Sundays Data System

&

Solar-Log™

Hybrid eControl-Box

Hybrid eControl-Box

**Version-28.06.16-GB**

Hybrid eControl-Box

eControl-Box : The Sundays Data System solutions

With his experience and knowledge of the Solar-Log products, Sundays Data System becomes a system integrator and allows an extended use of the Solar-Log solutions.

From the export limitation for markets where injection is forbidden to the management of hybrid systems via the security and the respect of the injection standards.
Sundays Data System has developped a complete range of solutions called eControl-Box.
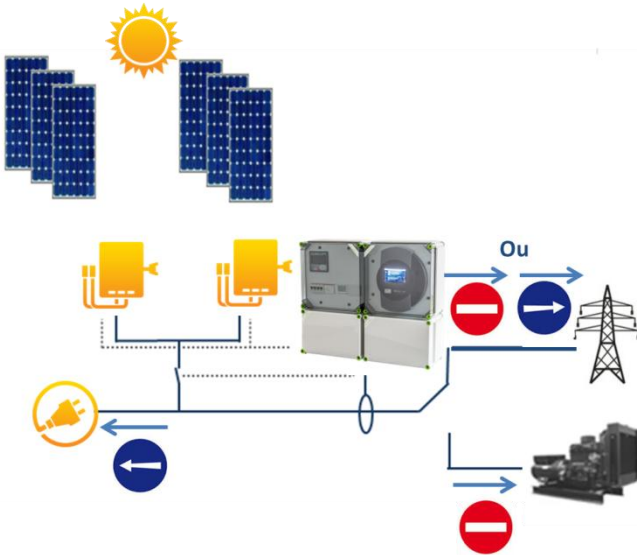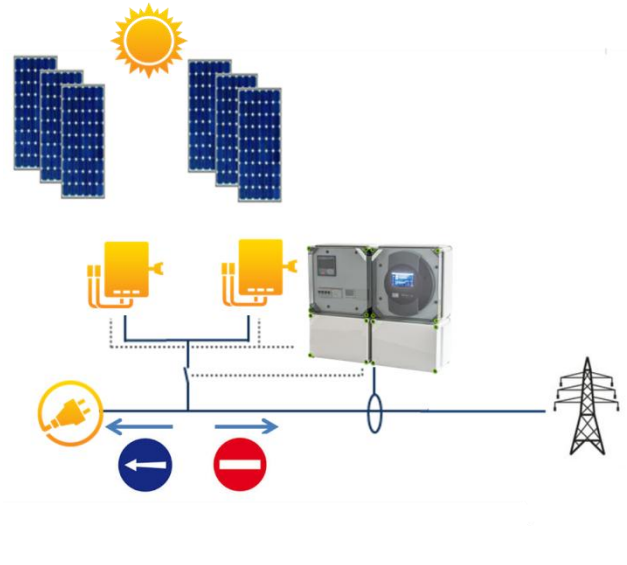
Our Solar-Log References

Our eControl-Box References
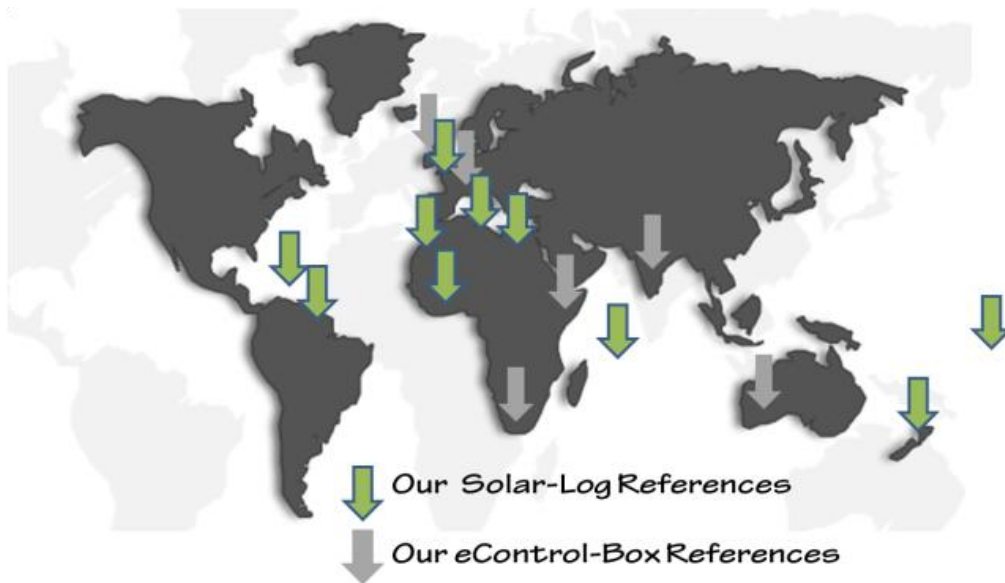
Hybrid eControl-Box

