



XS 0.8

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's in the bottom row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the bottom row are lit and you can change charging mode. None of the LED's the top row on is indicating charging status.

Explanation: The battery voltage could be under 2V.

Test: Test the charger on a fresh battery.

- [ⓘ is flashing](#)

If no battery or if the battery voltage is too low the led will start to flash to indicate the unit has entered power save mode.

Test: Test the charger on a fresh battery.

- [ⓘ is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

Explanation 3: The charger is not connected to a 12V battery.

Test: Test with a fresh 12V battery.

Explanation 4: The charge cycle is interrupted in step 1.

Test: Test to restart the charge cycle, if it still fails in step 1 the battery is sulphated and needs to be replaced.

Explanation 5: The charge cycle is interrupted in step 4.

Test: Test to restart the charge cycle, if it still fails in step 4 the battery is can't be charged and needs to be replaced.



XC 0.8

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: The charger has to be connected to battery for the LED's to light up.

- [No LED is lit when the charger is connected to both the power outlet and the battery](#)

Explanation: The battery voltage could be under 4V.

Test: Test against another battery that is fresh.

- [The charger does not switch from !\[\]\(b6d55d0b173caf9b2505126db01e6158_img.jpg\) into maintenance charging !\[\]\(12811766810e4126d2bed4d8c0808e60_img.jpg\)](#)

Explanation 1: Larger loads are connected to the battery at the same time.

Test: Disconnect the loads from the battery and try to charge again.

Explanation 2: Defective battery.

Test: If possible, measure the voltage on the battery when the charging is completed. If the voltage is under 7V the battery is probably faulty.

Test: Try the charger on another fresh battery.

- [!\[\]\(c25df6c57dccd81095d14ed16c5e6013_img.jpg\) and !\[\]\(427093379526118120820e4db9055b93_img.jpg\) is lit \(flashing rapidly\) simultaneously and there is a ticking sound](#)

Explanation 1: Bad connection.

Test: Move the clamps and make sure there is no loose connection in the quick connector, Comfort Connect.

Explanation 2: The charger is working in the desulphation phase.

Test: Leave the charger to charge for 24h (with some supervision). If the charger does not start charging (one of the LED's are lit) within 24h the battery is in very poor condition.

- [!\[\]\(269ecda55a64d643f7a554661696c989_img.jpg\) switches to !\[\]\(457b16d52067f602a9b1f53ec424662a_img.jpg\) after the charge has been stopped](#)

Explanation: When the charger restarts the battery voltage is monitored. If the battery voltage is above 6,5V, the charging will not commence. When the battery is between 6,5V and 7,2V it is considered as fully charged. The charging will automatically start again when the battery voltage drops below 6,5V.

- [The error LED !\[\]\(6c63a1144094e62a6968227fa9175cd8_img.jpg\) is lit](#)



Explanation: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

XS 800

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: The charger has to be connected to battery for the LED's to light up.

- [No LED is lit when the charger is connected to both the power outlet and the battery](#)

Explanation: The battery voltage could be under 6V.

Test: Test against another battery that is fresh.

- [The charger does not switch from !\[\]\(e1bdc70a9006e3802acd56af7aa337d8_img.jpg\) into maintenance charging !\[\]\(6ae057bca7ac6a248ab7813081463b17_img.jpg\)](#)

Explanation 1: Larger loads are connected to the battery at the same time.

Test: Disconnect the loads from the battery and try to charge again.

Explanation 2: Defective battery.

Test: If possible, measure the voltage on the battery when the charging should be finished. If the voltage is under 7V the battery is most likely faulty.

Test: Try the charger on another fresh battery.

- [!\[\]\(f27fcb70c1e5b985e115fc4716d86ff2_img.jpg\) and !\[\]\(6c6f20642b351a420d854c876275f471_img.jpg\) is lit \(flashing rapidly\) simultaneously and there is a ticking sound](#)

Explanation 1: Bad connection.

Test: Move the clamps and make sure there is no loose connection in the quick connector, Comfort Connect.

Explanation 2: The charger is working in the desulphation phase.

Test: Leave the charger to charge for 24h (with some supervision). If the charger does not start charging (one of the LED's are lit) within 24h the battery is in a very poor condition.

- [!\[\]\(7e90f000b36d0318f53f471e0cf2674e_img.jpg\) switches to !\[\]\(ec19932ea4fdddc186babe562d5a17b6_img.jpg\) after the charge has been stopped](#)

Explanation: When the charger restarts the battery voltage is monitored. If the battery voltage is above 12,9V, the charging will not commence. When the battery is between 12,9V and 14,4V it is considered as fully charged. The charging will automatically start again when the battery voltage drops below 12,9V.

