



-power in control



DATA SHEET



Genset Control Unit, GCU 100

- Engine control and protection
- Generator and busbar protection
- Emergency genset control
- Breaker control
- Easy-to-read graphical display
- Integrated emulation software solution



DEIF A/S · Frisenborgvej 33 · DK-7800 Skive
Tel.: +45 9614 9614 · Fax: +45 9614 9615
info@deif.com · www.deif.com

Document no.: 4921240428D
SW version:

1. Genset Control Unit, GCU 100

1.1. Variants and options.....	3
1.1.1. Variant overview.....	3
1.1.2. Protection (ANSI)	4
1.1.3. Available variants	4
1.2. Accessories.....	5
1.2.1. Available accessories	5
1.3. Variant display layouts.....	5
1.3.1. GCU 111.....	5
1.3.2. GCU 112.....	6
1.3.3. GCU 113.....	6
1.4. Technical specifications and dimensions.....	7
1.4.1. Technical specifications.....	7
1.4.2. Unit dimensions in mm (inches).....	9
1.5. Order specifications and disclaimer.....	10
1.5.1. Order specifications.....	10
1.5.2. Disclaimer.....	10

1. Genset Control Unit, GCU 100

1.1 Variants and options

1.1.1 Variant overview

Main Features	GCU 111	GCU 112	GCU 113
Engine start/stop	X	X	X
Engine monitoring and protection	X	X	X
CAN bus engine communication, J1939	X	X	X
Modbus communication, RS-485	X	X	X
Programmable logic, M-Logic	X	X	X
Remote annunciator support, AOP-2	X	X	X
Easy-to-read graphical display	X	X	X
Multiple language support	X	X	X
User-configurable texts	X	X	X
Alarm and event log	X	X	X
Integrated emulation software solution	X	X	X
Generator monitoring and protection	X	X	X
Generator breaker control	-	X	X
Tie breaker control	-	-	X
Emergency genset control	-	-	X

1.1.2 Protection (ANSI)

The following protection functions are included as standard functions:

Protection function	ANSI	Levels
Generator reverse power	32	2 steps
Generator over-current	50	2 steps
Fast over-current	51	2 steps
Generator over-voltage	59	2 steps
Generator under-voltage	27	2 steps
Generator over-frequency	81	2 steps
Generator under-frequency	81	2 steps
Busbar over-voltage	59B	2 steps
Busbar under-voltage	27B	2 steps
Busbar over-frequency	81B	2 steps
Busbar under-frequency	81B	2 steps
Generator overload	32	2 steps
Current unbalance	46	1 step
Voltage unbalance	60	1 step
Overexcitation	24	1 step
Loss of excitation	40	1 step

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

1.1.3 Available variants

Variant	Description	Item no.	Note
GCU 111	Genset Control Unit	2912560030-02	
GCU 112	Genset Control Unit	2912560030-03	
GCU 113	Genset Control Unit	2912560030-04	

