# Automatic **Melodeon Fire Curtain**

Model: **MELODEON**

NAFFCO Melodeon Fire Curtain systems prevents the spreading of fire from one area to another. The Curtain assembly comprises fire-rated fiberglass fabric uniquely folded into a compact head box that is typically installed above the ceiling with a finished bottom tray. This makes the system virtually invisible until activated. The curtain descents at a controlled speed upon receipt of signal from a fire alarm and provides fire integrity for up to four hours*.

We are constantly developing and enhancing our fire curtains to ensure compliance with the latest standards and regulations.

## System tested to

- UL10D
- NFPA 252
- BS 476 part 6 & Part 7 (Fabric)

## Compliance

- NFPA 80
- UL

## Fire Integrity

- Up to 240 min.

240mins

## Advantages

- An ideal solution for buildings with large open spaces.
- Lightweight & Compact design, low head room requirements.
- Unlimited width, custom sizes and layouts.
- Manufactured with intricacy using advanced machinery.
- Meeting Bespoke requirements.
- Do not require any columns or corner posts
- Guaranteed Gravity Fail Safe (no power needed).

## Applications

Elevator Halls, Atriums, Escalators, and Other void areas.

*NF-WRGF0667/120

FIRE RATED SMOKE RATED VERTICAL ACTING

# **Fabric** Data Sheet

Model: **NF-WRGF0667/120**

## Specification

NF-WRGF0667/120 is a high performance heavyweight stainless steel wire reinforced woven glass fabric coated with fire retardant aluminum-pigmented polyurethane on both sides. Fabrics are tested to BS476 –6 & BS 476 -7 for fire propagation and flame spread index respectively and rated to CLASS 0 rating.

NF-WRGF0667/120 provide high temperature resistance and reflectivity, which provides a heat-reflecting surface along with other properties to manufacture smoke curtains, fire curtains & Barriers

## Fabric Data

| Character | Unit | Value | Tolerance | Test Standard |
|---|---|---|---|---|
| **Finished Fabric** | | | | |
| Weight | g/m² | 700 | ±5% | |
| Thickness | mm | 0.7 | ±5% | |
| Coating Weight | g/m² | 50 | ±10% | |
| Coating Application | | Both Side | | |
| **Base Fabric** | | | | |
| Weight | g/m² | 640 | ±5% | |
| Weave Pattern | | 8H Satin | | |
| Thread Count Warp | per CM | 16 | ±5% | |
| Thread Count Weft | per CM | 15 | ±5% | |
| Yarn Count Warp | Tex | EC9 68/2 V4A | | |
| Yarn Count Weft | Tex | EC9 68/2 V4A | | |
| Standard Color | | Grey | | |
| Reaction to Fire | | CLASS 0 | | BS476 Part 6 & 7 |
| Application Temp. | | Up to 1100°C | | |
| Tensile Strength Warp | N/cm | 930 | | |
| Tensile Strength Weft | N/cm | 640 | | |

# Fire Curtain **Motor**

## NFGR53/30 (40W)

The 24V DC fire curtain motor is an in-house designed unit installed at one end of the roller tube, featuring a factory-fitted drive coupling for seamless integration. It supports clockwise or counterclockwise retraction. The opposite end houses a free-sliding shaft with two bearings for stability. Built with high-quality components, the motor ensures reliable, maintenance-free operation and a long service life.

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LISTED
S35507
TYPE: F

### Features

- Designed for Fire and Smoke Curtain Systems.
- Supports smooth, precise, and reliable operation.
- Compact and lightweight for ease of installation.
- High-efficiency motor with low energy consumption.
- Compatible with building management systems (BMS).
- Integrated fail-safe operation in case of power failure (battery backup compatibility).

