

# DC loads monitoring and back-up for a smarter Maintenance

Safer critical industrial equipment against DC loads malfunctions/failures or power outages.



## Effects of DC load issues/ power outage

- Industrial systems involve a multitude of interconnected components, making it difficult to pinpoint specific issues when this is generated by a derating in the Power source. Unpredictable and unrepeatabe situation can happen to sensitive electronics devices (e.g. sensors, ..).
- Concurrent activation of DC loads and unmanaged inrush currents or short circuits can lead to high current phenomenon affecting overall system stability.
- Unexpected power outages disrupt production processes, leading to lost time, scrapped products, and missed shipment dates.

## Three levels solution for DC Power monitoring

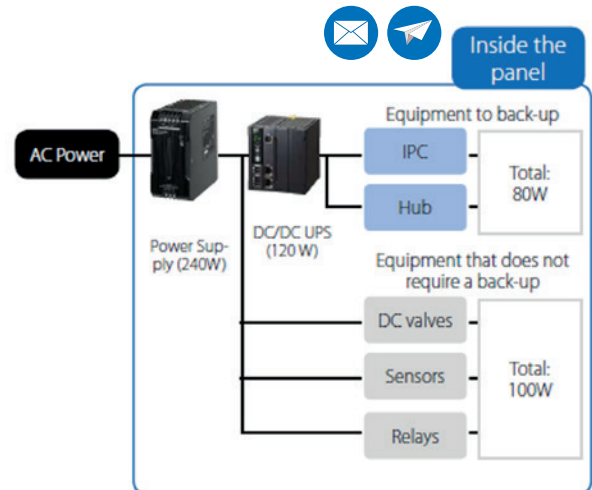
- Monitoring functions in Power supply units keep trace of any derating condition that impacts the DC load. These products also estimate the lifecycle based on usage conditions. Electronic Circuit Breaker allows isolation of circuits or loads with issues, making it easier to identify defective devices. Furthermore, UPS solution provide backup power for critical 24 VDC equipment such as PLCs and remote connections.
- When an abnormal behaviour is detected, timely alerts ensure that corrective actions can be taken promptly. Notifications are sent via email, SMS, or social media platforms like Telegram.
- When monitoring remotely, you'll have access to a graph that displays the trend of measured values.

## OMRON approach for DC loads monitoring and backup

Frequent interruptions due to power issues linked to loads failures or unexpected behaviour necessitate more frequent maintenance and repairs activities.

**S8VK-X** Power supply, estimate remaining device lifetime and monitoring DC voltage/current signals unlock possibility to detect early stage of DC loads malfunction to prevent overload scenarios.

**S8BA UPS** allows maintenance team to be alerted due unexpected power outage providing Backup power for critical 24 VDC devices equipment (PLC & Remote Connection) adding extra details as when the battery becomes weak during backup operation or replacement required cause battery life counter goes off -scale.



OMRON products	Items references
<b>NX1P2-Compact controller</b>	NX1P29024DT1: 24 Digital Transistor I/O (PNP), EtherCAT (4 PTP axes, 16 EtherCAT nodes), EtherNet/IP and 1 serial option port
<b>RT100 Remote Access Solution</b>	RT100-EMM3010: SiteManager LAN, 10 Device Agents, 3x Ethernet Ports, 1x Micro SD slot, 1x USB port
<b>S8VK-X24024-EIP</b>	Book type power supply, 240 W, 24 VDC, 10 A, DIN rail mounting, Push-in terminal, Coated, Ethernet IP / Modbus TCP
<b>S8BA-24D24D120LF</b>	UPS, DIN rail type, DC-DC, 5A, 120W

### Complete your equipment with:

**Electronic Circuit Breaker**  
S8V-CP series



Start the outputs sequentially and load-dependent to prevent high inrush current. Enable rapid short-circuit shutdown without impacting other channels. Easily identify faulty devices.

**Redundance Unit for Power supply**  
S8VK-R



If the 24 VDC power supply fails, a UPS does not help. On contrary a redundant power supply system continues to operate. Signal output available for failure detection of power supplies.

**Monitoring relay**  
K8 series



Protect and safeguard Mono and three-phase equipment with functions such as phase-loss, phase-sequence, overvoltage, Undervoltage and phase-asymmetry monitoring.

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