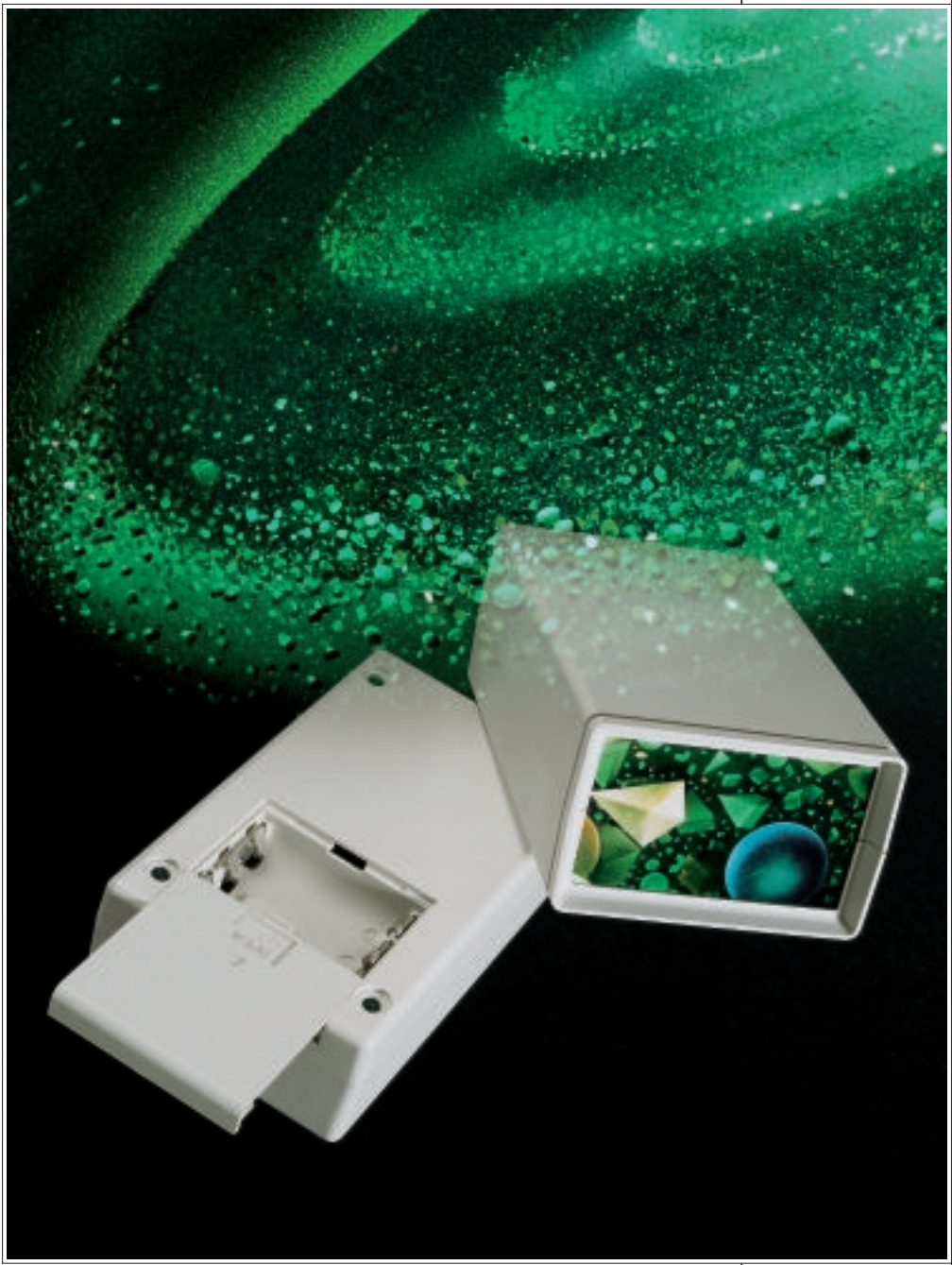

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Stand: 09/01 usa *Copyright © 2001 OKW Gehäusesysteme KG, Buchen, Germany (http://www.okw.com)*

SHELL-TYPE-CASES

YOUR ADVANTAGE

- Available in 4 different sizes.
  From 3.346 x 1.772 x 0.866" to 7.480 x 5.433 x 3.583" for mounting eurocards 100 x 160 mm.
- All sizes can be delivered in 3 heights – the flat design for small component parts and the higher version for larger component parts.
- 3 different case types:
  V: open front, closed rear.
  O: open front, open rear.
  G: closed front, closed rear.
- Front and rear panels in aluminium or PMMA (plexiglass®) infra-red permeable material available as accessories for the types V and O.
- Also available with battery compartment (type V / G).
- The closed version (type G) with recessed control panel provides protection for a membrane keyboard.
- Robust and sealed up to **IP 65** for closed version without battery compartment when using the sealing kit.

