RESTYLING

SICES®
Empowering your control

MC 100

Supervisor controller for multiple parallel applications

- Microprocessor controller aimed for the safe management of single or multi-mains with automatic transfer switch capability.
- MC100 is recommended for those power plants requiring the management of the MCB (Mains Circuit Breaker) and MGCB (Master Gensets Circuit Breaker), like:
  - **MSB + MSTP** (Multiple Stand-by + Multiple Short Time Parallel)
  - **MPtM** (Multiple Parallel to Mains)
  - **MSB + MPtM** (Multiple Stand-by + Multiple Parallel to Mains)
- MC100 is designed to synchronize multiple gensets equipped with SICES Controllers with single or multiple Mains/Grids, controlling the transfer of the load (SOFT LOAD TRANSFER) between the Mains and the Gensets to provide NO-BREAK on the load .
- Multiple generators can be automatically started/stopped by MC100 upon Mains Failure.
- MC100 is able to carry out MCB and MGCB common bus synchronization.
- MC100 includes a Load Management logic that overlaps the Load Management integrated into SICES genset controllers.
- LOAD SHEDDING function with 4 steps available.
- Centralized management of the BASE LOAD REFERENCE.
- IMPORT/EXPORT power control.
- Management of the POWER FACTOR.
- MC100 can be used with an extended range of SICES controllers like: DST4602Evolution, DST4602, GC600, GC500Plus, GC500, DST4601/PX for paralleling/ synchronizing applications, communicating via PMCBus over Can.

- ***Easy solution even for complex systems with less wiring and components***
- ***Loss of Mains protection***
- ***Gensets automatic activation/deactivation***
- ***Configurable logics***
- ***Common bus synchronization***
- ***Italian design***

MADE IN ITALY

General info

MC100 is a powerful controller studied for synchro/ parallel applications including multiple gensets operating in parallel to the Mains/Grid.
MC100 is able to control MCB (Mains Circuit Breaker) and MGCB (Master Gensets Circuit Breaker), allowing the transfer of the load between the Mains and the Gensets to provide NO-BREAK on the load (REVERSE SYNCHRONIZATION & SOFT LOAD TRANSFER).
The restyling of MC100 offers two separated push buttons for the manual management of the MCB and MGCB.
In addition the new graphic is in conformity with the new range of controllers powered by SICES.
Several functions and instruments are available like: Internal synchroniser, Import/Export and Base load operation, Loss of mains protections and Load shedding functions.
MC100 is also used for measuring the mains voltage, the voltage on the bus, the current and the power on the exchange point with the mains.
A wide series of programmable I/O are available for matching any customized requirement. The configuration logics are available too offering the AND/ OR logics.
MC100 can be used with an extended range of SICES controllers like: DST4602Evolution, DST4602, GC600, GC500Plus, GC500, DST4601/PX for paralleling/ synchronizing applications.
In addition, in case of the plant includes a tie breaker controlled by the BTB100, the communication among the controllers is powered through PMCBus over Can.
The powerful graphic display including icons, symbols and bar graphs offers an intuitive operation together with high set of functions.

Measured Values

Bus Voltages:
L1-L2, L2-L3, L3-L1
True RMS measure
Lx-N max. voltage < 300Vac cat. IV
High voltage pulse = 6KV 1.2/50 us
Measurable voltage = 25.000V Max (by means external TV)
Currents:
L1, L2, L3
True RMS measure
Nominal max. current: 5Aac
Overload measurable current : 4 x 5Aac (sinusoidal)
Max. nominal current = 6000A (by external CT)
By means a proper parameter can be set the mode of connection of the external transformers (switch point with the Mains, Load or Bus bar)
Auxiliary Currents:
The same as above
Mains Voltages:
L1-L2, L2-L3, L3-L1
True RMS measure
Lx-N max. voltage < 300Vac cat. IV
High voltage pulse = 6kV 1.2/50 us
Max. measurable voltage = 25.000V (by external TV)
Mains and Bus Frequency meter:
Resolution = 0.1 Hz
Accuracy = ± 50ppm, ±35ppm/°C (typical)

Battery Voltmeter:
Resolution = 0.1V

Computed Measures

- Active power meter
- Reactive power meter
- Apparent power meter
- Power factor: Total and phase by phase.
- Active and reactive energy counter.
- Total active and reactive power of all generator sets with GCB closed.
- Total active and reactive Energy counter of all generator sets with GCB closed.
- Max. nominal power available on the bus bar.
- Load percentage of generators running with GCB closed

