



PHOENIX
ARCHITECTURAL
GLASS + METAL

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Switchable Privacy Glass / Smart Glass

As a pioneer in the industry, Phoenix AG+M's Switchable Privacy Glass / Smart glass is known for its reliability and high-level of optical clarity. With the flick of a switch or automation controller this glass provides On-Demand Privacy or Instant Transparency. Phoenix AG+M offers a full line of exclusive, customizable, configurable, and UL-certified Switchable Privacy Glass / Smart Glass products.

Applications.

Switchable Privacy Glass / Smart Glass is used in a myriad of applications and is available in a variety of shapes, sizes, and compositions.

Healthcare.

Many hospitals are replacing patient dividing curtains with Switchable Privacy Glass / Smart Glass partitions for easier maintenance; to provide better visibility, privacy and sound deadening. Switchable privacy glass / Smart glass is also deployed in "observation areas" including operating rooms, ICU locations and nurseries.

Corporate & Government.

Create an open feeling office space with glass walls and doors which have the ability to be transparent or opaque at the flick of a switch.

Facade / Building Envelope.

Switchable Privacy Glass / Smart Glass can be manufactured as energy efficient IGUs and in Hurricane resistant / impact rated glass configurations.

Security.

Switchable Privacy Glass / Smart Glass is easily assembled into Ballistic / BR / Blast rated configurations as well as security containment and anti-eavesdropping configurations.



Aurora Cooperative Center



QUALITY ▫ SERVICE ▫ VALUE = PHOENIX AG+M



Function:

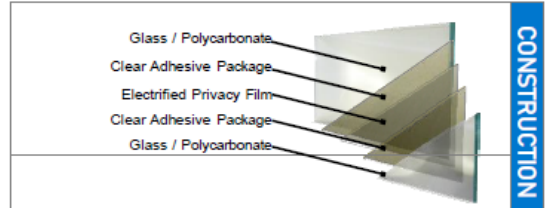
Provides instant visibility or privacy for a translucent, milky white, laminated panel to become transparent with the application of an electrical current to an embedded layer of PDLC liquid crystal particles.

Switching Action:

A variety of switching options are applicable from a basic single-pole light switch, smart phone app, or integration into home automation systems, standard and low voltage.

Method of Action:

Electrical current (70VAC) aligns randomized suspended liquid crystals to achieve desired transparency / privacy.



This product is manufactured per ANSI Z97.1 for laminated safety glass construction

Dimension:

Maximum width: 58" (1475mm)
Maximum length: 120" (3048mm)
Larger custom sizes available.

Thickness (Glass):

Maximum Thickness: (unlimited)
Minimum Thickness: 5/16" (7.9mm)
[average thicknesses @ 7/16" (11mm), 9/16" (14.2mm)]

Thickness (Polycarbonate):

Maximum Thickness: (unlimited)
Minimum Thickness: 1/16" (1.58mm)

Energy Data:

Input Power: 70VAC /50Hz
Operating Temp: -20 / 70°C
Energy Consumption: 1~3 watts/ sq meter
0 Watts in privacy state

Performance Data:

Parallel Light Transmission:
On: 78% / Total Light: 80%; Haze Range: 2.5-9%, dependent on composition of construction & environmental lighting conditions.
Off: 4% / Total Light: 65%; Haze Range: Full, dependent on composition of construction & environmental lighting conditions.

Switching Speed:
Private to Transparent: Approx 10 ms
Transparent to Private: Approx 10 ms

UV Blockage: 99%

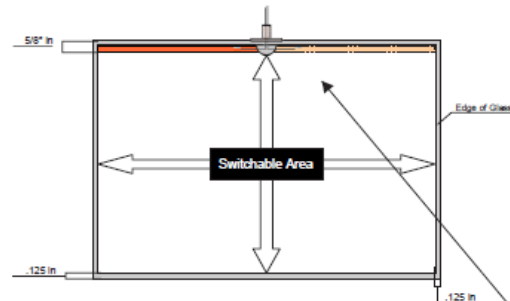
Installation Data:

Wet Glazing Sealant Specification:

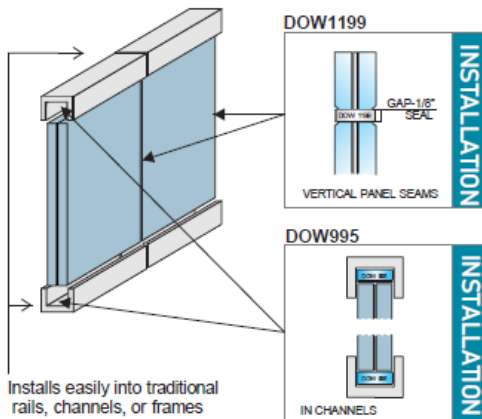
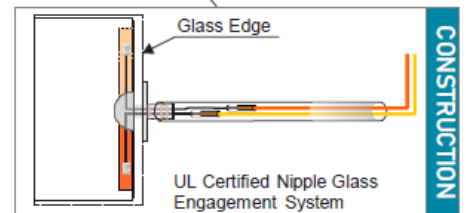
See page 5 of this document and contact Phoenix AG+M for additional glazing details and cautions.

