SMARTGLASS
TECHNOLOGIES

What Is Smart Glass?

How to Install Smart Glass?

WHAT IS SMART GLASS?

TRANSFORMING THE FUTURE OF GLASS WITH PRIWATT™

Smart glass has revolutionized the way we approach architecture and design. No longer just a static material, glass has become a dynamic element that offers instant privacy, energy efficiency, and modern appeal. As this technology becomes increasingly integrated into new construction and renovation projects, the ability to understand and properly install smart glass positions you as a leader in the industry.

By learning how PriWatt™ Smart Glass works and gaining confidence in the installation process, you'll be prepared to offer clients innovative solutions, respond to growing demand, and quote projects with precision and professionalism.

That's where Smart Glass Technologies comes in. As a trusted manufacturer and pioneer in the field of switchable glass, we provide everything you need—from high-quality products to technical knowledge and hands-on training.

This guide is designed specifically for glass installers, offering a practical overview of:

- What PriWatt™ Smart Glass is and how it functions
- Key installation techniques
- Electrical and glazing requirements
- Best practices to ensure long-term performance

Whether you're new to smart glass or expanding your existing expertise, this guide will serve as a valuable reference throughout your installation journey. With PriWatt™, getting started is easy—and the opportunities ahead are endless.

WHAT IS SMART GLASS?

TYPES OF SMART GLASS TECHNOLOGIES

There are two main types of active smart glass technologies widely used today:

PDLC (Polymer Dispersed Liquid Crystal)

Function: Switches from clear to white opaque with power.

Benefits:

- Instant privacy at the flip of a switch
- Blocks visibility without blocking light
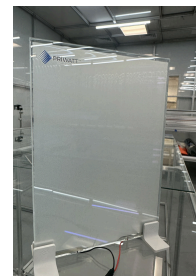- Ideal for bathrooms, offices, hospitals, and meeting rooms

PNLC (Polymer Networked Liquid Crystal)

Function: Naturally clear, becomes opaque only when powered ("reverse mode").

Benefits:

- Saves energy by staying clear without power
- Fail-safe privacy: remains transparent during outages
- Perfect for always-bright spaces that need occasional privacy

EC (Electrochromic)

Function: Gradually tints from clear to blue based on voltage.

Benefits:

- Controls glare and heat gain from sunlight
- Reduces HVAC energy costs
- Enhances aesthetics of smart façades and skylights

CLC (Cholesteric Liquid Crystal)

Function: Switches to full blackout mode on demand.

Benefits:

- Provides total light blocking and privacy
- Ideal for bedrooms, cinemas, boardrooms
- Enhances rest, focus, and immersive environments

HANDLING

HANDLING AND STORING PRIWATT™ SMART GLASS

Before beginning any installation, one of the most important considerations is how you handle and store the glass. Proper delivery, storage, and handling of PriWatt™ Smart Glass is essential to ensure it functions as designed and maintains its longevity and visual clarity.

Just like traditional glass, smart glass is delicate—but with the added complexity of embedded electronic components, it requires even greater care. Please follow all manufacturer guidelines provided by Smart Glass Tech to avoid any damage during transport or installation. These specifications may vary depending on the product type (PDLC, PNLC, CLC, or EC).

GENERAL GUIDELINES FOR HANDLING AND STORING PRIWATT™ GLASS:

- Always transport PriWatt™ Smart Glass in the custom crate provided. This ensures safe delivery to the installation site. If no crate is provided or you're unsure about packaging requirements, please contact Smart Glass Technologies for support.
- Never slide the glass out of the crate. Carefully lift it from the sides to avoid stress on the laminated edges or electrical components.
- Avoid resting the glass on hard or uneven surfaces. Use cushioned, non-abrasive materials to protect the surface and corners from chips, scratches, or cracks.
- Do not handle the glass by its electrical wires or connectors. The PriWatt™ system uses embedded copper tabs and wiring—grabbing or putting pressure on these can cause internal delamination or connectivity failure.
- Secure any loose wires before moving the glass. If tabs or leads are not factory-taped, use electrical tape to fasten them temporarily to the glass surface to avoid snagging or tearing during handling.

