

ALVARADO

Supervisor 2000-SM **Barrier Free Optical Turnstile for Indoor Installation**



Technical Specifications

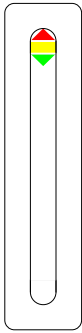
Dimensions	<u>Cabinet Length:</u>	17.00" (432 mm)
	<u>Cabinet Height:</u>	38.85" (987 mm)
	<u>Cabinet Width:</u>	4.00" (102 mm)
	<u>Clear Passage Width:</u>	28.00" (711 mm) or 36.00" (915 mm)
Materials	<u>Base:</u>	Formed and welded carbon steel. Powder coated RAL 9017, <i>Solar Black (matte)</i> .
	<u>Internal Frame:</u>	Welded steel. The frames provide the mounting for the controller boards, and optical sensor components and are configurable for use as center cabinet frames in multi turnstile installations.
	<u>End Panels:</u>	Formed and welded 304 stainless steel. All exterior welds are ground smooth and polished. Available in #4 satin or powder coated finish.
	<u>Side Panels:</u>	Formed and welded 304 stainless steel. All exterior welds are ground smooth and polished. Available in #4 satin or powder coated finish.
	<u>Lid:</u>	Anodized aluminum. Available in clear anodized over a #4 satin finish.
Function	The SU2000-SM provides barrier free single or bi-directional (card in/card out) electronically controlled access.	
Method of Operation	A single passage will be allowed in the authorized direction upon receipt of an authorization signal from an access control system, GateKeeper turnstile control software, or push button device. The turnstile will reset after the user has passed through the turnstile or the time frame allowed for an entry to occur has expired. If an unauthorized user attempts to tailgate or enter from the opposite direction, the unit will recognize the illegal passage and the built in violation alarm will be activated.	
	Eight infrared sensors mounted inside the turnstile cabinets are used to monitor traffic through the turnstile and determine user position within the passageway.	
Status LEDs	Red, Yellow, and Green LED's are flush mounted within the cabinet lid and are configured to function in the following manner:	
	<u>Yellow LEDs:</u>	Turnstile is ready for card presentation.
	<u>Green LEDs:</u>	Passage is allowed in the direction indicated.
	<u>Red LEDs:</u>	Passage is prohibited in the direction indicated.
Violation Alarm	A built in violation alarm will be activated when an unauthorized user enters the turnstile. Alarm duration is user configurable and can be set to sound continuously until manually reset or for a user defined time from 2 to 8 seconds. Alarm settings can be made via DIP switches or with GateKeeper turnstile control software.	

Fire Alarm	Activation to disable the turnstile in conjunction with the fire alarm or other life safety system is achieved by supplying a sustained dry contact to the SU2000. Terminal strip connections are provided for this purpose.
Interface	<p><u>Dry Contact:</u> Single passage activation for either direction of operation is achieved by supplying an isolated, voltage free, momentary dry contact duration of at least 500 ms. Separate terminal strip connections are provided for each controlled direction for passage allowed and passage denied input signals.</p> <p><u>RS-485:</u> Many turnstile settings, including passage activation, can be controlled and monitored using RS-485 serial interface and/or GateKeeper turnstile control software. Refer to the GateKeeper specification for additional information.</p>
Aborted Entry (Time Out)	Unit has an adjustable aborted entry (time out) timer. If the user does not pass through the turnstile within the set time, the turnstile will reset and wait for the next activation. If the user attempts to pass through the turnstile after the set time has expired the violation alarm will sound. Timer duration is user adjustable ranging from 5 to 20 seconds. Timer settings can be changed or disabled via DIP switches or with GateKeeper turnstile control software.
“Open/Close” Inputs	Activation to “open” or “close” either direction of passage is achieved by supplying a sustained dry contact to the SU2000. Separate terminal strip connections are provided for each controlled direction for both “open” turnstile and “close” turnstile input signals.
Blocked Sensor Alarm	The built in alarm will emit a chirping sound if one or more of the infrared sensors remains blocked or obstructed.
Tailgate Sensitivity	Tailgate sensitivity settings can be changed via DIP switches or with the GateKeeper turnstile control software.
Outputs	Terminal strip connections are provided for the following output signals: <p><u>Authorized Passage Feedback:</u> An isolated, voltage free, momentary dry contact output signal is provided for each direction of passage for each authorized user that passes through the turnstile.</p> <p><u>Unauthorized Passage Feedback:</u> An isolated, voltage free, momentary dry contact output signal is provided for each direction of passage for each unauthorized user that passes through the turnstile.</p> <p><u>Violation Alarm:</u> An isolated, voltage free, momentary dry contact output signal is provided each time the violation alarm is activated. This output allows the turnstile to be integrated with an external auxiliary security device such as a facility alarm, CCTV system, or an electric lock controlled door when the turnstile is violated.</p> <p><u>Aborted Entry (Time Out):</u> An isolated, voltage free, momentary dry contact output signal is provided for each direction of passage every time passage is aborted.</p>
Power Supply	120 VAC, 60 Hz
Power Rating	Maximum power consumption is 60 W per turnstile.
Operational Voltage	Primary power is stepped down and rectified for low voltage 12 VDC and 5 VDC operation.
Installation Details	SU2000-SM turnstile cabinets are shipped fully assembled. Fork lift & pallet jack equipment may be required for off loading.

