



# HISBOX STRING COMBINER

UTILITY SCALE - COMMERCIAL & INDUSTRIAL - RESIDENTIAL

2025



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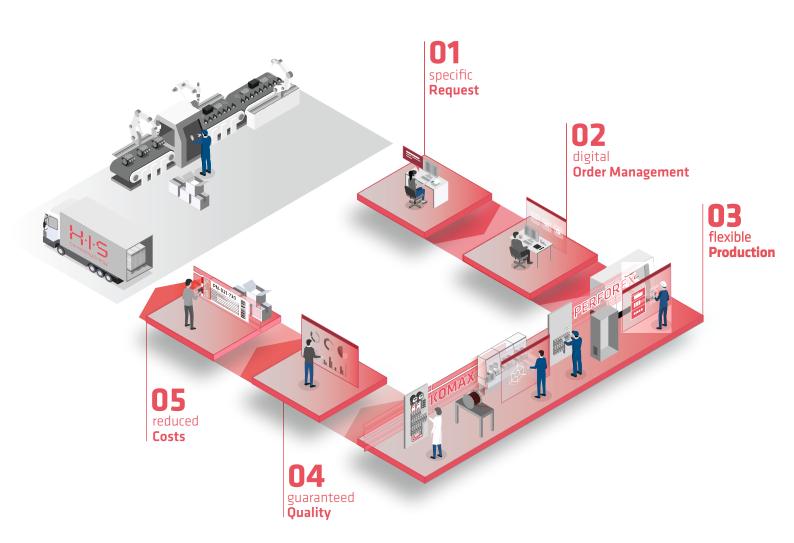
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# 1 Brand. 1000 Possiblities.

- Designed with high quality components.
- Designed to individual requirements.
- Tested for high plant availability.

# DESIGNED WITH HIGH QUALITY COMPONENTS TESTED FOR HIGH RETURN ON INVESTMENT.

ENGINEERING - TESTING - PRODUCTION





Engineering, manufacturing and testing under one roof. Additional testing for special requirements.

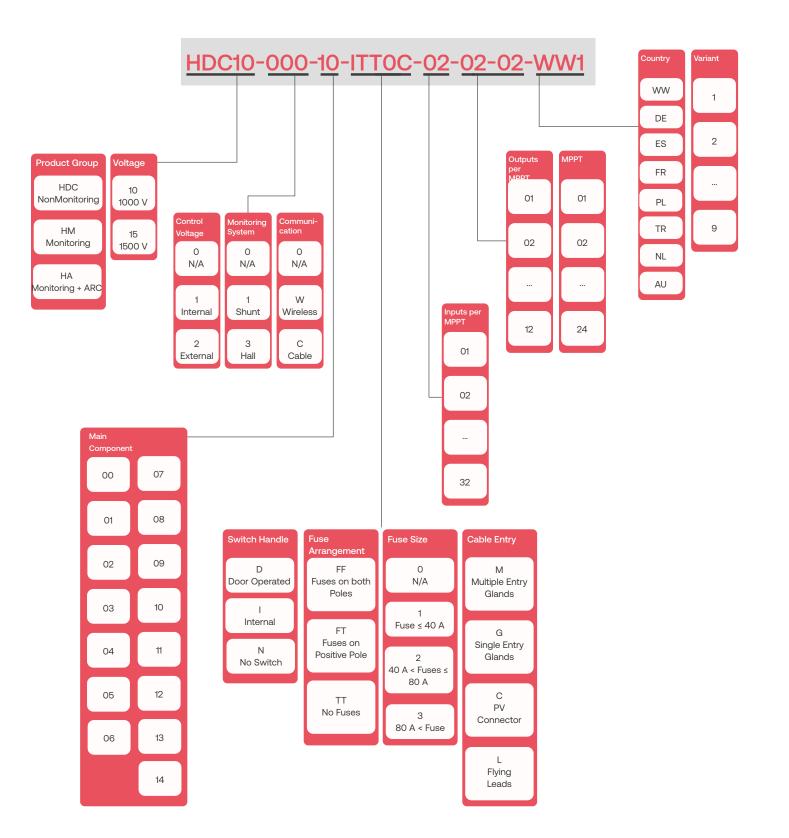


Well thought out. Ready to use. Including necessary accessories to make installation safe, simple and quick.



Smart design to save costs (CapEx) helps to avoid extensive work during installation and operations (OpEX)

## HIS ARTICLE CODE GENERATOR

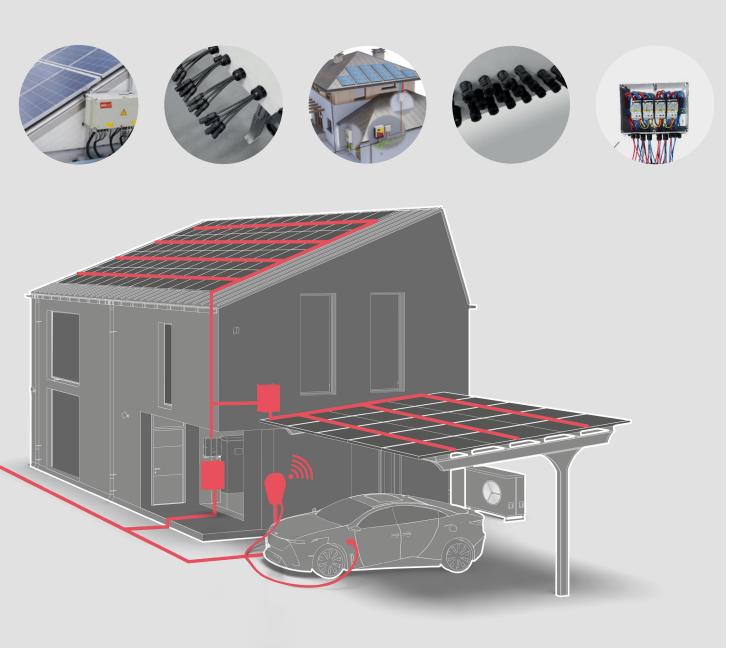


MAIN COMPONENTS	DESCRIPTION	MAIN COMPONENTS	DESCRIPTION
00	Combiner	08	Load Break Switch; UVR
01	SPD Type 2	09	SPD Type 2; Load Break Switch; UVR; Motor
02	SPD Type 1+2	10	SPD Type 1+2 ; Load Break Switch; UVR; Motor
03	SPD Type 2; Load Break Switch	11	Load Break Switch; SOR
04	SPD Type 1+2; Load Break Switch	12	SPD Type 2; Load Break Switch; SOR; Motor
05	SPD Type 2; Load Break Switch; UVR	13	SPD Type 1+2 ; Load Break Switch; SOR; Motor
06	SPD Type 1+2; Load Break Switch; UVR	14	Load Break Switch; UVR; Motor
07	Load Break Switch		



