

Power*	Number of Sunny Island inverters			Number of batteries**
	SI 8.0H	SI 6.0H	SI 5048	
102 kW	6	9	-	5
108 kW	9	6	-	
114 kW	12	3	-	
120 kW	15	-	-	6
126 kW	9	9	-	
132 kW	12	6	-	
138 kW	15	3	-	7
144 kW	18	-	-	
150 kW	12	9	-	
156 kW	15	6	-	10
162 kW	18	3	-	
...	
222 kW	21	9	-	11
228 kW	24	6	-	
234 kW	27	3	-	
240 kW	30	-	-	12
246 kW	24	9	-	
252 kW	27	6	-	
258 kW	30	3	-	...
264 kW	33	-	-	
270 kW	27	9	-	
276 kW	30	6	-	5
282 kW	33	3	-	
288 kW	36	-	-	
98 kW***	-	-	15	5
114 kW***	-	6	12	6
144 kW***	3	6	12	7

* Power of the Sunny Island inverters for 30 minutes at 25°C
 ** 1 battery per cluster
 *** Power of the SI5048 for 30 minutes at 25°C: 6,500 W

SMA Solar Technology AG
 Sonnenallee 1
 34266 Niestetal
 www.SMA.de

SMA Service Line
 Tel. +49 561 9522 399
 Fax: +49 561 9522 4697
 E-mail: SunnyIsland.Service@SMA.de

Installation - Circuitry Overview
MULTICLUSTER BOX 36



MC-BOX-36-IAA-en-20 | Version 2.0

ENGLISH

TERMS USED IN SMA MULTICLUSTER TECHNOLOGY

Stand-Alone Grid

A stand-alone grid is a utility grid which is independent of the public energy supply. A stand-alone grid with Sunny Island is designed as a single-phase or three-phase AC grid and integrates various kinds of power generators such as PV plants, small wind turbine systems and diesel generators. Batteries for energy storage are also an integral part of stand-alone grids. The Sunny Island battery inverter forms a stand-alone grid and maintains a stable energy supply by regulating all processes.

Cluster

A cluster is made up of three Sunny Island inverters and one battery. One Sunny Island inverter per line conductor, and thus a total of three Sunny Island inverters, is connected to form a three-phase stand-alone grid. Within the cluster, one Sunny Island is the master, while the other two are slaves.

Multiclustertank System

A multiclustertank system is made up of multiple clusters connected in parallel. The performance of the multiclustertank system increases with the number of clusters. The clusters are connected in parallel via a Multiclustertank Box. The size of the Multiclustertank Box is determined when the system is designed depending on the power requirement.

Multiclustertank Box

The Multiclustertank Box is the main AC distribution board in the multiclustertank system and a component of the SMA multiclustertank technology. The Multiclustertank Box connects the Sunny Island clusters with the loads and the power generators within a stand-alone grid.

