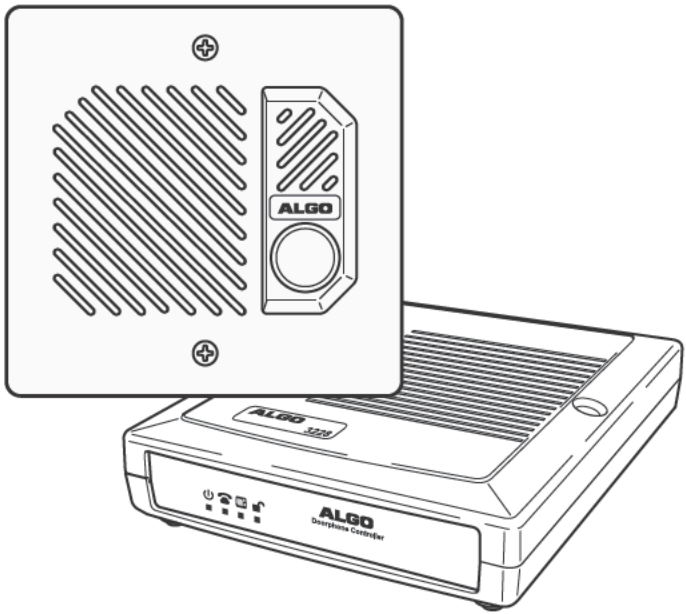
ALGO



3228 Station Port FXS Doorphone

Installation and User Guide

Algo Communication Products Ltd., Burnaby, BC Canada V5J 5L2

www.algosolutions.com

241238-01

Document #: 90-00059A

Important Safety Notice

The 3228 Station Port FXS Doorphone is designed and tested to comply with EN 60950-1:2006 safety requirements. When the Doorphone Controller is connected to wiring that exits the building, there is potential risk of lightning induced electrical surges or high voltages from fault conditions. To reduce risk, outdoor wiring should be protected by Earth grounded conduit whenever possible. If outdoor wiring will be connected to the Doorphone Controller then the power supply provided with the Doorphone Controller must first be connected to a properly Earthed mains supply. Under no circumstances can the Doorphone Controller be disconnected from Earth ground while connected to outdoor wiring. Customers are required to have adequate lightning protection where the telephone line enters the building. The 3228 is not intended for connection to the PSTN.

Support

Algo is pleased to offer telephone or email support relating to installation issues, applications assistance, or general product inquiries.

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Burnaby, BC, Canada, V5J 5L2
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sales@algosolutions.com Tel: 604.454.3790

Algo products are warranted against defect in workmanship for a period of 12 months after installation not to exceed 18 months from date of manufacture. For warranty or non-warranty repair support please contact your distributor or reseller. If necessary, contact Algo using the support contacts listed above.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, or 4) Consult the dealer or an experienced radio/TV technician for help.

Disclaimer and Limitation of Liability

While every effort has been made to ensure that the information contained in this Installation and User Guide is accurate and complete, no liability can be accepted for any errors or omissions. Algo Communication Products Ltd. (hereinafter "Algo") reserves the right to change the specifications of the hardware or software/firmware described herein at any time without prior notice. Algo and its subsidiaries assume no responsibility for any damage or loss resulting from the use of this Installation and User Guide.

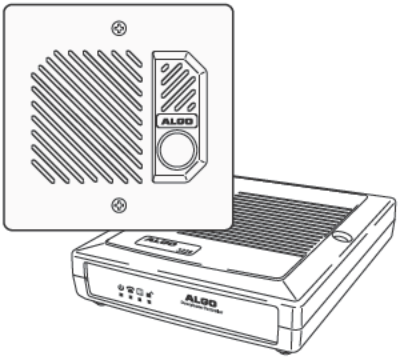
Algo and its subsidiaries assume no responsibility for any loss or claims by third parties which may arise through the use of this product. Algo makes no warranties, either expressed or implied, regarding the Algo 3228 Doorphone or related software and firmware, its merchantability, or its fitness for any particular purpose. The exclusion of implied warranties is not permitted by some states. As such, the exclusion may not apply to you.

