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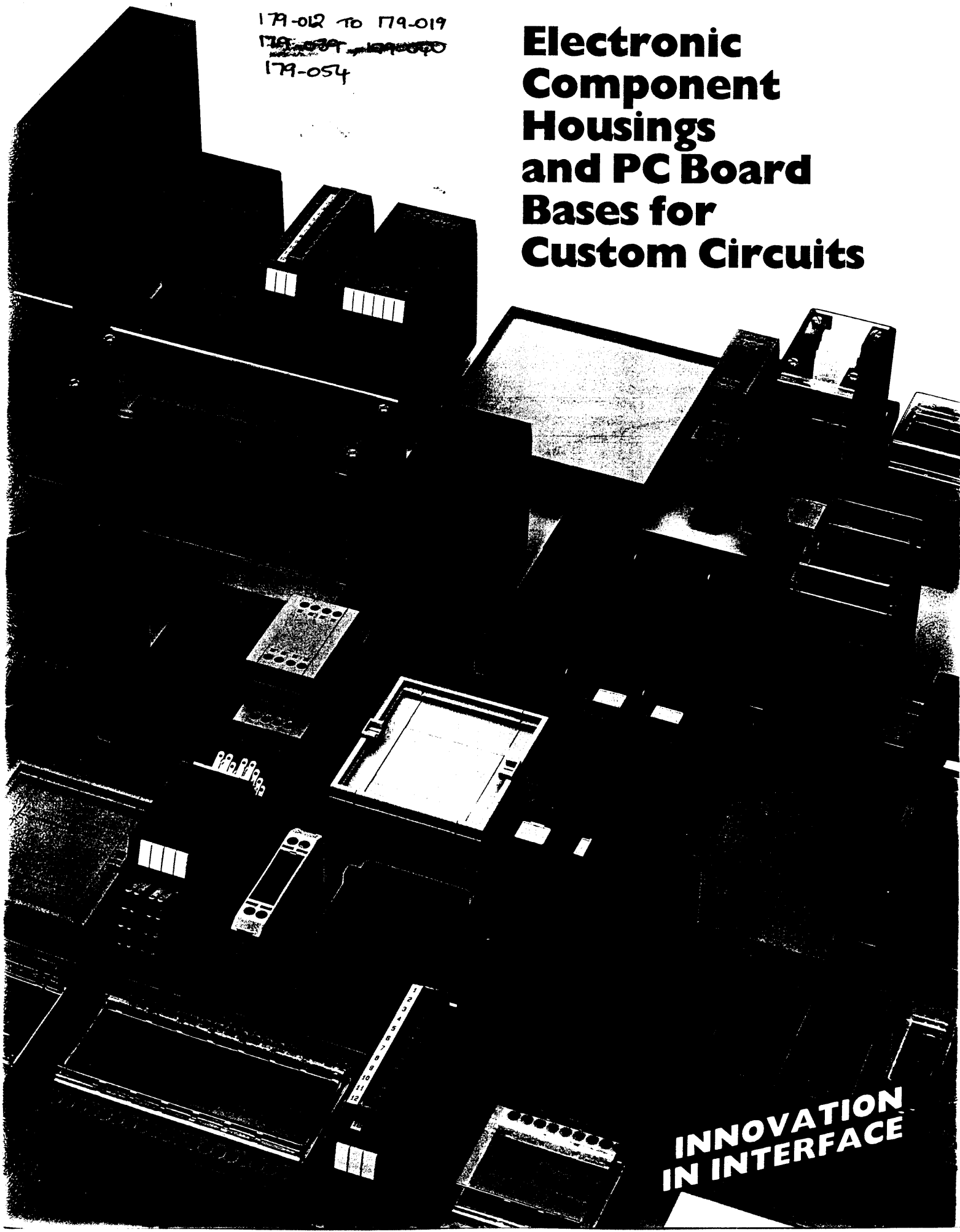
179-012 TO 179-019
179-[illegible]
179-054

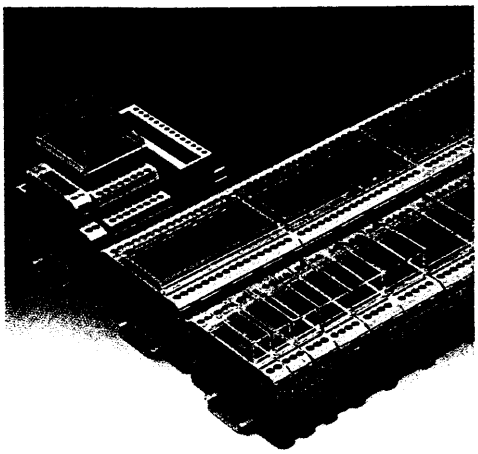
Electronic Component Housings and PC Board Bases for Custom Circuits



ectronic Component ousings and PC Board ases for Custom Circuits

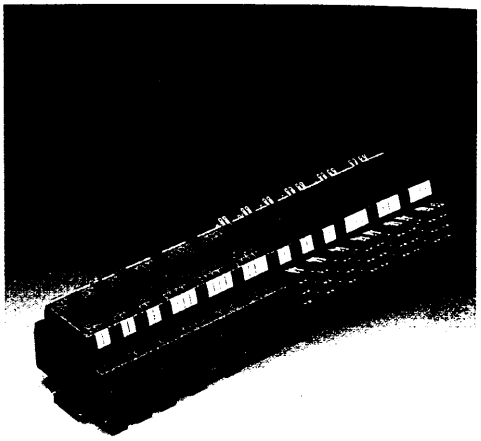
With the trend to distribution and appli-ion of new technologies, more and more mpact rail mountable housings with inte-ted connection systems are required for mponent PC board bases.
The comprehensive Phoenix housing ge comprises three harmonized product ups: The **MODUFACE** and **UEG/UEGM** mponent housings and the **UM/UMK** PC ard bases for custom circuits. The hous-s which are conceived in accordance h the modular principle accept printed uit boards from a few square centime-s up to complex cards. All housings have common the high stability, the solid work-nship and the rail mountable design.
The machine mounted components and dered electronic groups are safely inte-ted in the component housings without ditional screw fitting and provide full ck protection. The housings offer a wide ge of connections from solid screw con-ctions up to 2.5 mm² and tab connec-ns through to multi-position electronic g connectors.
The use of standard component hou-gs reduces development time and costs, even the smallest batches and indivi-al equipment can be economically pro-ced. For large series the housings can be shed in a choice of six other colors in dition to the standard green color.

Range Review



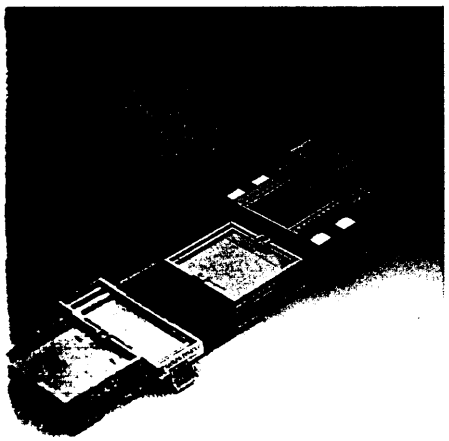
Component Housing MODUFACE

MODUFACE component housings are rail mountable small housings accepting electronic circuits and standard compo-nents.
MODUFACE offers a selection of approx. 20 housing variations, which are available with a number of positions and grids from 10 mm to 150 mm. The empty housings are offered with screw, tab or COMBICON connections to meet practical require-ments.

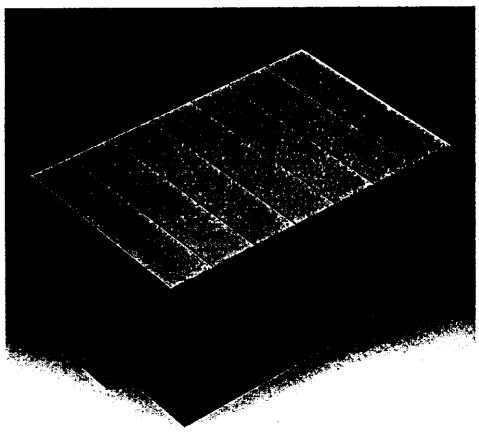


Component Housings UEG

The electronic component housing UEG is particularly suitable to accept made to measure adaption or conversion functions. It is available in 20 and 30 mm construction widths with individual custom fitted double level screw or tab connections. Using the universal foot these empty housings snap on to commercially available DIN EN mounting rails.

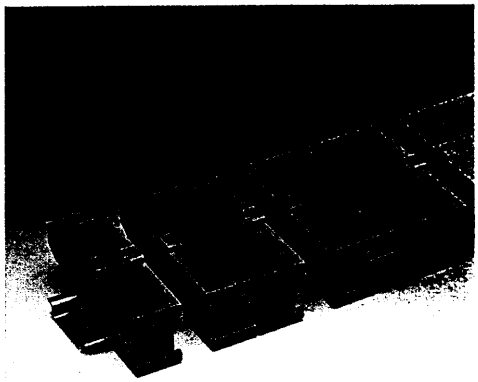


following review shows the various ranges.



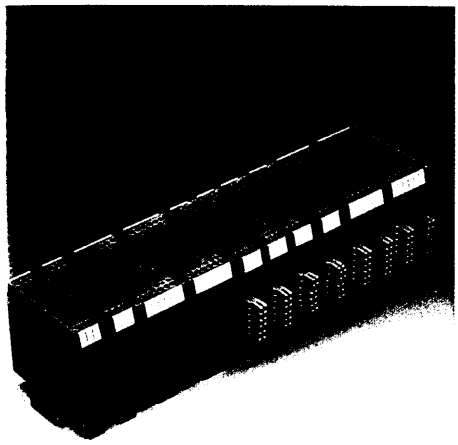
Component Housing UEG-EU

Using this housing for European format cards, even complex electronics are made rail mountable. The empty housing can be matched to all requirements by simply en-gaging the individual elements. Available as connection system are high position plug connectors as well as the comprehensive range of printed circuit terminal blocks (see catalog page 290).



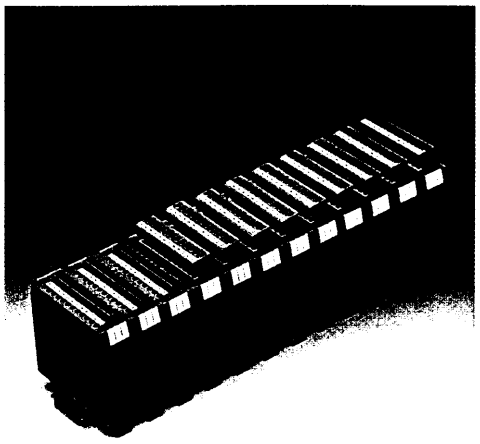
PC Board Bases for Custom Circuits UMK

The universal module UMK permits pro-fessional rail mounting of electronics. The PC board bases for custom circuits are comprised of individual elements which can be optionally extended in the mounting rail longitudinal direction in accordance with the printed circuit board size. With its universal foot it can be engaged on com-mercially available DIN EN mounting rails.



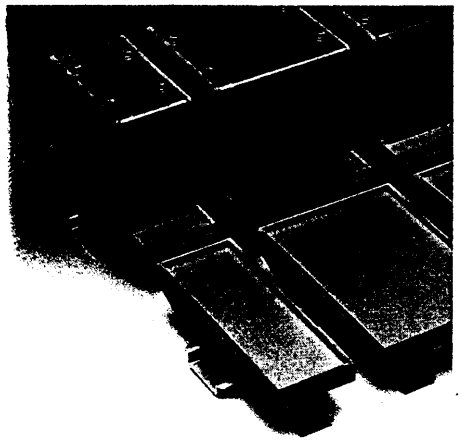
ɔmponent Housings UEGM

The electronic component housing EGM offers the practical possibility of ting individual interface functions. Due to e various construction widths (22.5, 25 ıd 40 mm) with optional screw and/or tab ɔnnections it easily meets individual requiments and needs. The housings snap on ɔmmercially available DIN EN mounting ils.



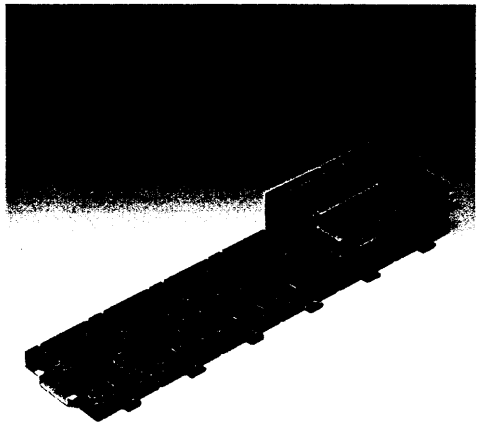
Component Housing UEGM-MSTB

The special feature of these 25 mm wide electronic component housings UEGM-MSTB is the connection of the external conductors through plug-in COMBICON pin strips. All standard COMBICON plug variations from 2 to 12 positions can mate the COMBICON pin strips. The individual connection points can be provided with light diodes. The empty housings possess a universal foot and snap on to commercially available DIN EN mounting rails.



C Board Bases for Custom Circuits UM

The PC board bases for custom circuits M offer the possibility of economically and ıickly expanding rail mounted electronic rcuits. The printed circuit board size can ɜ optionally expanded in the mounting rail ngitudinal direction by simply fitting the M base elements in rows. The modules e available both with and without end ɔvers. Due to their universal foot, these odules snap on to commercially available IN EN mounting rails.



Mounting Plates MP

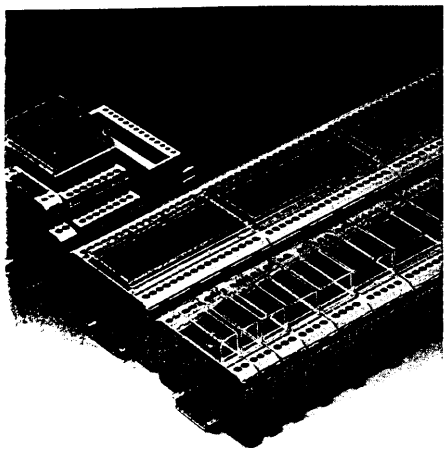
The mounting plates for rail fitting have been specially designed to accept size 0 switching equipment.

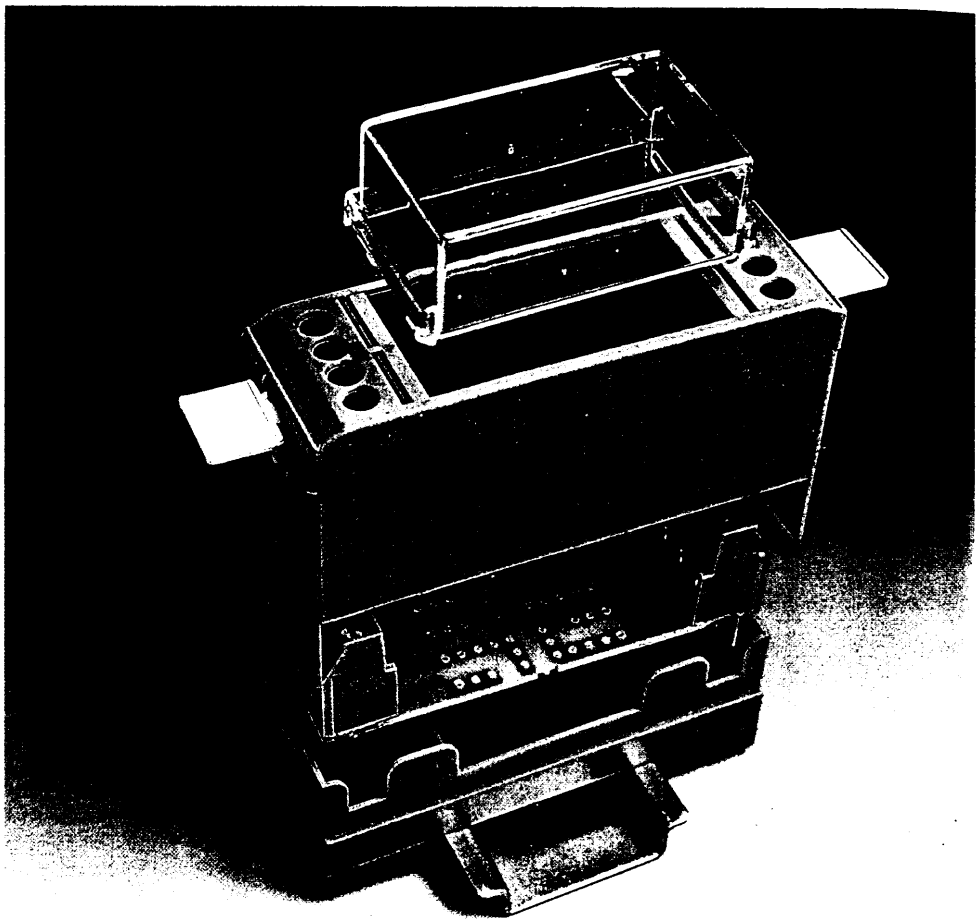
Contents Page

ODUFACE

›neral

MODUFACE is the name for a complete mponent housing range for the economi- l arrangement of industrial electronics cording to switch cabinet referenced re- irements. In the housing small interface cuits can be fitted as well as complete ntrol units.





The component holder range can be ›ided into three delivery groups:
The first delivery form: individual parts are supplied without printed circuit boards for complete custom fitting
The second delivery form: the prefabricated modules offer a standard printed circuit board with solder points for custom soldering of construction elements.
The third delivery form: here various housing variations can be individually combined.
Common features for all MODUFACE ›ducts:
Uniform and well designed housing system
Optimum and space saving accommodation of the electronics in finely stepped module variants, which can be selected in grids from 10 to 150 mm
Practical and easily wired conductor connection through solid screw terminals up to 2.5 mm^2 very fine strand or optional 6.3/2.8x0.8 mm tab connections or COMBICON or electronic plug connectors.
Easy snap fitting on the ⊓ symmetrical mounting rails in accordance with DIN EN 50022
Shock and soil protected accommodation of electronic components
Selection between three cover sizes in transparent or non-transparent design.

›ign Principle

The blown-up view indicates the principle the MODUFACE construction: the com- ›nent fitted printed circuit board is in- ›ted in the housing upper section and ›bsequently reliably engages with the ›using base (no screws!).

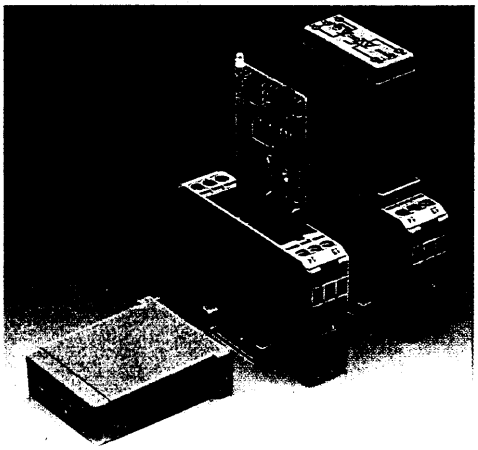
Electronic Component Accommodation

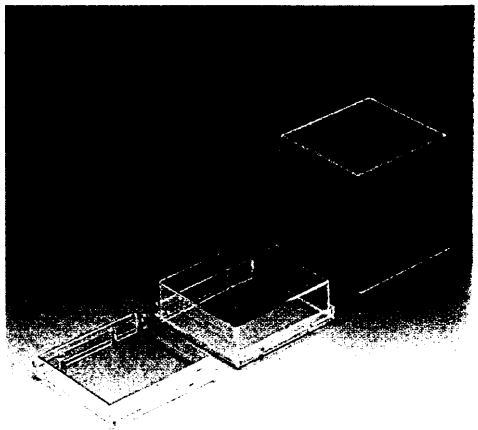
The fine type stages permit optimum adaption of the housings to the required printed circuit board surface for the electronic components and to the required connection positions and: the printed circuit board geometry is rectangular. The layout of each printed circuit board with its dimensions, the connection points and the component side is represented on pages 18–19 in a scale of 1:1. The special feature: all electronic components and printed circuit terminal blocks can be fitted in accordance with production requirements and machine soldered in one operating cycle!

