



# User Manual

HOME



**NOCTUA** NV-FH2

8 channel fan hub for 5V, 12V, and 24V fans

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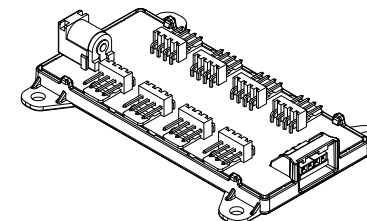
The NV-FH2 is a flexible, premium-quality 8 channel PWM fan hub that is ideal for powering up to eight fans in home, office or multi-purpose ventilation applications using an external power supply with 5.5mm barrel connector such as Noctua's optional NV-PS1. It's compatible with 5, 12, and 24V fans with 4-pin PWM and 3-pin connectors and supports up to 60W total power draw.

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 NV-FH2 represents the gold standard in highly robust multi-purpose splitter boards that work just as nicely inside a PC as in other ventilation applications.

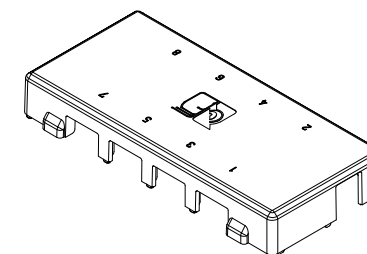
## NV-FH1 SPECIFICATIONS

Output connectors	8x 4-pin PWM	Safety standards	EN 62368-1, EN 55035, EN 55032, UL-62368
Input connectors	1x 5.5mm (outer diameter) / 2.1mm (inner diameter) barrel connector, 1x 4-pin PWM	Certifications	CE, UKCA, UL
Max. power via barrel conector input	60 W	Size	93x62x12.5mm (without cover) / 93x62x19mm (with cover)
Max. power via 4-pin PWM input	22 W	Weight	47 g
Operating voltage	5-24 V	Fan compatibility	All Noctua 24V, 12V, and 5V fans, many third party fans
Operating temperature	-40°C to +60°C	Warranty	6 years
Flammability class	UL-94 V-0		

