



Intrinsically Safe Telephones



**Model 272-001 and
Model 263-000.
Patent Pending.**

- **North American Listed for All Hazardous Groups**
- **cUL / UL Listed**
- **Replaces Explosionproof Telephones w/o Replacing System Cable in Most Applications**
- **Braille Metallic Keypad**
- **“Shrill”-Type Penetrating Ringer**
- **Noise-Cancelling Microphone**
- **Volume control handset**
- **Low Sidetone for Noisy Environments**
- **Switchable Power Supply - 110VAC/220VAC**
- **Hytrel® Coil Cord for Maximum Durability**
- **Hearing Aid Compatible (HAC)**
- **Extreme operating temperature range**

GAI-Tronics' Corporation designs 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, reducing the energy levels and 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

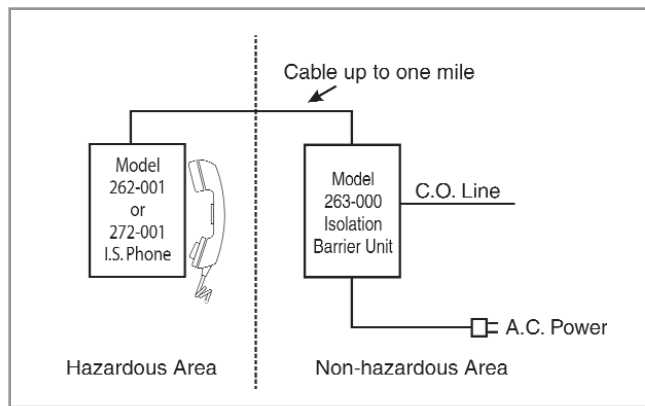
electronics configured for installation in a customer provided, centrally located cabinet. GAI-Tronics Intrinsically Safe Telephones include standard items such as a proximity detecting hook-switch with no moving parts and a sealed keypad to keep out dust, dirt and moisture. The sealed electronic ringer also prevents contaminants from entering the housing. Other standard features include a noise-cancelling microphone and volume control handset.

GAI-Tronics has been manufacturing rugged industrial communications equipment for Sixty years. Manufactured in the U.S.A.

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 262-001 or 272-001) should be ordered with its own wall-mountable Isolation Barrier Unit (Model 263-000). 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 261-001) or weatherproof (Model 271-001) combination of these units.

MODELS:	DESCRIPTION:	CONSISTS OF:	
261-001 271-001	Indoor Intrinsically-Safe Telephone Weatherproof Intrinsically Safe Telephone	Telephone 262-001 272-001	Isolation Barrier 263-000 263-000



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 267-001), which houses the Power Supply (Model 266-001) and the Line Card (Model 265-001) associated with each telephone. The central cabinet will also house a Patch Panel (Model 268-001) to properly wire the system. An example of a Rack Barrier System is shown below. This hypothetical system has 26 phones.

QTY:	MODELS:	DESCRIPTION:
26	Model 262-001 or 272-001	Intrinsically-Safe Telephone
26	Model 265-001	Line cards
4	Model 267-001	Subracks
4	Model 266-001	Power Supplies
2	Model 268-001	Patch Panels

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

Rack System Ordering Information

QTY. of 262-001 or 272-001 Telephones Desired	Number of Model 265-001 Line Card Required:	Number of Model 266-001 Power Supplies Required:	Number of Model 267-001 Subracks Required:	Number of Model 268-001 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 262-001 or 272-001 will require a corresponding Model 265 Line Card in the central Cabinet. The Model 265-001 Line Card controls station operation while ensuring intrinsic safety.

Each Model 266-001 Power Supply is capable of powering up to seven I.S. stations. This power supply is 110/220V switchable, allowing flexible applications.

The Model 267-001 Subrack is located in the customer supplied central cabinet assembly, and houses up to seven Model 265-001 Line Cards and one Model 266-001 Power Supplies. The Model 267 Subrack is a standard 19-inch length, making it adaptable to most cabinets.

The Model 268-001 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 268-001 Patch Panel. The Patch Panel is located between each set of Model 267-001 Subracks in the central cabinet.



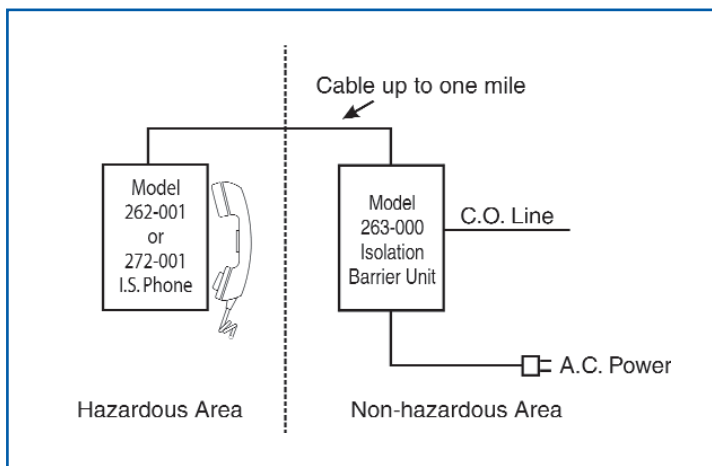
Model 267-001 Subrack with Model 265-001 Line Card



