

# INTRINSICALLY-SAFE TELEPHONES



Model 272 with Model 263 Isolation Barrier  
Patent Pending

**G**AI-Tronics' Corporation designed Intrinsically-Safe Telephones for use in chemical plants, refineries, grain elevators and any other environment where volatile gases and dust are a major consideration. Housed in durable glass-reinforced polyester for indoor or outdoor applications, GAI-Tronics Intrinsically-Safe Telephones are the safest and most economical communication solution in hazardous environments.

GAI-Tronics Intrinsically-Safe Telephones include safety barriers, allowing the telephones to obtain low energy levels, eliminating the possibility of a spark or explosion occurring. The barrier is placed in an indoor or outdoor, non-hazardous location up to one mile from the telephone. In contrast to explosionproof telephones, which are designed to *contain* an explosion, our Intrinsically-Safe Telephones limit input power to *prevent* an explosion from occurring. Further, explosionproof telephones require expensive, sealed conduit, and their large, bulky design makes installation and maintenance more difficult. In most applications, Intrinsically-Safe Telephones use standard telephone cable and do not require conduit.

GAI-Tronics' Intrinsically-Safe Telephones can be purchased as an individual barrier configuration for smaller installations, or as a rack barrier configuration for larger installations, or where space is a constraint. The individual barrier configuration provides an Indoor or Outdoor Telephone with a wall-mountable Isolation Barrier Unit which houses the safety barrier and power supply. The rack barrier configuration provides the Isolation Barrier Unit's electronics configured for installation in a customer-provided, centrally-located cabinet.

- **UL 913 Approved for All Hazardous Groups**
- **CSA Approved for Division 1, Class I, Groups A, B, C, D; Class II, Group G (Including Coal Dust); Class III**
- **Replaces Explosionproof Telephones Without Replacing System Cable in Most Applications**
- **"Shrill"-Type Penetrating Ringer**
- **Noise-Cancelling Microphone**
- **Low Sidetone for Noisy Environments**
- **Switchable Power Supply - 110VAC/220VAC**
- **Hytrel<sup>®</sup> Coil Cord for Maximum Durability**
- **Hearing Aid Compatible (HAC)**



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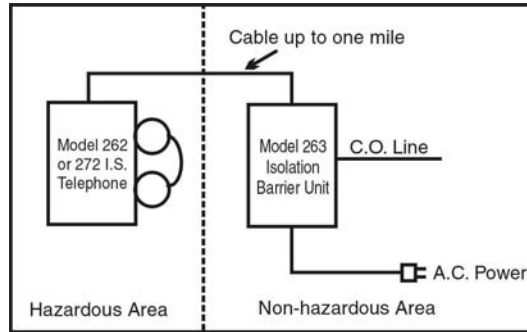


# INDIVIDUAL BARRIER CONFIGURATION

For applications requiring just a few phones, we recommend that the Intrinsically-Safe Telephones be purchased on an "individual" basis. Each phone (Model 262 or 272) should be ordered with its own wall-mountable Isolation Barrier Unit (Model 263). The Isolation Barrier Unit houses both the PCBA and the Power Supply for the telephone. For convenience, a single model number has been established to order an indoor (Model 261) or weatherproof (Model 271) combination of these units.

MODEL NO.	DESCRIPTION	CONSISTS OF	
		Telephone	Isolation Barrier Unit
261	Indoor Intrinsically-Safe Station	262	263
271	Weatherproof Intrinsically-Safe Station	272	263

**Typical Individual System Configuration**



# RACK BARRIER CONFIGURATION

For larger systems, or where limited space makes mounting of Isolation Barrier Units difficult, GAI-Tronics offers a Rack Barrier Configuration. A standard 19" rack, customer-provided and centrally-located, houses the electronics for the Intrinsically-Safe phone system. GAI-Tronics provides a standard 19" Subrack (Model 267), which houses the Power Supply (Model 266) and the Line Card (Model 265) associated with each telephone. The central cabinet will also house a Patch Panel (Model 268) to properly wire the system. An example of a Rack Barrier System is shown below. This hypothetical system has 26 phones.

