



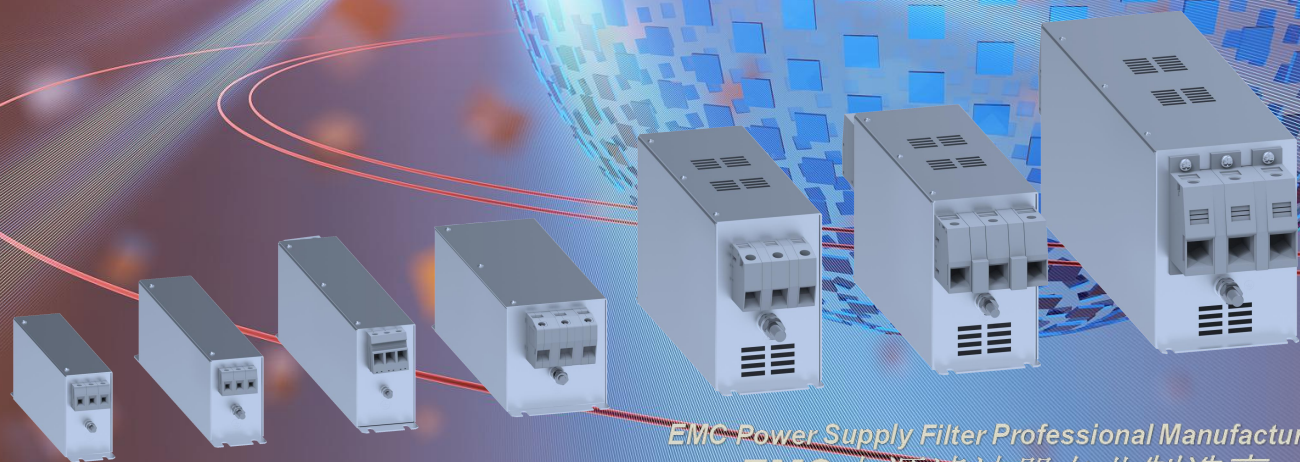
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FM3258

3x480/277VAC

3x520/300VAC

7-180A



EMC Power Supply Filter Professional Manufacturer

EMC电源滤波器专业制造商

| EMC Power Filter | Sine Wave Filter | DVDT Filter | LCL Filter | Harmonic Filter |
| EMC电源滤波器 | 正弦波滤波器 | DVDT滤波器 | LCL滤波器 | 谐波滤波器 |

瓦恩默电气
中国·上海

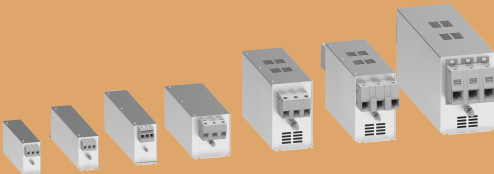
FM3258

Ultra-compact EMC/RFI Filter for Motor Drives Applications
电机驱动专用超紧凑型 EMC/RFI 滤波器

Applications: Three-phase variable frequency / servo drives, inverters / converters, machine tools and process automation equipment with energy conversion devices, HVAC, elevators, power supplies, UPS, and other general three-phase scenarios.

应用: 三相变频 / 伺服驱动、逆变器 / 变流器, 含能量转换装置的机床及过程自动化设备, HVAC、电梯、电源、UPS 等通用三相场合等

CE/RoHS compliant



瓦恩默
电气集团

FM3258



型号命名 P/N SYSTEM

FM	3258	-	7	-	44	XXX
Project code 项目代码	Series 系列: 3258: 3x480/277VAC 3258H:3x520/300VAC	-	Rated Current额定电流(A): 7,16,30,42,55, 75,100,130,180	-	Input/Output European Terminal: 输入/输出欧式端子: 44:7~16A 33:30~42A 34:55~75A 35:100~130A 40:180A	Custom code自定义 Alphanumeric数字或字母

