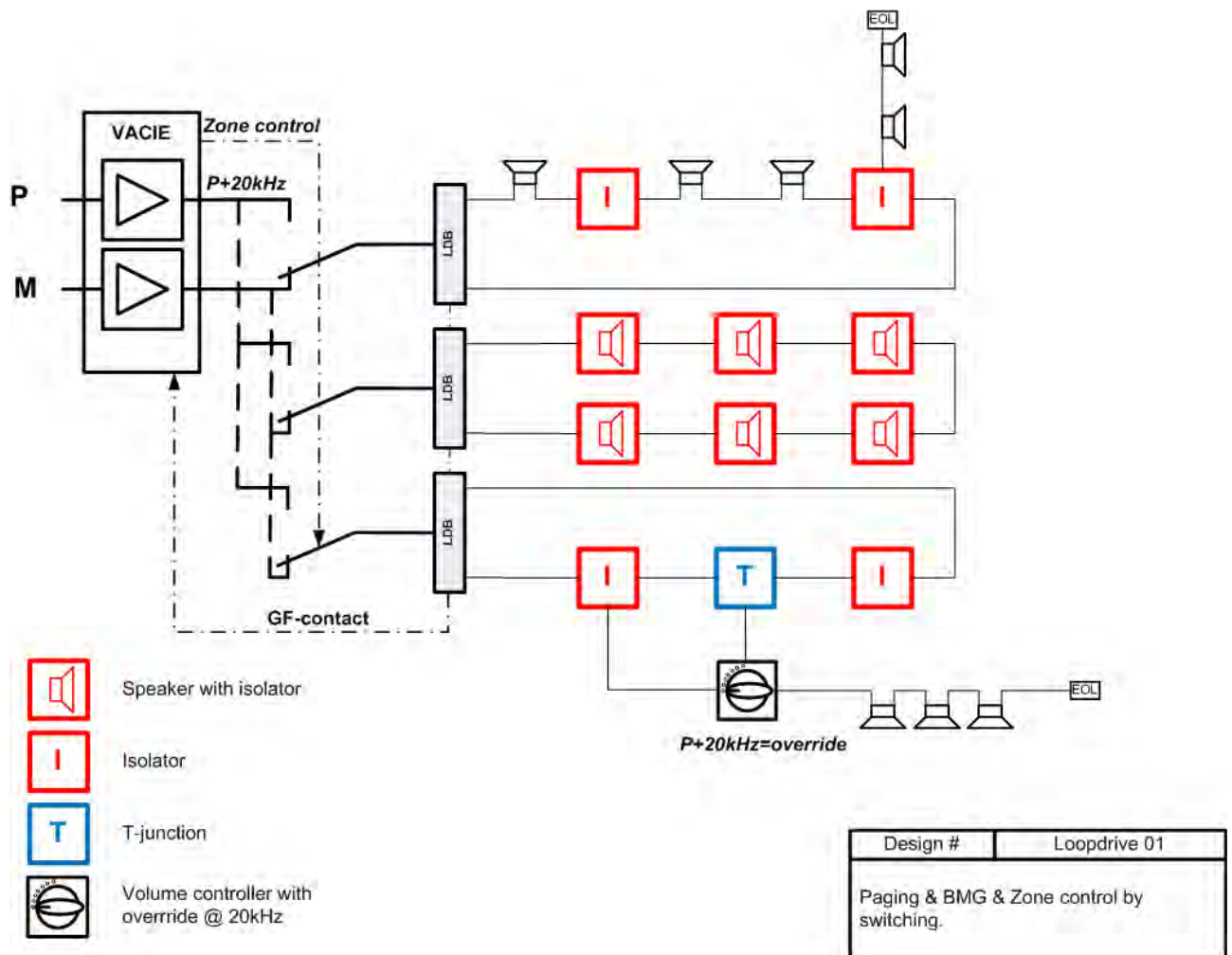


Field Isolator Module - FIM - Tutorial



Zone switching by relays & local volumecontrol with general-call override:

Paging and Music broadcast using LDB and amplifier switching at the VACIE. LDB is distributing audio over the loop. Music volume is controlled by the local volume-controller(s) with paging-override function. (Two-wire system)