Loss of Mains protections

- Undervoltage (27)
- Overvoltage (59)
- Underfrequency (81U)
- Overfrequency (81O)
- ROCOF (df/dt, 81R)
- Vector jump

Inputs and outputs

- N.18 Programmable insulated digital inputs
- N.14 Programmable relays (1A) outputs
- N.2 Relays (8A)
- N.2 SPDT (10A) relays for dual circuit breaker management
- N.6 Analogue inputs 0...10V
- N.2 Outputs PWM

Communication

- N.1 Serial port RS232 with Modbus RTU protocol
- N.1 Additional serial port RS232 or RS485 having Modbus RTU protocol
- CANBUS J1939 interface

AS OPTION:
- Converter RS485/232 Modbus
- DANCE Ethernet interface Modbus TCP/IP
- Modem GSM/GPRS

Embedded functions

- MCB management
- MGCB management
- Contemporary synchronization of many gen sets on MCB
- Contemporary synchronization of many gen sets on MGCB
- Voltage matching in synchronizing operation
- Automatic Load sharing (automatic start and stop)
- AMF mode in case of stand by generators
- Load shedding (it's possible to set many thresholds in base of the nominal power available on the bus. In case of that threshold is exceeded in island mode operation, not privileged loads are enabled).
- Import/Export for MPtM (Multiple Parallel to Mains) plants.
- Base load management for MPtM (Multiple Parallel to Mains) plants.
- Power factor management/regulation for MPtM (Multiple Parallel to Mains) plants
- Soft transfer Load (or Back synchro) from Mains to Gen sets and vice versa
- Loss of mains protections for gen sets running in parallel with the Mains
- Current measure at switch point, or vice versa, on the bus bar.
- Directional power measures at switch point, or vice versa, on the bus bar.
- Measure of gen sets total power
- Time Clock
- Periodical test
- Possibility to set generators running in base of time slot and daily programme
- Events a data logging
- Embedded alarm horn
- Insulated CAN interface for PMCBUS applications
- Multilanguage device (EN, IT, RU)

Additional technical data

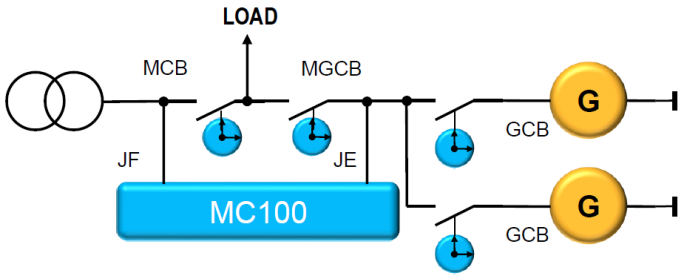
- Supply voltage: 7…32 Vdc
- Power consumption: about 3W with LCD Lamp Saving active.
- LCD: transflective with LED backlight.
- Operating temperature: -25 °C to 70 °C
- Protection degree: IP65 (gasket included into the box)
- Weight: 1200g
- Overall dimensions: 247x177 (LxH) mm
- Panel cut-out: 218x159 (LxH) mm
- Graphic display 70x38 (LxH) mm - 128 x 64 pixel

EMC: conform to EN61326-1.
Safety: built in conformity to EN61010-1

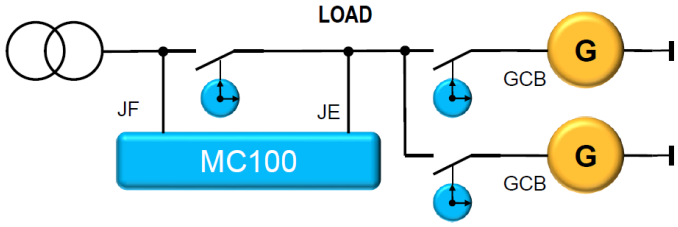
Tropicalized version for hazardous areas available on demand.

