

Multi-Point Gas Detection and Control System



DESCRIPTION

Wall mounted, microprocessor-based, multi-point, analog electronic control system for various gas, temperature and humidity detection, control and alarm.

APPLICATION

To control and alarm upon the presence of any toxic, combustible and refrigerant gases. Any combination of the AT-11/3300 series or other 4-20 mA transmitters can be connected to the control unit. The controller can interface via binary outputs, a 4-20 mA signal, and an optional BACnet coupler with any compatible electronic analog control, DDC/PLC control or automation system.

FEATURES

- Continuous monitoring
- Four (4) analog inputs, 4-20 mA
- Four (4) digital inputs
- Five (5) relay outputs:
 - Five-stage control
 - Fail-safe assignable
- Two (2) analog outputs, 4-20 mA
 - Selectable for low, high or averaging
- Built-in horn
- Accepts combination of toxic or combustible gases, refrigerants, temperature or humidity remote sensor inputs
- Optional BACnet coupler upwards communication to BAS
- Liquid Crystal Display (LCD)
- LED status indicators
- Keypad user interface
- Simple menu-driven programming
- RFI/EMI protected
- Modular technology
- Overload & short-circuit protected
- NEMA 4X enclosure
- Easy maintenance

SPECIFICATIONS

<p>Electric</p> <p>Power supply</p> <p>Power consumption</p> <p>RF/EMI protected</p> <p>Type of Control</p> <p>General</p> <p>Analog inputs</p> <p>Analog reading</p> <p>Stage level / setpoint</p>	<p>24 VAC/VDC, -15%/+20%, 50/60 Hz, auto-resettable fuse</p> <p>13 VA (0.5 A), w/max sensor connections for AT Series; other types of transmitters may require external power source</p> <p>4.0 W @ 3 ft. (1 m) radiated</p> <p>Five-stage (S1 to S5) control, assignable up to five (5) binary/relay output, i.e. Low-med-high-fault/fail-horn*, or low1-low2-med1-med2-high, or any other combinations (* = horn/audible alarm built-in and factory pre-configured to relay output "R05")</p> <p>Four (4) 4-20 mA</p> <p>Current and mean (average) value</p> <p>Field adjustable over full range, five (5) per analog input, assignable to current or mean (average) value</p>	<p>- hysteresis/switching differential</p> <p>Digital inputs</p> <p>- application</p> <p>Relay outputs (R1-R5) w/ status LEDs</p> <p>- each stage level (S1-S5)</p> <p>- sensor fail-safe</p> <p>Time delay switching</p> <p>Analog output</p> <p>Audible alarm</p> <p>Alarm acknowledgement</p>	<p>Selectable for each sensor point</p> <p>Four (4), each can be individually assigned to any relay (R1...R5). Remote audio/visual alarm reset or override function</p> <p>Five (5) SPDT, 8A 24 VAC/VDC-250 VAC contact resistance 100 mΩ, max. Assignable to any relay Assignable to any stage level Selectable for make and brake of each sensor point (SP1 to SP4) 0-9,999 seconds</p> <p>Two (2) independent 4-20 mA signal, 500 Ω max. load, selectable as low, high or averaging of sensor inputs</p> <p>85 db (10 ft), enabled or disabled, selectable; assignable to stage level S1, S2, S3, S4 or S5</p> <p>Menu-driven and system reset function for latched relays</p>
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**PolyGard
LGC2-04**



City of Los Angeles Approved



NRTL Tested & Certified
Conforms to STD
UL 2017

System performance tested in conjunction with PolyGard Carbon Monoxide & Combustible Gas Transmitters to STD UL 2075

BACnet Upwards Communication Option



SPECIFICATION

User Interface

Keypad type	Refer to "illustration keypad user interface"
Touch buttons	Six (6)
Status LED's	Yellow: Fault (fail) Red: Alarm
Digital display	Liquid Crystal Display (LCD), two lines, 16 characters per line, 1 digit resolution, backlit
- unit display	Menu selectable, per sensor; ppm, %v/v, %LEL, °F or % RH

BACnet Interface, optional*

	Read sensor's status information via BACnet coupler and BACnet-Profile, BACnet-Services and BACnet BIBBs
Input scaling	Coupler option "B"
0-250 ppm CO	Coupler option "P"
0-100%	
Communication	TCP/IP 10/100 Mbits/sec
Connector	Ethernet RJ45
Interface	BACnet-Profile
Description	BACnet-Services "Who-is (execute)" "I-am (initiate)" "ReadProperty" "WriteProperty"
Object types	Version B1.2, B2.2

Environmental

Permissible ambient	
- working temperature	23°F to 104°F (-5°C to 40°C)
- storage temperature	-4°F to 104°F (-20°C to 40°C)
- humidity	15 to 95% RH, non-condensing
- working pressure	Atmospheric ± 10%