These considerations represent just a few of the key factors to keep in mind when handling PriWatt™ Smart Glass before installation. With proper handling and care, our smart glass can deliver reliable performance for over a decade—making it one of the most durable and long-lasting solutions for on-demand privacy and shading. By understanding the best practices for transporting and preparing the glass, you help ensure it performs flawlessly throughout its expected lifespan.

Once the PriWatt™ Smart Glass panels have been delivered and unpacked, a careful inspection should be completed before installation begins. This step ensures that any issues are identified early—protecting both the integrity of the product and the success of the project. Key inspection points include:

1. Dimensions & Quantity
2. Verify that the number of panels and their dimensions match the specifications outlined in the approved architectural plans. Any discrepancies should be addressed immediately before proceeding further.
3. Visual Condition – Edges & Surface
4. Inspect each panel for chips, scratches, or other visible damage—especially along the glass edges and active (PDLC, PNLC, CLC, EC) layer. If any defects are found, document them thoroughly and contact Smart Glass Tech for support before installation.
5. Manufacturer Labels

Thorough inspection at this stage ensures the highest level of quality and reliability in the final installation. By taking a few extra minutes to double-check sizing, surface condition, and labeling, you help guarantee a smooth installation process—and a flawless, long-lasting smart glass experience for the end user.

GLAZING

PREPARING THE SITE FOR PRIWATT™ SMART GLASS INSTALLATION

Once the PriWatt™ Smart Glass panels have been inspected, the next critical step is to assess the installation area itself. This preparation phase is essential to avoid costly delays, ensure long-term performance, and prevent potential damage to the smart glass or wiring during or after installation.

Below are key steps to follow during site preparation:

Pre-Installation Site Survey

- Perform a comprehensive site inspection to ensure environmental conditions are suitable.
- Confirm that all necessary materials and tools are on hand.
- Verify that the frame type and depth match the project specifications, and confirm the location and availability of electrical power points.
- Evaluate any unique structural conditions or project constraints that may impact installation.

Surface Cleaning & Readiness

- Clean all surfaces thoroughly just before applying glazing primers, silicone sealants, or electrical tape.
- Remove dust, oil, protective coatings, or debris that could compromise adhesion or electrical contact.

Sealant Selection

- Only use neutral-cure silicones approved by Smart Glass Technologies. Avoid acetic-cure silicones, which can chemically damage the interlayer and compromise long-term glass performance.
- Refer to the official PriWatt™ sealant compatibility list before beginning any sealing work.

Prepare Channels and Frames

- Clean glazing channels, stops, and rabbets to remove any sharp edges, contaminants, or abrasive particles.
- Ensure all bonding surfaces are free from substances that may affect adhesion (including dust, grease, or construction debris).

Final Cleaning Pass

- Just before applying glazing compound or mounting tape, conduct one final wipe-down of all contact surfaces.
- Double-check all materials against the manufacturer's installation guidelines, as requirements may vary by product type (PDLC, PNLC, etc.).

SMARTGLASS
TECHNOLOGIES

INSTALLING PRIWATT™ SMART GLASS: THE SETTING STAGE

Now that you've unpacked, inspected, and fully prepared the installation area, it's time for the most exciting step — installing the PriWatt™ Smart Glass.
Properly setting the glass is crucial to achieving a clean finish, long-term performance, and full alignment with the client's specifications. Even small details at this stage can have a significant impact on the durability and functionality of the system.

KEY GUIDELINES FOR SETTING SMART GLASS
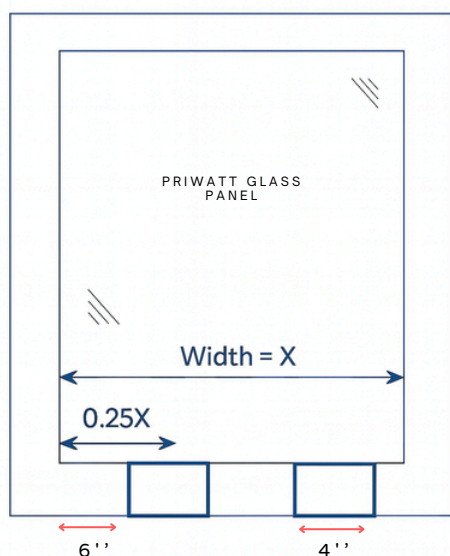
Figure 1: Setting blocks placement.
Drawing is not to scale.

