

#11052 Optoelectronic TTL-Converter (for CANON) for NAUTICAM underwater photo housings

MANUAL

Specifications

- Compatible photo cameras:
- Compatible underwater housings : NA-5Dm4, NA-7Dm2, NA-5DSR, NA-5Dm3, NA-1DX/DC, NA-60D, NA-80D, NA-6D/II,...
- Compatible strobes:
- TTL outputs:
- (+/-) "Flash Exposure compensation" adjustment underwater:
- Continuous (serial) shooting mode support:
- 1-st / 2-nd curtain modes support:
- Switching "TTL / M" underwater by camera controls:
- Setting strobe power manually by camera controls in M mode:
- Switching power "ON/OFF":
- Battery type:
- Current consumption (in standby mode)
- Battery capacity (+20°C):
- Maximum Fiber-optic cable length for "TTL" operation:
- Maximum Fiber-optic cable length for "MANUAL" operation (at max power setting):
- Recommended Fiber-optic cable type:
- Available Electric Bulkhead type (optional accessory):
- Dual Electric cables ("Sea&Sea", "Ikelite") support:
- Dimensions of main board:

Safety Warning for Batteries usage

- Use batteries only CR1632 type.
- > Batteries must be new and undamaged. Carefully check batteries before usage.
- To avoid leakage or explosion, always check appropriate battery terminals position ("plus" / "minus") before installing to the TTL-Converter.
- Never expose batteries to overheating, short-circuiting, disassembling, high pressure, mechanical deformation. Save batteries from high humidity and water. All these circumstances may cause a chemical leakage, electric shock, explosion or fire, which can be dangerous for health.
- Remove batteries from TTL-Converter before longtime storage.
- Utilize used batteries according appropriate rules.
- > Keep out batteries of children. Save batteries in inaccessible for children place

installation



• Open underwater housing. Pick up mirror prism by a sharp knife. (Prism is glued very slightly, like a sticker, on the plastic podium, easy to delete it by the knife). Delete mirror prism from the housing.

• Using hex wrench unscrew 2 bolts from plastic podium. Delete podium from the housing.

 Insert batteries into TTL-Converter. Before installation check that "plus" terminal of each battery is in Up position.

• Try TTL-Converter installation to its place. Bend LED wires as necessary for concrete housing. Try to insert both LEDs into optical bulkheads.

 Install 2 white plastic spacers. Install TTL-Converter board. Screw 2 bolts, included with TTL-Converter package, by screwdriver.

• (*Optional*). In case of using Electric Wire Synchronization, connect electric bulkheads flat cables to 4-pin sockets on the board.

• **IMPORTANT!** Push both LEDs maximum deep into the optical bulkheads by any tool. The LED must be maximum close to transparent optical element inside the bulkhead to get normal TTL accuracy.

IMPORTANT! Strongly recommended to use only original NAUTICAM fiber optical cables listed in Specifications above. In case of using inconsistent or low transmission index cables, user will get a wrong exposure of underwater shots.

Inon Z240, Z330; Sea&Sea YS-250, YS-D1, YS-D2; Ikelite DS-161, DS-160 2 optical, 2 electric ves yes ves yes 1/64.....1/1 automatic by camera command CR1632 (2pcs.) 0.1 mkA 3 years, 45 000 flashes 3m 40m Nauticam #26216, #26211, #26212 Nikonos-5, Ikelite, S-6 ves 55mm x 24mm x 10mm

all Canon DSLR cameras

Optional Accessories

- UW Technics #91340 Nikonos style Bulkhead (M14 screw) with flat cable and 4-pin MicroMatch connector.
- UW Technics #91341 Ikelite style Bulkhead (M14 screw) with flat cable and 4-pin MicroMatch connector.
- UW Technics #91342 S-6 style Bulkhead (M14 screw) with flat cable and 4-pin MicroMatch connector.
- Bulkheads are optional products and must be purchased separately.



External cable connections with underwater strobes

- TTL-Converter maintains synchronization for underwater strobes by Fiber Optical cable connection and by electric cable connection as well.
- Maximum 2 Fiber Optic cables can be used (via housing optical bulkheads). It is possible to connect 2 underwater strobes.
- IMPORTANT! Dual fiber optical cables usually don't support reliable TTL operation via optical bulkheads, because of their optical connector construction. Recommended to use for TTL operation only single fiber optical cables.
- Maximum 2 Electric cables can be connected (via housing electric bulkheads).
- Dual electric cables ("Sea&Sea", "Ikelite") are supported by TTL system at each electric output as well. Using 2 dual cables, it is possible to connect 4 underwater strobes simultaneously.

