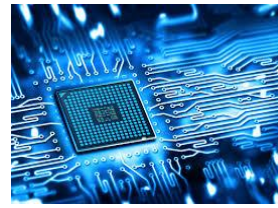


# PAGA AUTOMATIC INITIATION OF ALARM TONES

TDS-013 Issue 01 Zitel Technical Bulletin



Thank you for your interest in Zitel - we are a UK based manufacturer of PAGA and Intercom products. Our systems are mainly designed for use in the Hazardous Oil, Gas and Petrochemical industries.

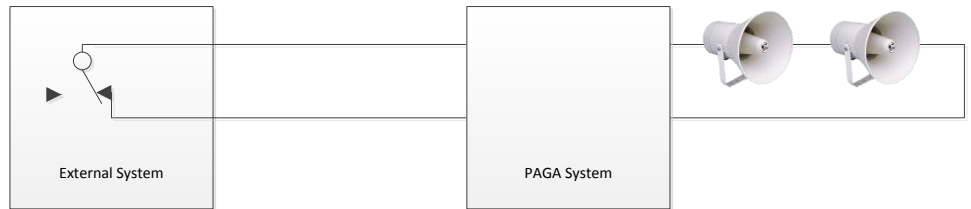
This Technical Data Sheet provides the reader with an introduction to Zitel PAGA auto alarm tone initiation from external site system-s such as the Fire and gas detection panel or ICSS.

Auto alarm tones can be temporarily disabled at the respective Zitel PAGA rack to allow service of the external auto alarm initiate inputs without risk of spurious alarm tone broadcast.

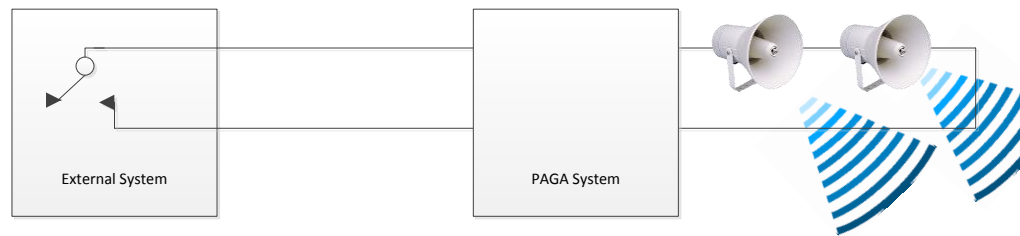
## PAGA AUTOMATIC INITIATION OF ALARM TONES

The PAGA System is often required to broadcast automatically initiated alarm tones. The connection to perform the required alarm control is made with other client specified systems including F&G Fire and Gas detection panels, ESD emergency shutdown panel and ICSS Integrated Control Safety System.

The interface between PAGA and the external initiating system is *usually* by a volt free / earth free contact. The contact is rated at 48 VD.C. 0.25A as standard with optional low voltage control inputs available to allow 5VD.C. switching.



The contact is normally arranged to be “fail safe” i.e. to maintain a quiescent status and opens to initiate the required alarm tone.



*Central processor type Zx100 carries auto alarm initiate disable key to prevent spurious alarm initiation when servicing the F and G or ICSS.*

There are two possible initiation modes that can be configured into the Zitel PAGA host management system:-

- 1) Latched contact alarm tone initiation
- 2) Pulsed or fleeting contact alarm tone initiation

