

ENGINEERING SPECIFICATION
IPGSM-DP COMMUNICATOR

PART 1.0 - GENERAL

1.1. DESCRIPTION:

- A. This section of the specification includes the furnishing, installation, connection and testing of the IPGSM-DP Communicator.
- B. The IPGSM-DP Communicator shall comply with requirements of NFPA Standard No. 72 except as modified and supplemented by this specification.
- C. The IPGSM-DP Communicator shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994.
- D. The IPGSM-DP Communicator shall be manufactured or supplied 100% by a single U.S. manufacturer (or division thereof).
- E. Underwriters Laboratories Inc. (UL) – USA
- F. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final check-out and to ensure the systems integrity.
- G. The IPGSM-DP Communicator shall meet requirements of UL ANSI 864 Ninth Edition

1.2. SCOPE:

- A. IPGSM-DP Communicator shall be installed in accordance to the project specifications and drawings.
- B. Basic Performance:
 - 1. The IPGSM-DP Communicator connect directly to the primary and secondary analog UL Listed Fire Alarm Control Panel telephone ports.
 - 2. Supports both dynamic (DHCP) or Public and Private Static IP addressing.
 - 3. Communicates over any type of customer-provided Ethernet 10/100 Base network connection (LAN or WAN), DSL modem or cable modem.
 - 4. Data transmits over standard contact-ID protocol is secured with the industry's advanced encryption standard (AES 256 bit).

5. Dual path communications: Uses Internet or GSM as primary.
6. User programmable: 7720P Programming Tool or via the web with AlarmNet Direct.
7. Diagnostic LEDs: Signal strength and status indications.
8. IP and GSM tested everyday
9. All circuits shall be power-limited, per UL864 requirements.

C. BASIC SYSTEM FUNCTIONAL OPERATION

When a fire alarm condition (Alarm, Supervisory or Trouble) is detected, the Fire Alarm Control Panel goes off-hook to dial the central station. The IPGSM-DP Dialer Capture Module detects the off-hook condition and provides the fire panel with a dial tone. When the fire panel detects the dial tone, it begins dialing the central station. The Dialer Capture Module considers the three second period after dialing as the number dialing has been completed. After the dialing is completed, the Dialer Capture Module returns a handshake to the fire panel.

The fire panel then sends the contact ID reports to the Dialer Capture Module, which in turn sends a kiss-off after the report is successfully received from the fire panel.

The Dialer Capture Module sends the contact ID reports to the iGSM communications module. When all the reports are sent, the fire panel goes on-hook. The iGSM communications module then transmits the messages to the central station (either over the internet or the GSM network).

1.3. SUBMITTALS

A. General:

1. Two copies of all submittals shall be submitted to the Architect/Engineer for review.
2. All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
3. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

B. Shop Drawings:

1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, complete wiring diagrams and conduit layouts.

C. Manuals:

1. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheet(s).
2. Wiring diagrams shall indicate internal wiring for IPGSM-DP Communicator and the interconnections between the items of equipment.
3. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

1.4. GUARANTY:

All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one year period shall be included in the submittal bid.

1.5. MAINTENANCE:

- A. Maintenance and testing shall be on a semi-annual schedule or as required by the local AHJ. A preventive maintenance schedule shall be provided by the contractor describing the protocol for preventive maintenance.
- B. As part of the bid/proposal, include a quote for a maintenance contract to provide all maintenance, tests, and repairs described below. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.

1.6. POST CONTRACT EXPANSIONS:

- A. The contractor shall have the ability to provide parts and labor to expand the system specified, if so requested, for a period of five (5) years from the date of acceptance.

B. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

1.7. APPLICABLE STANDARDS AND SPECIFICATIONS:

The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.

A. National Fire Protection Association (NFPA) - USA:

- No. 13 Sprinkler Systems
- No. 70 National Electric Code (NEC)
- No. 72 National Fire Alarm Code
- No. 101 Life Safety Code
- No. 38 Manually Actuated Signaling Boxes
- No. 217 Smoke Detectors, Single and Multiple Station
- No. 228 Door Closers–Holders for Fire Protective Signaling Systems
- No. 268 Smoke Detectors for Fire Protective Signaling Systems
- No. 268A Smoke Detectors for Duct Applications
- No. 346 Waterflow Indicators for Fire Protective Signaling Systems
- No. 464 Audible Signaling Appliances
- No. 521 Heat Detectors for Fire Protective Signaling Systems
- No. 864 Control Units for Fire Protective Signaling Systems
- No. 1481 Power Supplies for Fire Protective Signaling Systems
- No. 1610 Central Station Burglar Alarm Units
- No. 1638 Visual Signaling Appliances
- No. 1971 Visual Signaling Appliances
- No. 2017 General-Purpose Signaling Devices and Systems
- CAN/ULC S524-01 Standard for Installation of Fire Alarm Systems

1. The IPGSM-DP Communicator shall be ANSI 864, 9th Edition Listed.

B. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.

