

Appendix D-3 – Sound Modeling Equipment Datasheets

AUDIBLE SOUND LEVELS FOR FULLY-IMMERSED POWER TRANSFORMERS

Table 0-2

Column 1 - Class*OA, OA and FOW Ratings

Column 2 - Class* FA and FOA First-stage Auxiliary Cooling**†

Column 3 - Straight FOA* Ratings, FA* FOA* Second-stage Auxiliary Cooling††

Average Sound Level ††, Decibels	Equivalent Two-winding Rating▲																	
	350 kV BIL and Below			450, 550, 650 kV BIL			750 and 825 kV BIL			900 and 1050 kV BIL			1175 kV BIL			1300 kV BIL and Above		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57	700	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
58	1000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59	...	...	...	700	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60	1500	...	...	1000	...	...	...	...	...	...	...	...	...	...	...	...	...	...
61	2000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
62	2500	...	...	1500	...	...	...	...	...	...	...	...	...	...	...	...	...	...
63	3000	...	...	2000	...	...	...	...	...	...	...	...	...	...	...	...	...	...
64	4000	...	...	2500	...	...	...	...	...	...	...	...	...	...	...	...	...	...
65	5000	...	...	3000	...	...	...	...	...	...	...	...	...	...	...	...	...	...
66	6000	...	...	4000	...	...	3000	...	...	...	...	...	...	...	...	...	...	...
67	7500	6250▲▲	...	5000	3750▲▲	...	4000	3125▲▲	...	...	...	...	...	...	...	...	...	...
68	10000	7500	...	6000	5000	...	5000	3750	...	...	...	...	...	...	...	...	...	...
69	12500	9375	...	7500	6250	...	6000	5000	...	...	...	...	...	...	...	...	...	...
70	15000	12500	...	10000	7500	...	7500	6250	...	...	...	...	...	...	...	...	...	...
71	20000	16667	...	12500	9375	...	10000	7500	...	...	...	...	...	...	...	...	...	...
72	25000	20000	20800	15000	12500	...	12500	9375	...	...	...	...	...	...	...	...	...	...
73	30000	26667	25000	20000	16667	...	15000	12500	...	12500	...	...	...	...	...	...	...	...
74	40000	33333	33333	25000	20000	20800	20000	16667	...	15000	...	...	12500	...	...	...	...	...
75	50000	40000	41667	30000	26667	25000	25000	20000	20800	20000	16667	...	15000	...	...	12500	...	...
76	60000	53333	50000	40000	33333	33333	30000	26667	25000	25000	20000	20800	20000	16667	...	15000	...	...
77	80000	66667	66667	50000	40000	41667	40000	33333	33333	30000	26667	25000	25000	20000	20800	20000	16667	...
78	100000	80000	83333	60000	53333	50000	50000	40000	41667	40000	33333	33333	30000	26667	25000	25000	20000	20800
79	...	106667	100000	80000	66667	66667	60000	53333	50000	50000	40000	41667	40000	33333	33333	30000	26667	25000
80	...	133333	133333	100000	80000	83333	80000	66667	66667	60000	53333	50000	50000	40000	41667	40000	33333	33333
81	...	...	166667	...	106667	100000	100000	80000	83333	80000	66667	66667	60000	53333	50000	50000	40000	41667
82	...	...	200000	...	133333	133333	...	106667	100000	100000	80000	83333	80000	66667	66667	60000	53333	50000
83	...	...	250000	...	...	166667	...	133333	133333	...	106667	100000	100000	80000	83333	80000	66667	66667
84	...	...	300000	...	...	200000	...	...	166667	...	133333	133333	...	106667	100000	100000	80000	83333
85	...	...	400000	...	...	250000	...	...	200000	...	...	166667	...	133333	133333	...	106667	100000
86	...	...	...	...	...	300000	...	...	250000	...	...	200000	...	...	166667	...	133333	133333
87	...	...	...	...	...	400000	...	...	300000	...	...	250000	...	...	200000	...	...	166667
88	...	...	...	...	...	...	...	...	400000	...	...	300000	...	...	250000	...	...	200000
89	...	...	...	...	...	...	...	...	...	...	...	400000	...	...	300000	...	...	250000
90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	400000	...	...	300000
91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	400000

*Classes of cooling (see 2.6.1 of American National Standard C57.12.00-1988).

