



DIGITAL TTL  
UW STROBE

**ONE160x**  
User Guide

Thank you for purchasing an ONEUW product!

We have created this innovative underwater strobe by interpreting your requests and suggestions with the highest technological expression and an extreme attention to quality.

Please read this user guide carefully before using your ONE160x underwater strobe. Only in this way you will be able to use it to its full potential in absolute safety for yourself and for others.

For any clarification or additional information please do not hesitate to contact us.

We are confident that this tool will become for you a faithful companion in your photographic path and a valuable aid in achieving the greatest satisfactions.

We give you a light for underwater photography "state of the art", it is now up to you with your imagination to realize the most beautiful images.

**Light becomes emotion, enjoy it.**

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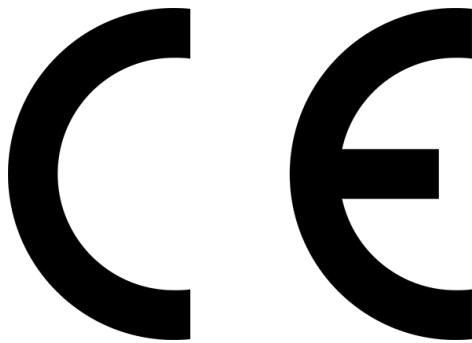
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# IMPORTANT INFORMATION

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## 1.0 Safety Notes

### 1.1 CE Mark



The ONE160x strobe has been developed and manufactured with safety standards in accordance with applicable CE Directives.

### 1.2 Warnings and caution

- Use the product for its intended purpose – underwater photography – following the modes and instructions given by this user guide.
- Do not attempt to disassemble the strobe under any circumstances. High voltages that can cause fatal electric shocks are present in the electronic components of it. Any tampering with the flash will void the warranty. All inspections and repairs must be carried out at ONEUW's premises or authorized service centers.
- Never short-circuit the terminals of the battery packs and do not attempt, for any reason, to disassemble them.

## IMPORTANT INFORMATION

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- Do not leave the strobe in overheated environments such as car interiors in summer or boat engine compartments. Do not expose the strobe in summer directly to the sun for prolonged periods, overheating can damage the unit and create dangerous situations.
- To recharge the battery packs, use only the specific battery charger supplied with the strobe, following the appropriate instructions for use (chapter 5.4). Recharge the battery packs in cool rooms and avoid overheating when using them.
- If the strobe is flooding turn it off immediately and for your safety do not use it until reconditioning to technically efficient condition. Send the unit to our plant or authorized service centers for inspection. Carefully read the instructions given in this manual in the relevant chapter (17.0)
- Strictly follow the instructions on how to connect the strobe. Camera model, wiring mode, single or dual units, interface with strobes of other brands, are all parameters that should be carefully checked for compatibility. The strobe and the units connected may be seriously damaged due to improper connections. Carefully read the instructions given in this manual in the relevant chapter (15.0).
- Do not fire the strobe directly into the lens of a digital camera, the camera sensor may become damaged.
- Do not fire the strobe directly into the eyes of someone, and do not look at the emission of lightning flash, it could cause retinal injury.

## IMPORTANT INFORMATION

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### 1.3 Warnings and informations in the chapters

The following chapters contain further notes in the form of "danger warnings" or "technical information notes".

The type of annotation is easily recognizable by the icon that precedes it as indicated below.



This icon indicates warnings concerning potentially dangerous situations that could result in property damage or personal injury.



This icon indicates warnings that allow you to deepen your technical knowledge of the equipment and its correct use.



## BASIC INFORMATION

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### 2.0 Key features overview

ONE160x is a professional underwater strobe with maximum energy of 157 Ws (J) and Guide Number 20 (ISO100-1m-full power). The beam angle is 130° (GN16).

The body of strobe is machined from a solid block of anticorrosive aluminium, protected by a hard anodizing treatment with nanotech quartz coating.


The depth rating is 200 m.

The strobe control is entrusted to a pair of powerful CPU that manage, one the digital communication between the camera and the strobe, i-TTL protocol by Nikon and E-TTL protocol by Canon, and the other the power circuits in order to optimize the performances of the unit in every situation, in addition to operational safety and battery life.

High-speed sync (HSS) mode is available in both auto flash exposure i-E-TTL and manual flash exposure modes.

The possibility of firmware upgrade allows us to guarantee, within hardware limits, the future compatibility with the new digital cameras.

Two large lever selectors, a multifunction rotary control switch and a wide control display allows us every function to be set and monitored.

The left MAIN lever selector operates the control of the pilot light and the TTL flash light reading mode. The  PL-TTL control lamps indicate the flash readiness, the switching on of the pilot light and the selection of the TTL mode respectively.

## BASIC INFORMATION

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The right INPUT lever selector allows us to select input and connection mode that we intend to use: synchro cable socket, fiber-optic cable socket, optical receiver on parabolic reflector for slave mode. The control lamps indicate the selected SYN-OPT-SLV input.

The rotary control switch adjusts power output in manual mode or exposure compensation in TTL mode. The selected energy level or exposure compensation are clearly visible in the center section of the wide display.

The lighting element is a professional and oversized circular flash lamp, with a slightly warm coating, mounted on parabolic reflector with dome port.

The strobe is equipped with a LED coaxial pilot light with two power levels that can be selected manually or automatically with focusing.

Power is supplied by a removable NiMH battery pack rechargeable by the dedicated desktop battery charger. More than 250 flashes at full power are ensured with recharge times ranging from 0.1 to 1.8 seconds.

## BASIC INFORMATION

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### 3.0 Available versions

The ONE160x digital strobe is available for Nikon and Canon cameras. The choice of version is carried out in purchase moment.

Depending on the version, the digital communication software between camera and strobe, managed by the first CPU, is compatible with Nikon's i-TTL or Canon's E-TTL protocols.

In both version, Nikon and Canon, the TTL auto flash exposure mode is available when in use are digital cameras connected to the strobe by a synchro cable correctly wired according to the specific i-TTL or E-TTL protocol (chapter 15.0). Are also supported auxiliary functions such as AF assist illuminator by pilot light and rear-curtain synchronization.

In addition to the i-E-TTL protocols managed with synchro cable, the s-TTL auto flash exposure mode is also available. This auto flash exposure mode is the same for both version.

#### 3.1 Nikon - Flash exposure modes

- **i-TTL** auto flash exposure mode - digital camera connected to strobe via synchro cable (wiring in according to the specific protocol - chapter 15.1)
- **film-TTL** auto flash exposure mode - film camera (or digital camera with converter) connected to strobe via synchro cable
- **s-TTL** auto flash exposure mode - strobe connected via fiber-optic cable
- **manual** manual flash exposure mode - strobe connected via synchro cable, fiber-optic cable or by optical slave receiver

## BASIC INFORMATION

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### 3.2 Canon - Flash exposure modes

- **E-TTL** auto flash exposure mode - digital camera connected to strobe via synchro cable (wiring in according to the specific protocol - chapter 15.2)
- **film-TTL** auto flash exposure mode - film camera (or digital camera with converter) connected to strobe via synchro cable
- **s-TTL** auto flash exposure mode - strobe connected via fiber-optic cable
- **manual** manual flash exposure mode - strobe connected via synchro cable, fiber-optic cable or by optical slave receiver

### 3.3 Version identification

When you switch on the strobe, as first information, the release number of firmware is showed on display. If nothing is visualized on display in addition to the number, the strobe firmware is for Nikon cameras. If the visualized number is preceded by the \_underscore symbol, the strobe firmware is for Canon cameras.