Initial Settings

- Set and check camera settings before underwater shooting:
 - Set appropriate Exposure Metering ("Evaluative", "Partial", "Spot", "Center-weighted) according your shooting conditions . Right type of Exposure Metering is the key setting for accurate TTL work. In case of wrong setting, the shot may be overlighted, or underlighted.
 - Set camera's "Flash Exposure Compensation" (and "Exposure Compensation") to "0 ev", as initial setting.
 - Set appropriate ISO. Recommended to use ISO 100....400 for best resolution and TTL accuracy underwater.
 - Set Aperture and Shutter Speed according real underwater conditions and shooting task. Pay attention that max fast sync speed for underwater strobes usage is usually about 1/250.
 - Recommended apertures F8-F16 for wide angle photo, and F16-F22 for Macro photo, as initial settings.
 - Use other settings recommended by your camera User's Manual.
- Using camera menu photographer can totally control TTL-Converter underwater. Flash settings are always stored in TTL-Converter nonvolatile onboard memory, even after power is turned off.
- Enter Flash control menu to set initial preferences:

SHOOT1		
Image quality S1		
Image review Hold		
Beep Enable		
Release shutter without card ON		
Lens aberration correction		
Flash control		

- **Flash firing** "Enable" (switch ON the flash) or "Disable" (switch OFF the flash)
- o E-TTL II metering "Evaluative" or "Average", according your preferences for metering for flash
- Flash sync. speed in Av mode "1/250 fixed", "1/60-1/250 auto" or "Auto"
- Enter External flash func. setting submenu:

Flash control		
Flash firing	Enable	
E-TTL II meter.	Evaluativ	е
Flash sync. speed in Av mode 1/250		
Built-in flash settings		
External flash func. setting		
External flash C.Fn setting		
Clear settings	M	ENU 🕤

Enter submenu for Shutter Synchronization setting:

External flash func. setting		
ETTL		Zoom AUTO
	5 2±0	
First-curtain synchronization		

• Set 1st or 2nd curtain synchronization, dependently of the shooting task.

Shutter synch	ronization		
First-curt	ain synchr	onization	
		4 H	

Shooting in TTL mode

- Set TTL-Converter onboard dial switch according your strobe type:
 - > 0 Manual mode (TTL protocol is disabled)
 - 1 Z240, Z330 underwater strobes
 - 2 YS-D1 underwater strobe
 - **3** YS-D2 underwater strobe
 - 4 YS-250 underwater strobe
 - > 5 DS-161, DS-160 underwater strobes
- Set main dial switch on the underwater strobe body to TTL mode. Please refer to concrete strobe User's Manual to choose appropriate mode (Z-240 set to "S-TTL", YS-D1/D2 set to "DS-TTL", YS-250/DS-161/DS160 set to "TTL").
- Set another dial (+/-Ev correction) on the underwater strobe body to "0 ev" position, as initial setting. Using Z-240 strobe, pay attention: magnet must be in "Push" position, for fiber optical connection set second dial switch to "0ev" as position "12 o'clock", for electric wire connection set to "ttl" as fixed position "9 o'clock". In case of optical TTL, adjustment (+/-) is available by the strobe dial "+/-Ev" and by the camera wheel "flash exposure compensation" as well, the final value is the sum of these two corrections. In case of electric wire TTL, adjustment (+/-) is unavailable by the strobe dial, but available by the camera control "flash exposure compensation".
- During the shooting, dependently of concrete underwater situation, strobe condition etc., photographer should set (+/-) correction to TTL flash intensity. Available to do it by 2 ways:
 - Use "+/-Ev" dial on the underwater strobe body (adjustment works for fiber-optical type connection only).
 - Use camera "Flash Exposure Compensation" function. Such adjustment is recommended, it is more deep, works for both types of connection. Available "Flash Exposure Compensation" range for Canon cameras: -3ev...0...+3ev. User can adjust it by steps 0.3ev or 0.5ev (choose the step by camera menu), viewing the value on the camera service screen or on the menu screen.
- Connect TTL-Converter Hot Shoe plug to the camera Hot Shoe socket. Switch ON the camera. TTL-Converter activates
 automatically (switch ON) when user pushes camera Shutter Release Button for shooting or focusing. Device goes to
 standby mode (switch OFF) also automatically few seconds later (according the camera command), or after disconnection
 from camera Hot Shoe socket.
- Camera recognizes E-TTL device on the Hot Shoe socket and confirms compatibility by the "Flash" symbol in the service screen. Submenu "External Flash func. settings" becomes available in camera menu only in case of full compatibility of products.
- Enter submenu Flash mode:

External flash func. sett	ing
ETTL	Zoom AUTO
₩> 52 ±0	
E-TTL II flash me	etering
Flash mode	
E-TTL II flash m	etering
ETTL	М

