

The power protection and the interface protection are powered by UPS able to guarantee the power supply for three hours

WARNING SAFETY PLATE: Presence of two power supplies (network utility company and photovoltaic plant) disconnect the plant before accessing the electrical panel

To Grid Connection MV/AT

**Characteristics of photovoltaic plant**

Power plant: 12.162,15kWp
N° of photovoltaic modules: 22.113
N° of photovoltaic modules in series: 27
N° of string: 819

**Characteristics of photovoltaic module**

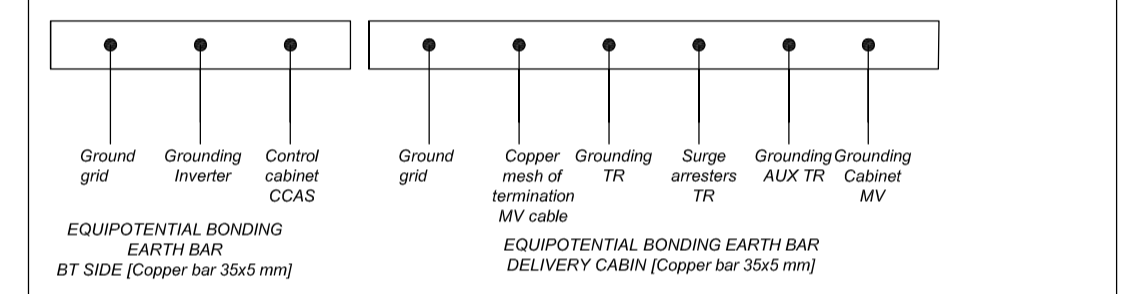
Power peak: 550 Wp [0 + 3 V]
Vmp: 40,9 V
Voc: 49,62 V
Imp: 13,45 A
Isc: 14,03 A
Efficiency: 21,33 %
Dimensions (W/D/H): 2.274 x 1.134 x 34 mm
Weight: 28,9 kg

**Characteristics of delivery cabinet**

Auxiliary Power: 250 kVA
Primary voltage transformer MV/LV: 0,400 kV
Secondary voltage transformer MV/LV: 30,0 kV
Vcc transformer MV/LV: 6%Pn <sup>3</sup> TV double secondary
Revalco tipo RVCB R.T. 30:0,1 kV protection
n°2 TV phase phase Revalco tipo RVCB R.T. 20:0,1 kV measure
n°4 TA TF70 R.T. 300/1A protection - n°2 TO 40/1 protection
MV Breaker: In=630A Icc=16kA
Interface device and Power device is MV BREAKER
Protection PRO NA 11: 74CT, 50, 51, 50N, 51N Power protection
Protection PRO NVA 100: 59, 59 V0, 27, 67N, 810, 81N

**Characteristics of inverter**

MV Power Station 4200
Control cabinet CCAS: 1 x 25 mm <sup>2</sup> FG7OR
Max. Input Voltage: 1500 V
Max. Input Current: 4750 A
European Efficiency: 98,6 %P
Dimensions (W/D/H) and Weight: 12.192/2.896/2.438 mm - < 26 t
Electronics degree of protection: Control rooms IP23D, inverter electronics IP65



