
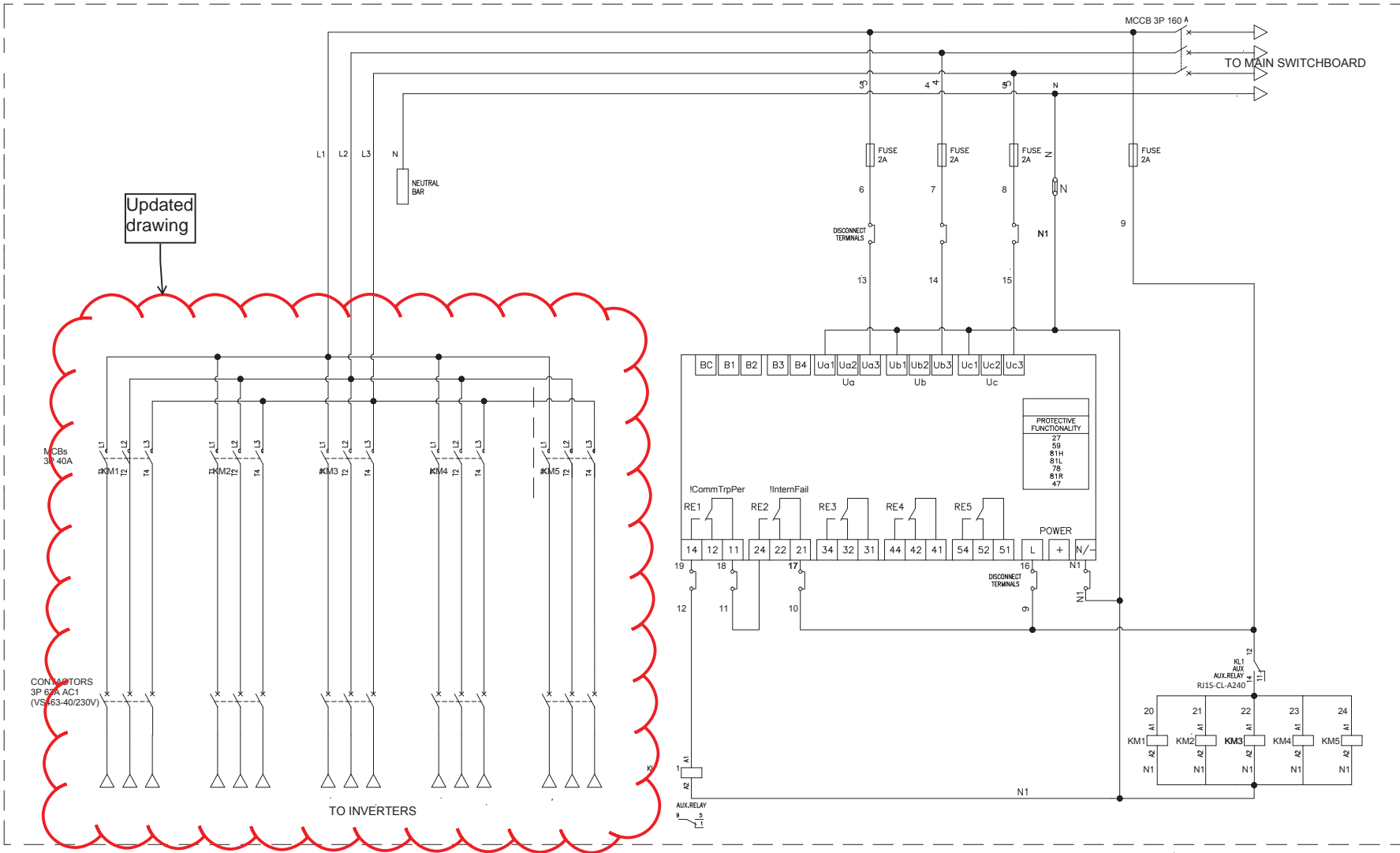


- 
1. Technology: Solar PV
 2. Maximum Power: 125 kW
 3. Contribution to fault levels: N/A
 4. Size & rating of the relevant Transformer: N/A
 5. Single line diagram: refer to following page
 6. Protection Systems & Communication Systems: refer to following page
 7. Voltage Control and reactive power capability: N/A
 8. Details specific to the location of facility: N/A

