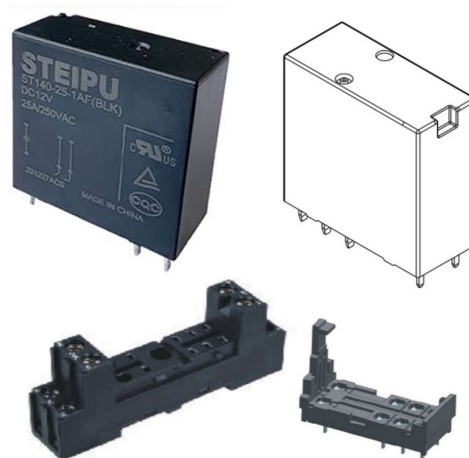


# ST140-25 工业/新能源继电器 Industry/New Energy Relay

## 特性 Features

- 1组25A 负载开闭能力 1 Pole 25A switching capability
- 1.5mm, 2.0mm间隙可选 1.5mm, 2.0mm gap optional
- 普通品机械寿命 1000 万次以上 Standard type M-life 10KK cycles
- 空间距离大于 6.4mm, 爬电距离大于 8mm Clearance distance: >6.4 mm, and creepage distance: >8 mm.
- 可提供满足 IEC62109-1 标准产品 Comply IEC62109-1 available
- 可提供满足 IEC60335-1 标准产品 Comply IEC60335-1 available
- UL绝缘系统:F级 UL insulation system: Class F
- 可提供配套插座使用 Socket Available
- 环保产品(符合RoHS标准) Environmental friendly product (RoHS compliant)



## 典型应用 Application

- 光伏逆变器/工业设备/不间断电源/灯/充电/智能家居等 Photovoltaic Inverters/Industrial Equipment/ UPC/Lighting/ Charging/Smart home, etc.

## 触点参数 Contact Data

|                                   |                                                                                                                                                                                                                                                                                                          |                                                                                |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 触点间隙 Contact Gap                  | 普通品 Normal Type                                                                                                                                                                                                                                                                                          | 1.5/2.0mm GAP                                                                  |
| 触点形式 Contact Arrangement          | 1A/1B/1C                                                                                                                                                                                                                                                                                                 |                                                                                |
| 触点额定 Contact Rating               | NO/NC: 25A<br>277VAC/30VDC                                                                                                                                                                                                                                                                               | NO/NC: 25A<br>277VAC/30VDC                                                     |
| 最大切换电压 Max. Switching Voltage     | 277VAC/30VDC                                                                                                                                                                                                                                                                                             |                                                                                |
| 最大切换电流 Max. Switching Current     | 25A                                                                                                                                                                                                                                                                                                      |                                                                                |
| 触点材质 Contact Material             | 银合金 Ag alloy                                                                                                                                                                                                                                                                                             |                                                                                |
| 接触电阻 Contact Resistance           | Max.100mΩ (1A 5VDC)                                                                                                                                                                                                                                                                                      |                                                                                |
| 动作/释放时间 Operate Time/Release Time | DC Coil: ≤15ms/ ≤10ms<br>AC Coil: ≤15ms/ ≤15ms                                                                                                                                                                                                                                                           | ≤20ms/ ≤10ms                                                                   |
| 最小切换负载 Min. switching load        | 100mA 10V                                                                                                                                                                                                                                                                                                |                                                                                |
| 电耐久性 Electrical Endurance         | on: off= 1s: 9s @23°C<br>CO: 25A 250VAC 1*10 <sup>4</sup> ops<br>阻性负载 R-Load<br>NO: 25A 250VAC 3*10 <sup>4</sup> ops<br>阻性负载 R-Load<br>NO: 23A 250VAC 5*10 <sup>4</sup> ops<br>阻性负载 R-Load<br>NC: 25A 250VAC 1*10 <sup>4</sup> ops<br>阻性负载 R-Load<br>NC: 23A 250VAC 3*10 <sup>4</sup> ops<br>阻性负载 R-Load | on: off= 1s: 9s @23°C<br>NO/NC: 25A 250VAC 1*10 <sup>4</sup> ops 阻性负载 R-Load   |
| 机械耐久性 Mechanical Endurance        | 1*10 <sup>7</sup> ops Min.                                                                                                                                                                                                                                                                               | 1.5mm Gap, 5*10 <sup>5</sup> ops Min.<br>2.0mm Gap, 1*10 <sup>5</sup> ops Min. |
| 最大切换功率 Max. Switching Power       | 6925VA/750W                                                                                                                                                                                                                                                                                              |                                                                                |