PRIWATT GLASS PANEL

Width = X

0.25X

6''   4''

Refer to Figure 1 for a visual reference on correct setting block placement, which plays an essential role in supporting the glass safely and evenly inside the frame.
Here are some general rules to follow:

- Setting blocks should be positioned at the quarter points of the glass panel width.
- Each block should be a minimum of 4'' in length to provide adequate support.
- Maintain at least 6'' distance from the glass corners to avoid stress concentrations or edge cracking.

Following these best practices ensures proper load distribution and minimizes the risk of damage during or after installation. Taking the time to set each PriWatt™ panel correctly reflects the quality and precision your clients expect from Smart Glass Technologies certified installations.

S E T T I N G   B L O C K S

It is crucial to ensure that once the glass is positioned on the setting blocks, the blocks are securely placed and cannot move inward or outward within the frame. This guarantees that the glass remains properly supported and does not shift off the setting blocks.
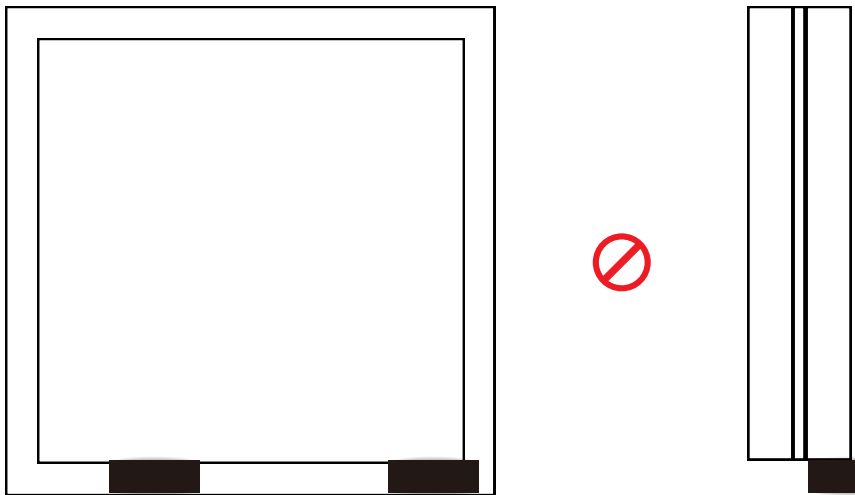
Glass partially resting on the setting blocks

Setting blocks made of rubber, neoprene, silicone, or thermoplastic are good to use. Don't use wood blocks.

Setting blocks made of rubber, neoprene, silicone, or thermoplastic are good to use.
Don't use wood blocks.

- Neoprene: These are a popular choice due to their flexibility, resilience, and weather resistance. Neoprene blocks provide cushioning for the glass against vibration, shock, and wind loads. They are a common material for setting blocks, which are used to position the glass in the frame and act as cushions.
- EPDM: Another strong option, EPDM setting blocks offer excellent weather resistance, flexibility, and durability. They are also commonly used in glazing systems.
- Silicone: Silicone glazing blocks are favored for their superior temperature resistance and weatherability, especially where silicone sealants are used, as silicone blocks are chemically compatible with them.
- Plastic: Clear plastic setting blocks are a good choice when you want the blocks to be barely visible, such as in mirror or frameless shower installations.

GLAZING

GLASS SURFACE CONDITIONS

- Glass lap and edge clearances must be provided in accordance with all relevant building codes and the manufacturer's installation standards.
- Ensure the glass is installed in a way that promotes visual uniformity across all panels. Factors such as frame type, alignment, and sight lines should be carefully considered to maintain a consistent appearance.

Frame-Specific Guidelines:

- For operable windows, sliding doors, or other dynamic frames, installation must strictly follow the specifications outlined by the architect and product manufacturer.

Moisture Protection:

- For exterior glazing or wet interior applications, use proper wet-sealing techniques to prevent moisture intrusion. The system must also be designed to allow for drainage of condensation through proper weep paths.

