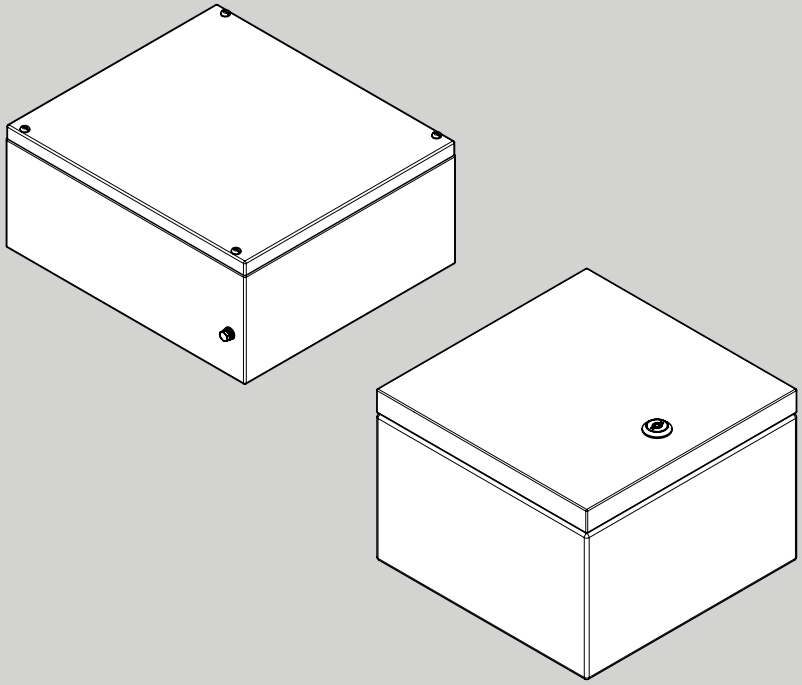
ZENITH-S
EMPTY ENCLOSURES

SCAME electrical solutions

EN **Installation, use and maintenance**

InfoTECH

ITALY	WORLDWIDE
Numero Verde 800-018009	ScameOnLine www.scame.com infotech@scame.com



II 2 GD

ENGLISH

EN

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THIS DOCUMENT MUST BE READ CAREFULLY BEFORE INSTALLATION

These instructions are intended for: expert electricians or appropriately trained personnel.

1. INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS FOR SAFE USE

1.1 SAFETY RULES

Enclosures type ZENITH-S made in stainless steel are designed as Group II Category 2 equipment and is suitable for use for fixed installation in areas with explosion hazard designated Zone 1 / Zone 2 and Zones 21 / Zone 22.
These operating instructions must be kept in safe place for later consultation. During operation, do not leave this instruction manual or other objects in the enclosure.
The enclosures are designed to withstand an impact of 7 J, and to be used in normal conditions of vibration. They are not designed for use in areas subject to intentional or extreme conditions of vibration.
In the event of incorrect assembly, the type of protection will no longer be assured.
Only genuine SCAME spare parts may be used for replacement.
No modifications are allowed to the enclosures that are not expressly mentioned in this instruction manual.

⚠ **Whenever work is done on the enclosure, be sure to observe the national safety and accident prevention regulations and the safety instruction given in this instruction manual.**

1.2 CONFORMITY TO STANDARDS

Enclosure type ZENITH-S are designed for:

- EN IEC 60079-0:2018
- EN 60079-7:2015
- EN IEC 60079-7:2015/A1:2018
- EN 60079-31:2014

- IEC 60079-0:2017
- IEC 60079-7:2015
- IEC 60079-31:2013

They are manufactured and tested in accordance with ATEX directive 2014/34/EU, and IECEx Scheme.

1.3 ENCLOSURES DIMENSIONS TYPE 645.B

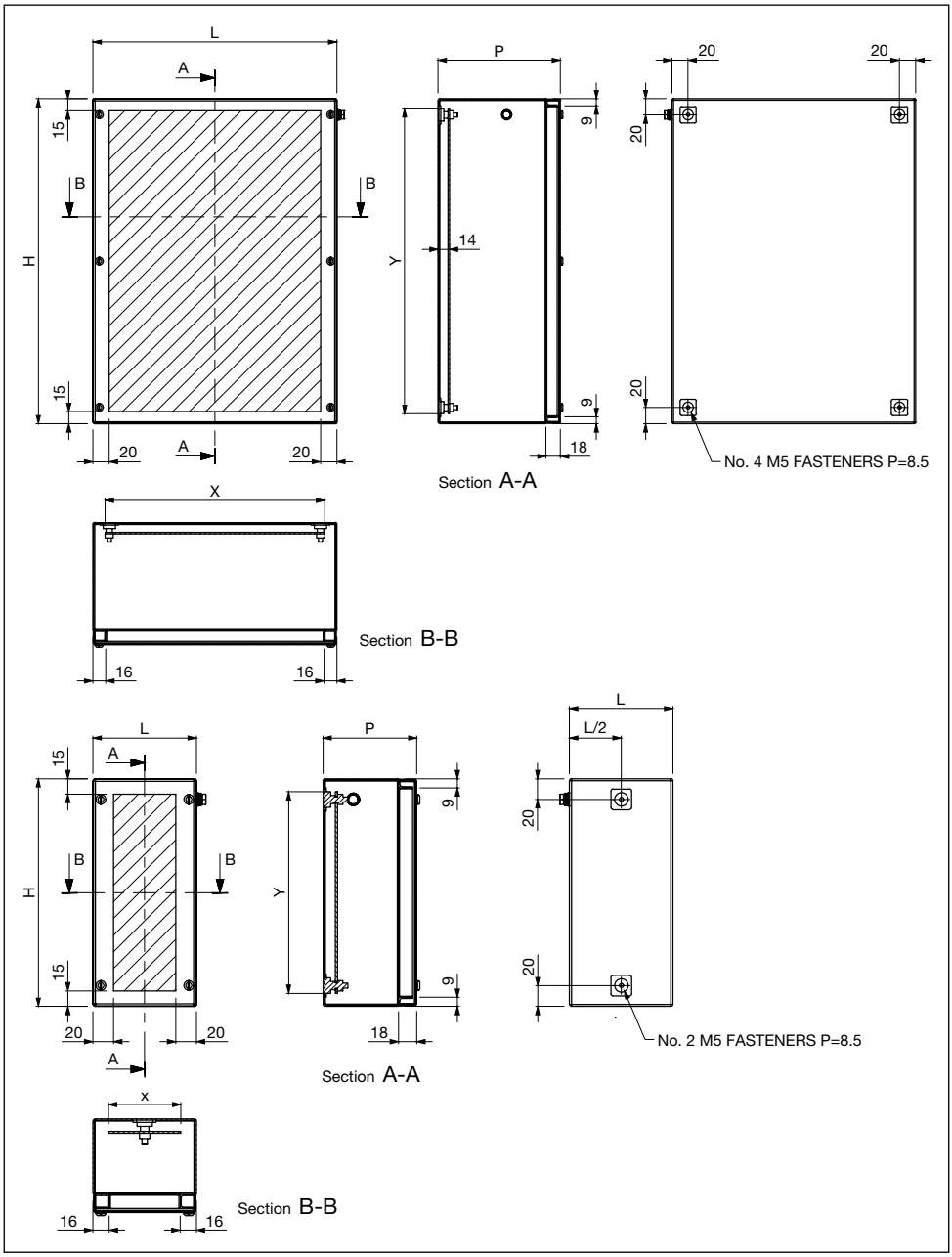


Figure 1 – Technical drawing of the enclosure

Type 645.B Code (*)	Enclosure size LxHxP [mm]	Body Thickness	Lid Thickness	Screws Numbers	Screw type	Nm
645.Bxy01	90X90X75	12/10	12/10	4	M5x16	2.5
645.Bxy02	100x100x90	12/10	12/10	4	M5x16	2.5
645.Bxy03	100x160x90	12/10	12/10	4	M5x16	2.5
645.Bxy04	100x220x90	12/10	12/10	4	M5x16	2.5
645.Bxy05	150x160x120	12/10	12/10	4	M5x16	2.5
645.Bxy06	150x220x120	12/10	12/10	4	M5x16	2.5
645.Bxy07	150x280x120	12/10	12/10	4	M5x16	2.5
645.Bxy08	200x220x120	12/10	12/10	4	M5x16	2.5
645.Bxy09	200x280x120	12/10	12/10	4	M5x16	2.5
645.Bxy10	250x280x120	12/10	12/10	4	M5x16	2.5
645.Bxy11	250x340x150	12/10	12/10	4	M5x16	2.5
645.Bxy12	300x340x150	12/10	12/10	4	M5x16	2.5
645.Bxy13	300x400x150	12/10	12/10	6	M5x16	2.5
645.Bxy14	400x400x150	12/10	12/10	6	M5x16	2.5

Table 1 - External dimensions

(*) The code is completed as following:

x = enclosure material: **4** = AISI304L
6 = AISI316L

y = gasket material: **S** = Silicon (for service temperature -50°C to +100°C)

The root part number could have an optional suffix not influential on the equipment and the type of protection.