Typical plant configurations

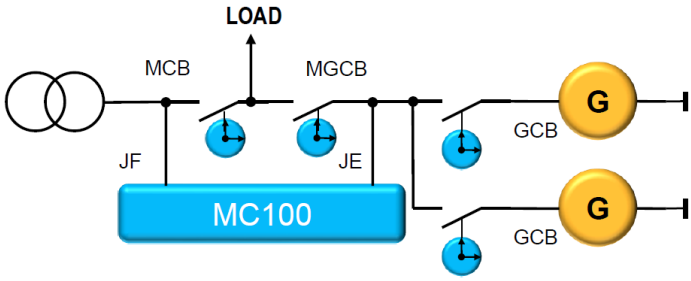
- **MSB + MSTP**
  (Multiple Stand-by + Multiple Short Time Parallel)



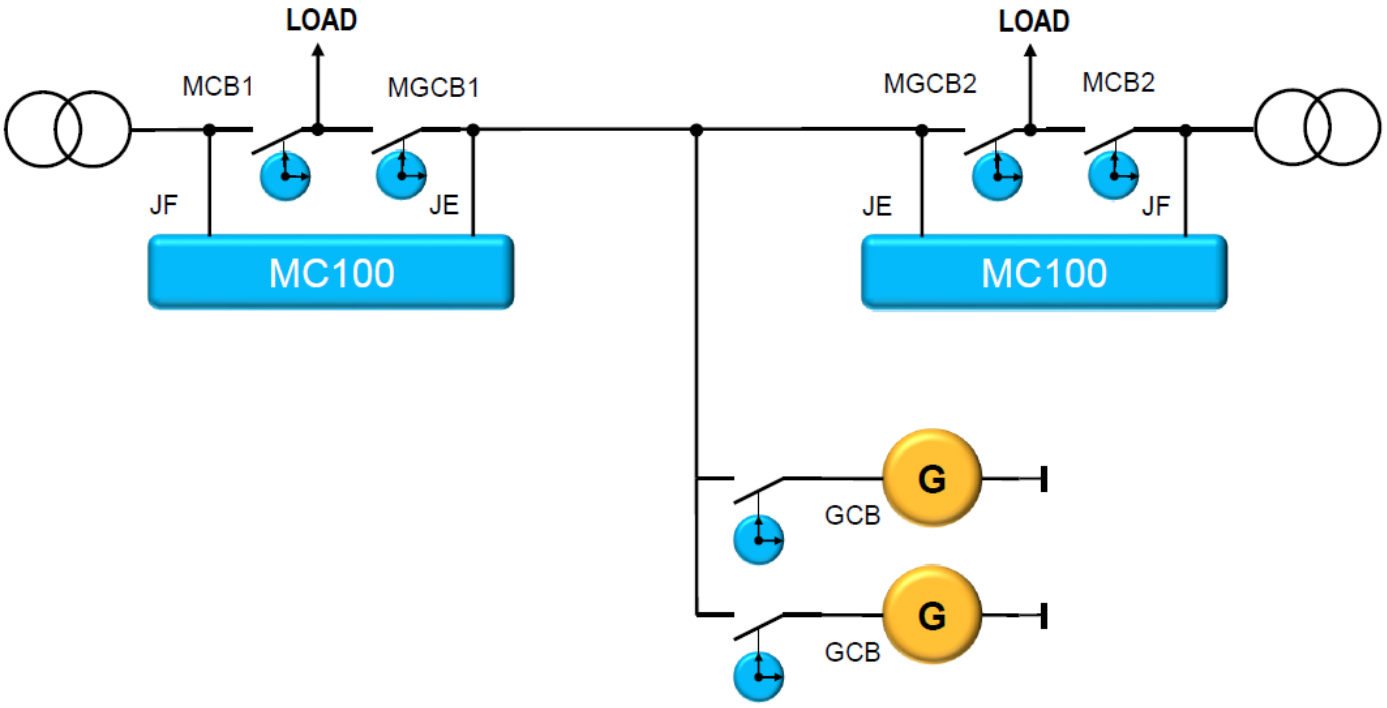
- **MPtM**
  (Multiple Parallel to Mains)



- **MSB + MPtM**
  (Multiple Stand-by + Multiple Parallel to Mains)



- **Multiple Mains & Multiple Gensets**



S.I.C.E.S. SRL
Società Italiana Costruzioni Elettriche Sumirago

Via Molinello 8B
21040 - Jerago con Orago (VA) ITALY

T +39 0331 212941
F +39 0331 216102

www.sices.eu
sales@sices.eu

SICES BRASIL LTDA

Avenida Portugal, 1174
Condomínio Empresarial ONIX
06696-060 / ITAPEVI (SP)

T +55 11 4193 2008

www.sicesbrasil.com.br
contato@sicesbrasil.com.br