Power Leads:

Leads typically exit top center horizontal of panel - 10' pigtail standard



WARNING
DOW 1199 MUST OUT-GAS TO THE ATMOSPHERE DURING CURE. FRAMES WILL PREVENT PROPER CURING



Installs easily into traditional rails, channels, or frames



PRIVACY



SHADE



SECURITY



PARTITION



UV BLOCKING



PROJECTION



Wiring Diagram for PC1240/70 Power Controller/Switchable Smart Glass (typical) Installation

The PC1240/70 mounts directly to any Flat Surface. Each module can operate up to 100/sf Smart Glass. Input = 120VAC / Output = 70VAC.

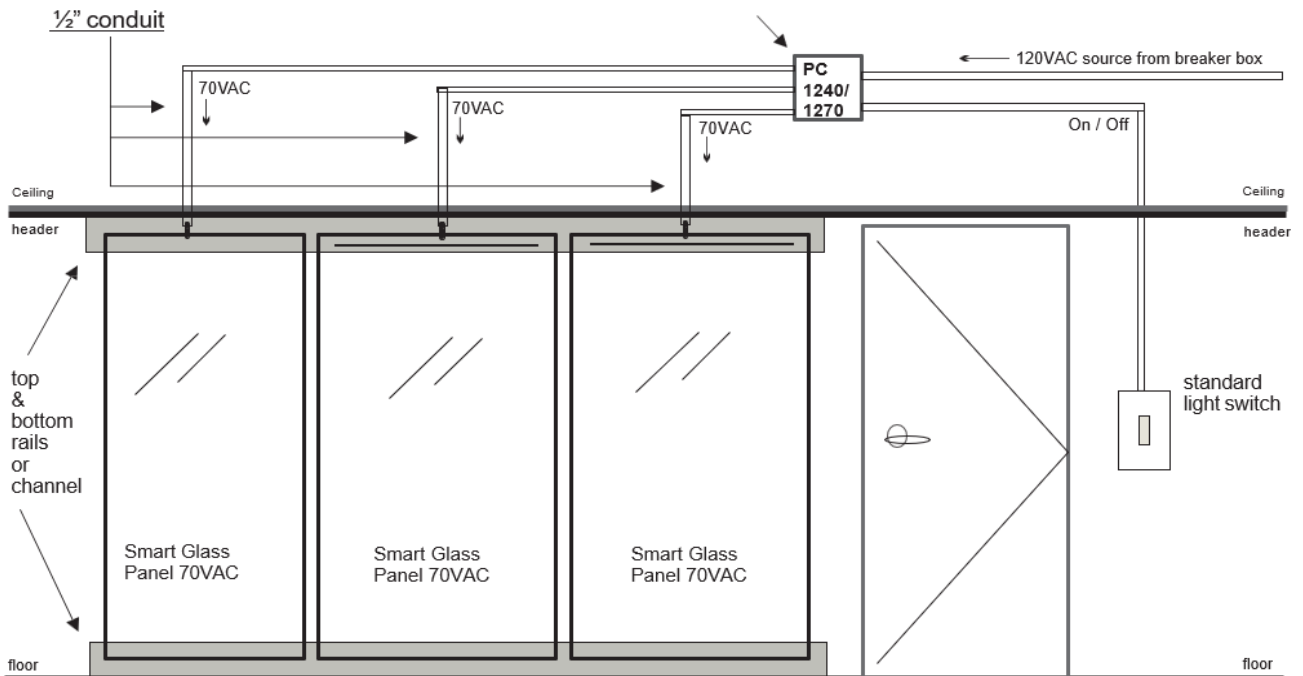
ALL wiring is intended to be routed through conduit for safety.

Each Smart Glass panel features a 10' pigtail of two 18-ga wires. (one yellow / one orange) These get routed through conduit from the glass edge to the Power Control Box typically mounted above a drop ceiling, utility cabinet, or supply room.