Physical

Enclosure (panel)	
- material	Polycarbonate, impact resistance EN 50102/IK08, flammability rating UL 94-5V
- conformity	UL Type 1, UL508 standards
- color	Light gray, smoked gray for cover
- protection	NEMA 4X (IP 65)
- installation	Wall (surface) mounted
Dimensions (H x W x D)	
- base	7.9 x 7.5 x 4.1 in. (200 x 190 x 105 mm)
Cable entry	5 holes for 1/2 in. conduit, covered
Wire connection	Terminal blocks, Push-on connect and screw type for lead wire
Wire size	
- input	Min. 22 AWG (0.34 mm ²) Max. 16 AWG (1.50 mm ²)
- output	Min. 24 AWG (0.25 mm ²) Max. 14 AWG (2.50 mm ²)
Weight	4.5 lbs. (2.0 kg)

Approvals / Listings

- unit rating	NRTL Performance Tested & Certified Conforms to STD ANSI/UL 2017 City of Los Angeles CE VDI 2053, C-No. 418791 EMV-Compliance 89/336/EWG UL Listed, E75645
- enclosure (panel)	UL Listed, E75645
Warranty	Two years material and workmanship

ORDERING INFORMATION

LGC 2 - 04 - 0500 US

Option	
00	No options
01	Key Lock w/2 keys
B0	BACnet Upwards Communication Coupler "C5-BAC-98" for AT Transmitters (0-250 ppm CO)
P0	BACnet Upwards Communication Coupler "C5-BAC-98-1" for AT Transmitters (0-100%)

Standard control system, ordering part number:

LGC2 - 04 - 0500 US,
configuration includes:

Digital, programmable controller with menu-driven key-pad user interface, LCD & LEDs, 24 VAC/VDC, 50/60 Hz NEMA 4X enclosure

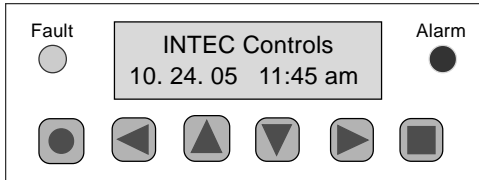
Inputs: (4) 4-20 mA
(4) Digital

Outputs: (5) Relays, SPDT, 8A
(2) 4-20 mA

(*) BACnet Interface: NRTL Certification to UL STD 61010-1 – "Pending"

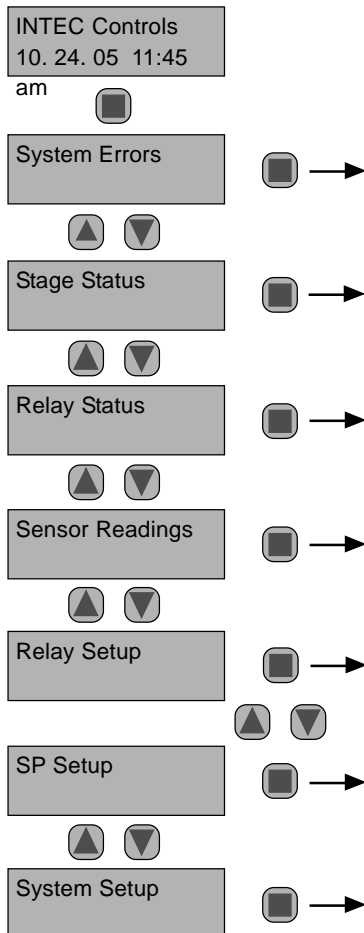
USER INTERFACE & CONTROLLER

Keypad User Interface



- Fault
"Yellow LED" Flashes at system / sensor failed
- Alarm
"Red LED" Flashes when any stage level setpoint is exceeded; steady when any relay output is in manual override operation
- Scroll down & up in Main menu and Sub menus; increases or decreases a value
- Navigates through menus on the same level; moves cursor when inputting data
- Exits programming and saves settings or return to previous level or menu
- Enter Sub menus or stores data; horn silence (if assigned)

Main Page & Main Menu



System Operation

All Programming is made via the keypad user interface in combination with the display screen. Security is provided via two password levels. The lower level password allows to override or to reset system status functions. The upper level password allows all programming and override functions.

Main Page Display

After powered on, displays INTEC and part number and changes to sensor reading display unless a system error occurs; then the error is displayed.

Main Menu

Displays headings of "System Errors", "Stage Status", "Relay Status", "Sensor Readings", "Relay Setup", "SP (Sensor Point) Setup", and "System Setup".

Sub Menu "System Errors"

Displays errors, reset corrected errors, and historical error summary.

Sub Menu "Stage Status"

Displays status of each "SP" sensor point, stage level/ setpoint exceeded.

