XVM Supercapacitors

16 V, 65 F module

Description

Eaton supercapacitors are unique, ultra-high capacitance devices utilizing electric double layer capacitor (EDLC) construction combined with new, high performance materials. This combination of advanced technologies allows Eaton to offer a wide variety of capacitor solutions tailored to specific applications.

The 16 V XVM supercapacitor module offers a means to easily achieve higher voltage, power or discharge time through series or parallel connection of multiple modules.

Features

- Compact size for easy mounting as replacement for, or in conjunction with a 12 V battery
- Series or parallel connection of multiple modules for higher voltage, power or discharge time
- High reliability, green solution for pulse or backup power applications
- Maintenance free
- UL recognized

Applications

- Industrial computer and emergency backup energy
- Battery assist engine starting, especially for cold or frequent starts
- Graceful system shutdown for robotics, PLCs and electrical switches

Environmental compliance

HALOGEN HF FREE

RoHS

Agency information

*Supercapacitor lifetimes vary based on charge voltage and temperature. See Eaton's application guidelines or contact your local Eaton sales representative for more information on lifetime estimates

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Ratings

Capacitance	65 F
Working voltage	16.2 V
Surge voltage	17 V
Capacitance tolerance	0% to +20% (+20 °C)
Operating temperature range	-40 °C to +65 °C

Specifications

Capacitance[1] (F)	Part number	Maximum initial dc ESR[1] (mΩ) (Equivalent Series Resistance)	Max continuous current (A)	Max leakage current[1] (mA)	Max power[2] (kW)	Stored energy[3] (Wh)	Typical mass (kg)	Typical thermal resistance[4] (°C/W)	Pulse current[5] (A)
65	XVM-16R2656-R	22	20	23	3.0	2.4	0.75	1.5	217

1. Capacitance, ESR and Leakage current are all measured according to IEC 62391-1 at +20 °C
2. Max. Power = Working Voltage^2 / 4 / DC ESR
3. Stored energy = ½ Capacitance x Working Voltage^2 / 3600
4. Thermal resistance (Rth) cell body temperature to ambient in open air in degrees C per Watt (°C/W)
5. Pulse current for 1 second from full rate voltage to half voltage. (A) = $\frac{0.5 \times V \times C}{(1 + ESR \times C)}$