特性与优势 Features And Benefits

- 1. 体积超薄紧凑, 节省柜内空间, 同电流等级里纤薄型设计.**
Ultra-thin and compact size, saves cabinet space, slim design within the same current rating.
- 2. 共模电感饱和能力强, 长线工况稳定, 电感优化磁路, 电机电缆最长支持 50m.**
Strong anti-saturation capability of common-mode inductor, stable performance for long cable conditions. Optimized magnetic circuit, supporting motor cable up to 50m.
- 3. 150kHz ~ 30MHz 宽频衰减, 满足 EN55011, 在 50m 电缆长度内可稳定满足 EN55011 A 类; 优化设计有助于冲击 B 类传导发射.**
Wideband attenuation from 150kHz ~ 30MHz, compliant with EN55011. Stably meets EN55011 Class A with 50m motor cable; optimized design helps to achieve Class B conducted emission.
- 4. 设计符合标准: UL1283、UL60939、CSA 22.2 No.8-13、IEC/EN60939.**
Design corresponding to: UL1283, UL60939, CSA 22.2 No.8-13, IEC/EN60939.
- 5. 过载能力强, 驱动器上电冲击耐受好, 上电瞬间可承受 4 倍额定电流; 每小时可短时承受 1.5 倍额定电流 1 分钟, 应对电机启动冲击, 可靠性高.**
Excellent overload capacity, good withstand for drive power-on surge. Instantly withstand 4 times rated current at power-up; 1.5 times rated current for 1 minute per hour to handle motor starting surge with high reliability.
- 6. 宽温域工作温度: -25°C ~ +100°C; CE 认证, UL94 V-0 阻燃, IP20.**
Wide operating temperature range: -25°C ~ +100°C; CE certified, UL94 V-0 flame retardant, IP20.
- 7. 提升整机抗扰, 保护驱动器, 安装在驱动器电源输入端, 抑制电网与驱动器之间双向噪声, 提高伺服、变频器整机可靠性与传导抗扰度.**
Improve equipment immunity and protect the drive. Installed at the power input of the drive, suppresses bi-directional noise between the grid and drive, enhances overall reliability and conducted immunity of servo and VFD systems.

Product Model 产品型号	Operate current 额定电流 [A]	Driver Power 驱动器功率 [KW]	Leakage current 泄漏电流[mA]	Power Loss @25°C/50Hz 功率损耗[W]	Input/Output Connections 输入/输出连接	Weight 重量[KG]
FM3258-7-44	7 (7.7)	4	4.3	3.8	44	0.5
FM3258-16-44	16 (17.5)	7.5	4.3	6.1	44	0.8
FM3258-30-33	30 (32.9)	15	4.3	11.8	33	1.2
FM3258-42-33	42 (46.0)	22	4.3	15.7	33	1.4
FM3258-55-34	55 (60.2)	30	4.3	25.9	34	2.0
FM3258-75-34	75 (82.2)	37	4.3	32.2	34	2.7
FM3258-100-35	100 (109.5)	55	4.3	34.5	35	4.3
FM3258-130-35	130 (142.4)	75	4.3	43.1	35	4.5
FM3258-180-40	180 (197.1)	110	4.3	58.3	40	6.0
FM3258H-7-44	7 (7.7)	4	4.7	3.8	44	0.5
FM3258H-16-44	16 (17.5)	7.5	4.7	6.1	44	0.8
FM3258H-30-33	30 (32.9)	15	4.7	11.8	33	1.2
FM3258H-42-33	42 (46.0)	22	4.7	15.7	33	1.4
FM3258H-55-34	55 (60.2)	30	4.7	25.9	34	2.0
FM3258H-75-34	75 (82.2)	37	4.7	32.2	34	2.7
FM3258H-100-35	100 (109.5)	55	4.7	34.5	35	4.3
FM3258H-130-35	130 (142.4)	75	4.7	43.1	35	4.5
FM3258H-180-40	180 (197.1)	110	4.7	58.3	40	6.0

* Calculated at rated current, 440 VAC (FM3258)/480 VAC (FM3258H) and cos phi=0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.

* 以额定电流、440 VAC (FM3258) /480 VAC (FM3258H) 及功率因数0.8计算。具体数值取决于驱动器、电机及整个应用的效率。

** Standardized calculated leakage current acc. IEC60939 under normal operating conditions (FM3258 at 480 VAC and FM3258H at 520 VAC).

