

■ INCREASED SAFETY ENCLOSURES



■ REFERENCE STANDARDS

IEC/EN 60079-0 Electrical apparatus for explosive gas atmospheres. <i>Parte 0: prescrizioni generali.</i>
IEC/EN 60079-11 Electrical apparatus for explosive gas atmospheres. <i>Part 11: intrinsic safety.</i>
IEC/EN 60079-7 Electrical apparatus for explosive gas atmospheres <i>Part 7: increased safety "e"</i>
IEC/EN 60079-31 Electrical apparatus for explosive gas atmospheres. <i>Part 31: equipment dust ignition protection by enclosure "t".</i>

■ GENERAL DESCRIPTION

The ZENITH P range comprises 15 sizes of enclosure manufactured in GRP glass reinforced polyester with 4 mm thickness. Polyester gives excellent mechanical strength and life expectancy; this material is highly resistant to contamination, it is absolutely corrosion-proof and is suitable for LSOH (low smoke zero halogen) applications. The range is carbon loaded which helps to reduce the surface resistance of the material and consequently removes the risk of ignition sources through static induced sparking resistivity. The mounting holes are contained within the profile of the enclosure, but are outside the seal. The wall thickness is sufficient to allow entry holes to be machined in the walls of the enclosure and it provides a very good alternative to aluminium, stainless steel or cast iron.


■ APPLICATION

These enclosures may be supplied with terminals fitted or as an empty certified component. If supplied as the latter, then final certification by the customer after fitting additional equipment, must be obtained. The ZENITH P range offers safe protection in various applications including both industrial and hazardous area where extremely unfavourable conditions are present. They are ideal for a wide variety of uses such as OEM applications, fire protection systems, tunnel wiring, lighting, power and instrument junction boxes.

■ CERTIFICATIONS

The products have passed laboratory tests and obtained the safety certification by approved ATEX certification bodies. Scame guarantees that the enclosure systems have been correctly manufactured and are compliant with safety standards. The correct use of the enclosure systems for their intended duty is essential for safeguarding the type of protection.

■ TECHNICAL CHARACTERISTICS

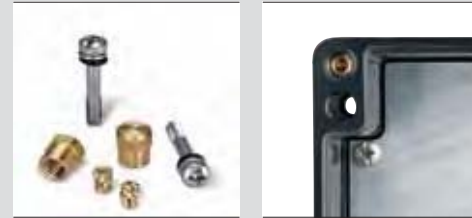
ATEX Code:	 II 2GD
Ex Protection type:	Ex e IIC Gb Ex e ia IIC Gb Ex t IIIC IP66 Db (Ta -50°C +40°C if not specified)
Certificates:	
- Empty Enclosure	Sira 08ATEX3041U IECEx SIR 11.0057U
- Control boxes	Sira 11ATEX3008 IECEx SIR 11.0059
- Terminal Box	Sira 08ATEX3042 IECEx SIR 11.0058
Degree of Protection:	IP66
Operating Temperature Range:	-60°C to +75°C (limits)
Temperature Class and Ambient	
- Standard	Ambient 40°C e T6 Class
- Optional	Ambient 60°C e T6 Class Ambient 60°C e T5 Class Ambient 75°C e T4 Class
Impact Resistance:	7 J
Material:	• Glass Reinforced Polyester (SMC) 4 mm thickness • Carbon Loaded for Anti-Static protection
Surface Resistance:	Antistatic properties: < 10⁹ Ω
Finish:	Natural Black RAL 9005

■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

Saline solution	Acids		Bases		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited Resistance	Resistant	Limited Resistance	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant

■ LID FIXING SCREWS

Corrosion resistant Stainless Steel (complete with retaining washer) for flat blade and PH screw head driver. Mounting holes located outside of the sealed area.




■ TERMINAL MOUNTING



Terminals shall be rail or internal plate mounted. DIN rail (TS 15, TS 35): 1 row. Certified terminal manufacturer and type have cross section 1.5mm² to 35mm². Our assembly service can supply these enclosures pre-assembled with terminals and cable glands according to customer's requirements.



■ CERTIFICATION LABEL

Certified self adhesive label. Stainless steel bonded plate (on request).

