

SUBAL V3

Optoelectronic TTL-Converter (for Nikon)

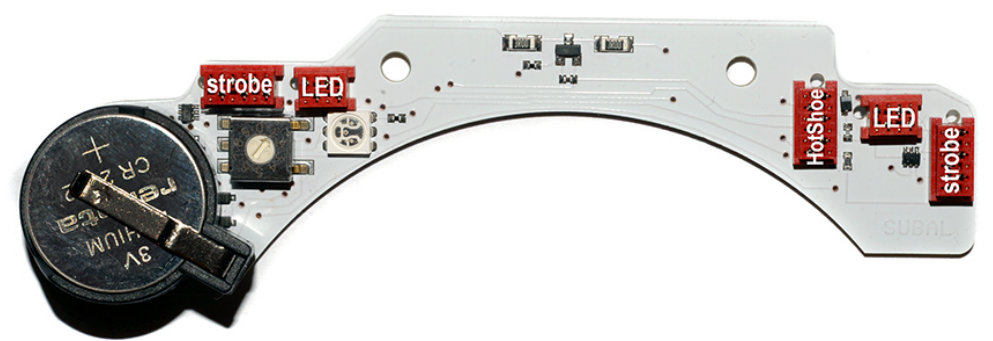
for SUBAL underwater photo housings

User's MANUAL

Specifications

- Compatible photo cameras: all Nikon cameras
- Compatible underwater housings : SUBAL
- Compatible TTL strobes: YS-250, YS-D1,YS-D2, DS-161, DS-160, Z-240
- TTL outputs: 2 optical, 2 electric
- ISO camera range: 50....25600
- Continuous shooting mode (CL / CH) support: yes
- Rear Curtain mode support: yes
- Switching "TTL / M" modes underwater: yes
- (+/-) Flash Exposure compensation: yes
- Switching power "ON/OFF": automatic
- Battery type: CR2032 (2pcs.)
- Current consumption in continuouse standby working mode 0.01 mKA
- Battery capacity (+20°C): 75 000 flashes, or 5-7 years
- Maximum Fiber-optic cable length for "TTL" operation: 3m
- Maximum Fiber-optic cable length for "MANUAL" operation: 35m
- Recommended Fiber-optic cable: Nauticam #26216, #26214, #26215
- Powerful LEDs for optical TTL: 2 pcs.
- Optional Electric Bulkhead type: Nikonos-V, S-6, Ikelite
- Dual Electric cables support: yes
- Indication: 3-color status LED

Pinout



Cable connections

- TTL-Converter maintains Optical TTL Synchronization by fiber optical cable connection, and Electric Wire TTL Synchronization by Electric wire cable connection.
- Maximum 2 pcs LEDs can be connected (for usage with Optical bulkheads). LEDs are included with the standard package of TTL-Converter.
- Maximum 2 pcs Electric bulkheads can be connected.
- Dual electric cables are supported at each electric output as well.

Shooting in TTL mode

- Check camera settings before underwater shooting with TTL:
 - Set appropriate camera's Exposure Meter Type ("Matrix", "Central-weighted", "Point") according your shooting tasks. 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.
 - For TTL operation user can set desired sync speed by camera menu, excluding sync speeds marked as "Auto FP". According the construction underwater strobes cannot work in FP synchronization, that is why "Auto FP" camera command is free for them, and it is assigned in TTL Converter firmware for switching system to "Controlled Manual Mode". Photographer should use it to switch TTL / M underwater.
 - Set "exposure compensation" and "flash exposure compensation" to "0ev", as initial settings.
 - Set appropriate ISO. TTL-Converter can work in ISO range 50....25600. Recommended to use ISO 50....400 for best resolution and TTL accuracy underwater. For Macro shooting recommended ISO 50-100. Be careful choosing extremely high ISO or "Auto-ISO" mode, it may cause overlighting by underwater strobes.
 - Set camera aperture and shutter speed according real underwater conditions and shooting task.
 - Set 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.
- IMPORTANT** ⓘ For macro shooting it is strongly recommended to use a **diffuser** for underwater strobes. Diffuser significantly improves light distribution and TTL accuracy, prevents overlighting for macro shooting.
- For normal TTL accuracy the minimum distance from strobe to an underwater subject must be more than 0.35 m, to avoid overlight.
- Set underwater strobe dial switch to desired TTL mode. Please refer to strobe User's Manual to choose appropriate mode. Usually it marked "S-TTL" ("TTL", "DS-TTL") on the strobe's body.
- Set (+/-Ev) dial switch on the strobe body to "0ev" position, as initial setting for Optical TTL usage.
- For Z-240** electric wire TTL usage set (+/-Ev) dial switch to position "TTL", another words "9 o'clock" position. For Optical TTL zero position is "12 o'clock"

- Set onboard rotary switch according your strobes type:

- **0** – Manual Mode (TTL protocol totally Off)
- **1** - Z-240 TTL underwater strobe
- **2** - YS-D1 TTL underwater strobe
- **3** - YS-D2 TTL underwater strobe
- **4** - YS-250 TTL underwater strobe
- **5** - DS-161/160 TTL underwater strobe

- Slide Hot Shoe connector into the camera Hot Shoe socket.
- Camera recognizes TTL device on it's HotShoe and confirms it by appropriate symbol "Flash"on the service screen.
- Dive and make TTL underwater photo, checking image quality and histogram via camera LCD.

