DATA SHEET

SkelMod 131V6F

+ 131 V DC nominal voltage
+ Ultra-low ESR
+ Long lifetime - 1 million duty cycles
+ Integrated Supercapacitor Management System for cell balancing
+ Active cooling (forced air)
+ Analog alarm signal outputs
+ LED status indicators

General Specifications

	Value	Unit
Electrical		
Product code	6730072	
Rated voltage V_R	131	V
Surge voltage	138	V
Rated capacitance	6.7	F
Rated DC 10ms ESR	62	mΩ
Rated DC 1s ESR	75.7	mΩ
Rated maximum peak current (for 1 s duration) [1, 9]	291	A
Short circuit current (For informational purposes - do not use as operating current.)	2.1*	kA
Maximum stored energy [2]	15.9	Wh
Cells in total	46	pcs
Cell type	SCA0300	

** Based on rated voltage and rated ESR. Based on typical ESR value*

Ultracapacitor management system

Passive balancing		
Resistor in parallel with each cell	120	Ω
Threshold balancing		
Threshold voltage per cell	2.7	V
Threshold balancing current	150	mA

Temperature and Life

	Value	Unit
Operating temperature range		
Minimum	-40	°C
Maximum	+65	°C
Storage temperature range (uncharged)		
Minimum	-40	°C
Maximum	+60	°C
Life		
Lifetime @ V_R and maximum operating temperature *Capacitance decrease 20% from rated value; resistance increase 100% from rated value*	1500	Hours
Storage life @ RT, uncharged	10	Years
Projected cycle life @ RT, between V_R and V_R / 2	1,000,000	Cycles
Thermal parameters		
Thermal resistance with operational fan (R_{th})	0.103	°C / W
Thermal capacitance (C_{th})	3.1	kJ / K
Max continuous current [10], ΔT = 15°C	44	A
Max continuous current [10], ΔT = 30°C	62	A
Max continuous current [10], ΔT = 40°C	72	A

