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For all installations

During any ULC Installation described within this guide, all the rules for safe installation specified in the CEC (Canadian Electrical Code) shall be respected. This guide is intended to be used in conjunction with the following DSC alarm control panel models unless otherwise stated: MAXSYS (PC4020)*, PowerSeries (PC1864/PC1832/PC1616)*, PowerSeries Neo (HS2128/HS2064/HS2032/HS2016). Always use this guide in conjunction with the corresponding installation manual for the alarm control panel.

- For mounting on the exterior of a vault, safe, or stockroom, installation of vibration detector is required (see Note 6).
- Transformer: Plug-in type or hardwired, minimum rated 16.5 Vac, 37 VA to- 40 VA Class 2 Power Limited, CSA/cETL/cUL Listed. Refer to the product installation manual for acceptable models.
  
  **Note:** Do not mount the hardwired transformer inside DSC enclosure models PC5003C, PC4050C.

- Install with ULC Listed devices where applicable.
- Refer to installation instructions of other manufacturers FACP’s (Fire Alarm Control Panel) for any wiring connections between DSC Subscriber's units and these manufacturer's listed fire alarm control panels.

### Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Household Burglary</th>
<th>Household Fire</th>
<th>Central station burglary monitoring</th>
<th>Central station fire monitoring</th>
<th>Local burglary (MAXSYS only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Battery Standby</td>
<td>4 hours</td>
<td>24 hours</td>
<td>24 hours</td>
<td>24 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td><strong>Battery Size</strong></td>
<td>12V/4Ah</td>
<td>1 x 12V/7Ah or 2 x 12V/7Ah</td>
<td>1 x 12V/7Ah or 2 x 12V/7Ah</td>
<td>1 x 12V/7Ah or 2 x 12V/7Ah</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> Battery capacity can be selected based on calculated AUX current consumption for the system (including all accessories).</td>
<td></td>
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</tr>
<tr>
<td>System Entry Delay</td>
<td>≤ 180 seconds</td>
<td>not applicable</td>
<td>≤ 60 seconds (security levels II/III/IV)</td>
<td>not applicable</td>
<td>≤ 45 seconds</td>
</tr>
<tr>
<td>System Exit Delay</td>
<td>≤ 45 seconds</td>
<td>not applicable</td>
<td>≤ 45 seconds (security levels II/III/IV)</td>
<td>not applicable</td>
<td>≤ 45 seconds</td>
</tr>
<tr>
<td>Minimum Bell Cutoff Time</td>
<td>4 minutes</td>
<td>5 minutes</td>
<td>max 4 minutes</td>
<td>not applicable</td>
<td>max 4 minutes</td>
</tr>
<tr>
<td>Communicator</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Enabled. See Note 1</td>
<td>Enabled. See Note 2</td>
<td>Optional</td>
</tr>
<tr>
<td>ULC Marking Note: For residential installation the commercial type marking is also acceptable (Subscribers' Unit).</td>
<td>Household Burglary Alarm System Control Unit</td>
<td>Household Fire Warning Alarm System Control Unit</td>
<td>Subscribers' Unit Burglary or Subscribers' Unit-Accessory Burglary</td>
<td>Subscribers' Unit Fire Alarm or Subscribers' Unit-Accessory Fire Alarm</td>
<td>Local Burglar Alarm</td>
</tr>
<tr>
<td>Power LED (Model ULC-LA)</td>
<td>Optional</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>(Not required if PK/RFK55XX keypads with AC indicator enabled are being used.)</td>
<td>Plug-in transformer Optional hardwired connection</td>
<td>Plug-in transformer Optional hardwired connection</td>
<td>Plug-in transformer (Security Levels I-II), hardwired connection (Security Levels III-IV)</td>
<td>Hardwired connection required Check local authority</td>
