

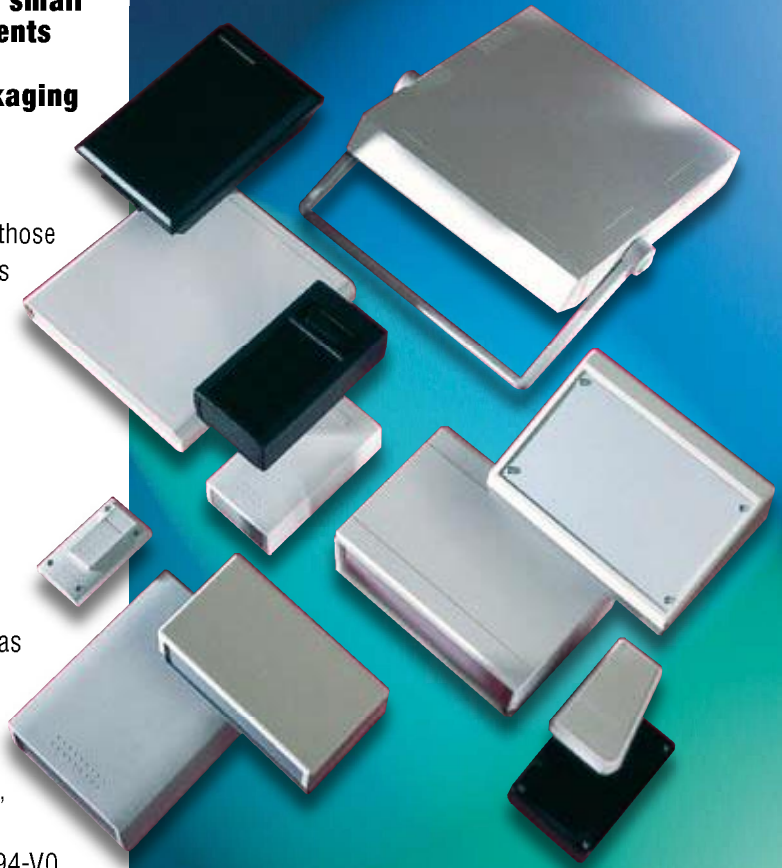
Small Enclosures

VERO TECHNOLOGIES : Small Enclosures

VERO Technologies plastic small enclosures fulfil requirements for aesthetically pleasing, technically excellent, packaging solutions.

Development trends in small enclosures are broadly similar to those that have driven subrack advances in the last few years; greater flexibility, simpler yet stronger construction and EMC protection.

Moulded enclosures need to be economical, good-looking and technically excellent. Our plastic cases are eminently suitable for portable or fixed use in a wide variety of applications such as the communications, test and measurement, networking and medical markets. Our cases have won prestigious IF design awards, and our newer products include scratch resistant finishes and UL94-V0 flammability rating. These injection moulded cases provide a low-cost option for the designer bringing new products to the electronics market.



▼ Small Enclosures

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web: www.verotl.com contact: sales@verotech.co.uk

Introduction: Plastic Enclosures

Injection moulded plastic enclosures offer a low cost low risk market entry option for the designer bringing new products to the electronics market.

We have a wide range of enclosure styles and sizes to choose from, as well as customising options to personalise your enclosure choice.

Customising options are:

- Drilling
- Machining
- Silk screening
- RF coatings
- Colour changes

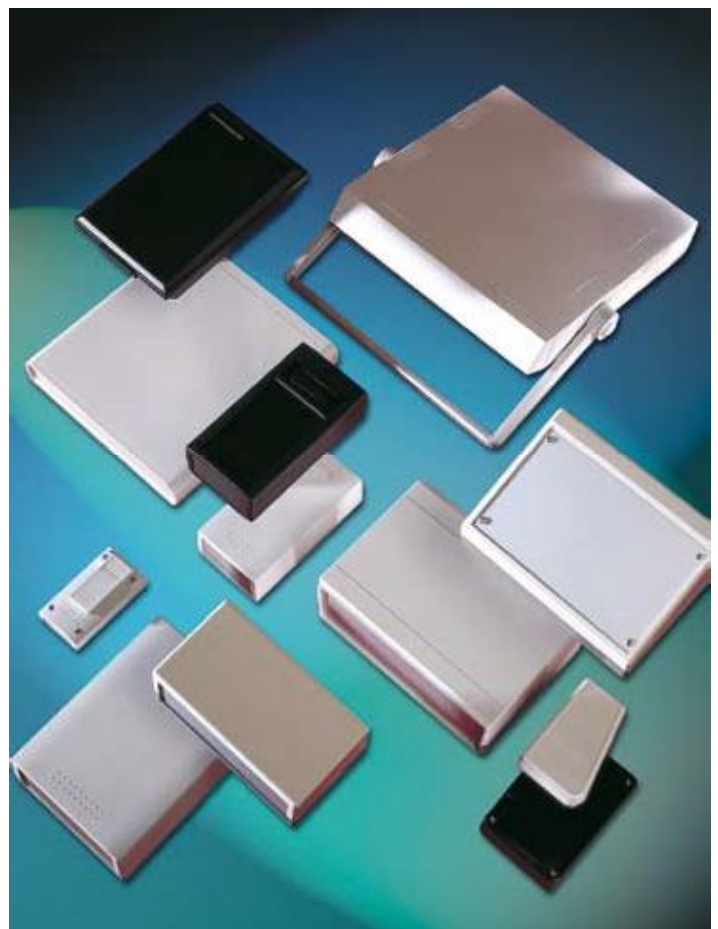
These customising options will be subject to a minimum order quantity. Please contact our Sales and Applications department on +44.(0)1489.774500 for further details.

VERONEX and **IBX** cases have both won the prestigious IF design award, for excellent design and functionality. Other ranges include the **NEW PATINA** cases which offer a scratch resistant finish, UL94-V0 rated material and two styles of assembly. The **APOLLO** range offers a modern design and a snap together design which removes the requirement for screws and is therefore easy to recycle.

We have endeavoured to provide as much information as possible in this catalogue section, however if you do require any additional information, please contact your local sales office for technical support.



Patina cases



Plastic enclosures

Small Enclosures: PCB Dimensional Accommodation Index

VERONEX

Pages 7 – 15

Accepts maximum PCB size of mm(inches) approx.

35 x 50 (1,38" x 1,97")	55 X 55 (2,17" x 2,17")
35 x 80 (1,38" x 3,15")	75 x 100 (2,95" x 3,94")
55 x 110 (2,17" x 4,33")	110 x 95 (4,33" x 3,74")
75 x 150 (2,95" x 5,91")	110 x 145 (4,33" x 5,71")

IBX

Pages 16 – 18

Accepts maximum PCB size of mm(inches) approx.

233 x 240 (9,17" x 9,45")

IDAS

Pages 19 – 20

Accepts maximum PCB size of mm(inches) approx.

209 x 214 (8,23" x 8,43")

PAIINA and SLOPING FRONT BOX Pages 21 – 24

Accepts maximum PCB size of mm(inches) approx.

160 x 100 (6,30" x 3,94")	100 x 50 (3,94" x 1,99")
120 x 100 (4,72" x 3,94")	
110 x 60 (4,33" x 2,36")	

APOLLO

Pages 25 – 26

Accepts maximum PCB size of mm(inches) approx.

140 x 80 (5,51" x 3,15")
190 x 130 (7,48" x 5,12")

GENERAL PURPOSE CASES

Page 27

Accepts maximum PCB size of mm(inches) approx.

55 x 35 (2,17" x 1,38")
95 x 55 (3,74" x 2,17")
155 x 85 (6,1" x 3,35")

FLIPTOP

Page 28

Accepts maximum PCB size of mm(inches) approx.

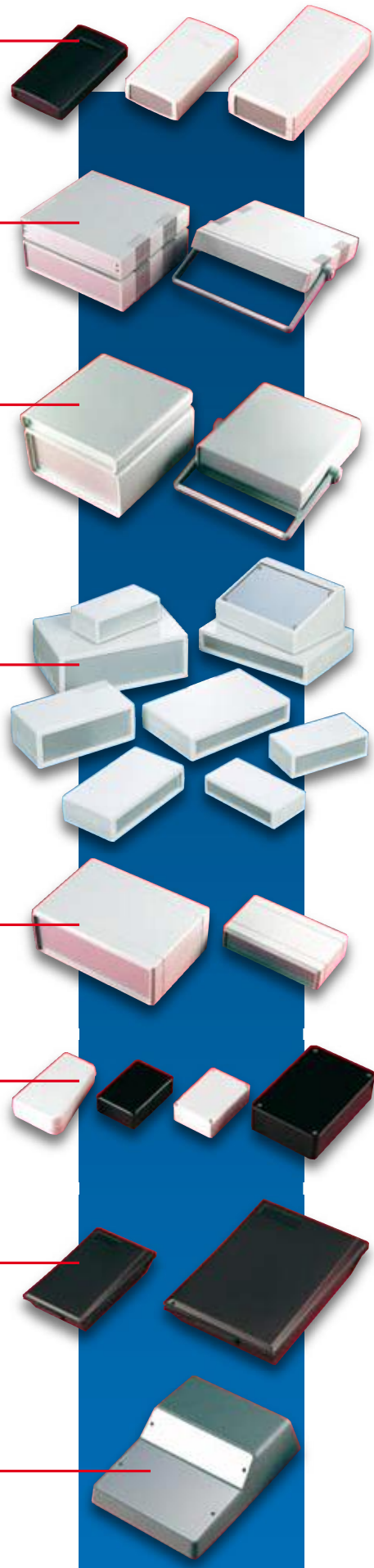
100 x 160 (6,30" x 3,94")
61 x 110 (2,40" x 4,33")

DESKTOP

Page 29

Accepts maximum PCB size of mm(inches) approx.

90 x 135 (3,54" x 5,31")



VERONEX Cases

VERONEX is a breakthrough in plastic enclosure design, combining the versatility and functionality demanded by engineers, with the modern styling appreciated by their customers.

The VERONEX range, available in 5 different plan sizes and 9 heights, is manufactured in UL94-V0 flame retardant ABS. The enclosures boast an attractive, lightly textured non-scratch finish which has been achieved using a unique chemical etch process.

A selection of quality accessories ideally suits VERONEX enclosures to a wide variety of OEM and consumer electronics, electrical and telecommunications applications. (see page14).

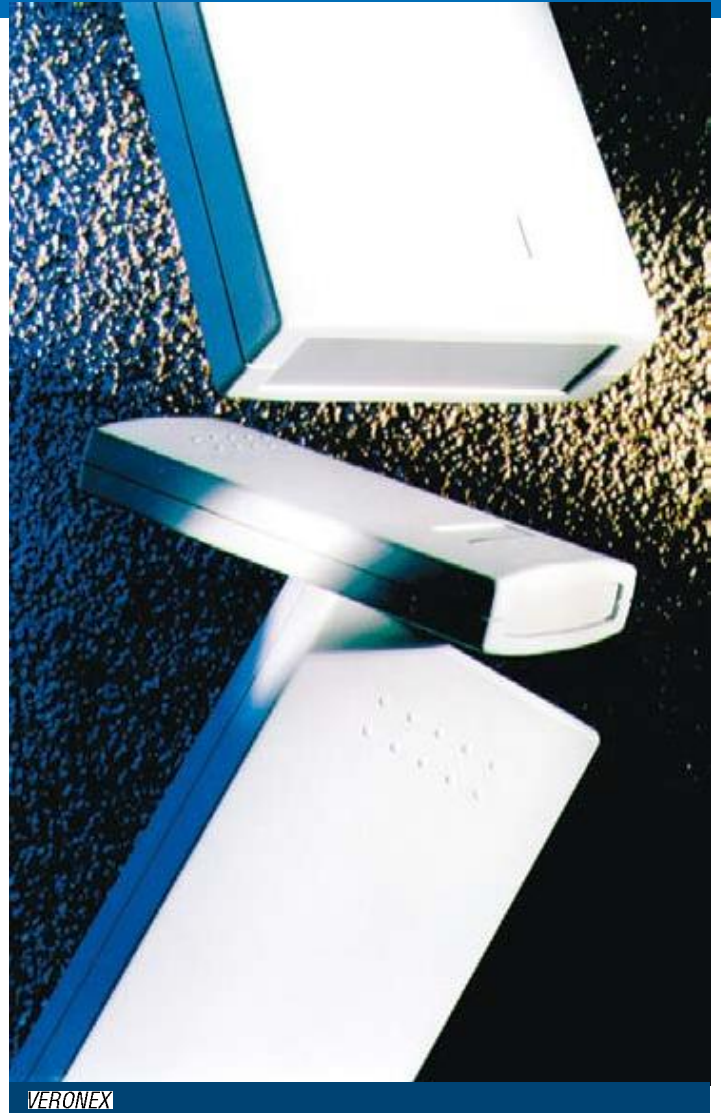
MATERIAL PERFORMANCE CHARACTERISTICS

ABS (FLAME RETARDANT)