Note: the dimension indicated in the above table, can be change maximum by 10%.

1.4 ENCLOSURES DIMENSIONS TYPE 645.C

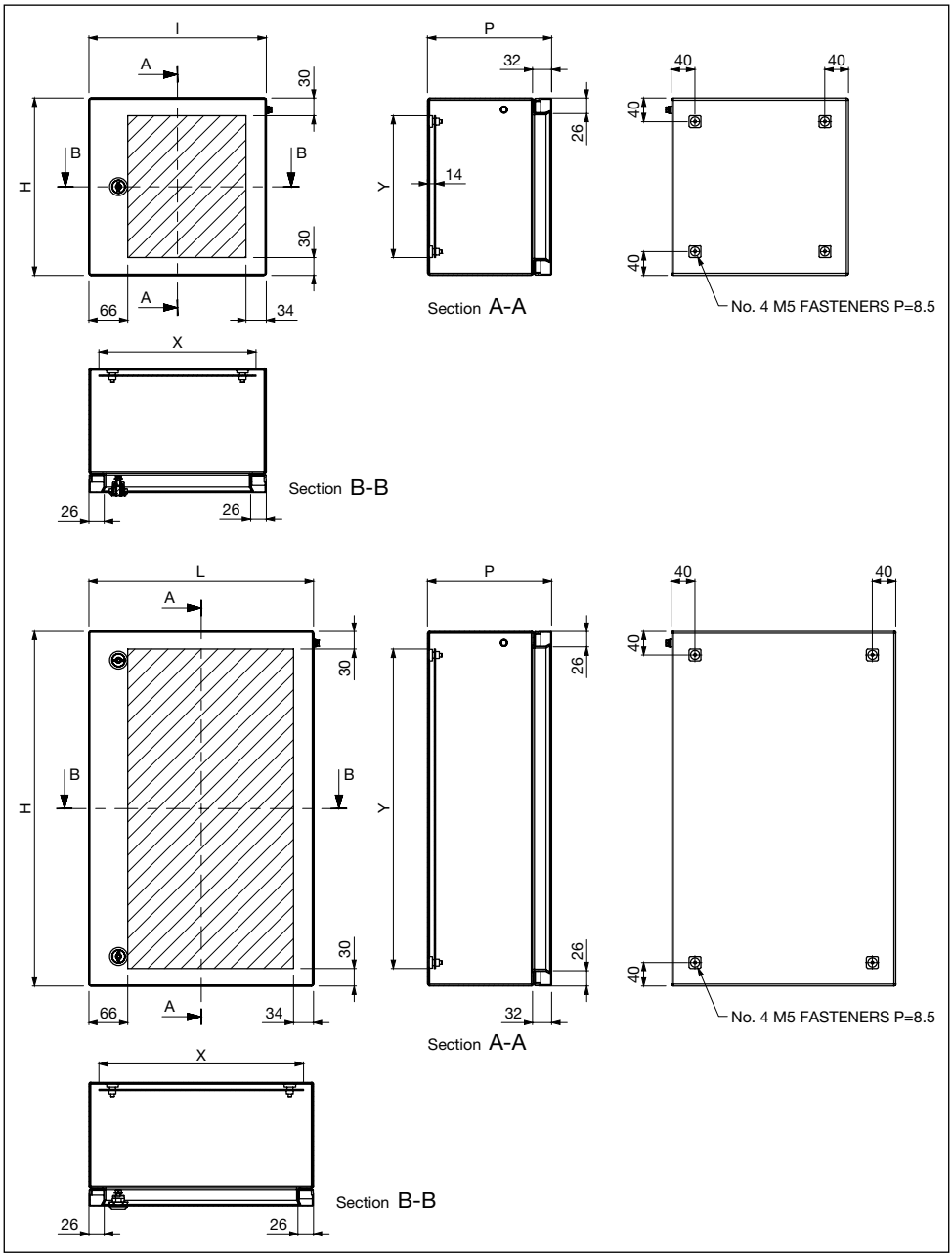


Figure 2 – Technical drawing of the enclosure

Type 645.C Code (*)	Enclosure size LxHxP [mm]	Body Thickness	Lid Thickness	Cam Lock	hinge
645.Cxy00zw	260x260x150	12/10	15/10	1	2
645.Cxy01zw	300x300x210	12/10	15/10	1	2
645.Cxy02zw	300x380x210	12/10	15/10	1	2
645.Cxy03zw	300x450x210	12/10	15/10	2	2
645.Cxy04zw	380x300x210	12/10	15/10	1	2
645.Cxy05zw	380x380x210	12/10	15/10	1	2
645.Cxy06zw	380x600x210	12/10	15/10	2	2
645.Cxy07zw	400x500x210	12/10	15/10	2	2
645.Cxy08zw	450x300x210	12/10	15/10	1	2
645.Cxy09zw	450x450x210	12/10	15/10	2	2
645.Cxy10zw	450x450x250	12/10	15/10	2	2
645.Cxy11zw	450x600x210	12/10	15/10	2	2
645.Cxy12zw	450x600x250	12/10	15/10	2	2
645.Cxy13zw	500x700x250	12/10	15/10	2	2
645.Cxy14zw	600x380x210	12/10	15/10	1	2
645.Cxy15zw	600x450x250	12/10	15/10	2	2
645.Cxy16zw	600x600x210	12/10	15/10	2	2
645.Cxy17zw	600x600x250	12/10	15/10	2	2
645.Cxy18zw	600x600x300	12/10	15/10	2	2
645.Cxy19zw	600x750x210	15/10	15/10	2	2
645.Cxy20zw	600x750x250	15/10	15/10	2	2
645.Cxy21zw	600x750x300	15/10	15/10	2	2
645.Cxy22zw	600x900x300	15/10	15/10	2	3
645.Cxy23zw	750x1000x300	15/10	15/10	2	3
645.Cxy24zw	800x1200x300	15/10	20/10	2	3

Table 2 - External dimensions

(*) The scame code is completed as following:

x = enclosure material:
- **4** = AISI304L
- **6** = AISI316L

y = gasket material:
- **S** = Silicon (for service temperature -50°C to +100°C)

z = gland plate
- **0** = Enclosure without gland plate
- **1** = Enclosure with 1 gland plate bottom sides
- **2** = Enclosure with 2 gland plates Top/Bottom sides
- **3** = Enclosure with 3 gland plate Bottom/Left/Right sides
- **4** = Enclosure with 4 gland plate Top/Bottom/Left/Right sides

w = key lock
- **Y** = Optional suffix, for key lock instead of cam lock

The root part number could have an optional suffix not influential on the equipment and the type of protection.

Note: the dimension indicated in the above table, can be change by 10%.

