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-canceling microphone and volume control handset.

GAI-Tronics has been manufacturing rugged industrial communications equipment for Sixty years. Manufactured in the U.S.A.
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:  
261-001 Indoor Intrinsically-Safe Telephone  
262-001 or 272-001 Isolation Barrier  
263-000 Power Supply  
271-001 Weatherproof Intrinsically Safe Telephone

CONSISTS OF:

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:  
26  
26  
4  
4  
2

MODELS:  
Model 262-001 or 272-001  
Model 265-001  
Model 266-001  
Model 267-001  
Model 268-001

DESCRIPTION:  
Intrinsically-Safe Telephone  
Line cards  
Subracks  
Power Supplies  
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  
1-7  
8-14  
15-21  
22-28  
29-35

Number of Model 265-001 Line Card Required:  
1-7 (same as qty. of stations)  
8-14 (same as qty. of stations)  
15-21 (same as qty. of stations)  
22-28 (same as qty. of stations)  
29-35 (same as qty. of stations)

Number of Model 266-001 Power Supplies Required:  
1  
2  
3  
4  
5

Number of Model 267-001 Subracks Required:  
1  
2  
3  
4  
5

Number of Model 268-001 Patch Panels Required:  
1  
2  
3
Model 267-001 Subrack with Model 265-001 Line Card

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

Model 268-001 Patch Panel

Model 268-001 Patch Panel

Model 266-001 Power Supply

Model 266-001 Power Supply

GAI-TRONICS® Intrinsically Safe Telephones

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.

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)

Wiring:

Standard Wire Types ........................................... Twisted pair shielded*

Wire Gauge (Min.) ........................................... 24 AWG

Wiring Loop Resistance (maximum) ........................................... 275 ohms

Wiring Capacitance (maximum) ........................................... 0.316μF

Enclosure Rating (UL):

Model 262-001 ........................................... Type 12
Model 272-001 ........................................... Type 3R (rainproof)
Model 263-000 ........................................... Type 3R (rainproof)

Construction, housing:

Model 262-001, 272-001 and 263-000 ........................................... 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

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 lbs. (1.31 kg)
Model 266-001.......................................................... 4.88 lbs. (2.22 kg)
Model 267-001.......................................................... 8.42 lbs. (3.83 kg)
Model 268-001.......................................................... 1.56 lb. (0.71 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;
FCC Registration Number ............................................................... ADGUSA-65066-TE-E
Ringer Equivalent Number .............................................................. 0.48
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 TELECO 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) ........................................... See 4-Wire Options Below
Telephone Network Interface (4 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) ......................................................... 136mA

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

Location (Model 263-000 I.B.U.) ........................................................ Ordinary (non-classified) indoor/outdoor
FCC Registration Number ............................................................... ADGUSA-65066-TE-E
Ringer Equivalence Number ............................................................ 0.48
IC Certification Number (Canada) ................................................... 8224541 A
Load number (LN) (Canada) .......................................................... 14
Connecting Method (Canada) .......................................................... CA11A
Relative Humidity ................................................................. 95% (non-condensing) maximum

Model 263-001 I.B.U. 4-Wire Option

Receive (TB2-1,2) ................................................................. 0 dBm (nominal), ±3 dBm (maximum)
Signal Level ................................................................. Dry (No dc)
Transmit (TB2-3,4) ................................................................. 0 dBm (nominal), ±3 dBm (maximum)
DC Loop ................................................................. Wet
Signal Level ................................................................. 20 mA-70 mA
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.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Door Open</th>
<th>Door Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>262 Series</td>
<td>85 dBA SPL</td>
<td>N/A</td>
</tr>
<tr>
<td>272 Series</td>
<td>84 dBA SPL</td>
<td>70 dBA SPL</td>
</tr>
</tbody>
</table>

Option Accessories / Order Code

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD</td>
<td>Locking Door</td>
<td>Outdoor phone only</td>
</tr>
<tr>
<td>SK</td>
<td>Spring Door</td>
<td>Outdoor phone only</td>
</tr>
<tr>
<td>H1</td>
<td>15&quot; Hytrel® Cord</td>
<td>Recommended for indoor phone only</td>
</tr>
<tr>
<td>H2</td>
<td>25&quot; Hytrel® Cord</td>
<td>Recommended for indoor phone only</td>
</tr>
</tbody>
</table>

Pub #930101C 9/2015

GAI-Tronics® USA (Corporate) Toll Free: 1 (800) 492-1212 Tel: (610) 777-1374 Fax: (610) 796-5954 www.gai-tronics.com
GAI-Tronics® UK Tel: +44 (0)1283 500500 Fax: +44 (0)1283 500400 www.gai-tronics.uk
GAI-Tronics® S.r.l - Italy Tel: +39 02 4588801 Fax: +39 02 93663110 www.gai-tronics.it
GAI-Tronics® Malaysia Tel: +603-8945-4035 / 8945-7348 Fax: +603-8945-4675 www.gai-tronics.com

The policy of GAI-Tronics is one of continuous improvement; therefore the company reserves the right to change specifications without notice.