## 性能参数 Characteristics

|                               |                                 |                                                                            |
|-------------------------------|---------------------------------|----------------------------------------------------------------------------|
| 绝缘电阻 Insulation Resistance    |                                 | 1000MΩ Min (at 500VDC)                                                     |
| 介质耐压 Dielectric Strength      | 断开触点间 Between Open Contacts     | Normal 1000Vrms 1min<br>1.5mm Gap 2000Vrms 1min<br>2.0mm Gap 2500Vrms 1min |
|                               | 线圈与触点间 Between Coil and Contact | 5000Vrms 1min                                                              |
| 温度范围 Temperature Range        |                                 | -40~+85°C                                                                  |
| 湿度 Ambient Operating Humidity |                                 | 5%~85%RH                                                                   |
| 振动 Vibration Resistance       |                                 | 频率 10Hz-55Hz, 双振幅 1.5mm<br>10Hz-55Hz, at double amplitude 1.5mm            |
| 冲击 Shock                      | 稳定性 Functional                  | 10G                                                                        |
|                               | 强度 Destructive                  | 100G                                                                       |
| 重量 Weight                     |                                 | Approx.19g                                                                 |

| 线圈参数 Coil Data (0.53W) only for normal type |                                    |
|---------------------------------------------|------------------------------------|
| 线圈电压范围 Coil Voltage Range                   | 3~110 VDC                          |
| 容许最大电压 Max. Continuous                      | 额定电压的120%<br>120% of Rated Voltage |
| 线圈绝缘等级 Coil Insulation System               | Class F                            |
| 额定线圈功率 Coil Rating Power                    | 约Approx. 0.53W                     |

| 线圈参数 Coil Data (0.8W)         |                                    |
|-------------------------------|------------------------------------|
| 线圈电压范围 Coil Voltage Range     | 3~110 VDC                          |
| 容许最大电压 Max. Continuous        | 额定电压的120%<br>120% of Rated Voltage |
| 线圈绝缘等级 Coil Insulation System | Class F                            |
| 额定线圈功率 Coil Rating Power      | 约Approx. 0.8W                      |

| 线圈参数 Coil Data (1.4W) only for 1.5/2.0mm gap type |                                    |
|---------------------------------------------------|------------------------------------|
| 线圈电压范围 Coil Voltage Range                         | 3~220 VDC                          |
| 容许最大电压 Max. Continuous                            | 额定电压的120%<br>120% of Rated Voltage |
| 线圈绝缘等级 Coil Insulation System                     | Class F                            |
| 额定线圈功率 Coil Rating Power                          | 约Approx. 1.4W                      |

| 线圈参数 Coil Data (1.2VA) only for normal type |                                    |
|---------------------------------------------|------------------------------------|
| 线圈电压范围 Coil Voltage Range                   | 6~240 VAC                          |
| 容许最大电压 Max. Continuous                      | 额定电压的110%<br>110% of Rated Voltage |
| 线圈绝缘等级 Coil Insulation System               | Class F                            |
| 额定线圈功率 Coil Rating Power                    | 约Approx. 1.2VA                     |

- 注:
- a) 所有数值均为在环境温度+23℃下未预通电的线圈 All the performance data are for coils that are not pre energized at 23℃ ambient temperature.

