	—	NSYS3DC3215	NSYS3X3215	NSYMM32
	300 (11.8)	250 (9.8)	150 (5.9)	1	NSYCRN325150	—	NSYS3X302515	NSYMM3025
	300 (11.8)	250 (9.8)	200 (7.9)	1	NSYCRN325200	—	—	NSYMM3025
	300 (11.8)	300 (11.8)	150 (5.9)	1	NSYCRN33150	NSYS3DC3315	NSYS3X3315	NSYMM33
	300 (11.8)	300 (11.8)	200 (7.9)	1	NSYCRN33200	NSYS3DC3320	—	NSYMM33
	300 (11.8)	400 (15.7)	200 (7.9)	1	NSYCRN34200	—	—	NSYMM43
	300 (11.8)	450 (17.7)	150 (5.9)	1	NSYCRN345150 [5]	—	—	NSYMM3045
	400 (15.7)	300 (11.8)	150 (5.9)	1	NSYCRN43150	NSYS3DC4315	NSYS3X4315	NSYMM43
	400 (15.7)	300 (11.8)	200 (7.9)	1	NSYCRN43200	NSYS3DC4320	NSYS3X4320	NSYMM43
	400 (15.7)	400 (15.7)	200 (7.9)	1	NSYCRN44200	NSYS3DC4420	NSYS3X4420	NSYMM44
	400 (15.7)	600 (23.6)	200 (7.9)	—	—	—	NSYS3X4620	—
	400 (15.7)	600 (23.6)	250 (9.8)	1	NSYCRN46250	—	—	NSYMM64
	400 (15.7)	600 (23.6)	300 (11.8)	1	NSYCRN46300	—	—	NSYMM64
	500 (19.7)	400 (15.7)	150 (5.9)	1	NSYCRN54150	—	—	NSYMM54
	500 (19.7)	400 (15.7)	200 (7.9)	1	NSYCRN54200	NSYS3DC5420	NSYS3X5420	NSYMM54
	500 (19.7)	400 (15.7)	250 (9.8)	1	NSYCRN54250	NSYS3DC5425	—	NSYMM54
	500 (19.7)	500 (19.7)	200 (7.9)	1	—	NSYS3DC5520	—	NSYMM55
	500 (19.7)	500 (19.7)	250 (9.8)	1	NSYCRN55250	NSYS3DC5525	—	NSYMM55
	600 (23.6)	400 (15.7)	150 (5.9)	1	NSYCRN64150	—	—	NSYMM64
	600 (23.6)	400 (15.7)	200 (7.9)	1	NSYCRN64200	NSYS3DC6420	NSYS3X6420	NSYMM64
	600 (23.6)	400 (15.7)	250 (9.8)	1	NSYCRN64250	NSYS3DC6425	—	NSYMM64
	600 (23.6)	500 (19.7)	150 (5.9)	1	NSYCRN65150	—	—	NSYMM65
	600 (23.6)	500 (19.7)	200 (7.9)	1	NSYCRN65200	—	—	NSYMM65
	600 (23.6)	500 (19.7)	250 (9.8)	1	NSYCRN65250	—	—	NSYMM65
	600 (23.6)	600 (23.6)	200 (7.9)	1	NSYCRN66200	NSYS3DC6620	—	NSYMM66
	600 (23.6)	600 (23.6)	250 (9.8)	1	NSYCRN66250	NSYS3DC6625	NSYS3X6625	NSYMM66
	600 (23.6)	600 (23.6)	300 (11.8)	1	NSYCRN66300	NSYS3DC6630	—	NSYMM66
	600 (23.6)	800 (31.5)	300 (11.8)	1	NSYCRN68300	—	—	NSYMM86
	700 (27.6)	500 (19.7)	200 (7.9)	1	NSYCRN75200	—	—	NSYMM75
	700 (27.6)	500 (19.7)	250 (9.8)	1	NSYCRN75250	NSYS3DC7525	NSYS3X7525	NSYMM75
	800 (31.5)	600 (23.6)	200 (7.9)	1	NSYCRN86200	NSYS3DC8620	—	NSYMM86
	800 (31.5)	600 (23.6)	250 (9.8)	1	NSYCRN86250	NSYS3DC8625	NSYS3X8625	NSYMM86
	800 (31.5)	600 (23.6)	300 (11.8)	1	NSYCRN86300	NSYS3DC8630	—	NSYMM86
	800 (31.5)	600 (23.6)	400 (15.7)	1	NSYCRNG86400	NSYS3DC8640	—	NSYMM86
	800 (31.5)	800 (31.5)	200 (7.9)	1	NSYCRN88200	—	—	NSYMM88
	800 (31.5)	800 (31.5)	250 (9.8)	1	—	NSYS3DC8825	—	NSYMM88
	800 (31.5)	800 (31.5)	300 (11.8)	1	NSYCRN88300	NSYS3DC8830	NSYS3X8830	NSYMM86
	800 (31.5)	1000 (39.4)	300 (11.8)	2	NSYCRNG810300D	—	—	NSYMM108
	800 (31.5)	1200 (47.2)	300 (11.8)	2	NSYCRNG812300D	—	—	NSYMM128
	1000 (39.4)	600 (23.6)	250 (9.8)	1	NSYCRN106250	NSYS3DC10625	—	NSYMM106
	1000 (39.4)	600 (23.6)	300 (11.8)	1	NSYCRN106300	—	—	NSYMM106
	1000 (39.4)	600 (23.6)	400 (15.7)	1	NSYCRNG106400	—	—	NSYMM106
	1000 (39.4)	800 (31.5)	250 (9.8)	1	NSYCRN108250	NSYS3DC10825	—	NSYMM108
	1000 (39.4)	800 (31.5)	300 (11.8)	1	NSYCRN108300	NSYS3DC10830	NSYS3X10830	NSYMM108
	1000 (39.4)	800 (31.5)	400 (15.7)	1	NSYCRNG108400	NSYS3DC10840	—	NSYMM108
	1000 (39.4)	1000 (39.4)	300 (11.8)	2	NSYCRNG1010300D	NSYS3DC101030	NSYS3X101030	NSYMM1010
	1000 (39.4)	1200 (47.2)	300 (11.8)	2	NSYCRNG1012300D	—	—	NSYMM1210
	1000 (39.4)	1200 (47.2)	400 (15.7)	2	NSYCRNG1012400D	—	—	NSYMM1210
	1200 (47.2)	600 (23.6)	300 (11.8)	1	NSYCRNG126300	—	—	NSYMM126
	1200 (47.2)	600 (23.6)	400 (15.7)	1	NSYCRNG126400	—	—	NSYMM126
	1200 (47.2)	800 (31.5)	300 (11.8)	1	NSYCRNG128300	NSYS3DC12830	NSYS3X12830	NSYMM128
	1200 (47.2)	800 (31.5)	400 (15.7)	1	NSYCRNG128400	NSYS3DC12840	—	NSYMM128
	1200 (47.2)	1000 (39.4)	300 (11.8)	2	NSYCRNG1210300D	NSYS3DC121030	NSYS3X121030	NSYMM1210
	1200 (47.2)	1000 (39.4)	400 (15.7)	2	NSYCRNG1210400D	—	—	NSYMM1210
	1200 (47.2)	1200 (47.2)	300 (11.8)	2	NSYCRNG1212300D	—	—	NSYMM1212
	1200 (47.2)	1200 (47.2)	400 (15.7)	2	NSYCRNG1212400D	—	—	NSYMM1212
	1400 (55.1)	1000 (39.4)	300 (11.8)	2	NSYCRNG1410300D	—	—	NSYMM1410

