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-power in control

CE

PARAMETER LIST

Engine Control Unit, ECU 100
Genset Control Unit, GCU 100

- Alarm list
- Parameter list

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1. General information

2. Alarm list

3. Parameter list

1. General information

1.1 Warnings, legal information and safety

1.1.1 Warnings and notes

Throughout this document, a number of warnings and notes with helpful user information will be presented. To ensure that these are noticed, they will be highlighted as follows in order to separate them from the general text.

Warnings

Warnings indicate a potentially dangerous situation, which could result in death, personal injury or damaged equipment, if certain guidelines are not followed.

Notes

Notes provide general information, which will be helpful for the reader to bear in mind.

1.1.2 Legal information and disclaimer

DEIF takes no responsibility for installation or operation of the generator set. If there is any doubt about how to install or operate the engine/generator controlled by the Multi-line 2 unit, the company responsible for the installation or the operation of the set must be contacted.

The Multi-line 2 unit is not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.

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.

1.1.3 Safety issues

Installing and operating the Multi-line 2 unit may imply work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.

Be aware of the hazardous live currents and voltages. Do not touch any AC measurement inputs as this could lead to injury or death.

1.1.4 Electrostatic discharge awareness

Sufficient care must be taken to protect the terminal against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.

1.1.5 Factory settings

The Multi-line 2 unit is delivered from factory with certain factory settings. These are based on average values and are not necessarily the correct settings for matching the engine/generator set in question. Precautions must be taken to check the settings before running the engine/generator set.

1.2 About the parameter list

1.2.1 General purpose of the Parameter List

This document is a complete parameter list including all parameters, which means that some of the option parameters included may not be accessible in the system in question.

The document includes a complete standard alarm list and a complete standard parameter list for setup. Therefore, this document is to be used for reference, when information about specific alarms and parameters is needed.

Please make sure to read this document before starting to work with the Multi-line 2 unit and the genset to be controlled. Failure to do this could result in human injury or damage to the equipment.

1.2.2 Intended users

This Parameter List is mainly intended for the person responsible for the unit parameter setup. In most cases, this would be a panel builder designer. Naturally, other users might also find useful information here.

1.2.3 Contents and overall structure

This document is divided into chapters, and in order to make the structure simple and easy to use, each chapter will begin from the top of a new page.

2. Alarm list

2.1 General information about the alarm list

2.1.1 Alarm list features

In the following, these abbreviations are used:
G: Generator
GB: Generator breaker
TB: Tie breaker
N/A: Not available

This chapter includes a complete alarm list. Therefore, this chapter is to be used for reference when specific information about the individual parameters is needed for the unit setup.

The table consists of the following possible adjustments:

Setpoint: The alarm setpoint is adjusted in the setpoint menu. The setting is a percentage of the nominal values.

Delay: The timer setting is the time that must expire from the alarm level is reached until the alarm occurs.

Relay output A: A relay can be activated by output A.

Relay output B: A relay can be activated by output B.

Enable: The alarm can be activated or deactivated. ON means always activated, RUN means that the alarm has run status. This means it is activated when the running signal is present.

Fail class: When the alarm occurs the unit will react depending on the selected fail class.