■ 型号命名标准 Model Number Legend

|                               |                                                                                                                   |     |     |   |   |   |     |   |     |        |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------|-----|-----|---|---|---|-----|---|-----|--------|
|                               | ST140                                                                                                             | -25 | -1A | S | P | F | -20 | B | XXX | /DC12V |
| 基本型号 Basic Type:              | ST140                                                                                                             |     |     |   |   |   |     |   |     |        |
| 触点负载 Contact Rating:          | 25: 25A                                                                                                           |     |     |   |   |   |     |   |     |        |
| 触点结构 Contact Arrangement:     | 1A: 1组常开 1 Form A; 1B: 1组常闭 1 Form B<br>1C: 1组转换 1 Form C                                                         |     |     |   |   |   |     |   |     |        |
| 防护构造 Protective Construction: | Blank: 耐助焊剂型 Flux tight; S: 塑料密封型 Sealed                                                                          |     |     |   |   |   |     |   |     |        |
| 线圈功耗 Coil Power:              | Blank: 0.53W 或 1.1-1.4VA; B: 1.4W; P: 0.8W                                                                        |     |     |   |   |   |     |   |     |        |
| 绝缘等级 Insulation class:        | F: F级 Class F                                                                                                     |     |     |   |   |   |     |   |     |        |
| 触点间隙类型 Contact Gap Type:      | Blank: 标准品 Standard; 15: 1.5mm Gap; 20: 2.0mm Gap                                                                 |     |     |   |   |   |     |   |     |        |
| 外壳特性 Case Characteristic:     | Blank: 透明外壳 Transparent Case; B: 黑色外壳 Black Case                                                                  |     |     |   |   |   |     |   |     |        |
| 特殊特性 Special Characteristic:  | Blank:标准型Standard; XXX: 客户特殊特性号 Customer Special Feature Number                                                   |     |     |   |   |   |     |   |     |        |
| 线圈电压 Coil Voltage:            | 3, 5, 6, 9, 12, 15, 18, 24, 36, 48, 60, 110VDC<br>6, 12, 24, 48, 60, 110, 120, 110/125, 220, 230, 240, 220/240VAC |     |     |   |   |   |     |   |     |        |

| 线圈规格 Coil Voltage Specifications (for DC Coil) |                      |                      |                         |       |       |
|------------------------------------------------|----------------------|----------------------|-------------------------|-------|-------|
| 额定电压<br>Nominal Coil                           | 动作电压<br>Must Operate | 释放电压<br>Release Coil | 线圈电阻<br>Coil Resistance |       |       |
| VDC                                            | VDC                  | VDC                  | Ω(±10%)                 |       |       |
|                                                |                      |                      | 0.53W                   | 0.8W  | 1.4W  |
| 3                                              | 2.40                 | 0.15                 | 17                      | 11    | 6     |
| 5                                              | 4.00                 | 0.25                 | 47                      | 30    | 17.5  |
| 6                                              | 4.8                  | 0.30                 | 67                      | 45    | 25    |
| 9                                              | 7.2                  | 0.45                 | 152                     | 100   | 57    |
| 12                                             | 9.6                  | 0.60                 | 270                     | 180   | 100   |
| 15                                             | 12.0                 | 0.75                 | 420                     | 280   | 160   |
| 18                                             | 13.5                 | 0.90                 | 610                     | 400   | 230   |
| 24                                             | 14.4                 | 1.20                 | 1080                    | 720   | 410   |
| 36                                             | 28.8                 | 1.80                 | 2445                    | 1620  | 925   |
| 48                                             | 38.4                 | 2.40                 | 4345                    | 2880  | 1645  |
| 60                                             | 48.0                 | 3.00                 | 6790                    | 4500  | 2570  |
| 110                                            | 88.0                 | 5.50                 | 22800                   | 13600 | 8640  |
| 220                                            | 176.0                | 11.0                 | /                       | /     | 34500 |

