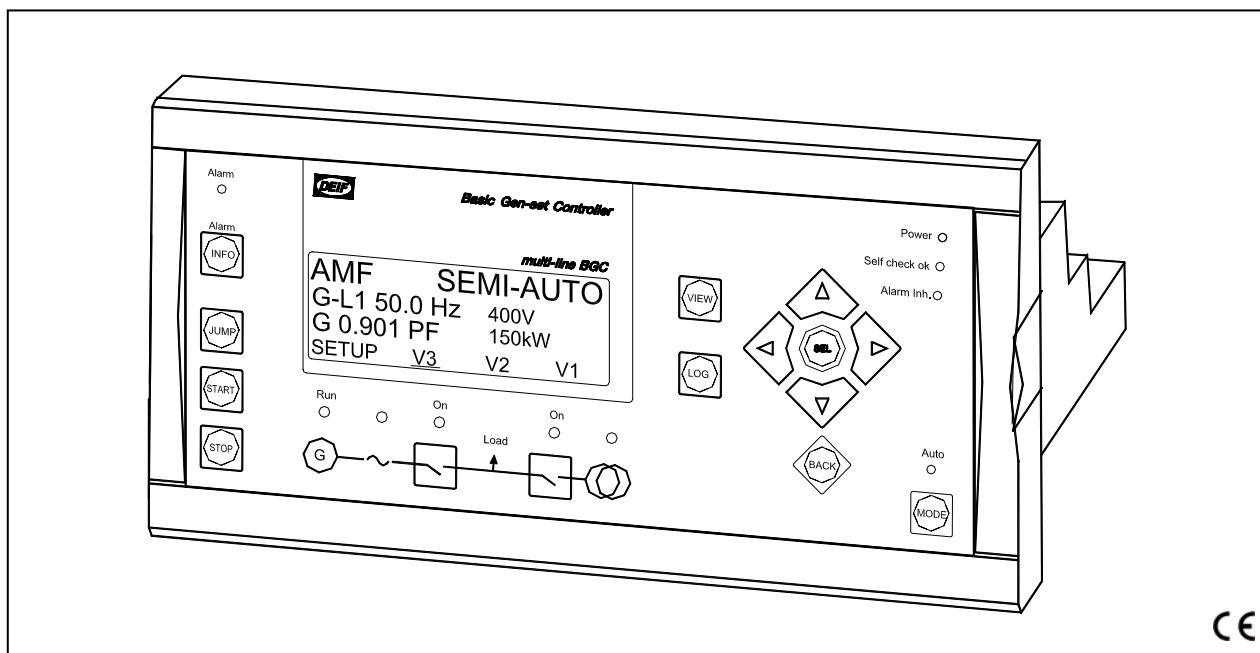




Standard functions

Automatic mains failure

- Engine start up
- From mains to generator supply at a mains failure
- From generator to mains supply at mains return

Island operation

- Semi-automatic control of the gen-set
- Semi-automatic control of the breakers

Time dependent start/stop

- Automatic gen-set and breaker control
- 8 different start/stop commands

Engine control

- Start preparation
- Start/stop sequences
- Fuel solenoid selection (coil type)

Protection (ANSI)

- Overcurrent, 2 levels (51)
- Reverse power (32)
- 3 configurable VDO inputs
- 5 configurable binary inputs

Generator and mains breaker

- Contactor (constant signal)
- Circuit breaker (400 ms pulse)

Application

The Basic Gen-set Controller is a micro-processor based control unit containing all necessary functions for protection of a gen-set and control of mains and generator breaker. It contains all necessary 3-phase measuring circuits and all values and alarms are presented on the LCD display.

The BGC is a compact all-in-one unit designed for the following applications:

1. Automatic mains failure (no back sync.)
2. Island operation

Optional applications:

3. Multiple gen-sets, load sharing
4. Peak shaving
5. Fixed power to mains
6. Automatic mains failure (back sync.)

The BGC automatically carries out a cyclical self-test at start-up. If any errors are found, they will be displayed in clear text in the display.

The generator and mains breaker types can be configured to be either a circuit breaker or a contactor. Speed governor control and automatic voltage regulation are optional functions.

