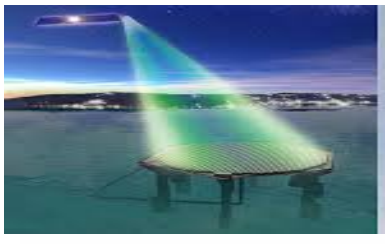
Technical Proposal
Camel Farm

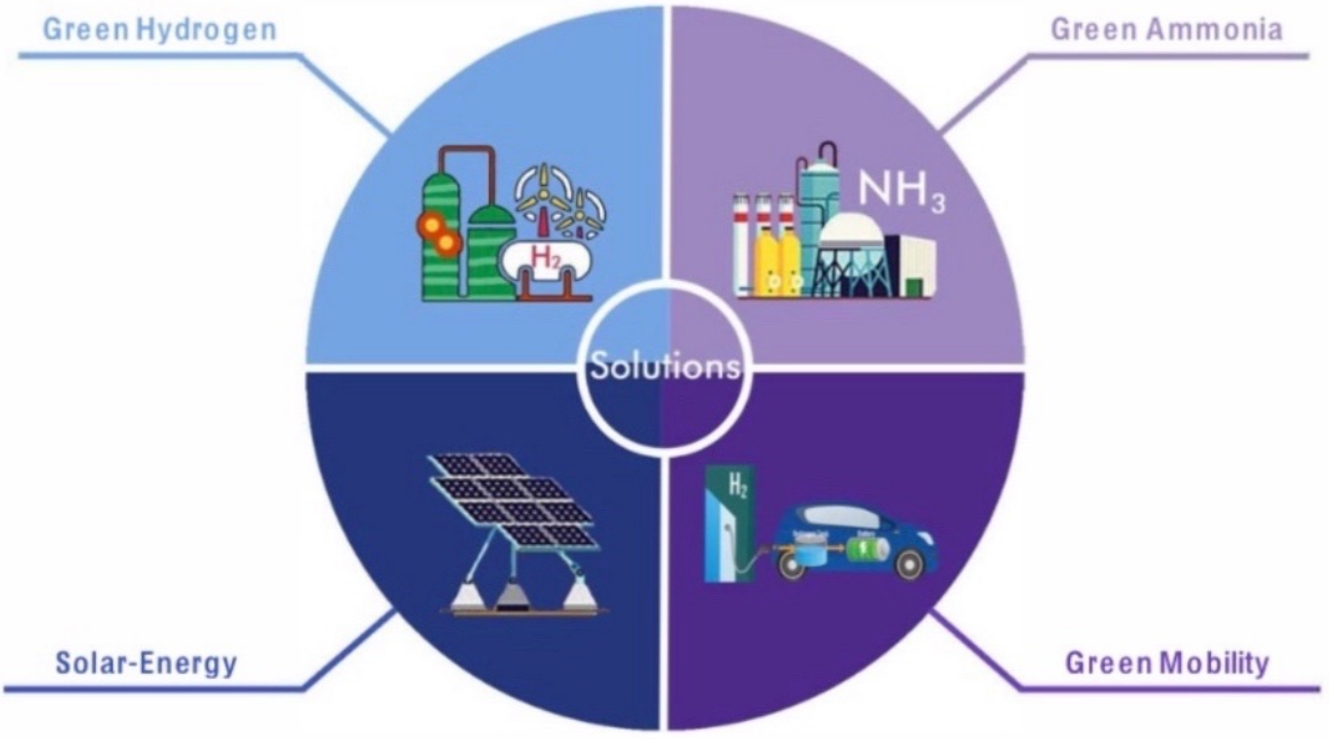
ARNI ENERGY

EMPOWERING THE FUTURE WITH INTELLIGENCE



DUBAI OFFICE:
Office No. *1005, Sidra Tower, Sheykh Zayed Rd, Dubai ,UAE.*

Our Green Energy Solutions



Green Hydrogen

----+ 100% Carbon free Hydrogen produced by Renewable. (Solar, Wind and Hydro Power)

----+ Green hydrogen is helping decarbonize sectors such as shipping and transportation, where it can be used as a fuel, as well as in manufacturing industries such as steel, Text and chemicals.

Green Ammonia

----+ Ammonia is a pungent gas that is widely used to make agricultural fe and utilizing in the food Industry.

----+ Green ammonia production is where the process of making ammonia is 100% renewable and carbon-free by Solar, wind, and Hydro Power.

Solar-Energy

----+ Reduce Your Electricity Bills up to 100%.

----+ Faster Payback 3-4 Years.

----+ Higher Return on Investment.

----+ 30 Years Plant Performance Warranty.

Green Mobility

----+ Fuel cell electric vehicles (FCEVs) are powered By Hydrogen.

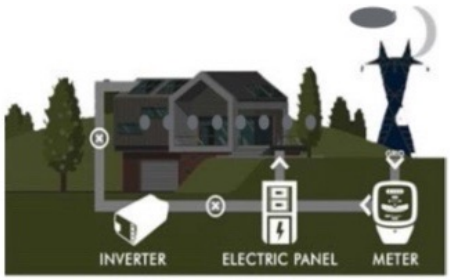
----+ They are more efficient than conventional internal combustion engine vehicles and produce no tailpipe emissions-they only emit water vapor and warm air.

Our Business Model

SOLAR ENERGY-CAPEX

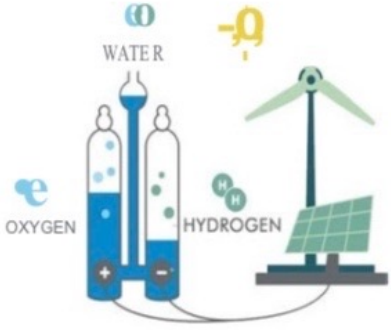
- The customer bears the entire capital expenditure of the project.
- The customer gets benefit by selling the surplus power generated to the DISCO through net-metering.
- Arni is offering a 20 years product warranty and 30 years performance warranty.
- Return on Investment will be 3-4 years with our customized solutions.
- The customer will be independent from rising grid/energy tariff costs

Energy produced from solar is clean and environment friendly.



SOLAR LEASING / PPA

- Arni Energy will design, install, operate, maintain and own the solar power plant..
- Customer has to sign a long term Power Purchase Agreement (PPA) with Arni Energy.
- Customer only pay for the monthly electricity consumed as per agreed tariff.
- Customer will be getting cheaper electricity tariff than grid tariff.
- Customer will start saving from day one.
- Arni Energy will be responsible for the O&M of the solar power plant.
- Customer can take the ownership of solar power plant through buy back agreement.



GREEN HYDROGEN

- The Hydaptive package accelerates the path toward 100% carbon-free power generation.
- Technology adapts as the grid needs larger amounts of energy storage.
- Standard packages reduce the cost and complexity of decabonization.
- Integrated technology adds flexibility to existing dispatchable power generation.

Major Project Reference List

Sr #	Project Name	Location	Installled Capacity (kWp)
1	Gold & Diamond Souk	U.A.E	1700
2	Meadows Souk	U.A.E	1700
3	Spring Souk	U.A.E	1800
4	University of Dubai	U.A.E	2500
5	Sapphire Textile Mills Unit 5-7	Pakistan	6500
6	Al karam Fabrics	Pakistan	5200
7	Tehreek e Jadeed	Pakistan	600
8	TIP Controls Shed	Pakistan	800
9	White Pearl Group	Pakistan	2000
10	Style Textiles Pvt Ltd	Pakistan	7300
11	Sapphire Textile Unit 04	Pakistan	4179
12	Amity University	U.A.E	1200
13	Amity School (2 Nos)	U.A.E	810
14	Charwell	U.A.E	360
15	Creative Plastics	U.A.E	459
16	Tagleef	U.A.E	1000
17	Dubai Muncipal Irrigation	U.A.E	45
18	Al Madina Hyoer Market	U.A.E	1000
19	Agility DIP	U.A.E	2700
20	Indu Cold Storage	U.A.E	895
21	Obaidulla Contracting	U.A.E	1500
22	Arni Dental Hospital	Japan	1438
23	Tokyo Club	Japan	1780
24	Fuji Solar	Japan	3200
25	White crown plaza	U.A.E	195
26	Kibsons	U.A.E	726
27	Paperchase	U.A.E	232
28	Habtoor	U.A.E	1060
29	Mira Town	U.A.E	432
30	Ranches Souq	U.A.E	433
31	Lehbab	U.A.E	124
32	Z&M Pro-Lab LLC	U.A.E	62
33	Agility	U.A.E	2700
34	Indo E-commerce	U.A.E	400
35	Barkely	U.A.E	455
36	Ajman Academy	U.A.E	497
37	Ihsan Cotton	Pakistan	1000
38	MTM	Pakistan	2900
39	MN Textile	Pakistan	500

Completed
Ongoing/Signed

Bill of Quantity(BOQ)

Project	XXXMWp On-Grid			
Location	XXXXX			
Client				
Project Type	EPC			
S.No	Description	Remark	Qty	Units
1	Product			
1.1	PV module	600Wp Mono Perc - Tier 1		pcs
1.2	Inverter	On-Grid- 250-350kW		pcs
1.3	Mounting structure	Fixed Structure		pcs
1.4	Isolator 320Amps	IP65 Enclosure		pcs
1.5	Remote monitering	Logger, SACU		pcs
1.6	DC cable	6mm-DC cable, KBE/RR		meter
1.7	MC4	20Amps - 1500VDc		pcs
1.8	STS / transformer unit	STS-3000k/6000K-H1 smart transformer station		pcs
1.9	AC cable Inv- To STS	3*300sqmm Al XLPE- 1.8KV		meter
1.10	AC cable STS- To Sub Station	3X150sqmm Al XLPE - 21KV		meter
1.11	AC cable for street Light	2X16mm Al XLPE-LV		meter
1.12	AC cable for CCtv	2X10mm Cu XLPE-LV		
1.13	Earthing Pit	DC earth, AC Earth		pcs
1.14	Lighting Arrestors	LPS		pcs
1.15	Weather Station	Seventh sensor (Irradiance Sensor,Ambient Temperature Sensor PT1000, Module Temperature Sensor PT1000, Wind Speed Sensor, Wind Direction Sensor)		pcs
1.16	Cable tape	Warning Tape - Causion Electric Cable Below		meter
1.17	DC Earth strips			meter
1.18	PVC tiles	LV & MV		pcs
1.19	Optical fibre			meter
1.20	Communication Cable	Schneider Utp Cat 6 Cable		meter
1.21	Terminations	Cable termination (6,300,150 -sqmm) Communication Cable (Cat6, Optical Fibre)		set
1.22	Canopy	Inverter Canopy		pcs
1.23	Plot Lighting	50watt Led Light		pcs
1.24	CCTV	NVR 24 camera set(Fitter on Light pole)		set
1.25	Monitoring TV	42inch Monitor		
1.26	Plant Monitoring PC	Office Desktop PC - Intel Core i7 11700, intel UHD Graphics 630 , 16GB 3200Mhz, 1TB SSD, 550W PSU, Wi-Fi + Keyboard and Mouse + 22 Inches Monitor FHD		
1.27	Accessories	(Cable ties, lugs, Glands, Copper Earth Link Wire(Al))		
1.28	EMS	EMS/BESS/Genset Grid controller		pcs
1.29	Fence	Chainlink fencing (2m height) With 6m Gate		Line meter
1.30	Security room			
2	Design & Engineering			
2.1	Design and Engineering			
2.2	Project management			

2.3	Documentations			
2.4	HSE Management			
2.5	Civil Management			
2.6	Mechanical Management			
2.7	Security			
3	Installation			
3.1	PV Installation			
3.2	LV terminations			
3.3	Communication device			
3.4	Structure			
3.5	Earthing DC.			
3.6	Earthing AC			
4	Machinery and tools			
4.1	Machinery			
4.2	Tools			
4.3	Testing Equipment			
4.4	Fork Lift			
4.5				
5	Temporary Installations			
5.1	Temp office			
5.2	Storage area for material			
5.3	Temp facility			
5.4	Water facility			
5.5	Emmergency backup genset			
6	Spare material			
6.1	PV Panel			
6.2	Inverter			
6.3	Structure			
6.4	DC cable			
6.5	AC Cable			
6.6	Communication cable			
7	Vehicles for site			
7.1	Truck			
7.2	Pickup			
7.3	Staff vehicle			
8	Fuel cost			
8.1	Fuel cost			
9	Staff			
9.1	Accomodation			
9.2	VISA			
9.3	Flight			
9.4	Food			
9.5	Medical			

Product Datasheet

PV Panel

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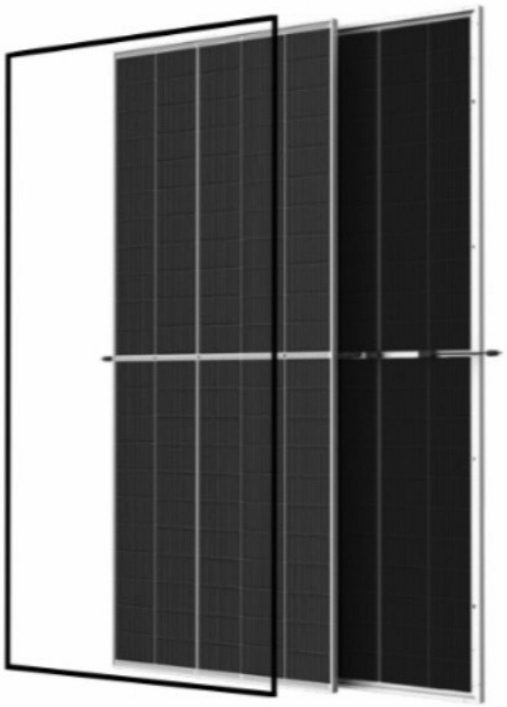


High HJT Module

NPA-611-SDGDC 730

705W | 710W | 715W | 720W | 725W | 730W

730W
Maximum Power Output

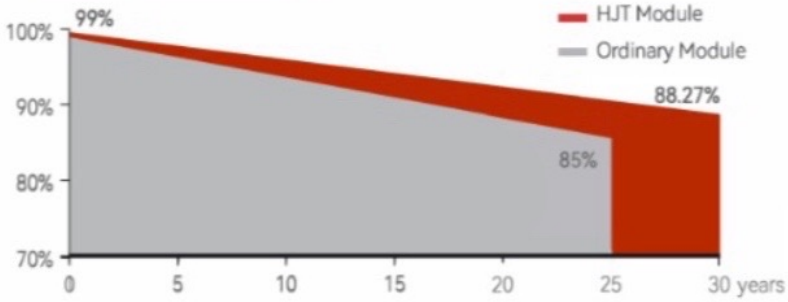
23.50%
Maximum Efficiency

90%+
Bifaciality

12 Years
Product Warranty

30 Years
Linear Power Warranty

Quality Assurance



Product Features

Industry-Leading Process Technology
Advanced HJT cell/module design, higher reliability and outstanding performance

G12 Cell / Module
G12 large-size wafer, effectively reducing LCOE and improving ROI

High Reliability
Certified mechanical performance up to 5400 Pa positive load and 2400 Pa negative load, with better protection against harsh weather

High Energy Yield
Maximum Module Efficiency up to 23.50% achieved by mature mass production HJT cell technology

Better Warranty
Extremely low LID/PID in longer service life, with 11.73% power degradation over 30 years

Higher Performance
Excellent weak light performance and lower temperature coefficient, resulting in better energy yield in all-weather

JP-AC

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NPA-611-SDGDC

705-730 W

Electrical Data(STC)

Model	NPA-611-SDGDC-705	NPA-611-SDGDC-710	NPA-611-SDGDC-715	NPA-611-SDGDC-720	NPA-611-SDGDC-725	NPA-611-SDGDC-730
Pmax(Wp)	705	710	715	720	725	730
Voc(V)	49.24	49.39	49.54	49.68	49.79	49.88
Isc(A)	17.37	17.42	17.47	17.52	17.57	17.64
Vmpp(V)	42.42	42.57	42.72	42.86	43.01	43.15
Impp(A)	16.62	16.68	16.74	16.80	16.86	16.92
Efficiency	22.70%	22.86%	23.02%	23.18%	23.34%	23.50%

STC: AM1.5 Irradiance: 1000W/m², Temperature=25℃

Electrical Characteristics(BSTC)

Model	NPA-611-SDGDC-705	NPA-611-SDGDC-710	NPA-611-SDGDC-715	NPA-611-SDGDC-720	NPA-611-SDGDC-725	GSM-MH3/132-730
Pmax(Wp)	776	781	787	792	798	802
Voc(V)	49.24	49.39	49.54	49.68	49.79	49.88
Isc(A)	19.11	19.16	19.22	19.27	19.33	19.40
Vmpp(V)	42.42	42.57	42.72	42.86	43.01	43.15
Impp(A)	18.28	18.35	18.41	18.48	18.55	18.58

αIsc (%/K): 0.04; βVoc (%/K): -0.24; γPmp (%/K): -0.24

BSTC: AM1.5, Front irradiance: 1000W/m², Back Irradiance135W/m², Temperature=25℃

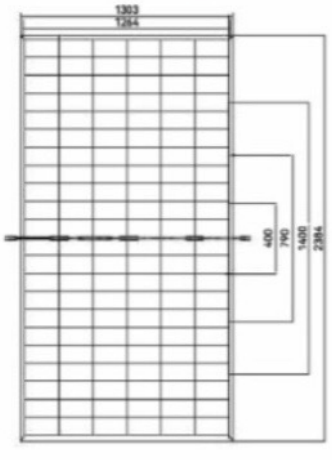
Mechanical Data

Cell(mm)	210×105
Weight(kg)	38.5±0.5kg
Dimension(L×W×H)(mm)	2384×1303×33mm
Cable(mm)	4mm², 300mm (customized length based on needs)
Frame	Anodized aluminum
Junction Box	IP68, 1500VDC, 3Diodes
Packaging configuration (40'Container; 17.5'Trailer)	33pcs/pallet; 17pallet/container; 561pcs/container 33pcs/pallet; 23pallet/Trailer; 759pcs/Trailer

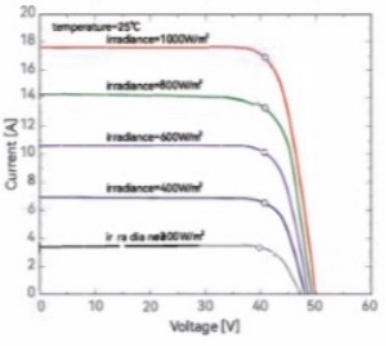
Working Condition

Maximum System Voltage	1500VDC
Operating Temperature	-40℃ ~ +85℃
Maximum Fuse Rating	35A
Rear Side Mechanical Load	2400Pa
Front Side Mechanical Load	5400Pa
NOCT	44±2℃
Safety Rating	Class II
Grounding Electric Conductivity	< 0.1Ω

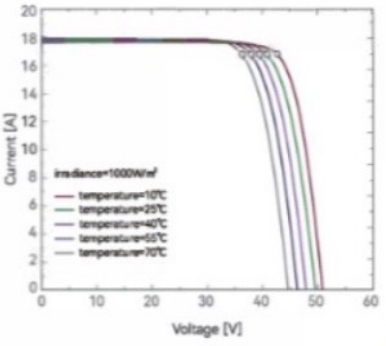
Dimensions (mm)



I-V Diagram



Different Irradiance



Different Temperature

*If the data is subject to change, the latest release shall prevail.

