Gas Detection System Auxiliary Monitor

INTEC
CONTROLS

DESCRIPTION

AUXMON

When integrated with the IN*TEC* Controls DGC5-Series Digital Gas Detection and Control System, the Auxiliary Monitoring option AUXMON-CAT24-16 provides full compliance with the California Title 24 Building Efficiency Standard for Enclosed Parking Garages (2016; Sec. 120.6(c)).

The flexible, scalable, field-proven and UL 2017-certified DGC5 Controller retains all of the primary gas monitoring and fan control functions. This best-in-class controller has many levels of fan protection and fault detection designed into its core architecture and is typically configured to override its normal sequence of operation and run all fans at full ventilation in the event of a detected system fault or when scheduled maintenance is due.

- **Occupancy Schedule:** The Title 24 Standard requires that garage ventilation fans operate at prescribed minimum air flow during all occupied hours. An occupancy schedule is maintained in the AUXMON for this purpose. During occupied hours, the AUXMON signals the DGC5 that all fans are to be initiated at minimum air flow and the DGC adjusts the analog output signals upward as necessary to prevent the accumulation of toxic gas at or above the Standard's maximum of 25 parts per million. During scheduled unoccupied hours, the AUXMON signals the DGC that the fans may be stopped, however, the DGC is allowed to run the fans if the gas sensors detect the presence of significant toxic gas.

- **Outlier Sensor Detection:** The Auxiliary Monitor continuously evaluates the very specific conditions in the Title 24 Standard that define outlier gas sensor readings during both occupied and unoccupied hours. An "outlier" is a sensor that is reporting it's readings normally but whose readings are significantly different than the other sensors in the same fan zone and the difference persists over time. If an outlier is identified, an alert is issued (audible and/or visual and/or email) and the DGC5 is overridden to its fault mode sequence – fans on full.

- **LAN Connection:** The AUXMON includes one RJ-45 Ethernet port. Connection to a local area network and access to a valid email server is required if email alerts to the facility's operators are desired as a supplement to audible/visual annunciators.

- **Acceptance Testing:** The Title 24 Standard prescribes very specific acceptance tests. Many of these tests require the temporary override of normal monitoring parameters so that the resultant actions can be observed more quickly than under normal system operation. The DGC5 Auxiliary Monitor is equipped with selector switches and is pre-programmed to allow the contractor and inspector to step through the tests without having to manually enter the test mode parameters. At the completion of the tests, the switches are reset and the DGC5 / AUXMON system is returned to normal monitoring and control. For the convenience of the installing contractor and the local authority's inspector, IN*TEC* Controls provides a step-by-step Acceptance Test Procedure and a Certificate of Acceptance form that includes all of the prescribed elements of the Parking Garage Ventilation System Acceptance Tests (Sec. NA7.12). Such a Certificate of Acceptance is required by the Title 24 Standard before an occupancy permit is granted with only two exceptions: any garage, or portion of a garage, where more than 20% of the vehicles expected to be stored have non-gasoline combustion engines; or, additions and alterations to existing garages where less than 10,000 cfm of new exhaust capacity is being added (e.g. 13,333 square feet using the design ventilation rate of 0.75 cfm/sqft.).


DGC5-B Enclosure

*The Auxiliary Monitor will be shipped from IN*TEC* Controls pre-programmed for the garage's ventilation configuration (control zones), operating schedule and notification email addresses.*

The operating schedule and email list may be easily changed on-site with no programming knowledge required.

IN*TEC*
C O N T R O L S

SWITCH USAGE

The AUXMON option for the DGC5 Controller includes two, 3-position switches, designated (Top-Switch) and (Bottom-Switch). The switches are used to sequentially select the Title 24 Acceptance Test steps.

Normal Operations

Run **C** R   Run **C** R

T-Switch   B-Switch
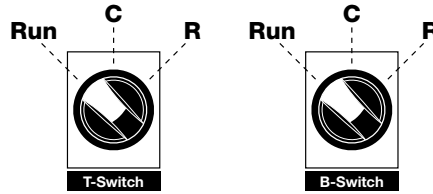
Except during acceptance testing, both switches should be set to the left ("Run") position.

