

Catalogue



Changeable
to meet
demands

UNITED KINGDOM

Sarel
Unit C
Stirling Court
Stirling Road
SWINDON
SN3 4TQ
Tel: +44 (0) 1793 837430
Fax: +44 (0) 1793 837475
www.sarel.co.uk
sarelgb@schneider.co.uk

HEADQUARTERS

Sarel SAS
52, route de Phalsbourg
BP 106
F-67269 SARRE-UNION Cedex
Tel: +33 (0) 3 88 01 62 00
Fax: +33 (0) 3 88 01 63 29
www.sarel-enclosures.com
fr-sarecom@sarel.fr

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THALASSA
industrial boxes

> THALASSA industrial boxes

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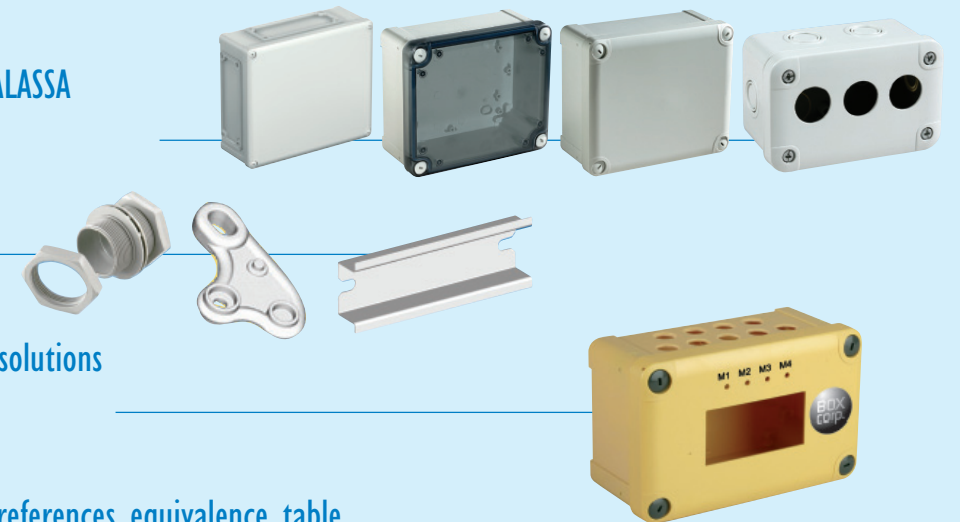
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SAREL
protecting your electrical
equipment



SAREL

The choice of a European leader

A dependable partner with adapted solutions

Since 1956, Sarel's vocation has been to design, manufacture and market enclosure systems to physically protect, produce and install equipment for industrial automated systems, electrical distribution and VDI networks, in all environmental conditions.

From all its ranges: industrial boxes, wall mounting enclosures, floor standing enclosures, racks and control desks, Sarel provides customised solutions positively contributing to the competitiveness of its customers.

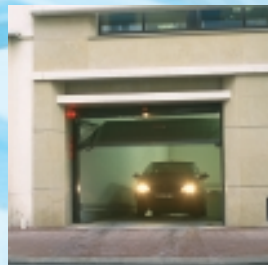


Providing the best response to requirements of professionals in building, industry, VDI networks and infrastructures

Openness, proximity, innovation and presence. Sarel has always encouraged the values that encourage closeness to customers and that favour development of partnerships. SAREL takes the greatest care in quality of its responses to the needs of professionals.

Users, specifiers, installers, or distributors, Sarel integrates your requirements in its global enterprise approach by means of:

- ▶ Products, equipment, materials that adapt easily to all circumstances whatever the configurations and applications, with guarantees of quality, reliability, and speed and ease of installation.
- ▶ Services backing up product customisation to meet your demands and provide the right solutions for specific requirements with maximum flexibility and the highest levels of quality and precision.



Four industrial sites operating in the dynamic of progress

In its two factories in France, as in its two Spanish factories, quality is a fundamental axis of Sarel industrial policy.

It is expressed at all levels of the company to best serve customers.

It is evidenced by ISO 9001 certification for product design, manufacture and distribution and ISO 14001 certification for environmental protection.

Expertise in four industrial fields

To respond efficiently to the needs of professionals in electricity, automated systems, electronics and VDI and telecom, networks, Sarel Quality Assurance guarantees complete control of the industrial processes necessary for the manufacture of its products. Distributed over four sites on a total area of 45 000 m², industrial activities are carried out in distinct, specialised workshops.

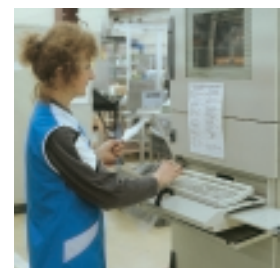
Each of these integrates dedicated production lines with specific manufacturing functions and equipment;

- ▶ **Sheet metalwork: metalworking, painting and packaging** are in strictly controlled flows, integrating technologies of punching, laser cutting, panel cutting, folding and welding, with integral moulding of polyurethane seals using a patented process.
- ▶ **Plastics injection moulding:** Two and three-product moulding organised in production islands with automated assembly machines.
- ▶ **Stainless steel metalworking, brushed and microbeaded.**
- ▶ **Thermosetting materials processing:** Glass reinforced polyester SMC hot press moulding.

Quality Assurance closely linked to the production process

From processing of orders to dispatch, the Total Quality Approach is applied to the design, production and delivery of products.

From production to the Logistics Centres, Sarel positions customer concerns as close as possible to the processes of product manufacture and delivery.



Specific services to satisfy your demands

Sarel offers responses to your specific requirements.
The organisation, skills and means of Sarel are adaptable to your specific needs.

Real time order processing

Recording of orders is automatic, which enables their real time processing. Direct access to the order system (EDI) is open to our customers to improve delivery lead times.

Customisation service

With a customisation service for wall mounting enclosures, floor standing enclosures and racks, Sarel designs and manufactures to meet your specific requests. Dimensions, shapes, cut-outs and colours can be customised to Sarel standards offering industrial quality. From design to production in a dedicated workshop, you benefit from our comprehensive service to study your specifications and respond conforming to the requirements of current standards.

Automated logistics

Sarel logistics centres at Sarre Union and Barcelona cover 25,000 m² and are largely automated. Their flexibility of organisation enables speedy order processing and guaranteed delivery lead times.

User guides, configurators and software

To assist you in configuration of your enclosures and integration of accessories adapted to your applications, Sarel makes tools available to you on CD-ROM or on its Internet site :

- ▶ Selection guides for enclosures, floor standing enclosures, racks and control desks.
- ▶ Configurators for enclosures, floor-standing enclosures and cells.
- ▶ VDI network rack and enclosure configurator.
- ▶ Thermal management calculation software: CLIMA.



An offer structured to cover all requirements in the building, industrial, infrastructure, VDI network markets and telecom.

	Industry and infrastructure	VDI network and electronic	Building
ENCLOSURES			
Steel industrial boxes	◆		
Plastic industrial boxes THALASSA	◆		◆
Spacial 3D steel enclosures	◆		◆
THALASSA insulating enclosures	◆	◆	◆
THALASSA insulating floor standing enclosures	◆	◆	◆
Spacial 18500 monobloc steel enclosures	◆	◆	
Stainless steel floor standing enclosures	◆	◆	
Spacial 6000 steel enclosures	◆	◆	
Steel control desks	◆		
EMC floor standing enclosures, cabinets, enclosures	◆		
CaSys VDI network, server and telecom racks and enclosures		◆	
Temperature control equipment	◆	◆	◆
INSTALLATION PRODUCTS AND SYSTEMS			
MUREVA dust and damproof equipment			◆
MUREVA dust and damproof boxes			◆
MURABOX flush mounting junction boxes			◆
Dust and damproof modular enclosures MUREVA	◆		◆
Installation conduit and accessories			◆
Fixing accessories	◆	◆	◆



industrial boxes

selection guide

THALASSA plastic industrial boxes

criteria	ABS	PC
exterior use		●
agressive atmosphere	●	●
degree of protection	IP66 IK07	IP66 IK08
dimensions (mm) H x W x D	65 x 65 x 45 to 325 x 275 x 160	65 x 65 x 45 to 325 x 275 x 160
universal application	●	●
electronic application		
coupling	● (1)	● (1)

range or product

ABS




page 16

PC



page 16

(1) See accessories page 17 to 21

 steel industrial boxes

steel box				safety enclosure	modular box in PVC polycarbonate	
		●	●		●	●
					● (2)	● (2)
IP40 IK08	IP44 IK08	IP66 IK08	IP66 IK09	IP55 IK09	IP65 IK10	IP65 IK09
80 to 160 80 to 160 45 to 65	80 to 200 80 to 200 45 to 90	80 to 400 80 to 400 45 to 110	200 or 300 300 to 500 150 or 200	180 or 230 130 to 210 96 or 126	180 to 540 270 to 720 180 to 230	195 295 to 495 128
●	●	●	●	●	● ●	● ●
					●	●



see www.sarel-enclosures.com

(2) See page 39

plastic industrial boxes

selection table

universal application/electronic and junction



page 15

page 16

dimensions (mm)						ABS boxes	PC boxes	UL boxes	boxes	boxes		
internal					external			IP66 IK07	IP66 IK08	IP66 IK08	for pushbuttons	for entry plates
H	W	D	body	cover	H	W	D					
65	65	47	37	10	74	74	54	●	●	●	●	
80	80	47	35	10	89	89	54	●	●	●		
105	65	55	45	10	116	74	62	●	●	●	●	
	105	55	45	10	116	116	62	●	●	●		
125	80	65	45	20	138	93	72	●	●	●		
150	105	80	60	20	164	116	87	●	●	●		
175	105	80	60	20	192	116	87	●	●	●		
	100	60	40		192	121	105	●	●	●		
	150	80	60	20	193	164	87	●	●	●		
	100	60	40		193	164	105	●	●	●		
225	175	80	60	20	241	194	87	●	●	●		●
	100	60	40		241	194	105	●	●	●		
	120	60	60		241	194	127	●	●	●		
275	225	80	60	20	291	241	88	●	●	●		
	120	100	20		291	241	128	●	●	●		●
	120	60	60		291	241	128	●	●	●		
	160	100	60		291	241	168	●	●	●		
325	275	120	100	20	341	291	128	●	●	●		●
	160	100	60		341	291	168	●	●	●		

dimensions (mm)			references industrial boxes			
height	width	depth	boxes 27000	cover opaque	cover transparent	boxes AB
			IP65			IP65
			IK10			IK09
180	270	180		27480	27460	27932
195	295	128		–	–	27942
195	395	128		–	–	27952
195	495	128		–	–	–
270	270	180		27481	27461	–
	360	180		27483	27463	–
	540	180		27485	27465	–
360	540	180		27487	27467	–
		230		27488	27468	–
	720	230		27491	27471	–
540	540	180		27489	27469	–
		230		27490	27470	–
	720	230		27492	27472	–

When ordering in the UK please add the prefix ENN to the reference number

selection table

universal application

safety

IP40



IP44



IP66



IP66



IP66



IP66



IP55



see www.sarel-enclosures.com

internal dimensions (mm) (1)			references steel industrial boxes IK08					references Spacial 3D boxes IK09	references 24300 boxes IK09 (2)
height	width	depth	with entries	empty	plate fixings	with uprights			
80	80	45	04065	05501	04408	–	–	–	
100	100	55	04105	05503	04410	–	–	–	
120	165	65	–	05507 (3)	04417	04418	–	–	
130	130	60	04145	05509	04413	–	–	–	
160	160	65	04175	05511	04416	–	–	–	
180	130	96	–	–	–	–	–	24310	
	165	96	–	–	–	–	–	24320	
200	200	90	–	05515 (3)	04420	04421	–	–	
200	300	110	–	–	–	04403	–	–	
		150	–	–	–	–	57125	–	
	400	110	–	–	–	04404	–	–	
	500	110	–	–	–	04405	–	–	
	600	110	–	–	–	04406	–	–	
230	210	126	–	–	–	–	–	24340	
250	250	100	–	–	04425	04426	–	–	
300	300	100	–	–	04430	04431	–	–	
		150	–	–	–	–	57126	–	
	400	150	–	–	–	–	57127	–	
	500	110	–	–	–	04435	–	–	
		200	–	–	–	–	57128	–	
	600	110	–	–	–	04436	–	–	
400	400	110	–	–	04440	04441	–	–	

(1) Except for Spacial 3D range (external dimensions).

(2) Various configurations (doors with window, with safety lock).

(3) Consult your local sales office.

When ordering in the UK please add the prefix ENN to the reference number

New
ouveau
eu

Your THALASSA industrial boxes IP66 IK07



modularity

logical and simple range of widths, heights and depths that in particular enables perfectly aligned side by side coupling of boxes.

adaptability

excellent flame resistance
ABS: 650°C
PC: 750°C
PC (UL): 960°C

equipment

all installation studs are of the same diameter, a single screw reference fixing all accessories.

intelligence

smart cover design with fixing studs and support feet to facilitate utilisation.



Customisation service

In addition to standard solutions, THALASSA industrial boxes transform and adapt to your specific requirements:

- Easily and directly integrating in your industrial process.
- Reducing production time and minimising logistical constraints.
- Harmonising with design and ergonomics of your equipment.
- Offering the guarantee of quality customisation.

The THALASSA industrial box custom offer:

- Accessory mounting.
- Machining: cut-outs, drilling.
- Colours.
- Packaging variants.
- Marking.

to IK08, perfect in all conditions!

installation

various box fixing possibilities:
outside usable space, through rear
face or using external fixing lugs.



choice

- boxes 65x65x47 mm to 325x275x160 mm in ABS or polycarbonate (PC), with deep or shallow, opaque or transparent covers,
- installation accessories for internal equipment mounting, cable entry and box fixing (wall, machine framework, etc.).

practicality

interchangeability with the
previous Pilote offer is assured
by installation stud compatibility.

aesthetics

design projecting the image of
strength and effective sealing.

and also...

■ security

Protection against electrical shock:
class II.

■ high performance

- sealing:
IP66 by polyurethane seal
Nema 4.4X (Nema 250)
- mechanical resistance:
ABS: IK07 (2J)
polycarbonate: IK08 (5J)

■ lightness and strength

Boxes weighing a few dozen grams
resist impacts of several kilograms.

