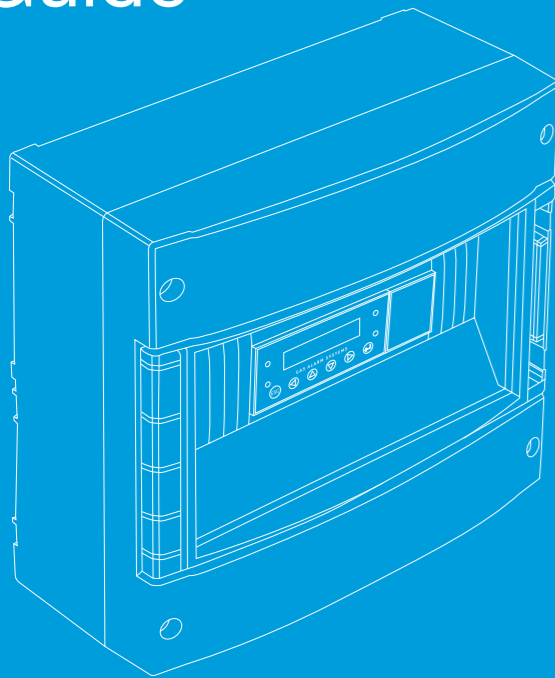


# Quickstart 1

# DGC6 Installation Verification Guide



## Read in its entirety **before** attempting Installation Verification!

### Installation Verification Checklist

(See the DGC6 User's Manual for additional information)

#### DO NOT SUPPLY POWER TO THE DGC6 OR POLYGARD®2 NETWORK DURING INSTALLATION VERIFICATION!

- 1. Verify that the DGC6 Controller is mounted at eye level and has adequate unobstructed clearance around the unit.
- 2. Verify that the working ambient temperature of the space is within the operating parameters of the Controller: 23°F to 104°F (-5°C to 40°C).
- 3. At the electrical panel, verify and record dedicated 120 Volt power circuit for the Controller. Do not turn on the power breaker at this time!

#### DGC6 Voltage Reading (VAC)

- 4. Verify trunk cable is Connect-Air #W202P-2288INTEC cable or equivalent (20 AWG, 4-conductor, one shielded twisted pair, all wires different colors). Use red & black for DC power and shielded, twisted pair blue & green for RS-485 communication.

*Note: If EP-06-I-100 units are distributed along the communication bus it is required that each be powered by a separate DC power supply with only the common (0 VDC) connected to the prior bus segment.*

- 5. **Important:** The trunk cable polarity must be maintained from DGC6 Controller to each digital transmitter. (Illustration 1 & 2)
- 6. **Important:** The trunk cable wiring must be daisy-chained: Controller to transmitter, then transmitter to transmitter; trunk-splitting not allowed without remote EP-06 Expansion Modules; see EP-06 datasheet. Each transmitter should have 4 wires entering and 4 wires leaving.

DT6: Power at terminal X4 pins 1(+) and 2(-), comm. at terminal X4 pins 3(A) and 4(B).  
DC6: Power at terminal X1 pins 3(+) and 2(-), comm. at terminal X12 pins 1(A) and 2(B).  
(Illustration 2)

- 7. **Important:** The cable shields must be continuous and not grounded at any point along the communication run. The shields should be taped so there is no possibility of shorting to ground in the sensor housings. The communication cable shields should be taped back at the Controller. Do not cut them off since it may be necessary to ground them to earth ground if communication problems are experienced.

*Note: Systems installed in protective conduit will have better noise immunity even if it is not required by local code.*

- 8. When installing the transmitters verify that the address number labeled on the outside of the housing matches approved layout plans. Typical DGC6 are specifically programmed for each project. Sensor addresses must be in sequential order per provided riser diagram to simplify communication troubleshooting and ensure proper zone control.
- 9. Confirm that a 560 ohm resistor was manually installed across the RS-485 communication terminals "F\_Bus\_A" & "F\_Bus\_B" for the last device on each trunk segment. (Illustration 3)

DT6: Terminal X4 between pins 3(A) and 4(B).  
DC6: Terminal X12 between pins 1(A) and 2(B).

*Note: The addition of an EP-06-I-100 Remote Expansion Module can create a new trunk segment at its location while continuing the original trunk; the new trunk segment must also terminate with a 560 ohm resistor at the last device. See reverse side for network overview.*

- 10. A DR6 transmitter may be piggybacked to a DT6 transmitter; verify that the distance of the remote digital transmitter does not exceed 16.4 ft (5 m). See DT6 datasheet.

