

HTS Series 3-Phase Solid State Relay

HTS系列三相固态继电器

3-Phase SSR | 480VAC Output
11-32VDC Input | Integrated Heatsink



7 Key Features | 七大核心特性

- 1. 三相 每级30A 输出规格**
3-phase 30A per-pole output rating
- 2. 最大 480VAC 负载电压**
Maximum 480VAC load voltage
- 3. 11-32VDC 直流控制输入**
11-32VDC DC control input
- 4. 过零触发可控硅输出**
Zero-cross thyristor AC output
- 5. 集成散热器导轨安装**
Integrated-heatsink DIN-rail mounting
- 6. 内置压敏过压保护**
Integrated varistor overvoltage protection
- 7. IP20 端子保护与状态指示**
IP20 terminal protection and status indication

Product Overview | 产品概述

HTS48D30 为 HTS 系列三相固态继电器，面向三相加热、风机、水泵和自动化负载控制，提供每极 30A 额定电流、最大 480VAC 负载电压和 11-32VDC 控制输入。产品采用过零触发可控硅输出、集成散热器、内置压敏过压保护和前端状态指示，可在控制柜内实现高频率、低维护的无触点三相开关控制。

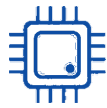
The HTS48D30 is a three-phase solid state relay in the HTS series for three-phase heating, fan, pump and automation load control. It provides a 30A per-pole rating, maximum 480VAC load voltage and 11-32VDC control input. Zero-cross thyristor output, integrated heatsink, built-in varistor protection and front status indication support high-cycle, low-maintenance contactless three-phase switching inside control cabinets.

Ordering Code | 型号说明

HTS	48	D	30
产品系列 Product Series	电压等级 Voltage Code	控制方式 Control Type	额定电流 Rated Current
HTS: 三相固态继电器系列 HTS: three-phase solid state relay series	48: 最大 480VAC 负载电压 48: Maximum 480VAC load voltage	D: 直流控制输入 D: DC control input	30: 每极 30A 额定负载电流 30: 30A rated load current per pole

Typical Applications | 典型应用

 三相加热控制 Three-phase Heating Control	 自动化控制柜 Automation Cabinets	 风机与暖通设备 Fans and HVAC Equipment
 塑料与成型设备 Plastic and Molding Equipment	 包装机械 Packaging Machinery	 测试与老化设备 Test and Burn-in Equipment



特性与安装 / Characteristics & Integration

通用数据表 | General Data

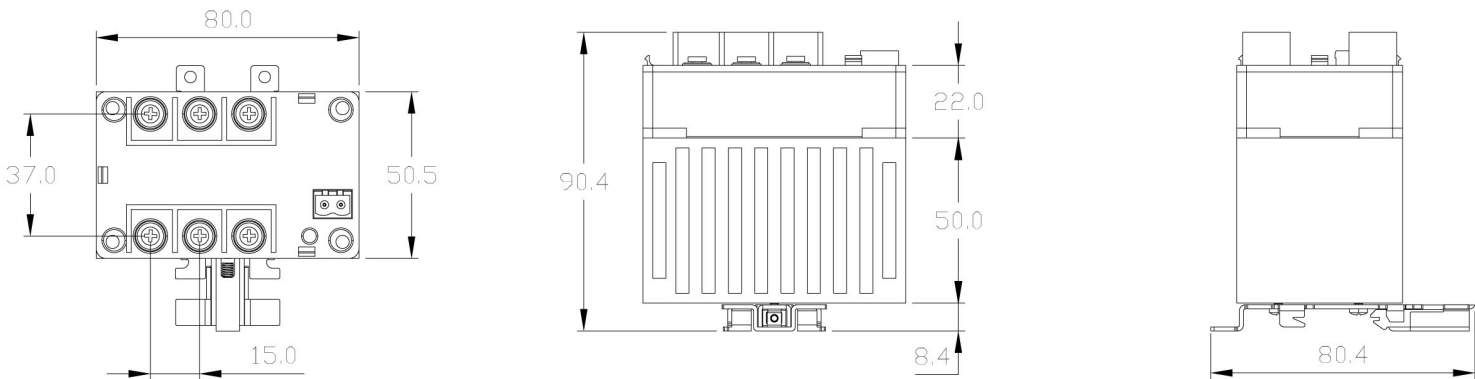
材料 / Material	PA66 (UL94 V0), black housing / aluminum heatsink
安装方式 / Mounting	DIN rail, integrated heatsink
产品宽度 / Product width	80mm class
触摸保护 / Touch protection	IP20 front-terminal protection
过压类别 / Overvoltage category	III, 6kV impulse withstand
输入/输出-外壳绝缘 / Input/output-case isolation	4000Vrms
重量 / Weight	Approx. 850g
工作温度 / Operating temperature	-40 to +80 °C with derating
储存温度 / Storage temperature	-40 to +100 °C
相对湿度 / Relative humidity	95%, non-condensing @ 40°C
污染等级 / Pollution degree	2
安装海拔 / Installation altitude	0-1000m; derate 1% FLC / 100m above 1000m