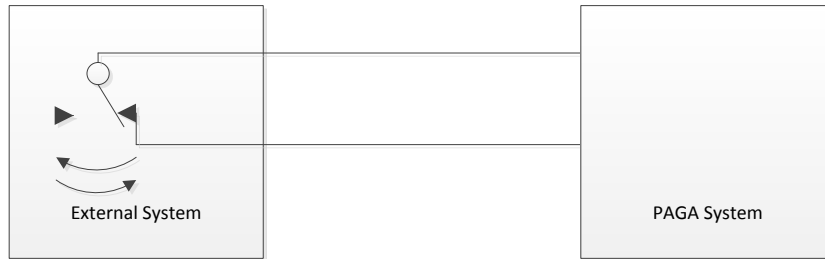
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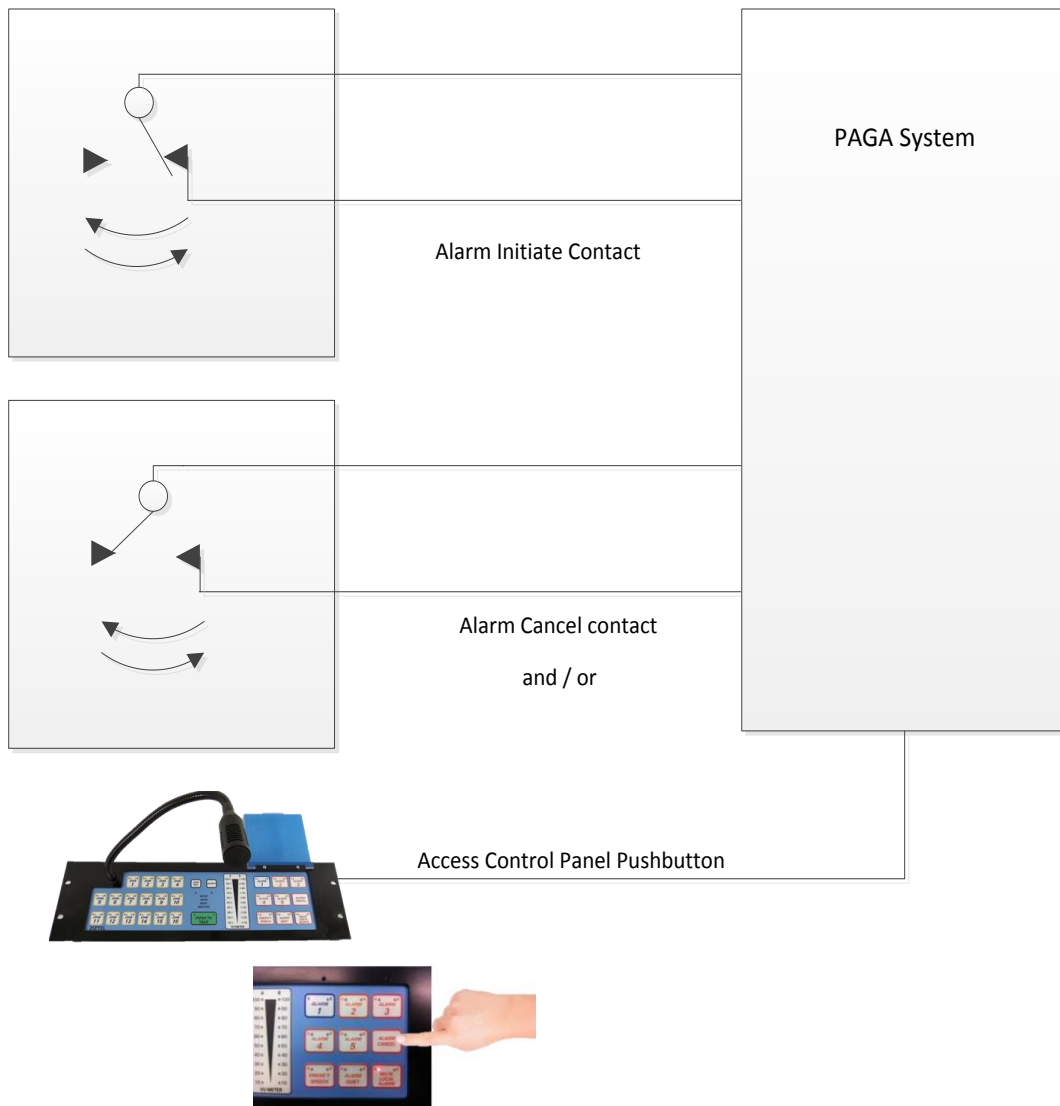
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Where latched alarm tone initiation is specified the respective control contact *opens* to broadcast the required alarm tone and *closes* to silence the alarm tone.

When fleeting alarm initiation is specified the respective contact opens for a minimum of 500 milli seconds which is detected by the PAGA system host management as a valid alarm tone routing request. The alarm tone is now broadcast and continues to broadcast even when the initiation contact returns the quiescent closed loop condition to the PAGA system.



The alarm is reset by momentary application of an access control panel “Cancel Alarm” push button press or an external volt / earth free momentary normally open “Cancel Alarm” contact closure.

