



## MASS SYSTEMSWITCH

Full automatic AC transfer systems  
for three AC sources

### AC power from any source

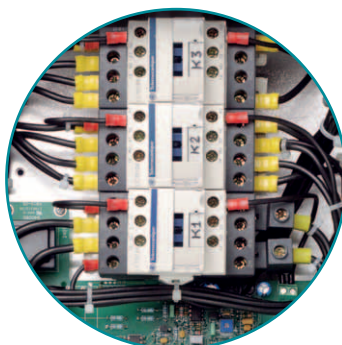
Mastervolt can offer a broad line of equipment to power your electrical needs when you're on the move. Whether it is on the road, at sea or in a house on a remote location, Mastervolt can supply the power to be independent. But what if more than one power source is available?

Manual switching between the power sources may seem the easiest and cheapest solution; it is definitely not the most user-friendly way, as switching must often be done through the dark. And more important: it may lead to short circuits.

Mastervolt has the solution to take over manual switching between different power sources: the Mass Systemswitch. It automatically switches the available AC power source to the right outputs. The switching between the AC power sources is done by means of fast and reliable double pole industrial relays. Fast enough to provide comfortable AC power with the smallest interrupts, ensuring almost continuous power. Reliable enough to avoid feedback of AC power to one of the AC sources, causing irreparable damage.

### Source priority

To switch the available power sources to the right outputs, the Mass Systemswitch is equipped with a source priority. If more than one power source is available, the source with the highest priority is switched to the output. The generator has the highest priority: when the generator is started, the Mass Systemswitch



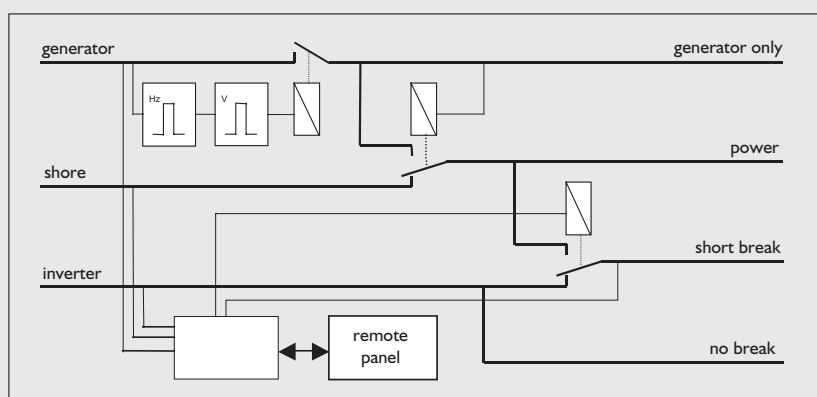
Fast and reliable double pole industrial relays.

samples its output voltage and frequency. Only when both are within limits, all outputs (except Inverter only) are supplied by the generator. Other power sources will be denied even when they are available. Shore power has the second priority. If there is no generator power available, shore power will be transferred to the Power and Shortbreak outputs. Power from the inverter will be denied. The lowest priority is assigned to the inverter. Only when no other power source is available, inverter power is transferred to the Shortbreak output. If this preferent behavior is not wanted, for instance to prevent the generator from overload or to prevent the shore fuse from tripping, it is possible to override it manually by means of the Load on inverter mode on the optional remote panel. Finally, the No break output is continuously supplied by power from the inverter. It delivers uninterrupted AC power from your batteries, thus the ideal output to feed more sensitive appliances like computers.



### Monitoring

A clear LED readout module on the front of the cabinet provides the status overview of the available AC sources to the user. For remote operation Mastervolt can supply a range of intelligent panels that can be connected to the Mass Systemswitch, giving you an exact status overview of the available AC-power sources. Use of a remote panel also offers you the possibility for automated Load on inverter operation: when the load connected to the shore or generator is too high, a part of the load will be switched to the inverter automatically.