# RESIDENTIAL

## READY TO CONNECT DC COMBINER 1000V FOR STRING INVERTER



## HISBOX 1000V DC RESIDENTIAL

Protection Devices         Type 2 or Type 1-2 (remote signaling upon request)           Fuse Links         10x38mm gPV Fuses (optional)           Load Break Switch         100x38mm gPV Fuses (optional)           Load Break Switch         1000 V DC, per MPPT (optional) (auxiliary status contact upon request)           Accessory         230V AC, undervictage release function for Fireman switch applications (optional)           Inputs         230V AC, undervictage release function for Fireman switch applications (optional)           Strings per MPPT         1 to 12           Strings per MPPT         1 to 6           Output         Cable feedthrough cable giands; modular connection system: optionally with PV-connectors or flying leads           DC Input         Cable feedthrough cable giands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable giands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable giands; modular connection system: optionally with PV-connectors or flying leads           DC Input         Cable feedthrough cable giands; modular connection system: optionally with PV-connectors or flying leads           Drectsure Lid         GPP (Glassifibre reinforced polyaster) or Polycarbonate           Enclosure         If Total lead lands.ation)           Muterial         GRP (Glassifibre reinforced polyaster) or Polyca	Electrical Characteristics	
Rated insulation Votage (U)         1000 V DC           Max Rated Current per String (InC)         20 A           Max rated current (InA)         60 A           Protection Devices            Overvotage Protection         Type 2 or Type 1-2 (remote signaling upon nequest)           Fuse Links         10x30mm qPV Fuses (optional)           Load Break Switch         10x00 V C, per MPPT (polonal) (auxilary status contact upon mequest).           Accessory         200 V AQ, undervotage release function for Freman switch applications (optional)           Inputs            MPPTs         1 to 12           Strings per MPPT         1 to 6           Output            Output            Grounding         Functional earth connection terminal           Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC hout         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC hout         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC hout         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC hout         Cable feedthrough cable glands; modular connection system: optionaly with PV-connectors o	Rated Voltage (Un)	1000 V DC
Max. Rated Current (inA)         20 A           Max. rated current (inA)         60 A           Protection Devices         Currentlage Protection           Currentlage Protection         Type 2 or Type 14.2 (ernote signalling upon request)           Ruse Links         1003 Brm pPV Fuses (options)           Load Beak Switch         1000 V DC, per MPPT (optional) (auxiliary status contact upon request)           Accessory         230V AC, undervoltage release function for Fireman switch applications (optional)           Inputs         10 2           Stings per MPPT         110 6           Output         Cable Generations           Object         Cable Generations           DC Input         Cable Generations           DC Input         Cable Generations           DC Input         Cable Generations           DC Input         Cable Generation system: optionally with PV-connectors or flying leads           DC Input         Cable Generation connection system: optionally with PV-connectors or flying leads           DC Input         Cable Generation connection system: optionally with PV-connectors or flying leads           DC Input         Cable Generation connection system: optionally with PV-connectors or flying leads           DC Input         Cable Generation connection system: optionally with PV-connectors or flying leads           DC Input<		1000 V DC
Max rated current (InA)         60 A           Protection Devices         Improvement (InA)           Overvoltage Protection         Type 2 or Type 1-2 (errorts signaling upon request)           Land Break Switch         100.00 V DC, per MPT (optiona) (auxiliery status contact upon request)           Accessory         230V AC, undervoltage release function for Fireman switch applications (optiona)           Imputs         1 to 2           Stings per MPT         1 to 6           Output         E           Stings per MPT         1 to 6           Output         E           Othput         Cable feedthrough cable glends, modular connection system. optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glends, modular connection system. optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glends, modular connection system. optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glends, modular connection system. optionally with PV-connectors or flying leads           DC cuput         Cable feedthrough cable glends, modular connection system. optionally with PV-connectors or flying leads           DC cuput         Cable feedthrough cable glends, modular connection system. optionally with PV-connectors or flying leads           DC cuput         Cable feedthrough cable glends, modular connection system. optionally	<b>C</b>	20 A
Overoltage Protection         Type 2 or Type 1+2 (cernote signaling upon request)           Fuse Links         10x38mm gPV Fuses (optional)           Load Break Switch         1000 V DC, per MPPT (optional) (audiary status contact upon request)           Accessory         230V AC, undervoltage release function for Fireman switch applications (optional)           Inputs         100           MPPTs         100 6           Output         100 6           Output         100 6           Output         6           Other Connections         100 6           DI loput         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands           Enclosure         0           Material         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP55)           Protection Class         II (Total insulation)           Mourting         Direct wall mounting or wall mounting brackets           Arti-condensation         Venting (reseure comprensiation) vak	Max. rated current (InA)	60 A
Fuse Links         10x38mm gPV Fuses (optional)           Load Break Switch         1000 V DC, per MPPT (optional) (auxiliary status contact upon request)           Accessory         230V AC, undervoitage release function for Fireman switch applications (optional)           Imputs         100           MPPTs         1 to 12           Strings per MPPT         1 to 6           Output         200 AC, undervoitage release function for Fireman switch applications (optional)           Strings per MPPT         1 to 6           Output         200 AC, undervoitage release function for Fireman switch applications (optional)           Strings per MPPT         1 to 6           Output         200 AC, undervoitage release function for Fireman switch applications (optional)           Strings per MPPT         1 to 6           Grounding         Functional earth connection terminal           Cable Genetitionugh cable glands, modular connection system: optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           Defestere         Opaque (RA	Protection Devices	
Lad Break Switch         1000 V DC, per MPPT (optional) (auxiliary status contact upon request)           Accessory         230V AC, undervoltage release function for Fireman switch applications (optional)           Inputs         100 I           MPPTs         1 to 12           Strings per MPPT         1 to 6           Grounding         Functional earth connection terminal           Cable Connections         E           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors of flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors of flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors of flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands;           PC Glausefiber einforced polyester) or Polycarbonate         Interview and	Overvoltage Protection	Type 2 or Type 1+2 (remote signalling upon request)
Accessory         230V AC, undervoltage release function for Fireman switch applications (optional)           Inputs         Inputs           MPPTs         1 to 12           Stings per MPPT         1 to 6           Output         Inputs           Cable Connections         Enclored and the system optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC liput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC struct         Cable feedthrough cable gland         Enclosure           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate         Enclosure           Ingress Protection         IP54 (up to IP65)         Ingress Protection         Post (up to IP65)           Protection Class         II (Total Insulation)         Outing (pressure compensation) valve included         Ingress Protection           UV Resistance         Ko8         Ves         Operation and Environmental Conditions         Yes           Operati	Fuse Links	10x38mm gPV Fuses (optional)
Inputs         Ito 12           MPPTs         1to 6           Output         Ito 6           Strings per MPPT         1to 6           Grounding         Functional earth connection terminal           Cable Connections         Cable Connection system: optionally with PV-connectors or flying leads           DC loput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC output         Cable feedthrough cable gland           Enclosure         Ito 765           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Iil         Ito 765           Ingress Protection         IP54 (up to P65)           Protection Class         It (Total insulation)           Mounting         Direct wall mounting or wall mounting brackets           Ant-condensation         Venting (ressure compensation) valve included           Impact Resistance         IK08 <t< td=""><td>Load Break Switch</td><td>1000 V DC, per MPPT (optional) (auxiliary status contact upon request)</td></t<>	Load Break Switch	1000 V DC, per MPPT (optional) (auxiliary status contact upon request)
MPTs         1 to 12           Strings per MPPT         1 to 6           Output         Ito 6           Strings per MPPT         1 to 6           Grounding         Functional earth connection terminal           Cable Connections         E           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DE Coutput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DE Coutput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DE Coutput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DE chosure         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Ant-condensation         Venting (pressure compensation) valve included           Impact Resistance         IKO8           UV Resistance         -20 °C up to max.	Accessory	230V AC, undervoltage release function for Fireman switch applications (optional)
Strings per MPPT         1 to 6           Output         Ito 6           Strings per MPPT         1 to 6           Grounding         Functional earth connection terminal           Cable Connections         Image: Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads.           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads.           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads.           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads.           DC Output         Cable feedthrough cable gland.         Image: PV-connectors or flying leads.           Enclosure         GRP (Glassfibre reinforced polyester) or Polycarbonate         Image: Protection           Ingress Protection         IPS4 (up to IPS5)         Image: Protection Class         I (Total Insulation)           Mounting         Direct wal mounting or wall mounting brackets         Image: Protection Class         Image: Protection (UP PS)           UP Resistance         IKO8         Image: Protection Prot	Inputs	
Output         Ito 6           Strings per MPPT         1 to 6           Grounding         Functional earth connection terminal           Cable Connections         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Input         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable gland           Enclosure         Cable feedthrough cable gland           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IK08           UV Resistance         Yes           Operation and Enviromental Conditions         -20 °C up to max +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Install	MPPTs	1 to 12
Strings per MPPT         1 to 6           Grounding         Functional earth connection terminal           Cable Connections         E           DC Input         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         Cable feedthrough cable gland           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IK08           UV Resistance         Ves           Operation and Enviromental Conditions         -20 °C up to max.+55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Alt	Strings per MPPT	1 to 6
Grounding         Functional earth connection terminal           Cable Connections         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DE Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           Enclosure         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           Enclosure Lid         GRP (Glassfibre reinforced polyester) or Polycarbonate           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         K08           UV Resistance         Yes           Operation and Enviromental Conditions         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Relative Humidity         Indoor; ma	Output	
Cable Connections         Cable Feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         Image: Cable feedthrough cable gland           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IKO8           UV Resistance         Yes           Operation and Enviromental Conditions         -20 °C up to max +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Attitude Above Sea Level (MLS)         Standard 2000m above, max. 4000m (derating factor applies)           Relative Humidity         Indoor. max. 50% at +40°C, max. 90% at +20°C (not condensat	Strings per MPPT	1 to 6
DC Input       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         PE - Grounding       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         Enclosure       GRP (Glassfibre reinforced polyester) or Polycarbonate         Enclosure Lid       Opaque (RAL7035) or transparent         Ingress Protection       IP54 (up to IP65)         Protection Class       II (Total Insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Impact Resistance       IK08         UV Resistance       -20 °C up to max +55°C (derating factor applies)         Installation       Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)         Atticde Above Sea Level (MLS)       Standard 2000m above, max 4000m (derating factor applies)         Relative Humidity       Indoor: max 50% at +40°C, max 90% at +20°C (not condensating)	Grounding	Functional earth connection terminal
DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         PE - Grounding       Cable feedthrough cable gland         Enclosure          Material       GRP (Glassfibre reinforced polyester) or Polycarbonate         Enclosure Lid       Opaque (RAL7035) or transparent         Ingress Protection       IP54 (up to IP65)         Protection Class       II (Total Insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Inpact Resistance       IK08         UV Resistance       Yes         Ambient Temperature       -20 °C up to max +55°C (derating factor applies)         Installation       Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)         Atti-de Above Sea Level (MLS)       Standard 2000m above, max 4000m (derating factor applies)	Cable Connections	
PE - Grounding       Cable feedthrough cable gland         Enclosure       GRP (Glassfibre reinforced polyester) or Polycarbonate         Material       GRP (Glassfibre reinforced polyester) or Polycarbonate         Enclosure Lid       Opaque (RAL7035) or transparent         Ingress Protection       IP54 (up to IP65)         Protection Class       II (Total Insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Impact Resistance       IK08         UV Resistance       Yes         Operation and Environmental Conditions       -20 °C up to max +55°C (derating factor applies)         Installation       Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)         Altiude Above Sea Level (MLS)       Standard 2000m above, max 4000m (derating factor applies)         Relative Humidity       Indoor: max 50% at +40°C, max 90% at +20°C (not condensating)	DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads
Enclosure         GRP (Glassfibre reinforced polyester) or Polycarbonate           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IK08           UV Resistance         Yes           Operation and Enviromental Conditions         -20 °C up to max. +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Altiude Above Sea Level (MLS)         Standard 2000m above, max. 4000m (derating factor applies)           Relative Humidity         Indoor: max. 50% at +40°C, max 90% at +20°C (not condensating)	DC Output	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads
MaterialGRP (Glassfibre reinforced polyester) or PolycarbonateEnclosure LidOpaque (RAL7035) or transparentIngress ProtectionIP54 (up to IP65)Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Attiude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	PE - Grounding	Cable feedthrough cable gland
Enclosure LidOpaque (RAL7035) or transparentIngress ProtectionIP54 (up to IP65)Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Attitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Enclosure	
Ingress ProtectionIP54 (up to IP65)Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Material	GRP (Glassfibre reinforced polyester) or Polycarbonate
Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Enclosure Lid	Opaque (RAL7035) or transparent
MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Ingress Protection	IP54 (up to IP65)
Anti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Protection Class	II (Total Insulation)
Impact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Mounting	Direct wall mounting or wall mounting brackets
V     Yes       Operation and Enviromental Conditions     -20 °C up to max. +55°C (derating factor applies)       Ambient Temperature     -20 °C up to max. +55°C (derating factor applies)       Installation     Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)       Altitude Above Sea Level (MLS)     Standard 2000m above, max. 4000m (derating factor applies)       Relative Humidity     Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Anti-condensation	Venting (pressure compensation) valve included
Operation and Enviromental Conditions         -20 °C up to max. +55°C (derating factor applies)           Ambient Temperature         -20 °C up to max. +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Altitude Above Sea Level (MLS)         Standard 2000m above, max. 4000m (derating factor applies)           Relative Humidity         Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Impact Resistance	IK08
Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	UV Resistance	Yes
InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Operation and Enviromental Conditions	
Altitude Above Sea Level (MLS)     Standard 2000m above, max. 4000m (derating factor applies)       Relative Humidity     Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)
Relative Humidity Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)	Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)
	Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)
Outgoor application; temporarily up to 95% at +25°C (not condensating)	Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)
Approvals	Approvals	
Standard         EN 61439-2, IEC 61439-2		EN 61439-2, IEC 61439-2

