

PSU-2 Instructions for Use (Software Version PSU-2.20T)

WARNING! To prevent fire or shock hazard, do not expose the unit to rain or moisture. To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only. Do not block ventilation openings.

Connecting

1. Connect the PSU touch screen monitor with the monitor cable to the 18-pin Lemo connector of the PSU main unit.
2. Connect the video signal from the camera to the BNC input CAM A.
3. If using a second camera on the set connect this to the BNC input CAM B.
4. Connect sound to AUDIO IN.
5. Connect external loudspeakers to the AUDIO OUT socket.
6. Connect additional monitors to one of the BNC outputs VIDEO OUT.
7. For automatic recording (of camera A and/or camera B) use a Vantage Lector® Box at the camera. The Box will transmit the camera speed through the BNC cable to the PSU – patent pending.
8. Plug the power cable into the 230 VOLTS mains power socket.

Starting the PSU

Press the POWER button. The small green LED on the PSU monitor shows that the unit is loading. After 120 seconds it will turn off and the LCD touch screen monitor will start working. (The built-in heater starts to warm up the mains power unit after connecting the PSU to the 230 VOLTS mains power socket at temperatures below 10°C)

Input Selector

To display different sources you can use the four input buttons CAM A, CAM B, CAM A+B and DISC. CAM A+B will show both video images side by side. DISC will show the already recorded takes. The selected source will be indicated on the upper right corner of the screen. By pressing the DISC button for one second you can additionally select different levels on the disc. HIDDEN TAKES directs you to all hidden takes (gray displays - see hiding takes). SHORT TAKES directs you to all takes shorter than the selected time (green displays - see user settings). To return to the standard disc level (blue displays) press DISC again or select a source (e.g. CAM A). The HAWK button will switch the PSU monitor into anamorphic mode to view anamorphic squeezed shots.

Video-out Selector

By using the VIDEO-OUT selector you can view the image on additional monitors. The video signal will be switched to both of the BNC VIDEO OUT sockets which are delivering the identical signal. The AUDIO OUT socket will be switched on at the same time. Select a source by pressing the appropriate button (AUTO, CAM A, CAM B, CAM A + B, DISC). The AUTO function automatically switches the picture that is shown on the PSU touch screen monitor to the VIDEO OUT sockets. A test-generator is available to calibrate additional monitors as well as the PSU touch screen monitor. A 1000 Hz –20 dB test tone is switched to the AUDIO OUT socket if the test-generator is switched on.

Time-Display & Take-Info

The Time-Display shows the running time of the selected take. Press the Time-Display to switch to reverse mode (counting backwards). The Take-Info is displayed right below the Time-Display. It shows recording date, recording time, shooting time and screen time (the screen time differs from the recording time, if a playback speed higher or lower than 25 fps is selected). The compression rate of the selected take is shown as well. By pressing these two lines the Take-Info will switch to System-Info. System-Info will show number of recorded takes, number of hidden takes, number of short takes, free disc capacity in hours/minutes, total shooting time, total screen time as well as visible screen time. The visible screen time is the total screen time of all takes which are not hidden. If you want to play out all these takes to an external video recorder, this time informs you how long it will take. Below these two lines you can see the capacity LED which informs you about the free disc capacity.

Please check for sufficient free capacity before recording!

Recording Shots

Press REC to start recording the screened shot. Use the STOP button to stop the recording. The takes will be numbered chronological beginning with take 1. You have to select CAM A or CAM B before recording.

Recording Shots with Lector®

To use these functions your camera(s) have to be equipped with a Vantage Lector® System. The left green LED inside the CAM A and CAM B buttons will show a proper connection of the channel with the Lector® box at the camera. This shows that the PSU will record automatically. By starting the camera the PSU will record the video input as well as the speed information of one or both cameras (while recording the LED turns into red flashing). The takes will be numbered chronologically beginning with take 1. You can stop the automatic recording of one shot by pressing the STOP button for more

than 0.8 seconds. The next take will be again recorded automatically. If you do not want automatic recording remove the Lector® Box from the camera.

The Lector® function has to be preset in the User-Settings first. This function works with the following cameras: Arricam ST & LT, Arriflex 535, 535B, 435, 235, 35-3, 35-2C with Cinematography Motor Base, Moviecam Compact & SL. Panavision cameras on request.