■ practicality

Packaging reusable after box is
equipped.
Wide accessories range.

■ standards

EN 62208
TÜV certified (report available on site
www.sarel.fr).

■ environment

Respect of eco-design rules (product
environmental profile)
Halogen-free plastic materials.

■ approvals

SEMKO, NEMKO, DEMKO
DNV, IMQ
UL: dedicated range in PC.

THALASSA plastic industrial boxes

general characteristics

- Wide dimensional range (H, W, D).
- Boxes can be joined (with exact consistency of dimensions) using kit ref. **82502**.
- Cover closing by 4 fast coarse pitch screws assuring IP66 protection. From dimensions 125x80 mm, standard screws (flat head screwdriver) can be replaced by other standardised screw head shapes (page 18).
- The 4 cover "feet" ensure rigidity and perfect stability during customisation operations.
- Adaptable hinges on all 20 and 40 mm depth covers (page 18).

box fixing

- Outside usable area, sealed, via 4 corners at box corners.
- Through box via 2 or 4 knock-out oblong holes.
- With fixing lugs (ref. **08161**).

equipment fixing

- Equipment fixing studs in box cover and body for self-tapping screws ϕ 4 mm (ref. **08181**, ϕ 4 mm x 10 cross and flat screw head).
- Possibility of fixing rails, plates (page 17) or other types of equipment support (for electronic board, etc.).
- Stand-offs, mounted on studs and spacers enable equipment height adjustment, (page 17).

other accessories

- Terminal blocks (page 19).
- Entries and cable glands (page 20).
- Screw clip-on knob (page 18).

technical characteristics

- IP66 to standard IEC 60529.
- NEMA 4.4 X to Nema 250.
- Class II to IEC 536.
- Colour: box grey RAL7035, cover smoked transparent.
- Halogen-free insulating plastic materials.
- Resistance to chemical and atmospheric agents: page 39.

ABS boxes:

- IK07 (2J) to EN 50102.
- Incandescent wire: 650°C to IEC 60695-2-11.
- Operating temperature: -25 ... +60°C.
- Installation temperature: -15 ... +40°C.

PC boxes:

- IK08 (5J) to EN 50102.
- Incandescent wire: 750°C.
- Operating temperature: -25 ... +80°C.
- Installation temperature: -15 ... +60°C.

certifications

- EN IEC 62208 certified by TÜV.
- SEMKO, NEMKO, DEMKO, DNV, IMQ.
- UL: dedicated range in PC material.
- Product Environmental Profile.

customisation

- Boxes can be customised on request (page 23).



selection guide

internal dimensions (mm)			ABS boxes	PC boxes	UL box	boxes for pushbuttons	boxes for mounting plates
total			IP66 - IK07	IP66 - IK08			
H	W	D					
65	65	45	●	●	●	●	
80	80	45	●	●	●		
105	65	55	●	●	●	●	
	105	55	●	●	●		
125	80	65	●	●	●		
150	105	80	●	●	●		
175	105	80	●	●	●		
	100		●	●	●		
	150	80	●	●	●		
	100		●	●	●		
225	175	80	●	●	●		●
	100		●	●	●		
	120		●	●	●		
275	225	80	●	●	●		
	120		●	●	●		●
	160		●	●	●		
325	275	120	●	●	●		●
	160		●	●	●		



see page 15

see page 16



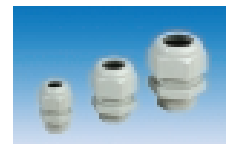
IP66 association kit



cable entries IP55



cable entries ISO IP67



IP68 cable glands

see page 20

When ordering in the UK please add the prefix ENN to the reference number

THALASSA plastic industrial boxes

boxes in ABS or PC with shallow cover

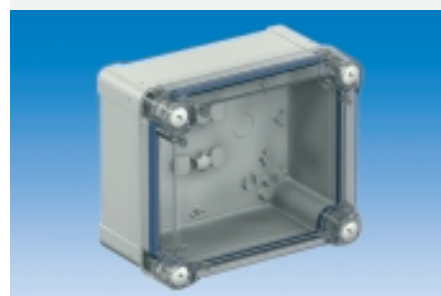
- IP66 – NEMA 4.4X.
- IK07 (ABS) - IK08 (PC)
- Grey RAL7035
- Box 45 to 120 mm depth with covers 10 to 20 mm.
- Opaque or transparent cover.
- Accessory hinges for covers from 20 mm only.



internal dimensions (mm)					external dimensions (mm)			boxes ABS IP66 - IK07		boxes PC IP66 - IK08		boxes UL IP66 - IK08	
total					total			cover		cover		cover	
H	W	D	body	cover	H	W	D	opaque	transparent	opaque	transparent	opaque	transparent
65	65	47	35	10	74	74	56	85002	-	85102	-	85402	-
80	80	45	35	10	89	89	51	85004	-	85104	-	85404	-
105	65	55	45	10	116	74	62	85003	-	85103	-	85403	-
	105	55	45	10	116	116	62	85005	-	85105	-	85405	-
125	80	65	45	20	138	93	72	85006	85026	85106	85126	85406	85426
150	105	80	60	20	164	121	87	85007	85027	85107	85127	85407	85427
175	105	80	60	20	192	121	87	85008	85028	85108	85128	85408	85428
	150	80	60	20	193	164	87	85010	85030	85110	85130	85410	85430
225	175	80	60	20	241	194	87	85012	85032	85112	85132	85412	85432
275	225	80	60	20	291	241	88	85015	85035	85115	85135	85415	85435
		120	100	20	291	241	128	85017	85037	85117	85137	85417	85437
325	275	120	100	20	341	291	128	85019	85039	85119	85139	85419	85439

boxes in ABS or PC with deep cover

- IP66 – NEMA 4.4X.
- IK07 (ABS) - IK08 (PC).
- Grey RAL7035.
- Box 100 to 160 mm depth with covers 40 to 60 mm.
- Opaque or transparent cover.
- Accessory hinges for covers from 40 mm only.



internal dimensions (mm)					external dimensions (mm)			boxes ABS IP66 - IK07		boxes PC IP66 - IK08		boxes UL IP66 - IK08	
total					total			cover		cover		cover	
H	W	D	body	cover	H	W	D	opaque	transparent	opaque	transparent	opaque	transparent
175	105	100	60	40	192	121	105	85009	85029	85109	85129	85409	85429
	150	100	60	40	193	164	105	85011	85031	85111	85131	85411	85431
225	175	100	60	40	241	194	105	85013	85033	85113	85133	85413	85433
		120	80	40	241	194	127	85014	85034	85114	85134	85414	85434
275	225	120	60	60	291	241	128	85016	85036	85116	85136	85416	85436
		160	100	60	291	241	168	85018	85038	85118	85138	85418	85438
325	275	160	100	60	341	291	168	85020	85040	85120	85140	85420	85440

choice

a range for every requirement



Other junction boxes, for building

Equivalence table for previous Pilote offer

When ordering in the UK please add the prefix ENN to the number

see www.sarel-enclosures.com

see page 26

THALASSA plastic industrial boxes

ABS pushbutton boxes

- IP54 - NEMA 13 (for equipped boxes).
- IK07.
- Grey RAL7035 and yellow RAL1021 "emergency stop".
- Pushbutton hole diameter: 22.5 mm.
- Knock-out cable entries for ISO cable gland (page 20).
- 4 entries diameter 20 mm on 1-button box.
- 6 entries diameter 20 mm on 2 and 3-button boxes.

practical

boxes ready-to-use



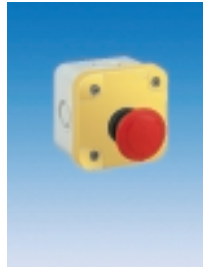
pushbutton boxes, empty

internal dimensions (mm)					external dimensions (mm)			ref.	
total					total				
H	W	D	body	cover	H	W	D		
65	65	47	35	10	74	74	54	85491	1 hole
65	65	47	35	10	74	74	54	85494 (1)	1 hole
105	65	55	45	10	116	74	62	85492	2 hole
105	65	55	45	10	116	74	62	85493	3 hole

(1) yellow "emergency stop" box.

pushbutton boxes, with buttons

- Emergency stop function with red ø 40 mm "mushroom head" pushbutton, "turn to release".
- Start/stop function with 2 pushbuttons.
- Raise/lower/stop function with 3 pushbuttons.
- Contact technical characteristics
 - Positive opening "N/C" contact to IEC 947-5-1 appendix K.
 - Mechanical durability of emergency stop contacts: 0.1 million cycles.
 - Mechanical durability of "N/C" and "N/O" contacts: 5 million cycles.
 - Short-circuit protection: 10A.



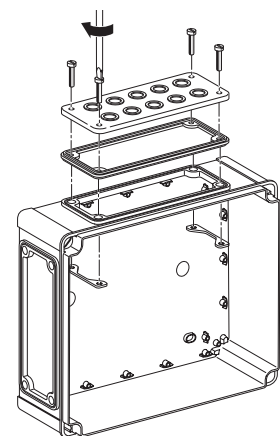
pushbutton boxes, with buttons

total internal dimensions (mm)			ref.
H	W	D	
65	65	47	85484
105	65	55	85482
105	65	55	85483

function	contact type	
	"N/O"	"N/C"
emergency stop	1	1
start/stop	1	1
start	1	-
stop	-	1
raise/lower/stop		
raise	1	-
lower	1	-
stop	-	1

boxes in polycarbonate for mounting plates

- IP66 - NEMA 4,4X.
- IK08 (PC).
- Grey RAL7035.
- Knock-out entry plate locations.
- Entry plate marking dimensions to SEN 280901:
 - FL13 134 x 33 mm.
 - FL21 216 x 88 mm.
- Entry plate mounting kit includes seal and screws.
- Entry plates not supplied.



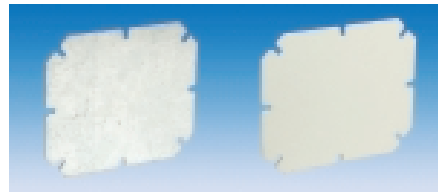
internal dimensions (mm)					external dimensions (mm)			IP66 - IK08		
total					total			cover		
H	W	D	body	cover	H	W	D	opaque	trans	
225	175	80	60	20	241	194	87	85182	85192	4 fl.13
275	225	120	100	20	291	241	128	85187	85197	2 fl.13+2 fl.21
325	275	120	100	20	341	291	128	85189	85199	4 fl.21

mounting kit for entry plate fl.13	08281
mounting kit for entry plate fl.21	08282

When ordering in the UK please add the prefix ENN to the number

mounting plates

- Mounting plates in galvanised steel (thickness 15/10) and insulating material (thickness 25/10) to suit any application. Screws not supplied.
- Plate fixing with ϕ 4 mm self-tapping cross/slot head screw, ref. **08181**.
- Dimensions, page 33.



steel plate

insulating material plate

box		mounting plate	
H	W	steel	insulating
175	150	08001	08011
225	175	08002	08012
275	225	08003	08013
325	275	08004	08014
d4 screw		08181	-

practical

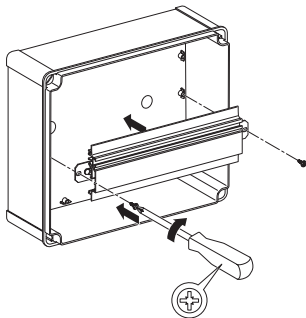
15x5 mm rail for compact terminal blocks

rails

- DIN rails symmetrical (15x5 mm), (35x7.5 mm) and (35x15 mm); asymmetrical. Screws not supplied (except for rails 15x5 mm).
- Aluminium HPUL profile for telecom, telephony equipment. Support supplied.
- Rail fixing by ϕ 4 mm self-tapping screws (not supplied), cross or flat head.
- Dimensions, page 32.



box	15 x 5 mm	35 x 7.5 mm	35 x 15 mm	asymmetrical	HPUL telecom profile
105	08051	08021	-	-	-
150	08052	08022	-	-	-
175	08053	08023	-	-	-
225	08054	08024	08031	08041	-
275	08055	08025	08032	08042	08061
325	08056	08026	08033	08043	08062



box with HPUL telecom profile



box with 15x5 mm rail



box with two 35x7.5 mm rails

stand-offs and spacers

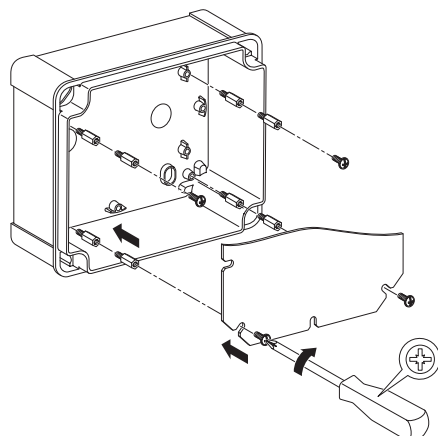
- Stand-offs in steel with ϕ 4 mm self-tapping thread at one end (for direct screwing into box studs) and M4 tapping at other for direct card mounting with M4 screw ref. **08186**, or spacer mounting.
- Steel spacers for mounting on stand-offs. M4 threaded and tapped.



height	lot of 4 self-tapping stand-offs M4	lot of 4 spacers M4
15 mm	08171	08176
20 mm	08172	08177
30 mm	08173	08178

screw for stand-offs and spacers

- Screw M4x10 for fixing cards on stand-offs and spacers.



reference	description
08186	M4 spacer/stand-off screw

smart

- my plate at the correct level
- one ϕ 4 mm screw type fixes everything

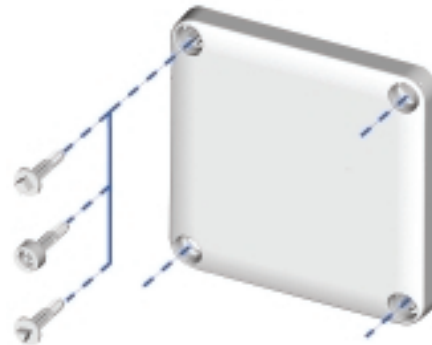
When ordering in the UK please add the prefix ENN to the number

screw head shapes

- THALASSA boxes are supplied as standard with screws for flat screwdriver 4 to 5.5 mm.
- These can be replaced by screws with other standardised head shapes to meet most applications.
- Having removed the standard screw, the new screw is positioned by simple pressure.
- Adapters (intermediate parts enabling cover fixing to box body) are the same as for standard screws. They are therefore not supplied with shape insert screws.



