

Flash
HVL-F28RM/HVL-F28RMA

Use this Help Guide when you have issues or questions on how to use your flash unit.

Regarding the compatibility with cameras equipped with global shutter image sensor

Global shutter sync photography

To use the global shutter sync photography, you need to update the software in this flash unit to version 2.00 or later. Update to the latest version to use it. For details about the global shutter sync photography, view [here](#).

Compatible cameras

This flash unit can be used in combination with the following Sony brand devices:

- Interchangeable Lens Digital Cameras with a conventional Multi Interface Shoe
- Interchangeable Lens Digital HD Video Camera Recorders
- Digital Still Cameras

[Compatible models with HVL-F28RM](#)

For camera models compatible with this flash unit, view [here](#). (Another window will open.)

[Compatible models with HVL-F28RMA](#)

For camera models compatible with this flash unit, view [here](#). (Another window will open.)

The settings of the flash unit can be viewed on the attached camera. View the external flash unit settings on the camera. When a camera without external flash setting capabilities is used, the settings you can make for the flash unit may be limited. For details, view [here](#).

When the TEST button flashes orange

Replacing the batteries (when the TEST button flashes)

When the batteries are low, the TEST button on the back of this flash unit flashes orange. For details, view [here](#).

Support information



Radio wireless flash photography

For an overview with preparation and usage examples for radio wireless flash photography, view [here](#). (Another window will open.)

[About this Help Guide](#)

[Locating parts and controls](#)

Preparations

[Unpacking](#)

[Inserting batteries](#)

[Attaching/removing the flash unit to/from the camera](#)

[Attaching/removing the mini-stand](#)

[Removing/attaching the dust and moisture resistant cover](#)

[Turning on the power to the flash unit](#)

[Replacing the batteries \(when the TEST button flashes\)](#)

[Pairing with a radio wireless commander/receiver \(for radio wireless flash photography\)](#)

Photographing

[TTL flash photography \(TTL\)](#)

[Manual flash photography \(MANUAL\)](#)

[High-speed sync photography \(HSS\)](#)

[Global shutter sync photography](#)

[Multiple flash photography \(MULTI\)](#)

[Firing test flashes](#)

Radio wireless flash photography

- [Configuring the flash unit for wireless flash photography](#)
- [Wireless flash photography \(with the receiver unit\)](#)
- [Multiple wireless flash photography with flash power ratio control](#)
- [Multiple wireless flash photography \(group flash photography\)](#)
- [Changing the settings of individual receiver units \(from the commander unit\)](#)
- [Notes on wireless flash photography](#)

Bounce flash photography

- [Bounce flash photography](#)
- [Adjusting the bounce flash angle](#)

[Registering/calling up a preference](#)

[Viewing the version information of this flash unit/the receiver unit](#)

[List of flash settings](#)

[Tips for the customers using a camera without external flash setting capabilities](#)

[Resetting the flash firing settings to the factory defaults](#)

[Restoring the factory default state of the flash unit](#)

Notes on using/cleaning the flash unit

[Safety precautions](#)

[Notes on use](#)

Specifications

— [Specifications](#)

— [Guide number](#)

— [Radio wireless features](#)

[Trademarks](#)

[License](#)

Flash
HVL-F28RM/HVL-F28RMA

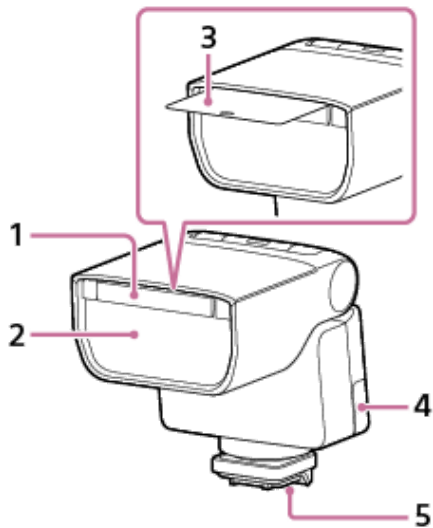
About this Help Guide

This Help Guide is provided for 2 flash unit models: HVL-F28RM/HVL-F28RMA.
The illustrations used for common descriptions are of the HVL-F28RM flash unit.

Flash
HVL-F28RM/HVL-F28RMA

Locating parts and controls

Flash unit (front side)

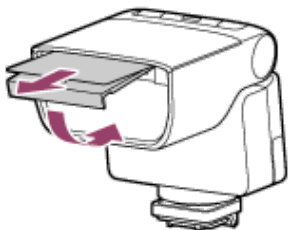


1. Built-in wide panel
2. Flashlamp
3. Bounce sheet
4. Micro USB terminal
5. Multi Interface foot

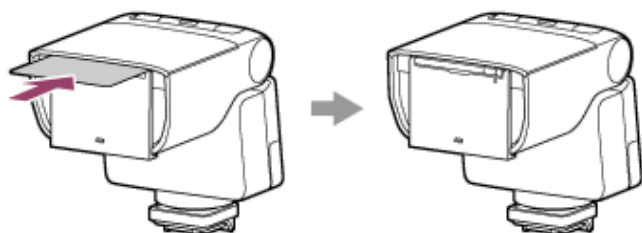
About the built-in wide panel

When you need a wider flash coverage for the focal length of 50 mm for photography, use the built-in wide panel.

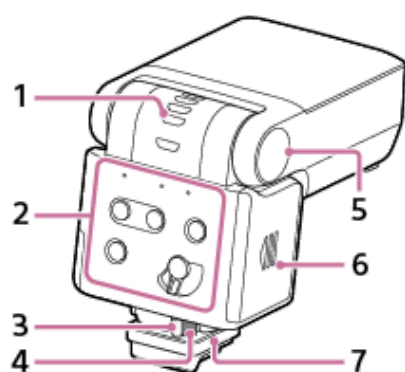
To use the built-in wide panel, gently pull out the wide panel along with the bounce sheet from the front of this flash unit and fold down the wide panel to cover the flashlamp.



Push the bounce sheet back into the flash unit.

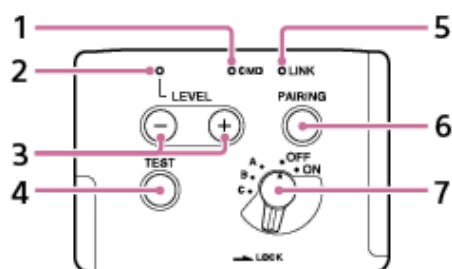


Flash unit (back side)



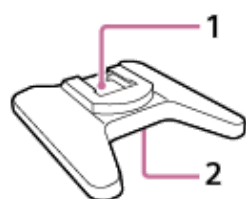
1. Bounce indicator (upper/lower angle)
2. Operation console
3. Lock lever
4. Release button
5. Bounce lock release button
6. Battery chamber door
7. Dust and moisture resistant cover

Operation console



1. CMD lamp
2. LEVEL lamp
3. LEVEL -/+ button
4. TEST button
5. LINK lamp
6. PAIRING button
7. Power switch

Mini-stand



1. Shoe for the Multi Interface foot
2. Tripod attachment hole

Flash
HVL-F28RM/HVL-F28RMA

Unpacking

If you find anything missing, please contact your dealer.
The number in the parentheses indicates the quantity.

- Flash unit (1)
- Connector protect cap (attached) (1)
- Dust and moisture resistant cover (attached) (1)
- Mini-stand (1)
- Pouch (1)
- Set of printed documentation

Flash
HVL-F28RM/HVL-F28RMA

Inserting batteries

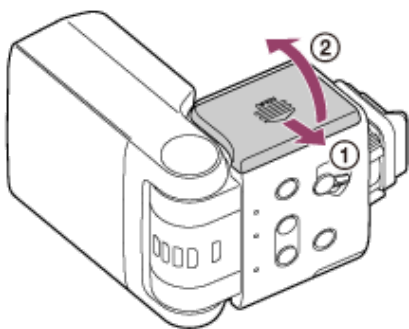
This flash unit can accommodate either set of the following:

- Two AA-size alkaline batteries
- Two AA-size rechargeable nickel-metal hydride (Ni-MH) batteries

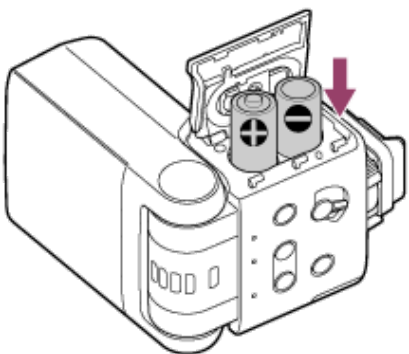
Note

- Before you use the rechargeable nickel-metal hydride batteries, be sure to fully charge the batteries with the specified battery charger.
- Do not use lithium-ion batteries in this flash unit as they may prevent the flash unit from delivering full performance.

- 1 Slide open the battery chamber door following the steps indicated in the following illustration.**



- 2 Insert the batteries into the battery chamber as illustrated ( ). (  indicate the direction of the batteries.)**



- 3 Close the battery chamber door.**

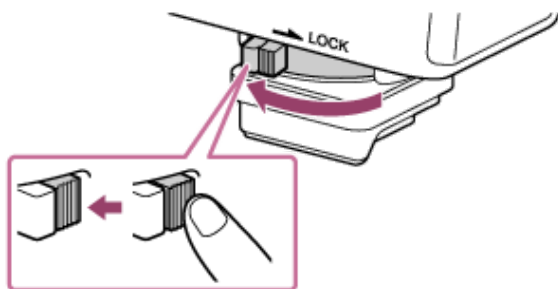
Perform the step 1 operations in reverse order.