MECHANICAL PROPERTIES	Units	Test method	Result
Izod impact strength	J/m	ASTM D256 ISO R180	60
Impact strength	KJ/m ²		
Unnotched	KJ/m ²	DIN 53453	70
Notched	KJ/m ²	ISO R179	7
Tensile properties			
Yield strength	N/mm ²	similar to DIN53455	17
Failure strength	N/mm ²		22
Elastic modulus	N/mm ²	ISO R527	1800
Flexural properties			
Maximum load	N/mm ²	ASTM D790	35
Deflection at break	mm	ISO 178	-
Elastic modulus	N/mm ²		1900

THERMAL PROPERTIES	Units	Test method	Result
Heat deflection temperature	°C	ASTM D648 DIN 53461 ISO 75A	85
Vicat softening point	°C	ASTM D1525	98
	°C	DIN 53460 ISO 306	89
Melt flow index	g/10mins	ASTM D1238 DIN 53735 ISO R1133	10
UL combustibility test	Fire classification	UL subject 94	V-0
UL file number	E70014(M)		

ELECTRICAL PROPERTIES	Units	Test method	Result
Specific volume resistivity	Ohm. cm	DIN 53482 VDE 0303	450
Dielectric strength	KV/mm	IEC243 DIN 53481	44



VERONEX IP64 Rated Cases

The VERONEX IP64 range is available in 4 plan sizes and 9 different heights. The enclosure is a simple two part construction with plastic end panels which are readily push fitted between two ribs in the case moulding. This, together with the tongue-and-groove joint which connects the two covers, achieves the IP64 seal against the ingress of dust and water.

Contents of kit

Description	Qty.	Material/Finish
Base moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Top moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Moulded end panels	2	RAL 7037,UL94-V0 flame retardant ABS
Case fixing screws	4	
Self adhesive feet	4	
(size 3 and 4 only)		
Self-tapping pcb screws	4	

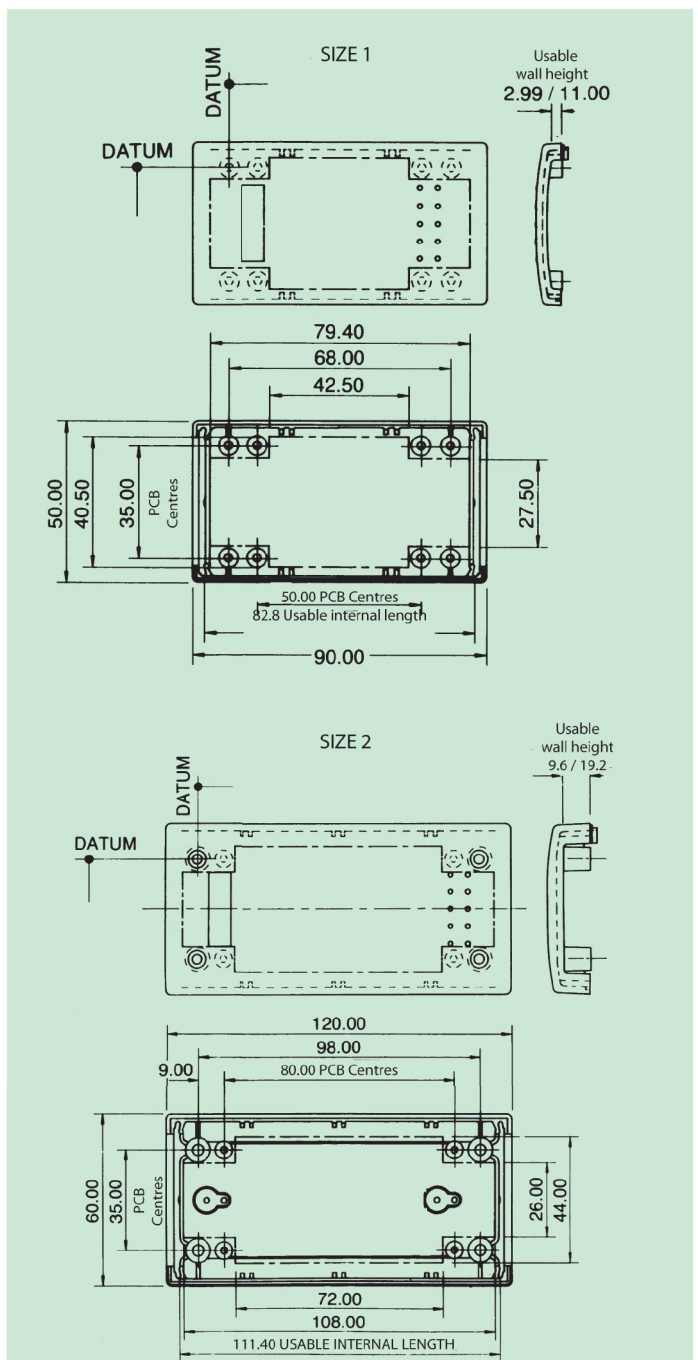
Ordering information

Description	H	W	D	Order code
	90	50	16	75-227894
Size 1	90	50	24	75-227895
	90	50	32	75-227896
Size 1 Black	90	50	16	75-237424
	90	50	24	75-237425
	120	60	30	75-227897
Size 2	120	60	40	75-227898
	120	60	50	75-227899
Size 2 Black	120	60	30	75-237426
	120	60	40	75-237427

For details of a full range of VERONEX compatible accessories, please refer to the accessories section



VERONEX IP64 size 1 and 2



web: www.verotl.com contact: sales@verotech.co.uk

VERONEX IP64 Rated Cases

Contents of kit

Item/Description	Qty.	Material/Finish
Base moulding ABS	1	RAL 7035,UL94-V0 flame retardant
Top moulding ABS	1	RAL 7035,UL94-V0 flame retardant
Moulded end panels ABS	2	RAL 7037,UL94-V0 flame retardant

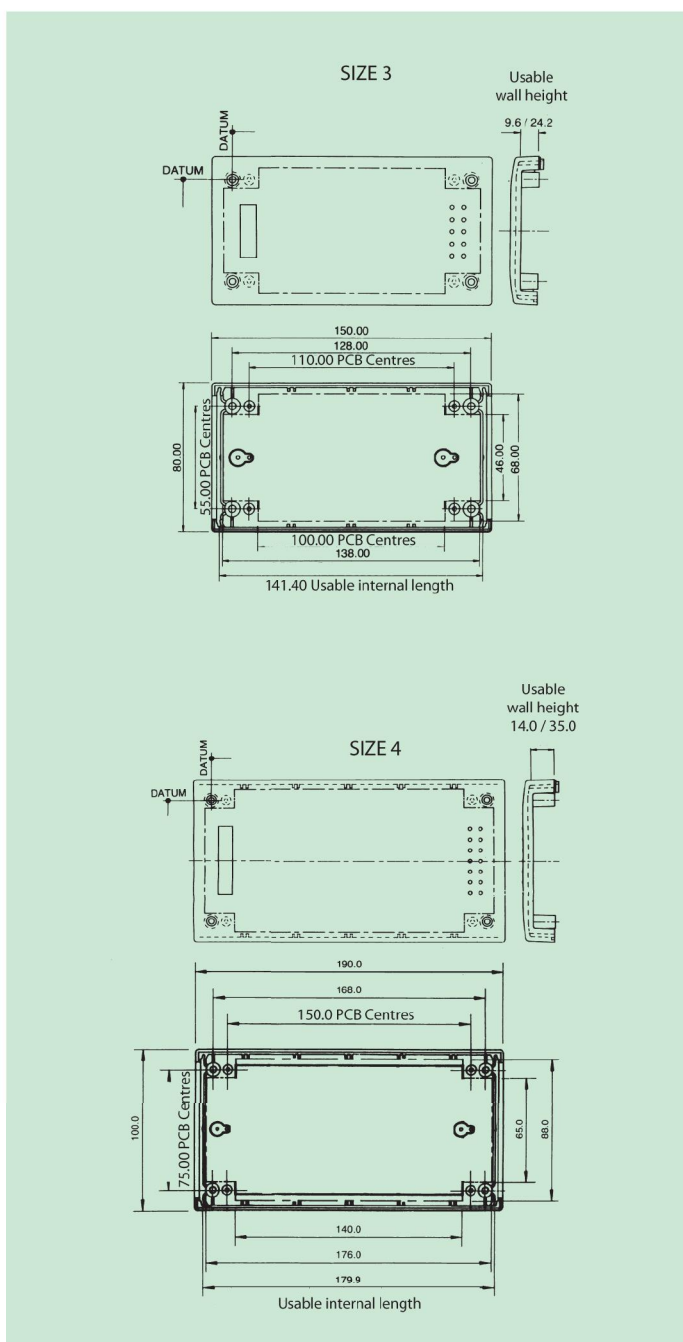
Ordering information

Description	H	W	D	Order code
Size 3	150	80	30	75-227900
Size 3	150	80	45	75-227901
Size 3	150	80	60	75-227902
Size 3 Black	150	80	30	75-237429
Size 3 Black	150	80	45	75-237430
Size 4	190	100	40	75-227903
Size 4	190	100	60	75-227904

For details of a full range of VERONEX compatible accessories, please refer to the accessories section



VERONEX IP64 size 3 and 4



VERONEX Hand-held Cases

The VERONEX hand held range have been designed for a variety of portable applications including data acquisition, field test and measurement.

The size 1 units, are supplied with the belt clip fitted as standard, but do not have a LCD cut out or recessed area for membranes. Unique to the two larger units are the top covers which feature a recessed membrane keypad area designed to accept a 74mm x 40mm (size 2) or 96mm x 60mm (size 3) membranes and an LCD cutout to accept meters and displays – see page 11 for details.

The size 2 units will accept a 40mm x 20mm LCD (viewing area 31 x 14mm) and size 3 will accept a 60 x 30mm LCD (viewing area 47 x 18mm).

Contents of kit

Description	Qty.	Material/Finish
Base moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Top moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Moulded end panels	2	RAL 7035,UL94-V0 flame retardant ABS
Belt clip (size 1 only)		
Fixing screws	4	
Self tapping pcb screws	4	
LCD lens (size 2 and 3 only)		Clear polycarbonate

Ordering information

Description: Without battery compartment

Size	H	W	D	Order code
1	90	50	16	75-228111
	90	50	24	75-228112
2	120	60	30	75-228113
3	150	80	30	75-228114
	150	80	45	75-228115

Description: With battery compartment

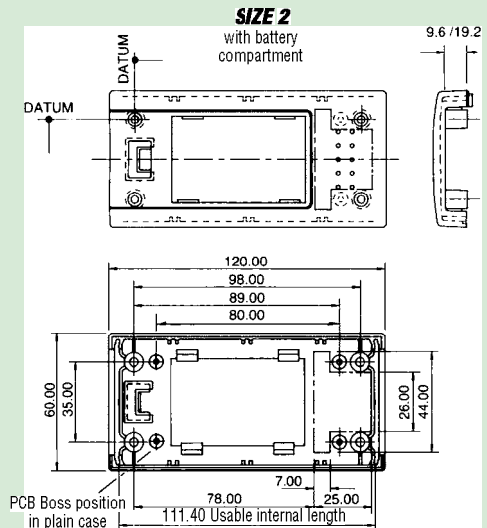
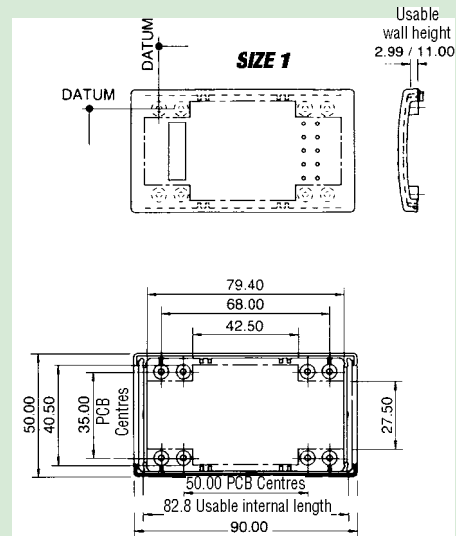
Size	H	W	D	Order code
2 ★	120	60	30	75-227909
3 ★★	150	80	30	75-227910
	150	80	45	75-227911

- ★ Case will accept Shallow Battery Box
- ★★ Case will accept either Shallow or Deep Battery Box

For details of a full range of VERONEX compatible accessories, please refer to page 15.