系列型号表 | Series Model Matrix

型号 Model	额定电流 Rated Current	负载电压范围 Load Voltage Range	控制电压范围 Control Voltage Range	输出 / 触发 Output / Trigger
HTS48D15	15A	480VAC	11-32VDC	DC control zero-cross
HTS48D30	30A	480VAC	11-32VDC	DC control zero-cross

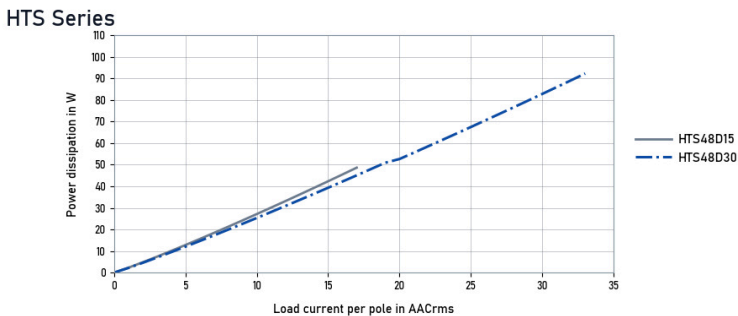
外形尺寸 | Mechanical Dimensions

单位 / Unit: mm

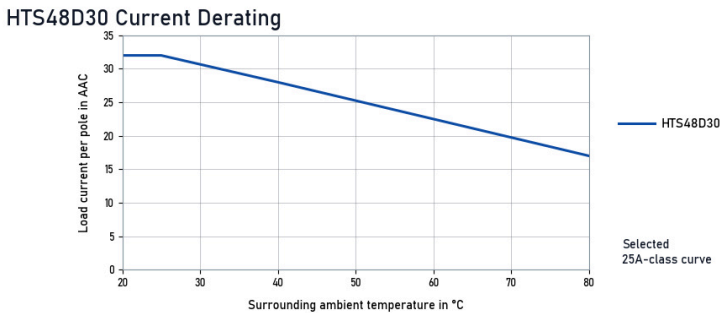


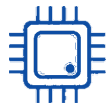
功耗与三相降额曲线 | Power Dissipation & 3-Phase Derating

三相输出功耗曲线 / Three-phase output power dissipation



环境温度电流降额曲线 / Ambient Temperature Current Derating Curve





兼容性和符合性

Compatibility & Compliance

项目 Item	参数 Rating
认证与应用 Certification and application	CE / UL / cUL / RoHS application requirements
低压开关设备 Low-voltage switchgear	EN/IEC 60947-4-3
电磁兼容 EMC	EN/IEC 61000-4 series, EN 55011 Class A
短路额定 Short-circuit rating	100kArms SCCR, 600VAC max. with Class J fuse
过压保护 Overvoltage protection	Integrated varistor, 1200Vp blocking class
振动/冲击 Vibration / impact	2g per axis; 15/11g/ms application class



接线规格表

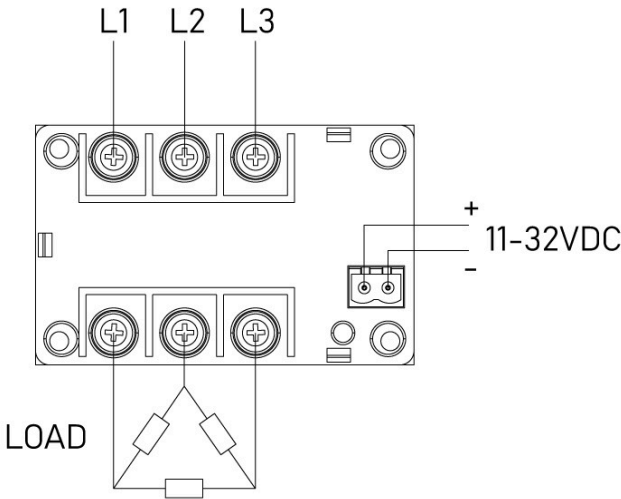
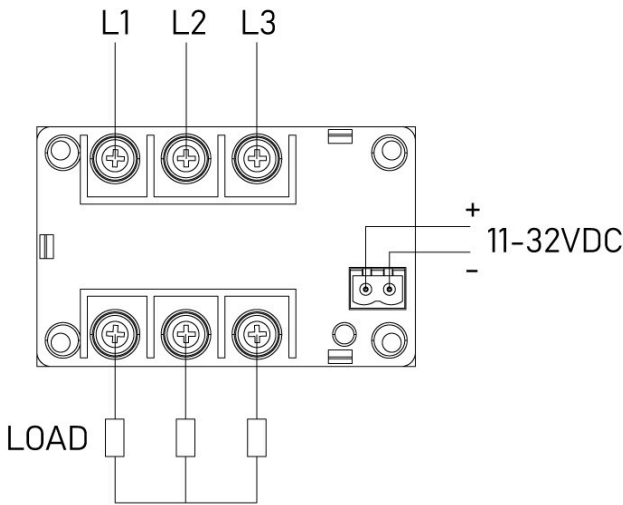
Wiring Specification Table