Solar-Inverter

On-Grid

1.C&I - NAI100~150

2.Utility Scale -NI-350TL-HV

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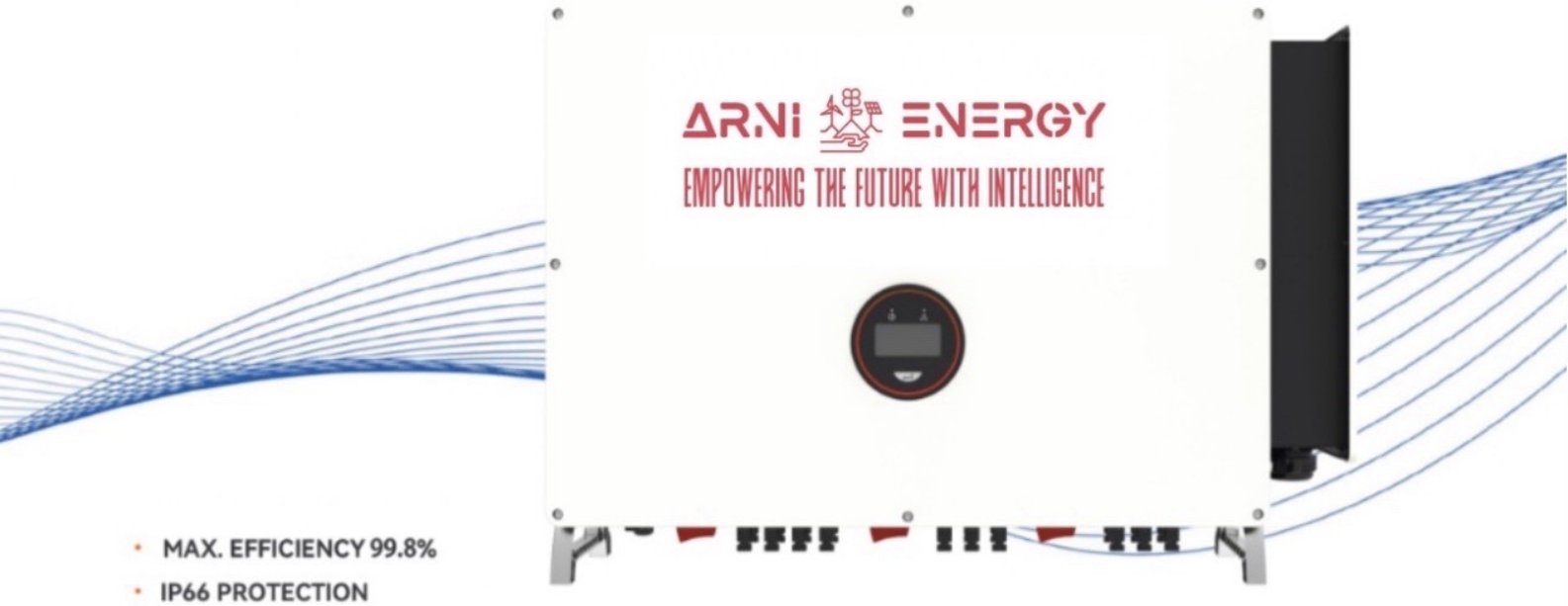
AI YOKOHAMA SERIES



- MAX. EFFICIENCY 99.8%
- IP66 PROTECTION

NAI100~150kW

10 MPPTs | ON Grid

AI-POWERED | WIRELESS POWERED | 10 YEARS WARRANTY | VOICE COMMAND | CARBON TRADE | BLOCK-CHAIN

Automated Fault Diagnosis & Troubleshooting

AI-driven system automatically detects and troubleshoots faults without the need for human intervention, ensuring seamless operations and minimal downtime.

Predictive Maintenance (5–7 Days in Advance)

Leveraging advanced analytics, the inverter predicts potential failures up to a week in advance—helping protect the power plant from environmental threats like storms and hail.

AI-Powered Threat Detection

Intelligent analysis of high-risk zones (e.g., bullet shell areas) to alert and safeguard PV panels against localized threats.

Intelligent Human Assistance

In cases where human intervention is necessary, the system precisely identifies the fault, pinpoints the exact location, and provides step-by-step instructions for resolution.

Smart Cleaning Recommendations

AI detects panel contamination and recommends specific cleaning zones to restore optimal performance and maximize energy efficiency.

Real-Time Fault Curve Recording

Continuously records fault data and provides real-time visualizations, enhancing maintenance and operational efficiency.

IP66 Intelligent Cooling System

Equipped with IP66-rated intelligent fans to maintain lower operating temperatures, ensuring longer equipment lifespan and improved reliability.

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Model	NAI-100KTL-NE	NAI-110KTL-NE	NAI-125KTL-NE	NAI-136KTL-NE	NAI-150KTL-NE
Input					
Max. Input Power (W)	160000	176000	200000	217600	240000
Start-up Voltage (V)	200	200	200	200	200
Max. DC Input Voltage (V)	1100	1100	1100	1100	1100
MPPT Voltage Range (V)	200-1000	200-1000	200-1000	200-1000	200-1000
Number of MPPTrackers	10	10	10	10	10
Number of DC Inputs per MPPT	2	2	2	2	2
Max. Input Current (A)	10*40	10*40	10*40	10*40	10*40
Max. Short-circuit Current (A)	10*50	10*50	10*50	10*50	10*50
Output					
Max. Output Power (W)	110,000	121,000	136,000	149,600	165,000
AC output rated apparent power (VA)	100,000	110,000	125,000	136,000	150,000
Max. Apparent Power (VA)	110,000	121,000	136,000	149,600	165,000
Grid Type**	3L/N/PE, 220/380V, 230/400V				
Rated AC Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
AC output rated current (A)	151.5	166.7	189.4	197	227.3
Max. Output Current (A)	166.7	183.3	206.1	226.7	250
Power Factor	0.8 leading ...0.8 lagging				
THDi@ Rated Power	<3%				
DCI	<0.5%1n				
Efficiency					
Max. Efficiency	98.8%	98.8%	98.8%	98.8%	99.8%
European Efficiency	98.3%	98.3%	98.3%	98.3%	98.3%
MPPT Efficiency	99.9%	99.9%	99.9%	99.9%	99.9%
Protection					
DC Reverse Polarity Protection	Integrated				
Insulation Resistance Protection	Integrated				
DC Switch	Optional				
Surge Protection	Integrated (Type II)				
Over-temperature Protection	Integrated				
Residual Current Protection	Integrated				
Islanding protection	Frequency shift, Integrated				
AC Short-circuit Protection	Integrated				
AC Over-voltage Protection	Integrated				
Intelligent string shutdown	Optional				
AFCI	Optional				
General Data					
Dimensions [W*H*D] (mm)	1025 * 640 * 320				
Weight (kg)	92				
Protection Degree	IP66				
Self-consumption at Night (W)	<1				
Topology	Transformerless				
Operating Temperature Range (℃)	-30-60				
Relative Humidity(%)	0-100				
Operating Altitude (m)	4000 (derating >3000)				
Cooling	Smart Fan Cooling				
Display	OLED & LED				
Communication	RS485/WiFi!GPRS/LAN (Optional)				

ARNI ENERGY
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THREE PHASE ON-GRID INVERTER

NI-350TL-HV

KEY FEATURES

High Efficiency
- Max.efficiency up to 99.08%, EU efficiency up to 98.8%
- output power up to 350kW, Including 6 MPPTs, 75A per MPPT
- 350kVA @35 °C, 330kVA @40 °C, 300kVA @45 °C

Smart
- LV4
- Adaptive SBF&SBR
- Fault forcast and Discretenss Analysis, Online Mantenanve order Management

Safe & Reliable
- Smart Connector-level Detection, Smart DC-Switch Disconnection
- Smart Terminal-level Detection
- IP66 , C5-M

Economical & Cost-Saving
- Auto reactive power Control According to Demand
- High Speed & High Anti-interfence PLC
- up to 30 strings, compatible to 182 and 210 series PV module

	NI-350TL-HV
Input DC	
Max.input power	500kW
Max.input voltage	1500V
Rated voltage	1080V
Start-up voltage	520V
MPPT voltage range	500-1500V
Max.input current	6*75A
Max.short circuit current	6*125A
MPPT number	6
Max. input strings number	30
Output AC	
Rated output power	350kW
Max.apparent output power	350kVA
Max.output power	350kW
Rated grid voltage	800V, 3/PE
Rated grid frequency	50Hz/60Hz
Rated grid output current	254A
Power factor	>0.99 (0.8 leading ... 0.8 lagging)
THDi	<1.5%
Efficiency	
Max.efficiency	99.08%
EU efficiency	98.80%
MPPT Efficiency	99.80%
Protection	
Integrated DC switch	Yes
DC rever-polarity protection	Yes
Anti-islanding protection	Yes
Short circuit protection	Yes
Output over currentprotection	Type II
DC Surge protection	Type II
AC Surge protection	Yes
Insulation impedance detection	Yes
Ground fault monitoring	Yes
Residual leakage current detection	Yes
Temperature protection	Yes
Strings monitoring	Yes
AC Over voltage protection	Yes
DC Over current protection	Yes
Integrated AFCI (DC arc-fault circuit protection)	Optional
Antibackflow	Optional
24-hour load monitoring	Optional
PID	Optional
General Data	
Dimensions (W*H*D)	1128*808*351mm
Weight	≤115kg
Self consumption(night)	<6W
Operating temperature range	-30..+60°C
Cooling concept	Fan-cooling
Max. operation altitude	5000m (Derating above 4000m)
Relative humidity	0-100%
Ingress protection	IP66
Topology structure	Transformerless
Grid connection stadard	NB/T32004, EN 50549-1,IEC 61727, IEC 62116,IEC 61683,IEC 60068,IEEE1547,UL1741
Safety/EMC standard	IEC/EN 62109-1/2,EN IEC61000-6-2/4, EN IEC 61000-3-11/12
Type of DC terminal	MC4 connector
Type of AC terminal	OT/DT terminal
Display&Communication	
Display	LED+Bluetooth+APP
Communication interface	RS485,Optional:WIFI,4G,PLC

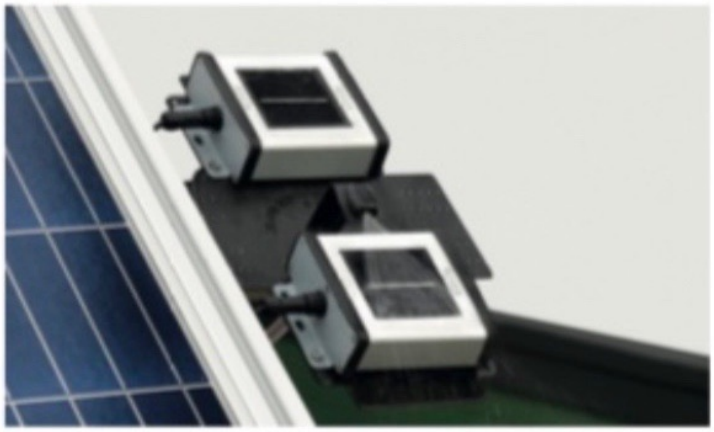
Weather Station

COMPACT WEATHER STATION

TECHNICAL DATA

	3S-CWS
Measured Data	Plane of Array Irradiance, Module & Ambient Temperature, Wind Speed & Direction, Relative Humidity, Air Pressure and Precipitation.
Standards	Compliant to IEC 61724-1:2021
Digital Outputs	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU (Optional Modbus TCP/IP)
Output Rate	1/s
Operating Temperature Range	-40°C to +85°C
Operating Humidity Range	0 to 100 %RH
Mounting Structure	Aluminum & Stainless Steel
Dimensions	720 x 1370 x 855 mm (W x L x H) (Height can be changed as per request)
Weight	4.8 kg
IP Rating	IP 54 (Optional IP 67)
Power Supply	12 to 30 V DC
Power Consumption	25 mA @ 24 V DC
Cable Length & Features	3 m LIYYC11Y PUR Cable, UV and weather resistant
Connection Box Material	ABS
Galvanic Isolation	1000 V between power supply and RS485 Bus

SOILING SENSOR

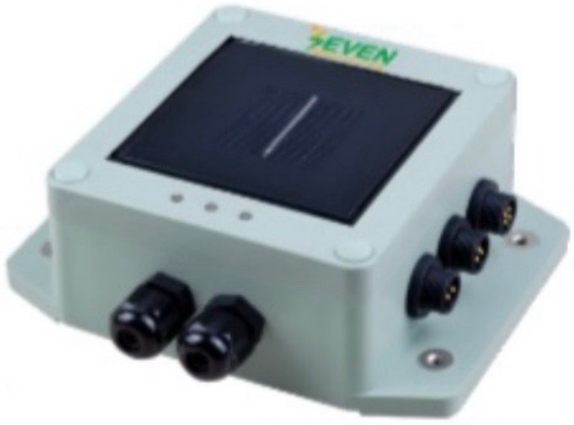


TECHNICAL DATA

Item Codes	3S-SMS-MB, 3S-SMS-GW, 3S-SMS-MB-24V, 3S-SMS-GW-24V	3S-SMS-MB-M
Soiling Ratio	0% - 100%	
Resolution	0,1%	
Uncertainty	≤ 1%	
Data Output	RS485 up to 38400 Baud	
Communication Protocol	Modbus RTU	
Output Rate	1/s	-
Operating Temperature Range	-20°C - 85°C	-40°C - 85°C
Operating Humidity Range	0% - 100% RH	
Power Supply	110-240V AC or 24V 5A DC	12 to 30 V DC
Power Consumption	Pump Passive: Max. 20 mA @ 24V DC	-
	Pump Active: Max. 3 A @ 24V DC	-
Communication Cable	3 m LI2Y(st)C11Y PUR Cable (UV and weather-resistant)	
Galvanic Isolation	1000 V between power supply and RS485 bus	
Water Tank Capacity	18 Liters	-
Water Consumption	36 Liters/year (Refilling required twice a year)	-
Washing Liquid	Pure Water: 100% (Should be used when the ambient temperature is above 0°C)	-
	Pure Water: 65% + Antifreeze: 35% (Should be used when the ambient temperature is below 0°C)	-
Water Hose Length	5 m (on request up to 20m)	-
Max. Water Line Height	5 m	-
Protection Class	IP54 (Optional IP65)	IP65 (Optional IP68)
Weight	10.5 kg	0.5 kg
Standard	IEC61724-1 (Annex C)	

IRRADIANCE SENSOR

(PV Pyranometer)