Black, White, and Green wires from your breaker box get connected to the “Power In” connection block on the PC1240/70.

Yellow and Orange wires from your Smart Glass panel get connected to the “AC Out” connection block on the PC1240/70.

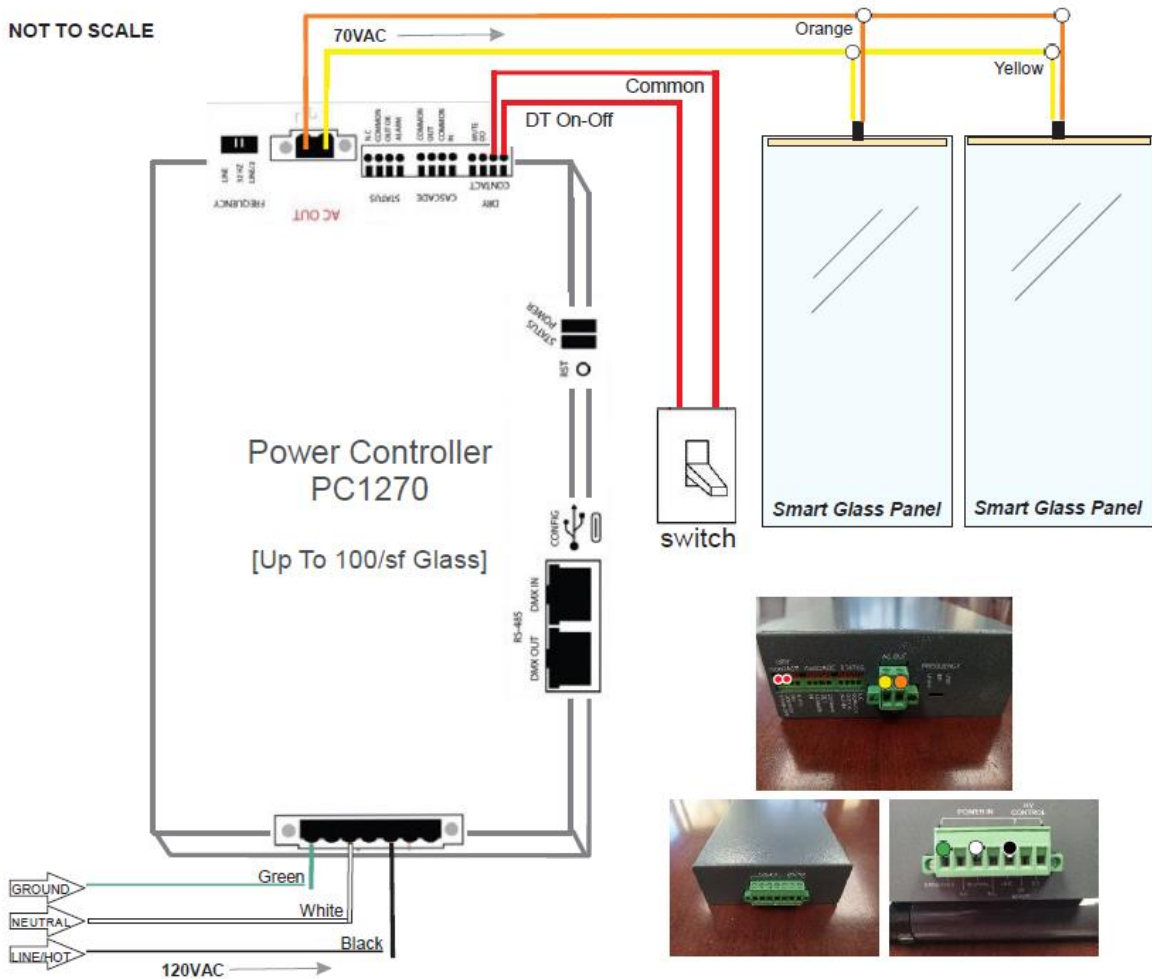
Your wires from the switch get connected to the “Dry Contact” connection block on the PC1240/70.





PC1270 Power Controller On/Off Wiring Schematic

Phoenix AG+M Switchable Privacy Glass / Smart Glass is delivered pre-wired (wire leads from the glass) for easy connection to our Power Module. All that is needed to control the glass is a dedicated light switch paired with the provided Power Module. Our system can also integrate with existing controllers at a smart-home or smart-business. There are a variety of ways to control our glass including - "Alexa, dim my glass!"