The Algo 3228 Doorphone has been tested using a variety of network systems. However, the large number of possible hardware and network configurations makes testing under every circumstance impossible. Thus, Algo does not guarantee uninterrupted service or correction of errors or that the functions or performance of the product will meet your requirements.

Table of Contents

Introduction

The 3228 Station Port FXS Doorphone provides a simple-to-install telephone-integrated entry security intercom solution for business and residential applications. Visitors cause a telephone to ring which enables conversation when answered and the capability to allow remote entry using door release features.



Designed to emulate an analog telephone set, the 3228 connects to any FXS gateway or telephone system analog station port.

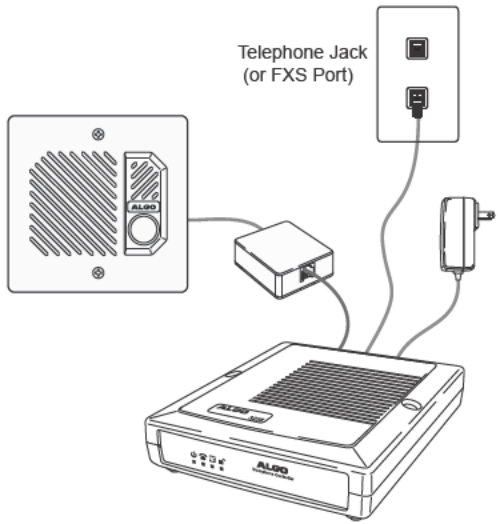
The 3228 Doorphone includes a Control Unit, Door Station, and Power Supply. The Control Unit and Door Station can be connected with a single twisted pair wire up to 1,000 feet (300 m) with the Door Station located outdoors and the Control Unit in a dry indoor location.

Features

- Single pair digital communication between Door Station and Control Unit
- Hands-free voice communication at the Door Station
- DSP enhanced audio for superior performance in noisy environments
- Programmable outbound dial number
- Door control relay contacts and available 24 Vdc 0.3 A strike power
- Configurable dry contact input and output from Control Unit
- Configurable dry contact input and output from Door Station
- Programmable by DTMF or USB connection to PC
- International 110/220 V, 50/60 Hz switching power supply
- Regulatory: CSA/UL, FCC, EN60950-1 2006 CB Scheme

Quick Install & Test

The 3228 Station Port FXS Doorphone is pre-configured for a typical installation. All that is needed is to configure a target phone number. Programming is only required to change default setting or for more advanced applications.



1. Connect the power supply to the Power Jack of the Doorphone Controller and plug into an available AC outlet.
2. Flush or surface-mount the Digital Door Station at desired location and connect a twisted telephone wire pair between the "CTRL" terminals of the Door Station and the center pair (red and green) of the supplied Telephone Wiring Jack. Polarity is not important.
3. Using the short six conductor modular cable, connect the Telephone Wiring Jack to the Door Station Jack of the Doorphone Controller.
4. Using the 6 foot (1.8 m) two-wire modular cable, connect your FXS Gateway or analog station port of a traditional phone system to the Telephone Jack of the Doorphone Controller.
5. Program the target telephone number for the 3228 to dial by using either the DTMF interface, or by connecting to a PC via USB (see "Programming & Configuration" on page 10).

To use the DTMF commands for programming, first establish a call by dialling the telephone number of the 3228 from another telephone. The 3228 will auto-answer the call.

6. Press the call button of the Door Station. The phone will ring and the call button will flash.
7. Answer to communicate with the Door Station. Press the DTMF digit 6 to activate the door control relay for three seconds if applicable.