<td>Plug-in transformer (Security Levels I-II), hardwired connection (Security Levels III-IV)</td>
</tr>
<tr>
<td>AC Power</td>
<td>Plug-in transformer Optional hardwired connection</td>
<td>Plug-in transformer Optional hardwired connection</td>
<td>Plug-in transformer (Security Levels I-II), hardwired connection (Security Levels III-IV)</td>
<td>Hardwired connection required Check local authority</td>
<td>Plug-in transformer (Security Levels I-II), hardwired connection (Security Levels III-IV)</td>
</tr>
<tr>
<td>Tamper Protection</td>
<td>Optional</td>
<td>Optional</td>
<td>Required. See Note 9</td>
<td>Optional</td>
<td>Required. See Note 9</td>
</tr>
<tr>
<td><strong>Note:</strong> ULC marking might be applied on the outside of the enclosure or inside on the PCB assembly.</td>
<td>DSC Models PC5003C PC500C Concourse</td>
<td>DSC Models PC5003C PC4050C Concourse</td>
<td>DSC Models PC5003C PC4050C</td>
<td>DSC Models PC5003C/PC4050C/PC4050CR (Red) Note: Do not install the hardwired transformer in the PC5003C and PC4050C enclosures.</td>
<td>DSC Models (Attack Resistant) CMC-1 PC4050CAR</td>
</tr>
<tr>
<td>Special Notes</td>
<td>*see Note 4</td>
<td>*see Notes 5, 6, and 7</td>
<td>*see Notes 3, 7, 8 and 12</td>
<td>*see Notes 5 &amp; 6</td>
<td>*see Notes 5 &amp; 6</td>
</tr>
<tr>
<td>Passive Levels</td>
<td>Transmitter(s) Equipment at Protected Premises</td>
<td>Supervision of Communication Channel(s)</td>
<td>Receiver Equipment at Signal Receiving Centre (SRC)</td>
<td>Security Levels (CAN/ULC-S302-14)</td>
<td></td>
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<tr>
<td><strong>Note:</strong> Test</td>
<td>Transmission required every 24 h (on each communication channel)</td>
<td></td>
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<tr>
<td><strong>P2</strong></td>
<td>Communication channels: Dialer and GSM/HSPA back-up, Dialer and IP back-up, GSM/HSPA and Dialer back-up, IP and GSM/HSPA back-up, GSM/HSPA and IP back-up. Refer to diagrams 3, 7a, 7b, 10, 11, 12, and 13. Note: When remote GSM/HSPA communicators are used in active systems or in conjunction with other Dialer passive channels (IP), the phone line monitoring can be disabled in C24 settings.</td>
<td>Failure of either channel shall be reported to the SRC within 240 seconds</td>
<td>SG-MLR2-DG/ SG-MLR2000/ SG-System IV/ SG-System III/ SG-System II/ SG-System I/SG-System 5</td>
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<tr>
<td><strong>P3</strong></td>
<td>Dual Communication System: GSM/HSPA and IP, Dialer and IP, and GSM/HSPA</td>
<td>Status change signals shall be sent simultaneously over both communication channels. Refer to diagrams 3, 7a, 7b, 10, 11, 12, and 13. Use separate PGM outputs programmed to activate for each type of event identified as a status change signal: Burglar Alarm, Holdup, Duress, Tamper, Opening/Closing. Use zone expander where more zone inputs are required to accommodate the transmission of these signals.</td>
<td>Failure of either channel shall be reported to the SRC within 240 seconds</td>
<td>SG-MLR2-DG/ SG-MLR2000/ SG-System IV/ SG-System III/ SG-System II/ SG-System I/SG-System 5</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The telephone service should be of a type that provides for timed release disconnect, in order to give the digital alarm communicator transmitter (dialer) the ability to disconnect an incoming call to the protected premises. If the lines (numbers) are in a single hunt group, they shall be individually accessible; otherwise, separate hunt groups shall be required. These lines shall be used for no other purpose than receiving signals from a digital alarm communicator transmitter. These lines (numbers) shall be unlisted. A timed release disconnect requirement applies to the telephone lines (numbers) connected to the digital alarm communicator receiver. The numbers assigned to the digital alarm communicator receiver shall be individually accessible, even where they are connected in rotary (hunt group). Models SG-MLR2-DG and SG-MLR2000 Receivers (DACR type) are legacy products that are still used by some ULC Listed Signal Receiving Centres.