## Included parts



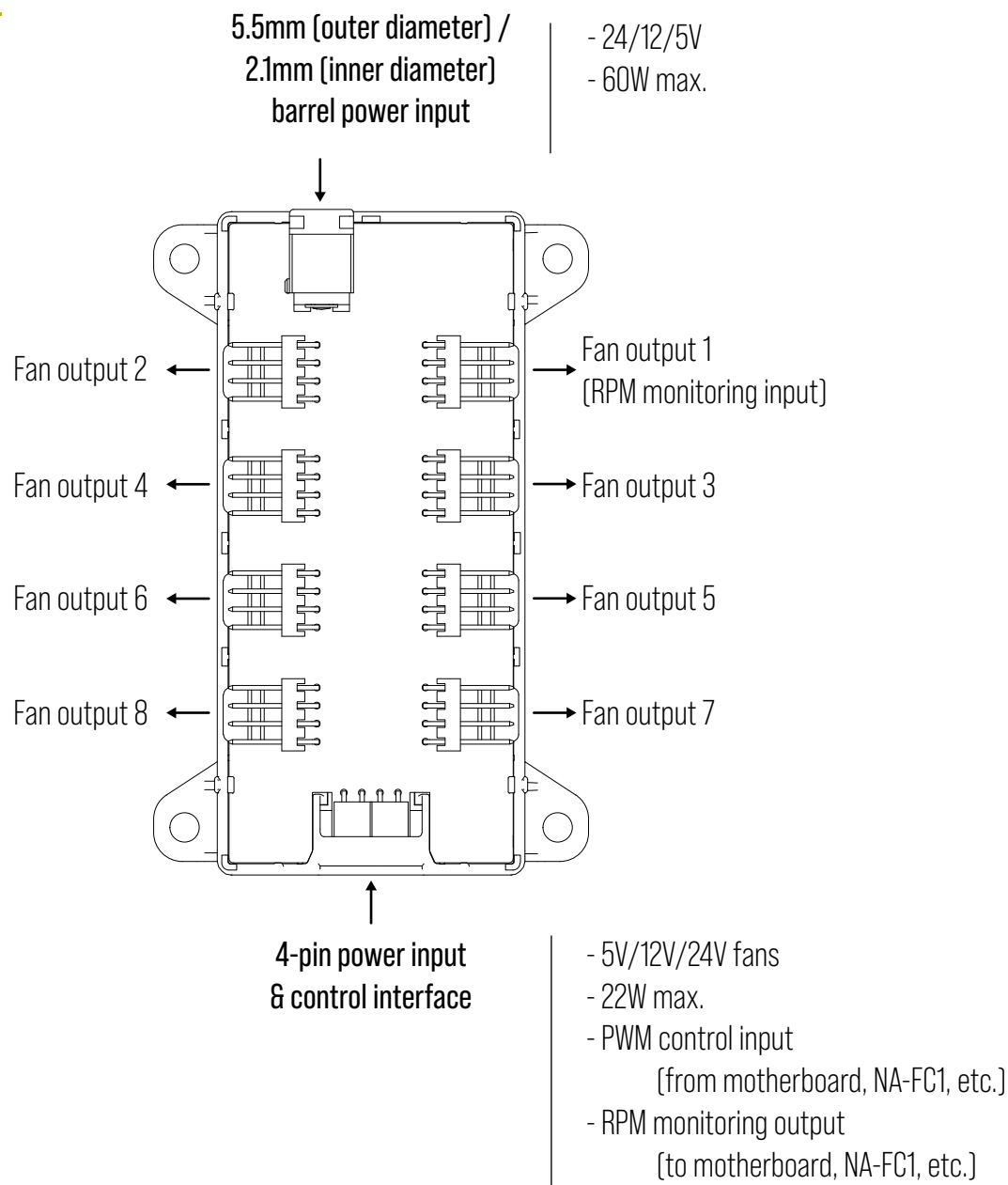
NV-FH2  
fan hub



NV-FHC2  
Top cover



## Interfaces



## Caution!

When powering the NV-FH2 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

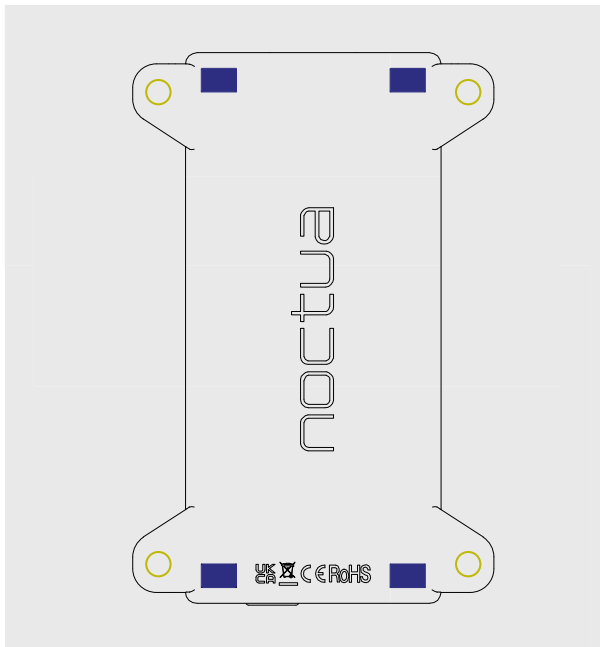
For maximum safety, the NV-FH2 has auto-resetting fuses on the 4-pin input (1.85A) and each individual 4-pin output (0.75A) so that it can automatically shut down in case of overcurrent or short-circuits on one of the connected devices or cables. If one of the fuses has blown, simply disconnect the NV-FH2 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.

## Mounting

The NV-FH2 features integrated neodymium magnets that make it stick to any magnetic surface such as steel PC case panels. For mounting to non-magnetic surfaces, the NV-FH2's four 4.1mm diameter screw holes (80x52.5mm hole pattern) that make screw-mounting or fixing with cable ties a breeze.