Flash
HVL-F28RM/HVL-F28RMA

Attaching/removing the flash unit to/from the camera

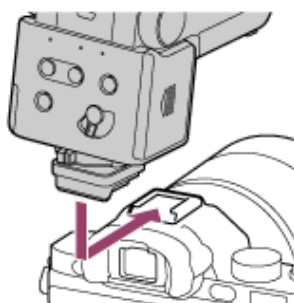
To attach the flash unit to the camera

- 1 Turn the power switch on the flash unit to "OFF."
- 2 Press and hold the release button and rotate the lock lever away from "LOCK."

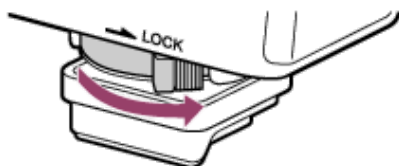


- 3 Remove the connector protect cap from the flash unit; and the shoe cap from the camera.
If the built-in flash on the camera is popped up, put it down.

- 4 Insert the Multi Interface foot of the flash unit into the Multi Interface shoe on the camera.
Be sure to push in the foot in the direction of the arrow until the foot is secured.



- 5 Rotate the lock lever toward "LOCK" until it stops at the right end to secure the flash unit on the camera.



To remove the flash unit from the camera

Turn off the power of this flash unit first. Press and hold the release button, rotate the lock lever away from "LOCK," and then slide the flash unit out of the Multi Interface shoe.

Note

- Once you removed the flash unit from the camera, be sure to attach the connector protect cap to the Multi Interface foot to protect its terminal.

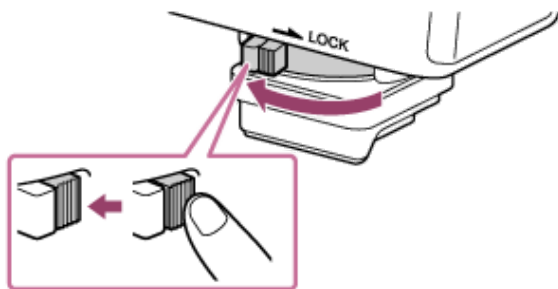
Flash
HVL-F28RM/HVL-F28RMA

Attaching/removing the mini-stand

When you have removed the flash unit from the camera to place and use it alone for wireless flash photography, attach the supplied mini-stand to the unit.

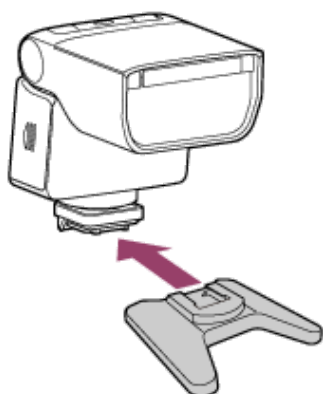
To attach the mini-stand

- 1 Press and hold the release button and rotate the lock lever away from "LOCK."

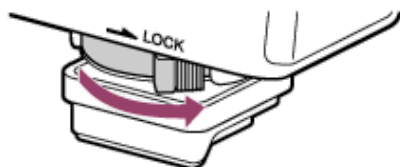


- 2 Remove the connector protect cap from the flash unit.

- 3 Slide the mini-stand onto the Multi Interface foot of the flash unit and push in the stand all the way.



- 4 Rotate the lock lever toward "LOCK" until it stops at the right end to secure the flash unit.



To remove the mini-stand

Press and hold the release button, rotate the lock lever away from "LOCK," and then slide the mini-stand out of the Multi Interface foot.

Hint

- You can screw the mini-stand to a tripod through the screw hole on the mini-stand.

Use a tripod with the screw that is shorter than 5.5 mm (7/32 in.) in length. To a tripod with the longer screw, you cannot secure the mini-stand firmly with the screw, resulting in possible damage to the mini-stand.

Note

- When you are finished with using this flash unit, be sure to attach the connector protect cap back to the Multi Interface foot.

5-023-112-14(2) Copyright 2020 Sony Corporation

Flash
HVL-F28RM/HVL-F28RMA

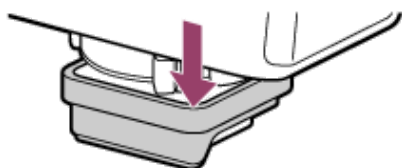
Removing/attaching the dust and moisture resistant cover

Depending on the external design of a camera, the dust and moisture resistant cover attached to this flash unit may come in contact with the camera body, but you can still attach the flash unit to the camera and use it for photography.

To secure the effect of dust and moisture resistance, make sure you attach the cover properly to the flash unit by following these steps.

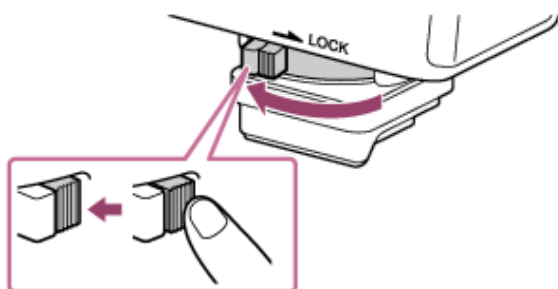
To remove the dust and moisture resistant cover

Push down a corner of the dust and moisture resistant cover to take it off of the Multi Interface foot.



To attach the dust and moisture resistant cover

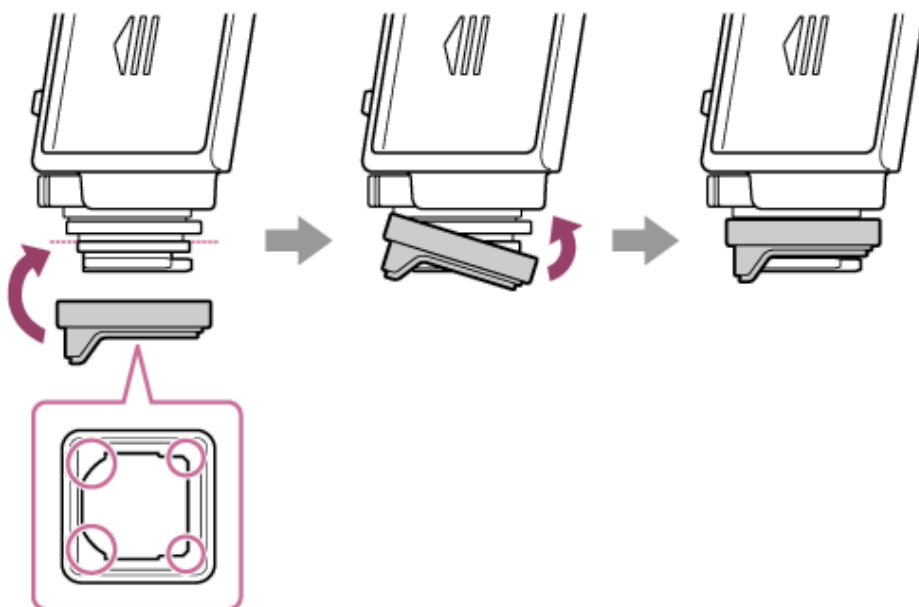
- 1 Press and hold the release button and rotate the lock lever away from "LOCK."



- 2 Orient the dust and moisture resistant cover with respect to the Multi Interface foot of the flash unit.

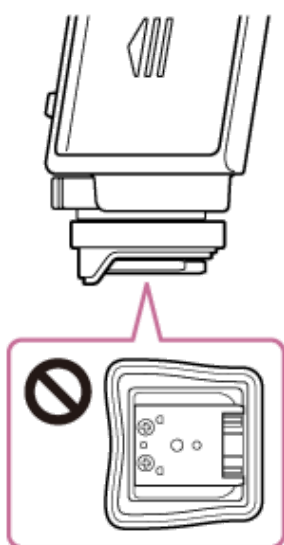


- 3 Attach the dust and moisture resistant cover by tucking its four inner corners into the gap above the Multi Interface foot.



- 4 Make sure that the dust and moisture resistant cover is not distorted and there is no gap between the cover and the flash unit.**

Tug each of the four corners of the cover to make sure it is firmly in place.
If the attached cover is distorted, remove and attach it back on.

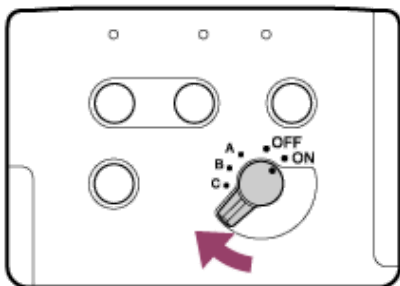


Flash
HVL-F28RM/HVL-F28RMA

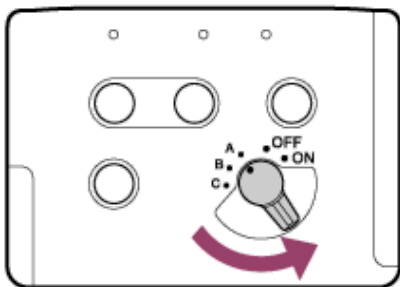
Turning on the power to the flash unit

1 Turn the power switch on this flash unit to "ON."

The flash unit is powered.



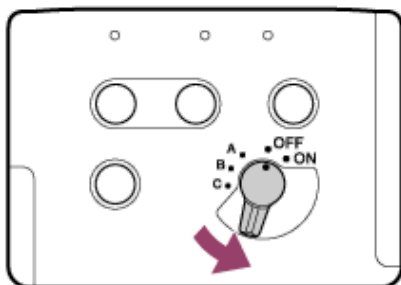
To configure the flash unit as the receiver unit, turn the power switch to "A," "B," or "C."