Playback Shots

To playback a shot press PLAY. The PSU will show the shot as it was recorded from the video assist (25 fps). To play the shot reverse press REV. To navigate within the shot use the SLOW buttons or the NAVIGATOR button. To play the complete disc press PLAY or REV twice, the PSU will switch to continuous mode (take after take). PAUSE will stop the playback similar to "stop" on a video recorder. The position within the take will be captured for continuing the playback at the same point later. The STOP button will stop the playback and "rewind" the take. To loop the take press PLAY for about 1 second, the take will be constantly repeated in a loop.

Playback Shots recorded with Lector®

For shots recorded with Lector® a yellow ORIGINAL CAMERA SPEED button will appear under the Fps-Display automatically. To playback this shot press PLAY. The PSU will show the shot in its original speed as it would be projected after developing the negative (if the camera was ramped during the shot to high speed, the final slow motion will be shown automatically). To deactivate the original speed function press ORIGINAL CAMERA SPEED. The PSU will playback the shot at 25 fps now. Press ORIGINAL CAMERA SPEED again to return to the original speed feature (the original recorded speed of a take will always be captured together with the take on the PSU for future use). To play the shot reverse press REV. To navigate within the shot use the SLOW buttons as well as the NAVIGATOR button. To play the complete disc press PLAY or REV twice, the PSU will switch to continuous mode (take after take). PAUSE will stop the playback similar to "stop" on a video recorder. The position within the take will be captured for continuing the playback later. The STOP button will stop the playback and "rewind" the take. To loop the take press PLAY for about 3 seconds, the take will be constantly repeated in a loop.

Change Playback Speed

To change the playback speed of the selected take use the +/- buttons right under the Fps-Display. By pressing the Fps-Display the numeric buttons will appear and allow a faster input of the playback speed**. After entering a speed higher than 25 fps, the PSU will interpolate the additional frames to simulate a smooth high speed playback. To allow manual playback speed changing of takes which have been recorded with original camera speed deactivate the ORIGINAL CAMERA SPEED function by pressing this yellow button.

*** The first three buttons are soft keys for frequently used camera speeds - press one of the soft keys longer than one second to enter the edit mode to preset individual camera speeds.*

Ramping

To enter a ramp (speed change within a take) press the RAMP button and the ramp menu will appear. Select the points within the take where the speed should change with the PLAY, SLOW or NAVIGATOR buttons. Press SET on the ramp menu. The point will be stored and listed on the Ramp-Display. By pressing on these listed points you can select them (the selected point will be headlined with a blue layer) and change the camera speed by using +/- buttons (see CHANGE PLAYBACK SPEED) or move this point by using the SLOW (or PLAY) button. The graphic ramp simulation (which appears on the screen) will help you to program the required ramp. After putting all points and speeds together press APPLY to activate the ramp. The PSU will calculate the ramp and will be ready for playback. If the ramp is already calculated you can press EDIT to adjust it again. By pressing DELETE you are deleting the marked point within the ramp. By pressing DELETE for 2 seconds you are deleting all points of a ramp.

Selecting Takes

Use the SKIP buttons to select takes. The Take-Display will show the number of the take which is selected. Press the Take-Display and the PSU will show all recorded takes as icons (the takes are marked with different colors similar to the different cameras, e.g. red for camera A. Original takes are marked with a yellow OCS label which stands for "original camera speed"). Press on one of these icons to select a take directly. If there are more than 36 takes recorded, use the button NEXT TAKES to show a second table of take icons and so on. You can also enter a take number with the numeric buttons. There will be a preview of the take. Press OK to select the take or ← to correct the entered take number. By pressing one of the WEEKDAY buttons you can select a specific shooting day. All shots which have been recorded during this day will be headlined to help you to find the right shot.

Hiding Takes

This feature will help you to "clean" the PSU without deleting any take. Press the Take-Display. Press HIDE/RECOVER. To hide a take press its icon. Press it again to recover it. The buttons HIDE ALL, SHOW ALL, INVERT SELECTION, SELECTED DAY will assist you in this process.

Deleting Takes

Press DELETE to get the Delete-Menu.

To delete a certain take press DELETE TAKE while this take is selected. After entering the security code for single-deleting the take will be deleted entirely.

To delete more than one takes press DELETE MORE TAKES. You can select the takes in the take-menu. Press a WEEKDAY button and then SELECTED DAY to delete a specific day entirely. After entering the security code for multi-deleting all selected takes will be deleted. You can stop the deleting process by pressing STOP DISC DELETION to save takes which are not yet deleted. (The system will start to delete at the lowest take number).