- [The error LED !\[\]\(84c7294e88a45ff42841b46282168b10_img.jpg\) is lit](#)



Explanation: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

MXS 3.6, MULTI XS 3600, Zafir 45, M45

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The charger requires voltage from the battery for the Standby LED to be lit.

Test: Connect the charger to a fresh battery.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's at the lower row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED is lit when the charger is connected to both the power outlet and the battery](#)

Explanation: The battery voltage could be under 2.2V.

Test: Test against another battery that is fresh.

- [The charger does not switch from !\[\]\(8355073e142dc50a1ca12e74a2b70822_img.jpg\) into maintenance charging !\[\]\(a4fc743cb7fd53b993f4a3d25401683e_img.jpg\)](#)

Explanation 1: Larger loads are connected to the battery at the same time.

Test: Disconnect the loads from the battery and try to charge again.

Explanation 2: Defective battery.

Test: If possible, measure the voltage on the battery when the charging should be completed. If the voltage is under 14,1V the battery is most likely faulty.

Test: Try the charger on another fresh battery.

- [!\[\]\(0f0f508d296bff693b2b34288b8d91ee_img.jpg\) and !\[\]\(da9573afbd0f11bd65fa98c07c313243_img.jpg\) is lit \(flashing rapidly\) simultaneously](#)

Explanation 1: Bad connection.

Test: Move the clamps and make sure there is no loose connection in the quick connector, Comfort Connect.

Explanation 2: The charger is working in the desulphation phase.

Test: Leave the charger to charge for 24h (with some supervision). If the charger does not start charging (one of the LED's are lit) within 24h the battery is in a very poor condition.

- [!\[\]\(e558e52448519c33f48313e95a1d7ecf_img.jpg\) switches to !\[\]\(a00c6602c6b0dbd7e13259146b59da09_img.jpg\) after the charge has been stopped](#)

Explanation: When the charger restarts the battery voltage is monitored. If the voltage is above 12,9V, the charging will not commence. When the battery is between 12,9V and 14,4V it is seen as fully charged. The charging will automatically start again when the battery voltage drops below 12,9V.



- [The charger goes into Standby mode after the power is cut and the charging does not start again](#)

Explanation: The charger will turn into Standby if the voltage in the battery is below 6V when the power is back on.

Test: Start the charging again by pressing on the mode button.

- [The error LED is lit](#)

Explanation: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.



MXS 5.0, MXS 5.0 CHECK, MXS 5.0 Polar, MXS 4003

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's in the bottom row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the bottom row are lit and you can change charging mode. None of the LED's the top row on is indicating charging status.

Explanation: The battery voltage could be under 2V.

Test: Test the charger on a fresh battery.

- [ⓘ is flashing](#)

If no battery or if the battery voltage is too low the led will start to flash to indicate the unit has entered power save mode.

Test: Test the charger on a fresh battery.

- [ⓘ is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

Explanation 3: The charger is not connected to a 12V battery.

Test: Test with a fresh 12V battery.

Explanation 4: The charge cycle is interrupted in step 1.

Test: Test to restart the charge cycle with the mode button, if it still fails in step 1 the battery is sulphated and needs to be replaced.

Explanation 5: The charge cycle is interrupted in step 2.

Test: Test to restart the charge cycle with the mode button, if it still fails in step 2 the battery is can't be charged and needs to be replaced.



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Explanation 6: The charge cycle is interrupted in step 5.

Explanation 6.1: Large loads are connected to the battery and drain the voltage.

Test: Disconnect the loads and try charging again.

Explanation 6.2: The battery cannot retain the charge provided.

MXS 7.0, MULTI XS 7000, Zafir 100, M100

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's at the lower row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the lowest row are lit and you can change charging mode. None of the LED's the top row on is indicating charging status.

Explanation: The battery voltage could be under 1,5V.

Test: Try to charge the battery in Supply mode for approximately 5 min. Then try regular charging.

Test: Test the charger on a fresh battery.

- [LED is lit for 4 hours and then turns into error mode](#)

If the battery voltage is not above 12,5V after 4h the charger will turn into error mode, because the voltage has not increased in the way it should have done.

Explanation 1: The battery is too large in relation to the capacity of the charger.

Test: Make sure that the battery/batteries size is not larger than the recommendations for Multi XS 7000 (225Ah).