Application Basics

Typical Applications for Auxiliary Inputs and Outputs

The 3228 architecture and digital link between the Door Station and Controller provides flexible options using the auxiliary inputs and outputs. These are some typical applications:

Cancel Ring When Door Opened

In a residential or warehouse installation it is not uncommon for the door to be answered in person *before* the phone is answered. Either Door Station or Control Unit inputs can be configured to cancel ring if the door is opened before a call is answered. This requires a normally closed or normally open contact to detect door open.

Trigger Door Bell from Door Station

When the Door Station call button is pressed, either (or both) the Door Station or Control Unit dry contact output can be configured to activate a door bell or auxiliary alerting system in addition to phone ring.

Trigger Door Station from External Button/Event

Either the Control Unit or Door Station can accept a dry contact closure to activate the Doorphone as if the call button had been pressed. This could be an external doorbell button, PIR detector, or some other system.

Cancel Door Open Relay once Door Opened

The door opening control can be set for activation (using the `Open Code') up to 30 seconds (set by the `Relay Time' setting) to allow sufficient time for entry. For security, the 3228 Doorphone can be configured to cancel Door Opening once the door is opened to prevent "tailgating" by unauthorized personnel.

Unlock Door Indefinitely until Canceled

The door opening control can be set to unlock indefinitely (using the `Latch Open Code') until canceled (using the `Release Code') that locks it again. This allows an entrance to be used repeatedly for a period of time without requiring multiple activations of the door control relay.

Anti-Door Tamper

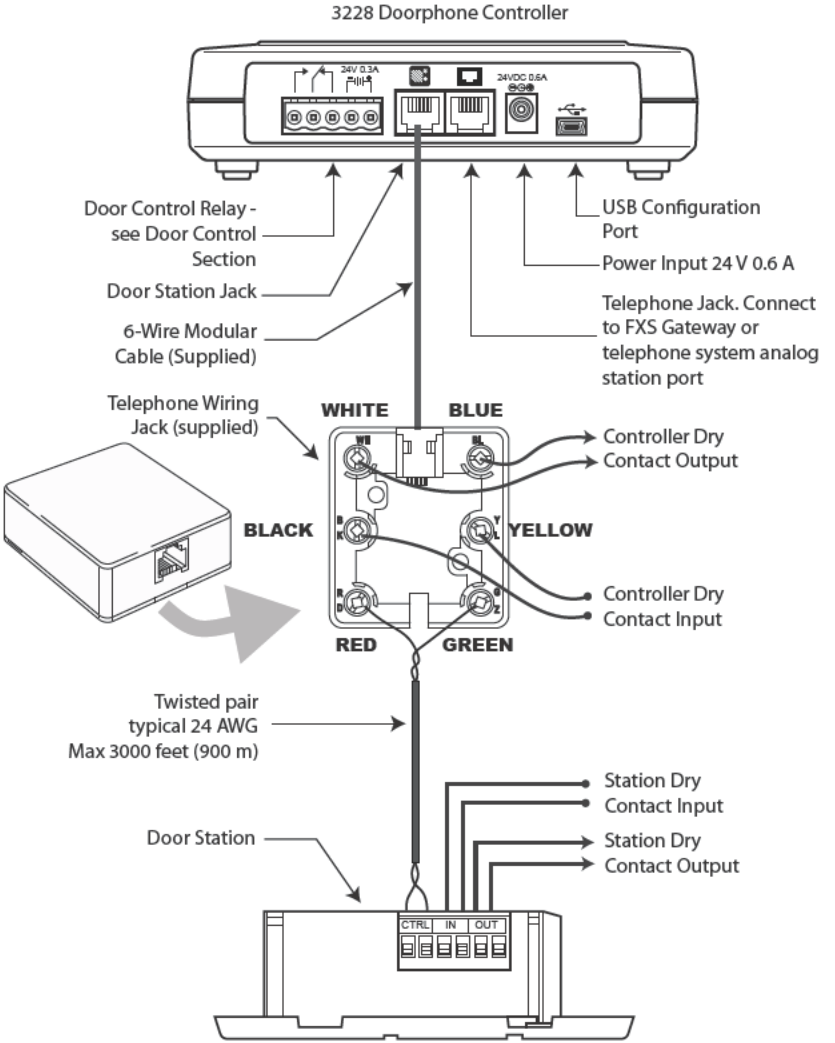
A feature of the 3228 Doorphone is to ring the telephone(s) with a warning alert in the event a door is ajar due to tampering (such as a door blocked open after being legitimately released for a visitor).