** 根据 IEC60939 标准, 在正常工作条件下的标准化计算漏电流 (FM3258 在 480 VAC, FM3258H 在 520 VAC) 。

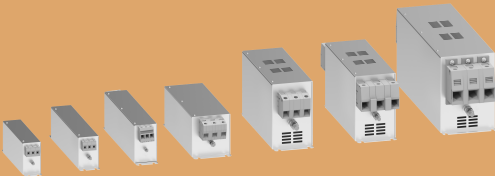
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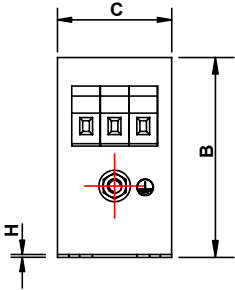
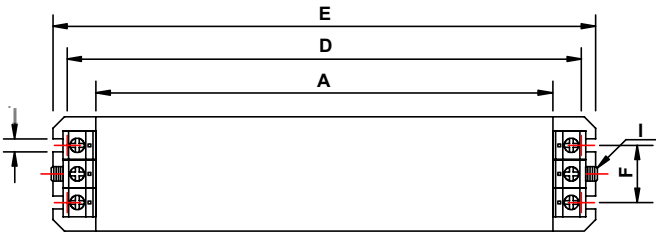
FM3258



性能参数 Performance parameter

额定工作电压	Nominal operating voltage	FM3258: 400 VAC FM3258H: 480 VAC
额定电流	Rated Currents	7-180A @ 50°C
最大持续工作电压	Maximum continuous operating voltage	FM3258: 3x480/277VAC FM3258H: 3x520/300VAC
过载能力	Overload capability	4x rated current at switch on; 1.5x rated current for 1 minute, once per hour 上电瞬间承受 4 倍额定电流, 每小时可短时承受 1.5 倍额定电流, 持续 1 分钟
工作频率	Operating frequency	DC to 60 Hz
耐压测试电压	High potential test voltage	P → E 2650 / 2750 VDC for 2 sec P → P 2100 / 2250 VDC for 2 sec
温度范围 (工作及存储)	Temperature range (operation and storage)	-25°C to +100°C (25/100/21)
设计符合	Design corresponding to	UL1283, UL60939, CSA 22.2 No.8-13, IEC/EN60939
阻燃等级符合	Flammability corresponding to	UL 94 V-0
防护等级	Protection category	IP 20

外形尺寸图 Mechanical drawing



Code	7A	16A	30A	42A	55A	75A	100A	130A	180A
A	160	220	240	240	220	240	240	240	350
B	70	70	85	85	90	145	145	145	170
C	40	45	50	50	85	90	90	90	120
D	180	235	255	255	235	255	255	255	365
E	190	250	270	270	250	270	270	270	380
F	20	25	30	30	60	60	60	60	102
G	4.5	5.4	5.4	5.4	5.4	6.5	6.5	6.5	6.5
H	1	1	1	1	1	1	1	1	1.2
I	M5	M5	M5	M5	M6	M6	M8	M8	M10

* 全部尺寸单位 mm; 1 英寸 = 25.4mm; 未注公差按 ISO 2768-m/EN 22768-m
* All dimensions in mm; 1 inch = 25.4 mm Tolerances according: ISO 2768-m/EN 22768-m

输入/输出 连接器 截面图

Input / Output connectors cross sections

输入 / 输出连接器 Input / Output connectors					
欧式端子Euro terminal	44	33	34	35	40
额定电流 Rated Currents	7~16A	30~42A	55~75A	100~130A	180A
硬导线Solid wire	10mm ²	16mm ²	35mm ²	50mm ²	95mm ²
软导线Flex wire	6mm ²	10mm ²	25mm ²	50mm ²	95mm ²
AWG美标线AWG type wire	AWG 8	AWG 6	AWG 2	AWG 1/0	AWG 4/0
推荐扭矩Recom. torque	1~1.2Nm	1~1.2Nm	1.8~2Nm	2.3~2.5Nm	17~20Nm

