

# 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



### 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

## 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 <sup>1</sup> (F)	Part number	Maximum initial dc ESR <sup>1</sup> (mΩ) (Equivalent Series Resistance)	Max continuous current (A)	Max leakage current <sup>1</sup> (mA)	Max power <sup>2</sup> (kW)	Stored energy <sup>3</sup> (Wh)	Typical mass (kg)	Typical thermal resistance <sup>4</sup> (°C/W)	Pulse current <sup>5</sup> (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<sup>2</sup> / 4 / DC ESR
3. Stored energy = ½ Capacitance x Working Voltage<sup>2</sup> / 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) =  $\frac{0.5 \times V \times C}{(1 + ESR \times C)}$

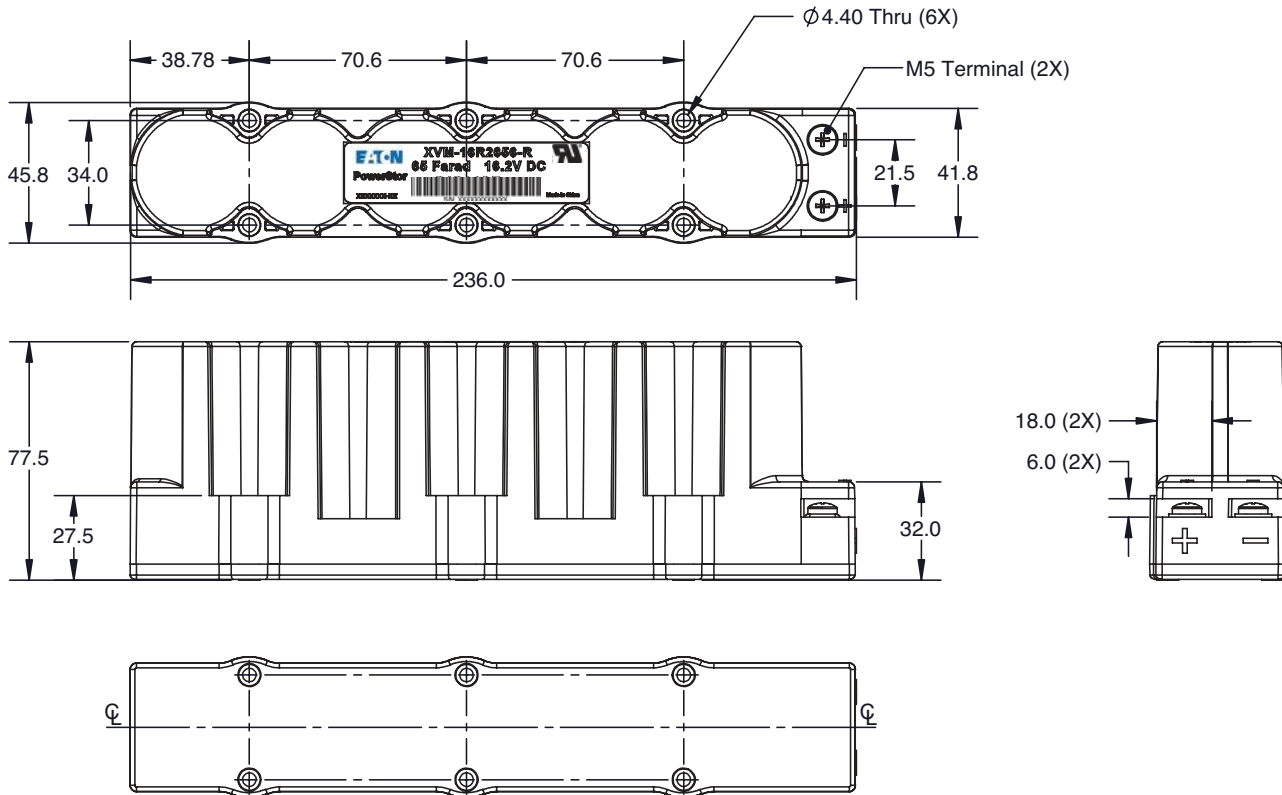
## Performance

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

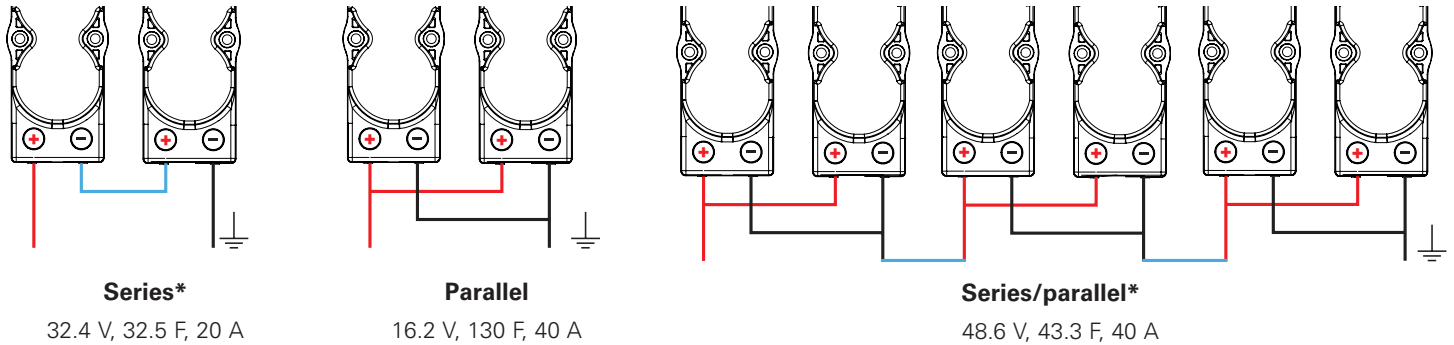
**Dimensions- mm**



**Mechanical specifications**

- Terminal Screws: M5 Philslot,  
Nickel-Plated Brass  
Max Torque 4N•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**



\* 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 <sup>6</sup> (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

Life Support Policy: Eaton does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the use.

Eaton reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Eaton also reserves the right to change or update, without notice, any technical information contained in this bulletin.

**Eaton**  
**Electronics Division**  
1000 Eaton Boulevard  
Cleveland, OH 44122  
United States  
Eaton.com/electronics

© 2022Eaton  
All Rights Reserved  
Printed in USA  
Publication No. 10105  
October 2022

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Follow us on social media to get the latest product and support information.