<table>
<thead>
<tr>
<th>Type</th>
<th>Transmitter(s) Equipment at Protected Premises</th>
<th>Supervision of Communication Channel(s)</th>
<th>Receiver Equipment at Signal Receiving Centre (SRC)</th>
<th>Security Levels (CAN/ULC-S302-14)</th>
<th>Back-up Requirements for Network Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive</td>
<td>IP T-Link TL250/TL300/TL300CF, TL280(R)/E/TL2803G(R)/E, TL280LE(R)/E</td>
<td>Loss in 180 seconds at SRC; compromise detection and identification at SRC 180 seconds</td>
<td>SG-System 5</td>
<td>IV (only when used in conjunction with a passive communication channel rated P1)</td>
<td>24h standby power</td>
</tr>
<tr>
<td>Note</td>
<td>Dual Communication System: Dual Dialer (PC4701/PC5700). Refer to diagram 1.</td>
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<tr>
<td>Note</td>
<td>Failure of either channel shall be reported to the SRC within 180 seconds.</td>
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<tr>
<td>Note</td>
<td>Failure of both channels shall be indicated locally in 15 minutes.</td>
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<tr>
<td>Note</td>
<td>A4</td>
<td>IP T-Link TL250/TL300/TL300CF, TL280(R)/E/TL2803G(R)/E, TL280LE(R)/E</td>
<td>Loss in 180 seconds at SRC; compromise detection and identification at SRC 180 seconds</td>
<td>SG-System 5</td>
<td>IV</td>
</tr>
<tr>
<td>Note</td>
<td>Dual Communication System: Dual Dialer with GSM/HSPA, Dialer with IP, GSM/HSPA with IP Fire Alarms shall be sent simultaneously over both communication channels. Refer to diagrams 3, 6a, 7a, 7b, 10, and 11.</td>
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<tr>
<td>Note for using Private, Corporate and High Speed Data Networks:</td>
<td>Network access and domain access policies shall be set to restrict unauthorized network access, and “spoofing” or “denial of service” attacks. Select a private internet provider that has redundant servers/systems, back-up power, firewall enabled and methods to identify and protect against “denial of service” attacks (i.e., via “spoofing”).</td>
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<tr>
<td>Note for using Public Switched and Wireless Data Networks:</td>
<td>Communication channels shall be facilitated such that the communicator will restrict unauthorized access, which could otherwise compromise security.</td>
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<tr>
<td>Note 2: Fire Monitoring Communication Systems (Refer to the wiring diagrams in this guide for possible configurations). Fire alarms shall be received at SRC in 60 seconds. Trouble signals shall be received at SRC in 90 seconds. AES128-bit encryption for active and passive IP connections (applies to Ethernet and Cellular paths).</td>
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</tbody>
</table>
Note 9: All system enclosures must be 24-hour tamper protected against opening or removal (DSC Tamper Kit T-1 or equivalent). This includes control unit and accessory cabinets, transmitters, initiating devices and bells/strobes. Keypads must be tampered if they use a zone input or if they are installed outside the protected area.