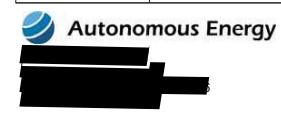
Updated drawing

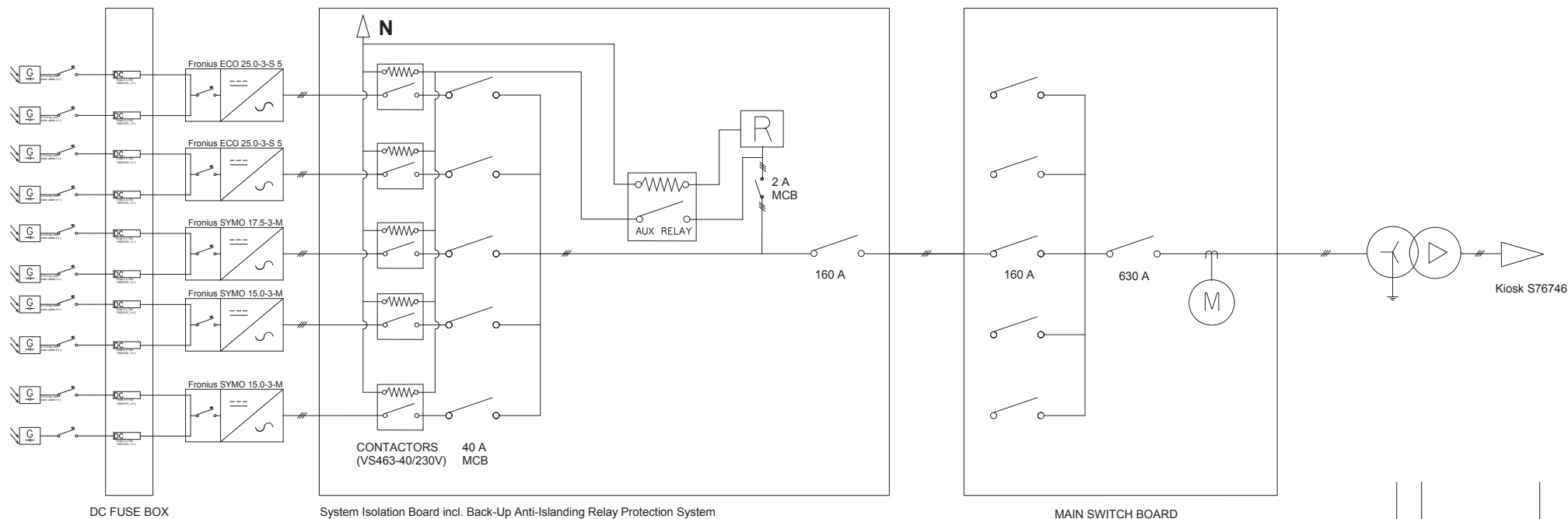


Contactor: VS463-40/230V
Aux Relay: RJ15-CL-A240

REV	DESCRIPTION	DATE	BY
C	Correction of MSB's position	30/6/2016	
B	Included contactor and relay model numbers	27/5/2016	
A	Relay Schematic	17/2/2016	

AMENDMENTS			
STATUS:	For Approval		
PROJECT:			
CLIENT:			
SITE:			
TITLE:	Relay Schematic		
DATE	27/05/2016	REVISION	C
DRAWING NO.	WPROP001-004-C	PROJECT NO.	WPROP001













DC FUSE BOX

System Isolation Board incl. Back-Up Anti-Islanding Relay Protection System

MAIN SWITCH BOARD

LEGEND

-  SOLAR ARRAY
-  DC FUSE
-  FRONIUS 3 Phase SOLAR STRING INVERTER
-  3-PHASE AC CIRCUIT BREAKER
-  PROTECTION RELAY
-  NORMALLY OPEN CONTACTOR (VS463-40/230V)
-  TRANSFORMER
-  3-PHASE BI-DIRECTIONAL METER

PV SYSTEM

100kW consists of 384 x JKM260PP JINKO solar PV modules and 5 x Fronius Inverters
 2 x Fronius Eco 25.0-3-S
 2 x Fronius Symo 15.0-3-M
 1 x Fronius Symo 17.5-3-M

REV	DESCRIPTION	DATE	BY
C	For Approval	28/7/2016	
B	Updated	27/5/2016	
A	For Approval	17/2/2016	

AMENDMENTS			
STATUS:	For Approval		
PROJECT:	[REDACTED]		
CLIENT:	W Property Group		
SITE:	[REDACTED]		
TITLE:	Single Line Diagram for 100kW Solar PV System		
DATE	28/07/2016	REVISION	C
DRAWING NO.	WPROP001-005-C	PROJECT NO.	WPROP001

Statement of the factory default setting of MainsPro unit

NOTE:





The following default setting is available from version 1.4. For older versions, different factory default setting was applied.