To create construction modules as narrow as possible with comprehensive electronic components, one or several additional PCB's can be mounted perpendicularly on the main PCB, via suitable connection elements. The layout of this additional printed circuit board including dimensions, the points for the connection element and the component side is represented on page 19 in a 1:1 scale.

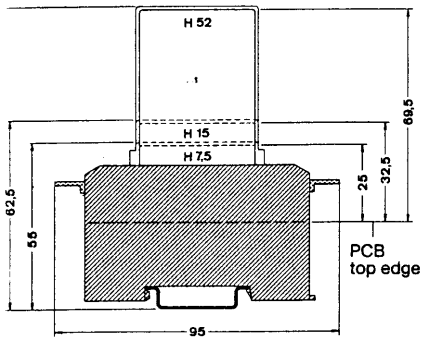
Three Cover Heights

The transparent or non-transparent green hoods available protect the internal electronics from shock and the ingress of dirt. The cover simply snaps on; it can be removed again at any time. The front permits the installation of display or actuation elements and a surface for a circuit print label. Economical quantities justify the production of covers upon request with front break-outs or prints.





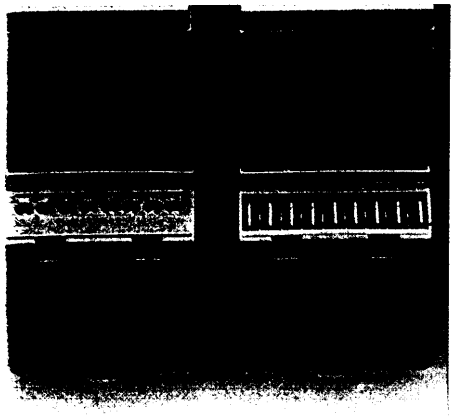
Special keying forms ensure that the ıvers can only be fitted in accordance th the circuit, i. e. as per the front print.



A selection can be made between three ıver heights, permitting an optimum ight matching to the electronics space quirement. The standard 7.5 and 15 mm gh covers are transparent; upon request onomical quantities allow the covers to offered as non-transparent green. The 52 m high cover is dnly available as non – ınsparent green. The tall covers are pro- ded with guide grooves to accept the ver- ally positioned additional printed circuit ards.

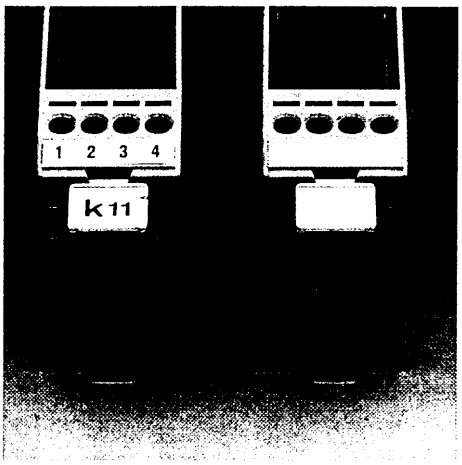
onductor Connections

Available designs are:
solid 2.5 mm² screw connections in the form of printed circuit terminal blocks MKDS 3 in 5 mm grid dimensions on both sides (see catalog page 290). Some MODUFACE housings are alternatively available with screw terminal blocks with a 7.5 mm grid dimension; more details upon request.
Upon request, tab connections 6.3/ 2.8 x 0.8 mm; the 2, 3, and 4 position printed circuit strips with plastic ribs between the tabs can be fitted in rows in accordance with the grid spacing; to this effect the housing upper sections are supplied in a modified design on one or both sides with connection openings at the top.
Upon request with plug-in COMBICON connections when ordering economical batch sizes.
The connection components are always ked with the electronic components on e printed circuit board and are machine ldered. The upper section of the MODU- \CE housing ensures an aesthetically egant integration of the connection ele- ents.



Marking

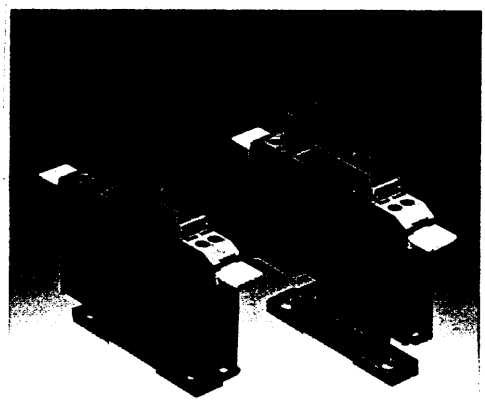
The marking of the connection terminal blocks is made on the marking slope by standard or individually printed marking strips SKS 5 or SKS 7.5 (see catalog page 290).
Economical quantities justify direct printing; more details upon request.



For module marking equipment marker labels EMG-GKS and EMG-SGKS are available, which can be inserted on both sides of the housing and individually marked.

Assembly

All MODUFACE modules are aligned in rows by simply engaging on the symmetrical mounting rail in accordance with DIN EN 50 022. Dismantling is made by pulling back the orange engagement latch.
To engage modules up to 30 mm width on the asymmetrical mounting rail in accordance with DIN EN 50 035 the adaptor EM-AD/NS 32 can be used.
Modules with a 12.5 and 25 mm width can also be individually mounted without a rail using a special plastic base.



Materials

Housing components and transparent cover are made of difficult to ignite thermoplastics, suitable and internationally listed for permanent temperatures up to 100°C.
The housing protection type corresponds to IP 40; IP 20 for connection terminals.

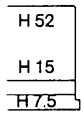
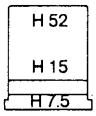
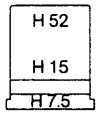
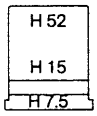
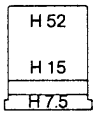
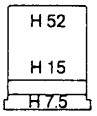
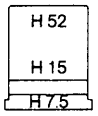
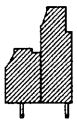
mm to inch
25 =(.984)
32.5=(1.279)
55 =(2.165)
62.5=(2.461)
69.5=(2.736)
95 =(3.740)

ODUFACE Range Review

Available

Upon request

DUFACE ic sing	Type	Width/spacing [mm/inch]	No. of positions	MODUFACE covers H 52 H 15 H 7.5 EMG 10-H... Page 8 10 (.394)	H 52 H 15 H 7.5 EMG 12-H... Page 8 12.5 (.492)	H 1 EMD 12-H... Page 15 12.5 (.492)	H 52 H 15 H 7.5 EMG 15-H... Page 9 15 (.590)	H 52 H 15 H 7.5 EMG 17-H... Page 9 17.5 (.689)	H 52 H 15 H 7.5 EMG 22-H... Page 9 22.5 (.886)	H 52 H 15 H 7.5 EMG 25-H... Page 10 25 (.984)	H 52 H 15 H 7.5 EMG 30-H... Page 10 30 (1.181)	H 52 H 15 H 7.5 EMG 37-H.. Page 11 37.5 (1.476)
	EMG 10 Page 8	10 (.394)	4	●								
	EMG 12 Page 8	12.5 (.492)	4		●							
	EMG 15 Page 9	15 (.590)	4 6				●					
	EMG 17 Page 9	17.5 (.689)	4 6					●				
	EMG 22 Page 9	22.5 (.886)	8						●			
	EMG 25 Page 10	25 (.984)	8		●					●		
	EMG 30 Page 10	30 (1.181)	10	●			●				●	
	EMG 37 Page 11	37.5 (1.476)	14		●							●
	EMG 45 Page 11	45 (1.772)	16				●		●			
	EMG 50 Page 11	50 (1.968)	18	●	●					●		
	EMG 75 Page 12	75 (2.953)	28		●					●		●
	EMG 90 Page 12	90 (3.543)	34	●			●		●		●	
	EMG 100 Page 13	100 (3.937)	38	●	●					●		
	EMG 125 Page 13	125 (4.921)	48		●					●		
	EMG 150 Page 13	150 (5.905)	56	●	●		●			●	●	●
	EMK 12 Page 14	12.5 (.492)	4									
	EMD 12 Page 15	12.5 (.492)	8			○						
	EME 45 Page 16	45 (1.772)	16	●	●					●		
	EMH 25 Page 17	25 (.984)	14									

							MODUFACE connection elements					
												
MG 45-H... Page 11	**EMG 50-H...** Page 11	**EMG 75-H...** Page 12	**EMG 90-H...** Page 12	**EMG 100-H...** Page 13	**EMG 125-H...** Page 13	**EMG 150-H...** Page 13	**MKDS...** Catalog Page 290	**GMKDS...** Catalog Page 292	**MKKDS...** Catalog Page 291	**FLIS...** Page 8	**MSTB...** Catalog Page 302	**FRONT1.5 H** Info 28 Page 4
45 (1.772)	50 (1.968)	75 (2.953)	90 (3.543)	100 (3.937)	125 (4.921)	150 (5.905)	5 (.197)	7.5 (.295)	5 (.197)	5 (.197)	5 (.197)	5 (.197)
							●					
							●			●	○	
							●	●				
							●	●		○	○	
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					○		●			○	○	
	●	●				○	●					
							●			○	○	
							●		●			
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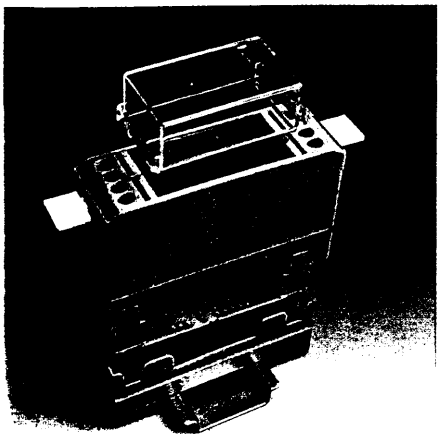
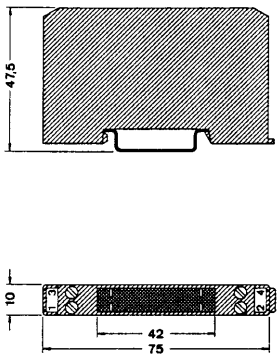
												●

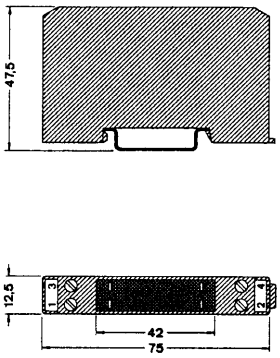
ɛctronic Modules EMG
· Custom Circuits

EMG 10
10 mm wide, 4 position

EMG 12
12.5 mm wide, 4 position





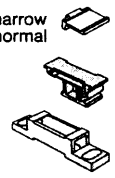


custom circuit modules are designed
ı solder support points allowing free
ɲponent installation. The empty modules
hout printed circuit board and connec-
terminal blocks) offer the possibility of
ommodating electronic circuits in dust
shock proof, low cost housings.

	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

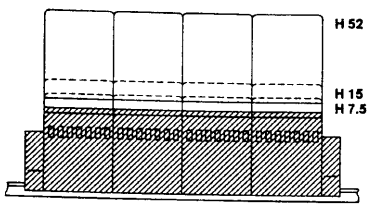
	[mm²]	AWG	I [A]
Connection data, fine strand	2.5	12	
Connection data, solid strand	4	12	
Tab connection 6.3/2.8x0.8 mm, DIN 46249:			20/5

ription		Type	Order No.	Pcs. Pkt.	Type	Order No.	Pcs. Pkt.
ɔy module, for PCB insertion, ɔut screw connection ɲal block and cover	Grid 5 Grid 7.5	**EMG 10-LG**	**29 47 74 7**	10	**EMG 12-LG**	**29 48 28 3**	10
ɔy module, for PCB insertion, ɔut tab connection strip ɔover					**EMG 12-LG-FSR** **EMG 12-LG-FSL** **EMG 12-LG-FS/FS**	**29 44 06 7** **29 44 07 0** **29 44 08 3**	10 10 10
om circuit module, consisting of housing, ection terminal blocks MKDS 3 and PCB with points ɔldering in electronic components		**EMG 10-B2**	**29 47 75 0**	10	**EMG 12-B2**	**29 48 30 6**	10
ɛr, to protect components from contact and ɜmination. Available in green or clear. ɛnsional drawing see page 9	clear clear grenn	**EMG 10-H 7.5 mm clear** **EMG 10-H 15 mm clear** **EMG 10-H 52 mm green**	**29 47 76 3** **29 47 77 6** **29 47 78 9**	10 10 10	**EMG 12-H 7.5 mm clear** **EMG 12-H 15 mm clear** **EMG 12-H 52 mm green**	**29 47 11 6** **29 48 29 6** **29 47 12 9**	10 10 10
ed circuit board, ɒpting electronic components page 18)		**P 1-EMG 10**	**29 47 79 2**	5	**P1-EMG 12**	**29 47 18 7**	5
ed circuit terminal blocks, grid 5, ɔldering into the PCB see catalog page 290)	2 position 3 position 4 position	**MKDS 3/2-EMG 10**	**17 12 34 2**	50	**MKDS 3/2**	**17 11 02 6**	50
ed circuit terminal blocks, grid 7.5, ɔldering into the PCB see catalog page 293)	2 position						
strip, with tab connection for ɛring into the PCB	2 position				**FLIS 2- (2–2.8–0.8) V**	**17 60 13 2**	50
ɔment marking plate	narrow normal	**EMG-SGKS**	**29 47 58 5**	50	**EMG-GKS**	**29 47 03 5**	50
ɔtor, to snap modules —ɔ mounting rails, ɲm (.445) wide					**EM-AD/NS 32**	**29 49 83 9**	10
ɔtor for direct fitting ɲm (.492) wide					**EMG-ADM**	**29 48 59 7**	10



ɛr loss dependent upon the cover ɲt at 20° C

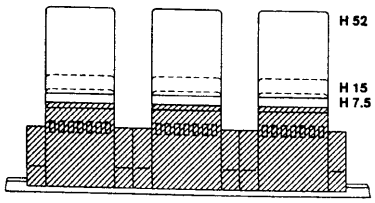
ɲted with zero spacing



Power loss [W] at 20° C

	EMG 10	EMG 12	EMG 15	EMG 17	EMG 22
H 7.5 mm	0.9	1.2	1.2	1.3	1.4
H 15 mm	1.0	1.3	1.4	1.5	1.6
H 52 mm	1.5	2	2	2.1	2.3

ɲted with a spacing of ≧ 20 mm (.787)



Power loss [W] at 20° C

	EMG 10	EMG 12	EMG 15	EMG 17	EMG 22
H 7.5 mm	1.2	1.3	1.3	1.4	1.6
H 15 mm	1.4	1.5	1.5	1.6	1.8
H 52 mm	2.2	2.6	2.7	2.7	2.9

Reduction factor dependent upon the ambient temperature

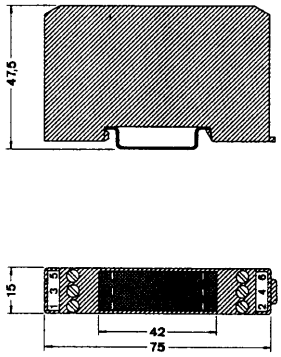
As the maximum permissible power loss is reduced with an increase in the ambient temperature, the listed reduction factor (K_I) must be taken into account when calculating the permissible power loss.

Ambient temperature [° C]

	20	30	40	50	60
K_I	1	0.8	0.64	0.51	0.41

EMG 15

15 mm wide,
4 position with screw connection, grid 7.5
6 position with screw connection, grid 5



	[mm²]	AWG
onnection data, fine strand	2.5	12
onnection data, solid strand	4	12

/pe	Order No.	Pcs. / Pkt.
MG 15-LG	29 47 80 2	10
MG 15-LG-7.5	29 44 09 6	10
MG 15-B3	29 47 81 5	10
MG 15-H 7.5 mm clear	29 47 82 8	10
MG 15-H 15 mm clear	29 47 83 1	10
MG 15-H 52 mm green	29 47 84 4	10
1-EMG 15	29 47 85 7	5
IKDS 3/3-EMG 15	17 12 69 8	50
iMKDS 3/2-EMG 15	17 31 46 2	50
MG-GKS	29 47 03 5	50
M-AD/NS 32	29 49 83 9	10

ower loss dependent upon the ambient temperature nd cover height

$P_{vtu} = P_{vt} \times K_j$

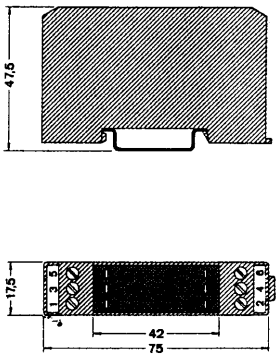
xplanations: Pv = power loss
tu = ambient temperature
t = 20° C
K_j = reduction factor

xample:
ower loss at 40° C in EMG 12, mounted without pacing, cover height H 15 mm

$P_{v40°C} = P_{v20°C} \times K_j = 1.3\,W \times 0.64 = 0.83\,W$

EMG 17

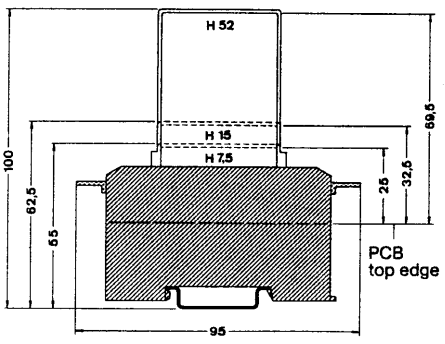
17.5 mm wide,
4 position with screw connection, grid 7.5
6 position with screw connection, grid 5



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

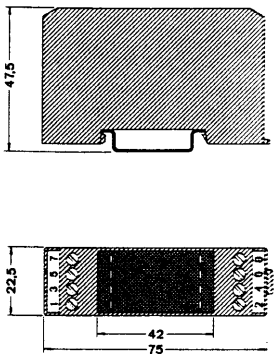
Type	Order No.	Pcs. / Pkt.
EMG 17-LG	29 46 07 8	10
EMG 17-LG-7.5	29 44 10 6	10
EMG 17-B3	29 46 08 1	10
EMG 17-H 7.5 mm clear	29 46 09 4	10
EMG 17-H 15 mm clear	29 46 10 4	10
EMG 17-H 52 mm green	29 46 11 7	10
P1-EMG 17	29 46 12 0	5
MKDS 3/2	17 11 02 6	50
MKDS 3/3	17 11 03 9	50
GMKDS 3/2	17 31 02 2	50
EMG-GKS	29 47 03 5	50
EM-AD/NS 32	29 49 83 9	10