 Via Costa Erta 15 Parre BG ITALY

Cod. 644.xxxx-yyy	Year 2011
S/N xxxxxxxx	V xxxx V
SIRA08ATEX3042	I max xxxx A
IECEx SIR 08.0014	P max xxxx W

Ex e IIC Tx Gb
Ex ia IIC Tx Gb
Ex e ia IIC Tx Gb
Ex t IIIC IP66 Txx°C Db
Ta -xx°C to xx°C

 0051
 II 2 GD

**DO NOT OPEN WHEN ENERGIZED
IN PRESENCE OF EXPLOSIVE ATMOSPHERE**

■ INCLUDED IN DELIVERY



- Empty Enclosure:
Enclosure with silicone seal and accessories not assembled.
- Terminal Box:
Pre-drilled Enclosure system – depending on version either with DIN rails and accessories and terminals (assembled). Cable glands can be supplied on request.

■ APPLICATION EXAMPLES



■ MAXIMUM PERMITTED POWER DISSIPATION

Code	Enclosure size	Ambient 40°C T6 class (●)		Ambient 60°C T6 class (●)		Ambient 60°C T5 class (●)		Ambient 75°C T4 class (●)	
644.0100	75x80x55	2.5	4.5	1.3	1.5	2.5	2.9	2.55	4.9
644.0200	75x80x75	2.6	4.6	1.3	1.5	2.6	3.1	2.9	5.2
644.0110	75x110x55	3.2	5	1.35	1.6	2.85	3.5	3.6	6
644.0210	75x110x75	3.4	5.1	1.35	1.65	3	3.8	4	6.4
644.0120	75x160x55	4.5	6	1.4	1.75	3.55	4.8	5.8	8.2
644.0220	75x160x75	4.7	6.1	1.45	1.8	3.6	4.9	6	8.4
644.0130	75x190x55	5.4	6.6	1.5	2	4	5.6	7	9.4
644.0230	75x190x75	5.5	6.7	1.55	2.05	4.05	5.7	7.2	9.85
644.0140	75x230x55	6.5	7.5	1.55	2.2	4.6	6.7	8.9	11.3
644.0240	75x230x75	6.6	7.6	1.6	2.25	4.7	6.8	9.2	11.6
644.0345	120x122x90	3.87	5.95	1.46	1.86	3.44	3.88	6.09	8.48
644.0350	120x220x90	3.75	7	2.3	2	3.8	4.5	8.25	1.6
644.0360	160x160x90	3	6.4	2.5	1.7	3.2	4	6	14.5
644.0370	160x260x90	6.3	8.5	2.8	2.5	5.1	5.6	13.5	19.7
644.0380	160x360x90	7.2	7.4	2.75	2.75	NA	NA	NA	NA
644.0390	160x560x90	11.7	11.2	3.8	4.2	NA	NA	NA	NA
644.0465	250x255x120	7.44	9.7	1.87	2.8	5.88	6.41	15.27	17.76
644.0485	250x400x120	9.57	11.94	2.12	3.36	NA	NA	NA	NA
644.0595	405x400x165	11.63	14.11	2.36	3.9	NA	NA	NA	NA

(▲) for cage type terminals. (●) for screw type terminals

■ MAXIMUM NUMBER OF TERMINALS - PHYSICAL DIMENSIONS

Code	Enclosure size	Term. Block	Mini 2.5mm ²	2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²	35mm ²	70/90mm ²	120/150mm ²
644.0100	75x80x55	6	6								
644.0200	75x80x75	6	6								
644.0110	75x110x55	10	12								
644.0210	75x110x75	10	12								
644.0120	75x160x55	18	22								
644.0220	75x160x75	18	22								
644.0130	75x190x55	24	28								
644.0230	75x190x75	24	28								
644.0140	75x230x55	30	35								
644.0240	75x230x75	30	35								
644.0345	120x122x90			12	10	7	6	4	3		
644.0350	120x220x90			31	26	20	16	12	9		
644.0360	160x160x90			19	16	12	10	7	5		
644.0370	160x260x90			32	32	25	20	16	12		
644.0380	160x360x90			58	49	38	30	24	18		
644.0390	160x560x90			94	81	63	50	41	30		
644.0465	250x255x120			36	30	23	19	15	11		
644.0485	250x400x120			65	54	42	33	27	20		
644.0595	405x400x165			64	54	41	33	27	20	11	10

The quantity of applicable terminals can be fitted in the enclosure is dependant on the internal width. The number may need to be reduced, depending on the actual current flowing in the conductors. In case the power dissipation of the terminals is superior to the maximum permitted power here stated, a different enclosure must be chosen or the temperature class must be changed.