STANDARD COLOUR

Off-white, RAL 9002.
Please refer to colour chart on page 214.

MATERIAL

High-impact Polystyrene (UL 94 HB).
Also available in other materials on request. Please refer to the specifications on pages 215-217.

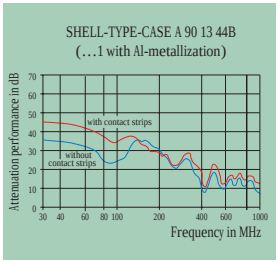












MULTIPLE VARIANTS, SEALED, MEMBRANE KEYBOARD.

The OKW shell-type case is a modular system with 1001 possibilities.

This universal case system is available in different sizes, heights and types. Simply choose the case which suits your special requirements best.

Please refer to our comprehensive range of accessories, e.g. pocket clip, wall-mounting brackets, tilt foot bar for ergonomic operation, rubber feet, etc.
See accessories pages 199-206.

APPLICATIONS

Measuring and control technology. Medical field and laboratory technology, peripheral devices and interfaces, switchboxes, modems.

EMC

Cases marked with ϟ are available with aluminium metallization on demand. Bonding can be achieved by the available contact strips (page 126).
See pages 207-209.

MODIFICATIONS AS PER CUSTOMER'S REQUIREMENTS

Machining on modern CNC-controlled machines. Lacquering. Silk screen and tampo printing.
See pages 210-213.



Battery compartment
of case size 110 for
1 flat battery 9 V (PP3).
(Order battery plug-in-contact separately; see page 205)



Three different types of SHELL-TYPE CASES available:

V: Open front, closed rear.
O: Open front, open rear.
G: Closed front, closed rear.

SHELL-TYPE CASES V 85, 110, 155, 190

Open front, closed rear.



Battery compartment
of case sizes 155, 190
for 4 mignon cells 1.5 V (AA)
or 2 flat batteries 9 V (PP3).
(Clips for AA cells fitted)



SHELL-TYPE CASES O 155, 190

Open front, open rear.



Battery compartment
of case size 155 for
1 flat battery 9 V (PP3) or
2 mignon cells 1.5 V (AA).
(Order contacts separately; see pages 201/205)



SHELL-TYPE CASES G 85, 110, 155, 190

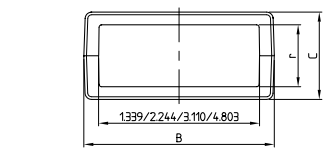
Closed front, closed rear.

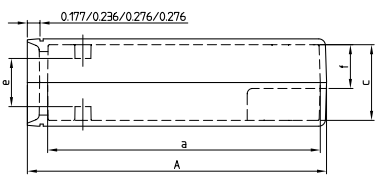
SHELL-TYPE CASES
V 85, 110, 155, 190

Open front, closed rear.



Detailed drawing available on demand in dwg or dxf format.





Part-No. with ϟ see EMC page 118

VERSION I

Without battery compartment.

VERSION II

With battery compartment * for 1 x 9 V flat battery (PP3).

VERSION III

With battery compartment * for 4 x 1.5 V mignon cells (AA) or 2 x 9 V flat batteries (PP3).

VERSION IV

With battery compartment * for 1 x 9 V flat battery (PP3) or 2 mignon cells 1.5 V (AA).

Battery compartments are accessible from the outside.

* References: The battery contact for version II and IV and clips for version IV must be ordered separately. See pages 205 / 201. The AA-cell clips for version III are already supplied with the case.

DESIGN

Two-part case with open front. Front panels in matt anodized aluminium or PMMA (plexiglass®) infra-red permeable material (accessories) can be inserted into the front guide grooves.

A high degree of rigidity and tight fitting as a result of the tongue- and groove joint.

MODIFICATIONS AS PER CUSTOMER'S REQUIREMENTS

See pages 210-213.