When you turn on the power to the flash unit, ⚡ (flash charge-up indicator) appears on the monitor screen of the camera attached with the flash unit.

To turn off the power to the flash unit

Turn the power switch to "OFF."



Flash charge-up

When you turn on the power to this flash unit, the flash unit starts charging up itself.

When the flash unit is fully charged up, the TEST button on the back of the flash unit lights in orange.

Power-saving mode

If this flash unit is left unused for 3 minutes or longer while it is removed from a camera or is attached to the camera in a power-saving state, the power to the flash unit will be automatically turned off to conserve the battery power.

- During wireless flash photography with the flash unit being used as an off-camera flash unit, the flash unit goes into power-saving mode in 60 minutes.

- Turning off the power switch on the connected camera (except for DSLR-A100) automatically places the flash unit in power-saving mode.
- You can specify the power-saving timer for the flash unit by selecting [External Flash Set.] - [Ext. Flash Cust. Set.] - [Power Save] from the menu of the camera attached with this flash unit; or the power-saving timer during wireless flash photography by selecting [WL Power Save].

Notes on continuous flash firing

- If this flash unit fires flashes in quick succession for a short period of time, its built-in safety circuit will be triggered to suspend flash firing and the flash interval may be forced to extend.
In addition, if the temperature inside the flash unit rises further, the TEST button on the back of the flash unit flashes in red to indicate that flash firing is disabled for a while (overheated state). In such a case, make sure that you turn the power switch on the flash unit to “OFF” and leave the flash unit unused for about 20 minutes to let it cool down.
- Continuous flash firing causes the batteries inside this flash unit to build up heat. Take sufficient care when you remove the batteries.

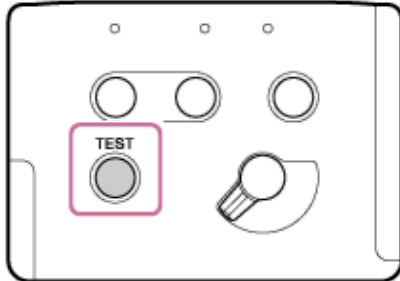
Related Topic

- [Replacing the batteries \(when the TEST button flashes\)](#)

Flash
HVL-F28RM/HVL-F28RMA

Replacing the batteries (when the TEST button flashes)

When the batteries are low, the TEST button on the back of this flash unit flashes orange.



- When flashing slowly
The batteries are low. It is recommended that you replace the batteries.
The flash unit, however, is still capable of firing flashes in this state.
- When flashing quickly
The flash unit is not capable of firing flashes. Replace the batteries.

Related Topic

- [Inserting batteries](#)

Flash
HVL-F28RM/HVL-F28RMA

Pairing with a radio wireless commander/receiver (for radio wireless flash photography)

To perform radio wireless flash photography with this flash unit, you need another flash unit that supports radio wireless communications or a radio wireless commander/receiver (not supplied) in addition to this flash unit and must pair them both together.

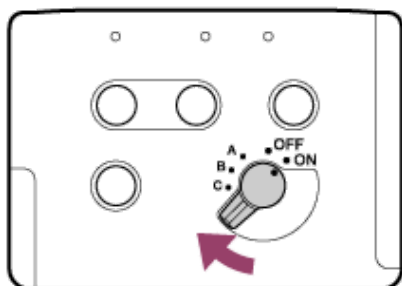
For details, refer to the operating instructions supplied with your device.

Hint

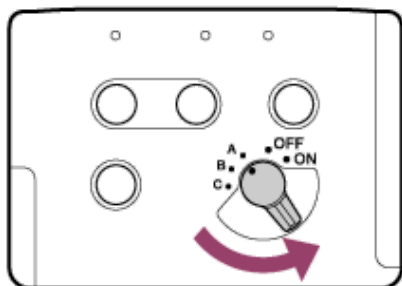
- You need to bring both devices within 1 m from each other for pairing.

1 Turn on the power to this flash unit and the other device, and then configure one flash unit as the commander unit and the other as the receiver unit.

- To configure this flash unit as the commander unit, turn its power switch to "ON."



- To configure this flash unit as the receiver unit, turn its power switch to "A," "B," or "C."

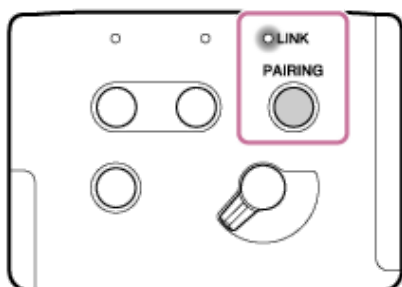


2 Press and hold the PAIRING buttons on this flash unit and the other device for 3 seconds.

The LINK lamps on the commander and receiver units flash in green.

On the commander unit, the CMD lamp lights.

When pairing is established, the LINK lamp on the receiver unit turns flashing to lit.



On the commander unit, the LINK lamp stays flashing and the unit remains in the pairing standby state.

To pair with a second or subsequent receiver unit, repeat step 2 with the device that you use as the receiver unit.

To bring the commander unit out of the pairing standby state, press the PAIRING button.

Hint

- You can pair this flash unit with up to 15 receiver units. If you pair it with a new device when the flash unit has already been paired with 15 receiver units, the pairing information of the receiver unit that has the oldest paired date among the 15 receiver units will be overwritten by the information of the newly paired device.
- You can view or delete the paired receiver unit(s) by selecting [External Flash Set.] - [Ext. Flash Cust. Set.] - [Disp. Paired Devices] from the menu of the camera attached with this flash unit.
For details, refer to the operating instructions supplied with your camera.

Note

- To switch the roles of the commander and receiver units for radio wireless flash photography, repeat the pairing procedure all over again.

Related Topic

- [Configuring the flash unit for wireless flash photography](#)

Flash
HVL-F28RM/HVL-F28RMA

TTL flash photography (TTL)

TTL-flash mode measures the light from the subject that is reflected through the lens. TTL metering also has a P-TTL metering function, which adds a pre-flash to TTL metering, and an ADI metering function, which adds distance data to the P-TTL metering.

Note

- ADI metering is possible in combination with a lens with a built-in distance encoder. Before using the ADI metering function, check whether your lens has a built-in distance encoder by referring to the specifications in the operating instructions supplied with your lens.

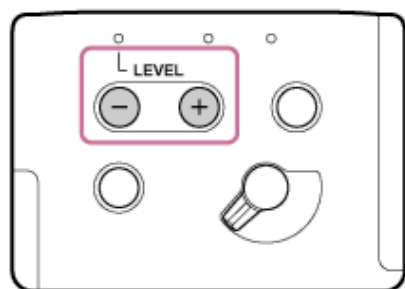
1 Work with the menu of the camera attached with this flash unit to specify [TTL Flash Firing] for the flash control mode.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.
By default, [TTL Flash Firing] is specified for the flash control mode.
For camera models compatible with this flash unit, visit the website at:

- HVL-F28RM
<https://www.sony.net/dics/f28rm/>
- HVL-F28RMA
<https://www.sony.net/dics/hvlf28rma/>

2 Press the shutter button on the camera to take a photo.

- Wait until the TEST button on the flash unit lights in orange (ready to fire), and then press the shutter button.
- You can change the flash compensation value (adjust the flash power level) by pressing the LEVEL +/- button on the flash unit. When you press the button, the LEVEL lamp on the flash unit flashes.
When the flash compensation value is set to a value other than ± 0.0 , the LEVEL lamp lights.
When the flash compensation value is set to ± 0.0 , the LEVEL lamp goes out.



- You can specify the flash power level in steps of 0.3 EV or 0.5 EV. To change the flash power level setting step, select [External Flash Set.] - [Ext. Flash Cust. Set.] - [Flash Power Lv Step] from the menu of the camera attached with this flash unit and change the setting option.
[0.3EV]: Changes the flash power level setting in steps of 0.3 EV.
[0.5EV]: Changes the flash power level setting in steps of 0.5 EV.

Auto WB adjustment with color temperature information

White balance is automatically adjusted on the camera (except for DSLR-A100) based on the color temperature information at the time of flash firing.

Note

- The Auto WB adjustment function works when:
 - this flash unit is attached to the camera and placed in TTL flash firing mode or manual flash firing mode.
 - [Auto] or [Flash] is specified for the white balance on the camera.

Notes on TTL flash photography

- To use fill-flash or auto-flash mode of the camera, you need to select the mode on the camera.
- Before photographing with the flash unit using the self-timer of the camera, make sure that the TEST button is lit.
- When flash compensation is made both on this flash unit and the camera, both compensation values are added up for flash firing.
- When a wide-angle lens with the focal length of less than 24 mm is used, the periphery of the monitor screen on the camera may appear darker.
- When a physically long lens is used, the flash light may be obstructed by the lens end.

Flash
HVL-F28RM/HVL-F28RMA

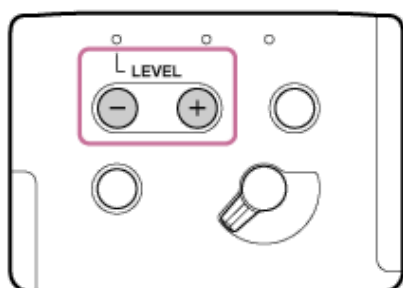
Manual flash photography (MANUAL)

Manual flash firing mode keeps the flash power level consistent regardless of the brightness of the subject or the settings of the camera.

