

SIEMENS



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# SINAMICS V20 输入输出接线 端子选用说明

SINAMICS V20 Input / Output Terminal Selection



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# 1 简介

在变频器外形尺寸D以及D以下的电气安装过程中，连接电源端子时仅允许使用绞合线或者带有经 UL/cUL 认证的 U 型压线端子的线缆；安装外形尺寸 E 时，仅能使用带有经 UL/cUL 认证的环型压线端子的线缆连接电源端子。

**NOTE** Please refer to Operating Instructions.

## 1.1 Mains terminal connections

在SINAMICS V20上，如果使用针型或者裸线作为输入输出端子接线时，在压接不规范（如开度过大造成V20金属接线端压到针型端子塑料外皮上/针型线头一截为空）或者连接不牢靠时，可能存在点接触现象，模块通电运行时可能产生高压电弧，碳化模块的金属接头，从而造成接触阻抗增大，增大对应相的输出电流，长时间运行或极端时，存在烧坏模块输入端子（L1/L2/L3），输出端子（U/V/W）或 PCB被烧毁的风险，尤其当使用较大功率模块时。

Figure 1-1 下图为使用针型接线端子不规范压接示例



**NOTE** Opening was too much, which caused V20 metal wiring port being pressed on the pin terminal lug's plastic sheath

## 2 推荐的电缆截面积、压线端子类型及螺钉紧固扭矩

材料

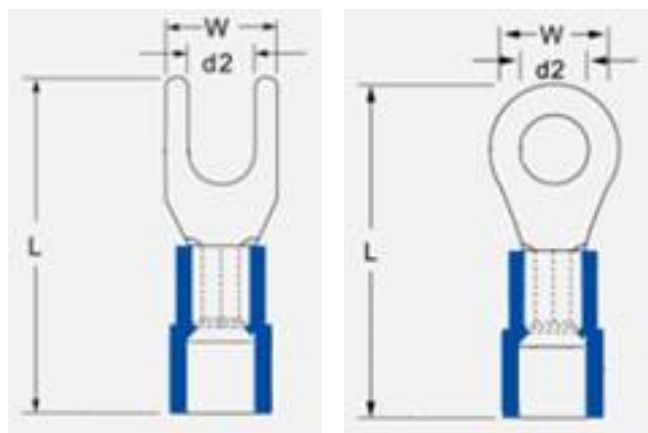
U 型压线端子

环型压线端子

压线端子主体：铜

绝缘：尼龙

镀层：锡



外形尺寸	额定输出功率	压线端子类型	电源及 PE 端子					电机/直流/制动电阻/输出接地端子				
			Cable cross-section * 电缆截面积 *	d2 (mm)	W (mm)	L (mm)	螺钉紧固扭矩 (公差: ± 10%)	电缆截面积 *	d2 (mm)	W (mm)	L (mm)	螺钉紧固扭矩 (公差: ± 10%)
400 V												
A	0.37 kW to 0.75 kW	U	1.0 mm <sup>2</sup> (14)	≥ 3.7	< 8	> 22	1.0 Nm	1.0 mm <sup>2</sup> (14)	≥ 3.7	< 8	> 22	1.0 Nm
	1.1 kW to 2.2 kW		1.5 mm <sup>2</sup> (14)					1.5 mm <sup>2</sup> (14)				
B	3.0 kW to 4.0 kW		4 mm <sup>2</sup> (10)	≥ 3.7	< 8	> 25	2.4 Nm	2.5 mm <sup>2</sup> (12)	≥ 4.2	< 8	> 22	1.5 Nm
C	5.5 kW		4 mm <sup>2</sup> (10)	≥ 5.2	< 12	> 25		4 mm <sup>2</sup> (10)	≥ 5.2	< 12	> 25	2.4 Nm
D	7.5 kW		6 mm <sup>2</sup> (10)	≥ 5.2	< 12	> 28		6 mm <sup>2</sup> (10)	≥ 5.2	< 12	> 28	
	11 kW to 15 kW		10 mm <sup>2</sup> (6)									

2 推荐的电缆截面积、压线端子类型及螺钉紧固扭矩

外形尺寸	额定输出功率	压线端子类型	电源及 PE 端子				电机/直流/制动电阻/输出接地端子					
			Cable cross-section * 电缆截面积 *	d2 (mm)	W (mm)	L (mm)	螺钉紧固扭矩 (公差: ±10%)	电缆截面积 *	d2 (mm)	W (mm)	L (mm)	螺钉紧固扭矩 (公差: ±10%)
E	18.5 kW	O	10 mm <sup>2</sup> (6)	≥ 5.2	< 13	> 30		10 mm <sup>2</sup> (6)	≥ 5.2	< 13	> 30	
	22 kW		16 mm <sup>2</sup> (4)			> 41		6 mm <sup>2</sup> (8)			> 41	
	30 kW		25 mm <sup>2</sup> (3)			> 45		10 mm <sup>2</sup> (6)			> 45	
230 V												
AA/AB/A	0.12 kW to 0.25 kW	U	1.0 mm <sup>2</sup> (14)	≥ 4.2	< 7	> 22	1.0 Nm	1.0 mm <sup>2</sup> (14)	≥ 3.2	< 7	> 22	1.0 Nm
	0.37 kW to 0.55 kW		1.5 mm <sup>2</sup> (14)			> 22		> 22				
	0.75 kW		2.0 mm <sup>2</sup> (14)			> 22		> 22				
B	1.1 kW to 1.5 kW		6.0 mm <sup>2</sup> (10)	≥ 3.7	< 8	> 25		2.5 mm <sup>2</sup> (12)	≥ 4.2	< 8	> 22	1.5 Nm
C	2.2 kW to 3.0 kW		10 mm <sup>2</sup> (6)	≥ 5.2	< 12	> 28	2.4 Nm	4.0 mm <sup>2</sup> (10)	≥ 5.2	< 12	> 28	2.4 Nm

\* 括号内的数据表示对应的 AWG 值。