Part-No.	Shell-type case	Outside dim. in inch			Inside dimensions						Spacings				Version
		A	B	C	a	b	c	d	e	f	k	o	r	t	
A 94 04 333	V 85	3.346	1.772	0.866	2.913	1.535	0.709	0.866	0.315	–	1.772	–	0.472	–	I
A 94 06 333 ϟ	V 110	4.488	2.835	1.299	3.858	2.441	1.063	1.693	0.669	–	2.992	1.181	0.906	–	I
A 94 06 343 ϟ		4.488	2.835	1.772	3.858	2.441	1.535	1.693	1.142	–	2.992	1.181	1.378	–	I
A 94 06 443 ϟ		4.488	2.835	2.244	3.858	2.441	2.008	1.693	1.614	–	2.992	1.181	1.850	–	I
A 94 06 334 ϟ		4.488	2.835	1.299	3.858	2.441	1.063	1.693	0.669	0.315	–	–	0.906	1.181	II
A 94 06 344 ϟ		4.488	2.835	1.772	3.858	2.441	1.535	1.693	1.142	0.787	–	–	1.378	1.181	II
A 94 08 333 ϟ	V 155	6.220	3.740	1.299	5.748	3.346	1.063	2.480	0.630	–	4.724	1.654	0.827	–	I
A 94 08 343 ϟ		6.220	3.740	1.772	5.748	3.346	1.535	2.480	1.102	–	4.724	1.654	1.299	–	I
A 94 08 443 ϟ		6.220	3.740	2.244	5.748	3.346	2.008	2.480	1.575	–	4.724	1.654	1.772	–	I
A 94 08 338 ϟ		6.220	3.740	1.299	5.748	3.346	1.063	2.480	0.630	0.276	–	–	0.827	2.402	III
A 94 08 348 ϟ		6.220	3.740	1.772	5.748	3.346	1.535	2.480	1.102	0.748	–	–	1.299	2.402	III
A 94 08 336 ϟ		6.220	3.740	1.299	5.748	3.346	1.063	2.480	0.630	0.276	3.543	–	0.827	1.220	IV
A 94 08 346 ϟ		6.220	3.740	1.772	5.748	3.346	1.535	2.480	1.102	0.748	3.543	–	1.299	1.220	IV
A 94 13 333 ϟ	V 190	7.480	5.433	1.772	6.890	5.118	1.535	3.976	1.102	–	6.063	1.654	1.220	–	I
A 94 13 343 ϟ		7.480	5.433	2.677	6.890	5.040	2.441	3.976	2.008	–	6.063	1.654	2.126	–	I
A 94 13 443 ϟ		7.480	5.433	3.583	6.890	5.040	3.346	3.937	2.913	–	6.063	1.654	3.031	–	I
A 94 13 338 ϟ		7.480	5.433	1.772	6.890	5.118	1.535	3.976	1.102	0.748	6.063	1.654	1.220	2.402	III
A 94 13 348 ϟ		7.480	5.433	2.677	6.890	5.040	2.441	3.976	2.008	1.654	6.063	1.654	2.126	2.402	III

SHELL-TYPE CASES
V 85, 110, 155, 190

Open front, closed rear.

ASSEMBLY

Case parts are assembled by means of four self-tapping screws.
Fast and easy to equip.
Guide ridges for vertical mounting of partitions and PCBs. Fastening pillars in top and base for horizontal mounting of PCBs.
Self-tapping screws for PCB fixing see accessories on page 201.



ACCESSORIES

- Contact strips to connect shielded case shells
- Front panels

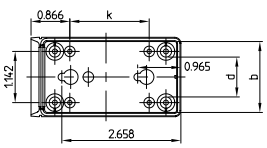
Order data see page 126.

Futher accessories see pages 199-206.

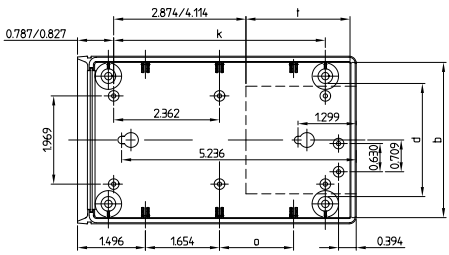
Same internal dimensions and spacings for top and base, with the exception, that the tops are without knock-out keyholes for wall-mounting.