Dimensional drawing of electronic modules EMG



EMG 22

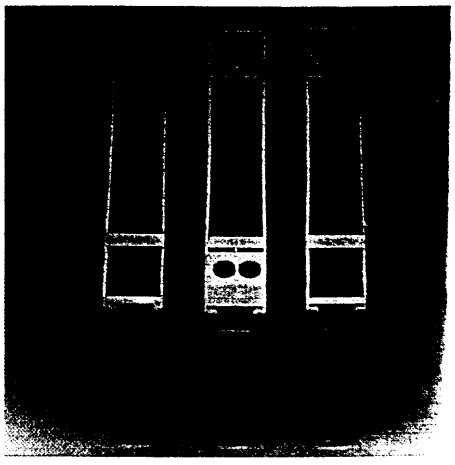
22.5 mm wide, 8 position



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

Type	Order No.	Pcs. / Pkt.
EMG 22-LG	29 46 13 3	10
EMG 22-B4	29 46 14 6	10
EMG 22-H 7.5 mm clear	29 46 15 9	10
EMG 22-H 15 mm clear	29 46 16 2	10
EMG 22-H 52 mm green	29 46 17 5	10
P1-EMG 22	29 46 18 8	5
MKDS 3/2	17 11 02 6	50
MKDS 3/3	17 11 03 9	50
MKDS 3/4	17 11 04 2	50
EMG-GKS	29 47 03 5	50
EM-AD/NS 32	29 49 83 9	10

Design of the electronic modules EMG with tab connection

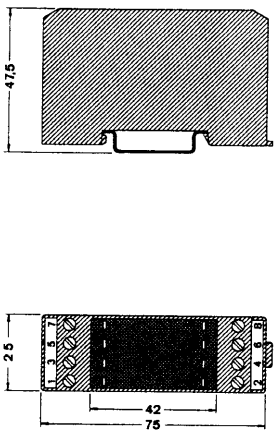


...-FS/FS ...-FSR ...-FSL

nm to inch

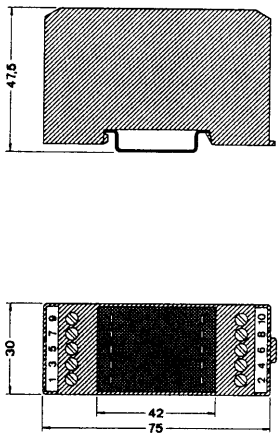
7.5 = (.295)	42 = (1.653)
0 = (.394)	47.5 = (1.870)
2.5 = (.492)	52 = (2.047)
5 = (.590)	55 = (2.165)
7.5 = (.689)	62.5 = (2.461)
2.5 = (.886)	69.5 = (2.736)
5 = (.984)	75 = (2.953)
2.5 = (1.279)	95 = (3.740)
	100 = (3.937)

EMG 25
25 mm wide, 8 position



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

EMG 30
30 mm wide, 10 position

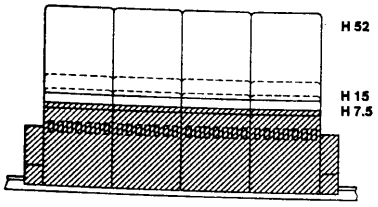


	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

;ription		Type	Order No.	Pcs. Pkt.	Type	Order No.	Pcs. Pkt.
ty module, for PCB insertion)ut screw connection inal block and cover	Grid 5	**EMG 25-LG**	**29 48 31 9**	5	**EMG 30-LG**	**29 47 86 0**	5
:om circuit module, consisting of housing, ıection terminal block MKDS 3 and PCB with points)ldering in electronic components		**EMG 25-B4**	**29 48 33 5**	5	**EMG 30-B5**	**29 47 87 3**	5
:r, to protect components from contact and amination. Available in green or clear. ensional drawing see page 11	clear clear green	**EMG 25-H 7.5 mm clear** **EMG 25-H 15 mm clear** **EMG 25-H 52 mm green**	**29 47 13 2** **29 48 32 2** **29 47 14 5**	10 10 10	**EMG 30-H 7.5 mm clear** **EMG 30-H 15 mm clear** **EMG 30-H 52 mm green**	**29 47 88 6** **29 47 89 9** **29 47 90 9**	5 5 5
ed circuit board, :pting electronic components page 18)		**P1-EMG 25**	**29 47 19 0**	5	**P1-EMG 30**	**29 47 91 2**	5
:ed circuit terminal blocks, grid 5)ldering into the PCB see catalog page 290)	2 position 3 position 4 position	**MKDS 3/2** **MKDS 3/3** **MKDS 3/4**	**17 11 02 6** **17 11 03 9** **17 11 04 2**	50 50 50	**MKDS 3/2** **MKDS 3/3** **MKDS 3/4**	**17 11 02 6** **17 11 03 9** **17 11 04 2**	50 50 50
pment marking plate	narrow normal	**EMG-GKS**	**29 47 03 5**	50	**EMG-SGKS** **EMG-GKS**	**29 47 58 5** **29 47 03 5**	50 50
)tor, to snap the module → mounting rails, mm (.445) wide		**EM-AD/NS 32**	**29 49 83 9**	10	**EM-AD/NS 32**	**29 49 83 9**	10
)tor for direct fitting mm (.492) wide		**EMG-ADM**	**29 48 59 7**	10			

er loss dependent upon the cover
ht at 20° C

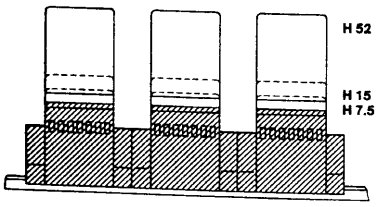
nted with zero spacing



Power loss [W] at 20° C

	EMG 25	EMG 30	EMG 37	EMG 45	EMG 50
H 7.5 mm	1.4	1.5	1.6	2.0	2.3
H 15 mm	1.6	1.7	1.9	2.5	2.8
H 52 mm	2.3	2.4	2.6	3.5	3.8

nted with a spacing of ≧ 20 mm (.787)



Power loss [W] at 20° C

	EMG 25	EMG 30	EMG 37	EMG 45	EMG 50
H 7.5 mm	1.6	1.7	1.8	2.4	2.6
H 15 mm	1.8	1.9	2.1	2.9	3.4
H 52 mm	2.9	3.1	3.5	4.4	4.8

Reduction factor dependent upon the ambient temperature

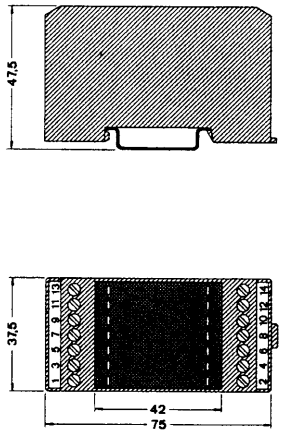
As the maximum permissible power loss is reduced with an increase in the ambient temperature, the listed reduction factor (K_j) must be taken into account when calculating the permissible power loss.

Ambient temperature [° C]

	20	30	40	50	60
K_j	1	0.8	0.64	0.51	0.41

EMG 37

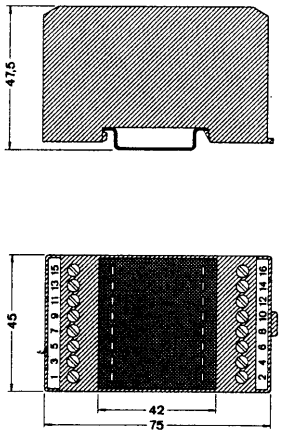
37.5 mm wide, 14 position



	[mm²]	AWG
onnection data, fine strand	2,5	12
onnection data, solid strand	4	12

EMG 45

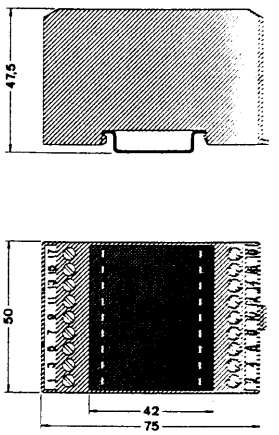
45 mm wide, 16 position



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

EMG 50

50 mm wide, 18 position



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

ype	Order No.	Pcs. Pkt.
MG 37-LG	**29 47 05 1**	5
MG 37-B7	**29 47 06 4**	5
MG 37-H 7.5 mm clear	**29 47 15 8**	5
MG 37-H 15 mm clear	**29 47 16 1**	5
MG 37-H 52 mm green	**29 47 17 4**	5
1-EMG 37	**29 47 07 7**	5
IKDS 3/2	**17 11 02 6**	50
IKDS 3/3	**17 11 03 9**	50
IKDS 3/4	**17 11 04 2**	50
MG-GKS	**29 47 03 5**	50

Type	Order No.	Pcs. Pkt.
EMG 45-LG	**29 46 19 1**	5
EMG 45-B8	**29 46 20 1**	5
EMG 45-H 7.5 mm clear	**29 46 21 4**	5
EMG 45-H 15 mm clear	**29 46 22 7**	5
EMG 45-H 52 mm green	**29 46 23 0**	5
P1-EMG 45	**29 46 24 3**	5
MKDS 3/2	**17 11 02 6**	50
MKDS 3/3	**17 11 03 9**	50
MKDS 3/4	**17 11 04 2**	50
EMG-GKS	**29 47 03 5**	50

Type	Order No.	Pcs. Pkt.
EMG 50-LG	**29 47 24 2**	5
EMG 50-B9	**29 47 25 3**	5
EMG 50-H 7.5 mm clear	**29 47 92 5**	5
EMG 50-H 15 mm clear	**29 47 93 8**	5
EMG 50-H 52 mm green	**29 47 94 1**	5
P1-EMG 50	**29 47 25 5**	5
MKDS 3/2	**17 11 02 6**	50
MKDS 3/3	**17 11 03 9**	50
MKDS 3/4	**17 11 04 2**	50
EMG-GKS	**29 47 03 5**	50

ower loss dependent upon the ambient temperature nd cover height

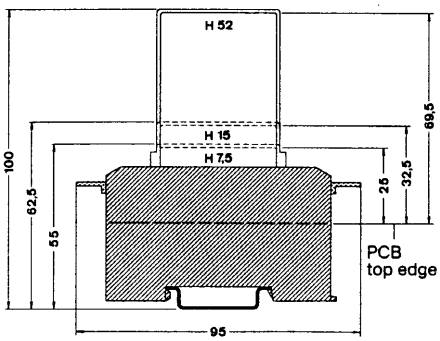
$P_{vtu} = P_{vt} \times K_l$

xplanations: Pv = power loss
tu = ambient temperature
t = 20° C
K_l = reduction factor

xample:
ower loss at 40° C in EMG 25, mounted without pacing, cover height H 15 mm

$P_{v40°C} = P_{v20°C} \times K_l = 1.6\,W \times 0.64 = 1.02\,W$

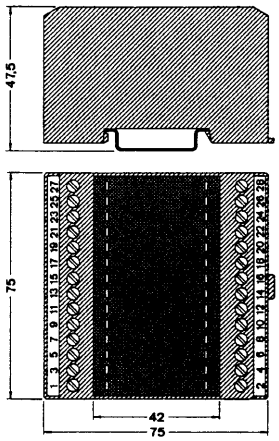
Dimensional drawing of electronic module EMG



nm to inch	
7.5 = (.295)	47.5 = (1.870)
5 = (.590)	50 = (1.968)
5 = (.984)	52 = (2.047)
0 = (1.181)	55 = (2.165)
2.5 = (1.279)	62.5 = (2.461)
7.5 = (1.476)	69.5 = (2.736)
2 = (1.653)	75 = (2.953)
5 = (1.772)	95 = (3.740)
	100 = (3.937)

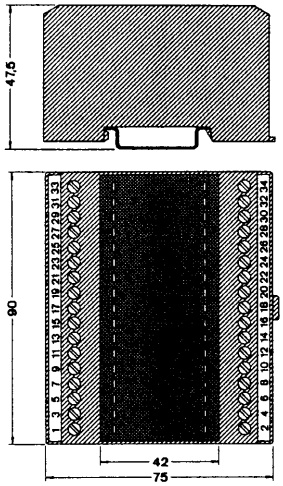
lectronic Modules EMG
)r Custom Circuits

EMG 75
75 mm wide, 28 position



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

EMG 90
90 mm wide, 34 position

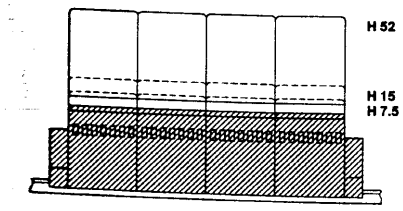


	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

scription		Type	Order No.	Pcs. Pkt.	Type	Order No.	Pcs. Pkt.
ıpty module, for PCB insertion hout screw connection minal block and cover	Grid 5	**EMG 75-LG**	**29 47 37 8**	5	**EMG 90-LG**	**29 46 25 6**	2
stom circuit module, consisting of housing, nnection terminal block MKDS 3 and PCB with points soldering in electronic components		**EMG 75-B14**	**29 47 38 1**	2	**EMG 90-B17**	**29 46 26 9**	5
ver, to protect components from contact and ntamination. Available in green or clear. nensional drawing see page 13	clear clear green	**EMG 75-H 7.5 mm clear** **EMG 75-H 15 mm clear** **EMG 75-H 52 mm green**	**29 47 95 4** **29 47 96 7** **29 47 97 0**	5 5 5	**EMG 90-H 7.5 mm clear** **EMG 90-H 15 mm clear** **EMG 90-H 52 mm green**	**29 45 39 6** **29 45 40 6** **29 44 30 0**	5 5 5
nted circuit board, cepting electronic components)e page 18–19)		**P1-EMG 75**	**29 47 39 4**	5	**P1-EMG 90**	**29 46 27 2**	5
nted circuit terminal blocks, grid 5, soldering into the PCB so see catalog page 290)	2 position 3 position 4 position	**MKDS 3/2** **MKDS 3/3** **MKDS 3/4**	**17 11 02 6** **17 11 03 9** **17 11 04 2**	50 50 50	**MKDS 3/2** **MKDS 3/3** **MKDS 3/4**	**17 11 02 6** **17 11 03 9** **17 11 04 2**	50 50 50
ulpment marking plate		**EMG-GKS**	**29 47 03 5**	50	**EMG-GKS**	**29 47 03 5**	50

wer loss dependent upon the cover
ight at 20° C

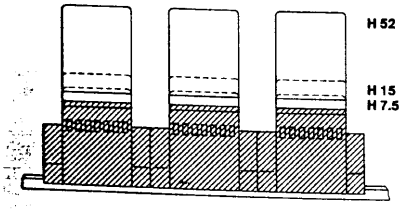
ounted with zero spacing



Power loss [W] at 20° C

	EMG 75	EMG 90	EMG 100	EMG 125	EMG 150
H 7.5 mm	3.3	4.1	–	–	–
H 15 mm	3.8	5.0	–	–	–
H 52 mm	4.9	6.1	–	–	–

ounted with a spacing of ≧ 20 mm (.787)



Power loss [W] at 20° C

	EMG 75	EMG 90	EMG 100	EMG 125	EMG 150
H 7.5 mm	3.9	4.6	–	–	–
H 15 mm	4.8	5.7	–	–	–
H 52 mm	5.8	7.1	–	–	–

Reduction factor dependent upon the ambient temperature

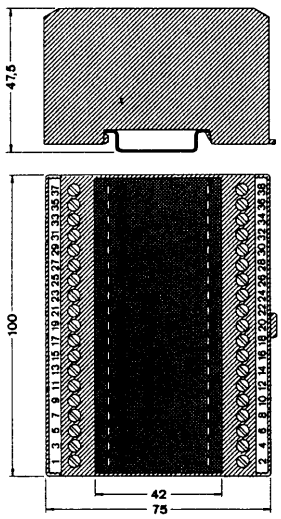
As the maximum permissible power loss is reduced with an increase in the ambient temperature, the listed reduction factor (K_J) must be taken into account when calculating the permissible power loss.

Ambient temperature [° C]

	20	30	40	50	60
K_J	1	0.8	0.64	0.51	0.41

EMG 100

100 mm wide, 38 position

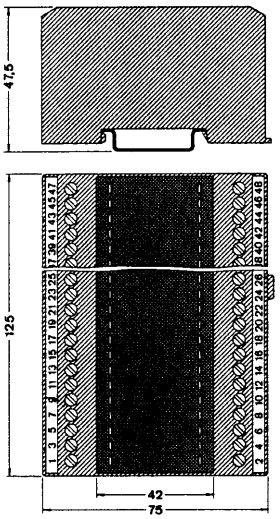


	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

Type	Order No.	Pcs. Pkt.
EMG 100-LG	29 47 08 0	2
EMG 100-B19	29 47 09 3	2
on request		
P1-EMG 100	29 47 10 3	5
MKDS 3/2	17 11 02 6	50
MKDS 3/3	17 11 03 9	50
MKDS 3/4	17 11 04 2	50
EMG-GKS	29 47 03 5	50

EMG 125

125 mm wide, 48 position

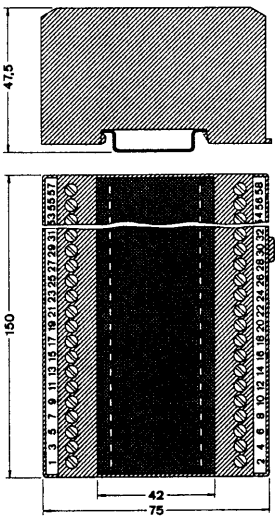


	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

Type	Order No.	Pcs. Pkt.
EMG 125-LG	29 47 98 3	2
EMG 125-B24	29 47 99 6	2
on request		
P1-EMG 125	29 46 01 0	5
MKDS 3/2	17 11 02 6	50
MKDS 3/3	17 11 03 9	50
MKDS 3/4	17 11 04 2	50
EMG-GKS	29 47 03 5	50

EMG 150

150 mm wide, 58 position



	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

Type	Order No.	Pcs. Pkt.
EMG 150-LG	29 46 02 3	2
EMG 150-B29	29 46 03 6	2
on request		
P1-EMG 150	29 46 04 9	5
MKDS 3/2	17 11 02 6	50
MKDS 3/3	17 11 03 9	50
MKDS 3/4	17 11 04 2	50
EMG-GKS	29 47 03 5	50

Power loss dependent upon the ambient temperature and cover height

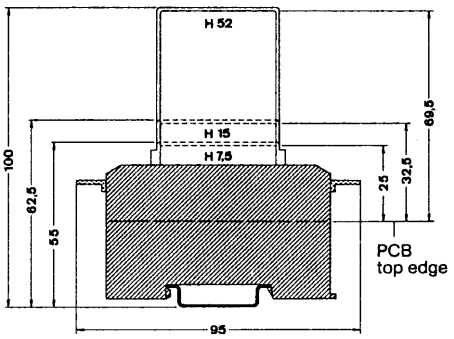
$P_{vtu} = P_{vt} \times K_j$

Explanations: Pv = power loss
tu = ambient temperature
t = 20° C
K_j = reduction factor

Example:
Power loss at 40° C in EMG 90; mounted without spacing; cover height H 15 mm

$P_{v40°C} = P_{v20°C} \times K_j = 5.0\,W \times 0.64 = 3.2\,W$

Dimensional drawing of electronic module EMG

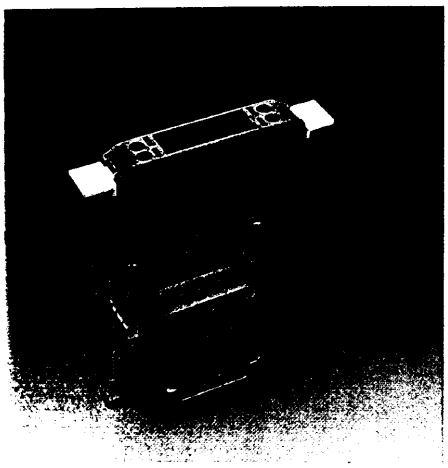


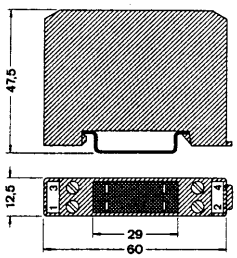
mm to inch

7.5 = (.295)	62.5 = (2.461)
15 = (.590)	69.5 = (2.736)
25 = (.984)	75 = (2.953)
32.5 = (1.279)	90 = (3.543)
42 = (1.653)	95 = (3.740)
47.5 = (1.870)	100 = (3.937)
52 = (2.047)	125 = (4.921)
55 = (2.165)	150 = (5.905)

ectronic Module EMK
r Custom Circuits

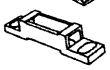
EMK 12
12.5 mm wide, 4 positions





The special feature of the electronic
›dule EMK is its compact design with
ly 12.5 mm construction width.