- 1 **Work with the menu of the camera attached with this flash unit to specify [Manual Flash Firing] for the flash control mode.**

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.

- 2 **Press the LEVEL +/- button on the flash unit to select the flash power level of your choice.**



- You can specify the flash power level in the range from 1/1 (brightest) to 1/128 (darkest).
You can view the current setting by selecting [External Flash Set.] - [Ext. Flash Firing Set.] - [Flash Power Level] from the menu of the camera attached with this flash unit.
- Decreasing the flash power by one level (e.g. 1/1 → 1/2) is equivalent to increasing the aperture by one level (e.g. F4 → 5.6).
- Flash unit software version 2.00 or later: When using the flash unit in combination with a camera equipped with a global shutter image sensor, the flash power level of the flash unit may not reach the set value, depending on the shutter speed setting of the camera. In such cases, the low flash power level indicator (⚡↓) is displayed on the flash charging icon of the camera.
For the shutter speed and flash power level setting conditions under which the low flash power level indicator is displayed, see “The setting conditions under which the low flash power level indicator is displayed” below.

- 3 **Press the shutter button on the camera to take a photo.**

Wait until the TEST button on the flash unit lights in orange (ready to fire), and then press the shutter button.

TTL level memory function

During TTL flash photography, a measured flash power level is automatically set as the flash power level in manual flash firing mode. This enables you to adjust the flash power level in manual flash firing mode on the basis of the flash power level measured during TTL flash photography, and to omit a series of operations necessary for determining the flash power level. To change the TTL level memory function setting, select [External Flash Set.] - [Ext. Flash Cust. Set.] - [TTL Level Memory] from the menu of the camera attached with this flash unit. By default, [On] is specified for the TTL level memory function.

Notes on using the TTL level memory function

- During multiple wireless flash photography (group flash photography), the guide number varies depending on the flash settings of individual flash units or the availability of the built-in wide panel. To retain an appropriate flash power level, specify a different wireless group for each flash unit.

- If a flash unit that does not support the TTL level memory function is used for multiple wireless flash photography (group flash photography), an appropriate flash power level may not be retained.
- In manual flash firing mode, the flash power level measured during TTL flash photography is retained. If you change the settings that affect the flash power level, such as the flash power level setting, after photographing, the changed settings will not be retained. When you have made such changes, perform TTL flash photography once again.
- If the flash power level measured during TTL flash photography is lower than the levels available in manual flash firing mode, the photographed images may appear over-exposed.

The setting conditions under which the low flash power level indicator is displayed (flash unit software version 2.00 or later)

✓ : Sufficient flash power level
 -: Insufficient flash power level

Shutter speed	Flash power level setting							
	1/128	1/64	1/32	1/16	1/8	1/4	1/2	1/1
1/250	✓	✓	✓	✓	✓	✓	✓	✓
1/500	✓	✓	✓	✓	✓	✓	✓	-
1/1000	✓	✓	✓	✓	✓	✓	✓	-
1/2000	✓	✓	✓	✓	✓	✓	-	-
1/4000	✓	✓	✓	✓	✓	-	-	-
1/8000	✓	✓	✓	✓	-	-	-	-
1/16000	✓	✓	✓	✓	-	-	-	-
1/32000	✓	✓	✓	-	-	-	-	-
1/64000	✓	✓	-	-	-	-	-	-
1/80000	✓	-	-	-	-	-	-	-

Note

- When a wide-angle lens with the focal length of less than 24 mm is used, the periphery of the monitor screen on the camera may appear darker.
- When a physically long lens is used, the flash light may be obstructed by the lens end.

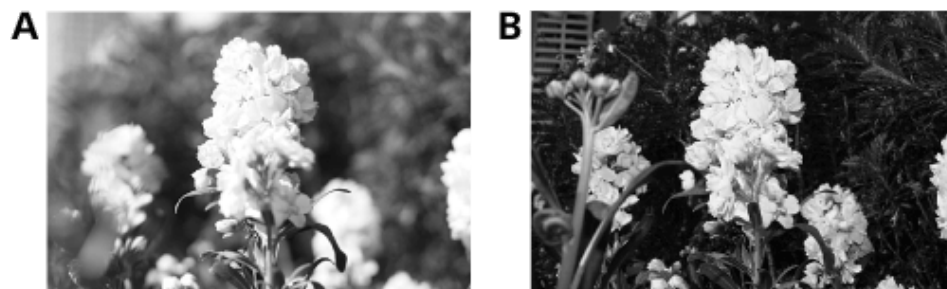
Related Topic

- [TTL flash photography \(TTL\)](#)

Flash
HVL-F28RM/HVL-F28RMA

High-speed sync photography (HSS)

High-speed sync photography eliminates the flash sync speed restrictions and enables the flash unit to be used through the entire shutter speed range of the camera. An increase in the selectable aperture range allows flash photography with a wide aperture, leaving the background out of focus and accentuating the front subject. When photographing a scene, where the background is very bright and the photograph is likely to be over-exposed, at a wide f-stop in A or M shooting mode of the camera, you can still adjust the exposure to the proper level by using the high-speed shutter.



A: High-speed sync photography

B: Normal flash photography

- 1 **Select [External Flash Set.] - [Ext. Flash Firing Set.] from the menu of the camera attached with this flash unit and specify [On] for [High Speed Sync].**

By default, [On] is specified for high-speed sync photography.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.

Flash sync speed

Flash photography is generally associated with the maximum shutter speed referred to as the flash sync speed. This restriction does not apply to cameras designed for high-speed sync photography, since they allow flash photography at the maximum shutter speed of the camera.

Note

- If you set the shutter speed of the camera faster than 1/4000 and take a photo, bright and dark streaks may appear on the photo. It is recommended that you set the flash power level in manual flash firing mode to at least 1/2 for photography.
- When a wide-angle lens with the focal length of less than 24 mm is used, the periphery of the monitor screen on the camera may appear darker.
- When a physically long lens is used, the flash light may be obstructed by the lens end.
- The minimum value available for specifying the flash power level varies in accordance with the high-speed sync setting.
 - When [On] is selected: 1/128
 - When [Off] is selected: 1/256*

* The minimum value is limited to 1/128 when [Off] is specified for [Wireless Flash] on the menu of the camera attached with this flash unit.

Flash
HVL-F28RM/HVL-F28RMA

Global shutter sync photography

By using a combination of this flash unit (flash unit software version 2.00 or later) and a camera equipped with a global shutter image sensor, flash photography can be synchronized with the entire range of shutter speeds available on the camera, enabling more effective flash exposures than conventional high-speed sync photography (HSS).

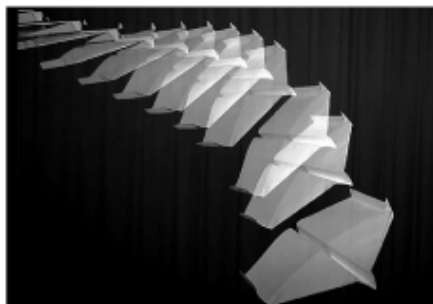
Note

- If you set the shutter speed of the camera faster than 1/10000 and take a photo, brightness and colors may vary.
- With a camera equipped with global shutter image sensor, the HSS icon is not displayed on the camera regardless of whether the high-speed sync setting is [ON]/[OFF].
- When the flash unit and camera are connected with an off-camera cable (not supplied) to perform photography, then instead of global shutter sync photography, it is performed by the conventional high-speed sync photography, so the distance the flash light can reach is shortened.
- During multiple flash photography or with the camera flash mode set to rear curtain sync, the shutter speed of the camera is limited to the flash sync speed.
- If the shutter speed of the camera is set faster than the flash duration of this flash unit, the flash power level may not reach the set value. In such cases, the low flash power level indicator is displayed on the flash charging icon of the camera. For details, see "[Manual flash photography \(MANUAL\)](#)." In addition, for the maximum Guide Number (GN) equivalent for each shutter speed, see "Global shutter sync flash (ISO 100)" in "[Guide number](#)."

Flash
HVL-F28RM/HVL-F28RMA

Multiple flash photography (MULTI)

This flash unit is capable of firing multiple times while the camera shutter is open (multiple flash photography). Multiple flash photography allows you to capture a series of movements of the subject in a single photo.



Hint

- For multiple flash photography, you need to place the camera in M shooting mode. Otherwise, you may not obtain the proper exposure.
- To avoid blurring of images due to hand movement, it is recommended that you use a tripod for multiple flash photography.

1 Work with the menu of the camera attached with this flash unit to specify [Multi Flash Firing] for the flash control mode.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.

2 Operate the camera to specify the flash interval, the number of flashes, and the flash power level for multiple flash photography.

3 Operate the camera to specify the shutter speed and the aperture.

The shutter speed should be at least equal to the value obtained by dividing the specified number of flashes (Times) by the specified flash interval (Hz).

For example, if [10] is selected for the number of flashes; and [5Hz] for the flash interval, specify at least 2 seconds for the shutter speed of the camera.

4 Press the shutter button on the camera to take a photo.

Wait until the TEST button on the flash unit lights in orange (ready to fire), and then press the shutter button.

Maximum number of flashes for continuous firing in multi flash firing mode

Due to the limited battery capacity, the maximum number of flashes for continuous firing in multi flash firing mode are listed in the following tables as guidelines.

