



HUNAN CHANGXIN TECHNOLOGY CO., LTD

AUTOMOTIVE SMART FILM

Installation & Wiring Tutorial

0.12mm

Ultra-Thin

12V → 65V

Power System

1.5×50m

Roll Size

SIDE
WINDOWS

REAR
WINDOWS

PANORAMIC ROOF
AREAS

www.cxsmartfilm.com | info@cxsmartfilm.com | +86 153 6366 9377

No. 580 Changsha Avenue, Yuhua District, Changsha City, Hunan Province, China



I. PREPARATION: TOOLS & PRE-CHECKS

1 Introduction & Product Overview

This tutorial guides installers step-by-step through fitting and wiring the CX Automotive smart film. The film features a lightweight, non-adhesive structure with a thickness of approximately 0.12mm, and switches between transparent and frosted states via power control. It is ideal for privacy protection, solar shading, and switchable window effects. Compared with traditional architectural smart film, this product is better suited to dynamic automotive use and offers:

- ▶ Lightweight design with a thinner film body
- ▶ Non-adhesive structure for easier installation and adjustment
- ▶ Wet-application compatibility
- ▶ Single-window or full-vehicle control
- ▶ Suitability for side windows, rear windows, and panoramic roof areas

2 Safety First — Read Before You Start

WARNING: The front windshield is NOT recommended for installation. The best visual effect is achieved when the viewing angle is close to 90°. A slanted viewing angle on the front windshield may affect visibility and driving safety. If wiring is disconnected or power fails, the film may instantly return to a frosted state. Do not install the film in any area that directly affects the driver's field of view.

Recommended areas: front/rear side windows, rear windshield, business-vehicle side windows, privacy-demanding areas, and the panoramic roof / sunroof area.

3 Supply Form Confirmation

Finished Film

Factory cut to size, electrode connection completed.
Ready to install upon receipt.

Best for: small-batch or single-vehicle use.

Roll Film

Standard size: 1.5m × 50m. Cut on site as needed;
electrode connection completed on site.

Best for: bulk installation, retrofit, or distribution projects.

4 Gather Tools & Complete Pre-Checks

Tools Required: Cleaning cloth · Spray bottle · Squeegee · Utility knife · Measuring tools · Power cable · Controller / Power converter · 12V cigarette lighter interface · Auxiliary installation tools

Pre-Installation Checklist: Glass surface free of dust, grease & adhesive residue · Window glass undamaged · No front windshield installation · Power supply & wiring plan confirmed · Dimensions accurately measured.

TIP: Re-verify all dimensions. Leave a proper margin when cutting roll film so the edges can be sealed cleanly.



II. DETAILED INSTALLATION STEPS

1 Clean the Glass

Clean the window glass thoroughly with water or cleaning solution until surface is free of dust, oil, and debris. Removing glue residue is essential. (Tip: A cleaner surface produces flatter installation & fewer bubbles.)

2 Cut the Film

If using roll film, cut the material according to the window dimensions and leave a proper margin. If using finished film, proceed directly to installation.

3 Position the Film

Place the Automotive smart film gently onto the glass for initial positioning. Because the product is non-adhesive, it can be freely moved, repositioned, and angle-adjusted during installation.

4 Wet Application Method

1. Spray clean water on glass.
2. Place film gently.
3. Adjust alignment.
4. Squeegee from center outward.
5. Remove water/air.
6. Check for bubbles/wrinkles.

NOTES: Do not press the film forcefully in one step. Do not stretch the electrode area. Reposition and squeegee out bubbles immediately if any appear.

5 Choose a Wiring Method

M1: One Window, One Controller

Door Lifter (12V) →
Converter (~65V) → Dimming
Film

Best For: Independent control, zoned privacy, personalized retrofits.

M2: One Controller, Multi Windows

Cigarette Lighter (12V) →
Converter (~65V) → 1-4
Windows

Best For: Business vehicles, fleet projects, unified control.

M3: Fuse Box Centralized Power

Car Fuse Box (12V) →
Converter (~65V) → 1-4
Windows

Advantages: Cleaner than lighter scheme, simpler than door-lifter.

6 Test the Control

The film switches between transparent and frosted states using the controller. The product works normally when powered on. If the wiring loses power, the film may instantly become frosted.

RISK WARNING: Installing in a position that directly affects the driver's line of sight creates safety risks — therefore front windshield installation is strictly not recommended.



III. PROFESSIONAL TIPS — AVOIDING COMMON PITFALLS

7 Transformer & Power Converter Compliance

STRICTLY PROHIBITED: Use only the dedicated transformer/power converter provided by the factory. Connecting directly to 110V/220V main AC power is strictly prohibited, and never reverse the high-voltage and low-voltage terminals under any circumstances. Doing so will instantly cause internal breakdown and destroy the film.

8 Wiring Safety & Insulation Standards

- ▶ Wrap all wiring joints tightly with multiple layers of high-grade insulation tape to prevent moisture, dust, and short-circuit risks.
- ▶ If backup wires are supplied, do not cut them — wrap and store them neatly within the window frame for future maintenance.
- ▶ Do not pull forcefully on the wire leads or copper foil electrodes, and avoid continuous structural tension at the electrode base.

9 Critical Precautions & Product Advantages

Power Stability

Ensure all connections are firm to avoid looseness, poor contact, or sudden power loss.

Vehicle Integrity

Avoid damaging original vehicle structure, weather seals, or door panel interior components.

Bubble Removal

Fully remove air and water to prevent long-term visual defects and delamination issues.

Lightweight design

Non-adhesive structure

Single/full-vehicle control

Side, rear & panoramic roofs

Finished & roll formats

Dynamic auto use scenarios

CONCLUSION

Automotive smart film is an intelligent privacy solution designed for automotive side windows, rear windows, and panoramic roof areas. For driving safety and stable performance, do not install it on the front windshield. Use the film only in areas that meet viewing-angle and safety requirements, and ensure the wiring remains stable and reliable.