**First- and second-stage auxiliary cooling (see TR 1.0.02).

†For column 2 and 3 ratings, the sound levels are with the auxiliary cooling equipment in operation.

††For intermediate kVA ratings, use the average sound level of the next larger kVA rating.

▲The equivalent two-winding 55°C or 65°C rating is defined as one-half the sum of the kVA rating of all windings.

▲▲Sixty-seven decibels for all kVA ratings equal to this or smaller.

Enclosure Package Operating Characteristics

Enclosure Type	Standby ekW	Cooling Air Flow Rate		Ambient Capability*		Sound Pressure Levels (dBA) at 7m (23 ft)
		m ³ /s	cfm	°C	°F	100% Load
Level 1 Sound Attenuated Enclosure (Steel)	350	10.4	22072	59	138	73
	400	10.4	22072	51	124	73
	450	10.4	22072	46	115	74
	500	12.5	26415	48	118	75
Level 2 Sound Attenuated Enclosure (Steel)	350	10.4	22071	50	122	72
	400	10.4	22071	50	122	72
	450	10.4	22071	50	122	72
	500	12.5	26415	50	122	72
Sound Attenuated Enclosure (Aluminum)	350	10.4	22072	59	138	72
	400	10.4	22072	51	124	73
	450	10.4	22072	46	115	74
	500	12.5	26415	48	118	75

*Cooling system performance at sea level. Consult your Cat[®] dealer for site specific ambient and altitude capabilities.

Note: Sound level measurements are subject to instrumentation, installation and manufacturing variability, as well as ambient site conditions.

Component Weights to Calculate Package Weight

Standby ekW	Narrow Skid Base		Wide Skid Base		Sound Attenuated Enclosure (Steel)		Sound Attenuated Enclosure (Aluminum)	
	kg	lb	kg	lb	kg	lb	kg	lb
350	273	602	465	1025	1245	2745	765	1687
400								
450								
500								

**Acoustic Test Center, Qingdao Branch, Institute of Acoustics,
Chinese Academy of Sciences
Test Report (Continuation Sheet)**

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Test Result

Table 4 Calculated Inverter Sound Power Level for 1/1 Octave Bands

Item	Sound Levels at Octave Band Center Frequencies (dB)									Overall Sound Power	
	31.5	63	125	250	500	1000	2000	4000	8000	(dBA)	(dB)
Inverter	85.5	85.3	86.6	85.9	90.1	81.0	80.3	88.1	80.6	91.9	95.7

Table 5 Calculated Inverter Sound Power Level for 1/3 Octave Bands

1/3 Octave Band Center Frequencies/Hz	Sound Power level/dB	1/3 Octave Band Center Frequencies/Hz	Sound Power level/dB
20	70.2	500	85.6
25	76.2	630	80.6
31.5	81.3	800	78.2
40	82.4	1000	76.0
50	81.6	1250	74.2
63	80.4	1600	74.5
80	79.2	2000	75.0
100	80.2	2500	76.4
125	84.0	3150	74.9
160	79.6	4000	70.7
200	77.5	5000	87.6
250	80.8	6300	80.2
315	83.4	8000	73.9
400	87.0	10000	73.1

Note: Because the sound power of inverter is much larger than the value of the transformer, so the total noise of the transformer and the inverter in the test state is the value of the inverter.

-Below Blank-



Voyager™ III

Packaged rooftop



Customer benefits

- Single packaged air/air unit: simple installation
- High performance: lowest energy consumption
- High reliability: low maintenance costs
- Eurovent certified performances

Range description

- TKD/YKD/WKD/DKD: Downflow air discharge and intake
- TKH/YKH/WKH/DKH: Horizontal flow air discharge and intake
- TKD/TKH: Cooling-only unit
- YKD/YKH: Cooling-only unit with gas heat
- WKD/WKH: Reversible heat pump unit
- DKD/DKH: Reversible heat pump unit with gas heat

Main features

- High efficiency in cooling and heating
- Adjustable pulley and drive kit
- Single-side access for easy service
- Pitched drain pan

Options

- Electric heater (TK*/WK*)
- Hot water coil with 3-way-valve (TK*/WK*)
- Gas burners: Staged Low/High capacity (YK*/DK*) or modulating (YK*)
- Advanced comparative enthalpy economizer
- Fresh air volume controlled by remote potentiometer, CO₂ sensor or communication interface
- Fire thermostat/smoke detector
- Clogged filter sensor/fan failure switch