### 3.4 Firmware upgrade

The ONE160x strobe's firmware is upgradable for future functionality. It is also possible to change the firmware from Nikon to Canon, or vice versa, with the complete replacement of the operating software.

The upgrade of a new firmware must be carried out at ONEUW's premises in Italy. It's not possible do it by himself.

**Technical features described in this User Guide edition are fully available only on strobes which have installed the latest released firmware.**

## BASIC INFORMATION

### 4.0 Strobe parts and controls

**A**



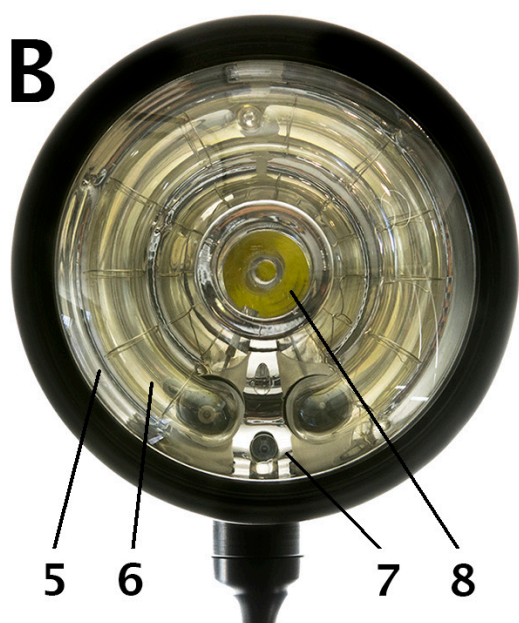
#### A-SIDE VIEW

- 1-Strobe body
- 2-Adapter base
- 3-Optical socket
- 4-Syncro socket

#### B-FRONTAL VIEW

- 5-Dome port
- 6-Circular lamp
- 7-Slave receiver
- 8-Pilot light

**B**



#### C-REAR VIEW

- 9-Control panel
- 10-Battery compartment cap
- 11-Safety release button
- 12-Opening-closing selector
- 13-Safety valve
- 14-Input lever selector
- 15-Main lever selector
- 16-Rotary control switch
- 17-Control display



## BASIC INFORMATION

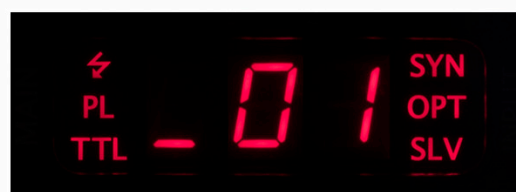


### CONTROL DISPLAY

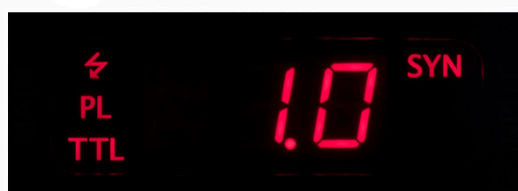
- 1-Main light-⚡-ready to fire
- 2-Main light-PL-pilot light
- 3-Main light-TTL-exposure mode
- 4-Input light-SYN-synchro cable
- 5-Input light-OPT-optical cable
- 6-Input light-SLV-optical receiver
- 7-Power output or compensation



Battery charger status  
is shown at unit turn on/off



Firmware release  
is shown at unit turn on



Exposure compensation  
is shown in TTL mode



Power output level  
is shown in manual mode



### BATTERY PACK

- 1-Charging socket
- 2-Tilting metal handle
- 3-Insertion side with power pin

### 5.0 Power supply management

Power is supplied by a removable NiMH battery pack made with the best professional high-energy cells from Panasonic. More than 250 flashes at full power are ensured with fully-charged battery pack. The recharge times, electronically managed by CPU, ranging from 0.1 to 1.8 seconds. The removable battery pack is located inside the strobe in a waterproof battery compartment which you may access by special closing cap.

- ① The power circuits to optimize performances in every situation are managed by a dedicated CPU. In this way the battery pack voltage and current are constantly monitored and adjusted to guarantee the best performance and to avoid overload currents or cells excessive discharge.

#### 5.1 Battery compartment opening

Rotate the closing cap selector by pressing the release button counterclockwise to the open position (selector dot at the open padlock symbol). When this position is reached, there will be a click that will keep the selector in place. It will then be possible, with adequate traction, to pull out the closing cap.

#### 5.2 Battery compartment closing

Before inserting the cap into the battery compartment, make sure that it is in the open position. Place the cap and push it all the way into the slot. Turn the cap selector, in a clockwise direction, to the close position (selector dot corresponding to the close padlock symbol). In this position the release button will return to the initial state activating the safety lock.



### 5.3 Battery pack installing and removing

The battery pack inserting in a univocal way, due its semi-circle shape, the side to be inserted is the one that shows the positive + and - negative power pins.

The battery pack is easily inserted or removed thanks to the tilting metal handle placed in the front.

### 5.4 Battery pack recharging

The battery pack must be charged using only the the included specific battery charger. Insert the AC power plug of the charger into the power outlet (check that the electrical voltage of the appliance corresponds with that of your electric network). When the device indicator light vill be green it's ready to charge. Connect the DC cable connector of the charger to the power connector of the battery pack. When the battery pack is charcing the device indicator light turns red. When the recharge of battery pack is completed, after a maximum of 90 min, the charger indicator light turns green.





## GETTING STARTED - POWER SUPPLY MANAGEMENT

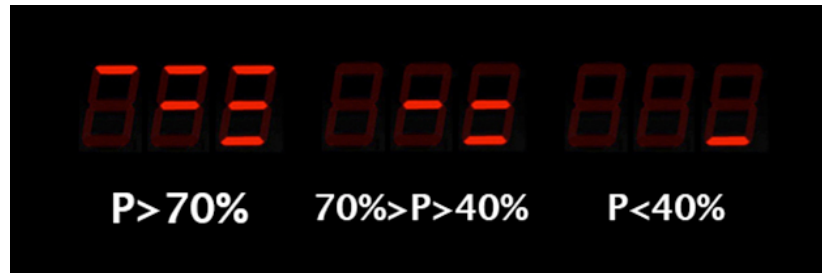
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- ❗ The battery compartment is full watertight. In the event of water seeping due a wrong battery cap compartment positioning, the inside of strobe body, where the electronic is installed, will be not flooded. If the power pins into the battery compartment are oxidized they have to be replaced. The repair must be carried out at ONEUW's premises or authorized service centers.
- ⚠ Do not charge the battery pack when it is placed in battery compartment - remove and charge it in a cool and ventilated place to avoid overheating.
- ⚠ Do not insert the battery pack into the strobe compartment after charging if they are still hot.
- ⚠ Do not handle the battery packs or battery charger with wet hands.
- ⚠ Do not remove the battery pack from battery compartment when strobe is turn on.

### 5.5 Battery pack state of charge check

The battery charge status is shown every time at unit turn on/off. The three-level charge indication is displayed by a series of horizontal segments, as shown in the following page. The data is to be considered as indicative and depends on external factors such as temperature, age of the batteries and their wear. For a correct battery charge indication in shut-down step, before turn-off the strobe wait for about 20-30 seconds without flashing.

