

## YOUR ADVANTAGE

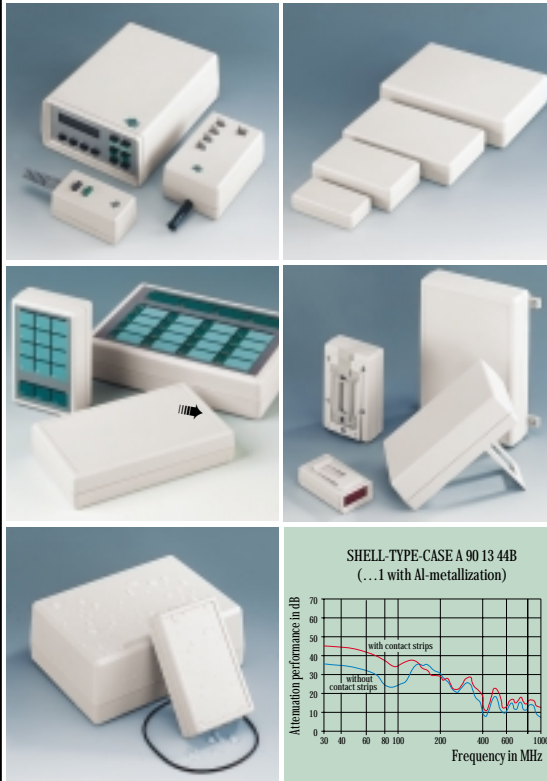
- Available in 4 different sizes. From 85 x 45 x 22 mm to 190 x 138 x 91 mm for mounting eurocards 100 x 160 mm.
- All sizes can be delivered in 3 heights – the flat design for small component parts and the higher version for larger component parts.
- 3 different case types:  
V: open front, closed rear.  
O: open front, open rear.  
G: closed front, closed rear.
- Front and rear panels in aluminium or PMMA red (plexiglass®) 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 228.

## MATERIAL

High-impact Polystyrene (UL 94 HB).  
Also available in other materials on request. Please refer to the specifications on pages 229-231.



## MULTIPLE VARIANTS, SEALED, MEMBRANE KEYBOARD.

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 starting from page 213.

## APPLICATIONS

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

## EMC

Cases marked with  $\neq$  are available with aluminium metallization on demand. Bonding can be achieved by the available contact strips (page 138).  
See pages 226-227.

## SERVICE-CENTER

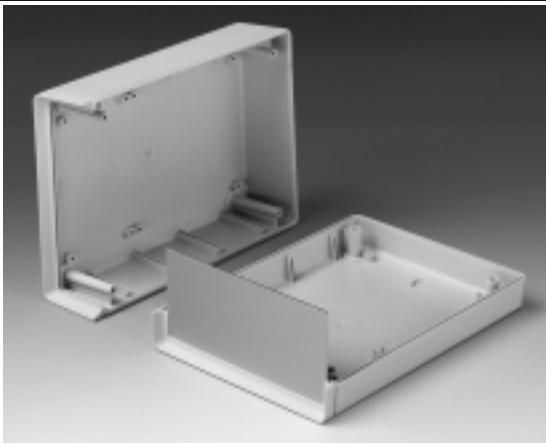
Machining on modern CNC-controlled machines.  
Lacquering, Silk screen and tampo printing.  
See pages 221-227.

# SHELL-TYPE CASES

Types V, O and G



Battery compartment of case size 110 for 1 flat battery 9 V (PP3). (Order battery plug-in-contact separately; see page 219)



Three different types of SHELL-TYPE CASES available:

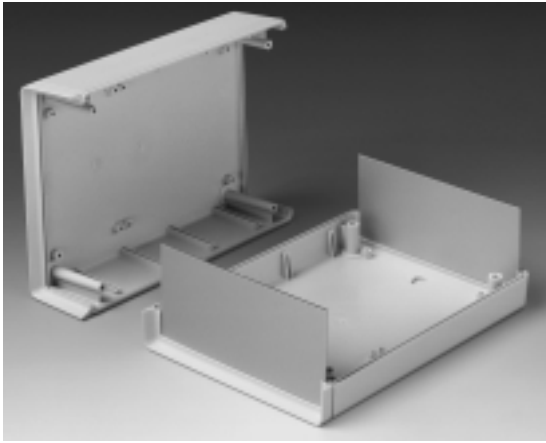
- V: Open front, closed rear.
- O: Open front, open rear.
- G: Closed front, closed rear.