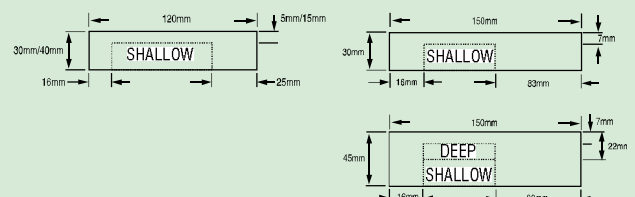


VERONEX hand held



SIZE 2 - SHALLOW BATTERY BOX

SIZE 3 - SHALLOW / DEEP BATTERY BOX



VERONEX Hand-held Cases

These size 2 and 3 cases are supplied in black and feature both LCD display and membrane keypad areas on the top cover, and a battery compartment on the base.

Contents of kit

Description	Qty.	Material/Finish
Base moulding	1	Black, UL94-V0 flame retardant ABS
1 Top moulding	1	Black, UL94-V0 flame retardant ABS
2 Moulded end panels	2	Black, UL94-V0 flame retardant ABS
4 Fixing screws	4	
4 Self tapping pcb screws	4	
LCD lens		Clear polycarbonate

Ordering information

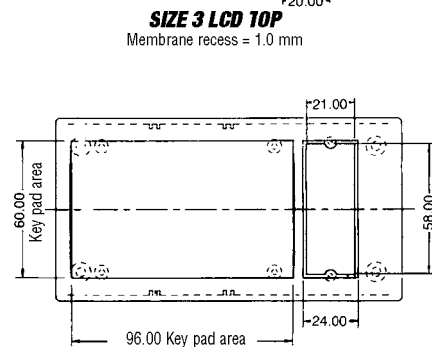
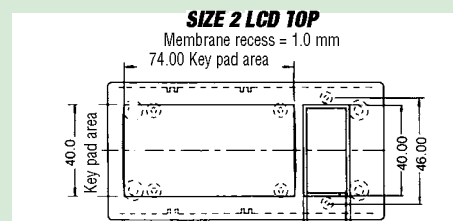
Description: With battery compartment

Size	L	W	H	Order code
2	120	60	30	75-237428
3	150	80	30	75-237431
	150	80	45	75-237432

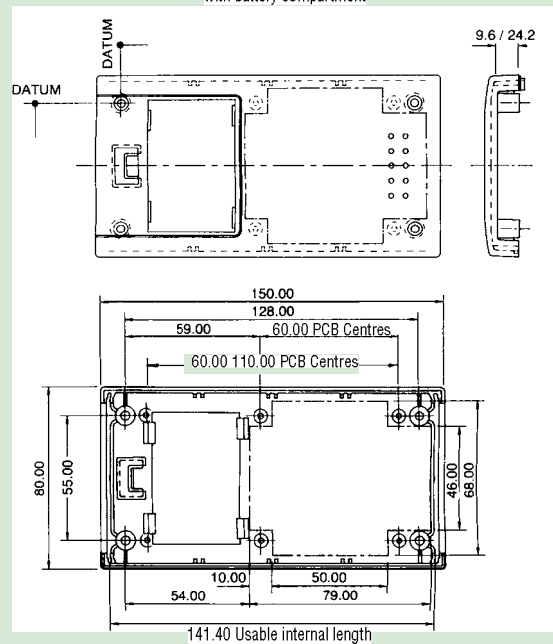
For details of a full range of VERONEX compatible accessories, please refer to page 15.



VERONEX hand held



SIZE 3
with battery compartment



VERONEX Instrument Cases

The instrument case range consists of two cover mouldings and two end panels - one plastic and one aluminium.

Battery compartments with sliding covers are supplied as standard in 9 different unit sizes. Battery holders, used in conjunction with the battery compartment are designed to accept a variety of battery sizes.

The two smaller plan sizes (2 and 3) can be fitted with an optional belt clip accessory, and the larger units are supplied with 4 self adhesive non slip feet for table top instrumentation applications. Knock-out keystlots are stamped in the mouldings for wall mounted instrumentation applications.

Contents of kit

Description	Qty.	Material/Finish
Base moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Top moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Moulded end panel	1	RAL 7035,UL94-V0 flame retardant ABS
Aluminium end panel	1	1,6mm anodised aluminium
Case fixing screws	4	
Self adhesive feet (sizes 3,4 and 5)	4	
Self tapping pcb screws	4	
Battery cover in battery compartment versions.		

Ordering information

Description: Without battery compartment

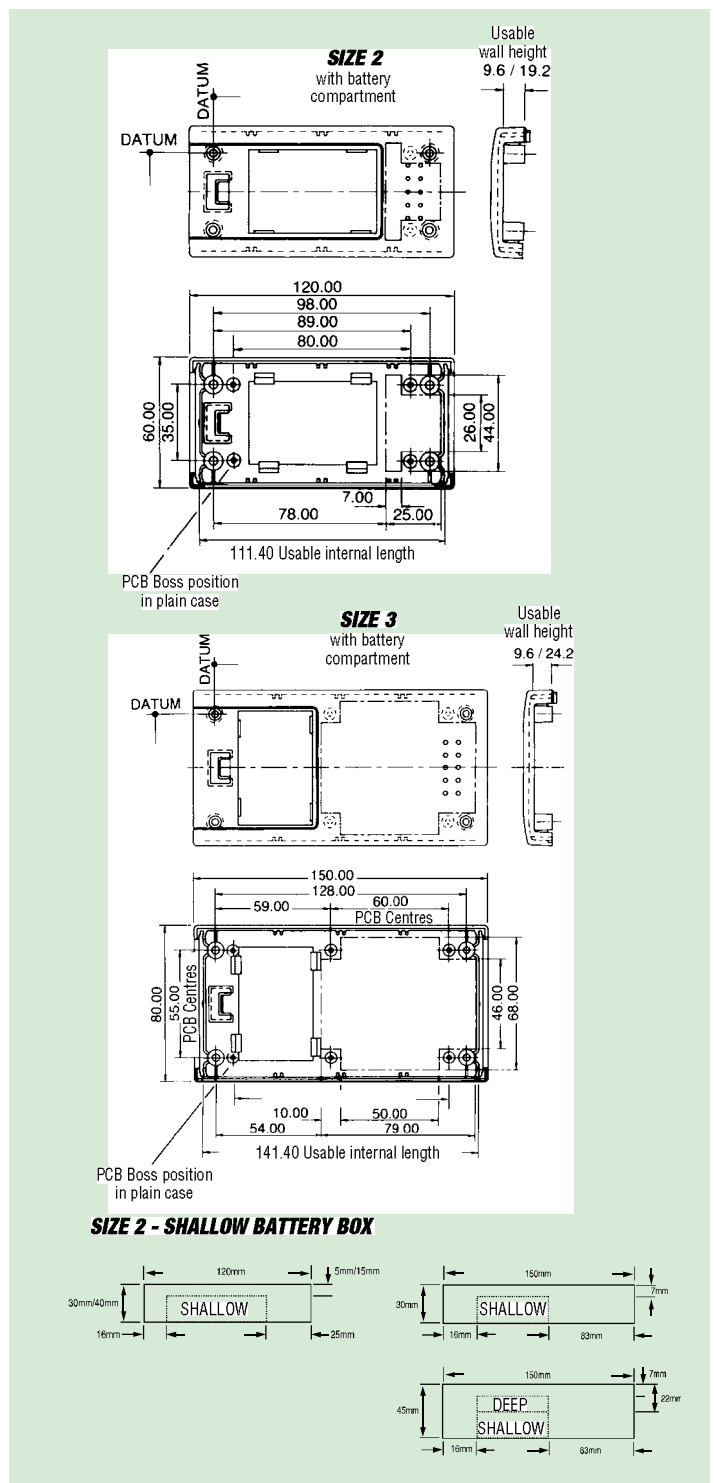
Size	H	W	D	Order code
2	120	60	30	75-228099
	120	60	40	75-228100
	120	60	50	75-228101
3	120	60	30	75-228102
	120	60	40	75-228103
	120	60	50	75-228104

Description: With battery compartment

Size	H	W	D	Order code
2 ★	120	60	30	75-227915
2 ★★	120	60	40	75-227916
3 ★	150	80	30	75-227917
3 ★★	150	80	45	75-227918

- ★ Case will accept Shallow Battery Box
- ★★ Case will accept either Shallow or Deep Battery Box

For details of a full range of VERONEX compatible accessories, please refer to page 15.



VERONEX Instrument Cases

Contents of kit

Description	Qty.	Material/Finish
Base moulding	1	RAL 7035, UL94-V0 flame retardant ABS
Top moulding	1	RAL 7035, UL94-V0 flame retardant ABS
Moulded end panel	1	RAL 7035, UL94-V0 flame retardant ABS
Aluminium end panel	1	1,6mm anodised aluminium
Case fixing screws	4	
Self adhesive feet	4	
(sizes 3, 4 and 5)		
Self tapping pcb screws	4	
Battery cover in battery compartment versions. (as base moulding)		

Ordering information

Description: Without battery compartment

Size	H	W	D	Order code
4	190	100	40	75-228105
	190	100	60	75-228106
	190	100	80	75-228107
5	185	135	40	75-228108
	185	135	65	75-228109
	185	135	80	75-228110

Description: With battery compartment

Size	H	W	D	Order code
4 ★	190	100	40	75-227920
4 ★★	190	100	60	75-227921
5 ★	185	135	40	75-227922
5 ★★	185	135	65	75-227923

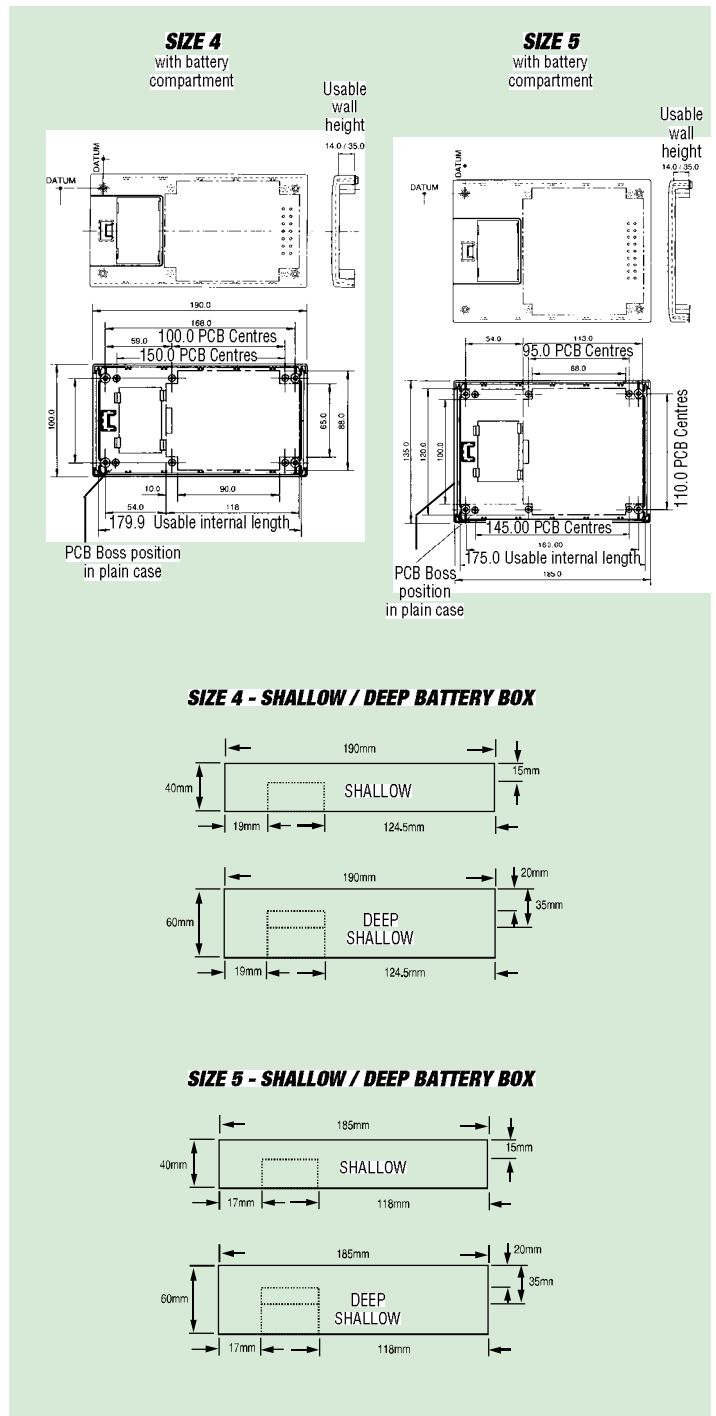
★ Case will accept Shallow Battery Box

★★ Case will accept either Shallow or Deep Battery Box

For details of a full range of VERONEX compatible accessories, please refer to page 15.