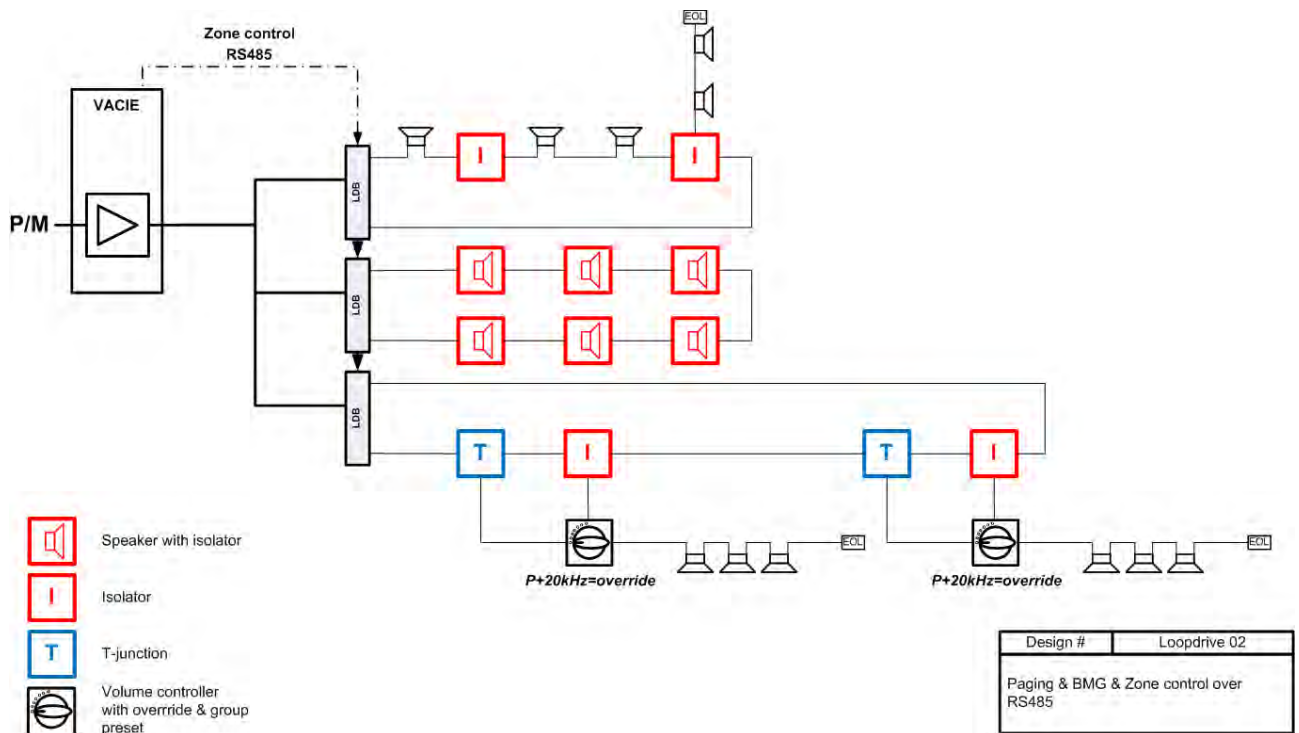
During Paging, VACIE controls zone-switching, by relays, and switches the Paging zones (LDB's) to the Paging amplifier. The LDB also detects any transmission-path fault between amplifier & LDB.

The Paging amplifier sends a 20kHz signal together with the Paging broadcast to activate the override-relay in the volumecontroller(s).

Local zone speakers in the volume-controlled area are surveilled by DC-current. EOL resistor terminates the line.

Other zones have a typical two-conduct loop configuration with fault addressing.

Field Isolator Module - FIM - Tutorial



Zone switching by RS485 & local volumecontrol with general-call override:

Paging and Music broadcast by LDB zone-muting. LDB is distributing audio over the loop. Music volume is controlled by the local volume-controller(s) with paging-override function. (Two-wire system)

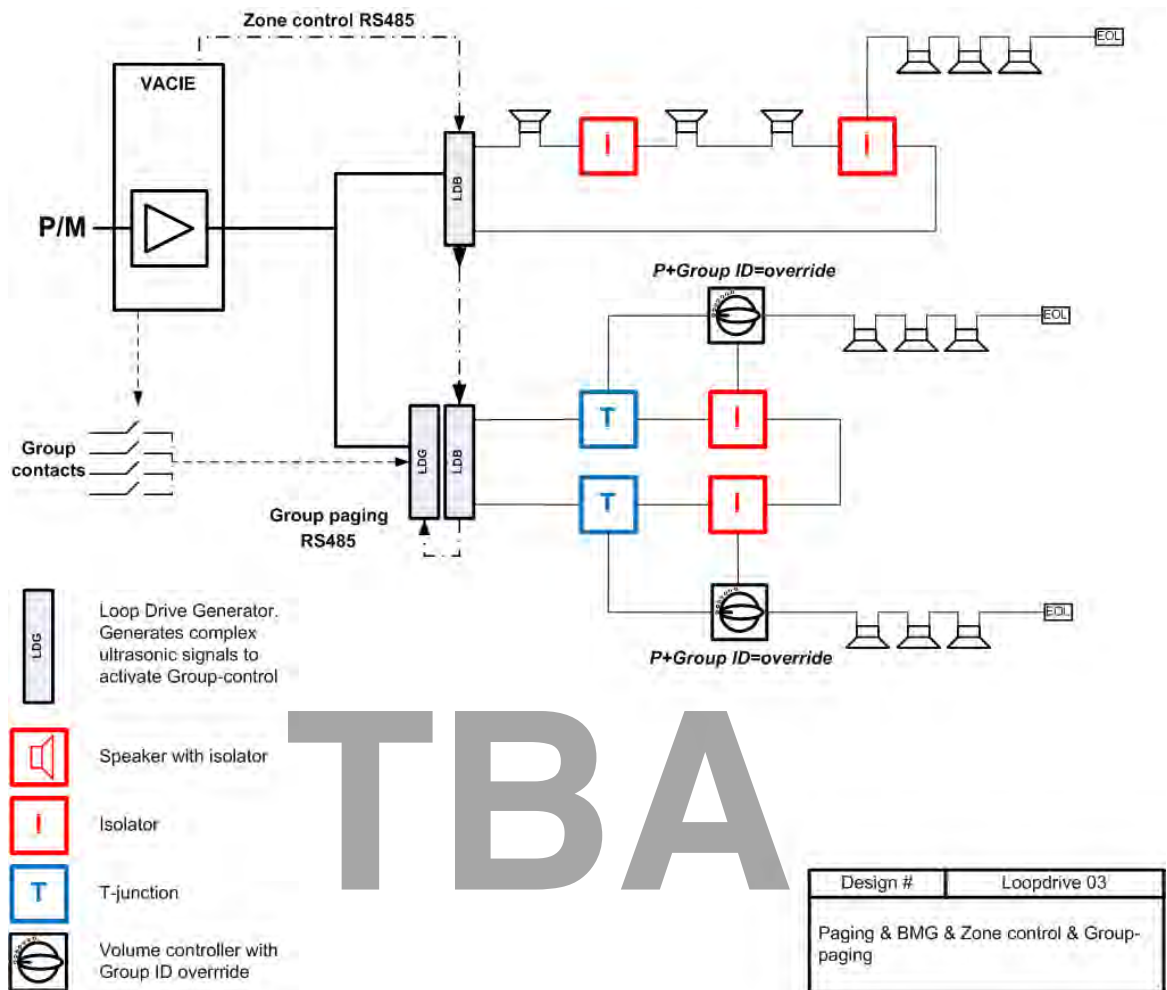
During Paging, VACIE controls zone-switching, by RS485, muting the NON-addressed zones. (Music is temporary disabled in the NON-addressed zones. If paging & un-interrupted BGM is a requirement, at least 2 front-end amplifiers are required (See Tutorial 01). The LDB also detects any transmission-path fault between amplifier & LDB.