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 215/219)



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

Closed front, closed rear.

### VERSION I

Without battery compartment.

### VERSION II

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

### VERSION III

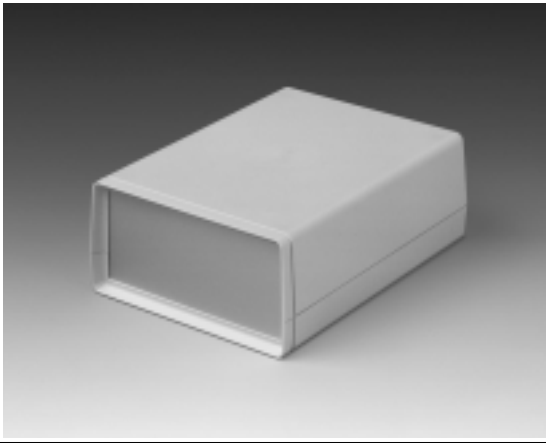
With battery compartment \* for 4 x 1.5 V mignon cells (AA) or 2 x 9 V flat batteries (PP3).

### VERSION IV

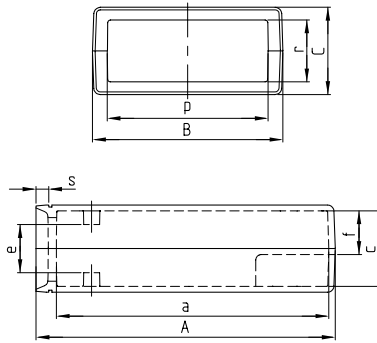
With battery compartment \* for 1 x 9 V flat battery (PP3) or 2 mignon cells 1.5 V (AA).

Battery compartments are accessible from the outside.

\* References: The battery contact for version II and IV and clips (2 single contacts and 1 double contact are necessary) for version IV must be ordered separately. See pages 219 / 215. The AA-cell clips for version III are already supplied with the case.



Detailed drawing available on demand in dwg, dxf or pdf format.



Part-No. with  $\neq$  see EMC page 130.

### DESIGN

Two-part case with open front. Front panels in matt anodized aluminium or PMMA red (plexiglass®) (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.

### SERVICE-CENTER

See pages 221-227.

