



# F&G SYSTEMS E-BOOK

# F&G SYSTEMS



Fire & Gas systems are designed to monitor environmental conditions and detect those variations that can be associated with an incipient fire or gas leakage. Most of the time the F&G system is formed by one or more control panels each of which is interconnected with field detectors, signaling units and actuators. The functions that an F&G system is normally called to perform are that of monitoring, warning, trip and actuate.

The monitoring function takes place between the panel and the detectors and it is aimed at detecting any environmental variation that can be associated with an anomalous condition. This is the case in detecting the presence of Smoke, Heat, Flame or Gas either combustible or toxic within the monitored area. Another monitoring function is also present between the panel and the instrumentation distributed in the area to monitor the status of the firefighting systems such as water or gas pressure, valves positions, system activations, etc.



The warning function is performed within the panel and the signaling unit located in the monitored area as well as within the panel and the master fire or control room. This function relates to the distribution of warning signals within the monitored area anticipating the formation of a threatening condition. The same is repeated to the control room where plant operators monitor the process.

The trip function is correlated with other superior systems such as the ESD or DCS and it is used to transfer the confirmation that certain hazardous conditions have been detected. The ESD or DCS normally acquire such trip and elaborate shut downs of the process equipment involved in the hazard, stops ventilation, de-energize rotating equipment or generators, etc.

The actuation function is performed within the F&G Panel and the actuators of those mitigation systems (such as water or foam deluge skid) that are provided to fight fires or contain gas clouds to spread.

SA Fire Protection offer a complete design of F&G systems for on-shore and off-shore applications based on PLC or EN 54 control panels. The system architecture are designed with SIL certified panels, detectors and actuators in order to grant the desired integrity level of each safety function.



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