

# 产品规格书

## Product Datasheet

### F5-MD1616R

#### 主要信息 Main



|                                |                               |
|--------------------------------|-------------------------------|
| 产品系列 Range Of Product          | FC5                           |
| 产品类型 Product Or Component Type | 离散量输入输出模块 Discrete Mix module |
| 离散量输入数量 Discrete Input Number  | 16                            |
| 离散量输入类型 Discrete Input Type    | 源型/漏型 Source/Sink             |
| 离散量输出数量 Discrete output Number | 16                            |
| 离散量输出类型 Discrete output Type   | 继电器 Relay                     |

## 补充信息 Complementary

### 晶体管输入特性 Transistor Input

| 特性 Characteristics                |                              | 参数 Parameter                                                             |
|-----------------------------------|------------------------------|--------------------------------------------------------------------------|
| 额定电压 Rated Voltage                |                              | DC 24V                                                                   |
| 输入范围 Input Range                  |                              | DC 0V~28.8V                                                              |
| 额定电流 Rated Current                |                              | 7mA                                                                      |
| 峰值 Peak                           | 电压 Voltage                   | 30V                                                                      |
|                                   | 电流 Current                   | 9mA                                                                      |
| 状态 State                          | 电压 (状态 1) Voltage in state 1 | >15V                                                                     |
|                                   | 电压 (状态 0) Voltage in state 0 | <5V                                                                      |
|                                   | 电流 (状态 1) Current in state 1 | >2.5mA                                                                   |
|                                   | 电流 (状态 0) Current in state 0 | <1.0mA                                                                   |
| 隔离 Isolation                      | -                            | 光耦 Optocoupler                                                           |
| 输入阻抗 Input impedance              |                              | 3.3kΩ                                                                    |
| 兼容性 Compatibility                 |                              | 兼容 2 线制/3 线制传感器 Compatible with 2/3 wire sensors                         |
| 输入类型 Input type                   |                              | 源型/漏型 Source/Sink                                                        |
| 线缆长度与类型 Cable length and type     |                              | 最长 100m 屏蔽电缆或 50m 非屏蔽电缆<br>Max 100m shielded cable, 50m unshielded cable |
| 保护 (过电压) Protection (overvoltage) |                              | 最大 30V, 限制每天 1 小时发生频率 Maximum 30V, limited to 1 hour per day frequency   |
| 接线端子 Wiring terminal              |                              | 可拆卸端子台<br>Removable terminal block                                       |

### 继电器输出特性 Relay Output

| 特性 Characteristics | 参数 Parameter           |
|--------------------|------------------------|
| 额定电压 Rated Voltage | DC 24V; AC 220V        |
| 输入范围 Input range   | DC 5V~30V; AC100V~250V |
| 额定电流 Rated Current | 最大 2A/点 Max 2A/Point   |

|                                     |                                  |                                                                           |
|-------------------------------------|----------------------------------|---------------------------------------------------------------------------|
| 电流/组 (4点) Current/group (4-point)   |                                  | 4A (继电器输出, 在 60°C时需降容 50%) 4A (relay output @60°C, 50% derating required) |
| 峰值 Peak<br>Maximum output frequency | 最大切换电压 Maximum switching voltage | AC 250V; DC 30V                                                           |
|                                     | 电流/点 Current/point               | 5A                                                                        |
| 隔离类型 Isolation type                 |                                  | 继电器线圈 Relay coil                                                          |
| 最大输出频率<br>Maximum output frequency  | 最大负载 Max Load                    | 0.1Hz                                                                     |
|                                     | 无负载 Without load                 | 5Hz                                                                       |
| 阻性负载 Resistive load                 |                                  | 2A/点, DC 24V/ AC 220V                                                     |
| 机械寿命 Mechanical life                |                                  | 最少 5,000,000 次 Minimum 5,000,000 times                                    |
| 电气触点寿命 Electrical contact life      |                                  | 最少 100,000 次 Minimum 100,000 times                                        |
| 短路保护 Short circuit protection       |                                  | 无 None                                                                    |
| 接线端子 Wiring terminal                |                                  | 可拆卸端子台 Removable terminal block                                           |