A DC6 transmitter may have a total max. of 3 total sensors from a pool of 2 digital sensors and 2 remote analog sensors. The distance of an analog sensor is not limited. See DC6 datasheet.

- 11. Measure and record below the physical length for each trunk in the system (up to 8). The maximum permissible length of the trunk segment is determined by the number and types of devices being powered; see reverse side for per unit power consumption. A repeater/power booster is required if the total power consumption exceeded 1,000 mA per trunk segment or if the actual physical length is longer than the calculated maximum allowed trunk length.

For additional assistance, consult INTEC Controls' DGC6\_Single-Trunk-Length-Verification spreadsheet or contact your account executive.

Calculate the Length (ft) of each Trunk							
T1	T2	T3	T4	T5	T6	T7	T8
<b>Total Length (ft) All Trunks =</b>							

- 12. **Important:** All transmitter terminal blocks, with communication and power, must be unplugged from the printed circuit boards during this procedure.

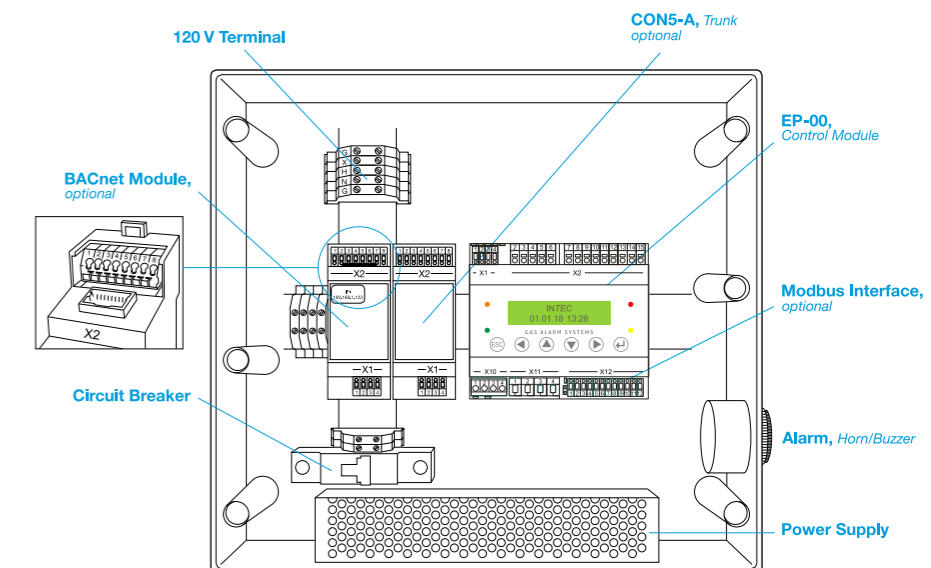
At the DGC6 Controller measure and record below the resistance (ohms) between the trunk cable RS-485 communication wires A and B for each trunk in the system. Resistance should be greater than 560 ohms, but less than 640 ohms. (Illustration 3)

Measure and Record Resistance (ohms) of each Trunk							
T1	T2	T3	T4	T5	T6	T7	T8

- 13. Check all trunk cables, with communication and power, and verify no short to ground.
- 14. If all measurements are within system parameters then terminate the trunk cables at the DGC6's Control Module or CON5 Module. (Illustration 1)
- 15. Reconnect the terminal blocks to their circuit boards. Remove protective sensor caps only after all construction and painting are completed.

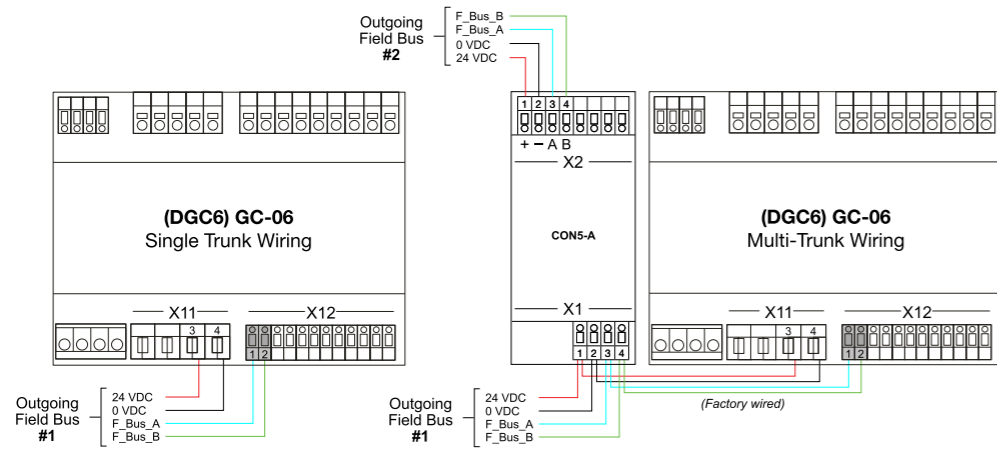
#### Installation Verification Procedure completed.