#### HISBOX 1000V DC RESIDENTIAL PLUG 'N' PLAY

Easy Plug Combiner from HIS Renewables allow you a quick and easy installation on the construction site. Thanks to the pre-assembled HIKRA solar cable and matching PV-connectors to the inverter, you have an industrially manufactured plug & play solution with the lowest possible contact resistances.



Inverter Manufacturer / Inverter Type	Order no.	Amount MPPT	Amount Ingoing MPPT	Amount Outgoing MPPT
Huawei SUN2000-8KTL	HDC-02-02-TTL1-012-E01	2	2	1
Huawei SUN2000-17KTL / 20	HDC-02-02-TTL1-013-E01	3	2	1
Huawei SUN2000-33KTL / 36KTL	HDC-02-02-TTL1-014-E01	4	2	1
Huawei SUN2000-60KTL-HV-D1-001	HDC-02-02-TTL1-016-E01	6	2	1
Huawei SUN2000-100KTL-M1	HDC-02-02-TTL1-110-E01	10	2	1

#### Your advantages:

- More quality: simple and safe installation due to completely ready-to-connect combiner boxes
- Cost reduction: Through industrial production including fully automated cable production
- Sure your yield through long-lasting protective devices
- Flexible splitter concept to meet your requirements
- Work in compliance with standards and always use the right connector and cross-connections thanks to HIS flexibility







## HISBOX 1000V DC RESIDENTIAL OVERVIEW

Inverter Manufacturer / Inverter Type	Order no.	Amount MPPT	Amount Ingoing MPPT	Amount Outgoing MPPT	Fuses	SPD	DC Switch
SMA Sunny Boy 1.52.5	HDC-02-02-TTG-011-E01	1	2	1	-	Typ 1+2	-
SMA Sunny Boy 3.0 / 3.6 / 4.0 / 5.0	HDC-02-02-TTG-012-E01 HDC-02-02-TTG-022-E01 HDC-02-02-TTG-012-E01 HDC-02-02-TTG-022-E01	2 2 2 2	2 2 2 2	1 2 1 2	- ~ ~	Typ 1+2	- - -
SMA STP Tripower 5000-12000TL	HDC-02-02-TTG-012-E01 HDC-02-02-TTG-022-E01 HDC-02-02-FFG-012-E01 HDC-02-02-FFG-022-E01	2 2 2 2	2 2 2 2	1 2 1 2	- - - -	Typ 1+2	- - -
SMA STP Tripower 15000-25000TL	HDC-02-03-FFG-012-E01 HDC-02-03-FFG-032-E01	2 2	3 3	1 3	$\checkmark$	Typ 1+2	-
SMA Sunny Tripower 60	HDC-02-01-TTG-011-E01 HDC-04-12-FFM-011-E01	1 1	1 12	1 1	-	Тур 1+2	- √
SMA Sunny Tripower Core 1	HDC-02-02-TTM-016-E01 HDC-02-02-TTM-026-E01 HDC-02-02-FFM-016-E01 HDC-02-02-FFM-026-E01	6 6 6	2 2 2 2	1 2 1 2	- - ~	Typ 1+2	- - -

## solar<mark>edge</mark>⁄

Inverter Manufacturer / Inverter Type	Order no.	Amount MPPT	Amount Ingoing MPPT	Amount Outgoing MPPT	Fuses	SPD	DC Switch
Solaredge SE5k / SE10K	HDC-02-02-TTG-011-E01 HDC-02-02-FFG-011-E01	1	2 2	1	- ✓	Тур 1+2	-
Solaredge SE25K / SE27.6K	HDC-02-02-TTG-021-E01 HDC-02-02-FFG-021-E01	1	2	2 2	-	Typ 1+2	-
	HDC-02-03-FFG-031-E01 HDC-04-03-FFG-031-E01	1	3	3 3	$\checkmark$		-



Inverter Manufacturer / Inverter Type	Order no.	Amount MPPT	Amount Ingoing MPPT	Amount Outgoing MPPT	Fuses	SPD	DC Switch
Huawei SUN2000-8KTL	HDC-02-02-TTG-012-E01 HDC-02-02-TTG-022-E01 HDC-02-02-FFG-012-E01 HDC-02-02-FFG-022-E01	2 2 2 2	2 2 2 2	1 2 1 2	- - - /	Тур 1+2	- - -
Huawei SUN2000-17KTL / 20	HDC-02-02-TTM-013-E01 HDC-02-02-TTM-023-E01 HDC-02-02-FFM-013-E01 HDC-02-02-FFM-023-E01	3 3 3 3	2 2 2 2	1 2 1 2	- - - -	Typ 1+2	- - -
Huawei SUN2000-33KTL / 36KTL	HDC-02-02-TTM-014-E01 HDC-02-02-TTM-024-E01 HDC-02-02-FFM-014-E01 HDC-02-02-FFM-024-E01	4 4 4	2 2 2 2	1 2 1 2	- - - /	Тур 1+2	- - -
Huawei SUN2000-60KTL-HV-D1-001	HDC-02-02-TTM-014-E01 HDC-02-02-TTM-024-E01 HDC-02-02-FFM-014-E01 HDC-02-02-FFM-024-E01	4 4 4 4	2 2 2 2	1 2 1 2	- - - -	Typ 1+2	- - -
Huawei SUN2000-60KTK-M0	HDC-02-02-TTM-016-E01 HDC-02-02-TTM-026-E01 HDC-02-02-FFM-016-E01 HDC-02-02-FFM-026-E01	6 6 6	2 2 2 2	1 2 1 2	- - - -	Typ 1+2	- - -

#### SUNGROW

Inverter Manufacturer / Inverter Type	Order no.	Amount MPPT	Amount Ingoing MPPT	Amount Outgoing MPPT	Fuses	SPD	DC Switch
Sungrow SG10KTL-M / SG12KTL-M	HDC-02-02-TTG-011-E01	1	2	1	-	Typ 1+2	-
Sungrow SG36KTL-M	HDC-02-03-FFM-013-E01 HDC-02-03-FFM-033-E01	3 3	3 3	1 3	$\checkmark$	Тур 1+2	-
Sungrow SG60KTL	HDC-04-16-FFM-011-E01	1	16	1	$\checkmark$	Typ 1+2	$\checkmark$

							ENZEN VERSCHIEBEN
Inverter Manufacturer / Inverter Type	Order no.	Amount MPPT	Amount Ingoing MPPT	Amount Outgoing MPPT	Fuses	SPD	DC Switch
Fronius Symo 3.0-3-M / 3.7.3-M / 4.5-3-M	HDC-02-02-TTG-022-E01	2	2	2	-	Typ 1+2	-
Fronius Symo 3.0-3-S / 3.7.3-S / 4.5-3-S	HDC-02-03-FFG-031-E01	1	3	3	$\checkmark$	Typ 1+2	-
Fronius Symo 10.0-3-M / 10.0-3-M-OS / 12.5-3-M	HDC-02-03-FFG-032-E01	2	3	3	$\checkmark$	Typ 1+2	-
Fronius Eco 25.0-3-S / 27.0-3-S	HDC-02-06-FFM-061-E01	1	6	6	$\checkmark$	Typ 1+2	-

SMA

#### HU BACKUP BOXES 1-PHASE/3-PHASE

The Backup Box is an advanced switching solution that is designed to help PV installers optimize their PV systems performance with its backup power function. Including the advanced power management system and automatic backup load shedding feature, the Backup Boxes ensures that your PV system operates safely and efficiently, even during power outages or other unforeseen events.