1.5 ENCLOSURES DIMENSIONS TYPE 645.D

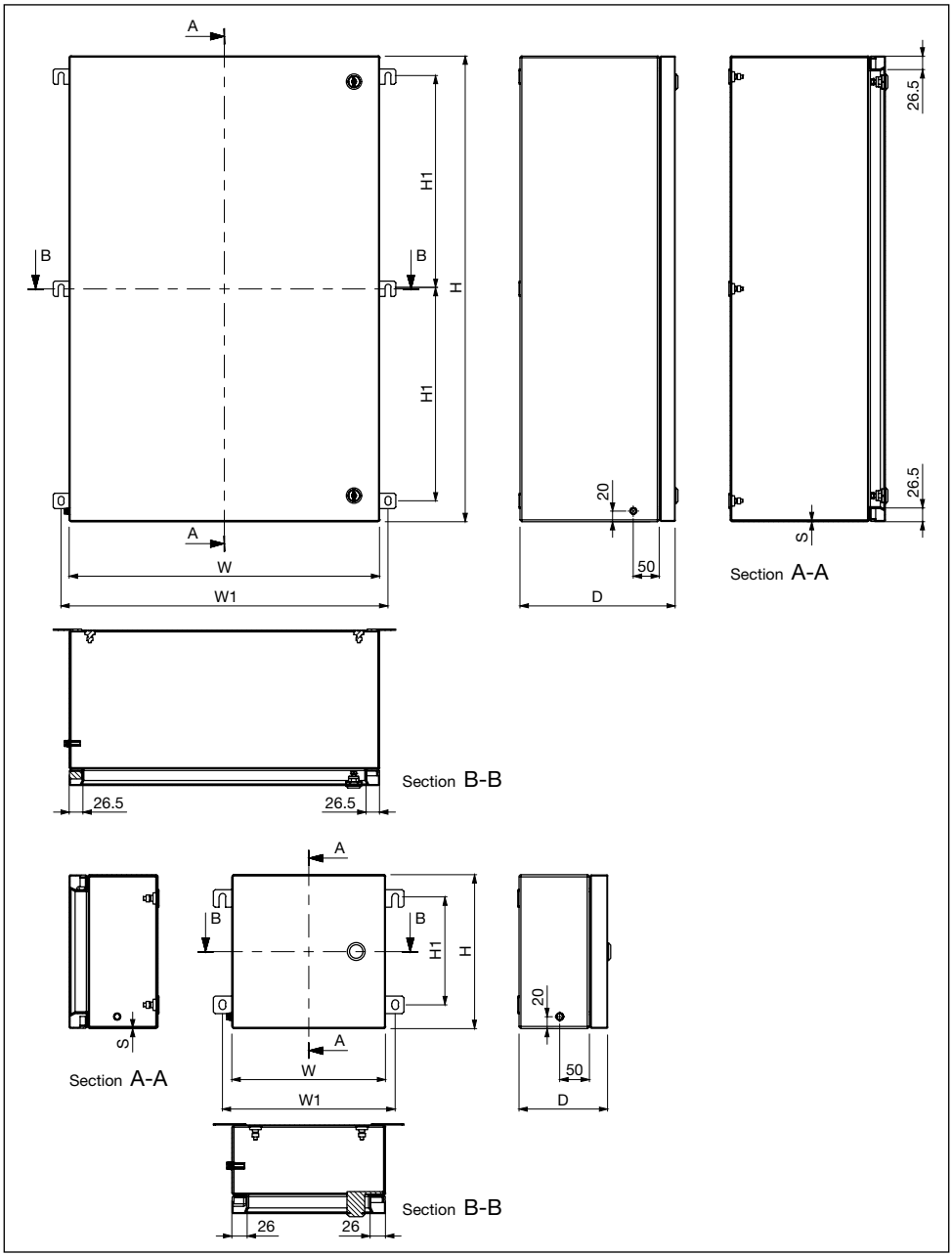


Figure 3 – Technical drawing of the enclosure

Type 645.C Code (*)	Enclosure size LxHxP [mm]	Body Thickness	Lid Thickness	Cam Lock	hinge	Mounting Brackets
645.Dxy00zw	260x260x150	12/10	15/10	1	2	4
645.Dxy01zw	300x300x210	12/10	15/10	1	2	4
645.Dxy02zw	300x380x210	12/10	15/10	2	2	4
645.Dxy03zw	300x450x210	12/10	15/10	2	2	4
645.Dxy05zw	380x380x210	12/10	15/10	2	2	4
645.Dxy07zw	400x500x210	12/10	15/10	2	2	4
645.Dxy09zw	450x450x210	12/10	15/10	2	2	4
645.Dxy11zw	450x600x210	12/10	15/10	2	3	4
645.Dxy14zw	600x380x210	12/10	15/10	2	3	4
645.Dxy16zw	600x600x210	12/10	15/10	2	3	4
645.Dxy19zw	600x750x210	12/10	15/10	2	3	4
645.Dxy22zw	600x900x300	12/10	15/10	2	3	6
645.Dxy23zw	750x1000x300	12/10	15/10	2	3	6
645.Dxy24zw	800x1200x300	12/10	15/10	2	3	6

Table 3 - External dimensions

(*) The scame code is completed as following:

x = enclosure material:
- **4** = AISI304L
- **6** = AISI316L

y = gasket material:
- **S** = Silicon (for service temperature -50°C to +100°C)

z = gland plate
- **0** = Enclosure without gland plate
- **1** = Enclosure with 1 gland plate bottom sides
- **2** = Enclosure with 2 gland plates Top/Bottom sides
- **3** = Enclosure with 3 gland plate Bottom/Left/Right sides
- **4** = Enclosure with 4 gland plate Top/Bottom/Left/Right sides

w = key lock
- **Y** = Optional suffix, for key lock instead of cam lock

The root part number could have an optional suffix not influential on the equipment and the type of protection.

Note: the dimension indicated in the above table, can be change by 10%

1.6 TYPE OF PROTECTION

Ex eb IIC Gb
Ex tb IIIC Db

1.7 EXAMPLE MARKING LABEL

SCAME Via Costa Erta 15 Parre BG ITALY

Cod. 645.Bxxxx
S/N xxxxxxxxx
IMQ 19 ATEX 033 U
IECEx IMQ 19.0004 U

Year 2022

0051

Ex eb IIC Gb
Ex tb IIIC Db
Ta -xx°C to xx°C

IP66

Ex II 2 GD

Figure 4 - Details of self-adhesive label or stainless steel plate

1.8 CERTIFICATES

Atex Components Certificate **IMQ 19 ATEX 033 U**
IECEx Components Certificate **IECEx IMQ 19.0004 U**

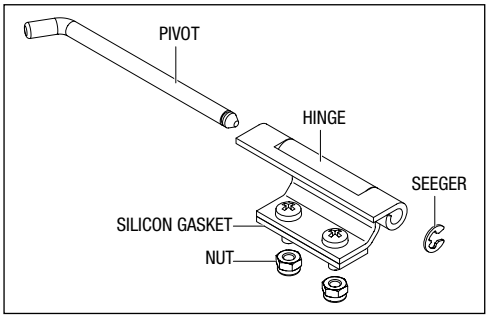
1.9 ENCLOSURE'S DEGREE OF PROTECTION
IP66

1.10 SERVICE TEMPERATURE RANGE
-50°C to +100°C

2. INSTALLATION
Suitably trained personnel in accordance with the applicable code of practice (e.g. IEC / EN 60079-14) and the provisions of the national safety and accident prevention regulations and this instruction manual shall carry out installation.

2.1 DOOR REMOVING
In order to make easy installation is possible to remove the door, following this steps:
1. Check the Tightened HINGE-NUT (2.5 Nm)
2. Remove the Seeger
3. Slip-off the pivot
4. Repeat the operation 1 and 2 for the other hinges

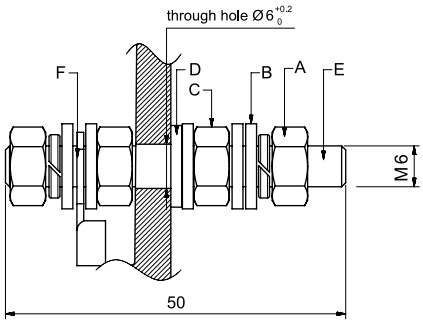
After the installation is done reassemble the door following the above steps reversing the order steps.



2.2 SAFETY INSTRUCTIONS
The IP rating of the enclosure shall be maintained for the area of installation by the use of correct arrangement of cable-gland, blanking plug elements, adapters in accordance with the installation rules. Where other certified components are part of the assembly, the user must take account of any limitation listed on relevant certificates. The holes must be cut inside the approved drilling areas for each wall, and must be done with absolute quality and without burrs. The cable glands are usually fitted during installation.
The enclosure must be installed in absence of damage and free of defects.

2.3 ACCESSORIES
The installation of the accessories must be performed before the installation of the enclosure, and following the relevant instruction sheets. Only approved and genuine SCAME accessories must be used. Back-plates made in AISI304L, AISI316L or galvanized steel.
- Back-plates made in AISI304L, AISI316L or galvanized steel.
- Mounting Brackets (Not for 645.D type)
- Windows
- Padlock only for 645.B
- Painting with maximum thickness < 0.2 mm.
- Optional Earth-stud M6/M10 (stud, nuts and plain washer) made of brass, AISI 316L or AISI304L.

2.3.1 Earth-Stud



A	BRASS OT58 OR INOX A2
B	INOX A2
C	BRASS OT58 OR INOX A2
D	TEFLON PTFE
E	BRASS OT58 OR INOX 316L
F	TINNED ELECTROLYTIC COPPER