Hybrid eControl-Box :

Hybrid systems diesel and photovoltaic

0% export with security break

The hybrid eControl-Box has been developped to be able to manage in parallel a photovoltaic system and a diesel generator. This box can also be used as a Safe eControl-Box with the additional possibility to stop the PV production in case of export and to re-start it automatically.

Other applications

The hybrid eControl-Box can be customized to match specific needs. The hybrid eControl-Box can be integrated to hybrid systems such as grid/PV and wind energy for example.

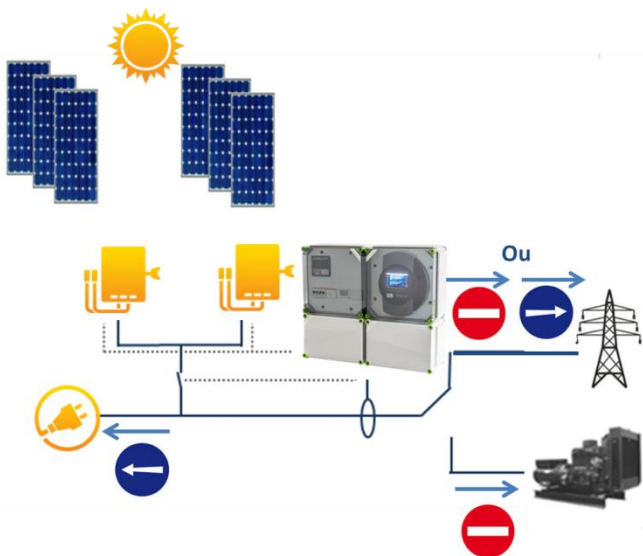Feel free to contact us.
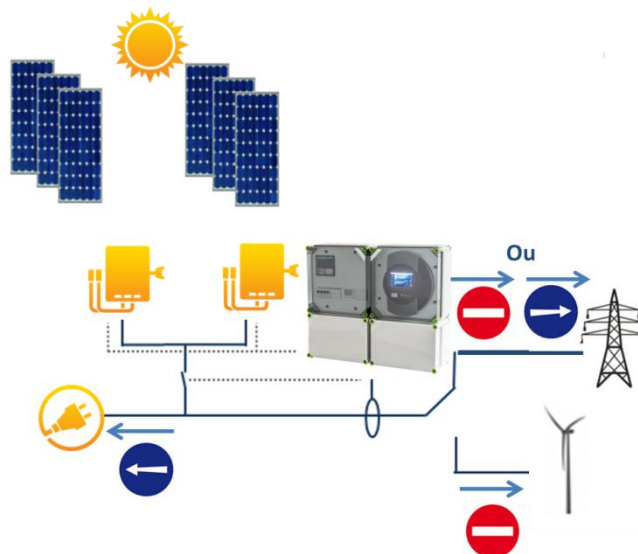
Hybrid eControl-Box
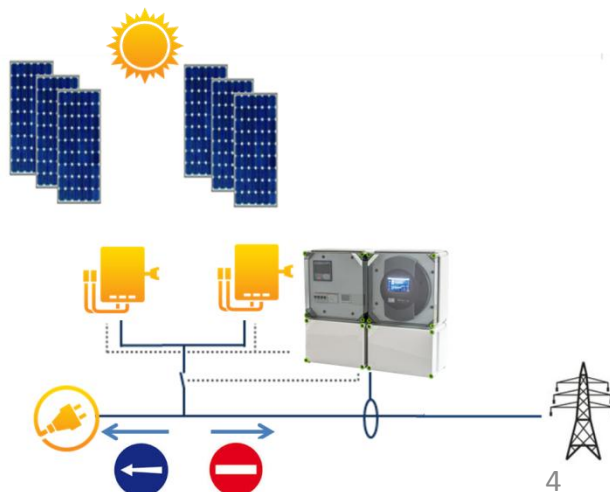
Hybrid eControl-Box :