Note 10: When performing the test for loss of communications channel on a 3G4010, 3G4010CF, LE4010, LE4020, LE4010CF, LE4020CF, TL2603G(R), 3G2060(R), TL2803G(R), 3G2080(R), TL2803G(R)E or 3G2080(R)E, it is recommended that you remove the SIM card from the communicator to simulate loss of communications. Removing the antenna is not an acceptable method for testing on these models as the 3G radio used in this product may be able to communicate without the antennae connected. The Cellular Service attribute must also be enabled via C24 Communications.

Note 11: When performing the test for loss of communications channel on a 3G3070, it is recommended that you remove the antenna from the communicator to simulate loss of communications. Please note that the ‘Cellular Service’ attribute must also be enabled via C24 Communications.

Note 12: As per ULC Bulletin 2017-02A, ULC Fire and Security Systems Group is accepting the use of MFVN digital telephone services for connection of digital dialer transmitters ULC listed to be connected to the public switched telephone network communications system. Since the MFVN communication channel technologies available are not provided with 24 hour standby power on the equipment and facilities used between the premises and the signal receiving center, it is required that, for passive communication channels used in monitored protective signaling system installations, the testing time of the passive communication channels should be reduced from the current 24 hours to 6 hours to better ensure that the system and communication channels are operating in their intended manner to reduce the life safety risk. A change in testing frequency for intrusion alarm systems is not required due to the many different levels of line security options available for these system types, which should be applied based on communication supervision needs for each installation. For PowerSeries Neo panels, the following programming options shall be adjusted to meet the new 6h test transmission when used in ULC-S561 compliant installations:

- Section [022] turn option 4 ON for hours.
- Section [377] option [003] set to 006 (for 6 hours).
- Section [309] option [002] enable test transmission for all applicable receivers.

**Programming**

The notes in the installation and programming sections describing the system configurations for ULC Listed installations must be implemented.

**Protection of the control unit - burglary**

The local control unit and local power supply must be protected in one of the following ways:

- The control unit and power supply must be located within the area of greatest protection on a tamper protected circuit.
- Each partition shall arm the area protecting the control unit and the audible alarm device power supply. This may require duplicate protection armed by each partition. Access to this protected area, without causing an alarm, will require that all partitions are disarmed.

In all cases described above, the protected area for the control unit must be programmed so that it cannot be bypassed, and installed in accordance with CAN/ULC-S302.

**User information**

The installer should advise the users and note the following in the user instruction manual:

- Service organization name and telephone number
- The programmed exit time
- The programmed entry time
- Safety precautions specified for the connected equipment

Products or components of products, which perform communications functions only, shall comply with the requirements applicable to communications equipment as specified in CAN/CSA-C22.2 No. 60950-1, Information Technology Equipment-Safety - Part 1: General Requirements.

**Zone wiring diagrams**
Note: The tamper and relay contacts (NC) used in door/window detectors or motion detectors are shown as the product is powered up and in normal supervisory condition.
Connection of Devices and Accessories for Water Type Extinguishing Systems

- 5 maximum in parallel, in one zone
- must be in close proximity to each other in one zone

**NOTE:** Only Control Valve Position Supervisory Devices can be used up to 5 on the same circuit.

Connection of Tamper Zone with Water Flow/Gate Valve

**Note:** Reference to WF terminal block designation is only specific to certain DSC modules (MAXSYS system). PowerSeries and PowerSeries Neo control panels can use any zone programmed as type 24 hr sprinkler when used in conjunction with a sprinkler supervision system.
Fire monitoring communication systems wiring diagrams

Notes:
- These wiring diagrams are also representative for commercial burglary monitoring applications.
- Either RM1C ULC or RM2 relays can be used for ULC installations.
- Recommended DSC power supply models: PC5204/PC5200/PC4204CX/HSM2204/HSM2300
- Refer to power supply installation manual for compatible control panels.

1. DSC subscribers’ unit fire and GSM/HSPA transmitter (passive/active communications system)

2. DSC subscribers’ unit fire and IP transmitter (active communication systems)

This diagram is also representative for Commercial Burglary applications with Active Line Security A1-A4.
3. DSC subscribers' unit fire and IP transmitter (passive communication system)

Notes:
- All wiring connections shall be run in a metallic protective conduit.
- Phone 1 program for T-Link ([301] set as DCAA).
- Phone 3 program in [303] and set as back-up to Phone 1 ([380] option 5 ON, 6 OFF).
- Phone 2 program in [302] the same as Phone 3.
- T-Link supervision enabled (Section [851], option [023] set to 01).
- Phone Line Monitoring (TLM) shall be enabled.
- PGM1 programmed as System Trouble (Section [009] Program as type 09; Section [501] TLM option 3 ON).
- T-Link TL250 Zone 1 program as type 21 in Section [036] and use reporting code 99 in section [050].
- 24h Test Transmission over phone line 1 and 2 must be enabled (Section [376] set options 1 and 2 ON).
- Fire Alarms shall be sent over both channels (section [351] set options 1 and 2 to ON).
- Dry contact outputs from ULC Listed Fire Alarm Control Unit shall be connected to Zone inputs on the ULC Listed DSC Subscribers' Unit Fire.