Electrical Characteristics	
Rated Voltage (Un)	230 V AC / 400 V AC
Rated Insulation Voltage (Ui)	400 V AC
Grid Configuration	TN-S, TN-C-S, TT*
Max. Rated Current (InA)	50 A
Cable Connections	
Input	Cable feedthrough cable glands; modular connection system: optionally with industrial sockets
Output	Cable feedthrough cable glands; modular connection system: optionally with industrial sockets
PE - Grounding	Cable feedthrough cable gland
Enclosure	
Material	GRP, Polystyrene, ABS, Polycarbonate
Enclosure Lid	Transparent
Ingress Protection	IP54 (up to IP65)
Protection Class	II (Total Insulation)
Mounting	Direct wall mounting or wall mounting brackets
Anti-condensation	Venting (pressure compensation) valve (optional)
Impact Resistance	IK08
Operation and Enviromental Conditions	
Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)
Approvals	
Standard	EN 61439-2, IEC 61439-2

Order No.	
HU1-N-20-40-E01(X)	Single Phase, 20A, Grid Tied Switching Box
HU1-N-50-63-E01(X)	Single Phase, 50A, Grid Tied Switching Box
HU3-N-50-63-E01(X)	Three Phase, 3 Poles, 50A, Grid Tied Switching Box
HU4-N-50-63-E01(X)	Three Phase, 4 Poles, 50A, Grid Tied Switching Box

KACO 📎

\*(X) F: Fronius, S: SMA, H: Huawei, K: Kaco, G: Goodwe, SG: Sungrow

Please contact us for customized solutions!