Test: Try to restart the charger because the charger might need more time to charge the battery.

Explanation 2: Larger loads are connected to the battery.

Test: Disconnect the battery and try to charge it without the loads.

Test: Try to restart the charger because the charger might need more time to charge the battery.

Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely due to a defective cell in the battery.

Test: Change the battery.

- [LED is flashing for 4 hours, then turns into error mode](#)

Explanation: The battery is probably too sulphated to revive. The battery is faulty and it is time to change it.

- [LED is lit and then turns into error mode](#)



The analysis phase is testing if the battery can retain the charge given.
Explanation 1: Large loads are connected to the battery and are draining the voltage.

Test: Disconnect the battery and try charging again.

Explanation 2: The battery cannot retain the charge given.

Test: The battery needs replacing.

- [The error LED is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: The clamps are short circuited.

Explanation 3: For chargers of the older type the error mode is flashing when only the plug is connected.

MXT 4.0, MULTI XT 4000

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's at the lower row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the lowest row are lit and you can change charging mode. None of the LED's the top row on is indicating charging status.

Explanation: The battery voltage could be under 2,5V.

Test: Test the charger on a fresh battery.

- [LED is lit for 4 hours and then turns into error mode](#)

If the battery voltage is not above 25,5V after 4h the charger will turn into error mode, because the voltage has not increased the way it should have done.

Explanation 1: The battery is too large in relation to the charger capacity.

Test: Make sure that the battery/batteries are not larger than the recommendations for Multi XT 4000 (100Ah).

Test: Try to restart the charger because the charger might need more time to charge the battery.

Explanation 2: Larger loads are connected to the battery.

Test: Disconnect the battery and try to charge it without the loads.

Test: Try to restart the charging, the charger might need more time to charge the battery.

Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely a defective cell in the battery.

Test: Change the battery.

- [LED is flashing, then turns](#)

Explanation: The battery is probably too sulphated to revive. The battery is faulty and it is time to change it.

- [LED is lit and then turns into error mode](#)

The analysis phase is testing if the battery can retain the charger given.

Explanation 1: Large loads are connected to the battery and draining the



voltage.

Test: Disconnect the battery and try charging again.

Explanation 2: The battery cannot retain the charge given.

Test: The battery needs replacing.

- [The error LED is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: The clamps are short circuited.

Explanation 3: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.



MXS 10

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's in the bottom row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the bottom row are lit and you can change charging mode. None of the LED's the top row on is indicating charging status.

Explanation: The battery voltage could be under 2V.

Test: Try to charge the battery in Supply mode for approximately 5 min. Then try regular charging.

Test: Test the charger on a fresh battery.

- [ⓘ is flashing](#)

If no battery or if the battery voltage is too low the led will start to flash to indicate the unit has entered power save mode.

Test: Test the charger on a fresh battery.

- [ⓘ is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

Explanation 3: The charger is not connected to a 12V battery.

Test: Test with a fresh 12V battery.

Explanation 4: The charge cycle is interrupted in step 1.

Test: Test to restart the charge cycle with the mode button, if it still fails in step 1 the battery is sulphated and needs to be replaced.



Explanation 5: The charge cycle is interrupted in step 2.

Test: Test to restart the charge cycle with the mode button, if it still fails in step 2 the battery is can't be charged and needs to be replaced.

Explanation 6: The charge cycle is interrupted in step 5.

Explanation 6.1: Large loads are connected to the battery and drain the voltage.

Test: Disconnect the loads and try charging again.

Explanation 6.2: The battery cannot retain the charge provided.

- [Temperature LED is lit](#)

Explanation: This led is turned on automatically when the temp sensor is connected.

- [Temperature LED is not lit](#)

Explanation: The temperature sensor is disconnected or has been damaged. The charger will assume room temperature and charge without temperature compensation.

- [Temperature LED is flashing](#)

Explanation: The temperature is above + 65 °C. The current is reduced until the temperature has dropped below + 65 °C. The charger reverts to normal charging current when the temperature drops below + 65 °C.

MXS 25, MULTI XS 25000

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's at the lower row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the bottom row are lit and you can change charging mode. If the LED's in the top row are not lit, the charging status is not being indicated.

Explanation: The battery voltage could be under 1,5V.

Test: Try to charge the battery in Supply mode for approximately 5 min. Then try regular charging.

Test: Test the charger on a fresh battery.