| 线圈规格 Coil Voltage Specifications (for AC Coil) |                      |                      |                         |
|------------------------------------------------|----------------------|----------------------|-------------------------|
| 额定电压<br>Nominal Coil                           | 动作电压<br>Must Operate | 释放电压 Release<br>Coil | 线圈电阻<br>Coil Resistance |
| VAC                                            | VAC                  | VAC                  | Ω(±10%)                 |
| 6                                              | 4.8                  | 0.6                  | 19                      |
| 12                                             | 9.6                  | 1.2                  | 72                      |
| 24                                             | 19.2                 | 2.4                  | 290                     |
| 48                                             | 38.4                 | 4.8                  | 1200                    |
| 60                                             | 48.0                 | 6.0                  | 1800                    |
| 110                                            | 88.0                 | 11.0                 | 6000                    |
| 120                                            | 96.0                 | 12.0                 | 6000                    |
| 110/125                                        | 88.0/100.0           | 11.0/12.5            | 6000                    |
| 220                                            | 176                  | 22.0                 | 23000                   |
| 230                                            | 184                  | 23.0                 | 23000                   |
| 240                                            | 192                  | 24.0                 | 23000                   |
| 220/240                                        | 176/192              | 22.0/24.0            | 23000                   |

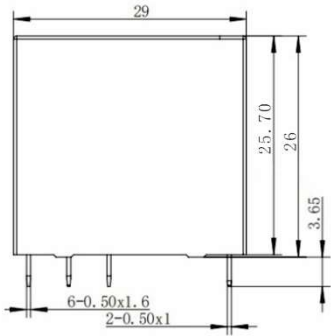
- 注:
- a) 以上值为初始值 All the performance data are initial values.
- b) 线圈电阻是在线圈温度23℃，公差为±10% Coil resistance is tested at 23℃ ambient temperature, ±10% tolerance.

外形尺寸、PCB 布局、接线图 Outline Dimensions, PCB Layout, Wiring Diagram (mm)