## 环境特性 Environmental Characteristics

| 类别 Category                          | 特性 Characteristic                                         |
|--------------------------------------|-----------------------------------------------------------|
| 运行环境温度 Operating ambient temperature | -10°C~60°C                                                |
| 存储温度 Storage temperature             | -20°C~70°C                                                |
| 相对湿度 Relative humidity               | 55%~95%, 无凝露 without condensation                         |
| 污染等级 Class of pollution              | 2 (IEC60664)                                              |
| 防护等级 Class of protection             | IP20                                                      |
| 涂层 Coating                           | 涂层防护, 干膜厚度≥20μm; 加强版干膜厚度≥40μm Coated protection, dry film |

|                          |                                                                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | thickness ≥ 20μm; reinforced dry film thickness ≥ 40μm                                                                                            |
| 海拔高度 Altitude            | 运行: 0m~3,000m Operation: 0m~3,000m<br>运输: ≤6,000m Transportation: ≤6,000m                                                                         |
| 抗震性能 Seismic performance | 5Hz~13.2Hz, 振幅 7mm; 13Hz~100Hz, 加速度 2G, X、Y、Z 三轴方向各 20 次<br>5~13.2Hz Amplitude 7mm, 13Hz~100Hz Acceleration 2G, 20 times each in X, Y and Z axes  |
| 抗冲击性能 Impact performance | 半正弦波, 加速度 15G, 持续 11ms, X、Y、Z 三轴方向各 6 次<br>Semi-positive sine wave, acceleration 15G, duration 11ms, 6 times in each of the X, Y and Z directions |

### 电磁敏感性 Electromagnetic Susceptibility

| Standard              | Method                    | Item                                                      |
|-----------------------|---------------------------|-----------------------------------------------------------|
| EN IEC 61000-6-4:2019 | CISPR 16-2-1              | Conducted Emissions at AC Mains Power Port (150kHz-30MHz) |
|                       | CISPR 32                  | Conducted Emissions at Wired Network Port(150kHz-30MHz)   |
|                       | CISPR 16-2-3              | Radiated Emissions(30MHZ-1GHz)                            |
|                       | CISPR 16-2-3              | Radiated Emissions(Above 1GHz)                            |
| EN IEC 61000-6-2:2019 | EN 61000-4-6:2014         | Conducted Immunity at AC Mains Power Port(150kHz-80MHz)   |
|                       | EN 61000-4-6:2014         | Conducted Immunity at Signal Port150kHz-80MHz             |
|                       | EN 61000-4-4:2012         | Electrical Fast Transients Burst at AC Mains Power Port   |
|                       | EN 61000-4-4:2012         | Electrical Fast Transients Burst at Signal Port           |
|                       | EN 61000-4-2:2009         | Electro static Discharge                                  |
|                       | EN 61000-4-8:2010         | Power Frequency Magnetic Field                            |
|                       | EN IEC 61000-4-3:2020     | Radiated Immunity(80MHZ-6GHz)                             |
|                       | EN 61000-4-5:2014+A1:2017 | Surge at AC Mains Power Port                              |
|                       | EN 61000-4-5:2014+A1:2017 | Surge at Signal Port                                      |
|                       | EN IEC 61000-4-11:2020    | Voltage Dips and Interruptions                            |

F5 系列交流电源型 PLC 系统符合下述的安全标准:

The F5 Series AC power supply type PLCs system meets the following safety standards:

- IEC 61010-1:2010 + A1:2019
- AMD1: 2016

### 端子定义 Definition of Terminals

|            |                           |    |     |     |     |     |    |     |     |     |     |   |
|------------|---------------------------|----|-----|-----|-----|-----|----|-----|-----|-----|-----|---|
| F5-MD1616R | Upper side<br>Lower layer | C4 | Q0  | Q1  | Q2  | Q3  | C5 | Q4  | Q5  | Q6  | Q7  | ● |
|            | Upper side<br>Upper layer | C0 | I0  | I1  | I2  | I3  | C1 | I4  | I5  | I6  | I7  | ● |
|            | Lower side<br>Upper layer | C2 | I10 | I11 | I12 | I13 | C3 | I14 | I15 | I16 | I17 | ● |
|            | Lower side<br>Lower layer | C6 | Q10 | Q11 | Q12 | Q13 | C7 | Q14 | Q15 | Q16 | Q17 | ● |

### 外形尺寸 Dimension:

84\*94\*83 (W\*H\*D)

单位 Unit: mm