Accessories

- Adjustable or non-adjustable roofcurbs
- Electronic (THS03) and programmable (THP03) zone sensor modules
- Quick adaptation curb (replacement market)
- TD5 Service and Diagnostic full color touchscreen display

ReliaTel™ Control

- 24 V easy-to-start and service microprocessor controls
- LonTalk®, Modbus®, BACnet® communication capabilities

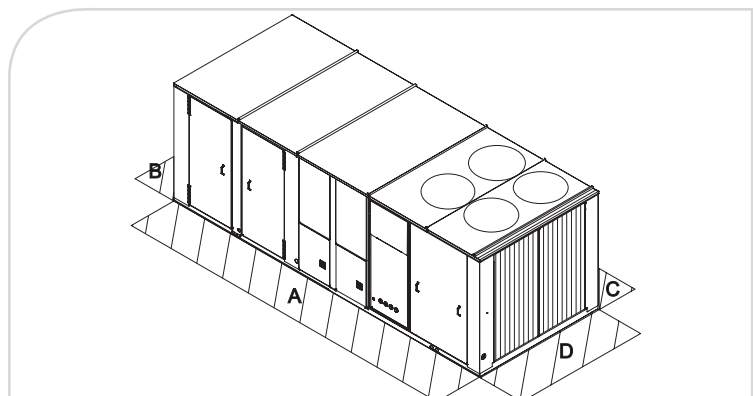
Energy saving options

- Dedicated downflow/horizontal flow Energy Recovery Module
- Plate heat exchanger version (efficiency from 40 to 60%)
- Heat recovery wheel version (efficiency from 65 to 85%)
- Dual fuel unit (DKD/DKH)
- Switch automatically from mechanical heating to gas heat when efficiency of the heat pump is decreasing in cold ambient temperatures

TKD / TKH	YKD / YKH	275	300	350	400	500	600
Net cooling capacity (1)	(kW)	82.8	88.2	93.1	120.3	131.9	153.5
Total power input (1)	(kW)	24.9	27.3	29.6	39.8	46.9	58.6
EER / Eurovent Energy class (1)		3.33 / A	3.23 / A	3.14 / A	3.02	2.81 / B	2.62 / C
Outdoor sound power level (3)	(dB(A))	88	88	89	90	90	91
Indoor sound power level (2)	(dB(A))	84	84	85	87	87	88
Nominal airflow	(m³/h)	13600	15300	17000	20400	24600	29500
Operating outdoor air temperature range - cooling (min./max.)	(°C)	-18 / +52	-18 / +52	-18 / +52	-18 / +49	-18 / +49	-18 / +52
Indoor temperature range - cooling (min./max.)	(°C)	16 / 33					
Indoor temperature range - heating - (min./max.)	(°C)	18/25					
Auxiliary gas heating capacity/Efficiency - low heat		69.3kW/93%				77.4kW/93%	
Auxiliary gas heating capacity/Efficiency - high heat		117.5kW/93%				154.8kW/93%	
Auxiliary gas heating capacity/Efficiency - mod. heat		46.3kW/105% - 145kW/93.5%					
Auxiliary electric heating capacity	(kW)	25	25	38	38	38	38
Weights and dimensions (Operating)							
Length TK*/YK* low heat/YK* high heat	(mm)	4580 / 4580 / 5285				5200 / 5900 / 5900	
Width	(mm)	2302					
Height	(mm)	1821	1821	1821	1996	1996	2268
Weight (no heat/with gas burner low heat / high heat)	(kg)	1599 / 1642 / 1835	1603 / 1658 / 1845	1650 / 1709 / 1895	2021 / 2135 / 2191	2080 / 2193 / 2250	2241 / 2494 / 2551
Clearance A	(mm)	2440					
Clearance B	(mm)	1220					
Clearance C	(mm)	1220					
Clearance D	(mm)	1830					
Electrical data (4)							
Power supply	(V/Ph/Hz)	400/3/50					
Nominal amps	(A)	76	82	93	116	130	151
Start-up amps	(A)	209	248	261	325	393	413