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



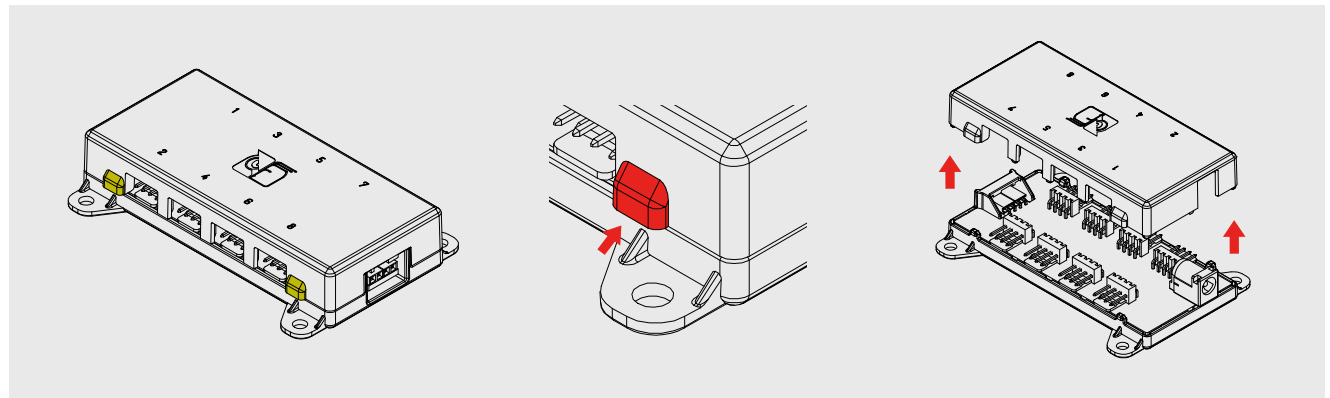
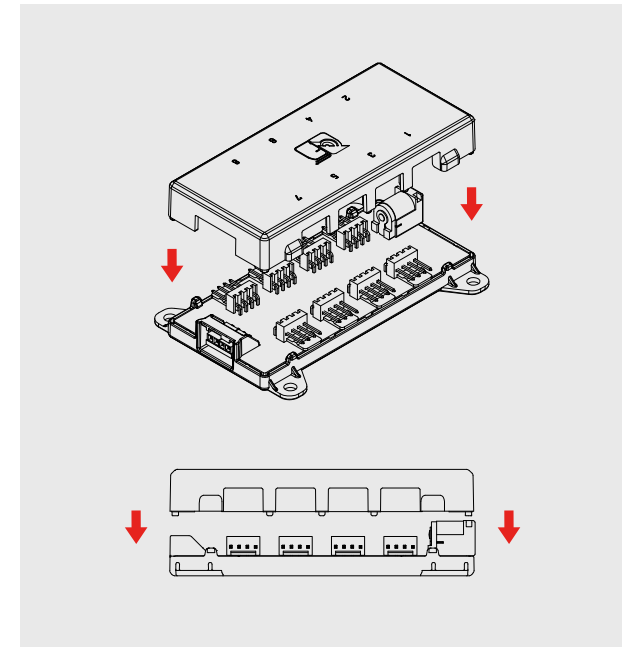
■ Screw mounting holes    ■ Magnets

## Installing the top cover

The NV-FH2 features a removable top cover that can be put on the hub for applications where the status LEDs should be hidden or where the PCB should be protected from dust, touch or mechanical impact.

To install, simply place the cover onto the fan hub so that the cut-outs align with the connectors. Then, press down firmly until all four corners click into place.

If you wish to remove the cover, place one finger beneath one of the clip-in ledges located in each corner of the cover. Pull upwards, until the cover releases from the clip. Repeat for each of the four ledges, until the cover is fully loose. Then pull the cover off.



## Powering with the NV-PS1 power supply

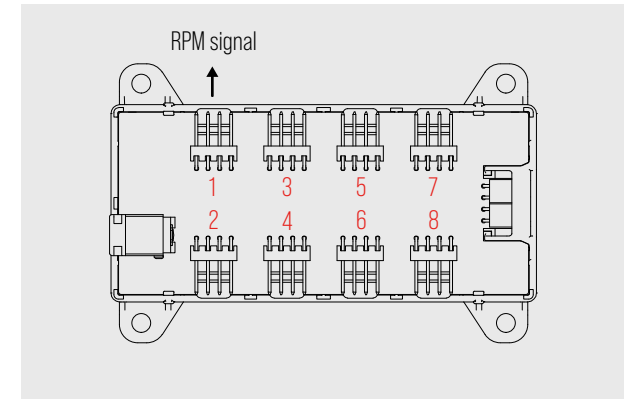
The NV-FH2 can be powered off the mains using the optional NV-PS1 power supply (available separately) that makes it super easy to run fans off the mains in just about any environment. The NV-PS1 supports both 230V and 115V and comes with modular plugs (EU/UK/US type).