In-Use and Ring

Either the Control Unit or Door Station can be configured to provide a dry contact output during ring or in-use for channel selection (typically) of third party video monitoring systems.

For more information on applications for the 3228 Station Port FXS Doorphone, please visit www.algosolutions.com/3228. The 3228 Doorphone firmware may be modified by USB connection to a PC and Algo routinely accepts requests for custom firmware for unique applications.

Basic Wiring Setup



Programming & Configuration

The 3228 Station Port FXS Doorphone may be programmed either by DTMF or through software using the USB connection on the 3228 Controller.

To enter Program Mode via the DTMF interface, dial **00 followed by the four digit password if configured (there is no password by default). The password may be entered or changed via the USB interface.

After completing programming, return on-hook to exit programming mode before testing the new settings, as the audio path to the speaker is disabled while in programming mode.

Program Settings and Codes

	Setting Name	DTMF Code	Description	Default
Ring Settings	Outgoing Call Mode	**11 nn	nn=00: No outgoing calls nn=01: Hotline dial nn=02: Dial number after dialtone nn=03: Dial number after delay	01 Hotline dial
	Incoming Call Mode	**12 nn	nn=00: Answer incoming calls nn=01: Ignore incoming calls	00 Answer incoming calls
	Outgoing Ring Limit	**13 nn	nn=00: Call Button Disabled nn=01..09: Limit to 1-9 rings nn=10: No limit (ring forever)	5 rings
	Cancel Ring if Door Opened	**14 nn	nn=00: No nn=01: Yes (Requires Door Sensor)	00 No
	Outgoing Dial Number	**15 LL S...	LL = length of string (00 to 10) S... = numeric string (e.g. **15041234 = "1234")	None
Audio	Speaker Volume	**21 nn	nn=00..10: Speaker audio level in 3 dB steps	09
	Mic Volume	**22 nn	nn=00..10: Microphone audio level in 3 dB steps	08
	DSP	**23 nn	nn=00: Full Duplex with Noise Reduction nn=01: Full Duplex without Noise Reduction	01 Full Duplex without Noise Reduction
	Microphone AGC (Automatic Gain Control)	**24 nn	nn=00: On nn=01: Off	00 On

	Setting Name	DTMF Code	Description	Default
Door Control	Open Code	**31 LL S...	LL = length of string (00 to 04) S... = numeric string (e.g. **31016 = "6")	Digit 6
	Relay Time	**32 nn	nn=00: ¼ second nn=01..30: 1-30 seconds	3 sec
	Cancel with Door Open	**33 nn	nn=00: No nn=01: Yes (Requires Door Sensor)	00 No
	Latch Open Code	**34 LL S...	LL = length of string (00 to 04) S... = numeric string (e.g. **34017 = "7")	None
	Release Code	**35 LL S...	LL = length of string (00 to 04) S... = numeric string (e.g. **35018 = "8")	None
Auxiliary I/O	Controller Output	**41 nn	nn=00: In-Use nn=01: Ring nn=02: Call Button Press nn=03: Door Control nn=04: Door Sensor nn=05: Door Alarm nn=06: Follow Controller Input nn=07: Follow Station Input nn=08: Disabled	00 In-Use
	Station Output	**42 nn	nn=00: In-Use nn=01: Ring nn=02: Call Button Press nn=03: Door Control nn=04: Door Sensor nn=05: Door Alarm nn=06: Follow Controller Input nn=07: Follow Station Input nn=08: Disabled	02 Call Button Press
	Door Relay	**43 nn	nn=00: In-Use nn=01: Ring nn=02: Call Button Press nn=03: Door Control nn=04: Door Sensor nn=05: Door Alarm nn=06: Follow Controller Input nn=07: Follow Station Input nn=08: Disabled	03 Door Control
	Controller Input	**44 nn	nn=00: Door Sensor, Normally Open Input nn=01: Door Sensor, Normally Closed Input nn=02: Manual Door Release Input nn=03: Door Control Lockout Input nn=04: Call Button, Normally Open Input nn=05: Call Button, Normally Closed Input nn=06: Disabled	01 Door Sensor NC
	Station Input	**45 nn	nn=00: Door Sensor, Normally Open Input nn=01: Door Sensor, Normally Closed Input nn=02: Call Button, Normally Open Input nn=03: Call Button, Normally Closed Input nn=04: Disabled	02 Call Button NO

