Noctua NA-FH1 | User manual

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Introduction

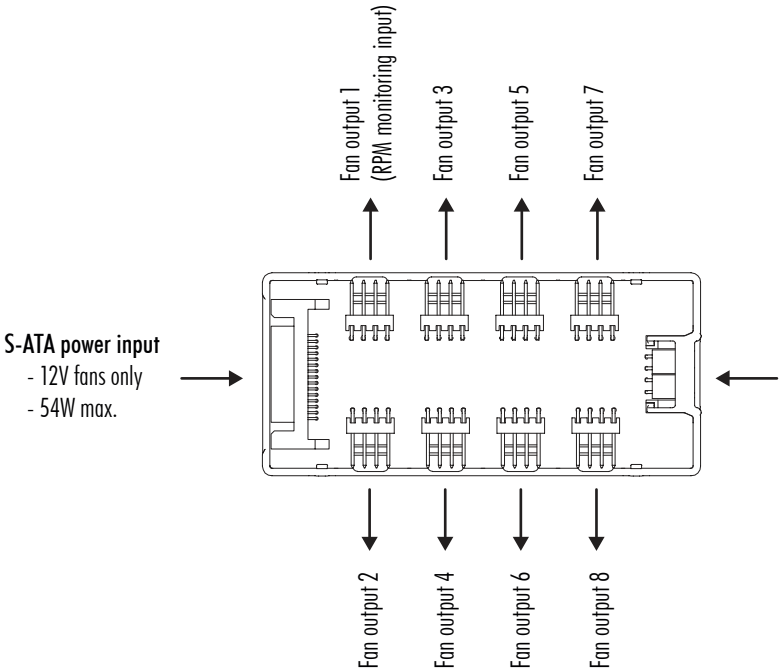
The NA-FH1 is a high-quality, smartly-protected 8 channel PWM fan hub that allows up to eight PWM fans to be run and controlled simultaneously via a single PWM motherboard fan header or stand-alone controllers such as the optional NA-FC1. Non-PWM fans can be controlled by adjusting the input voltage. Supporting both 12V and 5V fans with 4-pin PWM and 3-pin connectors, the NA-FH1 is highly flexible and suitable both for PC environments and other 12V- or 5V-based applications. It can be powered either via its S-ATA input (for 12V fans, up to 54W) or 4-pin PWM input (for 5V and 12V fans, up to 24W), both of which are protected against overcurrent with a self-resetting fuse for maximum safety even in case of short-circuits on the connected devices or cables. The two ports can also be used concurrently with the device, automatically taking power via S-ATA and exchanging RPM and PWM signals via the 4-pin interface. Status LEDs allow for easy monitoring and thanks to its magnetic fixture, installing the NA-FH1 inside a PC case or on any other steel surface is a breeze. Topped off with CE, UKCA and UL certifications, full compliance with all applicable safety standards as well as Noctua's 6-year manufacturer's warranty, the NA-FH1 is a safe, dependable premium choice for powering and controlling up to eight fans.

Specifications

Output connectors: 8x 4-pin PWM
Input connectors: 1x S-ATA (for 12V fans only), 1x 4-pin PWM
Max. power via S-ATA input: 54W
Max. power via 4-pin PWM input: 24W
Max. current per output channel: 3A with S-ATA power (54W max. total output) / 2A with 4-pin power (24W max. total output)
Operating voltage: 5-12V
Operating temperature: -40°C to +60°C

Flammability class: UL-94 V-0
Safety standards: EN 62368-1, EN 55035, EN 55032, UL-507
Certifications: CE, UKCA, UL
Fan compatibility: all Noctua 12V and 5V fans, many third party fans
Scope of delivery: NA-FH1, NA-EC1 4-pin PWM input cable
Size: 93x43x12.5mm
Weight: 31g
Warranty: 6 years

Interfaces



S-ATA power input
- 12V fans only
- 54W max.

4-pin power input & control interface
- 5V/12V fans
- 24W max.
- PWM control input (from motherboard, NA-FC1, etc.)
- RPM monitoring output (to motherboard, NA-FC1, etc)

When powering the NA-FH1 via the 4-pin input from a PC motherboard, please check your motherboard manual for the maximum current of the fan header and make sure not to exceed it.