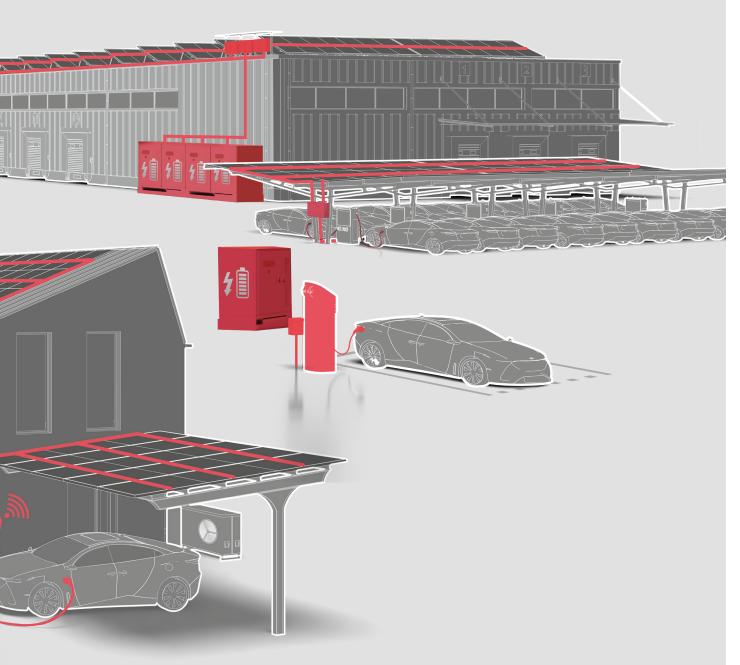






# COMMERCIAL & INDUSTRIAL ROOFTOPS

MAXIMUM SAFETY & RELIABILITY



## HDC 1000V DC FIREMAN SWITCH UNDERVOLTAGE RELEASE

Resci Velage (Ur)         1000 V DC           Resci Rustation Vohtage (U)         000 V DC           Max. Rated Current per String (InC)         20 A           Max. Rated Current per String (InC)         80 A           Protection Devices         Vene Control           Deventinge Protection         Type 2 of Type 10 [renote signaling upon request]           Deventinge Protection         100 20 V DC, per MPP1 (optional)           Lead Break Switch         100 V DC, per MPP1 (optional) (audiery status contact upon request)           Data Break Switch         100 20 V DC, per MPP1 (optional) (audiery status contact upon request)           Rings per MPP1         102 P           Strings per MPP1         112           Grounding         Functional earth contracton terminal           Cable Contrections         200 Point           DC Point         Cable feedthrough cable glands; modular contracton system costonally with PV-contractors or thing leads           DC Output         Cable feedthrough cable glands; modular contracton system costonally with PV-contractors or thing leads           Protection         Cable feedthrough cable glands; modular contracton system costonally with PV-contractors or thing leads           DC Output         Cable feedthrough cable glands; modular contracton system costonally with PV-contractors or thing leads           Protoconing         Gale feedthrough cable glands; modular	Electrical Characteristics	
Max Rated Current (inA)         20 A           Max Rated Current (inA)         80 A           Protection Devices            Overvoltage Protection         Type 2 or Type 1-2 (errorde signaling upon request)           Ease Links         10x08mm gPV Russ (eptional)           Land Break Switch         1000 V DC, per MPPT (eptional) (ausliny status contact upon request)           Partner Switch Application         230 V AC, undervoltage release function for Fireman switch applications (included)           MPPTIs         10x0 V DC, per MPPT (eptional) (ausliny status contact upon request)           Strings per MPPT         11x0 8           Output            Graunding         Functional earth connection terminal           Cable Connections            DC loput         Cable feedthrough cable glands; modular connection system optionally with PV-connectors or flying leads           DC counding         Cable feedthrough cable glands; modular connection system optionally with PV-connectors or flying leads           PE - Gounding         Cable feedthrough cable glands; modular connection system optionally with PV-connectors or flying leads           PE - Gounding         Cable feedthrough cable glands; modular connection system optionally with PV-connectors or flying leads           PE - Gounding         Cable feedthrough cable glands; modular connection system optionaly with PV-connectors or flying leads <td>Rated Voltage (Un)</td> <td>1000 V DC</td>	Rated Voltage (Un)	1000 V DC
Max. Rated Current (inA)         80 A           Protection Devices         Incomposition of the part of Type 3 or Type 1-2 (remote signaling upon request).           Ruse Links         10x83mm dPV Fuses (optionsi)           Load Break Switch         1000 V DC, per MPFT (potional) (auxiliary status contact upon request).           Firemain Switch Application         230V AC, undervoitage release function for Fireman switch applications (included)           Inputs         Inputs           MPFTs         1 to 12           Strings per MPPT         1 to 3           Output         Inputs           Calue Connections         Inputs           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or Hyng leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or Hyng leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or Hyng leads           PE - Grounding         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or Hyng leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or Hyng leads           PE - Grounding         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or Hyng leads           PE - Grounding	Rated Insulation Voltage (Ui)	1000 V DC
Protection Devices         Even Uses           Ourwortage Protection         Type 2 or Type 1-2 (remote signaling upon request)           Load Break Switch         100/Birm @P Uses (optional)           Laad Break Switch         1000 V DC, per MPPT (optional) (auxilary status contact upon request)           Ineman Switch Application         230V AC, undervoltage release function for Freman switch applications (included)           Inputs         Inputs           MPPT is         1 to 12           Strings per MPPT         1 to 8           Output         Inputs           Strings per MPPT         1 / 2           Glocanding         Functional earth connection terminal           Cable Connections         Inputs           DC Pupt         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrou	Max. Rated Current per String (InC)	20 A
Overvettage Protection         Type 2 or Type 1/2 (errorte signaling upon request)           Exe Links         106/28mm gPV Exees (eptiona)           Load Beak Switch         1000 V DC, per MPPT (eptiona) (auxiliary status contact upon request)           Fireman Switch Application         200/ AC, undervoltage release function for Fireman switch applications (included)           MPPTs         100 2           Strings per MPPT         110 2           Strings per MPPT         1/2           Grounding         Functional earth connection terminal           Cable Geomections         -           DC liput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DF Couput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DF Couput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DF - Grounding         Cable feedthrough cable glands           Enclosure         Opaque (RA/2033) or transparent           Ingress Protection         IPSE (up to IPSE)           Protection Class         II (Ictal insulation)           Moting (pressure compensation) valve included         Impact Resistance           UV Resistance         Venting (pressure compensation) valve included           Ind	Max. Rated Current (InA)	80 A
Euse Links         10x38mm gPV Fuses (optional)           Load Break Switch         1000 V DC, per MPPT (optional) (auxiliary status contact upon request)           Fireman Switch Application         230V AC, undervoltage release function for Fireman switch applications (included)           Imputs         100 2           Strings per MPPT         10 12           Strings per MPPT         10 2           Strings per MPPT         1/2           Graunding         Functional earth connection terminal           Cable Connections         Imputs           DC Unput         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands           Proctoart         Cable feedthrough cable glands           Material         GRP (Gassfither enforced polyester) or Polycarbonate           Ingess Protection         P54 (up to P65)           Protection Class         II(Total Insulation)           Mounting         Direct wal mounting or wall mounting brackets           Anti-condenation         Veis           Operation and Environmental Conditions         Veis           Operation and Environmental Conditions         Veis           Anti-condenation         Veis           Introcondenation         Veis	Protection Devices	
Load Break Switch     1000 V DC, per MPPT (optional) (auxiliary status contact upon request)       Fireman Switch Application     230V AC, undervoltage release function for Fireman switch applications (included)       Inputs     1to 12       Strings per MPPT     1to 8       Output     2000 AC, undervoltage release function for Fireman switch applications (included)       Strings per MPPT     1to 8       Output     2000 AC, undervoltage release function for Fireman switch applications (included)       Strings per MPPT     1/2       Grounding     Encitional earth connection terminal       Catale Connections     2000 AC, undervoltage release function system optionally with PV-connectors or flying leads       DC Input     Cable feedthrough cable glands, modular connection system optionally with PV-connectors or flying leads       DC Output     Cable feedthrough cable glands       Enclosure     Cable feedthrough cable glands       Material     GRP (Classifibre reinforced polyester) or Polycarbonate       Enclosure Lid     Opaque (RAL/OSB) or transparent       Ingress Protection     IP64 (up to IP65)       Protection Class     II (Total Insulation)       Mounting (pressure compensation) valve included     Impact Resistance       Live Resistance     KO8       UV Resistance     Yes       Opaction and Erviromental Conditions       Arbitent Temperatue     -20 °C (up	Overvoltage Protection	Type 2 or Type 1+2 (remote signalling upon request)
Fireman Switch Application         290V AC, undervoltage release function for Fireman switch applications (included)           Inputs         MPPTs         110 f2           Strings per MPPT         110 f2         110 f2           Strings per MPPT         1/2         Grounding         Functional earth connection terminal           Cable feedthrough cable glands, modular connection system optionally with PV-connectors or flying leads         DC Input         Cable feedthrough cable glands, modular connection system optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands, modular connection system optionally with PV-connectors or flying leads         DC Input         Cable feedthrough cable glands, modular connection system optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands, modular connection system optionally with PV-connectors or flying leads         DC Input         Cable feedthrough cable gland           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate         DC Input         De Polycarbonate         DE Input (Input Input In	Fuse Links	10x38mm gPV Fuses (optional)
Inputs         Ito 12           Strings per MPPT         1 to 12           Strings per MPPT         1 to 8           Output         Education           Strings per MPPT         1/2           Grounding         Functional earth connection terminal           Cable Connections         Educational earth connection terminal           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         Images Protection           Ingress Protection         PP4 (up to IP65)           Protection Class         II (Total Insulation)           Mutning         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         K08           UV Resistance         -20 °C up to max +65°C (derating factor applies)           Instalation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, instalation manual applies)           Antich	Load Break Switch	1000 V DC, per MPPT (optional) (auxiliary status contact upon request)
MPPTs         1 to 12           Strings per MPPT         1 to 8           Output         Intrasper MPPT           Strings per MPPT         1/2           Grounding         Functional earth connection terminal           Cable Connections         Intraspect Method           DC Output         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands, modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         GRP (Glassfibre reinforced polyester) or Polycarbonate           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wal mounting or wal mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IK08           UV Resistance         Venting factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Installation         Indoor mat 2000 make, max. 4000m (derating factor applies)           Installation         Indoor max 50% at +40°C, max. 90% at +20°C (not condensating) <t< td=""><td>Fireman Switch Application</td><td>230V AC, undervoltage release function for Fireman switch applications (included)</td></t<>	Fireman Switch Application	230V AC, undervoltage release function for Fireman switch applications (included)
Strings per MPPT         1 to 8           Output         Instrument of the string sper MPPT           Strings per MPPT         1/2           Grounding         Functional earth connection terminal           Cable Connections         Enclosed           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         Image (RAL7035) or transparent           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Verting (pressure compensation) valve included           Impact Resistance         Verting (pressure compensation) valve included	Inputs	
Output         I/2           Strings per MPPT         1/2           Grounding         Functional earth connection terminal           Cable Connections         Image: Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         Image: GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         KO8           VV Resistance         Yes           Operation and Enviromental Conditions         Indoor and Outdoor, shaded (protected from rain and direct surlight, installation manual applies)           Antibient Temperature         -20 °C up to max +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain	MPPTs	1 to 12
Strings per MPPT       1/2         Grounding       Functional earth connection terminal         Cable Connections       E         DC Input       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         PE - Grounding       Cable feedthrough cable gland         Enclosure       GRP (Glassfibre reinforced polyester) or Polycarbonate         Enclosure Lid       Opaque (RAL7035) or transparent         Ingress Protection       IP54 (up to IP65)         Protection Class       II (Total insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Impact Resistance       IK08         UV Resistance       Yes         Operation and Enviromental Conditions       -20 °C up to max +55°C (derating factor applies)         Installation       Indoor smax 50% at +40°C, max 90% at +25°C (not condensating)         Attude Above Sea Level (MLS)       Standard 2000m above, max 4000m (derating factor applies)         Relative Humidity       Indoor max 50% at +40°C,	Strings per MPPT	1 to 8
Grounding       Functional earth connection terminal         Cable Connections       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         FE - Grounding       Cable feedthrough cable gland         Enclosure       Material         Enclosure Lid       Opaque (RALZ035) or transparent         Ingress Protection       IP54 (up to IP65)         Protection Class       II (Total Insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Impact Resistance       IKO8         UV Resistance       Yes         Operation and Environmental Conditions       -20 °C up to max.+55°C (derating factor applies)         Installation       Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)         Altitude Above Sea Level (MLS)       Standard 2000m above, max 4000m (derating factor applies)         Relative Humidity       Indoor max b5% at +40°C, max 90% at +25°C (not condensating)         Outdoor application: temporarily up to 95% at +25°C (not condensati	Output	
Cable Connections         Cable Connections           DC Input         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           DC Output         Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads           PE - Grounding         Cable feedthrough cable gland           Enclosure         Material           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IKO8           UV Resistance         Ves           Operation and Enviromental Conditions         -20 °C up to max +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Altitude Above Sea Level (MLS)         Standard 2000m above, max 4000m (derating factor applies)           Relative Humidity         Indoor max 50% at +25°C (not condensating)           Outdoor application: temporarily up to 95% at +25°C (not condensating)	Strings per MPPT	1/2
DC Input       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         PF - Grounding       Cable feedthrough cable gland         Enclosure       Image: Cable feedthrough cable gland         Material       GRP (Glassfibre reinforced polycarbonate         Enclosure Lid       Opaque (RAL7035) or transparent         Ingress Protection       IP54 (up to IP65)         Pretection Class       II (Total Insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Impact Resistance       IK08         UV Resistance       Vextor         Ambient Temperature       -20 °C up to max +55°C (derating factor apples)         Installation       Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)         Altitude Above Sea Level (MLS)       Standard 2000m above, max 4000m (derating factor applies)         Relative Humidity       Indoor: max, 50% at +40°C, max, 90% at +20°C (not condensating)         Outdoor application: temporarily up to 95% at +25°C (not condensating)       Outdoor application: temporarily up to 95% at +25°C (not condensating)	Grounding	Functional earth connection terminal
DC Output       Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         PE - Grounding       Cable feedthrough cable gland         Enclosure       Image: Cable feedthrough cable gland         Material       GRP (Glassfibre reinforced polyester) or Polycarbonate         Enclosure Lid       Opaque (RAL7035) or transparent         Ingress Protection       IP54 (up to IP65)         Protection Class       II (Total Insulation)         Mounting       Direct wall mounting or wall mounting brackets         Anti-condensation       Venting (pressure compensation) valve included         Impact Resistance       IKO8         UV Resistance       Ves         Operation and Environental Conditions       -20 °C up to max +55°C (derating factor applies)         Installation       Indoor: max .50% at +40°C, max .90% at +20°C (not condensating)         Altitude Above Sea Level (MLS)       Standard 2000m above, max .4000m (derating factor applies)         Relative Humidity       Indoor: max .50% at +40°C, max .90% at +25°C (not condensating)         Outdoor application: temporarily up to 95% at +25°C (not condensating)         Outdoor application: temporarily up to 95% at +25°C (not condensating)	Cable Connections	
PE - Grounding     Cable feedthrough cable gland       Enclosure       Material     GRP (Glassfibre reinforced polyester) or Polycarbonate       Enclosure Lid     Opaque (RAL7035) or transparent       Ingress Protection     IP54 (up to IP65)       Protection Class     II (Total Insulation)       Mounting     Direct wall mounting or wall mounting brackets       Anti-condensation     Venting (pressure compensation) valve included       Impact Resistance     IK08       UV Resistance     Yes       Operation and Environental Conditions     -20 °C up to max +55°C (derating factor applies)       Installation     Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)       Altitude Above Sea Level (MLS)     Standard 2000m above, max. 4000m (derating factor applies)       Relative Humidity     Indoor max .50% at +40°C, max. 90% at +25°C (not condensating)       Outdoor application: temporarily up to 95% at +25°C (not condensating)	DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads
Enclosure         GRP (Glassfibre reinforced polyester) or Polycarbonate           Material         GRP (Glassfibre reinforced polyester) or Polycarbonate           Enclosure Lid         Opaque (RAL7035) or transparent           Ingress Protection         IP54 (up to IP65)           Protection Class         II (Total Insulation)           Mounting         Direct wall mounting or wall mounting brackets           Anti-condensation         Venting (pressure compensation) valve included           Impact Resistance         IK08           UV Resistance         Yes           Operation and Enviromental Conditions         -20 °C up to max. +55°C (derating factor applies)           Installation         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)           Altitude Above Sea Level (MLS)         Standard 2000m above, max. 4000m (derating factor applies)           Relative Humidity         Indoor: max. 50% at +40°C, max 90% at +25°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)	DC Output	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads
MaterialGRP (Glassfibre reinforced polyester) or PolycarbonateEnclosure LidOpaque (RAL7035) or transparentIngress ProtectionIP54 (up to IP65)Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max 90% at +25°C (not condensating)Outdoor application: temporarily up to 95% at +25°C (not condensating)	PE - Grounding	Cable feedthrough cable gland
Enclosure LidOpaque (RAL7035) or transparentIngress ProtectionIP54 (up to IP65)Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIKO8UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +25°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)ApprovalsIndoor: max. 50% at +40°C, max. 90% at +25°C (not condensating)	Enclosure	
Ingress ProtectionIP54 (up to IP65)Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIKO8UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 400°m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +25°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)Approvals	Material	GRP (Glassfibre reinforced polyester) or Polycarbonate
Protection ClassII (Total Insulation)MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental ConditionsAmbient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)Approvals	Enclosure Lid	Opaque (RAL7035) or transparent
MountingDirect wall mounting or wall mounting bracketsAnti-condensationVenting (pressure compensation) valve includedImpact ResistanceIKO8UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)Approvals	Ingress Protection	IP54 (up to IP65)
Anti-condensationVenting (pressure compensation) valve includedImpact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions	Protection Class	II (Total Insulation)
Impact ResistanceIK08UV ResistanceYesOperation and Enviromental Conditions	Mounting	Direct wall mounting or wall mounting brackets
UV ResistanceYesOperation and Enviromental Conditions-20 °C up to max. +55°C (derating factor applies)Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)ApprovalsIndoor: max. 50% at +40°C, max. 90% at +25°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)	Anti-condensation	Venting (pressure compensation) valve included
Operation and Enviromental ConditionsAmbient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)Approvals	Impact Resistance	IK08
Ambient Temperature-20 °C up to max. +55°C (derating factor applies)InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)ApprovalsIndoor: max. 50% at +40°C, max. 90% at +25°C (not condensating)	UV Resistance	Yes
InstallationIndoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)Altitude Above Sea Level (MLS)Standard 2000m above, max. 4000m (derating factor applies)Relative HumidityIndoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)Approvals	Operation and Enviromental Conditions	
Altitude Above Sea Level (MLS)     Standard 2000m above, max. 4000m (derating factor applies)       Relative Humidity     Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)       Approvals     Indoor: max. 50% at +20°C (not condensating)	Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)
Relative Humidity     Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)       Outdoor application: temporarily up to 95% at +25°C (not condensating)       Approvals	Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)
Outdoor application: temporarily up to 95% at +25°C (not condensating)       Approvals		
Approvals	Relative Humidity	
	Approvals	
		EN 61439-2, IEC 61439-2