WKD / WKH DKD / DKH		400	500	600
Net cooling capacity (1)	(kW)	115.5	136.2	156.1
Total power input (1)	(kW)	39.8	50.3	62.7
EER / Eurovent Energy class (1)		2.90 / B	2.71 / C	2.49 / D
Net heating capacity (1)	(kW)	107.1	146.8	174.0
COP / Eurovent Energy class (1)		3.30 / B	3.27 / B	3.28 / B
Outdoor sound power level (3)	(dB(A))	90	90	91
Indoor sound power level (2)	(dB(A))	87	87	88
Nominal airflow	(m³/h)	20400	24600	29500
Operating outdoor air temperature range - cooling (min./max.)	(°C)	-18 / +52		
Indoor temperature range - cooling (min./max.)	(°C)	18 / 33		
Operating outdoor air temperature range - heating (min./max.)	(°C)	-15 / +20		
Indoor temperature range heating - (min./max.)	(°C)	10 / 25		
Auxiliary gas heating capacity / efficiency - low heat		77.4kW / 93%		
Auxiliary gas heating capacity / efficiency - high heat		154.8kW / 93%		
Auxiliary electric heating capacity	(kW)	63	75	75
Weights and dimensions (Operating)				
Length WK* / DK*	(mm)	5200 / 5900		
Width	(mm)	2302		
Height	(mm)	1996	2268	2268
Weight (no heat/with gas burner low heat / high heat)	(kg)	2047 / 2161 / 2217	2282 / 2395 / 2452	2297 / 2550 / 2607
Clearance A	(mm)	2440		
Clearance B	(mm)	1220		
Clearance C	(mm)	1220		
Clearance D	(mm)	1830		
Electrical data (4)				
Power supply	(V/Ph/Hz)	400/3/50		
Nominal amps	(A)	114	145	158
Start-up amps	(A)	290	353	420

- (1) At Eurovent conditions EN-14511:
indoor: 27°C/19°C, outdoor: 35°C (cooling)
Indoor: 20°C, outdoor 7°C/6°C DB/WB (heating)
- (2) Supply + return level
- (3) Level in free field
- (4) Electrical data given without electric heater and exhaust fan option



Three-phase pad-mounted compartmental type transformer



General

At Eaton, we are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality, most reliable transformers. Eaton's Cooper Power series Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. In order to drive this innovation, we have invested both time and money in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin. Such revolutionary products as distribution-class UltraSIL™ Polymer-Housed Evolution™ surge arresters and Envirotemp™ FR3™ fluid have been developed at our Franksville lab.

With transformer sizes ranging from 45 kVA to 12 MVA and high voltages ranging from 2400 V to 46 kV, Eaton has you covered. From fabrication of the tanks and cabinets to winding of the cores and coils, to production of arresters, switches, tap changers, expulsion fuses, current limit fuses, bushings (live and dead) and molded rubber goods, Eaton does it all. Eaton's Cooper Power series transformers are available with electrical grade mineral oil or Envirotemp™ FR3™ fluid, a less-flammable and bio-degradable fluid. Electrical codes recognize the advantages of using Envirotemp™ FR3™ fluid both indoors and outdoors for fire sensitive applications. The bio-based fluid meets Occupational Safety and Health Administration (OSHA) and Section 450.23 NEC Requirements.