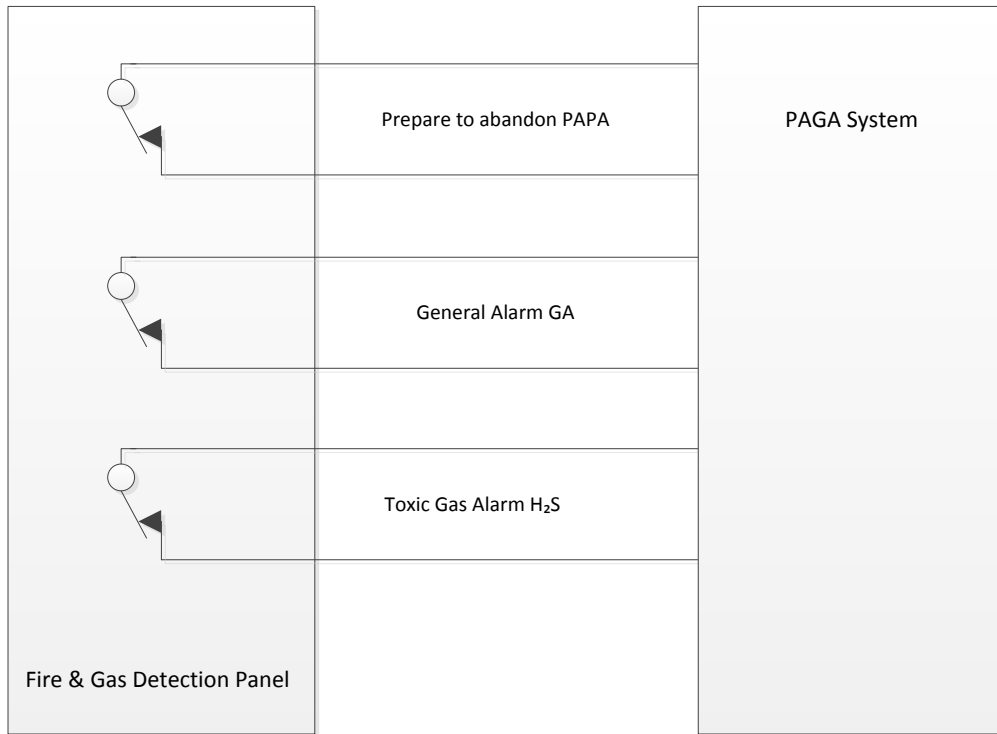


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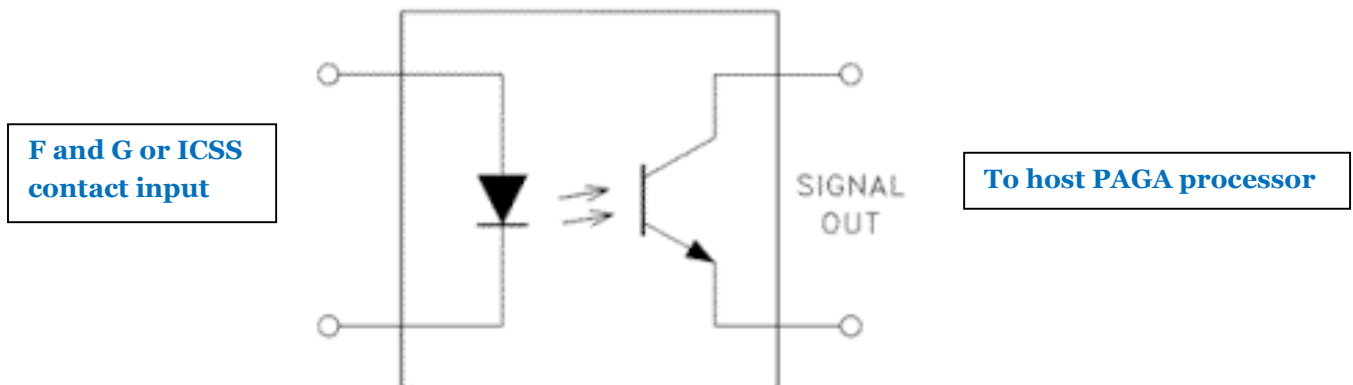
The system may require multiple automatic tone initiations, in this case two or more contacts are assigned depending on the number of alarm tones to be initiated by the system. In some applications the alarm tone may be required to broadcast to a particular area of the plant, in these instances a contact is assigned which provides a “zonal” initiation.



