

# DGC-2020ES Digital Genset Controller



## Overview

The DGC-2020ES Digital Genset Controller is a rugged, reliable, and easy-to-use genset control system. It is designed to be a cost effective controller for gensets that will either be islanded or used in a mains failure scenario. The DGC-2020ES has all of the essentials needed for complete genset control, protection, and metering with simple, intuitive programmable logic.

## Features

- Generator control
- Engine and generator protection
- Automatic transfer switch control
- Automatic generator configuration detection
- Extremely rugged, fully-potted design
- Seven programmable contact inputs
- Three-phase mains fail detection (optional)
- SAE J1939 engine ECU communications (optional)
- Programmable analog engine senders
- Resistive sender inputs for oil pressure and coolant temperature (optional)
- Multilingual capability
- Remote annunciation with the Basler RDP-110C (remote display panel)
- Event recording (up to 30 events in nonvolatile memory)
- Start, run, and prestart relays and four programmable outputs
- Exercise timer
- Additional contact input/output module (CEM-2020) available to expand the capabilities of the DGC-2020ES
- Tier 4 compliance - symbol handling and alarm capabilities

## Benefits

- BESTCOMSP<sup>Plus</sup>® provides flexible workspace, intuitive settings and graphs, built-in error checking, and summary screens to easily make settings with confidence.
- Controller ruggedness and flexibility make it ideal for rental gensets.
- Flexibility provided by features such as:
  - High-line/low-line override
  - Single-phase or three-phase override
  - Wye/delta/ground delta configurable
  - Alternate frequency override (50/60 Hz)
- BESTlogic<sup>™</sup> Plus preprogrammed schemes and drag and drop logic makes it easy to create logic with confidence.

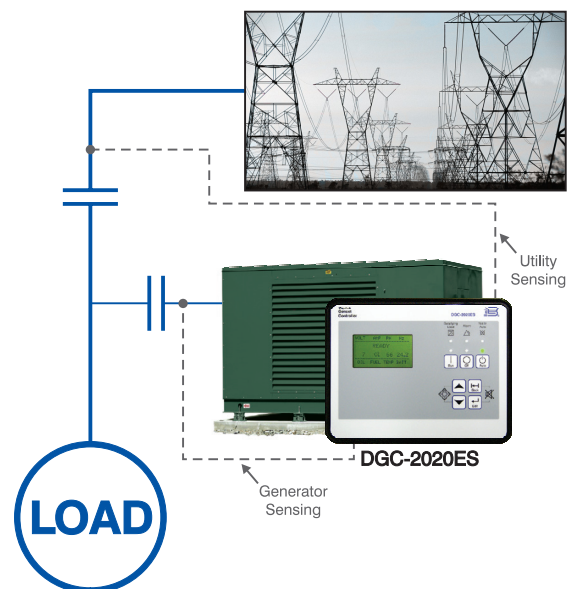


Figure 1 - Typical DGC-2020ES Connection Diagram

## Specifications

### Power Supply

Nominal:	12 or 24 Vdc
Range:	6 to 32 Vdc
Battery Ride Through:	Starting at 10 Vdc, withstands cranking ride through down to 0 Vdc for 50 ms

### Power Consumption

Sleep Mode:	4.5 W
Normal Operation Mode:	6.5 W
Maximum:	14 W

### Current Sensing

1 A Sensing:	0.02 to 1.0 Aac, continuous 5 Aac for 1 second 10 Aac for 0.05 second
5 A Sensing:	0.1 to 5.0 Aac, continuous 25 Aac for 1 second 50 Aac for 0.05 second
Burden:	1 VA

### Voltage Sensing

Range:	12 to 576 Vrms L-L
Frequency Range:	10 to 72 Hz (50/60 Hz nominal)
Burden:	1 VA
1 Second Rating:	720 Vrms

### Contact Sensing

Contact Inputs (7):	Accepts normally open (N.O.), Dry Contacts, programmable
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### Resistive Senders

Fuel Level Sender:	5 to 250 $\Omega$ nominal
Coolant Temp Sender:	5 to 2,750 $\Omega$ nominal
Oil Pressure Sender:	5 to 250 $\Omega$ nominal