Powering Business Worldwide

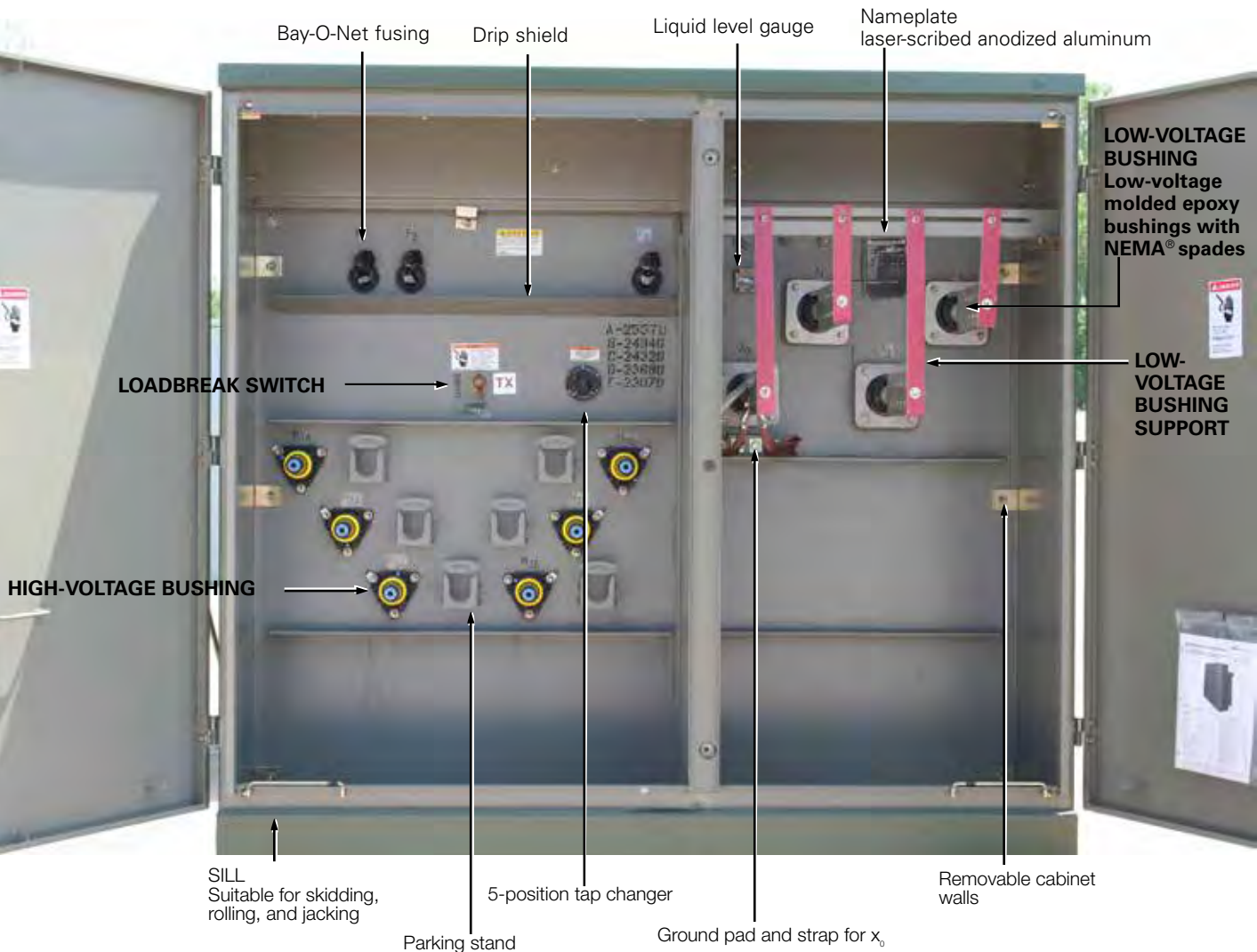


Figure 1. Three-phase pad-mounted compartmental type transformer.

Table 1. Product Scope

Type	Three Phase, 50 or 60 Hz, 65 °C Rise (55 °C, 55/65 °C), 65/75 °C, 75 °C
Fluid Type	Mineral oil or Envirotemp™ FR3™ fluid
Coil Configuration	2-winding or 4-winding or 3-winding (Low-High-Low), 3-winding (Low-Low-High)
Size	45 – 10,000 kVA
Primary Voltage	2,400 – 46,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge
	K-Factor (up to K-19)
	Vacuum Fault Interrupter (VFI)
	UL® Listed & Labeled and Classified
	Factory Mutual (FM) Approved®
	Solar/Wind Designs
	Differential Protection
	Seismic Applications (including OSHPD)
	Hardened Data Center

Table 2. Three-Phase Ratings**Three-Phase 50 or 60 Hz**kVA Available¹:

45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3750, 5000, 7500, 10000

¹Transformers are available in the standard ratings and configurations shown or can be customized to meet specific needs.**Table 3. Impedance Voltage**

Rating (kVA)	Low-voltage rating		
	≤ 600 V	2400 Δ through 4800 Δ	6900 Δ through 13800GY/7970 or 13800 Δ
45-75	2.70-5.75	2.70-5.75	2.70-5.75
112.5-300	3.10-5.75	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75	4.35-5.75
750-2500	5.75	5.75	5.75
3750	5.75	5.75	6.00
5000		6.00	6.50

Note: The standard tolerance is ± 7.5%**Table 4. Audible Sound Levels**

Self-Cooled, Two Winding kVA Rating	NEMA® TR-1 Average
	Decibels (dB)
45-500	56
501-700	57
701-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63
3001-4000	64
4001-5000	65
5001-6000	66
6001-7500	67
7501-10000	68