TECHNICAL DATA

	3S-IS	3S-IS-T-I	3S-IS-T-V
Sensor Type	Silicon Reference Cell (31 mm x 31 mm)		
Meassured Data	Irradiance, Cell & Module & Ambient Temperature, Wind Speed & Direction, and Relative Humidity	Irradiance and Cell Temp.	Irradiance and Cell Temp.
Irradiance Range	0 - 1600 W/m²		
Uncertainty	≤1,2% (Less than 2%, as per IEC 61724-1 standard Class A)		
Resolution	0.1 W/m² (Less than 1W/m², as per IEC 61724-1 standard Class A)		
Response Time	1 sec. (Less than 3 sec. as per IEC 61724-1 standard Class A)		
Drift	<0.3% / year		
Field of View	170° (Larger than 160° as per IEC 61724-1 standard Class A)		
Tilt-Azimuthal Angle	0°- 0° (±1°, as per IEC 61724-1 standard Class A)		
Output Rate	1/s	-	-
Data Output	RS485 up to 38400 Baud	Analog 4-20 mA	Analog 0-1,5 V
Communication Protocol	Modbus RTU	-	-
Power Supply	12 to 30 V DC		
Power Consumption	30 mA max @24 VDC	50 mA max @24 VDC	15 mA max @24 VDC
Cable Length & Features	3 m, LIYYC11Y PUR Cable, UV and Weather Resistant		
Galvanic Isolation	1000 V between power supply and RS485 bus	-	-
Cell Temperature Sensor Type	PT1000 Class A as per EN 60751		
Operating Temperature Range	-40°C to +85°C		
Operating Humidity Range	0 to 100 % RH		
Box Dimensions	110 mm x 140 mm x 42 mm (W x L x H)		
Weight	0.3 kg		
IP Rating	IP 54 (Optional IP 65, IP 68)		
Sensor Housing Material	ASA GF10		
Compliant Standard	IEC 61724-1:2021 and IEC 60904		
Calibration	Each sensor is calibrated under Class AAA Sun Simulator as per IEC 60904-2 and IEC 60904-4 by using a reference cell calibrated by ISFH-Germany		

ALBEDOMETER

TECHNICAL DATA

	3S- ALBEDO	3S- ALBEDO-2T
Sensor Type	Silicon Reference Cell (31 x 31 mm)	
Measured Data	POA Irradiance, Reflected Irradiance and Solar Albedo	POA Irradiance, Reflected Irradiance and two module temperatures
Irradiance Range	0 - 1600 W/m²	
Uncertainty	≤1.2 % (less than 2%; as per IEC 61724-1 standard Class A)	
Resolution	0.1 W/m² (less than 1 W/m²; as per IEC 61724-1 standard Class A)	
Response Time	1 sec (less than 3 sec; as per IEC 61724-1 standard Class A)	
Field of View	170° (Larger than 160° as per IEC 61724-1 standard Class A)	
Tilt-Azimuthal Angle	0°- 0° (≤1°; as per IEC 61724-1 standard Class A)	
Output Rate	1/sec	
Data Output	RS485 up to 38400 Baud	
Communication Protocol	Modbus RTU	
Power Supply	12 to 30 V DC	
Power Consumption	20 mA max @24 VDC	22 mA max @24 VDC
Cable Length & Features	3 m LIYYC11Y PUR Cable, UV and Weather Resistant	
Galvanic Isolation	1000 V between power supply and RS485 bus	
Operating Temperature Range	-40°C to + 85°C	
Operating Humidity Range	0 to 100 %	
Box Dimensions	108 mm x 112 mm x 38 mm (W x L x H)	
Weight	0.52 kg	0.86 kg
IP Rating	IP54 (Optional IP 65, IP 68)	
Sensor Housing Material	Aluminum	
Standard	IEC 61724-1:2021 and IEC 60904	
Calibration	Each sensor is calibrated under Class AAA Sun Simulator as per IEC 60904-2 and IEC 60904-4 by using a reference cell calibrated by ISFH-Germany	

LOW-COST IRRADIANCE SENSOR

TECHNICAL DATA

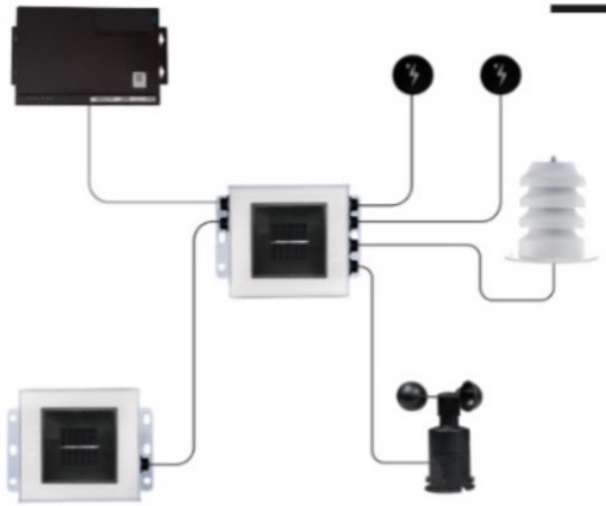
	3S-IS-LR	3S-IS-LR-T
Measured Data	Plane of Array Irradiance	Plane of Array Irradiance and 1 External Temperature
Sensor Type	Silicon Reference Cell (31 x 31 mm)	
Measuring Range	0 ... 1600 W/m²	
Uncertainty	≤ 3 %	
Resolution	0.1 W/m²	
Response Time	1 s	
Drift	<0.3% / year	
Field of View	170°	
Tilt-Azimuthal Angle	0°- 0°	
Output Rate	1/s	
Data Output	RS485 up to 38400 Baud	
Communication Protocol	Modbus RTU	
Power Supply	12 to 30 V DC	
Power Consumption	10 mA max @ 24 V DC	15 mA max @ 24 V DC
Cable Length & Features	3 m LIYYC11Y PUR Cable, UV and Weather Resistant	
Galvanic Isolation	1000 V Between Power Supply and RS485 Bus	
Operating Temperature Range	-40°C to +85°C	
Operating Humidity Range	0 to 100 % RH	
Box Dimensions	84 mm x 118 mm x 55 mm (W x L x H)	
Weight	0.2 kg	
IP Rating	IP 67	
Sensor Housing Material	ABS	

THERMOPILE
PYRANOMETER

TECHNICAL DATA

	3S-TP-MB-A	3S-TP-MB-B	3S-TP-MB-C
Measured Data	Global Horizontal (GHI) or POA Irradiance, Internal and Housing Temperature and Internal Humidity		
Sensor Type	Thermopile		
Spectral range (50% points)	280 to 2800 nm		
Irradiance Range	0 - 4000 W/m²		0 - 2000 W/m²
Response time (95%)	0.5s (less than 10s: as per ISO9060:2018 standard Class A)		
Zero offset A - Thermal Radiation (200W/m²)	± 1W/m² (± 7W/m²; as per ISO9060:2018 standard Class A)		
Zero offset B - Temperature change (5K/hr)	± 1.5 W/m² (± 2W/m²; as per ISO9060:2018 standard Class A)	± 4 W/m² (± 4W/m²; as per ISO9060:2018 standard, Class B)	± 5 W/m² (± 8W/m²; as per ISO9060:2018 standard, Class C)
Total zero off C - Total zero off-set	± 3W/m² (± 10W/m²; as per ISO9060:2018 standard Class A)		
Non-stability (change/year)	< 0.5% (± 0.8%; as per ISO9060:2018 standard Class A)		
Non-linearity (100 to 1000 W/m²)	± 0.2% (± 0.5%; as per ISO9060:2018 standard Class A)	± 1% (±1%; as per ISO9060:2018 standard, Class B)	± 3% (±3%; as per ISO9060:2018 standard, Class C)
Directional response (at 1000W/m² I 0 to 80°)	± 10W/m² (± 10W/m²; as per ISO9060:2018 standard Class A)		
Spectral Error	± 0.2% (± 0.5%; as per ISO9060:2018 standard Class A)		
Temperature response (-20°C to 50°C)	± 0.4% (± 1%; as per ISO9060:2018 standard Class A)		
Irradiance Resolution	0.1 W/m²		
Internal Humidity Range Accuracy Resolution	0% to 100% ± 1 % RH (20…70 %) @ 25 °C 1%		
Internal Temperature Range Accuracy Resolution	-40°C to +85°C ± 0.1 °C (5…60 °C) @ 20…80 % RH 0.1°C		
Housing Temperature Range Accuracy Resolution	-40°C to +85°C ± 0.2 °C 0.1°C		
Viewing angle	2π sr		
Data Output	RS485 up to 38400 Baud		
Communication Protocol	Modbus RTU (Optional Modbus TCP/IP)		
Output Rate	1/s		
Operating Temperature Range	-40 to 85°C		
Supply voltage	12 to 30 V DC		
Power Consumption	20 mA @ 24 V DC		
Cable Features	3x2x0,14 mm² Cable - LI2(ST)C11Y- PUR, UV and weather resistant		
Cable Length	3 meter standard length (Custom length available)		
Galvanic Isolation	1000 V between power supply and RS485 Bus		
IP Rating	IP 67		
Dimensions	Ø 140 mm x 116 mm		
Sensor Housing Material	Alloy Aluminum		
Shade Disk Material	ABS		
Weight	0,98 kg		
Standards	ISO 9060:2018, Fast Response Spectrally Flat Class A (Secondary Standard), IEC 61724-1:2021, Class A, ISO/TR 9901:1990 ISO 9847	ISO 9060:2018 Spectrally Flat Class B (First Class), IEC 61724-1:2021 Class B, ISO/TR 9901:1990 ISO 9847	ISO 9060:2018 Spectrally Flat Class C (Second Class), IEC 61724-1:2021 Class B, ISO/TR 9901:1990 ISO 9847

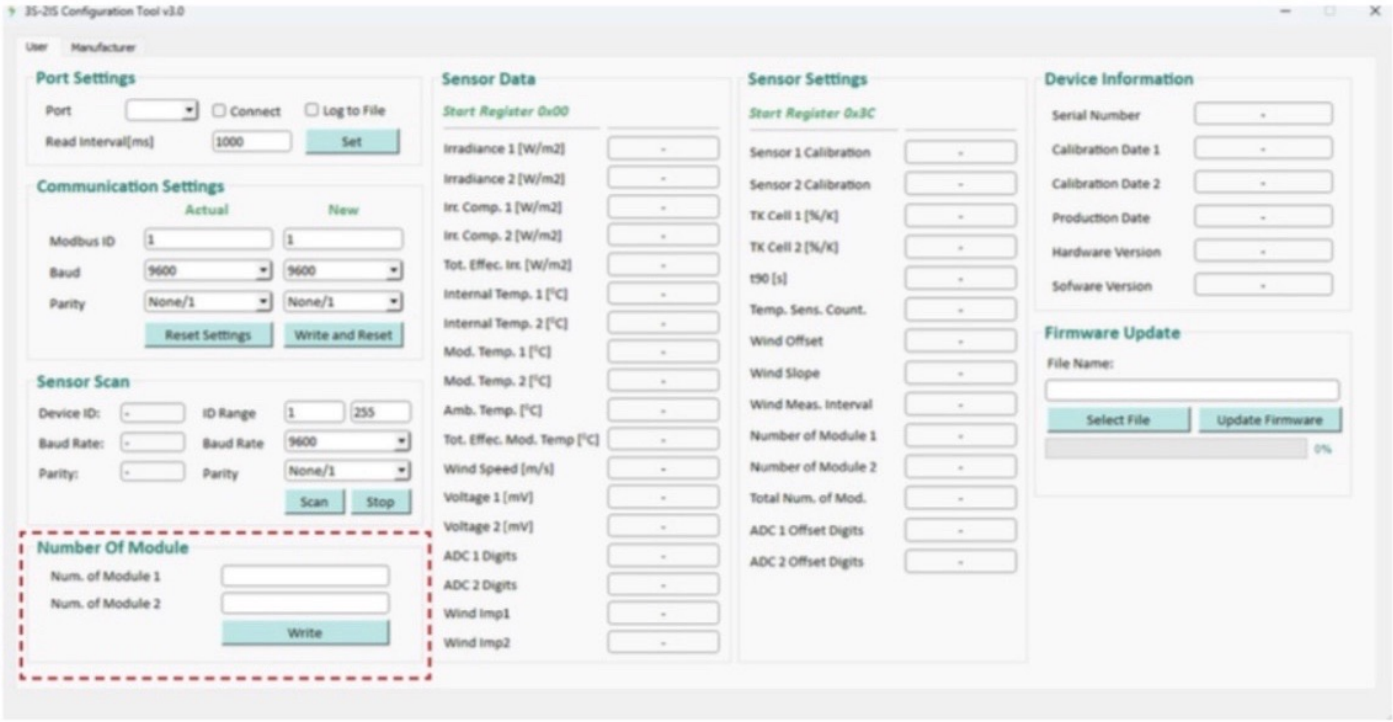
DUAL ORIENTATIONS IRRADIANCE SENSOR (3S-2IS)



Special Solution for dual orientation plants:

3S-2IS model is specially developed to calculate the Performance Ratio (PR) for the dual orientation PV plants, as it calculates the average irradiance value as per the number of panels in each direction. Installation directions of panels in PV power plants and the number of panels in these directions may be different. The user will be able to set the number of panels in each orientation for the correct calculations. 3S-2IS special design allows simultaneous connection of two Irradiance Sensors, two Module Temperature Sensors, Ambient Temperature Sensor and Wind Speed Sensor.

The number of panels in both directions, to which the sensors are connected to, is entered into the electronic card via 3S-2IS Configuration Interface. The total effective irradiance and total effective module temperature can be calculated and communicated to the datalogger via Modbus RTU protocol. By using these values, the accurate Performance Ratio can be calculated in the monitoring systems.



MULTI-ORIENTATION IRRADIANCE SENSOR (3S-4IS) / (3S-3IS)

TECHNICAL DATA

	3S-4IS / 3S-3IS
Measured Data	Total Effective Irradiance, Total Effective Module Temperature, 4 nos. POA Irradiance, 4 nos. Cell Temperature, 4 nos. Module Temperature, Ambient Temperature, Wind Speed, and Wind Direction
Output Rate	1/s
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU
Power Supply	12 to 30 V DC
Power Consumption	40 mA max @ 24 V DC
Electrical Connection	3 m LIYYC11Y PUR Cable, UV and Weather Resistant
Galvanic Isolation	1000 V between power supply and RS485 bus
Operating Temperature Range	-40°C to +85°C
Operating Humidity Range	0 to 100 %RH
Dimensions (Connection Box / Sensor)	211 mm x 123 mm x 60 mm / 140 mm x 110 mm x 42 mm (W x L x H)
Weight (Connection Box / Sensor)	0.5 kg / 0.3 kg
IP Rating (Connection Box / Sensor)	IP 67 / IP 54 (Optional IP 65, IP 68)
Material (Connection Box / Sensor)	ABS / Aluminum
Standard	IEC 61724-1:2021 and IEC 60904
Calibration	Each sensor is calibrated under a Class AAA Sun Simulator according to IEC 60904-2 and IEC 60904-4 standards using a reference cell calibrated by the ISFH Institute in Germany.Germany.