C. Local and State Building Codes.

D. All requirements of the Authority Having Jurisdiction (AHJ).

1.8. APPROVALS:

A. The system shall have proper listing and/or approval from the following nationally recognized agencies:

PART 2.0 PRODUCTS

2.1. EQUIPMENT AND MATERIAL, GENERAL:

- A. All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a fire protective signaling system, meeting the National Fire Alarm Code.
- B. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.
- C. All equipment must be available "over the counter" through the Security Equipment Distributor (SED) market and can be installed by dealerships independent of the manufacturer.

2.2. CONDUIT AND WIRE:

A. Conduit:

1. Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.
2. Where required, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross sectional area where three or more cables are contained within a single conduit.
3. Cable must be separated from any open conductors of power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, per NEC.
4. Conduit shall not enter the fire alarm control panel, or any other remotely mounted control panel equipment or backboxes, except where conduit entry is specified by the Fire Alarm Control Panel manufacturer.
5. Conduit shall be 3/4 inch (19.1 mm) minimum.

B. Wire:

1. All IPGSM-DP Communicator wiring shall be new.

2. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the IPGSM-DP Communicator.
3. All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system.
4. Wire and cable not installed in conduit shall have a fire resistance rating suitable for the installation as indicated in NEC 760 (e.g., FPLR).
5. All field wiring (with exception of external communications Ethernet) shall be electrically supervised for open circuit and ground fault.

C. Terminal Boxes, Junction Boxes and Cabinets:

All boxes and cabinets shall be UL listed for their use and purpose.

2.3. IPGSM-DP COMMUNICATOR:

- A. The IPGSM-DP Communicator shall be a Fire-Lite Alarms Model IPGSM-DP. Central station supervisory equipment shall be a Honeywell's AlarmNet Network Control Center listed to UL-864 standards.
- B. IPGSM-DP Communicator is connected to any Fire Alarm Control Panel DACT telephone ports, the system shall be capable of transmitting Contact ID formatted alarms, supervisory or troubles to a Honeywell's AlarmNet Network Control Center equipped with a Honeywell AlarmNet receiver via Ethernet over a private or public WAN/LAN, Intranet or Ethernet.
- C. System Capacity and General Operation
 1. The IPGSM-DP Communicator shall include connections to the Fire Alarm Control Panel's phone outputs and shall convert the contact ID protocol into Ethernet Packets.
 2. The IPGSM-DP Communicator shall be completely field-programmable locally from a 7720P Programming Tool or via the web with AlarmNet Direct.
 3. The IPGSM-DP Communicator shall be capable of transmitting events in contact ID format.
 4. Communication shall include vital system status such as:
 - Independent Zone (Alarm, trouble, non-alarm, supervisory)
 - Independent Addressable Device Status

- AC (Mains) Power Loss
- Low Battery and Earth Fault
- System Off Normal
- 24 Hour Test Signal
- Abnormal Test Signal (per UL requirements)

5. The IPGSM-DP Communicator shall support independent zone reporting via the Contact ID format. This format shall enable the central station to have details concerning the location of the fire for emergency response. The IPGSM-DP Communicator shall be capable of providing simulated phone lines to the Fire Alarm Control Panel. The IPGSM-DP Communicator shall communicate over IP or GSM primary and shall be transparent to the Fire Alarm Control Panel normal operation over phone lines.

6. The supervising station shall consist of a Honeywell's AlarmNet Network Control Center receiver.

D. Enclosures:

1. The IPGSM-DP Communicator shall be housed in a UL-listed cabinet.
2. The back box and door shall be constructed of steel with provisions for electrical conduit connections into the sides and top.

E. Power Supply:

1. The main power supply shall operate on 120 VAC, 60 Hz, 0.50Amp and shall provide all necessary power for the IPGSM-DP Communicator.
2. Positive-Temperature-Coefficient (PTC) thermistors, circuit breakers, or other over-current protection shall be provided on all power outputs. The power supply shall provide an integral battery charger. Battery arrangement may be configured in the field.
3. The main power supply shall continuously monitor all field wires for earth ground conditions.

1.11. BATTERIES:

- A. Upon loss of Primary (AC) power to the IPGSM-DP Communicator, the battery shall have sufficient capacity to power the IPGSM-DP Communicator for required standby time (24 hours) followed by 5 minutes of alarm.

- B. The battery is to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required.

PART 3.0 - EXECUTION

3.1. INSTALLATION:

- A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.
- B. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas.

3.2. TEST:

The service of a competent, NICET level II technician shall be provided to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72.

- A. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

3.3. FINAL INSPECTION:

- A. At the final inspection, a minimum NICET Level II technician shall demonstrate that the system functions properly in every respect.

3.4. INSTRUCTION:

- A. Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.
- B. The contractor or installing dealer shall provide a manual indicating "Sequence of Operation."