YMER 3
OPERATORS GUIDE

The Ymer-3 has been developed as a cooperation between Hedén Group AB in Sweden and PLC Electronics Solutions in Canada. The system is built around the same basic idea as our legendary motors. User-friendly and robust have been our mindset throughout the development. LenSaver™ manual calibration and manual override, for safe use on any lens with or without end stops and the quickest manual calibration system on the market.

Features include:

- Lens mapping with pre marked scale rings for focus iris and zoom
- LenSaver™ (patent pending) manual calibration
- Automatic calibration
- 3 channel Receiver
- Remote trigger
- Robust radio with a line of sight range of up to 500 m (1640 feet)
- Industry-leading wireless control allowing for the fastest response of any long-range follow focus system on the market
- Control knob with adjustable resistance for smooth individual operation
- Adjustable Zoom speed
- Lens limits and Macro functions at the press of a button
- 5 threaded mounting points for attachments, two 1/4 inch, one 3/8 inch and two M4
- Transmitter powered by standard Sony NP-FM500H compatible battery

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Important information

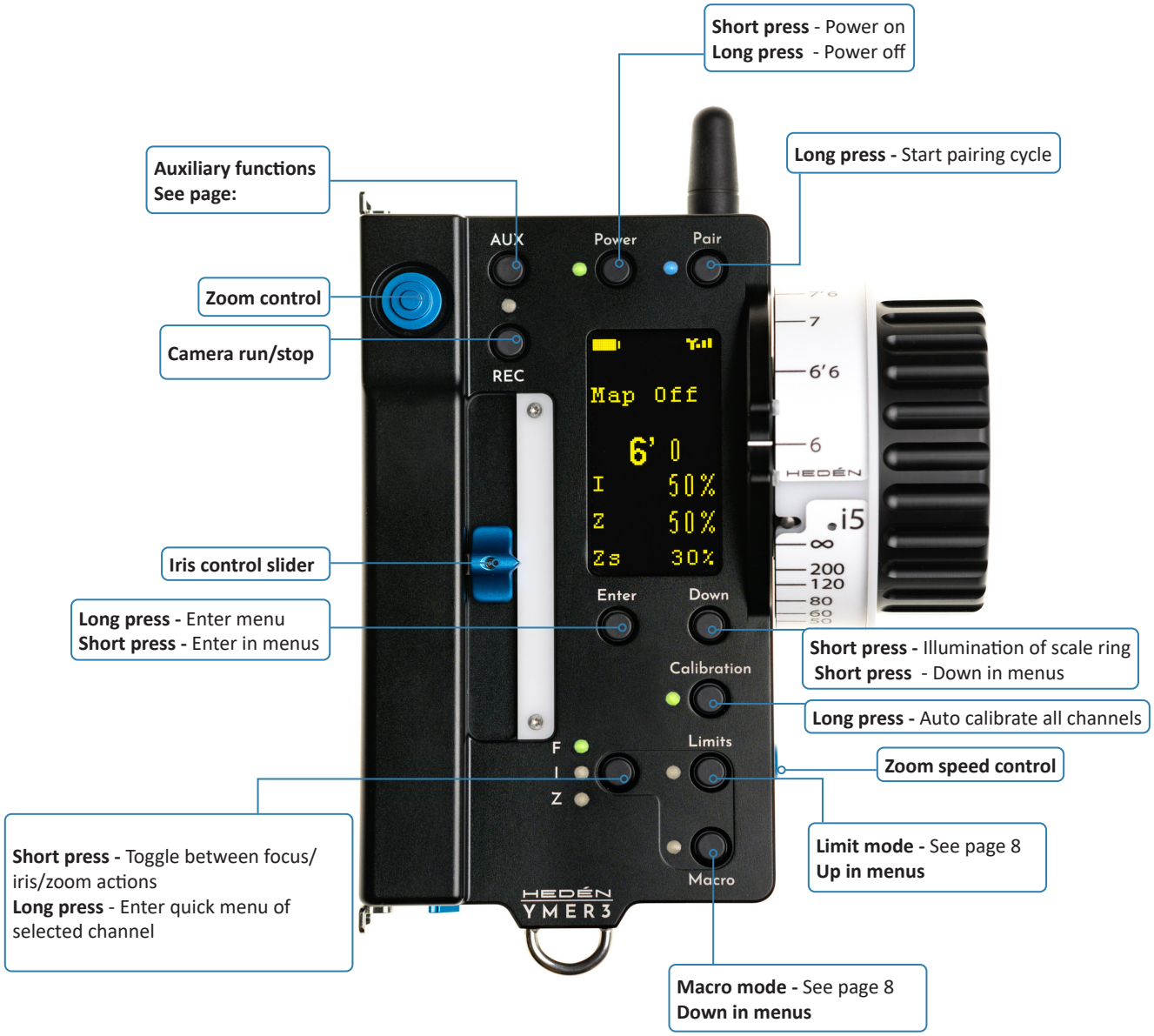
Hedén Ymer 3 radio module is fully compliant with European CE, United States FCC and GITEKI Japanese stan-