- [LED is lit for 4 hours and then turns into error mode](#)

If the battery voltage is not above 12,5V after 4h the charger will turn into error mode, because the voltage has not increased the way it should have done.

Explanation 1: The battery is too large in relation to the chargers capacity.

Test: Make sure that the battery/batteries are not larger than the recommendations for MXS 25 and Multi XS 25000 (500Ah).

Test: Try to restart the charger because the charger might need more time to charge the battery.

Explanation 2: Larger loads are connected to the battery.

Test: Disconnect the battery and try to charge it without the loads.

Test: Try to restart the charging, the charger might need more time to charge the battery.

Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely a faulty cell in the battery.

Test: Change the battery.

- [LED is flashing, then turns into error mode](#)

Explanation: The battery is probably too sulphated to revive. The battery is faulty and it is time to change it.

- [LED is lit and then turns into error mode](#)



The analysis phase is testing if the battery can retain the charge given.

Explanation 1: Large loads are connected to the battery and drain the voltage.

Test: Disconnect the battery and try charging again.

Explanation 2: The battery cannot retain the charge given.

Test: The battery needs replacing.

- [The error LED is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

Explanation 3: The clamps are short circuited in Supply mode.

Test: Separate the clamps.

- [Temperature LED is lit](#)

Explanation **Multi XS 25000**: DC interruption or short circuit in the cable.

Explanation **MXS 25**: This is normal, the LED is on indicating that the temperature sensor is activated. If the LED is turned off here is a DC interruption or short circuit in the cable.

- [Temperature LED is flashing](#)

Explanation: The temperature is above + 65 °C. The charging is interrupted.

Press the MODE button to restart charging when the temperature has dropped below + 65 °C.

M200, M300

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's at the lower row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the bottom row are lit and you can change charging mode. None of the LED's in the top row on is indicating charging status.

Explanation: The battery voltage could be under 1,5V.

Test: Test the charger on a fresh battery.

- [LED is lit for 4 hours and then turns into error mode](#)

If the battery voltage is not above 12,5V after 4h the charger will turn into error mode, because the voltage has not increased the way it should have done.

Explanation 1: The battery is too large in relation to the chargers capacity.

Test: Make sure that the battery/batteries are not larger than the recommendations for M200 and M300 (500Ah).

Test: Try to restart the charger because the charger might need more time to charge the battery.

Explanation 2: Larger loads are connected to the battery.

Test: Disconnect the battery and try to charge it without the loads.

Test: Try to restart the charging, the charger might need more time to charge the battery.

Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely a faulty cell in the battery.

Test: Change the battery.

- [LED is flashing, then turns into error mode](#)

Explanation: The battery is probably too sulphated to revive. The battery is faulty and it is time to change it.

- [LED is lit and then turns into error mode](#)

The analysis phase is testing if the battery can retain the charge given.

Explanation 1: Large loads are connected to the battery and drain the voltage.



Test: Disconnect the battery and try charging again.

Explanation 2: The battery cannot retain the charge given.

Test: The battery needs replacing.

- [The error LED is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

Explanation 3: The clamps are short circuited in Supply mode.

Test: Separate the clamps.

- [Temperature LED is lit](#)

Please note that the function of temperature sensor has changed for M200 and M300. The charger will indicate differently depending on when it was purchased.

Explanation **M200 and M300 purchased before 2011**: DC interruption or short circuit in the cable.

Explanation **M200 and M300 purchased from 2012 and later**: This is normal, the LED is on indicating that the temperature sensor is activated. If the LED is turned off here is a DC interruption or short circuit in the cable.

- [Temperature LED is flashing](#)

Explanation **M200 and M300 purchased from 2012 and later**: The temperature is above + 65 °C. The charging is interrupted. Press the MODE button to restart charging when the temperature has dropped below + 65 °C.

MXT 14, MULTI XT 14000

- [No LED is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's to be lit.

- [No LED is lit when the charger is connected only to the power outlet](#)

Explanation: One of the LED's in the bottom row should light up when the charger is connected to the power outlet.

Test: Make sure that there is power from the power outlet.

- [No LED's are lit on the top row when the charger is connected to both the power outlet and the battery](#)

The LED's on the bottom row are lit and you can change charging mode. None of the LED's the top row on is indicating charging status.

Explanation: The battery voltage could be under 7V.

Test: Try to charge the battery in Supply mode for approximately 5 min. Then try regular charging.

Test: Test the charger on a fresh battery.

- [LED is lit for 4 hours and then turns into error mode](#)

If the battery voltage is not above 25,5V after 4h the charger will go into error mode, because the voltage has not increased the way it should have done.

