



NESSCAP® Ultracapacitor Products 16V MODULES

Features

- 16V Series with rated capacitance of 108F, 200F, 266F, 333F and 500F
- Highest power performance with ultra-low internal resistance
- Integrated UMU (Ultracapacitor Management Unit) for:
 - Individual cell balancing
 - Voltage and temperature diagnosis by logic output
 - Optional CAN or RS communication interface
- Rugged design for harsh environments
- Typical applications:
 - Transportation and automotive
 - Industrial UPS and DVR



Specifications

Rated Capacitance (F)	Internal Resistance (mΩ)		Max Current ¹ (A)	Leakage Current (mA)	Stored Energy (Wh)	Specific Energy (Wh/kg)	Nominal Weight (kg)	Part Number
	AC (100Hz)	DC						
Discharge with constant current at 25°C			1 sec discharge rate to 1/2V _R	72 hours at 25°C	at V _R	Gravimetric		
108	< 3.6	< 4.3	580	< 1.5	3.9	1.05	3.7	EMHSR-0108C0-016R0S
200	< 2.9	< 3.5	930	< 2.7	7.2	1.75	4.1	EMHSR-0200C0-016R0S
266	< 2.5	< 3.0	1,160	< 3.0	9.7	2.10	4.6	EMHSR-0266C0-016R0S
333	< 2.0	< 2.4	1,450	< 4.2	12.1	2.37	5.1	EMHSR-0333C0-016R0S
500	< 1.6	< 1.9	2,020	< 5.2	18.2	3.03	6.0	EMHSR-0500C0-016R0S

Rated Voltage, V _R		16.2V DC		
Surge Voltage		17.1V DC		
Capacitance Tolerance		0% / +20%		
Operating Temperature Range		-40 ~ 65°C		ΔCAP < 5% and ΔESR < 150% of initial value measured at 25°C
Storage Temperature Range		-40 ~ 70°C		
Lifetime	Endurance	1,500 hours at V _R and 65°C		ΔCAP < 20% and ΔESR < 60% of specified value
	At Room Temperature	10 years ² at V _R		ΔCAP < 30% and ΔESR < 150% of specified value
Cycle Life		1,000,000 cycles between V _R and 1/2V _R using constant current charge and discharge at 25°C		ΔCAP < 30% and ΔESR < 150% of specified value
Electronics (Ultracapacitor Management Unit)	Balancing	Active Balancing		
	Monitoring	Over Voltage : High and Low signal Temperature : NTC		Requires external 5V DC input, configurable to user specific requirements
	Communications	High/Low Logic signal Optional CAN 2.0B, J1939 or RS485 interface		
	Signal Output	4 pin connector		
Enclosure	Output Terminals	M8 screw holes		
	Insulation Coordination	Rated insulation voltage : 1kV DC Or 2.8kV AC (50Hz, 10sec) Rated impulse withstand voltage : 6kV DC		IEC 61287-1 (Cat. : OV II)
	Protection Degree	IP 65 (Dust-tight and protected against water jets)		IEC 60529
	Vibration & Shock Resistance	SAE J2380 : Vibration SAE J2464 : Shock		
	Mounting	8 locations, M8 holes on top and bottom covers		

1 – Warning: this value should not be used as continuous current

2 – Lifetime at room temperature is a provisional value

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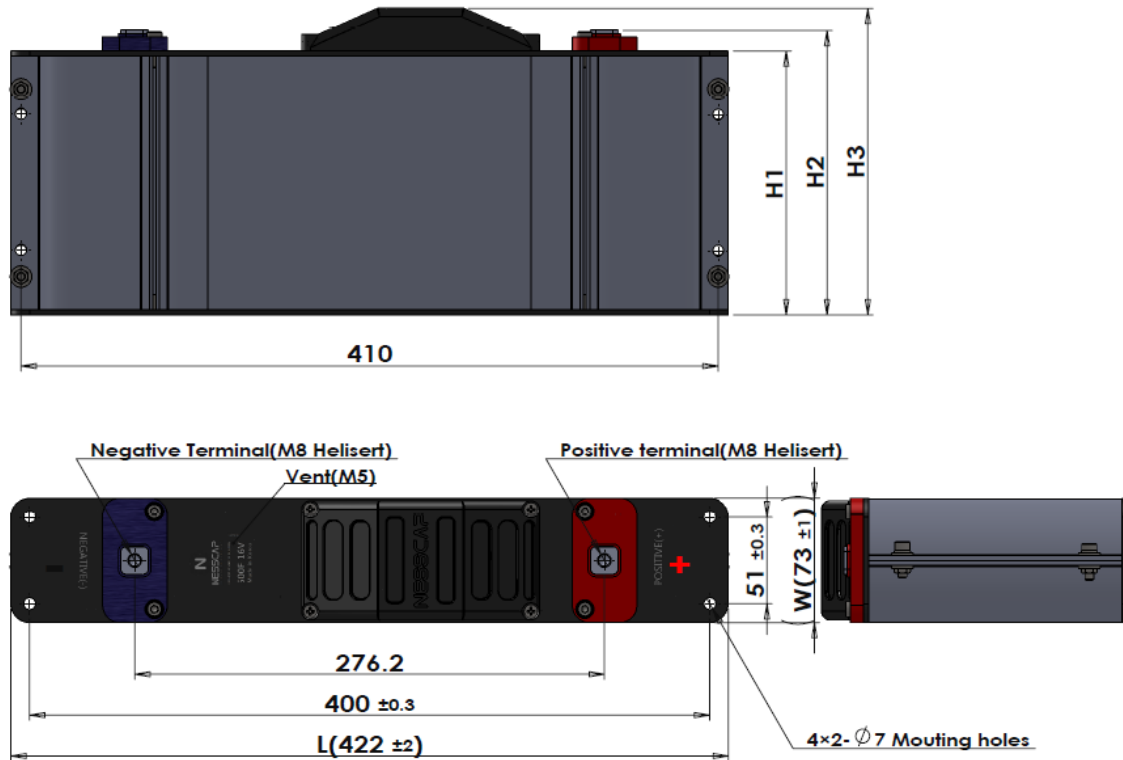
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ISO 9001, 14001, and TS 16949 certified



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Dimensions



Part Number	Capacitance (F)	Dimensions (mm)				
		L(±2.0)	W(±1.0)	H1(Max)	H2(Max)	H3(Max)
EMHSR-0108C0-016R0S	108	422	73	68.5	80.5	93.5
EMHSR-0200C0-016R0S	200	422	73	91	103	116
EMHSR-0266C0-016R0S	266	422	73	102	114	127
EMHSR-0333C0-016R0S	333	422	73	119	131	144
EMHSR-0500C0-016R0S	500	422	73	155	168	180

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