square double bar triangle



	cover depth		
description	20 mm	40 mm	60 mm
square 6 mm	08216	08217	08218
7 mm	08219	08220	08221
8 mm	08222	08223	08224
triangle			
(1) 6.5 mm	08225	08226	08227
8 mm	08228	08229	08230
double bar			
3 mm	08231	08232	08233
5 mm	08234	08235	08236
plastic screw	08213	08214	08215

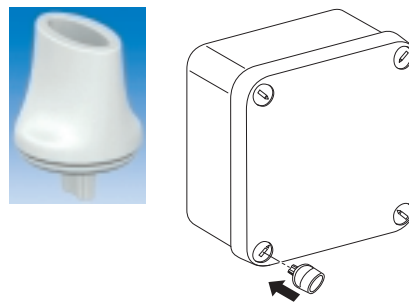
(1) CNOMO

clever

just one key to open not only boxes, but also all the other enclosures in my installation

knob

- Knobs (or mini-handles) enable screw manipulation without a tool. They are ideally suited to hinge-equipped boxes.
- Simply clipped over the head of the standard plastic screw.



reference	description
08211	knob

hinges

- Hinges are adaptable on all cover depths 20 and 40 mm from box size 125x80 mm.
- Hinges allow complete opening of the cover.
- Permissible load of cover with hinges: 10 kg/m².
- Hinges (sets of 2) are supplied with screws and installation instructions.



	cover depth	
description	20 mm	40 mm
hinges	08191	08192

practical

the hinge enables complete cover opening to angle > 200°



When ordering in the UK please add the prefix ENN to the reference number

fixing lugs

- Plastic fixing lugs for mounting on boxes from size > 105x105 mm.
- Vertical or horizontal mounting.
- Kit comprising 4 lugs + screws.



reference	description
08161	fixing lug

ventilation entries

- IP68, 1 bar (0.1 bar for high airflow version).
- Material: PA6 V2, copolymer acrylic membrane, water and oil resistant.
- Operating temperature: -40 ... +105°C.
- dp permeability = 70 mbar,
 - ref. **08297** (standard) = 0.016 m³/h
 - ref. **08298** (high flow) = 0.120 m³/h



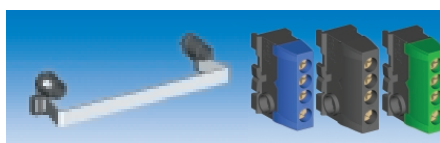
reference	Ø	flow (m ³ /h)
08297	M12	0.016
08298	M12	0.120

high performance

ventilates box without reducing IP

terminal blocks IP2X

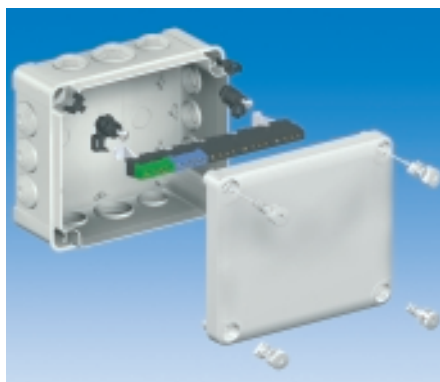
- Boxes from size 175x105 mm accept terminal block support bar 12x2 mm.
- Screw terminal blocks clip easily on this bar.
- Terminal block connection capacity: see selection guide.
- Separate earth terminal clips in boxes size ≤ 105x105 mm.
- Max. connection capacity: 2x2.5².



bars

terminal blocks

description	reference
support block bars	175x60 mm 08251 225x80 mm 08252 275x100 mm 08253
earth terminal	09101



description	black (phase)	blue (neutral)	green (earth)
4-hole blocks			
2 x 10 ² + 2 x 16 ²	08257	08259	08255
4-hole blocks			
3 x 16 ² + 1 x 25 ²	08256	08258	08254
lot	10	5	5

selection guide

number of terminal blocks per support

	terminal blocks 2 x 10 ² + 2 x 16 ²	terminal blocks 3 x 16 ² + 1 x 25 ²	boxes (mm)
175 mm support	4 0	0 4	175 x 105 175 x 150 225 x 175
225 mm support	6 0 3	0 5 3	225 x 175 275 x 225
275 mm support	8 0 3 4	0 6 4 3	275 x 225 325 x 275
earth terminal			dimensions ≤ 105 x 105

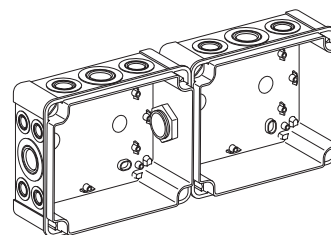
When ordering in the UK please add the prefix ENN to the reference number

association kit

- The association kit enables side-by-side mounting of boxes from size 125x80 mm, without reducing IP.
- Kit installation is by drilling an M32 hole in boxes to be associated. To increase wire passage capacity, a second kit can be added after drilling an additional M32 hole.
- Kit comprises 2 connection parts, nuts and seals.



reference	description
82502	association kit



IP67 ISO cable entries

- IP67.
- Conforming to standard EN 50262.
- Material: EPDM plastic.
- Adapted to wall thicknesses 1 to 4 mm (0.5 to 2 mm for ref. **08831**).
- Fast, no-tool installation.



reference	ISO	drilling Ø	cable Ø (mm)	lot
08831	M12	13	3 - 5	50
08832	M16	16	5 - 7	50
08833	M20	20	7 - 10	50
08834	M25	24	10 - 14	50
08835	M32	30	14 - 20	50
08836	M40	38	20 - 26	25
08837	M50	48	26 - 35	25

IP55 cable entries

- EVA membrane/stepped entries.
- IP55.
- RAL7035.
- Material: SBS.
- Pack lots of 10 cable entries.



drilling Ø (mm)	cable/ conduit	conduit and colors	
		white RAL 9010	clear grey RAL 7035
23	4 - 20	08121	08111
29	4 - 25	08122	08112
36	4 - 32	-	08113
44	4 - 40	-	08114

When ordering in the UK please add the prefix ENN to the reference number

cable gland

- IP68, 5 bars.
- Conforming to standard EN50262.
- Colour grey RAL7035.
- Material: PA6, neoprene seal.
- Operating temperature: -30 ... +80°C up to +150°C for short periods.
- Cable glands are supplied with nuts.
- IP is assured without a seal between cable gland and box. However, the seal proposed as an accessory assures sealing in the case of mounting on a steel enclosure.
- The cable gland (ref. **08079**) is particularly adapted to red boxes for safety circuits (incandescent wire: 960°C).
- Lots of 20 (M12 to M25), 10 (M32), 5 (M40).



cable gland

blanking plug

- Screws in to replace cable gland.
- Lots of 20 plugs (M12 to M15), 10 plugs (M32), 5 plugs (M40).

transport protection cap

- Mounted to seal cable gland during transport or during maintenance operations.
- Lots of 20 caps (M16 to M25), 10 caps (M32), 5 caps (M40).



transport plug (for temporary protection of box contents)

multicable disc **08098**

cable gland seal

- Lots of 100 seals (M12 to M25), 50 seals (M32), 25 seals (M40).



smart

- Pass several cables via the same cable gland using the multicable disc.

cable gland, disc and plug selection guide

Ø	cable gland 1 cable		multicable disc		seal	blanking plug	transport plug
	ref.	Ø min/max (mm)	ref.	Nb/Ø (mm)			
M12	08071	3/6,5	-	-	08091	08101	-
M16	08072	4/8	08097	2x4	08092	08102	08291
M20	08073	6/12	08098	3x4	08093	08103	08292
M20 (1)	08079	6/12	-	-	08093	-	-
M25	08074	11/17	08099	4x5	08094	08104	08293
M32	08075	15/21	08100	6x5	08095	08105	08294
M40	08076	19/28	-	-	08096	08106	08295

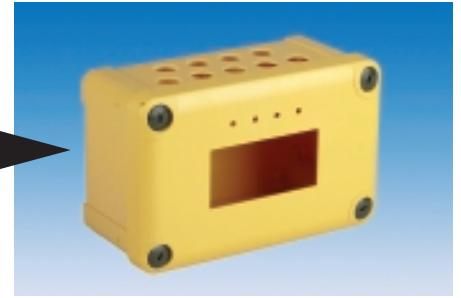
(1) high fire resistance cable gland for red boxes.

THALASSA box customisation

customised plastic industrial boxes



Standard box



ABS box coloured in mass + machining of holes for cable glands + machining of cover to enable internal view

■ In addition to the wide range of standard catalogue solutions, THALASSA industrial boxes can be adapted to meet your specific requirements.

■ To do this, use the tools Sarel makes available to you (www.sarel-enclosures.com or at your local sales office)

- a simple configurator, printed format (following page) to be faxed to your local sales office
- this same configurator, in software format, can be completed directly with your Sarel sales contact. This has the advantage of providing you with a rapid quotation according to your requirement.

- detailed drawings of all box dimensions are available in .dxf format, allowing you to easily plan installation of your equipment in the box.

advantages

The wide range of customisation possibilities for SAREL THALASSA boxes offers many advantages:

- Custom boxes to your specification can be easily and directly integrated in your industrial process.
- Reduction in your production time.
- Minimisation of logistical constraints.
- Harmonisation with appearance and ergonomics of your own equipment.
- Guarantee of high quality customisation produced using latest generation machinery.

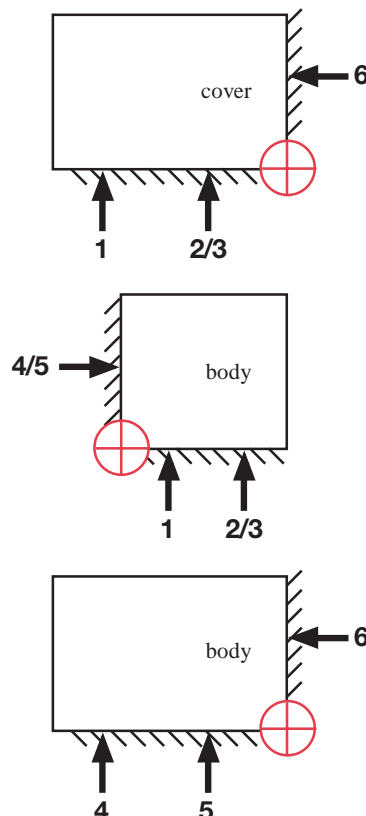
technical information, tolerances

■ Tolerance applied for the first machining operation on each part conforms to standard ISO 2768-mK (see reference diagrams below)

■ Tolerance between different machining operations is limited to ± 0.1 mm

■ ⊕ = reference point

■ 1, 2, 3, 4, 5, 6 = isostatic referencing points.



THALASSA industrial box customisation offer

■ Equipment mounting

Simply select the accessories you wish to install in the box

- chassis (steel or insulating material)
- DIN rails and alu profiles
- spacers and stand-offs
- hinges, knobs
- special head screws (triangle, square, double bar)
- cable glands, cable entries
- coupling kit
- fixing lugs, ventilation entries

■ Cut-outs, drilling

All types of machining possible on all box and cover faces:

- simple drilling
- drilling with chamfer, M tapping
- other shapes

■ Colours

ABS boxes in your required colour from a defined list of RAL references. Other colour references are available on request. For PC box colours, please consult us for details.

■ Packaging, packing

If standard packaging (normally unitary) does not suit your constraints, we can offer you:

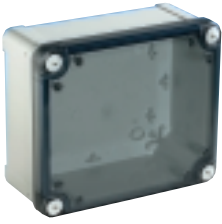
- bulk packaging in carton or even pallet bin
- separate body and cover packaging
- neutral unprinted unitary packaging.

■ Marking

Our laser equipment enables high precision permanent laser marking. Please consult us for details of this operation.

THALASSA configured industrial boxes

Having completed this form, please fax or e-mail to your local SAREL sales office.



Your contact details

Date: _____ Tel: _____
 Name, First Name: _____ Fax: _____
 Company: _____ e-mail: _____
 Address: _____



1 - Technical specification of box

Quantity boxes

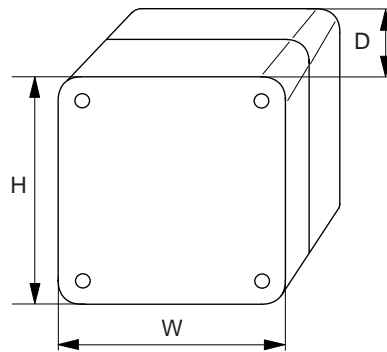
(min. quantity: please consult us)

Material ABS PC

Opaque cover

Transparent cover

shallow covers (10 and 20 mm)				
H	W	D	cover depth	
65	65	47	10	
80	80	47	10	
107	65	55	10	
	105	55	10	
125	80	65	20	
150	105	80	20	
175	105	80	20	
	150	80	20	
225	175	80	20	
275	225	80	20	
		120	20	
325	275	120	20	



(dimensions in mm)

deep covers (40 and 60 mm)				
H	W	D	cover depth	
175	105	100	40	
	150	100	40	
225	175	100	40	
		120	60	
275	225	120	60	
		160	60	
325	275	160	60	

2 - Colour selection

ABS boxes in your choice of colour from range below:

RAL	body	cover
7035 (standard)	<input type="checkbox"/>	<input type="checkbox"/>
7036*	<input type="checkbox"/>	<input type="checkbox"/>
7016*	<input type="checkbox"/>	<input type="checkbox"/>
1021*	<input type="checkbox"/>	<input type="checkbox"/>
3000*	<input type="checkbox"/>	<input type="checkbox"/>
6018*	<input type="checkbox"/>	<input type="checkbox"/>
9003*	<input type="checkbox"/>	<input type="checkbox"/>
9010*	<input type="checkbox"/>	<input type="checkbox"/>
9005*	<input type="checkbox"/>	<input type="checkbox"/>

Other colours * -----

Cover fixing screws can be in 2 colours:

RAL	
7035 (standard)	<input type="checkbox"/>
7016	<input type="checkbox"/>

*additional cost

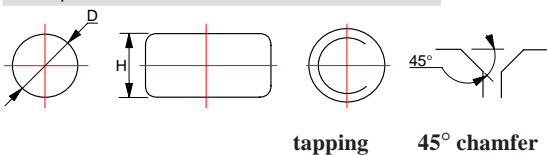
PC (polycarbonate) material colouring possible:
please consult us for details

(Special conditions)

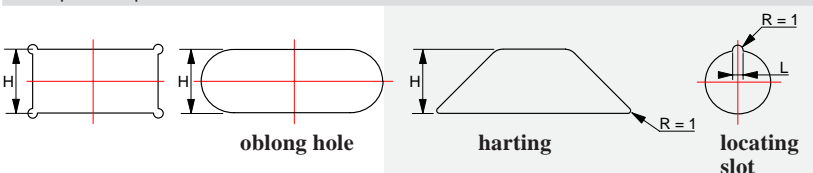
3 - Specification of cut-outs

All drilling types can be produced (simple holes or with chamfer, tapping or special opening to your specifications) on all box faces (including cover).