- Avoid using Ymer system near water or in rainy conditions. Water intrusion may lead to permanent damage.
- All electronics is sensitive to over voltage and ESD, only connect and disconnect the motor when the receiver is not powered up.
- Make sure all cables are original Hedén cables and inspect for damage before use. Using faulty cables may cause serious damage to internal electronics.
- We recommend using genuine Sony NP-FM500H batteries in the handset for longest run time.
- The included foam insert will fit straight into a Pelican/Peli 1450 case.

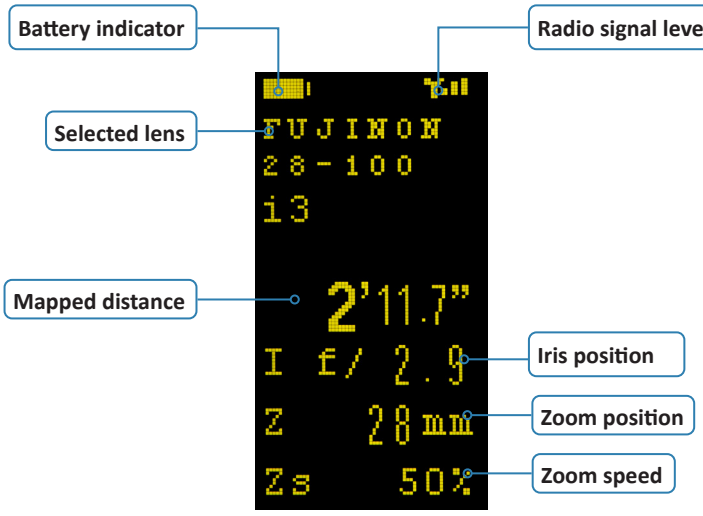
YMER 3 Kit Components

Ymer Transmitter Unit	1x
Ymer Receiver Unit	1x
Receiver power cable	1x
HEDÉN neck strap	1x
Scale ring	6x
Receiver Bracket w. 1/4 inch screw	1x