Specifications (No Timers Required)

Dimensions of Case:	6.5"L x 4.1"W x 1.4"H
Input Voltage:	110VAC, 50/60Hz, 1360mA
Output Voltage:	70VAC, 50Hz, 1970mA
Coverage Area:	100/sf
Output Channel:	One (1)
Operations:	On/Off
Mount:	Wall Mount Brackets
Weight (controller only):	1.5 lbs.

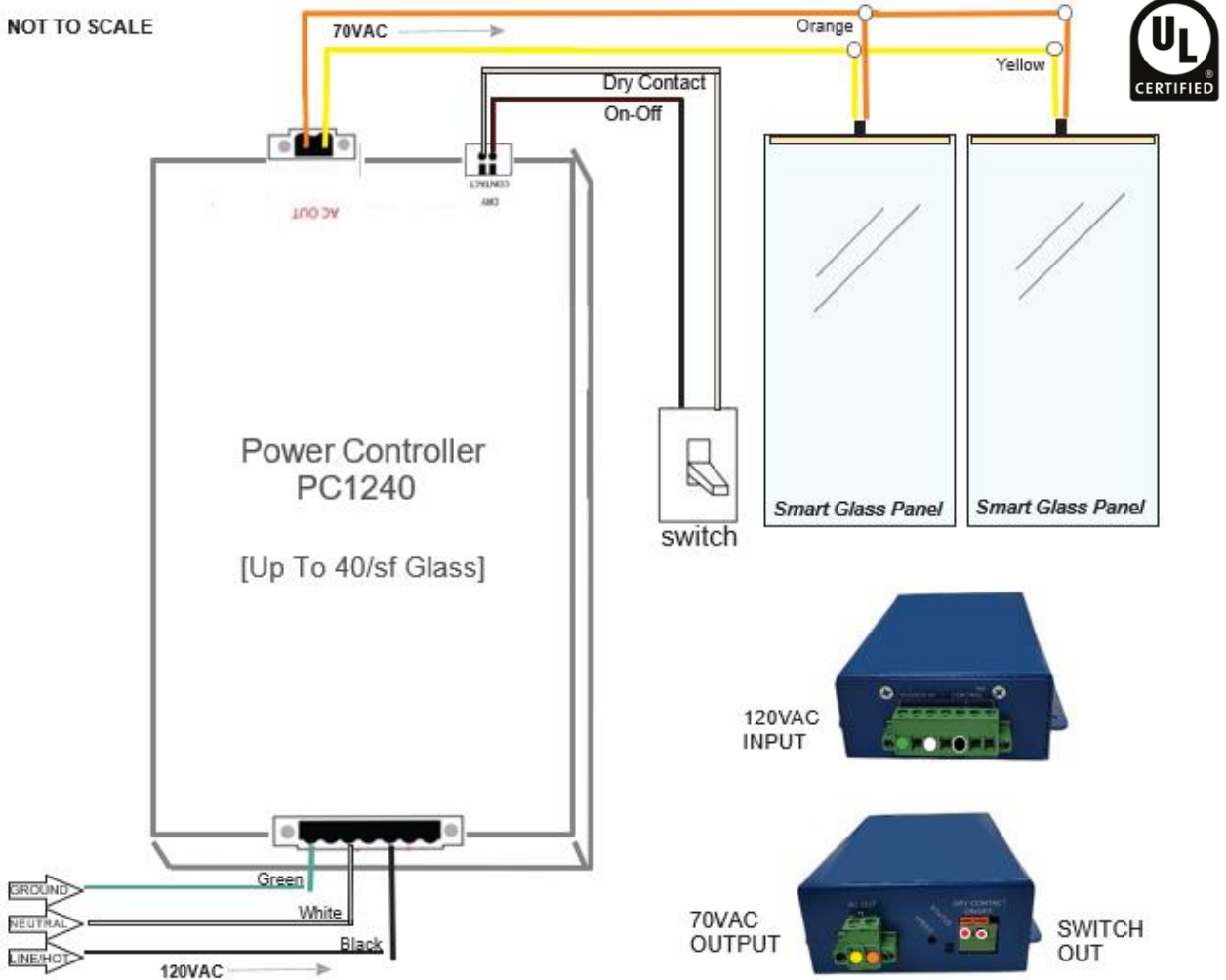




PC1240 Power Controller On/Off Wiring Schematic

Phoenix AG+M Switchable Privacy Glass / Smart Glass is delivered pre-wired (wire leads from the glass) for easy connection to our Power Module. All that is needed to control the glass is a dedicated light switch paired with the provided Power Module. Our system can also integrate with existing controllers at a smart-home or smart-business. There are a variety of ways to control our glass including - "Alexa, dim my glass!"