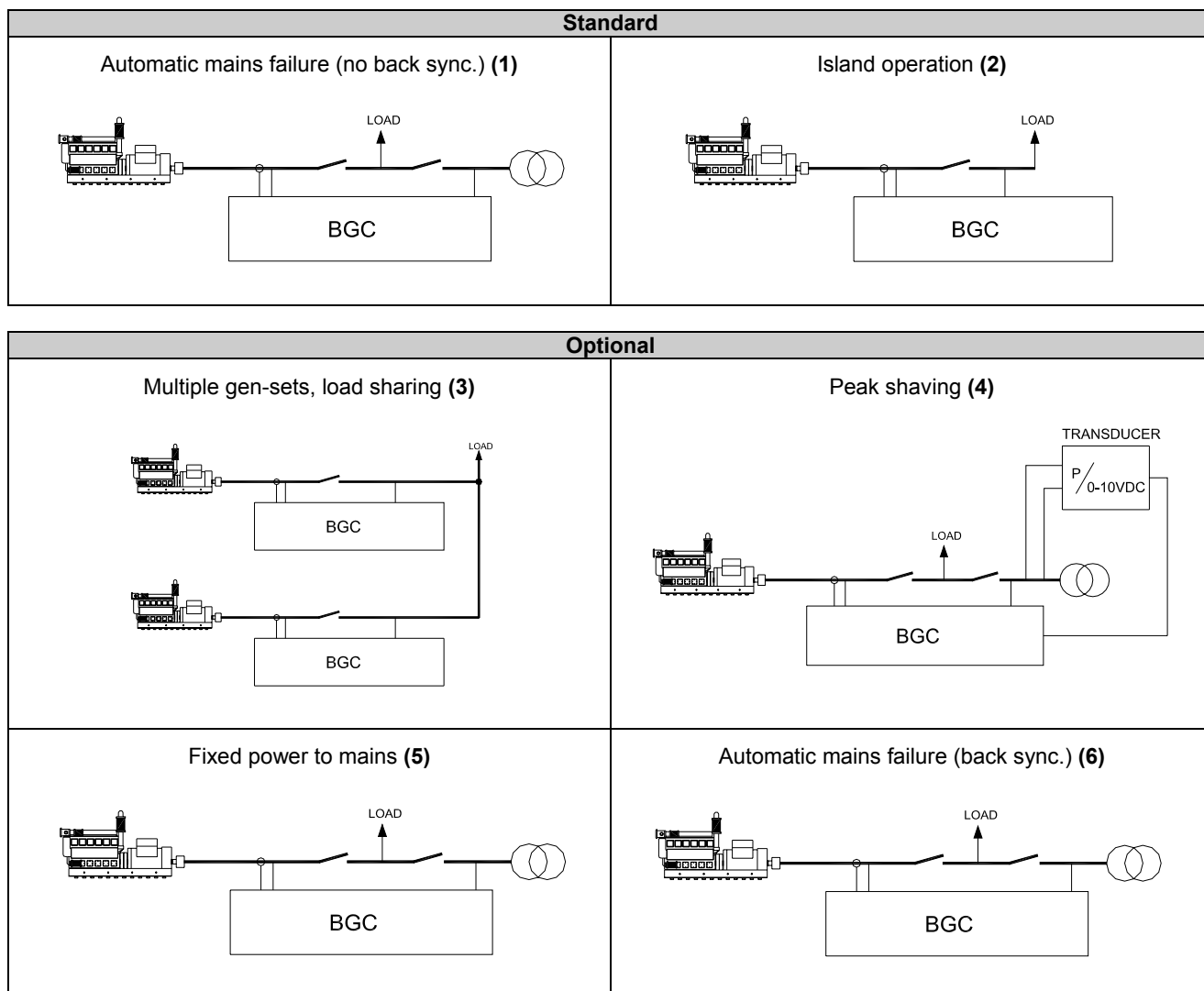
Setup

Setup is easily done via a menu structure in the display (password protected, 3 levels) or via the RJ45/RS232 PC connection and the multi-line 2 Windows® based PC utility software. The PC interface box needed for this operation is optional equipment for the BGC. The utility software offers additional features such as monitoring of all relevant information during commissioning, saving and downloading of settings and downloading of software updates.