Approximate Weight

Approximately 50 lb. (22.7 Kg) per cabinet

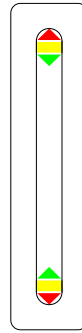
Cabinet Types Available



Left Cabinet



Right Cabinet



Center Cabinet

Options

Status Chime

A chime tone indicates that an activation signal has been provided to the turnstile and the user is allowed passage.

“Open” / “Close” Turnstile Overrides

A built in key override switch overrides the access control system to “open” or “close” one or both directions of the turnstile. Separate overrides are required for each direction of passage.

GateKeeper Turnstile Control Software

Password protected PC based program allows all installed SU2000 turnstiles to be configured, monitored and administered, allowing control of virtually all turnstile functionality, from a single standard PC. Communication with the SU2000 units is via RS-485 serial protocol. The program runs on Windows 2000 or XP operating system.

Alternate Power Supply

100/240 VAC, 50/60 Hz

SU2000-SM General Configuration



Single Lane Configuration (Top View)



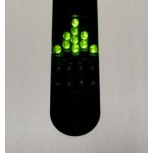
Multiple Lane Configuration (Top View)

Status LED's User Instructions



Yellow LEDs

- Turnstile is ready for card presentation
- Present access control card to the reader for authorization
- Wait for the Green LEDs to illuminate before proceeding



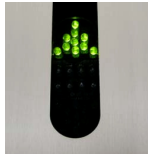
Green LEDs

- Passage is allowed in the direction indicated
- Proceed through the turnstile



Red LEDs

- Passage is prohibited in the direction indicated
- Wait for the Yellow LEDs to illuminate before presenting the next access control card to the card reader



Flashing Green LEDs

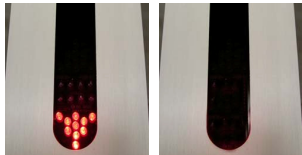
- Free passage is allowed in the direction indicated
- An access control card is not required in the direction indicated
- Proceed through the turnstile

Alarm Conditions

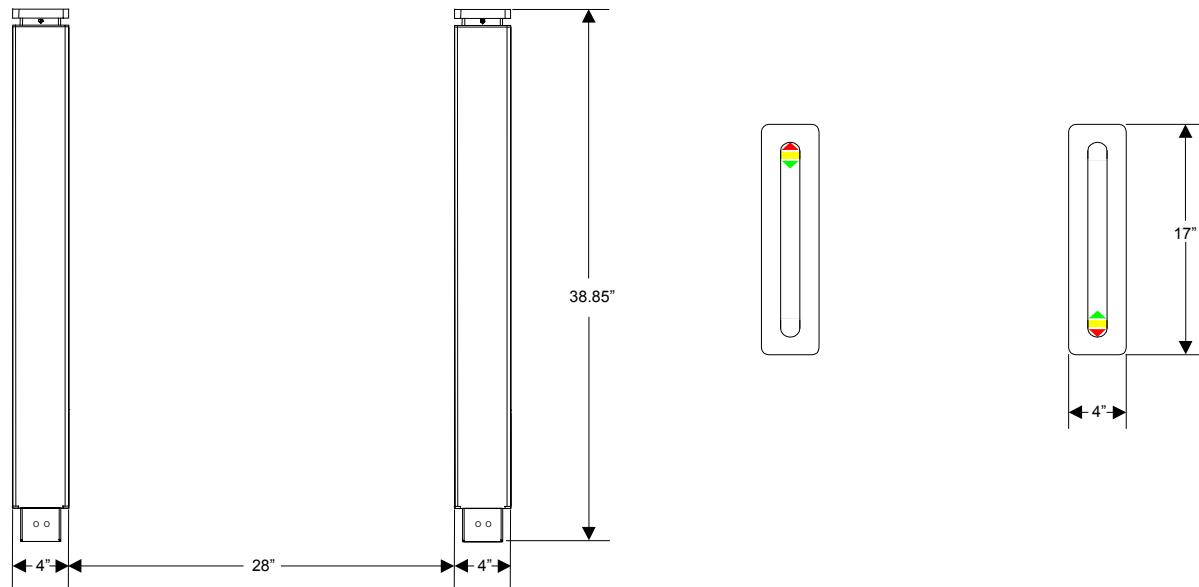
The alarm will be activated in each of the following scenarios:

- Unauthorized Passage
- Premature Entry
- Tailgating
- Loitering

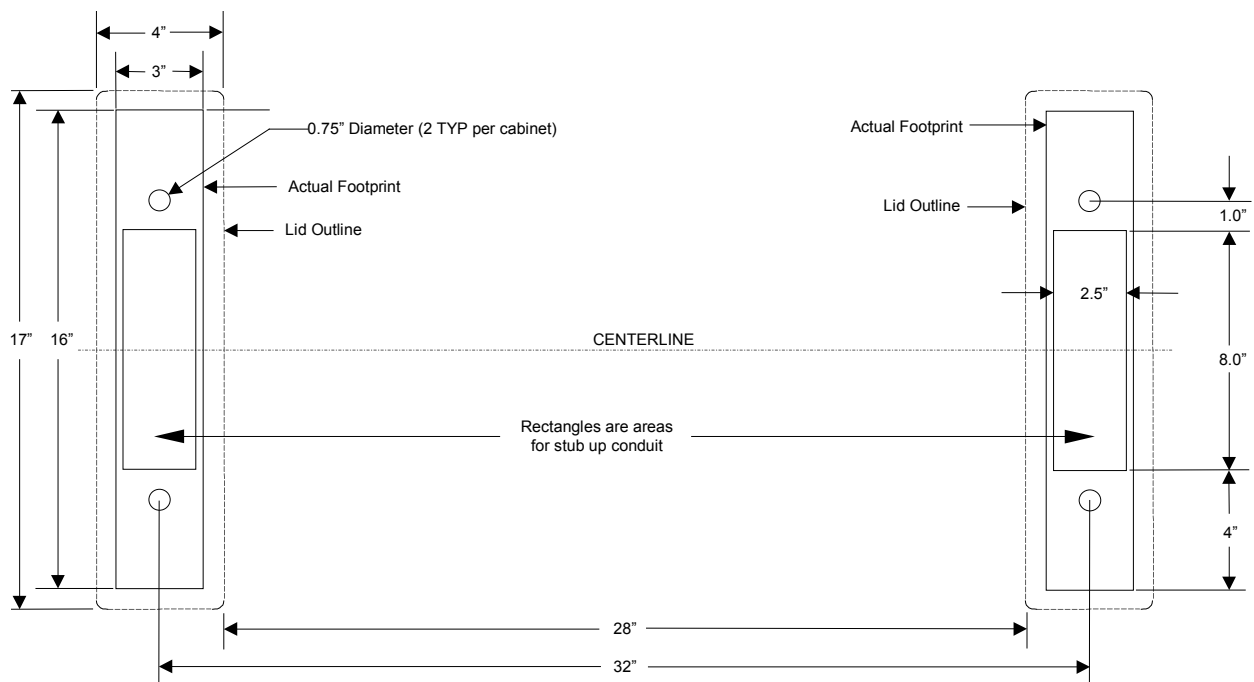
Flashing Red LEDs and Audible Alarm



SU2000-SM Site Preparation



SU2000-SM Footprint Drawing



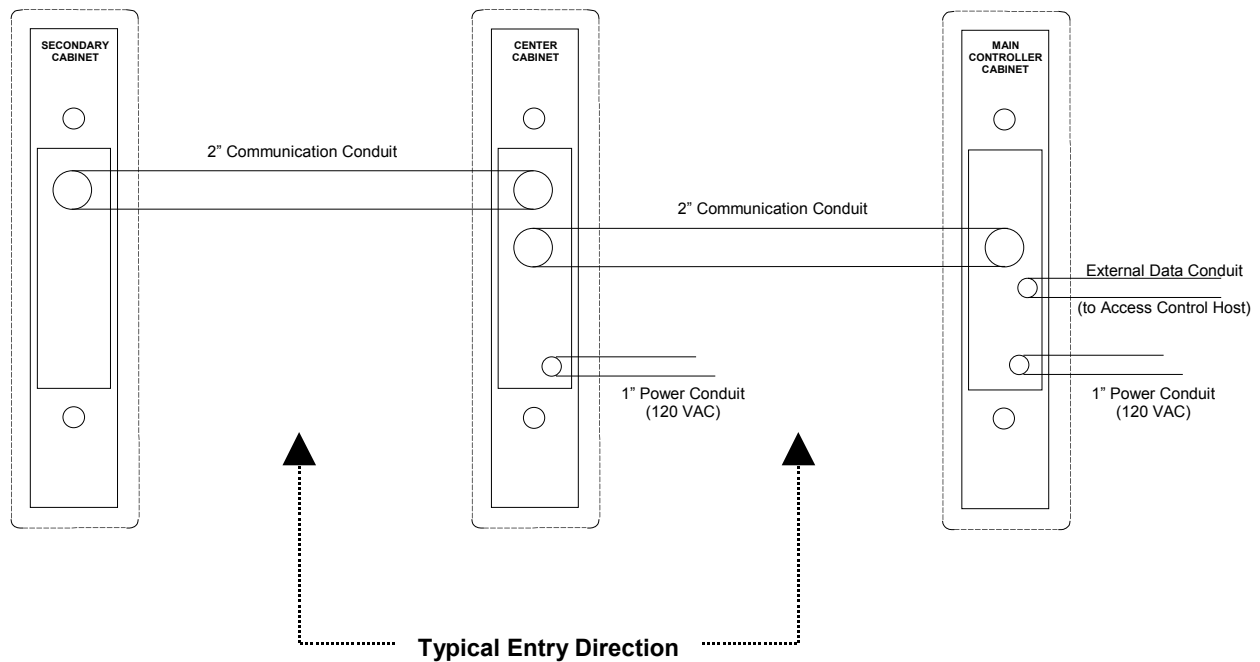
Notes:

- The cabinet centerline to centerline dimension for a 28" passage width is 32".
- The cabinet centerline to centerline dimension for a 36" passage width is 40".
- For custom installations that deviate from the Standard and ADA Compatible lane passage widths, the passage width of the lane must never exceed 36" (this is measured from the inside edge to edge for a clear passage width).

Slab Requirements

- Minimum thickness 4" (102 mm) level solid concrete pad
- A full sweep electrical conduit underneath the floor, one for power and another for communication, separated from each other.
- Cabinets must be installed perpendicular and flush with the floor while level to each other.

Conduit Requirements



High Voltage Power Conduit

- 1" power conduit for 120 VAC primary power must be run to the Main Controller Cabinet and each Center Cabinet.

Low Voltage Power Conduit

- 1" conduit must be run to interconnect the cabinet sets that form each passage lane.
- The power cables required to interconnect the cabinet sets that form each passage lane are provided with the turnstiles.
- Do not roll excess cabling.
- Conduits that interconnect a cabinet set can not exceed 10' in length.

Communication Conduit

- 2" conduit must be run to interconnect the cabinet sets that form each passage lane.
- The cables required to interconnect the cabinet sets that form each passage lane are provided with the turnstiles.
- Do not roll excess cabling.
- Conduits that interconnect a cabinet set can not exceed 10' in length.