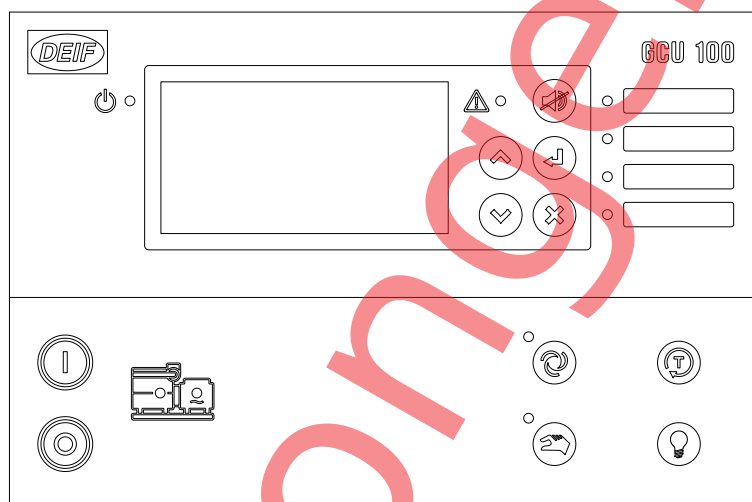
1.2 Accessories

1.2.1 Available accessories

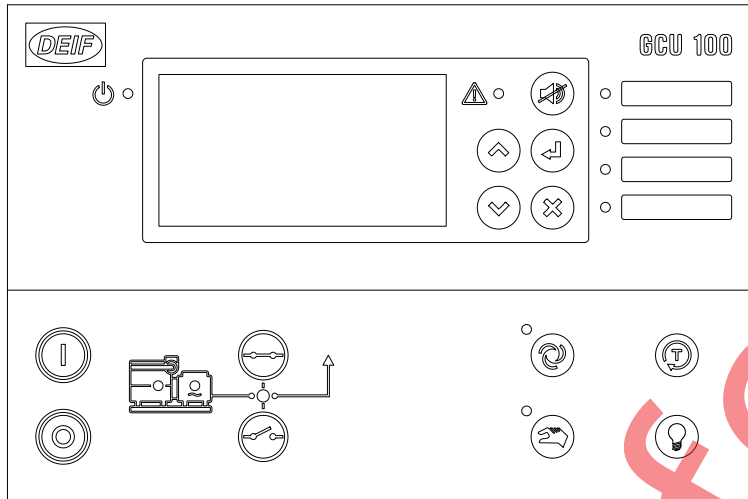
Accessory	Description	Item no.	Note
Operator panels			
Additional Operator Panel, AOP-2 (X4)	16 configurable LEDs, eight configurable buttons and one status relay. CAN bus communication.	2912890050	
Display gasket (L)		1129150061	Included in standard delivery
Cables			
USB to TTL PC interface cable (J9)	For PC utility software	1034000011	
Documentation			
CD-ROM with complete documentation (K2)		2304230002	