This diagram is also representative for Commercial Burglary applications with Passive Line Security P1-P3.

4. Fire alarm control unit (with no dialer) and IP transmitter (active communication system)

Notes:
- Power for T-Link TL250 shall be provided from Fire Alarm Control Unit or separately listed Power Supply rated for the application (12V/275mA).
- All wiring connections shall be run in a metallic protective conduit.
- T-Link TL250 Supervision at Signal Receiving Centre (SRC) shall be enabled (180 Sec.).
- For local supervision of the IP communicator connect PGM output from T-Link TL250 to one zone input on the Fire Alarm Control Unit.
- Dry contact outputs from ULC Listed Fire Alarm Control Unit shall be connected to Zone inputs on the T-Link TL250 (or PC5108 if used).
5. Fire alarm control unit (with dialer) and IP transmitter (active communication system)

- Diagram showing Fire Alarm Control Unit connected to IP Transmitter (T-Link TL300) and PC5003C cabinet.

Notes:
- Power for T-Link TL300 shall be provided from Fire Alarm Control Unit or separately listed Power Supply rated for the application (12V/275mA).
- All wiring connections shall be run in a metallic protective conduit.
- T-Link TL250 Supervision at Signal Receiving Centre (SRC) shall be enabled (180 Sec.).
- For local supervision of the IP communicator connect PGM output from T-Link TL300 to one zone input on the Fire Alarm Control Unit.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the T-Link TL300 for supervision of Tip/Ring connection.
- For local supervision of the IP communicator connect PGM output from T-Link TL300 to one zone input on the Fire Alarm Control Unit.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the T-Link TL300 for supervision of Tip/Ring connection.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the T-Link TL300 for supervision of Tip/Ring connection.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the T-Link TL300 for supervision of Tip/Ring connection.

6a. Fire alarm control unit (with dialer) and GSM/HSPA transmitter (passive communication system)

- Diagram showing Fire Alarm Control Unit connected to GSM/HSPA Transmitter (3G4010/LE4010/LE4020).

Notes:
- Power for 3G4010/LE4010/LE4020 shall be provided from Fire Alarm Control Unit or separately listed Power Supply rated for the application (12V/700mA).
- All wiring connections shall be run in a metallic protective conduit.
- Connections to the zoned inputs of the GSM/HSPA communicator shall be limited to 18m, same room.
- For local supervision of the GSM/HSPA transmitter connect PGM output from 3G4010/LE4010/LE4020 to one zone input on the Fire Alarm Control Unit.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the 3G4010/LE4010/LE4020 for supervision of Tip/Ring connection.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the 3G4010/LE4010/LE4020 for supervision of Tip/Ring connection.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the 3G4010/LE4010/LE4020 for supervision of Tip/Ring connection.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the 3G4010/LE4010/LE4020 for supervision of Tip/Ring connection.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the 3G4010/LE4010/LE4020 for supervision of Tip/Ring connection.

*Model 3G4010CF/LE4010CF/LE4020CF has its own power supply (with integral backup) and only requires connection to a dedicated AC mains circuit. Model LE4020CF input range is 10-28Vdc/700mA.
6b. Fire alarm control unit (with dialer) and GSM/HSPA transmitter (active communication system)

**Notes**
- Power for 3G4010/LE4010/LE4020 shall be provided from Fire Alarm Control Unit or separately listed Power Supply rated for the application (12 V / 700 mA).
- All wiring connections shall be run in a metallic protective conduit.
- Connections to the zoned inputs of the GSM/HSPA communicator shall be limited to 18 m, same room.
- For local supervision of the GSM/HSPA transmitter, connect PGM output from 3G4010/LE4010/LE4020 to one zone input on the Fire Alarm Control Unit.
- Dry contact Trouble output from ULC Listed Fire Alarm Control Unit shall be connected to Zone input on the 3G4010/LE4010/LE4020 for supervision of control units TIP/RING connection.
- Supervision at the SRC receiver shall be set to 180 seconds.
- Connect24 profile shall be set to ULC Commercial Fire Active installation (for commercial burglary applications choose ULC Commercial Burg Active profile).

