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# 产品说明书

(STD233M)

深圳星火自动化科技有限公司

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# STD233M 说明书

产品名称:	STD233M	供电电压:	24-40VDC																																																																																																																																														
产品简介:	<p>STD233M 是一款基于 32bit 高运算能力的 ARM 为核心，研制而成的高集成度步进电机驱动器。驱动器以分离式功率元件为主驱电路，采用电流传感器作为反馈，进而形成电流闭环。产品可以驱动 57 以下全系列步进电机，性能稳定、长期运行可靠。在点胶机、螺丝机、SMT 等设备上获得了广泛应用。</p>																																																																																																																																																
机械尺寸图:	<p>The drawing shows a rectangular PCB with a width of 57 mm and a height of 96 mm. On the right side, there is a 22 mm wide section containing a 4.5 mm wide connector strip. The connector has 14 pins labeled as follows:</p> <ul style="list-style-type: none"> <li>PU+ (脉冲信号)</li> <li>PU- (脉冲信号)</li> <li>DR+ (电机反馈信号)</li> <li>DR- (电机反馈信号)</li> <li>MF+ (电机反馈信号)</li> <li>MF- (电机反馈信号)</li> <li>D7 (模式)</li> <li>D6 (模式)</li> <li>D5 (模式)</li> <li>D4 (模式)</li> <li>D3 (模式)</li> <li>D2 (模式)</li> <li>D1 (模式)</li> <li>D0 (模式)</li> <li>B+ (电机)</li> <li>B- (电机)</li> <li>A+ (电机)</li> <li>A- (电机)</li> <li>DC- (电源)</li> <li>DC+ (电源)</li> </ul> <p>Internal tables from the drawing:</p> <p><b>Current Setting</b></p> <table border="1"> <thead> <tr> <th>D0</th> <th>D1</th> <th>D2</th> <th>I<sub>m</sub>(A)</th> <th>b(A)</th> </tr> </thead> <tbody> <tr><td>ON</td><td>ON</td><td>ON</td><td>0.7</td><td>1.0</td></tr> <tr><td>OFF</td><td>ON</td><td>ON</td><td>1.1</td><td>1.5</td></tr> <tr><td>ON</td><td>OFF</td><td>ON</td><td>1.4</td><td>2.0</td></tr> <tr><td>OFF</td><td>OFF</td><td>ON</td><td>1.7</td><td>2.4</td></tr> <tr><td>ON</td><td>ON</td><td>OFF</td><td>2.0</td><td>2.8</td></tr> <tr><td>OFF</td><td>ON</td><td>OFF</td><td>2.4</td><td>3.3</td></tr> <tr><td>ON</td><td>OFF</td><td>OFF</td><td>2.7</td><td>3.7</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>3.0</td><td>4.2</td></tr> </tbody> </table> <p><b>Subdivision Setting</b></p> <table border="1"> <thead> <tr> <th>D4</th> <th>D5</th> <th>D6</th> <th>D7</th> <th>PULSE SREV</th> </tr> </thead> <tbody> <tr><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>200</td></tr> <tr><td>OFF</td><td>ON</td><td>ON</td><td>ON</td><td>400</td></tr> <tr><td>ON</td><td>OFF</td><td>ON</td><td>ON</td><td>800</td></tr> <tr><td>OFF</td><td>OFF</td><td>ON</td><td>ON</td><td>1600</td></tr> <tr><td>ON</td><td>ON</td><td>OFF</td><td>ON</td><td>3200</td></tr> <tr><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>6400</td></tr> <tr><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>12800</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>25600</td></tr> <tr><td>ON</td><td>ON</td><td>ON</td><td>OFF</td><td>1000</td></tr> <tr><td>OFF</td><td>ON</td><td>ON</td><td>OFF</td><td>2000</td></tr> <tr><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td><td>4000</td></tr> <tr><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>5000</td></tr> <tr><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>8000</td></tr> <tr><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>10000</td></tr> <tr><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>20000</td></tr> <tr><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>40000</td></tr> </tbody> </table> <p><b>Mode setting</b></p> <table border="1"> <thead> <tr> <th>D3</th> <th>I/O Mode</th> <th>OFF</th> <th>Pulse Mode</th> <th>ON</th> <th>I/O Mode</th> </tr> </thead> <tbody> <tr><td>ON</td><td>I/O Mode</td><td>OFF</td><td>Pulse Mode</td><td>ON</td><td>I/O Mode</td></tr> </tbody> </table>			D0	D1	D2	I <sub>m</sub> (A)	b(A)	ON	ON	ON	0.7	1.0	OFF	ON	ON	1.1	1.5	ON	OFF	ON	1.4	2.0	OFF	OFF	ON	1.7	2.4	ON	ON	OFF	2.0	2.8	OFF	ON	OFF	2.4	3.3	ON	OFF	OFF	2.7	3.7	OFF	OFF	OFF	3.0	4.2	D4	D5	D6	D7	PULSE SREV	ON	ON	ON	ON	200	OFF	ON	ON	ON	400	ON	OFF	ON	ON	800	OFF	OFF	ON	ON	1600	ON	ON	OFF	ON	3200	OFF	ON	OFF	ON	6400	ON	OFF	OFF	ON	12800	OFF	OFF	OFF	ON	25600	ON	ON	ON	OFF	1000	OFF	ON	ON	OFF	2000	ON	OFF	ON	OFF	4000	OFF	OFF	ON	OFF	5000	ON	ON	OFF	OFF	8000	OFF	ON	OFF	OFF	10000	ON	OFF	OFF	OFF	20000	OFF	OFF	OFF	OFF	40000	D3	I/O Mode	OFF	Pulse Mode	ON	I/O Mode	ON	I/O Mode	OFF	Pulse Mode	ON	I/O Mode
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电流设置:	I <sub>p</sub> (A)	1.0	1.5	2.0	2.4	2.8	3.3	3.7	4.2
	I <sub>m</sub> (A)	0.7	1.1	1.4	1.7	2.0	2.4	2.7	3.0
	D0	ON	OFF	ON	OFF	ON	OFF	ON	OFF
	D1	ON	ON	OFF	OFF	ON	ON	OFF	OFF
	D2	ON	ON	ON	ON	OFF	OFF	OFF	OFF

细分设置:	PULSE/REV	200	400	800	1600	3200	6400	12800	25600	1000	2000	4000	5000	8000	10000	20000	40000
	D4	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
	D5	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
	D6	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
	D7	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

技 术 参 数 ：	功能		参数
	供电电压		24-40VDC
	可调电流		8 档可调，最高有效电流 3.0A
	细分设定		16 档可调，最高 40000ppr
	驱动电机		20,28,29,35,42,57 全系列
	释放功能		具备，MF 接通电机释放，默认留空为锁机状态。
	短路保护		有效
	单双脉冲		可设定，SP12=0 单脉冲，1 双脉冲
	速度模式		D3 按下有效，速度可通过细分拨码开关改变，每档间隔 30rpm，PU 导通转动，断开停止。
	可调参数:		SP01
SP05			滤波常数，0-6，值越大，低速平滑越好，太大滞后严重，同步性变差。
SP17			电机电感量，匹配不同电机，调大电机高速性能好，太大电机会啸叫，刚好不啸叫为宜

注：可调参数需通过星火专用调试工具进行调试。