Figure 5 - Detail of optional earth stud

3. TYPE 645.C & 645.D ENCLOSURE FLANGES

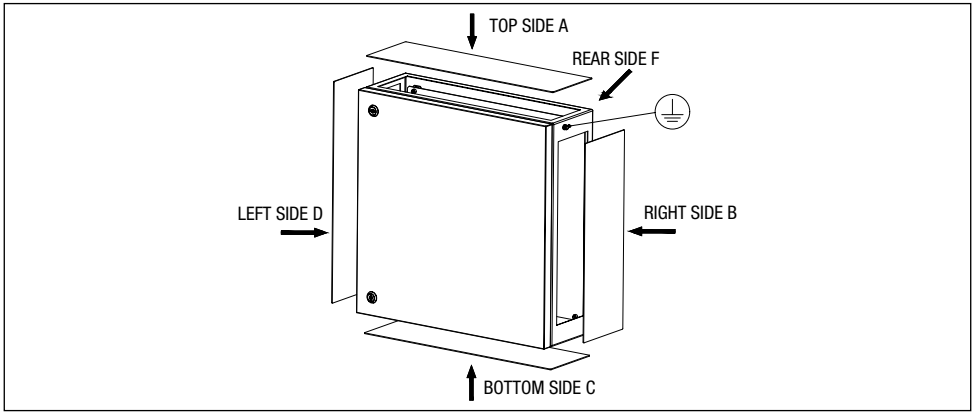


Figure 6

Enclosure size LxHxP [mm]	Top/Bottom Side - A/C	Screws Numbers M5x12	Left Side - D	Screws Numbers M5x12	Right Side - B	Screws Numbers M5x12	Nm
260x260x150*	210x70	6	210x70	6	150x70	6	2.5
300x300x210*	250x130	8	250x130	8	190x130	8	2.5
300x380x210*	250x130	8	330x130	8	270x130	8	2.5
300x450x210*	250x130	8	400x130	10	340x130	10	2.5
380x300x210	330x130	8	250x130	8	190x130	8	2.5
380x380x210*	330x130	8	330x130	8	270x130	8	2.5
380x600x210	330x130	8	550x130	10	490x130	10	2.5
400x500x210*	350x130	10	450x130	10	390x130	10	2.5
450x300x210	400x130	10	250x130	8	190x130	8	2.5
450x450x210*	400x130	10	400x130	10	340x130	10	2.5
450x450x250	400x170	10	400x170	10	340x170	10	2.5
450x600x210*	400x130	10	550x130	12	490x130	12	2.5
450x600x250	400x170	10	550x170	12	490x170	12	2.5
500x700x250	450x170	10	650x170	12	590x170	12	2.5
600x380x210*	550x130	12	330x130	8	270x130	8	2.5
600x450x250	550x170	12	400x170	10	340x170	10	2.5
600x600x210*	550x130	12	550x130	12	490x130	12	2.5
600x600x250	550x170	12	550x170	12	490x170	12	2.5
600x600x300	550x220	12	550x220	12	490x220	12	2.5
600x750x210*	550x130	12	700x130	14	640x130	14	2.5
600x750x250	550x170	12	700x170	14	640x170	14	2.5
600x750x300	550x220	12	700x220	14	640x220	14	2.5
600x900x300*	550x220	12	850x220	16	790x220	16	2.5
750x1000x300*	700x220	14	950x220	16	890x220	16	2.5
800x1200x300*	750x220	14	1150x220	18	1090x220	18	2.5

***** *= 645.D enclosure versions*

Table 4 – Flange Fixing screws

3.1 BOX DRILLING AREAS

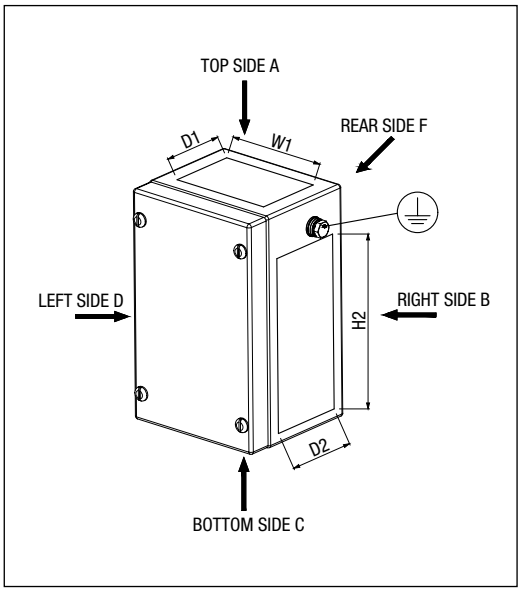


Figure 7 – Permitted drilling areas

Enclosure size (W x H x D)	Top/Bottom Without gland plate A/C W1 x D1	Left/Right Without gland plate B/D H2 x D2
90X90X75	80x50	80x50
100x100x90	90x65	90x65
100x160x90	90x65	150x65
100x220x90	90x65	210x65
150x160x120	140x95	150x95
150x220x120	140x95	210x95
150x280x120	140x95	270x95
200x220x120	190x95	210x95
200x280x120	190x95	270x95
250x280x120	240x95	270x95
250x340x150	240x125	330x125
300x340x150	290x125	330x125
300x400x150	290x125	390x125
400x400x150	390x125	390x125

Table 5 – Dimensions of permitted drilling areas

3.2 TYPE 645.C & 645.D BOX DRILLING AREAS

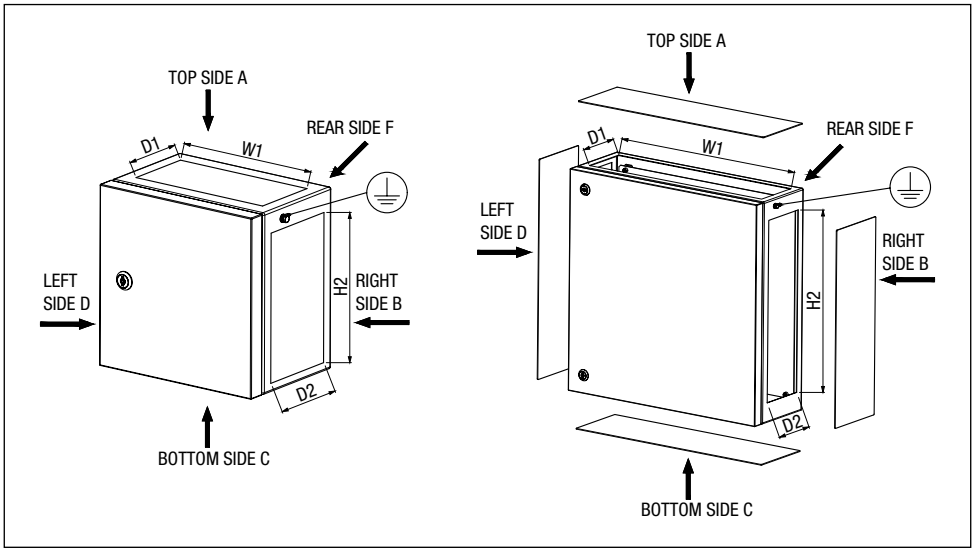


Figure 8 – Permitted drilling areas

Enclosure size (W x H x D)	Top/Bottom Without gland plate A/C W1 x D1	Left/Right Without gland plate B/D H2 x D2	Top/Bottom With gland plate A/C W1 x D1	Left Side With gland plate D H2 x D2	Right Side With gland plate B H2 x D2
260x260x150*	250x110	250x110	210x70	210x70	150x70
300x300x210*	290x170	290x170	250x130	250x130	190x130
300x380x210*	290x170	370x170	250x130	330x130	270x130
300x450x210*	290x170	440x170	250x130	400x130	340x130
380x300x210	370x170	290x170	330x130	250x130	190x130
380x380x210*	370x170	370x170	330x130	330x130	270x130
380x600x210	370x170	590x170	330x130	550x130	490x130
400x500x210*	390x170	490x170	350x130	450x130	390x130
450x300x210	440x170	290x170	400x130	250x130	190x130
450x450x210*	440x170	440x170	400x130	400x130	340x130
450x450x250	440x210	440x210	400x170	400x170	340x170
450x600x210*	440x170	590x170	400x130	550x130	490x130
450x600x250	440x210	590x210	400x170	550x170	490x170
500x700x250	490x210	690x210	450x170	650x170	590x170
600x380x210*	590x170	370x170	550x130	330x130	270x130
600x450x250	590x210	440x210	550x170	400x170	340x170
600x600x210*	590x170	590x170	550x130	550x130	490x130
600x600x250	590x210	590x210	550x170	550x170	490x170
600x600x300	590x260	590x260	550x220	550x220	490x220
600x750x210*	590x170	740x170	550x130	700x130	640x130
600x750x250	590x210	740x210	550x170	700x170	640x170
600x750x300	590x260	740x260	550x220	700x220	640x220
600x900x300*	590x260	890x260	550x220	850x220	790x220
750x1000x300*	740x260	990x260	700x220	950x220	890x220
800x1200x300*	790x260	1190x260	750x220	1150x220	1090x220

***** *= 645.D enclosure versions*

Table 6 – Dimensions of permitted drilling areas

3.3 LID DRILLING AREA

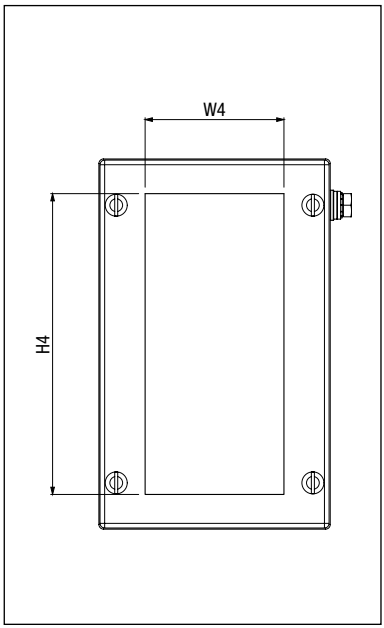


Figure 9 – Cover permitted drilling area

Enclosure size (W x H x D)	Maximum drilling area G (W4 x H4)	Maximum holes number			
		Ø30,5 mm	Ø22,5 mm	Ø32,5 mm	Ø30,8mm Ø30,6mm (with keyway)
90x90x75	50x60	\	1	\	\
100x100x90	60x70	1	1	1	1
100x160x90	60x130	1	2	1	1
100x220x90	60x190	2	3	2	2
150x160x120	110x130	2	3	2	2
150x220x120	110x190	3	5	3	3
150x280x120	110x250	4	7	4	4
200x220x120	160x190	5	7	5	5
200x280x120	160x250	7	8	7	7
250x280x120	210x250	9	12	9	9
250x340x150	210x310	12	15	12	12
300x340x150	260x310	15	20	15	15
300x400x150	260x370	15	24	15	15
400x400x150	360x370	25	36	25	25