Table 5. Insulation Test Levels

KV Class	Induced Test 180 or 400 Hz 7200 Cycle	kV BIL Distribution	Applied Test 60 Hz (kV)
1.2	Twice Rated Voltage	30	10
2.5		45	15
5		60	19
8.7		75	26
15		95	34
25		125	40
34.5		150	50

Table 6. Temperature Rise Ratings 0-3300 Feet (0-1000 meters)

	Standard	Optional
Unit Rating (Temperature Rise Winding)	65 °C	55 °C, 55/65 °C, 75 °C
Ambient Temperature Max	40 °C	50 °C
Ambient Temperature 24 Hour Average	30 °C	40 °C
Temperature Rise Hotspot	80 °C	65 °C



LV5⁺ Energy Storage Power Station

Data Sheet (FlexInverter)



GE's LV5⁺ Energy Storage Power Station combines GE Renewable Energy's LV5⁺ 1500V inverter, with medium voltage power transformer, optional MV Ring Main Unit (RMU), and various options for a reliable, plug & play, factory integrated power conversion solution for energy storage applications.

The LV5⁺ Energy Storage Power Station is GE's latest evolution in power electronics. Building on expertise in the renewables industry, GE now offers its latest power conversion technology for efficient, cost effective and dispatchable power.

LV5⁺ Energy Storage Power Station Features:

- UL or IEC compliant configurations
- 3.0 - 3.9 MVA output power
- High efficiency
- Air-cooled system
- Plug & play
- Night time disconnect option
- Direct outdoor installation
- Standard 20ft container for optimized logistics and installation
- Fibre-optic SCADA interface
- Digital ready

1. LV5⁺ 1500V Energy Storage Power Station Data

Specifications	Units	LV5+-1560-ESS Power Station	LV5+-1563-ESS Power Station	LV5+-1566-ESS Power Station	LV5+-1569-ESS Power Station
Input Data					
DC Voltage Range ¹	Vdc	853 - 1300	895 - 1300	938 - 1300	980 - 1300
Max Permissible DC Voltage	Vdc	1500			
Max Continuous DC Current (at 40°C / 50°C)	Adc	4000 / 3200			
Max DC Short Circuit Interrupt Rating	Adc	250 kA for 30 ms			
Number of DC Inputs		Direct busbar connection or up to 48 conductors per pole, bottom or side entry available			
Output Data - Medium Voltage					
Transformer HV / LV Connection		Δ (Delta) / Y (Wye)			
Transformer Efficiency	%	98.8 (Standard) / 99.1 (Option)			
Active AC Output Power Discharging (PF=0.92) ² (at 40°C / 50°C)	MW	3.08 / 2.73	3.23 / 2.87	3.40 / 3.00	3.54 / 3.14
Active AC Output Power Charging (PF=0.985) ² (at 40°C / 50°C)	MW	2.55 / 2.26	2.67 / 2.38	2.82 / 2.48	2.93 / 2.61
AC Output Voltage (+10% / -10%) ³	kVac	22 / 33 / 34.5			
Rated Current HV Winding Discharging Mode (at 50°C)	Aac	72 / 52 / 50	82 / 55 / 52	86 / 57 / 55	90 / 60 / 57
Rated Current HV Winding Discharging Mode (at 40°C)	Aac	88 / 59 / 56	92 / 61 / 59	97 / 65 / 62	101 / 68 / 65
Rated Current HV Winding Charging Mode (at 50°C)	Aac	59 / 40 / 38	63 / 42 / 40	65 / 44 / 42	68 / 46 / 44
Rated Current HV Winding Charging Mode (at 40°C)	Aac	68 / 45 / 43	71 / 48 / 46	75 / 50 / 48	78 / 52 / 50
Grid Frequency ±5%	Hz	50 / 60			
Power Factor (PF) Range		0 to 1 leading & lagging for charging and discharging modes ³			
Current Harmonic Distortion (TDD)	%	<3			
Medium Voltage Cable		Designed for 630mm² / 1250 MCM max			
Efficiency & Auxiliary Power					
System Efficiency Discharging (Max / EU / CEC) ⁴	%	97.8 / 97.6 / 97.7			
Inverter Efficiency Discharging (Max / EU / CEC) ⁵	%	98.9 / 98.6 / 98.7			
Nighttime Aux Power ⁶	W	700			
Interfaces					
Plant Control Interface / PLC		Modbus TCP, OPCUA, EGD			
Programming / Diagnostic Interface		Modbus TCP, OPCUA			
Extra Analog and Digital I/O		Option			
Features and Options					
Cooling		Air Cooled			
Emergency Shut Down		Included			