Model 268-001 Patch Panel



Model 266-001 Power Supply



Typical Rack System Configuration

Specifications

Mechanical

Operating Temperature Range	262-001, 272-001 and 263-000: -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:	Twisted pair shielded*
Type	24 AWG
Wire Gauge (Min.)	275 ohms
Wiring Loop Resistance (maximum)	0.316uF
Wiring Capacitance (maximum)	Type 12
Enclosure Rating (UL):	Type 3R (rainproof)
Model 262-001	Type 3R (rainproof)
Model 272-001	Model 263-000
Model 263-000	Model 262-001, 272-001 and 263-000
Construction, housing:	Glass-reinforced Polyester
Dimensions, housing:	Model 262-001: 8.02(203.7)W x 9.52(241.8)H x 3.86(98)D; inches (mm)
Model 272-001	9.39(238.5)W x 13.13(334.3)H x 7.46(189.5)D; inches (mm)
Model 263-000	9.27(235.5)W x 13.02(330.7)H x 3.86(98)D; inches (mm)
Model 265-001	5.06(128.6)H x 2(50.8)W x 12.9(327.6)D; inches (mm)
Model 266-001	5.06(128.6)H x 3.8(96.5)W x 12.1(307.3)D; inches (mm)
Model 267-001	5.25(133.3)H x 19(482.6)W x 14.5(368.3)D; inches (mm)
Model 268-001	1.75(44.5)H x 19.75(501.6)W x 1.25(31.75)D; inches (mm)

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

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

Specifications...Mechanical Continued

Shipping Weight:	Model 262-001	6 lbs. (2.7 kg)
	Model 272-001	11.6 lbs. (5.3 kg)
	Model 263-000	10 lbs. (4.5 kg)
	Model 265-001	2.88 lb. (1.31 kg)
	Model 266-001	4.88 lb. (2.22 kg)
	Model 267-001	8.42 lb. (3.83 kg)
	Model 268-001	1.56 lb. (.71 kg)

Electrical / Acoustical

Model 262-001 (Indoor) 272-001 (Outdoor) Telephone

Electrical Specifications (nominal)	12 V, 12mA
Hazardous Areas Approved - UL / cUL	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)
FCC Registration Number	ADGUSA-65066-T-E
Ringer Equivalence Number	0.4B
Load No. (Canada)	14
Ringer Performance (typical)	98 dB (262) / 92 dB (272) at 10'
Frequency (adjustable at the IBU)	1-8 kHz (typical)
Ring signal loss (18 AWG)	-4 dB/mile
Microphone	Dynamic noise-canceling
Earpiece	Hearing aid compatible (HAC)
Output (0 dBm @ IBU TELCO Line)	105 dB SPL@ 1 kHz
Audio signal loss (18 AWG)	-1.3 dB/mile
Signaling	DTMF only
Transmission Path (2-cond)	Full Duplex

Model 263-000 Isolation Barrier Unit (I.B.U.) and Rack-Mounted (I.B.U.)

Telephone Network Interface (2 wire)	BELL PUB 61100 Compatible
Telephone Network Interface (4 wire)	See 4-Wire Options Below
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)	136mA

Model 263-000 I.B.U. General / Environmental

Location (Model 263-000 IBU)	Ordinary (non-classified) indoor/outdoor
FCC Registration Number	ADGUSA-65066-TE-E
Ringer Equivalence Number (REN)	0.4B
IC Certification Number (Canada)	822 4541 A
Load number (LN) (Canada)	14
Connecting Method (Canada)	CA11A
Relative Humidity	95% (non-condensing) maximum

Model 263-000 I.B.U. 4-Wire Option

Receive (TB2-1,2)	Dry (No dc)
Signal Level	0 dBm (nominal), ±3 dBm (maximum)
Transmit (TB2-3,4)	Wet
DC Loop	20 mA-70 mA
Signal Level	0 dBm (nominal)
Ring Voltage Input	40 V-150 Vrms

Pole-Mount Kits

- 230-001 Pole-Mounting Kit for 272 Series
- 231-001 Pole-Mounting Kit for 262 Series

Approvals *(See specific approval listings above in Specifications)

Model Number and Description	cUL*	CSA*
262 / 272 Series I.S. Phone	●	●
263-000 Isolation Barrier	●	●
265-001 Line Card		●
266-001 Power Supply		●
267-001 Card Cage		●

Ringer Level (avg. @ 2 ft.)

Model	Door Open	Door Closed
262 Series	85 dBA SPL	N/A
272 Series	84 dBA SPL	70 dBA SPL

Option Accessories / Order Code

LD	Locking Door	Outdoor phone only
SK	Spring Door	Outdoor phone only
H1	15" Hytre® Cord	Recommended for indoor phone only.
H2	25" Hytre® Cord	Recommended for indoor phone only.

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