Options

In order to perfectly match the product solution to specific applications, the functionality of the BGC can be equipped with a number of available options. The options selected by the customer will be integrated in the standard BGC hereby securing the same user interface unaffected by whether the application needs a highly complex or a more basic gen-set controller.

Single line application diagrams



Available options



Due to the fact that the BGC is limited to two option slots, there is an upper limit of two hardware options per unit (except G2 + G3). Please visit www.deif.com or contact us directly for detailed information about available options.

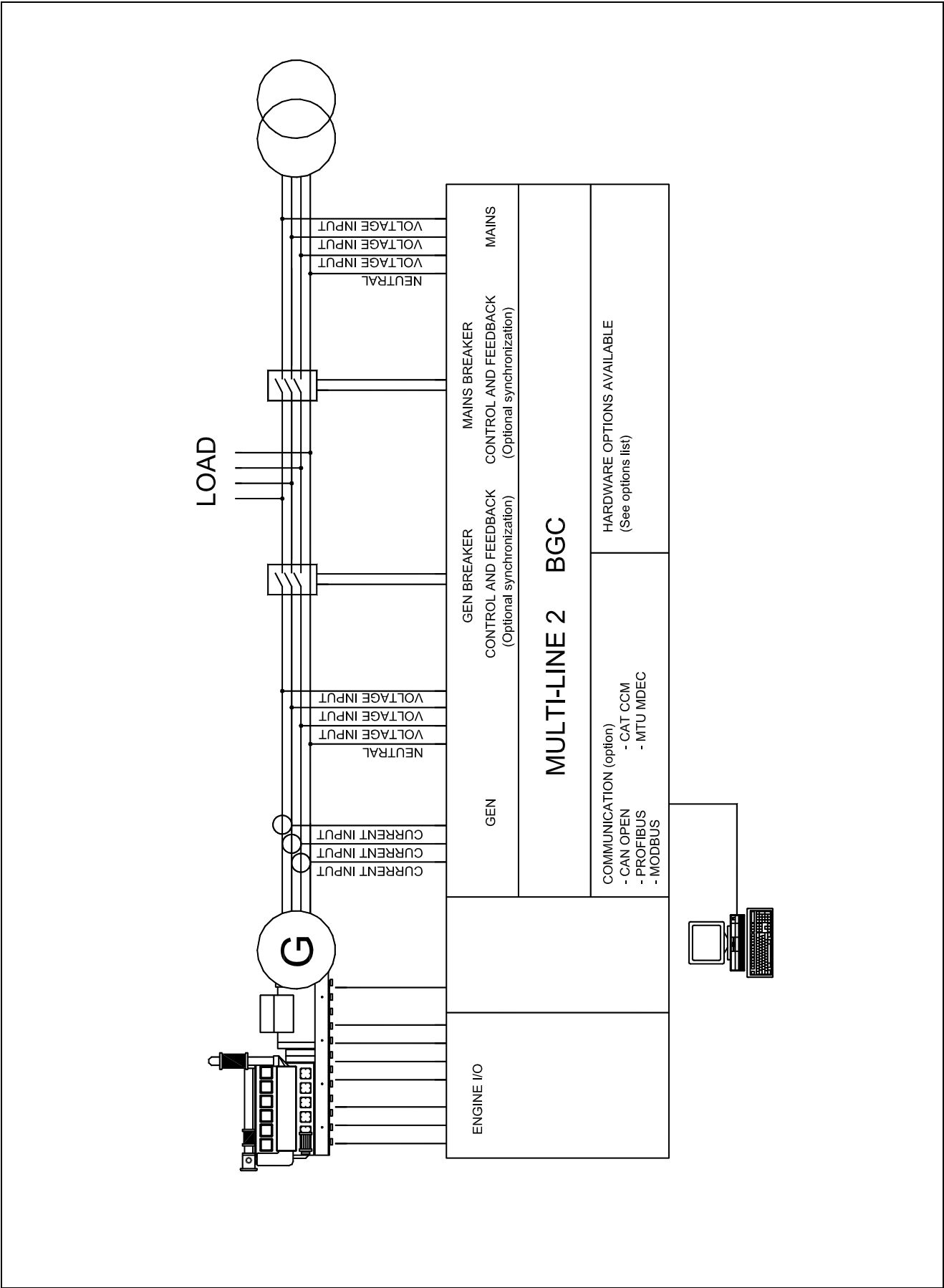
Option	Description	Type	Note
A	Loss of mains protection package		
A1	over- and undervoltage (generator and busbar/mains) (27/59) over- and underfrequency (generator and busbar/mains) (81) vector jump (78) df/dt (ROCOF) (81)	Software option	
A2	over- and undervoltage (generator and busbar/mains) (27/59) over- and underfrequency (generator and busbar/mains) (81) df/dt (ROCOF) (81)	Software option	
A3	over- and undervoltage (generator and busbar/mains) (27/59) over- and underfrequency (generator and busbar/mains) (81) vector jump (78)	Software option	
B	Generator/busbar/mains protection package		
B1	over- and undervoltage (generator and busbar/mains) (27/59) over- and underfrequency (generator and busbar/mains) (81)	Software option	
C	Generator add-on protection package		