Button Layout - Transmitter

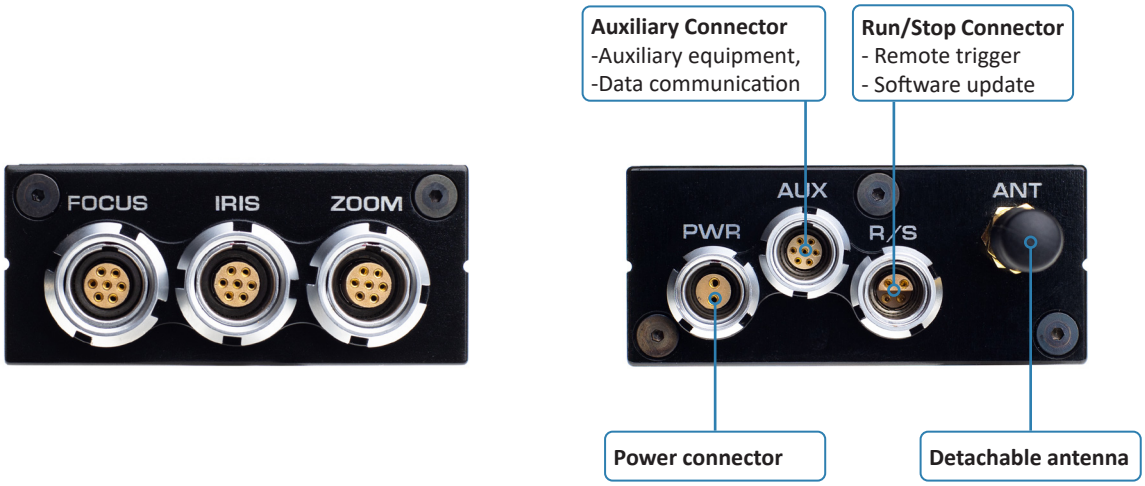


Main menu Layout



LED and Button Layout - Receiver

Side view, left and right side



Installing the Receiver

Mount the Receiver bracket on an appropriate surface using the supplied ¼ inch screw or other preferred method. The receiver can then be mounted in the bracket by placing it in with the lower edge first and then pressing the receiver in place while lifting the release tab slightly. The receiver will snap in place when the mounting bracket is set in a centered position. This is the recommended configuration as the receiver will be more secure, but the receiver can also be mounted in an off-center position if needed. To release the receiver, press the release tab while pulling the receiver at a slight forwards angle.
Connect the motor cable(s), Run/Stop cable (if desired), AUX cable (if desired) and power cable. Note the correct connector orientation.

WARNING! Do not connect the power cable to an active power source until all other cables and equipment are installed in order to protect them from over voltage and ESD.

The chosen power source needs to be able to source 3 Amps or the motor performance will suffer. The receiver can use a power source anywhere between 10-30 volts (DC) and will accept both standard and reverse polarity power cables, although we recommend only using original Hedén power cables.

Motor direction

The motor default direction of travel can be altered by using the Dir function. This will change what direction the motor moves in relation to the control knob.
On the receiver the current selection is marked by either a solid green or red DIR button LED.

Resetting the Receiver to Factory Settings

Resetting the receiver will restore all settings to factory defaults.

To perform the reset, turn the system off. Press and hold the AUTO button while powering the system back up and keep the AUTO button pressed down until the flashing F.r on the display turns solid. Once F.r has turned solid, release the AUTO button and the receiver will be reset to factory settings.

Pairing

The Hedén Ymer 3 system uses frequency-hopping spread spectrum radio signals and powerful antennas to communicate at a distance of up to 500 meters (approx. 547 yards) line of sight. Using a radio system with Low Emission significantly reduces interference by other 2.4Hz radio frequencies and the system will not be affected by WI-Fi devices. This makes the Hedén Ymer system very reliable and the risk of interference marginal.

In order to pair the Transmitter with the receiver both units need to be powered on. On the transmitter, long press the pair button for about 2 seconds until the unit gives of a slight vibration and the blue LED starts blinking.

On the receiver, long press both pair buttons simultaneously for approximately 2 seconds until the Rx DATA LED starts blinking blue. Both units are now in pairing mode.

Pairing usually takes about 10 seconds and successful pairing is indicated by the blue LED's on both units turning solid blue.

A solid red Rx DATA LED on the receiver indicates that the unit is not receiving data. Usually meaning not paired or out of range/contact. The LED's just above the Rx DATA LED signifies data strength, where one solid yellow signifies a poor signal and two green and one yellow signifies good signal strength.