Examples of standard cut-outs:



Examples of special cut-outs:



Do not forget to send us a printed or software installation drawing

THALASSA configured industrial boxes

4 - Specification of accessories

4.1 Mounting plate:

steel plate <input type="checkbox"/>	from size 175x150 mm	not mounted <input type="checkbox"/>
insulating material plate <input type="checkbox"/>	from size 175x150 mm	not mounted <input type="checkbox"/>





4.2 Rails:

			Quantity
symmetrical rail 15x5.5 mm	(from H or W 105 mm)	x	<input type="text"/>
symmetrical rail 35x7.5 mm	(from H or W 105 mm)	x	<input type="text"/>
symmetrical rail 35x15 mm	(from H or W 225 mm)	x	<input type="text"/>
asymmetrical rail	(from H or W 225 mm)	x	<input type="text"/>
alu telecom profile	(from H or W 275 mm)	x	<input type="text"/>

4.3 Internal fixings:

	Quantity		Quantity		Quantity	
self-tapping spacers (set of 4)	15 mm x <input type="text"/>	20 mm x <input type="text"/>	30 mm x <input type="text"/>			
stand-offs (set of 4)	15 mm x <input type="text"/>	20 mm x <input type="text"/>	30 mm x <input type="text"/>	not mounted	<input type="checkbox"/>	

4.4 Cover closing:

hinges (set of 2) <input type="checkbox"/>				
mounted on:	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
	left	right	bottom	top

knobs for plastic screws (set of 2)

From size 125x80 mm, standard screws (flat screwdriver head) can be replaced by screws with other standardised head shapes:





plastic screw square 6	<input type="checkbox"/>
plastic screw square 7	<input type="checkbox"/>
plastic screw square 8	<input type="checkbox"/>
plastic screw triangle 6.5 CNOMO	<input type="checkbox"/>
plastic screw triangle 8	<input type="checkbox"/>
plastic screw double bar 3	<input type="checkbox"/>
plastic screw double bar 5	<input type="checkbox"/>

THALASSA configured industrial boxes

4.5 Cable entries:

	Quantity	Quantity	Quantity	Quantity
IP68 cable gland for 1 cable + nut	M12 x <input type="text"/>	M16 x <input type="text"/>	M20 x <input type="text"/>	M25 x <input type="text"/>
	M32 x <input type="text"/>	M40 x <input type="text"/>		
IP68 cable gland for 4 cables + nut	M16 x <input type="text"/>	M20 x <input type="text"/>	M25 x <input type="text"/>	M32 x <input type="text"/>
plug	M16 x <input type="text"/>	M20 x <input type="text"/>	M25 x <input type="text"/>	M32 x <input type="text"/>
transport plug	M12 x <input type="text"/>	M16 x <input type="text"/>	M20 x <input type="text"/>	M25 x <input type="text"/>
	M32 x <input type="text"/>	M40 x <input type="text"/>		
IP55 sealed entry	D23 x <input type="text"/>	D29 x <input type="text"/>	D36 x <input type="text"/>	D44 x <input type="text"/>
IP67 sealed entry	M12 x <input type="text"/>	M16 x <input type="text"/>	M20 x <input type="text"/>	M25 x <input type="text"/>
	M32 x <input type="text"/>	M40 x <input type="text"/>		
coupling kit	M32 x <input type="text"/>	<i>(from H or W 125)</i>		

4.6 Others:

fixing lugs (set of 4)		<input type="text"/>	in vertical position		<input type="text"/>	or in horizontal position
		Quantity				
ventilation entry M12 IP68 16 l.h		<input type="text"/>				
ventilation entry M12 IP68 120 l.h		<input type="text"/>				

5 - Specification of marking

Our laser equipment enables high precision permanent marking.

Please consult us for details of this operation.

6 - Specification of packaging

If standard packaging (assembled boxes, unitary pack marked "Sarel") does not suit your constraints, we can propose the following alternative solutions:

option 1:		separate body and cover	<input type="checkbox"/>	(elimination of unitary pack)
option 2:	neutral unitary pack		<input type="checkbox"/>	or without unitary pack <input type="checkbox"/> (grouping in bulk pack)
option 3:		grouping in pallet bin	<input type="checkbox"/>	

THALASSA industrial box technical characteristics, customisation service specifications and DXF format drawings are available on our site www.sarel-enclosures.com

THALASSA plastic industrial boxes

Equivalence table, PVC and ABS industrial boxes

Previous offer						New offer							
Pilote PVC boxes						THALASSA ABS boxes							
dimensions (mm)			opaque	opaque + hinges	trans. + hinges				body	cover	opaque	trans.	
W	H	D				W	H	D					
100	100	55	02560	-	-	105	105	55	45	10	85005	-	
105	70	48	03080	-	-	105	65	55	45	10	85003	-	
						125	80	65	45	20	85006	-	
105	70	80	03082	-	-	125	80	65	45	20	85006	-	
130	69	57	03180	-	-	150	105	80	60	20	85007	-	
130	69	90	03182	-	-	150	105	80	60	20	85007	-	
150	100	80	03155	-	-	175	150	80	60	20	85010	-	
164	99	67	03360	03370	-	175	105	80	60	20	85008	-	
164	99	97	03362	-	-	150	105	80	60	20	85007	-	
						175	105	100	60	20	85009	-	
						175	150	80	60	20	85010	-	
164	129	70	03560	03570	03571	175	150	80	60	20	85010	85030	
164	129	91	03520	-	-	175	150	80	60	20	85010	-	
						175	150	100	60	40	85011	-	
164	129	130	03562	-	-	175	150	100	60	40	85011	-	
210	150	80	03305	-	-	225	175	80	60	20	85012	-	
214	162	71	03640	-	-	225	175	80	60	20	85012	-	
214	162	92	03620	03670	03671	225	175	100	60	40	85013	85033	
214	162	129	03622	-	-	225	175	120	80	40	85014	-	
264	214	91	03750	03770	-	275	225	80	60	20	85015	-	
						275	225	120	100	20	85017	-	
264	214	110	03752	-	-	275	225	120	60	60	85016	-	
						275	225	120	100	20	85017	-	
300	240	100	03900	03905	-	275	225	120	100	20	85017	-	
300	240	150	03902	-	-	275	225	120	100	20	85017	-	
						275	225	160	100	60	85018	-	
310	210	105	03805	-	-	325	275	120	100	20	85019	-	
328	258	92	03884	03885	-	325	275	120	100	20	85019	-	
328	258	151	03894	-	-	325	275	120	100	20	85019	-	
						325	275	160	100	60	85020	-	
100	100	130	02562	-	-	no equivalence							

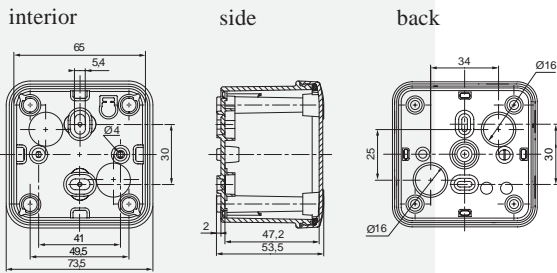
Equivalence table, PC industrial boxes

Previous offer						New offer								
Pilote PC boxes						THALASSA PC boxes								
dimensions (mm)			opaque	trans.	trans. + hinges				body	cover	opaque	trans.	opaque UL	trans. UL
W	H	D				W	H	D						
100	100	55	02565	02561	-	105	105	55	45	10	85105	-	85405	-
105	70	48	03085	03081	-	105	65	55	45	10	85103	-	85403	-
						125	80	65	45	20	85106	85126	85406	85426
130	69	57	03400	03401	-	150	105	80	60	20	85107	85127	85407	85427
164	99	67	03365	03361	-	175	105	80	60	20	85108	85128	85408	85428
164	99	97	03366	-	-	175	105	100	60	40	85109	-	85409	-
						175	150	80	60	20	85110	-	85410	-
164	129	70	03565	03561	-	175	150	80	60	20	85110	85130	85410	85430
164	129	91	03525	03521	-	175	150	100	60	40	85111	85131	85411	85431
164	129	130	03566	-	-	175	150	100	60	40	85111	-	85411	-
214	162	71	03645	03641	-	225	175	80	60	20	85112	85132	85412	85432
214	162	92	03625	03621	-	225	175	100	60	40	85113	85133	85413	85433
214	162	129	03626	03623	-	225	175	120	80	40	85114	85134	85414	85434
264	214	91	03740	-	-	275	225	80	60	20	85115	-	85415	-
264	214	110	03760	03761	-	275	225	120	60	60	85116	85136	85416	85436
300	240	100	03910	03911	03908	275	225	120	100	20	85117	85137	85417	85437
328	258	92	03881	03883	-	325	275	120	100	20	85119	85139	85419	85439
			03880	03883	-	325	275	120	100	20	85119	85139	85419	85439
328	258	151	03891	03893	-	325	275	160	100	60	85120	85140	85420	85440
100	100	130	02566	-	-	no equivalence								
264	214	150	03762	03763	-	no equivalence								
239	129	66	03434	-	-	no equivalence								

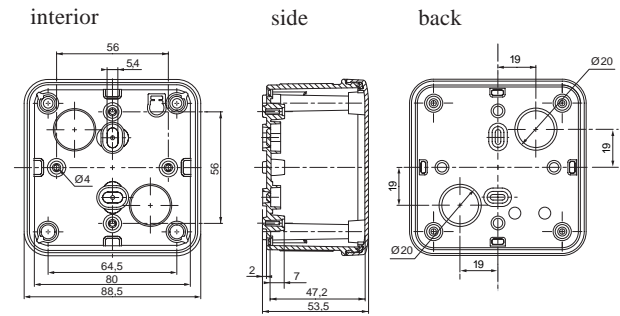
a DXF drawing is available showing previous and new box compatibility.