NOT TO SCALE



Specifications (No Timers Required)

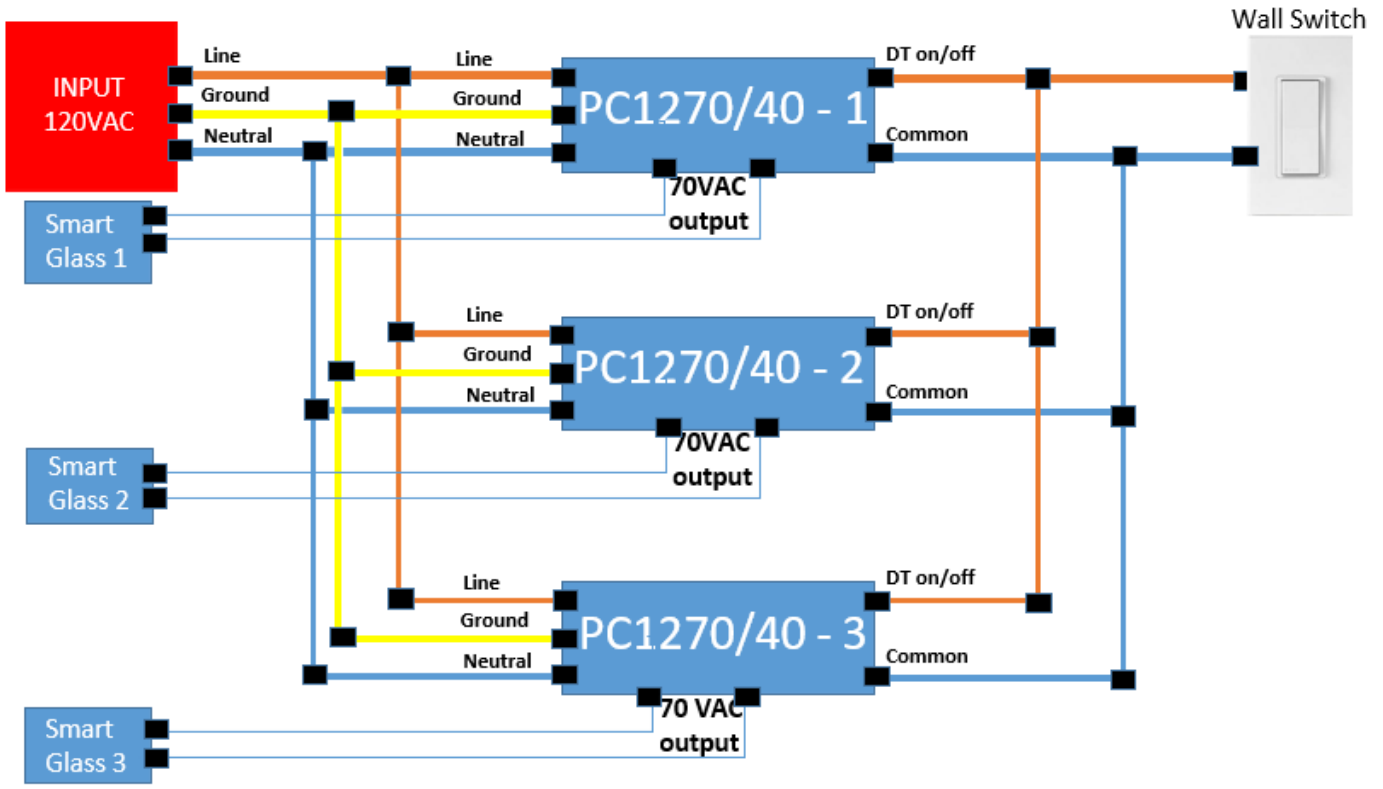
Dimensions of Case:	4.9"L x 3"W x 1.4"H
Input Voltage:	110VAC, 50/60Hz, 450mA
Output Voltage:	70VAC, 50Hz, 600mA
Coverage Area:	40/sf
Output Channel:	One (1)
Operations:	On/Off
Mount:	Built In (flat surface)
Weight (controller only):	1 lbs.





Wiring Schematic for Multiple Controllers Via a Single Switch

Multiple Power Controller diagram \ Single Switch





STOP!



USE ONLY DOW 995 OR DOW 1199* NEUTRAL CURE SILICONE. USE OF ANY OTHER SEALANT COULD CAUSE PERMANENT DAMAGE TO THE SWITCHABLE PRIVACY FILM PANEL

CRITICAL!