Detailed drawing available on demand in dwg or dxf format.
⊛ ⊛ = Type of screw for case fixing: cross head

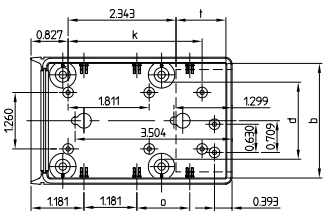
V 85 ⊛ H (PH1)



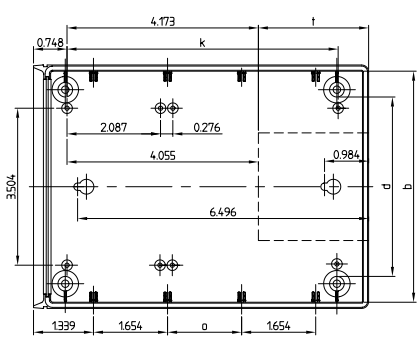
V 155 ⊛ Z (PZ1)



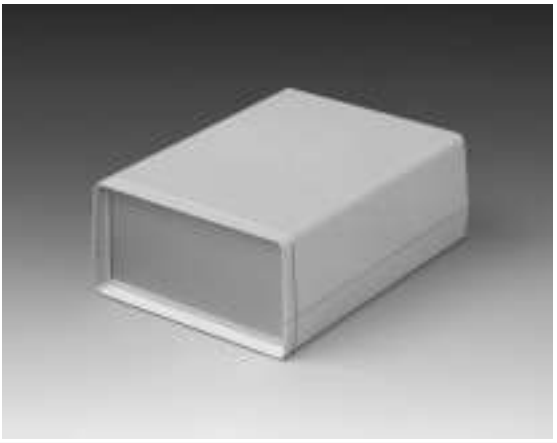
V 110 ⊛ Z (PZ1)



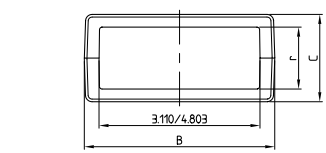
V 190 ⊛ Z (PZ1)

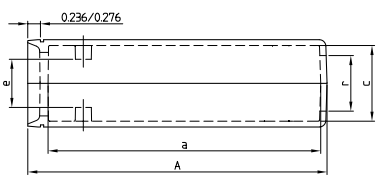


SHELL-TYPE CASES
O 155, 190 Open front, open rear.



Detailed drawing available on demand in dwg or dxf format.





DESIGN

Two-part case with open front and open rear. Front and rear panels in matt anodized aluminium or or PMMA (plexiglass®) infra-red permeable material (accessories) can be inserted into the front / rear guide grooves.

A high degree of rigidity and tight fitting as a result of the tongue- and groove joint.

VERSION I

Without battery compartment.

Part-No. with ϟ see EMC page 118.

MODIFICATIONS AS PER CUSTOMER'S REQUIREMENTS

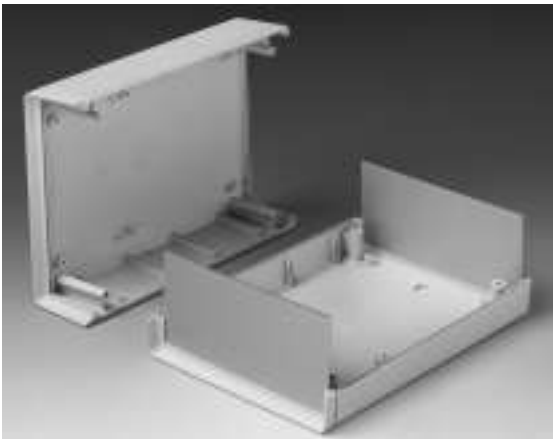
See pages 210-213.

Part-No.	Shell-type case	Outside dim. in inch			Inside dimensions						Spacings			Version
		A	B	C	a	b	c	d	e	f	k	o	r	
A 94 08 330 ϟ	O 155	6.220	3.740	1.299	5.630	3.346	1.063	2.480	0.630	–	4.724	1.654	0.827	I
A 94 08 340 ϟ		6.220	3.740	1.772	5.630	3.346	1.535	2.480	1.102	–	4.724	1.654	1.299	I
A 94 08 440 ϟ		6.220	3.740	2.244	5.630	3.346	2.008	2.480	1.575	–	4.724	1.654	1.772	I
A 94 13 330 ϟ	O 190	7.480	5.433	1.772	6.850	5.118	1.535	3.976	1.102	–	6.063	1.654	1.220	I
A 94 13 340 ϟ		7.480	5.433	2.677	6.850	5.039	2.441	3.976	2.008	–	6.063	1.654	2.126	I
A 94 13 440 ϟ		7.480	5.433	3.583	6.850	5.039	3.346	3.937	2.913	–	6.063	1.654	3.031	I

SHELL-TYPE CASES
O 155, 190 Open front, open rear.