Table 7 – Dimensions of cover permitted drilling areas

3.4 TYPE 645.C & 645.D LID DRILLING AREAS

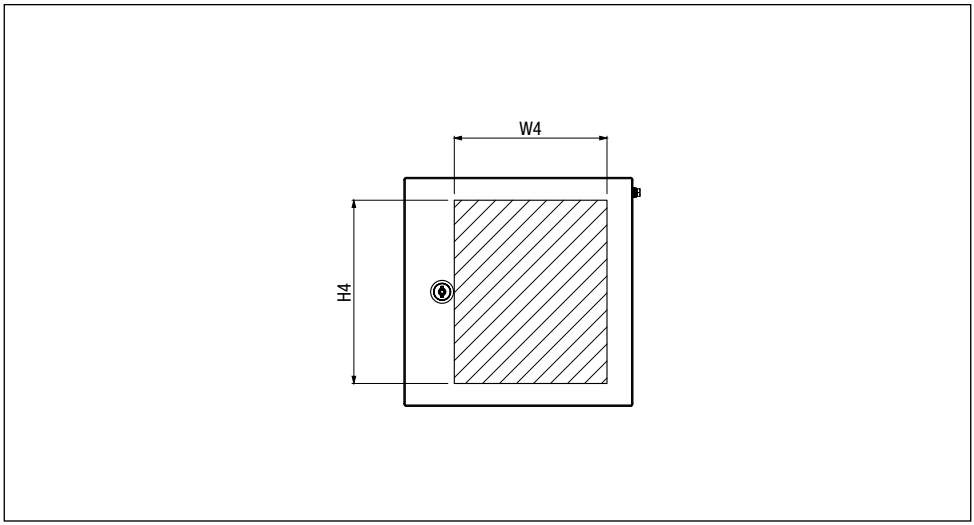


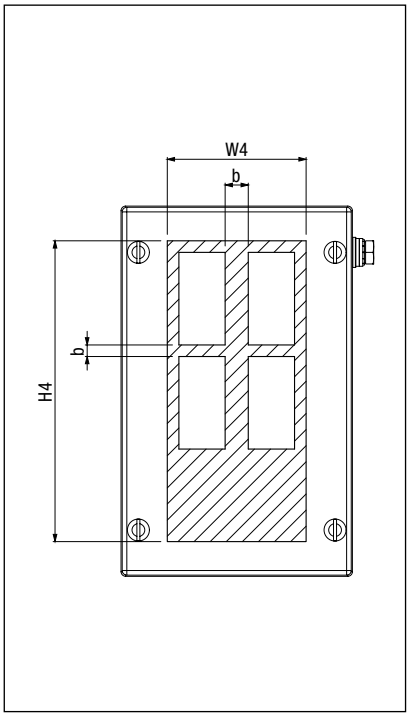
Figure 10 – Cover permitted drilling area

Enclosure size (W x H x D)	Maximum drilling area G (W4 x H4)	Maximum holes numbers			
		Ø30,5 mm	Ø22,5 mm	Ø32,5 mm	Ø30,8mm Ø30,6mm (with keyway)
260x260x150*	160x200	6	12	6	6
300x300x210*	200x240	8	12	8	9
300x380x210*	200x320	12	15	12	12
300x450x210*	200x390	15	18	15	15
380x300x210	280x240	12	18	12	15
380x380x210*	280x320	16	24	16	20
380x600x210	280x540	28	36	28	35
400x500x210*	300x440	24	35	24	30
450x300x210	350x240	15	24	15	18
450x450x210*	350x390	25	36	25	30
450x450x250	350x390	25	36	25	30
450x600x210*	350x540	35	54	35	42
450x600x250	350x540	35	54	35	42
500x700x250	400x640	44	69	44	63
600x380x210*	500x320	28	40	28	36
600x450x250	500x390	35	48	35	45
600x600x210*	500x540	49	72	49	63
600x600x250	500x540	49	72	49	63
600x600x300	500x540	49	72	49	63
600x750x210*	500x690	63	88	63	81
600x750x250	500x690	63	88	63	81
600x750x300	500x690	63	88	63	81
600x900x300*	500x840	77	112	77	100
750x1000x300*	650x940	100	150	100	100
800x1200x300*	700x1140	120	180	120	120

***** *= 645.D enclosure versions*

Table 8 – Dimensions of cover permitted drilling areas

3.5 SQUARE LID DRILLING AREA



Enclosure size (W x H x D)	Maximum drilling area G (W4 x H4)	Maximum SQUARE holes		
		Maximum number	Maximum Size	Minimum distance b - (mm) – Fig.8
90X90X75	50x60	--	--	--
100x100x90	60x70	1	57x53mm	60
100x160x90	60x130	1	57x53mm	60
100x220x90	60x190	2	57x53mm	60
150x160x120	110x130	1	57x53mm	60
150x220x120	110x190	2	57x53mm	60
150x280x120	110x250	3	57x53mm	60
200x220x120	160x190	1	118x95mm	60
200x280x120	160x250	2	118x95mm	60
250x280x120	210x250	2	118x95mm	60
250x340x150	210x310	2	118x95mm	60
300x340x150	260x310	2 1	118x95mm 255x85mm	60 100
300x400x150	260x370	2 1	118x95mm 255x85mm	75 100
400x400x150	360x370	2 1	118x95mm 255x85mm	75 100

Figure 11 – Lid drilling Area

Table 9 – Dimensions of cover permitted drilling areas

3.6 TYPE 645.C & 645.D LID SQUARE DRILLING AREA

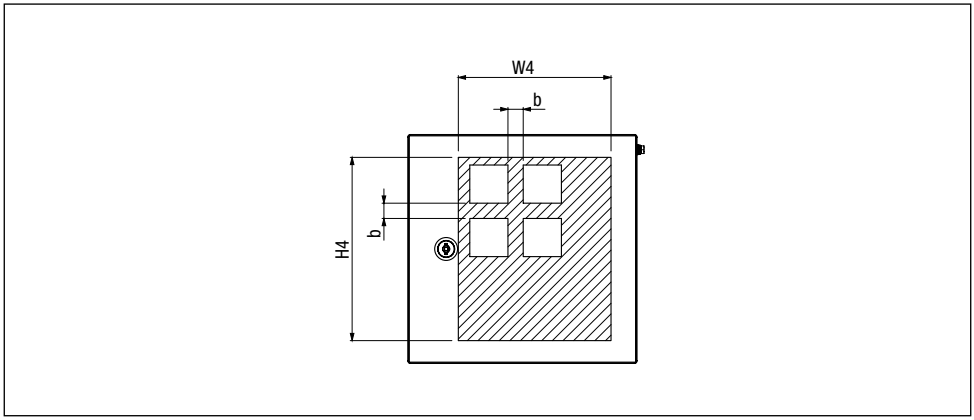


Figure 12 – Lid drilling Area

Enclosure size (W x H x D)	Maximum drilling area G (W4 x H4)	Maximum SQUARE holes		
		Maximum number	Maximum Size	Minimum distance b - (mm) – Fig.8
260x260x150	160x200	1	118x95mm	60
300x300x210	200x240	1	118x95mm	60
300x380x210	200x320	2	118x95mm	60
300x450x210	200x390	2	118x95mm	60
380x300x210	280x240	1	118x95mm 255x85mm	60 100
380x380x210	280x320	2	118x95mm 255x85mm	60 100
380x600x210	280x540	3	118x95mm 255x85mm	60 100
400x500x210	300x440	6 2	118x95mm 255x85mm	60 100
450x300x210	350x240	2 1	118x95mm 255x85mm	60 100
450x450x210	350x390	4 2	118x95mm 255x85mm	60 100
450x450x250	350x390	4 2	118x95mm 255x85mm	60 100
450x600x210	350x540	6 3	118x95mm 255x85mm	60 100
450x600x250	350x540	6 3	118x95mm 255x85mm	60 100
500x700x250	400x640	6 3	118x95mm 255x85mm	60 100
600x380x210	500x320	6 2	118x95mm 255x85mm	60 100
600x450x250	500x390	6 2	118x95mm 255x85mm	60 100
600x600x210	500x540	9 3	118x95mm 255x85mm	60 100
600x600x250	500x540	9 3	118x95mm 255x85mm	60 100
600x600x300	500x540	9 3	118x95mm 255x85mm	60 100
600x750x210	500x690	12 4	118x95mm 255x85mm	60 100
600x750x250	500x690	12 4	118x95mm 255x85mm	60 100
600x750x300	500x690	12 4	118x95mm 255x85mm	60 100
600x900x300	500x840	15 4	118x95mm 255x85mm	60 100
750x1000x300	650x940	15 5	118x95mm 255x85mm	60 100
800x1200x300	700x1140	18 6	118x95mm 255x85mm	60 100

Table 10 – Dimensions of cover permitted drilling areas

3.7 DRILLING DRAIN BREATHER POSITION

DRAIN valve shall be installed always on the bottom face side.