When ordering in the UK please add the prefix ENN to the reference number

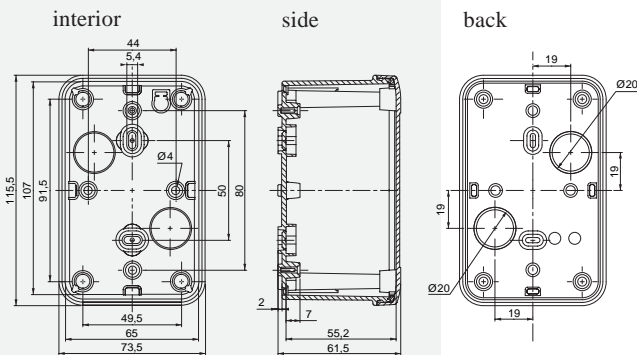
box 65 x 65 x 45 mm



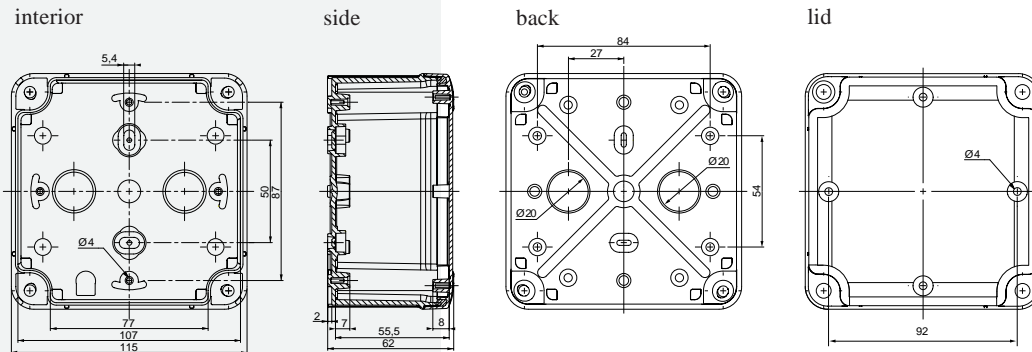
box 80 x 80 x 45 mm



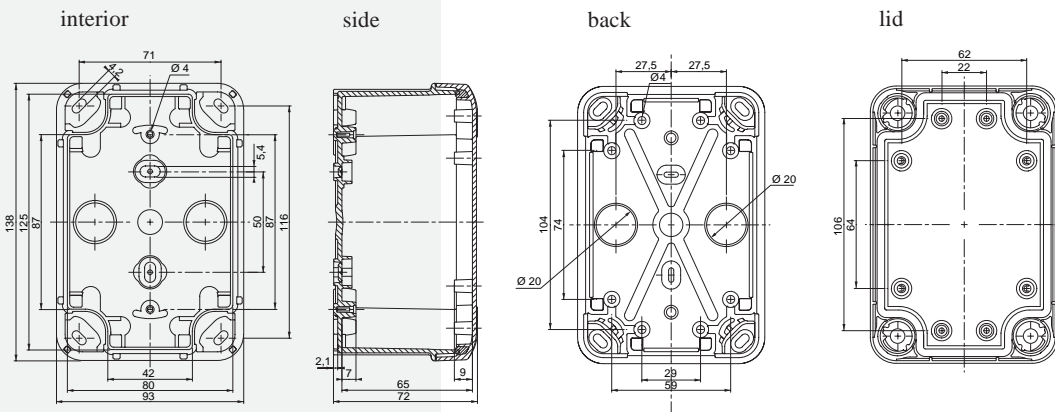
box 105 x 65 x 55 mm



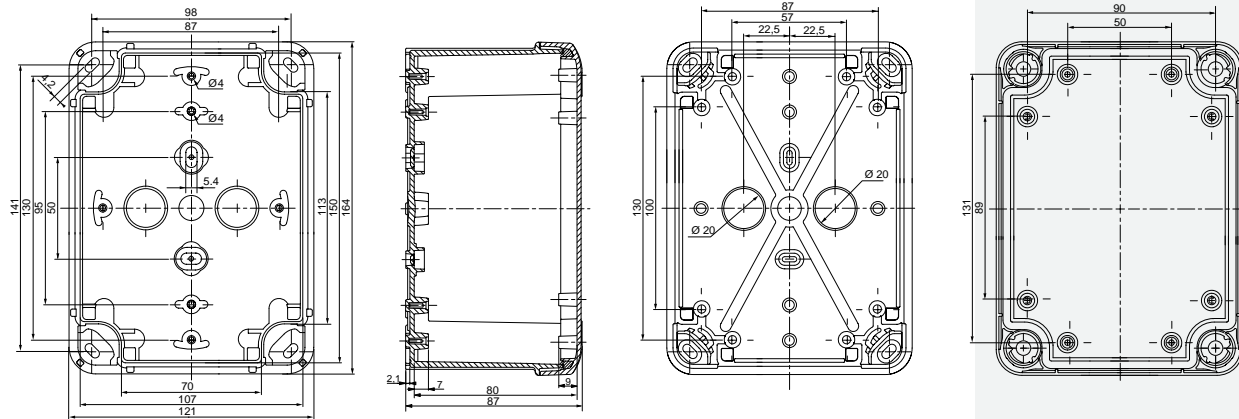
box 105 x 105 x 55 mm



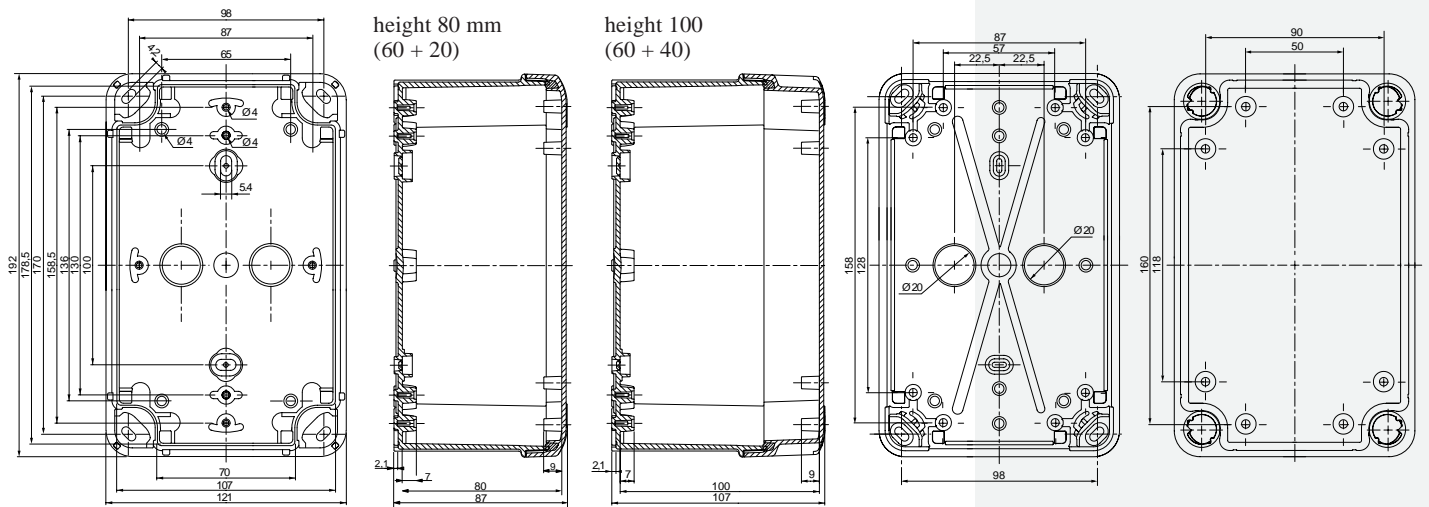
box 125 x 80 x 65 mm



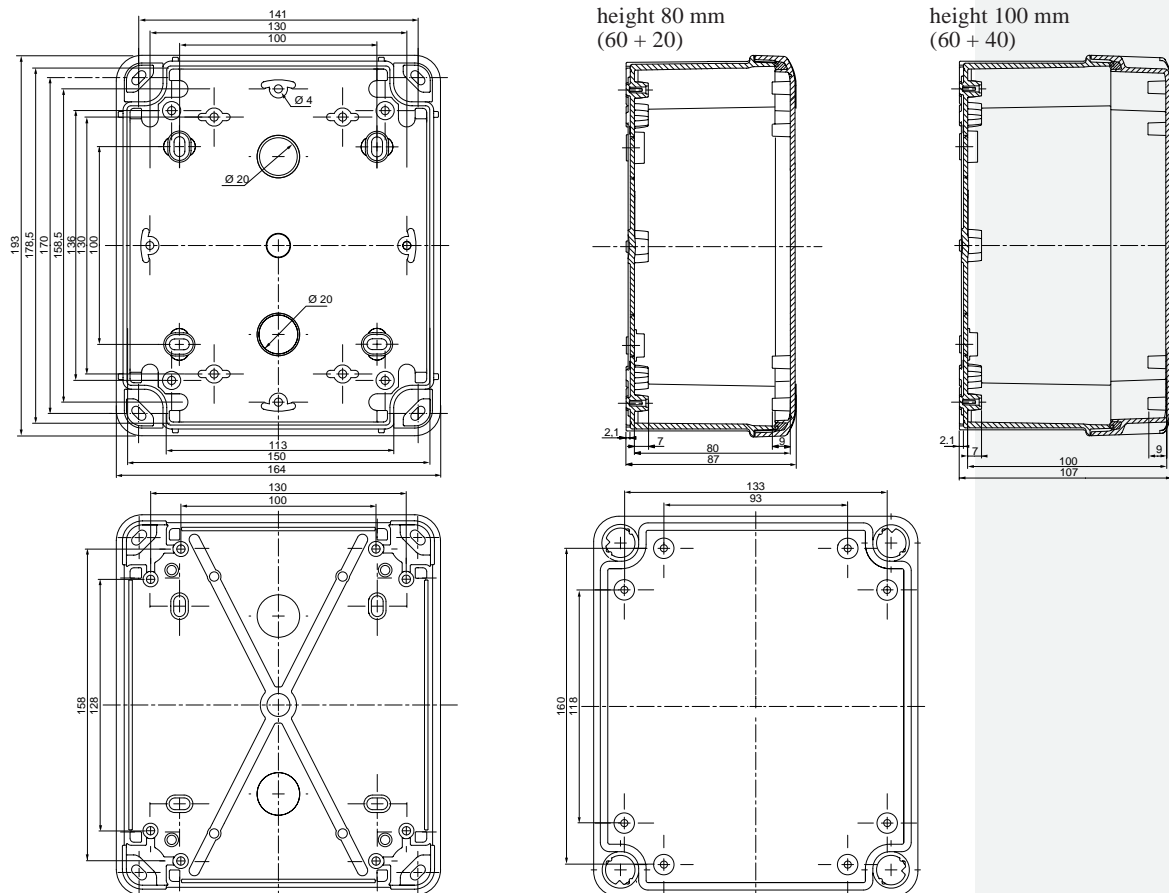
box 150 x 105 x 80 mm



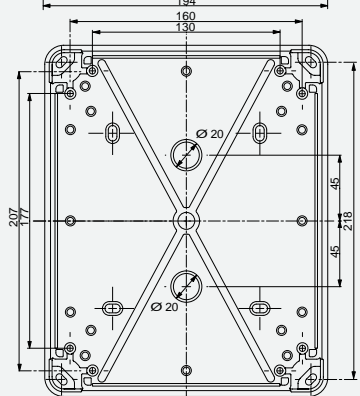
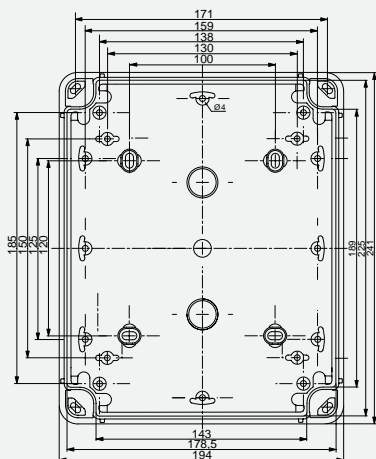
box 175 x 105 x 80 or 100 mm



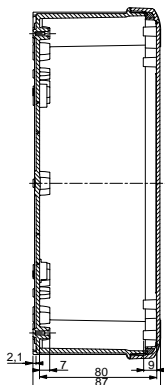
box 175 x 150 x 80 or 100 mm



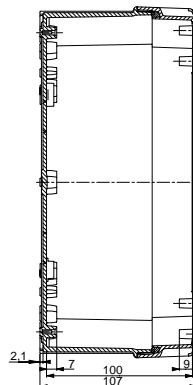
box 225 x 175 x 80, 100 or 120 mm



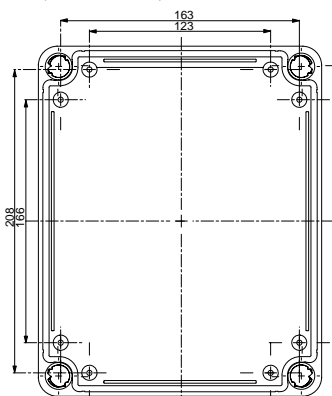
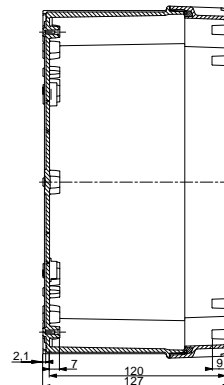
height 80 mm
(60 + 20)



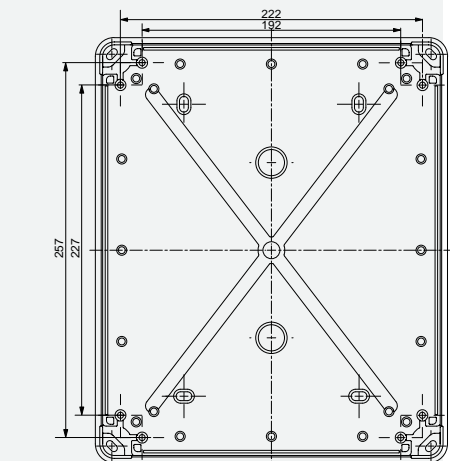
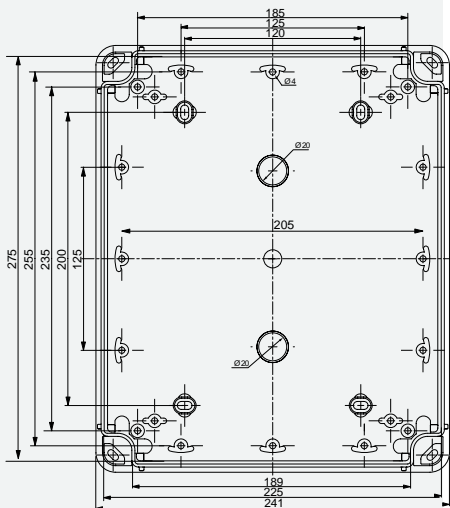
height 100 mm
(60 + 40)



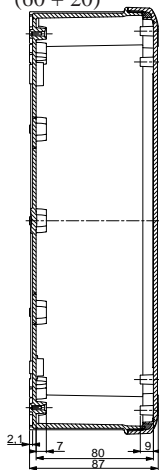
height 120 mm
(80 + 40)



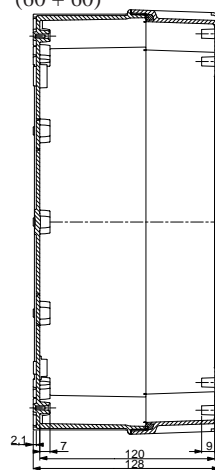
box without entries, smooth faces 275 x 225 x 80, 120 or 160 mm



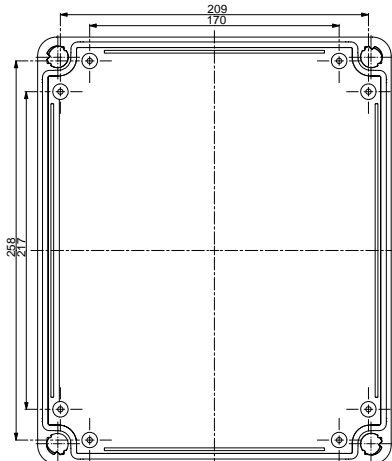
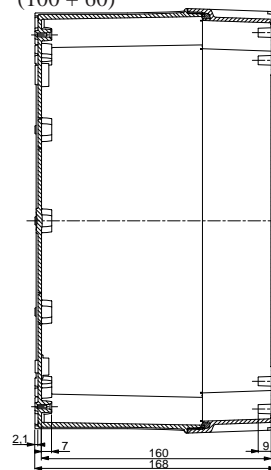
height 80 mm
(60 + 20)



height 120 mm
(60 + 60)