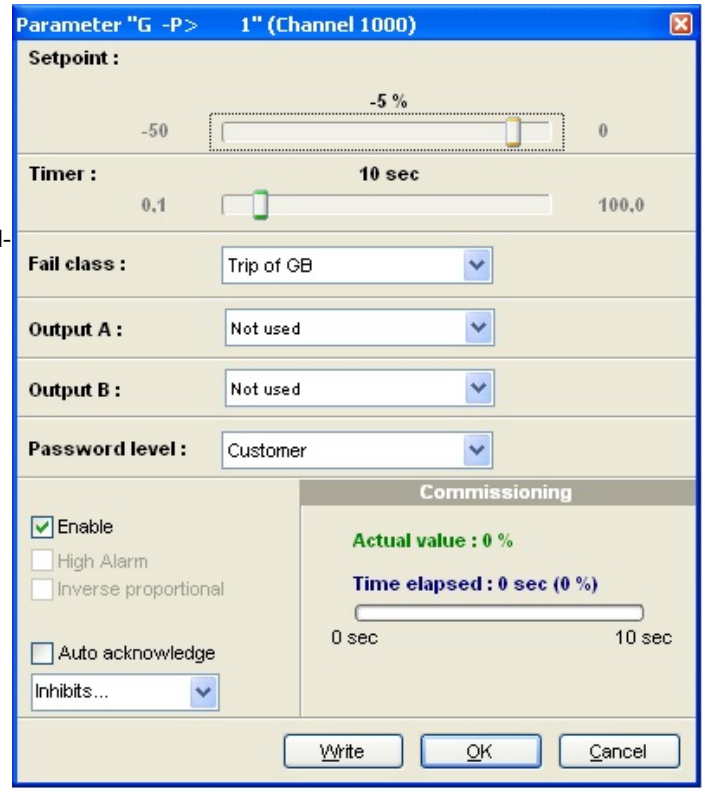
Fail classes are:

Fail class	DG (diesel generator)
F1	Block
F2	Warning
F3	Trip GB
F4	Trip + Stop
F5	Shutdown

Small differences due to the character of the parameters may exist between the individual tables.

It is also possible to configure the parameters by using the PC utility software. It will be possible to make the same configurations as described above.

By using the PC utility software, extra functionality is available. For all the protections it is possible to make an automatic acknowledgement of the alarm.



2.2 Protection parameters

2.2.1 Reverse power and overcurrent protection

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1000 Reverse power 1						
1001	–P> 1	Set-point	-200.0% 0.0%	-5.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the reverse power has been continuously above the programmed value during the programmed delay.
1002	–P> 1	Timer	0.1 s 100.0 s	10.0 s		
1003	–P> 1	Relay output A	Not used Relay... Limit	Not used		
1004	–P> 1	Relay output B	Not used Relay... Limit	Not used		
1005	–P> 1	Enable	OFF ON	ON		
1006	–P> 1	Fail class	F1…F5	Trip GB (F3)		
1010 Reverse power 2						
1011	–P> 2	Set-point	-200.0% 0.0%	-5.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the reverse power has been continuously above the programmed value during the programmed delay.
1012	–P> 2	Timer	0.1 s 100.0 s	10.0 s		
1013	–P> 2	Relay output A	Not used Relay... Limit	Not used		
1014	–P> 2	Relay output B	Not used Relay... Limit	Not used		
1015	–P> 2	Enable	OFF ON	ON		
1016	–P> 2	Fail class	F1…F5	Trip GB (F3)		
1030 Overcurrent 1						
1031	I> 1	Set-point	50.0% 200.0%	115.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the current has been continuously above the programmed value during the programmed delay.
1032	I> 1	Timer	0.1 s 3200.0 s	10.0 s		
1033	I> 1	Relay output A	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1034	I> 1	Relay output B	Not used Relay... Limit	Not used		
1035	I> 1	Enable	OFF ON	ON		
1036	I> 1	Fail class	F1…F5	Warn-ing(F2)		
1040 Overcurrent 2						
1041	I> 2	Set-point	50.0% 200.0%	120.0%	Designer's Refer-ence Handbook GCU 113/112/111	The alarm and fail class are acti-vated when the current has been continuously above the program-med value during the programmed delay.
1042	I> 2	Timer	0.1 s 3200.0 s	5.0 s		
1043	I> 2	Relay output A	Not used Relay... Limit	Not used		
1044	I> 2	Relay output B	Not used Relay... Limit	Not used		
1045	I> 2	Enable	OFF ON	ON		
1046	I> 2	Fail class	F1…F5	Trip GB (F3)		
1130 Fast overcurrent 1						
1131	I>> 1	Set-point	150.0% 350.0%	150.0%	Designer's Refer-ence Handbook GCU 113/112/111	The alarm settings relate to the nominal current setting. The alarm and fail class are activated when the current has been continuously above the programmed value dur-ing the programmed delay.
1132	I>> 1	Timer	0.0 s 100.0 s	2.0 s		
1133	I>> 1	Replay output A	Not used Relay... Limit	Not used		
1134	I>> 1	Relay output B	Not used Relay... Limit	Not used		
1135	I>> 1	Enable	OFF ON	OFF		
1136	I>> 1	Fail class	F1...F5	Trip GB (F3)		
1140 Fast overcurrent 2						