Where auto initiation of more than one alarm tone cadence is specified the alarm broadcast is conditional on a “priority” structure embedded within the PAGA system to ensure that in the event of multiple alarms being initiated only the alarm of the highest priority is routed to the system loudspeakers.

The PAGA incorporates an optically isolated switch for each interface input. This ensures that possible fault conditions on the connections between PAGA system and external system cannot be transferred to the host PAGA management control processor.

*Typical Zitel PAGA optically isolated input shown below ensures galvanic separation between PAGA system-s and external initiating panel*



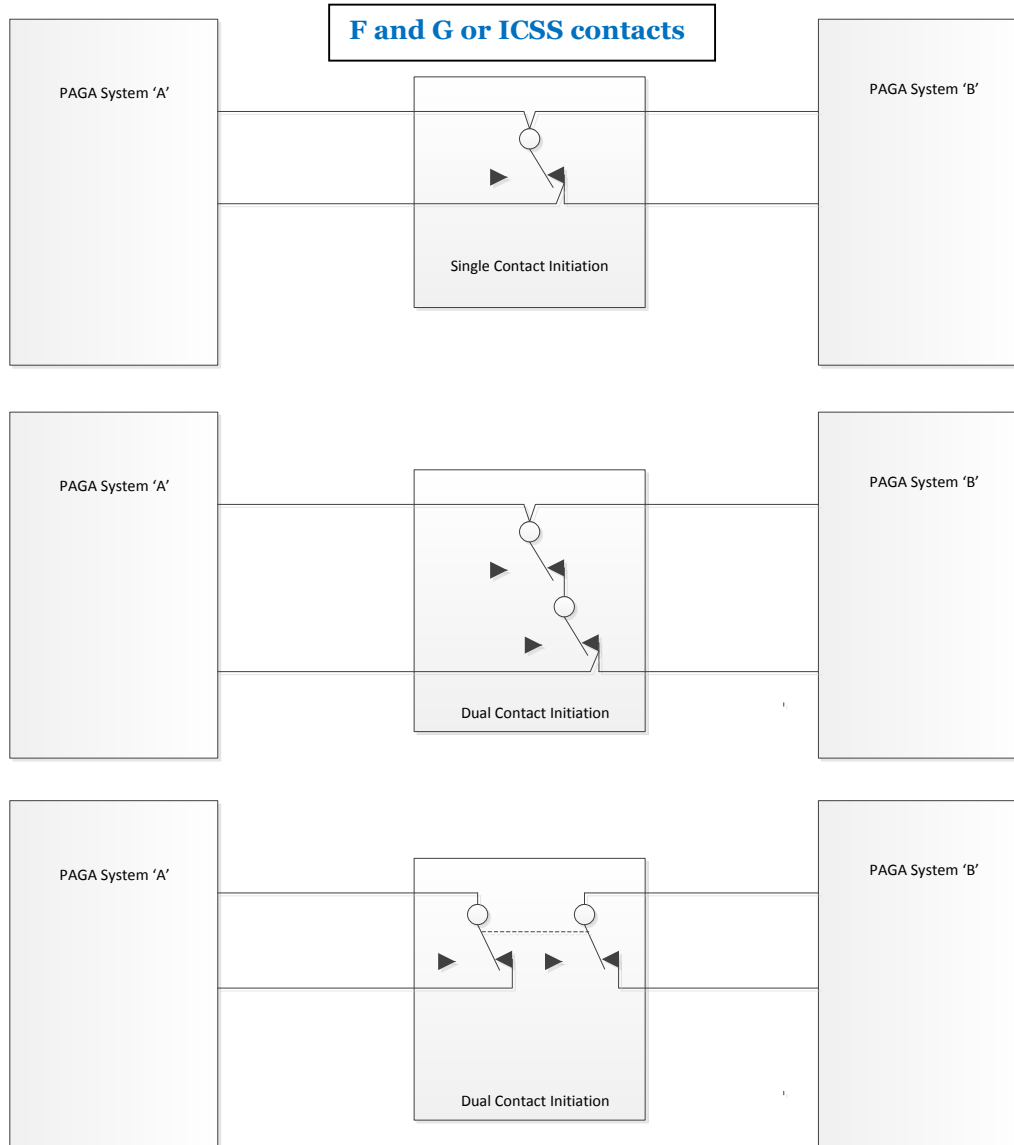
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## Duplicated PAGA Systems

Where N+1 or A+B PAGA architectures are specified the initiation contact interface can be implemented in a number of ways.