FM3258

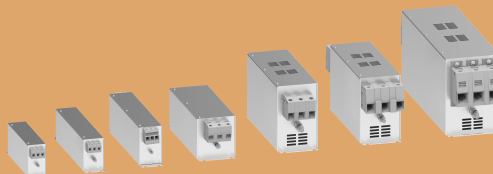
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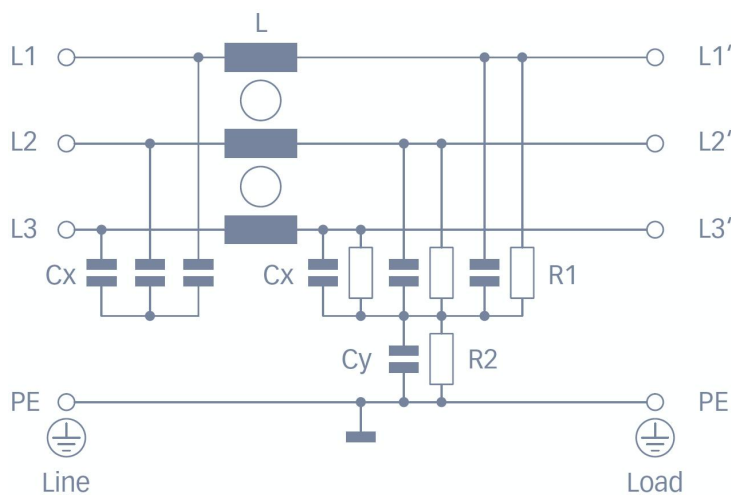


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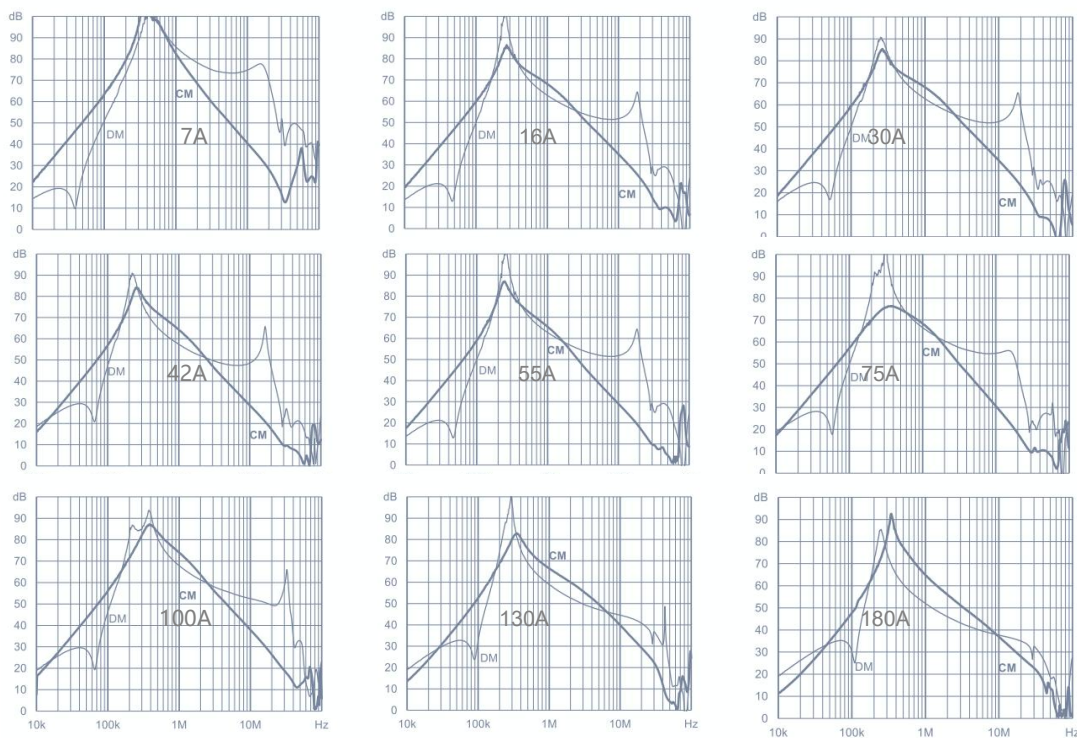
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电气原理图 Electrical schematic



插入损耗(dB) Insertion loss(dB)



依据 CISPR 17 标准; 差模 (DM): 50Ω 源 / 50Ω 负载, 对称测试; 共模 (CM): 50Ω 源 / 50Ω 负载, 非对称测试。
Per CISPR 17; Differential Mode (DM): 50Ω source / 50Ω load, symmetrical test; Common Mode (CM): 50Ω source / 50Ω load, asymmetrical test.