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1141	I>> 2	Set-point	150.0% 350.0%	200%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the current has been continuously above the programmed value during the programmed delay
1142	I>> 2	Delay	0.0 s 100.0 s	0.5 s		
1143	I>> 2	Replay output A	Not used Relay... Limit	Not used		
1144	I>> 2	Relay output B	Not used Relay... Limit	Not used		
1145	I>> 2	Enable	OFF ON	OFF		
1146	I>> 2	Fail class	F1...F5	Trip GB (F3)		

2.2.2 Voltage protections

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1150 G overvoltage 1						
1151	G U> 1	Set-point	100.0% 130.0%	103.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously above the programmed value during the programmed delay.
1152	G U> 1	Timer	0.1 s 100.0 s	10.0 s		
1153	G U> 1	Relay output A	Not used Relay... Limit	Not used		
1154	G U> 1	Relay output B	Not used Relay... Limit	Not used		
1155	G U> 1	Enable	OFF ON	OFF		
1156	G U> 1	Fail class	F1…F5	Warning (F2)		
1160 G overvoltage 2						
1161	G U> 2	Set-point	100.0% 130.0%	105.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously above the programmed value during the programmed delay.
1162	G U> 2	Timer	0.1 s 100.0 s	5.0 s		
1163	G U> 2	Relay output A	Not used Relay... Limit	Not used		
1164	G U> 2	Relay output B	Not used Relay... Limit	Not used		
1165	G U> 2	Enable	OFF ON	OFF		
1166	G U> 2	Fail class	F1…F5	Warning (F2)		
1170 G undervoltage 1						
1171	G U< 1	Set-point	40.0% 100.0%	97%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously under the programmed value during the programmed delay.
1172	G U< 1	Timer	0.1 s 100.0 s	10.0 s		
1173	G U< 1	Relay output A	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1174	G U< 1	Relay output B	Not used Relay... Limit	Not used		
1175	G U< 1	Enable	OFF ON	OFF		
1176	G U< 1	Fail class	F1…F5	Warning (F2)		
1180 G undervoltage 2						
1181	G U< 2	Set-point	40.0% 100.0%	95.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously under the programmed value during the programmed delay.
1182	G U< 2	Timer	0.1 s 100.0 s	5.0 s		
1183	G U< 2	Relay output A	Not used Relay... Limit	Not used		
1184	G U< 2	Relay output B	Not used Relay.. Limit	Not used		
1185	G U< 2	Enable	OFF ON	OFF		
1186	G U< 2	Fail class	F1…F5	Warning (F2)		
1200 G voltage trip						
1201	G voltage trip	Set-point	Ph-Ph Ph-N	Ph-Ph	Designer's Reference Handbook GCU 113/112/111	Selection between phase-phase or phase-neutral voltage detection. When phase-phase tripping is selected, the voltage alarms relate to the nominal voltage. When phase-neutral tripping is selected, the voltage alarms relate to the nominal voltage divided by √3.
1202	BB voltage trip	Set-point	Ph-Ph Ph-N	Ph-Ph	Designer's Reference Handbook GCU 113/112/111	Selection between phase- phase or phase-neutral voltage detection.When phase-phase tripping is selected, the voltage alarms relate to the nominal voltage. When phase-neutral tripping is selected, the voltage alarms relate to the nominal voltage divided by √3.

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1203	Unbal-ance I	Set-point	Normal Average	Average	Designer's Refer-ence Handbook GCU 113/112/111	This parameter selects how the current is calculated. This is then used to calculate protections.

2.2.3 Frequency protections

Frequency settings relate to the nominal frequency setting.