- AUTOMATIC SWITCHING BETWEEN THREE AC SOURCES
- RELIABLE DOUBLE POLE SWITCHING
- LIGHT WEIGHT, COMPACT AND STYLISH DESIGN
- FREQUENCY AND VOLTAGE CONTROLLED GENERATOR INPUT
- LOAD ON INVERTER FUNCTION
- EASY TO INSTALL
- LED DISPLAY
- CONNECTION FOR REMOTE PANEL OPERATION
- CAN BE USED WITH ANY KIND OF INVERTER OR GENERATOR

TECHNICAL SPECIFICATIONS

Model	Mass Systemswitch 6	Mass Systemswitch 10	Mass Systemswitch 16	System Manager AC transfer switch 4.5kW	System Manager AC transfer switch 6kW
Article number	55008000	55008100	55008200	55007501	55007551
Typical application	automatic transfer switch system as component for high power AC distribution (6 kW and more). Additional external circuit breakers must be applied (installation dependent).			Easy to install completely assembled AC distribution system including AC transfer switch and automatic circuit breakers (up to 6 kW).	
Nominal input voltage	230V/50-60Hz	230V/50-60Hz	230V/50-60Hz	230V/50-60Hz	230V/50-60Hz
Input voltage range	200-250V AC	200-250V AC	200-250V AC	200-250V AC	200-250V AC
Inputs					
Nominal current Generator	25A	40A	63A	16A	25A
Nominal current Shore	25A	25A	40A	16A	16A
Nominal current Inverter	25A	25A	25A	20A	25A
Earth leakage breaker (RCCB)	no	no	no	yes (2x)	yes (2x)
Pass through generator input	----- continuous monitoring of voltage and frequency -----			----- delayed pass through -----	
Threshold values generator pass through	----- switch on: >48Hz, >205V, switch off: <43Hz, <150V -----			----- 10 sec., adjustable between 0-30 sec. -----	
Outputs					
Nominal current Inverter only	25A	25A	25A	6A	6A
Nominal current short break	25A	25A	25A	10A + 16A	16A + 16A
Nominal current power	25A	40A	40A	16A + 16A	16A + 16A
Nominal current generator only	n/a	40A	63A	n/a	n/a
Automatic circuit breakers	----- no, as breakers values are source and load dependent -----			yes	yes
General					
Power consumption (AC on all inputs)	27VA	33VA	33VA		
Power consumption (only inverter power)	< 1VA	< 1VA	< 1VA		
Specified operation temperature	-5.....+60°C (will meet specified tolerances)				
Allowed operating temperature	-40...+70°C (may not meet all specified tolerances)				
None operating temperature	-60...+80°C (storage temperature)				
Relative humidity	95% max, non condensing				
Switching time	on: 12...22ms / off: 4...19ms				
Options					
Connection for Mastervolt remote panel	yes	yes	yes	yes	yes
LED indications:	----- AC source present for each input and load on inverter -----			no	no
Mechanical					
Wire size	AC power: 0.5 - 10mm² / AWG 20 - 7, remote panel: 0.14 – 2.5mm² / AWG 26 - 13				
Dimensions, hxxwxd	340 x 261 x 144 mm. / 13.4 x 10.3 x 5.7 inch.			375 x 285 x 140 mm. / 14.8 x 11.2 x 5.5 inch.	
Approximate weight	4.4 kg. / 9.6 lbs	4.9 kg. / 10.8 lbs	5 kg. / 11.1 lbs	6 kg. / 13 lbs	6 kg. / 13 lbs
Protection degree	IP44	IP44	IP44	IP55	IP55
Specifications are subject to change without notice.					