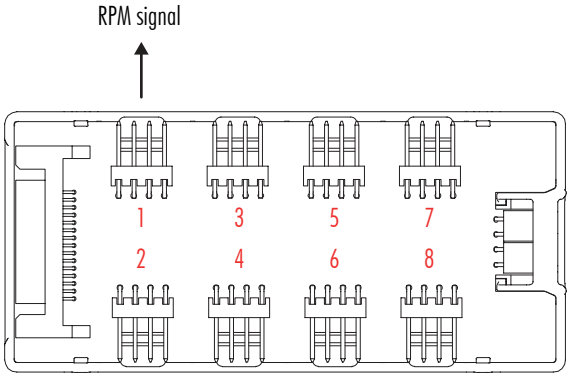
Resettable fuses

Especially when drawing power from a PC power supply via S-ATA connectors, short-circuits on the connected cables or devices can cause hazardous situations such as cable fires. For extra safety, the NA-FH1 has auto-resetting fuses both on the S-ATA and on the 4-pin input so that it can automatically shut down in case of overcurrent or short-circuits on one of the connected devices or cables. If one of the fuses has blown, simply disconnect the NA-FH1 from all power sources for 1 minute to reset it. Make sure that current ratings and maximum operating temperature are within the specified limits before reconnecting.

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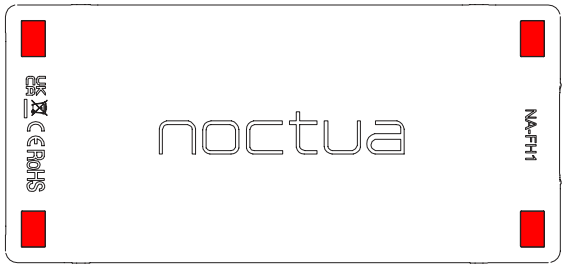
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Status LED and RPM monitoring



The NA-FH1 transmits the RPM speed signal of the fan connected to the first port to the motherboard for speed monitoring. For additional watchdog functionality, all ports feature status LEDs that light up if an RPM signal is being received and go off if the fan stops or fails.

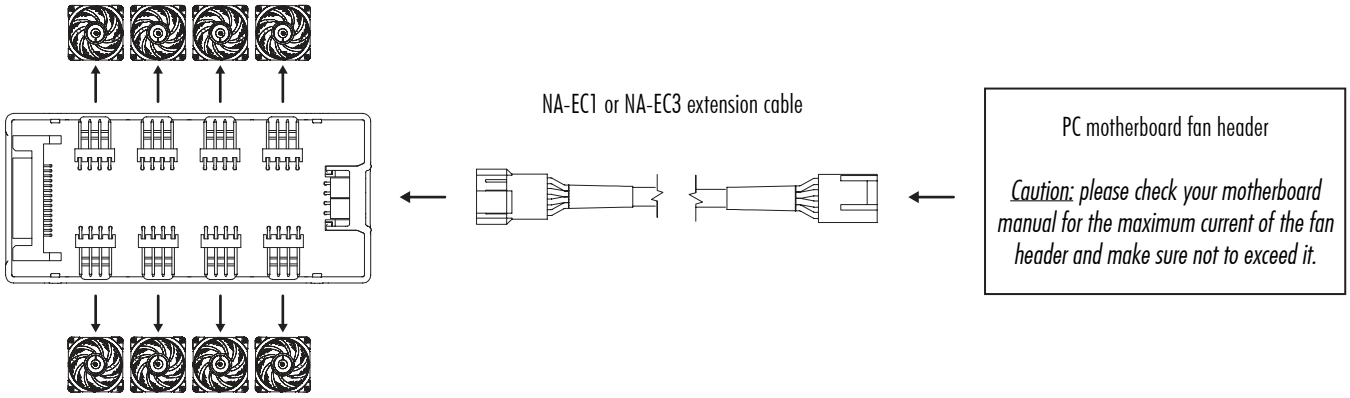
Magnetic fixture



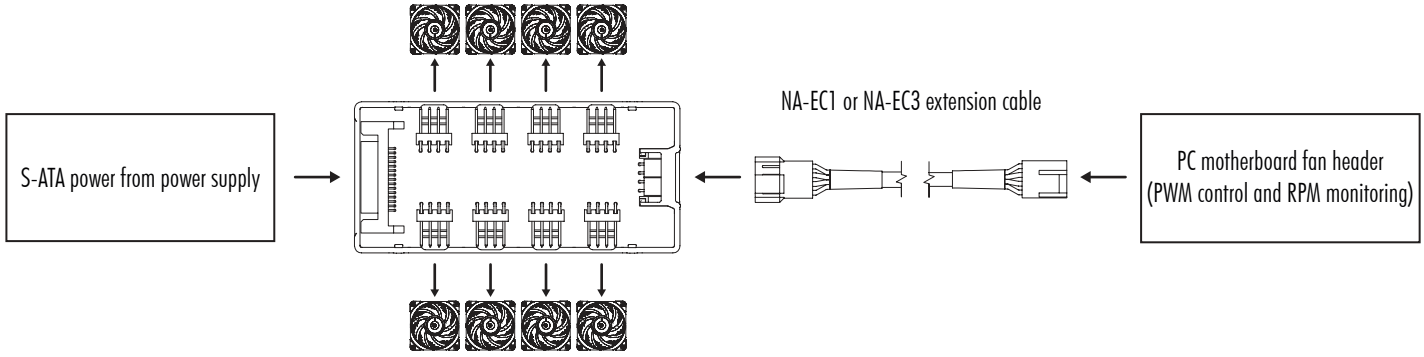
Caution: Do not place directly on hard disk drives, keep at least 5cm distance.