	Setting Name	DTMF Code	Description	Default
Security	Max Door Open	**51 nn	nn=00: 30 seconds nn=01: 2 minutes nn=02: 15 minutes nn=03: 30 minutes nn=04: 60 minutes nn=05: 90 minutes nn=06: 120 minutes nn=07: None	07 None
	Ring Phone Upon Door Alarm	**52 nn	nn=00: Call every 2 minutes nn=01: Call every 10 minutes nn=02: Call every 30 minutes nn=03: Call every hour nn=04: None (do not make any calls)	04 None
	Ring this Number Instead	**53 LL S...	LL = length of string (00 to 10) digits S... = numeric string (e.g. **53041234 = "1234")	None
Disconnect Options	Disconnect Type	**61 nn	nn=00: Loop Current nn=01: Polarity Reversal nn=02: Dialtone	00 Loop Curent
	Loop Disconnect	**62 nn	nn=00: 0.1 seconds nn=01: 0.25 seconds nn=02: 0.5 seconds nn=03: 0.75 seconds nn=04: 1 second	01 0.25 seconds
	VOX Timeout	**63 nn	nn=00: 5 seconds nn=01: 10 seconds nn=02: 20 seconds nn=03: 30 seconds nn=04: 1 minute nn=05: Disabled	05 Disabled
	Call Limit	**64 nn	nn=00: 15 seconds nn=01: 30 seconds nn=02: 1 minute nn=03: 2 minutes nn=04: 3 minutes nn=05: 5 minutes nn=06: 10 minutes nn=07: 30 minutes nn=08: Disabled	08 Disabled
	Allow Call Button to End Call	**65 nn	nn=00: No nn=01: Yes	00 No
Restore Default Settings		**55	Returns all settings to factory default values	

Door or Gate Control Basics

Door control contacts are provided from the Doorphone Controller and are typically used for door strike activation or gate control. For security, the door control relay is located in the Controller to avoid entry by tampering. The Door Station dry contact output (OUT) may be configured for 'low security' gate control requiring a low current dry contact.

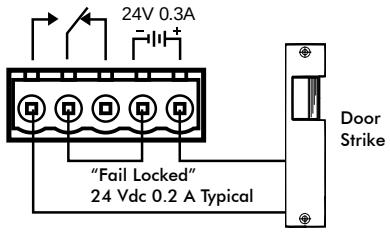
Door Release

Door release typically involves energizing or de-energizing a door strike which pivots to allow a locked door to open without retraction of the latch bolt. There are two different types of door strikes:

- "Fail Locked" (or "Fail Secure")
- "Fail Unlocked" (or "Fail Safe")

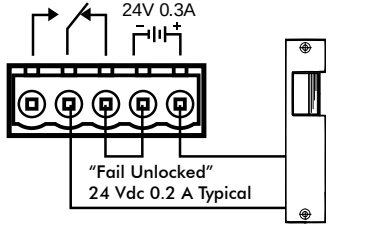
Fail Locked / Fail Secure Electric Strike

These require power to release and remain locked during power failure. The door may still normally be opened from the outside with a key, or from inside without a key. The door control relay is used to apply power to release the door.