### Engine Speed Sensing

Magnetic Pickup:	
Voltage Range:	6 to 70 Vpp
Frequency Range:	32 to 10,000 Hz
Generator Voltage Range:	12 to 576 Vac
Via ECU over J1939	

### Output Contacts

Fuel Solenoid, Engine Crank, Pre-Start Relays Rating:	5 Adc at 28 Vdc make, break, and carry
Programmable Relays:	4
Rating:	2 Adc at 28 Vdc make, break, and carry

### Metering

Generator and Bus Voltage:	0 to 576 Vac, $\pm 3\%$
Generator Current:	0 to 5,000 Aac, $\pm 3\%$
Generator and Bus Frequency:	10 to 72 Hz, $\pm 0.25\%$
Power Factor:	0.2 lead, 0.2 lag, $\pm 0.02$
Real Power:	PF x Total kVA, $\pm 5\%$
Oil Pressure:	0 to 150 psi (0 to 10.3 bar) (0 to 1,034 kPa)
Coolant Temp:	32 to 410°F, (0 to 204°C), $\pm 3\%$
Battery Voltage:	6 to 32 Vdc, $\pm 3\%$
Engine RPM:	0 to 4,500 rpm, $\pm 2\%$
Engine Run Time:	0 to 99,999 hrs, $\pm 1\%$
Maintenance Timer:	0 to 5,000 hrs, $\pm 1\%$
Fuel Level:	0 to 100%, $\pm 3\%$

### Protection

Generator:	27, 47, 50, 59, 810/U
Engine:	Oil pressure, coolant temperature, overcrank ECU specific elements, and diagnostic reporting

### Agency/Certifications

NFPA, CE, and UKCA compliant, UL (cURus) recognized, UL 6200:2019 recognized, China RoHS compliant

### Communication

USB Port:	USB 2.0, Mini-B jack
RDP-110C (optional):	4,000 ft (1,219 m) max wire length, 20 AWG (0.52 mm2) min wire size
CAN bus:	250 kb/s communication rate, 1.5 to 3 Vdc differential bus

### Environmental

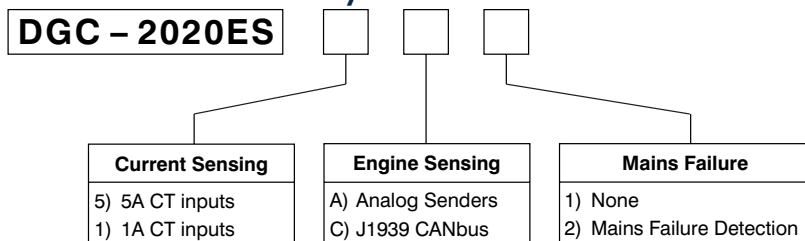
Operating Temp:	-40°C to 70°C (-40°F to 158°F)
Storage Temp:	-40°C to 85°C (-40°F to 185°F)
Humidity:	IEC 68-2-38
Salt Fog:	IEC 68-2-52
Ingress Protection:	IEC IP56 for front panel
Shock:	15 G in three perpendicular planes
Vibration:	
3 to 25 Hz:	0.06" (1.6 mm) peak amplitude
25 to 2,000 Hz:	5 G

### Physical

Weight:	1.9 lb (0.86 kg)
Dimensions (WxHxD):	8.81" x 6.81" x 2.57" (223.8 mm x 173.0 mm x 65.3 mm)

For complete specifications, download the instruction manual at [www.basler.com](http://www.basler.com).

## Style Chart



Visit the DGC-2020ES mobile site!

Use your smartphone and scan the QR code to gain quick access to our mobile-enabled site featuring the field support information you need.

[m.basler.com/qrs/DGC-2020ES](http://m.basler.com/qrs/DGC-2020ES)



## Related Products

### DGC-2020 Digital Genset Controller

Controller with additional features such as automatic synchronization and load sharing.

### AVC63-4 Automatic Voltage Regulator

For brushless generators from 5 kW to more than 100 kW.

### AVC63-7 Automatic Voltage Regulator

For brushless generators from 100 kW to over 500 kW.

## Accessories

### RDP-110C Remote Display Panel

Provides remote alarm and pre-alarm indication and annunciation of system status, easily meeting the annunciation requirements of NFPA-110 applications.

### CEM-2020 Contact Expansion Module

Provides additional contact I/O for large or complex logic schemes.