MODULE TEMPERATURE SENSOR

TECHNICAL DATA

	3S-MT-PT1000	3S-MT-PT1000-MB	3S-MT-PT1000-I	3S-MT-PT1000-U
Sensor Type	PT1000			
Measuring Range	-40°C to +85°C			
Accuracy	±0.1°C			
Resolution	0.1°C			
Data Output	PT1000	RS485 up to 38400 Baud	Analog 4-20 mA	Analog 0-10 V
Communication Protocol	-	Modbus RTU	-	-
Power Supply	-	12 to 30 V DC		
Power Consumption	-	15 mA @ 24 V DC	30 mA @ 24 V DC	15 mA @24 V DC
Electrical Connection	3 m 2x2x0,22 mm² 24 AWG LI2YC11Y-TP PUR Cable, UV and Weather Resistant	1 m 2x2x0,22 24 AWG LI2YC11Y-TP PUR Cable, and 2 m 2x2x0,22 mm² LIY2Y(SE)GRP PUR Cable, UV and Weather Resistant		
Operating Temperature Range	-40°C to +85°C			
Box Dimensions	-	82 x 80 x 55 mm (W x L x H)		115 x 65 x 55 (WxLxH)
Sensor Cover Dimensions	Ø 35 x 3 mm			
Weight	167 gr	280 gr	257 gr	267 gr
IP Rating	IP 67			
Box Material	-	ABS		
Sensor Cover	Laminated Backsheet (EVA - Tedlar)			
Mounting Method	3M® Sticker to Back of Module			
Standard	Class A according to IEC 60751:2022			

AMBIENT TEMPERATURE SENSOR

TECHNICAL DATA

	3S-AT-PT1000	3S-AT-PT1000-MB	3S-AT-PT1000-I	3S-AT-PT1000-U
Sensor Type	PT1000			
Measuring Range	-40°C to +85°C			
Accuracy	±0.1°C			
Resolution	0.1°C			
Data Output	PT1000	RS485 up to 38400 Baud	Analog 4-20 mA	Analog 0-10 V
Communication Protocol	-	Modbus RTU	-	-
Power Supply	-	12 to 30 V DC		
Power Consumption	-	15 mA @ 24 V DC	30 mA @ 24 V DC	15 mA @ 24 V DC
Cable's Length & Features	1.5 m 2x2x0,22 24 AWG LI2YC11Y PUR Cable, UV and Weather Resistant	0.5 m 2x2x0,22 24 AWG LI2YC11Y-TP PUR Cable, and 2.5 m 3x2x0.22 mm² LI2Y(SE)GRP PUR Cable, UV and Weather Resistant		
Operating Temperature Range	-40°C to +85°C			
Box Dimensions	-	80 mm x 82 mm x 55 mm (W x L x H)		65 mm x 115 mm x 55 mm (WxLxH)
Shield Dimensions	Ø 105 x 100 mm			
Weight	127 gr	467 gr		347 gr
IP Rating	IP 67			
Box Material	-	ABS		
Sensor Housing Material	Stainless Steel Tube			
Shield Material	ABS			
Mounting Method	Ground Mounting			
Standard	Class A according to IEC 60751:2022			

WIND SPEED SENSOR

TECHNICAL DATA

	3S-WS-PLS-A	3S-WS-PLS-P	3S-WS-MB-A	3S-WS-MB-P	3S-WS-I-A	3S-WS-I-P
Sensor Type	Cup Star Anemometer (Reed Switch)					
Measuring Range	0,9 to 60 m/s				0,9 to 50 m/s	
Accuracy	Below 5m/s 0.5 m/s and 10% of reading above 5m/s					
Resolution	0,1 m/s					
Threshold	0,9 m/s					
Survival Speed	60 m/s				50 m/s	
Data Output	Reed Relay		Modbus RTU - RS485		Analog (4-20 mA)	
Communication Protocol	-		Modbus RTU		-	
Power Supply	-		12 to 30 V DC			
Cable Length & Features	3 m LIYY Cable, UV and Weather Resistant		3m LIYYC11Y PUR Cable, UV and Weather Resistant			
Operating Temperature Range	-40°C ... +85°C (Ice Free)					
Dimensions	180 x 145 mm	136 x 151 mm	180 x 145 mm	136 x 151 mm	180 x 145 mm	136 x 151 mm
Box Dimensions	-		82 x 80 x 55 mm (L x W x H)			
Weight	0,34 kg	0,20 kg	0,34 kg	0,20 kg	0,34 kg	0,20 kg
Box Weight	-		0,16 kg			
Housing Material	Anodized Aluminum	ASA	Anodized Aluminum	ASA	Anodized Aluminum	ASA
Cup Material	ABS	ASA	ABS	ASA	ABS	ASA
Mounting Method	Pipe or Ground Mounting					
Standard	Compliant to IEC 61724-1:2021					

WIND DIRECTION SENSOR

TECHNICAL DATA

	3S-WD	3S-WD-MB	3S-WD-I
Sensor Type	Vane-Driven Hall Effect Position Sensor		
Measuring Range	0-359°		
Accuracy	±1% of Measuring Value		
Resolution	0.1°	1°	
Start Speed	1 m/s		
Data Output	Analog (0 V – 3.3 V)	Modbus RTU - RS485	Analog 4-20 mA
Communication Protocol	-	Modbus RTU	-
Power Supply	-	12 to 30 V DC	
Power Consumption	-	20 mA typically at 24 VDC	30 mA typically at 24 VDC
Cable Length & Features	3 m LIYY Cable, UV and Weather Resistant	3m LIYYC11Y PUR Cable, UV and Weather Resistant	
Operating Temperature Range	-40°C to +85°C (Ice Free)		
Dimensions	Ø: 290x195 mm		
Box Dimensions	-	L x W x H : 55x80x82 mm	
Weight	0,25 kg		
Box Weight	-	0,25 kg	
IP Rating	IP 54 (IP67 Optional)		
Housing Material	Aluminum/ASA GF10 (Plastic)		
Vane Material	Aluminum/ASA GF10 (Plastic)		
Box Material	-	ABS	
Mounting Method	Pipe or Ground Mounting		
Standard	Compliant to IEC 61724-1:2021		

RELATIVE HUMIDITY & AMBIENT TEMPERATURE SENSOR

TECHNICAL DATA

	3S-RH&AT	3S-RH&AT&PS	3S-RH&AT-MB	3S-RH&AT&PS-MB	3S-RH-I
Measured Data	Relative Humidity and Ambient Temperature	Relative Humidity, Ambient Temperature and Pressure	Relative Humidity and Ambient Temperature	Relative Humidity, Ambient Temperature and Pressure	Relative Humidity
Sensor Type	Capacitive				
RH Range	0% to 100%				
RH Accuracy	±1% RH (20 ... 70%) at 25 °C				
RH Resolution	0.1%				
T Range	-40°C to +85°C				-
T Accuracy	±0.1% °C at (5 ... 60 °C)				-
T Resolution	0.1°C				-
Pressure Range	-	260 to 1260 hPa	-	260 to 1260 hPa	-
Pressure Accuracy	-	0.5 hPa	-	0.5 hPa	-
Pressure Resolution	-	0.1 hPa	-	0.1 hPa	-
Data Output	I²C		RS485 up to 38400 Baud		Analog 4-20 mA
Communication Protocol	-		Modbus RTU		-
Power Supply	3 V DC		12 to 30 V DC		
Power Consumption	-		20 mA max @ 24 VDC		30 mA @ 24 V DC
Cable Length & Features	3 m LIYYC11Y PUR Cable, UV and Weather Resistant				
Operating Temperature Range	-40°C to +85°C				
Box Dimensions	-		64 x 68 x 35 mm (W x L x H)		
Shield Dimensions	Ø 105 x 100 mm				
Weight	0,2 kg		0,5 kg		
IP Rating	IP 65				
Box Material	-		ABS		
Sensor Housing Material	Stainless Steel Tube - Membran Filter				
Shield Material	ABS				
Standard	Class A according to IEC 60751:2022 (Temperature) Class A according to IEC 61724-1:2021 (Relative Humidity)				

RAIN GAUGE

TECHNICAL DATA

	3S-RG-MB	3S-RG-PLS
Sensor Type	Tipping Bucket Rain Gauge	
Measuring Range	600 mm/h	
Accuracy	±%1 (0 mm/h - 30mm/h) ±%2 (30mm/h - 100mm/h) ±%5 (100mm/h-600mm/h)	
Resolution	0.2 mm	
Collecting Area	200 cm²	
Data Output	RS485 up to 38400 Baud	Reed Relay
Communication Protocol	Modbus RTU	-
Power Supply	12 to 30 V DC	-
Power Consumption	35 mA @ 24 V DC	-
Cable Length & Features	3 m LIYYC11Y Cable, UV and Weather Resistant	3 m LIYY Cable, UV and Weather Resistant
Operating Temperature Range	0°C to +85°C	
Dimensions	Ø 160 x 257 mm	
Connection Box Dimensions	70.2 mm x 82 mm x 55 mm (W x L x H)	-
Weight	1.4 kg	1,2 kg
IP Rating	IP 65	
Housing Material	Plexiglass	
Connection Box Material	ABS	-

Mounting Systems

SEVEN produces custom designed mounting systems for easy sensor installation in site, especially for Rooftop projects. It is a tower combining different sensors as per the installation requirements.

SEVEN Mounting System is a custom product designed as per the site conditions and the sensors to be mounted. It is made of Chrome as it is strong and has a high resistance against the Weather conditions.

TECHNICAL DATA

	3S-MS
Material	Coated Steel
Length	1123 mm
Width	635 mm
Height	1048 mm (it can be changed as per request)

PORTABLE SOILING SENSOR

TECHNICAL DATA

	3S-SMS-P
Soiling Ratio	0% - 100%
Resolution	0.1%
Uncertainty	≤ 2%
Data Output	RS485
Operating Temperature Range	-10°C to +50°C
Operating Humidity Range	0 ... 90 % RH
Power Supply	12 V 24 Ah Lithium Battery
Working Time	3 hours
Battery Charging Time	3 hours
Portable Soiling Sensor Dimensions	Ø 280 mm x 180 mm
Portable Soiling Sensor Weight	4 kg
Battery Box Dimensions	220 mm x 232 mm x137 mm (W x L x H)
Battery Box Weight	3.6 kg

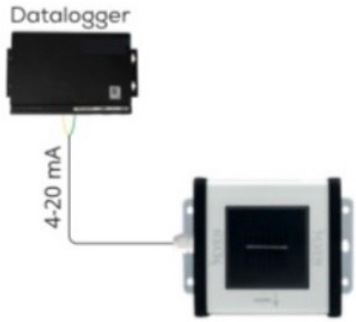
SNOW SENSOR

TECHNICAL DATA

	3S-SS-MB
Snow Ratio	0% - 100%
Snow Ratio's Resolution	5%
Irradiance Sensor's Uncertainty	≤ 1.2 %
Irradiance Range	0…1600 W/m²
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU
Output Rate	1/s
Operating Temperature Range	-40°C to +85°C
Operating Humidity Range	0 to 100 %RH
Power Supply	22 to 30 V DC
Power Consumption	0.82 A max @ 24VDC (While heating off 0.02 A max @24 VDC)
Cable's Length & Features	3m LIYYC11Y PUR Cable, UV and weather resistant
Galvanic Isolation	1000 V Between Power Supply and RS485 Bus
IP Rating	IP 65
Dimensions	200 mm x 412 mm x 44 mm (W x L x H)
Weight	1845 g
Calibration	Each sensor is calibrated and normalized under Class AAA Sun Similator as per IEC 60904-2 by Using a reference cell calibrated by ISFH-Germany

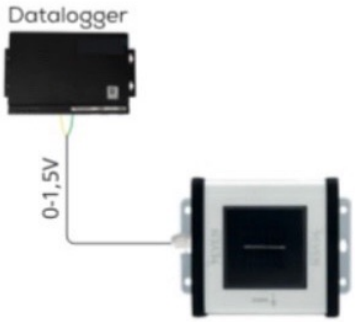
IRRADIANCE SENSOR BOX

Model: 3S-IS-T-I



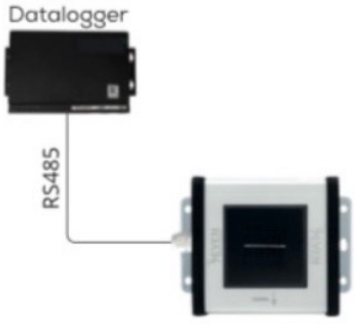
4-20 mA analog output for Irradiance Value

Model: 3S-IS-T-V



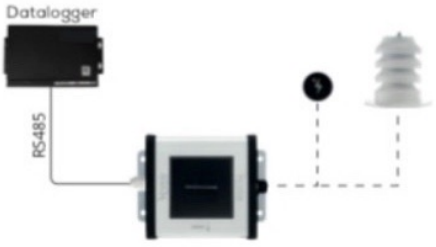
0-1,5 V analog output for Irradiance Value

Model: 3S-IS



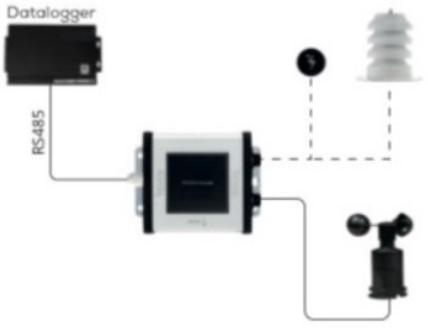
Modbus RTU output for Irradiance Value Cell Temperature Sensor Included

Model: 3S-IS-1



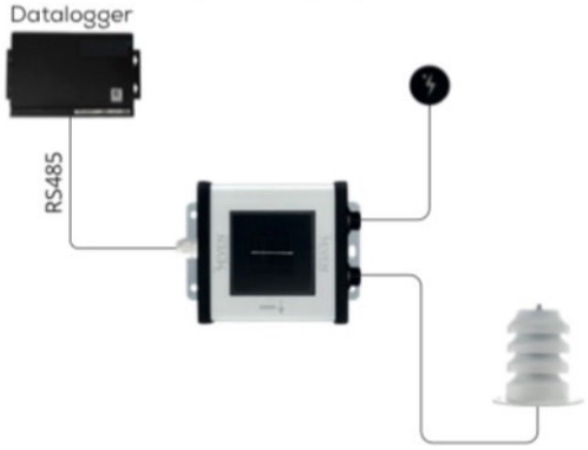
Irradiance Sensor with an external temperature sensor (Module Temperature Sensor or Ambient Temperature Sensor)

Model: 3S-IS-2



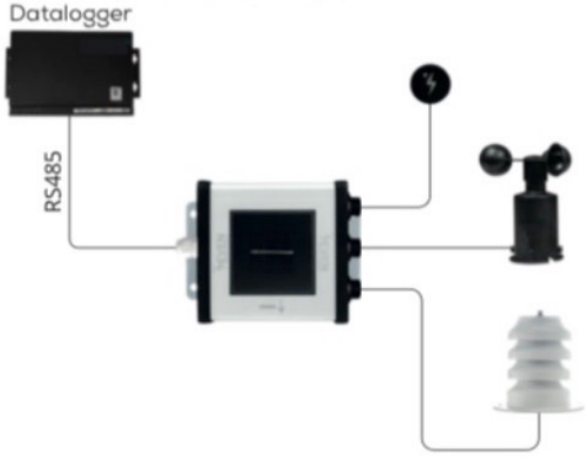
Irradiance Sensor with an external Temperature Sensor (Module Temperature Sensor or Ambient Temperature Sensor), and Wind Speed Sensor

Model: 3S-IS-2T



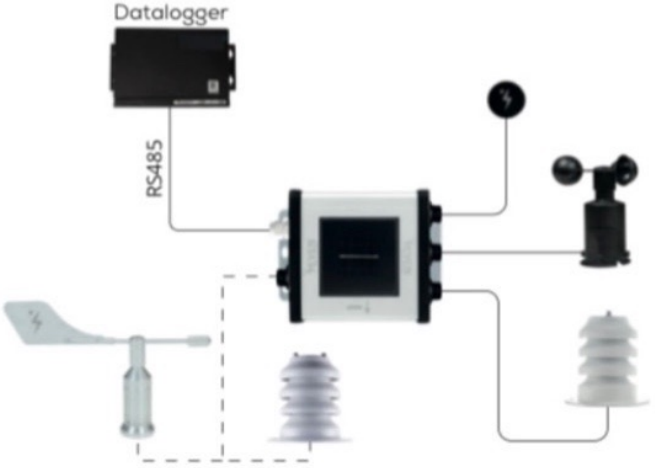
Irradiance Sensor with external two temperature sensors; Module Temperature Sensor, and Ambient Temperature Sensor

Model: 3S-IS-3



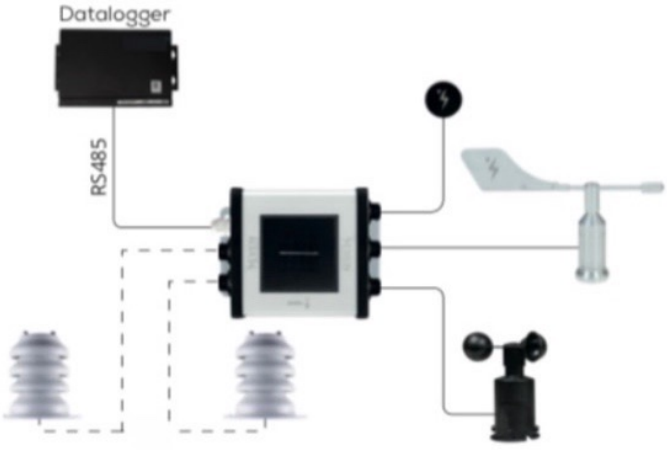
Sensors can be connected to Irradiance Sensor; Module Temperature Sensor, Ambient Temperature Sensor, and Wind Speed Sensor

Model: 3S-IS-4



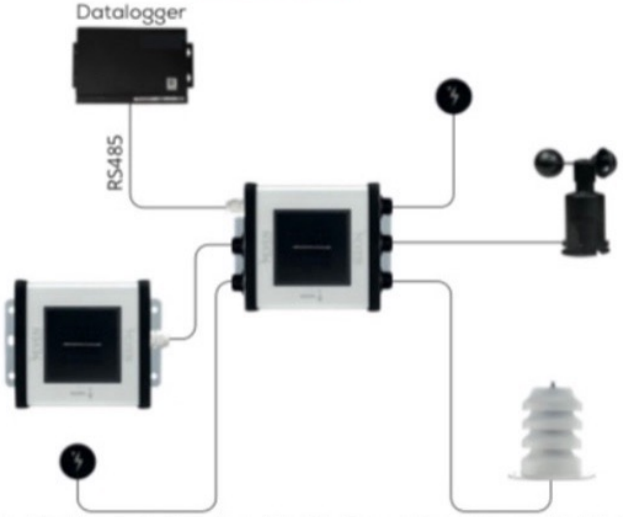
Following sensors can be connected to Irradiance Sensor; Module Temperature Sensor, Ambient Temperature Sensor, Wind Speed Sensor, and Wind Direction Sensor or Relative Humidity Sensor

Model: 3S-IS-5



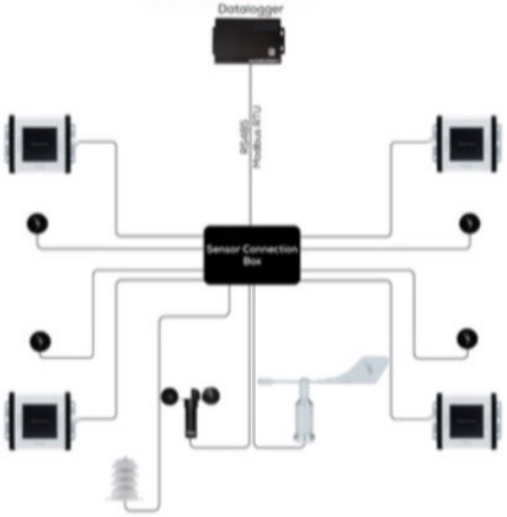
Following sensors can be connected to Irradiance Sensor; Module Temperature Sensor, Ambient Temperature Sensor, Wind Speed Sensor, Wind Direction Sensor, and Relative Humidity Sensor

Model: 3S-2IS



Two Irradiance Sensors, Two Module Temperature Sensors, Ambient Temperature Sensor, and Wind Speed Sensor can be connected. Special Solution when it's a dual orientation plant.