Fail Unlocked / Fail Safe Electric Strike

These (as well as magnetic locks), require power to lock and become unlocked during power failure. The door control relay is used to maintain power to the door lock (NC and C contacts) which is interrupted to release the door. Magnetic locks may require override systems to allow safety exit in the event of fire.



Power Supply

The Doorphone Controller provides an auxiliary 24 V 0.3 A power supply which is suitable for common types of door strikes. If more current or a different voltage is required, then the customer must provide a matching power supply for the electric strike or magnetic lock. Maximum switching capability of the door control contacts is 1 A 30 V.

The Door Control relay may also be configured for alternate functionality including In-Use, Ring, and Call Button Press.

Connections and Lights

Auxiliary Dry Contact Outputs

Both the Doorphone Controller and Door Station provide a dry contact output for connection to auxiliary devices. Maximum switching capacity is 30 V 50 mA.

Default operations are as follows:

- Doorphone Controller Output = In-Use (commonly used for camera control)
- Door Station Output = Call Button Press (commonly used to activate a secondary door bell)

Other options for Doorphone Controller output include Ring and Call Button Press. Other options for Door Station output include In-Use and Door Control.

See “Programming & Configuration” on page 10 for more information on options.

Auxiliary Dry Contact Inputs

Both the Doorphone Controller and Door Station can detect a dry contact closure from auxiliary devices. A non-capacitive and non-inductive low voltage and low current is used to detect contact closure.

Default operations are as follows:

- Doorphone Controller input = Door Sensor Normally Closed (used to detect door open)
- Door Station input = Call Button Normally Open (used to detect external doorbell switch)

Options for Doorphone Controller input include Door Sensor Normally Closed, Door Sensor Normally Open, Manual Door Release, Door Control Lockout, Call Button Normally Closed, and Call Button Normally Open.

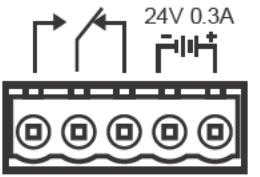
Options for Door Station input include Door Sensor Normally Closed, Door Sensor Normally Open, Call Button Normally Closed, and Call Button Normally Open.

See “Programming & Configuration” on page 10 for more information on options.

Connection Details

Door Control (5 Position Removable Terminal Block)

Relay	NO	Normally Open
	C	Common
	NC	Normally Closed
Auxiliary Power	PWR -	0.3 A (GND)
	PWR +	0.3 A (24 V)



Door Station Jack (RJ12 Telephone Jack)

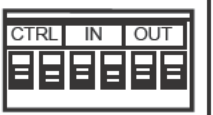
Center Pair (Red & Green)	Door Station
Middle Pair (Yellow & Black)	Dry Contact Input Max 1 kΩ
Outside Pair (Blue & White)	Dry Contact Output Max 50 mA 30 V

Telephone Jack (RJ12 Telephone Jack)

Center Pair	FXS Gateway Phone System Analog Station Port

Door Station (6 Position Terminal Block)

CTRL	Connect to Door Station Jack of Doorphone Controller
SW	Dry Contact Input to Door Station (e.g. Door Contact, Doorbell Switch); Max. 1 kΩ
DATA	Dry Contact Output from Door Station (e.g. Gate Control); Max 50 mA 30 V



Specifications

Telephone

Interface	Connect to FXS gateway or telephone system analog station port

Door Control

Contact Rating	Maximum 30 V 1 Amp
Contact Type	1 Form C, Normally Open and Normally Closed
Duration	Programmable, including latch
Activation	DTMF, programmable
Auxiliary Power	24 Vdc, current limited to 300 mA
Terminal Block Wiring	12-26 AWG

Doorphone Controller

Power	AC Mains Adapter 95-230 V 50/60 Hz Included
Installation	Shelf or wall-mounted
Dry Contact Output	Maximum 30 V 50 mA switching (programmable function)
Dry Contact Input	Contact detected using 24 Vdc 1 mA (programmable function); Maximum resistance 1 kΩ
Environmental	Dry indoor location
Operating Temp.	0 to 40° C (32 to 104° F)