## GETTING STARTED - POWER SUPPLY MANAGEMENT



- ① To keep the optimal capacity of battery packs, partial charges should be avoided as much as possible. They should first be completely discharged and then fully recharged.
- ① To improve the capacity and duration of battery packs some full discharge-charge cycles are recommended every three months.
- ① Do not discharge the battery pack by flashing. Use the pilot light only. The unit automatically switches off when the battery is discharged.
- ① Do not recharge an already charged battery pack, you may damage it.




### 5.6 Air transport - Shipments

Nickel Metal Hydride batteries are not subject to air transport restrictions as indicated in the IATA International Air Transport Association specific declaration **“Guidance on the air transport of Batteries, nickel-metal hydride UN3496”** extract from **“Dangerous Goods Regulations (DGR) 62nd edition 2021”**.

The batteries are considered **“NON RESTRICTED”** since in full respect with the requirements of **“Special Provision A199”**.

## GETTING STARTED - POWER SUPPLY MANAGMENT

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-  When the battery packs are shipped by courier, the **“NOT RESTRICTED”** words and the **"Special Provision A199"** number must be included in the description of goods on the Air Waybill as required by IATA DGR 8.2.6.
-  Always travel or ship with the battery pack removed by the strobe. Put the battery pack in his neoprene bag in order to protect it from possible shock and / or damage.
-  Always travel or ship with the minimum battery pack charge level. In this way any dangerous situation that may arise will be less critical and of lower intensity and duration.

### 6.0 Strobe switching on/off

The strobe is switched on and off by pressing the MAIN and INPUT lever selector simultaneously.

Turning on the unit is indicated by the visual indications on the display and by a single beeping sound after which the lever selectors can be released.

When the strobe is switched on, the following information are showed on the display:

- Firmware release number and strobe version
- Battery charge status

Together with this information, all the indicator lights on the display, MAIN section on the left and INPUT section on the right, light up at the same time for a check.

The strobe is switched off by pressing the MAIN and INPUT lever selectors simultaneously for a few seconds. A first beeping sound is emitted after one second and keeping the pressure on the lever selectors a second acoustic signal will warn that the lever selectors can be released. The strobe will turn off after displaying the battery charge status on the display.

- ① The left and right lever selectors, operated either individually or together, give different commands depending on the operating time that we can classify as short (one pulse) or long (one or more seconds depending on the command).

### 7.0 Lever selectors function

Using the lever selectors, we set the operating parameters of the flash. The red MAIN left lever selector operates the control of the pilot light and the TTL auto flash exposure mode.

The black INPUT right lever selector selects the active input of the flash.

#### 7.1 MAIN lever selector - Pilot light

Pressing it for a short time the pilot light switches on sequentially at 50%, then at 100% output power and finally turns off it. The pilot light switch on is signaled by the light up of the PL indicator light and by a single beeping sound after which the MAIN control selector can be released.

#### 7.2 MAIN lever selector - TTL mode

Pressing for a long time, it allows the change from manual mode to TTL mode, both with synchro cable connection and with optical fiber. The activation of the TTL auto flash exposure mode is signaled by the light up of the TTL indicator light. At this action will be released immediately a first beeping sound and after about a couple of seconds will be issued a further one. At this second warning you can release the control lever.

#### 7.3 INPUT lever selector - Input mode

Pressing it for a short time selects input and connection mode that we intend to use: synchro cable socket, fiber-optic cable socket, optical receiver on parabolic reflector for slave mode. The selected input is signaled by the light up of the respective indicator light SYN-OPT-SLV and by a single beeping sound after which the INPUT control selector can be released.

## CONTROLS FUNCTIONS - DISPLAY INDICATIONS

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When the strobe is connected to the digital camera by a synchro cable properly wiring in according to the specific i-TTL or E-TTL protocol, the SYN input is selected by default and it is automatically locked. Other input mode are not selectable.

### 7.4 Storing operating parameters

When you turn-off the strobe the latest settings are stored and not lost by power supply interruption (changing battery pack). When you switch it on again, they will be exactly replicated (input mode, exposure mode, power setting, pilot light, 2nd curtain synchro , TTL master and slave, inverted display, etc).

- ① When the TTL auto flash exposure mode is activated, the Nikon i-TTL or Canon E-TTL or optical s-TTL, operating protocol is automatically selected according to the strobe version and the selected input mode.
- ① When the SLV slave input mode is selected, frontal signal by optical receiver on parabolic reflector, the TTL auto flash exposure mode is not available - the power output level can be controlled manually only.
- ① This feature is available starting with version 3.0 firmware or later.

### 8.0 Rotary control switch function

The rotary control switch sets the strobe power output both in manual mode or TTL mode.

When the manual mode is selected, the rotary switch adjusts energy control in  $\frac{1}{2}$  f-stop increments over a range of - 6 f-stop, starting from the default value of Full - full power.

When the TTL mode is selected, the rotary switch adjusts exposure compensation in  $\frac{1}{3}$  f-stop increments over a range of +/- 2 f-stop, starting from the default value of 0.

The selected setting for power or exposure compensation are visible in the display as shown in the table in the following chapter (9.0).

- ① The rotary selector acts directly on an incremental encoder, feature for which its rotation in both directions is continuous.

## CONTROLS FUNCTIONS - DISPLAY INDICATIONS

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### 9.0 Display indications

The wide display located in center between the two lever selectors shows all the strobe operating mode and settings.

Switched on the unit is signalled by the display visual indications and by a single beeping sound.

The MAIN control lamps, on the left, are the following: ⚡-PL-TTL. They indicate respectively the strobe ready to fire, the switching on of the pilot light and the selection of the TTL mode.

The INPUT control lamps, on the right, are the following: SYN-OPT-SLV. They indicate respectively the selected connection mode: synchro cable socket, fiber-optic cable socket or optical receiver on parabolic reflector for slave mode.

All control lamps are switched on red color when the relative function is activated.

The selected energy level, manual mode, or exposure compensation, TTL mode, are visible in the 3-digit numerical display as shown in the table on the following page.



## CONTROLS FUNCTIONS - DISPLAY INDICATIONS

The selected values of energy level or exposure compensation are visualized on the display as follows:

Manual				TTL EV+/-	
f-stop				f-stop	
(1/1)	F	u	ll	2.	0
	-	0.	5	1.	7
(1/2)	-	1.	0	1.	3
	-	1.	5	1.	0
(1/4)	-	2.	0	0.	7
	-	2.	5	0.	3
(1/8)	-	3.	0	0.	0
	-	3.	5	-	0. 3
(1/16)	-	4.	0	-	0. 7
	-	4.	5	-	1. 0
(1/32)	-	5.	0	-	1. 3
	-	5.	5	-	1. 7
(1/64)	-	6.	0	-	2. 0

### **9.1 Inverted display mode - Check flash**

Depending on the configuration of use and the number of units, the position of the strobes may be reversed by 180°. With this setup, the control display is upside down, making it difficult to read.

The simultaneous pressing of the left and right lever selectors for a long time (about one second), allows the numerical indication of the central display to be inverted.

Regardless of the position of the strobe, the selected power or compensation values can be read easily at any time.

The activation of the display reverse reading is signaled both by a low power control flash and by a single beeping sound after which the control levers must be released.

The low-power flash emission is useful for quickly checking the operation of the strobe even without d-SRL connected.

### **9.2 Power output reading**

In TTL auto flash exposure mode, the amount of light is dosed automatically.

After every shot in this mode, the display shows the percentage of power output supplied by the strobe.

In this way it is possible to vary the exposure parameters, shutter speeds and/or apertures, in the right way, always ensuring full power coverage of the flash.