**Ground Grid: 4 x 35 mm<sup>2</sup> copper wire rope**

**Grounding Inverter: 1 x 50 mm<sup>2</sup> FG7OR**

**Control cabinet CCAS: 1 x 25 mm<sup>2</sup> FG7OR**

**Copper mesh of termination MV cable: 1 x 25 mm<sup>2</sup> FG7OR**

**Grounding TR: 1 x 50 mm<sup>2</sup> FG7OR**

**Surge arresters TR: 1 x 50 mm<sup>2</sup> FG7OR**

**Grounding AUX TR: 1 x 25 mm<sup>2</sup> FG7OR**

**Copper mesh of termination MV cable: 1 x 35 mm<sup>2</sup> FG7OR**

**Grounding cabinet MV: 1 x 50 mm<sup>2</sup> FG7OR**

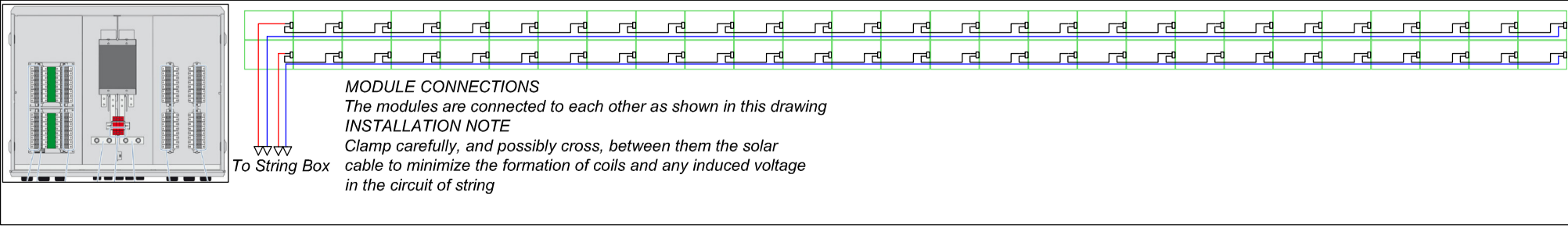
**CABLE LIST**

- String cables: 1x10 mm<sup>2</sup> FG21M21 (AL A1Z2Z2) 1800 VCC or similar
- Box string cables: 2x1x400 mm<sup>2</sup> ARG7OR 1500 VCC (Al) or FG21M21 1800 VCC
- Data transmission: EIA RS-485 2x2x24 AWG
- Connections Inverter to Transformer: BUS BAR
- Connection transformer MV/LV to AUX TR: BUS BAR
- Connection transformer AUX TR to CCAS: 4x1x95 mm<sup>2</sup>
- Connection transformer MV/LV to MT Cabinet: 3x1x300 mm<sup>2</sup> ARE4H5Z or 3 x 300 mm<sup>2</sup> AL XLPE
- The low voltage cable are FG7OR if they are installed in trunking and NO7VK if installed in cabinets

SEZIONE	BOX	Potenza stringa [W]	N°str	L Positivo [m]	L Negativo [m]	L P+N [m]	Voc [V]	Vn [V]	In [A]	Tipologia Conduttore	Sezione conduttore mmq	Resistività	ΔV [V]	Vf	Pf	ΔV %	ΔP %
1	1	356400	24	180	180	360	1339,74	1104,3	318,48	Al	400	0,0287	8,23	1096	349078	0,74%	2,05%
1	2	356400	24	130	130	260	1339,74	1104,3	318,48	Al	400	0,0287	5,94	1098	349005	0,54%	1,85%
1	3	356400	24	105	105	210	1339,74	1104,3	318,48	Al	400	0,0287	4,80	1100	350169	0,43%	1,75%
1	4	356400	24	60	60	120	1339,74	1104,3	318,48	Al	400	0,0287	2,74	1102	350824	0,25%	1,56%
1	5	356400	24	55	55	110	1339,74	1104,3	318,48	Al	400	0,0287	2,51	1102	350897	0,23%	1,54%
1	6	356400	24	25	25	50	1339,74	1104,3	318,48	Al	400	0,0287	1,14	1103	351334	0,10%	1,42%
1	7	356400	24	15	15	30	1339,74	1104,3	318,48	Al	400	0,0287	0,69	1104	351479	0,06%	1,38%
1	8	356400	24	15	15	30	1339,74	1104,3	318,48	Al	400	0,0287	0,69	1104	351479	0,06%	1,38%
1	9	356400	24	40	40	80	1339,74	1104,3	318,48	Al	400	0,0287	1,83	1102	351115	0,17%	1,48%
1	10	356400	24	45	45	90	1339,74	1104,3	318,48	Al	400	0,0287	2,06	1102	351042	0,19%	1,50%
1	11	356400	24	55	55	110	1339,74	1104,3	318,48	Al	400	0,0287	2,51	1102	350897	0,23%	1,54%
2	12	148500	10	65	65	130	1339,74	1104,3	132,7	Al	400	0,0287	1,24	1103	346376	0,11%	1,43%
2	1	356400	24	120	120	240	1339,74	1104,3	318,48	Al	400	0,0287	5,48	1099	349951	0,50%	1,81%
2	2	356400	24	95	95	190	1339,74	1104,3	318,48	Al	400	0,0287	4,34	1100	350315	0,39%	1,71%
2	3	356400	24	85	85	170	1339,74	1104,3	318,48	Al	400	0,0287	3,88	1100	350460	0,35%	1,67%
2	4	356400	24	75	75	150	1339,74	1104,3	318,48	Al	400	0,0287	3,43	1101	350606	0,31%	1,63%
2	5	356400	24	50	50	100	1339,74	1104,3	318,48	Al	400	0,0287	2,29	1102	350970	0,21%	1,52%
2	6	356400	24	45	45	90	1339,74	1104,3	318,48	Al	400	0,0287	2,06	1102	351042	0,19%	1,50%
2	7	356400	24	20	20	40	1339,74	1104,3	318,48	Al	400	0,0287	0,91	1103	351406	0,08%	1,40%
2	8	356400	24	20	20	40	1339,74	1104,3	318,48	Al	400	0,0287	0,91	1103	351406	0,08%	1,40%
2	9	356400	24	20	20	40	1339,74	1104,3	318,48	Al	400	0,0287	0,91	1103	351406	0,08%	1,40%
2	10	356400	24	40	40	80	1339,74	1104,3	318,48	Al	400	0,0287	1,83	1102	351115	0,17%	1,48%
2	11	356400	24	55	55	110	1339,74	1104,3	318,48	Al	400	0,0287	2,51	1102	350897	0,23%	1,54%
2	12	148500	10	55	55	110	1339,74	1104,3	132,7	Al	400	0,0287	1,05	1103	346402	0,09%	1,41%
3	1	356400	24	130	130	260	1339,74	1104,3	318,48	Al	400	0,0287	5,94	1098	349005	0,54%	1,85%
3	2	356400	24	95	95	190	1339,74	1104,3	318,48	Al	400	0,0287	4,34	1100	350315	0,39%	1,71%
3	3	356400	24	85	85	170	1339,74	1104,3	318,48	Al	400	0,0287	3,88	1100	350460	0,35%	1,67%
3	4	356400	24	75	75	150	1339,74	1104,3	318,48	Al	400	0,0287	3,43	1101	350606	0,31%	1,63%
3	5	356400	24	70	70	140	1339,74	1104,3	318,48	Al	400	0,0287	3,20	1101	350679	0,29%	1,61%
3	6	356400	24	45	45	90	1339,74	1104,3	318,48	Al	400	0,0287	2,06	1102	351042	0,19%	1,50%
3	7	356400	24	35	35	70	1339,74	1104,3	318,48	Al	400	0,0287	1,60	1103	351188	0,14%	1,46%
3	8	356400	24	20	20	40	1339,74	1104,3	318,48	Al	400	0,0287	0,91	1103	351406	0,08%	1,40%
3	9	356400	24	20	20	40	1339,74	1104,3	318,48	Al	400	0,0287	0,91	1103	351406	0,08%	1,40%
3	10	356400	24	45	45	90	1339,74	1104,3	318,48	Al	400	0,0287	2,06	1102	351042	0,19%	1,50%
3	11	356400	24	75	75	150	1339,74	1104,3	318,48	Al	400	0,0287	3,43	1101	350606	0,31%	1,63%
3	12	103950	7	105	105	210	1339,74	1104,3	92,89	Al	400	0,0287	1,40	1103	302448	0,13%	1,44%
TOTAL		12162150	819	2280	2280	4560									11971331,91	0,74%	2,05%