Specifications	Units	LV5 ⁺ -1560-ESS Power Station	LV5 ⁺ -1563-ESS Power Station	LV5 ⁺ -1566-ESS Power Station	LV5 ⁺ -1569-ESS Power Station
Mounting Options		Piers / Pad			
Array Configurations Supported		Floating			
Nighttime Transformer Disconnect		Option			
Insulation Monitoring		Option			
Power Disconnect AC Side		Motorized AC Circuit Breaker			
Switch-Disconnect DC Side		Motorized DC Switch			
Overvoltage Protection, DC and AC		Included – IEC 61643-1 Class II / UL 1449			
Main Power Transformer Oil Type		Mineral - ONAN (Standard) / Biodegradable - KNAN (Option)			
Oil Containment		Option			
Aux Power / Customer Loads		Option (up to 45 kVA)			
Door Interlocking System		Option			
Weather Station		Option			
Noise ⁷	dBa	<75			
Weight	kg / lbs	approx. 17000 / 37480			
Dimensions (L x W x H)	m / ft	6.1 x 2.4 x 2.9 / 20 x 8 x 9.5			
Protection Rating and Ambient Conditions					
Operating Temperature Range	°C / °F	Standard -10 to +55 / +14 to +131, Option -25 to +55 / -13 to +131			
Storage Temperature Range	°C / °F	-40 to +65 / -40 to +149			
Cold Weather Option ⁸	°C / °F	Down to -35 / -31			
Humidity	%	5-100 (rated for outdoor installation)			
Maximum Altitude without Derating ⁹	m / ft	1000 / 3281			
Seismic		Zone 2B ASCE 7 / IBC			
Maximum Wind Speed ¹⁰	kph / mph	250 / 155			
Snow Load		ASCE 7			
IP Class / NEMA Rating		IP 54 / NEMA 3R (Inverter & RMU) IP 24 / NEMA 3 (Transformer)			
Standards					
Electromagnetic Compatibility (EMC)		EN 61000-6-2, 62920 / CISPR 11			
Certifications		IEC, CE, UL 1741 SA			

¹ At nominal AC voltage. Additional active power limitations in case of line overvoltage apply (reactive power injection to control AC voltage).

² Active power is valid for the cited PF range up to 40°C and grid voltage ≥ nominal voltage

³ Derating will apply according to PQ curves

⁴ Preliminary, includes auxiliary power losses

⁵ Preliminary, excludes auxiliary power losses

⁶ No heating, no cooling, without environmental controls enabled, DC link de-energized and without transformer no load losses

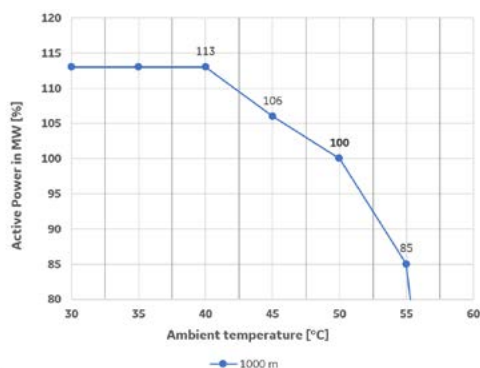
⁷ At 10m in front of enclosure and 1m up from the ground

⁸ Cold weather option on request

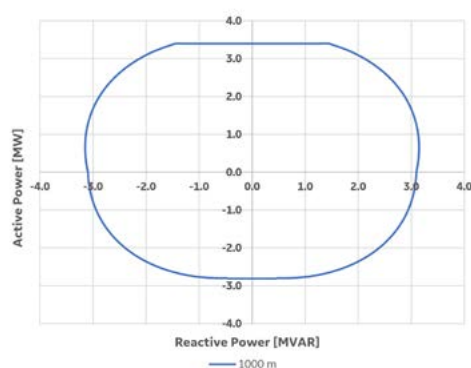
⁹ Higher altitudes (with derating) on request

¹⁰ Maximum wind speed without derating 81 kph / 50 mph

2. Power/ Temperature Derating Curve ¹¹ & Sample PQ Diagram ¹²



¹¹ Applicable for grid voltage ≥ nominal voltage, altitudes >1000m on request



¹² PQ diagram for LV5+ 1563 at nominal grid voltage, 1150 Vdc and 40°C ambient