Door Station

Power	Provided by Controller link
Wiring	Single pair, normally 24 AWG twisted 1,000 Feet (300 m) Maximum
Dry Contact Output	Maximum 30 V 50 mA switching (programmable function)
Dry Contact Input	Contact detected using 24 Vdc 1 mA (programmable function); Maximum resistance 1 kΩ
Operating Temp.	-30 to 60° C (-22 to 140° F)
Weather Resistance	CSA/UL NEMA 3R weather resistant for outdoor locations
Call Button	Backlit tactile silicon rubber
Installation	Flush or surface mounted using supplied plastic bezel; Fits two gang electrical box
Faceplates	304 Stainless Steel, Brass; Optional Vandal-Proof (model 3203)

Programming

Method	DTMF or USB Port using configuration software

Power Requirement

Typical (idle)	1 W
Maximum*	10 W

* Audio Active, door contacts using 24 V 0.3 A auxiliary supply

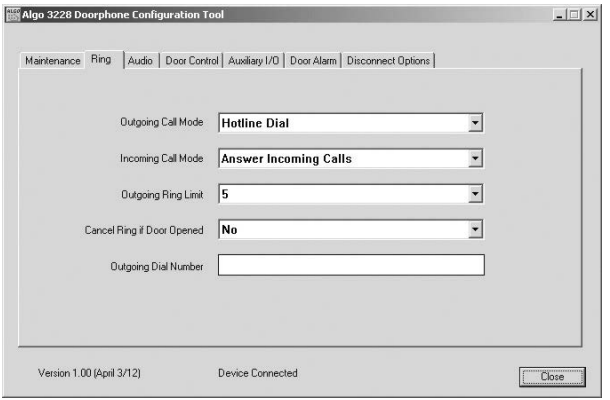
Specifications are subject to change without notice. Some features may only be available in specific firmware or hardware releases.

Configuration Tool

The USB Configuration Tool is a Windows software alternative to the DTMF programming method described earlier in this Guide. To use the Tool, first attach the supplied USB cable between the computer and the 3228, then install and run the software from the CD.

Note that the USB Configuration Tool can also be downloaded from Algo's website at www.algosolutions.com/3228

After installation, the program can be accessed by going to
Start > All Programs > Algo > 3228 Doorphone > 3228 Configuration Tool

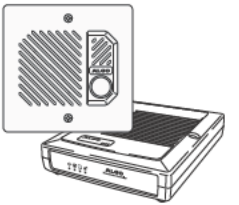


USB Configuration Tool Sample Screen

ALGO

Related Algo Doorphone Products

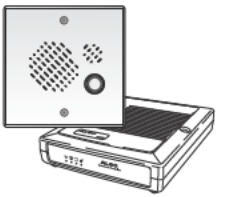
8028 SIP Doorphone



The 8028 emulates a SIP telephone for compatibility with all phone servers that support third-party SIP endpoints. The system supports auto-provisioning, and is configurable through a web interface. Supplied with digital door station with both stainless steel and brass faceplates.

www.algosolutions.com/8028

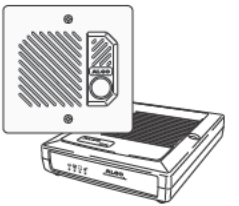
8028V Tamper-Proof SIP Doorphone



Same as the model 8028 above with the exception that the supplied digital door station is a special tamper-proof design. Suitable for environments where there is a high potential for attempted damage or abuse.

www.algosolutions.com/8028V

3226 FXO Trunk Port Doorphone



The 3226 emulates a Central Office (CO) telephone line, allowing it to connect directly to a FXO Gateway or telephone system analog trunk port. Configurable ring cadence and CLID message. Supplied with digital door station with both stainless steel and brass faceplates.

www.algosolutions.com/3226