To delete the entire DISC press DELETE DISC. After entering the security code for disc-deleting the DISC will be deleted entirely. All hidden takes and all short takes will be deleted as well. You can stop the deleting process by pressing STOP DISC DELETION to save takes which are not yet deleted. (The system will start to delete at the lowest take number).

To delete only the hidden takes or only the short takes first press DISC for one second and then select the specific disc level (HIDDEN TAKES or SHORT TAKES). The delete-function now only works for this level and is not affecting any takes at the main level.

Action Master

Press IN and OUT during recording or playback to set action marks. At future playback the take will be played between this marks only. You can overwrite the points at any time by pressing the appropriate button again at the desired position of the take. Auto Trimming is setting both marks automatically. The "trim off time" can be preset between 0,5 and 10 seconds. The Time-Display shows the running time between both marks.

The Action Master-Function has to be activated in the User-Settings first.

Take Notes

Press NOTES longer than one second to display a keyboard for typing individual messages per take. Five soft keys can be preset with individual expressions (three are preset already but can be edited again). Press one of the soft keys longer than one second to enter the edit mode. Press the green $\sqrt{\quad}$ -button to mark good takes. In the Take-Menu (Icon-Mode) good takes can be separated from the rest by pressing the $\sqrt{\quad}$ -button in that menu.

The Take-Note-Function has to be activated in the User-Settings first.

Overlay

By pressing the OVERLAY button the Overlay-Menu will be displayed. Find a frame on one of the camera inputs or on the disc and press SET to store it. Select a second source to complete the overlay. The slider allows you to adjust both levels with each other. The Overlay-Indicator in the upper right corner of the screen informs you about an active overlay.

Picture Settings

Press SETTINGS** and select PICTURE. In the PICTURE SETTINGS menu you can select the following functions: black & white, mirror X, mirror Y, inverse, mask-, zoom-, and center-cross-feature for both camera inputs individually.

Mask & Zoom

You can mask the outside of a frame. Open the Mask-Menu and press the LCD screen where the mask should begin. Move your finger to the lower corner of the opposite side. The mask will appear. In the Mask-Menu you can adjust the mask and its shade exactly. Use the MASK OFF button to remove the mask. Pressing the MASK OFF button again will put the mask on the screen again. The Zoom-Function works in a similar way. To lock the zoom or mask press OK in the appropriate menu. Mask & zoom settings will be visible on additionally attached monitors as well.

Center Cross

You can erase the center cross by using this feature. Align the red markings to the center cross in the picture and adjust it to the minimum size. Some ground glasses have dots in the center which can be removed by pressing the DOT button. Press OK to activate the function.

Audio Settings & Fan Control

Press SETTINGS and select AUDIO. If an audio signal is lined up to the PSU it will be recorded automatically. Audio playback will be available at 24/25 fps only. Press VARIABLE SOUND SPEED to playback the soundtrack at any speed. The AUDIO SETTINGS menu allows to adjust the volume of the headphones (or of the on-board-loudspeaker if installed). For sync sound recording you can activate the fan-control-function by pressing FAN CONTROL. This reduces the noise emission during recording to a minimum. After recording the FAN CONTROL needs a cool-down-phase of some seconds to become available again. The Fan-Control-Display will show the remaining waiting time in seconds. The MANUAL FAN-OFF switch allows to switch the PSU to silent-mode without recording a take. Press TEMPERATURE DISPLAY to screen the temperature of the PSU main unit (standard working temperature 58° C).

User Settings

Press SETTINGS and select USER. The following functions are available:

Lector-Recording presets all parameters for automatic recording. Press SWITCH to trigger an automatic switch to the recording channel at the start of any recording. With KEEP the PSU will not automatically switch to the recording channel. AUTO starts and stops a recording automatically when the camera starts and stops. MANUAL displays a message informing about one or two running cameras (only if the take(s) is/are longer than the time limit which is preset in the Short-Take-Menu). Press REC at any time while the message is displayed to record the entire take(s) with an automatic stop at the end of the shot(s). Press NO RECORDING to avoid a recording of one or both channels. The viewing time of the Manual-Lector-Message can be preset. OFF deactivates any automatic or semi-automatic mode. The recordings have to be stored and stopped by hand. However the Lector-Signal (camera speed) will be still recorded for every take. BEEP triggers a start tone when the camera is switched on.