Auto Calibration

Automatic motor calibration is commonly used for lenses with end stops. Automatic calibration can be started in two ways, either from the transmitter or from the receiver. There is three levels of torque settings, LOW, MED, HIGH. You will access the torque setting from the main settings menu or the quick menu for each channel

-On the Receiver

Pressing the AUTO button on the receiver will perform a soft reset of the unit and perform a recalibration of all motor channels. The connected motors will now move in one direction until they find the lens end stop. They will then change direction and repeat. When both ends are detected the motors will return to a point somewhere on the lens track. The system is now ready to use.
The calibration sequence is tuned to be gentle with the end stops of lenses, sometimes the calibration will not reach both end stop due to varition in lens friction. If this occours you can increase the calibration torque or use the LenSaver maual calibration described furter down on this page.

-On the Transmitter

Auto calibration is initiated by long pressing the Calibration button for 2 seconds until the unit gives a slight vibration and the green Auto LED starts blinking.

The Focus motor will now move in one direction until it finds the lens end stop (or the resistance gets higher than the set torque value can overcome). It will then change direction and repeat. When both ends are detected the Auto LED turns solid green and the motor will return to the set position determined by the position of the control knob on the hand unit. The system is now ready to use.

The calibration sequence is tuned to be gentle with the end stops of lenses, sometimes the calibration will not reach both end stop due to variation in lens friction. If this occurs you can increase the calibration torque or use the LenSaver maual calibration described further down on this page.

The lens calibration and current position is retained in memory up to 1 day after the system is powered down.

Removing the motor, initiating calibration or powering the system down for more than 1 day removes the current calibration and positional memory.

LenSaver™ Manual Calibration

The Hedén Ymer system features the unique LenSaver™ manual calibration method with unprecedented control over the calibration process. Manual calibration is especially helpful for lenses with no or fragile end stops. Manual calibration will prevent damage to sensitive equipment and is faster than automatic calibration in the hands of an experienced operator. The calibration method can also help overcoming problems with automatic calibration due to uneven or high resistance in old or worn lenses.

LenSaver™ Manual calibration can only be initiated from the receiver. There is a separate MANUAL button per each channel. To manually calibrate any of the channels press the corresponding MANUAL button on the receiver, the green LED starts blinking and the display shows blinking digital segments.

The lens or motor can now be rotated by hand until it reaches the desired endpoints in both directions, without any further input. The system recognizes the extremes -i.e. the most clockwise and counter clockwise position, as ends. Leave the lens at least an inch from any end stop before proceding. Press the MANUAL button once more to set the most extreme positions the motor/lens has been at as end stops. The LED indicator turns green and the display goes back to a number while the motor turns into position. The system is now ready to use.

Manual Override

The Hedén Ymer system features a manual override function that can be used to take manual control over the lens when the motor is idling. 5 seconds after the last input the power to the motor is cut off to preserve energy and the manual override function can be used. The lens can now be freely moved without the motor resisting or getting out of calibration. If any of the controls on the transmitter is moved, the corresponding motor is reactivated and goes back to the position decided by the controller. The mapped values of the lens will show up in the display if the motor is manually moved flashing to indicate that the motor has been manually moved. If you move the control to the motor that has been manually moved, it will go back to the hand units position.

Limits

Limits lets you set 2 limits in the knob range and move the motor only between these points. Make sure the FIZ toggle is set to the channel you want to apply the limit to.

Focus limits

- Short pressing the limit button will lock the motor until you short press limit button again.
- To set limits press and hold the limit button and move the control between the points , release limit button when you moved between the desired points.

Iris limits

-Make sure FIZ-toggle is set to I, cycle through with the FIZ-button.
-Move iris slider to the first limit position, press limits, move to the second position and press limits again.

