

# Section 7: SKIIPACK® 4)

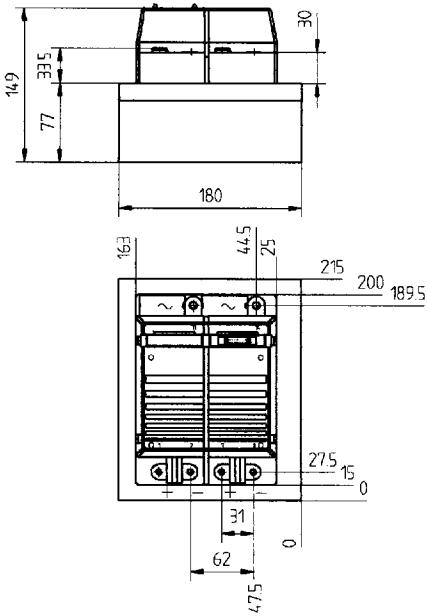
## Large IGBT Power Packs

### SKIIPACK = SEMIKRON Integrated Intelligent Power Pack

Type	<sup>2)</sup> Options; W... control connection W = wire F = fibre optic T = Temp.sense	V <sub>CEs</sub> V	I <sub>C</sub> <sup>3)</sup> @ T <sub>lm</sub> = 25°C A	V <sub>CEsat</sub> @ I <sub>C</sub> 25 °C typ./chip V	P <sub>tot</sub> <sup>1)</sup> @ T <sub>J</sub> =150°C @ T <sub>amb</sub> = 35 °C W	R <sub>th</sub> IGBT / Diode <sup>5)</sup> °C/W	Case	Circuit diagram
SKiP 462 GB 060 250 W/WT <sup>6)</sup>		600	400	2,1	1140	0,114/0,14	S2	
SKiP 662 GB 060 251 W/WT <sup>6)</sup>		600	600	2,1	1370	0,08/0,14	S2	
SKiP 962 GB 060 350 W/WT-F/FT <sup>6)</sup>		600	900	2,1	1840	0,053/0,09	S3	
SKiP 1262 GB 060 451 W/WT-F/FT <sup>6)</sup>		600	1200	2,1	2170	0,04/0,07	S4	
SKiP 402 GB 120 201 W/WT		1200	400	3,15	1670	0,05/0,14	S2	
SKiP 612 GB 120 203 W/WT		1200	600	3,15	1800	0,04/0,14	S2	
SKiP 602 GB 120 301 W/WT-F/FT		1200	600	3,15	2180	0,033/0,093	S3	
SKiP 912 GB 120 303 W/WT-F/FT		1200	900	3,15	2330	0,027/0,093	S3	
SKiP 912 GB 120 031		1200	900	3,15	2330	0,027/0,093	S3	
SKiP 802 GB 120 401 W/WT-F/FT		1200	800	3,15	2370	0,025/0,07	S4	
SKiP 802 GB 120 040		1200	800	3,15	2370	0,025/0,07	S4	
SKiP 1212 GB 120 402 W/WT-F/FT		1200	1200	3,15	2500	0,02/0,07	S4	
SKiP 1212 GB 120 041		1200	1200	3,15	2500	0,02/0,07	S4	
SKiP 592 GB 160 270 W/WT		1600	500	3,8	1800	0,04/0,14	S2	
SKiP 792 GB 160 370 W/WT-F/FT		1600	700	3,8	2330	0,027/0,09	S3	
SKiP 792 GB 160 034		1600	700	3,8	2330	0,027/0,09	S3	
SKiP 1092 GB 160 470 W/WT-F/FT		1600	1000	3,8	2670	0,02/0,07	S4	
SKiP 1092 GB 160 044		1600	1000	3,8	2670	0,02/0,07	S4	
SKiP 262 GD 060 351 W/WT <sup>6)</sup>		600	200	2,1	1550	0,23/0,28	S3 D	
SKiP 362 GD 060 352 W/WT <sup>6)</sup>		600	300	2,1	1840	0,16/0,28	S3 D	
SKiP 102 GD 120 304 W/WT		1200	150	3,15	1930	0,14/0,42	S3 D	
SKiP 202 GD 120 300 W/WT		1200	200	3,15	2180	0,1/0,28	S3 D	
SKiP 312 GD 120 302 W/WT		1200	300	3,15	2330	0,08/0,28	S3 D	
SKiP 192 GD 160 371 W/WT		1600	150	3,8	2090	0,11/0,28	S3 D	
SKiP 292 GD 160 372 W/WT		1600	250	3,8	2330	0,08/0,28	S3 D	
SKiP 262 GDL 060 452 W/WT <sup>6)</sup>		600	200	2,1	1750	0,23/0,28	S4 DL	
SKiP 362 GDL 060 453 W/WT <sup>6)</sup>		600	300	2,1	2060	0,16/0,28	S4 DL	
SKiP 102 GDL 120 403 W/WT		1200	150	3,15	2150	0,14/0,42	S4 DL	
SKiP 202 GDL 120 400 W/WT		1200	200	3,15	2430	0,1/0,28	S4 DL	
SKiP 312 GDL 120 404 W/WT		1200	300	3,15	2560	0,08/0,28	S4 DL	
SKiP 192 GDL 160 471 W/WT		1600	150	3,8	2330	0,11/0,28	S4 DL	
SKiP 292 GDL 160 472 W/WT		1600	250	3,8	2590	0,08/0,28	S4 DL	
<sup>1)</sup> Mounted on heatsink: Case S2 on P16/180F fan not attached <sup>7)</sup> R <sub>thsa</sub> = 0,044 °C/W Case S3 on P16/260 F      R <sub>thsa</sub> = 0,036 °C/W Case S4 on P16/340 F      R <sub>thsa</sub> = 0,033 °C/W								<b>SKIIPACK (view from left)</b> 
<sup>2)</sup> Available options of integrated drivers								
<sup>3)</sup> All data apply to one switch								
<sup>4)</sup> 1600 V types have V <sub>iso</sub> (AC; rms; 1 min) = 4 kV, others: 2,5 kV								
<sup>5)</sup> All diodes are CAL diodes. CAL = Controlled Axial Lifetime technology								
<sup>6)</sup> Preliminary data								
<sup>7)</sup> Recommended fan type: D2E-133-2A or D2E-133-2K								