The Paging amplifier sends a 20kHz signal together with the Paging broadcast to activate the override-relay in the volumecontroller(s).

Local zone speakers in the volume-controlled area are surveilled by DC-current. EOL resistor terminates the line.

Other zones have a typical two-conduct loop configuration with fault addressing.

Field Isolator Module - FIM - Tutorial



Zone switching by RS485 & group-paging/volumecontrol with LDG:

Paging and Music broadcast by LDB zone-muting. LDB is distributing audio over the loop. Music volume is controlled by the local volume-controller(s) with paging-override function. (Two-wire system)

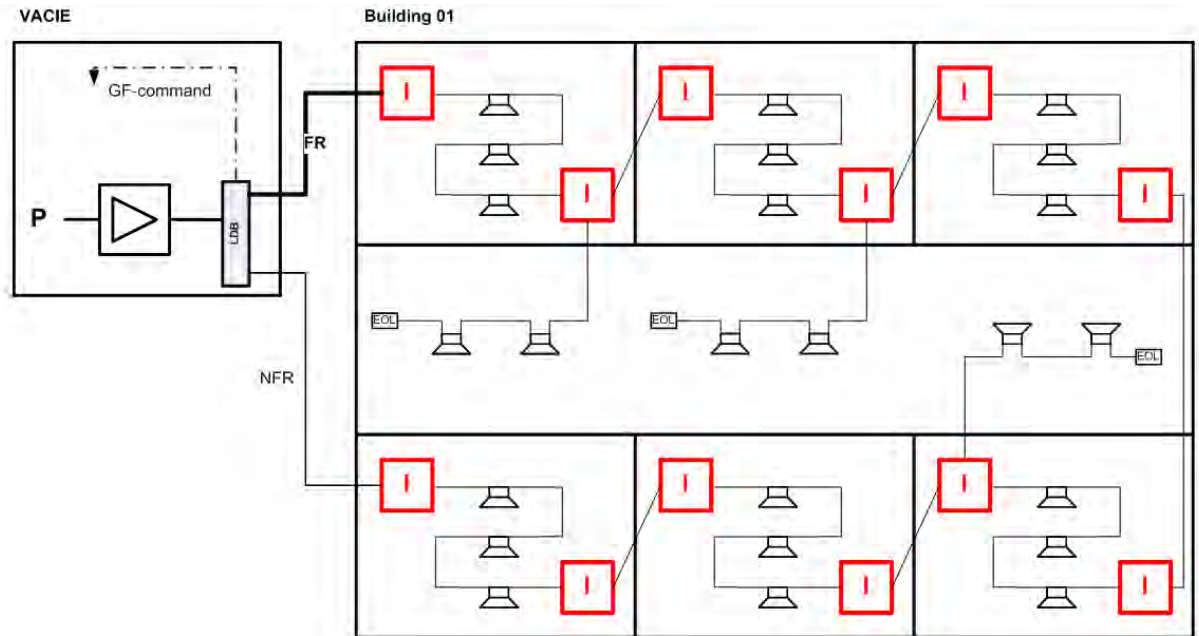
During Paging, VACIE controls zone-switching, by RS485, muting the NON-addressed zones. (Music is temporary disabled in the NON-addressed zones. If paging & un-interrupted BGM is a requirement, at least 2 front-end amplifiers are required (See Tutorial 01). The LDB also detects any transmission-path fault between amplifier & LDB.

The LDG (Loop Drive Generator) sends an 20kHz signal together with the Paging broadcast to activate the override-relay in the volumecontroller(s). In case of a GROUP-call, the LDG receives either a contact or a data signal command over the RS485 from the VACIE. The LDG is generating a complex ultrasonic signal that is superposed onto the Paging-broadcast signal addressing the Group-volume controllers that are set to react to the Group-command.






Local zone speakers in the volume-controlled area are surveilled by a DC-current. EOL resistor terminates the line.

Other zones have a typical two-conduct loop configuration with fault addressing.

Field Isolator Module - FIM - Tutorial



FR / NFR Fire-retarded / NON Fire retarded

-  Loop Drive Booster
-  Speaker with isolator
-  Isolator
-  T-junction
-  Volume controller with override & group preset

Design #	Loopdrive 04
Typical Isolator configuration & Paging	

Typical Loopdrive room-to-room configuration for paging only:

Room load > 50Watt:

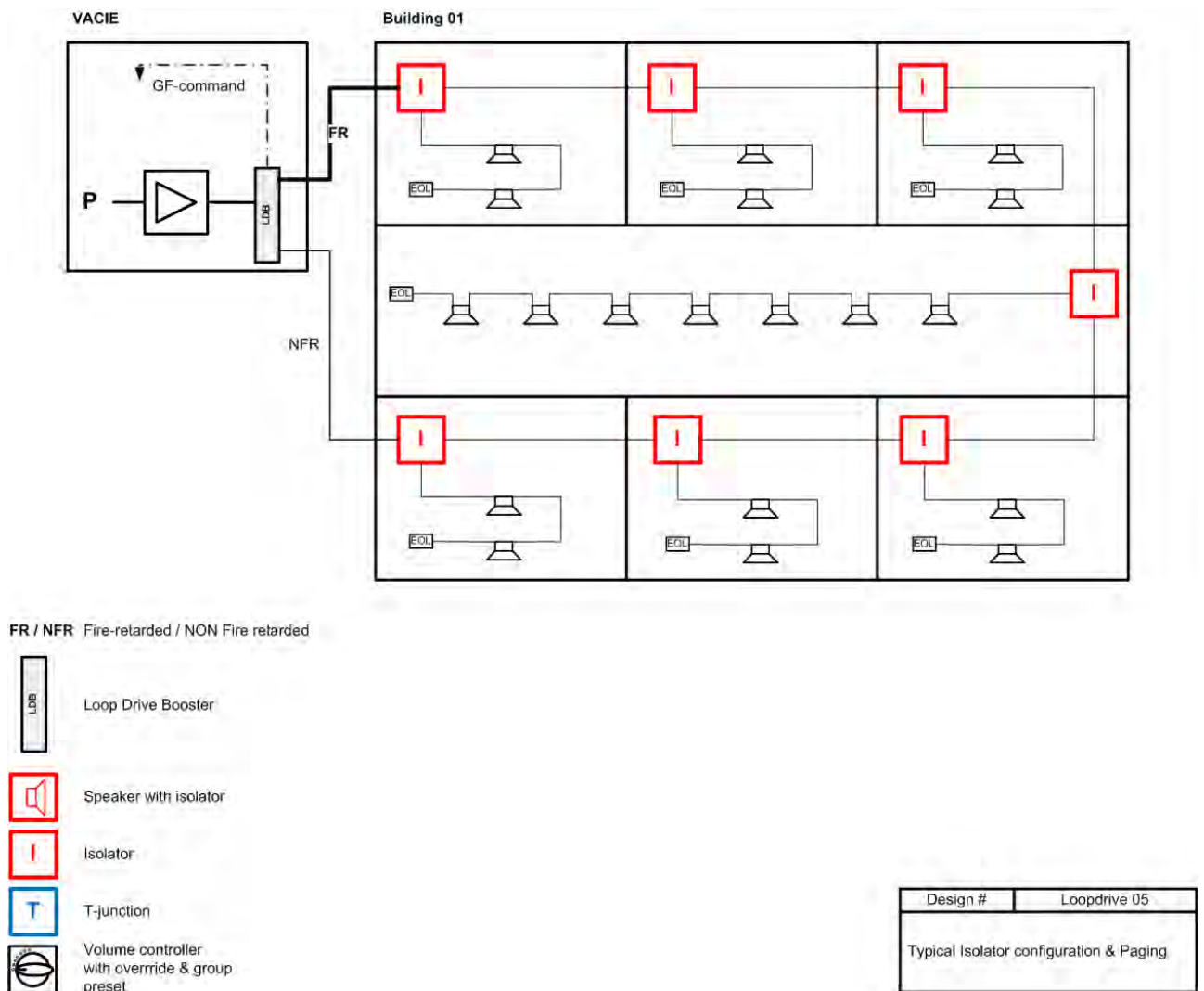
In this example, loudspeakers are positioned in-between isolators. This configuration is used when the loudspeaker load exceeds 50Watt per room. In order to secure full integrity in case of a fire, two-isolators are required.

The incoming and outgoing cables from the VACIE run via different route. One of the cables should be wired as fire-retarded at the section where both cables joined in same cable conduct near the VACIE cabined room.

The speakers to the adjacent hallway are tapt from the room isolators T-branch output. Load < 50W.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



Typical Loopdrive room-to-room configuration for paging only:

Room load < 50Watt:

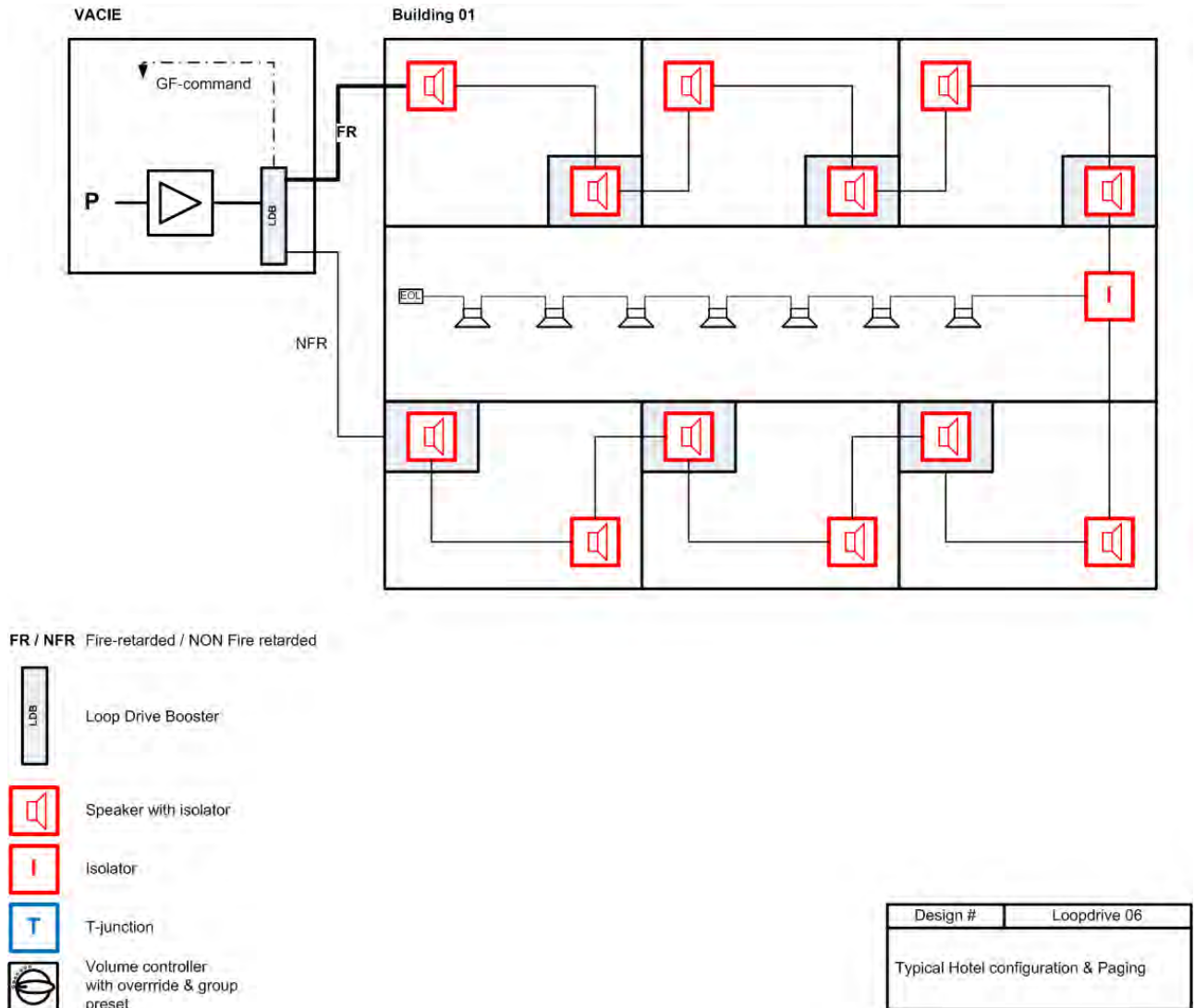
In this example, loudspeakers are connected to the T-branch of a single isolator. This configuration is used when the loudspeaker load *is less than 50Watt per room*. In order to secure full integrity in case of a fire, a single-isolator is sufficient.