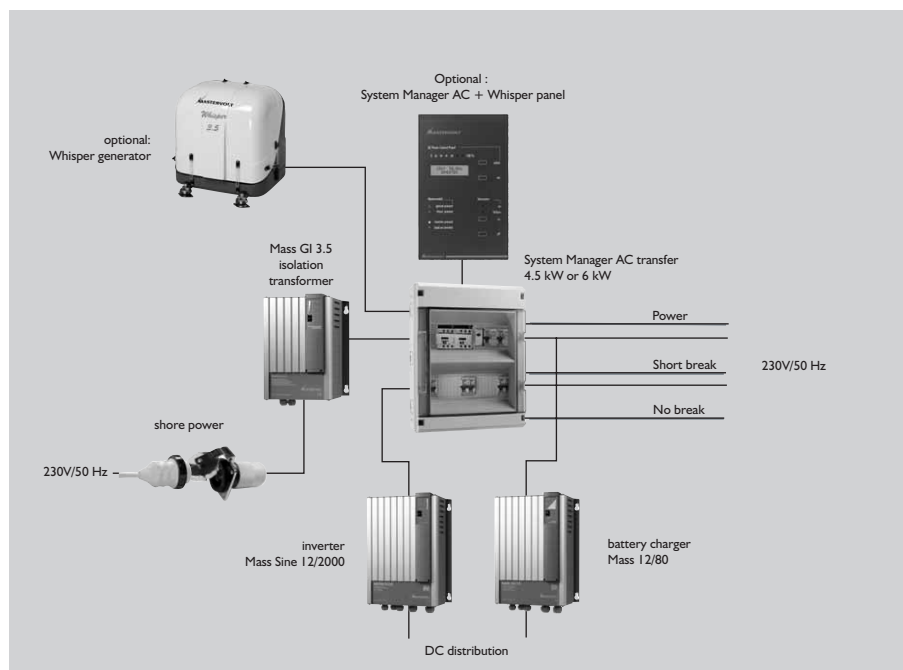
Remote panels for the Mass Systemswitch and System Manager AC transfer switch (optional)

All below mentioned panels are suitable for remote operation of the above mentioned Mass Systemswitches and the System Manager AC transfer switches.



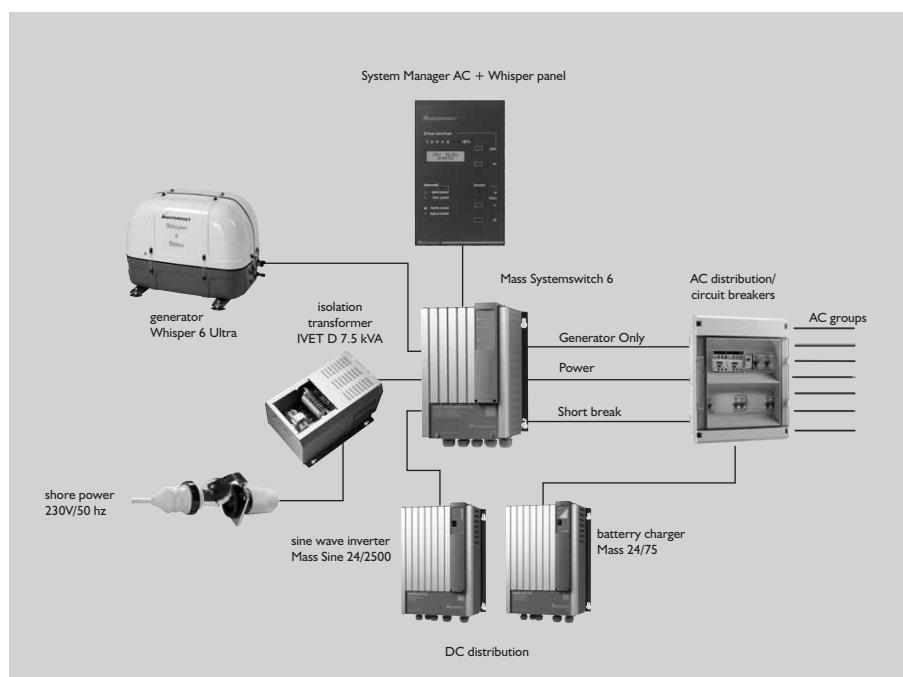
Model	System Manager AC	System Manager AC + Whisper	Power System Control panel 3 AC/DC	Power System Control panel 4 AC/DC + Whisper
Part number	70400015	70400020	70400030	70400040
Application	Monitoring by LCD display of AC voltage, frequency, current and kVA; LED bar display for kVA.	Monitoring by LCD display of AC voltage, frequency, current and kVA; LED bar display for kVA; remote operation of the Whisper generator.	Monitoring by LCD display of AC voltage, frequency, current and kVA; LED bar display for kVA; battery monitoring. Remote operation of battery charger and inverter.	Monitoring by LCD display of AC voltage, frequency, current and kVA; LED bar display for kVA; battery monitoring. Remote operation of battery charger, inverter and Whisper generator.
Mastervision compatible	yes	yes	yes	yes
Automated load on inverter mode	yes	yes	yes	yes
Dimensions (wxh)	120 x 195 mm	120 x 195 mm	240 x 195 mm	240 x 195 mm