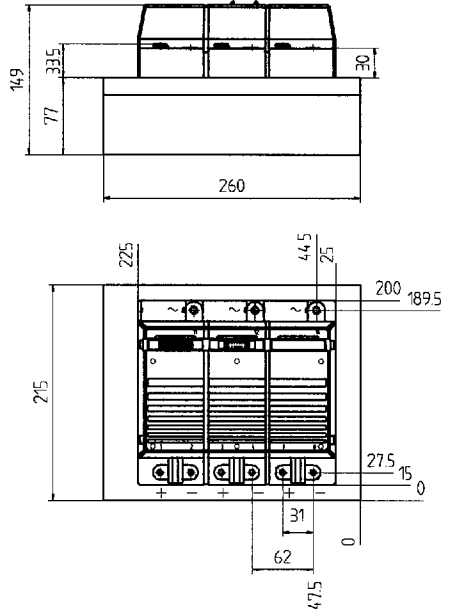
**Case S2**

**SKiiPACK 2 - GB**



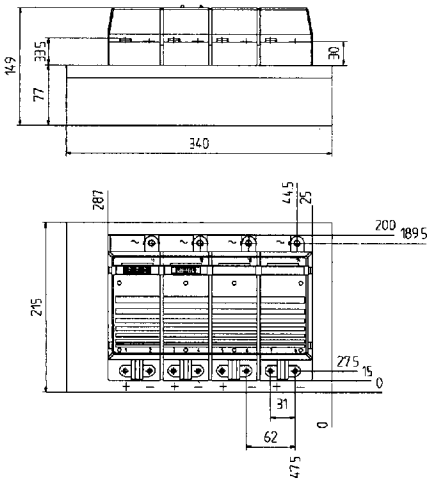
**Case S3**

**SKiiPACK 3 - GB**



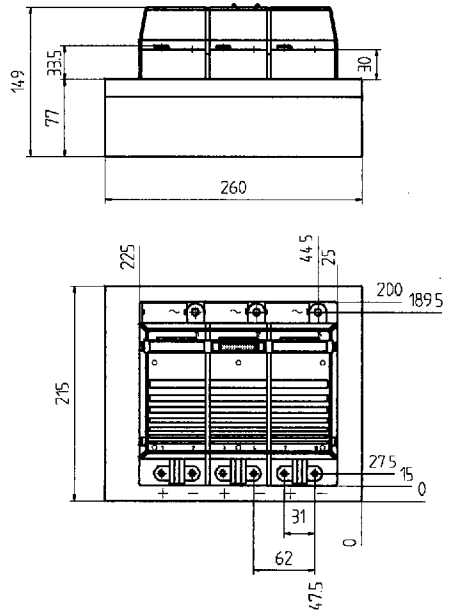
**Case S4**

**SKiiPACK 4 - GB**



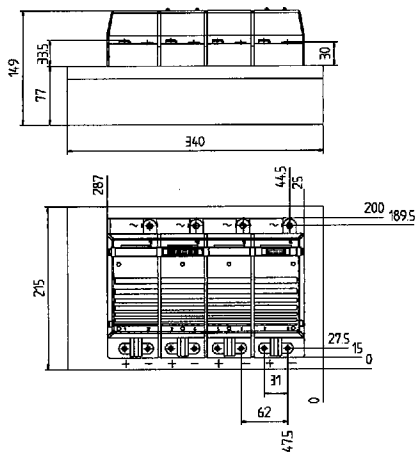
**Case S3 - D**

**SKiiPACK 3 - GD**



Case S4 - DL

SKIIPACK 4 - GDL



**SKIIPACK**

**Type Designation System**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩  
**SKIIP 6 0 2 G B 120 301 WT**

- ① SKiiP = SEMIKRON integrated intelligent Power
- ② I<sub>C</sub>/100 i.e. 6 = 600 A
- ③ kind of IGBT chips used
- ④ 2 = version 2
- ⑤ G = IGBT
- ⑥ internal el. circuit:  
 B = half bridge  
 D = 3 phase bridge (IEC - B6CI)  
 DL = 3 phase bridge with brake chopper (GAL)
- ⑦ V<sub>CE</sub>/10 i.e. 120 = 1200 V
- ⑧ driver unit: 0 = without driver  
 2 = SKIIPACK 2  
 3 = SKIIPACK 3  
 4 = SKIIPACK 4
- ⑨ driver unit version number
- ⑩ Options:  
 control connections: W = Wire  
 F = Fiber optic  
 T = Temperature sensor  
 C = Current sensor (available '96)

**Pin Arrays**  
**SKIIPACK GB**  
**Half bridge configuration**

Pin	signals	Opto
1	14-pins DIN 41651	
2	reserved	
3	BOT IN	3
4	ERROR OUT	2
5	TOP IN	1
6	Overtemp. OUT	
7	+24 V <sub>DC</sub> IN	
8	+24 V <sub>DC</sub> IN	
9	+15 V <sub>DC</sub> IN	