The hybrid eControl-Box must be used with a Solar-Log PM+ to have enough reactivity to guarantee a perfect operating.

The hybrid eControl-Box is delivered complete and cabled including the Solar-Log PM+ you have ordered.

Hybrid systems diesel and photovoltaic
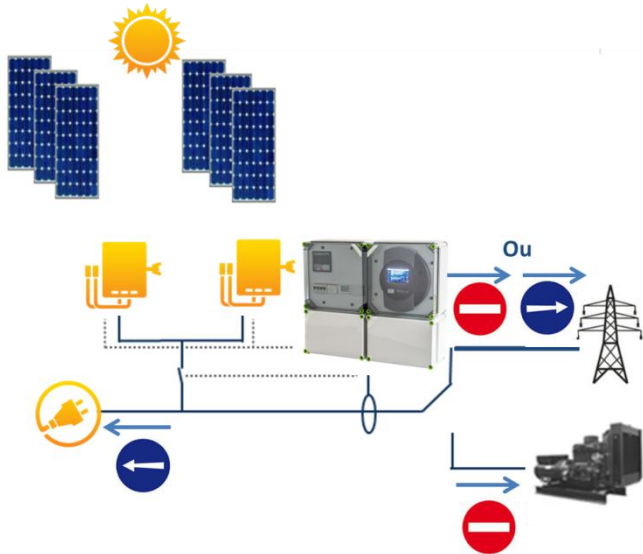
0% export with security break

4

Hybrid eControl-Box

Hybrid eControl-Box : Hybrid diesel and photovoltaic systems

Use in configuration Fuel/grid and PV:

The hybrid eControl-Box is a solution allowing an actual follow up of the production and consumption of a site and a management of the PV production according to two predefined scenarios:

- Grid operating
- Generator operating

In grid use, the hybrid eControl-Box will make sure the installation does not export to the grid or depending on conditions can allow a full or partial export..

In generator use, the eControl-Box will be the conductor of the installation and will make sure that the PV production will only be the difference between the minumum threshold configured for the genset (advice 40%) and the consumption.

The Solar-Log PM+ connected to the hybrid eControl-Box will manage the photovoltaic production according to 16 limitation levels to guarantee that no current will be sent back to the grid or to the generator.

In case of failure, the hybrid eControl-Box will switch to the security mode and stop the solar production. The hybrid eControl-Box switches back to normal mode after all parameters returned to normal conditions..