In a duplicated PAGA scenario each central rack A/B carries independent resources and operates entirely autonomously of the other subsystem. It is therefore vital to ensure that both A and B racks are given the **same** automatic alarm initiate condition at the **same** time to ensure both A and B are instructed to broadcast the same alarm tone at the same time. Optically isolated initiate inputs fitted inside each PAGA rack guarantee galvanic isolation between the two sub system A / B central racks and prevent a possible fault condition inside the A equipment cross transferring to the B system.

Alarm synchronisation between the two subsystems i.e. A and B is guaranteed by a separate dedicated isolated optically coupled cable pair which interconnects both racks on a fail-safe basis (i.e. if the sync cable is damaged then the alarm tone from both A and B subsystem is allowed to continue to play but un-synchronised).

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## ZIDo8 Interface Device

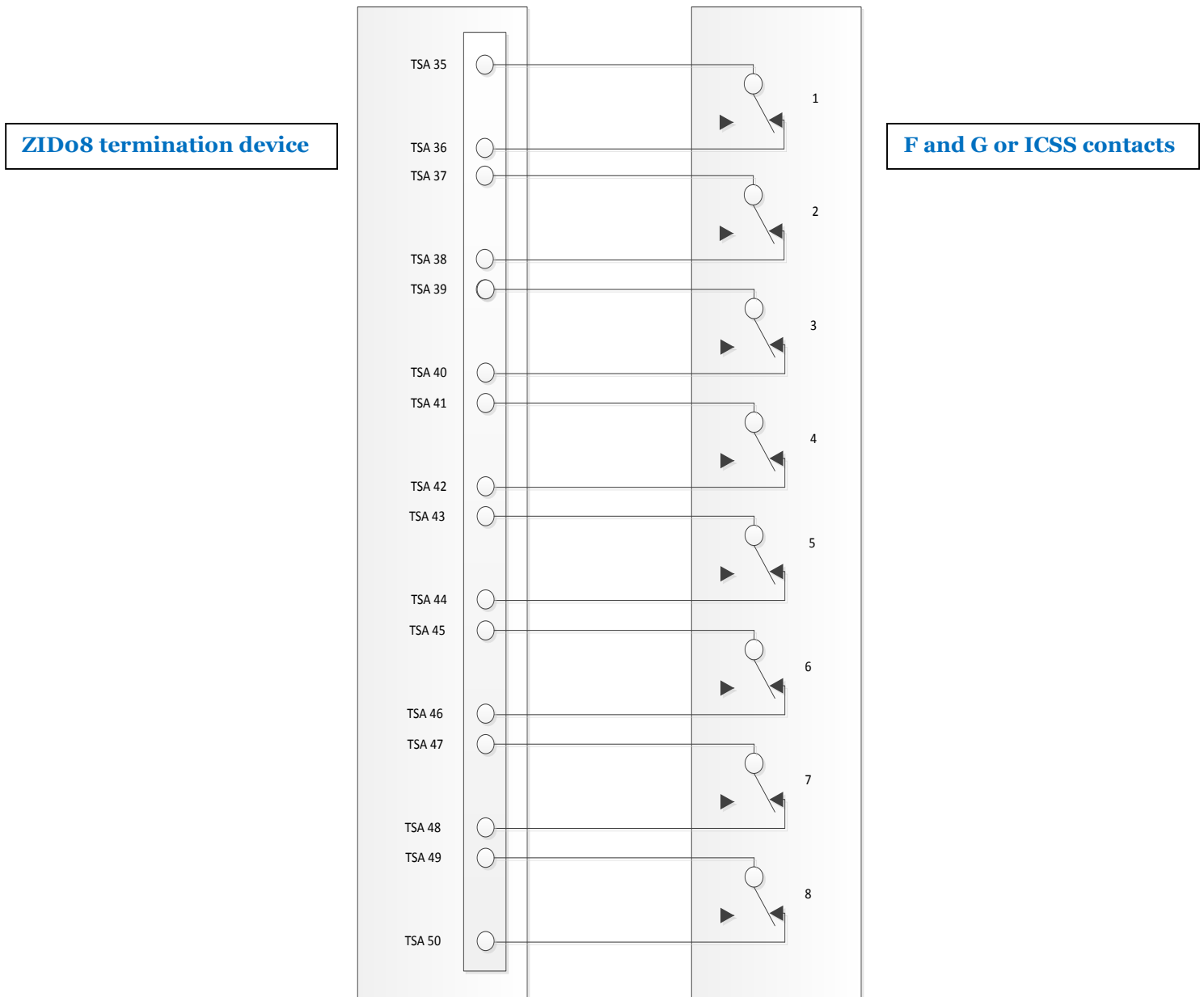
Auto alarm inputs and alarm synchronisation connections are connected to the PAGA central rack via the ZIDo8 Interface device.