# DC COMBINER MONITORING WITH REMOTE OPERATION (SINGLE-MPPT MAX. 12 INPUT)

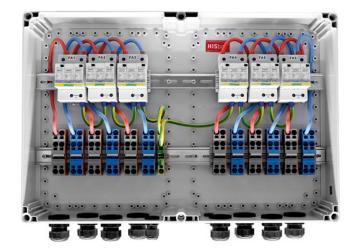
Electrical Characteristics				
Rated Voltage (Un)	1500 V DC			
Rated Insulation Voltage (Ui)	1500 V DC			
Max. Rated Current per String (InC)	20 A			
Max. Rated Current (InA)	250 A			
String Monitoring				
Monitoring Device	Hallsensor technology, up to 25A current, voltage, temperature measurement, two digital inputs			
Power Supply	Integrated DC/DC Converter 1500 V DC / 24V			
Communication Protocol	Integrated DC/DC Converter 1500 V DC / 24V RS485 Modbus/RTU or optionally LoRa or Wifi			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling included)			
Overvoltage Protection for Data Line	12 V RS485 data SPD (included)			
Fuse Links	10x85mm gPV Fuses			
Load Break Switch	1500 V DC (auxiliary status contact included)			
Accessory	External operation handle (IP65)			
Remote Operations	24 V DC / 230 V AC shunt opening release for remote operation (included)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 12			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable gland			
PE - Grounding	Cable feedthrough cable gland			
Enclosure	CPR (Classifier reinforced polyester)			
Material	GRP (Glassfibre reinforced polyester)			
Material Orientation	Landscape or Portrait			
Material Orientation Body	Landscape or Portrait Opaque (RAL7035)			
Material Orientation Body Enclosure Lid	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent			
Material Orientation Body Enclosure Lid Ingress Protection	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65)			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation Impact Resistance	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation Impact Resistance UV Resistance	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation Impact Resistance UV Resistance UV Resistance	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08 Yes			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation Impact Resistance UV Resistance UV Resistance Ambient Temperature	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08 Yes -20 °C up to max. +55°C (derating factor applies)			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation Impact Resistance UV Resistance UV Resistance Ambient Temperature Installation	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08 Yes -20 °C up to max. +55°C (derating factor applies) Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Material Orientation Body Enclosure Lid Ingress Protection Protection Class Mounting Anti-condensation Impact Resistance UV Resistance UV Resistance <b>Operation and Enviromental Conditions</b> Ambient Temperature Installation Altitude Above Sea Level (MLS)	Landscape or Portrait Opaque (RAL7035) Opaque (RAL7035) or transparent IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08 Yes -20 °C up to max. +55°C (derating factor applies) Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies) Standard 2000m above, max. 4000m (derating factor applies) Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)			

Standard



#### DC COMBINER 1000V MULTI-MPPT

Electrical Characteristics				
Rated Voltage (Un)	1000 V DC			
Rated Insulation Voltage (Ui)	1000 V DC			
Max. Rated Current per String (InC)	20 A			
Max. Rated Current (InA)	80 A			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling upon request)			
Fuse Links	10x38mm gPV Fuses (optional)			
Load Break Switch	1000 V DC, per MPPT (optional) (auxiliary status contact upon request)			
Fireman Switch Application	230V AC, undervoltage release function for Fireman switch applications (included)			
Inputs				
MPPTs	1 to 12			
Strings per MPPT	1 to 8			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying lead			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester) or Polycarbonate			
Enclosure Lid	Opaque (RAL7035) or transparent			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	Direct wall mounting or wall mounting brackets			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)			
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)			
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)			
Approvals				
Standard	EN 61439-2, IEC 61439-2			



## DC COMBINER 1000V SINGLE-MPPT 10/12/14/16 STRINGS

Electrical Characteristics				
Rated Voltage (Un)	1000 V DC			
Rated Insulation Voltage (Ui)	1000 V DC			
Max. Rated Current per String (InC)	20 A			
Max. Rated Current (InA)	250 A			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling upon request)			
Fuse Links	10x38mm gPV Fuses (optional)			
Load Break Switch	1000 V DC, per MPPT (optional) (auxiliary status contact upon request)			
Accessory	External operation handle (IP65)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 16			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable glands			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester)			
Enclosure Lid	Opaque (RAL7035)			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	Stainless steel wall mounting brackets			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)			
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)			
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)			
Approvals				
Standard	EN 61439-2, IEC 61439-2			



### **HISBOX SMART POWER & METERING**

Power fluctuations and electrical faults can cause serious damage to solar power systems and disrupt their operation, resulting in downtime and lost revenue.

At HIS, we understand the importance of maintaining the safety and reliability of your solar power system. That's why we offer a range of grid and system protection boxes designed to safeguard your system from electrical faults, ensuring optimal performance and longevity.

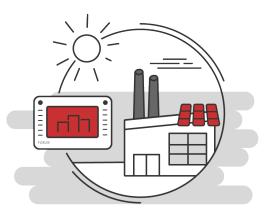
Our protection boxes assume the monitoring and protective function, which includes checking the mains voltage, the mains frequency and detecting possible isolated operation. As soon as one or more functions deviate from the target range, the signal to switch off is sent to the central section switch and to section switches that are integrated in the generating plants.

HISbox<sup>®</sup> Smart Power & Metering boxes are engineered to meet the highest safety and reliability standards and are designed to protect your solar power system against overvoltage, undervoltage, overcurrent, and other electrical faults including the advanced communication skills.

#### Features:

- Complies with VDE 4105 Requirements
- Integrated AC Combiner (Inverter Collector)
- Realtime Monitoring & Control
- Schnittstelle Direktvermarktung RE
- Automatic or Manual Operations
- Suitable for Indoor & Outdoor Applications
- ACC. TO IEC61439-1 & 2





## HNA GRID PROTECTION VDE-AR-N 4105:2018-11, VDE-AR-N 4110

HISbox Grid and Plant Protection takes over all functions required by the power supply company for grid and plant protection in your PV plant. HISbox<sup>®</sup> Grid and Plant Protection contains the CM-UFD.M31 grid monitoring device with a remotely controllable 4-pole switch as well as the associated components.

The fully pre-wired switchgear combination is used between the grid connection point and the inverter.

Electrical Characteristics				
Rated Voltage (Un)	230 V / 400 V AC			
Rated Insulation Voltage (Ui)	400 V AC			
Max. Rated AC Power	up to 135 kVA			
Grid Configuration	TN-S, TN-C-S, TT (IT, TNC networks on request)			
Protection Devices				
Isolation Point / Coupling Switch	4 Pole AC power contactor / 4 pole switch disconnector with motor operation			
Time delay relay	Yes (with switch disconnector)			
Grid Monitoring Relay	CM-UFD.M31, remotely triggered in accordance with the low voltage directive			
Shutdown times	Switching point: <100ms and total switch-off time: <200ms (including grid and plant protective relay)			
Fireman Switch Application	230V AC, undervoltage release function for Fireman switch applications (optional)			
Overvoltage Protection	Yes (optional)			
Cable Connections				
AC Input & Output	Cable feedthrough cable glands or cable grommets			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester)			
Enclosure Lid	Opaque (RAL7035) or transparent			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	Stainless steel wall mounting brackets			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Ambient Temperature	-15 °C up to max. +40 °C (+35 ° C 24 h mean value) (derating factor applies)			
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)			
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)			
Approvals				
Standard				

Standard

EN 61439-2, IEC 61439-2, VDE-AR-N 4105:2018-11, VDE-AR-N 4110

#### **Features:**

- Designed in accordance with VDE-AR-N 4105:2018-11 and optimally VDE-AR-N 4110 (from 135kVA).

- Easy commissioning thanks to preset basic programs for country-specific directives.

- Ready for connection to TNS and TT networks. (IT-, TNC- networks on request)

- Fulfills all functions required by the power supply company for network and system protection.
- Contains, in addition to the control unit, 1 remotely controllable 4-pole disconnection point and the associated components.
- Current measured values are displayed and stored on the LC display.

- Retrievability of the last 300 mains faults with time stamp/real-time clock.

- Remote disconnection via ripple control signal receiver and monitoring of the connected coupling switches.