**Example Rack Barrier System includes:**

QTY.	MODEL NO.	DESCRIPTION
26	Model 262 or 272	Intrinsically-Safe Telephones
26	Model 265	Line Cards
4	Model 267	Subracks
4	Model 266	Power Supplies
2	Model 268	Patch Panels

See chart below to compute the number of each component required for your system.

**Rack System Ordering Information**

Qty. of 262 or 272 Telephones Desired	No. of Model 265 Line Cards Required	No. of Model 266 Power Supplies Required	No. of Model 267 Subracks Required	No. of Model 268 Patch Panels Required
1-7	1-7 (same as qty. of stations)	1	1	1
8-14	8-14 (same as qty. of stations)	2	2	1
15-21	15-21 (same as qty. of stations)	3	3	2
22-28	22-28 (same as qty. of stations)	4	4	2
29-35	29-35 (same as qty of stations)	5	5	3

# RACK BARRIER COMPONENTS

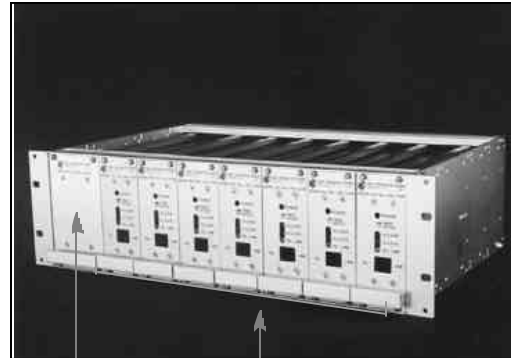
Each Model 262 or 272 will require a corresponding Model 265 Line Card in the central Cabinet. The Model 265 Line Card controls station operation while ensuring intrinsic safety.

Each Model 266 Power Supply is capable of powering up to seven I.S. stations. This power supply is 110/220V switchable, allowing flexible applications.

The Model 267 Subrack is located in the customer supplied central cabinet assembly, and houses up to seven Model 265 Line Cards and one Model 266 Power Supplies. The Model 267 Subrack is a standard 19-inch length, making it adaptable to most cabinets.

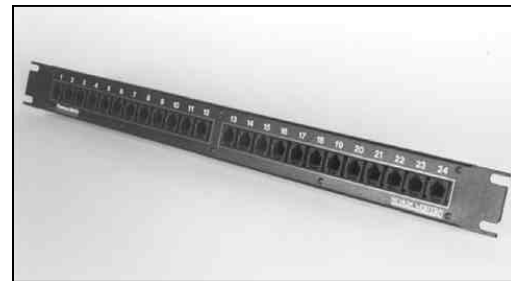
The Model 268 Patch Panel is provided to make installation and wiring of the I.S. stations more convenient. Up to 14 I.S. phones can plug into each Model 268 Patch Panel. The Patch Panel is located between each set of Model 267 Subracks in the central cabinet.