Technician/Installer's Name(s):	
Installation Date:	

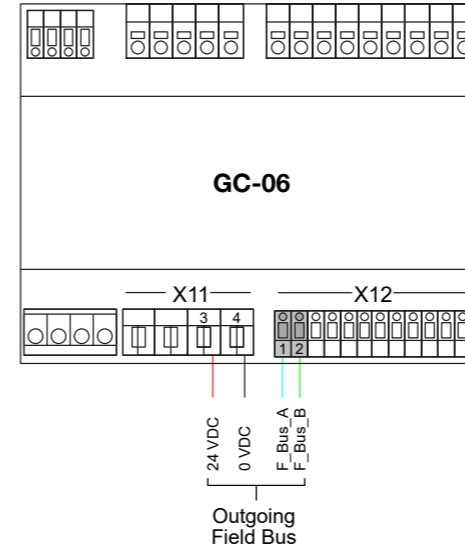


### ILLUSTRATION 1

Single trunk versus multi-trunk field connections. For networks with more than (2) trunks, "Outgoing Field Bus #1" connects to additional CON5-A Modules in similar fashion at terminal block X1; trunk numbers are assigned in the order they are wired from the GC-06, with the "Outgoing Field Bus #1" remaining static as trunk #1.



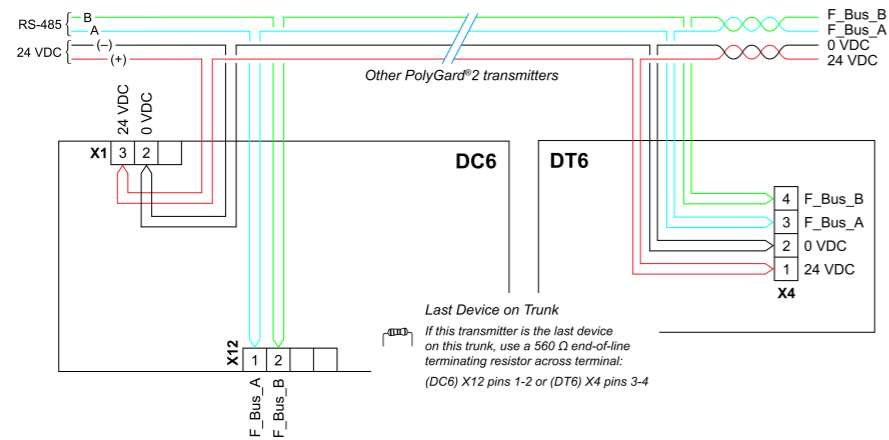
## PolyGard®2 DGC6 Multi-Point RS-485 Digital Gas Detection and Control System



Unit Type	Unit Power Consumption (mA)
DT6 - w/1 Tox (ie. CO/NO2), O2	8
DT6 - w/2 Tox (ie. CO/NO2), O2	10
DT6 - w/1 Comb (ie. CH4)	56
DR6 - w/1 Tox (ie. CO/NO2), O2	2
DR6 - w/1 Comb (ie. CH4)	50
DC6 - w/1 Tox (ie. CO/NO2), O2	57
DC6 - w/2 Tox (ie. CO/NO2), O2	59
DC6 - w/1 Comb (ie. CH4)	105
EP-06-I-100 (exp module, +4 relays)	120