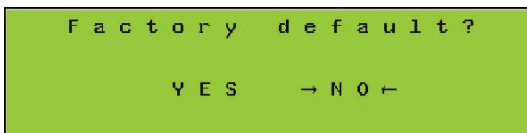
Setting	Setpoint group	Setpoint name	Value	Step	Unit
Overvoltage limit 1^{*)}	V<>	V>	270	1	[V]
Overvoltage delay 1	V<>	V> Del	1,00	0,01	[s]
Overvoltage limit 2	V<>	V>>	0 (OFF)	1	[V]
Overvoltage delay 2	V<>	V>> Del	2,50	0,01	[s]
Undervoltage limit 1^{*)}	V<>	V<	200	1	[V]
Undervoltage delay 1	V<>	V< Del	1,00	0,01	[s]
Undervoltage limit 2	V<>	V<<	160	1	[V]
Undervoltage delay 2	V<>	V<< Del	0,20	0,01	[s]
10 minutes floating average overvoltage*	V<>	Avg V>	440	1	[V]
Voltage asymmetry limit	dU	V unb	0 (OFF)	1	[V]
Negative sequence overvoltage limit	dU	V> neg	0 (OFF)	1	[V]
Positive sequence undervoltage limit	dU	V< pos	0 (OFF)	1	[V]
Common delay of all voltage asymmetry protections	dU	dU Del	2,50	0,01	[s]
Overfrequency limit 1	f<>	f>	51,0	0,1	[Hz]
Overfrequency delay 1	f<>	f> Del	1,00	0,01	[s]
Overfrequency limit 2	f<>	f>>	0 (OFF)	0,1	[Hz]
Overfrequency delay 2	f<>	f>> Del	0,10	0,01	[s]
Underfrequency limit 1	f<>	f<	49,0	0,1	[Hz]
Underfrequency delay 1	f<>	f< Del	1,00	0,01	[s]
Underfrequency limit 2	f<>	f<<	0 (OFF)	0,1	[Hz]
Underfrequency delay 2	f<>	f<< Del	0,10	0,01	[s]
Vector shift limit	LOM	Vs Lim	8 to -8	1	[°]
ROCOF limit	LOM	ROCOF	1	0,01	[Hz/s]
ROCOF filter	LOM	ROCOF Filt	5	1	[-]
Delay of Vector shift and ROCOF evaluation after measured voltage connection	LOM	LOM Init Del	3	1	[s]






Setting	Setpoint group	Setpoint name	Value	Step	Unit
Vector shift and ROCOF signalization time (TRIP duration)	LOM	LOM Trip Del	1	1	[s]
Measurement range	Basic	Uin	230/400V	-	-
Measured system	Basic	System	3ph	-	-
Display timeout	Basic	DispT	0	1	[min]
Automatic Fault Reset enabling	Basic	Auto FR	ENABLED	-	-
Automatic Fault Reset timer	Basic	Auto FR Del	60	1	[s]
TRIP at the unit startup	Basic	Start Trip	ENABLED	-	-
Common impulse length	Basic	Imp Len	3	1	[s]
Enabling the external trip binary switch	Basic	Ext	ENABLED	-	-
Enabling the fault Reset binary switch	Basic	F.R.	DISABLED	-	-
Enabling the Alt settings binary switch	Basic	Alt	ENABLED	-	-
Enabling the blocking binary switch	Basic	Dis	DISABLED	-	-
Function of 1 st relay output	f(RE)	f(RE1)	!CommTrpPer	-	-
Function of 2 nd relay output	f(RE)	f(RE2)	!InternFail	-	-
Function of 3 rd relay output	f(RE)	f(RE3)	BakTrpImp	-	-
Function of 4 th relay output	f(RE)	f(RE4)	CommTrpImp	-	-
Function of 5 th relay output	f(RE)	f(RE5)	TrpEndImp	-	-

***) NOTE:**
Please note, that the indicated setting is adjusted for "Star" connection of the measured voltage, i.e. ph-to-N voltage measurement. In case of using "Delta" connection, the appropriate change of the setpoints is necessary. Please refer to the MainsPro Installation and Operation Guide for the wiring explanation and to the MainsPro Reference Guide for information about the setpoints adjustment.

ComAp states that the mentioned setting is guaranteed for all MainsPro units, SW version 1.4, upon shipment of a new unit, if no other setting is explicitly requested. In case of need, the factory default settings can be provided by the following procedure:

1. Enter the init screen, by pushing the  and  at the same time.
2. Press  and  to enter the Factory default activation screen:



3. Using  and  do your selection. By selecting YES, you will return all previously done setting to the default values. **Please note that by this selection, you will loose all setting done prior to this operation!** Press  to confirm your selection.
4. By selecting NO and pressing  or by pressing , return to the measurement screens with no change.