VERONEX instrument



VERONEX EMC Cases

VERONEX EMC cases have been introduced to meet the increasing demand for protection from potentially damaging E and H field interferences.

The mouldings have been coated with copper silver paint (25m - 50m) and the tongue and groove joints ensure good continuity along the enclosure. The end panels are also uniquely retained to ensure good electrical contact when coatings are applied.

The enclosures available offer a variety of styles, plastic end panels, metal end panels, battery compartments and accessories.

Good adhesion is achieved on plastic substrate and the copper silver is resistant to atmospheric oxidation and corrosion. Coatings are applied by conventional spraying techniques using electroform masks for precise selectivity of coverage.



Contents of kit

Description	Qty	Material/Finish
Base moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Top moulding	1	RAL 7035,UL94-V0 flame retardant ABS
Moulded end panel	2	RAL 7035,UL94-V0 flame retardant ABS
Case fixing screws	4	
Self adhesive feet (sizes 3,4 and 5)	4	
Self tapping pcb screws	4	
Battery cover in battery compartment versions (as base moulding)		

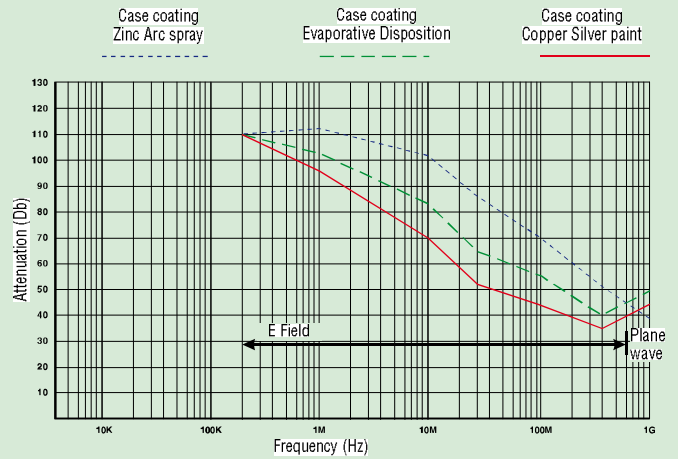
Ordering information

Size	H	W	D	Order code
1	90	50	16	75-245323
	90	50	24	75-245324
2	120	60	30	75-245325
3 ★	150	80	30	75-245327
4	190	100	40	75-245328
	190	100	60	75-245326

★ Note: Battery compartment version

For details of a full range of VERONEX compatible accessories, please refer to page 15.

RFI SHIELDING EFFECTIVENESS



VERONEX Accessories

1 VENTED END PANELS

In addition to the plastic and aluminium panels, ventilated aluminium end panels are available for all size 2 units. These are useful for enclosures which are required to house small alarms or buzzers, or to permit airflow across delicate components.

Ordering information

	Qty.	H	W	D	Order code
	1	120	60	30	75-227740
Size 2 Case	1	120	60	40	75-227742
	1	120	60	50	75-227745

2 BELT-CLIPS

Belt-clips, manufactured in RAL 7035 high impact polystyrene, can be fitted to sizes 1, 2 and 3 units of the VERONEX range. They are supplied with fixings which screw into two of the four case moulding mounting bosses.

Ordering information

Size	Qty	Black	Grey
Size 1 Case	1	75-237433	75-226648
Size 2 Case	1	75-237434	75-226658
Size 3 Case	1	75-237435	75-226670

3 POLYCARBONATE LCD COVERS

Polycarbonate windows are available for fitting over LCD displays in the case moulding recess. Size 2 units will accept a 40x20mm LCD (viewing area 31x14) and size 3 will accept a 60x30mm LCD (viewing area 47x18mm).

Ordering information

Size	Qty.	Order code
Size 2 Case	1	75-250724
Size 3 Case	1	75-250718

4 BATTERY BOXES

Battery compartments are available in 2 depths. The shallow recess can accept one PP3 or one 2AAA battery holder, while the deeper compartment is suitable for one 4AA, one 2AA or one 4AAA holder.

Ordering information

Type	Qty.	Battery holders	Order code
Shallow	1	Accept 1 x PP3 or 2 x AAA holders	75-226685
Deep	1	Accept 1 x 4AA or 1 x 2AA or 1 x 4AAA holder	75-226686

5 SELF-ADHESIVE RUBBER FEET

Self-adhesive rubber feet are available for fixing to the base of VERONEX units in tabletop applications.

Ordering information

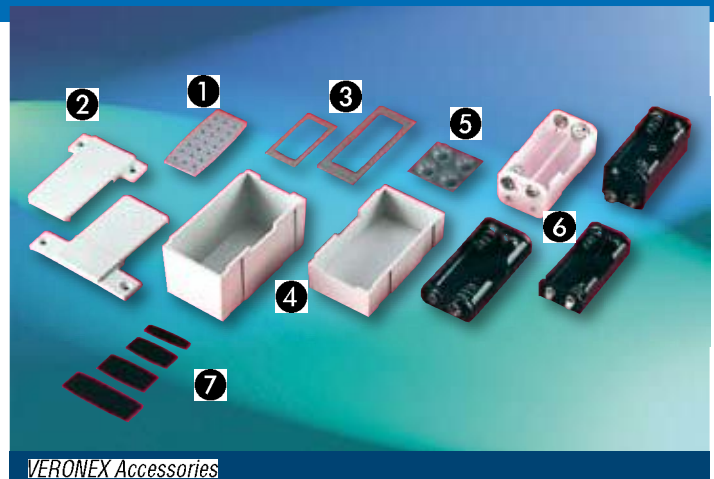
Feet	Qty.	Order code
Self-adhesive feet	4	75-228117

6 BATTERY HOLDERS

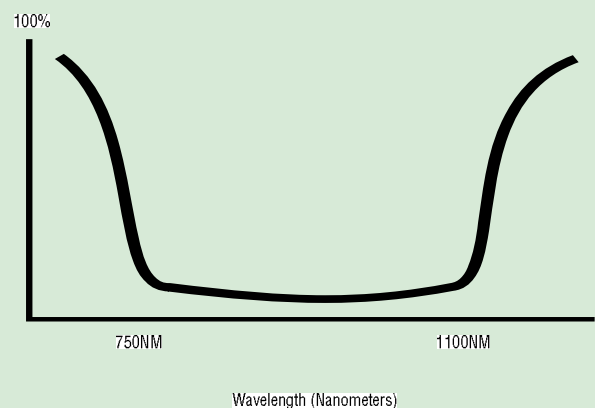
Battery holders are used in conjunction with the deep or smaller battery boxes. These give the user maximum flexibility in selecting the battery type required.

Ordering information

Description	Qty	Order code
PP3 leads	10	75-28183J
2AA holder	1	75-227429A
4AA holder	1	50-1717G
2AAA holder	1	75-227427G
4AAA holder	1	75-226687A



ABSORPTION



7 INFRA RED END PANELS

These are designed to fit neatly into the VERONEX enclosures giving a medium transparent to infra red transmissions. The wavelength of operation is between 750nm and 1100nm. These are ideally suited to remote control applications.

Ordering information

Size	Colour	H	W	D	Order code
Size 1 Case	Black	90	50	16	75-237739
		90	50	24	75-237741
Size 2 Case	Black	120	60	30	75-237742
Size 3 Case	Black	150	80	30	75-237743
Size 4 Case	Black	190	100	40	75-237744

IBX Instrument Cases

IBX cases are strong, easily assembled enclosures, which provide facilities for circuit boards, power supplies, interconnections, controls and displays.

Four individual sizes are available in heights from 25mm to 100mm. The three largest sizes are suitable for either desktop or portable applications.

Portable versions (Type B) accept a strong tilt and swivel carrying handle which is ordered separately.

The handle provides a comfortable carrying facility and tilt mechanism with increments of 30°. The aluminium cross-bar also incorporates a label recess.

Horizontal and vertical PCB guides are incorporated in the side infill mouldings; the horizontal guides being suitable for 6U Eurocards of either 160 or 220mm depths.

Four self-adhesive PCB mounting clips are supplied with each case. These may be positioned accurately using the reference grid which appears on both the top and base mouldings.

A range of plastic sloping front panels and captured or screw-on anodised aluminium panels are available as accessories.

Each IBX case is supplied with four moulded non-slip feet which allow units to be safely stacked on each other.

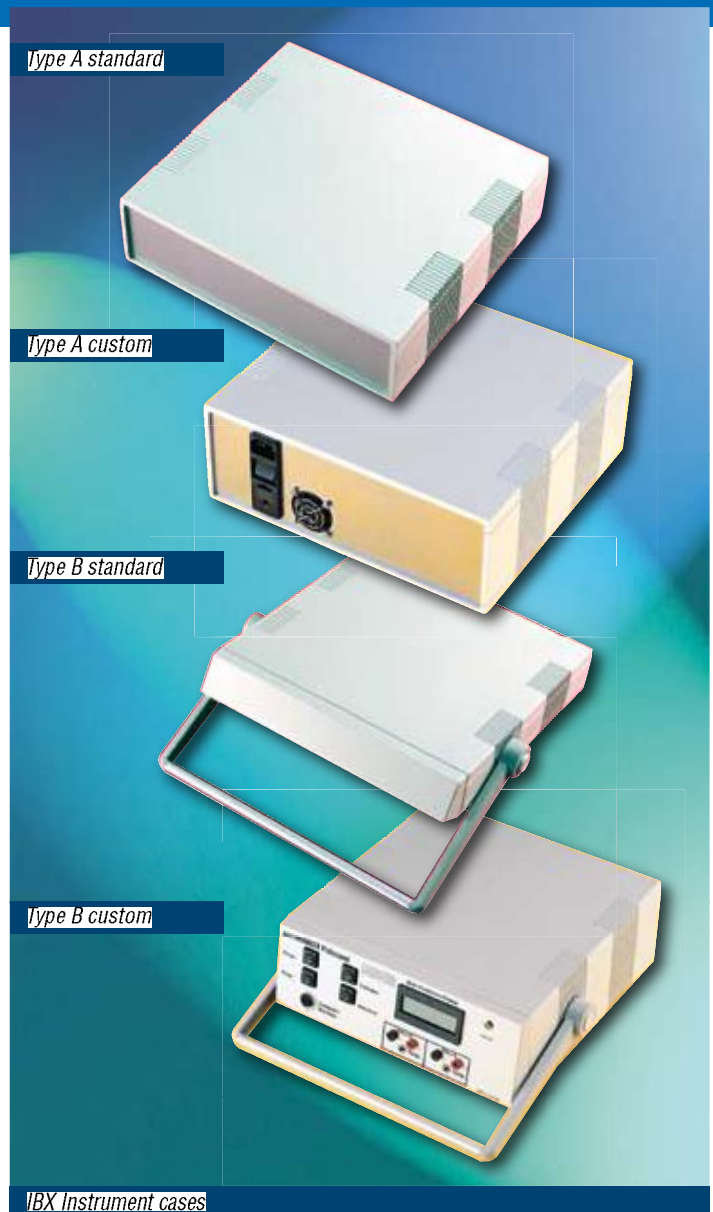
CONSTRUCTION

IBX mouldings are manufactured in a durable high quality ABS material.