In case the required power is greater than the maximum that can be delivered, the display will signal Full - full power and a beeping sound repeated will be emitted.

## FLASH EXPOSURE MODES - ADVANCED OPERATIONS

### 10.0 Flash exposure modes

The flash exposure modes, according to connecting system used, are the following:

- **i-E-TTL** auto flash exposure mode - digital camera connected to strobe via synchro cable (wiring in according to the specific protocol - chapter 15.0)
- **film-TTL** auto flash exposure mode - film camera (or digital camera with converter) connected to strobe via synchro cable
- **s-TTL** auto flash exposure mode - strobe connected via fiber-optic cable
- **manual** manual flash exposure mode - strobe connected via synchro cable, fiber-optic cable or by optical slave receiver

Switching on the unit, the latest setting used will be replicated.

If you want to use a different connection mode, select the correct one by the black INPUT lever selector on the right: SYN-OPT-SLV.

If you want to use a different flash exposure mode, select the correct one by the red MAIN lever selector on the left: Manual-TTL.

#### 10.1 i-E-TTL - film-TTL auto mode

In i-E-TTL auto flash exposure mode the light output is automatically dosed by the camera-strobe system which is digitally interfaced via synchro cable (SYN-input) according to the specifications of the Nikon and Canon protocols.

**Attention**, this flash exposure mode does not require the interposition of any TTL converter or other electronic devices.

## FLASH EXPOSURE MODES - ADVANCED OPERATIONS

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The power output supplied by the strobe is displayed in % on display.

In TTL mode it is possible to compensate, through the central rotary switch, the exposure value at  $\frac{1}{3}$  f-stop increments over a range of +/- 2 stop, starting from the default value of 0.

If the required power is greater than the maximum that can be supplied, the display will indicate Full - full power and a beeping sound repeated will be emitted.

### 10.2 s-TTL auto mode

In s-TTL auto flash exposure mode the light output is automatically dosed by the camera-TTLtrigger-strobe system by optical pulses which are transmitted via fiber-optic cable (OPT-input).

**Attention**, to operate in s-TTL auto flash exposure mode, digital camera and ONE160x strobe must be interfaced by an optical TTL-trigger dedicated to the ONE160x unit. This device has the function of converting the information received from the camera into optical pulses, which they will be decoded by the strobe CPU to managing the monitoring pre-flashes and and the final exposure flash.

The exposure may be correct only if the optical pulses which the strobe received are correctly calibrated according to the unit technical specification.

The power output supplied by the strobe is displayed in % on display.

In TTL mode it is possible to compensate, through the central rotary switch, the exposure value at  $\frac{1}{3}$  f-stop increments over a range of +/- 2 stop, starting from the default value of 0.

If the required power is greater than the maximum that can be supplied, the display will indicate Full - full power and a beeping sound repeated will be emitted.

## FLASH EXPOSURE MODES - ADVANCED OPERATIONS

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- ① When the TTL auto flash exposure mode is activated, the Nikon i-TTL or Canon E-TTL or optical s-TTL, operating protocol is automatically selected according to the strobe version and the selected input mode.
- ① Digital communication between ONE160x strobe and digital camera may occasionally be interrupted, thus impeding the correct units interfacing. To restore the proper functioning, the communication need to be reset by switched off and on again the units. If the problem persists check the connection elements; hot shoe, connectors and syncro cables must be clean and dry. Otherwise the data transmission between the units can be disturbed or interrupted.

### 10.3 Manual mode via synchro cable

In manual flash exposure mode, connection via synchro cable (SYN-input), the light output is manually selected by the rotary control switch. The energy level, which is showed on display, can be adjusted in ½ f-stop increments over a range of - 6 f-stop. When the manual flash exposure mode is selected, the default power value is Full - full power.

- ① If the digital camera is connected to the ONE160x strobe by a synchro cable with only two cabled wires (trigger+ground) and the TTL auto exposure mode is selected, the flash will be fired at full power. This connection type does not support the TTL auto flash exposure mode - select the manual flash exposure mode and adjust the energy level to the desired value.
- ① In manual flash exposure mode, connection via synchro cable (SYN-input), monitoring pre-flashes are not output.

### 10.4 Manual mode via fiber optic cable

In manual flash exposure mode, connection via fiber optic cable (OPT-input), the light output is manually selected by the rotary control switch. The energy level, which is showed on display, can be adjusted in  $\frac{1}{2}$  f-stop increments over a range of - 6 f-stop. When the manual flash exposure mode is selected, the default power value is Full - full power.

### 10.5 Pre-flash managment

The ONE160x strobe, set in manual exposure mode and connected via fiber optic cable (OPT-input), allows you to disable any monitoring pre-flashes, which they cannot be deactivated by the camera, to avoid that the exposure flash is fired in advance - flash not "sync".

To achieve this a brightness threshold (value expressed in microseconds) of the received optical pulses can be set manually. The light signals received with values below the threshold one are considered as pre-flashes and therefore replicated by the unit at a minimum energy level, while those with values above it are considered as triggering flashes and therefore enabled to fire the synchronized exposure flash emitted by the unit to the manually selected power.

This set-up mode can be activated only when the input selected is optical (OPT-input), while the exposure mode may be selected in both manual and TTL.

The function is activated by the right INPUT control selector, holding down it for a few seconds. At this action will be released immediately a first beeping sound and after about four seconds will be issued a further one. At this second warning you can release the control lever.

You can then use the rotary central switch to set the desired threshold value, selectable in a range from 0 to 200 microseconds. The selected value is shown on the display.

## FLASH EXPOSURE MODES - ADVANCED OPERATIONS

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After 5 seconds of inactivity the selected value will be stored and the strobe will automatically return in shooting mode to the default setting (optical input-manual mode-full power).

The default timing selected is zero, value which selects all the optical signals received as triggering flashes. This setting allows to the optical receiver the maximum sensitivity, limited only by its technical features.

① This feature is available starting with version 5.0 firmware or later.

### **10.6 Manual mode via optical slave receiver**

When the SLV-input mode is selected, signal received by optical sensor positioned on parabolic reflector, the flash exposure mode is manual. The light output is manually selected by the rotary control switch. The energy level, which is showed on display, can be adjusted in  $\frac{1}{2}$  f-stop increments over a range of - 6 f-stop. When the SLV-slave input mode is selected, the manual flash exposure mode is automatically selected to the default power value Full - full power.

① When the SLV-input mode is selected, signal by optical sensor on parabolic reflector, the TTL auto flash exposure mode is not available. The power output level can be controlled manually only.

### 11.0 Rear-curtain sync

#### 11.1 Rear-curtain sync Nikon cameras

This flash synchronization mode is activated via the camera and the unit does not need to be set. The display of the activated function is visible by the light up of the dedicated icon in the camera display.

#### 11.2 Rear-curtain sync Canon cameras

This flash synchronization mode is activated by the right INPUT control selector on the strobe.

By pressing it for a long time a first beeping sound will be issued immediately, followed by a second beeping sound which will be issued after about two seconds. After the last beeping sound the INPUT control selector can be released.

In this way the advanced flash sync modes can be selected.

First is selected the rear-curtain sync mode and it is signaled by the light up of the SYN and SLV indicators light.

By pressing the selector another (short) time is selected the high-speed sync (HSS) mode and it is signaled by the light up of the SYN and OPT indicators light.

By pressing the selector another (short) time no advanced flash sync mode is selected and it is signaled by the light up of the SYN indicator light only.