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1210 G overfrequency 1						
1211	G f> 1	Set-point	100.0% 120.0%	103.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the frequency has been continuously above the programmed value during the programmed delay. Frequency settings relate to nominal frequency setting.
1212	G f> 1	Timer	0.2 s 100.0 s	10.0 s		
1213	G f> 1	Relay output A	Not used Relay... Limit	Not used		
1214	G f> 1	Relay output B	Not used Relay... Limit	Not used		
1215	G f> 1	Enable	OFF ON	OFF		
1216	G f> 1	Fail class	F1…F5	Warning (F2)		
1220 G overfrequency 2						
1221	G f> 2	Set-point	100.0% 120.0%	105.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the frequency has been continuously above the programmed value during the programmed delay.
1222	G f> 2	Timer	0.2 s 100.0 s	5.0 s		
1223	G f> 2	Relay output A	Not used Relay... Limit	Not used		
1224	G f> 2	Relay output B	Not used Relay... Limit	Not used		
1225	G f> 2	Enable	OFF ON	OFF		
1226	G f> 2	Fail class	F1…F5	Warning (F2)		
1240 G underfrequency 1						
1241	G f<1	Set-point	80.0% 100.0%	97.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the frequency has been continuously under the programmed value during the programmed delay.
1242	G f<1	Timer	0.2 s 100.0 s	10.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1243	G f<1	Relay output A	Not used Relay... Limit	Not used		
1244	G f<1	Relay output B	Not used Relay... Limit	Not used		
1245	G f<1	Enable	OFF ON	OFF		
1246	G f<1	Fail class	F1…F5	Warning (F2)		
1250 G underfrequency 2						
1251	G f<2	Set-point	80.0% 100.0%	95.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the frequency has been continuously under the programmed value during the programmed delay.
1252	G f<2	Timer	0.2 s 100.0 s	5.0 s		
1253	G f<2	Relay output A	Not used Relay... Limit	Not used		
1254	G f<2	Relay output B	Not used Relay... Limit	Not used		
1255	G f<2	Enable	OFF ON	OFF		
1256	G f<2	Fail class	F1…F5	Warning (F2)		

2.2.4 Busbar voltage protections

Voltage settings relate to the nominal voltage setting.

No.	Setting		Min. Max	Factory setting	Ref.	Description
1270 Busbar overvoltage 1						
1271	BB U> 1	Setpoint	100.0 % 120.0 %	103.0%	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously above the programmed value during the programmed delay.
1272	BB U> 1	Timer	0.0 s 99.99 s	10.0 s		
1273	BB U> 1	Relay output A	Not used Relay... Limit	Not used		
1274	BB U> 1	Relay output B	Not used Relay... Limit	Not used		
1275	BB U> 1	Enable	OFF ON	OFF		
1276	BB U> 1	Fail class	F1...F5	Warning (F2)		
1280 Busbar overvoltage 2						
1281	BB U> 2	Setpoint	100.0 % 120.0 %	105.0 %	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously above the programmed value during the programmed delay.
1282	BB U> 2	Timer	0.0 s 99.99 s	5.0 s		
1283	BB U> 2	Relay output A	Not used Relay... Limit	Not used		
1284	BB U> 2	Relay output B	Not used Relay... Limit	Not used		
1285	BB U> 2	Enable	OFF ON	OFF		
1286	BB U> 2	Fail class	F1...F5	Warning (F2)		
1300 Busbar undervoltage 1						
1301	BB U< 1	Setpoint	40.0 % 100.0 %	97.0 %	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously under the programmed value during the programmed delay.
1302	BB U< 1	Timer	0.00 s 99.99 s	10.00 s		

No.	Setting		Min. Max	Factory setting	Ref.	Description
1303	BB U< 1	Relay output A	Not used Relay... Limit	Not used		
1304	BB U< 1	Relay output B	Not used Relay... Limit	Not used		
1305	BB U< 1	Enable	OFF ON	OFF		
1306	BB U< 1	Fail class	F1...F5	Warning (F2)		
1310 Busbar undervoltage 2						
1311	BB U< 2	Setpoint	40.0 % 100.0 %	95.0 %	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the voltage has been continuously under the programmed value during the programmed delay.
1312	BB U< 2	Timer	0.00 s 99.99 s	5.0 s		
1313	BB U< 2	Relay output A	Not used Relay... Limit	Not used		
1314	BB U< 2	Relay output B	Not used Relay... Limit	Not used		
1315	BB U< 2	Enable	OFF ON	OFF		
1316	BB U< 2	Fail class	F1...F5	Warning (F2)		

2.2.5 Busbar frequency protections

Frequency settings relate to the nominal frequency setting.