SHELL-TYPE CASES

Part-No.	Shell-type case	Outside dim.			Inside dimensions								Spacings												Version
		A	B	C	a	b	c	d	e	f	g	h	k	l	m	n	o	p	r	s	t				
A 94 04 333	V 85	85	45	22	74	39	18	22	8	-	22	-	45	29	-	-	-	34	12	4.5	-	I			
A 94 06 333 $\neq$	V 110	114	72	33	98	62	27	43	17	-	21	-	76	32	30	30	30	57	23	6	-	I			
A 94 06 343 $\neq$		114	72	45	98	62	39	43	29	-	21	-	76	32	30	30	30	57	35	6	-	I			
A 94 06 443 $\neq$		114	72	57	98	62	51	43	41	-	21	-	76	32	30	30	30	57	47	6	-	I			
A 94 06 334 $\neq$		114	72	33	98	62	27	43	17	8	21	46	-	32	30	30	-	57	23	6	30	II			
A 94 06 344 $\neq$		114	72	45	98	62	39	43	29	20	21	46	-	32	30	30	-	57	35	6	30	II			
A 94 08 333 $\neq$	V 155	158	95	33	143	85	27	63	16	-	20	60	120	50	38	42	42	79	21	7	-	I			
A 94 08 343 $\neq$		158	95	45	143	85	39	63	28	-	20	60	120	50	38	42	42	79	33	7	-	I			
A 94 08 443 $\neq$		158	95	57	143	85	51	63	40	-	21	60	120	50	38	42	42	79	45	7	-	I			
A 94 08 338 $\neq$		158	95	33	143	85	27	63	16	7	20	60	-	50	38	42	-	79	21	7	61	III			
A 94 08 348 $\neq$		158	95	45	143	85	39	63	28	19	20	60	-	50	38	42	-	79	33	7	61	III			
A 94 08 336 $\neq$	158	95	33	143	85	27	63	16	7	20	60	90	50	38	42	-	79	21	7	31	IV				
A 94 08 346 $\neq$	158	95	45	143	85	39	63	28	19	20	60	90	50	38	42	-	79	33	7	31	IV				
A 94 13 333 $\neq$	V 190	190	138	45	175	130	39	101	28	-	19	53	154	89	34	42	42	122	31	7	-	I			
A 94 13 343 $\neq$		190	138	68	175	128	62	101	51	-	19	53	154	89	34	42	42	122	54	7	-	I			
A 94 13 443 $\neq$		190	138	91	175	128	85	100	74	-	19	53	154	89	34	42	42	122	77	7	-	I			
A 94 13 338 $\neq$		190	138	45	175	130	39	101	28	19	19	53	154	89	34	42	42	122	31	7	61	III			
A 94 13 348 $\neq$		190	138	68	175	128	62	101	51	42	19	53	154	89	34	42	42	122	54	7	61	III			

# SHELL-TYPE CASES

## V 85, 110, 155, 190

Open front, closed rear.



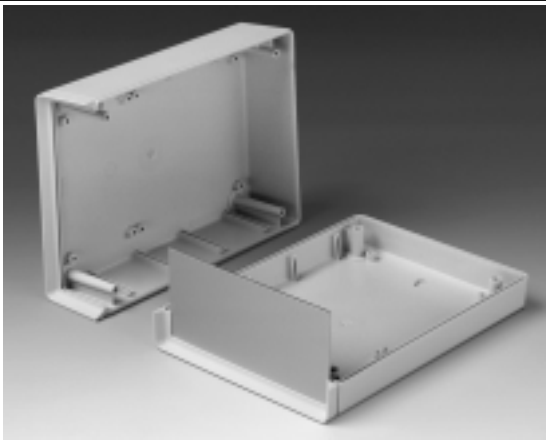
### ASSEMBLY

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 215.



### ACCESSORIES

- Contact strips to connect shielded case shells
- Front panels

Order data see page 138.

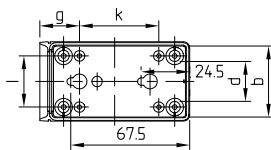
Further accessories see pages 213-220.

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

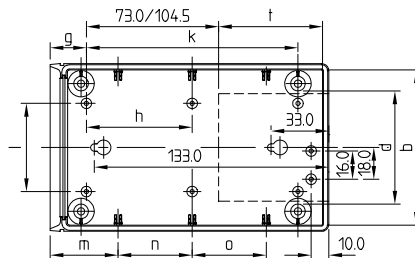
Detailed drawing available on demand in dwg, dxf or pdf format.

⊗ ⊕ = Type of screw for case fixing cross head

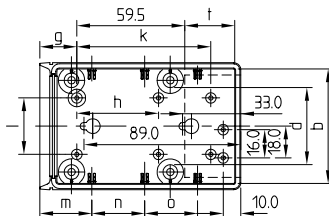
V 85 ⊗ H (PH1)



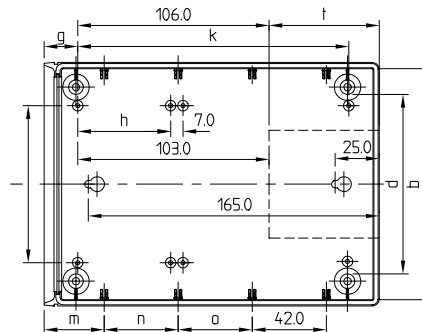
V 155 ⊗ Z (PZ1)