* Model 3G4010CF/LE4010CF/LE4020CF has its own power supply (with integral backup) and only requires connection to a dedicated AC mains circuit. Model LE4020 input range is 10 Vdc - 28 Vdc / 700 mA.

7a. DSC subscribers' unit fire and GSM/HSPA transmitter (passive communication system)

**Notes**
- Power for 3G4010/LE4010/LE4020 shall be provided from DSC Subscribers' Unit Fire or separately listed Power Supply rated for the application (12V/700mA).
- All wiring connections shall be run in a metallic protective conduit.
- Connections to the zoned inputs of the GSM/HSPA communicator shall be limited to 18m, same room.
- Phone Line Monitoring (TLM) shall be enabled.
- Connect PGM4 output from 3G4010/LE4010/LE4020 (Trouble conditions) to a zone input on the Subscriber Unit for supervision of the GSM Transmitter.
- 24h Test Transmission over phone line (PSTN) and 3G4010/LE4010/LE4020 must be enabled.
- Fire Alarms shall be sent over both communication channels.
- On the Subscribers' Unit program PGM1 for PC1864/PC1832/PC1616 as System Event (Section [009] as type 10; Section [501] Fire Event option 2 ON). An alternate option is to program PGM1 as Zone Follower (Sec [009] = 29) and assign Fire Zone to PGM1 in Section [551]. In this case, a restored fire alarm condition does not require the DSC control panel to be reset. For PC4020 program PGM1 as type [49] Steady Fire ([00070049].
- Dry contact outputs from ULC Listed Fire Alarm Control Unit shall be connected to Zone inputs on the ULC Listed DSC Subscribers' Unit Fire.
- For ULC-S561 installations when using the PC5003C enclosure it is required to install the listed hardwired transformer outside the enclosure.
- The control panel manual shall be consulted for the list of compatible keypads.

*Model 3G4010CF/LE4010CF/LE4020CF has its own power supply (with integral backup) and only requires connection to a dedicated AC mains circuit. Model LE4020CF input range is 10-28 Vdc / 700 mA.

This diagram is also representative for Commercial Burglary applications with Passive Line Security P1-P3.
7b. DSC subscribers' unit fire and GSM/HSPA transmitter mounted remotely
Alternate wiring diagram for DSC subscribers' unit fire and GSM/HSPA transmitter passive communication system - using phone line supervision relay

Fire Alarm
Control Unit
Outputs
Fire
Supervisory
Trouble

DSC
Subscribers'
Unit Fire

Zone
Inputs
TIP/RING

PC4020 HS2128
PC1684 HS2064
PC1832 HS2032
PC1616 HS2016

PGM1

RM1C ULC
Relay

PC5003C
PC4050CR

AC Input

DSC Keypad
LCD4501
PK55XX
HS2LCD/ICN/LED

AUX Power
12V/700mA*

GSM/HSPA
Transmitter

3G/LE4010
3G/LE4010CF
LE4020/LE4020CF

T1/R1

RM1C ULC
Relay

Communicator cabinet

PSTN

GSM/HSPA Network

Notes:
- Connect PGM output from
  GS3060/3G3070/3G4010/LE4010/LE4020 (Phone Line
  Trouble) to a zone input on the subscriber unit for
  supervision of the PSTN phone line voltage.
- When the 3G4010/LE4010/LE4020 is installed remotely
  from the DSC Control Panel, it is required to monitor the
  Phone Line Trouble condition at the keypad by using an
  additional RM1C Relay.
- All wiring connections shall be run in a metallic protective
  conduit.
- Refer to notes in Figure 7A and detailed diagrams in Figure
  9 for additional information.

*Model 3G4010CF/LE4010CF/LE4020CF
has its own power supply (with integral
backup) and only requires connection to a
dedicated AC mains circuit. Model
LE4020CF input range is 10-28Vdc/700mA.