When using the alkaline batteries

Flash power levels	Flash intervals (Hz)																		
	100	90	80	70	60	50	40	30	20	10	9	8	7	6	5	4	3	2	1
1/8	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	8	10

Flash power levels	Flash intervals (Hz)																		
	100	90	80	70	60	50	40	30	20	10	9	8	7	6	5	4	3	2	1
1/16	6	6	6	6	6	6	8	8	8	9	10	10	10	10	10	10	15	30	50
1/32	10	10	10	10	10	10	15	15	15	15	15	15	15	15	15	20	25	50	100*
1/64	25	25	25	25	25	25	25	25	25	35	40	40	50	65	90	100*	100*	100*	100*
1/128	50	50	50	50	60	60	60	65	95	100*	100*	100*	100*	100*	100*	100*	100*	100*	100*

“100*” indicates 100 or greater.

When using the nickel-hydrate batteries

Flash power levels	Flash intervals (Hz)																		
	100	90	80	70	60	50	40	30	20	10	9	8	7	6	5	4	3	2	1
1/8	5	5	5	5	5	5	5	5	5	5	6	6	6	7	7	8	9	20	80
1/16	8	8	8	8	8	8	9	9	9	10	10	10	10	10	15	25	100*	100*	100*
1/32	15	15	15	15	15	15	15	15	15	20	35	45	100*	100*	100*	100*	100*	100*	100*
1/64	25	25	25	25	25	25	25	30	45	100*	100*	100*	100*	100*	100*	100*	100*	100*	100*
1/128	50	50	50	50	55	65	95	100*	100*	100*	100*	100*	100*	100*	100*	100*	100*	100*	100*

“100*” indicates 100 or greater.

Note

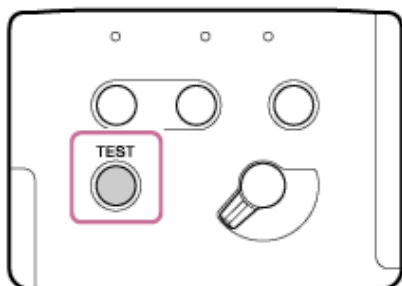
- The maximum number of flashes for continuous firing varies depending on the type and condition of the batteries.
- When a wide-angle lens with the focal length of less than 24 mm is used, the periphery of the monitor screen on the camera may appear darker.
- When a physically long lens is used, the flash light may be obstructed by the lens end.

Flash
HVL-F28RM/HVL-F28RMA

Firing test flashes

You can fire test flashes before you start photographing. If you intend to use a flash meter for manual flash photography, be sure to fire test flashes.

- 1 Wait until the TEST button lights in orange (ready to fire), and then press the TEST button.



Tips on firing test flashes

- The flash power for firing test flashes depends on the flash power level specified for each flash mode. During TTL flash photography, this flash unit fires test flashes at the flash power level corresponding to the guide number 2.
- With the test flash function, you can preview how the subject cast shadows (the modeling flash). On this flash unit, you can select [3 Times] (3 flashes) or [4 Sec] (continuous flash firing at consistent intervals of 4 seconds) for the modeling flash. To change the modeling flash setting, select [External Flash Set.] - [Ext. Flash Firing Set.] - [Test Flash] from the menu of the camera attached with this flash unit, and then change the setting option.
- When [1 Time] or [Group] is specified for firing test flashes in multi flash firing mode, this flash unit fires the specified number of test flashes of the specified flash power level at the specified flash intervals while you press and hold the TEST button.
- During radio wireless photography, you can force the receiver unit(s) to fire test flashes in accordance with the test flash setting on the commander unit by pressing the TEST button on the commander unit.
- When this flash unit is configured as the commander unit for radio wireless photography, the TEST button lights in orange as soon as all the flash units, including the receiver units, become ready to fire.

Configuring the flash unit for wireless flash photography

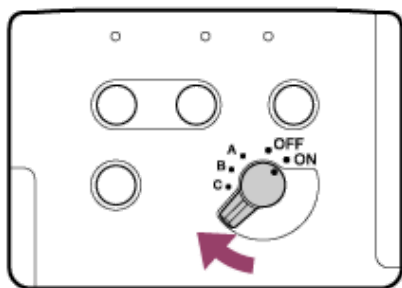
This flash unit supports radio wireless communications for flash photography. Configure the flash unit that you attach to a camera as the commander unit; and the flash unit of which flash operation is wirelessly triggered as the receiver unit (off-camera flash unit).

Hint

- To perform radio wireless flash photography, you need to pair the commander unit with the receiver unit in advance.

To configure the flash unit as the commander unit

- 1 Turn the power switch on this flash unit to “ON.”

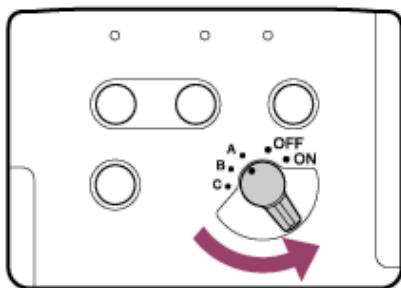


- 2 Work with the menu of the camera attached with this flash unit to specify [On] for [Wireless Flash].

The CMD lamp on the flash unit lights.

To configure the flash unit as the receiver unit

Turn the power switch on this flash unit to “A,” “B,” or “C.”



For details about the flash unit settings and wireless flash photography, see [“Wireless flash photography \(with the receiver unit\).”](#)

Hint

- The radio wireless communication distance available between the commander unit and the receiver unit is approximately 35 m (114 ft.). (Acquired under our measurement conditions.)
- Select [External Flash Set.] - [Ext. Flash Cust. Set.] - [Commn. Channel] from the menu of the camera attached with this flash unit, and then specify the channel to use for radio wireless communications. By default, [Auto] is specified for the communication channel and a channel appropriate for the ambient radio conditions at the time that you turn on this flash unit is used.
- When this flash unit is configured as the commander unit for radio wireless photography, the TEST button lights in orange as soon as all the flash units, including the receiver units, become ready to fire.

Related Topic

- [Pairing with a radio wireless commander/receiver \(for radio wireless flash photography\)](#)

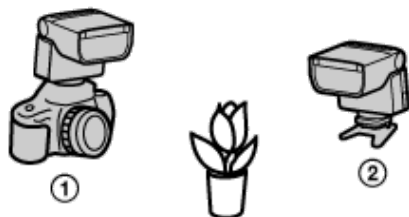
5-023-112-14(2) Copyright 2020 Sony Corporation

Flash
HVL-F28RM/HVL-F28RMA

Wireless flash photography (with the receiver unit)

You can configure either of the following devices as the commander unit, and then use the commander unit to trigger the flash operation of this flash unit that is not attached to a camera and is configured as the receiver unit.

- another flash unit that is attached to the camera and supports radio wireless communications
- a radio wireless commander that is attached to the camera



①: Commander unit

②: This flash unit (HVL-F28RM/HVL-F28RMA) configured as the receiver unit

For the commander unit, you can use this flash unit or a radio wireless commander.

- 1 Work with the menu of the camera attached with this flash unit to specify [On] for [Wireless Flash].**
For details on the settings of the camera, refer to the operating instructions supplied with your camera.
- 2 Turn the power switch on the flash unit to “A,” “B,” or “C.”**
The flash unit is configured as a member of a wireless group (“A,” “B,” or “C”).
- 3 Attach the mini-stand to the flash unit.**
- 4 Attach another flash unit of the same model (HVL-F28RM/HVL-F28RMA) that is configured as the commander unit, or a radio wireless commander to the camera.**
When using another flash unit of the same model (HVL-F28RM/HVL-F28RMA), make sure that its power switch is turned to “ON.”
- 5 Place the camera and this flash unit.**
- 6 Make sure that the flash unit attached to the camera (the commander unit) and this flash unit (the receiver unit) are wirelessly connected and ready to fire.**
 - When wirelessly connected:
The LINK lamp is lit in green.
 - When ready to fire:
The TEST button is lit in orange.
- 7 Press the shutter button on the camera to take a photo.**
To fire test flashes, press the TEST button on the commander unit.

Hint

- To the receiver unit, the flash control mode of the commander unit is applied.
- During manual flash photography, you can adjust the flash power level of the receiver unit by pressing the LEVEL +/- button on the commander unit.

Related Topic

- [Pairing with a radio wireless commander/receiver \(for radio wireless flash photography\)](#)
- [Attaching/removing the mini-stand](#)

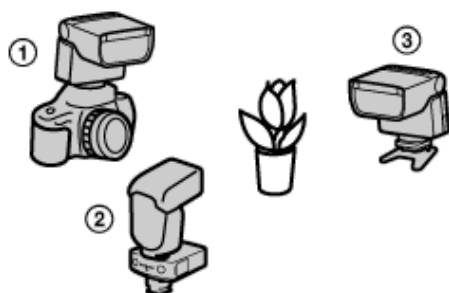
5-023-112-14(2) Copyright 2020 Sony Corporation

Flash
HVL-F28RM/HVL-F28RMA

Multiple wireless flash photography with flash power ratio control

You can perform wireless flash photography while controlling the flash power ratio among a maximum of 3 wireless groups (A, B, and C) of flash units including the commander unit. Before you perform multiple wireless flash photography, be sure to configure each of the flash units as the commander unit or the receiver unit.