Explanation 1: The battery is too large in relation to the capacity of the chargers.

Test: Make sure that the battery/batteries are not larger than the recommendations for XT 14000 / Multi XT 14000 (500Ah).

Test: Try to restart the charger because the charger might need some more time to charge the battery.

Explanation 2: Larger loads are connected to the battery.

Test: Disconnect the battery and try to charge it without the loads.

Test: Try to restart the charging, the charger might need more time to charge the battery.

Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely a defective cell in the battery.

Test: Change the battery.

- [LED is flashing, then turns](#)

Explanation: The battery is probably too sulphated to revive. The battery is faulty and it is time to change it.

- [LED is lit and then turns into error mode](#)



The analysis phase is testing if the battery can retain the charge given.

Explanation 1: Large loads are connected to the battery and drain the voltage.

Test: Disconnect the battery and try charging again.

Explanation 2: The battery cannot retain the charge provided.

- [The error LED is lit](#)

Explanation 1: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

- [Temperature LED is lit](#)

Explanation **Multi XT 14000**: DC interruption or short circuit in the cable.

Explanation **MXT 14**: This is normal, the LED is on indicating that the temperature sensor is activated. If the LED is turned off here is a DC interruption or short circuit in the cable.

- [Temperature LED is flashing](#)

Explanation: The temperature is above + 65 °C. The charging is interrupted.

Press the MODE button to restart charging when the temperature has dropped below + 65 °C.

MXTS 70

- [No LED or display is lit when the charger is connected only to the battery](#)

Explanation: The plug has to be connected for the LED's and the displays to be lit.

- [No LED or display is lit when the charger is connected only to the power outlet](#)

Explanation: The displays and LED's should light up when the charger is connected to the power outlet. The fans should also turn on.

Test: Make sure that there is power from the power outlet.

-  [Is lit](#)

Explanation: This led is lit when the charger has been set to a current less than the maximum.

-  [Is lit](#)

Explanation: This led is lit when the charging has been stopped or not started. Press the START/PAUSE button to start or resume.

-  [is lit](#)

This indication always has an explanation in the Ah & info display.

E01: Reverse polarity.

Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

E02: Over voltage. The battery connected has a higher voltage than the selected charge program.

Test: Make sure that the battery and the selected charge program corresponds to each other.

E03: Time out step 1: Desulphation. The battery is sulphated and can't be charged correct.

Test: Try to restart the charge cycle, if it still fails in step 1 the battery is sulphated and needs to be replaced.

E04: Time out step 2. Soft start. The battery can't be charged correct.

Test: Try to restart the charge cycle, if it still fails in step 1 the battery is sulphated and needs to be replaced.



E05: Analyze. The charger can't keep the charge.

Test: Remove all parallel loads on the battery and restart the charge cycle. If the analyze fails again the battery needs to be replaced.

E06: battery overheated. The charger has detected a too warm battery, over + 60 °C. Push Pause/Start to resume charging when temperature is below

Test: Make sure that it is not the ambient that is too warm. If that is not the case the battery need to be replaced.

E07: Low battery voltage in supply program. The battery connected has too low voltage to continue. The battery connected is either a 12V and the charger is in 24V mode or the parallel loads are too high

Test: If a 12V battery is connected check if the unit is in 24V mode. Try to remove all parallel loads.

E08: Over current in supply. The charger has switched off the output due to too high current.

Test: Make sure that the clamps not are shortened. Also check if there are massive parallel loads on the battery.

E99: Over voltage protection. If battery voltage is below 17V the ERROR LED is lit when 24V mode has been selected.

Press the START/PAUSE button to proceed with in 12V mode. To change to 24V mode press INCREASE or DECREASE.

[Temperature LED is lit](#)

Explanation: This led is turned on automatically when the temp sensor is connected.

[Temperature LED is not lit](#)

Explanation: The temperature sensor is disconnected or has been damaged. The charger will assume room temperature and charge without temperature compensation.



D250S Dual

- [Power LED is not lit.](#)

Explanation: The target battery voltage must be above 9V.

- [The Power LEDs are flashing rapidly or glowing faint.](#)

Explanation: The charger has entered power save mode due to low voltage.

- [The charger does not start charging.](#)

Explanation: In order to start charging the supply voltage needs to be above 13.1V on the supply battery input or above 11.5V on the solar input. The voltage on the target battery also needs to be above 5V. The solar voltage also needs to be higher than the alternator input voltage.