The following points show how these advanced mode are sequenced:

- 1 - No advanced sync > SYN indicator light
- 2 - Rear-curtain sync > SYN + SLV indicators light
- 3 - High speed sync > SYN + OPT indicators light



## FLASH EXPOSURE MODES - ADVANCED OPERATIONS

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- ① In both version, Nikon and Canon, the rear-curtain sync mode is available when in use are digital cameras connected to the strobe by a synchro cable correctly wired according to the specific i-TTL or E-TTL protocol (chapter 15.0).
- ① When the SLV slave input mode is selected, frontal signal by optical receiver on parabolic reflector, the rear-curtain sync is not available.

### 12.0 High-speed sync HSS

High-speed sync (HSS) allows you to sync the light of your strobe when using a shutter speed faster than the camera's maximum flash sync speed (X-sync), usually 1/200 or 1/250 s.

In HSS mode, as soon as the curtain starts to open, the strobe starts rapidly firing creating a stroboscopic effect that illuminates the shutter slit as it moves down the sensor throughout the exposure time up to 1/8000 s shutter speed.

**Because the strobe has to output pulses of light continuously the available flash power in HSS mode is significantly reduced.**

HSS mode is available in both auto flash i-E-TTL and manual flash exposure modes.

#### 12.1 High-speed sync Nikon cameras

The HSS mode is automatically activated by the camera when the shutter speed is set over camera's maximum flash sync speed (X-sync), usually 1/200 or 1/250 s.

The strobe does not need to be set. The display of the activated function is visible by the light up of FP symbol in the camera display.

#### 12.2 High-speed sync Canon cameras

The HSS mode is activated by the right INPUT control selector on the strobe.

By pressing it for a long time a first beeping sound will be issued immediately, followed by a second beeping sound which will be issued after about two seconds. After the last beeping sound the INPUT control selector can be released.

## FLASH EXPOSURE MODES - ADVANCED OPERATIONS

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In this way the advanced flash sync modes can be selected.

First is selected the rear-curtain sync mode and it is signaled by the light up of the SYN and SLV indicators light.

By pressing the selector another (short) time is selected the high-speed sync (HSS) mode and it is signaled by the light up of the SYN and OPT indicators light.

By pressing the selector another (short) time no advanced flash sync mode is selected and it is signaled by the light up of the SYN indicator light only.

The following points show how these advanced mode are sequenced:

- 1 - No advanced sync > SYN indicator light
- 2 - Rear-curtain sync > SYN + SLV indicators light
- 3 - Hig speed sync > SYN + OPT indicators light

- ❶ In both version, Nikon and Canon, the HSS mode is available when in use are digital cameras connected to the strobes by synchro cables correctly wired according to the specific i-TTL or E-TTL protocol (chapter 15.0).
- ❷ When the OPT optical input mode is selected, strobes connected via fiber-optic cables, the HSS mode is not available.
- ❸ When the SLV slave input mode is selected, frontal signal by optical receiver on parabolic reflector, the HSS mode is not available.
- ❹ This feature is available starting with version 6.0 firmware or later.

### 13.0 Pilot light

A perfectly collimated LED coaxial pilot light facilitates flash pointing operations. The luminous flux level is 200 lumens with 10° beam angle.

#### 13.1 Pilot light manual switching on/off

The pilot light is activated by the left MAIN control selector on the strobe.

Pressing it for a short time the pilot light switches on sequentially at 50%, then at 100% output power and finally turns off it. The pilot light switch on is signaled by the light up of the PL indicator light and by a single beeping sound after which the MAIN control selector can be released.

#### 13.2 Autofocus assistance mode

With synchro cable connection (wiring according to specific i-TTL or E-TTL protocol - chapter 15.0) the autofocus assistance mode is automatically activated by the camera.

During the exposure flash, the pilot light is automatically switched off so as not to affect the exposure.

With Canon cameras, the automatic mode is only active if the autofocus mode selected is One-Shot AF, and the focus area selected is the central one.

With Nikon cameras, automatic mode is only active if the autofocus mode selected is S (single servo AF with focus priority) and the focus area selected is the central one.

Camera settings may vary from model to model, please refer to your camera's user guide to check the activation of mode or turn it off if necessary.

### 14.0 Connectors - Synchro cables

The connections used in the ONEUW system are the following:

- NikonosV (NV) - 5 pin connection (5 wires cable)
- S6 - 6 pin connection (6 wires cable)

The NV is the most popular and widespread connection, the S6 one provides the best safety and reliability performance which the market offers today.

All connector components are made in anti-corrosion aluminium with hard anodizing treatment or moulding, always designed, with the best technical polymers. All electrical contacts are gold plated to prevent oxidation even in the marine environment.

#### 14.1 Synchro cable socket

The provided synchro cable socket with the strobe, which is positioned on the body back, is the S6 type. This choice allows full compatibility to data transmission of E-TTL Canon and i-TTL Nikon digital protocols.

#### 14.2 Synchro cables

ONEUW synchro cables are manufactured on our technical specifications with high-quality multi-wire conductors and special outer coatings, which are particularly flexible and resistant to use in the marine environment. The synchro cables are available with NV and/or S6 type connections, as shown on the next page. This configuration possibility allow us full compatibility to data transmission of E-TTL Canon and i-TTL Nikon digital protocols and the nearly total interface with the housings offered by the various manufacturers.

### 14.3 Fiber-optic cable socket

The provided fiber-optic cable socket with the strobe, which also is positioned on the body back, is the Sea&Sea type.

### 14.4 Fiber-optic cables

For a correct transmission of the optical impulses between the digital camera and the strobe, it is essential to use high quality multicore fiber optic cables with a large section.

The fiber-optic cable used to connect the strobe must be equipped with a Sea&Sea plug type.

A sharp bend in the cable may compromise or interrupt the transmission of the optical signal.



## SINGLE-STROBE AND MULTI-STROBE SET-UP

### 15.0 Single-Strobe and Multi-Strobe set-up

#### 15.1 Nikon cameras

Nikon's TTL digital protocol provides for signal transmission by 5-pin cables.

i-TTL auto exposure mode may be supported by both a single ONE160x and a pair of them (or more units) connected via synchro cable to digital camera.

To operate in i-TTL mode, the housing can be equipped with both 5-pin NV and six-pin S6 connections, even in a mixed configuration.

#### Single-Strobe set-up

- Single NV or S6 socket with all 5 wires connected  
ONE160x  
Selectable mode: i-TTL or manual

#### Multi-Strobe set-up “ONE-NVslv”

- 1st NV or S6 socket (on the left or right) with all 5 wires connected  
ONE160x - main strobe called MASTER unit  
Selectable mode: i-TTL or manual
- 2nd NV or S6 socket (on the left or right) with all 5 wires connected  
ONE160x - secondary strobe called SLAVE unit  
Selectable mode: i-TTL or manual
- 3rd NV or S6 socket (other position) with all 5 wires connected  
ONE160x - secondary strobe called SLAVE unit  
Selectable mode: i-TTL or manual

<b>Strobe Unit:</b>	ONE160x MASTER	ONE160x SLAVE
<b>Mode:</b>	i-TTL	i-TTL or manual
<b>Mode:</b>	manual	manual

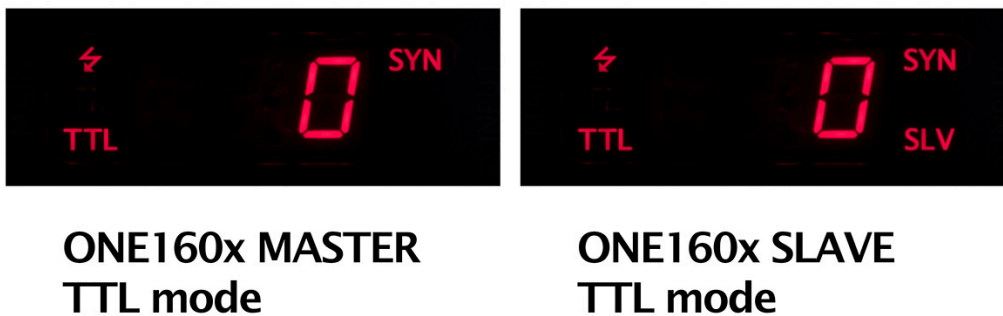
## SINGLE-STROBE AND MULTI-STROBE SET-UP

### 15.2 Setting the ONE160's SLAVE mode

The ONE160's SLAVE mode is activated by the right INPUT control selector on the strobe.