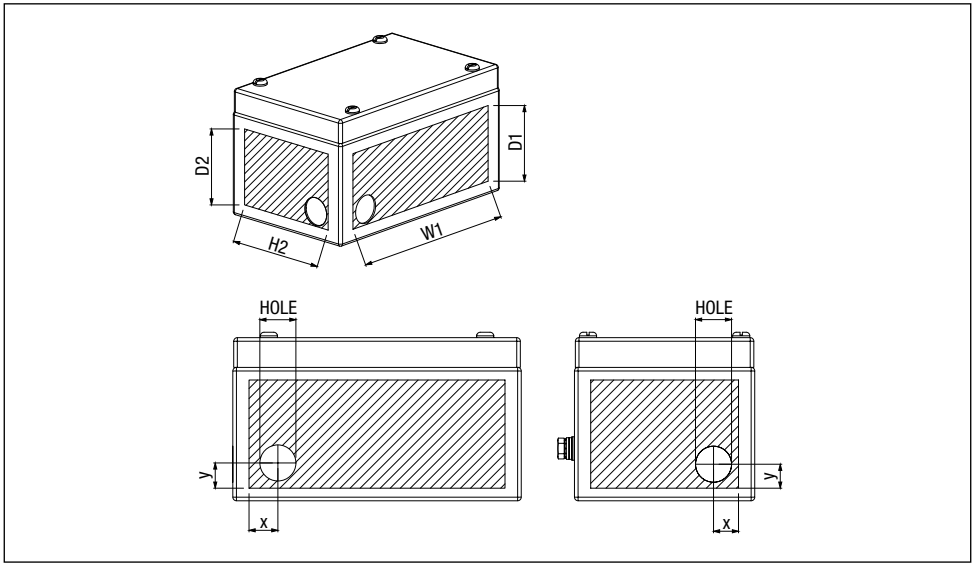


Figure 13 – Position holes for breather/drain valve

Hole Size			
	M16	**M20**	**M25**
HOLE	Ø16,4/16,8mm	Ø 20,5/21mm	Ø 25,5/26mm
X	16mm	16mm	20mm
Y	16mm	16mm	20mm

Table 11 - Position holes for breather/drain valve

3.8 CABLE GLANDS

Use only Ex eb and/or Ex tb IIIC approved glands (as relevant). Certified cable glands can only be fitted with a suitable IP rating commensurate with IP rating of the enclosure.

Ensure that all the cable-glands used, shall be suitable for the cable in order to prevent self-loosening and ensure permanent sealing to avoid moisture ingress.

3.8.1 Cable entries

Certified cable glands and blanking plug elements only to be fitted with a suitable IP rating commensurate with IP rating of the enclosure.

Holes can be drilled in all four face sides and the rear side.

The enclosures can be supply with gland plate on long side (A\C) and short side (B\D).

Clearances shall be maintained as specified in Table 16 - Figure 17.

All holes shall be drilled according to table 7 for version without gland plate and 8 with gland plate:

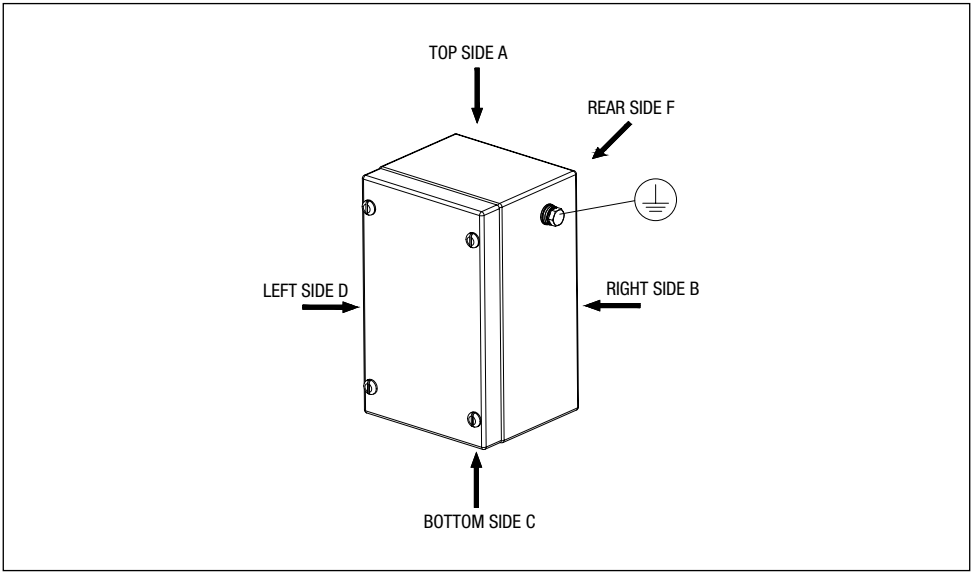


Figure 14 – Entry sides

Enclosure size (W x H x D)	Top / Bottom Face sides A/C								Left / Right Face sides B/D								Rear Face side F				
	M12	M16	M20	M25	M32	M40	M50	M63	M12	M16	M20	M25	M32	M40	M50	M63	M16	M20	M25	M32	M40
90X90X75	6	3	2	2	1	-	-	-	6	3	2	2	1	-	-	-	2	2	2	-	-
100x100x90	8	4	3	2	1	1	-	-	8	4	3	2	1	1	-	-	2	2	2	-	-
100x160x90	8	4	3	2	1	1	-	-	12	9	5	3	2	2	-	-	2	2	2	-	-
100x220x90	8	4	3	2	1	1	-	-	16	10	7	5	4	3	-	-	3	3	3	3	-
150x160x120	20	12	8	6	3	2	1	1	20	12	8	6	3	2	1	1	3	3	3	3	1
150x220x120	20	12	8	6	3	2	1	1	30	18	11	8	5	3	2	2	3	3	3	3	1
150x280x120	20	12	8	6	3	2	1	1	40	24	14	10	6	4	3	2	3	3	3	3	1
200x220x120	26	15	10	8	5	3	2	2	30	18	11	8	5	3	2	2	3	3	3	3	1
200x280x120	26	15	10	8	5	3	2	2	40	24	14	10	6	4	3	2	3	3	3	3	1
250x280x120	34	21	12	10	5	3	3	2	40	24	14	10	6	4	3	2	3	3	3	3	1
250x340x150	45	28	18	14	8	5	3	2	60	40	24	20	10	7	4	3	3	3	3	3	1
300x340x150	50	34	21	17	10	6	4	3	60	40	24	20	10	7	4	3	3	3	3	3	1
300x400x150	50	34	21	17	10	6	4	3	60	46	27	21	12	8	5	4	3	3	3	3	1
400x400x150	60	46	27	21	12	8	5	4	60	46	27	21	12	8	5	4	3	3	3	3	1

