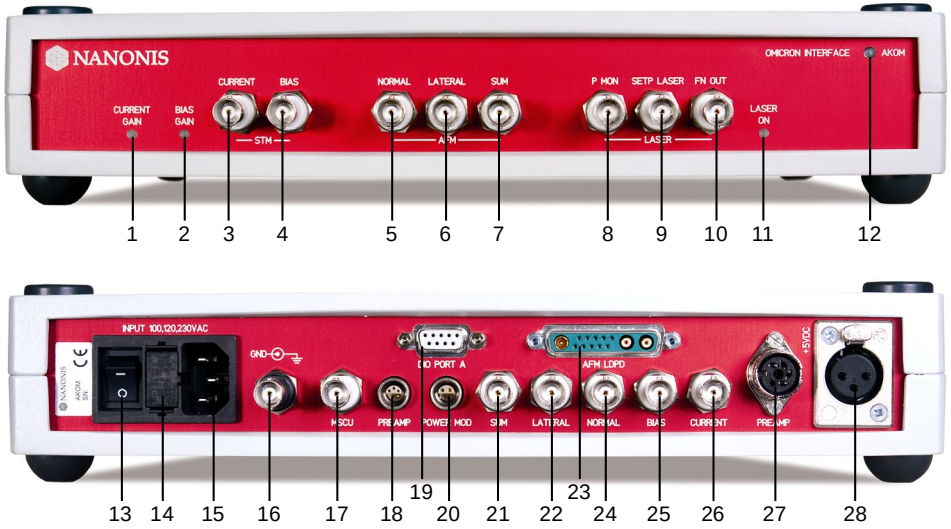
Adaptation Kit for Omicron SPMs

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 Controller. 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 kΩ 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) & 26) Tunneling current, 4) & 25) Bias voltage, 5) & 24) Normal deflection from PSD, 6) & 22) Lateral deflection from PSD, 7) & 21) Sum signal on PSD, 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 AFM preamplifier, 19) Digital I/O for Nanonis SC4, 20) Laser power modulation, 23) Connector for laser diode driver and photodetector, 27) Power supply for STM preamplifier, 28) 5V Power supply for PRE-4 tunneling preamplifier

GENERAL

casing	Wavetronic, stackable
main power	230 V AC / 120 V AC / 100 V AC (±15%)
operating temperature	+5° to +45°C
dimensions	33.0 x 26.8 x 5.4 cm (Width x Depth x Height)
weight	ca. 2 kg
compliance	CE

POWER SUPPLIES

type	linear regulated
voltages	+18.5 V, -18.5 V, +5 V
GND	1 kΩ || 100 nF to chassis ground

DIGITAL CONTROL (19)

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 (AFM Preamp)
pin 8	DIO 4 (AFM Preamp)
pin 4	DIO 5 (Laser on/off)

PREAMP (27)

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

5 V DC (28)

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

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