- Commander unit: this flash unit (HVL-F28RM/HVL-F28RMA) or a radio wireless commander
- Receiver unit (off-camera flash unit): this flash unit (HVL-F28RM/HVL-F28RMA) or a radio wireless receiver



- ①: Commander unit
②: Radio wireless receiver
③: Receiver unit

1 Work with the menu of the camera attached with the commander unit to select the wireless group, and then change the flash power ratio.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera. When the flash power ratio among the wireless groups A, B, and C is displayed as “4:2:1” on the connected camera, for example, the flash unit in each group fires flashes with a fraction of the total flash power: $\frac{4}{7}$, $\frac{2}{7}$, and $\frac{1}{7}$, respectively.

Hint

- The commander unit fires flashes as a member of the wireless group A. When you do not want the commander unit to fire flashes, select [External Flash Set.] - [Ext. Flash Firing Set.] - [CMD Flash Firing] from the menu of the camera attached with the commander unit, and then specify [Off].

Related Topic

- [Pairing with a radio wireless commander/receiver \(for radio wireless flash photography\)](#)

Flash
HVL-F28RM/HVL-F28RMA

Multiple wireless flash photography (group flash photography)

You can perform wireless flash photography among a maximum of 5 wireless groups of flash units including the commander unit. Before you perform multiple wireless flash photography, be sure to configure each of the flash units as the commander unit or the receiver unit.

- Commander unit: this flash unit (HVL-F28RM/HVL-F28RMA) or a radio wireless commander
- Receiver unit (off-camera flash unit): this flash unit (HVL-F28RM/HVL-F28RMA) or a radio wireless receiver

1 Work with the menu of the camera attached with the commander unit to specify the flash control mode, the flash compensation, and the flash power level for each wireless group.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera. You can change the flash compensation value (adjust the flash power level) collectively for all the wireless groups by pressing the LEVEL +/- button on this flash unit configured as the commander unit.

Hint

- You can specify [TTL Flash Firing], [Manual Flash Firing], or [Flash Off] for the flash control mode of the wireless groups A, B, and C. For the wireless groups D and E, on the other hand, you can specify either [Manual Flash Firing] or [Flash Off]. The flash units in the wireless group with the flash mode specified as [Flash Off] do not fire flashes. This flash unit cannot be specified as a member of the wireless group D or E.
- When [On] is specified for the TTL level memory function ([TTL Level Memory]), the flash power level measured during TTL flash photography is automatically applied to the flash power level for each of the wireless groups A, B, and C during manual flash photography.
- The commander unit fires flashes as a member of the wireless group A. When you do not want the commander unit to fire flashes, select [External Flash Set.] - [Ext. Flash Firing Set.] - [CMD Flash Firing] from the menu of the camera attached with the commander unit, and then specify [Off].
- You can compensate the flash power level collectively for all the wireless groups by specifying a collective flash compensation level.
- Flash unit software version 2.00 or later: The low flash power level indicator () is displayed on the flash charging icon of the camera if the group includes even one flash unit whose flash power level is insufficient. If this occurs, adjust the flash power level of all flash units in the group to an appropriate level or set the shutter speed of the camera to a slower speed.

Related Topic

- [Pairing with a radio wireless commander/receiver \(for radio wireless flash photography\)](#)

Flash
HVL-F28RM/HVL-F28RMA

Changing the settings of individual receiver units (from the commander unit)

When you perform multiple flash photography, for example, you can change the wireless group setting or the zoom setting of individual paired receiver units from the commander unit.

Note

- When this flash unit is configured as the receiver unit, the commander unit is not capable of changing the wireless group setting or the zoom setting of the receiver unit.

1 Work with the menu of the camera attached with the commander unit to change the wireless group setting or the zoom setting of individual receiver units.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.

Note

- When the value specified for the zoom setting on the commander unit is larger or smaller than the zoom setting values available on the receiver unit, its maximum or minimum value is specified for the zoom setting on the receiver unit.

Flash
HVL-F28RM/HVL-F28RMA

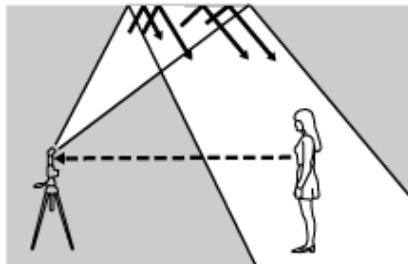
Notes on wireless flash photography

- During photography with off-camera flash units, P-TTL flash metering is automatically used instead of ADI metering.
- Flash unit software version 2.00 or later: When you use a combination of flash units that are compatible and not compatible with global shutter sync photography for multiple radio wireless flash photography including ratio control and group flash, global shutter sync photography is not available. High-speed sync photography is used instead.
To use global shutter sync photography with multiple flash units, make sure that all flash units are compatible with global shutter sync photography.

Flash
HVL-F28RM/HVL-F28RMA

Bounce flash photography

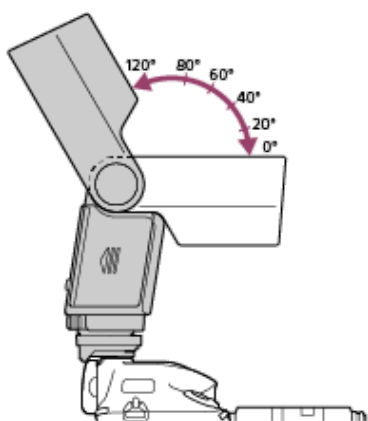
Using the flash unit with a wall directly behind the subject produces strong shadows on the wall. By directing the flash unit at the ceiling, you can illuminate the subject with reflected light, reducing the intensity of the shadows and producing a softer light on the screen.



A: Bounce flash photography
B: Standard flash photography

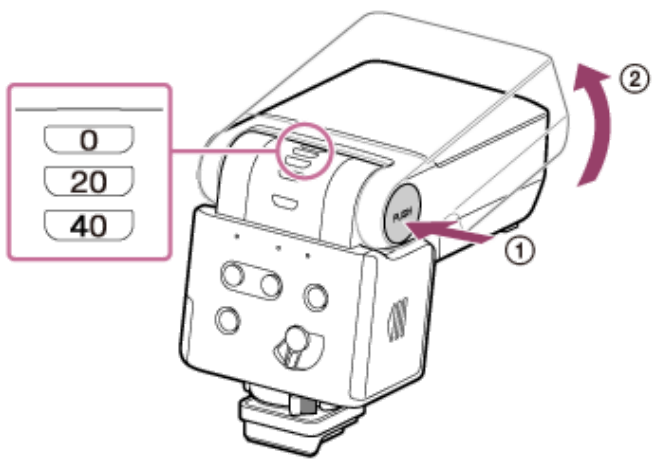
1 Hold the camera firmly and tilt up the flashlamp.

The illustration used below is of the HVL-F28RM flash unit.



About bounce lock mechanism

When the flashlamp is tilted to the 0-degree (0°) position, the flashlamp is locked (bounce lock mechanism) to disable adjustment of the bounce flash angle. To adjust the bounce flash angle when the flashlamp is locked, press and hold the bounce lock release button and tilt up the flashlamp.

**Note**

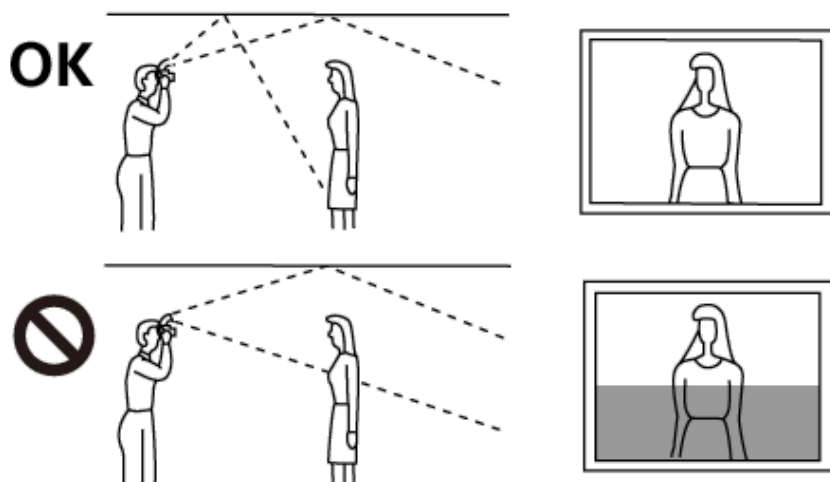
- Use a white ceiling or wall to bounce the flash light. A colored surface may tint the bounced light. High ceilings or glass are not recommended for the bounce surface.

Flash
HVL-F28RM/HVL-F28RMA

Adjusting the bounce flash angle

Simultaneous use of the flash light from this flash unit and the bounced light produces uneven lighting. To determine the bounce flash angle, take the flash photography conditions into consideration, such as the distance to the bounce surface, the distance from the camera to the subject, and the focal length of the lens.

Examples of flash photography conditions: the distance to the bounce surface, the distance from the camera to the subject, the focal length of the lens



To bounce the flash light upward

Determine the bounce flash angle with consideration for the focal lengths of the lens listed in the following table.

Focal lengths of the lens	Bounce angle
70 mm minimum	20°, 40°
28 mm - 70 mm	60°
28 mm maximum	80°, 120°

Tips on using the bounce sheet

The bounce sheet creates a highlight in the subject's eyes and makes the subject look more vibrant.

The bounce sheet is pulled out along with the wide panel from this flash unit. Push the wide panel back into the flash unit.

Hint

- When you use the bounce sheet for flash photography, tilt up the flashlamp by 80°.

Flash
HVL-F28RM/HVL-F28RMA

Registering/calling up a preference

You can register the mode or settings that you frequently use to either [MR1] or [MR2] as a preference and call it up by working with the menu of the camera attached with this flash unit.