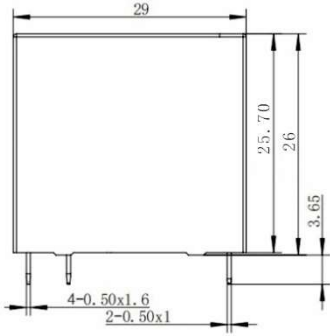
外形尺寸 Outline Dimensions

透明外壳或普通间隙类型 Transparent Case or Normal Contact Gap Type

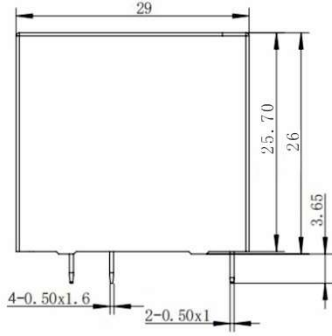
1 组转换 1 Form C



1 组常开 1 Form A

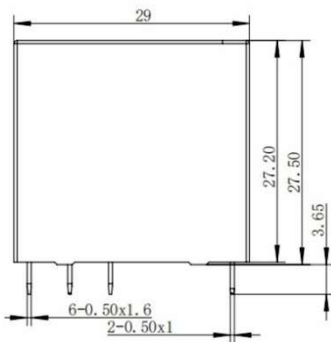


1 组常闭 1 Form B

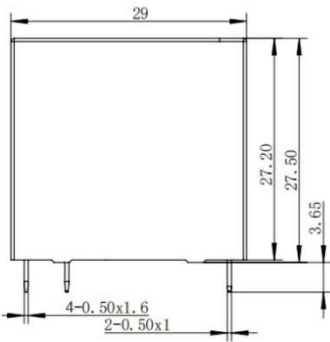


黑色外壳或大间隙类型 Black Case or Big Contact Gap Type

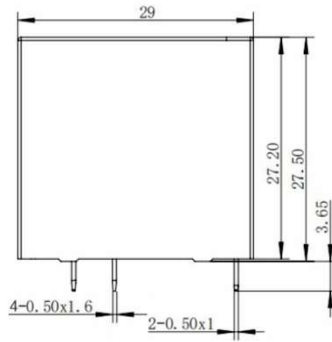
1 组转换 1 Form C



1 组常开 1 Form A

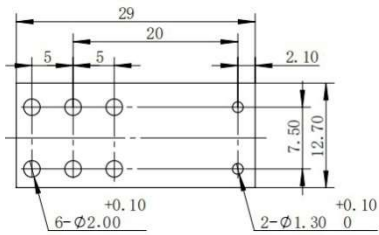


1 组常闭 1 Form B

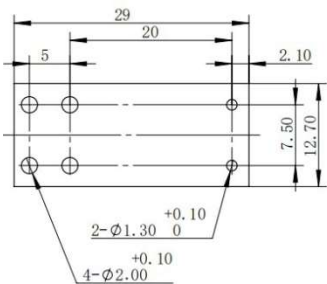


印刷线路板加工尺寸 PCB Outline Dimension Bottom View

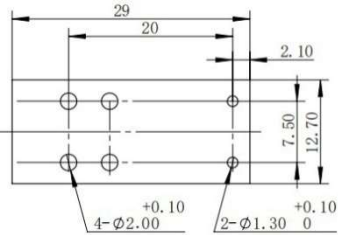
1 组转换 1 Form C



1 组常开 1 Form A

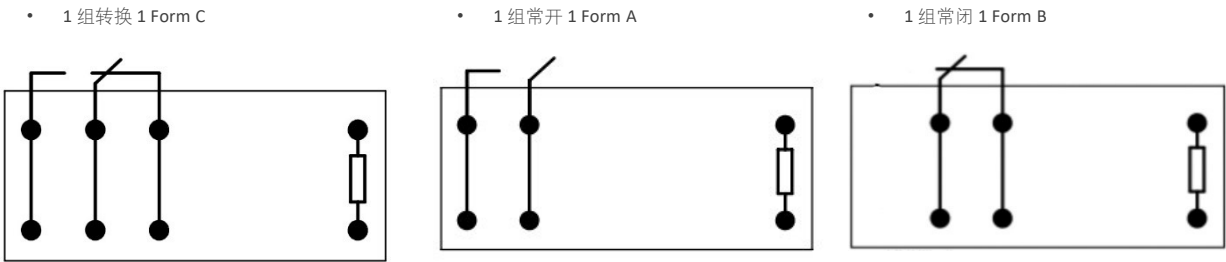


1 组常闭 1 Form B



■ 外形尺寸、PCB 布局、接线图 Outline Dimensions, PCB Layout, Wiring Diagram (mm)

◆ 接线图 Wiring Diagram Bottom View



注 Note:  
未注尺寸公差 Unspecified tolerance : <1mm: ±0.2 mm, 1~5 mm: ±0.3mm, >5mm: ±0.5mm ;  
安装孔尺寸中未注尺寸公差为± 0.1 mm PC board layout dimensions hadn't specified tolerance is ±0.1mm.

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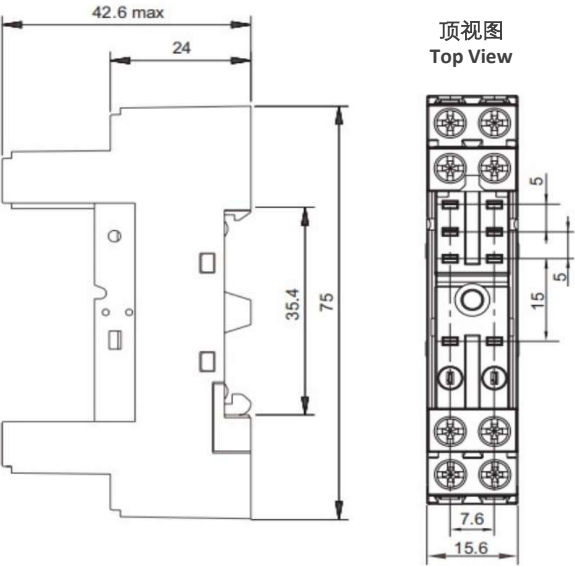
插座命名标准 Socket Number Legend

|                              |                                                                 |      |      |      |
|------------------------------|-----------------------------------------------------------------|------|------|------|
|                              | ST140                                                           | -08E | -DRA | ,XXX |
| 基本型号 Base Type:              | ST140                                                           |      |      |      |
| 插座型号 Socket Type:            | 08E: 08E系列 08E Series                                           |      |      |      |
| 安装类别 Mounting Classes:       | PCB: PCB 安装 PCB Mounting                                        |      |      |      |
|                              | DRA: 35mm 导轨 35mm DIN Rail                                      |      |      |      |
| 特殊特性 Special Characteristic: | Blank:标准型Standard; XXX: 客户特殊特性号 Customer Special Feature Number |      |      |      |