There are a number of ZIDo8 options. *(See data sheets DS 017,018,019,108)*

The most commonly used are ZIDo8, ZIDo8-34F and ZIDo8-34A (ZIDo8-34F+ provides up to sixteen interfaces but does not carry Alarm synchronisation capability this must be separately given on either ZIDo8 or ZIDo8-34A). Contact inputs can be either form A or B – Normally open and closed to initiate or fail safe Normally closed open to initiate.

ZIDo8 enables up to eight interface points to be connected to external initiate contacts, the ZIDo8 can be cascaded to extend I/O facilities accordingly)t

The inputs are available on TSA as follows:-



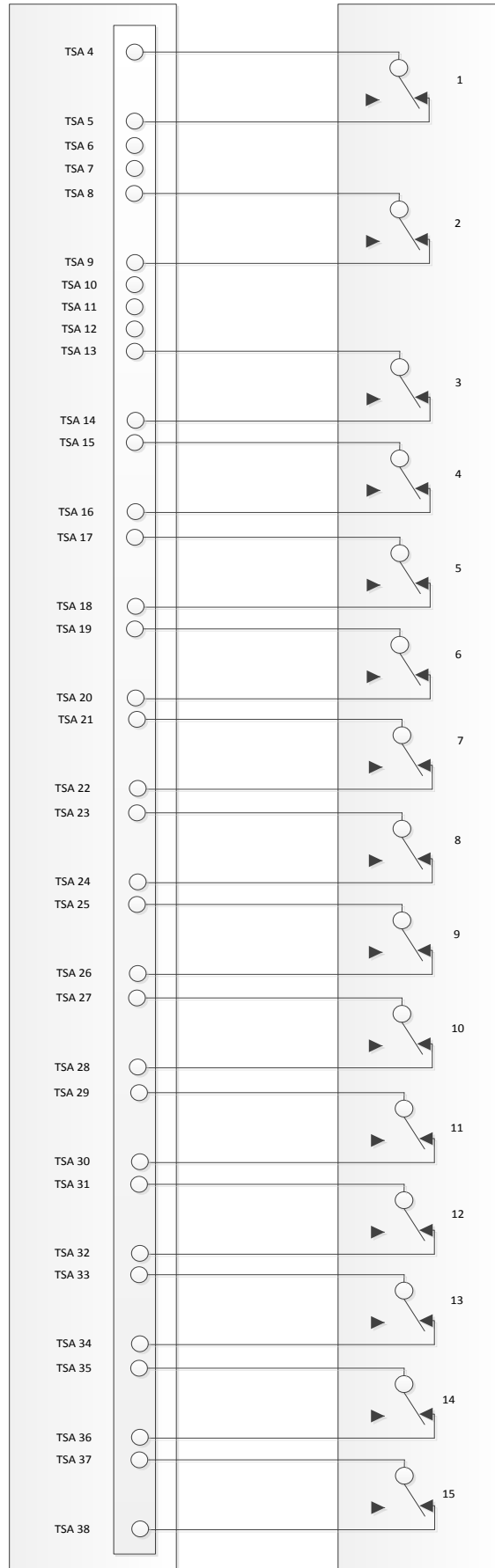
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ZIDo8-34A enables up to **fifteen** interface points to be connected to external initiate contacts.

ZIDo8-34A termination device



F and G or ICSS contacts

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