

## Power modules



General technical data for power modules	
Input voltage	600/625/680 V DC
Output voltage	3-phase AC 0 ... 430 V
Output frequency, max.	1.4 kHz
Degree of efficiency $\eta$ <sup>1)</sup>	0.98

1)  $\eta$  = (active power output/active power consumed) at the module power supply terminals.

Power module in single-axis design						
Internal heat dissipation	6SN1123-1AA0.-	-0HA1	-0AA1	-0BA1	-0CA1	-0DA1
External heat dissipation	6SN1124-1AA0.-	-0HA1	-0AA1	-0BA1	-0CA1	-0DA1
Hose cooling	6SN1123-1AA0.-	–	–	–	–	–
Cooling method		Natural cooling	Natural cooling	Forced cooling	Forced cooling	Forced cooling
For operating 1FT6/1FK/1FN/1FW6 motors						
Power loss Total/internal/external <sup>2)</sup>	W	35/14/21	50/19/31	90/35/55	190/65/125	300/30/270
For operating 1PH/1FE1/2SP1/1PM motors and asynchronous low-voltage motors						
Power loss Total/internal/external <sup>2)</sup>	W	30/12/18	40/16/24	74/29/45	260/89/171	320/32/288
Max. possible conductor cross-section	mm <sup>2</sup>	6	6	6	6	16
Weight, approx.						
• Internal heat dissipation	kg (lb)	6.5 (14.33)	6.5 (14.33)	6.5 (14.33)	7.5 (16.54)	9.5 (20.95)
• External heat dissipation	kg (lb)	6.5 (14.33)	6.5 (14.33)	6.5 (14.33)	7.5 (16.54)	9.5 (20.95)
Power module in single-axis design (continued)						
Internal heat dissipation	6SN1123-1AA0.-	-0EA1	-0FA1	-0LA1	-0JA1	-0KA1
External heat dissipation	6SN1124-1AA0.-	-0EA1	-0FA1	-0LA1	-0JA1	-0KA1
Hose cooling	6SN1123-1AA0.-	–	-0FA1	–	-0JA1	-0KA1

Cooling method		Forced cooling	Forced cooling	Forced cooling	Forced cooling	Forced cooling
For operating 1FT6/1FK/1FN/1FW6 motors						
Power loss Total/internal/external	W	645/25/620	730/90/640	460/25/435	1910/170/1130	1910/250/1660
For operating 1PH/1FE1/2SP1/1PM motors and asynchronous low-voltage motors						
Power loss Total/internal/external <sup>2)</sup>	W	685/30/655	850/100/750	460/19/441	1290/190/1100	2170/325/1845
Max. possible conductor cross-section	mm <sup>2</sup>	50	95	50	95	150
Weight, approx.						
• Internal heat dissipation	kg (lb)	13 (28.67)	26 (57.33) <sup>1)</sup>	13 (28.67)	21 (46.31) <sup>1)</sup>	24 (52.92) <sup>1)</sup>
• External heat dissipation	kg (lb)	13 (28.67)	26 (57.33) <sup>1)</sup>	13 (28.67)	21 (46.31)	24 (52.92)
<b>Power module in two-axis design</b>						
Internal heat dissipation	6SN1123-1AB0.-	-0HA0	-0AA0	-0BA0	-0CA0	
External heat dissipation	6SN1124-1AB0.-	-0HA0	-0AA0	-0BA0	-0CA0	
Cooling method		Natural cooling	Forced cooling	Forced cooling	Forced cooling	
For operating 1FT6/1FK/1FN/1FW6 motors						
Power loss Total/internal/external <sup>2)</sup>	W	70/27/43	100/38/62	180/69/111	380/130/250	
For operating 1PH/1FE1/2SP1/1PM motors and asynchronous low-voltage motors						
Power loss Total/internal/external	W	76/28/48	118/42/76	226/74/152	538/184/354	
Max. possible conductor cross-section	mm <sup>2</sup>	6	6	6	6	
Weight, approx.						
• Internal heat dissipation	kg (lb)	7 (15.44)	7 (15.44)	7 (15.44)	13.5 (29.77)	
• External heat dissipation	kg (lb)	7 (15.44)	7 (15.44)	7 (15.44)	13.5 (29.77)	

1) Without built-on or hose cooling components.

2) Total: total power loss from the module.

Internal: residual power loss in the control cabinet.

External: power loss dissipated directly to atmosphere.

The data relate to the corresponding rated pulse frequencies of the inverters.