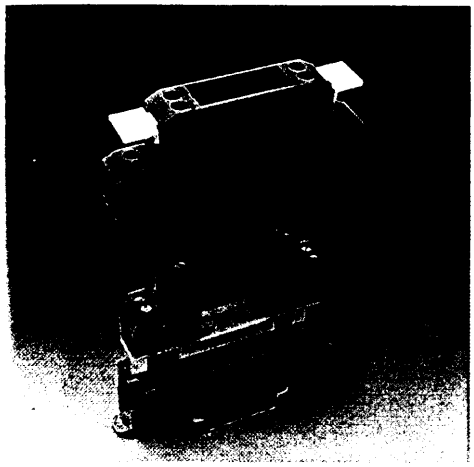
	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

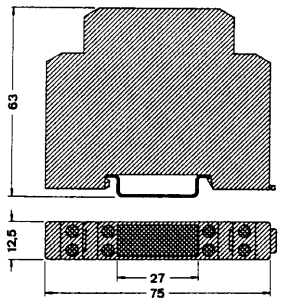
Description		Type	Order No.	Pcs. / Ptk.
Empty module, for PCB insertion, without screw connection terminal block		**EMK 12-LG**	**29 48 98 2**	10
Custom circuit module, consisting of housing, connection terminal blocks MKDS 3 and PCB with points for soldering in electronic components		**EMK 12-B2**	**29 48 99 5**	10
Printed circuit board, to mount electronic components (see page 19)		**P1-EMK 12**	**29 47 01 9**	5
Printed circuit terminal blocks, for soldering into the PCB (also see catalog page 290)	2 positions	**MKDS 3/2**	**17 11 02 6**	50
Equipment marking plate		**EMG-GKS**	**29 47 03 5**	50
Adaptor, to snap the module on ⊏ mounting rails, 11.4 mm (.445) wide		**EM-AD/NS 32**	**29 49 83 9**	10
Adaptor for direct fitting 12.5 mm (.492) wide		**EMG-ADM**	**29 48 59 7**	10

mm to inch
12.5=(.492)
29 =(1.142)
47.5=(1.870)
60 =(2.362)

Double Level Electronic Module EMD for Custom Circuits

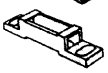
EMD 12
12.5 mm wide, 8 position





The module type EMD offers 8 connection points in a double level arrangement with a construction width of only 12.5 mm.

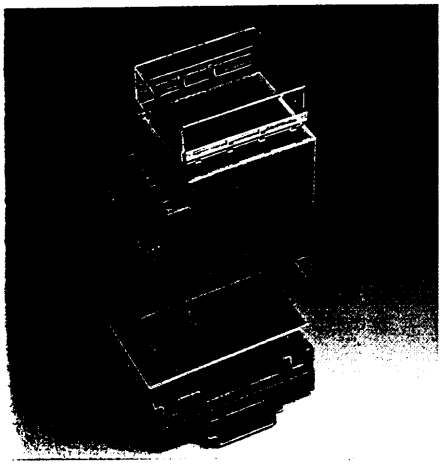
	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

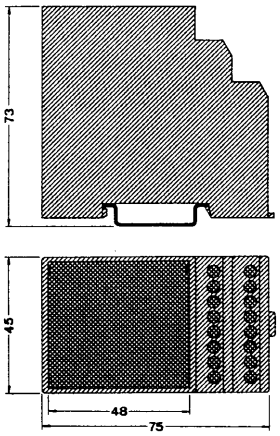
Description		Type	Order No.	Pcs / Pkt
Empty module, for PCB insertion, without screw connection terminal blocks and cover		**EMD 12-LG**	**29 47 40 4**	10
Cover, to protect components from contact and contamination		**on request**		
Printed circuit terminal blocks, for soldering in the PCB, bottom lower level	2 positions	**MKDS 3/2**	**17 11 02 6**	50
Printed circuit terminal blocks, for soldering in the PCB upper level	2 positions	**MKKDSH 3/2**	**17 21 04 5**	50
Spacer, plastic for the printed circuit terminal blocks MKKDSH		**AH-MKKDSH 3/2**	**17 21 78 6**	50
Equipment marking plate		**EMG-GKS**	**29 47 03 5**	50
Adaptor, to snap the modules on ⊏ mounting rails, 11.4 mm (.445) wide		**EM-AD/NS 32**	**29 49 83 9**	10
Adaptor for direct fitting 12.5 mm (.492) wide		**EMG-ADM**	**29 48 59 7**	10

mm to inch
12.5=(.492)
27 =(1.063)
63 =(2.480)
75 =(2.953)

ɔuble Level
ectronic Module EME
r Custom Circuits

EME 45
45 mm wide, 16 position



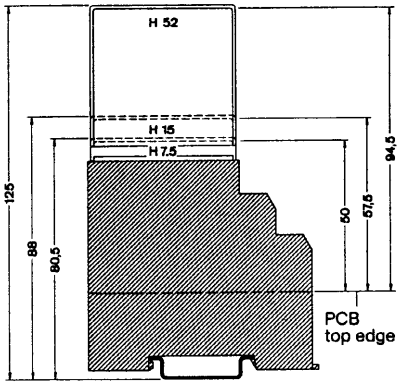


The module type EME offers an enlarged stom circuit space. The 16 connection ints are arranged on only one side of the ɔdule on both levels as input or output minal blocks.

	[mm²]	AWG
Connection data, fine strand	2.5	12
Connection data, solid strand	4	12

Description		Type	Order No.	Pcs. / Ptk.
Empty module, for PCB insertion, without screw connection terminal blocks and cover		**EME 45-LG**	**29 44 11 9**	10
Cover, to protect components from contact and contamination. Available in green or clear, see below for dimensions	clear	**EMG 50-H 7.5 mm clear**	**29 47 92 5**	5
	clear	**EMG 50-H 15 mm clear**	**29 47 93 8**	5
	green	**EMG 50-H 52 mm green**	**29 47 94 1**	5
Printed circuit terminal blocks, grid 5, for soldering in the PCB	2 position	**MKKDSG 3/2**	**17 21 09 0**	50
	3 position	**MKKDSG 3/3**	**17 21 08 7**	50

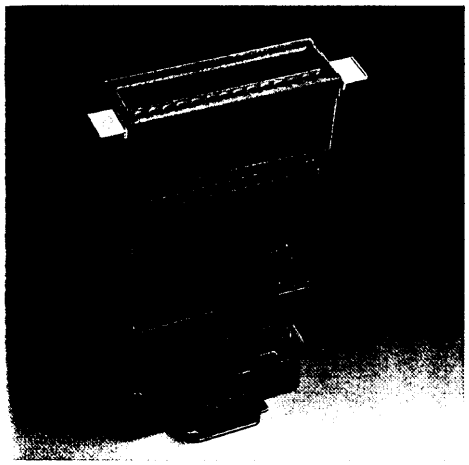
Dimensional drawing of electronic module EME

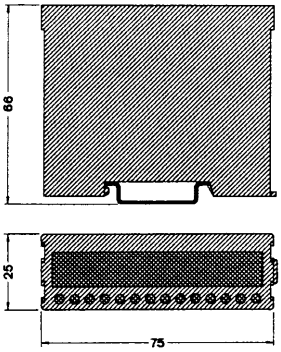


mm to inch
7.5=(.295)
15 =(.590)
45 =(1.772)
48 =(1.890)
50 =(1.968)
52 =(2.047)
57.5=(2.264)
73 =(2.874)
75 =(2.953)
80.5=(3.169)
88 =(3.464)
94.5=(3.720)
125 =(4.921)

Electronic Module EMH for Custom Circuits

EMH 25
25 mm wide, 14 position



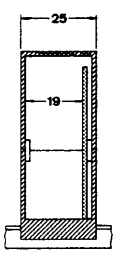


These component housings with front connection system have a variable construction height. With a construction width of only 25 mm, the required module height and thus the custom circuit space can be flexibly varied by the use of intermediate elements. In this manner the vertically arranged PCB in the module can be matched to the individual switching task. 14 individual printed circuit terminals with front connection are fitted in the module. Each connection point can also be allocated a light indicator.

	[mm²]	AWG
Connection data, fine strand	1.5	16
Connection data, solid strand	1.5	16

Description	Type	Order No.	Pcs / Pkt
Empty module, for PCB insertion, without screw connection terminal blocks	**EMH 25-LG**	**29 44 12 2**	10
Intermediate elements, for the empty module intermediate element, 18 mm high intermediate element, 30 mm high	 **EMH 25-ZE 18** **EMH 25-ZE 30**	 **29 44 13 5** **29 44 14 8**	 10 10
Single printed circuit terminal block, for front connection, 5 mm grid, pin spacing 5 mm pin spacing 10 mm	**FRONT 1.5H/SA5** **FRONT 1.5H/SA10**	**17 00 00 8** **17 00 04 0**	50 50
End cover, necessary at the end of a terminal block row, 2,5 mm thick, color: green	**D-FRONT 1.5H**	**17 00 02 4**	50
Equipment marking plate	**EMG-GKS**	**29 47 03 5**	50
Adaptor to snap the module on ⊏ mounting rails, 11.4 (.445) mm wide	**EM-AD/NS 32**	**29 49 83 9**	10
Adaptor for direct fitting 12.5 (.492) mm wide	**EMG-ADM**	**29 48 59 7**	10

Dimensional drawing of electronic module EMH



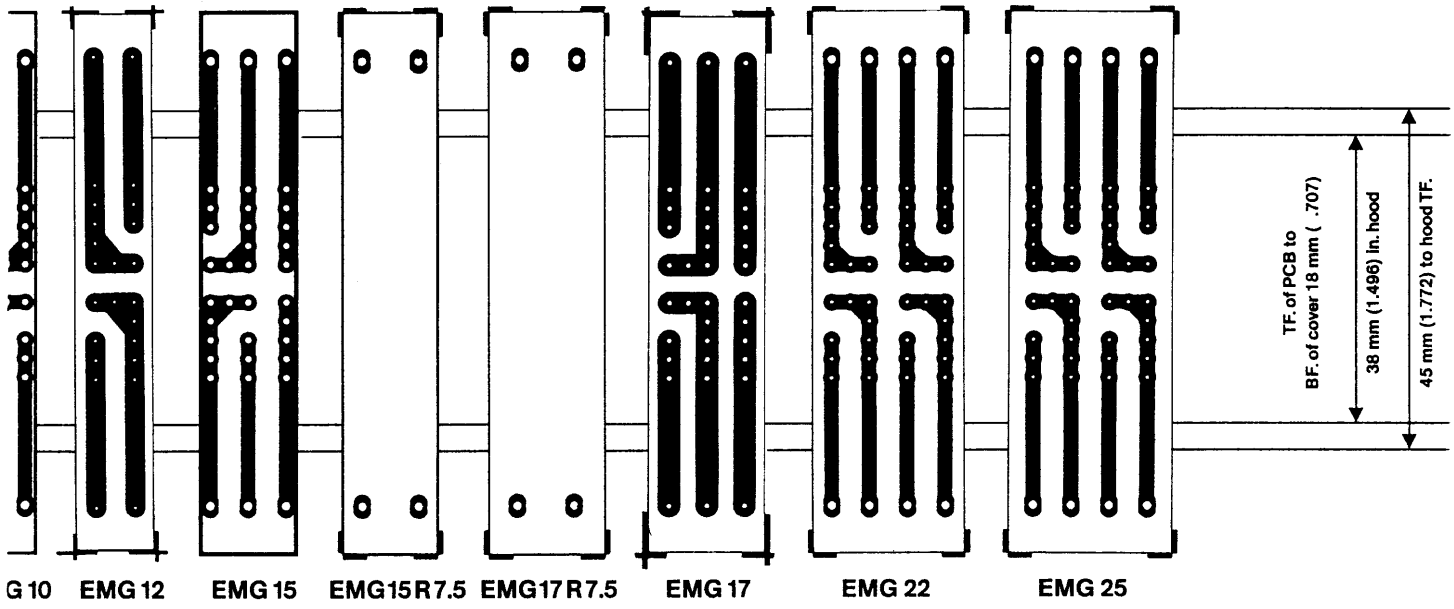
mm to inch
19=(.748)
25=(.984)
66=(2.598)
75=(2.953)

inted Circuit Board Layouts for the Electronic Modules EMG, EMK, EMD, EME and MH in a 1:1 Scale

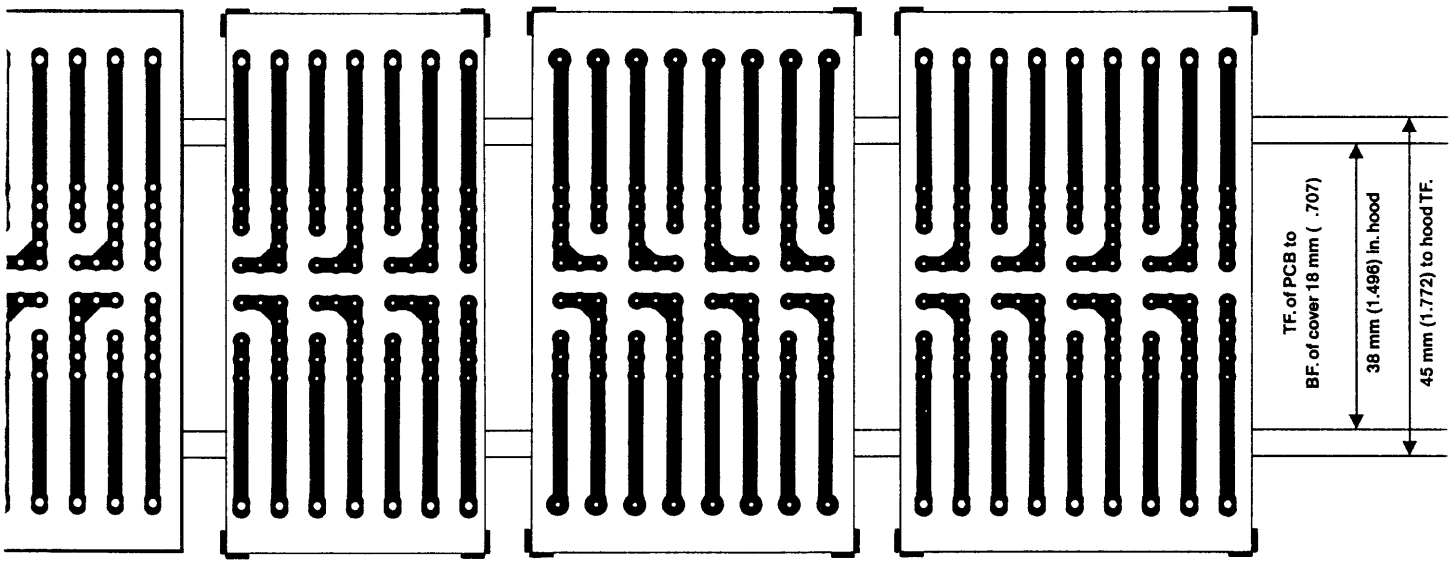
TF. ≙ Top face
BF. ≙ bottom face
in. ≙ internal

nical data for the printed circuit board

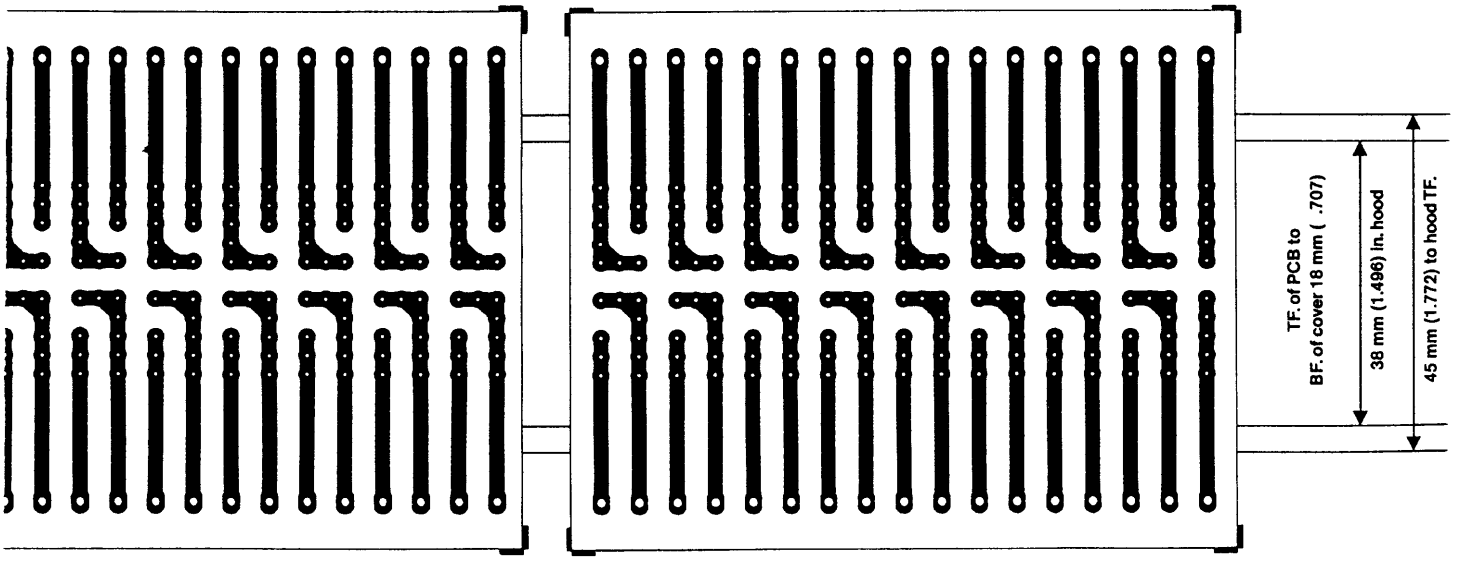
ic material: Epoxy glass filament fabric
1.5 mm (.026) thick as per DIN 40802
per plating: 70 µm
es: 1.3 mm (.051) dia. for the solder pins of
the screw and tab connections
0.9 mm (.035) dia. for components as per DIN 40801 page 2
nd creepage distance: 250 V AC as per VDE 0110/Gr. C
VDE 0160



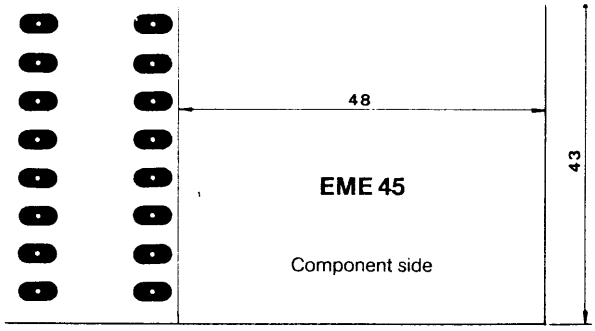
G 10 EMG 12 EMG 15 EMG 15 R 7.5 EMG 17 R 7.5 EMG 17 EMG 22 EMG 25