Operating principle:
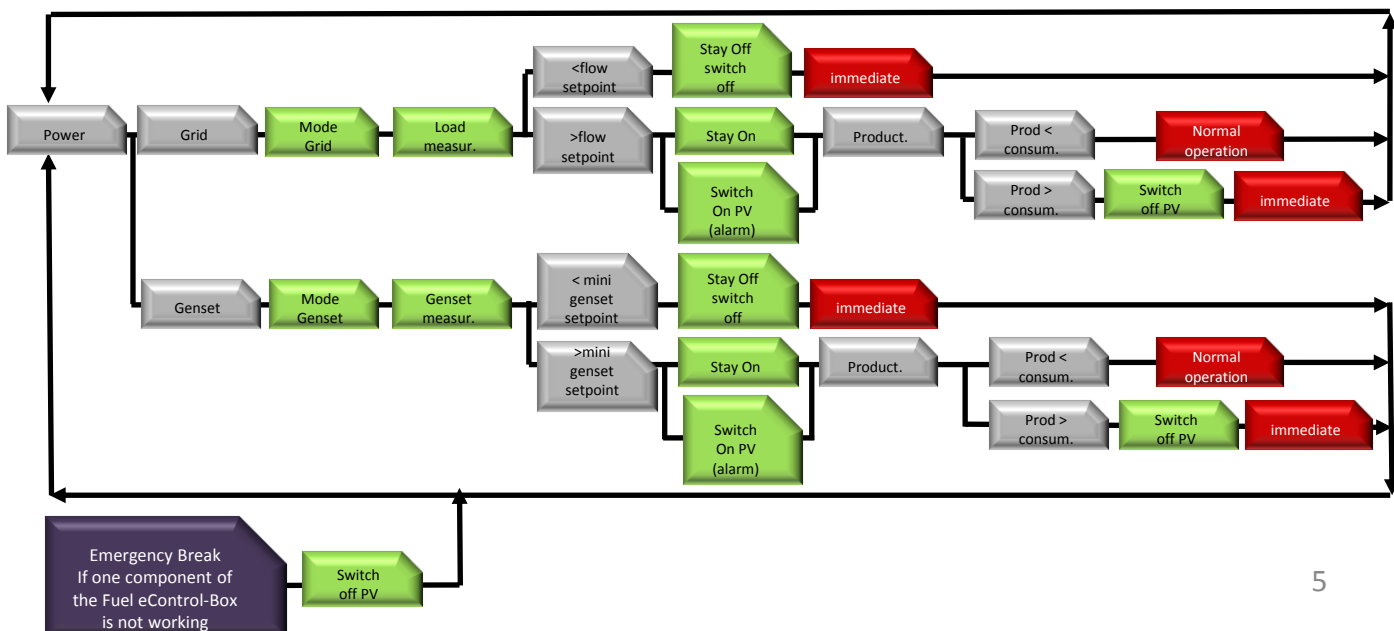
Hybrid eControl-Box

Hybrid eControl-Box : 0% injection with security break

Use in 0% export:

The hybrid eControl-Box can also be used in 0% export configuration if the injection of the produced energy to the grid is forbidden.

In this case, the hybrid eControl-Box will make sure that the photovoltaic production will never exceed the total load.

In case of failure, the hybrid eControl-Box will switch to the security mode and stop the solar production. The hybrid eControl-Box switches back to normal mode after all parameters returned to normal conditions
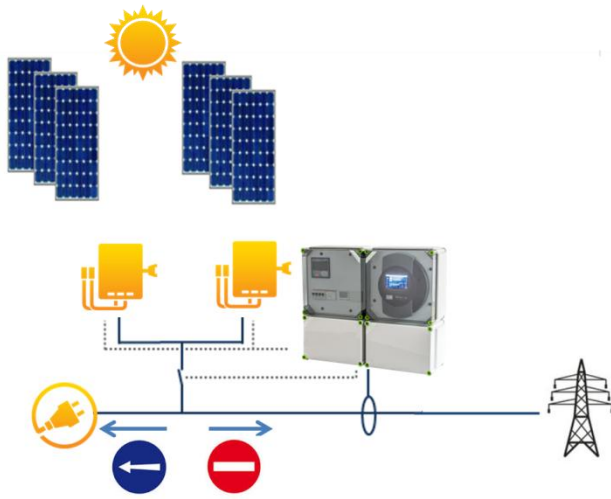
Operation principle:

Production management via Solar-Log
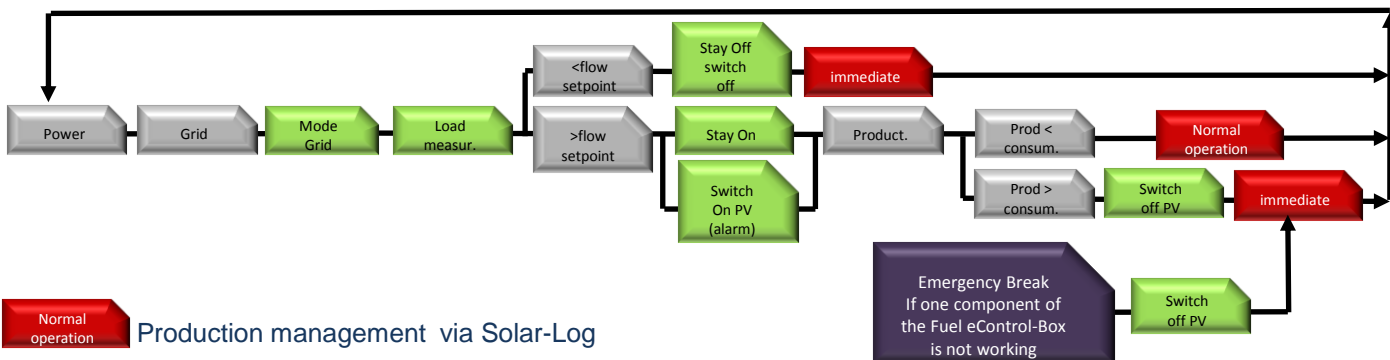
Hybrid eControl-Box

Hybrid eControl-Box : Further functions

Grid analyser:

The hybrid eControl-Box is functionning as a grid analyser and is providing power quality data.

The hybrid eControl-Box is a perfect analysis tool to control the power quality.

Hybrid eControl-Box is intended for measuring, analysing and monitoring of single-phase or three-phase electrical power network. The meter records TRMS value according to the principle of fast sampling of voltage and current signals. A built-in microprocessor calculates measurands (voltage, current, frequency, energy, power, power factor, phase angles, etc.) from the measured signals.
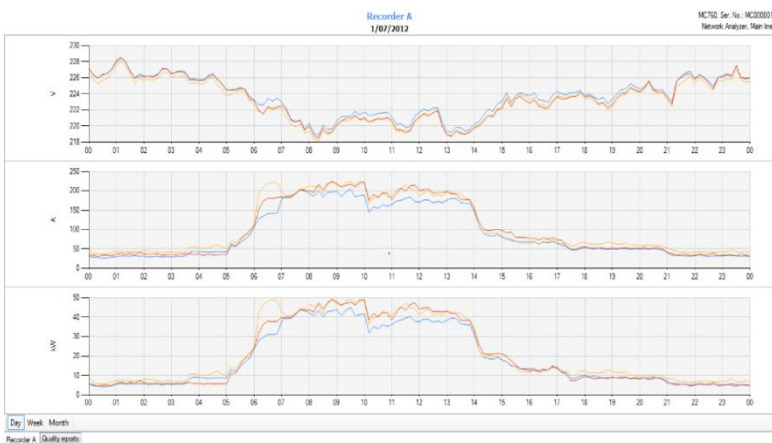
With an integrated memory of 8Mb, the hybrid eControl-Box can record up to 32 values like voltage, current, frequency, active and reactive power, power factor and total harmonics.

All data can be displayed via the local interface of the hybrid eControl-Box as graphics or tables. Additionnal software and interface can be provided on request.

Several reports can be generated and export as an excel file in order for the plant manager to easily study and analyse events and disturbances.

The hybrid eControl-Box is a perfect tool to monitore the grid power quality.