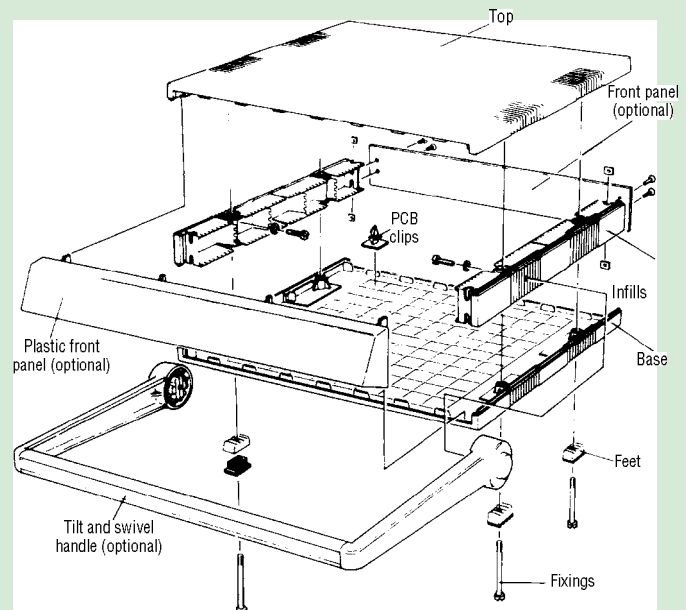
Top and base mouldings are separated by side infills which give four different heights.

Four assembly screws pass through the feet, base panel and infills and secure to inserts in the top panel.

The three largest sizes are available with their infill mouldings pre-drilled to allow fitting of a carrying handle, (Type B).



EXPLODED VIEW



IBX Instrument Cases

Portable versions (Type B) accept a strong tilt and swivel carrying handle which is ordered separately.

The handle provides a comfortable carrying facility and tilt mechanism with increments of 30°. The aluminium cross-bar also incorporates a label recess. IBX Cases are strong, easily assembled enclosures which provide facilities for circuit boards, power supplies, interconnections, controls and displays.

Four individual sizes are available in heights from 25mm to 100mm. The three largest sizes are suitable for either desktop or portable applications.

Contents of kit

Description	Qty.	Material/Finish
Type A IBX		
Top cover	1	ABS, light grey BS4800 00A01
Base cover	1	ABS, light grey BS4800 00A01
Infills (except 25mm)	2	ABS, light grey BS4800 00A01
Assembly screws	4	
Feet mouldings	4	mid grey BS4800 00A05
Rubber feet inserts	4	
PCB mounting clips	4	Nylon 66
Handle cross bar		Anodised aluminium

ABS Material specification

Temp. range	-40°C to +80°C
Flame class ratings	UL94-HB

Type B IBX (No size 1 version) As above but including:

Side infills drilled for carry handle	2
---------------------------------------	---

Note: Order front panels separately – please refer to page 18.

TYPE A IBX CASES

Ordering information

Size	Dimensions			Int. height	A		Order code
	H	W	D		A	B	
1	25	275	250	19	14,3	263,8	500-54501
2	50	275	250	44	39,3	263,8	500-54502
3	75	275	250	69	64,3	263,8	500-54503
4	100	275	250	94	89,3	263,8	500-54504

TYPE B IBX CASES (FOR USE WITH CARRY HANDLE)

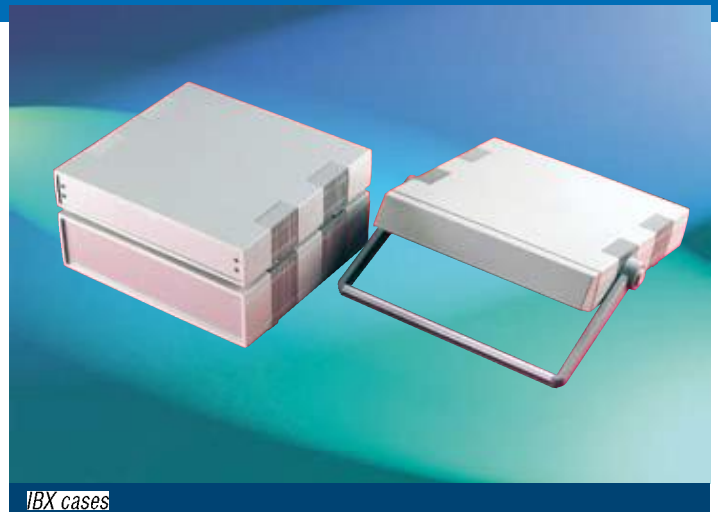
Ordering information

Size	Dimensions			Int. height	Case		Order code	Carry handle Order code
	H	W	D		A	B		
2	50	275	250	44	39,3	263,5	500-54750	–
3	75	275	250	69	64,3	263,5	500-54751	500-54505
4	100	275	250	94	89,3	263,5	500-54752	–

TILT AND SWIVEL CARRY HANDLE

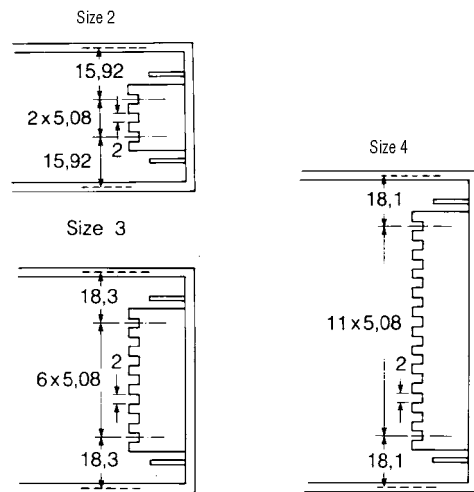
This is a robust handle, ideal for portable applications, providing a comfortable carrying facility and tilt mechanism with increments of 30°. The aluminium cross-bar also incorporates a label recess.

Each handle is supplied fully assembled and is easily attached to the case. Please order Type B IBX cases when a carrying handle is to be used. These include side infills which have been pre-drilled to accept the handle mounting screws. The carry handle will support a maximum load of 200N.

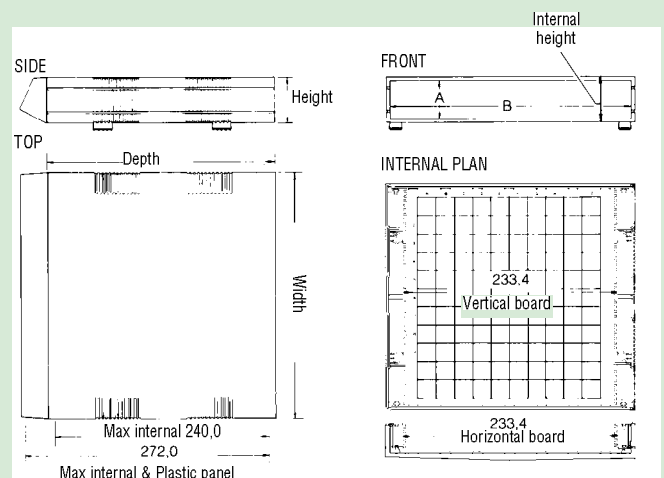


IBX cases

BOARD MOUNTING POSITIONS (HORIZONTAL)



DIMENSIONAL DETAILS



IBX Instrument Cases

SLOPING FRONT PANELS

The inclined display face of these front panels gives an improved viewing angle for desk mounted applications. They also provide additional internal space and cooling by way of a row of slots on the underface of the mouldings.

Contents of kit

Description	Qty	Material/Finish
Panel	1	ABS, light grey BS4800 00A01

SCREW-ON FRONT PANELS

These removable anodised aluminium front panels are attached to the infill mouldings and allow easy access without the need to dismantle the unit. Once assembled to the infills at both the front and rear they form a rigid chassis, thus allowing all wiring and testing to be carried out prior to the final assembly of the top and base.

Contents of kit

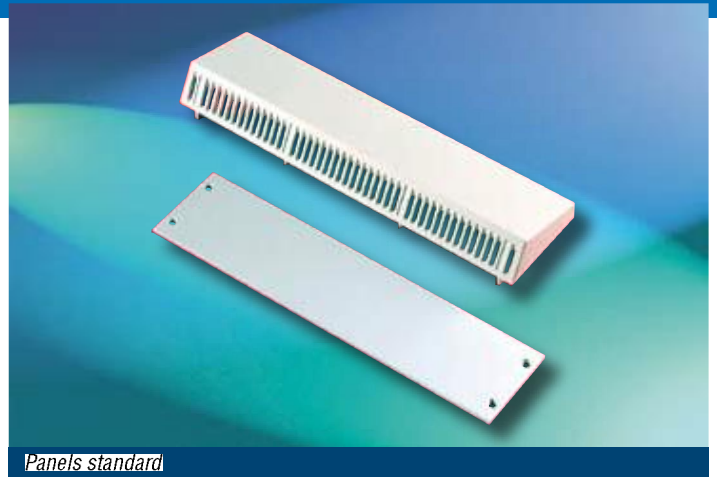
Description	Qty	Material/Finish
Panel	1	3,0mm Anodised aluminium
Fixings		

CAPTURED FRONT PANELS

These anodised aluminium front panels are captured in slots in both the top and base during assembly of the unit. This provides an attractive frontal appearance with no obvious fixings and additional security.

Contents of kit

Description	Qty	Material/Finish
Panel	1	1,2mm Anodised aluminium



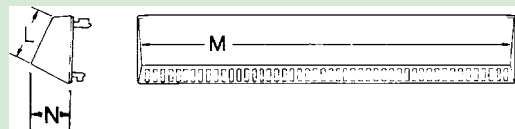
Panels standard



Panels custom

For details of a full range of compatible accessories, please refer to page 30.

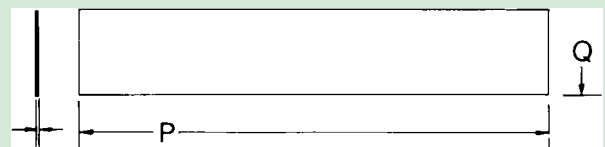
SLOPING FRONT PANELS



SCREW-ON FRONT PANELS



CAPTURED FRONT PANELS



Ordering information

Case size	Plastic sloping front panels			Order code	Screw-on front panels					Order code	Captured panels			Order code
	L	M	N		S	T	U	V	W		P	Q	R	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	37,5	270,0	30,0	500-54506	263,5	13,0	39,0	250,0	3,0	500-54509	268,0	44,0	1,2	500-54512
3	61,0	270,0	30,0	500-54507	263,5	38,0	64,0	250,0	3,0	500-54510	268,0	69,0	1,2	500-54513
4	86,0	270,0	30,0	500-54508	263,5	63,0	89,0	250,0	3,0	500-54511	268,0	94,0	1,2	500-54514

IDAS Cases

APPLICATIONS

There are now two types of IDAS Case available. The modem case is ideal for desktop applications. Whilst the instrument case, with its tilt and swivel carry handle, is an ideal solution for portable equipment.

CONSTRUCTION

IDAS case mouldings are manufactured in high quality ABS material. The construction consists of a top, base and a series of spacer mouldings which are used to increase the unit height in increments of 35mm.

Four aluminium pillars are bonded to the top cover. The spacer and base mouldings are positioned on these and the whole assembly is screwed together using fixings through the base and into tapped holes in the pillars.

Provision is made in the mouldings for two alternative mounting positions for the front panels. The first position is designed to locate an alternative 3mm panel. The second position is ideal for mounting 1,6mm dummy panels.

Instrument case versions also include a tilt and swivel carry handle. This can be set at 30° intervals.

MODEM CASES

Contents of kit

Description	Qty	Material/Finish
Cover mouldings	2	ABS, light grey BS4800 00A01 ★
Tilt and swivel handle		ABS - mid grey BS4800 00A5 ★
Cross bar		Anodised aluminium
Front panels	2	1,6mm anodised aluminium
Spacers (where applicable)	2 or 4	
Self-adhesive feet	4	
Case screws	4	
PCB mounting clips	4	

ABS Material specification ★

Temp. range	-40°C to +80°C
Flame class rating	UL94-HB

INSTRUMENT CASES

Contents of kit

As Modem cases but including tilt and swivel carry handle.

Ordering information

Size	Order code	Order code
	Modem case	Instrument case
1	75-52446	—
2	75-52447	75-201088
3	75-52448	75-201089

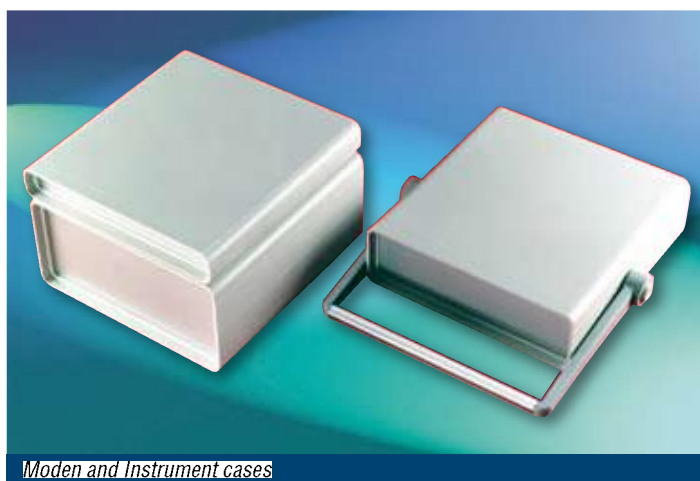
For details of a full range of compatible accessories, please refer to page 30.