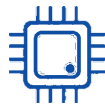
项目 Item	功率端 Power terminals	控制端 Control terminals
端子 Terminals	1/L1, 3/L2, 5/L3, 2/T1, 4/T2, 6/T3	A1+, A2-
导体 Conductors	75°C copper wire	60/75°C copper wire
连接类型 Connection type	M3 screw / box clamp	Pluggable control terminal
剥线长度 Stripping length	11mm	8mm
硬线线径 Solid / stranded wire	1x 2.5-25.0mm ² / 14-3AWG	0.5-2.5mm ² / 18-12AWG
软线线径 Flexible wire	1x 2.5-16.0mm ² / 14-6AWG with sleeve	0.5-2.5mm ² / 20-12AWG
扭矩 Torque	2.5-3.0Nm	0.4-0.5Nm
保护接地 Protective earth	M3 PE, 1.5Nm	Required for Class I applications



三相接线示意图

3-Phase Wiring Diagram





性能 / Performance

输出参数表 | Output Parameters

项目 Item	HTS48D30
额定工作电流 [AAC @ °C] Rated operational current [AAC @ °C]	AC-51: 30 @ 40, 37 @ 25; AC-53a: 14 @ 40
负载电压与频率 [VAC, Hz] Load voltage and frequency [VAC, Hz]	480, 45-65
相间电压不平衡 [%] Permissible voltage unbalance [%]	<=15 between L1/L2/L3
阻断电压 [Vp] Blocking voltage [Vp]	1200
输出保护与漏电流 [mAAC] Output protection and leakage [mAAC]	Integrated varistor; <5 @ rated voltage
最小工作电流 [mAAC] Minimum operational current [mAAC]	400
重复过载电流 [AAC, s, cycle] Repetitive overload current [AAC, s, cycle]	107, 1 on / 9 off, 50
非重复浪涌与 I2t [Ap, ms, A2s] Non-repetitive surge and I2t [Ap, ms, A2s]	1150, t=10; I2t 6600
电机功率 @ 400/480VAC [HP / kW] Motor rating @ 400/480VAC [HP / kW]	10 / 5.5; 10 / 7.5
功率因数与 dV/dt [V/us] Power factor and dV/dt [V/us]	>0.5 at rated voltage; 1000

输入参数表 | Input Parameters

项目 Item	参数 Rating
控制电压范围 [VDC] Control voltage range [VDC]	11-32
确保导通电压 [VDC] Guaranteed ON Voltage [VDC]	10.5
确保关断电压 [VDC] Guaranteed OFF Voltage [VDC]	<=5
最大反向电压 [VDC] Maximum reverse voltage [VDC]	32
最大输入电流 [mADC @ VDC] Maximum input current [mADC @ VDC]	<=15 @ 32
响应时间 [cycle, us @ VDC] Response time [cycle, us @ VDC]	0.5 + 500 @ 24
触发方式 Trigger mode	Zero-cross AC output
端子定义 Terminal assignment	A1+ / A2- control input
状态指示 Status indication	Green CONTROL LED

热数据 | Thermal Data

项目 Item	参数 Rating
散热结构 Thermal construction	Integrated heatsink, upright DIN-rail mounting
30A 满载条件 30A full-load condition	20mm side spacing, Ta <=40°C
0mm 间距降额 0mm spacing derating	27A @ 40°C; 12.5A @ 80°C
20mm 间距降额 20mm spacing derating	30A @ 40°C; 17.5A @ 80°C
安装方向 Mounting orientation	Upright heatsink, within +/-10°
柜内间距 Cabinet clearance	Y1 >=50mm top, Y2 >=100mm opposite row

安装间距与降额 | Spacing & Derating

安装间距 Spacing	25°C	40°C	80°C
0mm side spacing	33.5AAC	27.0AAC	12.5AAC
20mm side spacing	37.0AAC	30.0AAC	17.5AAC

说明 / Note: Values are per-pole AAC current limits for integrated-heatsink three-phase operation.