Table 12 – Wall side without gland plate - Standard entry arrangements

3.9 TYPE 645.C & 645.D MAXIMUM CABLE ENTRIES WITHOUT GLAND PLATES

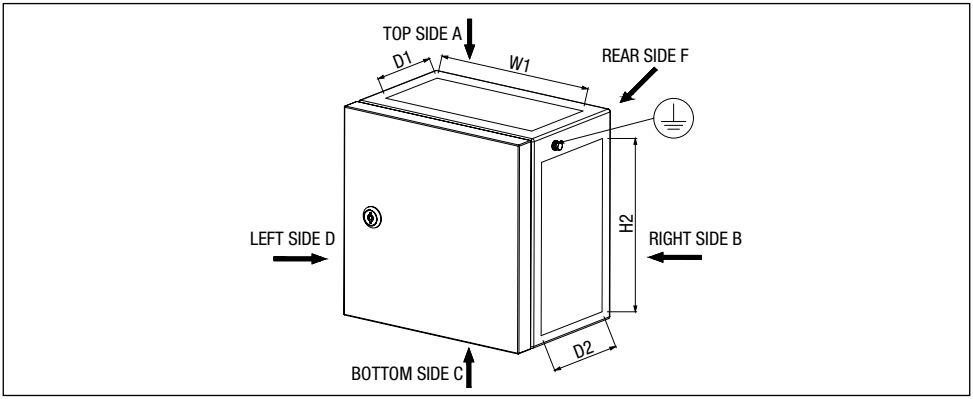


Figure 15 – Entry sides

Enclosure size (W x H x D)	Top / Bottom Face sides A/C									Left / Right Face sides B/D									Rear Face side F				
	M12	M16	M20	M25	M32	M40	M50	M63	M75	M12	M16	M20	M25	M32	M40	M50	M63	M75	M16	M20	M25	M32	M40
260x260x150*	42	25	21	11	8	4	3	2	2	42	25	21	11	8	4	3	2	2	3	3	3	3	3
300x300x210*	66	45	28	22	11	8	6	4	2	66	45	28	22	11	8	6	4	2	3	3	3	3	3
300x380x210*	66	45	28	22	11	8	6	4	2	84	55	36	28	16	11	8	5	3	3	3	3	3	3
300x450x210*	66	45	28	22	11	8	6	4	2	100	65	44	30	20	14	10	6	4	3	3	3	3	3
380x300x210	84	55	36	28	16	11	8	5	3	66	45	28	22	11	8	6	4	2	3	3	3	3	3
380x380x210*	84	55	36	28	16	11	8	5	3	84	55	36	28	16	11	8	5	3	3	3	3	3	3
380x600x210	84	55	36	28	16	11	8	5	3	120	75	60	38	27	17	14	8	5	3	3	3	3	3
400x500x210*	90	58	36	28	17	11	8	5	3	102	70	44	34	21	14	10	6	4	3	3	3	3	3
450x300x210	100	65	44	30	20	14	10	6	4	66	45	28	22	11	8	6	4	2	3	3	3	3	3
450x450x210*	100	65	44	30	20	14	10	6	4	100	65	44	30	20	14	10	6	4	3	3	3	3	3
450x450x250	120	78	55	36	22	18	11	8	4	120	78	55	36	22	18	11	8	4	3	3	3	3	3
450x600x210*	100	65	44	30	20	14	10	6	4	120	75	60	38	27	17	14	8	5	3	3	3	3	3
450x600x250	120	78	55	36	22	18	11	8	4	130	90	70	48	30	24	16	10	5	3	3	3	3	3
500x700x250	120	84	60	40	26	18	12	8	4	150	102	80	52	30	27	17	11	5	3	3	3	3	3
600x380x210*	120	75	60	38	27	17	14	8	5	84	55	36	28	16	11	8	5	3	3	3	3	3	3
600x450x250	130	90	70	48	30	24	16	10	5	120	78	55	36	22	18	11	8	4	3	3	3	3	3
600x600x210*	120	75	60	38	27	17	14	8	5	120	75	60	38	27	17	14	8	5	3	3	3	3	3
600x600x250	130	90	70	48	30	24	16	10	5	130	90	70	48	30	24	16	10	5	3	3	3	3	3
600x600x300	150	110	82	55	36	25	18	12	6	150	110	82	55	36	25	18	12	6	3	3	3	3	3
600x750x210*	120	75	60	38	27	17	14	8	5	150	100	68	42	28	20	16	9	6	4	4	4	4	4
600x750x250	130	90	70	48	30	24	16	10	5	150	120	85	56	35	27	17	14	6	4	4	4	4	4
600x750x300	150	110	82	55	36	25	18	12	6	150	126	96	65	44	33	24	15	6	4	4	4	4	4
600x900x300*	150	110	82	55	36	25	18	12	6	150	150	120	80	54	40	27	18	7	4	4	4	4	4
750x1000x300*	150	150	100	65	45	30	22	15	8	150	150	150	100	60	42	30	20	8	4	4	4	4	4
800x1200x300*	150	150	110	70	50	35	25	17	10	150	150	150	120	70	50	35	22	10	4	4	4	4	4

***** *= 645.D enclosure versions*

Table 13 – Wall side without gland plates - Standard entry arrangements

3.10 TYPE 645.C & 645.D MAXIMUM CABLE ENTRIES WITH GLAND PLATES

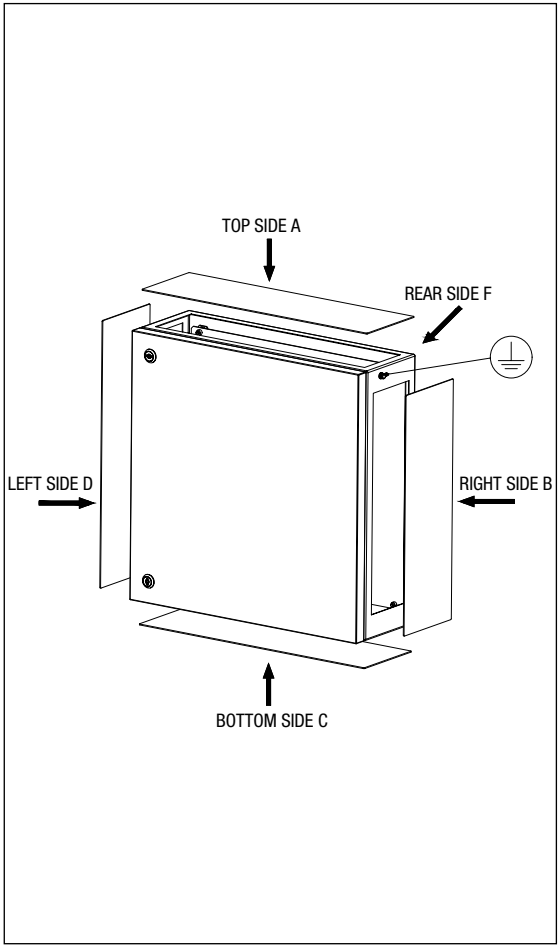


Figure 16 – Entry sides

Dimensions	Rear side F				
	M16	M20	M25	M32	M40
260x260x150*	3	3	3	3	3
300x300x210*	3	3	3	3	3
300x380x210*	3	3	3	3	3
300x450x210*	3	3	3	3	3
380x300x210	3	3	3	3	3
380x380x210*	3	3	3	3	3
380x600x210	3	3	3	3	3
400x500x210*	3	3	3	3	3
450x300x210	3	3	3	3	3
450x450x210*	3	3	3	3	3
450x450x250	3	3	3	3	3
450x600x210*	3	3	3	3	3
450x600x250	3	3	3	3	3
500x700x250	3	3	3	3	3
600x380x210*	3	3	3	3	3
600x450x250	3	3	3	3	3
600x600x210*	3	3	3	3	3
600x600x250	3	3	3	3	3
600x600x300	3	3	3	3	3
600x750x210*	4	4	4	4	4
600x750x250	4	4	4	4	4
600x750x300	4	4	4	4	4
600x900x300*	4	4	4	4	4
750x1000x300*	4	4	4	4	4
800x1200x300*	4	4	4	4	4