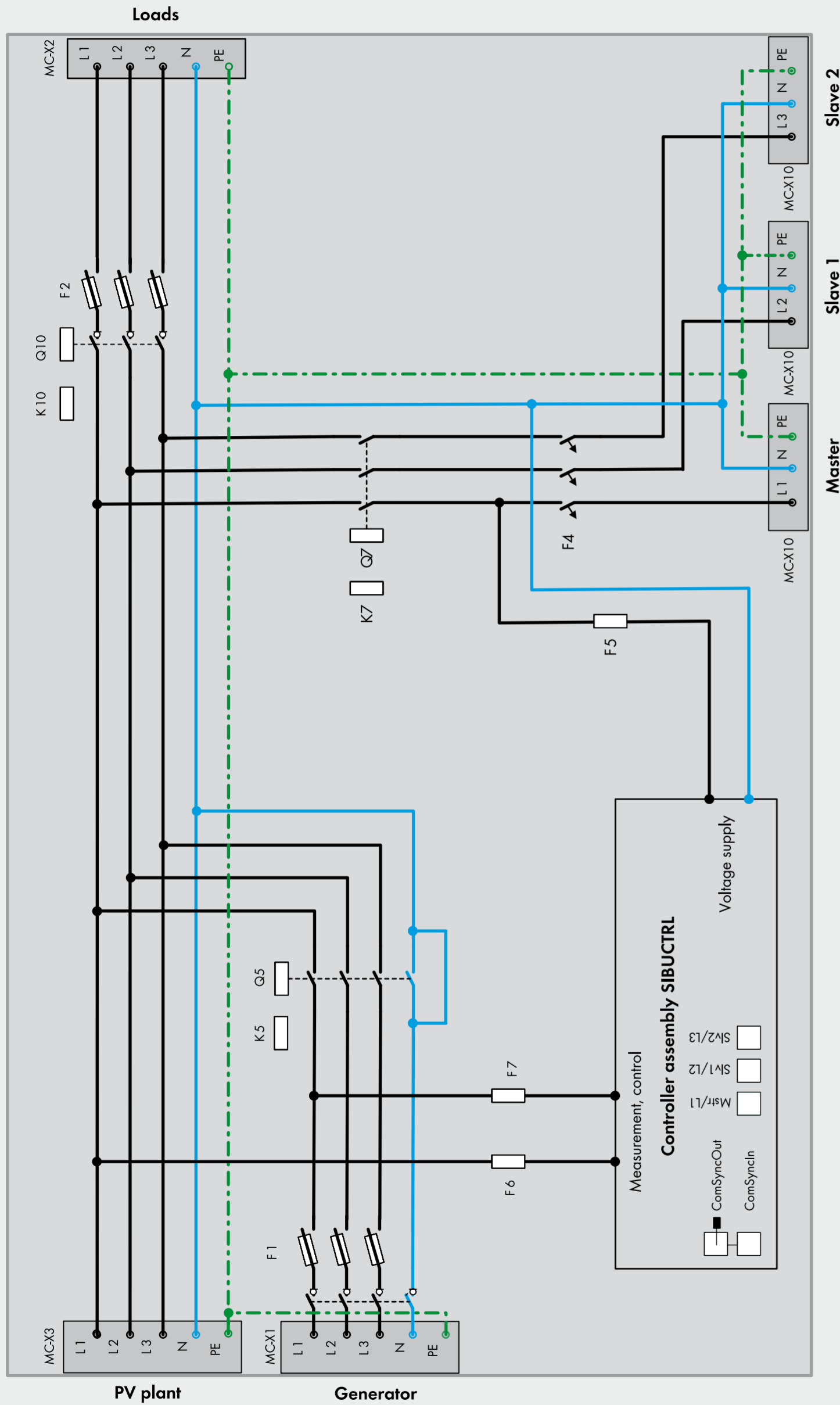
Master

The master is the control and communication center in a cluster. It carries out the following tasks:

- Connecting and disconnecting the slaves
- Controlling and monitoring the slaves, e.g. regulating frequency and voltage
- Controlling the battery charge and discharge
- Monitoring the battery capacity and state of charge
- Storing the cluster and battery data on SD card
- Requesting the diesel generator
- Exchanging data with the masters of other clusters
- Updating both slaves after firmware updates
- Displaying system values and system states
- Centrally recording user entries

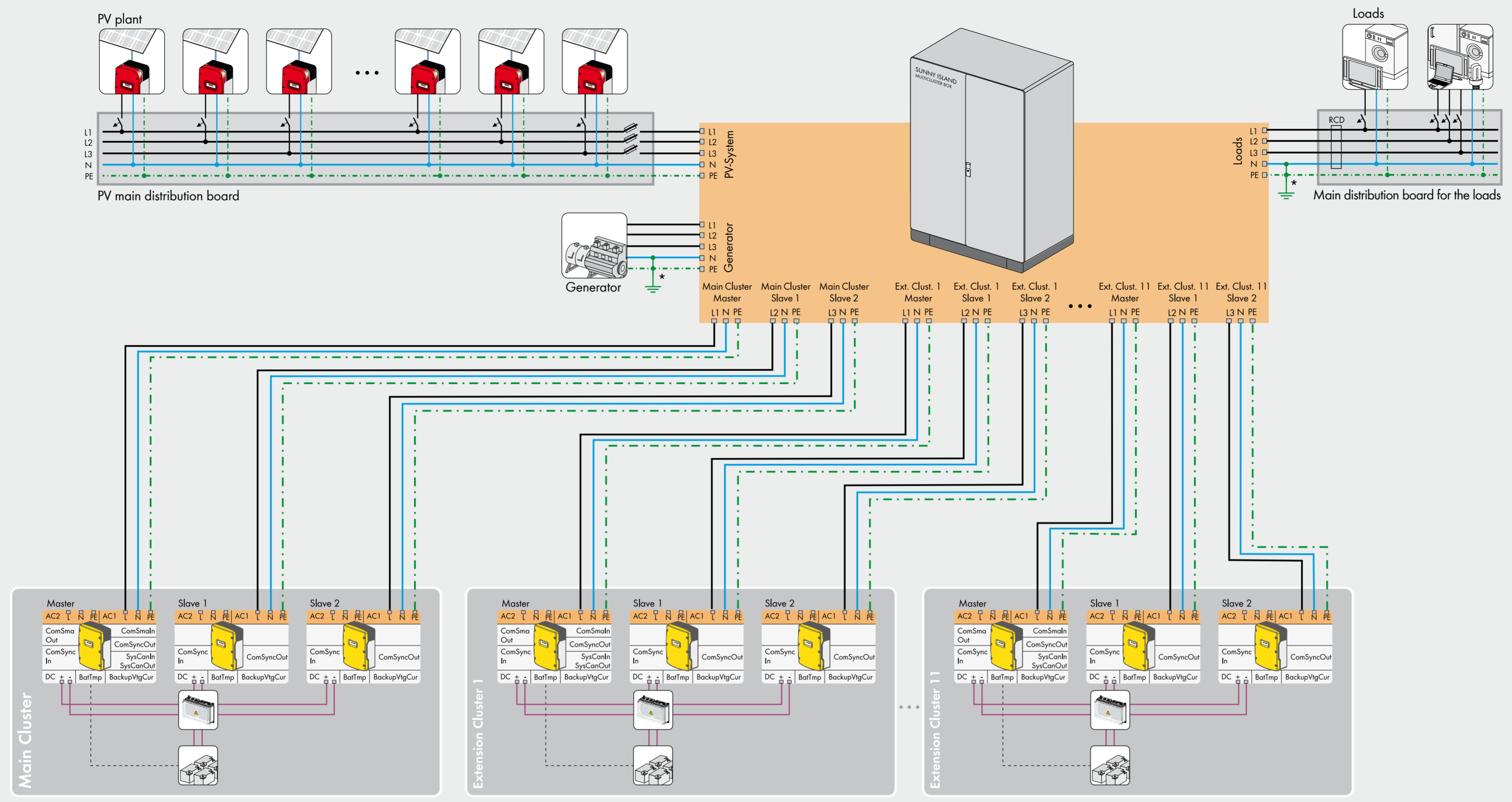
Fuse	Fuse type	Usage	Supply line from
F1	IV/HRC size 3	Generator	-
F2	IV/HRC size 3	Load	-
F4	Circuit breaker C32	Sunny Island	L1 Sunny Island
F5	D01 / 6A	Controller assembly K7, Q7	L1 internal
F6	D01 / 6A	K10, Q10	L1 generator
F7	D01 / 6A	K5, Q5	-