Pressing it for a long time the SLAVE mode is activated and it is signaled by the light up of both the SYN and SLV indicators light. By pressing the selector a beeping sound will be issued after about two seconds. After the beeping sound the INPUT control selector can be released.

#### MULTI-STROBE SET-UP ONE-NVslv



At the first set-up, or new one not memorized, the first strobe you switch-on must always to be set as SLAVE unit, the second (or last) one as MASTER unit.

If you want to reverse the set-up of two strobes already switched on, for example A = MASTER B = SLAVE, first set the unit A as the new SLAVE and then the unit B as the new MASTER.

Respecting these sequences, the camera will always be interfaced with only a MASTER unit, as required by i-TTL protocol.

Otherwise, if two MASTER units are recognized by the camera, the digital data communication will be discontinued creating anomalies in the functioning of both strobes.



## SINGLE-STROBE AND MULTI-STROBE SET-UP

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To restore the proper functioning a reset is required by switching the units off and on again.

① This feature is available starting with version 2.0 firmware or later.

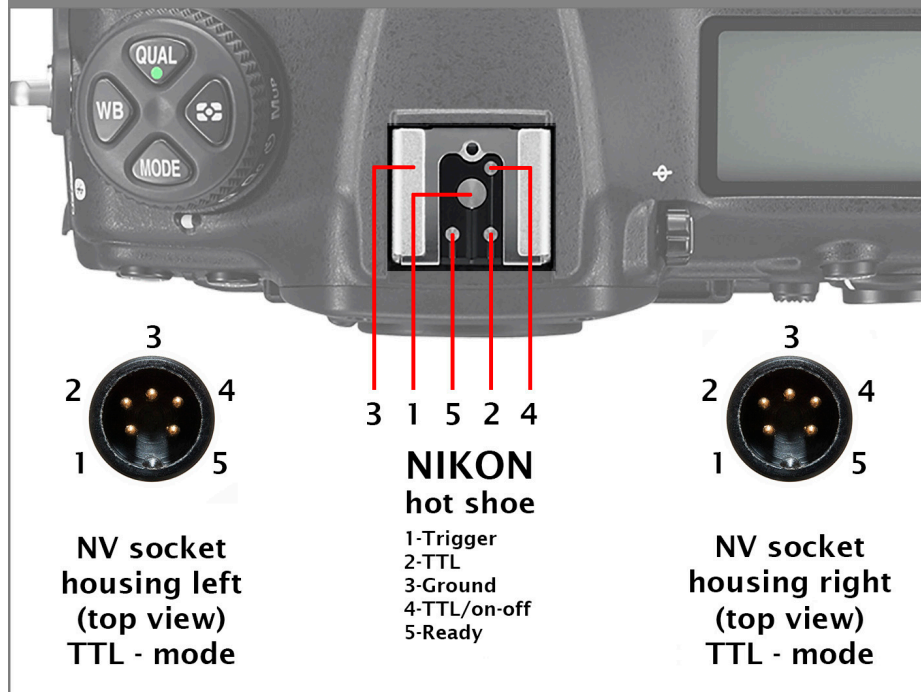
### 15.3 Nikon connection wiring

On the next page - pictures 1 and 2 - the correct wiring of NV and S6 connections for dual strobe setup can be viewed in detail.

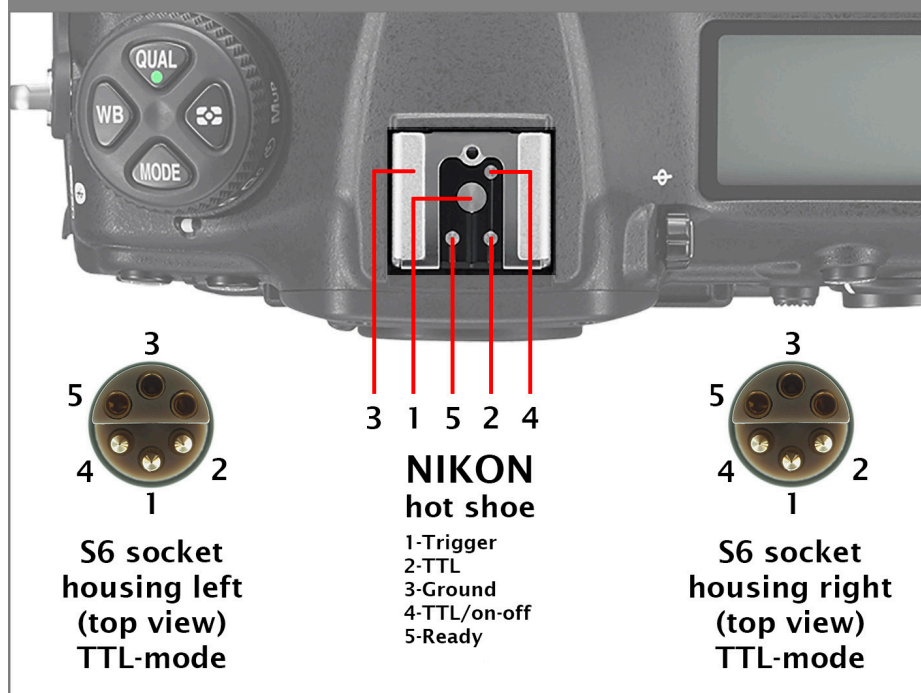
**Warning:** Only ONE160x strobes can be used in pairs (or more units) with connections that carry both all 5 wired wires. Do not use other strobes with connections so wired, you could seriously damage your Nikon digital camera and strobes.

# SINGLE-STROBE AND MULTI-STROBE SET-UP

## 1-NIKON dual NV sockets



## 2-NIKON dual S6 sockets



## SINGLE-STROBE AND MULTI-STROBE SET-UP

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### 15.4 Canon cameras

Canon's TTL digital protocol provides for signal transmission by 6-pin cables.

E-TTL auto exposure mode is supported by single strobe or a unit pair connected by synchro cable to digital camera.

To operate in E-TTL mode, the housing must be equipped with six-pin S6 connections.

#### Single-Strobe set-up

- Single S6 socket with all 6 wires connected  
ONE160x  
Selectable mode: E-TTL or manual

#### Dual-Strobe set-up

- 1st S6 socket (on the left or right) with all 6 wires connected  
ONE160x  
Selectable mode: E-TTL or manual
- 2nd S6 socket (on the left or right) with all 6 wires connected  
ONE160x  
Selectable mode: E-TTL or manual

If NikonosV connections are used only manual mode is available and only 2 wires must be connected (X trigger and GND ground).