To register a preference

- 1 Set up this flash unit as you want for registering as a preference.
- 2 Work with the menu of the camera attached with this flash unit to register the current setup on the memory storage of the flash unit.
For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.
- 3 Select the preference name of your choice ([MR1] or [MR2]).

To call up a preference

Work with the menu of the camera attached with this flash unit to select the preference name of your choice.

Hint

- To change the preference properties, call up a preference, change the setup of this flash unit, and then register the setup all over again by selecting [External Flash Set.] - [Ext. Flash Cust. Set.] - [Memory] from the menu of the camera attached with this flash unit.
- When you do not intend to use the registered preferences, select [Off] in the procedure for calling up the registered preferences.

Flash
HVL-F28RM/HVL-F28RMA

Viewing the version information of this flash unit/the receiver unit

You can view the version information about this flash unit and the paired receiver unit(s). Check this information when a firmware update is released.

1 Work with the menu of the camera attached with this flash unit to select the device of your choice.

When a receiver unit is selected, the contents of the displayed information vary depending on the radio conditions. When no receiver units are paired, no receiver units are available for selection.

For details on the external flash settings of the camera, refer to the operating instructions supplied with your camera.

Flash
HVL-F28RM/HVL-F28RMA

List of flash settings

While this flash unit is attached to a camera with external flash setting capabilities, you can change the following flash settings:

External flash firing settings

Setting items	Descriptions	Setting options
Flash Control Mode	Flash control mode setting	TTL Flash Firing (*)/Manual Flash Firing/Multi Flash Firing/Group Flash Firing
Memory recall	Calling up the registered preferences	Off (*)/MR1/MR2
High Speed Sync	High-speed sync setting	On (*)/Off
CMD Flash Firing	Flash firing setting of this flash unit that is configured as the commander unit	On (*)/Off
Flash Comp.	Flash compensation setting	−3.0 - +3.0 (*: ±0.0)
Flash Power Level	Flash power level setting	1/1 (*) - 1/128, Off (When [Wireless Flash] is set to [On] on the camera with this flash unit attached, settings up to 1/256 are available.)
Flash Interval	Intervals for firing flashes in multi flash firing mode	1Hz - 100Hz (*: 5Hz)
Number of Flashes	Number of flashes to fire in multi flash firing mode	2 - 100 (*: 10), Continuous
Ratio Control	Flash power ratio control setting	On/Off (*)
Ratio Value (A) Ratio Value (B) Ratio Value (C)	Flash power ratio settings	OFF/1 (*) - 16

* Factory default

Note

- The items and options available for setting vary depending on the flash mode.
- Performing the reset operation on this flash unit resets the all of the above external flash firing settings to the factory defaults. For the reset operation, see [“Resetting the flash firing settings to the factory defaults.”](#)

External flash custom settings

Setting items	Descriptions	Setting options
Memory	Registers the current mode or settings.	-
Test Flash	Test flash firing setting	Group/1 Time (*)/3 Times/4 Sec
TTL Level Memory	Flash power level memory setting in TTL flash firing mode	On (*)/Off
Flash Power Lv Step	Flash power level step setting	0.3EV (*)/0.5EV
Receiver Set	Changes the settings of individual paired receiver units.	-
Commn. Channel	Wireless channel setting	Auto (*)/CH1-CH14
Disp. Paired Devices	Displays the information about the paired devices.	-
Power Save	Power-saving timer setting	30 Sec/3 Min (*)/30 Min/Off
WL Power Save	Power-saving timer setting during wireless flash photography	60 Min (*)/240 Min/Off
Version	Displays the version information about this flash unit and the receiver unit(s).	-

* Factory default

Tips for the customers using a camera without external flash setting capabilities

When this flash unit is attached to a camera without external flash setting capabilities, the following operations are available:

- Changing the flash compensation value
- Configuring the flash unit as the commander or receiver unit
- Pairing the commander unit with the receiver unit
- Firing test flashes
- Resetting the flash firing settings to the factory defaults
- Restoring the factory default state of the flash unit

Note

- It is recommended that you reset the flash firing settings to the factory defaults before performing TTL flash photography.
- The settings of this flash unit are retained when it is attached to a camera without external flash setting capabilities as well.
- While this flash unit is removed from a camera, you cannot view the firmware version.

Related Topic

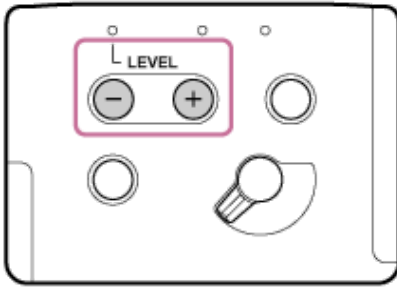
- [TTL flash photography \(TTL\)](#)
- [Firing test flashes](#)
- [Configuring the flash unit for wireless flash photography](#)
- [Pairing with a radio wireless commander/receiver \(for radio wireless flash photography\)](#)
- [Resetting the flash firing settings to the factory defaults](#)
- [Restoring the factory default state of the flash unit](#)

Flash
HVL-F28RM/HVL-F28RMA

Resetting the flash firing settings to the factory defaults

You can reset the current flash firing settings retained on this flash unit to the factory defaults.
For the setting items and options available for the flash firing settings, see [“List of flash settings.”](#)

- 1 **Make sure that this flash unit is powered, and then press and hold the LEVEL - button and the LEVEL + button simultaneously for 3 seconds.**



The TEST button and the LINK lamp light in red, and then the flash firing settings are reset to the factory defaults.

Note

- While the reset process is in progress, do not turn off the power to the flash unit or remove its batteries.

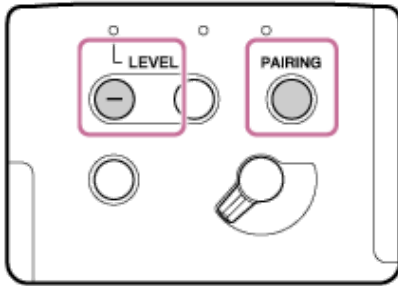
Flash
HVL-F28RM/HVL-F28RMA

Restoring the factory default state of the flash unit

You can initialize this flash unit by clearing all the information, including the pairing information as well as the flash firing settings, retained on this flash unit and restore the factory default state of the flash unit.

For the setting items and options available for the flash firing settings, see "[List of flash settings.](#)"

- 1 **Make sure that this flash unit is powered, and then press and hold the LEVEL - button and the PAIRING button simultaneously for 7 seconds.**



The TEST button and the LINK lamp light in red, and then the flash unit restarts.

Note

- While the initialize process is in progress, do not turn off the power to the flash unit or remove its batteries.

Flash
HVL-F28RM/HVL-F28RMA

Safety precautions

- To avoid the risk of a fire or an electric shock, observe the following:
 - Do not disassemble or alter this unit.
 - Do not use this unit with wet hands.
 - Do not allow ingress of water or foreign matters (metal, flammable substances, etc.) to this unit.
 - Do not use this unit in a place subject to water splashes, high humidity, dust, oil fumes, and steam.
- To avoid the risk of damage or a malfunction, observe the following:
 - This unit is precision equipment. Do not drop the unit, hit it, or subject it to a strong physical impact.
 - Do not touch the electrical contacts on this unit with bare hands.
 - Do not use or store this unit in a place subject to high temperatures and humidity.
 - When using this unit outdoors, keep the unit from exposure to rain or seawater.
- For interior inspection and repair of this unit, contact your Sony dealer or local authorized Sony service facility.

Warning: Batteries

Failure to follow the following precautions may result in an accident causing death or serious injury due to fire, electric shock, or explosion.

- Do not carry around or store this flash unit along with metal objects, such as coins and hairpins.
- Do not attempt to disassemble this flash unit, or make an alteration or a short circuit on the flash unit.

Caution

Failure to follow the following precautions may result in death or serious injury.

- Do not use the flash near the eyes of people or animals, as this may cause visual impairment. When using the flash, maintain a distance of at least 1 m.
- If the outer case is damaged due to a fall or other reason, never touch the exposed parts. Doing so may cause an electric shock.
- Do not operate the flash while driving a car or other vehicle or fire the flash toward a driver, as this may cause temporary visual impairment, which could lead to accidents.
- If you notice any abnormalities, such as excessive heat, burning smell, or smoke during use, immediately remove the batteries and stop using the unit. Continued use may cause a fire or burns.
- Never use a battery whose outer tube has peeled off or is otherwise damaged. Doing so may cause fluid leakage, generate heat, or rupture.
- Do not use this flash unit when it is wrapped.
Heat build-up may cause deformation of the flash unit or a fire.
- Do not use this flash unit in a place subject to explosive or combustible gas.
- If use of this flash unit causes radio interference with other devices, stop using the wireless functions.
Radio interference may cause malfunctions, resulting in incidents.

Notes

Failure to follow the following precautions may result in injury or damage to surrounding objects.

- Do not turn on the light source if covered by skin or other objects. When the light is on, the light source will become very hot and may cause burns.
- Place this flash unit on a stable place.
Placing the flash unit on a wobbling table or a tilted surface may cause the flash unit to fall off, resulting in injuries.

- Before attaching this flash unit to a camera, make sure that the flash unit is not powered.
Attaching the powered flash unit to a camera may cause malfunctions or unexpected flashes, resulting in eye damage by strong light.

5-023-112-14(2) Copyright 2020 Sony Corporation

Flash
HVL-F28RM/HVL-F28RMA

Notes on use

In addition to this Help Guide, please read “Notes on use” in the Startup Guide (supplied).