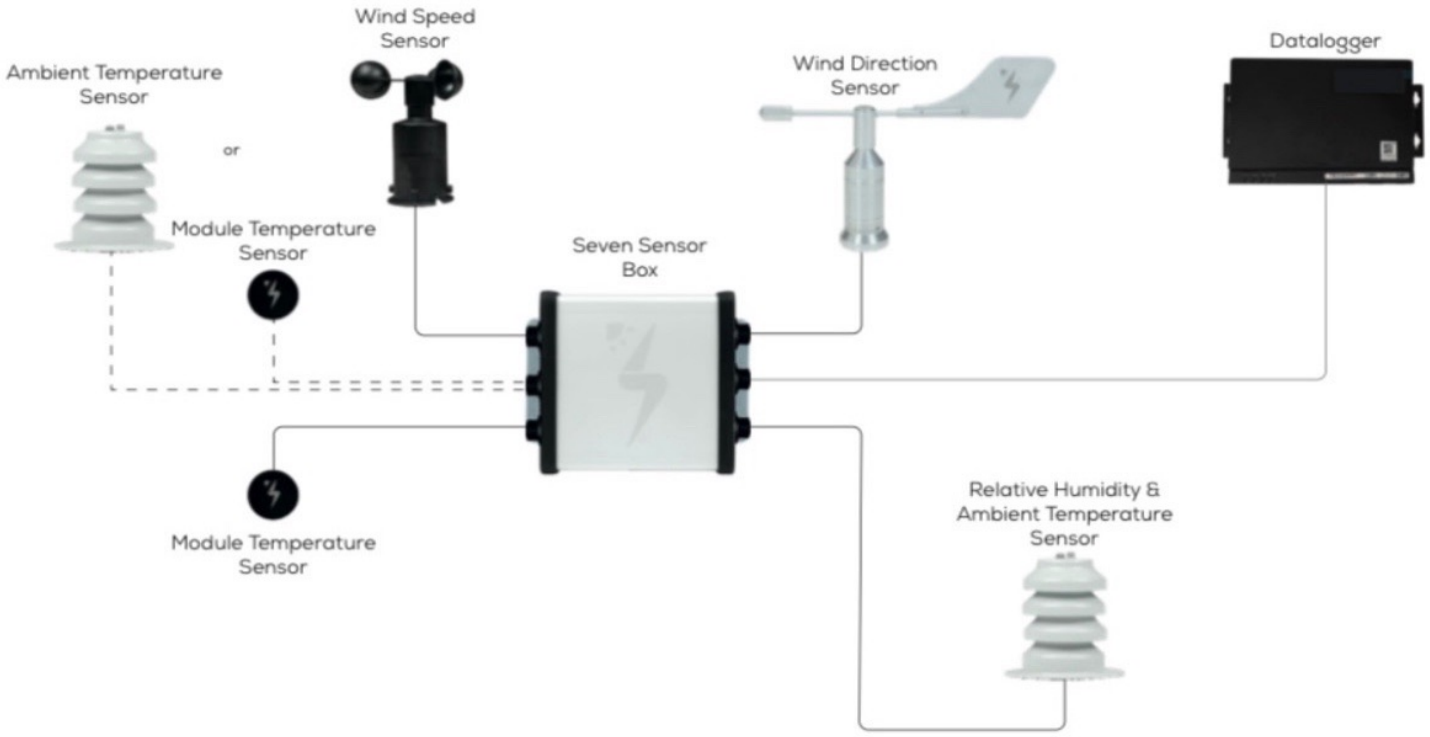
Model: 3S-4IS



4 Irradiance Sensors, 4 Module Temperature Sensors, Ambient Temperature Sensor, Wind Direction Sensor, and Wind Speed Sensor can be connected.

3S-C2

SELECTION OF SENSOR BOX



Model: 3S-C2-2

Sensor Box with two sensor connections

Model: 3S-C2-3

Sensor Box with three sensor connections

Model: 3S-C2-4

Sensor Box with four sensor connections

Model: 3S-C2-5

Sensor Box with five sensor connections

Technical Specifications
Modbus RTU

Common Modbus Register Map

SEVEN Modbus devices can be configured to operate in different communication parameters. The table that follows describes each supported bus protocol.

Baud Rate	4800, 9600, 19200, 38400
Parity	None, Even, Odd
Stop Bit	1, 2 (only at None parity)
Factory Default	9600 Baud, 8N1, address: 1

The following Modbus data can be read individually or in blocks:
Read carefully the notes at the bottom of the table about the parameters.
You can find which parameter is included in which sensors in the matching matrix after the table.

COMMON MODBUS REGISTER MAP				
ID-Dec	**ID-Hex**	**Parameter**	**Range**	**Resolution**
30000	0x00	Irradiance [1] Irradiance 1 [2]	0-1600 W/m²	0.1 W/m²
30001	0x01	Irradiance 2	0 - 1600 W/m²	0.1 W/m²
30002	0x02	Irradiance 3	0 - 1600 W/m²	0.1 W/m²
30003	0x03	Irradiance 4	0 - 1600 W/m²	0.1 W/m²
30006	0x06	Temperature Compensated Irradiance [3] Temperature Compensated Irradiance 1 [2]	0 - 1600 W/m²	0.1 W/m²
30007	0x07	Temperature Compensated Irradiance 2	0-1600 W/m²	0.1 W/m²
30008	0x08	Temperature Compensated Irradiance 3	0 - 1600 W/m²	0.1 W/m²
30009	0x09	Temperature Compensated Irradiance 4	0 - 1600 W/m²	0.1 W/m²
30012	0x0C	Irradiance [4] Temperature Compensated Irradiance [3] Total Effective Temperature Compansated Irradiance [5]	0 - 1600 W/m²	0.1 W/m²
30014	0x0E	Albedo	0-1	0.01
30015	0x0F	Internal Temperature [3] Internal Temperature 1 [2]	(-40) - (+85)°C	0.1°C
30016	0x10	Internal Temperature 2	(-40) - (+85) °C	0.1°C
30017	0x11	Internal Temperature 3	(-40) - (+85) °C	0.1°C
30018	0x12	Internal Temperature 4	(-40) - (+85) °	0.1°C
30021	0x15	Total Effective Module Temperature [5]	-40) - (+85) °C	0.1°C

COMMON MODBUS REGISTER MAP				
ID-Dec	ID-Hex	Parameter	Range	Resolution
30022	0x16	Module Temperature [3]	(-40) - (+85) °C	0.1°C
		Module Temperature 1 [5]		
		External Temperature 1 [7]		
30023	0x17	Module Temperature 2 [5]	(-40) - (+85) °C	0.1°C
		External Temperature 2 [7]		
30024	0x18	Module Temperature 3 [5]	(-40) - (+85)°C	0.1°C
		External Temperature 3 [7]		
30025	0x19	Module Temperature 4 [5]	(-40) - (+85) °C	0.1°C
		External Temperature 4 [7]		
30026	0x1A	External Temperature 5	(-40) - (+85) °C	0.1°C
30027	0x1B	External Temperature 6	(-40) - (+85) °C	0.1°C
30028	0x1C	External Temperature 7	(-40) - (+85) °C	0.1°C
30029	0x1D	Ambient Temperature [8]	(-40) - (+85) °C	0.1°C
		External Temperature 8 [7]		
30032	0x20	Ambient Temperature (SHT)	(-40) - (+85) °C	0.1°C
30033	0x21	Relative Humidity (SHT)	0 - 100 %	0.1 %
30035	0x23	Air Pressure	260 - 1260 hPa	0.1 hPa
30036	0x24	Rainfall Intensity (Hour)	0 - 900 mm/hr	mm/hr
30037	0x25	Rainfall Intensity (Minute)	0 - 15 mm/min	mm/min
30038	0x26	Rainfall Intensity (Second)	0 - 0.25 mm/sec	mm/sec

30042	0x2A	Instant Soiling Ratio	0 - 1	0.01
30043	0x2B	Daily Average Soiling Ratio	0 - 1	0.01
30044	0x2C	Instant Soiling Level	0 - 1	0.01
30045	0x2D	Daily Average Soiling Level	0 - 1	0.01
30046	0x2E	Instant Soiling Level Percentage	0 - 100 %	0.1 %
30047	0x2F	Daily Average Soiling Level Percentage	0 - 100 %	0.1 %
30048	0x30	Soiling Rate	(-100) - (+100) %	0.1 %
30050	0x32	Wash Tank Status	0 - 1	-
30052	0x34	Wind Direction	0 - 359°	1°
				0.1°
30053	0x35	Wind Speed (m/s)	0 - 40 m/s	0.1 m/s
			0 - 60 m/s	0.01 m/s
30054	0x36	Wind Speed (knots)	0 - 120 knots	0.01 knots
30055	0x37	Wind Speed (knots)	0 - 216 km/h	0.01 km/h

SunSpec Technical Specifications

Modbus Holding Registers Map

SEVEN Modbus devices can be configured to operate in different communication parameters. The table that follows describes each supported bus protocol.

Baud Rate	4800, 9600, 19200, 38400
Parity	None, Even, Odd
Stop Bit	1, 2 (only at None parity)
Factory Default	9600 Baud, 8N1, address: 1

The following Modbus data can be read individually or in blocks.
Seven Sensor Modbus Holding Register Map is created based on SunSpec modbus Register map:

Start	End	Value	Type	Units	Scale Factor	Constant
40000	40001	SunSpec ID	uint32	N/A	N/A	"SunS"
40002	40002	SunSpec Device ID	uint16	N/A	N/A	0x0001
40003	40003	SunSpec Length	uint16	Registers	N/A	65
40004	40019	Manufacturer	String (32)	N/A	N/A	"SevenSensor"
40020	40035	Model	String (32)	N/A	N/A	"3S-2IS"
40036	40043	Hardware Version	String (16)	N/A	N/A	"4.0"
40044	40051	Software Version	String (16)	N/A	N/A	"6.0"
40052	40067	Serial Number	String (32)	N/A	N/A	"24.12.345.65.0013"
40068	40068	Device ID	uint16	N/A	N/A	1
Sunspec Device Model Measurement Registers						
40069	40069	Block ID	uint16	N/A	N/A	307
40070	40070	Length	uint16	Registers	N/A	11
40071	40071	Air Temperature	int16	°C	0.1	Measured
40072	40072	Relative Humidity	int16	%	0	N/A
40073	40073	Barometric Pressure	int16	hPa	0	N/A
40074	40074	Wind Speed	int16	m/s	0.1	Measured
40075	40075	Wind Direction	int16	°	0	N/A
40076	40076	Rain Gauge (Hour)	int16	mm/hour	0	N/A
40077	40077	Snow	int16	inches	0	N/A
40078	40078	PPT Type	int16	inches	N/A	N/A
40079	40079	Electric Field	int16	V/m	0	N/A
40080	40080	Surface Wetness	int16	KOhms	0	N/A
40081	40081	Soil Moisture	int16	%	0	N/A

Irradiance Model Registers						
Start	End	Value	Type	Units	Scale Factor	Constant
40082	40082	Block ID	uint16	N/A	0	302
40083	40083	Length	uint16	Registers	0	5
40084	40084	Global Horizontal	uint16	W/m²	0.1	Measured
40085	40085	Plane of Array	uint16	W/m²	0.1	Measured
40086	40086	Diffuse Irradiance	uint16	W/m²	0	N/A
40087	40087	Direct Irradiance	uint16	W/m²	0	N/A
40088	40088	Total Effective Irradiance	uint16	W/m²	0	N/A
Back of Module Temperature Registes						
40089	40089	Block ID	int16	N/A	N/A	303
40090	40090	Length	int16	Registers	N/A	9
40091	40091	Total Effective Modul Tempe-rature	int16	°C	0.1	Measured
40092	40092	Modul Temp 1	int16	°C	0.1	Measured
40093	40093	Modul Temp 2	int16	°C	0.1	Measured
40094	40094	Modul Temp 3	int16	°C	0.1	Measured
40095	40095	Modul Temp 4	int16	°C	0.1	Measured
40096	40096	Modul Temp 5	int16	°C	0.1	Measured
40097	40097	Modul Temp 6	int16	°C	0.1	Measured
40098	40098	Modul Temp 7	int16	°C	0.1	Measured
40099	40099	Ambient Temp (SHT)	int16	°C	0.1	Measured
Device Model Measurement Registers						
40100	40100	Block ID	uint16	N/A	N/A	308
40101	40101	Length	uint16	Registers	N/A	5
40102	40102	Total Effective Irradiance	uint16	W/m²	0.1	Measured
40103	40103	Modul Temp1	int16	°C	0.1	Measured
40104	40104	Modul Temp2	int16	°C	0.1	Measured
40105	40105	Wind Speed	int16	m/s	0.1	Measured
40106	40106	Air Temperature	int16	°C	0.1	Measured

MODEL SELECTION TABLE

Sensor Model		Irradiance	Internal Cell Temperature	Connectable Sensors				
				Module Temperature 3S-MT-PT1000	Ambient Temperature 3S-AT-PT1000	Wind Speed 3S-WS-PLS	Wind Direction 3S-WD	Relative Humidity & Ambient Temperature 3S-RH&AT
3S-IS-LR		1						
3S-IS-T-I		1	1					
3S-IS-T-V		1	1					
3S-IS		1	1					
3S-IS-1	3S-IS-1-MT	1	1	1				
	3S-IS-1-AT	1	1		1			
3S-IS-2	3S-IS-2-MT	1	1	1		1		
	3S-IS-2-AT	1	1		1	1		
3S-IS-2T		1	1	1	1			
3S-IS-3		1	1	1	1	1		
3S-IS-4	3S-IS-4-WD	1	1	1	1	1	1	
	3S-IS-4-WD/AT-MT	1	1	1	1		1	
	3S-IS-4-WD/MT-WS	1	1	1		1	1	
	3S-IS-4-WD/AT-WS	1	1		1	1	1	
	3S-IS-4-WD/WS	1	1			1	1	
	3S-IS-4-WD/MT	1	1	1			1	
	3S-IS-4-WD/AT	1	1		1		1	
	3S-IS-4-WD/	1	1				1	
	3S-IS-4-RH	1	1	1		1		1
	3S-IS-4-RH/MT-WS	1	1	1		1		1
	3S-IS-4-RH/WS	1	1			1		1
	3S-IS-4-RH/MT	1	1	1				1
	3S-IS-4-RH/	1	1					1
3S-IS-5	3S-IS-5	1	1	1		1	1	1
	3S-IS-5/RH-WD	1	1				1	1
	3S-IS-5/WS	1	1			1	1	1
	3S-IS-5/MT	1	1	1			1	1
	3S-IS-5/MT-WS	1	1	1		1	1	1
3S-2IS		2	2	2	1	1		
3S-3IS		3	3	3	1	1	1	
3S-4IS		4	4	4	1	1	1	

Mounting Structure

1.Rooftop

2.Sandwich Panel

3.Ground Mount

4.Single AxisTracker 1P

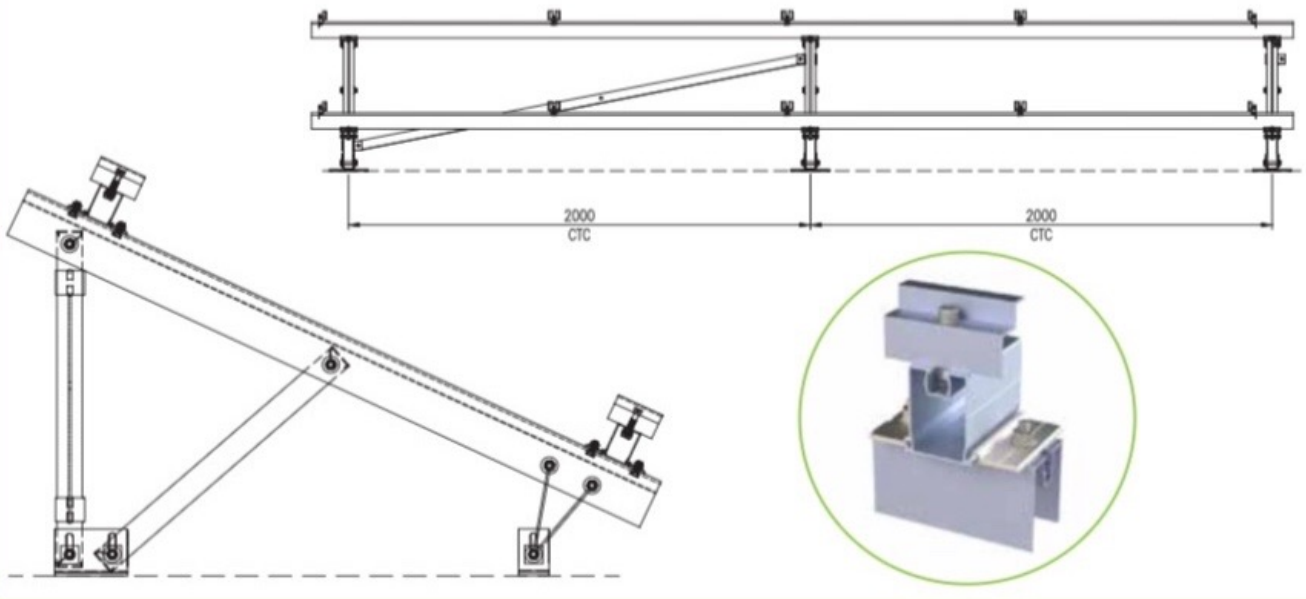
PSI OMEGA

Rooftop

Single Portrait Mounting Systems - Elevated Ballast

System Arrangement

- This mounting system can be designed and installed as per the available Roof Top area.
- For large scale projects customization of tables could be done.
- The Aluminum grade used is AA 6063 T6 with Silver Matt Anodising up to 15 - 18 microns.
- The fastners are used as per CLASS A2 - 70
- The Inclination / Tilt angle depends on the latitude.
- The distance between the horizontal purlins will be according to the panel dimensions.
- TUV Certified Mounting Systems.