- Isolated network detection df/dt (ROCOF)







# **UTILITY SCALE**

#### **REALIZE SUCCESSFUL PV SYSTEMS WITH HOLISTIC SOLUTIONS**



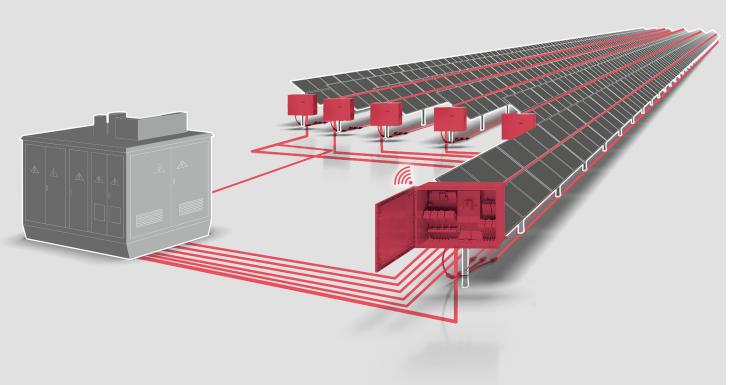






E-CAD ENGINEERING ERP MANUFACTURING

LOGISTICS



#### HM15 MONITORING 1500V DC (4-32A)

Electrical Characteristics				
Rated Voltage (Un)	1500 V DC			
Rated Insulation Voltage (Ui)	1500 V DC			
Max. Rated Current per String (InC)	20 A			
Max. Rated Current (InA)	500 A			
String Monitoring				
Monitoring Device	Hallsensor technology, up to 25A current, voltage, temperature measurement, two digital inputs			
Power Supply	Integrated DC/DC Converter 1500 V DC / 24V			
Communication Protocol	RS485 Modbus/RTU or optionally LoRa or Wifi			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling included)			
Overvoltage Protection for Data Line	12 V RS485 data SPD (included)			
Fuse Links	10x85mm gPV Fuses			
Load Break Switch	1500 V DC, 400 A, 500 A, 630 A (auxiliary status contact included)			
Accessory	External operation handle (IP65)			
Remote Operations	24 V DC / 230 V AC shunt opening release for remote operation (included)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 32			
Output				
Strings per MPPT	1/2			
	Functional earth connection terminal			
Grounding	Functional earth connection terminal			
Grounding Cable Connections	Functional earth connection terminal			
	Functional earth connection terminal Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
Cable Connections				
Cable Connections DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
Cable Connections DC Input DC Output	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands			
Cable Connections DC Input DC Output PE - Grounding	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035)			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection         Protection Class	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation)			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection         Protection Class         Mounting	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection         Protection Class	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation)			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection         Protection Class         Mounting         Anti-condensation	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection         Protection Class         Mounting         Anti-condensation         Impact Resistance	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08			
Cable Connections         DC Input         DC Output         PE - Grounding         Enclosure         Material         Orientation         Body         Ingress Protection         Protection Class         Mounting         Anti-condensation         Impact Resistance         UV Resistance	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08 Yes			
Cable ConnectionsDC InputDC OutputPE - GroundingEnclosureMaterialOrientationBodyIngress ProtectionProtection ClassMountingAnti-condensationImpact ResistanceUV ResistanceOperation and Enviromental Conditions	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable glands Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08			
Cable ConnectionsDC InputDC OutputPE - GroundingEnclosureMaterialOrientationBodyIngress ProtectionProtection ClassMountingAnti-condensationImpact ResistanceUV ResistanceOperation and Enviromental ConditionsAmbient Temperature	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads Cable feedthrough cable gland Cable feedthrough cable gland GRP (Glassfibre reinforced polyester) Landscape or Portrait Opaque (RAL7035) IP54 (up to IP65) II (Total Insulation) Direct wall mounting or wall mounting brackets Venting (pressure compensation) valve included IK08 Yes -20 °C up to max. +55°C (derating factor applies)			
Cable ConnectionsDC InputDC OutputPE - GroundingEnclosureMaterialOrientationBodyIngress ProtectionProtection ClassMountingAnti-condensationImpact ResistanceUV ResistanceUV ResistanceOperation and Enviromental ConditionsAmbient TemperatureInstallation	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         Cable feedthrough cable glands         Cable feedthrough cable gland         GRP (Glassfibre reinforced polyester)         Landscape or Portrait         Opaque (RAL7035)         IP54 (up to IP65)         II (Total Insulation)         Direct wall mounting or wall mounting brackets         Venting (pressure compensation) valve included         IK08         Yes         -20 °C up to max. +55°C (derating factor applies)         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Cable ConnectionsDC InputDC OutputPE - GroundingEnclosureMaterialOrientationBodyIngress ProtectionProtection ClassMountingAnti-condensationImpact ResistanceUV ResistanceUV ResistanceOperation and Enviromental ConditionsAmbient TemperatureInstallationAltitude Above Sea Level (MLS)	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads         Cable feedthrough cable glands         Cable feedthrough cable gland         GRP (Glassfibre reinforced polyester)         Landscape or Portrait         Opaque (RAL7035)         IP54 (up to IP65)         II (Total Insulation)         Direct wall mounting or wall mounting brackets         Venting (pressure compensation) valve included         IK08         Yes         -20 °C up to max. +55°C (derating factor applies)         Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)         Standard 2000m above, max. 4000m (derating factor applies)         Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)			

Standard

## HM15 MONITORING HIGH CURRENT 1500V DC (35-80A)

Electrical Characteristics				
	1500 V DC			
Rated Voltage (Un)				
Rated Insulation Voltage (Ui)	1500 V DC			
Max. Rated Current per String (InC)	40 A			
Max. Rated Current (InA)	630 A			
String Monitoring				
Monitoring Device	Hallsensor technology, up to 25A current, voltage, temperature measurement, two digital inputs			
Power Supply	Integrated DC/DC Converter 1500 V DC / 24V			
Communication Protocol	RS485 Modbus/RTU or optionally LoRa or Wifi			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling included)			
Fuse Links	10x85mm gPV Fuses			
Load Break Switch	1500 V DC, 400 A, 500 A, 630 A, 800 A (auxiliary status contact included)			
Accessory	External operation handle (IP65)			
Remote Operations	24 V DC, 230 V AC shunt opening release for remote operation (optional)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 16			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable gland			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester)			
Orientation	Landscape or Portrait			
Body	Opaque (RAL7035)			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	Stainless steel wall mounting brackets, standalone pedestal (optional)			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)			
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)			
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)			
Approvals				
Standard	EN 61439-2, IEC 61439-2			

#### **GATEWAY BOXES**

Communication plays an essential role in monitoring and controlling DC combiner boxes for efficient operation and maintenance.

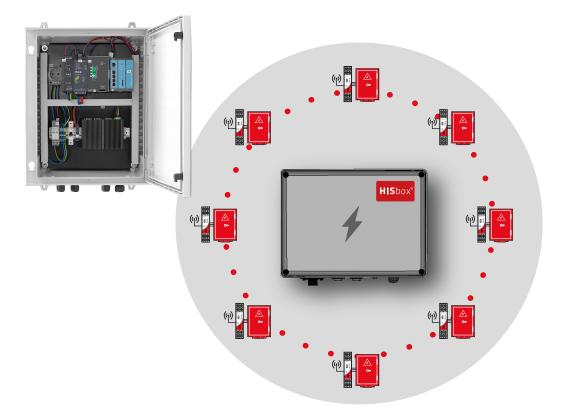
Typically, DC combiner boxes incorporate communication protocols that allow them to transmit relevant information to a central monitoring system or supervisory control and data acquisition (SCADA) system.

This communication enable the exchange of information such as voltage, current, temperature, alarms, and status data between the DC combiner boxes and the monitoring or control systems. By monitoring these parameters, operators can identify potential issues, perform preventive maintenance, and optimize the overall performance of the PV plant.

HIS Renewables completes the utility scale solution portfolio with the wireless gateways including Wi-Fi and LoRa applications. Seamlessly connect your Modbus RS-485 devices (DC Combiners) to wireless networks, enabling efficient data transfer and remote monitoring.

#### Order No.

Gateway-LoRa-E001 Gateway-AdvanticSys-E001 RS485 to LoRa Gateway Box, 24V DC Power Supply needed RS485 to WiFi Gateway Box, 24V DC Power Supply needed



## PV ARRAY BOX 1500V DC (4-32A)

Electrical Characteristics				
Rated Voltage (Un)	1500 V DC			
Rated Insulation Voltage (Ui)	1500 V DC			
Max. Rated Current per String (InC)	40 A			
Max. Rated Current (InA)	630 A			
String Monitoring				
Monitoring Device	Hallsensor technology, up to 25A current, voltage, temperature measurement, two digital inputs			
Power Supply	Integrated DC/DC Converter 1500 V DC / 24V			
Communication Protocol	RS485 Modbus/RTU or optionally LoRa or Wifi			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling included)			
Fuse Links	10x85mm gPV Fuses			
Load Break Switch	1500 V DC, 400 A, 500 A, 630 A, 800 A (auxiliary status contact included)			
Accessory	External operation handle (IP65)			
Remote Operations	24 V DC, 230 V AC shunt opening release for remote operation (optional)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 16			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable gland			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester)			
Orientation Body	Landscape or Portrait Opaque (RAL7035)			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	stainless steel wall mounting brackets, standalone pedestal (optional)			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)			
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)			
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)			
Approvals				

Standard

## PV ARRAY BOX HIGH CURRENT 1500V DC (35-80A)

Electrical Characteristics				
Rated Voltage (Un)	1500 V DC			
Rated Insulation Voltage (Ui)	1500 V DC			
Max. Rated Current per String (InC)	40 A			
Max. Rated Current (InA)	630 A			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling upon request)			
Fuse Links	22x58mm gPV Fuses			
Load Break Switch	1500 V DC, 400 A, 500 A, 630 A, 800 A (auxiliary status contact upon request)			
Accessory	External operation handle (IP65)			
Remote Operations	24 V DC, 230 V AC shunt opening release for remote operation (optional)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 16			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable gland			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester)			
Orientation	Landscape or Portrait			
Body	Opaque (RAL7035)			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	Stainless steel wall mounting brackets, standalone pedestal (optional)			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)			
Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Altitude Above Sea Level (MLS)	Standard 2000m above, max. 4000m (derating factor applies)			
Relative Humidity	Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)			
	Outdoor application: temporarily up to 95% at +25°C (not condensating)			
Approvals				
Standard	EN 61439-2, IEC 61439-2			