Example setups

Application example 1: Powering and controlling low-current PC PWM fans via a motherboard fan header (24W max.)



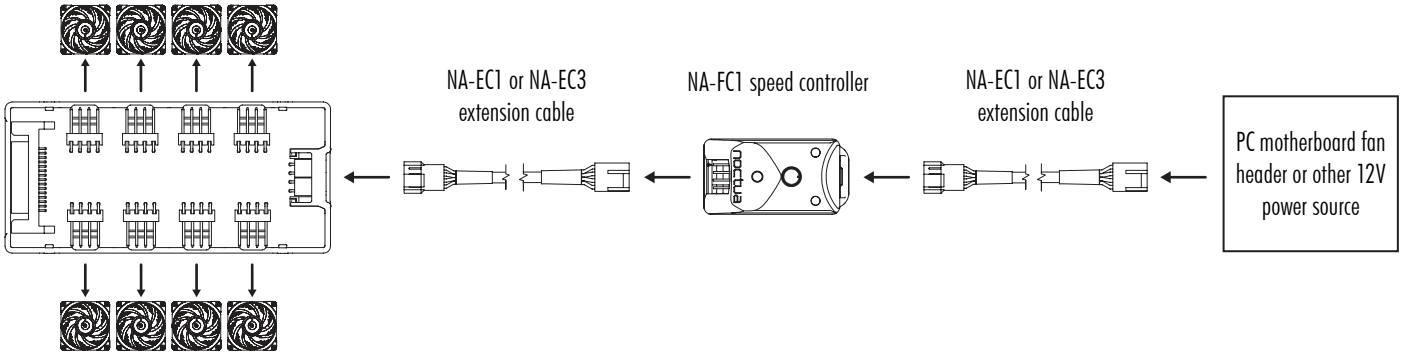
Application example 2: Controlling high-current PC PWM fans safely via a motherboard fan header using S-ATA power (54W max.)



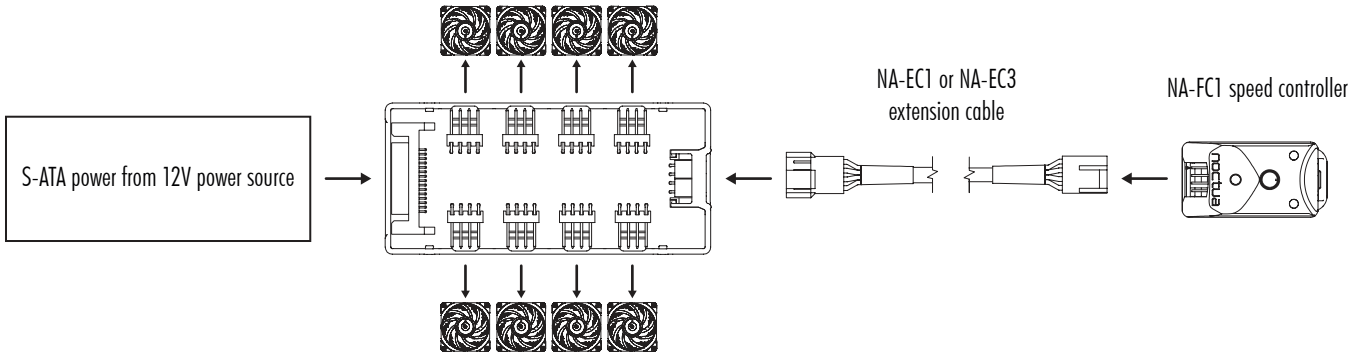
If both its S-ATA and 4-pin input ports are connected, the NA-FH1 will automatically draw power via S-ATA and use the 4-pin port for PWM control and RPM monitoring only. This way, it is possible to control fans with high power consumption safely without risking damage to the motherboard.

Caution: Please make sure that your power supply can provide the required current on the 12V rails, especially if they are heavily loaded by a GPU or other appliances.

Application example 3: Powering and controlling 12V PWM fans through NA-FC1 (24W max.)



Application example 4: Powering high-current 12V PWM fans through the S-ATA connector and controlling them using NA-FC1 (54W max.)



Application example 5: Powering and controlling 5V PWM fans using NA-FC1 and a USB power supply (24W max.)