Butt-Joint Glazing (Frameless Vertical Joints):

- Butt-joint glazing—installing glass panels without vertical mullions—is permitted using a minimum glass thickness of 7/16".
- Only use neutral-cure silicones (e.g., Dow Corning 1099 791, 795, 995).
- Do not use acetic-cure silicones, as they can damage the interlayer and compromise performance.

System Restrictions:

- Pressure-glazed systems that lack positive positioning stops are not suitable for PriWatt™ Smart Glass and should be avoided.

Electrical Requirements:

- All electrical connections must be positioned for easy access by a licensed electrician. Only a certified electrician should connect PriWatt™ Smart Film or Glass to the controller and power supply.
- All electrical work must comply with local electrical codes and safety standards.
- Refer to Figures 5 and 6 for technical diagrams showing proper setups for direct voltage and dry contact wiring methods.

Controller/Transformer Placement:

- PriWatt™ controllers should be installed in well-ventilated areas, away from direct sunlight or high heat, to ensure optimal performance and longevity.

Final Checks:

- Test every PriWatt™ panel for functionality before installation.
- In wet environments, ensure electrical connections exit at the head of the frame to protect them from moisture exposure.

TECHNICAL DIAGRAMS

SUPPLIES NEEDED

Installation of PriWatt™ Glass requires the following items:

1. A 10 AMP (minimum) ground fault interrupter circuit breaker with 120VAC 50-60Hz (installer/owner supplied) electricity.

2. A wall mounted switch,120VAC 50-60Hz (installer/owner supplied). This switch is required to allow the panels to be turned ON.

3. Power transformer (supplied). Transformers contain 2A (100W) or 4A (300W) fuse within the housing.
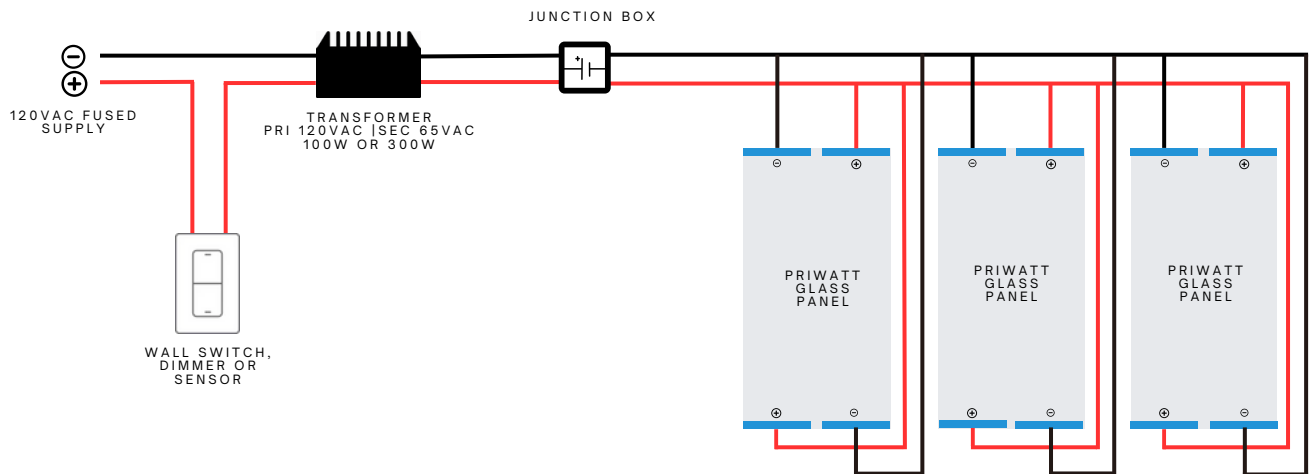
BUSBAR WIRING OPTIONS

JUNCTION BOX

DOUBLE ON LONG SIDE
(FOR RATIO 4:1)