Standard

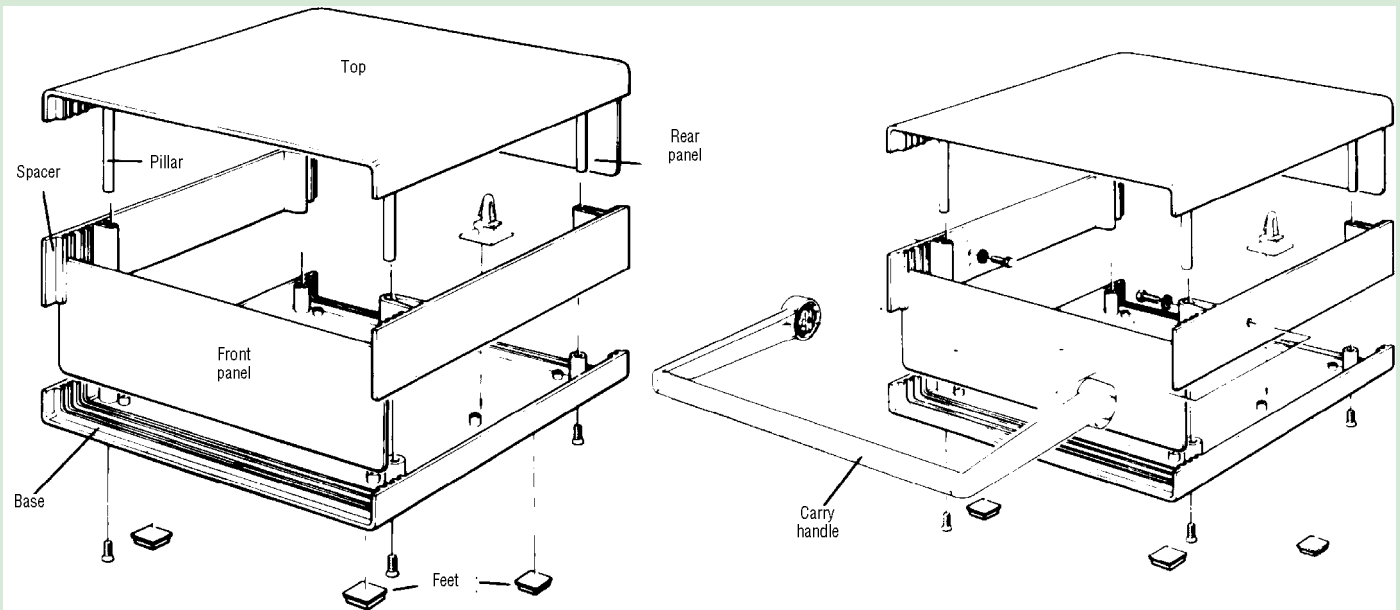


Custom

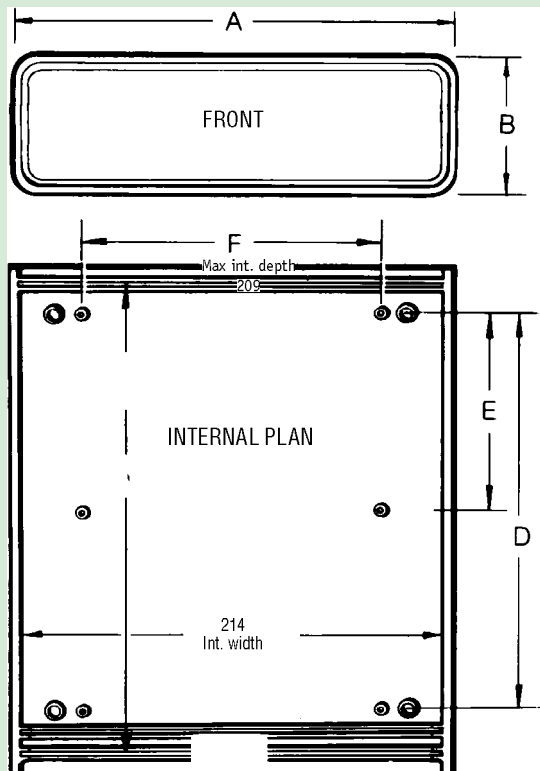


Modem and Instrument cases

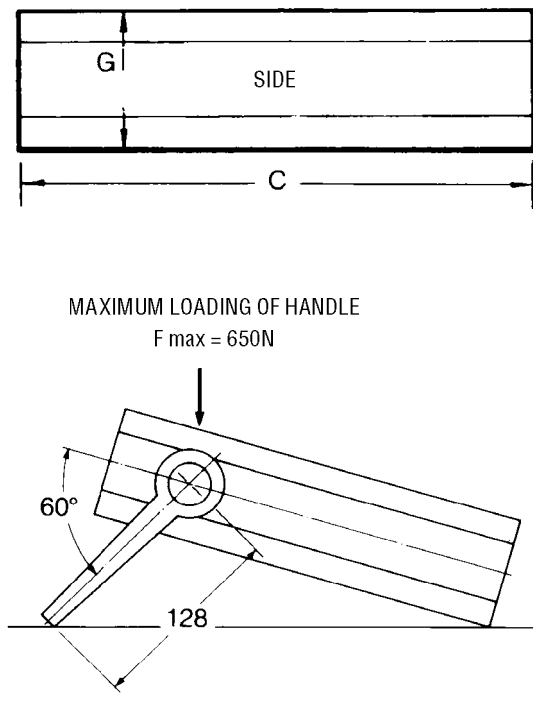
IDAS Cases



IDAS MODEM CASES DIMENSIONAL DETAILS (BOTH TYPES)



IDAS INSTRUMENT CASE



Dimensions

Size	A	B	C	D	E	F	G
1	220,0	35,0	230,0	176,0	88,0	160,0	32
2	220,0	70,0	230,0	176,0	88,0	160,0	67
3	220,0	105,0	230,0	176,0	88,0	160,0	102

Patina® Cases type A construction

INTRODUCTION

The Patina® range of plastic enclosures has been launched in response to an increased demand for aesthetically pleasing and technically competent electronic packaging solutions. This range utilises the latest tool finishing techniques and as such gives a high quality, durable textured surface which ensures that your product - looks good for longer!

The Patina® products also offer the very latest in material durability, using a high quality, flame retardant (UL94-V0) ABS.

APPLICATIONS

The Patina® range of attractive and durable plastic enclosures is available in 12 sizes. They offer a significant choice to the user, both in terms of sizes, as well as 2 different assembly methods.

These enclosures are ideally suited to office or industrial applications, for computer peripherals, or test instrumentation.

Features

- UL 94-V0 ABS
- RAL 7035 light grey
- Screw or clip together design (Types A & B)
- Anodised aluminium front and rear panels
- Scratch resistant - chemical etch texture finish
- Choice of 12 sizes
- Moulded - in PCB mounting features
- EMC options - Si/Ag inner coating
- Vertical or horizontal board mounting

TYPE A CONSTRUCTION

Type A cases consist of two heights of moulding which give three case sizes when assembled (See drawing Type A). The four securing screws pass through the base and are then retained by brass inserts in the top moulding.

Bosses in the mouldings provide self tapping screw fixing points for circuit boards and chassis plates.

Single eurocards (100mm x 160mm) can be mounted easily into type A cases.

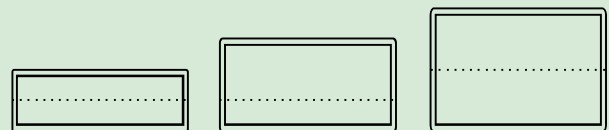
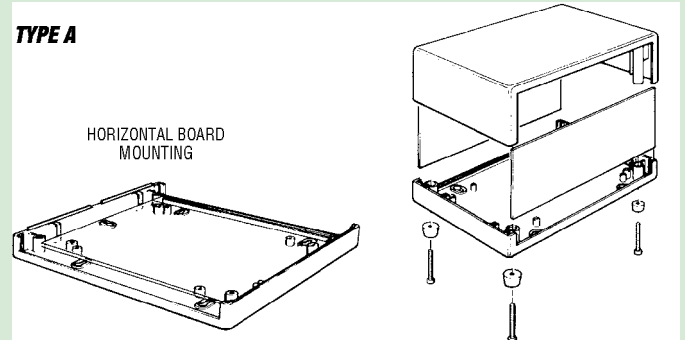
Keyhole knockouts for wall mounting are provided and vertical moulded guides for circuit board or panel mounting are integral in the top and base.



Patina Type A construction



Patina Type A construction (detail)



THREE HEIGHT VARIATIONS

Patina® Cases type B construction

TYPE B CONSTRUCTION

Type B cases are of clip together design for fast and convenient assembly requirements. Consisting of 3 plan areas, these add 9 more sizes to the Patina® plastic case range. To open the case, the wall is flexed, allowing the catch to be disengaged.

Bosses are provided in the top and base mouldings to allow horizontal board mounting. Guides are moulded into the case sides to give vertical / motherboard mounting.

Contents of kit

Item/Description	Qty.	Material/Finish
Top moulding	1	ABS RAL 7035, Light grey
Base moulding	1	ABS RAL 7035, Light grey
Front and rear panels	2	Satin anodised aluminium 1.6mm
PCB mounting screws (type A)	4	No.4 pozidrive self tapping
Feet (self adhesive)	4	Rubber (RAL 7037 Grey)

ABS Material specification

Temperature range	-40°C to +80°C
Flammability	UL94-V0

EMC PATINA® RANGE

Subject to minimum order quantities, we can offer the entire range of Patina® cases with an EMC coating, which provides very reliable shielding properties. We use a copper/silver loaded paint which provides a durable conductive finish, selectively on the inner surface of the case. Typical attenuation figures are >60dB at 1MHz to >20dB at 1GHz, but it is always recommended that equipment is tested to meet the current CE marking requirements.

For further details of EMC coated Patina® cases please contact our Sales and Applications team on +44.(0)1489.774500.

For details of a full range of compatible accessories, please refer to page 30.



Patina Type B construction

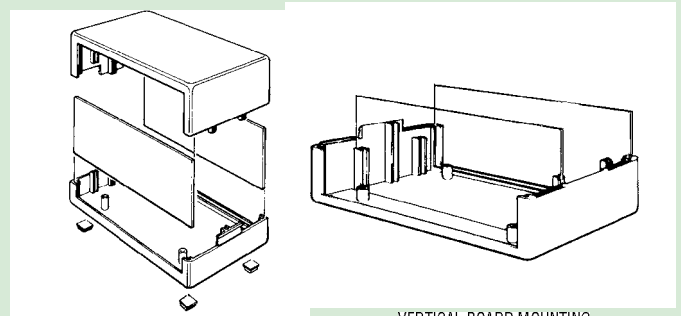


Patina Type B (detail)



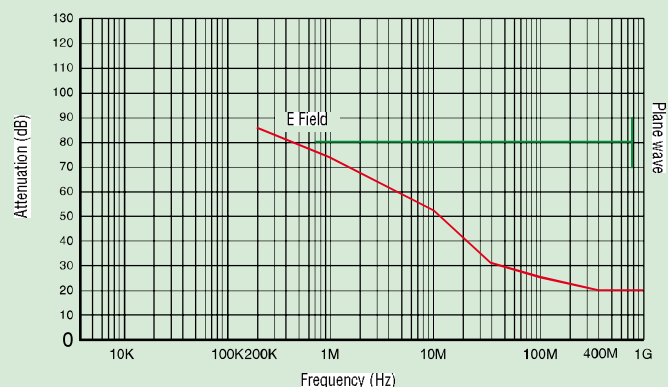
Patina Type B (detail)

TYPE B



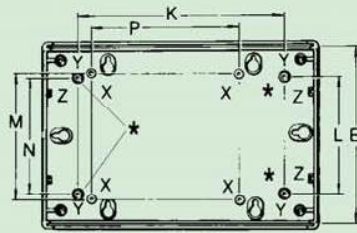
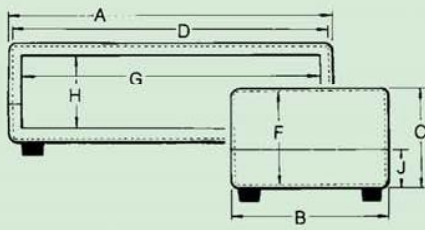
VERTICAL BOARD MOUNTING