Sub Menu "Relay Status"

Displays status and manual control of each output relay.

Sub Menu "Sensor Readings"

The current and mean/average values are displayed for each "SP" sensor point with sensing type and engineering unit (ppm, %v/v, %LEL, F, %RH).

Sub Menu "Relay Setup"

Enter and /or change parameters of each relay.

- Assign de-energized or energized normal operation
- Select steady or flashing function
- Select horn function
- Select latching or non-latching mode
- Select digital input usage, and assign to any output relay

Sub Menu "SP Setup"

Enter and/or change parameters of each sensor point.

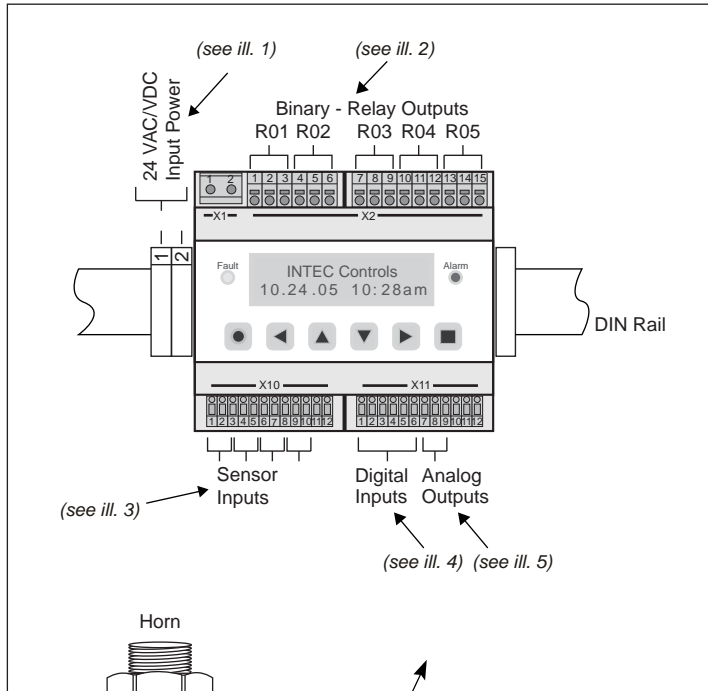
- Activate sensor point
- Select sensor point type (gas, temperature, humidity)
- Select measuring range
- Select sensor signal
- Select stage/setpoint 1 to 5
- Select hysteresis
- Set delay ON/OFF time
- Select current or mean/average value
- Assign sensor point fault to stage level setpoint
- Assign setpoint 1 to 5 to any output relay
- Assign to analog Output

Sub Menu "System Setup"

Enter and/or change system parameters.

- Select service mode
- Set next maintenance date
- Select service phone number
- Select averaging function, time and overlay, of any SP
- Set date, time and time format
- Change customer password
- Select analog output function
- Set failure relay
- Select power ON time
- Select appropriate hardware configuration

FIELD WIRING CONFIGURATION



Recommended

- **Twisted, shielded wire for analog inputs**
(Shield to be terminated and connected only at the sensor/transmitter location)
- **Grounded housing**

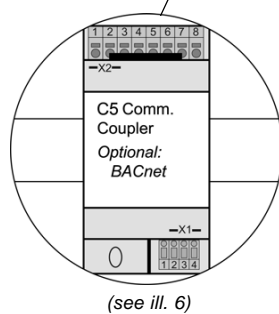
Caution:

The non-metallic enclosure does not provide grounding between conduit connections. Use grounding bushings and jumper wires.

The enclosure is to be mounted using the mounting holes located in the base external to the equipment cavity, or the equivalent.

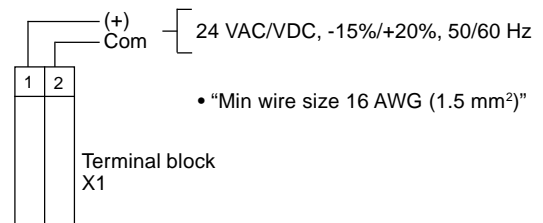
The conduit hubs must be connected to the conduit before connected to the enclosure.

When connecting conduit to the enclosure use only UL listed or UL recognized conduit hubs that have the same environmental type rating as the LGC2 enclosure.