DOUBLE ON SHORT SIDES
(QUATTRO)
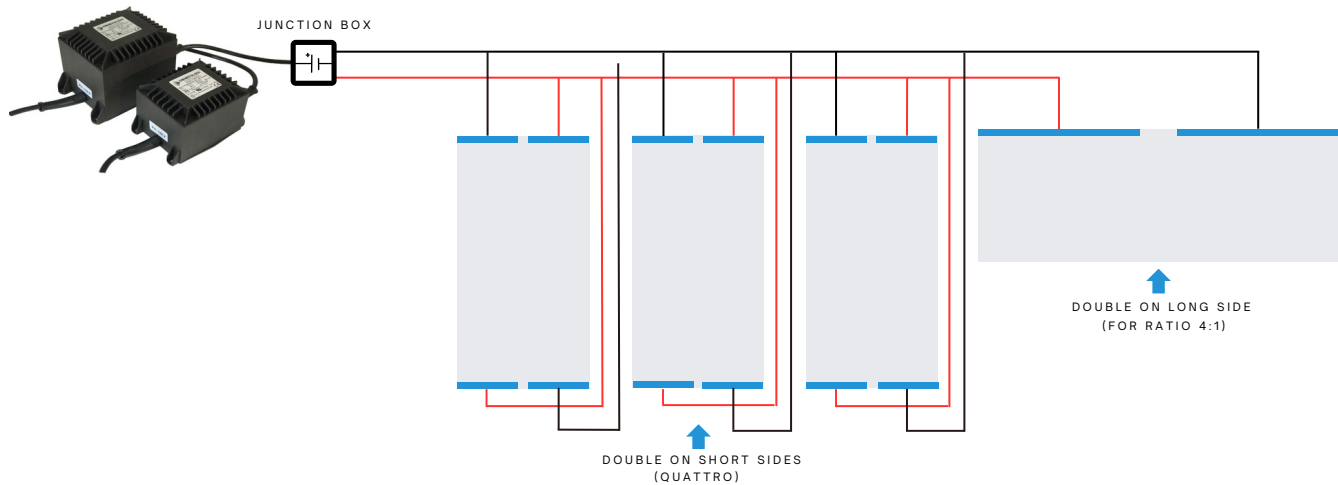
NOTE: Edges where the busbars are placed must be covered by minimum 1/2''
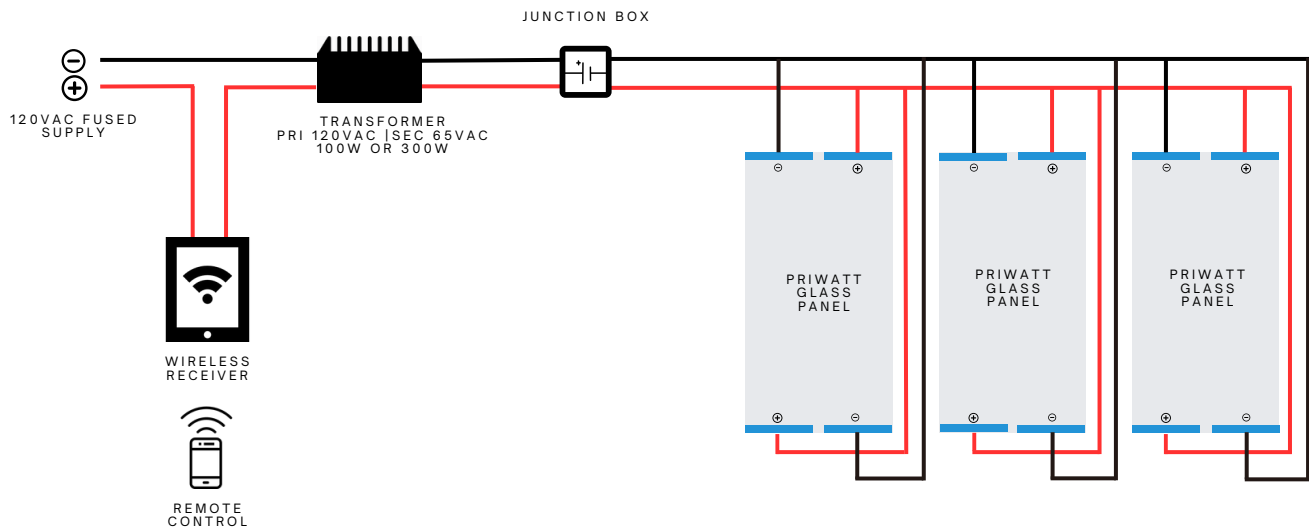
PRE WIRING

- PriWatt™ Glass requires all input electrical installations be completed by a Licensed Electrician and in compliance with all code requirements. Low voltage connection can be done by the certified installer.