No.	Settings		Min. Max.	Factory setting	Ref.	Description
1350 Busbar overfrequency 1						
1351	BB f> 1	Setpoint	100.0 % 120.0 %	103.0 %	Designer's Reference Handbook GCU 113	The alarm and fail class are activated when the frequency has been continuously above the programmed value during the programmed delay.
1352	BB f> 1	Timer	0.0 s 99.99 s	10.0 s		
1353	BB f> 1	Relay output A	Not used Relay... Limit	Not used		
1354	BB f> 1	Relay output B	Not used Relay... Limit	Not used		
1355	BB f> 1	Enable	OFF ON	OFF		
1356	BB f> 1	Fail class	F1...F5	Warning (F2)		
1360 Busbar overfrequency 2						
1361	BB f> 2	Setpoint	100.0 % 120.0 %	105.0 %	Designer's Reference Handbook GCU GCU 113	The alarm and fail class are activated when the frequency has been continuously above the programmed value during the programmed delay.
1362	BB f> 2	Timer	0.00 s 99.99 s	5.0 s		
1363	BB f> 2	Relay output A	Not used Relay... Limit	Not used		
1364	BB f> 2	Relay output B	Not used Relay... Limit	Not used		
1365	BB f> 2	Enable	OFF ON	OFF		
1366	BB f> 2	Fail class	F1...F5	Warning (F2)		
1372	BB f> 3	Timer	0.00 s 99.99 s	5.0 s		
1380 Busbar underfrequency 1						
1381	BB f< 1	Setpoint	80.0% 100.0%	97.0 %	Designer's Reference Handbook GCU 113	The alarm and fail class are activated when the frequency has been continuously under the programmed value during the programmed delay.

No.	Settings		Min. Max.	Factory setting	Ref.	Description
1382	BB f< 1	Timer	0.00 s 99.99 s	10.0 s		
1383	BB f< 1	Relay output A	Not used Relay...Limit	Not used		
1384	BB f< 1	Relay output B	Not used Relay...Limit	Not used		
1385	BB f< 1	Enable	OFF ON ON	OFF		
1386	BB f< 1	Fail class	F1…F5	Warning (F2)		
1390 Busbar underfrequency 2						
1391	BB f< 2	Setpoint	80.0% 100.0%	95.0 %	Designer's Reference Handbook GCU 113	The alarm and fail class are activated when the frequency has been continuously under the programmed value during the programmed delay.
1392	BB f< 2	Timer	0.00 s 99.99 s	5.0 s		
1393	BB f< 2	Relay output A	Not used Relay...Limit	Not used		
1394	BB f< 2	Relay output B	Not used Relay...Limit	Not used		
1395	BB f< 2	Enable	OFF ON	OFF		
1396	BB f< 2	Fail class	F1…F5	Warning (F2)		

2.2.6 Overload protections

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1450 Overload 1						
1451	P> 1	Set-point	-200.0% 200.0%	100.0%	Designer's Reference Handbook GCU 113/112/111	Settings relate to nominal power. The alarm and fail class are activated when the power has been continuously above the program- med value during the program- med delay.
1452	P> 1	Timer	0.1 s 3200.0 s	10.0 s		
1453	P> 1	Relay output A	Not used Relay... Limit	Not used		
1454	P> 1	Relay output B	Not used Relay... Limit	Not used		
1455	P> 1	Enable	OFF ON	OFF		
1456	P> 1	Fail class	F1…F5	Warning (F2)		
1460 Overload 2						
1461	P> 2	Set-point	-200.0% 200.0%	110.0 %	Designer's Reference Handbook GCU 113/112/111	The alarm and fail class are activated when the power has been continuously above the program- med value during the program- med delay.
1462	P> 2	Timer	0.1 s 3200.0 s	5.0 s		
1463	P> 2	Relay output A	Not used Relay... Limit	Not used		
1464	P> 2	Relay output B	Not used Relay... Limit	Not used		
1465	P> 2	Enable	OFF ON	OFF		
1466	P> 2	Fail class	F1…F5	Trip GB (F3)		