[3] IP66 with one door, IP55 with two doors  
 [4] See Table 28.2 UL File Numbers for Enclosures, page 28-3.  
 [5] Two cable gland plates, one on top and one on bottom.

**Polyester Wall-Mounting Enclosures**

**Table 28.6: Thalassa Polyester Wall-Mounting Enclosures**

	Height: mm (in)	Width: mm (in)	Depth: mm (in)	ABS/PC Wall-Mounting Enclosures IP66 [6]	Polyester Wall-Mounting Enclosures IP66 [6]	Polyester Wall-Mounting ATEX Enclosures [6]	Mounting Plate
				Plain door	Plain door		
 <p>ABS/PC Wall-Mounting Enclosure IP66— Plain Door</p>	310 (12.2)	215 (8.5)	160 (6.3)	NSYPLM32G	—	—	NSYMM32
	308 (12.1)	255 (10.0)	160 (6.3)	—	NSYPLM3025G	NSYPLMEX3025	NSYMM3025
	430 (16.9)	330 (13.0)	200 (7.9)	—	NSYPLM43G	NSYPLMEX43	NSYMM43
	530 (20.9)	430 (16.9)	200 (7.9)	—	NSYPLM54G	NSYPLMEX54	NSYMM54
	647 (25.5)	436 (17.2)	250 (9.8)	—	NSYPLM64G	NSYPLMEX64	NSYMM64
	747 (29.4)	536 (21.1)	300 (11.8)	—	NSYPLM75G	NSYPLMEX75	NSYMM75
	847 (33.3)	636 (25.0)	300 (11.8)	—	NSYPLM86G	NSYPLMEX86	NSYMM86
	1056 (41.6)	852 (33.5)	350 (13.8)	—	NSYPLM108G	NSYPLMEX108	NSYMM108

**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: IP54 or IP55, and the surrounding environment is relatively clean, allowing air to enter the enclosure.