Take-Notes allows to store comments per recorded take. Activate this function and select the viewing time (MAN, 0.5 – 30 seconds, PERMANENTLY). Generally take notes are not shown on the video out signals. By pressing the TAKE NOTES VISIBLE AT VIDEO-OUT button the notes are visible on attached monitors as well.

Action Master allows to set in- and out-marks to concentrate on action.

Tool-Tips provide On-Screen-Help for the PSU-2. Select language (German, English, French or Spanish) and your skill level. View individual tips by pressing SKIP in this menu. Press on a tooltip to remove it from the screen, press the area again to read the last displayed tooltip once more.

Screen-Unlock allows you to set the code for unlocking the PSU. A new code should be written down in your notes to avoid access problems when the code has been forgotten. The pre-set code is 5555.

Clean-Screen makes it easy to clean the LCD screen of the PSU. As long as you are cleaning the monitor it will stay dark to assist you. Do not use alcohol or acetone!

Compression-Rate can be selected between no compression, 1:5 and 1:10. Recording without data compression can be used for shots recorded with professional broadcast video cameras. The compression rate 1:5 and 1:10 is perfect for images coming from video assist systems like the Arri IVS.

Interpolation allows to switch off the interpolation used for high speed playback. The playback without interpolation is not as smooth as the standard setting and only uses the original frames.

Short-Takes allows to select the minimum time of the takes which have to be recorded. This means if you select e.g. 4 seconds every take shorter than 4 seconds will not be shown. This feature is ideal to avoid automatic (Lector® controlled) recording of gate checks etc. If you select 0.0 seconds all takes will be shown again. You can not lose any take since the PSU is recording all of them. This function only controls whether short takes are shown or not. It can be selected at any time. Take numbers will disappear and will return when the short-takes-function is switched back to 0.0.

Date-&Time allows to enter the correct date and time information. These data will be recorded with every shot.

Camera-Type improves the image quality according to the camera system in use.

Second-Unit is needed when working with three or four cameras and two PSU systems on the set. You can switch the second PSU to the CAM C + CAM D. It will label both video streams accordingly.

Full Screen

Press FULL SCREEN to enlarge the video picture(s). A reduced number of functions (PLAY, PAUSE, etc.) is still available as well as all displays (TAKE, TIME, FPS). Press FULL SCREEN again to get back to the standard mode.

Lock Screen & Quitting the PSU

To switch off and lock the screen press EXIT and then LOCK SCREEN for one second. To get access again press EXIT and enter the code for unlocking. The pre-set code is 5555. To shut down the PSU press EXIT and then SHUTDOWN for 3 seconds.

WARNING! Do not disconnect the PSU from mains power as long as the unit is running! Before any disconnecting the shutdown process has to be fully completed!

PSU-2 SPECIFICATIONS

Power requirements / consumption	220 to 240 V AC, 50/60 Hz / about 1.5 A max. at 25° C 240 V AC
Operating temperature / humidity	5°C to 35°C (41° F to 95°F) / 20 % to 80 %
Dimensions (w/h/d) / mass	435 x 260 x 460 mm / 24.5 Kg (main unit) 350 x 410 x 80mm / 8 Kg (monitor)
Disc capacity / max. playback speed	approx. 60 h (compression rate 1:10) / 1250 fps

Input connectors

CAM A / CAM B	each BNC Composite 75 ohms terminated 1 Vpp with Lector® encoding
SHUTTER PILOT A / B	each LEMO 2-Pin TTL 5V for separate camera speed information without Lector®
AUDIO IN	XLR 3-pin 0 dBm

Output Connectors

VIDEO OUT	2x BNC Composite 75 ohms terminated 1 Vpp
AUDIO OUT	XLR 3-pin 0 dBm

Digital Interface

FIREWIRE IEEE1394A	LEMO 8-pin
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Accessories

18-Pin PSU monitor cable 2 meters, mains power cable 2 meters, monitor holder – optional: 18-Pin PSU monitor cables 4, 8 & 20 meters, data cables IEEE1394A 4-pin + 6-pin, Lector® System, stand adapter, monitor sunshade, rain cover, PSU-2 DVD writer

Design and specifications are subject to change without notice. Made in Germany by Vantage Film

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