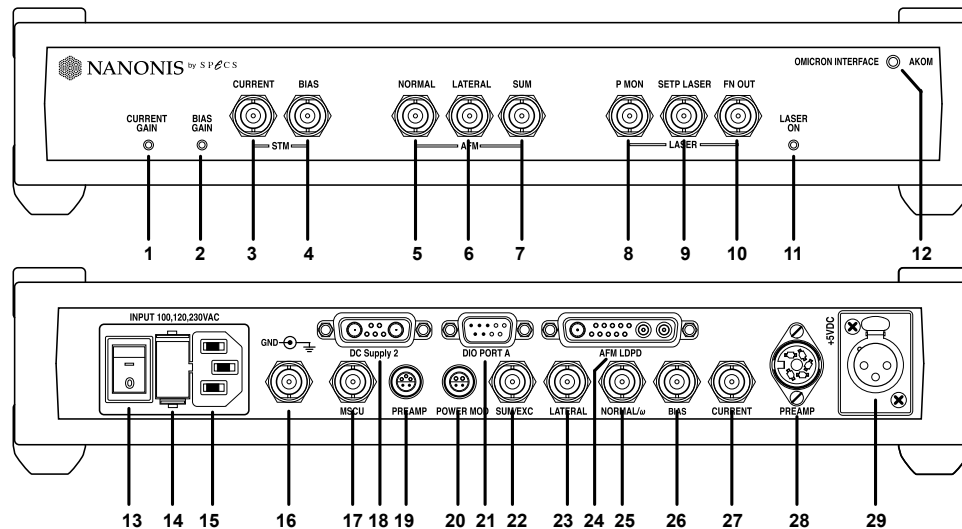


Adaptation Kit for Omicron SPMs

NANONIS AK-OM4

The AK-OM4 is an adaptation kit to connect an Omicron Scanning Probe Microscope (such as STM1, UHV AFM/STM, VT SPM, LT STM, Cryogenic SFM/STM) directly to the Nanonis SPM Control System. The adaptation kit is pin-compatible with the original Omicron cables. The AK-OM4 provides optimized, low-noise power supplies for the original Omicron preamplifiers (STM and AFM). They are short circuit proof with resettable fuse under voltage detection. The analog ground pin (GND, 16) is connected over 1 k Ω to chassis ground and is accessible through a BNC connector to allow for different ground concept depending on the experimental set-up. Bias and current gains of the Omicron preamplifier can be switched from the Nanonis software with status LED (1, 2) on the front panel. For the VT-AFM microscope, the laser diode is completely monitored from the software.



1) & 2) Gain switch LED indicators, 3) & 27) Tunneling current, 4) & 26) Bias voltage, 5) & 25) Normal deflection from PSD or Qplus signal, 6) & 23) Lateral deflection from PSD, 7) & 22) Sum signal on PSD or excitation signal for Qplus, 8) Laser power monitor, 9) Laser setpoint, 10) FN output from Omicron, 11) Laser status LED, 12) Power indicator LED, 13) Power switch, 14) Main power fuse, 15) AC power input, 16) BNC for analog or chassis ground, 17) Trigger output for Omicron Micro Slide Control Unit (MSCU), 18) Power supply for Qplus preamplifier, 19) Power supply for AFM preamplifier, 20) $\pm 15V$ power supply for the z modulation unit, 21) Digital I/O for Nanonis SC4, 24) Connector for laser diode driver and photodetector, 28) Power supply for STM preamplifier, 29) 5V Power supply for PRE-4 tunneling preamplifier.

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GENERAL

• casing	Wavetronic, stackable
• main power	230 V AC / 120 V AC / 100 V AC ($\pm 15\%$)
• operating temperature	+5° to +45°C
• dimensions	33.0 x 26.8 x 5.4 cm (Width x Depth x Height)
• compliance	CE

POWER SUPPLIES

• type	linear regulated
• voltages	+18.5 V, -18.5 V, +5 V
• GND	1 k Ω 100 nF to chassis ground

DIGITAL CONTROL (21)

• connector	Sub D9
• digital signals	3.3 V TTL
• pin 1	digital GND
• pin 6	DIO 0 (Bias Gain)
• pin 2	DIO 1 (Current Gain)
• pin 7	DIO 2 (Trigger MSCU)
• pin 3	DIO 3 (Laser on/off)

PREAMP (28)

• connector	PREH DIN 71206
• pin 1	+ 18.5 V / 100 mA
• pin 2	- 18.5 V / 100 mA
• pin 3	resettable (under voltage detection)
• pin 4	GND
• pin 5	bias gain: 0 V / 15 V, 1 k Ω output resistance current gain: 0 V / 15 V, 1 k Ω output resistance

DC SUPPLY 2 (18)

• pin A1, 1, 2, 4	GND
• pin A2	+5 V DC, 1.2 A
• pin 3 / 5	-18 V / +18 V, 100mA

5 V DC (29)

• connector	Neutrik NC3FP-1
• pin 2,3	GND
• pin 1	+5 V DC, 1 A
• fuse	resettable (under voltage detection)



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