C1	over- and undervoltage (generator) (27/59) over- and underfrequency (generator) (81) overload (32) peak current current unbalance voltage asymmetry reactive power import (excitation loss) reactive power export (overexcitation)	Software option	
D	Voltage/var/PF control		
D1	Selection between: constant voltage control (stand-alone) constant reactive power control (parallel with mains) constant power factor control (parallel with mains) reactive load sharing (island paralleling with other generators)	Software option	Selection between: D1A: Analogue control D1R: Relay control Requires option M14
D2	constant voltage (stand-alone/sync.)	Software option	
F	Analogue transducer outputs		
F1	2 transducer outputs, 0...20mA or 4...20mA	Hardware option	
F2	4 transducer outputs, 0...20mA or 4...20mA	Hardware option	Two boards – no other hardware option available
G	Control functions		
G1	2 load dependent relays	Hardware option	Requires option M14
G2	synchronising with analogue lines	Hardware option	Two other hardware options available
G3	load sharing and synchronising	Hardware option	Two other hardware options available
H	Serial communication		
H1	Can-open	Hardware option	
H2	Modbus RTU	Hardware option	
H3	Profibus DP	Hardware option	
H4	CAT CCM	Hardware option	
H5	Can-bus engine communication for: MTU MDEC Detroit Diesel DDEC Deutz EMR John Deere JDEC Volvo Penta D12 AUX	Hardware option	
H6	Cummins ECM (RS485) engine communication	Hardware option	
J	Cables		
J5	BGC converter box kit	Other	
K1	Designer's reference handbook (hard copy)	Other	