FM系列电源滤波器使用注意事项:

1. 存储及运行环境要求 / Storage and Operating Environment Requirements

本电源滤波器禁止露天使用，严禁暴晒、淋雨、浸水。设备仅限在通风良好、干燥洁净、无油污粉尘、无腐蚀性气体及腐蚀性液体的室内环境存储与运行，避免腐蚀介质、污染物侵蚀设备结构，影响电气性能与使用寿命。

This power filter is prohibited from outdoor application, direct sunlight exposure, rain and water immersion. It shall only be stored and operated in a well-ventilated, dry and clean indoor environment free of oil, dust, corrosive gases and corrosive liquids, so as to prevent equipment structure erosion caused by corrosive media and pollutants which may affect electrical performance and service life.

设备环境参数需严格满足以下技术要求：工作及存储环境温度 $-30^{\circ}\text{C} \sim +65^{\circ}\text{C}$ ；环境温度为 $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 时，空气相对湿度 $\leq 90\%$ ，环境无凝露、无结霜、无积水。

The environmental parameters shall strictly comply with the following technical requirements: operating and storage ambient temperature: $-30^{\circ}\text{C} \sim +65^{\circ}\text{C}$; maximum relative humidity $\leq 90\%$ at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$, no condensation, no frost and no water accumulation.

2. 安装规范要求 / Installation Specifications

2.1 安装位置要求 / Installation Position Requirements

电源滤波器应固定安装在设备电源输入端入口处，最大限度缩短机箱内部输入线缆长度，有效抑制辐射干扰与电磁耦合干扰，保证滤波性能稳定达标。

The power filter shall be fixedly installed at the power inlet of the equipment to minimize the length of internal input cables, effectively suppress radiated interference and electromagnetic coupling interference, and ensure stable and standard filtering performance.

2.2 布线规范要求 / Wiring Requirements

电源滤波器输入线缆与输出线缆不得交叉、重叠、缠绕，严禁使用扎带捆绑固定输入、输出线路，防止产生电磁串扰，造成滤波效果下降、抗干扰性能劣化。

The input and output cables of the power filter shall not cross, overlap or twist with each other. It is forbidden to bind input and output cables with cable ties to avoid electromagnetic crosstalk, attenuation of filtering effect and degradation of anti-interference performance.

2.3 接地规范要求 / Grounding Requirements

电源滤波器金属外壳必须大面积贴合设备实现可靠接地；设备互联接地时，接地线应尽量短、粗、直，最大限度降低接地阻抗，保证接地安全、稳定、有效，符合电气安全规范。

The metal enclosure of the power filter shall be closely attached to the equipment for large-area reliable grounding. The grounding wire shall be kept as short, thick and straight as possible to minimize grounding impedance, ensure safe, stable and effective grounding and comply with electrical safety specifications.

2.4 螺栓式端子接线规范 / Bolt-type Terminal Wiring Specification

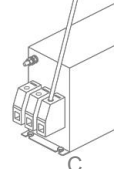
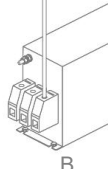
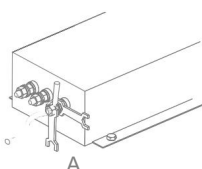
对于螺栓式输出端子，接线紧固必须采用双扳手对位操作：一把扳手固定端子根部螺母防转，另一把扳手拧紧接线螺母（详见图A）。严禁直接拧动端子螺栓，防止内部引线移位、变形，避免设备出现打火、短路、绝缘击穿、滤波性能下降等问题，同时防止端子破损失效。其余各相接线均按本规范执行，且所有端子螺栓紧固必须严格遵循产品技术手册规定的扭矩范围，禁止超扭矩或欠扭矩安装。

For bolt-type output terminals, dual-wrench operation is mandatory for fastening: one wrench fixes the root nut to prevent rotation, and the other tightens the wiring nut (see Figure A). Do not twist the terminal bolt directly to avoid displacement and deformation of internal wires, which may cause arcing, short circuit, insulation breakdown, filtering performance degradation and terminal damage. All other phases shall be wired in accordance with this specification. All terminal bolts shall be fastened strictly within the torque range specified in the technical manual; over-torque or under-torque installation is prohibited.

2.5 端子台安装规范 / Terminal Block Installation Specification

安装端子台型电源滤波器时，紧固螺丝的工具需与设备外壳保持垂直施力（详见图B），严禁倾斜、偏位操作（详见图C），防止端子台开裂、变形、损坏，确保接线牢固、绝缘可靠。

When installing terminal block type power filters, fasten screws with tools perpendicular to the equipment enclosure (see Figure B). Inclined or offset operation (see Figure C) is strictly prohibited to prevent cracking, deformation and damage of the terminal block, ensuring firm wiring and reliable insulation.