Macro

The Macro function is used to give the operator extra fine control over motor operation allowing smooth incremental movements with extreme precision. By limiting the span of motor travel between two markers and still utilizing the full travel range in the control knob, the operator can achieve very fine control and simplified macro movements.

Use the transmitter control knob to move the motor to the first desired limit and press the Macro button once. The Macro LED on the transmitter and the LED's by the FOCUS/LIMITS button on the receiver will start blinking to indicate that the first macro marker has been set. Move the motor to the second position and press the Macro button again. This sets the second position and the motor moves to its new position within the span defined by the position of the control knob. The Macro LED on the transmitter and the LED's by the FOCUS/LIMITS button on the receiver turns solid green to indicate that the system is in Macro mode.

To turn the Macro function off, press the Macro button one more time. The Macro LED on the transmitter and the LED's by the FOCUS/LIMITS button on the receiver will turn off to indicate that the system is no longer in Macro mode. The motor will now move to a point within the full calibrated range determined by the position of the control knob.

REC

This section will cover the basics of setting up the Ymer system for remote trigger and will not go into detail regarding cables. Hedén offers a range of different cables for use on different camera systems. There are variations on how to set the system up depending on what camera and cables you are using.

The Hedén Ymer system uses contact closure to remotely trigger the camera. This solution is compatible with most cameras. For solutions regarding Schmitt triggering used by RED camera systems, more information can be found at https://heden.se/support/red-run-stop/

Information about Run/Stop functions, cables and more can be found at www.heden.se and in our newsletters.

To set the system up for remote triggering, a cable needs to be connected from the RUN/S connector on the left-hand side panel on the receiver to the appropriate connector on your camera system.

WARNING! Do not connect this cable when the receiver is powered.

Refer to separate instructions from the camera manufacturer as to where to connect cables and how to set the camera up for remote triggering.

Make sure the Hedén Ymer system is powered and paired and that all necessary parameters dictated by the camera manufacturer is met. A single press of the REC button will trigger the Run/Stop function. The LED above the REC button will turn solid red to indicate that the function is active. To inactivate the function, press the REC button one more time. The LED above the REC button will now turn off.

Lens Mapping

Ymer 3 have lens mapping function on all 3 channels. The unit have 100 different storage positions for storing lens data internally. Before you start mapping to make things easier, make sure the motor directions are correct. You can map a lens with one ring and then change what ring you want to use after mapping. For this to work the best use a ring that matches the near focus the closest with the lens you are mapping.

Lens menu
- Enter the main menu by long pressing the Enter button.
- Navigate the menu with enter, down button or Limits and Macro buttons wich doubles as up/down buttons in menues.
- Enter into the “Lens” menu. This is where all the stored lenses will be shown and where you add lenses to the library.
- Use Limit and Macro button to navigate between the 100 different slots for lenses. The empty slots will flash “empty”. The saved lenses will show up with name and what ring was used.
- Press enter to select the slot you want to edit. If the slot is empty you will only get the option to add a new lens. If there is a lens added to the slot already, you will get the option to remap the lens but keep the naming, overwrite the lens or pick the lens as the active one.

Lens Name
There is a pre loaded list of lens manufacturers.
- Select the first letter in the name of the lens manufacturer and pick the name from the list.
- Input the focal length of the lens. If you are mapping a zoom lens, use the dash to separate the focal lengts of the zoom in this step.

Mapping
If you are only mapping focus you can skip the iris mapping and zoom mapping steps with the enter button.
-Set min aperture, use down button to move the cursor to the f-stop number and use limits/macro button to change the value.
- Press enter to select value and anter again, repeat for max aperture value.
- Set the minimum focal lenght using limits/macro button and enter and repeat for maximum focal length
- Select if you want to map all 3 channels or just one of them
- Select the ring you want to map the lens to, imperial 1-5 or metric 1-5. You dont need the physical ring on the hand unit, the values will be shown on the screen.
- Move the focus knob to the infinity mark, the lens should also be at infinity. If it is not, you can still map in reverse but we reccommend to reverse the motor direction to make mapping easier.
- While having the lens and ring at infinity press AUX to mark the starting point
- For the first point, move the lens to the desired position, then hold AUX and move the knob(or the value in the screen) to the corresponding value, release AUX when the correct value is in the screen or on the mapped ring. Repeat this for the whole lens span. You can undo the previous point if you marked it incorrectly. At least 4 points is needed to be able to save a mapping. More points will increase the precision of the mapping. Press save.