The DOW 1199 is intended for use in a glass wall installation where a “Wet” butt joint is required. DO NOT use DOW 1199 as a black fill in a frame, such as a U-channel, window sash, or where the glass edge is bedded in the DOW 1199 and a frame caps the glass and silicone. This type of installation requires the use of DOW 995.

WARNING

Disconnect line power via fuses or circuit breakers BEFORE installation.

Carefully read installation instructions completely before installation.



DO NOT ATTEMPT INSTALLATION ON A “LIVE” CIRCUIT!



**FAILURE TO COMPLY WITH INSTALLATION STANDARDS
WILL NULLIFY MANUFACTURER’S WARRANTY**

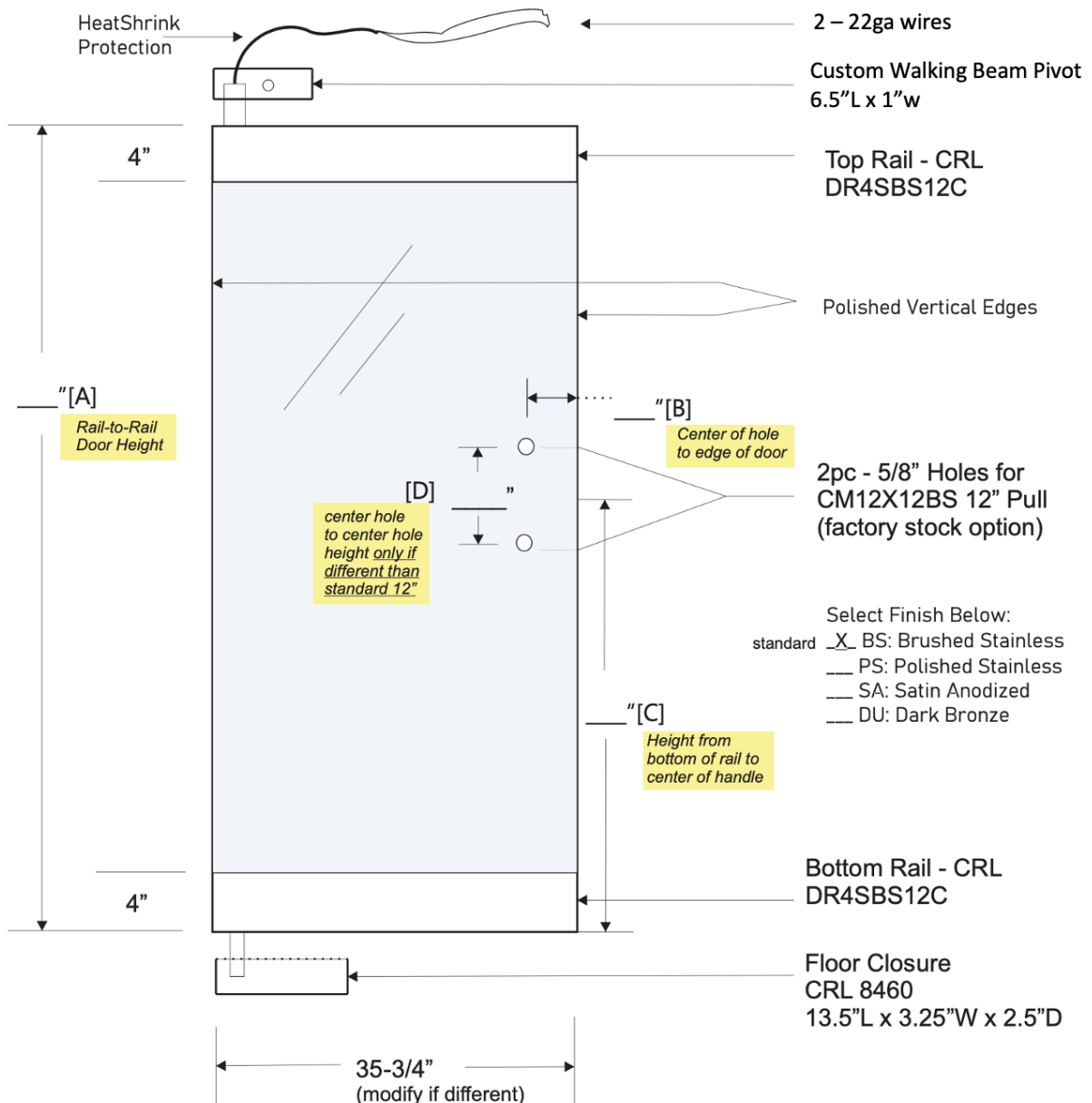


Switchable Privacy Glass – Frameless Door Solution



The Phoenix AG+M Switchable Privacy Glass / Smart Glass Door ships to the glazier fully-assembled and ready to be hung. The opening should be prepared by installing the appropriate receiving equipment to allow for proper door function.