2.6 螺栓紧固与防松规范 / Thread Fastening and Anti-loosening Specification

为防止设备运行过程中螺栓紧固件件松脱，所有接线及固定螺栓部位必须加装防松垫圈。所有紧固件作业需严格按照产品规定扭矩范围执行，扭矩过大易造成端子、螺栓及壳体破损，扭矩过小易导致接线松动、接触不良，引发发热及安全患。

English: To prevent loosening of threaded fasteners during operation, anti-loosening washers must be installed on all wiring and fixing threads. All fastening operations shall comply strictly with the specified torque range. Excessive torque may damage terminals, threads and enclosure, while insufficient torque may cause loose wiring and poor contact, resulting in overheating and potential safety hazards.

2.7 极性接线规范 / Polarity Wiring Specification

电源滤波器负载端接线必须严格对照产品铭牌及说明书极性标识施工，禁止反向接线。若负载接线极性错误，设备无法实现标称滤波性能及电气指标，无法保证正常使用效果。

Load-side wiring of the power filter shall strictly follow the polarity marks on the product nameplate and manual. Reverse wiring is prohibited. Wrong polarity connection will fail to achieve rated filtering performance and electrical specifications, and cannot guarantee normal operating effect.

2.8 引出端接触与清洁要求 / Terminal Contact and Cleaning Requirements

设备主引出端及外接端子需保持洁净，严禁附着杂物、粉尘及油污。接线时需保证外接端子与主引出端完全贴合、接触可靠，防止接触电阻过大造成引出端异常温升、过热烧损。

Main outlets and external terminals shall be kept clean without debris, dust and oil contamination. Ensure full fitting and reliable contact between external terminals and main outlets during wiring to avoid excessive contact resistance, abnormal temperature rise and terminal burnout.

2.9 负载引线适配要求 / Load Cable Adaptation Requirements

电源滤波器负载端所接引线、铜排等配件，须具备匹配的额定载流能力与散热性能，建议采用标准适配截面铜排连接。禁止使用载流不足、散热条件较差的配件，避免长期运行过热，影响设备寿命及运行稳定性。

Cables, copper bars and other accessories connected to the load side of the power filter shall have matched current-carrying capacity and heat dissipation performance. Standard cross-section copper bars are recommended. Accessories with insufficient current capacity and poor heat dissipation are forbidden to avoid long-term overheating, which affects service life and operating stability.

3. 安全提醒与风险警告 / Safety Reminders and Risk Warnings

用户在安装、通电调试及投入运行前，必须完整阅读并熟知本安全说明，严格遵照规范操作，方可开展设备安装与投运工作。

Before installation, power-on commissioning and operation, users shall fully read and understand all safety instructions and operate in strict accordance with specifications before installation and commissioning.

3.1 设备搬运规范 / Handling Specification

搬运电源滤波器时，严禁以输出端子、接线端子作为受力支撑点，防止端子扭曲、松动、断裂，避免设备电气结构受损、无法正常使用。

When handling the power filter, do not support the equipment by output terminals or wiring terminals to prevent terminal distortion, loosening and fracture, which may damage the electrical structure and cause equipment failure.

3.2 接地安全准则 / Grounding Safety Principles

设备安装与运维需遵循先接保护接地、最后断开接地的安全原则。电源滤波器工作存在固有漏电流，使用前必须确保接地系统完好、接地可靠。额定电流50A及以上的电源滤波器，禁止仅依靠外壳接地，必须对设备专用接地端子进行独立可靠接地。

Equipment installation and maintenance shall follow the safety principle: connect protective grounding first and disconnect it last. Power filters produce inherent leakage current during operation, so reliable grounding must be confirmed before use. For power filters rated 50A and above, enclosure grounding alone is not allowed; independent and reliable grounding must be performed through the dedicated grounding terminal.

3.3 高压触电风险警告 / High-Voltage Electric Shock Warning

电源滤波器内部含有储能元器件，设备断电后端子仍会残留危险高压余电。设备断电后5秒内严禁触碰任何接线端子，防止触电、电弧灼伤等安全事故。

The power filter contains energy-storing components. Dangerous residual high voltage may remain on terminals after power-off. Do not touch any terminal within 5 seconds after power cut to avoid electric shock and arc burn accidents.