■ APPROVED ATEX CERTIFIED TERMINALS

Terminals shall be selected from this list of approved manufacturers. Additional manufacturers are available on request after approval of our internal laboratory.
Terminal blocks (internal plate mounted) and mini terminals (DIN rail TS15) are suitable for use with small size enclosures.
Standard rail terminals (DIN rail TS35) are suitable for use with large size enclosures.
When the enclosure is supplied as Ex i (low voltage instrumentation application), a suitable set of blue terminals is applied.
Terminals can be screw type or spring cage.
Cross section is from 1,5 mm² to 120 mm².

- WEIDMULLER**
Terminal Block BK, MK – Mini Terminal AKZ – Terminal Type: WDU, ZDU, SAK, SAK K.
- WAGO**
Terminal Block 262, 264 – Terminal Type: 280, 281, 282, 283, 284 and 2002, 2004, 2006, 2010, 2016.
- PHOENIX**
Terminal Type: UT, ST, DT, UK
- ABB ENTRELEC**
Terminal M ... EX.
- CABUR**
Terminal Block BPL, TPL - Mini Terminal RN - Terminal CBD.



EX e - Ex i Terminals



EX e Terminal Blocks

■ DIN METALLIC RAILS

- Steel, cold lamination
- Electrolytic zinc coating
- Thickness of zinc coating: 8 micron min.
- Length of the rail: 2m
- Non drilled rail with drilling points provided
- Drilled rail with slots

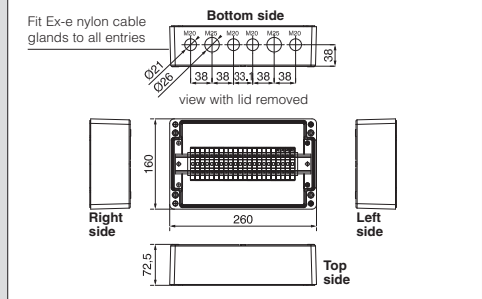
■ CUSTOMISATIONS

Scame can supply these enclosures as empty components or after performing the following operations:

- Drilling entries
- Tapping holes
- Fitting terminals
- Supplying suitable cable glands

Detail of components	
Terminal fixing device	2 pieces
Terminals	18 pieces x 2.5mm
Earth terminals	4 pieces x 2.5mm
Cable glands	
M25	2 pieces
M20	4 pieces