1.3 Variant display layouts

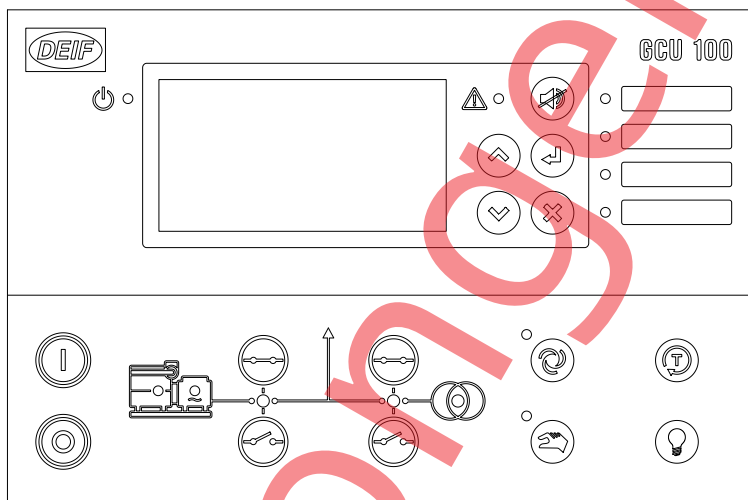
1.3.1 GCU 111



1.3.2 GCU 112



1.3.3 GCU 113



1.4 Technical specifications and dimensions

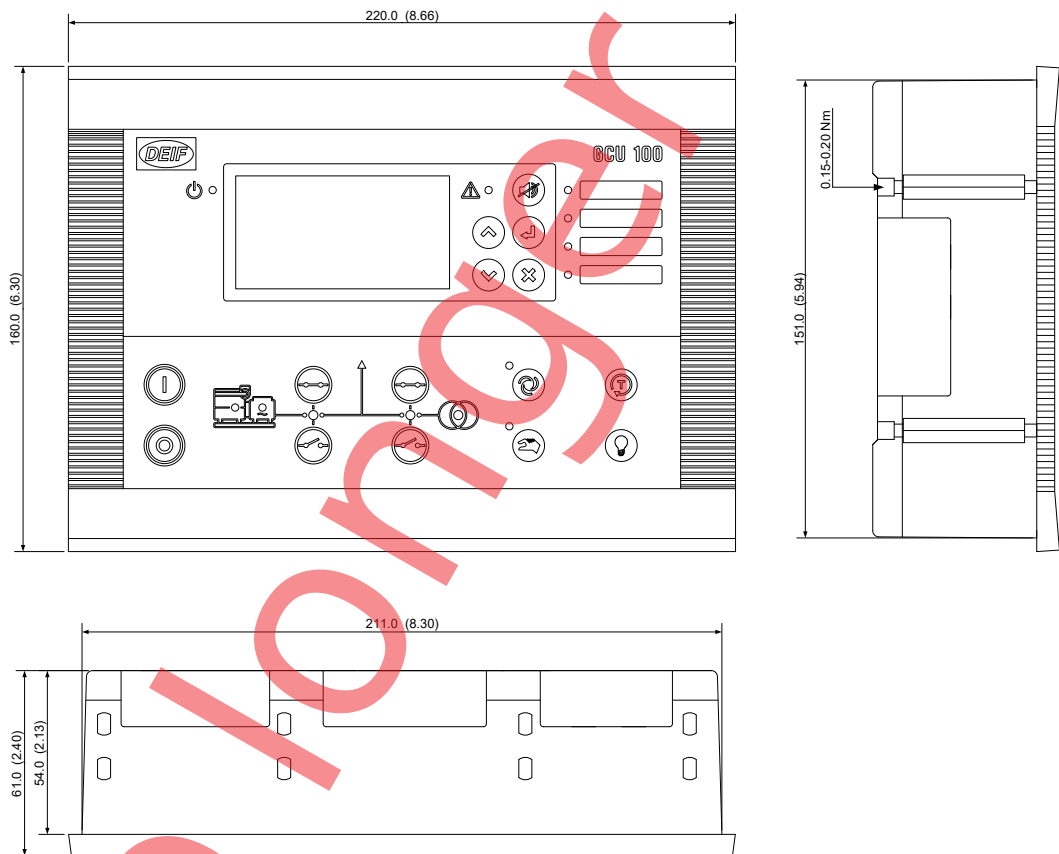
1.4.1 Technical specifications

Accuracy	Class 2.0 To EN 60688 Fast over-current protection: 3 % of 350 %*In
Operating temperature	-20 to 70 °C (-4 to 158 °F) (UL/cUL Listed: max. 50 °C ambient)
Storage temperature	-40 to 70 °C (-40 to 158 °F)
Measuring input voltage	50 to 480 V AC (+20 %) phase-phase (UL/cUL Listed: 50 to 300 V AC) Load: 1.5 MΩ/phase
Measuring input current	1 A or 5 A AC from current transformer Current overload: 4 × In continuously (60 sec.) 20 × In, 10 sec. (max. 75 A) 80 × In, 1 sec. (max. 250 A) Consumption max.: 0.3 VA/phase (UL/cUL Listed: use listed or R/C (XODW2.8) current transformers) Frequency: 30 to 70 Hz
Tacho RPM input	2 to 70 V peak Frequency: 10 to 10000 Hz
Aux. supply	6 to 36 V DC continuously Max. 8 W consumption (UL/cUL Listed: 7.5 to 32.7 V DC)
Dropout cranking	Able to survive 0 V for 50 ms at 12 V DC aux. supply before dropout
Passive digital input voltage	Bi-directional optocoupler 6 to 36 V DC Impedance: 4.7 kΩ OFF: <2 V DC
Multi-functional input	RMI - Resistance Measurement Input. 0 to 2500 Ohm with wire fail detection. 4 to 20 mA from active transducer, input impedance 50 Ohm. With wire fail detection. Binary - multi-inputs can be configured as "binary" switch function inputs, dry contacts, with wire fail detection. Internal 3 V supply.
Relay outputs	Impedance: 240 Ω ~ 16 mA Relays 21-23: 30 V AC/DC 2 A (UL/cUL Listed: 30 V DC 1 A Resistive) Relays 45, 47: 250 V AC/30 V DC 2 A (UL/cUL Listed: 30 V DC 2 A Resistive) Relays 24, 26: 30 V AC/DC 8 A (UL/cUL Listed: 30 V DC 6 A Resistive) Status relay/config.: 24 V DC 1 A Resistive

