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22KW OBC Liquid
Model No. ATC22KC-380S380-W

Q & A

Items	Questions	Answer
1.	此 OBC (ATC22KC-380S380-W) 的輸出負載是否可為非電池組，而是直接接上常時負載，例如冷凍鏈系統？ Can the output load of this OBC (ATC22KC-380S380-W) be a non-battery pack, constant load, such as a cold chain system?	理論上： 此款 OBC（車載充電機）可以作為非電池組的恆定負載（例如冷凍鏈系統）的電源。 但我們不建議。 主要考量： 1. 系統差異： 常時負載與電池組的儲能系統是不一樣的。 2. 潛在問題： 會有 0 電壓啟動的問題。雖然此 OBC 有加熱模式可以克服此問題，但仍有負載電壓不穩定與湧浪電流 (Inrush Current) 的問題需克服。 如有此項需求，請務必事先與我們技術人員聯繫，並取得最佳的設定與建議後再執行。 Theoretically: Yes, this OBC (On-Board Charger) can be used as a power source for a non-battery pack constant load (e.g., a cold chain system). However, we do not recommend it. Main Considerations: 1. System Difference: A constant load system is different from a battery energy storage system. 2. Potential Issues: There will be a 0-voltage startup problem. Although this OBC has a heating mode to overcome this, issues with load voltage instability and inrush current still need to be addressed. If you have this requirement, you must contact our technical staff in advance to get the optimal settings and advice before implementation.
2.	OBC 的冷卻系統要求為何 (水溫、流量、壓力)？ What are the cooling system requirements for the OBC (water temperature, flow rate, pressure)?	為了確保 OBC 的最佳性能與使用壽命，冷卻系統應滿足以下要求： 冷卻方式： 液冷 (Liquid cooling) 建議水和乙二醇混合比例50%：50% 入口溫度： 60°C 流 量：12(L/min) (每分鐘 12 公升) 壓 力： 250kpa To ensure the optimal performance and lifespan of the OBC, the cooling system must meet the following

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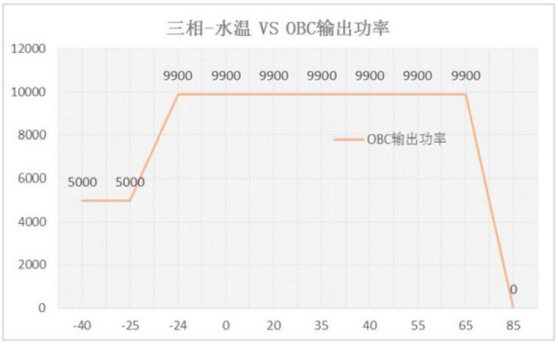
		requirements: Cooling method: Liquid cooling Coolant type: recommended to use Ethylene glycol and water 1:1. However, the final determination shall be made by the OEM. Nozzle Inlet temperature: 60°C Flow rate: 12(L/min) (12 liters per minute) Pressure: 250(kpa)
3.	OBC_Temperature 的定義與閾值： 正常/故障的具體溫度值是多少？ Definition and Thresholds for OBC_Temperature: What are the specific temperature values for normal/fault?	溫度工作區間定義 (此為內部溫度，非水溫)：  正常工作區間： -24°C 至 65°C。在此範圍內，OBC 可維持額定功率輸出。 高溫降額 (Derating)： 超過 65°C 後開始降額；當溫度達到 85°C 時，輸出功率將降至 0W。 低溫降額 (Derating)： 在 -40°C 至 -25°C 之間，OBC 將會降額輸出。 Temperature Operating Range Definition (This refers to internal temperature, not coolant temperature): Normal Operating Range: -24°C to 65°C. The OBC maintains rated power output within this range. High Temperature Derating: Derating begins above 65°C; output power drops to 0W at 85°C. Low Temperature Derating: The OBC will derate its output between -40°C and -25°C.
4.	OBC 的三相輸入電壓保護閾值 (Input Voltage Status Thresholds) 是多少？ What are the three-phase input voltage protection thresholds (Input Voltage Status Thresholds) for the OBC?	根據規格定義，三相輸入電壓的保護與恢復閾值如下： 三相 OBC 輸入欠壓 (Three-phase Input Under voltage): 保護值 (Protection Threshold): 294 Vac 恢復值 (Recovery Threshold): 304 Vac 三相 OBC 輸入過壓 (Three-phase Input Over voltage): 保護值 (Protection Threshold): 466 Vac 恢復值 (Recovery Threshold): 456 Vac According to the specifications, the protection and recovery thresholds for three-phase input voltage are as follows: Three-phase Input Under voltage:

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		Protection Threshold: 294 Vac Recovery Threshold: 304 Vac Three-phase Input Over voltage: Protection Threshold: 466 Vac Recovery Threshold: 456 Vac
5.	出貨前檢驗 (Pre-shipment Inspection)： ANNREN 在出貨前會檢驗哪些項目？ Pre-shipment Inspection: What items does ANNREN inspect before shipment?	我們的出貨前檢驗 , 包含以下四大項目： 1. 外觀檢驗： 包含密封性、標籤、連接器。 2. 結構與尺寸檢驗： 包含產品長、寬、高。 3. 電性能與功能測試： 包含耐壓、絕緣、ATE 功能測試（例如：效率、紋波、漏電流、CAN 通訊）。 4. 包裝檢驗： 包含外箱、標籤、包材。 Our Pre-shipment Inspection (PSI) includes the following four main categories: 1. Appearance Inspection: Includes sealing integrity, labeling, and connectors. 2. Structural and Dimensional Inspection: Includes product length, width, and height. 3. Electrical Performance and Functional Testing: Includes withstand voltage, insulation, and ATE functional tests (e.g., efficiency, ripple, leakage current, CAN communication). 4. Packaging Inspection: Includes outer carton, labeling, and packaging materials.
6.	OBC 是否可以立放或側放安裝？ Can the OBC be mounted vertically (upright) or on its side?	是的。 根據安裝說明 (Mounting Instruction)，OBC 可以懸掛 (hanged under)、平放 (laid upon) 或側掛 (side mounted) 在車輛的金屬框架上。 安裝建議： 1. 使用 4 顆螺栓固定。 2. 建議螺栓尺寸為 M8*30，扭力 22Nm。 3. OBC 應通過 M8 固定螺栓接地，並使用環形端子與充電座的 PE (接地) 相連。 建議：雖然安裝說明允許多種安裝方式，但我們建議以水平放置 (laid upon) 為最佳安裝方式。因為所有主要的開發與驗證測試，都是在此基礎上完成的。 Yes. According to the Mounting Instruction, the OBC can be hanged under, laid upon, or side mounted on the vehicle's metal frame. Mounting Recommendations: 1. Use 4 bolts for fixation. 2. Suggested bolt size is M8*30, with a torque $\ge$ 22Nm。

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		3. The OBC should be grounded via a fixed M8 bolt, using a ring terminal lug connected to the PE (Protective Earth) of the charging inlet. Recommendation: Although the instructions allow for multiple mounting orientations, we recommend horizontal mounting (laid upon) as the optimal method. This is because all primary development and validation tests were completed in this orientation.
7.	其他注意細節 Other Notes	若是使用發電機當作負載，本規格品 OBC AC 3 相電壓，必須帶 N(3 相 4 線(0)線)，才能 drive DC/DC converter。 本規格品所搭載的負載功率，建議採用 3 倍的功率。 加熱模式：OBC 不檢測電池電壓。電流請求值 MAX：64A。 接地PE：務必接地 If a generator is used as the load, this OBC specification requires that the AC 3-phase voltage must include the Neutral line (3-phase 4-wire (N) system) in order to drive the DC/DC converter. It is recommended that the power capacity of the connected load be three times the rated power of this specification. Heating Mode: The OBC does not detect battery voltage. Maximum current request value: 64A. PE Grounding: Must be properly grounded.