10	+15 V <sub>DC</sub> IN	
11	GND	
12	GND	
13	Temp. analog OUT	
14	GND analog	
14	reserved	

**SKIIPACK GD**  
**3 phase bridge configuration**

Pin	signals
1	26-pins DIN 41651
2	reserved
3	BOT HB 1 IN
4	ERROR HB 1 OUT
5	TOP HB 1 IN
6	BOT HB 2 IN
7	ERROR HB 2 OUT
8	TOP HB 2 IN
9	BOT HB 3 IN
10	ERROR HB 3 OUT
11	TOP HB 3 IN
12	Overtemp. OUT
13	reserved
14	reserved
15	+24 V <sub>DC</sub> IN
16	+24 V <sub>DC</sub> IN
17	+15 V <sub>DC</sub> IN
18	+15 V <sub>DC</sub> IN
19	GND
20	GND
21	Temp. analog OUT
22	GND analog
23	reserved
24	reserved
25	reserved
26	reserved

**SKIIPACK GDL**

**3 phase bridge configuration with brake chopper**

Pin	signals
1	26-pins DIN 41651
2	reserved
3	BOT HB 1 IN
4	ERROR HB 1 OUT
5	TOP HB 1 IN
6	BOT HB 2 IN
7	ERROR HB 2 OUT
8	TOP HB 2 IN
9	BOT HB 3 IN
10	ERROR HB 3 OUT
11	TOP HB 3 IN
12	Overtemp. OUT
13	reserved
14	reserved
15	+24 V <sub>DC</sub> IN
16	+24 V <sub>DC</sub> IN
17	+15 V <sub>DC</sub> IN
18	+15 V <sub>DC</sub> IN
19	GND
20	GND
21	Temp. analog OUT
22	GND analog
23	reserved
24	reserved
25	reserved
26	reserved

Pin	signals
1	14-pins DIN 41651
2	reserved
3	CHOPPER ext. ON
4	ERROR OUT
5	RESET
6	reserved
7	+24 V <sub>DC</sub> IN
8	+24 V <sub>DC</sub> IN
9	+15 V <sub>DC</sub> IN
10	+15 V <sub>DC</sub> IN
11	GND
12	GND
13	reserved
14	reserved