TYPE B - Copper/Silver paint



Patina® Cases types A and B

TYPE A



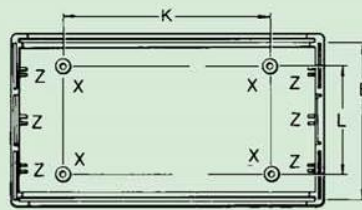
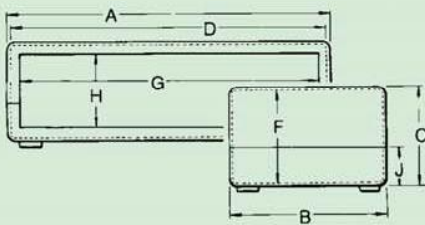
PLAN VIEW OF BASE AND TOP

Key
 X - Board mounting pillars for self-tapping screws
 Q - Board mounting pillars for eurocards
 Y - Full height corner pillars
 Z - Integrally moulded guide slots for vertically mounted boards

Ordering information

Dimensions														Dimensions of vertically mounted boards	Order code
A	B	C	D	E	F	G	H	J	K	L	M	N	P		
		40,0			34,0		24,0	20,0						25,6 x 199,0	75-265738
205,0	140,0	75,0	199,0	132,0	69,0	189,0	59,0	20,0	152,8	85,0	94,2	88,9	114,3	60,6 x 199,0	75-265739
		110,0			104,0		94,0	55,0						95,6 x 199,0	75-265740

TYPE B



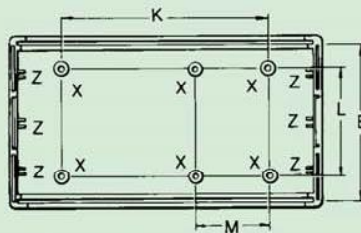
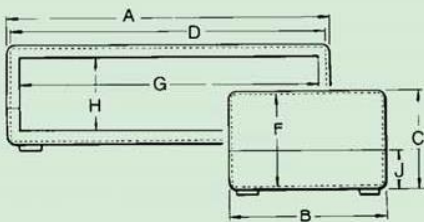
PLAN VIEW OF BASE AND TOP

Side
 Plan view of base
 X - Board mounting pillars for self-tapping screws
 Z - Integrally moulded guide slots for vertically mounted boards

Ordering information

Dimensions												Dimensions of vertically mounted boards	Order code	
A	B	C	D	E	F	G	H	J	K	L				
		40,0			34,0		24,0	20,0					33,4 x 174,0	75-265741
180,0	120,0	65,0	174,0	112,0	59,0	164,0	49,0	20,0	114,3	94,2			58,4 x 174,0	75-265742
		90,0			84,0		74,0	45,0					83,4 x 174,0	75-265743
		40,0			34,0		24,0	20,0					33,4 x 148,0	75-265744
154,0	85,0	60,0	148,0	77,0	54,0	138,0	44,0	20,0	99,1	53,3			53,4 x 148,0	75-265745
		80,0			74,0		64,0	40,0					72,4 x 148,0	75-265746

TYPE B



PLAN VIEW OF BASE AND TOP

X - Board mounting pillars for self-tapping screws
 Z - Integrally moulded guide slots for vertically mounted boards

Ordering information

Dimensions												Dimensions of vertically mounted boards	Order code	
A	B	C	D	E	F	G	H	J	K	L	M			
		30,0			24,0		18,0	15,0					23,5 x 117,0	75-265747
125,0	65,0	40,0	119,0	58,2	34,0	113,0	28,0	15,0	91,5	45,75	33,0		33,5 x 117,0	75-265748
		50,0			44,0		38,0	25,0					43,5 x 117,0	75-265749

Sloping Front Cases

This sloping front case consists of two mouldings which are assembled together using four self-tapping screws.

The base and top moulding incorporate a continuous tongue and groove which seals the case against intrusion of wires, tools etc.

Contents of kit

Item/Description	Qty	Material/Finish
Top	1	ABS RAL 7035, light grey
Base	1	ABS RAL 7035, light grey
Front panel	1	1.6mm Satin anodised aluminium
Feet	4	Polythene (Grey)
Fixings		

ABS Material specification

Temp. range	-40°C to 80°C
Flammability	UL94-V0

Ordering information

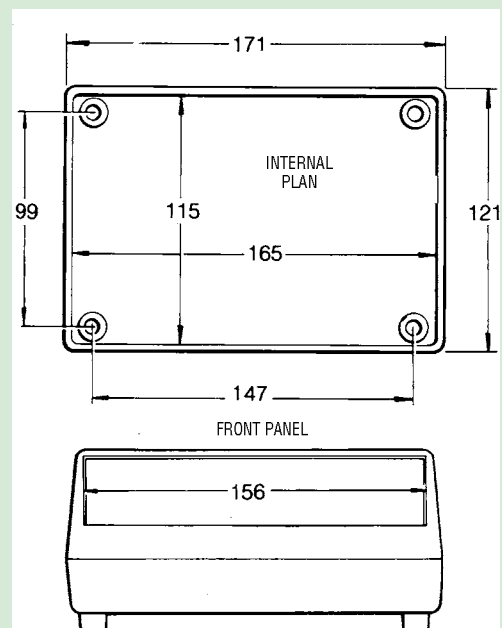
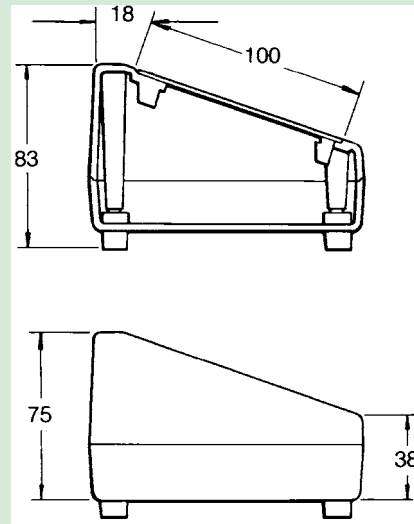
Description	Order code
Sloping front case	75-266985

For details of a full range of compatible accessories, please refer to page 30.



Sloping front case

SLOPING FRONT CASE



APOLLO Cases

CONSTRUCTION

The plastic injection moulded top and base sections clip together, without the use of screws, to provide the basic construction.

The two heights and two widths combine in various configurations to provide six case sizes. The cases, which have a textured exterior finish, incorporate vertical slots for PCB mounting. The plastic front and rear panels can be fitted in a recessed, flush or projecting position according to individual preference requirements.

An aluminium and plastic panel is supplied with sizes 1, 2, 4 and 5. Two aluminium panels are supplied with sizes 3 and 6. The cases are available in a combinations of light grey with mid grey. Four self-adhesive non-slip feet are provided for fixing to the base and four self-adhesive PCB mounting clips are also provided for universal mounting of circuit boards.

Contents of kit

Description	Qty.	Materials/Specification
Top moulding	1	ABS light grey
Base moulding	1	ABS light grey
PCB mounting clips	4	Nylon 66
Plastic panel	1	ABS mid grey (See ^{NOTE})
Aluminium panel	1	1,6mm aluminium (See ^{NOTE})
Self-adhesive feet	4	

ABS Material specification

Temp. range	-40°C to +80°C
Flame class rating	UL94-HB

WALL MOUNTING

Located in the shell mouldings are two pre-set drilling points specifically designed to cater for wall mounting applications. A hole is incorporated at these points to act as an accurate centre drill.

The illustration gives the relevant dimensions.

Ordering information

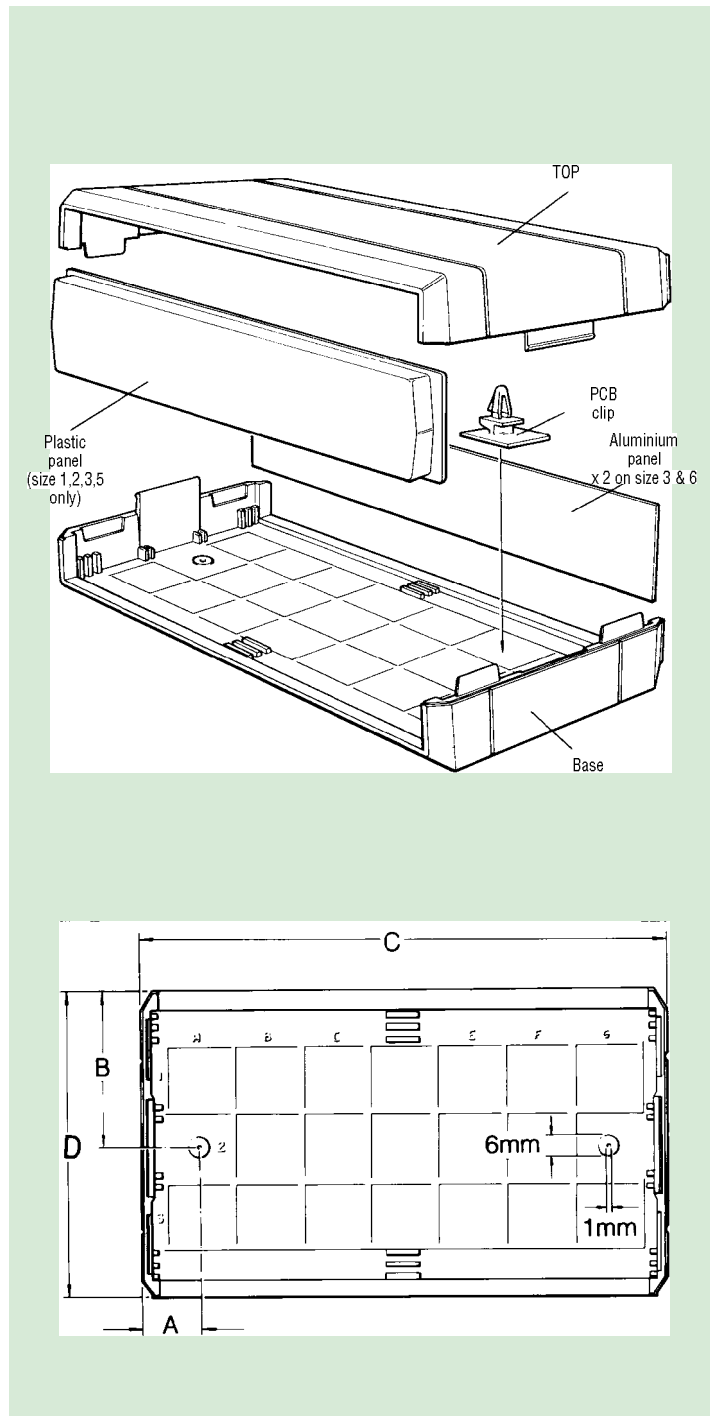
Case size	Case dimensions					Order code
	A	B	C	D	E	
1	91	155,28	39,2	152,52	34	75-38106
2	91	155,28	59,2	152,52	54	75-38107
3 ^{NOTE}	91	155,28	79,2	152,52	74	75-38108
4	146,5	206,14	39,4	203,32	34,2	75-38118
5	146,5	206,14	74,4	203,32	69,2	75-38119
6 ^{NOTE}	146,5	206,14	109,4	203,32	104,2	75-38120

^{NOTE}: Sizes 3 and 6 include 2 aluminium panels only

For details of a full range of compatible accessories, please refer to page 30.



APOLLO cases



General Purpose Cases

APPLICATIONS

The range consists of three types and a hand held control version.

Type 1, which is the smallest size, is available in either black or white and is supplied in a box containing mouldings for 10 enclosures. Types II and III are supplied in black, in single kits.

The hand held housing is ergonomically designed to be comfortably held in the hand. The housing is ideal for remote control applications and is supplied as a pack comprising mouldings and fixing screws for 10 boxes.

CONSTRUCTION

Case types II and III have a continuous lip moulded into the lid and base which provides a protection seal against the intrusion of tools, pins, wire or other such implements. The internal surfaces are free of protrusions and are therefore ideally suited to utilize the PCB mounting accessories featured on page 29.