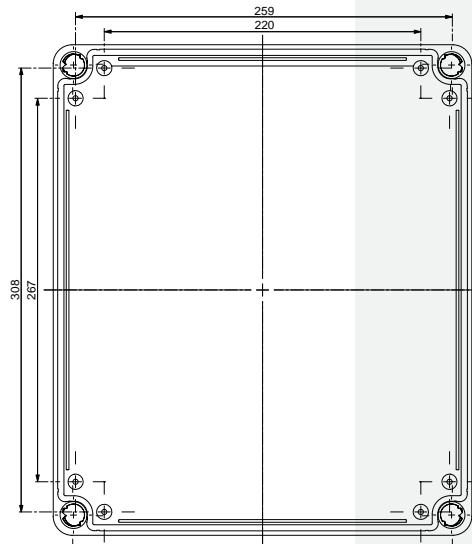
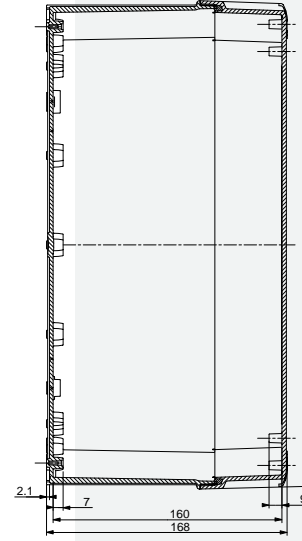
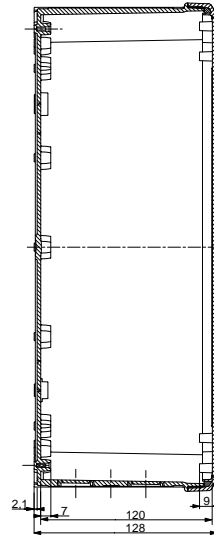
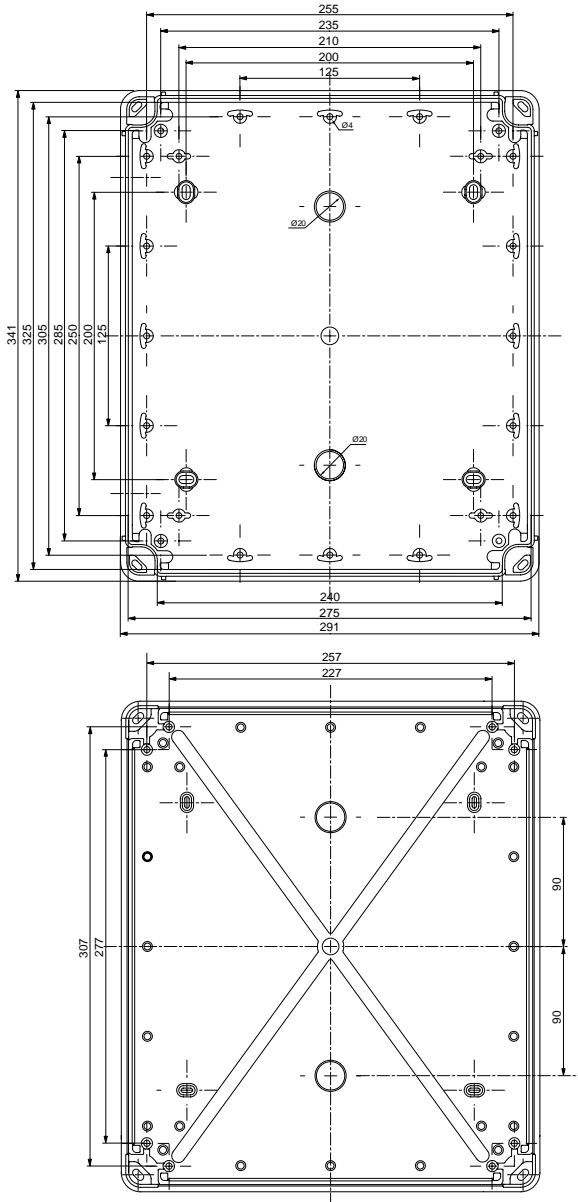
height 160 mm
(100 + 60)



box 325 x 275 x 120 or 160 mm

height 120 mm
(100 + 20)

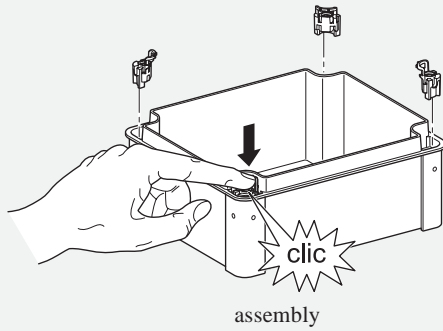
height 160 mm
(100 + 60)



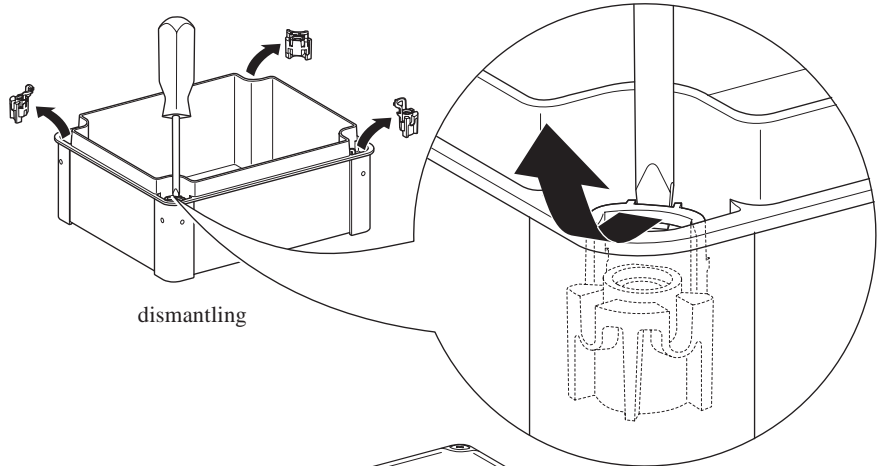
ref. boxes	internal dimensions			box fixing (external markings)				accessory fixing (internal markings)		
	H	W	D	A	B	C	D	E	F	G
85006-85026 85106-85126 85406-85426	125	x 80	x 65	50	-	116	71	87	-	-
85007-85027 85107-85127 85407-85427	150	x 105	x 80	50	-	141	98	130	87	-
85008-85028 85108-85128 85408-85428	175	x 105	x 80	100	-	170	98	158,5	87	-
85009-85029 85109-85129 85409-85429	175	x 105	x 100	100	-	170	98	158,5	87	-
85010-85030 85110-85130 85410-85430	175	x 150	x 80	100	100	170	141	158,5	130	-
85011-85031 85111-85131 85411-85431	175	x 150	x 100	100	100	170	141	158,5	130	-
85012-85032 85112-85132 85182-85192 85412-85432	225	x 175	x 80	120	100	218	171,5	205	158,5	125
85013-85033 85113-85133 85413-85433	225	x 175	x 100	120	100	218	171,5	205	158,5	125
85014-85034 85114-85134 85414-85434	225	x 175	x 120	120	100	218	171,5	205	158,5	125
85015-85035 85115-85135 85415-85435	275	x 225	x 80	200	120	268,5	218,5	255	205	125
85016-85036 85116-85136 85416-85436	275	x 225	x 120	200	120	268,5	218,5	255	205	125
85017-85037 85117-85137 85187-85197 85417-85437	275	x 225	x 120	200	120	268,5	218,5	255	205	125
85018-85038 85118-85138 85418-85438	275	x 225	x 160	200	120	268,5	218,5	255	205	125
85019-85039 85119-85139 85189-85199 85419-85439	325	x 275	x 120	200	200	319	269	305	255	125
85020-85040 85120-85140 85420-85440	325	x 275	x 160	200	200	319	269	305	255	125

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box equipment, cover closing screw adapter

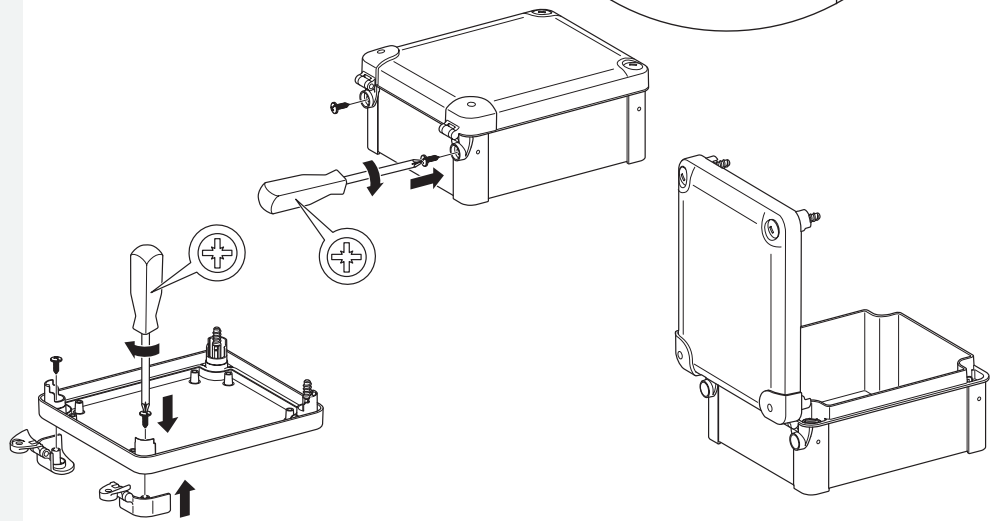
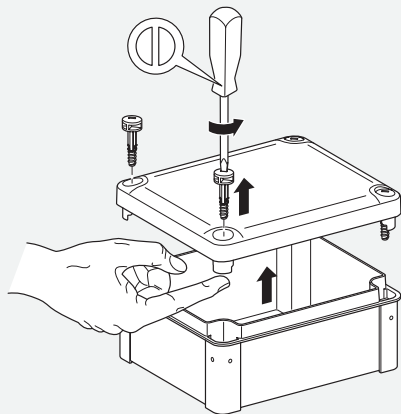


assembly



dismantling

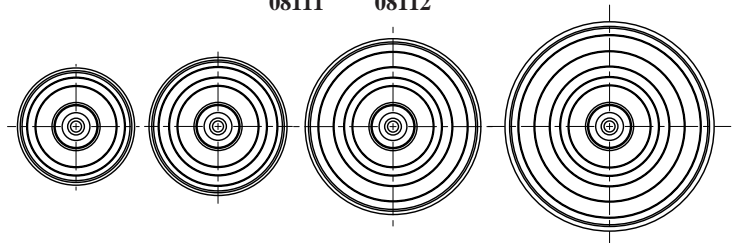
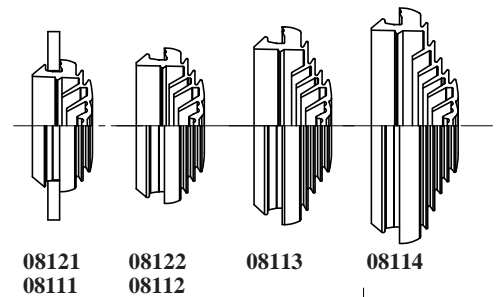
hinges



IP55 entry implementation

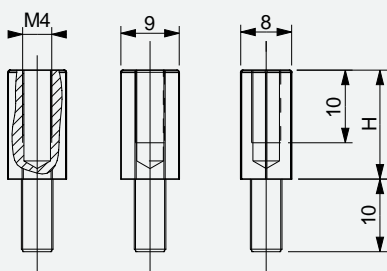
- Introduction of rigid cables (4 to 14 mm):
 - strip wires min. 100 mm,
 - push wires through membrane.
- Introduction of flexible cables (4 to 11.5 mm):
 - pierce and soften membrane with screwdriver 4 to 5.5 mm,
 - pass cable through membrane.
- Introduction of conduits:
 - remove appropriate step: 16, 20, 25, 32 or 40 mm,
 - push conduit.

Ø (mm)	drilling cable/ conduit	conduit and colors	
		white RAL 9010	clear gray RAL 7035
23	4 - 20	08121	08111
29	4 - 25	08122	08112
36	4 - 32	-	08113
44	4 - 40	-	08114



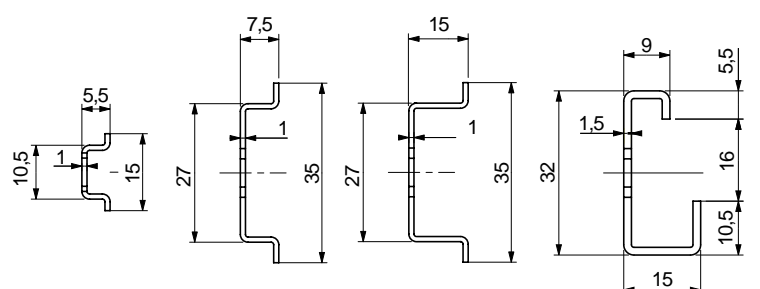
When ordering in the UK please add the prefix ENN to the reference number

spacers



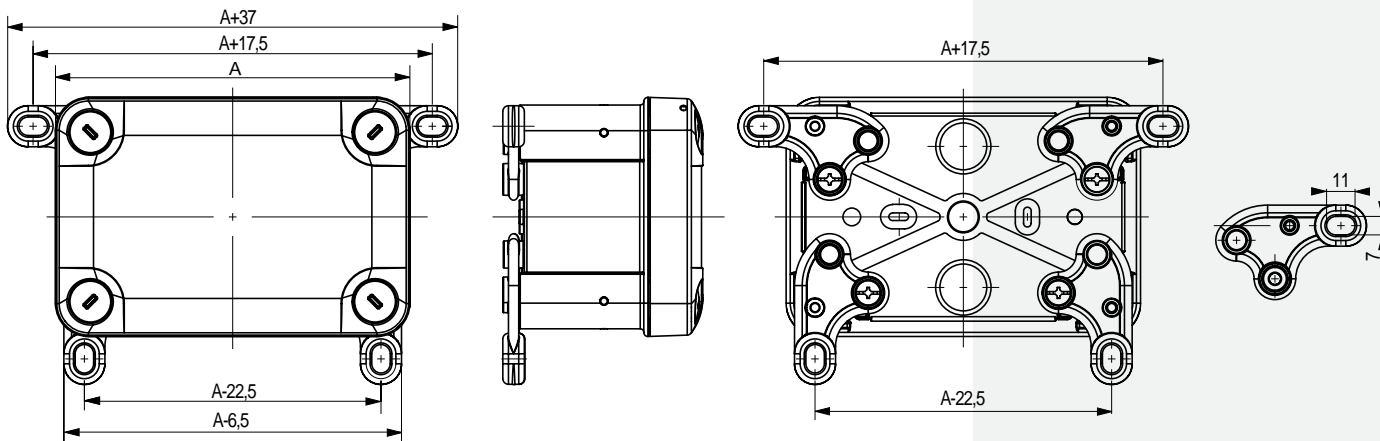
H=15, 20, 30

rails

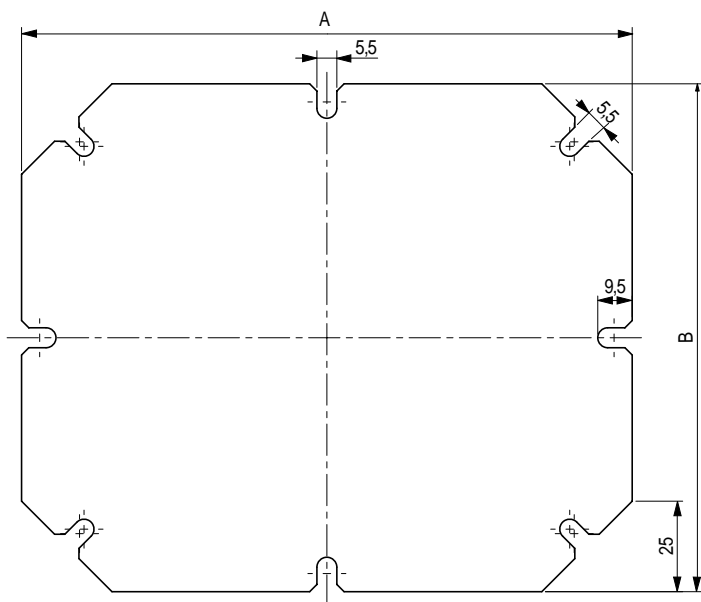


afmetingen THALASSA kunststof industriedozen

bevestigingsbeugels

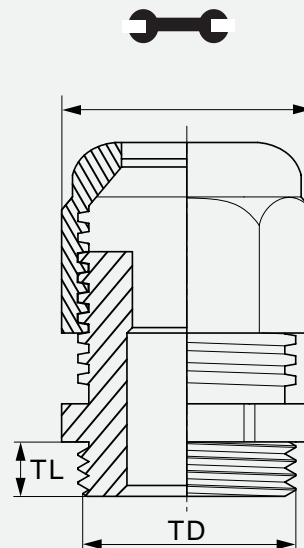


montageplaten




doos		montageplaten		afmetingen (mm)	
H	B	staal	isolerend	A	B
175	150	08001	08011	168,5	140
225	175	08002	08012	215	168,5
275	225	08003	08013	265	215
325	275	08004	08014	315	265