***** = 645.D enclosure versions*

Table 14 – Rear side cable entry

Dimensions	Top / Bottom Side A/C									Left Side D									Right Side B								
	M12	M16	M20	M25	M32	M40	M50	M63	M75	M12	M16	M20	M25	M32	M40	M50	M63	M75	M12	M16	M20	M25	M32	M40	M50	M63	M75
260x260x150*	27	14	12	5	3	3	-	-	-	27	14	12	5	3	3	-	-	-	18	11	8	4	2	2	-	-	-
300x300x210*	50	28	18	15	8	6	3	2	2	50	28	18	15	8	6	3	2	2	35	24	15	11	6	4	3	2	1
300x380x210*	50	28	18	15	8	6	3	2	2	65	40	24	20	10	8	5	3	3	50	32	21	15	8	6	4	3	2
300x450x210*	50	28	18	15	8	6	3	2	2	80	48	30	22	14	10	6	4	3	65	40	24	19	12	8	5	4	3
380x300x210	65	40	24	20	10	8	5	3	3	50	28	18	15	8	6	3	2	2	35	24	15	11	6	4	3	2	1
380x380x210*	65	40	24	20	10	8	5	3	3	65	40	24	20	10	8	5	3	3	50	32	21	15	8	6	4	3	2
380x600x210	65	40	24	20	10	8	5	3	3	110	68	42	32	18	14	8	6	5	95	60	36	29	16	12	8	5	4
400x500x210	65	40	24	19	12	9	5	3	3	90	56	33	26	14	12	6	5	4	80	48	30	22	12	10	5	4	3
450x300x210	80	48	30	22	14	10	6	4	3	50	28	18	15	8	6	3	2	2	35	24	15	11	6	4	3	2	1
450x450x210*	80	48	30	22	14	10	6	4	3	80	48	30	22	14	10	6	4	3	65	40	24	19	12	8	5	4	3
450x450x250	96	60	40	28	18	12	10	6	3	96	60	40	28	18	12	8	6	3	78	50	32	23	15	9	8	5	3
450x600x210*	80	48	30	22	14	10	6	4	3	110	68	42	32	18	14	8	6	5	95	60	36	29	16	12	8	5	4
450x600x250	96	60	40	28	18	12	10	6	3	126	80	52	38	26	17	12	8	5	108	70	48	33	23	15	12	7	5
500x700x250	102	65	44	30	21	14	10	6	4	150	100	64	52	31	20	14	9	6	138	90	56	48	28	18	14	8	6
600x380x210*	110	68	42	32	18	14	8	6	5	65	40	24	20	10	8	5	3	3	50	32	21	15	8	6	4	3	2
600x450x250	126	80	52	38	26	17	12	8	5	96	60	40	28	18	12	8	6	3	78	50	32	23	15	9	8	5	3
600x600x210*	110	68	42	32	18	14	8	6	5	110	68	42	32	18	14	8	6	5	95	60	36	29	16	12	8	5	4
600x600x250	126	80	52	38	26	17	12	8	5	126	80	52	38	26	17	12	8	5	108	70	48	33	23	15	12	7	5
600x600x300	150	103	65	48	30	24	17	11	8	150	103	65	48	30	24	17	11	8	150	90	60	40	28	21	15	9	8
600x750x210*	110	68	42	32	18	14	8	6	5	145	84	51	42	24	19	10	7	6	130	80	48	38	22	17	10	7	5
600x750x250	126	80	52	38	26	17	12	8	5	150	105	68	58	34	21	16	10	7	150	100	64	52	31	20	14	9	6
600x750x300	150	103	65	48	30	24	17	11	8	150	126	85	63	38	30	21	14	10	150	116	80	56	35	27	19	12	10
600x900x300*	150	103	65	48	30	24	17	11	8	150	150	105	77	45	36	26	17	12	150	150	95	70	43	33	24	15	12
750x1000x300*	150	120	90	55	40	30	20	13	8	150	150	130	100	60	40	30	20	12	150	150	130	100	60	40	30	20	12
800x1200x300*	150	120	110	65	45	35	25	15	10	150	150	150	120	70	50	35	22	12	150	150	150	120	70	50	35	22	12

***** *= 645.D enclosure versions*

Table 15 – Wall side cable entry

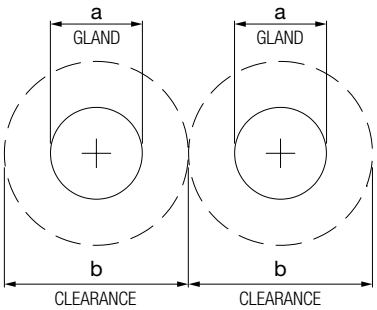
3.11 DRILLING CLEARANCES

Cable gland size a - (mm)	Minimum Clearances Between holes b - (mm)	Minimum Clearances From the edge (*) (mm)
12	25	6
16	32	8
20	39	9
25	46	11
32	58	13
40	68	14
50	81	15
63	96	16
75	105	16

(*) Minimum distance from the enclosure edge or the limit drilling area.

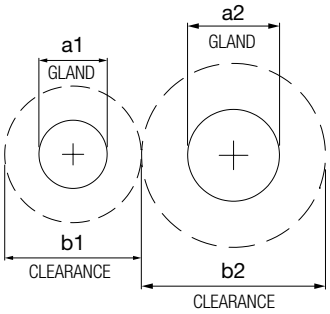
Table 16 - Clearance for standard gland sizes

Clearance between two holes with same diameter



Minimum centre to centre distance = b

Clearance between two holes with different diameters



Minimum centre to centre distance = b1/2 + b2/2

Figure 17

3.12 TYPE 645.B, 645.C & 645.D LID CLEARANCES

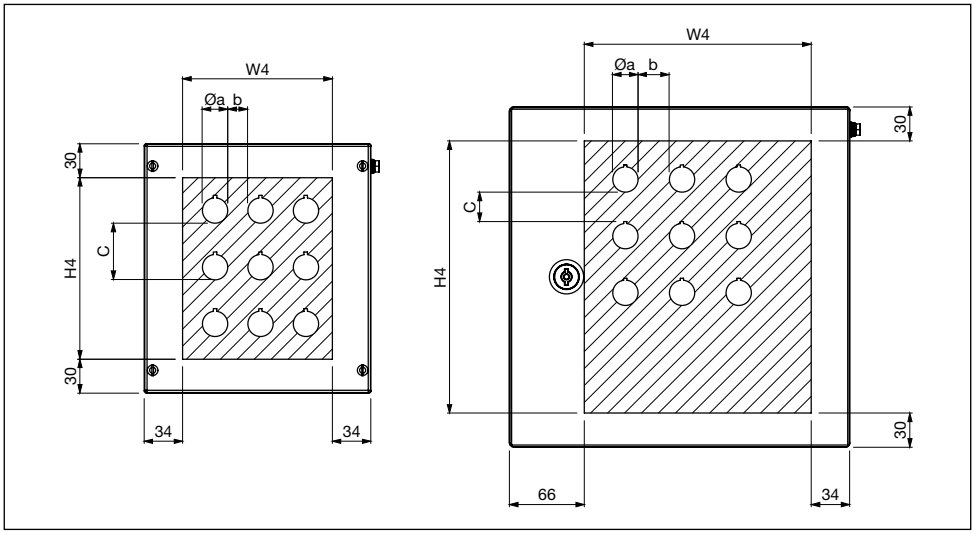


Figure 18 – Lid Clearances

Manufacturer Components	Maximum Mounting Ø a – (mm)	Minimum distance between two holes b – (mm)	Minimum distance between two holes c – (mm)
SCHNEIDER-ELECTRIC	Ø22,5	35	35
EX-TECH	Ø22,5	35	35
CZ	Ø30,6 (with key-way)	20	40

Table 17 – Actuators Clearances

Note : the hole have to be placed within the permitted drilling area (in any position) according to the minimun distances indicated in the table 6.

4. SERVICING AND MAINTENANCE AND REPAIRING

Inspection and maintenance of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. IEC / EN 60079-17). During servicing, it is particularly important to check those components upon which the type of protection depends.

4.1 ROUTINE MAINTENANCE

Routine maintenance is required in order to guarantee the efficiency of the enclosure and to maintain the required level of protection.

1) Check that the lid and removable gland plate seal is in place and not damaged each time the enclosure is opened
2) Check that all the lid and removable gland plate fixing screws are in place and secured each time the enclosure is closed
3) Check that the mounting screws/bolts are tight and free of corrosion annually
4) Check the security of all cable glands annually
5) Check the enclosure for damage annually
6) In zones with presence of combustible dusts, it is necessary to periodically clean the upper surface of the box, limiting the depth of the layer to less than 5 mm.

Note, be sure to be tight the screws of lid and gland plate with the torque indicated in this document.

Storage conditions :
Storage Temperature : from -50°C to +80°C
Relative Humidity : ≤95%RH

The estimated product lifetime is 25 years if maintenance and storage condition are respected and all prescriptions specified applied in this instructions.

4.2 RESISTANCE TO CHEMICAL AGENT

Consideration should be given to the environment in which these enclosures are to be used to determine the suitability of these materials to withstand any corrosive agents that may be present.

4.3 DISPOSAL

Disposal and recycling of the product shall be done according to national regulations for waste disposal and recycling.

SCAME electrical solutions

DECLARATION OF CONFORMITY EU

We: **SCAME PARRE S.p.A.**
Via Costa Erta, 15 – 24020 Parre (BG) ITALY

Declare that the following products :

Enclosure Type ZENITH-S Code 645.Bxxxx , 645.Cxxxxxx or 645.Dxxxxxx
(The specified product code and serial number are indicated on the plate and on the packaging).

to which this declaration refers are compliant with :
ATEX Directive 2014/34/EU
IECEx certification scheme

EN IEC 60079-0: 2018
EN 60079-7:2015
EN IEC 60079-7:2015+A1:2018
EN 60079-31:2014
IEC 60079-0: 2017
IEC 60079-7:2015
IEC 60079-31:2013

EN 62208
EN 60529:1991+A1:2000+A2:2013

ATEX Markings	**ATEX/IECEx protection type (*): Ex**
0051 Ex **II 2 GD**	**Ex eb IIC Gb** **Ex tb IIIC Db** **IP66** **Tserv. : -50°C ≤ Ts ≤ +100°C**

(*) Specific data relative to: protection type and service temperature are indicated on the plate.

The models belonging to this family of products are the subject of certificates **IMQ 19 ATEX 033 U** (in compliance with Annex III of the ATEX Directive), **IECEx IMQ 19.0004 U** (in compliance with the IECEx scheme) and notification of the quality system **IMQ 08 ATEX 013 Q** (in compliance with Annex VII of the ATEX Directive).

Parre, 09/02/2022

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