V 110 ⊗ Z (PZ1)



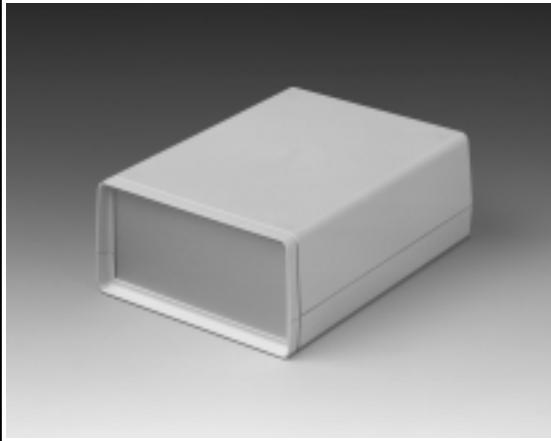
V 190 ⊗ Z (PZ1)



# SHELL-TYPE CASES

## O 155, 190

Open front, open rear.

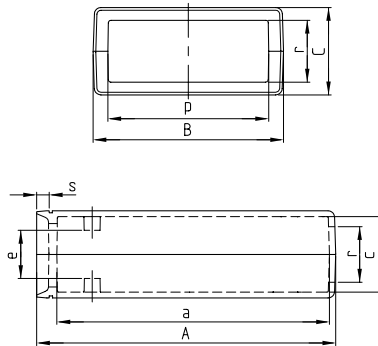


### DESIGN

Two-part case with open front and open rear. Front and rear panels in matt anodized aluminium or PMMA red (plexiglass®) (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.

Detailed drawing available on demand in dwg, dxf or pdf format.



### VERSION I

Without battery compartment.

Part-No. with  $\neq$  see EMC page 130.

### SERVICE-CENTER

See pages 221-227.

Part-No.	Shell-type case	Outside dim.			Inside dimensions						Spacings										Version	
		A	B	C	a	b	c	d	e	f	g	h	k	l	m	n	o	p	r	s		t
A 94 08 330 $\neq$	O 155	158	95	33	143	85	27	63	16	-	20	60	120	50	38	42	42	79	21	6	-	I
A 94 08 340 $\neq$		158	95	45	143	85	39	63	28	-	20	60	120	50	38	42	42	79	33	6	-	I
A 94 08 440 $\neq$	O 190	158	95	57	143	85	51	63	40	-	20	60	120	50	38	42	42	79	45	6	-	I
A 94 13 330 $\neq$		190	138	45	174	130	39	101	28	-	19	53	154	89	34	42	42	122	31	7	-	I
A 94 13 340 $\neq$	O 190	190	138	68	174	128	62	101	51	-	19	53	154	89	34	42	42	122	54	7	-	I
A 94 13 440 $\neq$		190	138	91	174	128	85	100	74	-	19	53	154	89	34	42	42	122	77	7	-	I

# SHELL-TYPE CASES

## O 155, 190

Open front, open rear.

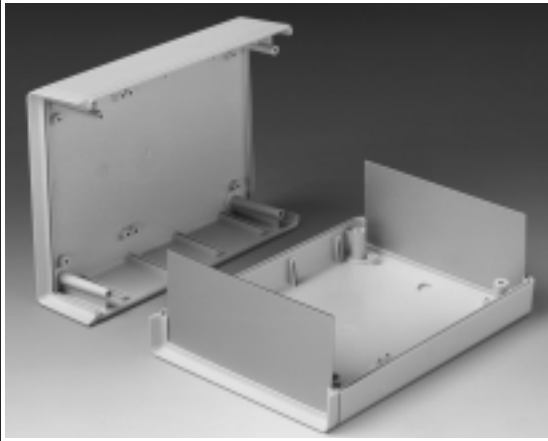


### ASSEMBLY

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 215.