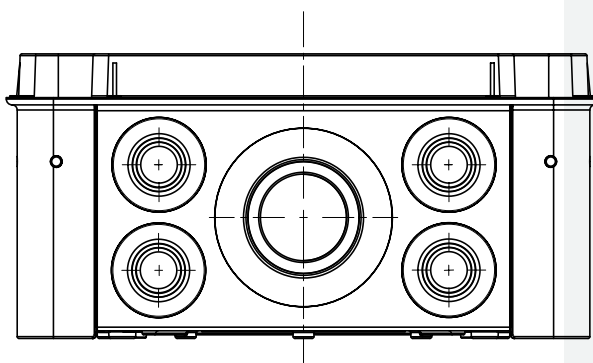
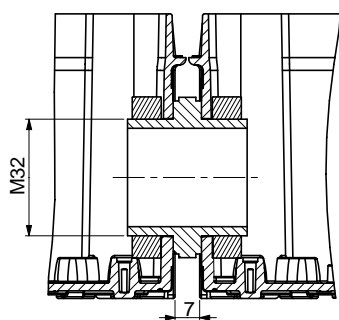
afmetingen



wartel













Ø	type	TD (mm)	TL (mm)		draad
M12	08071	12	6	15	1.5
M16	08072	16	8	19	1.5
M20	08073-08079	20	10	24	1.5
M25	08074	25	8	29	1.5
M32	08075	32	10	36	1.5
M40	08076	40	10	46	1.5

samenbouw kit



product certifications

The product certifications stated are for assemblies fitted with complete cladding. The external mounting of an accessory with an IP rating lower than that of the enclosure downgrades the enclosure IP rating.

	L.C.I.E. NF EN 60529	L.C.I.E. EEXe II	Bureau VERITAS	Det NORSKE VERITAS	GERMA- NISCHER LLOYD	U.L. USA	U.L. Canada	I.M.Q. Italie	TÜV	DEMKO	SEMKO	NEMKO
	CEI 529		France	Oslo								
												
Steel boxes 4400 (IP66)	●											
Plastic and polyester industrial boxes (screw fixed cover)	●											
Polyester enclosures 27000			●			●						
Boîtes plastiques Thalassa				● (2)		● (2)			● (4)	●	●	●
Boîtes plastiques Mureva								● (2)	● (5)			
Spacial 3D enclosures (3)	● (1)	●	●	●	●	●	●	●				
Screw cover enclosures	● (1)		●									
Stainless steel enclosures 54900			●			●	●					
Thalassa enclosures	●		●		●	●	●	●				
Thalassa enclosures			●			●						
Spacial 18500 enclosures			●			●						
Spacial 6000 enclosures	●		●	●		●						
Temperature control accessories (fans, resistance heater, regulators): UL certification												

(1) EN 50298 certification (see opposite page).

(2) On request only.

(3) LROS certification also available.

European enclosure standard: EN 50298

Empty enclosures for low-voltage switchgear and controlgear assemblies - General requirements.

Application

For empty enclosures before incorporation of equipment by the user, in the state as supplied by the manufacturer.

Field of application

Test requirements for enclosures to be used as part of equipment assemblies for voltages lower than 1000 V AC and 1500 V DC.

Classification

Type of material: metal
 Fixing mode: wall mounting
 Use location: exterior
 Degree of protection: IP66 (IP55 for 2-door enclosures)
 Impact resistance: IK10 (IK08 for enclosures with glazed door)

Information provided by the manufacturer

Manufacturer marketing brand (SAREL).
 Mechanical characteristics, materials and conditions of use.
 Conditions of use:
 Ambient air temperature for exterior installations: -25° ... + 40° C.
 Atmospheric conditions for exterior installations: humidity can temporarily reach 100% at temperature 25° C.
 Transport and storage conditions: between -25° ... + 55° C; and for limited periods not exceeding 24 hours: up to +70° C.

Constructive arrangements

Admissible static loads for Spacial 3D, in enclosure: 200 kg/m².
 Admissible static loads for Spacial 3D, on door: 50 kg/m².

Protection circuit

Metal enclosures assure electrical continuity.

Standard EN 50298 type tests

Static loads: test at 1.25 x maximum admissible load for 1 hour.
 Hoisting: Spacial 3D enclosure not concerned (wall mounting).
 Axial loads of metal inserts: 500 N for 10 seconds for M8 inserts.
 IK code: test according to standard EN 50102 with pendulum impact tester. After testing, enclosure IP code to be retained.
 IP code: test according to standard EN 60529. Degree of protection against penetration of solid bodies, against penetration of water and against access to dangerous parts.
 Thermal stability: temperature 70° C: 7 days.
 Resistance to heat: (6).
 Resistance to abnormal heat and to fire: (6)
 Dielectric strength: (6)
 Protection circuit continuity: resistance not to exceed 0.1 ohm.
 Weather resistance: cycle of 500 hours (cycle: rain 5 minutes + UV lamp 25 minutes).
 Corrosion resistance, for exterior enclosures:
 - 12 cycles of 24 hours humid heat test at 40° C and relative humidity 95 %,
 - and 14 cycles of 24 hours salt mist test at 35° C.

Our empty enclosures are EC marked as the Low Voltage Directive (DBT). It is the responsibility of final manufacturer of the equipment to respect regulations in force.

(6) These characteristics do not concern the Spacial 3D enclosure (information required for plastics enclosures).

permissible loads on chassis, plinths and doors of enclosures

references	permissible load (kg)			
	on plain chassis	on plinth	on door (1)	on bracket vertic. horiz.
Spacial 3D enclosures				
83015 to 83021	60	135	50	350 180
83023 to 83027	90	135	50	350 180
83028 to 83057	135	135	50	350 180
83054 to 83061	150	135	50	350 180
83063 to 83069	180	135	50	350 180
Thalassa enclosures				
59318	60	45	20	42
59323	90	45	15	70
59327/59727	90	45	15	84
59336/59736	100	45	10	122
59357/59757	135	45	10	168
59361	180	15	5	280
Small dimension ,material enclosures				
59315				21
59316				21
Spacial 18500 and Spacial 6000 enclosures				
	300 kg/m ² (500 kg max.)	1000	55 (single/double door)	

(1) On sheet steel door thickness 2 mm: 60 kg permissible maximum load.

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characteristics of plastics materials

mechanical, electrical, physical and fire resistance characteristics

Plastics materials generally used for manufacture of our products:

- ABS,
- polycarbonate,
- PVC (polyvinyl chloride),
- bayblend,
- polyester,
- altuglas,
- polypropylene,
- polystyrene,
- polyamide 6 and 12,
- EVA entry material

characteristics	standards	units	ABS	polycarbonate	PVC	bayblend	polyester	EVA entry
Mechanical properties								
tensile resistance	NFT51034-ISO/R527	MPa	44	>65	45	35	85	5
tensile strain	NFT51034-ISO/R527	%	12	>110	120 to 150	40	–	600
sagging resistance	NFT51034	MPa	2300	2300	2200	1950	13000	1200
impact resistance	NFT51035-ISO/R179	KJm ²	125	no breakage	25	no breakage	60	no breakage
notching resistance	NFT51035-ISO/R179	KJ/m ²	19	25	20	25	50	–
Electrical properties								
stresspoint	NFC26220	–	–	250-300	>600	>550	>600	–
superficial stress	NFC	Ohm	10 ¹⁵	>10 ¹⁵	>10 ¹³	>10 ¹⁴	≥10 ¹²	>10 ¹³
dielectric strength	NFC26225	Kv/mm	16,5	>30	30	24	18-20	20
specific resistivity	NFC	Ohm x cm	10 ¹⁵	>10 ¹⁶	≥10 ¹⁵	10 ¹⁶	≥10 ¹²	>10 ¹⁶
Physical properties								
softening temperature (Vicat B)	NFT51021-ISO/306	°C	95	145-150	79-80	115	–	80
temperature resistance	–	°C	-40...+90	-50...+125	-20...+65	-35...+90	-50...+150	-40...+120 (1)
water absorption	NFT51002 ISO/R62	%	0,2 - 0,45	0.15	<0.1	0.2	0.2	–
specific weight	NFT51063 ISO/R1183	Kg/dm ³	1,04	1.21	1.4	1.12	1.85	0.3 in 24h
Fire resistance								
oxygen index	NFT51071	%	19	26	45-50	22	24.4	18
hot wire test, 2 mm	NFC20455	°C	650	750	960	750	960	750° (1.5 mm)
hot wire test, 3 mm	NFC20455	°C	650	850	960	750	960	NA
epiradiant trial		°C		140	73	108	600	80

(1) Altuglass: -20 ... +80°C
PA 12: -60 ... +85°C

characteristics	standards	units	altuglas	polypropylene	polystyrene	polyamide 6	polyamide 12
Mechanical properties							
tensile resistance	NFT51034-ISO/R527	MPa	30	35	24	40	30
tensile strain	NFT51034-ISO/R527	%	5	400	36	200	300
sagging resistance	NFT51034	MPa	1400	1300	2100	820	500
impact resistance	NFT51035-ISO/R179	KJ/m ²	20	20	63	no breakage	no breakage
notching resistance	NFT51035-ISO/R179	KJ/m ²	3	5	50	31.2	15
Electrical properties							
stresspoint	NFC26220	–	–	–	KB175	KB175	KB180
superficial stress	NFC	Ohm	≥10 ¹⁴	–	>10 ¹³	10 ¹²	5.10 ¹⁰
dielectric strength	NFC26225	Kv/mm	13-15	20	≤40	23	55
specific resistivity	NFC	Ohm x cm	>10 ¹⁵	>10 ¹⁶	>10 ¹⁵	10 ¹¹	3 x 10 ¹¹
Physical properties							
softening temperature (Vicat B)	NFT51021-ISO/306	°C	120-122	75 (vicat A)	79	230	140
temperature resistance	–	°C	-20...+80	-10...+80	85	-20...+100	-50...+125
water absorption	NFT51002 ISO/R62	%	<0.5	0.1 in 24 H	0.1 in 24 H	1.6	1.5
specific weight	NFT51063 ISO/R1183	Kg/dm ³	1.18	0.91	1.06	1.14	1.03
Fire resistance							
oxygen index	NFT51071	%	18.5	18	18	24	22
hot wire test, 2 mm	NFC20455	°C		650	650/960	750	650
hot wire test, 3 mm	NFC20455	°C	960	650	650/960	850	650
epiradiant trial		°C	115	80	75	200	130

characteristics of plastics materials

resistance to chemical agents

Plastics materials generally used for manufacture of our products:

- ABS,
- polycarbonate,
- PVC (polyvinyl chloride),
- bayblend,
- polyester,
- altuglas,
- polypropylene,
- polystyrene,
- polyamide 6 and 12,
- EVA entry material

At ambient temperature:

- + = resistant
- O = limited resistance
- = not resistant
- sat = saturation

concentration maxi %	ABS	polycarbonate	PVC	bayblend	polyester	altuglas	polypropylene	polystyrene	polyamide 6	polyamide 12	EVA entry
Acetone	-	-	-	-	-	O	100 +	-	100 +	+	+
Hydrochloric acid	15 +	10 +	30 +	20 +	30 +	sat +	10 +		10 -	10 +	10 +
Citric acid		10 +	sat +	10 +	100 +	sat +	sat +	+	10 O	+	10 +
Acide lactique	80 +	10 +	90 +	10 -	100 +	20	90 +	90 -	50 O +	+	sat +
Lactic acid	30 +	10 + 100 -	50 +	10 +	20 + +	10 + 100 -	25/ 50		2 O 10 -	-	50 +
Phosphoric acid	85 +	100 +	sat +	+	100 + 95 -	10 +	sat +	10 -	2 O	50 +	+
Sulphuric acid	50 +	50 + 100 -	96 +	30 +	70 +	30 +	96 +		3 -	10 +	96 +
Alcohol	O	96 +	96 +	-	50 O	50 O	96 +	+	96 O	96 +	+
Pure aniline	O	-	100 -	-	O	-	100 +		100 O	100 O	
Mineral bases		O	10 +	-	100 +	10 +	50 +	50	10 +	50 O	
Benzene	+	- 100	-	+	-	O 100	O	- 100	+	+	-
Liquid bromine		- 100	-	-		100	-		100	-	-
Liquid chlorine		-	100 -	-	sat +	-	100 -		100 O	-	50 +
Sea water	+	100 +	100 +	+	100 +	100 +	-	100 +		100 +	sat +
Petrol	+	100 +	100 O	-	100 +	100 O	-	-	100 +	+	-
Ether	-	100 O	100 -	-	100 O	+			100 +	100 +	-
Hexane	O	+	O	O	-		100 +		100 +	100 +	-
Oils and greases	+	100 +	100 +	O	100 +	100 O	100 +	-	+	100 +	-
Aromatic hydrocarbons	O	-	-	-	-	+	-	-	-	+	-
Fuel oil	O	100 O	100 +	-	100 +	100 -	100 +		100 +	100 +	-
Naphthalene			100 O	-	100 +	100 -	100 +		100 +	100 +	
Nitrobenzene	-	-	100 -	-		-	100 O		-	O	-
Phenol	-	-	sat O	-	20 O	-	sat +		-	-	10 O
Mineral salts		+	+	+	+	+	+			+	+
Iodine solution		O	-	+		-			+		
Toluene	-	-	100 -	-	+	O	100 O	-	100 +	100 +	-
Trichlorethylene	-	-	100 -	-	-	-	100 O	-	100 -	100 O	-
Urea		sat +	sat +	+			sat +		10 +	sat +	sat O

For other chemical agents, please consult us.