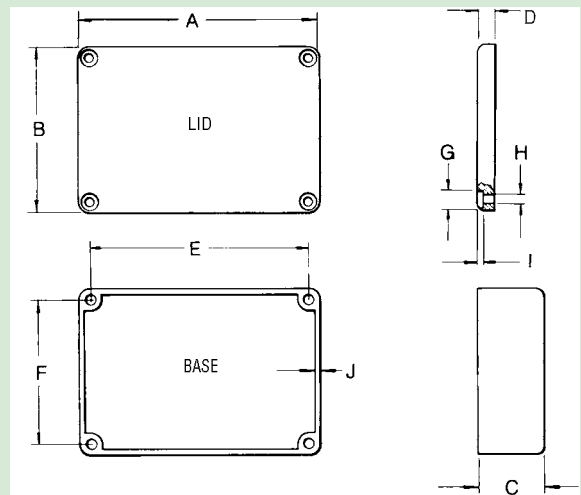


General purpose cases

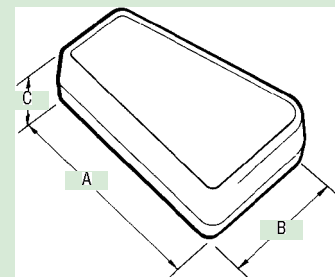
Contents of kit

Description	Material/Finish
Mouldings	ABS, black or white
Flame class rating	Non flame retardant
Temp. range	-40°C to +80°C

DIMENSIONAL DETAILS



HAND HELD CONTROL BOX



Ordering information

Type	Colour	Dimensions										Order code
		A	B	C	D	E	F	G	H	I	J	
I*	Black	72	50	20	5	65,5	43,5	5,8	3,2	1,6	1,6	75-1413
1*	White	72	50	20	5	65,5	43,5	5,8	3,2	1,6	1,6	75-1469
II	Black	120	80	30	6,5	106	66	6,5	3,5	2,5	2,0	75-2860
III	Black	180	110	49	7,5	164	94	6,5	3,5	2,5	2,5	75-2861

*Note: Supplied in a pack of mouldings for 10 boxes

HAND HELD CONTROL BOX

Ordering information

Description	Qty	Dimensions			Order code
		A	B	C	
Hand held boxes	10	94.0	61.0	27.1	75-1799

Fliptop Cases

APPLICATIONS

This distinctive wedge-shaped housing is specifically designed for portable instrument applications. The case offers a robust construction able to withstand both internal and external environments. Interconnection and controls are easily catered for in the base section with the inclusion of an aluminium cover plate. The fliptop case therefore offers an economical packaging solution to the ever growing number of portable electronic instrument applications.

CONSTRUCTION

The case consists of a moulding which includes the base section and flip over lid. The two halves are connected by an integral hinge section and the case is opened and securely shut using a robust snap together clip, moulded to the front of the lid.

The base includes six moulded bosses for horizontal PCB mounting, the largest case being suitable for housing a single Eurocard 100 x 160mm. The kit includes six self-tapping screws for PCB mounting.

An aluminium cover plate is assembled to the base section. The plate is retained by two clips at the rear and secured firmly by a screw fixing at the front.

Contents of kit

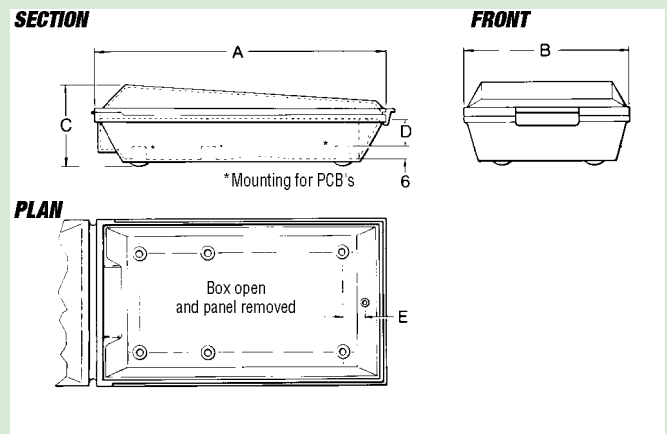
Description	Material/Finish
Case	Polypropylene
Flame class rating	Non flame retardant Black
Temp. range	-20°C to 65°C
Cover plate	Etched and anodised aluminium Size 1 1mm thickness, Size 2 1,6mm thickness
Hinge life	>10,000 operations within temp range

Ordering information

Size	Dimensions					Order code
	A	B	C	D	E	
1	130	75	34	11,5	6	75-3018
2	196	127	51	21,5	10	75-3019

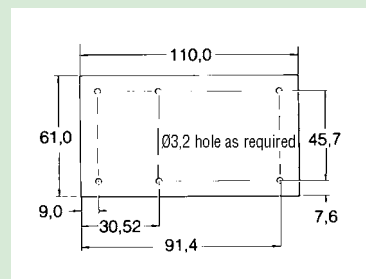


Fliptop cases

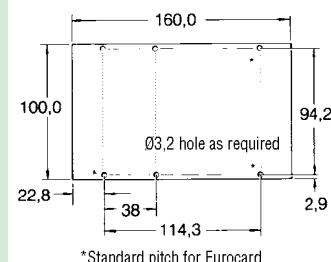


MAXIMUM CIRCUIT BOARD SIZES

SIZE 1



SIZE 2



*Standard pitch for Eurocard mounting

Desktop Cases

HI-STYLE DESKTOP CASE

The base and top panels are manufactured in 1,6mm anodised aluminium, and are attached using self-tapping screws.

Contents of kit

Description	Qty	Material/Finish
Top	1	ABS, Brown or RAL 7037 Dusty Grey
Aluminium bottom plate	1	1,6mm anodised aluminium
Front panels	2	1,6mm anodised aluminium
Non-slip feet	4	

Fixings

ABS Material specification

Flame class rating	Non flame retardant
Temp. range	-40°C to 80°C

Ordering information

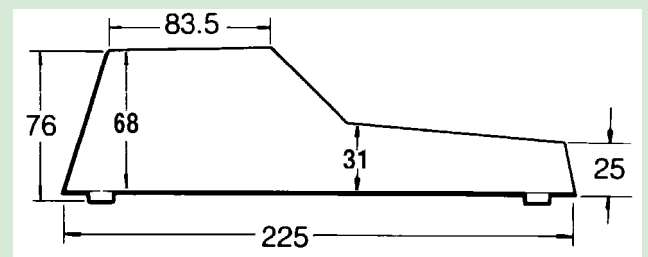
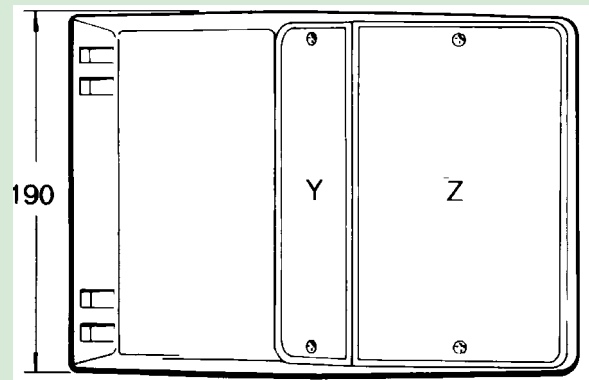
Panel colour	Usable panel area		Order code
	Y	Z	
Brown	143 x 43	146 x 96	75-1715
Grey	143 x 43	146 x 96	75-251434



Hi-style desktop cases

For details of a full range of compatible accessories, please refer to page 28.

HI-STYLE DESKTOP CASE



Accessories

BATTERY HOLDERS

These holders are designed to allow external access. The cover, moulded as part of the box and with a flip-over type hinge, opens easily for battery change and snaps securely shut.

SMALL BATTERY HOLDER

The small housing accepts a PP3 9V battery and may easily be fitted by clipping into either a panel or enclosure with a wall thickness of 1,5mm or 3mm. The panel cutout size is 58mm by 24mm. Supplied with one PP3 battery lead.

LARGE BATTERY HOLDER

The larger housing will accept 2 PP3 batteries and requires a panel cutout, size 45,25 square. In addition to being easily fitted to a panel thickness of 1,5mm or 3mm and held in position by the clip-in type retention feature, there is also a screw fitting facility using two M3 screws which allows other panel thicknesses to be accommodated. Supplied with two PP3 battery leads.

AA BATTERY STACK

This is a battery stack suitable for four AA size batteries. Interconnection may be made from the stack to the equipment using a PP3 battery lead.

PP3 BATTERY LEADS

These are already supplied with the battery holders, but additional leads are available in packets of 10.

PCB MOUNTING ACCESSORIES

Three types of PCB mounting accessories are available. They are attached to the cases with high impact adhesive pads which are supplied with each kit. A matrix is moulded into the shells of the Apollo and IBX cases to assist in positioning of these pads.

Contents of kits

Description	Material/Finish
Mouldings	Polypropylene, Grey
ABS Material specification	
Flame class rating	Non flame retardant
Temp. range	-20°C to +65°C

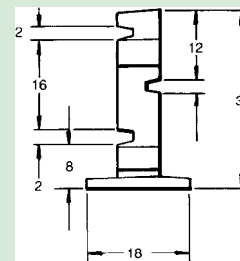
Ordering information

Description	Qty	Order code
Small battery holder	1	75-2859
Large battery holder	1	75-1716
Battery stack for 4, 1 ½V, AA cells	1	50-1717
PP3 Battery leads	10	75-28183
Combination guide	10	75-38125
Mounting clip	10	75-38127
Self tapping boss	10	75-38126



Battery holders

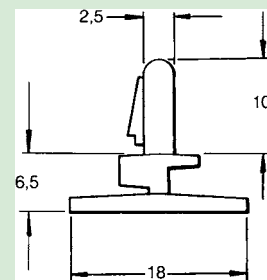
COMBINATION PCB GUIDE



For horizontal or vertical mounting

PCB MOUNTING CLIP

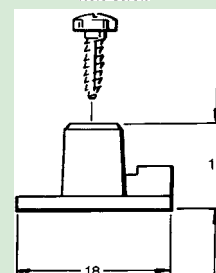
Drill 4ø4.2mm holes in circuit board



(4 supplied with every Apollo, IBX and Idas case).
Clips into hole in PCB for horizontal mounting.

SELF TAPPING BOSS

Drill 4ø4mm holes in panel
No.6 screw



For horizontal mounting

Small Enclosures: Order code index

Order code	Page	Order code	Page	Order code	Page
050		075-228113	8	075-52446	17
050-1717	13	075-228114	8	075-52447	17
050-1717	28	075-228115	8	075-52448	17
075		075-228117	13	500	
075-1413	25	075-237424	6	500-54501	15
075-1469	25	075-237425	6	500-54502	15
075-1715	27	075-237426	6	500-54503	15
075-1716	28	075-237427	6	500-54504	15
075-1799	25	075-237428	9	500-54505	15
075-201088	17	075-237429	7	500-54506	16
075-201089	17	075-237430	7	500-54507	16
075-226648	13	075-237431	9	500-54508	16
075-226658	13	075-237432	9	500-54509	16
075-226670	13	075-237433	13	500-54510	16
075-226685	13	075-237434	13	500-54511	16
075-226686	13	075-237435	13	500-54512	16
075-226687	13	075-237739	13	500-54513	16
075-227427	13	075-237741	13	500-54514	16
075-227429	13	075-237742	13	500-54750	15
075-227740	13	075-237743	13	500-54751	15
075-227742	13	075-237744	13	500-54752	15
075-227745	13	075-245323	12		
075-227894	6	075-245324	12		
075-227895	6	075-245325	12		
075-227896	6	075-245326	12		
075-227897	6	075-245327	12		
075-227898	6	075-245328	12		
075-227899	6	075-250718	12		
075-227900	6	075-250724	12		
075-227901	7	075-251434	27		
075-227902	7	075-265738	21		
075-227903	7	075-265739	21		
075-227904	7	075-265740	21		
075-227905	7	075-265741	21		
075-227909	8	075-265742	21		
075-227910	8	075-265743	21		
075-227911	8	075-265744	21		
075-227915	10	075-265745	21		
075-227916	10	075-265746	21		
075-227917	10	075-265747	21		
075-227918	10	075-265748	21		
075-227920	11	075-265749	21		
075-227921	11	075-266985	22		
075-227922	11	075-28183	13		
075-227923	11	075-28183	28		
075-228099	10	075-2859	28		
075-228100	10	075-2860	25		
075-228101	10	075-2861	25		
075-228102	10	075-3018	26		
075-228103	10	075-3019	26		
075-228104	10	075-38106	23		
075-228105	11	075-38107	23		
075-228106	11	075-38108	23		
075-228107	11	075-38118	23		
075-228108	11	075-38119	23		
075-228109	11	075-38120	23		
075-228110	11	075-38125	28		
075-228111	8	075-38126	28		
075-228112	8	075-38127	28		