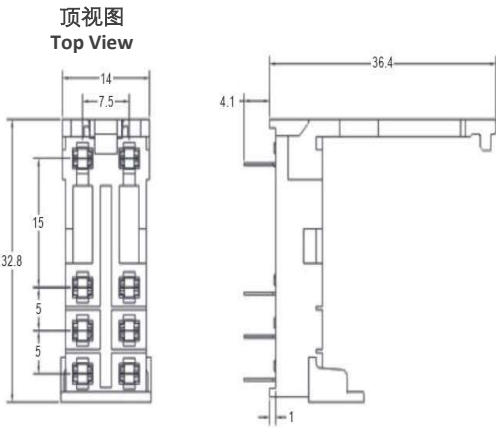
外形尺寸、PCB 布局、接线图 Outline Dimensions, PCB Layout, Wiring Diagram (mm)

外形尺寸 Outline Dimensions

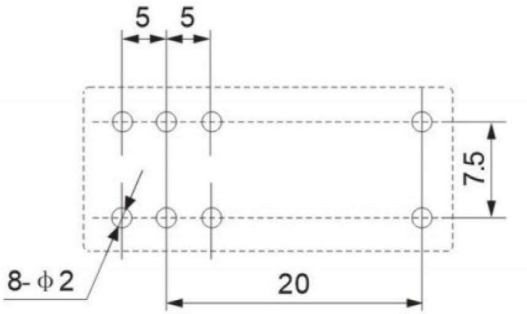
- 35mm 导轨型 35mm DIN Rail Type



- PCB安装型 PCB Mounting Type



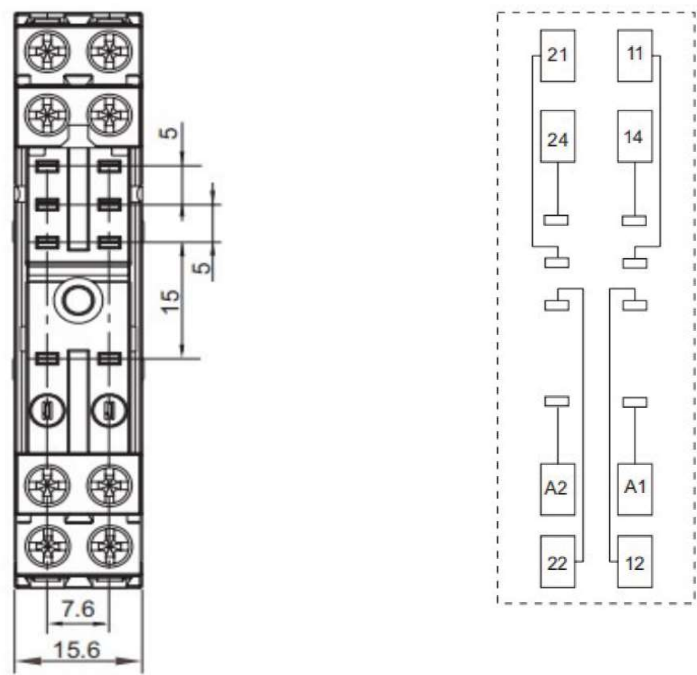
印刷线路板加工尺寸(PCB安装型) PCB Outline Dimension Bottom View (PCB Mounting Type)



注 Note:  
未注尺寸公差 Unspecified tolerance : <1mm: ±0.2 mm, 1~5 mm: ±0.3mm, >5mm: ±0.5mm ;  
安装孔尺寸中未注尺寸公差为± 0.1 mm PC board layout dimensions hadn't specified tolerance is ±0.1mm.

■ 外形尺寸、PCB 布局、接线图 Outline Dimensions, PCB Layout, Wiring Diagram (mm)

◆ 插座接线图 (35mm 导轨型) Socket Terminal-arrangement (35mm DIN Rail Type)



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