

Drive modules

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 η ¹⁾	0.98

1) η = (active power output/active power consumed) at the module power supply terminals.

Power module in <u>single-axis design</u>						
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 ²⁾	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	W	30/12/18	40/16/24	74/29/45	260/89/171	320/32/288

Power module in <u>single-axis design</u>						
Total/internal/external ²⁾						
Max. possible conductor cross-section	mm ²	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 <u>single-axis design</u> (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 ²⁾	W	685/30/655	850/100/750	460/19/441	1290/190/1100	2170/325/1845
Max. possible conductor cross-section	mm ²	50	95	50	95	150
Weight, approx.						
• Internal heat dissipation	kg (lb)	13 (28.67)	26 (57.33) ¹⁾	13 (28.67)	21 (46.31) ¹⁾	24 (52.92) ¹⁾

Power module in <u>single-axis design</u>						
● External heat dissipation	kg (lb)	13 (28.67)	26 (57.33) ¹⁾	13 (28.67)	21 (46.31)	24 (52.92)
Power module in <u>two-axis design</u>						
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 ²⁾	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 ²	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

Module width	Feed drives with motors	Main spindle drives with motors	Power module for internal heat dissipation	Power module for external heat dissipation	Mounting frame for cabinet 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.
Single-axis power modules					
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 ¹⁾	6SN1162-0BA04-0EA0
300 (11.81)	100/100	120/150/193 ²⁾	6SN1123-1AA00-0JA1 ¹⁾	6SN1124-1AA00-0JA1 ¹⁾	6SN1162-0BA04-0EA0

Module width	Feed drives with motors	Main spindle drives with motors	Power module for internal heat dissipation	Power module for external heat dissipation	Mounting frame for cabinet installation
300 (11.81)	140/210	200/250/257 ²⁾	6SN1123-1AA00-0KA1 ¹⁾	6SN1124-1AA00-0KA1 ¹⁾	6SN1162-0BA04-0EA0
Two-axis power modules					
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.
Single-axis version				

Module width	Feed drives with motors	Main spindle drives with motors	Power module for hose cooling	Hose connection kit
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.