Iris/zoom mapping
Iris mapping will start at the highest aperture number entered previously
- Move iris slider until the lens reaches the max iris value on the screen, short press AUX
- Repeat for the lowest iris number
- Use limits/macro buttons to decide what values in between min and max that you want to map, move the slider to the corresponding mark on the lens and press AUX for each mark.

Mapping zoom is identical to iris mapping.

Lens Map On/Off
To activate or de-activate the lens mapping
- Press enter to open Main Menu
- Select “Map On” To turn lens mapping on
- Select “Map Off” to turn lens mapping off
- “Exit to return to home screen

Quick FIZ menu

Use short press to toggle between Focus Iris and Zoom mode.
Long press to enter the quick menu for the active channel.

AutoCal - Auto calibrates only the active channel
Trq Low/Med/High - Sets the calibration torque for the active channel
Dir Fwd/Rev - Reverse motor direction
Ctr Std/rev- Reverse the direction of the contol (availible for iris and zoom)
MO On/Off - Manual override toggle on/off.
F - Shows the actual digital value of the position

File menu

In the file menu you will find functions to save/load from USB stick and delete lenses.

Saving and loading lenses
-Use the included USB-stick with specific file structure. If you do not have it, format any USB-stick to FAT32 and download the file structure from our website.
When you save the files to the USB they will all be stored in one sigle file. You can insert the USB-stick to another ymer 3 unit and load all the files.

Delete Lens
-Deletes the active lens.

Delete all lens
- Deletes all the lenses stored.

Setup menu

Under the set up menu you will find the following:
Mtr Trq - Change calibration torque of all channels
Led Str - Change brightness of button LEDs
AUX In - Switch between CineRT and Cinetape
AUX Btn - Set function of AUX button between, Focustracking, screen on/off or no function
Service - Only used for initial setup at factory
Test Pg - Only used for initial setup at factory

Updating Software

Go to www.heden.se/support/downloads to download the Ymer software update program with full instructions on how to update software on the Ymer follow focus system.

Trouble Shooting

Q. My motor will not calibrate the full span of the lens

A1. Make sure the lens is not right at the lens end stop

A2. Try using LenSaverTM manual calibration

A3. Try switching to a new gear. Play between gear and hub can cause problems with automatic calibration. Motor service might be required.

Q. Automatic calibration will not start

A. Make sure the system is set to automatic and not manual calibration. Switching between automatic and LenSaverTM manual calibration can only be done on the receiver.

Q. My macro markers are not exactly where I placed them

A. Try waiting about one second after each press of the button for the system to calculate the new parameters and correctly place the marker.

Q. I am experiencing connectivity or signal quality issues

A1. Make sure the antenna is not damaged.

A2. Try staying within line of sight. Solid structures can interfere with the signal.

A3. Try keeping the antenna on the receiver and transmitter upright

Q. My motor spins uncontrollably at power up/calibration

A. This is a sign of encoder malfunction. Make sure all cables are connected to the correct connector. Make sure the motor connector and pins are not damaged. Make sure the system is not powered up when switching or connecting cables or equipment. Service and/or repairs might be required.

Q. My transmitter/receiver won't pair

A1. Avoid waiting too long between starting the pairing sequence on the transmitter and receiver. Try starting the pairing on both units within a few seconds.

A2. Try keeping the transmitter and receiver at a minimum distance of 50 cm from each other during pairing.

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