This diagram is also representative for
Commercial Burglary applications with
Passive Line Security P1-P3.
Connection Details for GSM/HSPA Supervision Relay & Redundant Fire Alarm Transmission

GS3060/3G3070/3G/LE4010/3G/LE/4010CF/LE4020/LE4020CF

NOTE: Use EOL resistor in series with N.O. contacts of the relay connected to PGM4

NOTE: Use EOL resistor in parallel with N.C. contacts of the relay connected to PGM4
9. Connection details for GSM/HSPA supervision relay, phone line supervision and redundant fire alarm transmission

Connection Details for GSM/HSPA Supervision Relay, Phone Line Supervision Relay and Redundant Fire Alarm Transmission

**NOTE:** Use EOL resistor in series with N.O. contacts of the relay connected to PGM4

**NOTE:** Use EOL resistor in parallel with N.C. contacts of the relay connected to PGM4
10. TL260/TL260GS/GS2060/TL2603G/TL2603GR/3G2060/3G2060R wiring diagram active/passive communication system

NOTE: For more details, refer to the control panel Installation Manual p/n 29007916.

Notes:
- Power for TL260/TL260GS/GS2060/TL2603G/TL2603GR/3G2060/3G2060R/TL260/TL260R shall be provided from PC1864/PC1832/PC1616 Subscriber's unit (Bell+ and AUX).
- Use for communication SIA format, program Section [350]= 04, Section [165] = 001 and Section [167]=060.
- TL260/TL260GS/GS2060/TL2603G/TL2603GR/3G2060/3G2060R/TL260/TL260R can be used as a passive communication module (back-up mode for Dialer) or as an active communication module (IP, GSM or both).
- For passive configurations:
  - Phone line monitoring (TLM) shall be enabled on the panel (section [015] bit 7 ON).
  - Program the analog phone number in Section [301] (primary path).
  - Program “DCAA” in Section [302] (redundant path for Fire Alarms) and program Section [351] bit 1 and 2 ON.
  - Program “DCAA” in location [301] (back-up path).
  - Program the call directions for tamper [359], opening/closing [367], maintenance [375] and test transmissions [376] as required by the application (bit 1 and 5 ON).
- For active configurations:
  - Phone line use is optional (depends on the IP or GSM channel being used and back-up power provisions for the IP channel). TLM does not need to be programmed if the phone line is not used.
  - Program “DCAA” in location [301] (IP/GSM module primary path). Select in section [851][005] whether the IP or GSM will be the primary or secondary path.
  - Program heartbeat interval in Section [851][004]=005A (90s). The supervision window at the Signal Receiving Centre’s receiver shall be programmed as max. 180s.
11. TL280/TL280R/TL2803G/TL2803GR/3G2080/3G2080R wiring diagram active/passive communication system

**NOTE:** For more details, refer to the control panel Installation Manual p/n 29009812.

**Notes:**
- Communicator programming (section [851]) is only supported through the Connect24 web portal.
- For communication format, program section [350] [001-004] (03 for Contact ID, 04 for SIA).
- For passive configurations (Commercial Burglary Line Security Level P3, simultaneous transmission configuration), can be done either using the phone line and alternate communicator module (IP or Cell), or just the dual path alternate communicator module (IP and Cell). If only the dual alternate communicator module is used then the programming associated with phone line operation is not applicable.
- Phone line monitoring (TLM) shall be enabled on the panel (section [015] bit 7 ON).
- Set communicator path on the panel: [300][001] set to Phone line, [002] set to Alt Comm Rec 1 (Ethernet channel) or Alt Comm Rec 3 (Cellular channel).
- Note that any communicator path can be selected as primary location ([001]) or backup location ([002]) in this configuration. Enable Cellular Low Signal Trouble in section [851][005] bit 8 ON.
- Program the analog phone number in Section [301] [001] as required by the application.
- Set communicator path directions in Section [309] as required by the application.
- For active configurations (Fire Monitoring, Commercial Burglary Security Level A1-A4):
  - For communication format, program section [350] [001-004] (03 for Contact ID, 04 for SIA).
  - Set communication path in Section [300][001] select 01 for Alt Comm Rec 1 (Ethernet channel), or 02 for Alt Comm Rec 3 (Cellular channel).
  - Enable parallel transmission in Section [380] bit 5 ON. Important Note: Enabling this option ensures the selected events are transmitted in parallel on all enabled communication paths.
  - Program system call directions in Section [309] as required by the application.
  - For 24hr test transmission, [851] system test options [026-029] shall be enabled [FF] for the communication paths available. [851][124-125] and [224-225] shall be programmed with time of transmission time and cycle.
  - Disable redundant communications toggle on the Connect24 portal. When using the redundant communications, receivers 1 and 3 shall not terminate at the same receiver line card, and receivers 2 and 4 shall not terminate at the same receiver line card.
  - For 24hr test transmission, [851] system test options [026-029] shall be enabled [FF] for the communication paths available. [851][124-125] and [224-225] shall be programmed with time of day for test transmission and 1440 hours (24hrs) for test transmission cycle.