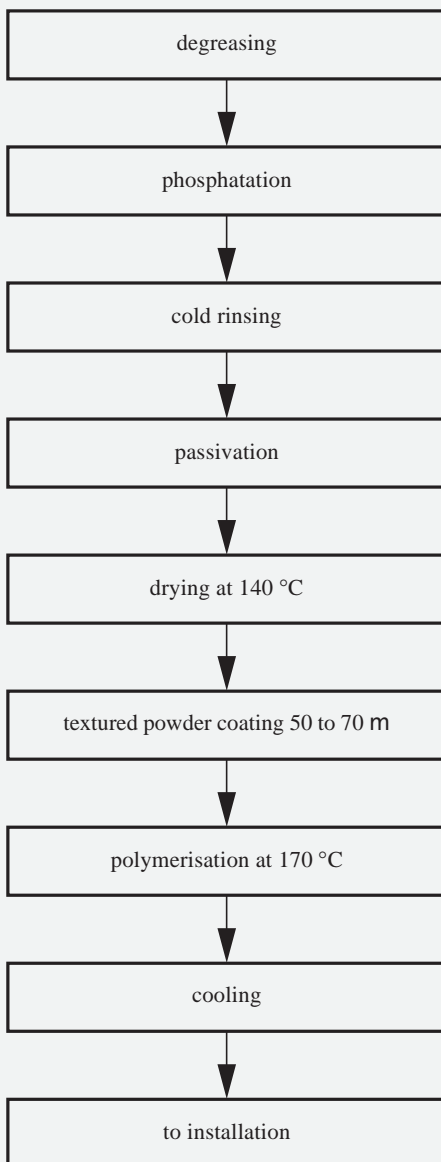
The above information is given in good faith from reliable sources. However, it is given for guidance only and it remains the responsibility of the user to ensure that the products are suitable for a particular application and to verify any information.

polyester base coating properties

product type

Thermosetting polyester resin based powder coating, modified by epoxy resins and designed for decoration but also for protection against corrosion. The performance of these coatings is superior to traditional epoxy powders in terms of colour stability, high temperature behaviour and weather resistance. Colour grey RAL 7032, textured appearance.

manufacturing process



mechanical properties

Test conditions: 0.8 mm thickness sheet steel samples. Cold degreasing using trichlorethylene. Film thickness: 60 microns.

Bonding (scratching and adhesive tape tests)	(NFT 30-038)	class 0
Ericksen stamping	(NFT 30-019)	>8 mm
Impact resistance	(NFT 30-017)	>1 kg/50 cm
Bending around cylindrical mandrel	(NFT 30-040)	3 mm
Bending around conical mandrel	(ASTM D 522)	no cracking
Persoz hardness	(NFT 30-016)	300-320 sec.

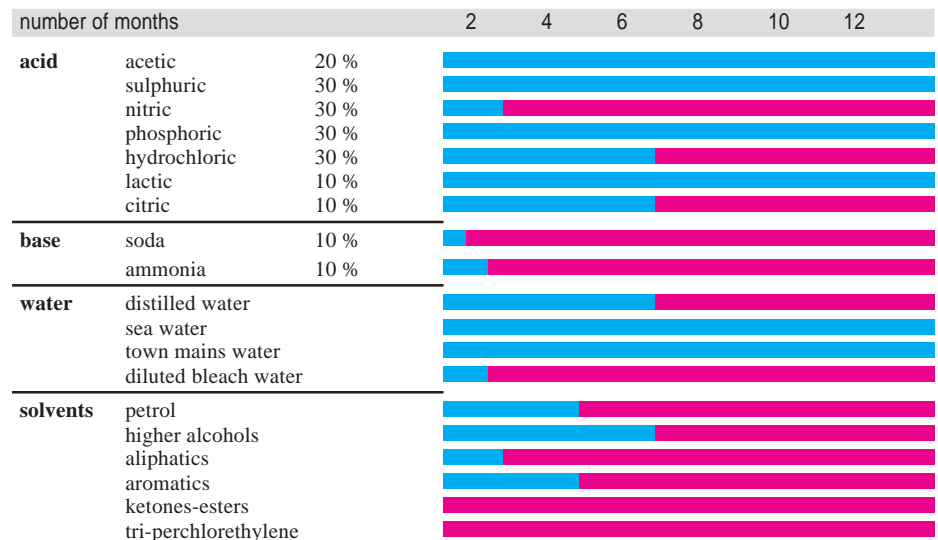
physical properties

Temperature resistance: - 40°C and 100 hours at +150°C (colour: white). Gloss retention: good.

chemical properties

Tests carried out at ambient temperature on phosphated samples coated with a 150 to 200 micron film:

■ film intact
 ■ film attacked (blistering, yellowing, loss of gloss)



corrosion resistance

Salt mist (NFX 41-002) from 200 to 1500 hours depending on the primer and surface treatment (solvent degreasing, sand blasting, phosphatation, etc.).

nuclear decontamination

Standard NFT 30.901:
 - class 1-SC = 5 % for contamination by fission products,
 - class 4-SC = 99 % for contamination by plutonium.

accelerated ageing

Test to QUV PANELS (ASTM G 53):
 4 hours UV cycle at 50 °C + 4 hours condensation at 40 °C :
 - 50 % gloss remaining at 60 °C after 100 to 250 hours,
 - colour variation after 100 to 250 hours
 Δ E = 2-4 NBS.

fire behaviour

Class M 1 (self-extinguishing material).
 Class M 0 (for coating on metal base)

definition of degrees of protection

■ Degrees of protection provided by the enclosures housing low and medium voltage equipment (up to 1000 V ~ and 1500 V =) are defined by the French standards NF EN 60 529 (IP) and NF EN 50 102 (IK).

■ The degree of protection is indicated by the IP code, which comprises the letters IP followed by two characteristic numerals. IP = code indicating degree of protection provided by the enclosure against access to dangerous parts, penetration of solid foreign bodies and penetration of liquids.

■ The degree of protection against external mechanical impact is indicated by the IK code, which comprises the letters IK followed by two characteristic numerals. IK = code indicating degree of protection provided by the enclosure against external mechanical impact.

IP		IK	
first characteristic numeral	second characteristic numeral	mechanical protection	
protection against solid bodies	protection against liquids		
0	0	0	0
			No protection
1	1	01	Impact energy 0.150 joule
2	2	02	Impact energy 0.200 joule
3	3	03	Impact energy 0.350 joules
4	4	04	Impact energy 0.500 joules
5	5	05	Impact energy 0.700 joules
6	6	06	Impact energy 1.00 joules
	7	07	Impact energy 2.00 joules
	8	08	Impact energy 5.00 joules
		09	Impact energy 10.00 joules
		10	Impact energy 20.00 joules

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Jl. RA Kartini kav. 26
12430 JAKARTA
Tel: (62) 21 750 44 06
Fax: (62) 21 750 43 97/(62) 21 750 45 25

JAPAN

TOSHIBA SCHNEIDER ELECTRIC Ltd
SK Bldg, Sendagaya.3/F 4-14-4
SENDAGAYA SHIBUYA-KU
TOKYO 151-0051
Tel: (81) 3 54 74 44 53
Fax: (81) 3 54 74 44 70

TOSHIBA SCHNEIDER ELECTRIC Ltd
5-27-23 Minami Suita - Suita Shi
OSAKA 564-0043
Tel: (81) 6 63 85 57 71
Fax: (81) 6 63 85 69 44

TOSHIBA SCHNEIDER ELECTRIC Ltd
Building Minami-kan 7F
4-27-20 NAGOYA MITSUI
Meieki Nakamura-ku
Tel: (81) 52 587 3570
Fax: (81) 52 587 3572

MALAYSIA

SCHNEIDER ELECTRIC Industrie (M)
Sdn Bhd N°11
Jalan U1/19, Seksyen U1
Hicom - Glenmarie Industrial Park
40150 SHAH ALAM
Selangor Darul Ehsan
Tel : (60) 3-78 83 63 33
Fax : (60) 3-78 83 60 00

52200 KUALA LUMPUR
Tel: (603) 627 274 30
Fax: (603) 627 57875

SINGAPORE

SCHNEIDER ELECTRIC SINGAP. Pte Ltd.
10 Ang Mo Kio Street 65
#65
17/20 Tech Point
569059 SINGAPORE
Tel: (65)64 84 78 77
Fax: (65)64 84 78 00

Headquarters

SAREL SA

52, route de Phalsbourg
BP 106
F-67269 SARRE-UNION CEDEX
Tel: 33 3 88 01 62 00
Fax: 33 3 88 01 63 29

Europe

AUSTRIA

SAREL Vertriebsges. m.b.H.
Josef-Strebl-Gasse 10
2345 BRUNN am GEBIRGE
Tel: (43) 2236 34603.0
Fax: (43) 2236 34607
office@sarel.at
www.sarel.at

BELGIUM

SAREL N.V.
Broekstraat 4
3078 KORTENBERG
Tel: (32) 2 758 00 20
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www.sarel.be

CZECH REPUBLIC

SCHNEIDER ELECTRIC CZ, s.r.o.
Mlynská, 70
602 00 BRNO
Tel: (420) 543 42 55 55
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DENMARK

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P.O. Box 7
1001 COPENHAGEN K
Tel: (45) 33 14 14 14
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ESTONIA

SCHNEIDER ELECTRIC Esti AS
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12618 TALLINN
Tel: (372) 60 09 700
Fax : (372) 65 06 702

FINLAND

SCHNEIDER ELECTRIC OY
Sinimäentie 14
02630 ESPOO
Tel: (358) 9 52 70 00
Fax: (358) 9 52 70 03 76

FRANCE

SAREL S.A.
52, rue de Phalsbourg
BP 106
67269 SARRE-UNION CEDEX
Tel: (33) 3 88 01 62 00
Fax: (33) 3 88 00 18 91
fr-sarelcom@sarel.fr
www.sarel.fr

GERMANY

SAREL GmbH
Gothaer Straße 29
40880 RATINGEN
Tel : 49 (0) 2102 404 95 50
Fax : 49 (0) 2102 404 95 51
www.sarel.de

ICELAND

S. GUDJÓNSSON ehf.
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Box 164
202 KÓPAVOGUR
Tel: (354) 520 45 00
Fax: (354) 520 45 01

IRELAND

SCHNEIDER ELECTRIC IRELAND
Head Office
BlockA. Maynooth Business Campus
Maynooth
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Fax: (353) 16 01 22 01
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www.schneider-electric.ie

ITALY

SCHNEIDER ELECTRIC S.p.a.
Viale Colleoni, 7
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20041 AGRATE BRIANZA (MILAN)
Tel: (39) 039 655 81 11
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LATVIA

SCHNEIDER ELECTRIC LATVIA
A. Deglava 60
LV 1035 RIGA
Tel : (371) 75 49 747
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NETHERLANDS

SAREL B.V.
Pasteurweg 3
Postbus 206
7740 AE COEVORDEN
Tel: (31) 524 59 78 00
Fax: (31) 524 51 66 58
info@sarel.nl
www.sarel.nl

NORWAY

SCHNEIDER ELECTRIC NORGE A/S
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www.schneider-electric.no

POLAND

SCHNEIDER ELECTRIC POLSKA Sp.z o.o.
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03-878 Warszawa
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electric.com
www.schneider-electric.pl

RUSSIA

SCHNEIDER RUSSIA
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Tel: (7) 095 797 40 00
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SLOVAKIA

SCHNEIDER ELECTRIC SLOVAKIA spol s.r.o.
Borekova 10
82106 BRATISLAVA
Tel: (421) 245 52 40 10
Fax: (421) 245 52 40 00

SWEDEN

SCHNEIDER ELECTRIC AB
Djupdalsvägen, 17-19
Box 954
19129 SOLLENTUNA
Tel: (46) 8 623 84 00
Fax: (46) 8 623 84 85

SWITZERLAND

SAREL AG
Bärchistrasse 129
Gewerbe Seeben
8460 MARTHALEN
Tel: (41) 52 305 49 49
Fax: (41) 52 305 49 59
sarel@sarel.ch
www.sarel.ch

UKRAINE

SCHNEIDER ELECTRIC UKRAINE SARL
10b Naberezhno-Khreschatytska
04070 KIEV
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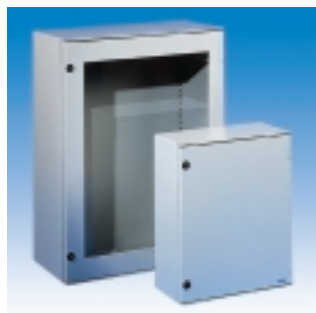
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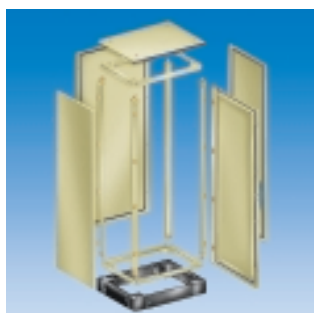
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- stainless steel
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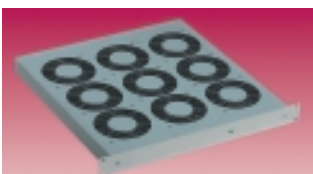


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