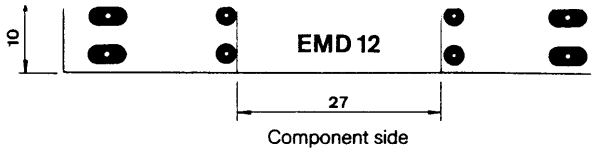
EMG 30 EMG 37 EMG 45 EMG 50

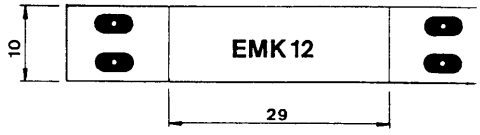


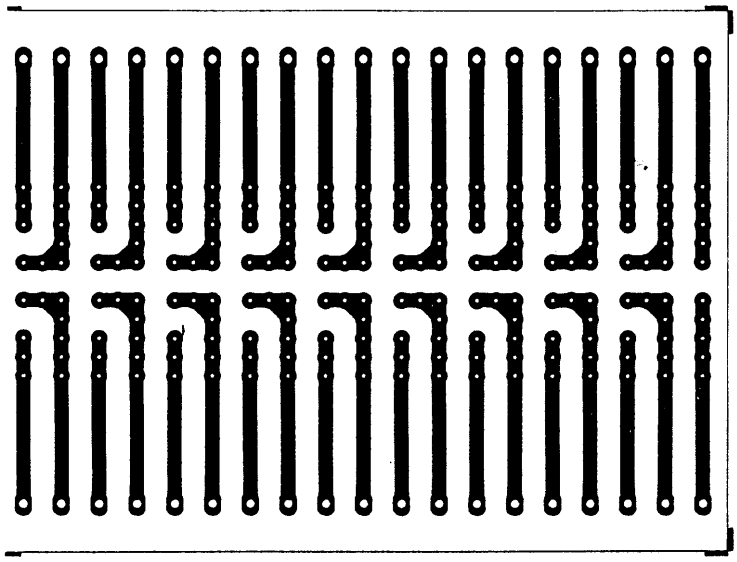
EMG 75 EMG 90



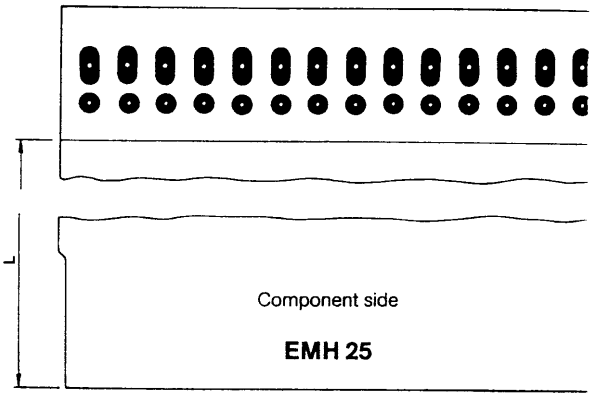
mm to inch
10=(.394)
27=(1.063)
29=(1.142)
38=(1.496)
43=(1.693)
47=(1.850)
48=(1.890)
60=(2.362)





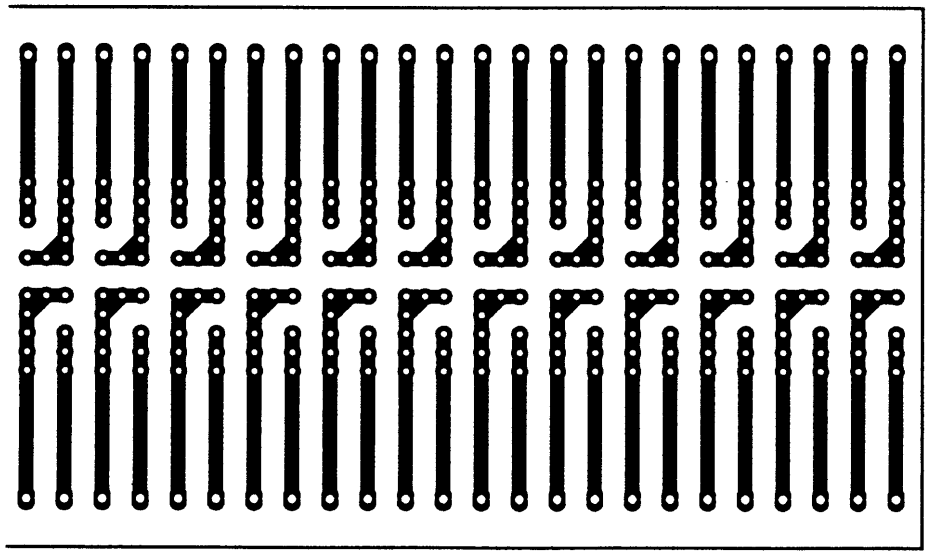


EMG 100

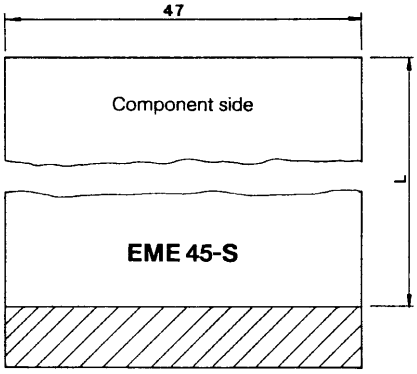


List of electronic modules EMH

Total length	Width	Component length L	Width
53 mm (2.087)	72 mm (2.835)	35 mm (1.378)	72 mm (2.83
71 mm (2.795)	72 mm (2.835)	53 mm (2.087)	72 mm (2.83
83 mm (3.268)	72 mm (2.835)	65 mm (2.559)	72 mm (2.83
101 mm (3.976)	72 mm (2.835)	83 mm (3.268)	72 mm (2.83
113 mm (4.449)	72 mm (2.835)	95 mm (3.740)	72 mm (2.83
131 mm (5.157)	72 mm (2.835)	113 mm (4.449)	72 mm (2.83
143 mm (5.629)	72 mm (2.835)	125 mm (4.921)	72 mm (2.83

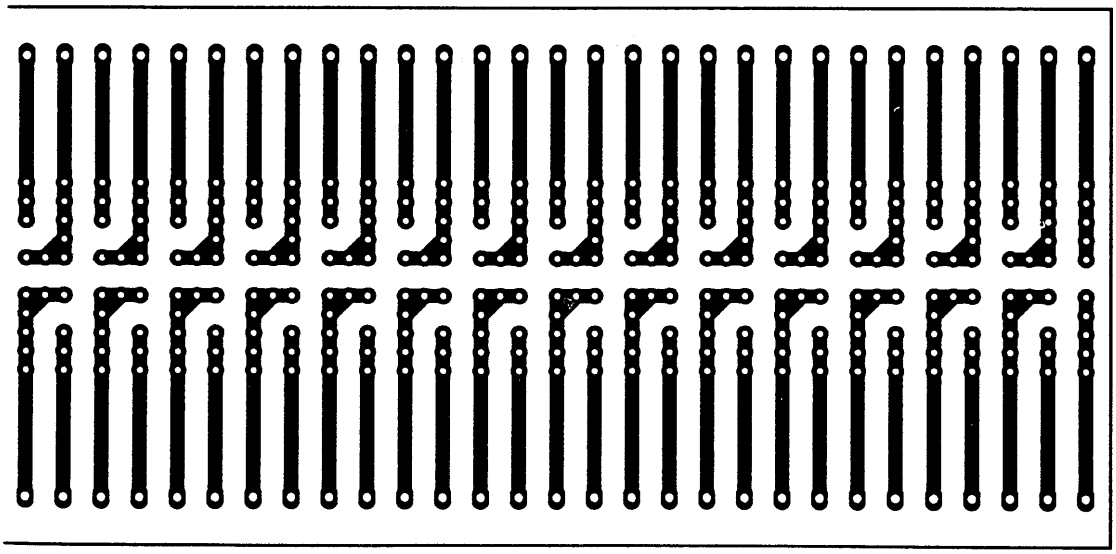


EMG 125

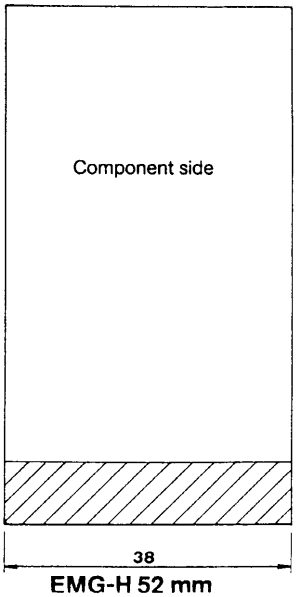


PCB dimensions when using different covers

Total length	Width	Component length L	Width	Covers
49 mm (1.929)	47 mm*	41 mm (1.614)	47 mm*	EMG 50-H 7
57 mm (2.244)	47 mm*	49 mm (1.929)	47 mm*	EMG 50-H 1
94 mm (3.701)	47 mm*	36 mm (1.417)	47 mm*	EMG 50-H 5
	*(1.850)		*(1.850)	
	*(1.850)		*(1.850)	
	*(1.850)		*(1.850)	

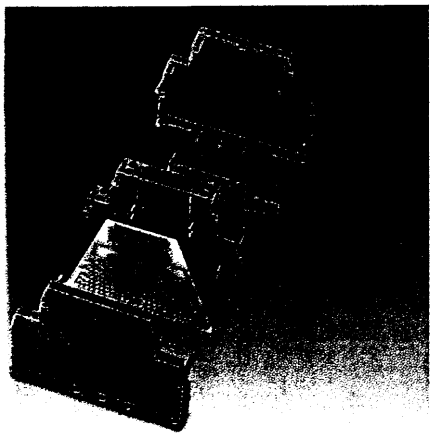


EMG 150



EMG-H 52 mm

ctronic Component usings UEG Custom Circuits

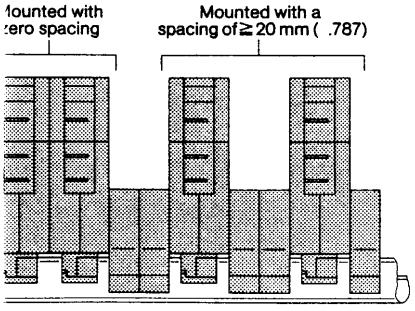


he electronic component housing UEG roduced in two widths (20 and 30 mm) ı screw or tab connections. The housing be engaged on commercially available I EN mounting rails.

he functionable housing concept per- s an economical production of series s. In one work cycle the basic element ı the connections and the custom cir- ed PCB are machine soldered and sub- uently securely engaged with the hous- shells to form a housing. Due to the ible level 8 or 16 screw or tab connec- s and the installation of one or two ted circuit boards even complex elec- ic circuits can be accommodated in the sing.

or laboratory samples and small series a versal printed circuit board is available.

or technical data and of the printed cir- board dimensions refer to page 26.



Type of moldings

krilen = Polyamide 6.6, see catalog page 12
Color: green

Marking and mounting material see catalog page 10

	Solid, [mm²]	fine strand,	AWG	I [A]	VAC [V]
Screw connection	4	2.5	12	10*	250*
Tab connection: 6.3/2.8 mm					
UEG 20-FS/FS				10/5*	500*
UEG 30/1-FS/FS				10/5*	500*
UEG 30/2-FS/FS				10/5*	250*

* The rated voltage applies to fully insulated receptacles and free solder connection. Voltage and current values are affected by the configuration of the printed circuit board.

Description

Electronic component housing, 20 mm wide, complete, equipped with 4 screw or 4 tab connections per side, for one printed circuit board

Electronic component housing, 30 mm wide, complete, equipped with 4 screw or 4 tab connections per side, for one printed circuit board

Electronic component housing, 30 mm wide, complete, equipped with 8 screw or 8 tab connections per side, for two printed circuit boards

Printed circuit board, for custom circuiting electronic components (see page 26)

Plastic sheath, as shock protection, slide onto conductor for 6.3 mm receptacles before fitting for 2.8 mm receptacles

Wire bridge, 50 position, divisible, for bridging identical inputs and outputs, 0.5 mm², insulation: black or gray

Power loss as a function of ambient temperature

Mounted with zero spacing
Power loss [W] at 20° C

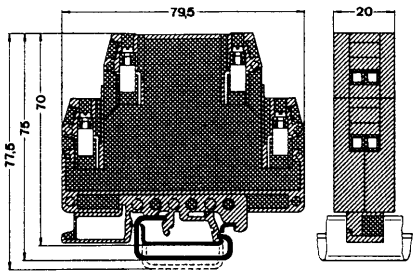
UEG 20	UEG 30/1	UEG 30/2	UEG 20-FS/FS	UEG 30/1-FS/FS	UEG 30/2-FS/FS
4	4	4	4.8	4.8	4.8

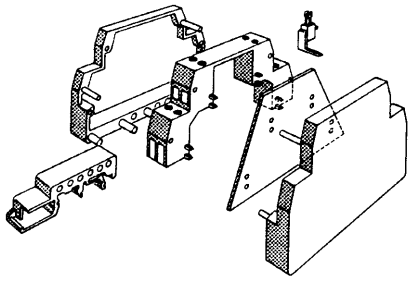
Mounted with spacing of ≧ 20 mm
Power loss [W] at 20° C

UEG 20	UEG 30/1	UEG 30/2	UEG 20-FS/FS	UEG 30/1-FS/FS	UEG 30/2-FS/FS
6.4	7.2	7.2	8	8	8

UEG 20

8 position component holder with screw connection





UEG 20

Type	Order No.	Pcs. / Pkt.
UEG 20	**27 90 21 1**	10
P1-UEG	**27 90 22 4**	10
DB 50-90 black	**28 20 91 6**	1
DB 50-90 grey	**28 20 92 9**	1

Reduction factor dependent upon the ambient temperature

As the maximum permissible power loss is reduced with an increase in the ambient temperature, the listed reduction factor (K_I) must be taken into account when calculating the permissible power loss.

Ambient temperature [° C]

	20	30	40	50	60	70	80
K_I	1	0.78	0.61	0.48	0.37	0.29	0.23

Power loss dependent upon the ambient temperature

$Pv_{tu} = Pv_t \times K_I$

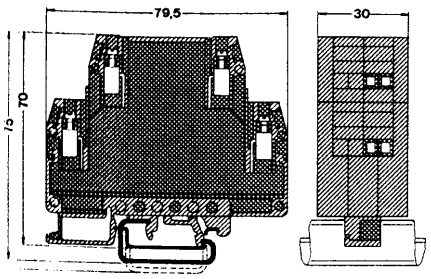
Explanations: Pv = power loss
tu = ambient temperature
t = 20° C
K_I = reduction factor

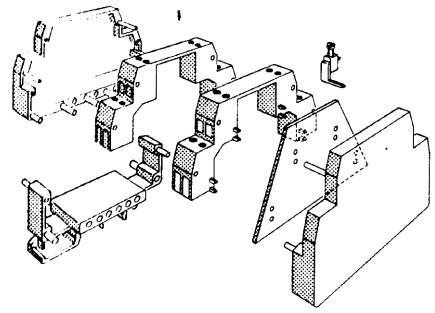
Example: Power loss at 40° C in UEG 20, mounted without spacing

$P_{V\,40°\,C} = P_{V\,20°\,C} \times K_I = 4\,W \times 0.61 = 2.44\,W$

UEG 30

16 position component holder with screw connection



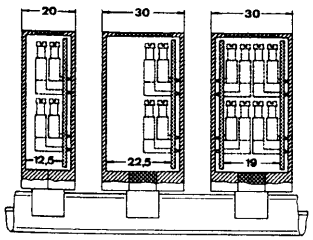


EG 30/1

pe	Order No.	Pcs. Pkt.
EG 30/1	27 90 87 1	10
EG 30/2	27 90 24 0	10
I-UEG	27 90 22 4	10
B 50-90 black	28 20 91 6	1
B 50-90 grey	28 20 92 9	1

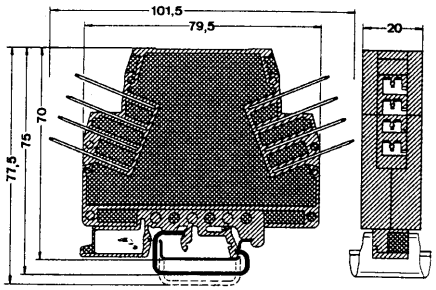
aximum component height on printed circuit board

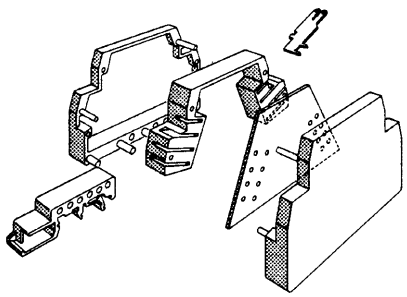
UEG 20 with 1 printed circuit board, max. 8 positions	UEG 30/1 increased internal space with 1 printed circuit board, max. 8 position	UEG 30/2 increased internal space with 2 printed circuit boards, mirror image arrangement, max. 16 positions



UEG 20-FS/FS

8 position component holder with slotted 6.3/2.8 mm tab connection



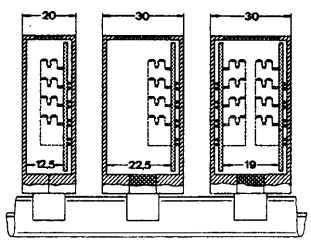


UEG 20-FS/FS

Type	Order No.	Pcs. Pkt.
UEG 20-FS/FS	27 90 26 6	10
P1-UEG-FS/FS	27 90 42 8	10
PT/FS-6.3	06 04 70 7	100
PT/FS-2.8	14 06 70 0	100

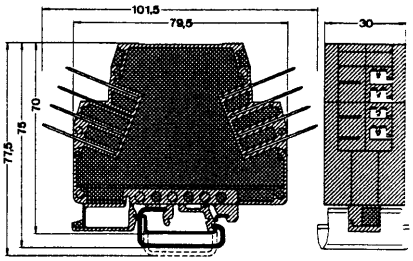
Maximum component height on printed circuit board

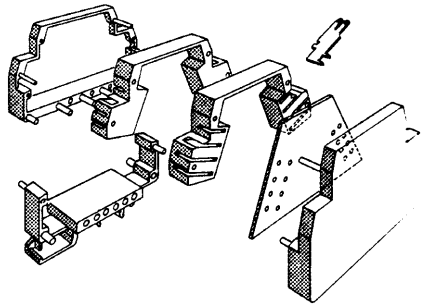
UEG 20-FS/FS with 1 printed circuit board, max. 8 positions	UEG 30/1-FS/FS increased internal space with 1 printed circuit board, max. 8 position	UEG 30/2-FS/FS increased internal space with 2 printed circuit boards, mirror image arrangement, max. 16 positions



UEG 30-FS/FS

8 and 16 position component holder with slotted 6.3/2.8 mm tab connection





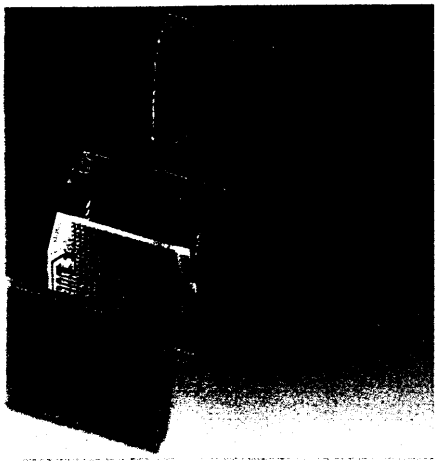
UEG 30/1-FS/FS

Type	Order No.	Pcs. Pkt.
UEG 30/1-FS/FS	27 90 88 4	10
UEG 30/2-FS/FS	27 90 27 9	10
P1-UEG-FS/FS	27 90 42 8	10
PT/FS-6.3	06 04 70 7	100
PT/FS-2.8	14 06 70 0	100

mm to inch

20 =(.787)
30 =(1.181)
70 =(2.756)
75 =(2.953)
77.5=(3.051)
79.5=(3.130)
101.5=(3.996)

ectronic Component
ousings UEGM
r Custom Circuits

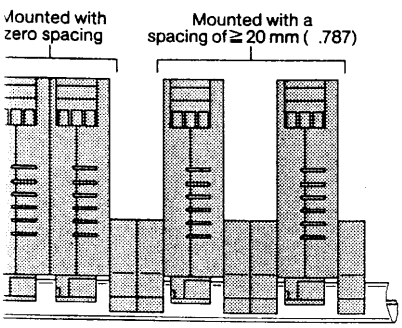


The electronic component housings GM supplement the UEG range and of- an enlarged internal area. The housing vailable in the widths 22.5 – 25 and mm. They can be individually provided n screw and/or tab connections. The usings snap on commercially available EN mounting rails.