FUSES



CIRCUITRY GENERATOR, LOAD, PV PLANT, SUNNY ISLAND AND BATTERY

LEGEND



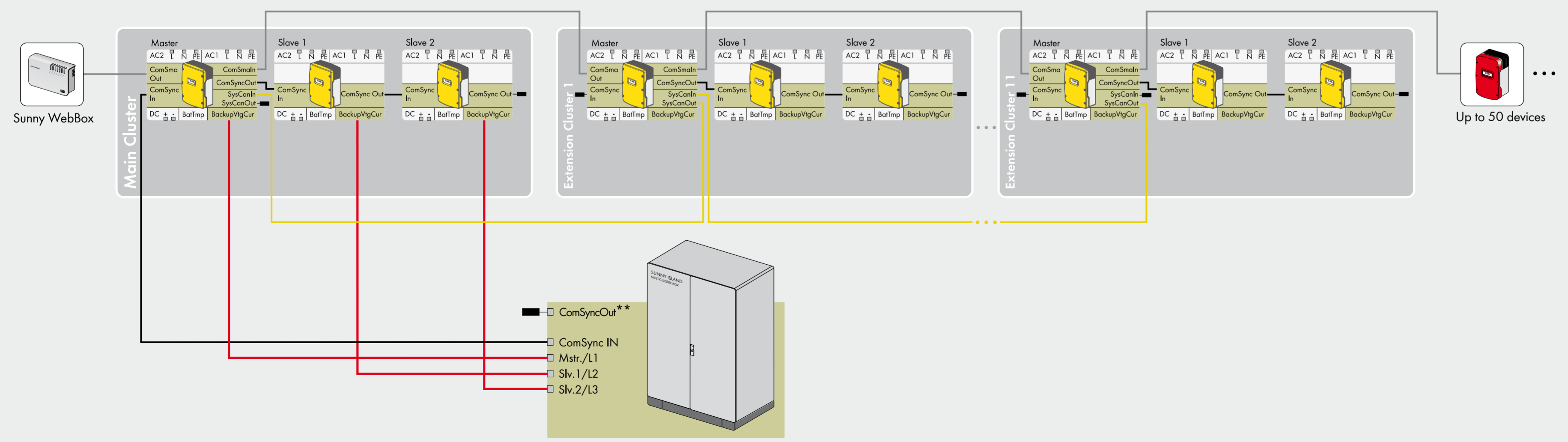
- Line conductor
- Neutral conductor
- Grounding conductor
- DC+ and DC- cables
- Battery temperature
- Data cable in a cluster from the master of the main cluster to the Multicluster Box
- Control and measuring cables
- Multicluster data cable (CAN-BUS)
- Data cable for RS485 communication
- Terminator
- BatFuse
- Battery
- Sunny Island
- PV inverter

Comment:

- * Ground the MC system outside the box on either the generator side or the load side.
- ** The terminator is plugged upon delivery.

COMMUNICATION CIRCUITRY

DATA MODULES FOR SI6.0H/8.0H



Interfaces	Data module
SysCanIn and SysCanOut	SI-SYSCAN.BGx
ComSmaIn and ComSmaOut	SI-COMSMA.BGx

Up to 50 devices

PIGGY-BACK FOR SI5048

Interfaces	Piggy-Back
SysCanIn and SysCanOut	MC-PB
ComSmaIn and ComSmaOut	

The pin connectors for the interfaces **ComSmaIn** and **ComSmaOut** are located in the connection area of the SI5048 and not at the Piggy-Back.