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MARTIONE CARMEN
Firmato il 18/04/2024 15:28
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Valido dal 28/07/2021 al 28/07/2024

PROVINCIA DI MATERA
COMUNE DI SALANDRA E SAN MAURO FORTE

LOCALITA':

PROGETTO:
INTERVENTO PER L'ATTUAZIONE DELLA TRANSIZIONE ENERGETICA, MEDIANTE LA REALIZZAZIONE DI UN PARCO AGRIVOLTAICO DIFFUSO A TERRA, DI POTENZA PARI A CIRCA 160,00 MWP, CON SISTEMA DI STORAGE E GRUPPO POWER-TO-GAS, PER LA PRODUZIONE DI IDROGENO VERDE"

TITOLO DOCUMENTO:
SCHEMA FUNZIONAMENTO SISTEMA DI ACCUMULO

REFERENTE PER LO SVILUPPO DEL PROGETTO
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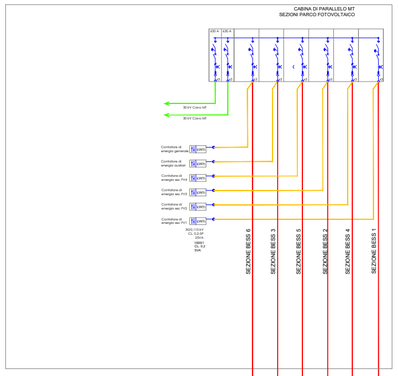
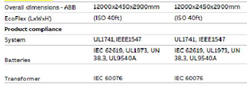
Codice lavoro	Livello proget.	Cat. Op.	Tipologia	Numero	Rev.	Pag.	di	Nome file	Scala	Progressivo
C261	PD	I.FV_IF	R	01	/00	1	1	4.13.b3.1_Schema_funz_sist_accumulo		

Rev.	Data	Descrizione	Redazione	Controllo	Approvazione
00	Aprile 2024	Emissione	Ing. Domenico Castaldo CSA Project	Ing. Domenico Castaldo CSA Project	Ing. Domenico Castaldo CSA Project



*The graphics shown might differ from the actual structure



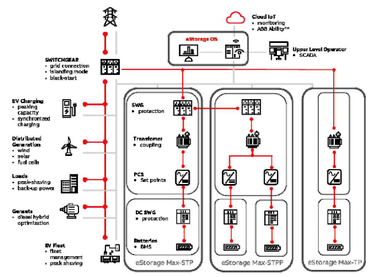
Complete Solution Equipment (STPP)

1. Switchgear (AC)
2. Transformer
3. Power conversion system (PCS)
4. Integrated battery enclosure

System Architecture

The eStorage Max can be provided in multiple, scalable configurations. All configurations are optimized to ensure customer and site requirements are met. The architecture will always include a transformer, power conversion system, battery storage and eStorage OS. Additional configuration options include switchgear (AC) and additional power conversion systems.

The eStorage OS is a fully integrated digital operating system for the eStorage Max that provides asset management, monitoring, control, protection and communication with the upper-level operator. Remote control, monitoring and embedded energy management functions for different applications are available as predefined options. The eStorage OS can also provide microgrid control and black start capability.



Technical data

Description	eStorage Max-TP	eStorage Max-TPP	eStorage Max-STP	eStorage Max-STPP
Electrical specifications				
Maximum Outputpower (S)[1]	2300kVA	5000kVA	2300kVA	5000kVA
Typical Outputpower (P) [1]	<2100kW	<4200kW	<2100kW	<4200kW
Typical Installed Energy	>2100 kWh	>4200 kWh	>2100 kWh	>4200 kWh
Max C-rate	<1C	<1C	<0.5C	<0.5C
Nominal voltage (kV)	12, 24, 36, 40.5	12, 24, 36, 40.5	12, 24, 36, 40.5	12, 24, 36, 40.5
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Power factor range	4-quadrant, 0 to 1	4-quadrant, 0 to 1	4-quadrant, 0 to 1	4-quadrant, 0 to 1
Connection method	3-phase	3-phase	3-phase	3-phase
Equipment				
Battery Enclosure	ABB EcoFlex	ABB EcoFlex	ABB EcoFlex	ABB EcoFlex
Battery chemistry	NMC, LFP	NMC, LFP	NMC, LFP	NMC, LFP
Grid connection equipment[2]	ABB Skid	ABB Skid	ABB Skid	ABB Skid
Power conversion system operation modes	VSI, PQ, VSI, Vf, CSI, grid forming, blackstart	VSI, PQ, VSI, Vf, CSI, grid forming, blackstart	VSI, PQ, VSI, Vf, CSI, grid forming, blackstart	VSI, PQ, VSI, Vf, CSI, grid forming, blackstart
Transformer type	Oil-filled, dry-type	Oil-filled, dry-type	Oil-filled, dry-type	Oil-filled, dry-type
AC switchgear	N/A	N/A	ABB SafeRing/SafePlus	ABB SafeRing/SafePlus
Environmental conditions				
Ambient temp. range (nom. ratings)	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Relative humidity	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
IP degree battery compartment	IP54	IP54	IP54	IP54
General specifications				
Overall dimensions - ABB Skid (LxWxH)	6000x2500x2775mm	6000x2500x2775mm	6800x2500x2775mm	12000x2300x2775mm
Overall dimensions - ABB EcoFlex (LxWxH)	12000x2450x2900mm (ISO 40ft)	12000x2450x2900mm (ISO 40ft)	12000x2450x2900mm (ISO 40ft)	12000x2450x2900mm (ISO 40ft)
Product compliance				
System	UL1741, IEEE1547	UL1741, IEEE1547	UL1741, IEEE1547	UL1741, IEEE1547
Batteries	IEC 62619, UL1973, UN 38.3, UL9540A	IEC 62619, UL1973, UN 38.3, UL9540A	IEC 62619, UL1973, UN 38.3, UL9540A	IEC 62619, UL1973, UN 38.3, UL9540A
Transformer	IEC 60076	IEC 60076	IEC 60076	IEC 60076
Medium-voltage distribution	IEC 62271-200	IEC 62271-200	IEC 62271-200	IEC 62271-200
Fieldbus connectivity (predefined option)	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring
Local user interface	ABB local control panel and embedded ABB Energy Management System	ABB local control panel and embedded ABB Energy Management System	ABB local control panel and embedded ABB Energy Management System	ABB local control panel and embedded ABB Energy Management System
Remote connectivity	Advanced SCADA and cloud connection, IEC62443	Advanced SCADA and cloud connection, IEC6443	Advanced SCADA and cloud connection, IEC62443	Advanced SCADA and cloud connection, IEC62443