The incoming and outgoing cables from the VACIE run via different route. One of the cables should be wired as fire-retarded at the section where both cables joined in same cable conduct . That might happen in the near surrounding of the VACIE cabined room.

The speakers to the adjacent hallway are tapt from a separate isolators T-branch in the hallway. Output load < 50W.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



Typical Loopdrive room-to-room (Hotel) configuration for paging only:

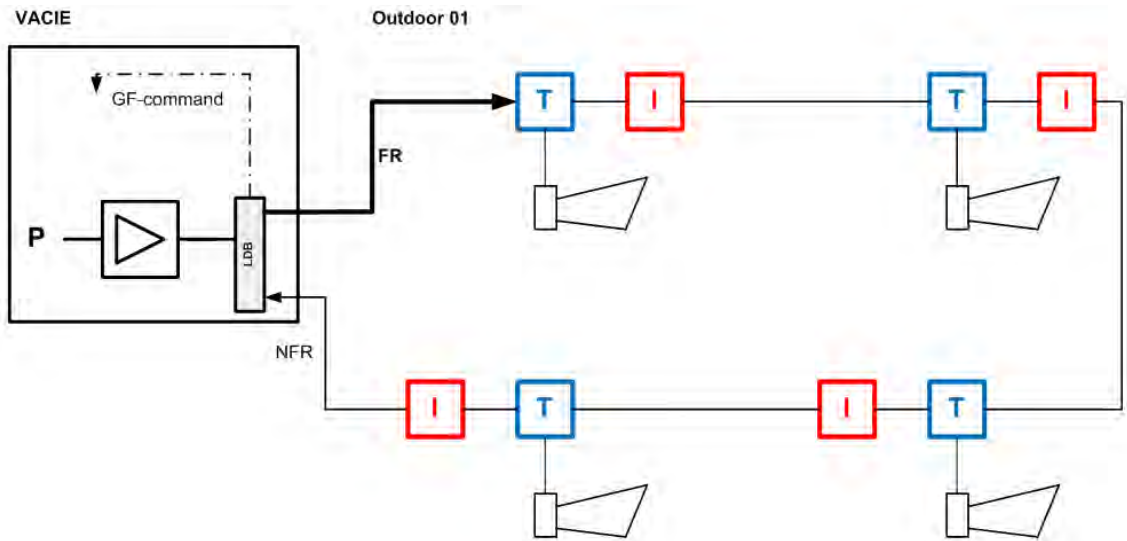
This example shows a typical Hotel configuration where each room and bathroom are rated as fire-zones and therefore need to be equipped with an individual powered speaker with fault detection. This can be achieved by using a speaker equipped with a FIM-isolator for each room and bathroom. In case of upgrading or refurbishing, Loopdrive is your most cost-effective way.

Whilst the room is prepared for its next guest, the service engineer replaces both speakers commissioning even before house-keeping is finished. Once all rooms are refurbished with new speakers with isolators, the central device LDB can be fitted and activated.






FIM's can be placed in the field even without being powered without disturbing the guest and the need to disable the existing paging system. The incoming and outgoing cables from the VACIE run via different route. One of the cables should be wired as fire-retarded at the section where both cables joined in same cable conduct. That might happen in the near surrounding of the VACIE cabined room.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



FR / NFR Fire-retarded / NON Fire retarded

-  Loop Drive Booster: 800W
-  High-power speaker: 50W > SP < 800W
-  Speaker with isolator
-  Isolator
-  T-junction + 'C'