**Note:** In order for the communicator module paths (Ethernet and Cellular) to report simultaneously, you need to enable the redundant communications toggle on the Connect24 portal. When using the redundant communications, receivers 1 and 3 shall not terminate at the same receiver line card, and receivers 2 and 4 shall not terminate at the same receiver line card. Communications will be simultaneous to receivers 1 and 3 and if unsuccessful will backup to receivers 2 and 4 simultaneously.

**For active configurations (Fire Monitoring, Commercial Burglary Security Level A1-A4):**
- Phone line use is optional (depends on the Ethernet or Cellular channel being used and back-up power provisions for the Ethernet channel). TLM does not need to be programmed if the phone line is not used. Enable Cellular Low Signal Trouble in section [851][005] bit 8 ON.
- Set communication path in Section [300][001] select 01 for Alt Comm. Rec 1 (Ethernet channel), or 02 for Alt Comm. Rec 3 (Cellular channel).
- Program the partition call directions in Section [311] as required by the application.
- Program the analog phone number in Section [301] [001] (primary path).
- Program system call directions in Section [309] as required by the application.
- For 24hr test transmission, [851] system test options [026-029] shall be enabled [FF] for the communication paths available. [851][124-125] and [224-225] shall be programmed with time of transmission time and cycle.
- Program heartbeat interval in Section [851][004]=05A (60s). The supervision window at the Signal Receiving Centre's receiver shall be programmed as max. 180s. Note: select the proper supervision profile from C24 website when enrolling/registering the Cellular alarm communicator for first time.

**Note:** The above reference to models TL280, TL280R, TL2803G, TL2803GR, 3G2080, 3G2080R also covers the models TL280E, TL280RE, TL2803GE, TL2803GRE, 3G2080E, 3G2080RE that are using a different integrated radio module.
12. 3G8080/3G8080I wiring diagrams active/passive communication system

For UL Commercial Burglary installations, the 3G8080(I)/TL880LT are listed as the sole means of communication (supervision window of 200s required at monitoring station) or as a back-up when used in conjunction with a POTS line (dialer). The communicator shall be powered from the compatible listed control unit HS2128/HS2064/HS2032/HS2016 or compatible listed power supply HSM2204/HSM2300 that complies with the ratings specified in the communicator manual.

For ULC Commercial Burglary installations, the 3G8080(I)/TL880LE is listed as an active communication system with line security level A1-A4 and as a passive communication system with communication line security level P1 when used alone or as P2-P3 when used in conjunction with the integrated POTS line (dialer) in the compatible NEO Alarm Control panels HS2128, HS2064, HS2032, HS2016.


The TL880LE can be used in ULC commercial burglary applications up to Security Level IV. Refer to Installation Manual P/N 29010001 for more details.
13. TL880LE/TL880LT wiring diagram active/passive communication system

**Diagram Notes:**
- Red wire on alarm controller PCLink_2 Header
- Primary Antenna (provided)
- Diversity Antenna (provided)
- Ethernet Cable Connections
- Quad cables (100ft / 30m maximum)
- Red wire on PCL-422 PC-Link header
- LTE Controller Board power terminals. Can be connected to power supply module (HSM2204/2300)