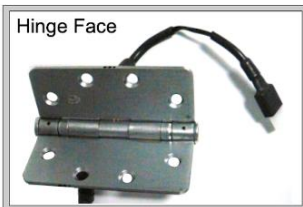
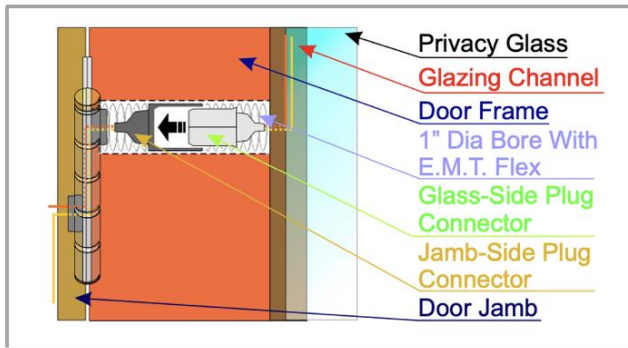
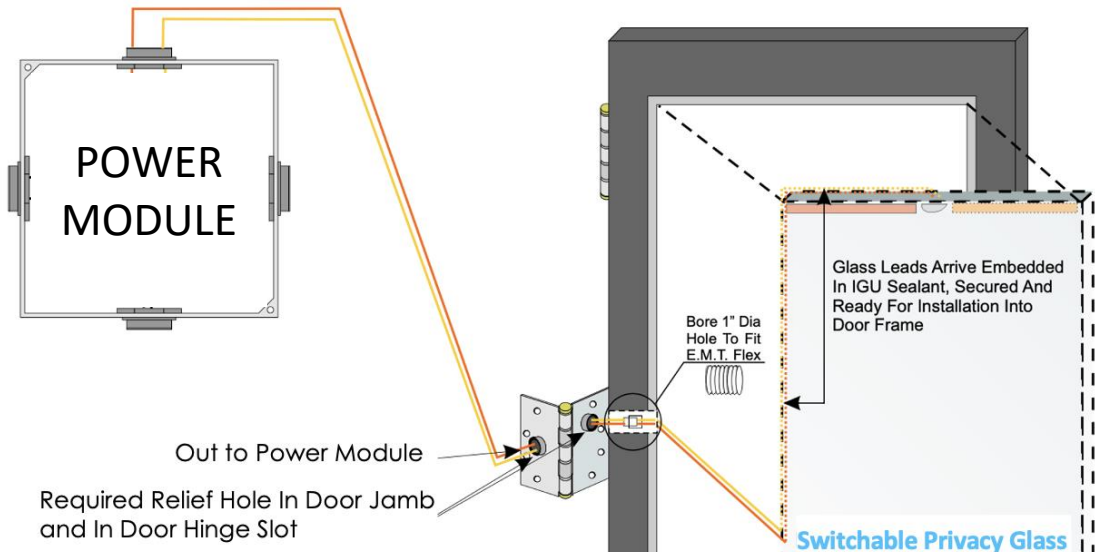
Our proprietary Walking Beam Upper Pivot System ensures proper electrical transfer to the glazing panel. The information indicated the basic door type. For custom configurations please contact Phoenix AG+M.



Switchable Privacy Glass – Framed Door Solution

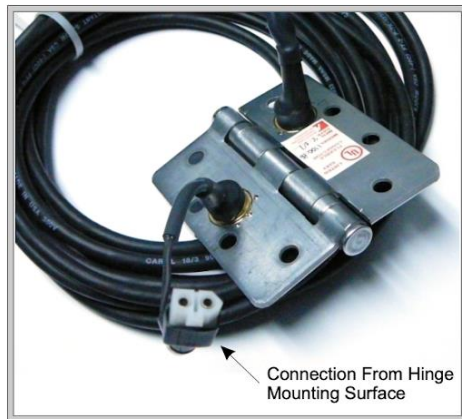


The Phoenix AG+M Electrified Hinge is the ideal solution ensuring proper electrification for fully framed Switchable Privacy Glass / Smart Glass Doors. This hinge is **NON-LOAD BEARING & MUST BE INSTALLED AS THE CENTER HINGE WITH A MINIMUM OF TWO STANDARD STRUCTURAL HINGES.**



Hinge Features:

- Hinge Face Looks Like Standard Door Hinge; Perfect Integration
- Custom Milled From Standard Size Hinges Ensuring Exact Fit
- UL Listing Assures User The Product Is Tested And Safe
- Quick And Simple Installation Makes Hinge Easy To Use
- Available In Most Any Standard Finish Or May Special Order



Switchable Privacy Glass – Partial Project List



Indicated below is a partial project list & does not include over 295 residential projects. Individual references are available upon request.