Fully "loaded" Subrack



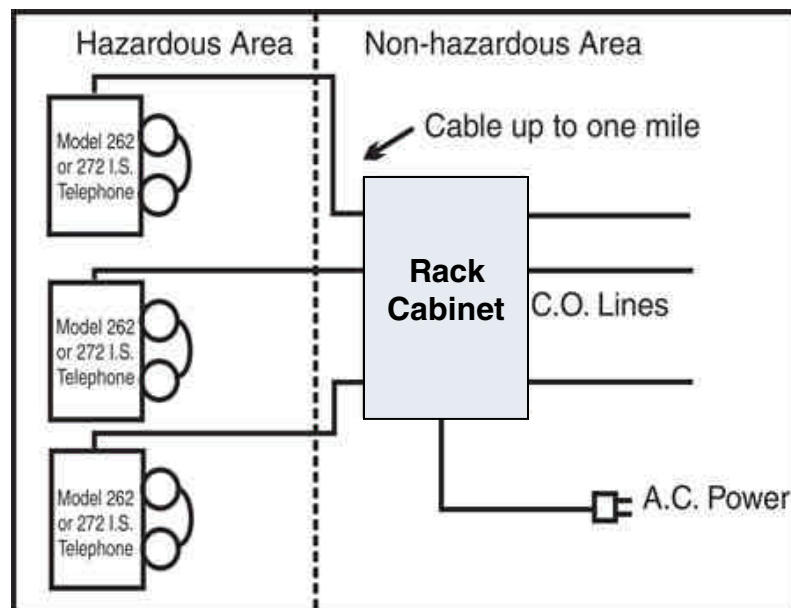
Model 266 Power Supply

Model 265 Line Cards



Model 268 Patch Panel

## Typical Rack System Configuration



## SPECIFICATIONS

### Mechanical

Operating Temperature Range	262/272: -40°C to +60°C (-40°F to +140°F) Rack Equipment: 0°C to +40°C (32°F to +104°F)
Humidity (non-condensing)	40% to 95% R.H.
Safe Wiring Distance (maximum) -	per UL (between IBU and I.S. Phone)
Standard Wire Types	1 Mile (Maximum)**
Wiring	Type Twisted pair shielded*
Wire Gauge (Min.)	24 AWG
Wiring Loop Resistance (maximum)	275 ohms
Wiring Capacitance (maximum)	0.316 uF
Enclosure Rating (UL)	Model 262 Type 12 Model 272 Type 3R (rainproof) Model 263 Type 3R (rainproof)
Enclosure Rating (CSA)	Models 262, 272 and 263 Type 3 (raintight)
Construction, housing	Models 262, 272 and 263 Glass-reinforced Polyester
Dimensions, housing	Model 262 8.02(203.7)W x 9.52(241.8)H x 3.86(98)D; inches (mm) Model 272 9.39(238.5)W x 13.13(334.3)H x 7.46(189.5)D; inches (mm) Model 263 9.27(235.5)W x 13.02(330.7)H x 3.86(98)D; inches (mm) Model 265 5.06(128.6)H x 2(50.8)W x 12.9(327.6)D; inches (mm) Model 266 5.06(128.6)H x 3.8(96.5)W x 12.1(307.3)D; inches (mm) Model 267 5.25(133.3)H x 19(482.6)W x 14.5(368.3)D; inches (mm) Model 268 1.75(44.5)H x 19.75(501.6)W x 1.25(31.75)D; inches (mm)
Shipping Weight	Model 262 6 lbs. (2.7 kg) Model 272 11.6 lbs. (5.3 kg) Model 263 10 lbs. (4.5 kg) Model 265 2.88 lb. (1.31 kg) Model 266 4.88 lb. (2.22 kg) Model 267 8.42 lb. (3.83 kg) Model 268 1.56 lb. (.71 kg)

\*Shielded Cable is required where multiple I.S. Phone wires are routed together

\*\*Distance up to 1.5 miles with specific types (Consult Factory).

### Electrical/Acoustical

#### Model 262 (Indoor) 272 (Outdoor) Telephone

Hazardous Areas Approved	UL	Division 1, Class I, Groups A, B, C and D; Class II, Groups E, F and G; Class III; Division 2 (same Classes and Groups as Division 1)
CSA		Division 1, Class I, Groups A, B, C, D; Division 1, Class II, Group G Division 1, Class III
FCC Registration Number		ADGUSA-65066-TE-E
Ringer Equivalence Number		0.4B
Load No. (Canada)		14
Ringer Performance (typical)		98 dB (262) / 92 dB (272) at 10'
Signalling		DTMF only
Transmission Path (2-cond)		Full Duplex

#### Model 263 Isolation Barrier Unit (I.B.U.) and Rack-Mounted I.B.U.

Telephone Network Interface	(2-wire)	BELL PUB 61100 Compatible
AC Power Input	Voltage (selectable)	90-130V / 180-240V
Frequency		47-63 Hz.
Current		0.5 Amps (maximum)
Intrinsic Safe Interface	Voltage (maximum)	18V
	Resistance (minimum)	66 ohms
Current Limited (maximum)		136 mA

## APPROVALS

\*(See specific approvals listings above in Specifications.)

Model Number and Description	CSA*	UL*
262/272 Indoor/Weatherproof I.S. Phones	●	●
263 Isolation Barrier Unit	●	●
265 Line Card		●
266 Power Supply		●
267 Card Cage		●

## Distributed by