Standard

#### **ARC FAULT DETECTION 1500V**

Electrical Characteristics				
Rated Voltage (Un)	1500 V DC			
Rated Insulation Voltage (Ui)	1500 V DC			
Max. Rated Current per String (InC)	20 A			
Max. Rated Current (InA)	500 A			
String Monitoring				
Monitoring Device	Hallsensor technology, up to 25A current, voltage, temperature measurement, two digital inputs			
Arc Fault Detection	Yes, String arc and busbar arc detection			
Power Supply	Integrated DC/DC Converter 1500 V DC / 24V			
Communication Protocol	RS485 Modbus/RTU or optionally LoRa or Wifi			
Protection Devices				
Overvoltage Protection	Type 2 or Type 1+2 (remote signalling included)			
Fuse Links	10x85mm gPV Fuses			
Load Break Switch	1500 V DC, 400 A, 500 A, 630 A (auxiliary status contact included)			
Accessory	External operation handle (IP65)			
Remote Operations	24 V DC, 230 V AC shunt opening release for remote operation (optional)			
Inputs				
MPPTs	1			
Strings per MPPT	up to 32			
Output				
Strings per MPPT	1/2			
Grounding	Functional earth connection terminal			
Cable Connections				
DC Input	Cable feedthrough cable glands; modular connection system: optionally with PV-connectors or flying leads			
DC Output	Cable feedthrough cable glands			
PE - Grounding	Cable feedthrough cable gland			
Enclosure				
Material	GRP (Glassfibre reinforced polyester)			
Orientation	Landscape or Portrait			
Body	Opaque (RAL7035)			
Ingress Protection	IP54 (up to IP65)			
Protection Class	II (Total Insulation)			
Mounting	Stainless steel wall mounting brackets, standalone pedestal (optional)			
Anti-condensation	Venting (pressure compensation) valve included			
Impact Resistance	IK08			
UV Resistance	Yes			
Operation and Enviromental Conditions				
Operation and Enviromental Conditions Ambient Temperature	-20 °C up to max. +55°C (derating factor applies)			
	-20 °C up to max. +55°C (derating factor applies) Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Ambient Temperature				
Ambient Temperature Installation	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies)			
Ambient Temperature Installation Altitude Above Sea Level (MLS)	Indoor and Outdoor, shaded (protected from rain and direct sunlight, installation manual applies) Standard 2000m above, max. 4000m (derating factor applies) Indoor: max. 50% at +40°C, max. 90% at +20°C (not condensating)			

Standard



## **ARRAY BOX - CABLE TRUNK SOLUTIONS**

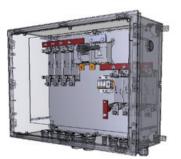
HISbox String boxes are synonymous with uncompromising product quality, the greatest possible cost-efficiency and longevity. We plan, develop and manufacture string boxes optimized and ready for connection from high quality industrial components of leading manufacturers to meet the exact requirements of your plant.

Technical Description		
Protection Class (acc. IEC 61140)	II, insulated	
Conformity	IEC 61439-1;-2	
Overvoltage device	Type 1+2 ln = 15kA lmax = 40A	
Fuse links	acc. IEC60269-6	
Load break switch	IEC 60947-3	
Enclosure	Glass-fiber reinforced Polyester (GRP); UV- and ozone stable; Incl. anti-pressure ventile; mounting brackets in stainless steel	
Cable feedthrough	Cable glands (Ø 6mm to 13mm); Optionally with Stäubli MC4, MC4-EVO2 (2,5-10mm²), Phoenix Contact Sunclix (6-16mm²)	
Ambient temperature	-20 °C to max. +55°C	
Altitude above sea level (MLS)	Standard 2000m above, max. 4000m (DERATING applies)	
Relative Humidity	Indoor: Max. 50% at +40°C, max. 90% at +20°C (not condensating) Outdoor application: temporarily up to 95% at +25°C (not condensating)	

Part No.	Amount strings	Max. rated current (Ina)	Fuses (+)	Fuses (-)	Standard
HDC1500-15-08-FF-011-E011	8	240	Yes	Yes	IEC
HDC1500-15-08-FT-011-E011	8	240	Yes	No	IEC
HDC1500-15-08-FF-011-E012	8	240	Yes	Yes	AS/NZ
HDC1500-15-08-FT-011-E012	8	240	Yes	No	AS/NZ
HDC1500-15-09-FF-011-E011	9	270	Yes	Yes	IEC
HDC1500-15-09-FT-011-E011	9	270	Yes	No	IEC
HDC1500-15-09-FF-011-E012	9	270	Yes	Yes	AS/NZ
HDC1500-15-09-FT-011-E012	9	270	Yes	No	AS/NZ
HDC1500-04-01-TT-011-E013	1	320	No	No	IEC
HDC1500-04-01-TT-011-E014	1	320	No	No	AS/NZ
HDC1500-04-01-FF-011-E012	1	320	Yes	Yes	IEC
HDC1500-04-01-FF-011-E013	1	320	Yes	Yes	AS/NZ

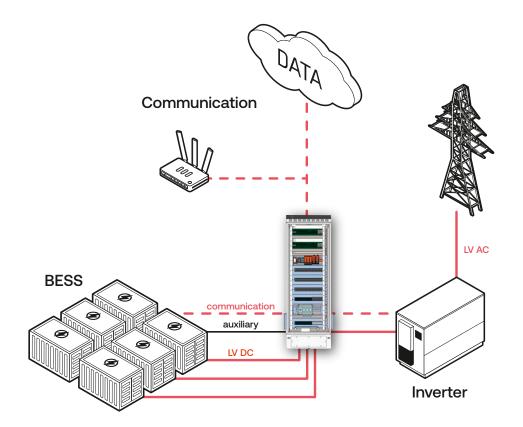






#### ALVC - AUXILIARY LOW VOLTAGE COMBINER

HISbox String boxes are synonymous with uncompromising product quality, the greatest possible cost-efficiency and longevity. We plan, develop and manufacture string boxes optimized and ready for connection from high quality industrial components of leading manufacturers to meet the exact requirements of your plant.





#### HISBOX ALVC (AUXILIARY LOW VOLTAGE CABINETS)

- Auxiliary services
- Communications
- Measurement & monitoring
- Power plant control
- Fire protection
- Power line switchgear assembly
- CCTV boxes

ENGINEERING & PRODUCTION FROM A SINGLE SOURCE



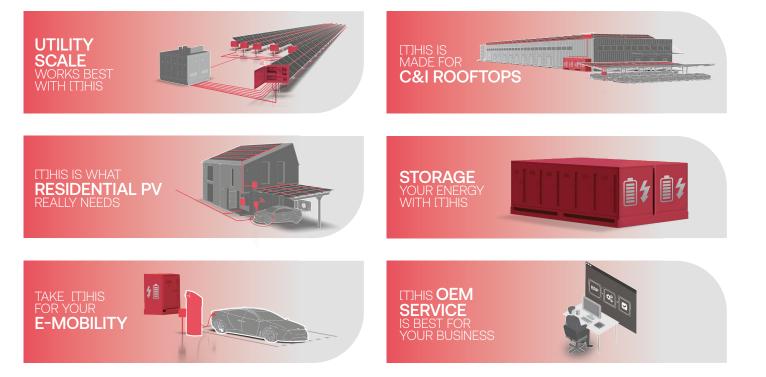
#### **HIS RENEWABLES**

HIS Renewables is one of the leading European providers of system solutions for the integration of renewable energy. Whether integrated photovoltaics, storage solutions, self-consumption optimization or EV charging technology:

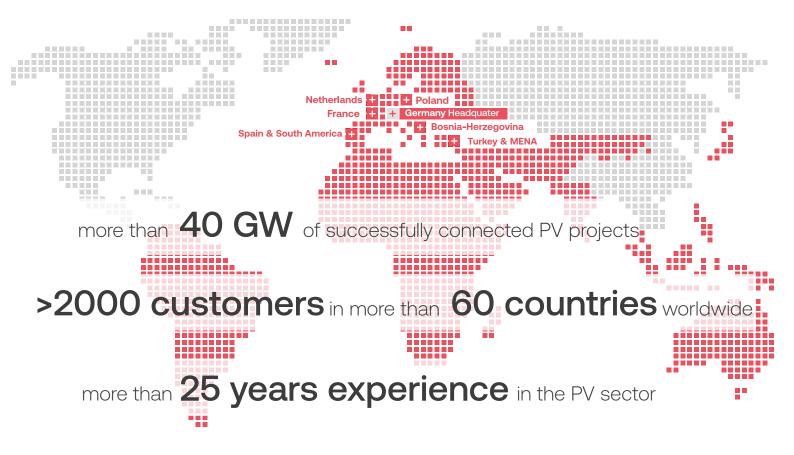
All HIS solutions have been developed at the company's location in Germany for more than 25 years and are manufactured on state-of-the-art machines and systems.

The result: Holistic, innovative and reliable solutions based on the plug & play approach, which ensure fast project implementation and a reduced risk of errors, and which enable HIS customers to carry out their tasks in the implementation of the energy transition quickly, safely and affordably in the long term.

#### FIELDS OF ACTIVITY



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