The functionable housing concept per- s the economical production of series ts. In one work cycle the basic element nachine soldered with the connections d the custom circuited PCB and subse- ently securely engaged with the housing ell to form a housing. Due to the double el 6 or 12 screw or tab connections and use of one or two printed circuit boards en complex electronic circuits can be ac- mmodated in the housing.

For laboratory samples and small series a versal printed circuit board is available.

For technical data and printed circuit ard dimensions refer to page 26.



Type of moldings

krilen = Polyamide 6.6, see catalog page 12
Color: green

Marking and mounting material see catalog page 10

	Solid, fine strand, [mm²]		AWG	I [A]	VAC [V]
Screw connection	4	2.5	12	10*	250*
Tab connection: 6.3/2.8 mm				10/5*	250*

* The rated voltage applies to fully insulated receptacles and free solder connection. Voltage and current values are affected by the configuration of the printed circuit board.

Description

Electronic component housing, 22.5 mm wide, complete, equipped with 3 screw or 6 tab connections per side, for one printed circuit board

Electronic component housing, as above, however, 25 mm wide

Electronic component housing, as above, however 40 mm wide

Electronic component housing, 40 mm wide, complete, equipped with 6 screw or 12 tab connections per side, for two printed circuit boards.

Printed circuit board, for custom circuiting electronic components (see page 26)

Metal part for tab connection, to increase the number of positions

Plastic sheath, as shock protection, slide onto conductor for 6.3 mm receptacles / for 2.8 mm receptacles before fitting

Wire bridge, 50 position, divisible for bridging identical inputs and outputs, 0.5 mm², insulation: black and grey

Power loss as a function of ambient temperature

Mounted with zero spacing
Power loss [W] at 20° C

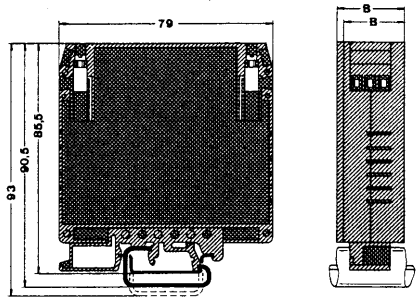
UEGM 22.5	UEGM 25	UEGM 40/1	UEGM 40/2	UEGM 22.5-FS/FS	UEGM 25-FS/FS	UEGM 40/1-FS/FS	UEGM 40/2-FS/FS
4	4	5.2	5.2	4	4	5.2	5.2

Mounted with spacing of ≧ 20 mm
power loss [W] at 20° C

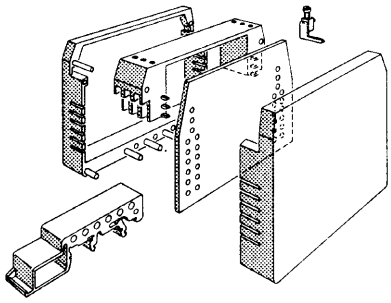
UEGM 22.5	UEGM 25	UEGM 40/1	UEGM 40/2	UEGM 22.5-FS/FS	UEGM 25-FS/FS	UEGM 40/1-FS/FS	UEGM 40/2-FS/FS
10	10	11.2	11.2	10	10	11.2	11.2

UEGM

6 position component holder with screw connection



W = 22.5 with UEGM 22.5
W = 25 with UEGM 25



UEGM 25

Type	Order No.	Pcs. / Pkt.
UEGM 22.5	**27 92 00 2**	10
UEGM 25	**27 92 01 5**	10
P1-UEGM	**27 92 10 9**	10
UEG-MT-FS	**27 90 38 9**	100
PT/FS-6.3	**06 04 70 7**	100
PT/FS-2.8	**14 06 70 0**	100
DB 50-90 black	**28 20 91 6**	1
DB 50-90 grey	**28 20 92 9**	1

Reduction factor dependent upon the ambient temperature

As the maximum permissible power loss is reduced with an increase in the ambient temperature, the listed reduction factor (K_I) must be taken into account when calculating the permissible power loss.

Ambient temperature [° C]

	20	30	40	50	60	70	80
K_I	1	0.8	0.64	0.51	0.41	0.33	0.26

Power loss dependent upon the ambient temperature

$Pv_{tu} = Pv_t \times K_I$

Explanations: Pv = power loss
tu = ambient temperature
t = 20° C
K_I = reduction factor

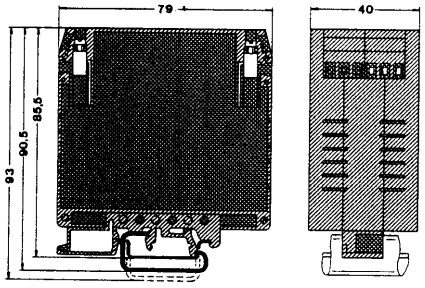
Example: Power loss at 40° C in UEGM 25, mounted without spacing

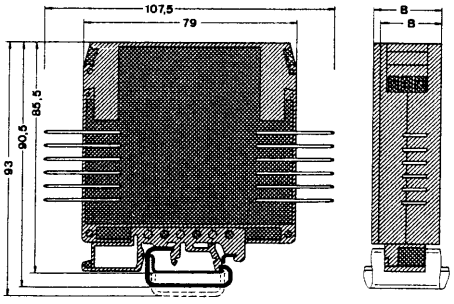
$Pv_{40°C} = Pv_{20°C} \times K_I = 4\,W \times 0.64 = 2.56\,W$

and 12 position component holder with screw connection

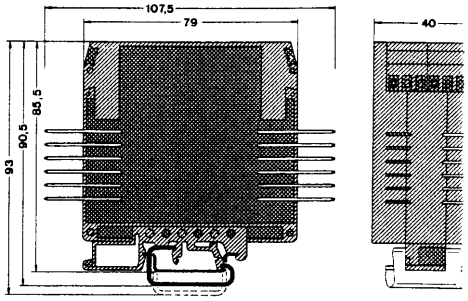
12 position component holder with slotted 6.3/2.8 tab connection

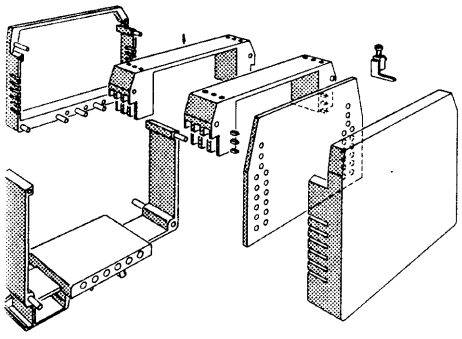
12 and 24 position component holder with slotted 6.3/2.8 mm tab connection



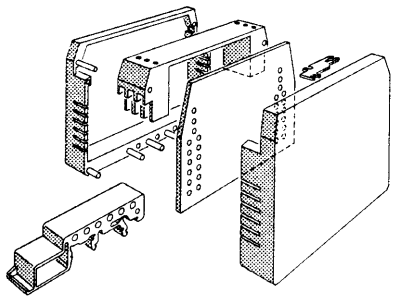


W=22.5 with UEGM 22.5
W=25 with UEGM 25

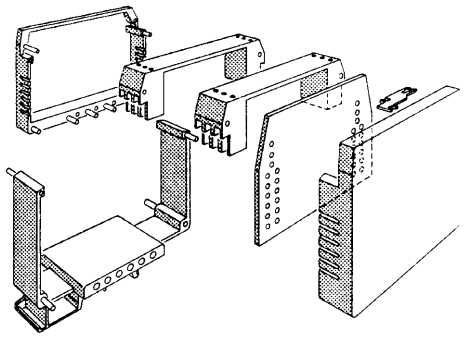




EGM 40/1



UEGM 25-FS/FS



UEGM 40/1-FS/FS

pe	Order No.	Pcs. Pkt.
EGM 40/1	27 92 11 2	10
EGM 40/2	27 92 02 8	10
I-UEGM	27 92 10 9	10
EG-MT-FS	27 90 38 9	100
T/FS-6.3	06 04 70 7	100
T/FS-2.8	14 06 70 0	100
B 50-90 black	28 20 91 6	1
B 50-90 grey	28 20 92 9	1

Type	Order No.	Pcs. Pkt.
UEGM 22.5-FS/FS	27 92 07 3	10
UEGM 25-FS/FS	27 92 08 6	10
P1-UEGM	27 92 10 9	10
PT/FS-6.3	06 04 70 7	100
PT/FS-2.8	14 06 70 0	100

Type	Order No.	Pcs. Pkt.
UEGM 40/1-FS/FS	27 92 12 5	10
UEGM 40/2-FS/FS	27 92 09 9	10
P1-UEGM 179-054.	27 92 10 9	10
PT/FS-6.3	06 04 70 7	100
PT/FS-2.8	14 06 70 0	100

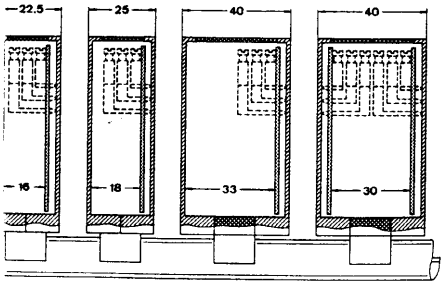
aximum component height on printed circuit board

EGM 22.5 th printed cuit ard, positions

UEGM 25 with 1 printed circuit board 6 position

UEGM 40/1 increased internal space with 1 printed circuit board, 6 positions

UEGM 40/2 increased internal space with 2 printed circuit boards, image arrangement, 12 position



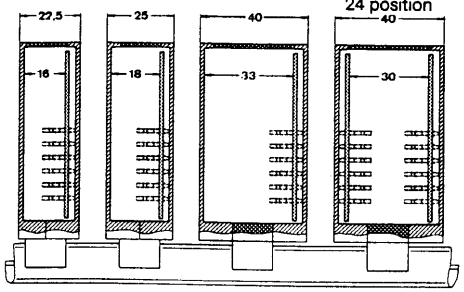
Maximum component height on printed circuit board

UEGM 22.5-FS/FS with 1 printed circuit board, 12 positions

UEGM 25-FS/FS with 1 printed circuit board, 12 positions

UEGM 40/1-FS/FS increased internal space with 1 printed circuit board, 12 position

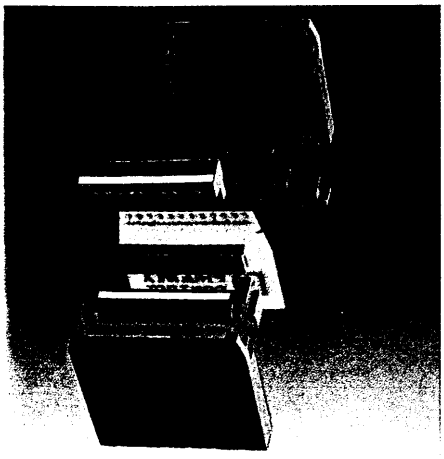
UEGM 40/2-FS/FS increased internal space with 2 printed circuit boards, image arrangement, 24 position



mm to inch

16 =(.630)
18 =(.709)
22.5=(.886)
25 =(.984)
30 =(1.181)
33 =(1.299)
40 =(1.575)
79 =(3.110)
85.5=(3.366)
90.5=(3.563)
93 =(3.661)
107.5=(4.232)

ectronic Component using with 12 Position OMBICON Header EGM-MSTB



The special feature of this 25 mm wide ctronic component housing UEGM-STB is the plug-in connection through a MBICON plug connector 2 or 12 posi-n COMBICON plugs can be optionally in-grated in the housing pin strip.

The COMBICON connection points can individually fitted with 3 mm dia. LEDS ad length 30 mm (1.181)]. The LED eak-outs in the housing not required can closed with plugs. If several component usings with the same plug arrangement arranged next to each other, the ividuality of the COMBICON plugs can ensured by keying. For this purpose the keying pin CS-MSTB is inserted in the cket and the corresponding contact pin oken off with the keying clippers. Using blind piece MSTB-BL individual contact s can be covered in order to achieve a mpartment formation on the pin strip.

The electronic component housing EGM-MSTB snaps on commercially avail-le DIN EN mounting rails.

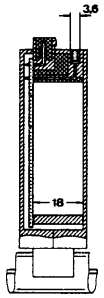
For technical data and printed circuit ard dimensions refer to page 27.

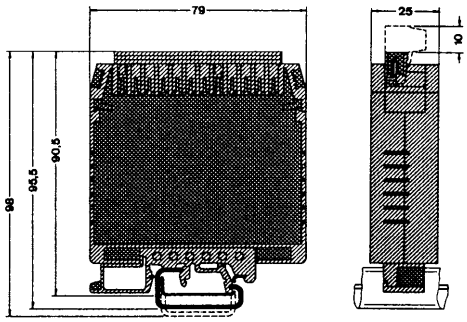
Type of moldings

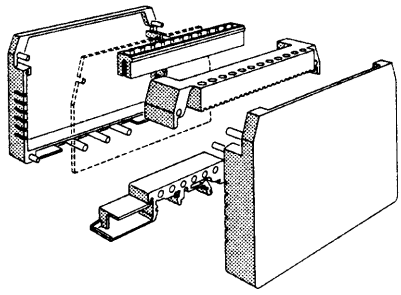
krilen = Polyamide 6.6, see catalog page 12
Color: green

Marking and mounting material see catalog page 10

Maximum component height on the printed circuit board

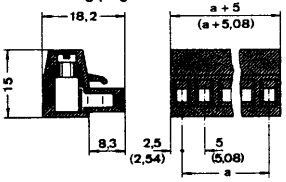






	Solid, [mm²]	fine strand,	AWG	I [A]	VAC [V]
Connection data	2.5	2.5	14	12*	250*

*Voltage and current values are affected by the configuration of the printed circuit board.



Description	No. of positions	Type	Order No.	Pcs. Pkt.
Electronic component housing, with 12 position COMBICON pin strip, additionally fitted with 3 mm LED light indicator	12	**UEGM-MSTB**	**27 81 45 3**	10
COMBICON header, 5.08 mm grid for other COMBICON plug types see catalog page 302	2	**MSTB 1.5/2-ST-5.08**	**17 57 01 9**	50
	3	**MSTB 1.5/3-ST-5.08**	**17 57 02 2**	50
	4	**MSTB 1.5/4-ST-5.08**	**17 57 03 5**	50
	5	**MSTB 1.5/5-ST-5.08**	**17 57 04 8**	50
	6	**MSTB 1.5/6-ST-5.08**	**17 57 05 1**	50
	7	**MSTB 1.5/7-ST-5.08**	**17 57 06 4**	50
	8	**MSTB 1.5/8-ST-5.08**	**17 57 07 7**	50
	9	**MSTB 1.5/9-ST-5.08**	**17 57 08 0**	50
	10	**MSTB 1.5/10-ST-5.08**	**17 57 09 3**	50
	12	**MSTB 1.5/12-ST-5.08**	**17 57 11 6**	50
(1) **Blind piece,** for coding and compartment formation, plugs onto pole pin, green plastic		**MSTB-BL**	**17 55 47 7**	100
(2) **Keying pin,** engages in the plug contact, remove counter pole in the housing, red plastic		**CS-MSTB**	**17 59 99 4**	100
(3) **Plugs,** for closing LED positions not in use		**UEGM-MSTB-BS**	**27 81 46 6**	60
(4) **Keying pliers,** for snipping contact pins, if the keying pin CS-MSTB is fitted in the plug		**MSTB-ZA**	**17 67 60 1**	1
(5) **Marking card,** with 25 pcs. 10 section white marking strips, self adhesive, sufficient for 250 terminals				
a) **unprinted:** for use with marker pen		a) **SKS 5: unprinted**	**14 01 20 0**	10
b) **printed:** with 25 identical decades		b) **SKS 5: 1-10**	**14 01 21 3**	
		SKS 5: 11-20 etc. up to **SKS 5: 191-200**		
c) **card,** with 50 pcs. 5 section marking strips sufficient for 250 terminals		c) **SKS 5: L1-N, PE**	**14 02 27 0**	
printed: with L1, L2, L3, N, PE U, V, W, N, ⏚		**SKS 5: U-N**	**14 01 28 4**	
(6) **Marker pen,** for individual labelling of unprinted SKS 5		**B-Pen**	**10 51 99 3**	1

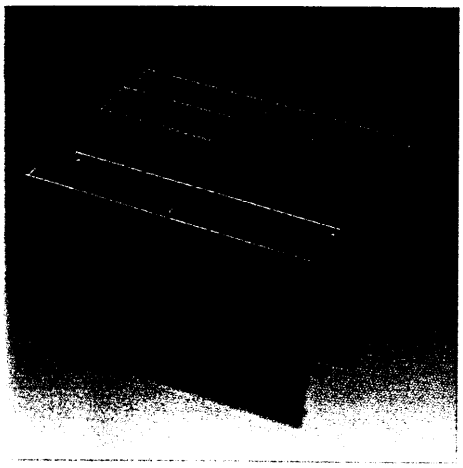
Note:
COMBICON plug connectors may only be actuated when not under power. If for technical operating reasons smaller loads are to be switched, experience values are available upon request.

ver loss dependent upon the ambient perature see page 22.

same power loss is applicable as with ctronic component housings UEGM 25.

mm to inch
3.6=(.142)
10 =(.394)
18 =(.709)
25 =(.984)
79 =(3.110)
90.5=(3.563)
95.5=(3.760)
98 =(3.858)

lectronic Component lousings for European ormat Cards UEG-EU

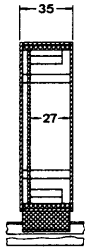


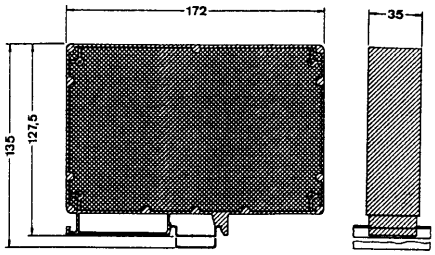
Type of moldings

krilen = Polyamide 6, see catalog page 12
Color: green

Marking and mounting material see catalog page 10

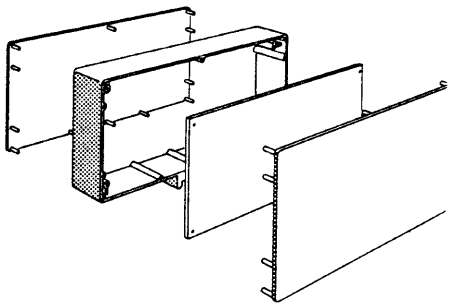
Maximum component height on the printed circuit board with 1 basic element





The rail mountable component housing EG-EU has been specially designed to re- eive European format cards. The printed rcuit board is directly fixed in the housing iiddle section and the housing closed with vo side elements. The positions of the fix- g holes on the printed circuit board are ie same as for fixing high position plug onnectors onto the printed circuit board – so see DIN 41612/part 1. In the middle ection break-outs can be punched for the onnection elements, whereby both high osition plug connectors as well as electro- c printed circuit terminal blocks can be sed.