## SINGLE-STROBE AND MULTI-STROBE SET-UP

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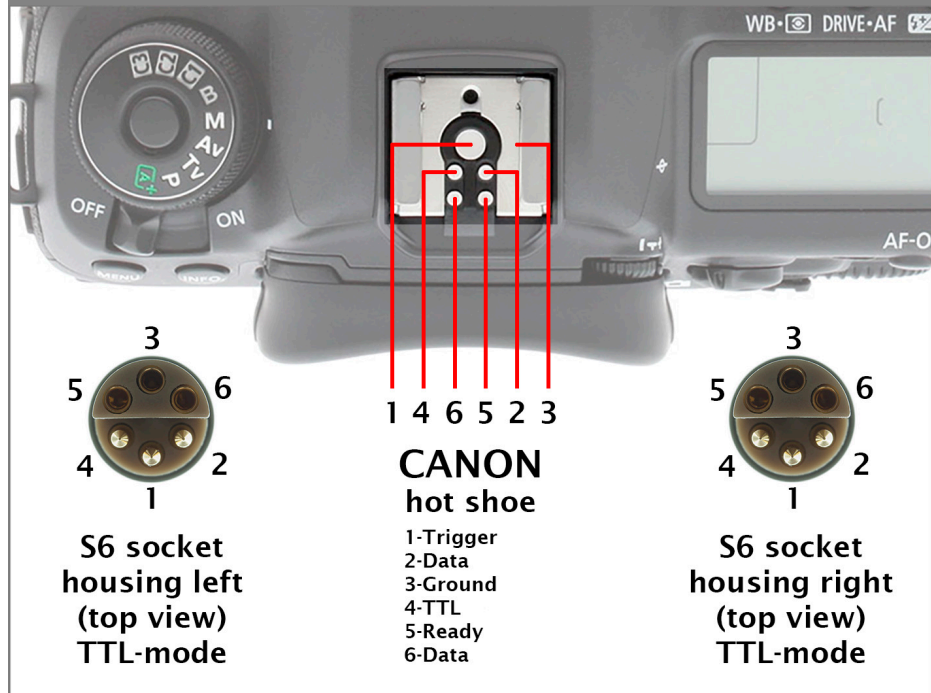
### 15.5 Canon connection wiring

On the next page - pictures 3 and 4 - the correct wiring of NV and S6 connections for dual strobe setup can be viewed in detail.

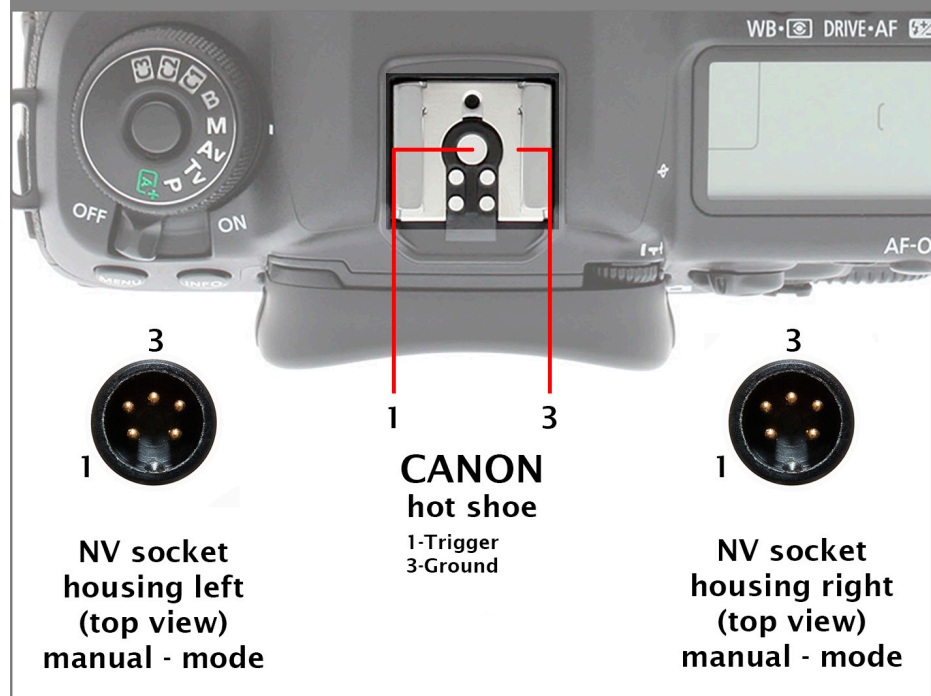
**Warning:** do not couple the ONE160x with strobes of other brands particularly old, the high voltage used on these models, not compatible with the one used in current digital electronic circuit boards, can seriously damage the ONE160x and the digital camera, both Canon and Nikon.

## SINGLE-STROBE AND MULTI-STROBE SET-UP

### 3-CANON dual S6 sockets



### 4-CANON dual NV sockets



### 16.0 Problem and error indications

The unit is controlled by microprocessors that allow all operation functions to be managed intelligently, thus guaranteeing a very high level of reliability.

The safety or protection alert of essential operational parameters as operating temperature and battery pack discharge are indicated as follow.

#### 16.1 Overheating protection

If the unit internal temperature is higher than the maximum allowed value, the fault is indicated on the display by the following safety alert:

- **EH1**

The unit automatically switches to the standby mode for 20 seconds, the safety alert flashes on the display and a beeping sound is emitted every 2 seconds. At the end of standby time the unit automatically switches off.

If this happens, remove the battery pack from the strobe and put the separate units in a cool place or in a ventilated area until they are cooled.



Do not leave the strobe in overheated environments such as car interiors in summer or boat engine compartments. Do not expose the strobe in summer directly to the sun for prolonged periods, overheating can damage the unit and create dangerous situations.

### **16.2 Battery pack excessive discharge protection**

If the battery capacity is low, the display starts flashing and a beep is emitted every minute.

When the battery pack reaches the maximum discharge value, which is considered correct to avoid damaging it, the status is indicated on the display by the following protection alert:

■ - - -

The unit automatically switches to the standby mode for 20 seconds, the protection alert flashes on the display and a beeping sound is emitted every 2 seconds.

At the end of standby time the unit automatically switches off.

### 17.0 Overpressure safety valve

A battery pack malfunction can generate gas inside the battery compartment. The operational safety is guaranteed by the presence of a stainless steel over-pressure relief valve in the cap of the battery compartment.

Any overpressure in the battery compartment is automatically reduced by means of this special safety valve.

If you notice bubbles coming out through the valve during use, means that may be gas presence.

In this case, the strobe must be immediately switched off and no longer used.

Once on the surface, handle the unit carefully without turning the battery compartment cap towards people to avoid possible injuries.

Inside the battery compartment, after the automatic release, there may be a residue of gas that must be vented manually as described below to prevent the risk of violent cap ejection when you open it.

Using a small screwdriver or other pointed tool, lift the valve edge as showed in the picture on the next page. The small residual overpressure will be eliminated allowing safe opening of battery compartment cap.

It is however possible to remove the battery compartment cap even without manual gas venting. In this case we recommend a firm grip on the cap selector to counterbalance any pressure at the time of opening.




## PROBLEMS - ERROR INDICATIONS - MAINTENANCE

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Should liquid leak from battery pack, avoid contact with skin; rinse and dry battery compartment and lid wearing gloves.



 If liquid leak from battery pack contacts skin or clothing, wash off the affected area repeatedly with soap and clean water.

