PACS SERVICES Ltd

SIS Quad Sense Operating Instructions

Operation

In normal operation the monitor boards will have a yellow flashing led on each board to indicate that the unit is working correctly. A red LED will only be lit when a sensor has been tripped or the “Sense” system has operated. Therefore as a quick check if no red LED is illuminated the system is working correctly.
The operation of the system can be easily checked by disconnecting a sensor, the corresponding Isolators will trip and the red LED will be lit continuously for that channel. It will now not be possible to reset the Isolators. By replacing the sensor connection, the channel can then be reset and then the Isolators can be reset.

The preferred test would be to activate the sensor in the pole and again check that all intended equipment on that pole has been isolated, which would prove the whole system.

With the introduction of the “Sense” system it is possible to set by channel a facility that will isolate a whole pole should one Isolator trip due to equipment fault. If set this can be tested by turning off an Isolator manually, if there is more than one Isolator for the pole the other Isolators will be tripped. This condition is indicated by the channel LED flashing slowly to distinguish the different reason for tripping. To reset a channel with “Sense” activated press the reset button, the channel LED will now flash quickly for 10 seconds to allow time for all associated Isolators to be reset. At the end of this period the lamp should extinguish, and all Isolators should be back on.

At initial commissioning it is important that all MCB’s are switched on before SIS power is applied, this will ensure the system learns the Isolator configuration.

Any unused channels should be switched off; channels not switched off have the potential to output trip voltages to unconnected wiring. If this results in a short the monitor board could be damaged.

Faults

Impact - In the event of an impact the controller or termination cabinet should first be checked to ensure the correct channel has tripped, and the corresponding Isolators are off. Once this has been determined the damaged pole can be removed and the cabling made safe. On replacement and once all wiring is complete the sensor can be refitted and the channel can then be reset, then the Isolator/s can be switched back on. It is important to check all heads etc. illuminate correctly in case of a wiring error.

Sense – If the channel LED is flashing slowly this will show the “Sense” system is activated and that the pole has been tripped by the “Sense” system, this would indicate that one Isolator has detected an equipment fault. To rectify reset the channel and whilst the LED is flashing quickly reset all the Isolators, depending on the fault the first Isolator to trip will be where the fault originates. In reality some equipment faults may take a period of time to trip the Isolator, in this instance it may be desirable to disable the “Sense” system on that channel so that only the one Isolator trips.

Maintenance

The QUAD units themselves should be checked at annual inspection, at this time the sensors should be operated to test the system. The system can also be used during maintenance to provide secure isolation. If the sensor is disconnected at the pole the power will be turned off and cannot be switched back on allowing safe maintenance to take place. Of course personnel must also test the supply has gone off with a test lead. Once the maintenance operation is complete the sensor can be refitted and the QUAD unit can be reset followed by the Isolators.

Fault Codes
The monitor boards have internal checking and can therefore show fault conditions using the front panel LED’s, these will give a series of quick flashes from 3 to 5 for different indications. The derails of these codes are given in the SIS QUAD handbook.

Switch Settings

DIP switches 1 to 4 will switch off monitoring of the same numbered channel.
DIP switches 5 to 8 will enable and disable “Sense” monitoring.
(Please switch off the SIS system before removing any monitor cards for changes)

Fault Outputs

Fault outputs are clean contacts, and can be configured as normally open or normally closed (Default NC).

1. Power failure will output both F1 and F2 together as NC to NO.
2. An impact fault will output F1 as a NC to NO.
3. A “Sense” fault will output F2 as a NC to NO.
4. System failure will output F2 as NC to NO.

SIS QUAD Sense Sample Wiring Layout