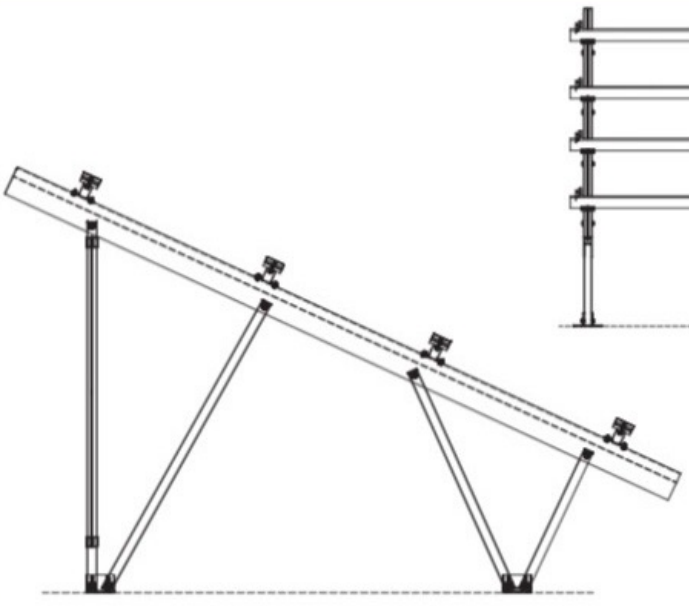
SOLAR PHOTOVOLTAIC MOUNTING SYSTEM

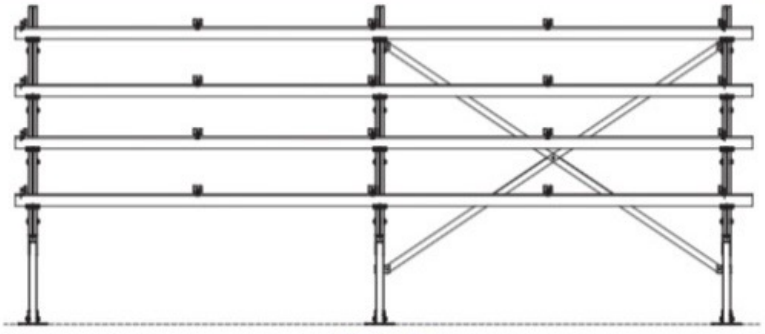
PSI CORONA

Double Portrait Mounting Systems - Elevated Ballast

System Arrangement

- This mounting system can be designed and installed as per the available Roof Top area.
- For large scale projects customization of tables could be done.
- The Aluminum grade used is AA 6063 T6 with Silver Matt Anodising up to 15 - 18 microns.
- The fastners are used as per CLASS A2 - 70
- The Inclination / Tilt angle depends on the latitude.
- The distance between the horizontal purlins will be according to the panel dimensions.
- TUV Certified Mounting Systems.

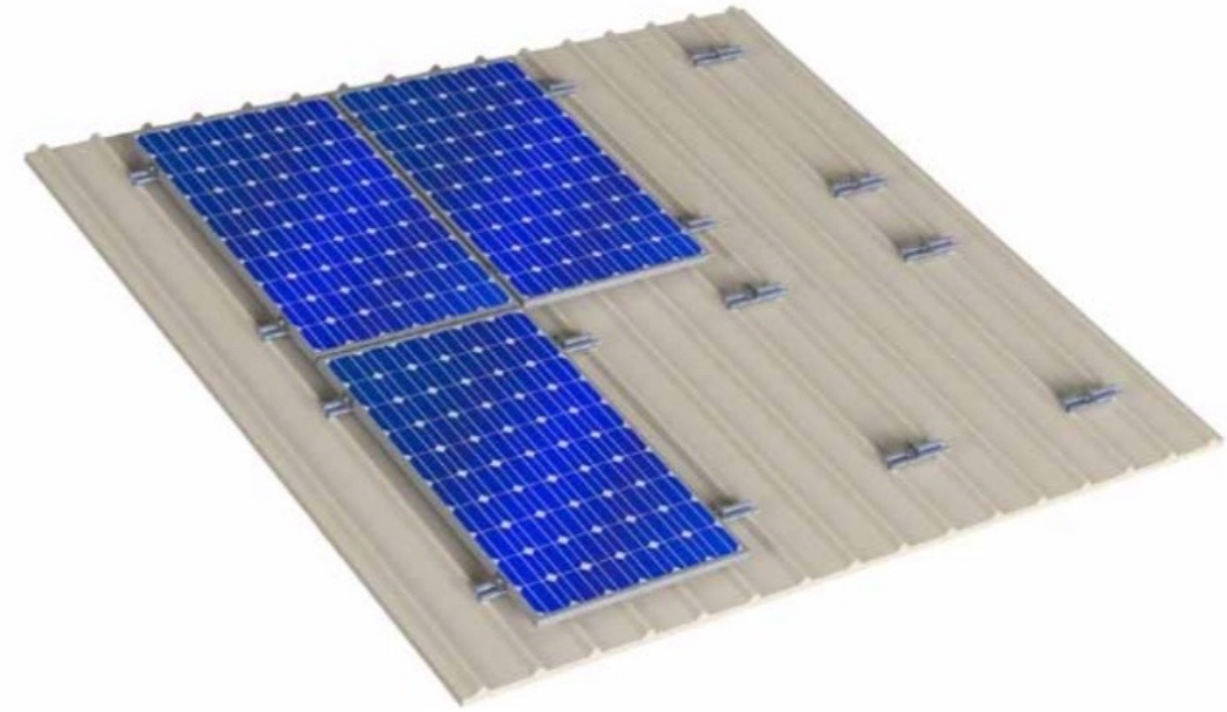




PSI ASTRO

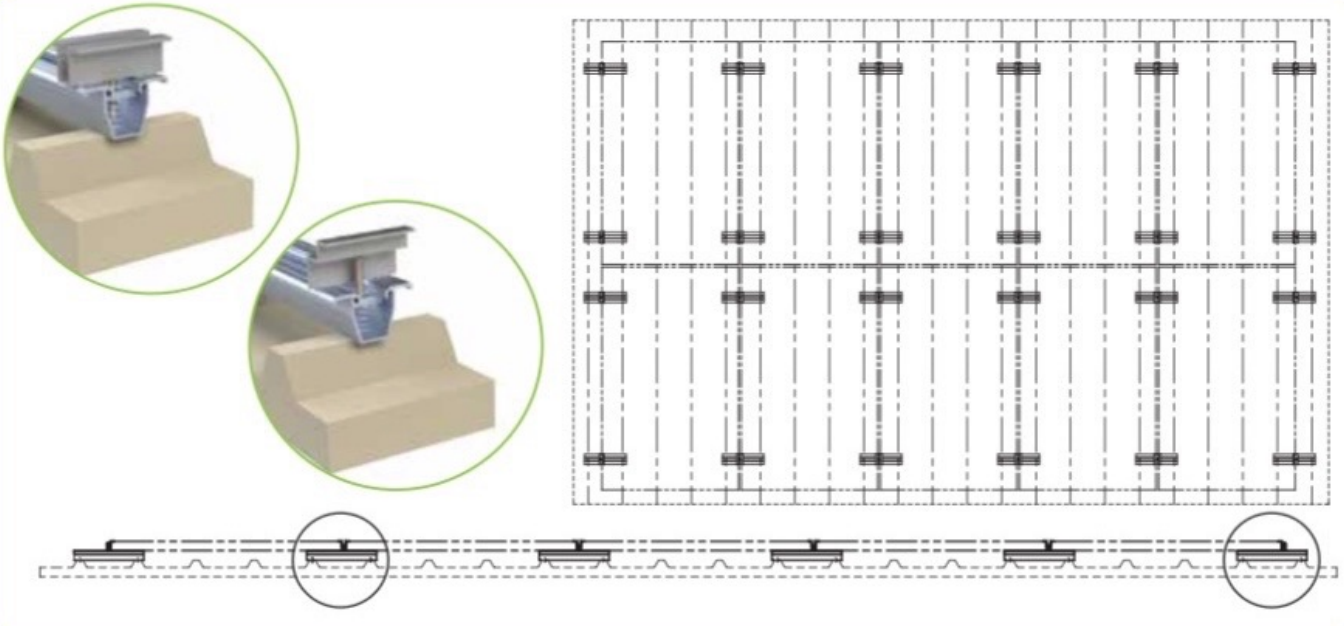
Sandwich Panel

ECO Portrait System



System Arrangement

- This mounting system can be designed and installed parallel to the Roof Top.
- For large scale projects customization of tables could be done.
- The Aluminum grade used is AA 6063 T6 with Silver Matt Anodising up to 15 - 18 microns.
- The fastners are used as per CLASS A2 - 70.
- The Vertical distance is defined by the module dimensions of the Solar PV System.
- The Horizontal distance is defined by the type of the corrugated metal sheet and the type of the panel.
- This is a economical solution ideal for rapid installation on Portrait Orientation.
- TUV Certified Mounting Systems.



SOLAR PHOTOVOLTAIC MOUNTING SYSTEM

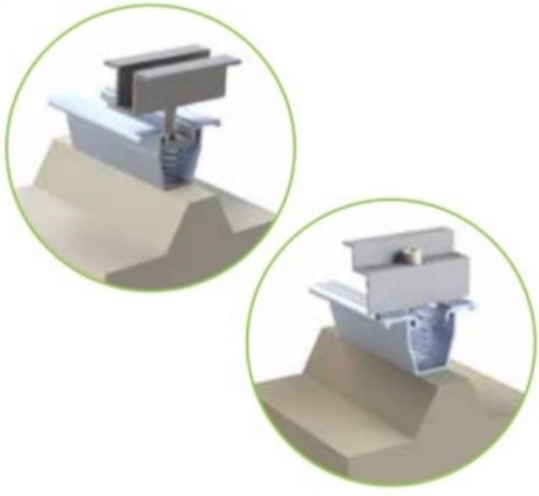
PSI ASTRO

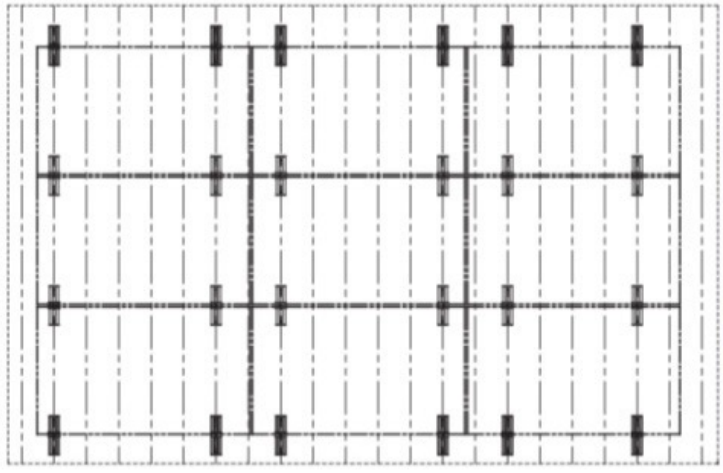
Sandwich Panel

ECO Landscape System

System Arrangement

- This mounting system can be designed and installed parallel to the Roof Top.
- For large scale projects customization of tables could be done.
- The Aluminum grade used is AA 6063 T6 with Silver Matt Anodising up to 15 - 18 microns.
- The fastners are used as per CLASS A2 - 70.
- The Vertical distance is defined by the module dimensions of the Solar PV System.
- The Horizontal distance is defined by the type of the corrugated metal sheet and the type of the panel.
- This is a economical solution ideal for rapid installation on Landscape Orientation.
- TUV Certified Mounting Systems.





INDUSTRIAL ROOF MOUNTED SYSTEMS

Profile Details & System Advantages

The above structures are ideal for Roof Top installations.

They are simple to assemble and provide high resistance to wind loads according to Euro Codes 1, 3, 8 and 9 and Dubai Municipality Seismic Design Loads.

Advantages:

- Simple Structure – Easy to install
- High Stability
- Economical Solution
- Quick Installation
- Easy alignment
- Provision of EPDM Sheet and Sealant ensures leak proof system
- The System can be relocated
- TUV Certified Systems

V RAIL

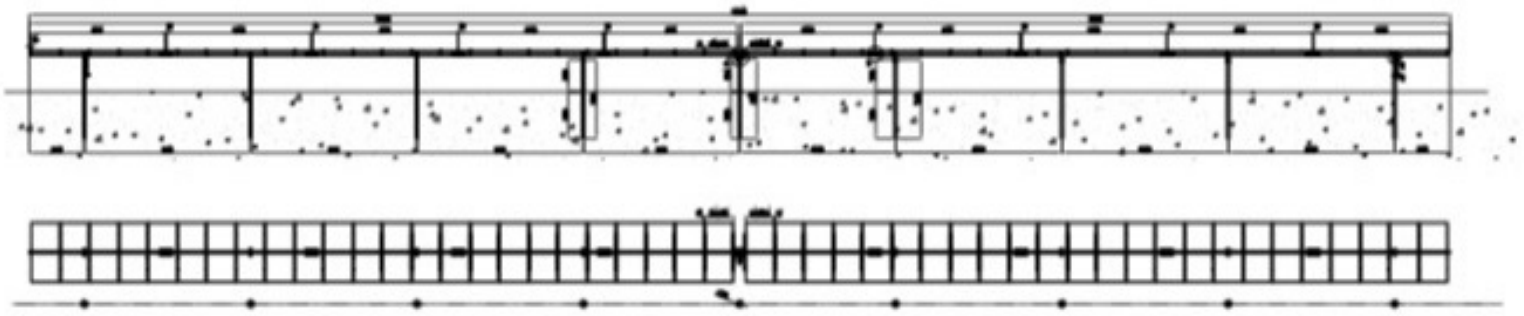
PURLIN

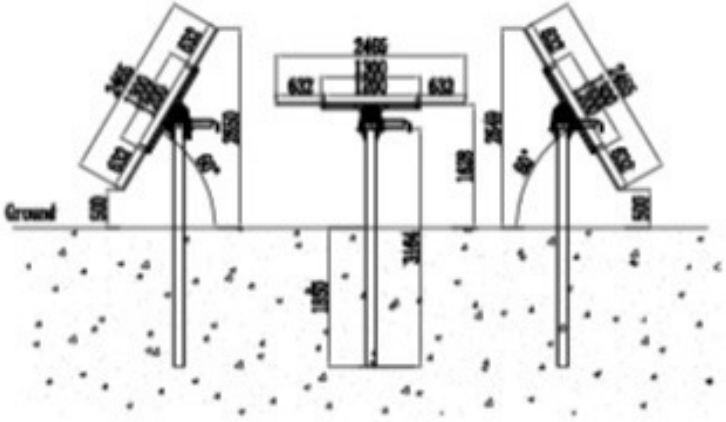
PURLIN

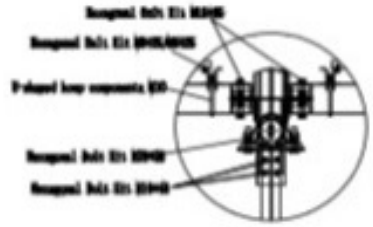
PURLIN JOINT

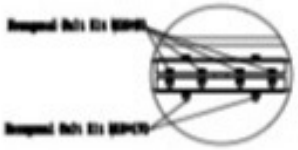
This drawing is valid only if with corresponding edition stamp