## SYSTEM APPLICATIONS



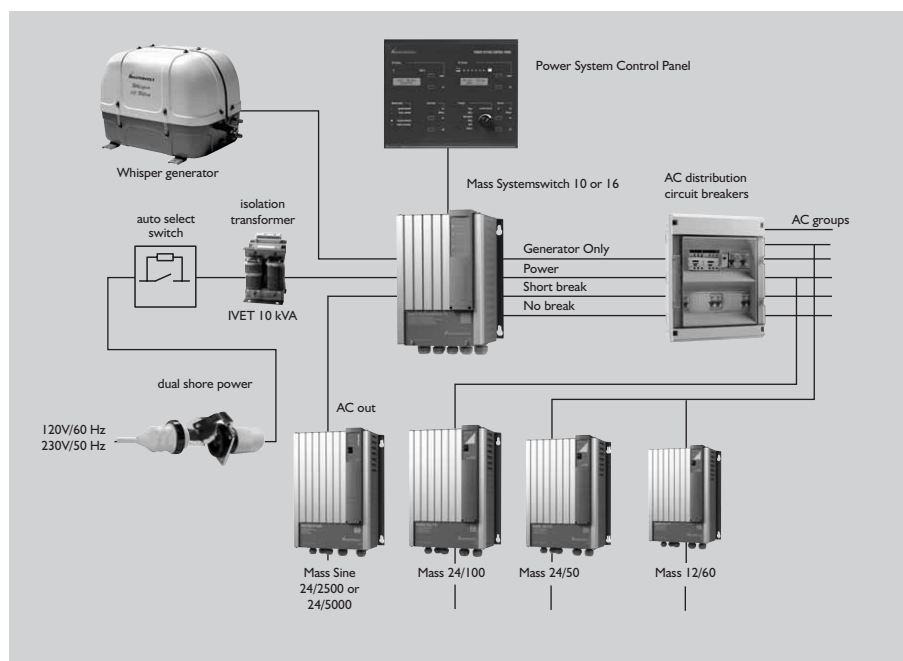
### Basic AC installation

Example of a System Manager AC transfer 4.5 kW or 6 kW used in AC systems on vessels up to 10 meters. The System Manager AC transfer is a complete AC transfer system with integrated automatic circuit breakers. Main AC elements of the installation are the Mass Sine 12/2000 inverter and a shore connection together with a Mass GI 3.5 isolation transformer or a transformer from the IVET range. A small generator like the Whisper 3.5 can be added as an option. The System Manager AC panel makes this AC system complete, although the System Manager AC transfer can also be operated automatically without this remote panel. When power from the shore or generator fails, AC power from the inverter is still available on the Short break output. As soon as AC power is available from the shore or generator again, it is automatically transferred to both the Power and the Short break output of the System Manager AC transfer.



### More power

This example, for instance a vessel in the 10-15 meter category, shows a more extended AC installation with larger loads. It is made possible by means of the Mass Systemsswitch 6 or 10 in combination with an external AC distribution box with automatic circuit breakers. The airconditioning is connected to the Generator only output and a hot water boiler is connected to the Power output. This means that the airconditioning is only available while the Whisper 8 generator is running. At the same time the hot water boiler is powered by the generator. In contrast with the air conditioning, the hot water boiler is still powered by the shore connection when power from the generator isn't available anymore. AC power is always available on the Short break output, which switches between the three available AC sources. This makes the Short break output suitable for continuous lightning.



