

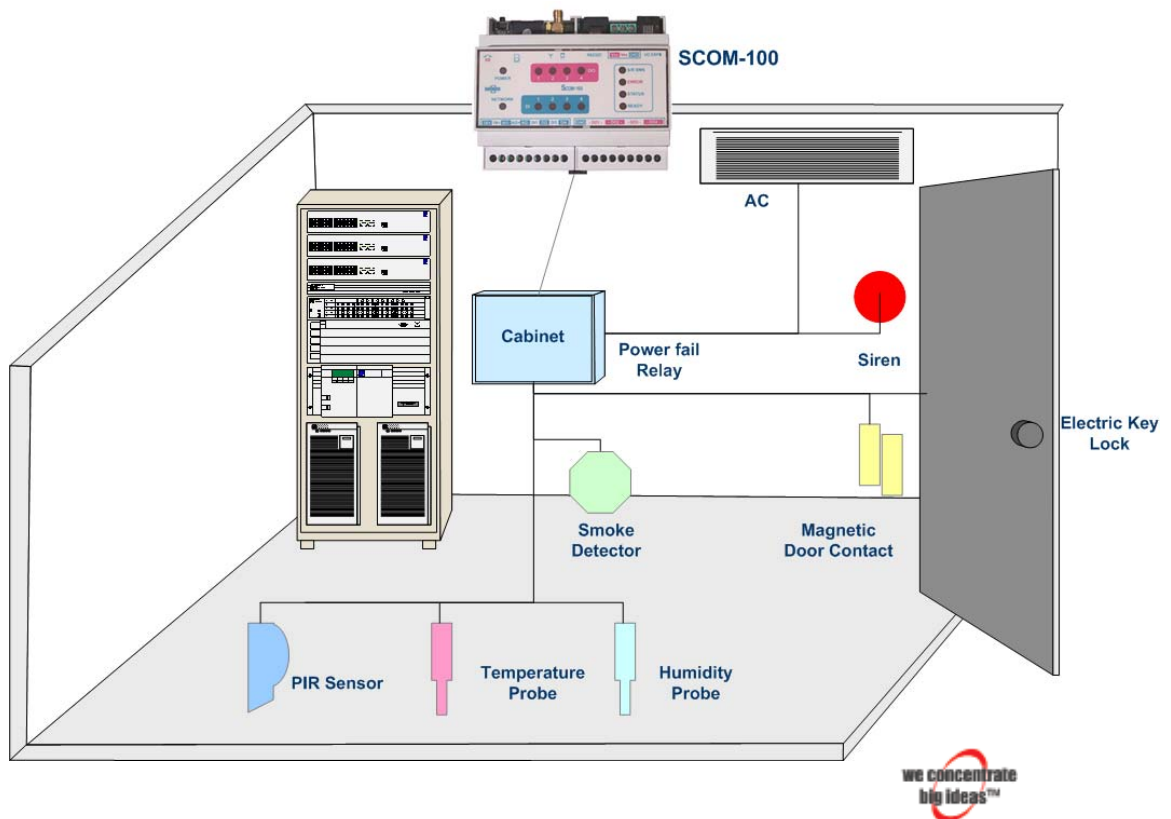
SCOM-100

SMS Alarm pager and remote controller

Application Note:

SCOM-100 Server Room Remote Monitoring

SCOM-100 is a GSM SMS alarming and remote monitoring & control unit. It is a low cost expandable I/O unit that can fit a vast series of applications ranging from domestic to industrial. In order to use it all that is needed is a SIM card and a user with a mobile phone.



At a computer-server room site it is desired to:

Safety Measurements & Monitoring

- Measure temperature and receive alarms when limits are exceeded,
- Measure humidity and receive alarms for exceeding limits,
- Receive alarms whenever there is a fire alarm,
- Receive alarms whenever there is a power failure and the UPS take on the power charges,

Security

- Automatically lock the entrance door based on a daily time schedule,
- Automatically engage a PIR security surveillance element based on a daily time schedule,
- Receive alarms whenever the door opens without a key,
- Allow only authorized users to enter the room.

Control

- Issue remote control commands to provide access to the room – open the door,
- Issue remote control commands to start an Air-conditioning unit,

- Issue remote control commands to open a window,
- Issue remote control commands to sound an intruder siren,
- Issue remote control commands to engage and disengage power in the room.
- Issue remote control commands to monitor measurements.

Elements needed to set up such a system:

- A SCOM-100 unit
- A 12V DC power supply to power the SCOM
- A GSM antenna to attach on the SCOM
- A GSM SIM card to insert in the SCOM unit
- A small plastic electric panel-cabinet to mount all the elements.
- A temperature probe (typically an AD592)
- A humidity probe (typically a 5-95% 4-20mA).
- A typical magnetic door contact to attach on a digital input of SCOM
- A typical 12V DC contact type PIR element (IR movement detector) to attach on a digital input of SCOM.
- A door key lock with an electric contact. It is recommended that the magnetic contact, the PIR and the key lock should be wired and powered via a relay attached to digital output of SCOM so that remote engage and disengage commands can be issued and also only authorized personnel with a key can enter the room.
- An intruder siren that can sound remotely and or immediately and or after a short delay when there is an intruder detected.
- A typical 12V DC contact type smoke detector.
- A power loss detection relay to be attached at a digital input to monitor power failures.

Functionality

For temperature:

If the temperature rises above 25°C an SMS alarm will be issued to a list of recipients which can decide and decide on,

1. Force the airconditioner to start and see if it happened,
2. Open a window if there is no Airconditioning,
3. Monitor the temperature and decide to get in the offices or wait until the morning because it is 3:00 in the morning,

For humidity:

1. High levels which might damage electronics will be alerted,
2. A potential water leakage in the Room will be immediately alerted.

For fire:

Receive an alarm via SMS when there is a fire detected.

For power management:

1. Receive an alarm via SMS when there is a power failure and estimate if the UPS will manage to provide power.
2. Remotely start a power generator after an appropriate delay.
3. Reset power on servers, switches, routers, etc
4. Extend the SCOM unit with an AI extension unit and also measure the quality of power eg. Voltage, current, frequency.

For security:

1. Automatically engage and disengage an intruder security system after 18:00 and until 7:00.
2. Enter the room during working hours with a key and or SMS commands from authorized mobile phone users.
3. Issue remote commands to allow maintenance personnel to enter the room

Note: A single SCOM-100 unit which has by default 2 analogue inputs, 4 digital inputs, and 4 relay digital outputs can manage all the above. The SCOM-100 can be extended for more digital inputs and outputs, more analogue sensors using extension units.