3.4 额定工况运行要求 / Rated Operating Conditions

设备运行电压、电流、负载等工况参数必须符合产品铭牌及技术说明书额定规格，严禁超压、超载运行。超出额定规格使用会造成设备异常发热、故障甚至永久损坏，建议配套适配的过流、过压保护装置。

Operating parameters such as voltage, current and load shall strictly conform to the rated specifications on the product nameplate and technical manual. Overvoltage and overload operation are prohibited.

Operation beyond rated range will cause abnormal heating, failure or permanent damage. Matching over-current and over-voltage protection devices are recommended.

3.5 温度与电流降额规范 / Temperature and Current Derating Specification

环境温度升高时，需按照行业标准及产品技术要求对电源滤波器执行电流降额使用。未按降额要求运行会导致设备温升超标、过热过载，长期异常运行将缩短设备使用寿命，引发老化、故障、烧毁等问题。

Current derating shall be implemented for the power filter according to industry standards and product technical requirements when ambient temperature rises. Failure to follow derating requirements will cause excessive temperature rise and overloading. Long-term abnormal operation will shorten service life and lead to aging, failure and burnout.

3.6 跌落设备使用规范 / Dropped Equipment Usage Rule

电源滤波器若发生跌落、碰撞、冲击，易造成内部线路、绝缘结构、端子连接等隐蔽损伤，存在安全隐患。原则上跌落后的产品禁止投入使用，需经专业人员全面检测合格后方可评估复用。

Dropping, collision or impact may cause hidden damage to internal circuits, insulation structures and terminal connections, bringing potential safety risks. In principle, dropped products are prohibited from being put into use. Reuse is allowed only after comprehensive inspection and confirmation by professional personnel.

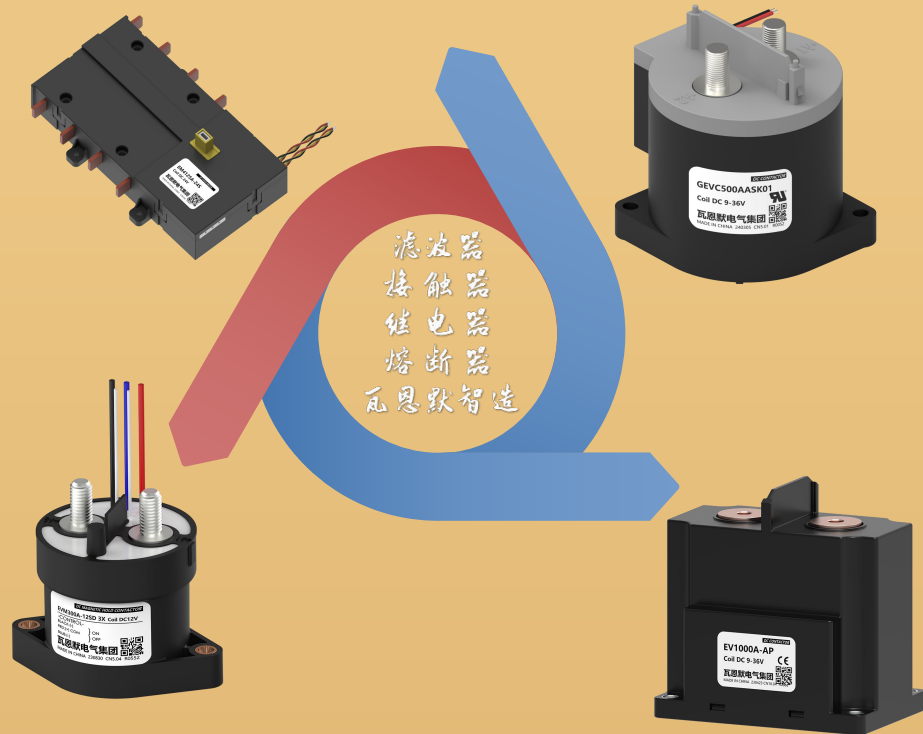


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www.ymelectric.com



RTUELEC SHARES CO.,LTD.

www.ymelectric.com

+86-21-5774 6756

sales@ymelectric.com

Building 6, Lane 208, Rongledong Road, Songjiang District, Shanghai