### Ultimate comfort

The Power System Control Panel will offer you total control of both DC and AC electrical power, for instance on vessels in the 20 meter plus category. A Whisper 10 or 16 Ultra generator together with the Mass Systemsswitch 10 or 16 can fulfill almost all your electrical needs, like electric cooking, airconditioning, washing machine and additional battery chargers for extra battery capacity (i.e. for the bowthruster). With the use of a Mass Sine 24/5000 inverter, AC power is always available on the Short break output which switches between the available AC sources. However, more sensitive appliances like computers should be connected to the No break output, which delivers uninterrupted AC power from the inverter.

## OTHER MASTERVOLT AC SWITCHING SYSTEMS

### Masterswitch 0 range: 2 inputs, 1 output without circuit breakers



Model	Masterswitch 0 5kW 230V/20A	Masterswitch 0 10kW 230V/40A	Masterswitch 0 3.5kW 120V/32A	Masterswitch 0 7kW 120V/60A	Masterswitch 0 9kW 120V/80A
Part number	55006010	55006015	55106000	55106100	55106200
Typical application	----- simple switching element between two AC sources without automatic breakers -----				
Nominal voltage	230V 50/60Hz	230V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz
<b>Number of inputs</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
Nominal input current Generator/Shore	20A	40A	32A	60A	80A
Nominal input current Inverter	20A	40A	32A	60A	80A
Delay time on Generator input	10 sec. (adjustable)	10 sec. (adjustable)	10 sec. (adjustable)	10 sec. (adjustable)	10 sec. (adjustable)
Earth leakage breaker (RCCB) on Generator / Shore input	no	no	no	no	no
<b>Number of outputs</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Nominal output current	20A	40A	32A	60A	80A
Mastervolt remote panel connection	no	no	no	no	no
Automatic circuit breakers protected	no	no	no	no	no
Dimensions (h x w x d)	200x110x115 mm	200x110x115 mm	200x110x115 mm	214x162x128 mm	214x162x128 mm
Weight	1.2 kg/2.6 lbs	1.3 kg/2.9 lbs	1.2 kg/2.6 lbs	2.5 kg/5.5 lbs	2.5 kg/5.5 lbs

### Masterswitch range with automatic circuit breakers



Model	Masterswitch Fuses 5kW 230V/20A	Masterswitch Combi (for Dakar Combi only)	Shore fix 16A/30mA
Part number	55006060	55006070	124001000
Typical application	completely assembled AC transfer system / AC distribution including automatic circuit breakers for small sized AC installations (up to 6 kW)		earth leakage breaker for shore connection only
Nominal voltage	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz
<b>Number of inputs</b>	<b>2</b>	<b>2</b>	<b>1</b>
Nominal input current generator (or shore)	16A	16A	n/a
Nominal input current shore	n/a	n/a	16A
Nominal input current inverter	20A	25A	n/a
Delay time on generator input	10 sec. (adjustable)	10 sec. (adjustable)	n/a
Earth leakage breaker (RCCB) on generator/shore input	yes, 1x DPNa VIGI Bxx 30mA	yes, 1x DPNa VIGI Bxx 30mA	yes, 1x DPNa VIGI Bxx 30mA
<b>Number of outputs</b>	<b>2</b>	<b>2</b>	<b>1</b>
Nominal output current no-break	n/a	n/a	n/a
Nominal output current short break	6A + 6A + 6A	6A + 6A	n/a
Nominal output current power	6A + 10A	6A + 10A	16A
Nominal output current generator only	n/a	n/a	n/a
Connection for Mastervolt remote panel	no	no	no
Protected with automatic circuit breakers	yes	yes	yes
Dimensions (h x w x d)	200 x 255 x 115 mm	200 x 255 x 115 mm	200 x 110 x 115 mm
Weight	2.1 kg / 4.6 lbs	2.1 kg / 4.6 lbs	0.7 kg / 1.5 lbs