### ACCESSORIES

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

Order data see page 138.

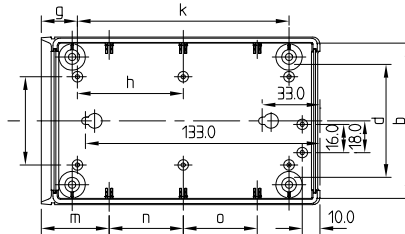
Further accessories see pages 213-220.

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

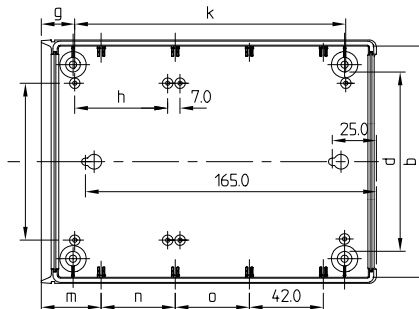
Detailed drawing available on demand in dwg, dxf or pdf format.

⊗ ⊗ = Type of screw for case fixing: cross head

O 155 ⊗ Z (PZ1)



O 190 ⊗ Z (PZ1)



**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 (2 single contact and 1 double contact are necessary) for version IV must be ordered separately. See pages 219 / 215. The AA-cell clips for version III are already supplied with the case.

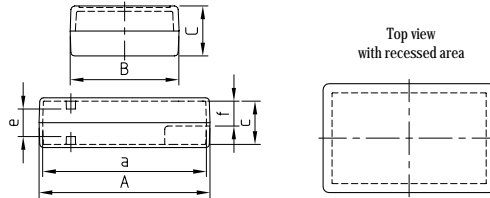

**DESIGN**

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.


 Part-No. with  $\neq$  see EMC page 130.

Detailed drawing available on demand in dwg, dxf or pdf format.

