Technical Datasheet

Solar pump driving system with hybrid power supply from photovoltaic panels (PV Plant) and three-phase AC Grid (Mains and/or Diesel Gen-Set) "Solar Power Control System / Hybrid - SPCS/H"

SPCS/H xx.x-400 COMBINER BOX Technical Data

System Type	***SPCS/H 7.5-400 Combiner***	***SPCS/H 11-400 Combiner***	***SPCS/H 15-400 Combiner***	***SPCS/H 19-400 Combiner***
Output Power Ratings Data				
Frequency Converter Type	***SPCS 7.5-400***	***SPCS 11-400***	***SPCS 15-400***	***SPCS 19-400***
Applicable Pump Motor AC Induction Motor Power	7.5 kW / 10 HP	11 kW / 15 HP	15 kW / 20 HP	19 kW / 25 HP
Frequency Converter Output Power Capacity	**13 kVA**	**21 kVA**	**25 kVA**	**31 kVA**
Rated Output Voltage / Rated Motor Voltage	3~ 400 V_{rms} (from 0 to U_{SUPPLY})			
Output Frequency	0÷60 Hz *(512 Hz upon request) variable frequency; frequency parameters are software adjustable*			
Rated Output Current	17.6 A_{rms}	27.7 A_{rms}	33.0 A_{rms}	38.0 A_{rms}
Overload Current	120% for up to 1 minute, once per 10 minutes			
PV Input Power Ratings Data				
Max Input Voltage PV Open-circuit Voltage (V_{oc})	800 V_{DC}			
MPPT Range	450 ÷ 650 V_{DC}			
Number of PV String Inputs	3	4 (5)	5 (6)	6 (7)
PV Plant String Panels Installation Recommendation	3 x 20PV [255÷300]Wp	4 (5) x 20PV [255÷300]Wp	5 (6) x 20PV [255÷300]Wp	6 (7) x 20PV [255÷300]Wp
DC Switch Disconnector	55A to 100A / 1000V_{DC} / DC21B / External Handle (outside enclosure)			
PV Inputs Protection	PV Fuses 15A / gPV / 1000V_{DC} / 10 x 38mm; Surge Arrester 1000 V_{DC} / Class II / 3+0 / I_{max}=40kA			
AC Input Power Ratings Data *(Hybrid Power Source Input implemented by HPSI-C-400 Module)*				
AC Grid Voltage Mains Voltage	3~ 400 V_{rms} ±15% / 50(60) Hz			
AC Input Current	21 A_{rms}	32 A_{rms}	40 A_{rms}	48 A_{rms}
AC Side Overvoltage Protection	Surge Arrester U_n=400V_{ac} / U_c=480V_{ac} / Type 2 / 3+0 / I_{max}=50kA			
AC Switch Disconnector & Protection	Thermomagnetic releases, 3p / I_n =32 to 63A / 25kA / External Handle (outside enclosure)			
Additional Power Features & Options – converter matched output chokes and output sine filters (depending on the output line cable length, i.e. depending on the distance, between the converter output and the pump motor input); converter matched input line chokes and filters				
Application and Environmental Data				
Operating Temperature Range	-20ºC to +55ºC			
Ingress Protection Degree	≥ IP54			
UV Proof	Yes *(for outdoor variant)*			
Altitude	≤ 2000m *(above 2000m – derating)*			
Conformity with Norms	EN 61439-2:2011; EN 62109-1:2010; EN 62109-2:2011; EN 61800-5-1:2007; EN 61800-3 C3			
Indication & Control Features				
LED Indication	Ready / Run / Alarm			
Operation Modes	Manual / Automatic *(front panel control switch "Manual / OFF / Auto")*			
Communication Interface Control Inputs and Outputs	RS 232/485 / *MODBUS RTU*; Programmable Analogue and Digital Inputs / Outputs;			
AC Induction Motor Control Methods	MPPT based U/f constant control			
Carrier (PWM) Frequency	4kHz to 12kHz *(software adjustable)*			
Built-in Electronic Protections	Over Voltage, Under Voltage, Over Current, Short Circuit, Over Load, Earth Fault, Output Phase Loss / Interruption, Overheating, PV Reversal, Dry Run			