- Dependently of concrete underwater subject type, strobes condition, ambient light underwater and etc, photographer should use +/- TTL correction ("Flash Exposure Compensation") to reach balanced TTL lighting.
- Photographer can adjust +/- TTL correction by 2 ways:
 - Use optical +/- TTL correction (+/-Ev) dial switch on the underwater strobe body (available for Fiber-optical connection only).
 - Use camera's "flash exposure compensation" function for +/- TTL correction (available for both Fiber-optical TTL and Electric Wire TTL connections). Available range for Nikon cameras "Flash exposure compensation": -3ev...0...+1ev. User can adjust it by steps 0.3ev or 0.5ev (set by camera menu), viewing +/-Ev value on the camera screen.

- TTL-Converter maintains normal accuracy TTL lighting control only for underwater conditions. Land TTL tests may give another results.
- Continuouse shooting in CL/CH camera modes are available for all modes of TTL Converter. But, to reach a constant lighting for all shots in seria, user should shoot in M (Manual) modes. Recommended to use minimum light levels at M mode for such aims.
- TTL-Converter activates automatically (switch ON) when user pushes camera's Shutter Release Button for focusing or shooting. Device goes to standby mode (switch OFF) also automatically few seconds later, according the camera command, or after disconnection of camera's HotShoe.
- In some shooting conditions TTL may be not effective or out of working range. This case please use MANUAL modes.

Shooting in True Manual Mode of TTL-Converter

- Switch system to Manual mode by setting TTL-Converter onboard rotary switch to "0" position.
- This operation can be done only before submerging, when the housing is open.
- This is true Manual mode. Camera does not recognize any device on the HotShoe socket, TTL protocol is totally disabled. Pre-Flashes are disabled.
- In this mode TTL-Converter makes fixed maximum duration main pulse at each shutter release.
- User should set "Manual mode without Pre-flashes" by the switch on the strobe body, and adjust strobe light intensity by the dial switch on the strobe body.

Shooting in Controlled Manual Mode of TTL-Converter

- Switching to Controlled Manual mode during the diving (underwater) is useful feature. It gives possibility to set strobe power manually by the camera controls. User need not set power manually on underwater strobe body, he can keep hands on the housing.
- TTL-Converter does not make pre-flashes in this mode.
- Underwater strobes must be set in "S-TTL" ("DS-TTL II") mode. Strobe's dial (+/-Ev) corrector set to "0" position.
- Switch TTL-Converter to Controlled Manual Mode using the camera menu:
Bracketing/flash >> Flash sync speed >> 1/200 Auto FP (or 1/250 Auto FP).
Camera setting for any sync speed marked as "Auto FP", points TTL-Converter to Controlled Manual Mode. Than, underwater strobe light power can be adjusted by camera controls, using "flash exposure compensation" function.
- Use camera "Flash exposure compensation" to adjust output strobe light power. Available ajustment range for underwater strobe: from Minimum strobe's power (displayes as "-3ev" on camera screen) to Maximum strobe's power (displayes as "+1ev" on camera screen). Possible to set step 0.3ev or 0.5ev, by camera menu.
- Pay attention, that "Auto FP" function also makes available very fast shutter speeds on the camera, which are not compatible with underwater strobes. To avoid mistakes for lighting using underwater strobes, set shutter speeds not faster than max *speed of synchronization* for your camera. Most Nikon cameras with mechanical shutter have maximum sync speed 1/200 or 1/250 (without Auto FP). Some old Nikon cameras also have electronic shutter with maximum synchronization speed up to 1/500 (without Auto FP).

Shooting in Manual Mode of underwater strobe

- Switch underwater strobe to Manual mode by the dial switch on the strobe body. This is traditional way for many underwater photographers. User adjusts lighting intensity only by the dial switch on the strobe body.
- Underwater strobe must be set to Manual mode with / without preflashes, dependently on TTL-Converter choosen mode.

Shooting with flash off

- Photographer can assign "Fn" camera's button to option "flash off" (by camera menu). Pushing the "Fn" button, user can shoot with flash off.

Indication

- Onboard 3-color status LED shows system information after each flash:
 - GREEN** – "TTL mode"
 - BLUE** – "Manual Mode"
 - RED** – "Low Battery"

Storage

- Slide Off TTL-Converter's connector from the camera's Hot Shoe socket. This way you defend the TTL-Converter from any accidents. For long time storage remove batteries from the product.