## Ideal combination with the NA-FC1 fan controller

The NV-FH2 is ideal for controlling multiple fans using the NA-FC1 controller (available separately). Thanks to a reverse-power design on the 4-pin input of the NV-FH2, the NA-FC1 can control the connected fans even if the hub is powered via 5.5mm barrel connector and there is no other connection or input on the 4-pin interface.

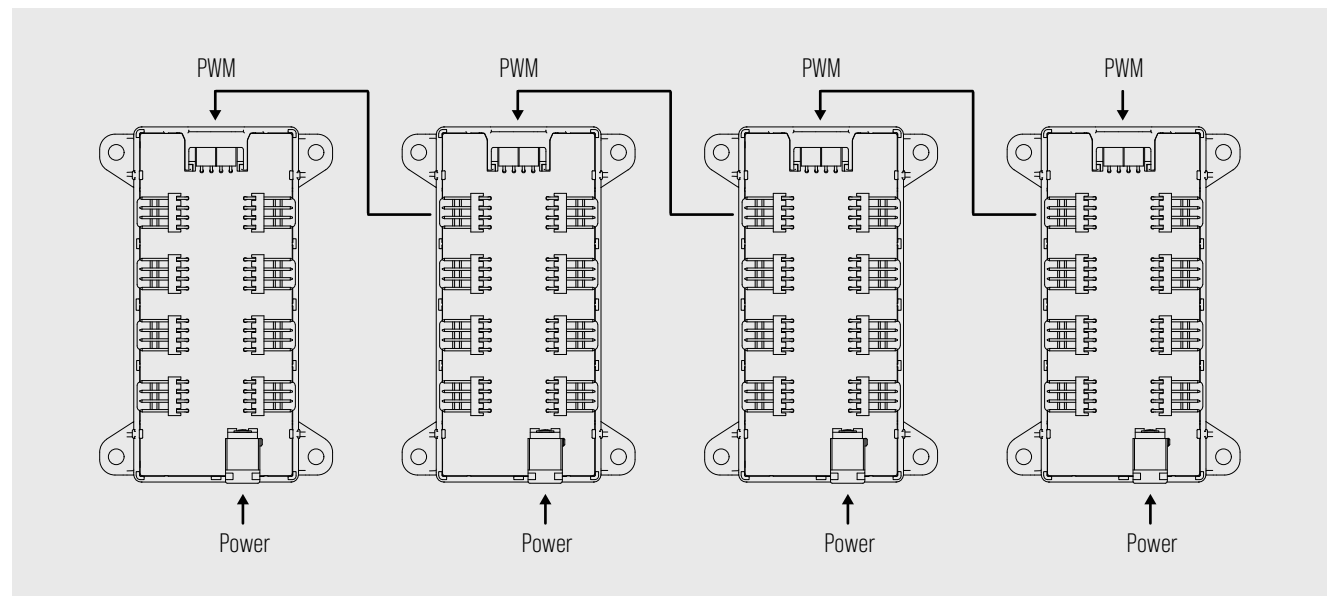
## Status LED and RPM monitoring

The NV-FH2 transmits the RPM speed signal of the fan connected to the first port (1) via the 4-pin control interface 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.



## Cascading

The NV-FH2 supports cascading in the sense that up to ten NV-FH2 units can be daisy-chained in order to run and control up to 71 fans. The NV-FH2's control circuit with signal buffer keeps PWM signals stable without jeopardising TTL logic levels on the follower boards.