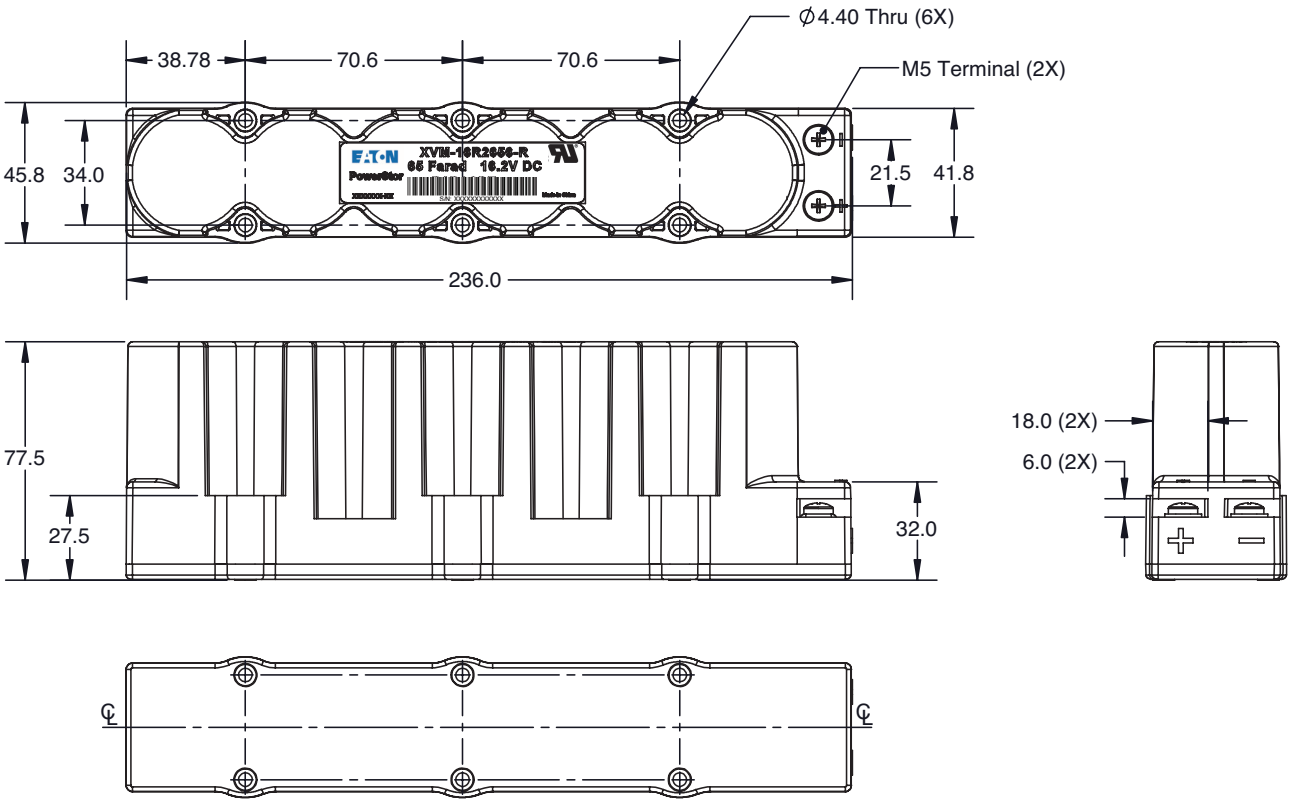
Performance

Parameter	Capacitance change (% of initial value)	ESR (% of initial value)
Life (1500 hours @ +65 °C @ 16.2 Vdc)	≤ 20%	≤ 200%
Storage life- (Uncharged, non-condensing atmosphere, 1 year @ -40 °C to +70 °C)	≤ 5%	≤ 10%

Safety and certifications

Regulatory	UL810A recognized file: MH46887
Environmental	IP54, RoHS, Halogen free
Vibration specification	IEC 60068-2-6
Shock specification	IEC 60068-2-27, -29
Cooling	Natural convection

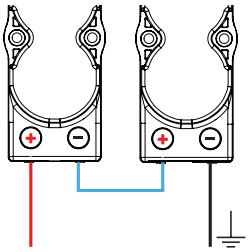
Dimensions- mm



Mechanical specifications

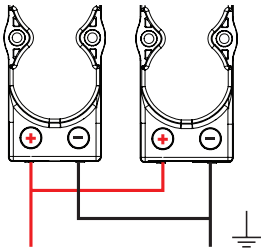
- Terminal Screws: M5 Philslot,
  Nickel-Plated Brass
  Max Torque 3N•m,
  Typical torque 2N•m,
- Mounting Points: Six, Brass Reinforced,
  Accommodate M4 Screws,
  Min Length 27.5 mm
  Max Torque 4N•m
- Mounting Orientation: No Restriction

Wiring configuration examples



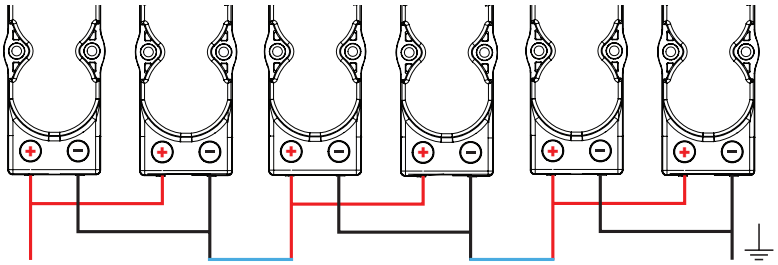
Series*

32.4 V, 32.5 F, 20 A



Parallel

16.2 V, 130 F, 40 A



Series/parallel*

48.6 V, 43.3 F, 40 A

* Maximum operating voltage 640 V.

Part numbering system

XVM	-16R2	65	6	-R
Family Code	Voltage (V) R = decimal	Capacitance (µF)		Standard product
		Value	Multiplier	
XVM = Family code	16R2 = 16.2 V	Example 656 = 65 x 10^6 (µF) or 65 F		

Packaging information

- Standard packaging: Bulk, 1 part per box
  10 boxes per carton

Part marking

- Manufacturer
- Capacitance (F)
- Working voltage (V)
- Family code (or part number)
- Polarity

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