Response times (delay set to min.)	Generator: Reverse power: <400 ms Power overload: <400 ms Over-current: <400 ms Over-/under-voltage: <400 ms Over-/under-frequency: <400 ms Fast over-current: <300 ms
Mounting	Panel-mounted (UL/cUL Listed: for use on a flat surface of a type 1 enclosure. Main disconnect must be provided by installer)
Size	160 × 220 mm (6.30" × 8.66")
Climate	97 % RH to IEC 60068-2-30, test Db -20 °C (-40 °) to IEC 60068-2-1 +70 °C to IEC 60068-2-2
Display	128 × 64 pixel backlight STN 3 line views can max. show a value of 9999
Safety	To EN 61010-1, UL508 and CSA22.2 no. 14-05 Installation category (over-voltage category) III, 300 V, pollution degree 2
Protection	Front: IP52/IP65 with gasket. Terminals: IP20/NEMA type 1 To IEC/EN 60529
EMC/CE	To EN 61000-6-1/2/3/4 IEC 60255-26
Material	Plastic housing is self-extinguishing according to UL94 (V0)
Plug connections	AC voltage/current inputs: 3.5 mm ² (13 AWG) multi-stranded Other: 1.5 mm ² (16 AWG) multi-stranded (UL/cUL Listed: wire size: AWG 30-12 Use 60/75 °C copper conductors only)
Tightening torque	0.5 Nm (4.4 lb-in)
PC connection	USB to TTL PC interface cable
Weight	0.9 kg (1.9 lbs)
Installation	(UL/cUL Listed: to be installed in accordance with the NEC (US) or the CEC (Canada))
Approval	CE UL/cUL Listed to UL508 and CSA 22.2 No. 14-05. UL/cUL Recognized to UL2200 Marine approvals pending
Additional operator panel AOP-2	
Operating temperature	-20 to 70 °C (-4 to 158 °F) (UL/cUL Listed: max. 60 °C ambient)
Storage temperature	-40 to 70 °C (-40 to 158 °F)

Aux. supply	18 to 36 V DC by external DC/DC converter 12DCR24/5 supplied from controlled Class 2 source
Terminals	DC-DC converter: 0.5 Nm (4.4 lb-in) Panel door mounting: 0.7 Nm (6.2 lb-in) Sub-D screw: 0.2 Nm (1.8 lb-in)
Tightening torque	For further information, refer to the "Installation Instructions"
Wiring	Size AWG 30-12 Use 60/75 °C copper conductors only
Mounting	Panel-mounted (UL/cUL Listed: for use on a flat surface of type 1 enclosure. Main disconnect must be provided by installer)
IP degree	IP54
Installation	(UL/cUL Listed: to be installed in accordance with the NEC (US) or the CEC (Canada))

1.4.2 Unit dimensions in mm (inches)



1.5 Order specifications and disclaimer

1.5.1 Order specifications

Variants

Mandatory information			
Item no.	Variant	Accessory	Accessory

Example:

Mandatory information			
Item no.	Variant	Accessory	Accessory
2912560030-04	GCU 113	USB to TTL PC interface cable	

Accessories

Mandatory information		
Item no.	Type	Accessory

Example:

Mandatory information		
Item no.	Type	Accessory
1022040065	GCU 100	USB to TTL PC interface cable

1.5.2 Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.

The English version of this document always contains the most recent and up-to-date information about the product. DEIF does not take responsibility for the accuracy of translations, and translations might not be updated at the same time as the English document. If there is a discrepancy, the English version prevails.