- 38 to 850 m<sup>3</sup>/h.
- Five input voltages: AC: 400/440 V, 230 V, 115 V (50/60 Hz), DC: 48 V and 24 V.
- Broad range of accessories (filters, IP55 and EMC covers, anti-vandalism kit).
- **UL Listing:** E80264

**Table 28.7: Ventilation Systems with Filters**

Fan flow rate (50 Hz)				Catalog Number					
Free with filter	With 1 outlet grill	With 2 outlet grills	Voltage	Fan with filter	Outlet grill	Color kit	IP55	IP55 stainless steel	EMC
				RAL 7035		RAL 7032			
38	25	33	230 V	NSYCVF38M230PF	NSYAG92LPF	NSYAG92LPC	—	—	—
38	27	35	115 V	NSYCVF38M115PF					
58	39	47	24 Vdc	NSYCVF38M24DPF					
44	34	41	48 Vdc	NSYCVF38M48DPF					
85	63	71	230 V	NSYCVF85M230PF	NSYAG125LPF	NSYAG125LPC	NSYCAP125LZF	NSYAG125LXF	NSYAG125SLE
79	65	73	115 V	NSYCVF85M115PF					
80	57	77	24 Vdc	NSYCVF85M24DPF					
79	59	68	48 Vdc	NSYCVF85M48DPF					
165	153	161	230 V	NSYCVF165M230PF	NSYAG223LPF	NSYAG223LPC	NSYCAP223LZF	NSYAG223LXF	NSYCAP223LE
164	153	161	115 V	NSYCVF165M115PF					
188	171	179	24 Vdc	NSYCVF165M24DPF					
193	171	179	48 Vdc	NSYCVF165M48DPF					
302	260	268	230 V	NSYCVF300M230PF					
302	263	271	115 V	NSYCVF300M115PF					
262	221	229	24 Vdc	NSYCVF300M24DPF	NSYAG291LPF	NSYAG291LPC	NSYCAP291LZF	NSYAG291LXF	NSYCAP291LE
247	210	218	48 Vdc	NSYCVF300M48DPF					
562	473	481	230 V	NSYCVF560M230PF					
582	485	494	115 V	NSYCVF560M115PF					
838	718	728	230 V	NSYCVF850M230PF	NSYAG291LPC	NSYCAP291LZF	NSYAG291LXF	NSYCAP291LE	
983	843	854	115 V	NSYCVF850M115PF					
931	798	809	400/440 V	NSYCVF850M400PF					

[6] See Table 28.2 UL File Numbers for Enclosures, page 28-3.









**Thermal Control**

Thermostats control the temperature inside the enclosure and send a signal when maximum or minimum temperature values have been reached.


- Temperature control: adjustable thermostats; single or double.
- Relative humidity control: adjustable humidistat.
- Temperature and relative humidity control: adjustable hygrotherm.




**Table 28.8: Control temperature**

	<b>Control a resistance heater or an alarm</b>				<b>Control a fan or an alarm</b>		
	Setting range	Catalog Number			Setting range	Catalog Number	
	0 to +60 °C	NSYCCOTHC		0 to +60 °C	NSYCCOTHO		
	+32 to +140 °F	NSYCCOTHCF		+32 to +140 °F	NSYCCOTHOF		
	<b>Control a resistance heater and a fan</b>				<b>Control a resistance heater or a fan</b>		
	Setting range	Catalog Number			Setting range	Catalog Number	
	0 to +60 °C	NSYCCOTHHD		0 to +60 °C	NSYCCOTHI		
	+32 to +140 °F	NSYCCOTHDF		+32 to +140 °F	NSYCCOTHIF		
	<b>Control a resistance heater or a fan</b>				<b>Control temperature and relative humidity</b>		
	Setting range	Display	Catalog Number		Setting range	Display	Catalog Number
	+5 °C to +50 °C	°C or °F	NSYCCOTH30VID	+5 °C to +50 °C	°C or °F	NSYCCOHYT30VID	
			NSYCCOTH120VID			NSYCCOHYT120VID	
			NSYCCOTH230VID			NSYCCOHYT230VID	
	7 different operating modes. Option of installing one or two external sensors.				3 different operating modes. Option of installing an external sensor.		
	<b>Control relative humidity</b>				<b>PTC external temperature sensor (double insulation)</b>		
	Setting range	Display	Catalog Number		Catalog Number		
	20% to 80%	% RH	NSYCCOHY230VID	NSYCCAST			
	2 different operating modes.						


**Table 28.9: Insulated resistance heaters**

	<b>Insulated resistance heater with fan</b>		
	Power (W)	Voltage (V)	Catalog Number
	100	120–240 AC	NSYCR100WU2C
	10	120–240 AC	NSYCR10WU2C
	147	120–240 AC	NSYCR150WU2C
	20	120–240 AC	NSYCR20WU2C
	55	120–240 AC	NSYCR50WU2C
	177	230 AC	NSYCR170W230VVC

**Table 28.10: Ultra-thin resistance heaters**

	<b>Ultra-thin heaters</b>		
	Power (W)	Voltage (V)	Catalog Number
	10	120	NSYCRS10W120V
	10	240	NSYCRS10W240V
	25	120	NSYCRS25W120V
	25	240	NSYCRS25W240V
	50	120	NSYCRS50W120V
	50	240	NSYCRS50W240V
	100	120	NSYCRS100W120V
	100	240	NSYCRS100W240V
	200	120	NSYCRS200W120V
200	240	NSYCRS200W240V	

**Table 28.11: Thermofans**

	<b>Thermofans</b>		
	Power (W)	Voltage (V)	Catalog Number
400/550	230 AC	NSYCRP1W230VTVC	
400/550	120 AC	NSYCRP1W120VTVC	