### 18.0 Maintenance

The strobe is made from a solid block of anticorodal aluminium protected by a hard anodizing treatment and nanotech quartz coating which makes surface hydrophobic.

To preserve the look and maintain the functionality of the unit, a rinsing in fresh water and a careful drying is necessary after each dive in saltwater. The water stagnation in strobe cavities such as safety valve or optical socket need to be avoid. Blow repeatedly in these areas. Periodic cleaning with a neutral detergent is recommended. Do not use any chemicals products to clean the strobe.

Clean and lubricate battery compartment lid o-ring regularly. A light coating of silicone grease is sufficient, do not exceed with the product.

Clean and lubricate the o-rings of strobe socket and synchro cable plugs periodically.

Attention is recommended when the synchro cable is removed from the strobe socket, water drops must do not fall on the connection pins. Pay careful attention to this operation, all connections must be kept dry.

Store the synchro cables with their own protective caps, avoiding cables tangling. Always put the protective cap on the strobe synchro socket when no cable is inserted.

- ① Slight stains on the anodised aluminium surface, due reaction with the marine sodium chloride, are not to be considered defects that may compromise the protection of the components, but as effect of ordinary wear and tear.

### 19.0 Accessories

#### 19.1 Standard accessories

The Standard Packaging includes:

- NiMH 4,8V 3050mAh Battery Pack
- Neoprene Battery Pack Bag
- Desktop Battery Charger 6.4V 1.6A - 110~240V 50/60hz - AC Plug EU
- O-ring Maintenance Set
- User Guide - downloadable pdf file
- 2 years ONEUW Warranty on Strobe
- 1 year ONEUW Warranty on Battery Pack and Charger

#### 19.2 Optional accessories

The following accessories may be supplied on request:

- NiMH 4,8V 3050mAh Spare Battery Pack
- Neoprene Battery Pack Bag
- Neoprene Body Cover
- Neoprene Dome Cover
- Ball Adapter L50 1" M6
- Ball Adapter L50 1" M6 45°
- Spiral Synchro Cable S6-S6
- Spiral Synchro Cable S6-NV
- Dual-Y Synchro Cable S6-S6
- Dual-Y Synchro Cable NV-S6
- White diffuser with red filter

## ACCESSORIES - SPECIFICATION

### 20.0 Specification

- CNC machined with high-quality anticorodal aluminium and hard anodized
  - Shooting modes Nikon i-TTL, Canon E-TTL, s-TTL, film TTL, manual
  - High-speed sync HSS available in i-E-TTL and manual by sync cable
  - Special coating warm circular flash lamp with dome port
  - Input by S6 synchro cable socket, Sea&Sea fiber-optic cable socket, slave sensor
  - Ergonomic controls insensitive to hydrostatic pression
  - Input, operating mode and power level showed on digital display
- 
- Max energy 157 Ws (J)
  - Manual mode power control range - step Full -6 f-stop - 1/2
  - TTL mode EV control range - step  $\pm 2$  f-stop - 1/3
  - Maximum shutter speed in HSS mode, up to 1/8000 s
  - GN Guide number ISO100-1m 20
  - GN ISO100-1m - detection angle 20-90° | 18-110° | 16-130°
  - Beam angle 130° (circular)
  - Number of full power flashes over 250
  - Recycle time 0,2-1,8 s
  - Color temperature 4.600 °K
  - Pilot light Led 200 lm 10° 2 steps
  - Power supply interchang. battery pack
  - Battery type and capacity NiMH 4,8V 3050mAh
  - Battery charging time 90 min
  - Flash arm connection M6 threaded hole
  - Dimension Diameter x Length (controls included) 99x200 mm
  - Weight in air battery included 1.480 g
  - Weight UW battery included  $\approx -190$  g  
(with neoprene cover) ( $\approx -70$  g)
  - Max operating depth 200 m

### 21.0 Warranty terms

ONEUW srl guarantees its products against manufacturing defects for a period of 24 months from date of sale by ONEUW. Warranty covers the repair or replacement, free of charge, of parts acknowledged to be faulty by ONEUW.

The warranty is not recognized when damage or defects to the unit are caused by:

- Inappropriate or negligent use by the purchaser
- Improper maintenance or use beyond the limits of the intended use of the unit
- Improper connections with digital cameras, other units or old strobes from other manufacturers
- Transport, fall, impact occurred after the purchase of the product
- Any circumstance that cannot be attributed to manufacturing defects

Synchro cables, circular flash lamp and battery packs are to be considered consumable parts and therefore covered by a different warranty from the standard one. The warranty will be bound by the terms and conditions offered by the respective suppliers which are the best one on the market for the quality of products offered.

Any tampering with the strobe will automatically void the warranty. All inspection or repairs, under penalty of forfeiture of the warranty, must be performed by ONEUW or by authorized service centers.

Any repair of the equipment under warranty will always be carried out at ONEUW's premises. The warranty covers the costs of defective components and labor cost for their replacement. Shipping costs are not included in the warranty and shall be borne by the purchaser.

### 22.0 Information on recycling and disposal

#### 22.1 Electrical and electronic equipment disposal



##### **For private households:**

##### **Information on Disposal for Users of WEEE**

The symbol with the crossed-out bin on our products and / or accompanying documents means that at the end of their life cycle, these used electrical and electronic equipment (WEEE) should not be mixed with general household waste. For proper treatment, recovery and recycling, please take these products to designated collection points where it will be accepted free of charge. Alternatively, in some countries, you may be able to return your products to your local retailer upon purchase of an equivalent new product. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

##### **For professional users in the European Union**

If you wish to discard electrical and electronic equipment (EEE), please contact your dealer or supplier for further information.

##### **For disposal in countries outside of the European Union**

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

### 22.2 Battery disposal



The crossed-out wheeled bin symbol on the battery and/or in the packaging and/or in the accompanying documentation indicates that used batteries must be collected in the appropriate waste containers. They cannot therefore be thrown into general collection bins and mixed with household waste.

Please dispose of used batteries at designated collection centers.

Disposing of this product correctly is important to minimize any potential effects of batteries on the environment and human health due to the potential presence of hazardous substances.

#### **For disposal in countries outside of the European Union**

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

### 23 General information - Notices

If you have any more questions please feel free to contact us at:

**ONEUW S.r.l.**  
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33043 Cividale del Friuli UD - Italy  
Tel/Fax +39 0432 753387  
[mail@oneuw.com](mailto:mail@oneuw.com)  
[www.oneuw.com](http://www.oneuw.com)

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ONEUW srl disclaims any liability for damages resulting either directly or indirectly to persons and devices from the use of this unit.

No refund or compensation may be claimed by the Purchaser to ONEUW srl.

With the intention to continuously improve our products, ONEUW srl reserves the right to modify the design and technical features of the unit without prior notice and is not bound by the information and illustrations provided in this user guide.



### 23.1 Trade mark® information

In compliance with industrial and intellectual property, all company and products names mentioned in this manual are trademarks or registered trademarks of their respective holders.

#### **NIKON**

It's a registered trademark of NIKON CORPORATION

#### **CANON**

It's a registered trademark of Canon Inc.

#### **PANASONIC**

It's a registered trademark of Panasonic Corporation

#### **SEA&SEA**

It's a registered trademark of SEA&SEA SUNPAK Co., Ltd.

#### **ONEUW**

It's a registered trademark of ONEUW S.r.l.

## 24.0 Annotations

[illegible]