ASSEMBLY

Case parts are assembled by means of four self-tapping screws.
Fast and easy to equip.
Guide ridges for vertical mounting of partitions and PCBs. Fastening pillars in top and base for horizontal mounting of PCBs.
Self-tapping screws for PCB fixing see page 201.



ACCESSORIES

- Contact strips to connect shielded case shells
- Front and rear panels

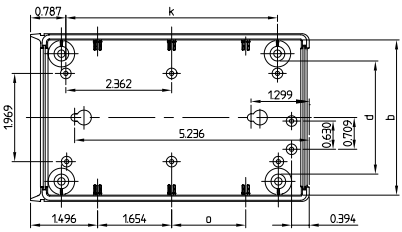
Order data see page 126.

Futher accessories see pages 199-206.

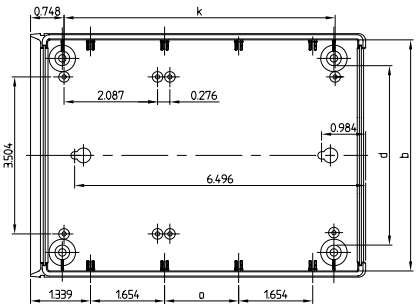
Same internal dimensions and spacings for top and base, with the exception, that the tops are without knock-out keyholes for wall-mounting.

Detailed drawing available on demand in dwg or dxf format.
⊛ ⊛ = Type of screw for case fixing: cross head

O 155 ⊛ Z (PZ1)



O 190 ⊛ Z (PZ1)



SHELL-TYPE CASES
G 85, 110, 155, 190

Closed front and rear



DESIGN

Two-part case with closed front and rear.

A high degree of rigidity and tight fitting as a result of the tongue-and groove joint.

Some versions are available with a recessed operating area.

Protection class up to IP 65 for version I when using the sealing kit.

Detailed drawing available on demand in dwg or dxf format.

VERSION I
Without battery compartment.

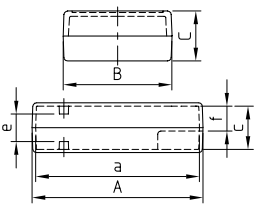
VERSION II*
With battery compartment for 1 x 9 V flat battery (PP3).

VERSION III*
With battery compartment for 4 x 1.5 V mignon cells (AA) or 2 x 9 V flat batteries (PP3).

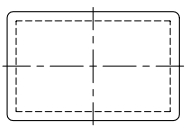
VERSION IV*
With battery compartment for 1 x 9 V flat battery (PP3) or 2 x 1.5 V mignon cells (AA).

Battery compartments are accessible from the outside.

* References: The battery contact for version II and IV and clips for version IV must be ordered separately. See pages 205 / 201. The AA-cell clips for version III are already supplied with the case.



Top view with recessed area



Part-No. with ϟ see EMC page 118.