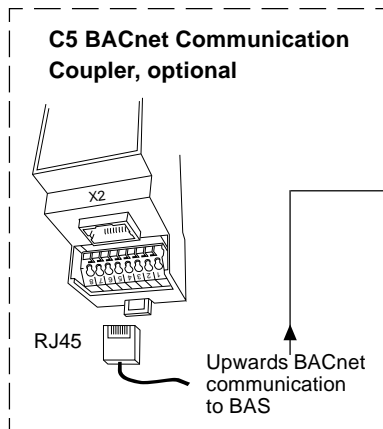


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24 VAC/VDC Input Power Supply

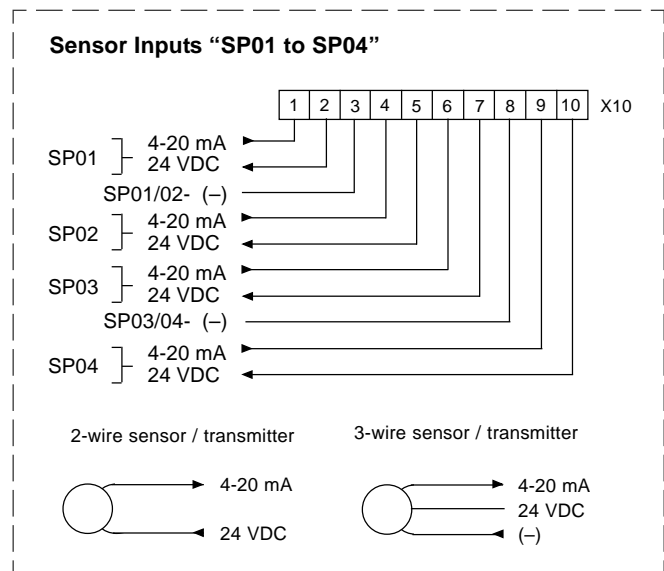
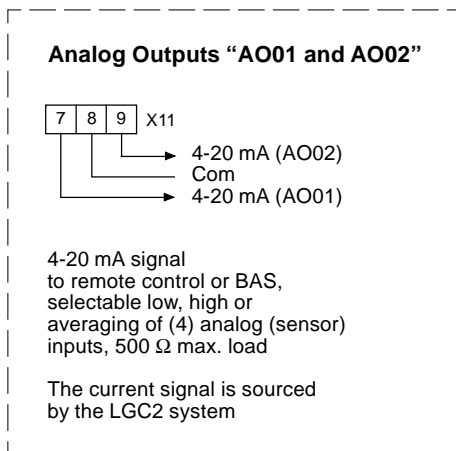
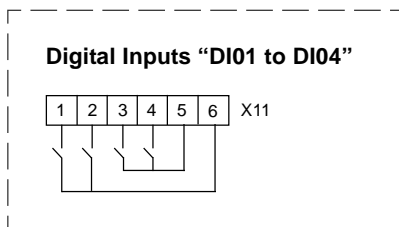
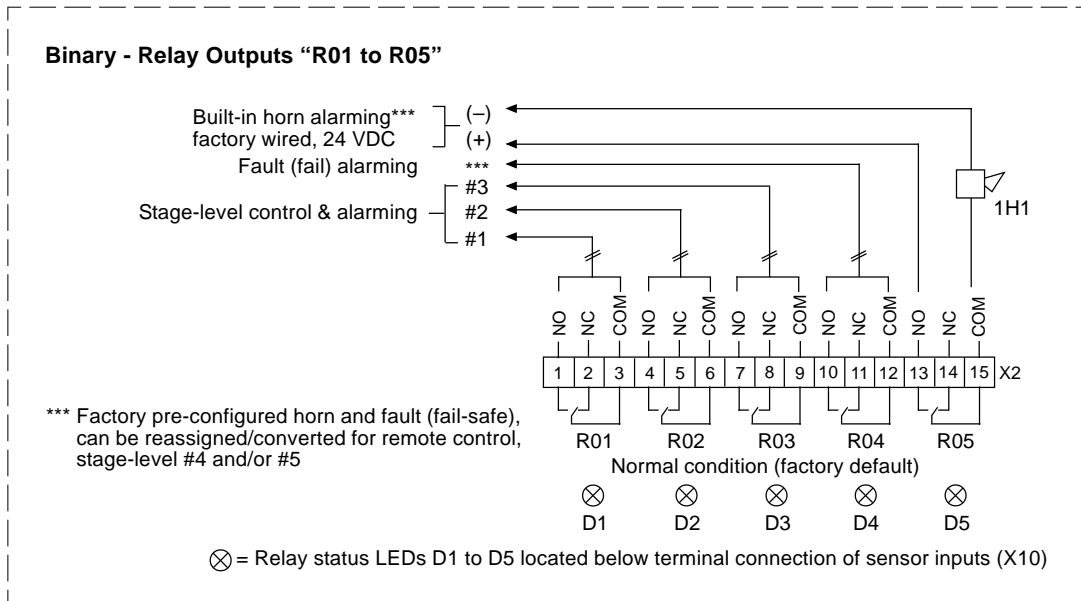


ill. 1



ill. 6

FIELD WIRING CONFIGURATION (cont...)



Note: Sensor inputs other than AT Series Transmitters with a power consumption of greater than 55 mA requires a separate DC power supply.