Terminal Box Assembly Drawing



Enclosure + ECP



Enclosure + Internal Plate

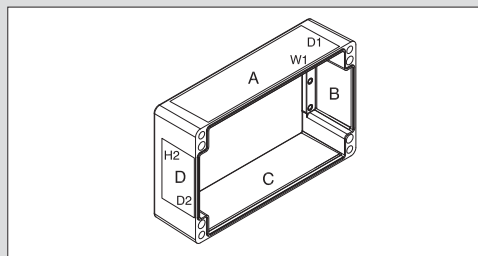


Terminal Box without Glands

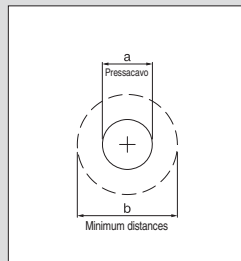
■ STANDARD ENTRY ARRANGEMENTS

Code	Enclosure size	Top/Bottom Sides A/C								Left/Right Sides B/D							
		M12	M16	M20	M25	M32	M40	M50	M63	M12	M16	M20	M25	M32	M40	M50	M63
644.0100	75x80x55	2	1	1	-	-	-	-	-	1	1	-	-	-	-	-	-
644.0200	75x80x75	4	2	1	1	-	-	-	-	2	2	-	-	-	-	-	-
644.0110	75x110x55	3	3	2	-	-	-	-	-	1	1	-	-	-	-	-	-
644.0210	75x110x75	6	6	3	2	1	-	-	-	2	2	-	-	-	-	-	-
644.0120	75x160x55	5	5	4	-	-	-	-	-	1	1	-	-	-	-	-	-
644.0220	75x160x75	10	10	5	3	2	-	-	-	2	2	-	-	-	-	-	-
644.0130	75x190x55	7	6	5	-	-	-	-	-	1	1	-	-	-	-	-	-
644.0230	75x190x75	14	12	6	4	3	-	-	-	2	2	-	-	-	-	-	-
644.0140	75x230x55	8	6	4	-	-	-	-	-	1	1	-	-	-	-	-	-
644.0240	75x230x75	16	12	6	4	2	-	-	-	2	2	-	-	-	-	-	-
644.0345	120x122x90	6	5	2	1	1	-	-	-	5	5	4	1	1	-	-	-
644.0350	120x220x90	14	14	9	4	3	-	-	-	5	4	2	1	1	-	-	-
644.0360	160x160x90	12	8	6	3	2	1	-	-	6	6	4	2	1	-	-	-
644.0370	160x260x90	26	16	12	6	4	3	-	-	6	6	4	2	1	-	-	-
644.0380	160x360x90	38	22	18	9	6	4	-	-	6	6	4	2	1	-	-	-
644.0390	160x560x90	58	36	28	14	8	6	-	-	6	6	4	2	1	-	-	-
644.0465	250x255x120	24	18	10	8	4	3	2	2	21	15	8	6	3	2	2	1
644.0485	250x400x120	42	33	18	16	6	5	4	3	21	15	8	6	3	2	2	1
644.0595	405x400x165	70	44	27	21	12	10	4	3	65	40	24	21	10	10	4	3

■ MINIMUM DISTANCES FOR DRILLING THE ENCLOSURE



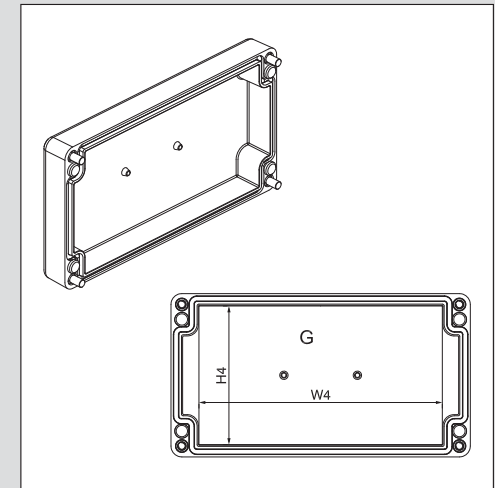
Cable gland dim. A (mm)	B (mm)
12	25
16	32
20	39
25	46
32	58
40	68
50	81
63	96



Code	Enclosure size	Top/Bottom Sides A/C W1xD1	Left/Right Sides B/D H2xD2
644.0100	75x80x55	48x34	28x28
644.0200	75x80x75	48x54	27x48
644.0110	75x110x55	80x34	28x28
644.0210	75x110x75	80x54	27x48
644.0120	75x160x55	130x34	28x28
644.0220	75x160x75	130x54	27x48
644.0130	75x190x55	160x34	28x28
644.0230	75x190x75	160x54	27x48
644.0140	75x230x55	90x34(x2)	28x28
644.0240	75x230x75	90x54(x2)	27x48
644.0345	120x122x90	75x58	60x52
644.0350	120x220x90	180x58	60x52
644.0360	160x160x90	110x65	84x56
644.0370	160x260x90	210x65	84x56
644.0380	160x360x90	310x65	84x56
644.0390	160x560x90	240x65(x2)	84x56
644.0435	250x255x120	200x88	168x81
644.0485	250x400x120	345x88	168x81
644.0595	405x400x165	345x133	323x126

■ COVER DRILLING MINIMUM DISTANCES

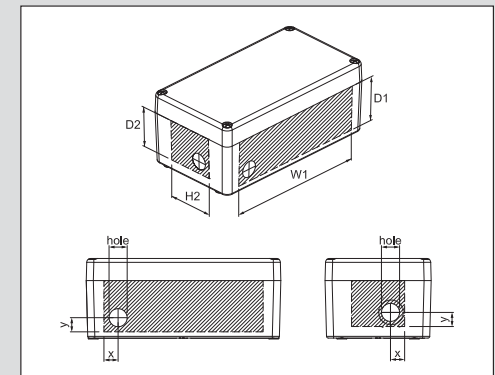
Code	Enclosure size	Maximum drilling distance	Top/Bottom Sides A/C			
			Ø 30,5mm	Ø 22,5mm	Ø 32,5mm	Ø 30,8mm
644.0200	75x80x75	55x45	-	1	-	1
644.0210	75x110x75	55x75	-	1	-	1
644.0220	75x160x75	55x125	-	2	-	2
644.0230	75x190x75	55x155	-	3	-	2
644.0240	75x230x75	55x195	-	3	-	3
644.0345	120x122x90	102x80	1	2	1	1
644.0350	120x220x90	102x179	2	6	2	2
644.0360	160x160x90	140x110	2	4	2	2
644.0370	160x260x90	140x210	6	6	6	6
644.0380	160x360x90	140x310	8	10	8	8
644.0390	160x560x90	140x510	13	18	13	13
644.0465	250x255x120	230x205	9	12	9	9
644.0485	250x400x120	230x350	15	24	15	15
644.0595	405x400x165	385x350	25	40	25	25