For technical data and printed circuit oard dimensions see page 27.

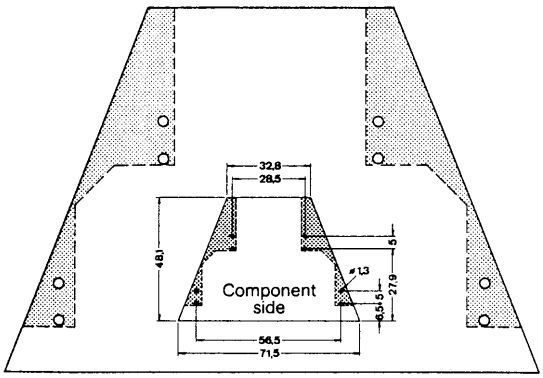


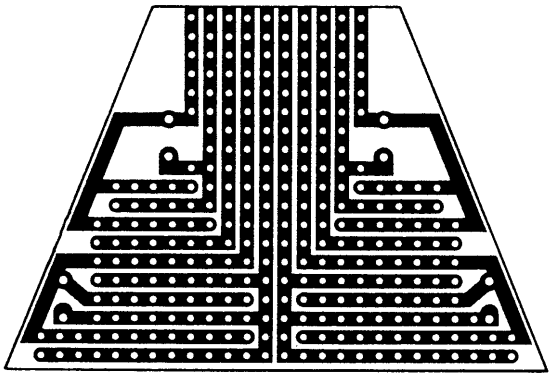
Description	Type	Order No.	Pcs. / Pkt.
Electronic component housing, comprising: basic element with snap foot, for fitting on ⊐, 32 mm (1.260) wide.	**UEG-EU-BE**	**29 56 81 9**	5
Side element, two pieces, for covering the basic element on both sides, 1.5 mm (.059) thick	**UEG-EU-SE**	**29 56 82 2**	5
Connection pin, for engaging several basic elements to form one unit; 12 necessary per element, brass	**UEG-EU-VS**	**50 28 88 3**	100

mm to inch
27 =(1.063)
35 =(1.378)
127.5=(5.020)
135 =(5.315)
172 =(6.772)

inted Circuit Board Layouts for the Electronic Component Housings UEG, UEGM, EGM-MSTB, UEG-EU in a 1:1 Scale

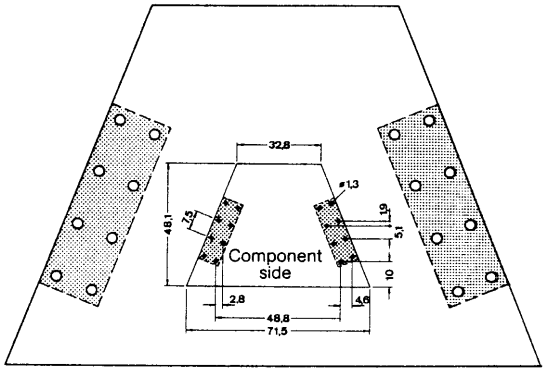
mponent Housing UEG
ıted Circuit Board for Component Housings with ew Connection

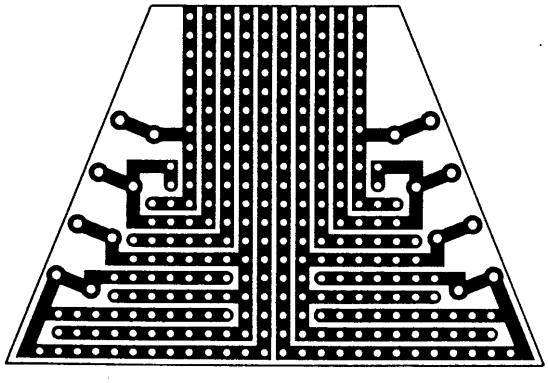




Printed Circuit Board P1-UEG

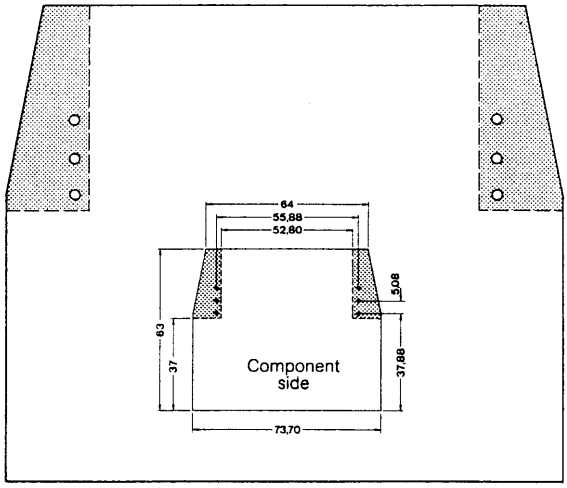
nted Circuit Board for Component Housings with ɔ Connection



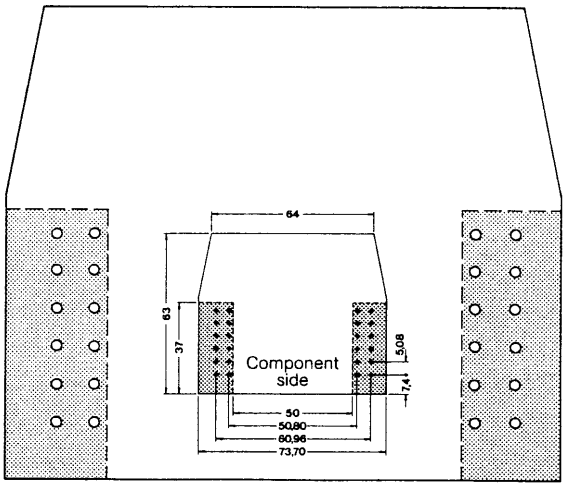


Printed Circuit Board P1-UEG-FS/FS

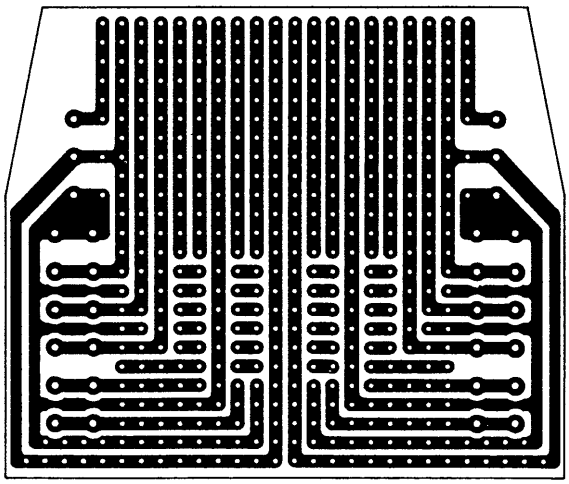
Component Housing UEGM
Printed Circuit Board for Component Housings with Screw Connection



Printed Circuit Board for Component Housings with Tab Connection



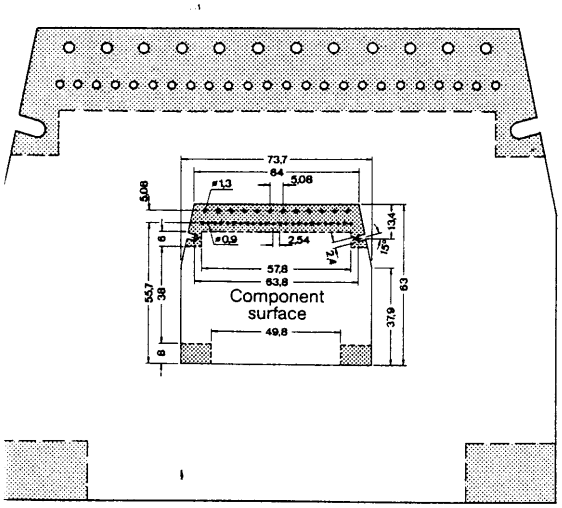
Printed Circuit Board P1-UEGM for Screw and Tab Connection



Technical data for the printed circuit board

Basic material: epoxy glass filament fabric
1.5 mm (.059) thick as per DIN 40802
Copper plating: 70 µm
Conductor path width: 2 mm (.0790)
Air and creepage distance: 125 V AC as per VDE 0110/Gr. C
VDE 0160
Holes: 1.3 mm (.051) dia. for the solder pins of
the screw and tab connections
0.9 mm (.035) dia. for the components as per DIN 40801 page 2

Component Housing UEGM-MSTB



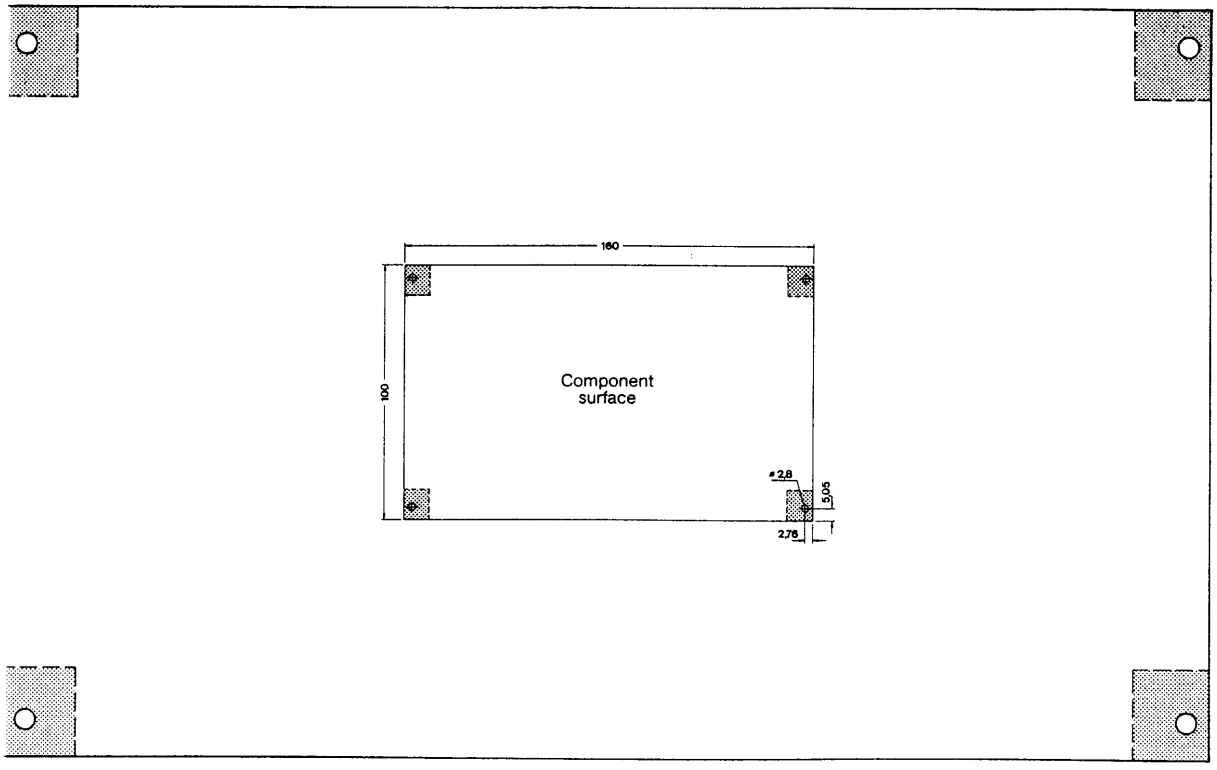
Technical data for the printed circuit board

Basic material: epoxy glass filament fabric
1.5 mm (.059) thick as per DIN 40802
Copper plating: 70 µm
Holes: 1.3 mm (.051) dia. for the solder pins of the COMBICON header
0.9 mm dia. for the components as per DIN 40801 page 2

mm to inch

0.9	=(.035)	37	=(1.457)
1.3	=(.051)	37.88	=(1.491)
1.9	=(.075)	37.9	=(1.492)
2.4	=(.094)	38	=(1.496)
2.54	=(.100)	48.1	=(1.894)
2.76	=(.109)	48.8	=(1.912)
2.8	=(.110)	49.8	=(1.961)
4.6	=(.181)	50	=(1.968)
5	=(.197)	50.8	=(2.000)
5.05	=(.199)	52.8	=(2.079)
5.08	=(.200)	55.7	=(2.193)
5.1	=(.201)	55.88	=(2.200)
6	=(.236)	56.5	=(2.224)
6.5	=(.256)	57.8	=(2.275)
7.4	=(.291)	60.96	=(2.400)
7.5	=(.295)	63	=(2.480)
8	=(.315)	63.8	=(2.512)
10	=(.394)	64	=(2.520)
13.4	=(.527)	71.5	=(2.815)
27.9	=(1.098)	73.7	=(2.901)
28.5	=(1.122)	100	=(3.937)
32.8	=(1.291)	160	=(6.299)

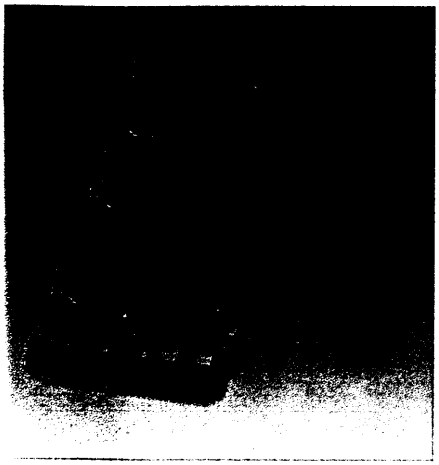
Component Housing UEG-EU



Technical data for the printed circuit board

Basic material: epoxy glass filament fabric
1.5 mm (.059) thick as per DIN 40802
Copper plating: 70 µm
Holes: 1.3 mm (.051) dia. for the solder pins of the
screw and tab connections.
0.9 mm (.035) dia. for the components as per DIN 40801 page 2

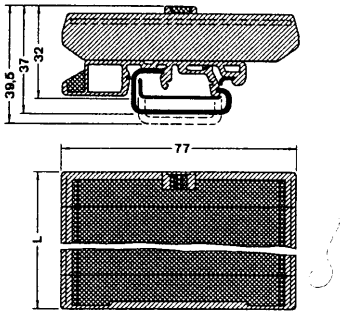
›mpact Custom Circuit ›dules UMK



Type of moldings

krilen = Polyamide 6.6, see catalog page 12
Color: green

Marking and mounting material see catalog page 10



mm to inch
32 =(1.260)
37 =(1.457)
39.5=(1.555)
77 =(3.031)

'he compact custom circuit module K is used where simple adaption and in-›onnection functions as well as compre-ısive electronic circuits require individual l rail mountable installation. They are nprised of various single elements with ering dimensions and functions. Depen-ıt upon the desired module size and the uired space requirement, the various in-dual elements are linked together to n a module. The PC board base modules K are available in a 22.5 – 33.75 – 45 etc. l.

wo side elements each 11.25 mm wide duce – when engaged – the smallest dule of 22.5 x 77 mm. Due to the adding sibility of the various base elements of 25 – 22.5 or 45 mm width the individually uired module dimensions are created. ›endent upon the module size one or eral foot elements are to be provided.

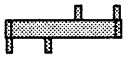
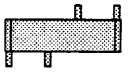
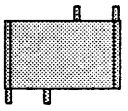
ıdvantages:

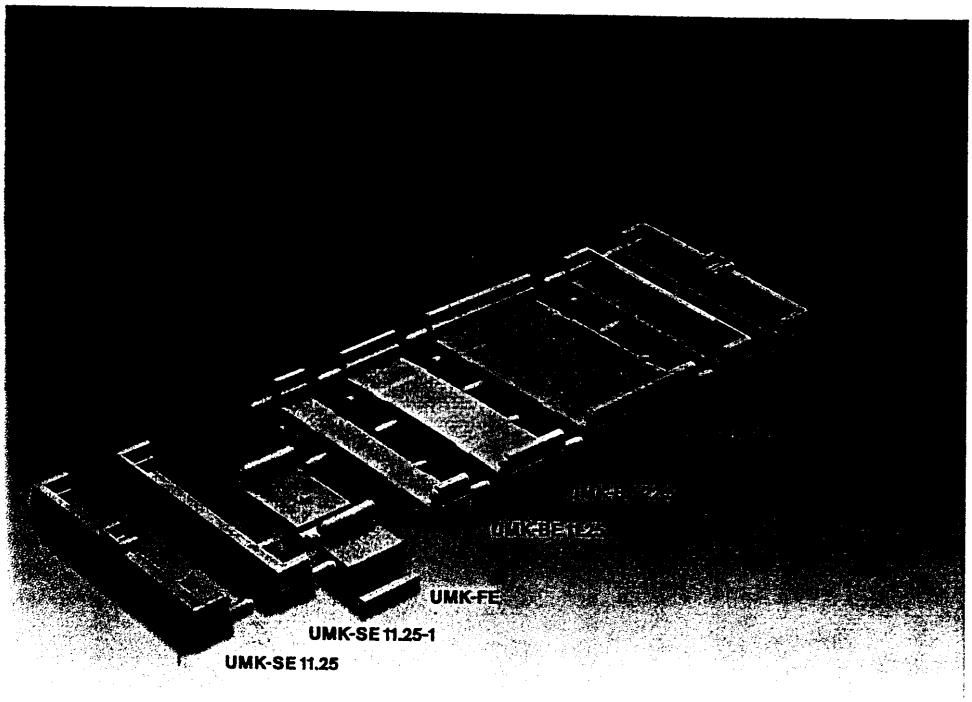
ast assembly due to the plug in modular ›rinciple. The tight engagement of the in-lividual elements ensures a high con-ıection strength.

)ue to the universal foot the module naps on commercially available DIN EN nounting rails.

he modules can either be marked using ne labeling grooves in the side elements ›r using the Phoenix module marking 'MB, which snaps in a hole (4 mm dia.) ı the printed circuit board.

Vide range of connection possibilities ›r the external conductor connections lue to the large selection of electronic ›rinted circuit boards, the screw, tab con-ıections, the COMBICON plug connec-›r etc. (see catalog page 290).