### Internal/external heat dissipation

<b>Module width</b>	<b>Feed drives with motors</b>	<b>Main spindle drives with motors</b>	<b>Power module for internal</b>	<b>Power module for external</b>	<b>Mounting frame for cabinet</b>
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			heat dissipation	heat dissipation	installation
	1FT6/1FK/1FN/1FW6	1PH/1FE1/2SP1/ 1PM/asynchronous low-voltage motors			For external heat dissipation
	Rated/peak current	Rated current/ current for S6- 40%/ peak current			
	$I_{S1}/\hat{I}$	$I_{S1}/I_{S6-40\%}/\hat{I}$			
mm (inch)	A	A	Order No.	Order No.	Order No.
<b>Single-axis power modules</b>					
50 (1.97)	3/6	3/3/3	6SN1123- 1AA00- 0HA1	6SN1124- 1AA00- 0HA1	6SN1162- 0BA04- 0AA1
50 (1.97)	5/10	5/5/8	6SN1123- 1AA00- 0AA1	6SN1124- 1AA00- 0AA1	6SN1162- 0BA04- 0AA1
50 (1.97)	9/18	8/10/16	6SN1123- 1AA00- 0BA1	6SN1124- 1AA00- 0BA1	6SN1162- 0BA04- 0AA1
50 (1.97)	18/36	24/32/32	6SN1123- 1AA00- 0CA1	6SN1124- 1AA00- 0CA1	6SN1162- 0BA04- 0FA1
100 (3.94)	28/56	30/40/51	6SN1123- 1AA00- 0DA1	6SN1124- 1AA00- 0DA1	6SN1162- 0BA04- 0BA1
150 (5.91)	42/64	45/60/76	6SN1123- 1AA00- 0LA1	6SN1124- 1AA00- 0LA1	6SN1162- 0BA04- 0CA1
150 (5.91)	56/112	60/80/102	6SN1123- 1AA00- 0EA1	6SN1124- 1AA00- 0EA1	6SN1162- 0BA04- 0CA1
300 (11.81)	70/140	85/110/127	6SN1123- 1AA01- 0FA1	6SN1124- 1AA01- 0FA1 <sup>1)</sup>	6SN1162- 0BA04- 0EA0
300 (11.81)	100/100	120/150/193 <sup>2)</sup>	6SN1123- 1AA00- 0JA1 <sup>1)</sup>	6SN1124- 1AA00- 0JA1 <sup>1)</sup>	6SN1162- 0BA04- 0EA0
300 (11.81)	140/210	200/250/257 <sup>2)</sup>	6SN1123- 1AA00- 0KA1 <sup>1)</sup>	6SN1124- 1AA00- 0KA1 <sup>1)</sup>	6SN1162- 0BA04- 0EA0
<b>Two-axis power modules</b>					
50 (1.97)	3/6	3/3/3	6SN1123- 1AB00- 0HA1	6SN1124- 1AB00- 0HA1	6SN1162- 0BA04- 0AA1
50 (1.97)	5/10	5/5/8	6SN1123- 1AB00- 0AA1	6SN1124- 1AB00- 0AA1	6SN1162- 0BA04- 0AA1

50 (1.97)	9/18	8/10/16	6SN1123- 1AB00- 0BA1	6SN1124- 1AB00- 0BA1	6SN1162- 0BA04- 0AA1
100 (3.94)	18/36	24/32/32	6SN1123- 1AB00- 0CA1	6SN1124- 1AB00- 0CA1	6SN1162- 0BA04- 0GA1

## Hose cooling

Module width	Feed drives with motors	Main spindle drives with motors	Power module for hose cooling	Hose connection kit
	1FT6/1FK/1FN/1FW6	1PH/1FE1/2SP1/ 1PM/asynchronous low-voltage motors		
	Rated/peak current	Rated current/ current for S6- 40%/ peak current		
	$I_{S1}/\hat{I}$	$I_{S1}/I_{S6-40\%}/\hat{I}$		
mm (inch)	A	A	Order No.	Order No.
<b>Single-axis version</b>				
300 (11.81)	70/140	85/110/127	6SN1123- 1AA02- 0FA1	6SN1162- 0BA03- 0AA1
300 (11.81)	100/100	120/150/193	6SN1123- 1AA00- 0JA1	6SN1162- 0BA03- 0AA1
300 (11.81)	140/210	200/250/257	6SN1123- 1AA00- 0KA1	6SN1162- 0BA03- 0AA1

1) Built-on fan required, see "Supplementary system components".

2) For 1FE1 motors with  $f_U < 0.5$  Hz, derating is necessary, see Planning Guide for 1FE1.