### ILLUSTRATION 2

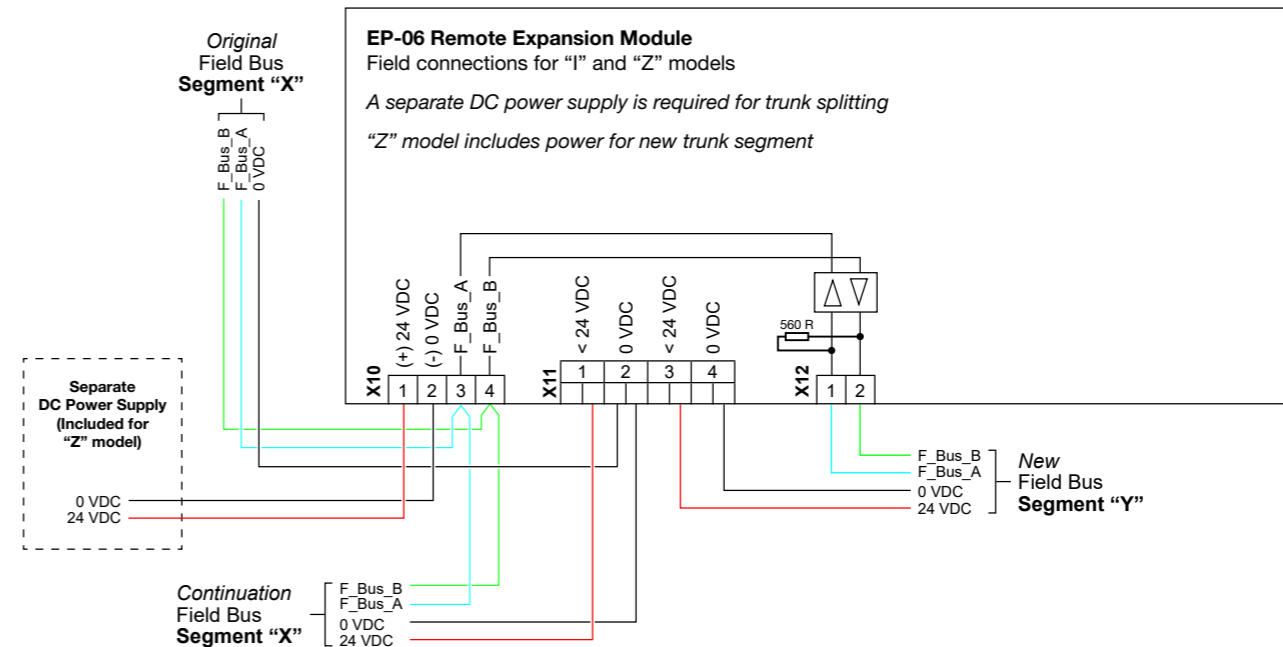
The trunk cable wiring must be daisy-chained from device to device; each with 4 wires entering and 4 wires leaving. If the DC6 or DT6 transmitter is the last device on the trunk, install a 560-ohm resistor across the communication lines "F\_Bus\_A" and "F\_Bus\_B." Use Connect-Air #W202P-2288INTEC cable or equivalent.



Original Field Bus Segment "X"

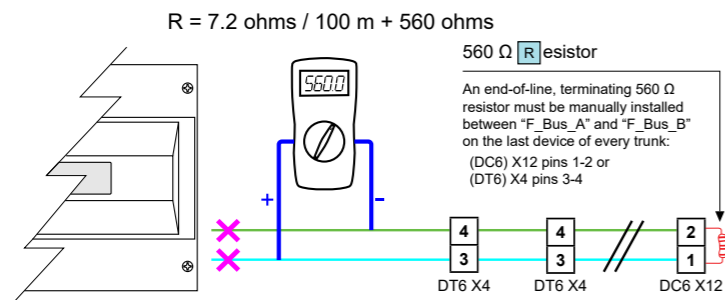
EP-06 Remote Expansion Module Field connections for "I" and "Z" models

A separate DC power supply is required for trunk splitting  
"Z" model includes power for new trunk segment



### ILLUSTRATION 3

Communication wires to DGC6 Controller and all terminal blocks must be disconnected from the printed circuit boards prior to measuring resistance. The measured result should be greater than 560 ohms but less than 640 ohms.



### TRAINING & CERTIFICATION

PolyGard®2 Series Commissioning and Service Certification Classes are available! Contact your account executive or: info@inteccontrols.com www.inteccontrols.com/certification-training.html

### ADDITIONAL REFERENCES

DGC6 Datasheet  
DGC6 UserManual  
DGC6 Quickstart2 Startup & Commissioning Guide  
DGC6 Installation & Commissioning Guidelines  
DGC6 Modbus-Supplement UserManual  
DGC6 Single Trunk Length Verification  
www.inteccontrols.com/gas-detection/DGC6.html



Still need technical assistance? Lets us know, we're here to help!

INTEC Controls  
Phone: (858) 761-9324 TECH SUPPORT  
Fax: (858) 578-4633  
Email: info@inteccontrols.com  
Web: inteccontrols.com