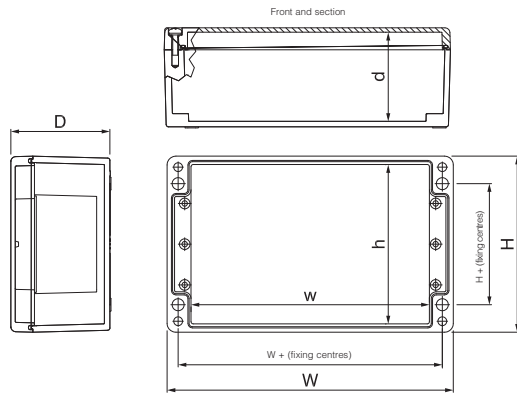
■ MINIMUM DISTANCES OF HOLES FOR DRAINAGE VALVES M20-M25-M12

Code	Enclosure size	Top/Bottom Sides A/C W1xD1	Left/Right Sides B/D H2xD2
644.0100	75x80x55	48x34	28x28
644.0200	75x80x75	48x54	27x48
644.0110	75x110x55	80x34	28x28
644.0210	75x110x75	80x54	27x48
644.0120	75x160x55	130x34	28x28
644.0220	75x160x75	130x54	27x48
644.0130	75x190x55	160x34	28x28
644.0230	75x190x75	160x54	27x48
644.0140	75x230x55	90x34 (x2)	28x28
644.0240	75x230x75	90x54 (x2)	27x48
644.0345	120x122x90	75x58	60x52
644.0350	120x220x90	180x58	60x52
644.0360	160x160x90	110x65	84x56
644.0370	160x260x90	210x65	84x56
644.0380	160x360x90	310x65	84x56
644.0390	160x560x90	240x65 (x2)	84x56
644.0465	250x255x120	200x88	168x81
644.0485	250x400x120	345x88	168x81
644.0595	405x400x165	345x133	323x126

Hole Diameter (mm) M20 Position x/y 16	Hole Diameter (mm) M25 Position x/y 20	Hole Diameter (mm) M12 Position x/y 15
Ø 20.5/21	Ø 25.5/26	Ø 12.2/12.4



DIMENSIONS



Code	Dimensions	External			Internal			Fixings		Screw
		H	W	D	h	w	d	H+	W+	
644.0100	75x80x55	75	80	55	58	48	46	45	68	M4
644.0200	75x80x75	75	80	75	58	48	66	45	68	
644.0110	75x110x55	75	110	55	58	78	46	45	98	
644.0210	75x110x75	75	110	75	58	78	66	45	98	
644.0120	75x160x55	75	160	55	58	128	46	45	148	
644.0220	75x160x75	75	160	75	58	128	66	45	148	
644.0130	75x190x55	75	190	55	58	158	46	45	178	
644.0230	75x190x75	75	190	75	58	158	66	45	178	
644.0140	75x230x55	75	230	55	58	198	46	39	218	
644.0240	75x230x75	75	230	75	58	198	66	39	218	
644.0345	120x122x90	120	122	90	102	104	80	82	106	M6
644.0350	120x220x90	120	220	90	102	190	80	82	204	
644.0360	160x160x90	160	160	90	142	112	80	110	140	
644.0370	160x260x90	160	260	90	142	212	80	110	240	
644.0380	160x360x90	160	360	90	142	312	80	110	340	
644.0390	160x560x90	160	560	90	142	512	80	110	540	
644.0465	250x255x120	250	255	120	230	235	110	200	235	
644.0485	250x400x120	250	400	120	230	380	110	200	380	
644.0595	405x400x165	405	400	165	385	380	154	355	380	