### Technical Specifications

| Parameter | Details |
|---|---|
| **Motor Type** | 24 VDC Brushless Motor |
| **Power Output** | 37.7 W |
| **Operating Voltage** | 24 VDC ± 10% |
| **Torque** | Mn 2400 Ncm |
| **Speed** | 3600 RPM |
| **Duty Cycle** | Continuous Operation (100% Duty) |
| **Temperature Range** | -10°C to +60°C |
| **Ingress Protection** | IP54 (Dust and splash-resistant) |

# Fire Curtain **Motor**

## NFGR42/40 (20W)

The 24V DC fire curtain motor is an in-house designed unit installed at one end of the roller tube, featuring a factory-fitted drive coupling for seamless integration. It supports clockwise or counterclockwise retraction. The opposite end houses a free-sliding shaft with two bearings for stability. Built with high-quality components, the motor ensures reliable, maintenance-free operation and a long service life.

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TYPE: F

### Features

- Designed for Fire and Smoke Curtain Systems.
- Supports smooth, precise, and reliable operation.
- Compact and lightweight for ease of installation.
- High-efficiency motor with low energy consumption.
- Compatible with building management systems (BMS).
- Integrated fail-safe operation in case of power failure (battery backup compatibility).

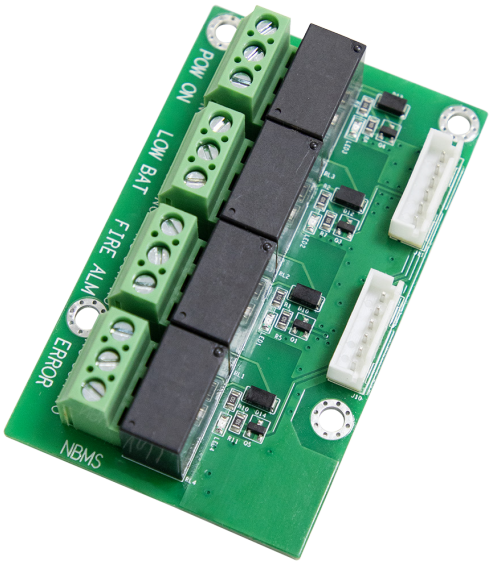
### Technical Specifications

| Parameter | Details |
|---|---|
| **Motor Type** | 24 VDC Brushless Motor |
| **Power Output** | 18.5 W |
| **Operating Voltage** | 24 VDC ± 10% |
| **Torque** | Mn 1400 Ncm |
| **Speed** | 3100 RPM |
| **Duty Cycle** | Continuous Operation (100% Duty) |
| **Temperature Range** | -10°C to +60°C |
| **Ingress Protection** | IP54 (Dust and splash-resistant) |

# Fire Curtain **BMS Controller**

## NBMS

The BMS (Building Management System) Controller is a cutting-edge device designed for seamless integration with fire and smoke curtains. It ensures real-time monitoring, control, and communication with fire safety systems, providing enhanced protection for buildings and occupants.




The indications include four alerts as below.


- Power on
- Trouble Shoot
- Fire Alaram
- CPU Fault

## Key Features

- **Compatibility:** Supports fire and smoke curtains with standard operating mechanisms.
- **Real-Time Monitoring:** Displays operational status, faults, and alarms.
- **Integration:** Compatible with most BMS protocols, including BACnet, Modbus, and KNX.
- **User Interface:** LED indicators.
- **Redundancy:** Dual power supply inputs for fail-safe operation.
- **Testing Functionality:** Built-in periodic testing features for maintenance.

## Technical Specifications

| Descriptions | Ratings |
|---|---|
| **Operating voltage** | 24Vdc; 2.2A; Non-power limited; Fail Safe, Class D |
| **Power factor** | 1 |
| **Terminal ratings** | 8A / 30VDC |
| | Power On - Green |
| | Low Battery - Yellow |
| | Fire Alarm - Red |
| | System Error - Red |

# Fire Curtain **Motor Controller**

## NF-FMC

The Fire Curtain Motor Controller (NMC) works alongside the Group Controller to manage individual curtain motors with precision. It ensures the accurate deployment and retraction of each 24V permanent magnet motor. Current-limiting switches detect when the curtain is fully retracted, reducing motor voltage to a holding level to minimize energy consumption and extend motor life.

