

Our 2-Way AC Transfer Switch Explained



Latronics' ACTS-40 and why you might want one...

Once you comprehend what the ACTS-40 can do and how it automatically makes your solar powered lifestyle that much easier you'll understand why it is a very cost effective nifty little device that quite literally sells itself.

Essentially the ACTS-40 will switch between two AC power sources up to a limit of 40A at 230/240V or 110/120V AC. It has two AC inputs and one AC output, this output goes to the main loads in a dwelling, RV, caravan or marine vessel.

Here's where it gets interesting; one of the AC inputs is called the Primary and the other is the Secondary. The Primary is dominant, meaning that the ACTS-40 will always use that Primary power AC source if it is available. However, if the Primary source ever disappears or fails then the ACTS-40 will look to the Secondary input to get its power supply. This preferential switching feature alone can be used in a wide range of different scenarios. Here are 4 examples:

The Grid as Back-Up: In your suburban home you could have your stand alone inverter AC supply fed into the Primary input and have the mains grid AC power going into the Secondary input. So if your batteries ever ran down too low that your stand alone inverter switched off then the ACTS-40 would quickly switch over to the grid supply as a back up source for your home. Most of the time your home would run from the stand alone inverter but if it ever needed servicing or the batteries ran down then the grid would be your back up supply, keeping everyone happy.

Remote Area Power Supply: In your stand alone home in the middle of the bush, you could have your generator AC output wired into the Primary input of the ACTS-40 with your generator switched off most of the time. Your stand alone inverters AC output wired into the Secondary input to run the house most of the time. However, when the solar charge controller monitors that the batteries are getting low it can send a 12V DC signal to start your (electric start) generator. As soon as the generator AC supply is up to speed and stable the ACTS-40 will switch over and use that Primary power source while your Latronics inverter goes into standby sleep mode. The battery charger also gets its power exclusively from the generator and once the batteries have reached float state the charge controller will release its 12V hold on the generator and it will turn

off. The ACTS-40 will sense the loss of its Primary power source and switch back to the Inverter supply on the Secondary input that is now running on fully charged batteries. Look Ma' no hands!

Caravan, Marine & RV: On a boat or in a caravan you could have the "Shore Power" (external water proof GPO male socket) wired into the Primary input of the ACTS-40 and have your stand alone inverter as the Secondary source. When you pull up to the mooring or the caravan park your inverter is already running your fridge and other devices from it's batteries but as soon as you plug in the mains AC (or a generator) the transfer switch will swap you over to run from the grid supply as it is the Primary (dominant) source for the ACTS-40. When it's time to leave you simply unplug and the ACTS-40 switches back over to the inverter that is wired into the Secondary input.

UPS or Battery Back Up: In your suburban home or business you could have some solar panels charging up batteries. You could have the grid supply as the Primary power source and the battery powered stand alone inverter as your secondary source (the inverter would normally be asleep in standby mode, using virtually no battery power). Most days the batteries would be charged from a relatively small solar system while the house or business would run from the grid as most dwellings do. But if there was a natural disaster related power failure or black out then the transfer switch would instantly swap you over to your stand alone inverter Secondary power supply and you could continue to function. Once the grid power was restored it would automatically take over again as it is the Primary source.

Some key points:

The ACTS-40 is an AC (Alternating Current) device and it should only be installed by an electrician.

When the ACTS-40 switches over it does it very quickly at 12 milliseconds, but more importantly it makes sure to switch over at the zero crossing. This means that it switches at a position in the AC sine wave where the voltage is momentarily at zero. This is an important feature as it means that devices like computers (even ones without internal batteries) and other sensitive electronics won't experience any spikes, losses or abrupt changes in their power supply.

The ACTS-40 comes in an IP-55 rated enclosure or you can opt for the panel mount version.

The ACTS-40 frees you up by automating the change over between dual power sources.

Further Details

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