Description		Type	Order No.	Pcs. / Pkt.
Universal module, comprising of: **Side element** 11.25 mm (.443) wide, with label groove		**UMK-SE 11.25**	**29 70 00 2**	10
Side element, 11.25 mm (.443) wide, without label groove		**UMK-SE 11.25-1**	**29 70 44 2**	10
Base element, 11.25 mm (.443) wide		**UMK-BE 11.25**	**29 71 53 5**	10
Base element, 22.5 mm (.886) wide		**UMK-BE 22.5**	**29 70 02 8**	10
Base element, 45 mm (1.772) wide		**UMK-BE 45**	**29 70 01 5**	10
Foot element, for mounting on ⊏ or ⊐, slideable between base and side elements		**UMK-FE**	**29 70 03 1**	10



Assembly drawing of the universal module UMK

PCB dimensions [mm]	Module length L [mm]	Side element UMK-SE...	Base element UMK-BE 11.25	Base element UMK-BE 22.5	Base element UMK-BE 45	Foot element UMK-FE
20.00x72x1.5	22.50	2	–	–	–	1
31.25x72x1.5	33.75	2	1	–	–	1
42.50x72x1.5	45.00	2	–	1	–	2
53.75x72x1.5	56.25	2	1	1	–	2
65.00x72x1.5	67.50	2	–	–	1	2
76.25x72x1.5	78.75	2	1	–	1	2
87.50x72x1.5	90.00	2	–	1	1	2
98.75x72x1.5	101.25	2	1	1	1	2
110.00x72x1.5	112.50	2	–	–	2	2
121.25x72x1.5	123.75	2	1	–	2	2
132.50x72x1.5	135.00	2	–	1	2	2
143.75x72x1.5	146.25	2	1	1	2	3
155.00x72x1.5	157.50	2	–	–	3	3
166.25x72x1.5	168.75	2	1	–	3	3
177.50x72x1.5	180.00	2	–	1	3	3

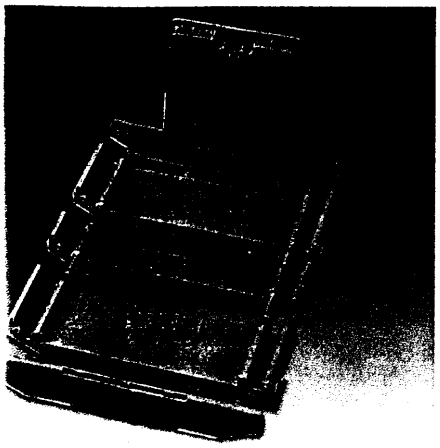
Order example:

UMK module, length 90 mm (3.543), for printed circuit boards 87.5x72x1.5 (3.445x2.835x.059)
comprising

29 70 00 2	2 side elements	UMK-SE 11.25
29 70 02 8	1 base element	UMK-BE 22.5
29 70 01 5	1 base element	UMK-BE 45
29 70 03 1	2 foot elements	UMK-FE

For printed circuit boards see catalog page 290.

ıiversal Module UM
r Custom Circuits



The universal module UM is suitable to
commodate one printed circuit board for
ng in individual electronic circuits, e. g.
ogrammable controls. They comprise indi-
ual elements with various dimensions
d functions. By arranging individual base
ments in a row the printed circuit board
face can be multiplied. Metal pins en-
ge the individual base elements to form
turdy unit. The various base elements are
ilable with and without ribs to support
printed circuit board. Do not locate
der points or component fixings in the
a of these ribs. Dependent upon the
dule size one or more base elements
fitted with a snap foot, which easily eng-
e on DIN-EN mounting rails. The side ele-
nts form both base element ends ar-
ged in a row and are available in three
ecutions.

he low side element UM-SE,
he tall side element UM-SE-A 60 for
60 mm wide U profile covers and
he tall side element UM-SE-A 73 for
73 mm wide U profile covers.

The tall side elements are available with-
t and with guide grooves for mechanical
ng of the printed circuit board vertically
the base PCB.

The transparent U profile covers are
ilable in various lengths, which depend
on the number of base elements used.
ey are screw fitted for the tall side ele-
nts. Furthermore an engageable trans-
rent hood is available for a base element
h snap foot for the lower side elements.

An adaptor rail is available for inserting
European format cards. It is pushed lat-
lly over the edge of the base elements
s reducing the width to the European
mat card dimension. Furthermore, vari-
s modules are available for fitting Euro-
an format cards.

A comprehensive range of electronic
nted circuit terminal blocks is available
the conductor connection (see catalog
ge 290).

Type of moldings

krilen = Polyamide 6.6, see catalog page 12
Color: green

U profile cover
Unbreakable PVC
max. temperature: 70° C

Transparent cover
Unbreakable polycarbonate,
Difficult to ignite and self extinguishing,
max. hood temperature: 100° C

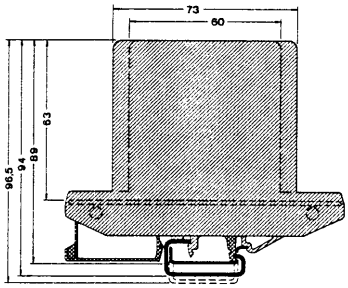
Marking and mounting material see catalog page 10

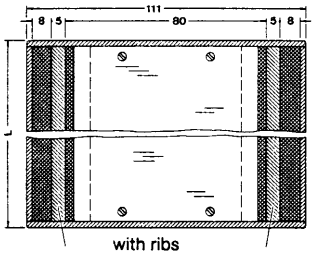
mm to inch

5	=(.197)
8	=(.315)
60	=(2.362)
63	=(2.480)
73	=(2.874)
80	=(3.150)
89	=(3.503)
94	=(3.701)
96.5	=(3.800)
106	=(4.173)
111	=(4.370)

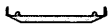
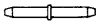
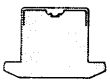
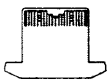
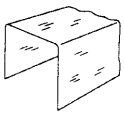
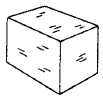
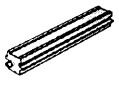
UM

with ribs for mechanical PCB support



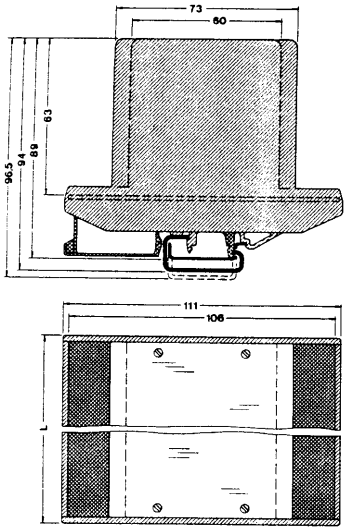


with ribs

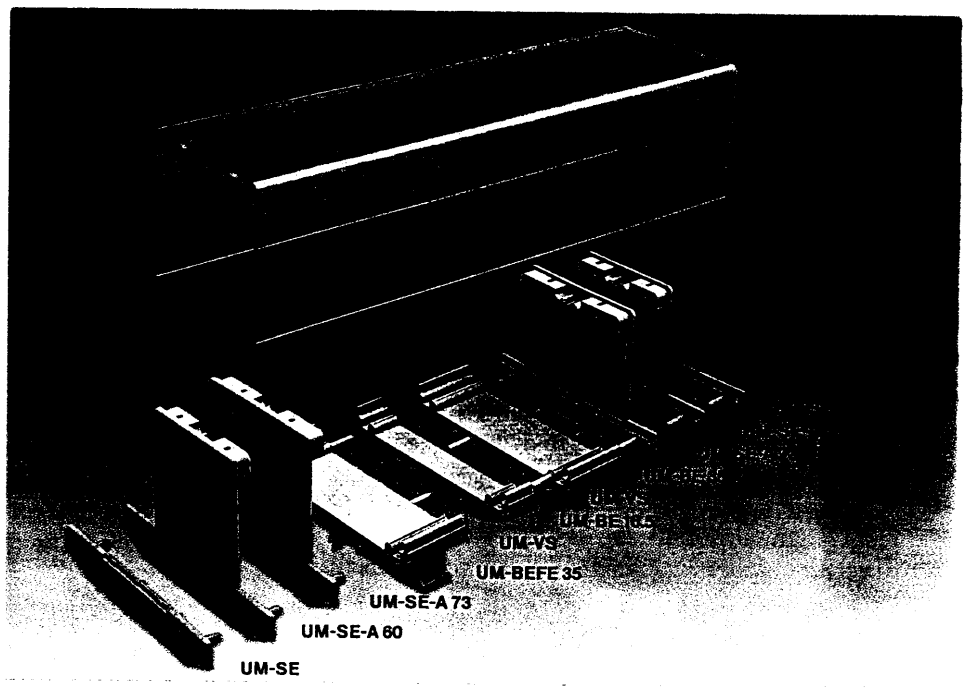
Description		Type	Order No.	Pcs. / Pkt.
Universal module, individual assembly, selectable consisting of: **Base element** with snap foot, for mounting on ⊏ or ⊐, a) with ribs, L=35 mm (1.378) b) without ribs, L=35 mm (1.378)		a) **UM-BEFE 35**	**29 55 56 4**	10
Base element, without snap foot, necessary for connection of several base elements a) with ribs, L=35 mm (1.378) b) without ribs, L=35 mm (1.378)		a) **UM-BE 35**	**29 55 57 7**	10
Base element, without snap foot, necessary for connection of several base elements a) with ribs, L=16.5 mm (.650) b) without ribs, L=16.5 mm (.650)		a) **UM-BE 16.5**	**29 56 90 3**	10
Connection pin, brass, for joining several base elements into one unit, 4 pieces per element		**UM-VS**	**29 55 58 0**	50
Side element, low version, for connection on both ends of the base elements UM-BEFE.		**UM-SE**	**29 55 59 3**	10
Side element, tall version, for double sided connection of the base elements UM-BEFE for 60 mm wide U profile cover		**UM-SE-A 60**	**29 55 61 6**	10
for 73 mm wide U profile cover		**UM-SE-A 73**	**29 55 60 3**	10
Side element, as above, however, with guide grooves for vertically arranged printed circuit boards for 60 mm wide U profile cover		**UM-SE-A 60-R**	**29 56 89 3**	10
for 73 mm wide U profile cover		**UM-SE-A 73-R**	**29 56 74 1**	10
U profile cover, transparent, a) **60 mm (2.362) wide,** screw fitting on side element UM-SE-A 60 for 1 base element UM-BE...35		**UM-A/U 60-35**	**29 55 65 8**	1
2 base elements UM-BE...35		**UM-A/U 60-70**	**29 55 66 1**	1
3 base elements UM-BE...35		**UM-A/U 60-105**	**29 55 67 4**	1
4 base elements UM-BE...35 and 1 base element UM-BE 16.5 for European format card 100x160x1.5 mm		**UM-A/U 60-156.5**	**29 55 55 1**	1
b) **73 mm (2.874) wide,** screw fitting on side element UM-SE-A 73 for 1 base element UM-BE...35		**UM-A/U 73-35**	**29 55 62 9**	1
2 base elements UM-BE...35		**UM-A/U 73-70**	**29 55 63 2**	1
3 base elements UM-BE...35		**UM-A/U 73-105**	**29 55 64 5**	1
4 base elements UM-BE...35 and 1 base element UM-BE 16.5 for European format card 100x160x1.5 mm		**UM-A/U 73-156.5**	**29 56 16 5**	1
Transparent cover, transparent for one base element, UM-BEFE (with 2 UM-SE) engageable, 60 mm wide, 50 mm high		**UM-H**	**29 55 44 1**	1
Adaptor, necessary for European format cards, pushed laterally over the edge of the base elements, reduces width to 100 mm, marking with labeling strip SKS, see catalog page 290, plastic, 156.5 mm (6.555) long		**UM-AE**	**29 56 48 2**	1
Universal module, complete accepting a European format card 100x160 mm, without U profile cover		**UM-LG 160**	**29 56 94 5**	1
Universal module, as above, however with an additional 60 mm (2.362) wide U profile cover		**UM-LG 160/A 60**	**29 56 95 8**	1
Universal module, as above, however with an additional 73 mm (2.874) wide U profile cover		**UM-LG 160/A 73**	**29 56 97 4**	1

UM

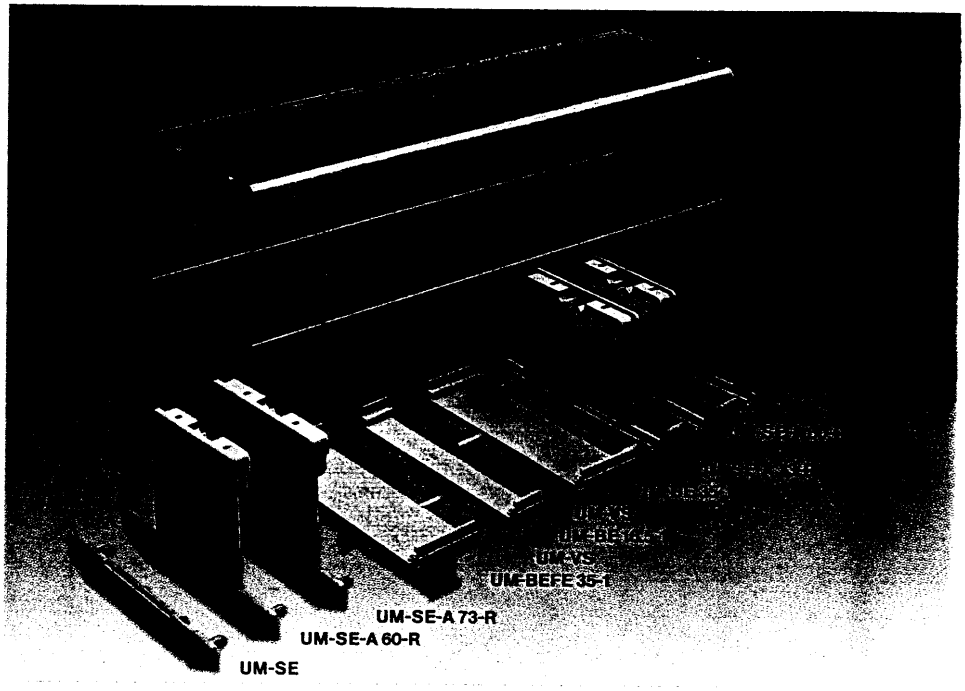
without ribs



ype	Order No.	Pcs. / Pkt.
) UM-BEFE 35-1	29 56 66 0	10
) UM-BE 35-1	29 56 65 7	10
) UM-BE 16.5-1	29 58 05 3	10
IM-VS	29 55 58 0	50
IM-SE-1	29 58 14 7	10
IM-SE-A 60	29 55 61 6	10
IM-SE-A 73	29 55 60 3	10
IM-SE-A 60-R	29 56 89 3	10
IM-SE-A 73-R	29 56 74 1	10
IM-A/U 60-35	29 55 65 8	1
IM-A/U 60-70	29 55 66 1	1
IM-A/U 60-105	29 55 67 4	1
IM-A/U 73-35	29 55 62 9	1
IM-A/U 73-70	29 55 63 2	1
IM-A/U 73-105	29 55 64 5	1
IM-H	29 55 44 1	1



Assembly drawing of UM module base elements with ribs



Assembly drawing of UM module base elements without ribs

Dimensions of the PCB* [mm]	Module length L [mm]	Base element UM-BEFE 35 UM-BEFE 35-1	Base element UM-BE 35 UM-BE 35-1	Base element UM-BE 16.5 UM-BE 16.5-1	Base element UM-SE UM-SE A 60 UM-SE-A 73	Length [mm] of th U profile cover UM-A/U 60... UM-A/U 73...
38.5 x 107.5 x 1.5	40	1	–	–	2	35
55.0 x 107.5 x 1.5	56.5	1	–	1	2	51.5
73.5 x 107.5 x 1.5	75	2	–	–	2	70
90.0 x 107.5 x 1.5	91.5	2	–	1	2	86.5
108.5 x 107.5 x 1.5	110	2	1	–	2	105
125.0 x 107.5 x 1.5	126.5	2	1	1	2	121.5
143.5 x 107.5 x 1.5	145	2	2	–	2	140
160.0 x 107.5 x 1.5	161.5	2	2	1	2	156.5
178.5 x 107.5 x 1.5	180	3	2	–	2	175

* When using the adaptor UM-AE the printed circuit board is reduced to 100 mm (3.937).

Order examples:

UM-module, length 40 mm (1.575), for printed circuit board 38.5 x 107.5 x 1.5 (1.516 x 4.232 x .059)
comprising
29 55 56 4 1 base element UM-BEFE
29 55 59 3 2 side elements UM-SE
29 55 44 1 1 cover UM

UM module 160 mm (6.299), for printed circuit boards in European format 100 x 160 x 1.5 (3.937 x 6.299 x .059)
comprising
29 55 56 4 2 base elements with snap foot UM-BEFE 35
29 55 57 7 2 base elements without snap foot UM-BE 35
29 56 90 3 1 base element without snap foot UM-BE 16.5
29 55 58 0 12 connection pins UM-VS
29 55 61 6 2 side elements UM-SE A 60
29 55 55 1 1 U profile cover UM-A/U 60-156.5
29 56 48 2 1 adaptor UM-AE

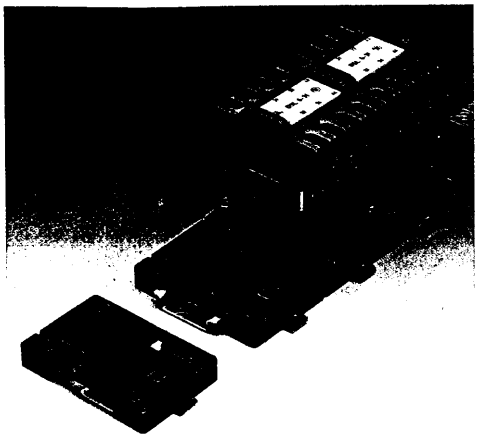
UM module, length 110 mm (4.331), for printed circuit boa 108.5 x 107.5 x 1.5 (4.272 x 4.232 x .059)
comprising
29 55 56 4 2 base elements with snap foot UM-BEFE
29 55 57 7 1 base element without snap foot UM-BE
29 55 58 0 8 connection pins UM-VS
29 55 60 3 2 side elements UM-SE-A 73
29 55 64 5 1 U profile cover UM-A/U 73-105

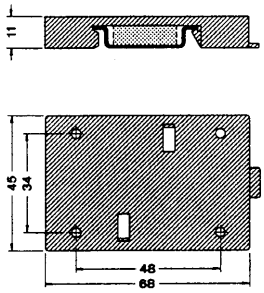
Information:
For PCB terminals see catalog page 290.

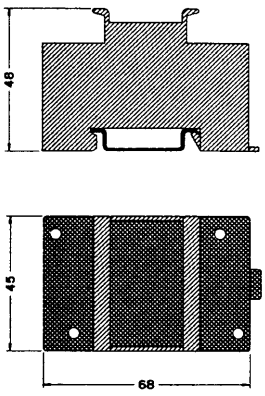
Mounting Plate EM-MP for Switching Equipment

EM-MP
45 mm wide

EM-MPG 45
45 mm wide







Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Mounting plate, for screw fitting size 0 switching equipment	**EM-MP 45**	**29 44 15 1**	5			
Mounting plate, enclosed design, to snap on size 0 switching equipment				**EM-MPG 45**	**29 44 17 7**	5
Cover, for the mounting plate EM-MP 45 for fitting protection elements	**EM-MP 45 H**	**29 44 16 4**	5			

These rail mounting plates have been specially conceived for size 0 switching equipment. They can accommodate Protection elements or coil protection circuits and motor interference suppression elements. Simple interface functions as linking element between electronic controls and conventional contactor controls can be realized in these units. The following two versions are available:

- Mounting plate EM-MP 45 for screwing onto size 0 switching equipment. The cover, which snaps below the mounting plate, accommodates protection elements for coil protection circuits. The connection lines of the protection elements for the coil connections can be led out of the mounting plate fronts.
- The enclosed mounting plate EM-MPG 45 offering housing character permit size 0 switching equipment to be snapped on. In the mounting plate interior interface functions and protection circuits for coil and motor interference suppression can be fitted. The connection lines between electronic circuit and switching equipment can be led out of the mounting plate front.

Both mounting plates snap on the ⊓ symmetrical mounting rail in accordance with DIN 50 022.

mm to inch
11=(.433)
34=(1.338)
45=(1.772)
48=(1.890)
68=(2.677)

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