Design #	Loopdrive 07
High-power speakers with Isolators & Paging configuration	

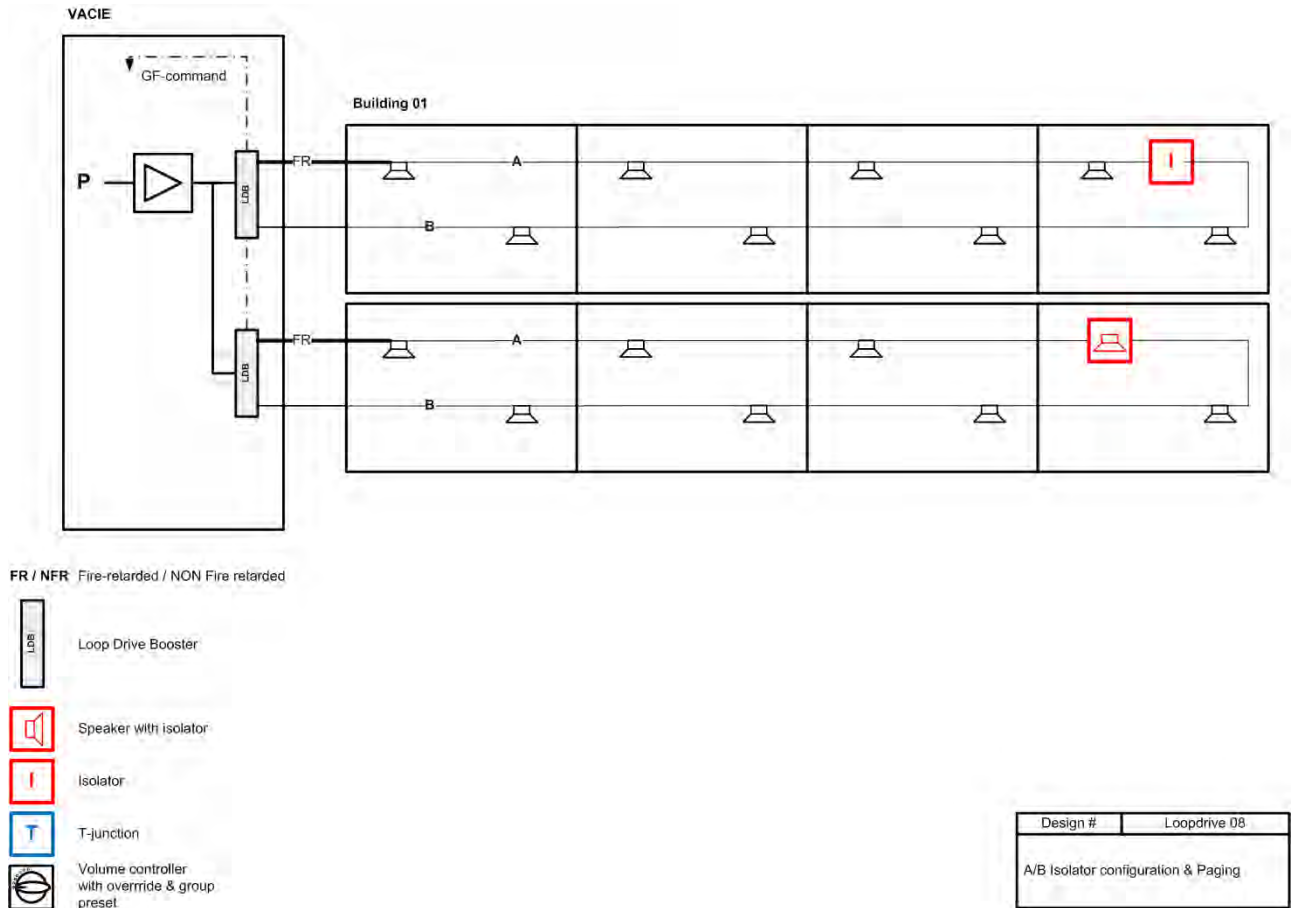
Loopdrive in combination with high-power speakers:

High-powered speakers are commonly used to address large spaces addressing large groups of people like arena's, airport-terminals, railway-stations.

Loopdrive is offering an ideal solution to simply isolate, detect and locate faulty cable sections and/or speakers. Each LDB-booster can handle a speaker load of up to 800Watt. Using T-junction boxes you can run single cables to the individual high-power speakers.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



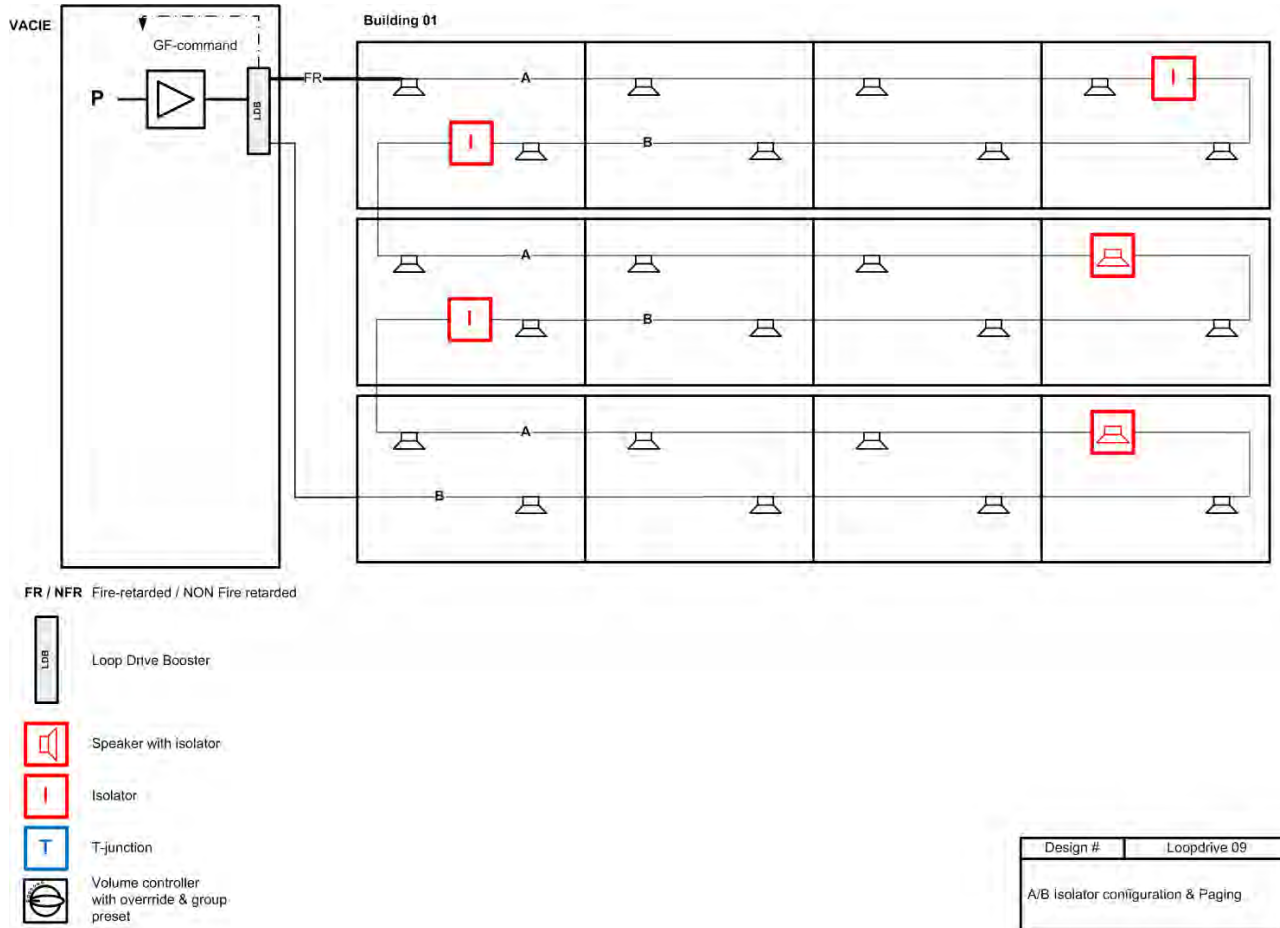
Typical Loopdrive A / B line with single amplifier and multiple LDB's:

Loopdrive booster LDB can act as a simple A/B line splitting device where a single FIM, or FIM with speaker, acts as an end-of-line device separating the A from the B line. By adding multiple LDB's to a single amplifier you can address multiple areas saving cost on amplifiers.

The incoming and outgoing cables from the VACIE to the zones are wired as fire-retarded cackling in most cases, or at least one of the in- or outgoing is.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



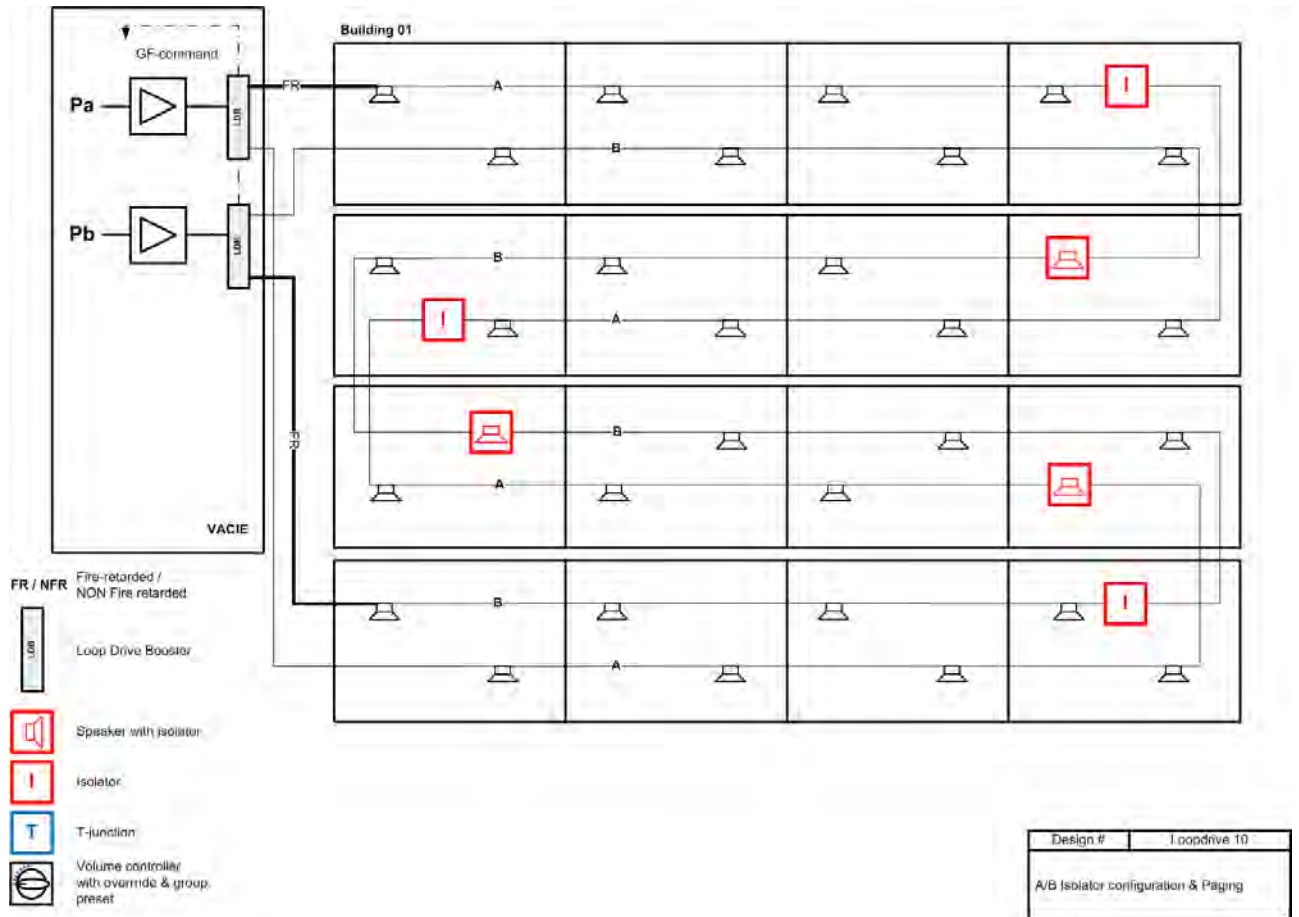
Typical Loopdrive A / B line for multiple-compartments with single amplifier:

Loopdrive booster LDB can act as a simple A/B splitting device where a FIM or FIM-with speaker acts as a compartment isolator separating the A from the B cable. By adding multiple FIM's to a single amplifier you can address multiple areas saving cost on amplifiers & cabling.