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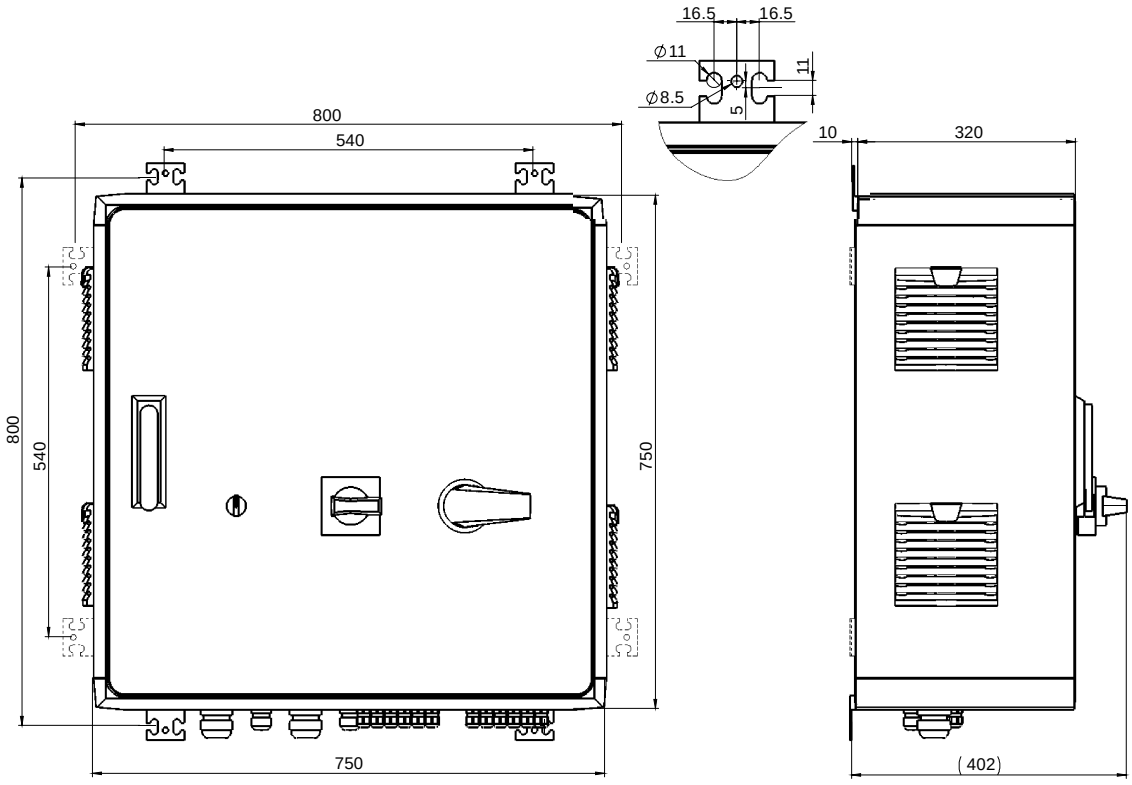
SPCS/H xx.x-400 COMBINER BOX Additional Control Features & Options
Water Level Control Module implementing two sets of sensors for utilization in draw-well and water tank applications. High and low liquid level control. LED indication. Applicable for conductive liquids.
Drive Remote Control Panel providing the possibility for system parameter adjustment, diagnostics and visualization of logged data via communication port. Installation, commissioning and maintenance support. The module is "pocket" sized and plug & play applicable. In most cases, the drive remote control panel skips the need for using a "notebook" for system adjustment and maintenance activities.
PLC & HMI integration for ensuring of additional system requirements, for instance a SCADA implementation for the pump system (pump station) procurator or operator.
GSM Communication Modules – system monitoring applications

Dimensions



SPCS/H xx.x-400 COMBINER BOX Overall Dimensions, [mm]

NOTE:

Depending on the installation requirements and options, the COMBINER BOX dimensions and configuration may differ from these, presented at the diagram above!

Contacts

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