- Before installation, inspect busbars, electrode leads and wires to assure insulation.

- Twin (or dual) wires are attached to each end of the PriWatt™ Glass busbar. This apparent double-up is to compensate in the case of a wire becoming detached or dislodged during the installation process. Neither end of the busbar is 'Polarity Conscious' - the wires can be considered as Negative or Positive when connecting them to the Transformer.

SMARTGLASS TECHNOLOGIES

WIRING DIAGRAMS

WALL SWITCH WIRING DIAGRAM

JUNCTION BOX

120VAC FUSED SUPPLY

TRANSFORMER
PRI 120VAC |SEC 65VAC
100W OR 300W

PRIWATT
GLASS
PANEL

PRIWATT
GLASS
PANEL

PRIWATT
GLASS
PANEL

WALL SWITCH,
DIMMER OR
SENSOR

WIRELESS REMOTE CONTROLLER WIRING DIAGRAM

JUNCTION BOX

120VAC FUSED SUPPLY

TRANSFORMER
PRI 120VAC |SEC 65VAC
100W OR 300W

PRIWATT
GLASS
PANEL

PRIWATT
GLASS
PANEL

PRIWATT
GLASS
PANEL

WIRELESS
RECEIVER

REMOTE
CONTROL

WARNING – Do not substitute a higher fuse rating! Fuse rating is critical to properly protect PriWatt™ Glass panels and the transformer.

Smart Glass Tech provides wiring diagram examples for the operation of its PriWatt™ PDLC Glass panels, however Smart Glass Tech assumes no liability for the wiring of any products and recommends that the purchaser or purchaser's designated agent consult with a licensed electrician for compliance with area Building Codes and professional electrical system wiring.

Page 10

ELECTRICAL

![SMARTGLASS TECHNOLOGIES logo]

CAUTIONARY INFORMATION

Before turning on the power supply the electrician must test the resistance reading between the frame and the electrode to ensure the reading is infinite/open circuit, i.e. there is no connection between the frame and the panels. If the reading is not infinite then the electrician will need to check all busbars, electrodes and cables until the short circuit is found and insulated accordingly.

No exposed busbars, electrode leads, or wires should contact any metal frames that will damage the transformer and PriWatt™ Glass. If busbars, electrode leads, or wires have become exposed during glass lamination or shipping, the exposed parts must be wrapped with insulation tape.

WIRING INTO HINGED DOORS AND OPENING WINDOWS

When fitting PriWatt™ Glass panels into swinging doors or opening windows, it is desirable to fit a concealed device into the frame to accommodate the required flexibility in the power cord. Which device you would require would depend on the specific nature of the frame, be it door or window. Power Transfer Units are made specifically for this purpose.

- It is important not to exceed the maximum Sq Ft Area Power Limit of the provided transformers.
- Install only on a GROUNDED 120VAC circuit protected by 10A fuse or breaker. The circuit must also be protected by a ground fault circuit interrupter.
- Do not connect any other devices or products to the output of the PriWatt™ transformer.
- There are no serviceable parts or replaceable parts within the PriWatt™ power supplies.
- Caution must be taken to prevent damage to provided wiring or wiring insulation.

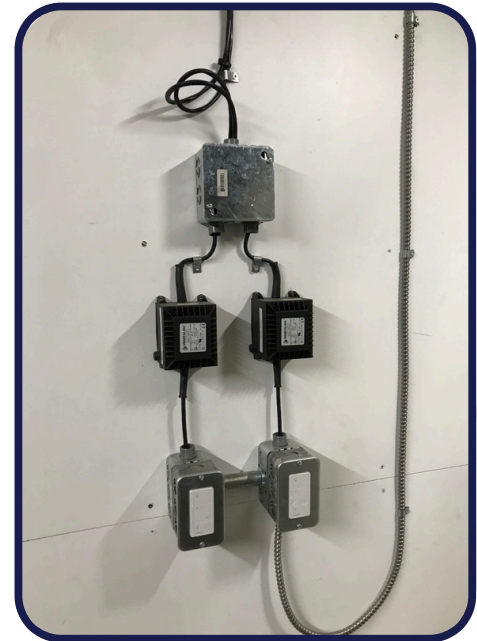DO NOT ATTEMPT TO INSTALL THE PriWatt™ GLASS PANELS ON A LIVE CIRCUIT.