Power terminals positive and negative

Size of terminal	M8	
Length of terminal bolt	25	mm
Tightening torque	5.5	Nm

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Fan specification

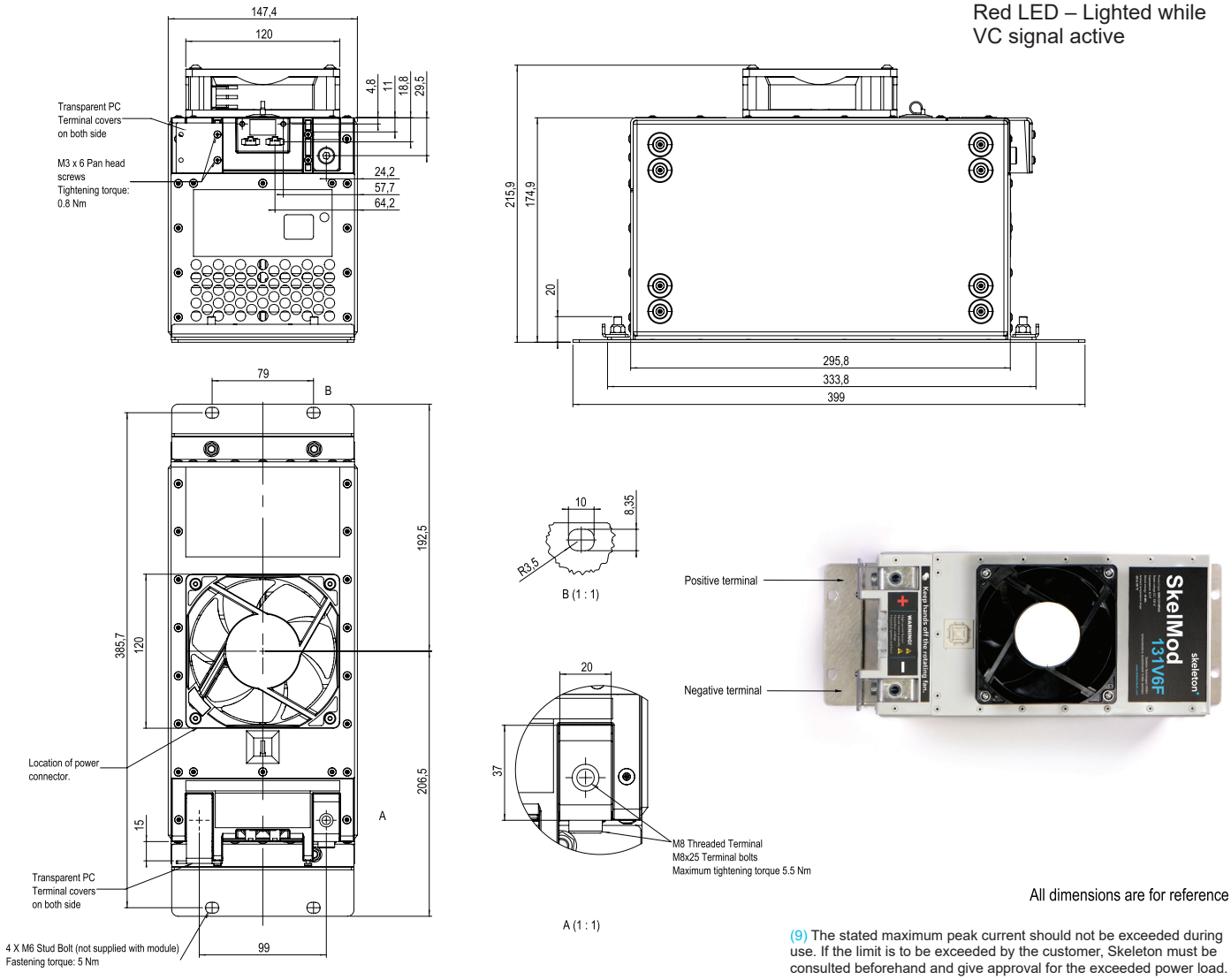
	Value	Unit
Rated voltage	100-240	VAC
Frequency	50/60	Hz
Input power @ 100 VAC	4.4	W

Physical parameters

	Value	Unit
Dimensions	See drawing below	
Weight	5.05	kg

Alarm signal

	Value
Thermal caution (TC)	Active if module temperature > 60 °C
Voltage caution (VC)	Active if any cell >= 2.9 V
Alarm signal connector	SMP-03V-NC
Pin assignment	1 TC signal output 2 VC signal output 3 Signal ground Open collector output by photo coupler
Type of signal circuit	5-24 VDC
Signal circuit current	1-10 mA
Terminal panel LED operation	Green LED – Lighted gradually according to module voltage Red LED – Lighted while VC signal active



All dimensions are for reference

(1) Maximum peak current (1 sec) = $\frac{½\ CV}{C \times ESR + 1s}$ (2) $E_{stored} = \frac{½\ CV^2}{3600}$ (3) $E_{specific} = \frac{E_{stored}}{mass}$

(4) $P_{density} = \frac{P_{max}}{volume}$ (5) $E_{density} = \frac{E_{stored}}{volume}$ (6) $P_{max} = \frac{V^2}{4 \times ESR}$

(7) $P_{specific} = \frac{P_{max}}{mass}$ (8) $R_{th} = \frac{\Delta T}{DC\ 1s\ ESR \times I^2}$

(9) The stated maximum peak current should not be exceeded during use. If the limit is to be exceeded by the customer, Skeleton must be consulted beforehand and give approval for the exceeded power load.

(10) These values of current refer to begin of life conditions of the product, for system design 200% ESR should be considered .

Standard markings

+ Name of manufacturer, part number, serial number, rated voltage
+ Rated capacitance, negative and positive terminals, warning marking
+ Total energy in watt-hours

Notes

+ All information provided on this data sheet and all subsequent supercapacitors sales and testing are subject to Standard Terms of Service (ToS) available on www.skeletontech.com, document General Terms of Sale for Skeleton Technologies GmbH