Part-No.	Shell-type case	Outside dim. in inch			Inside dimensions						Spacings			Recessed area	Version
		A	B	C	a	b	c	d	e	f	k	o	t	(L x W x H)	
A 94 04 331	G 85	3.346	1.772	0.866	3.110	1.535	0.709	0.866	0.315	–	1.969	–	–	–	I
A 94 04 341		3.346	1.772	1.299	3.071	1.496	1.142	0.866	0.787	–	1.969	–	–	–	I
A 94 04 441		3.346	1.772	1.772	3.071	1.496	1.614	0.866	1.220	–	1.969	–	–	–	I
A 94 06 331 ϟ	G 110	4.488	2.834	1.299	4.094	2.441	1.063	1.693	0.669	–	2.992	1.181	–	–	I
A 94 06 351 ϟ		4.488	2.834	1.319	4.094	2.441	1.063	1.693	0.669	–	2.992	1.181	–	4.016 x 2.362 x 0.040	I
A 94 06 341 ϟ		4.488	2.834	1.772	4.094	2.441	1.535	1.693	1.142	–	2.992	1.181	–	–	I
A 94 06 441 ϟ		4.488	2.834	2.244	4.094	2.441	2.008	1.693	1.614	–	2.992	1.181	–	–	I
A 94 06 332 ϟ		4.488	2.834	1.299	4.094	2.441	1.063	1.693	0.669	0.315	–	–	1.181	–	II
A 94 06 352 ϟ		4.488	2.834	1.319	4.094	2.441	1.063	1.693	0.669	0.315	–	–	1.181	4.016 x 2.362 x 0.040	II
A 94 06 342 ϟ		4.488	2.834	1.772	4.094	2.441	1.535	1.693	1.142	0.787	–	–	1.181	–	II
A 94 08 331 ϟ	G 155	6.220	3.740	1.299	5.866	3.346	1.063	2.480	0.630	–	4.724	1.654	–	–	I
A 94 08 351 ϟ		6.220	3.740	1.319	5.866	3.346	1.063	2.480	0.630	–	4.724	1.654	–	5.689 x 3.209 x 0.040	I
A 94 08 341 ϟ		6.220	3.740	1.772	5.866	3.346	1.535	2.480	1.102	–	4.724	1.654	–	–	I
A 94 08 441 ϟ		6.220	3.740	2.244	5.866	3.346	2.008	2.480	1.575	–	4.724	1.654	–	–	I
A 94 08 337 ϟ		6.220	3.740	1.299	5.866	3.346	1.063	2.480	0.630	0.276	–	–	2.402	–	III
A 94 08 357 ϟ		6.220	3.740	1.319	5.866	3.346	1.063	2.480	0.630	0.276	–	–	2.402	5.689 x 3.209 x 0.040	III
A 94 08 347 ϟ		6.220	3.740	1.772	5.866	3.346	1.535	2.480	1.102	0.748	–	–	2.402	–	III
A 94 08 335 ϟ		6.220	3.740	1.299	5.866	3.346	1.063	2.480	0.630	0.276	3.543	–	1.220	–	IV
A 94 08 355 ϟ		6.220	3.740	1.319	5.866	3.346	1.063	2.480	0.630	0.276	3.543	–	1.220	5.689 x 3.209 x 0.040	IV
A 94 08 345 ϟ		6.220	3.740	1.772	5.866	3.346	1.535	2.480	1.102	0.748	3.543	–	1.220	–	IV
A 94 13 331 ϟ	G 190	7.480	5.433	1.772	7.165	5.118	1.535	3.976	1.102	–	6.063	1.654	–	–	I
A 94 13 351 ϟ		7.480	5.433	1.791	7.165	5.118	1.535	3.976	1.102	–	6.063	1.654	–	6.772 x 4.724 x 0.040	I
A 94 13 341 ϟ		7.480	5.433	2.677	7.087	5.039	2.441	3.976	2.008	–	6.063	1.654	–	–	I
A 94 13 441 ϟ		7.480	5.433	3.583	7.087	5.039	3.346	3.937	2.913	–	6.063	1.654	–	–	I
A 94 13 337 ϟ		7.480	5.433	1.772	7.165	5.118	1.535	3.976	1.102	0.748	6.063	1.654	2.402	–	III
A 94 13 357 ϟ		7.480	5.433	1.791	7.165	5.118	1.535	3.976	1.102	0.748	6.063	1.654	2.402	6.772 x 4.724 x 0.040	III
A 94 13 347 ϟ		7.480	5.433	2.677	7.087	5.039	2.441	3.976	2.008	1.654	6.063	1.654	2.402	–	III

SHELL-TYPE CASES
G 85, 110, 155, 190

Closed front and rear

ASSEMBLY

Case parts are assembled by means of four self-tapping screws.
Fast and easy to equip.
Guide ridges for vertical mounting of partitions and PCBs. Fastening pillars in top and base for horizontal mounting of PCBs.
Self-tapping screws for PCB fixing see page 201.



ACCESSORIES

- Contact strips to connect shielded case shells
- Sealing kit

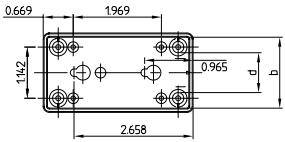
Order data see page 126.

Futher accessories see pages 199-206.

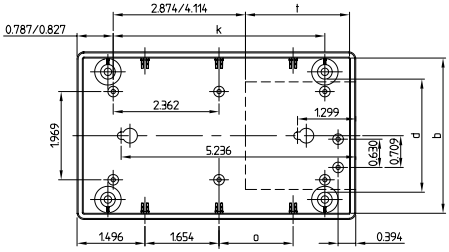
Same internal dimensions and spacings for top and base, with the exception, that the tops are without knock-out keyholes for wall-mounting.