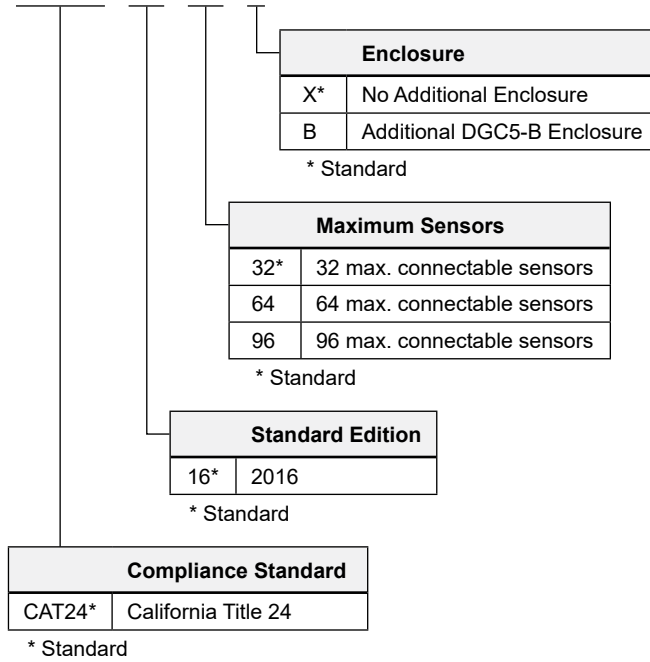|	TITLE 24 – ACCEPTANCE TEST PROCEDURES Functional testing steps as specified in Section NA7.12.2 of the Title-24-2016 Standard	
Test Procedures	**Switch Positions**	**Description/Instructions**
1: Sensor Test	**C** **C** T-Switch B-Switch	Verify that all sensor readings are OK and fans are running at minimum speed.
2: Bump Test	**C** **C** T-Switch B-Switch	Apply test gas to sensors in each zone to verify that fans ramp to full speed as required.
3: Service Due Test	**R** **Run** T-Switch B-Switch	The AUXMON temporarily loads a service due time of 5 minutes.
4: Unoccupied Mode Sensor Fault Test	**R** **C** T-Switch B-Switch	The AUXMON temporarily puts the system in unoccupied mode and loads a 1% outlier threshold and 5-minute outlier duration.
5: Occupied Mode Sensor Fault Test	**R** **R** T-Switch B-Switch	The AUXMON temporarily puts the system in occupied mode and loads 1% outlier threshold and 5-minute outlier duration.
Return to Normal Operations	**Run** **Run** T-Switch B-Switch	Placing the switches in the "Run/Run" position restores the system to its normal occupied / unoccupied schedule with normal parameters for sensor outlier detection.

RJ-45 ETHERNET PORT

The AUXMON option for the DGC5 Controller provides an externally accessible Ethernet connection via an RJ-45 connector. The IP address for the AUXMON is factory set and cannot be change by the operator; default IP 192.168.10.11, unless specified.

This port can be used for two functions:

- Connection to a LAN for real-time email alerts
- Direct connection to a computer/laptop for basic system monitoring

INTEC CONTROLS

ORDERING INFORMATION

AUXMON- XXXXX - XX - XX - X

Enclosure	
X*	No Additional Enclosure
B	Additional DGC5-B Enclosure

* Standard

Maximum Sensors	
32*	32 max. connectable sensors
64	64 max. connectable sensors
96	96 max. connectable sensors

* Standard

Standard Edition	
16*	2016

* Standard

Compliance Standard	
CAT24*	California Title 24

* Standard

SELECTION GUIDE		
# of Sensors	**DGC5 System + AUXMON**	**Available Space***
≤ 32	DGC5-B + **AUXMON**-xxxxx-xx-**32-X**	3
	DGC5-C + **AUXMON**-xxxxx-xx-**32-X**	10
	DGC5-B + **AUXMON**-xxxxx-xx-**32-B**	17
33-64	DGC5-C + **AUXMON**-xxxxx-xx-**64-X**	4
	DGC5-C + **AUXMON**-xxxxx-xx-**64-B**	18
65-96	DGC5-C + **AUXMON**-xxxxx-xx-**96-B**	12
	* DGC5 Options: CON5-A = 1 C5-BAC = 1 C5-MOD = 1 EP5 = 3	