Test: Test Use a voltmeter to verify that the voltages are within the levels specified above.

- [The charger does not stop charging the target battery even though the alternator or charger on the supply battery has been turned off](#)

When charging of the supply battery is turned off the voltage will drop. The output power of the charger is dependent on the input voltage. With lower input voltage the output power is lower. Due to this it may take some time until the charger stops. It will however not drain the supply battery, the charger will turn off when the voltage has dropped below 12.8V. If there is power on the solar panel, this will be used to charge the target battery.

- [⚡ Is flashing.](#)

Explanation: The charger has detected a problem. This LED is always flashing with some other LEDs lit to tell what the problem is.

If only the power on lamp is lit then the temperature at the target battery is too high. The charger will not charge the battery if the temperature is above 65 °C, as soon as the temperature is lower, the charging will automatically restart.

If the alternator or solar LED or both are lit when the error led is flashing a connection problem is detected with the target battery, check the connections.

SmartPass



- [The Power LED is flashing rapidly or glowing faint.](#)

Explanation: The charger has entered power save mode due to low voltage. There is no charger or alternator turned on for the supply battery.

- [The SmartPass does not start charging.](#)

Explanation: In order to start charging the supply voltage needs to be above 13.1V. The voltage on the target battery also needs to be above 5V.

Test: Test Use a voltmeter to verify that the voltages are within the levels specified above.

- [The SmartPass does not stop charging the target battery even though the alternator or charger on the supply battery has been turned off](#)

When charging of the supply battery is turned off the voltage will drop. The SmartPass will turn off when the voltage has dropped below 12.8V, if there are no parallel loads this will take some time.

- [The SmartPass does not supply the consumers from the consumer battery.](#)

The SmartPass will turn off the consumer output if the consumer battery reaches 11.5V. This will prevent the battery from being damaged due to being drained too much. To turn on the consumer output again the consumer battery needs to be charged.

- [Is lit.](#)

Explanation: The SmartPass has detected a problem. This LED is always lit with some other LEDs flashing to tell what the problem is.

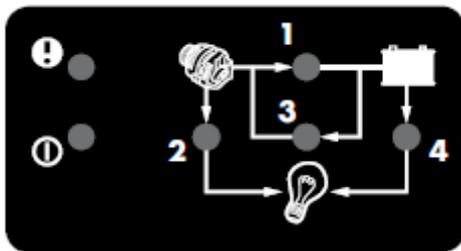
Led 1 flashing: A problem is detected with the service battery. The current to the battery is too high or the SmartPass is overheated. If the current is too high the SmartPass will try to start charging the battery five times. If all five tests fails the SmartPass needs to be disconnected from both batteries before it can restart. If this is the case check the cables for short circuit. If the SmartPass is overheated charging will automatically restart when the temperature has dropped.

Led 2 flashing: A problem is detected with the consumer output, while the consumer output is connected to the starter battery input. The current to the output is too high or the SmartPass is overheated. If the current is too high the SmartPass will try to start charging the battery five times. If all five tests fails the SmartPass needs to be disconnected from both batteries before it can restart. If this is the case check the cables for short circuit, there could also be too many consumers connected. If the SmartPass is overheated output will automatically turn on when the temperature has dropped.

Led 3 flashing: A problem is detected with the starter battery while maintenance charging. The current to the battery is too high or the SmartPass is overheated. If the current is too high the SmartPass will try to start charging the battery five times. If all five tests fail the SmartPass needs to be disconnected from both batteries before it can restart. If this is the case check the cables for short circuit. If the SmartPass is overheated output will automatically turn on when the temperature has dropped.

Led 4 flashing: A problem is detected with the consumer output, while the consumer output is connected to the consumer battery. The current to the output is too high or the SmartPass is overheated. If the current is too high the SmartPass will try to start charging the battery five times. If all five tests fails the SmartPass needs to be disconnected from both batteries before it can restart. If this is the case check the cables for short circuit, there could also be too many consumers connected. If the SmartPass is overheated output will automatically turn on when the temperature has dropped. It could also mean that the battery voltage on the consumer battery is too low, this case is discussed above.

Led 1, 3 and 4 flashing: The temperature on the service battery is too high. The SmartPass will not charge the battery if the temperature is above 65 °C, as soon as the temperature is lower, the charging will automatically restart.



❗ **Error lamp**

① **Power lamp**

1. Service battery charging lamp

2. Alternator battery consumption lamp

3. Alternator battery charging lamp

4. Service battery consumption lamp