Single Axis Tracker 1P









Iten Code	PJ-241014-03	Panel	2465*1134*30	Power	630W	Angle	±60°	Design	Chk'D	Appv'D	Do Not Scale Drawing
Proj. Name	3HW Traking Systen	Wind Speed	44.4 m/s	Snow Load	0 KN/M²	Layout	1*48				View Scale 1:1
		Terrain Categories		Design Code	BS63999						Date 2024-11-01 Ver. V02

Cables

1.Telecomunication

2.AC Cable

3.DC Cable

D-Link®
Building Networks for People

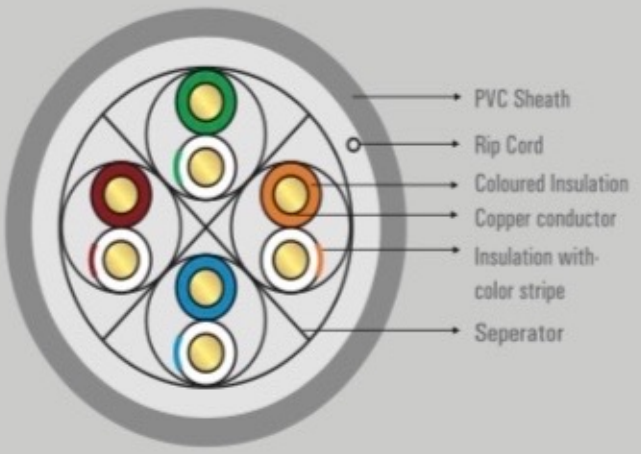
CAT 6 UTP CABLES

APPLICATION

Enhanced performance cable for transmission of high speed data, digital and analogue voice and video (RGB) signals on LANs. Supports Gigabit Ethernet (1000 baseT) standard. Performance verified up to 600 Mhz

This cable well exceeds the requirements of ANSI/TIA-568-C.2 category6 ISO 11801 Class E

Approval : UL Listed & ETL Verified



CONSTRUCTION

Conductor:	23 AWG Solid bare Copper (4 pair)
Insulation:	High Density Polyethylene
Pairs:	2 Insulated conductors twisted together
Sheath:	FR-PVC Insulation thickness 0.2mm nominal
Cable Diameter:	6.1 mm nominal
Cable wt per Box:	13.6 Kgs nominal
Printing:	Each meter printed with sequential Length Counter

ELECTRICAL PROPERTIES

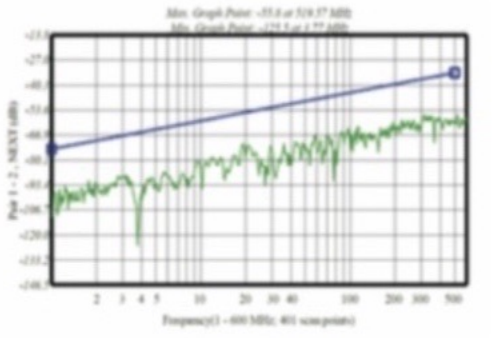
Characteristic Impedance:	100 ± 15Ω
Conductor Resistance:	≤ 9.38 Ω /100m
Insulation Resistance:	100M Ω
Mutual Capacitance:	< 5.6nF/100m
Resistance Unbalance:	5% Max
Capacitance Unbalance:	330pF/100m
Delay Skew:	< 45nS
NVP (%):	69%
Operating Voltage:	72V
Dielectric Strength:	1.0KV dc or 0.75KV ac for 1min

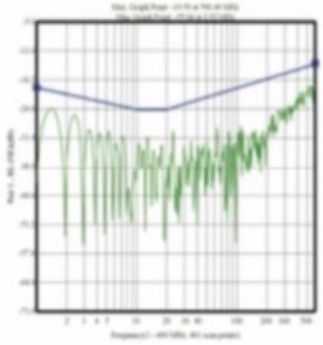
COLOR CODE

PAIR NO	COLOR
1-2	White-Orange Stripe and Orange
4-5	White-Blue Stripe and Blue
3-6	White-Green Stripe and Green
7-8	White-Brown Stripe and Brown

TRANSMISSION CHARACTERISTICS PER 100M

Frequency MHz	Insertion Loss (dB/100m)	RL (dB)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	PSACR (dB)
1	2.0	20.0	74.3	72.3	67.8	64.8	72.3	70.3
4	3.8	23.0	65.3	63.3	55.8	52.8	61.5	59.5
8	5.3	24.5	60.8	58.8	49.7	46.7	55.5	53.5
10	6.0	25.0	59.3	57.3	47.8	44.8	53.3	51.3
16	7.6	25.0	56.2	54.2	43.7	40.7	48.6	46.6
20	8.5	25.0	54.8	52.8	41.8	38.8	46.3	44.3
25	9.5	24.3	53.3	51.3	39.8	36.8	43.8	41.8
31.25	10.7	23.6	51.9	49.9	37.9	34.9	41.2	39.2
62.5	15.4	21.5	47.4	45.4	31.9	28.9	32.0	30.0
100	19.8	20.1	44.3	42.3	27.8	24.8	24.5	22.5
200	29.0	18.0	39.8	37.8	21.8	18.8	10.8	8.8
250	32.8	17.3	38.3	36.3	19.8	16.8	5.5	3.5
500	45.3	15.2	33.8	31.8	13.8	10.8	4.5	2.8
600	51	14.5	31.2	29.9	11.8	8.6	3.5	2.1





MECHANICAL PROPERTIES

Bending Radius: < 25.4mm at –20°C ± 1°C

Pulling Force: 11.5 Kg

Operating Temperature Range: –20°C to +70°C

Storage Temperature Range: 0°C to +50°C

CONNECTION SYSTEM

Compatible with all common systems according to TIA/EIA 568-C.2 and ISO/IEC 11801 Class E

PACKING

Reels of guaranteed 305m Length

ORDERING INFORMATION

Part Code	Description
NCB-C6UGRYR-100	CAT6 UTP 24AWG Solid: 100M
NCB-C6UGRYR-305	CAT6 UTP 23AWG Solid: 305M

Solar cable H1Z2Z2-K

Advantages

- EN50618 approval
- Double insulated Electron-beam cross-linked compounds
- UV, ozone and hydrolysis resistant
- Halogen free, flame retardant
- Flexible, easy to strip
- Compatible to all connectors
- Meter marking – easy installation

Applications

- Double insulated, electron-beam cross-linked cables for photovoltaic power applications.

Construction

- Conductor — Tinned fine copper strands acc. to VDE 0295 / IEC 60228, Class 5
- Insulation — XLPO, flame retardant, halogen free, electron-beam cross-linked
- Jacket — XLPO, flame retardant, halogen free, electron-beam cross-linked
- Insulation color — black
  Jacket color — black or red

Mechanical feature

- Bending radius 4 x outer diameters
- Temperature range -40 °C to +90 °C, Max. temp. at conductor +120 °C
- Short circuit temperature 250°C for 5 s
- Flame-resistant test acc. to EN 60332-1-2
- Anticipated service life 25 years

Electrical characteristics

- Rated voltage DC 1500 V
  AC U_0/U: 1.0/1.0 kV
- max. permitted voltage U_0 1800 V DC
- Insulation resistance 1000MΩ/KM
- Test Voltage (AC) AC 6.5kV, 50Hz, 5 min

Cross section nxmm²	Conductor Ø mm	Outer Ø mm	Current-carrying capacity [A] at 60°C	Conductor resistance kΩ / km at 20°C	Weight app. kg / km	Cable Code
1x1.5	1.5	4.3	30	13.7	30	PV302515
1x2.5	2.0	5.2	42	8.21	42	PV502525
1x4.0	2.5	5.5	55	5.09	55	PV562940
1x6.0	3.3	6.3	70	3.39	68	PV842960
1x10.0	4.3	7.8	98	1.95	98	PV142301
1x16.0	5.3	9.2	132	1.24	132	PV228301
1x25.0	6.6	11.3	176	0.795	176	PV361302
1x35.0	7.8	13.3	218	0.565	218	PV525303
1x50.0	9.3	14.8	280	0.393	280	PV720305
1x70.0	11.4	16.9	350	0.277	350	PV988307
1x95.0	12.8	18.7	410	0.210	410	PV134930
1x120.0	14.6	20.7	480	0.164	480	PV169130

Dimensions and specifications may be changed without prior notice.

Solar cable twin-core

Advantages

- TÜV approval, PV1-F 2 PfG 1169
- Double insulated Electron-beam cross-linked compounds
- UV, ozone and hydrolysis resistant
- Halogen free, flame retardant
- Flexible, easy to strip
- Compatible to all connectors
- Meter marking – easy installation

Applications

- Double insulated, electron-beam cross-linked cables for photovoltaic power applications.

Construction

- Conductor: Tinned fine copper strands acc. to VDE 0295 / IEC 60228, Class 5
- Insulation: XLPO, flame retardant, halogen free, electron-beam cross-linked
- Jacket: XLPO, flame retardant, halogen free, electron-beam cross-linked
- Insulation color: black and red
  Jacket color: black with red strip

Mechanical feature

- Bending radius: 4 x Ø outer diameters
- Temperature range: -40 °C to +90 °C, Max. temp. at conductor +120 °C
- Short circuit temperature: 250°C for 5 s
- Flame-resistant test: acc. to EN 60332-1-2
- Anticipated service life: 25 years

Electrical characteristics

- Rated voltage: DC 1.5kV
  AC U_0/U: 0.6/1.0 kV
- max. permitted voltage: U_0 1800 V DC
- Insulation resistance: 1000MΩ/KM
- Test Voltage (AC): AC 6.5kV, 50Hz, 5 min

Cross section nxmm²	Conductor Ø mm	Outer Ø mm	Current-carrying capacity [A] at 60°C	Conductor resistance kΩ / km at 20°C	Weight app. kg / km	Cable Code
2x1.5	1.5	4.3x8.8	30	13.7	30	PV2F3025
2x2.5	2.0	5.2x10.6	42	8.21	42	PV2F5025
2x4.0	2.5	5.5x11.2	55	5.09	55	PV2F5629
2x6.0	3.3	6.3x12.8	70	3.39	68	PV2F8429
2x10.0	4.3	7.8x15.8	98	1.95	98	PV2F1423
2x16.0	5.3	9.2x18.6	132	1.24	132	PV2F2283
2x25.0	6.6	11.3x22.8	176	0.795	176	PV2F3613
2x35.0	7.8	13.3x26.8	218	0.565	218	PV2F5253
2x50.0	9.3	14.8x29.8	280	0.393	280	PV2F7203
2x70.0	11.4	16.9x34.0	350	0.277	350	PV2F9883

Dimensions and specifications may be changed without prior notice.

CU/XLPE/STA/PVC LV

APPLICATIONS

- For laying in doors, in tunnels, cable trench, or direct in ground, able to bear external mechanica force, but unable to bear large pulling force.

CONSTRUCTION

- Conductor: Plain annealed stranded circular (rm) or sector shaped (sm) copper conductor IEC 60228, Class 2
  Insulation: PVC/XLPE
  Armour: Non-magnetic steel-tape
  Jacket:PVC (Polyvinyl Chloride)
  Jacket Color:
  2 core: ■Blue, ■Brown
  3 core: ■Black, ■Brown, ■Grey
  4 core: ■Black, ■Brown, ■Grey, ■Blue

TECHNICAL CHARACTERISTICS

- Voltage Rating: Uo/U 0.6/1KV
  Test Voltage: 4kv
- Max. Short circuit temperature: 90°C
- Short circuit temperature: 250°C for 5 s
- Standards: BS 5467, IEC 60502-1
- Temperature range: -35 °C to +90 °C
- Bending Radius: 12×D (overall diameter)
- Flame retardant: IEC 60332-1-2

CU/XLPE/STA/PVC LV

Nom Cross Section Area	Conductor diameter	Insulation thickness	Sheath thickness	Aprox. arall diameter of cable	Aprox.weight of cable	Max.DC Resistance at 20°C
mm^2	mm	mm	mm	mm	kg / km	Ω / km
4x1.5	1.38	0.7	1.8	12.9	241	12.1
4x2.5	1.78	0.7	1.8	13.9	299	7.41
4x4	2.25	0.7	1.8	15.0	377	4.61
4x6	2.76	0.7	1.8	16.3	480	3.08
4x10	4.10	0.7	1.8	19.4	690	1.83
4x16	5.1	0.7	1.8	21.9	964	1.15
4x25	6.4	0.9	1.8	26.1	1,424	0.727
4x35	7.6	0.9	1.8	28.9	1,851	0.524
4x50	7.5	1.0	1.9	30.0	2,512	0.387
4x70	8.6	1.1	2.0	35.3	3,443	0.268
4x95	10.8	1.1	2.1	39.3	4,511	0.193
4x120	12.9	1.2	2.3	46.2	5,848	0.153
4x150	14.5	1.4	2.4	51.3	7,226	0.124
4x185	16.0	1.6	2.6	56.3	8,548	0.0991
4x240	18.3	1.7	2.8	62.5	10,882	0.0754
4x300	20.5	1.8	3.0	68.9	13,679	0.0601
4x400	23.5	2.0	3.3	77.8	17,512	0.0470

HIGH PURITY CU/AL CONDUCTOR

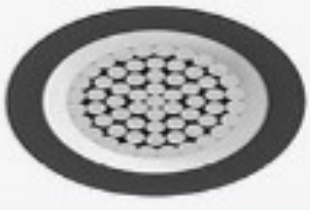
Copper or aluminium stranded (type 2) conductors according to IEC 60228 for high electrical conductivity

FLAME RETARDANT PVC JACKET

Provided with flame retardant PVC jacket to pass flame propagation test to IEC 60332-1

PRODUCT CATEGORIES

UNARMOURED LV POWER CABLE



AL/XLPE/PVC

CU/XLPE/PVC

AL/XLPE/SWA/PVC

CU/XLPE/PVC

ARMOURED LV POWER CABLE

AL/XLPE/SWA/PVC

CU/XLPE/SWA/PVC

AL/XLPE/STA/PVC

CU/XLPE/STA/PVC

Connector

1.MC4

2.Cable accessories

MC4 Connector Datasheet

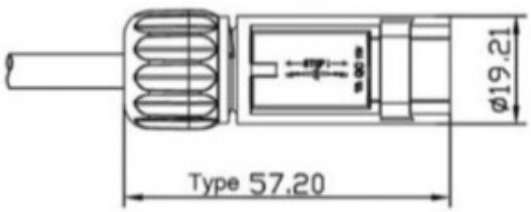
BPE MC4 connectors are your ideal and safest connectors to use when installing Solar PV systems. Rated at 1500V DC and IP65, our MC4 connectors are high quality and durable connectors that are designed to handle the harsh conditions of outdoor installations.

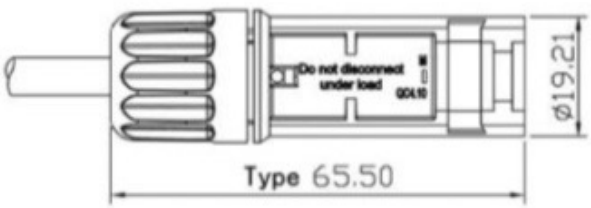
Main Benefits

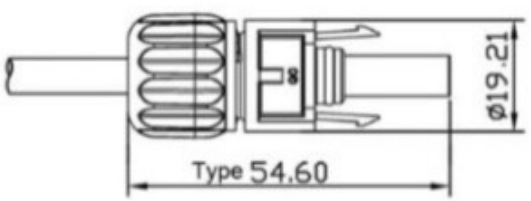
» Rated for 1500V DC
» IP65
» Safe and secure connectors
» 20 connectors per box
» Pack includes male and female MC4 connector, 20 packs per box

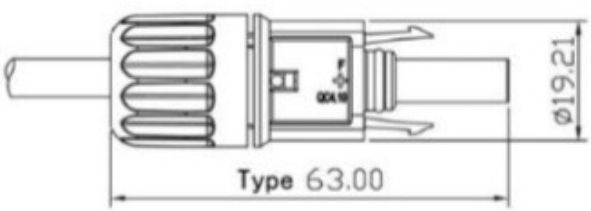
Technical Specifications

Item	MC4 10-cd
Rated Voltage	IEC1500V&UL1500V
Rated Current	36A, 41A, 46A
Size of Cables	2.5mm², 4.00mm², 6.00mm²/14AWG, 12AWG, 10AWG
Match Connector	MC4, H4
Protection Class	II
Temperature Range	-40°C ~ +85°C
Contact Resistance	<5mΩ
Protection Degree	IP68
Flammability Class	5VA









CABLE GLANDS & LUGS

- E1W glands
- CW cable glands
- BW cable glands
- PVC cable glands
- A1A2 cable glands
- Bimetallic cable lugs
- Metallic cable glands
- Explosion Proof Glands
- Tinned copper cable lugs
- Insulated cable lugs Pin type
- Insulated cable lugs fork type
- Insulated cable lugs ring type
- Insulated cable lugs blade type

STD & CERTIFICATIONS

BS 6121
EN 50262
IP66
SIRA, ROK, ABS,
Lloyds, DNV GOST

GLAND

Operating Temperature
- 60°Cto+150°C

Materials

Glands Bodies, Caps & Rings
- Brass/Nylon

Seals
- Nitrile rubber

Shrouds/Sleeves
- Black Poly Vinyl Chloride (PVC). LSF

Earth Tag
- Natural Brass

Locknut
- Natural Brass/Galv. finish
- Natural Brass / Nickel Plated

Entry Thread
- METRIC / PG

LUGS
- Resistance up to +125 º C

The purpose of a Cable Gland, also known as a cable connector or fitting, is to fasten and secure the end of a cable to the equipment. A Cable Gland offers strain relief.