Access Control System Conduit

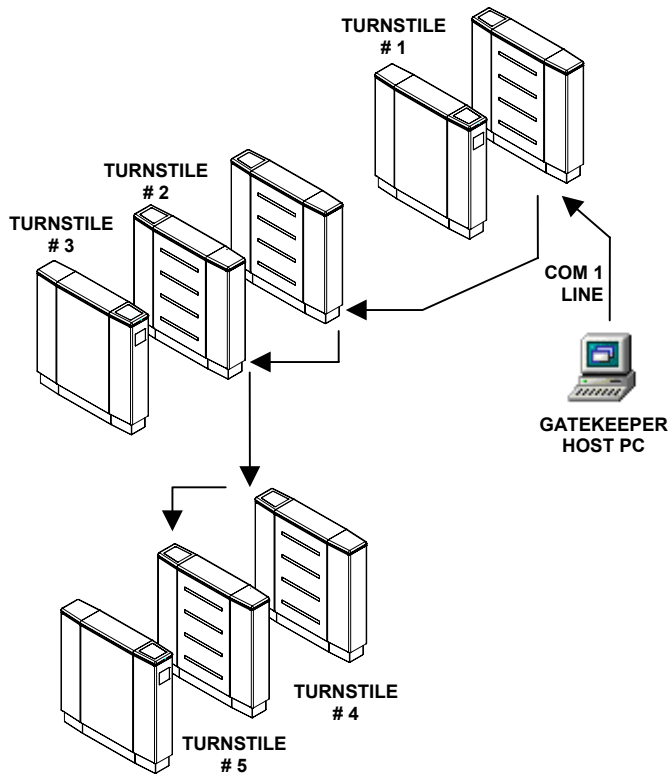
- Diagram provided does not specify the conduit requirements for integrating the turnstile with an access control system
- Consult access control system provider for power and communication conduit specifications for integrating card readers or other access control system devices with turnstiles

GateKeeper Turnstile Control Software RS-485 Serial Interface Conduit Requirements

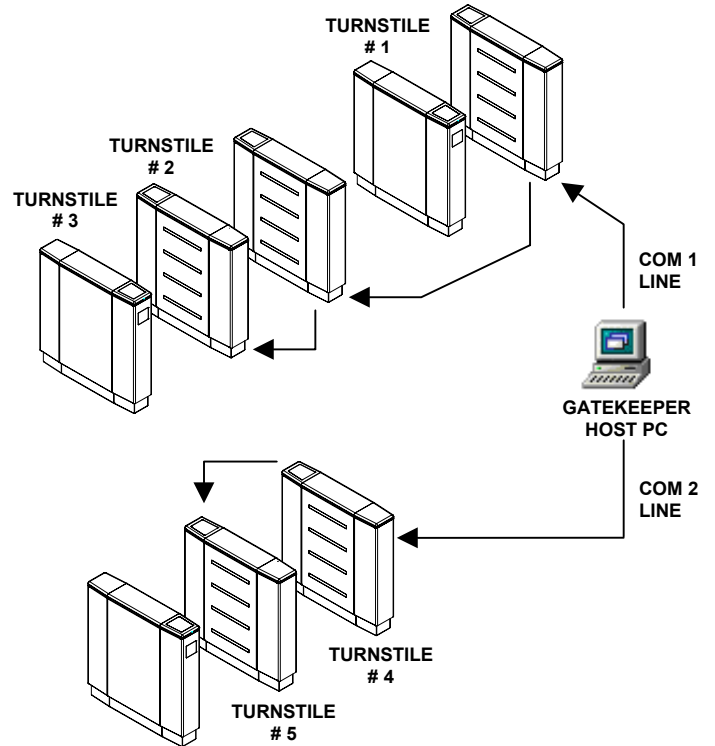
Turnstile settings, including passage activation, can be controlled and monitored using RS-485 serial interface and/or GateKeeper turnstile control software. Four wire communication cable must be daisy-chained from the COM port on the host computer to each turnstile to provide RS-485 communication.

- No more than 16 turnstiles may be daisy-chained to each COM port
- Total cable length from the COM port to the last turnstile in the daisy-chain may not exceed 3000 feet (914 m)
- RS-485 communication cable must not be run in the same conduit as AC Power.

Single COM Port RS-485 Daisy-Chain Cabling Diagram



Multiple COM Port RS-485 Daisy-Chain Cabling Diagram



Throughput Rates

<u>Card Reader Device</u>	<u>Users per minute</u>
Proximity	40
Magnetic Swipe	25
Magnetic Swipe with Numeric Keypad	20
Omni-directional Barcode Scanner	40

- Figures are approximations
- Flow rates may increase with enhanced user familiarity
- Access control / card reader system response time is assumed to be instantaneous

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