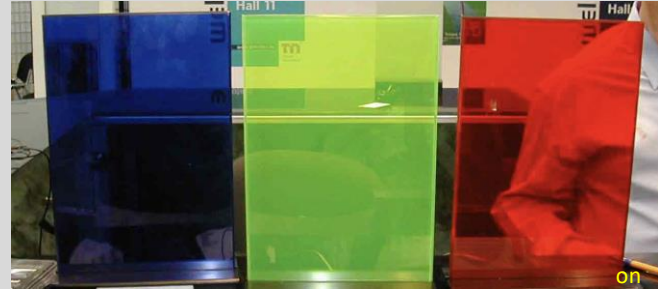
Crown Lounge	Mercedes Benz Robotics Technology Lab
Amex Centurion Lounge	Oxford Properties
EJCM Pharmatech	Oxy Scientific #16
Green Valley Resort	Crosby Executive Center
Univ of Pittsburgh Medical Center	ACC
21C Hotels	Alumed
Valley Ho Hotel	A G & G
4 Seasons Hotel Palo Alto	Bell Helicopter
Quantico - US Marine Base	W Hotel Scottsdale
Lulu's Mammoth	Wright Petersen Air Force Base
The Mahsa Boutoque	West Virginia Univeristy Stadium
Legacy Bank Headquarters	Ashmins
URG Medical	Lynette College
Brookline Public Health	Layne TX
Brookhaven Nano-Technology Building	Talon Air
Engbarth Plaza	Rousseau Engineering
Vertern Adminstration Hospital (several locations)	Jones of New York
Fredrick Memorial Hospital	Lakeway medical
New South Whales Tourism Office	Shriver Air Force Base
Linda hall Library	Univ of S. Carolina Medical
NV Oral & Facial	Timeless Glass
Crozer medical	Hanscom Air Force Base
Wild 327	US Army - Ft. Belvoir
Bank of America	GSA - Classified Executive Offices
North Shore University Hospital	OMB Reception
UBS - Union Bank of Switzerland	Hewlet Packard Global Security
Zimmerman Lofts	OMB Valve
Blonde Bar	8050 Marshall
Tuscany Fallas	Black Swan Aspen
Hyatt Islandia	Patek Philippe
Westin Monache	Shell Oil Co.
19 Entertainment	1207 Aurora
Big Blue Bus	Aurora Cooperative Center
SW-8 Lynch Exhibits	1200 Washington
Downstream Casino	Baker Clouse
The Palms Resort	Western Leadership
Baltimore Hilton Conv Center	Lasting Impressions
Vernon Beverly Hills	Winter Haven
Federal Aviation Adminstration (FAA)	1355 1st Ave NYC
Sdassualt Systes	Salesforce.com
Portico Properties Barbados	Play Nightclub
Envision Eyecare	USTB
St. Charles Place	Mastercard
Chatuagua	NASA Space Camp
Mandarin Hotel Miami	Cequell III
My Studio Vending Co.	AOS
Trinity Yachts	Aspen Switchable
St. Anthoys Hospital	Perdido Resort
Cornerstone Plaza	IWR Conference Room
Episcopal II	Cyber STL
QB Conservatory	Navvis
Cypress Humanitoes	Proector & Gamble
Salon de mar	Surf Club Miami
Lake Chalet Nor Cal	UPMC Shayside
8 W. 54th Street	6705 Pixie
Malin Space Center	Delta LaGuaurdia Intl.
Sand Ridge Energy	Scottrade
Snitzer West	James Willard Hosp. Operating Room



Robotics Tech. Lab; Birmingham, AL

on

off



Phoenix AG+M Switchable Privacy Glass / Smartglass is available in a variety of glass formats including:

- BR / Ballistic Glass & Blast-Rated
- Custom Colors
- Bent Glass
- Insulated Glass
- Jumbo / Over-Sized Glass





The Big Blue Bus, Santa Monica, CA



on



off



Legacy Bank HQ, Oklahoma City, OK.