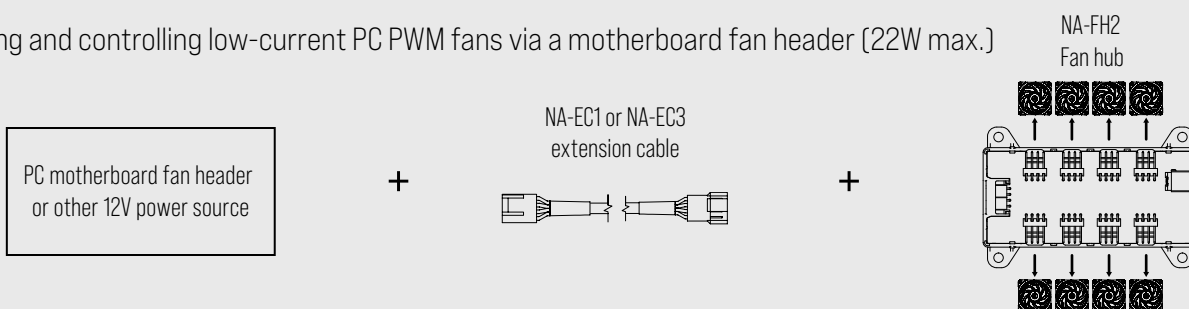
## Cautions

If there is a voltage difference between the power source connected to the barrel power input and the voltage specification of the device connected to the 4-pin interface (e.g. 24V barrel vs. 12V 4-pin or 5V barrel vs. 12V 4-pin), please modify the NA-EC1 input cable by cutting the yellow [power] pin of the cable to make sure that the lower voltage device will not be damaged by the higher voltage.

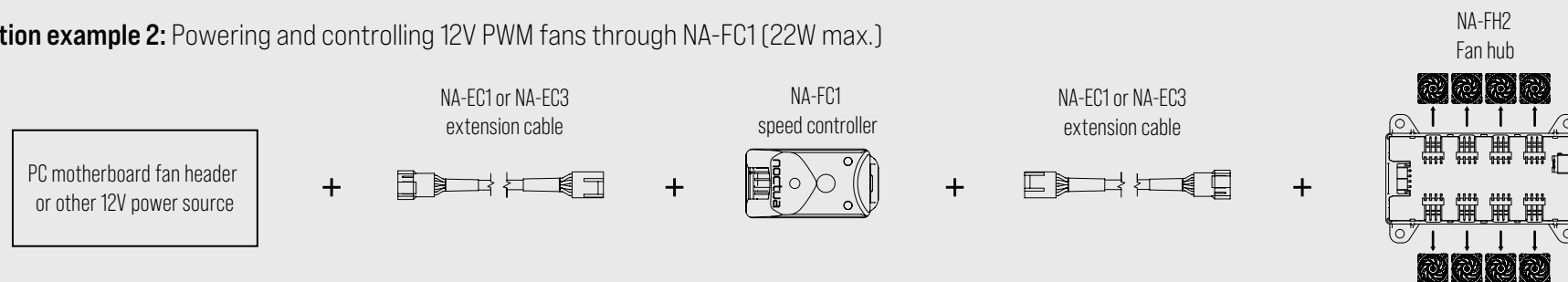
When using a PC fan header for RPM monitoring and PWM control while using a 12V barrel connector power supply (e.g. NV-PS1) for powering, please either make sure that the power supply is shut off whenever the PC is shut off or modify the NA-EC1 input cable by cutting the yellow [power] pin of the cable to make sure that no power will go into the PC when it is shut off. If using a 24V or 5V power supply, the power pin of the the NA-EC1 cable must always be cut.