The NMC is essential for smooth and reliable operation, whether during normal conditions or in response to fire alarms. It ensures fire curtains respond effectively to commands from the Group Controller, maintaining both safety and operational integrity.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### Technical Specifications

| Descriptions | Ratings |
|---|---|
| POWER - Primary Operating Supply | 24Vdc; 2.2A; Non-power limited; Fail Safe, Class D |
| MOTOR Output | 24Vdc nominal, maximum one motor. Recorded voltage for compatibility: 16.22Vdc – 33.59Vdc Non-power limited |
| | Restricted to same room; Fail Safe, Class D |
| OVERRIDE | 5V DC Rated Voltage; 5 mA Maximum (Current – Fail Safe) |
| | restricted to same room, (20 feet in Conduit), Class D |
| Delay Unwinding Time | 0-60sec |
| Delay Rewinding Time | 0-60sec |
| 2 Stage Hold Time | 0-60sec |
| Down/Unwinding Speed | 0-60sec |
| Locked Current | 250 -360 |
| Max. cable size: Override | 2 x 12 AWG /.01A (restricted to within Room) |
| Max. cable size: To motor | 2 x 16 AWG /3.0A (restricted to within Room) |

# Fire Curtain **Group Controller**

## NF-FGCP

The Fire Curtain Group Controller (NGC) is a central control unit designed to manage the deployment and retraction of up to six 20W or three 40W 24V permanent magnet motors. It operates fire curtains seamlessly under both standard and emergency conditions.

In normal operation, the NGC supplies 24V power to the motors, keeping the curtains securely retracted within their headboxes. During a fire alarm, the NGC cuts power, triggering a controlled “Gravity Fail Safe” descent to deploy the curtains. Once the fire alarm system is reset, the NGC restores power to retract the curtains.

For larger systems requiring synchronized operation of multiple curtains or more than six motors, Multi-Function GCPs can be linked together. Backup batteries ensure up to two hours of operation during power outages, guaranteeing reliable curtain deployment even during mains failure.


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## Technical Specifications

| Descriptions | Ratings |
|---|---|
| Input Voltage | 120V (5.0A) / 230V (3.75A) |
| Current | 5.0 Amps / 3.75 Amps |
| Frequency | 50Hz/60Hz |
| AC/DC Switchover | ON < 90% |
| Voltage | OFF < 85% |
| Ground impedance | 0 Ohms |
| POWER OUT Circuit Voltage | 24Vdc nominal output voltage (19.26-25.8Vdc), Non-Power Limited, Fail, Class D |
| POWER OUT Circuit Current | 16Amps Max |
| Duty | 50% |
| Maximum number of NMC’S | 6 (20W) / 3 (40W) |
| Backup battery | 24V / 7Ah |
| Stand by time | 4hrs (Full load - 6/20W motor) |
| Battery Charging Voltage | 27.0 – 27.5V |
| Battery Charging Current | Max 1.5A |
| Low Voltage Disconnect | 80% of Nominal (19.2V) +/ - 5% |
| Fire Loop | N/C 5V 10Ma (Open Circuit Fault > 1MOhms), (Closed Circuit Fault > 1MOhms), |
| | (Restricted to same room, 20ft. in conduit), non-power limited, Class D |
| Test Switch | 5V 5-10mA , Class D. |
| Alarm out Circuit | 24 Vdc Nominal (19.22Vdc – 28.58Vdc), 300mA max current, |
| | Power Limited, restricted to same room, Class E |
| Max. cable size: Fire circuit | 2 x 12 AWG / .01A (restricted to within Room) |
| Max. cable size: Mains Input | 1 x 14 AWG / 5.0A |
| Max. cable size: NMC out | 2 x 12 AWG / 15.0A |
| Max. cable size: Test Switch | 2 x 12 AWG / .01 (Restricted to within Room) |