Available options (continued from page 3)

Option	Description	Type	Note
M	Configurable I/O extension cards		
M13	7 binary inputs, configurable	Hardware option	
M14	4 relay outputs	Hardware option	
M15	4 analogue inputs, configurable, 4...20mA	Hardware option	
Y	Display layout		
Y1	BGC display for island operation (no mains breaker)	Hardware option	

(ANSI# as per IEEE Std C37.2-1996(R2001) in parenthesis).

Principle diagram



Technical specifications

Accuracy:	Class 1.0, to IEC 688	Load sharing lines:	-5...0...+5V DC
Operating temp.:	-25...70°C	Analogue outputs:	0(4)...20mA Galvanically separated Active output (internal supply) Load max. 500Ω
Galvanic separation:	Between AC voltage, AC current and other I/Os: 3250V AC, 50Hz, 1 min. Between analogue outputs: 500V DC, 1 min.	Safety:	To EN 61010-1, installation category (overvoltage category) III, 600V, pollution degree 2
Meas. voltage:	Max. 480V phase to phase	Protection:	Unit: IP20
Consumption:	Max. 0.15VA/phase	EMC/CE:	To EN 61000-6-1/2 SS4631503 (PL4) and IEC 255-3
Meas. current:	-/1 or -/5A AC	VDO inputs:	Resistor inputs, internal supply
Consumption:	Max. 0.3VA/phase	Material:	All plastic materials are self-extinguishing according to UL94 (V1)
Current overload:	4 x I _n continuously 20 x I _n , 10 sec. (max. 75A) 80 x I _n , 1 sec. (max. 300A)	Plug connections:	AC current: 4 mm ² multi stranded Other: 2.5 mm ² multi stranded
Meas. frequency:	30...70Hz	PC:	RS232 converter box (option J5)
Aux. supply:	12/24V DC, -25/+30% Max. 8W consumption	Display:	IP52 (IP54 with gasket: Option L) To IEC 529 and EN 60529
Binary inputs:	Bi-directional optocoupler Input voltage 12...32V DC Impedance max. 4.7kΩ	Approval:	UL 508 (listing pending)
Relay outputs:	250V AC / 8A or 24V DC / 2A	Weight:	Approx. 1 kg (2.2 lbs)
Analogue inputs:	-10...0...+10V DC Not galvanically separated Impedance max. 100kΩ		
Mounting:	Panel mounted		
Climate:	Class HSE, to DIN 40040		

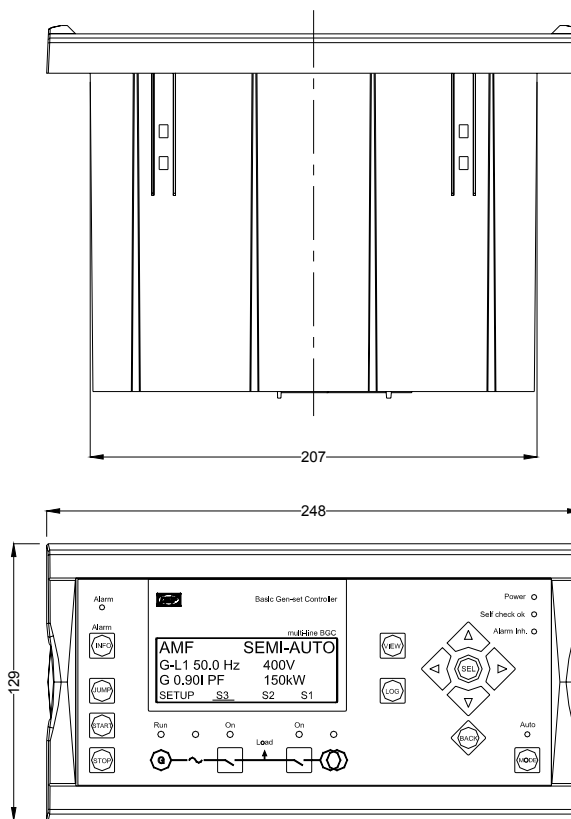
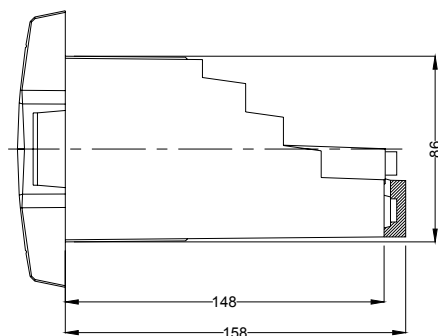
Unit dimensions (mm)

Panel cutout:

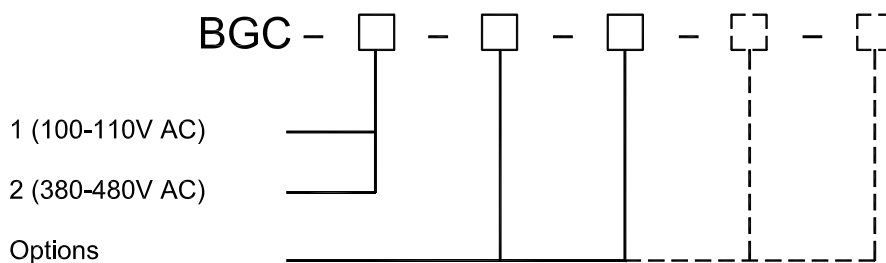
H x W = 86 x 208

Display size:

H x W = 129 x 248



Order specifications



Due to our continuous development we reserve the right to supply equipment which may vary from the described.