While photographing

- Do not fire more than 20 consecutive flashes (40 consecutive flashes when the flash power level is 1/32 and the shutter speed of the camera is 1/250 or slower) to prevent heat build-up and degradation of this flash unit and its batteries. When the flash unit has fired the maximum number of flashes, stop using the flash unit and let it cool down for 20 minutes or longer.
- During wireless photography, this flash unit may fire flashes unexpectedly because it is unable to receive communication signals from an off-camera flash for locational reasons. In such a case, change the location of the off-camera flash or the wireless channel setting.
- Do not put this flash unit with the camera attached in a bag, etc. It may result in malfunctions of the flash unit or the camera.
- Do not carry around this flash unit with the camera attached. It will result in malfunctions.
- Keep the flashlamp away from a human body when tilting it up for bounce flash photography to prevent eye damage or skin burns.
- When tilting up or down the flashlamp, keep your fingers off the tilt part to prevent injuries.
- When closing the battery chamber door, hold it firmly down while sliding it fully across.
While closing the battery chamber door, be careful not to injure your fingers by being caught by the door.

Batteries

- Depending on the storage temperature or conditions, the remaining battery power of the alkaline batteries may be detected lower than the actual one and the TEST button on this flash unit may flash in orange. If you keep using the flash unit for a while longer, it may correctly detect the remaining battery power.
- When the rechargeable nickel-metal hydride batteries are running out of power, the performance of this flash unit drastically deteriorates. This may cause the flash unit to suddenly stop operating shortly or immediately after the TEST button starts flashing in orange.
- Do not use lithium-ion batteries in this flash unit as they may prevent the flash unit from delivering full performance.
- Depending on the time elapsed since manufacture of the batteries, the flash interval and the number of flashes may vary from the values shown in the Specifications table even when this flash unit has brand new batteries inside.
- Before removing the batteries for replacement, make sure you turn off the power to this flash unit and let it cool down for a few minutes. Depending on the battery type, the batteries inside the flash unit may have built up heat. Take sufficient care when you remove the batteries.
- Remove and store the batteries when you do not intend to use this flash unit for an extended period of time.

Temperature

- The flash unit should only be used within the temperature range of 0 °C to 40 °C (32 °F to 104 °F).
- Do not expose the flash unit to extremely high temperatures (e.g. direct sunlight inside a vehicle) or high humidity.
- To prevent condensation from forming inside this flash unit, put the flash unit in a sealed plastic bag when bringing it from a cold environment into a warm environment. Let it warm up to the ambient temperature before taking it out of the bag.
- Battery capacity decreases at colder temperatures. When using this flash unit in a cold environment, keep in mind that you should use new batteries or replace the batteries, from time to time, with the spare batteries that are kept warm. In a cold environment, the TEST button on the flash unit may temporarily flashes in orange even when there is some power left in the batteries.
Batteries regain some of their capacity when warmed to normal operating temperatures.

Places to avoid for use/storage

- Extremely hot, cold or humid places
In places such as in a car parked in the sun, this flash unit may become deformed and this may cause a malfunction.
- Places subject to direct sunlight or near a heat source (for storage)
This flash unit may become discolored or deformed, and this may cause a malfunction.

- Places subject to significant vibration
- Places near a strong magnetic field
- Sandy or dusty places

Be careful not to let sand or dust get into this flash unit. This may cause the flash unit to malfunction, and in some cases the malfunction cannot be repaired.

Maintenance

- Remove this flash unit from the camera. Clean the flash unit with a dry soft cloth. If it has been in contact with sand, wiping will damage the surface, and it should therefore be cleaned gently using a blower. In the event of stubborn stains, gently wipe them off with a cloth lightly moistened with water or tepid water, and then wipe the flash unit with a dry soft cloth. Never use strong a solvent, such as paint thinner or benzine, as it damages the surface finish.
- If fingerprints or particles are stuck to the flashlamp, we recommend that you wipe it clean with a soft cloth.

Flash
HVL-F28RM/HVL-F28RMA

Specifications

Flash unit

Flash control	Flash control using pre-flash (P-TTL/ADI metering)
Wireless method	Radio wireless method
Flash coverage	50 mm (24 mm when the built-in wide panel is used)
Continuous flash performance	40 flashes at 10 flashes per second (normal flash, flash power level: 1/32, camera's shutter speed: 1/250 or slower, 50 mm, rechargeable nickel-metal hydride batteries)
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage temperature	−20 °C to +60 °C (−4 °F to +140 °F)
Dimension (w/h/d) (Approx.)	HVL-F28RM: 65.1 mm × 83.5 mm × 91.4 mm (2 5/8 in. × 3 3/8 in. × 3 5/8 in.) HVL-F28RMA: 65.1 mm × 83.5 mm × 94.4 mm (2 5/8 in. × 3 3/8 in. × 3 3/4 in.)
Mass (Approx.)	HVL-F28RM: 219 g (7.8 oz) (excluding the batteries) HVL-F28RMA: 226 g (8 oz) (excluding the batteries)
Power requirements	DC 3 V
Recommended batteries	- Two AA-size alkaline batteries - Two AA-size rechargeable nickel-metal hydride batteries

Flash interval/number of flashes

The number of flashes indicates the approximate number of flashes available with new batteries before they wear out.

Flash interval/number of flashes	With alkaline batteries	With nickel-metal hydride batteries
Flash interval (sec) (*1)	Approx. 0.1 - 6.4	Approx. 0.1 - 4.1
Number of flashes (times) (*2)	Approx. 110 or more	Approx. 130 or more

*1 Minimum duration of time before the TEST button lights after the previous flash (Acquired under our measurement conditions.)

*2 Number of flashes at the highest flash power level available in every 30 seconds (Acquired under our measurement conditions.)

Functions in this manual depend on testing conditions at our firm.
Design and specifications are subject to change without notice.

Flash
HVL-F28RM/HVL-F28RMA

Guide number

Normal flash (ISO 100)

- Manual flash/35mm-format

Flash power level	Flash coverage setting (mm)	
	24 (*)	50
1/1	20	28
1/2	14.1	19.8
1/4	10	14
1/8	7.1	9.9
1/16	5	7
1/32	3.5	4.9
1/64	2.5	3.5
1/128	1.8	2.5

* When the wide panel is attached.

- APS-C format

Flash power level	Flash coverage setting (mm)	
	24 (*)	50
1/1	20	28
1/2	14.1	19.8
1/4	10	14
1/8	7.1	9.9
1/16	5	7
1/32	3.5	4.9
1/64	2.5	3.5
1/128	1.8	2.5

* When the wide panel is attached.

HSS flat flash (ISO 100)

- Manual flash/35mm-format (maximum Guide Number (GN) equivalent for each zoom position)

Shutter speed	Flash coverage setting (mm)	
	24 (*)	50
1/250	6.4	10.8
1/500	4.6	7.7
1/1000	3.2	5.4
1/2000	2.3	3.8
1/4000	1.6	2.7
1/8000	1.1	1.9
1/16000	0.8	1.4

* When the wide panel is attached.

- APS-C format (maximum Guide Number (GN) equivalent for each zoom position)

Shutter speed	Flash coverage setting (mm)	
	24 (*)	50
1/250	6.4	10.8
1/500	4.6	7.7
1/1000	3.2	5.4
1/2000	2.3	3.8
1/4000	1.6	2.7
1/8000	1.1	1.9
1/16000	0.8	1.4

* When the wide panel is attached.

Global shutter sync flash (ISO 100) (flash unit software version 2.00 or later)

- Manual flash/35mm-format (maximum Guide Number (GN) equivalent for each zoom position)

Shutter speed	Flash coverage setting (mm)	
	24 (*)	50
1/250	20	28
1/500	18.6	26.3
1/1000	16.4	23.1
1/2000	12.9	18.2
1/4000	9.7	13.7
1/8000	6.9	9.7
1/16000	5.0	7.0
1/32000	3.5	5.0

Shutter speed	Flash coverage setting (mm)	
	24 (*)	50
1/64000	2.5	3.5
1/80000	2.2	3.2

* When the wide panel is attached.

- APS-C format (maximum Guide Number (GN) equivalent for each zoom position)

Shutter speed	Flash coverage setting (mm)	
	24 (*)	50
1/250	20	28
1/500	18.6	26.3
1/1000	16.4	23.1
1/2000	12.9	18.2
1/4000	9.7	13.7
1/8000	6.9	9.7
1/16000	5.0	7.0
1/32000	3.5	5.0
1/64000	2.5	3.5
1/80000	2.2	3.2

* When the wide panel is attached.

Flash
HVL-F28RM/HVL-F28RMA

Radio wireless features

The following lists the specifications of radio wireless features on this flash unit.

Frequency band	2.4 GHz
Number of channels	14 channels
Communication distance	Approximately 35 m (114 ft.) (Acquired under our measurement conditions.) ● The distance given above applies under conditions where there are no obstacles, shielding, or radio wave interferences. ● The communication distance may be shorter depending on the positioning of the products, the ambient environment, and weather conditions.

Flash
HVL-F28RM/HVL-F28RMA

Trademarks

- “Multi Interface Shoe” is a trademark of Sony Group Corporation.

Flash
HVL-F28RM/HVL-F28RMA

License

This product comes with software that is used based on licensing agreements with the owners of that software. Based on requests by the owners of copyright of these software applications, we have an obligation to inform you of contents of the agreement.

For the software used on this product, visit the website at:

https://helpguide.sony.net/ilc/flash_oss1/v1/en/index.html