SHELL-TYPE CASES

Part-No.	Shell-type case	Outside dim.			Inside dimensions								Spacings								Dim. (LxWxH) recessed area	Version	
		A	B	C	a	b	c	d	e	f	g	h	k	l	m	n	o	t					
A 94 04 331	G 85	85	45	22	79	39	18	22	8	-	17	-	50	29	-	-	-	-	-	-	-	-	I
A 94 04 341		85	45	33	78	38	29	22	20	-	17	-	50	29	-	-	-	-	-	-	-	-	I
A 94 04 441		85	45	45	78	38	41	22	31	-	17	-	50	29	-	-	-	-	-	-	-	-	I
A 94 06 331 $\neq$	G 110	114	72	33	104	62	27	43	17	-	21	-	76	32	30	30	30	-	-	-	-	-	I
A 94 06 351 $\neq$		114	72	33.5	104	62	27	43	17	-	21	-	76	32	30	30	30	-	102	x 60	x 1	-	I
A 94 06 341 $\neq$		114	72	45	104	62	39	43	29	-	21	-	76	32	30	30	30	-	-	-	-	-	I
A 94 06 441 $\neq$		114	72	57	104	62	51	43	41	-	21	-	76	32	30	30	30	-	-	-	-	-	I
A 94 06 332 $\neq$		114	72	33	104	62	27	43	17	8	21	46	-	32	30	30	-	30	-	-	-	-	II
A 94 06 352 $\neq$		114	72	33.5	104	62	27	43	17	8	21	46	-	32	30	30	-	30	-	102	x 60	x 1	II
A 94 06 342 $\neq$		114	72	45	104	62	39	43	29	20	21	46	-	32	30	30	-	30	-	-	-	-	II
A 94 08 331 $\neq$	G 155	158	95	33	149	85	27	63	16	-	20	60	120	50	38	42	42	-	-	-	-	-	I
A 94 08 351 $\neq$		158	95	33.5	149	85	27	63	16	-	20	60	120	50	38	42	42	-	144.5	x 81.5	x 1	-	I
A 94 08 341 $\neq$		158	95	45	149	85	39	63	28	-	20	60	120	50	38	42	42	-	-	-	-	-	I
A 94 08 441 $\neq$		158	95	57	149	85	51	63	40	-	21	60	120	50	38	42	42	-	-	-	-	-	I
A 94 08 337 $\neq$		158	95	33	149	85	27	63	16	7	20	60	-	50	38	42	-	61	-	-	-	-	III
A 94 08 357 $\neq$		158	95	33.5	149	85	27	63	16	7	20	60	-	50	38	42	-	61	144.5	x 81.5	x 1	-	III
A 94 08 347 $\neq$		158	95	45	149	85	39	63	28	19	20	60	-	50	38	42	-	61	-	-	-	-	III
A 94 08 335 $\neq$		158	95	33	149	85	27	63	16	7	20	60	90	50	38	42	-	31	-	-	-	-	IV
A 94 08 355 $\neq$		158	95	33.5	149	85	27	63	16	7	20	60	90	50	38	42	-	31	144.5	x 81.5	x 1	-	IV
A 94 08 345 $\neq$		158	95	45	149	85	39	63	28	19	20	60	90	50	38	42	-	31	-	-	-	-	IV
A 94 13 331 $\neq$	G 190	190	138	45	182	130	39	101	28	-	19	53	154	89	34	42	42	-	-	-	-	-	I
A 94 13 351 $\neq$		190	138	45.5	182	130	39	101	28	-	19	53	154	89	34	42	42	-	172	x 120	x 1	-	I
A 94 13 341 $\neq$		190	138	68	180	128	62	101	51	-	19	53	154	89	34	42	42	-	-	-	-	-	I
A 94 13 441 $\neq$		190	138	91	180	128	85	100	74	-	19	53	154	89	34	42	42	-	-	-	-	-	I
A 94 13 337 $\neq$		190	138	45	182	130	39	101	28	19	19	53	154	89	34	42	42	61	-	-	-	-	III
A 94 13 357 $\neq$		190	138	45.5	182	130	39	101	28	19	19	53	154	89	34	42	42	61	172	x 120	x 1	-	III
A 94 13 347 $\neq$		190	138	68	180	128	62	101	51	42	19	53	154	89	34	42	42	61	-	-	-	-	III

# SHELL-TYPE CASES

## G 85, 110, 155, 190

Closed front and rear



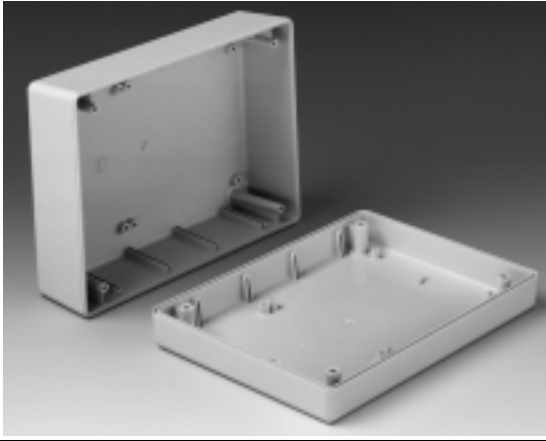
### ASSEMBLY

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 215.



### ACCESSORIES

- Contact strips to connect shielded case shells
- Sealing kit

Order data see page 138.

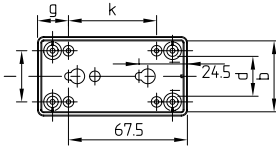
Further accessories see pages 213-220.

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

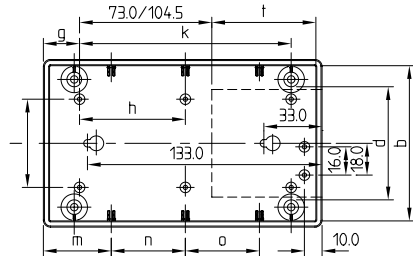
Detailed drawing available on demand in dwg, dxf or pdf format.