• Set ETTL mode:

Later, during the shooting in TTL mode, adjust (+/-) Flash Exposure Compensation by the camera wheel, if images are too dark or too bright:

Flash exposure compensation		
522−1⅓		
Darker Brigh ⁻321012‡3	iter	

- For normal TTL accuracy the distance from underwater strobe to a target must be more than 0.35m underwater (and more than 0.7m for the land tests), to be inside the working TTL range. But camera can be positioned as close to the target as user needs.
- TTL-Converter is tuned for normal TTL accuracy under water. Land tests may give another results.
- In some shooting conditions or extreme camera settings, TTL control system may be not effective or <u>out of working range</u>. This case photographer should use Manual modes.

Shooting in Manual modes

Underwater photographer can use 3 different ways for shooting in Manual mode:

o Camera (menu) Manual Mode

Switch system to Manual mode by camera menu.

This is preferable Manual mode for universal usage, easy switchable and controllable under water during the diving. This case TTL-Converter switches to appropriate M mode automatically by camera command.

Flash mode	
Manua	l flash
ETTL	Μ

In that Manual mode also becomes available flash output level scale in submenu. User can adjust strobe light intensity by camera wheel, looking to that scale:



** **Pay attention:** In that mode for flash intensity manual adjustment by camera wheel, underwater strobe must be set in TTL (S-TTL) mode by dial switch on the strobe body.

*** For information: In this Manual mode all Pre-flashes are disabled.

o Underwater Strobe Manual Mode:

Switch underwater strobe to Manual mode by the dial switch on the strobe body.

This is traditional way for underwater photographers. User sets M mode and adjusts lighting intensity only by the dial switches on the strobe body.

** **Pay attention:** For that mode usage, it is recommended to set camera (by menu) to M mode with flash output "1/1", to avoid any restriction for underwater strobe input signal duration. Set underwater strobe to "M mode without Pre-flashes" by switches on the strobe body, and adjust strobe light intensity by the dial switch on the strobe body. *** For information: If camera is in M mode as recommended above, all Pre-flashes are disabled.

o TTL-Converter Manual Mode:

Switch system to Manual mode by setting TTL-Converter onboard dial switch to "0" position.

This operation can be done only before submerging, when the housing is open. This is forced Manual mode. This case camera does not recognize any device on it's HotShoe socket, TTL protocol in system is totally disabled. In this mode TTL-Converter makes single pulse of fixed (maximum) duration at each shutter release.

This mode is recommended for creative shooting with long length fiber optical cables (up to 40m length), or for usage with TTL incompatible underwater strobes, or any other difficult situations.

** **Pay attention:** User should set underwater strobe to "M mode without Pre-flashes" by switches on the strobe body, and adjust strobe light intensity by the dial switch on the strobe body. *** For information: In this Manual mode all Pre-flashes are disabled.

Continuous (serial) shooting with underwater strobe

For getting accurate exposure with underwater strobe in TTL mode, the strobe must be fully charged before each shot to reach stable Pre-flash and Main flash durations. Underwater strobe recycle time is about 2-3 sec, that is why recommended 2-3 seconds interval between shots when shooting in TTL. If strobe is only partially charged, the TTL exposure may be different from shot to a shot, or serial shooting may be even totally impossible (dark next shots), of course such effect depends on strobe type. For example, DS-161 strobe in TTL mode allows to make few shots with acceptable dirfference in exposure, but Z-240 allows to make only single shots in TTL mode (needs 2 seconds interval between shots).

In common case, for continuouse shooting it is strongly recommended to use Manual modes for underwater strobe control. To reach acceptable constant lighting for series of shots, - use minimum strobe intensities.

Storage

- After shooting switch Off the camera.
- Disconnect TTL-Converter Hot Shoe plug from camera socket. This way you defend the TTL-Converter from any accidents. Also, you save TTL-Converter's battery, because its standby current consumption is minimum in that case.
- For a long time storage remove batteries from TTL-Converter.

Warranty

- Product warranted against any manufacturing defects for 2 year from the date of purchase for consumer use.
- Manufacturer accepts no liability for any damage to and defects in the housing caused by improper use and/or poor maintenance.
- Manufacturer does not hold responsibility for damage of any nature, to any equipment used with the product.
- Manufacturer accepts no liability for any loss of captured images or the inability to capture images even if it is due to the malfunctioning of the product.
- This warranty only applies to products purchased from authorized dealers and does not extend beyond the original retail purchaser.
- Unauthorized modifications and/or repairs of the product will automatically invalidate this warranty.
- To return products for service, please contact authorized dealer in your region.