Time	U1 [V] Avg	U2 [V] Avg	U3 [V] Avg	I1 [A] Avg	I2 [A] Avg	I3 [A] Avg	P1 [W] Avg	P2 [W] Avg	P3 [W] Avg	Q1 [var] Avg	Q2 [var] Avg	Q3 [var] Avg	E1 [Wh] Exp	E2 [varh] Exp	f [Hz] Avg	Ti [°C] Avg
00:00:00	227.19	226.64	227.19	31.4	50.0	35.1	5,470	9,180	5,680	4,390	6,510	5,430	1,399,827.000	493,899.000	50.052	32.180
00:10:00	226.37	225.79	226.34	28.8	39.2	34.1	4,740	6,280	5,200	4,370	6,160	5,640	1,399,830.000	493,902.000	49.972	32.060
00:20:00	225.97	225.31	225.97	27.5	37.8	30.4	4,490	5,800	4,460	4,230	6,230	5,220	1,399,832.000	493,904.000	49.993	31.880
00:30:00	226.46	225.65	226.37	26.2	37.3	33.7	4,140	5,730	4,970	4,210	6,160	5,770	1,399,835.000	493,907.000	49.993	31.760
00:40:00	226.48	225.93	226.53	26.5	37.8	33.6	4,230	5,800	4,920	4,210	6,260	5,770	1,399,837.000	493,910.000	50.001	31.630
00:50:00	227.06	226.62	227.10	29.0	41.7	32.7	4,830	6,760	4,740	4,390	6,580	5,700	1,399,840.000	493,912.000	50.017	31.570
01:00:00	227.98	227.59	228.14	30.6	42.5	36.3	5,380	7,200	5,980	4,260	6,350	5,570	1,399,843.000	493,915.000	50.034	31.490
01:10:00	228.48	228.07	228.50	32.2	44.9	39.7	5,820	7,840	6,670	4,300	6,420	5,960	1,399,846.000	493,918.000	49.995	31.470
01:20:00	228.00	227.47	227.93	31.4	42.0	35.2	5,520	7,060	5,840	4,370	6,280	5,310	1,399,850.000	493,921.000	49.994	31.470
01:30:00	226.87	226.37	226.78	31.4	43.1	39.2	5,610	7,340	6,580	4,210	6,280	5,840	1,399,853.000	493,923.000	50.009	31.440
01:40:00	226.00	225.31	225.91	32.5	42.2	34.8	5,910	7,250	5,930	4,160	5,980	4,990	1,399,856.000	493,926.000	50.006	31.340
01:50:00	226.43	225.91	226.25	31.5	42.3	41.3	5,730	7,150	7,430	4,050	6,210	5,500	1,399,859.000	493,928.000	50.030	31.320
02:00:00	226.23	225.70	226.16	31.4	45.9	38.0	5,680	8,070	6,460	4,090	6,330	5,500	1,399,863.000	493,931.000	50.023	31.280
02:10:00	226.23	225.84	226.25	29.9	44.7	35.7	5,270	7,940	5,840	4,070	6,070	5,430	1,399,866.000	493,934.000	49.984	31.220

Hybrid eControl-Box : The Sundays Data System solutions

Hybrid eControl-Box :

• All-in-one solution for injection ban or hybrid installations, delivered
mounted and cabled in an IP65 protection box.
• Solar-Log PM+
• PLC RS485 to measure the production
• Watchdog
• Electrical protections included and cabled
• Cabling of the PM ports

Hybrid eControl-Box : Technical data

	Hybrid eControl-Box
Description	Zero export & Fuel
Solar-Log PM+	Depends on model
Export control requirement	NET Meter reading
Load following	included
CT sets	1
CT connection / prewired internally	standard
LCO	No
3 phase system / 1 phase system	3 or 1
connection point	terminal
ANSI functions	32
Islanding Protection Relay	-
Tamper proof	lead seal
Password protection	yes
Inverter comminucation	
16 channel BCD	6.7 % steps
Compatibility	all inverters with power management functionality compatible with Solar-Log
Supply voltage	
Rated supply voltage Us	AC 100…264V
Frequency range of Us	47 … 63 Hz
Maximum current	10A
Environment/EMC	
EMC	IEC 61326-1
Operation temperature	-25 … +55 degree celsius
Enclosures	
IP Protection level	IP 65
Resistance to impact	IK 08
UV and weather resistant	yes
Measuring voltage inputs	
U (L1-N, L2-N, L3-N)	230V
U (L1-L2, L2-L3, L1-L3)	400V
Measuring range	10 … 120%
Rated frequency	45 … 65 Hz
Measuring current inputs	
Accuracy class according IEC 62053-22	0.5 S
Measuring range	0.1 … 120% In
In	5A
Measuring current transformer ration	1 … 6000
Power protection measurements	
Reverse power	0 … depending on CT size
Response delay	0.2 … 999 sec
Additionnal equipment	
CTs	
Contactor for PV stop	
Dry contact on Genset	

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