Detailed drawing available on demand in dwg or dxf format.
⊛ ⊛ = Type of screw for case fixing: cross head

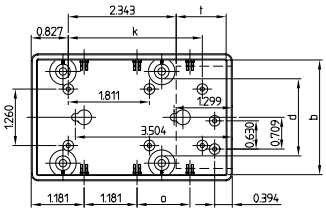
G 85 ⊛ H (PH1)



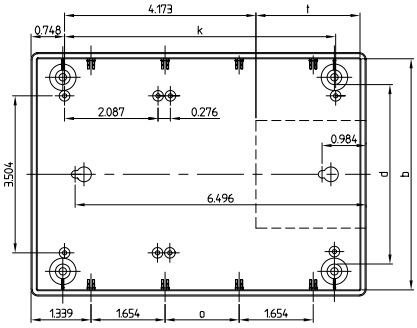
G 155 ⊛ Z (PZ1)



G 110 ⊛ Z (PZ1)



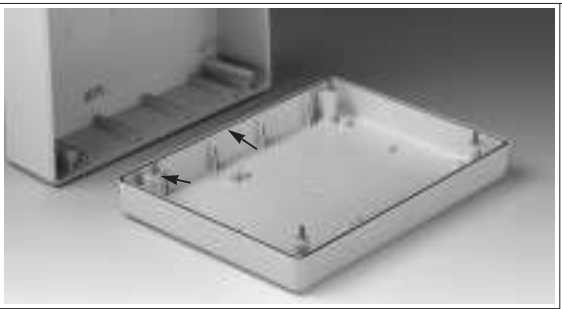
G 190 ⊛ Z (PZ1)



SEALING KIT

Protection class up to **IP 65** for cases type G (closed front and rear and without battery compartment)

Inlay O-ring and four rubber disks seal the tongue and groove joint and the four assembly pillars.



Part-No.	Sealing kit for case	Supply / Application
A 91 04 250	G 85	1 O-ring for the case
A 91 06 352	G 110	4 rubber disks for sealing between the assembly pillars
A 91 08 486	G 155	
A 91 13 630	G 190	

CONTACT-STRIPS

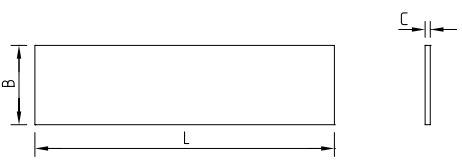
Aluminium strips which provide additional electrical continuity between the top and base shells of shielded cases (order two pieces, one for each side).
Easy assembly. Strips simply clip into guide grooves which are moulded into the inner side-walls.



Part-No.	Contact strips for case	Supply / Application
A 91 04 073	V, G 85	1 contact strip to connect shielded case shells
A 91 06 095	V, G 110	
A 91 08 120	V, O, G 155	
A 91 13 150	V, O, G 190	

FRONT AND REAR PANELS

For SHELL-TYPE CASES V and O. Available in aluminium or PMMA (plexiglass®) infra-red permeable material.



Part-No. Aluminium	PMMA (plexiglass®)	For cases	Dim. in inch L	B	C
A 91 04 111	A 91 04 113	A 94 04 33.	1.398	0.567	0.039
A 91 07 111	A 91 06 113	A 94 06 33.	2.315	1.000	0.039
A 91 07 121	A 91 06 123	A 94 06 34.	2.315	1.472	0.039
A 91 07 221	A 91 06 223	A 94 06 44.	2.315	1.945	0.039
A 91 09 111	A 91 08 113	A 94 08 33.	3.209	0.929	0.039
A 91 09 121	A 91 08 123	A 94 08 34.	3.209	1.402	0.039
A 91 09 221	A 91 08 223	A 94 08 44.	3.209	1.874	0.039
A 91 14 111	A 91 13 113	A 94 13 33.	4.890	1.323	0.059
A 91 14 121	A 91 13 123	A 94 13 34.	4.890	2.228	0.059
A 91 14 221	A 91 13 223	A 94 13 44.	4.890	3.134	0.059

SHELL-TYPE CASES V:

Open front, closed rear.

SHELL-TYPE CASES O:

Open front, open rear.

SHELL-TYPE CASES G:

Closed front, closed rear.

For additional accessories see pages 199-206.