⊗ ⊕ = Type of screw for case fixing cross head

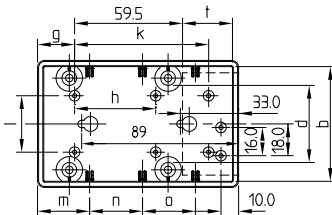
G 85 ⊗ H (PH1)



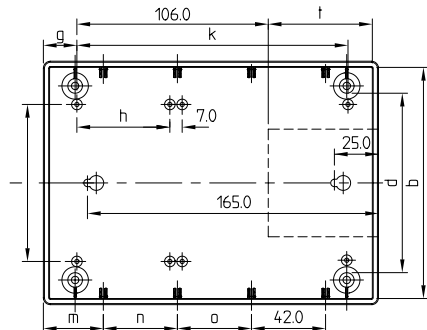
G 155 ⊗ Z (PZ1)



G 110 ⊗ Z (PZ1)



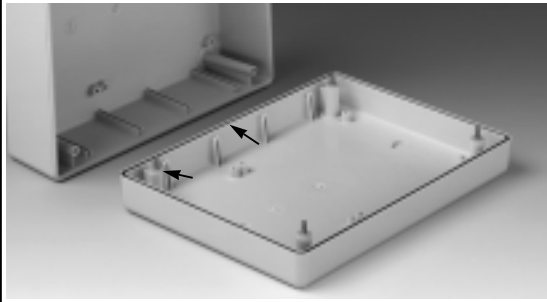
G 190 ⊗ Z (PZ1)



## 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.

A 91 04 250
A 91 06 352
A 91 08 486
A 91 13 630

Sealing kit for case

G 85
G 110
G 155
G 190

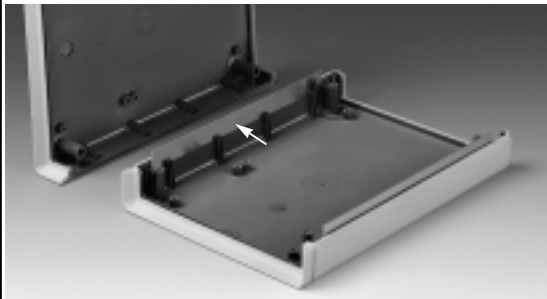
Supply / Application

1 O-ring for the case  
4 rubber disks for sealing between the assembly pillars

## 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.

A 91 04 073
A 91 06 095
A 91 08 120
A 91 13 150

Contact strips for case

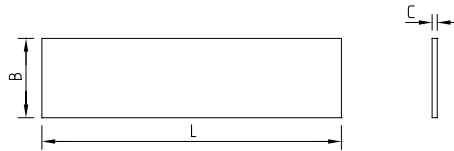
V, G 85
V, G 110
V, O, G 155
V, O, G 190

Supply / Application

1 contact strip to connect shielded case shells

## FRONT AND REAR PANELS

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



Part-No.  
Aluminium

A 91 04 111
A 91 07 111
A 91 07 121
A 91 07 221
A 91 09 111
A 91 09 121
A 91 09 221
A 91 14 111
A 91 14 121
A 91 14 221

PMMA (plexiglass®)

A 91 04 113
A 91 06 113
A 91 06 123
A 91 06 223
A 91 08 113
A 91 08 123
A 91 08 223
A 91 13 113
A 91 13 123
A 91 13 223

For cases

A 94 04 33.
A 94 06 33.
A 94 06 34.
A 94 06 44.
A 94 08 33.
A 94 08 34.
A 94 08 44.
A 94 13 33.
A 94 13 34.
A 94 13 44.

Dim. in mm

L	B	C
35.5	14.4	1
58.8	25.4	1
58.8	37.4	1
58.8	49.4	1
81.5	23.6	1
81.5	35.6	1
81.5	47.6	1
124.2	33.6	1.5
124.2	56.6	1.5
124.2	79.6	1.5

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 213-220.