ELECTRICAL

TRANSFORMER

PRIWATT™ 100VA ISOLATING TRANSFORMER

PRI: 120 V / 60 HZ
SEC: 65 V / 2,08 A

Potted in a black plastic housing
4 mounting straps at the housing
Pri-connection: SVT 2x AWG18, black, ca. 0,3 m long
Sec-connection: SVT 2x AWG18, black, ca. 0,3 m long
Automatically resetting temperature switch (110° C)
Glass tube micro fuse (D 2,0 A)
Maximum ambient temperature 40° C
Isolation class B
IP 56
Dimensions (L x W x H): ca. 120/89 x 75 x 77 mm3 (sens cords)
Weight: ca. 2,2 kg (4.85 lbs)
UL certificates: E125651, E466710
According to EN 61558
Made in Germany

PRIWATT™ 300VA ISOLATING TRANSFORMER

PRI: 120 V / 60 HZ
SEC: 65 V / 4,25 A

Potted in a black plastic housing
4 mounting straps at the housing
Pri-connection: SVT 2x AWG18, black, ca. 0,3 m long
Sec-connection: SVT 2x AWG18, black, ca. 0,3 m long
Automatically resetting temperature switch (110° C)
Glass tube micro fuse (D 4,0 A)
Maximum ambient temperature 40° C
Isolation class B
IP 56
Dimensions (L x W x H): ca. 134/101 x 91 x 100 mm3 (senscords)
Weight: ca. 3,4 kg (7.5lbs)
UL certificates: E125651, E466710
According to EN 61558
Made in Germany

DO NOT ATTEMPT TO INSTALL THE PriWatt™ GLASS PANELS ON A LIVE CIRCUIT!

CLEANING AND CARE GUIDELINES FOR PRIWATT™ SMART GLASS INSTALLERS

As a certified installer of PriWatt™ Switchable Glass, you may be responsible for cleaning the glass after installation or advising clients on how to maintain their new system. Understanding best practices for cleaning and care is essential to ensure long-term performance and client satisfaction.

Below are key tips and recommendations for cleaning PriWatt™ Smart Glass safely and effectively:

Pre-Cleaning Inspection

- Before cleaning, carefully inspect the glazing to confirm it is fully sealed and that no edges or electrical components are exposed to moisture.
- Test each PriWatt™ panel to verify proper switching functionality and control response. Address any issues before proceeding.

Power Safety

- Always turn off the power before cleaning any PriWatt™ glass
- Do not power the glass back on until the surface is completely dry.

Cleaning Procedure

- Never spray cleaner directly onto the glass or film. Instead, apply the solution to a soft, lint-free cloth and gently clean the affected area.
- This helps prevent moisture from seeping into the film edges, frames, or profiles.
- For regular cleaning, use a standard glass cleaner or a mix of mild soap and water.
- After cleaning, rinse with clean water and use a squeegee to remove excess moisture. Dry the frame and edges thoroughly.

Environmental Precautions

- Only clean PriWatt™ glass at room temperature.
- Avoid cleaning in direct sunlight or when the glass is hot, as sudden temperature changes can increase the risk of thermal cracking.
- Never expose the glass to extreme heat or cold during or after cleaning.

What to Avoid

- Do not lean objects against the glass or apply pressure to the film surface.
- Avoid using adhesives, stickers, or any glue on the smart glass surface.
- Never use abrasive tools, rough cloths, or chemical solvents.

 Final Steps

- Always leave the official cleaning and maintenance instructions with the client upon completion.
- For the most up-to-date care instructions, refer back to Smart Glass Tech or your installer training materials.
-

As PriWatt™ Smart Glass continues to transform the way we design and build modern environments, your role as a trained installer is more important than ever. Whether you're new to the technology or an experienced professional, staying informed about proper handling and maintenance is key to ensuring the product performs beautifully for years to come.