The incoming and outgoing cables from the VACIE to the zones are wired as fire-retarded cackling in most cases, or at least one of the in- or outgoing is.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



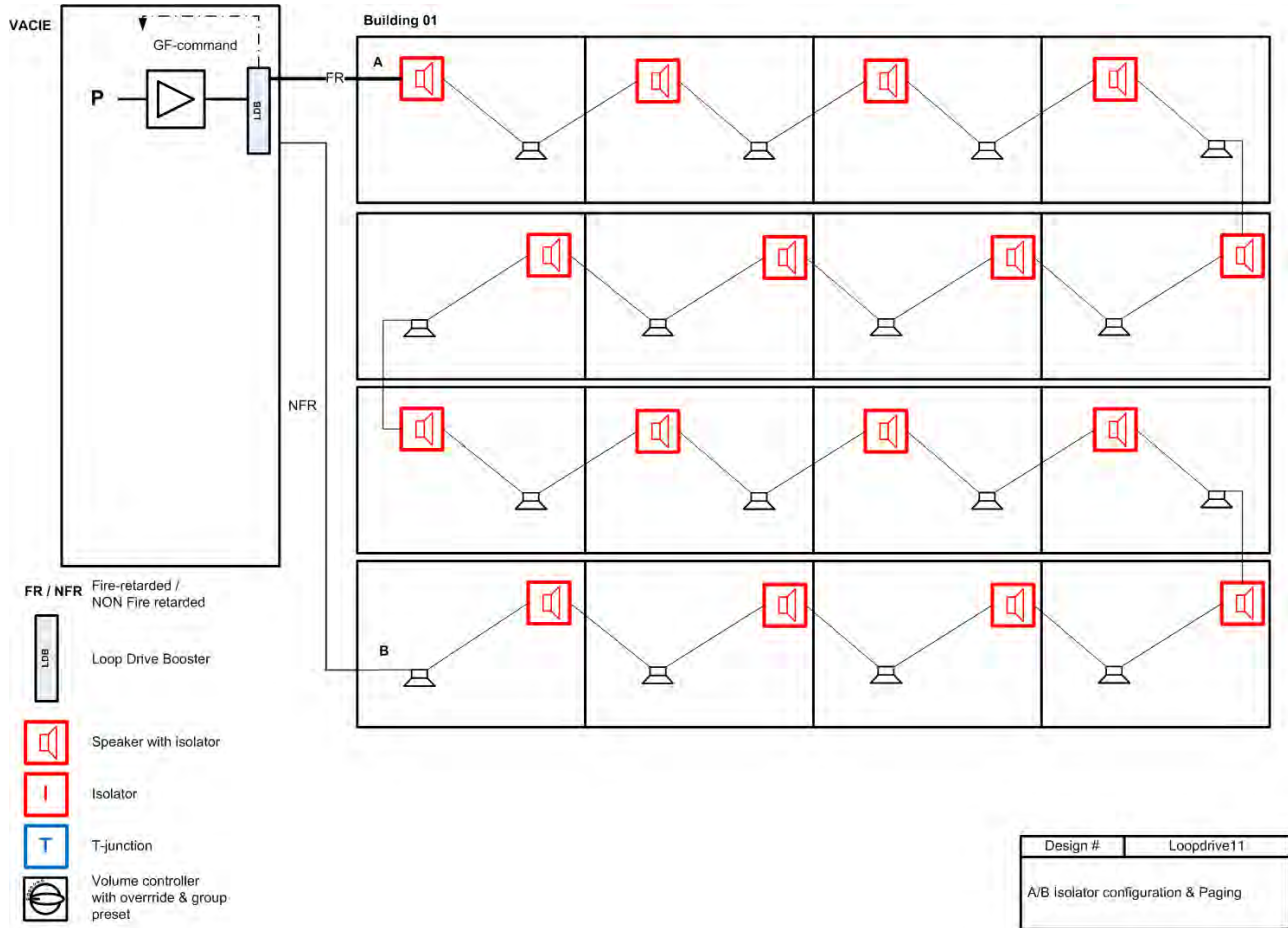
Typical Loopdrive A / B line for multiple-compartments with multiple paging amplifiers & LDB's:

Loopdrive booster LDB can act as a simple A/B splitting device where a FIM or FIM-with speaker acts as a compartment isolator separating compartments. By adding multiple LDB's to a multiple amplifiers you can address multiple areas saving cost and increasing system integrity.

The incoming and outgoing cables from the VACIE to the zones are wired as fire-retarded cackling in most cases, or at least one of the in- or outgoing is.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.

Field Isolator Module - FIM - Tutorial



Typical Loopdrive A / B line with single amplifier and single/multiple LDB's:

Loopdrive booster LDB can act as a simple A/B splitting device where a FIM or FIM-with speaker acts as a compartment isolator separating the A from the B cable. By adding multiple FIM's to a single amplifier you can address multiple areas saving cost on amplifiers & cabling.

The incoming and outgoing cables from the VACIE to the zones are wired as fire-retarded cackling in most cases, or at least one of the in- or outgoing is.

Cabling is typical 2-conduct. A third conduct can be used for optional earth-leakage detection and/or speaker to ground safety requirements.