

Kappa APEX II & Smart APEX II



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Pre-installation requirements

Information to prepare the installation of the Kappa APEX II & Smart APEX II.

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General

It is assumed that the installation of the system is conducted by Bruker AXS BV. Please send the checklist to the office once the preparations are ready. Only after approval of the checklist by Bruker AXS BV an installation engineer will start the installation work.

Packing and shipping

The system comes in several crates, pallets and boxes. The exact number of crates may vary.

- Upon receipt please check the number of crates against the packing list.
- Inspect for visual shipping damage.

Site

- Specification of environment.

- Temperature : 20° - 22° C (temperature regulated)
- Temperature stability : +/- 2° C
- Humidity: approx. 40%.
- Not in direct sunlight
- Normal clean environment (solid particle contamination : less than 10E5 / m3)
- Generated heat to be removed by air conditioning: 1 kW
- Required floor space is 300 x 300 cm. This includes an optional low temperature system.
- The total weight is 630 kg with a floor load of 815 kg/m²
- The height of the room should be minimal 245 cm (needed for installing equipment).
- The foot print is approx. 86 x 118 cm. The workspace is 130 x 140 cm (top cabinet). The height is 204 cm
- After unpacking all parts will fit through a standard door (minimum 86 cm).

Power requirements

- Mains power :
 - Standard 3 phase 120, 230 (+/-10%) or 240 VAC (-10%, +6%). On request one phase 208, 230 (+/-10%) or 240 VAC (-10%, +6%).
 - 47-63 Hz
 - Maximum power 6 kVA
 - Surge voltage category according IEC664-II
- Mains current surge : 32 A
- The buyer should provide one suitable wall socket with cable plug within 8 m of the backside of the equipment. 10 m of cable, 5 x 8.4 (8 AWG) mm² is delivered with the instrument.
- If the generator is connected to a fixed mains terminal an isolator must be installed in a convenient position near the equipment. This enables the generator to be completely isolated from the electrical mains supply for maintenance and service.
- An external earth terminal in accordance to local regulations must be provided. It will be connected to the central earth connection of the equipment by a cable supplied with the equipment.
- For safety reasons we recommend to install a residual current breaker, conforming local supply regulations. It should be 3 x 32A or 3 x 40A, time delay with a fault current of 30 mA (3-phase) or 70 mA (1-phase).
- When the neutral power line N is not connected to earth a four phase -automatic circuit breaker must be installed which disconnects in case of an error of one of the four lines.

- It is good practice to have extra wall sockets available for connecting accessories and additional equipment.
- Grounding requirements: DC resistance less or equal then 0.5 Ohm

Cooling Water

- The user should supply a water cooling water system which meets the specification:
 - Removed power: maximum 3 kW.
 - Flow: minimum 4 l/min, maximum 6 l/min.
 - Difference pressure between input and output : 4 - 7.5 Bar. Advise: typical 6 bar which gives approx 4.5 ltr/min.
 - Temperature: 15 - 25 °C depending on humidity. Advise: not lower than ambient temperature to prevent condensation.
 - Normal tap water quality can be used or better demineralized water with :
 - Specific conductivity: 10 - 250 uS/cm
 - Hardness: maximum 30° German scale (300 mg CaO in 1 l water) or 53.7° French scale or 37.5° English scale.
 - pH : 7.5 - 9.5
 - No additives
- The wall behind the system must have cooling water supply connections with stop cocks. The generator is delivered with 2x 10 m of flexible hoses with an inner diameter of 1/2" (13 mm).
- Advises for the water circuit:
 - When mains water supply is used, it is strongly recommended that a water filter is fitted.
 - Use the same piping materials as much as possible.
 - Synthetic materials are preferred, if not possible use brass, copper or stainless steel.
 - To prevent algae non transparent materials should be used.
 - The atmospheric air should not have access to the water.

Water cooler

- A water-to-air recirculating cooler should be outside the room where the goniometer is positioned, to avoid heat and noise problems.
- When a cooling water unit is included in the delivery it must be determined before installation where the unit must be installed and how the connections to the generator will be made.

- Adequate ventilation to the outside must be ensured.

Detector cooler

The detector is cooled with a cooling liquid. The cooler, tubes and connections are supplied by Bruker AXS BV. The cooler is positioned outside the cabinet.

- The customer should supply:
 - 2 litres of laboratory grade ethylene glycol.
 - 5 litres of demineralized water or bottled spring water.

Computers and network

- The instrument is supplied with a dedicated Server PC close to the goniometer.
- An ethernet hub is included for connections between the Server PC, host computer and an optional local printer.
 - The ethernet hub is equipped with a RJ45 for connection to the customer network.
 - It is advised to supply two network IP numbers before installation (for the Server PC and the host PC).

Summary of activities conducted by Bruker AXS BV

- Unpack the crates
- Connect, included mains cable and water hoses to the equipment.
- Assemble and interconnect equipment parts.
- Test and align the instrument.
- Instruct the buyer about operation of the equipment.
- Furnish the buyer with copy of the installation report.

Summary of activities that are to be conducted by the buyer

- Fill in and send the checklist when all preparations are ready and the equipment is received.
- Dispose of packing materials after unpacking by installation engineer.
- Ensure that all necessary maintenance is carried out.
- Sign the acceptance protocol at the end of installation.