**Characteristics of String monitor**

Number of string: 24
Max. DC Voltage: 1500 V
Rated current: 320 A
Electronics degree of protection: IP54



**IL PROGETTISTA**  
ING. GIACOMO GUARNIERI  
Diplo. Ingegner della Prov. di Foggia  
N° 253 Sezione A  
INGEGNERE CIVILE AMBIENTALE  
INDUSTRIALE E DELL'INFORMAZIONE

**LA PROPRIETA'**  
AGRI NEW TECH ITALIA SRL  
Sede Legale: Via Padre Pio, 8  
70020 Cassano delle Murge (BA) - Italia  
P. IVA n° 0304440722 - REG. IA n° 423219

**IL DIRETTORE LAVORI**  
Ing. Guarnieri Giacomo  
Via Padre Pio n.6  
cap 70020 Cassano Delle Murge

**SunElectrics s.r.l.**  
Operations Via Padre Pio n°6 -  
70020 Cassano delle Murge (BA) Italy  
info@sunelectrics.it - www.sunelectrics.it

Comune: Matera (MT) | Località: SP 140, Mass. Cipolla snc | Foglio: 20 | Mappale: 395,396,397

Descrizione: **Impianto Fotovoltaico**  
P\_c.c.=12.162,15 kWp  
Pn\_a.c. = 12.000 kVA

Descrizione: **Progetto Definitivo** | Titolo: **Schema Elettrico** | Scala: **NO**

IL COMMITTENTE: **AGRI NEW TECH SRL**  
Sede Legale: Via Padre Pio, 8  
70020 Cassano delle Murge (BA) - Italia  
Parita IVA, e C.F. 08384840727

N.Riv.	Descrizione	Data	Disegnato	Controllato	Approvato	Num. Progetto	File
0	Progetto Definitivo	22/10/2021	D.Seminaro	G.Guarnieri	G.Guarnieri	PMWMT19	PMWMT19_v1E1.dwg
1							
2							
3							
4							

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