## Example setups

### Application example 1: Powering and controlling low-current PC PWM fans via a motherboard fan header (22W max.)

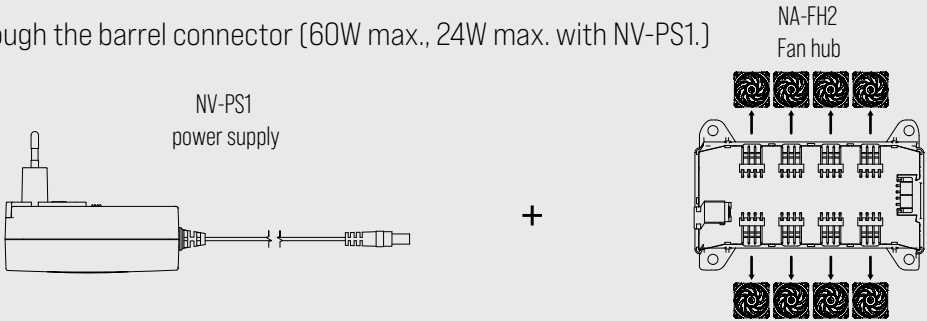


### Application example 2: Powering and controlling 12V PWM fans through NA-FC1 (22W max.)

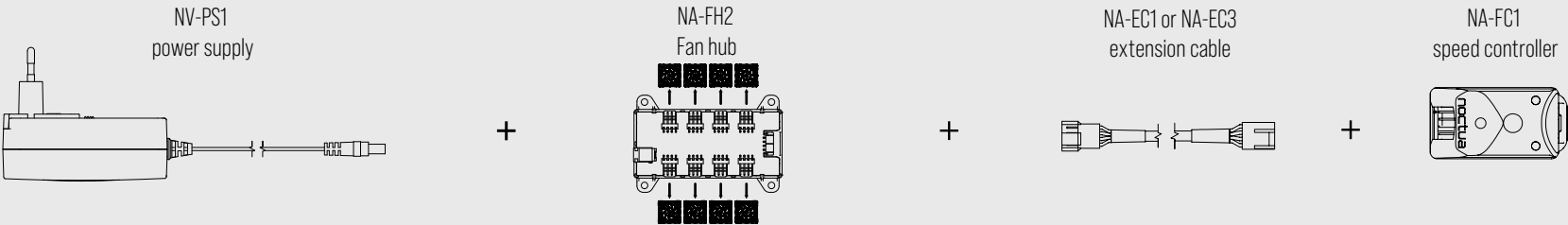


# Example setups

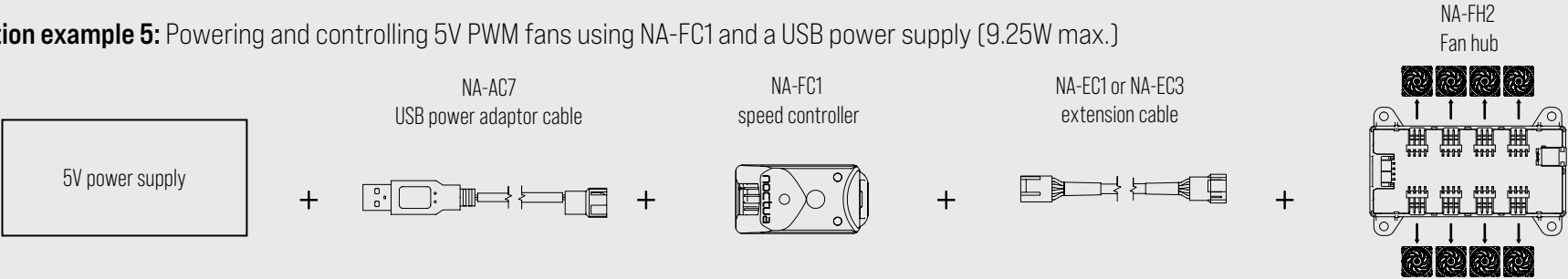
**Application example 3:** Powering fans through the barrel connector [60W max., 24W max. with NV-PS1.]



**Application example 4:** Powering fans through the barrel connector and controlling them using NA-FC1 [24W max.]



**Application example 5:** Powering and controlling 5V PWM fans using NA-FC1 and a USB power supply [9.25W max.]



## Warranty & support

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Even with high-grade products and strict quality control, the possibility of defects cannot be eliminated entirely. Therefore, we aim at providing the highest possible level of reliability and convenience by offering a warranty period of 6 years and direct, fast and straightforward RMA service.

Should you encounter any problems with your NV-FH2, please don't hesitate to contact our support team at [support@noctua.at](mailto:support@noctua.at).

Please also consult the FAQ section on our website: [www.noctua.at/faqs](http://www.noctua.at/faqs)