All Single Wire Armor (SWA) cable types can employ the BW(indoor) or CW(outdoor) type brass indoor cable gland, which offers mechanical cable retention and electrical continuity via armour wire termination. BW and CW line of industrial cable glands is made of brass grade CuZn39Pb3 (CW614N) and is designed and tested to BS6121:2005.

Tinned Copper crimping terminals are designed and manufactured to provide electrical connections utilizing high conductive copper.

The connectors withstand a wide range of electrical and environmental conditions, including current surges, high temperatures, corrosion resistance and vibrations. Connectors are tinplated to provide durable long-lasting corrosion resistance

TECHNICAL SUPPORT

PROJECT SCHEDULE DEPENDANT PACKAGES

DELIVERED TO SITE

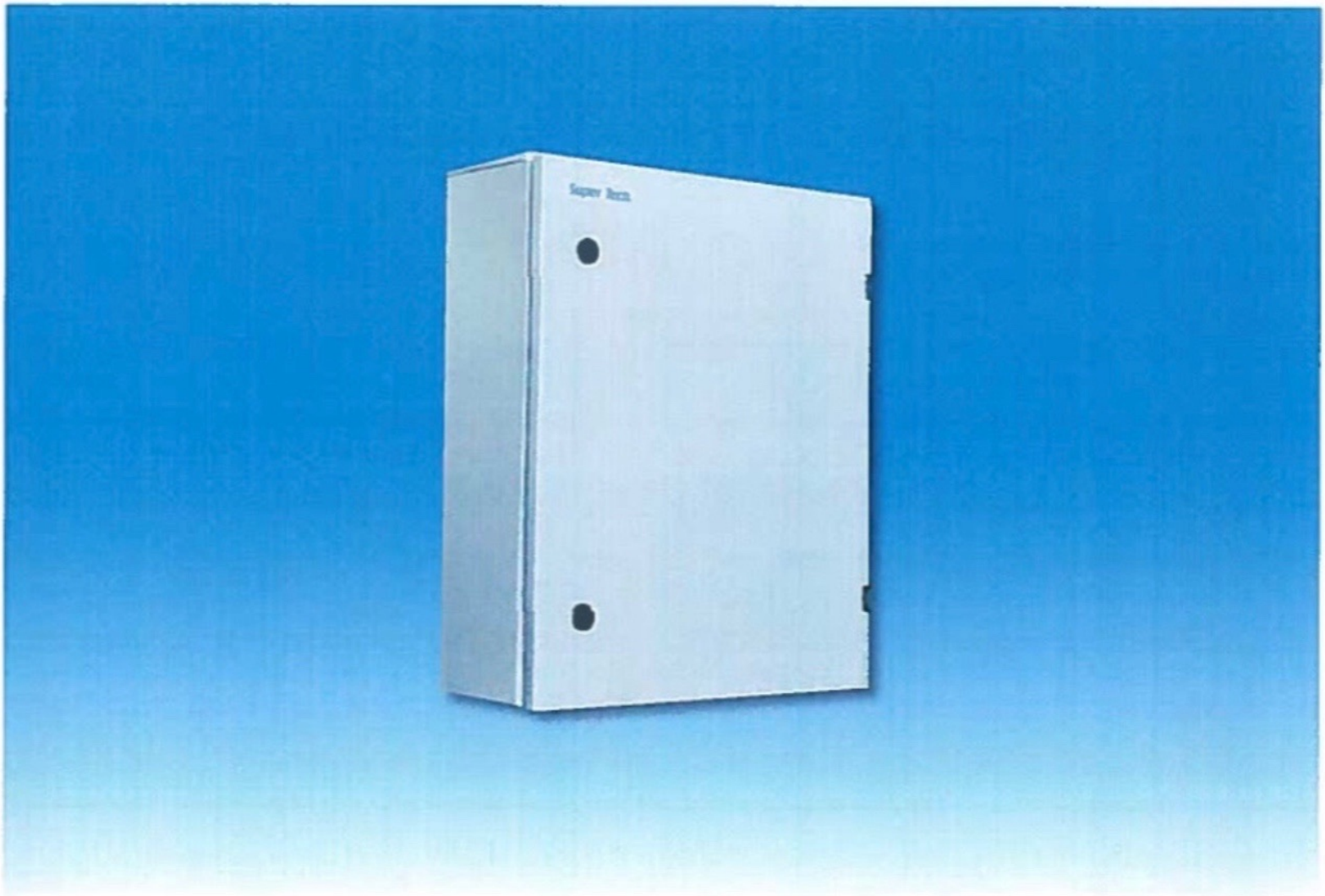
CUSTOM SOLUTIONS

EXTENDED WARRANTY

 BW Cable Gland	 CW Cable Gland	 A1 / A2 Cable Gland
 E1W Cable Gland	 Crimping Type Copper Tubular Cable Terminal Ends	 PG Glands
 Aluminium Cable Glands	 Nickle Plated Brass Gland - IP68	 Copper Pin Type Cable Terminal

Switchgear Panel

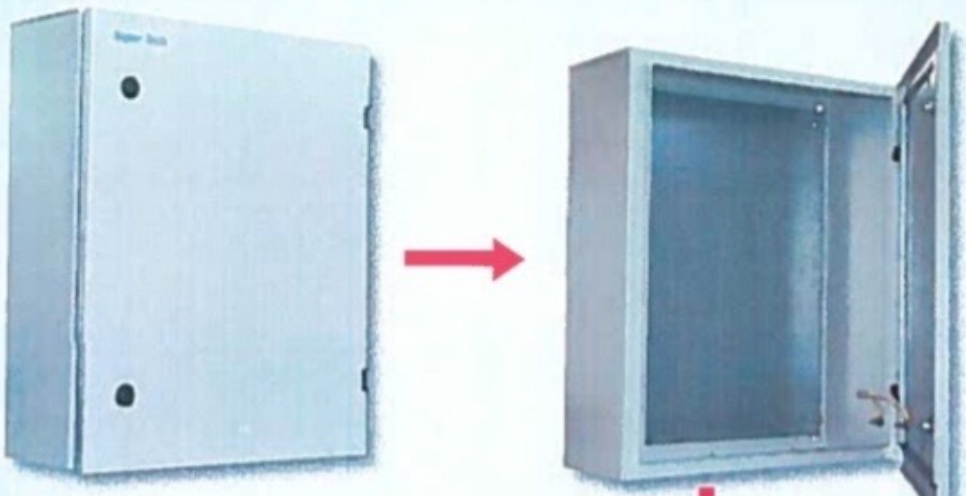
Wall Mounting Steel Enclosures

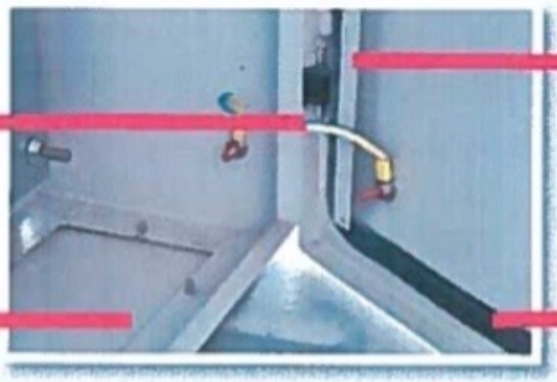


ARNI ENERGY

EMPOWERING THE FUTURE WITH INTELLIGENCE

Wall Mounting Steel Enclosures





Door Reinforcement Frame Available upon Request

Earthing Between Body & Door by means of M6 x 15 Welded Studs. Screwed Hinges Easily Removable Allowing Changing of Door Opening Direction

Detail of Recessed Cable Gland Plate Ensuring a Flat Surface

Polyurethane Foamed Gasket Ensuring Full Water Tightnesses

Application

- Designed to enclose electrical and electronic equipment and protect against harsh industrial environments
- For use as instrument enclosures, electric, hydraulic or pneumatic control housings, electrical junction boxes or terminal wiring enclosures.
- Impressive styling features make the enclosure a suitable addition to any high-tech equipment installation.

Finish

Standard cycle epoxy polyester powder finish.
Body & doors RAL 7032 textured finish.
Mounting plate in RAL 2004 smooth finish.

Construction

- Body and cover are formed from 1.2mm mild steel. Mounting plate in sheet steel or galvanized steel
- Continuously hinged cover has steel hinges and provides 120° opening.

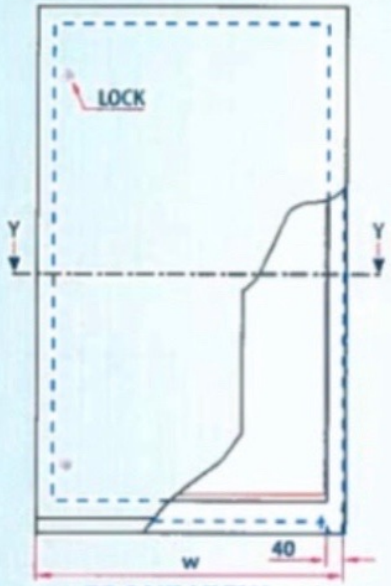
Protection Degree

Complies with IEC 60529 & NEMA4, 12
IP65

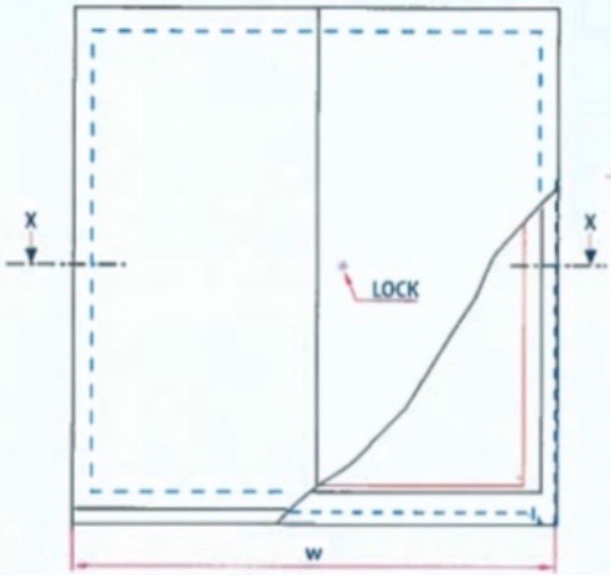
Model	H	W	D	Thickness		
	mm	mm	mm	Door/mm	Body/mm	M.P/mm
STECH2215	200	200	150	1	1	1.5
STECH2515	250	200	150	1	1	1.5
STECH2315	300	200	150	1	1	1.5
STECH2320	300	200	200	1	1	1.5
STECH25315	300	250	150	1	1	1.5
STECH25320	300	250	200	1	1	1.5
STECH25325	300	250	250	1	1	1.5
STECH3315	300	300	150	1	1	1.5
STECH3320	300	300	200	1	1	1.5
STECH3325	300	300	250	1	1	1.5
STECH3415	400	300	150	1	1	1.5
STECH3420	400	300	200	1	1	1.5
STECH3425	400	300	250	1	1	1.5
STECH3430	400	300	300	1	1	1.5
STECH4415	400	400	150	1	1	1.5
STECH4420	400	400	200	1	1	1.5
STECH4425	400	400	250	1	1	1.5
STECH4430	400	400	300	1	1	1.5
STECH3515	500	300	150	1.2	1.2	1.5
STECH3520	500	300	200	1.2	1.2	1.5
STECH3525	500	300	250	1.2	1.2	1.5
STECH3530	500	300	300	1.2	1.2	1.5
STECH4515	500	400	150	1.2	1.2	1.5
STECH4520	500	400	200	1.2	1.2	1.5
STECH4525	500	400	250	1.2	1.2	1.5
STECH4530	500	400	300	1.2	1.2	1.5
STECH5515	500	500	150	1.2	1.2	1.5
STECH5520	500	500	200	1.2	1.2	1.5
STECH5525	500	500	250	1.2	1.2	1.5
STECH5530	500	500	300	1.2	1.2	1.5
STECH4615	600	400	150	1.2	1.2	1.5
STECH4620	600	400	200	1.2	1.2	1.5
STECH4625	600	400	250	1.2	1.2	1.5
STECH4630	600	400	300	1.2	1.2	1.5
STECH5615	600	500	150	1.2	1.2	1.5
STECH5620	600	500	200	1.2	1.2	1.5
STECH5625	600	500	250	1.2	1.2	1.5
STECH5630	600	500	300	1.2	1.2	1.5
STECH6615	600	600	150	1.2	1.2	2
STECH6620	600	600	200	1.2	1.2	2
STECH6625	600	600	250	1.2	1.2	2

Model	H	W	D	Thickness		
	mm	mm	mm	Door/mm	Body/mm	M.P/mm
STECH6630	600	600	300	1.2	1.2	2
STECH4720	700	400	200	1.2	1.2	2
STECH4730	700	400	300	1.2	1.2	2
STECH5715	700	500	150	1.2	1.2	2
STECH5720	700	500	200	1.2	1.2	2
STECH5725	700	500	250	1.2	1.2	2
STECH5730	700	500	300	1.2	1.2	2
STECH6720	700	600	200	1.2	1.2	2
STECH6725	700	600	250	1.2	1.2	2
STECH6730	700	600	300	1.2	1.2	2
STECH6820	800	600	200	1.2	1.2	2
STECH6825	800	600	250	1.2	1.2	2
STECH6830	800	600	300	1.2	1.2	2
STECH6840	800	600	400	1.2	1.2	2
STECH8820	800	800	200	1.2	1.2	2
STECH8825	800	800	250	1.2	1.2	2
STECH8830	800	800	300	1.2	1.2	2
STECH6 1020	1,000	600	200	1.2	1.2	2
STECH6 1025	1,000	600	250	1.2	1.2	2
STECH6 1030	1,000	600	300	1.2	1.2	2
STECH7 1020	1,000	700	200	1.2	1.2	2
STECH8 1020	1,000	800	200	1.2	1.2	2
STECH8 1025	1,000	800	250	1.2	1.2	2
STECH8 1030	1,000	800	300	1.2	1.2	2
STECH8 1040	1,000	800	400	1.2	1.2	2
STECH10 1025	1,000	1,000	250	1.2	1.2	2
STECH10 1030	1,000	1,000	300	1.2	1.2	2
STECH6 1220	1,200	600	200	1.2	1.2	2
STECH6 1225	1,200	600	250	1.2	1.2	2
STECH6 1230	1,200	600	300	1.2	1.2	2
STECH8 1220	1,200	800	200	1.2	1.2	2
STECH8 1225	1,200	800	250	1.2	1.2	2
STECH8 1230	1,200	800	300	1.2	1.2	2
STECH10 1225	1,200	1,000	250	1.2	1.2	2
STECH10 1230	1,200	1,000	300	1.2	1.2	2
STECH10 1240	1,200	1,000	400	1.2	1.2	2
STECH12 1225	1,200	1,200	250	1.2	1.2	2
STECH12 1230	1,200	1,200	300	1.2	1.2	2
STECH6 1430	1,400	600	300	1.5	1.5	2
STECH8 1430	1,400	800	300	1.5	1.5	2
STECH8 1440	1,400	800	400	1.5	1.5	2
STECH10 1430	1,400	1,000	300	1.5	1.5	2
STECH10 1440	1,400	1,000	400	1.5	1.5	2
STECH12 1430	1,400	1,200	300	1.5	1.5	2

Dimension Details

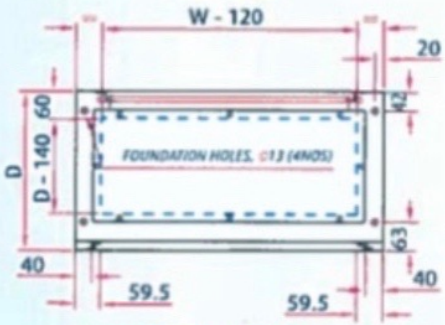


FRONT VIEW
(WITH SINGLE DOOR)

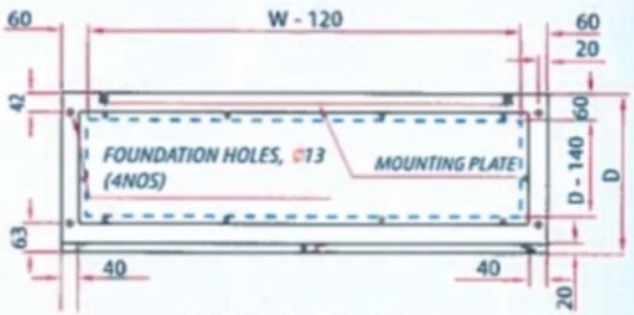


FRONT VIEW
(WITH DOUBLE DOOR)

SECT. SIDE VIEW



SECTION Y - Y



SECTION X - X