2.2.7 Current unbalance protection

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1500 Unbalanced current						
1501	Unbalance curr.	Set-point	0.0% 100.0%	30.0%	Designer's Reference Handbook GCU 113/112/111	Settings relate to nominal generator current. The alarm and fail class are activated when the difference between the max. reading and the min. reading of the 3 measured currents has been continuously above the programmed value during the programmed delay.
1502	Unbalance curr.	Timer	0.1 s 100.0 s	10.0 s		
1503	Unbalance curr.	Relay output A	Not used Relay... Limit	Not used		
1504	Unbalance curr.	Relay output B	Not used Relay... Limit	Not used		
1505	Unbalance curr.	Enable	OFF ON	OFF		
1506	Unbalance curr.	Fail class	F1…F5	Trip GB (F3)		
1710 Unbalanced current 2						
1711	Unbalance curr. 2	Set-point	0.0% 100.0%	40.0%	Designer's Reference Handbook GCU 113/112/111	Settings relate to nominal generator current. The alarm and fail class are activated when the difference between the max. reading and the min. reading of the 3 measured currents has been continuously above the programmed value during the programmed delay.
1712	Unbalance curr. 2	Timer	0.1 s 100.0 s	10.0 s		
1713	Unbalance curr. 2	Relay output A	Not used Relay... Limit	Not used		
1714	Unbalance curr. 2	Relay output B	Not used Relay... Limit	Not used		
1715	Unbalance curr. 2	Enable	OFF ON	OFF		
1716	Unbalance curr. 2	Fail class	F1...F5	Trip GB (F3)		

2.2.8 Voltage unbalance protection

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1510 Unbalanced Voltage						
1511	Unbalance volt.	Set-point	0.0 % 50.0 %	10.0 %	Designer's Reference Handbook GCU 113/112/111	Settings relate to nominal voltage. The alarm and fail class are activated when the difference between the max. reading and the min. reading of the 3 measured generator voltages have been continuously above the programmed value during the programmed delay.
1512	Unbalance volt.	Timer	0.1 s 100.0 s	10.0 s		
1513	Unbalance volt.	Relay output A	Not used Relay... Limit	Not used		
1514	Unbalance volt.	Relay output B	Not used Relay... Limit	Not used		
1515	Unbalance volt.	Enable	OFF ON	OFF		
1516	Unbalance volt.	Fail class	F1...F5	Trip GB (F3)		

2.2.9 Reactive power import (loss of excitation) protection

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1520 Reactive power import (loss of exitation)						
1521	–Q>	Setpoint	0.0 % 150.0 %	50.0 %	Designer's Reference Handbook GCU 113/112/111	Settings relate to nominal power. The alarm and fail class are activated when imported VAr has been continuously above the programmed value during the programmed delay.
1522	–Q>	Timer	0.1 s 100.0 s	10.0 s		
1523	–Q>	Relay output A	Not used Relay... Limit	Not used		
1524	–Q>	Relay output B	Not used Relay... Limit	Not used		
1525	–Q>	Enable	OFF ON	OFF		
1526	–Q>	Fail class	F1...F5	Warning (F2)		

2.2.10 Reactive power export (overexcitation) protection

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1530 Reactive power export (overexcitation)						
1531	Q>	Setpoint	0.0 % 100.0 %	60.0 %	Designer's Reference Handbook GCU 113/112/111	Settings relate to nominal power. The alarm and fail class are activated when exported VAr has been continuously above the program- med value during the programmed delay.
1532	Q>	Timer	0.1 s 100.0 s	10.0 s		
1533	Q>	Relay output A	Not used Relay... Limit	Not used		
1534	Q>	Relay output B	Not used Relay... Limit	Not used		
1535	Q>	Enable	OFF ON	OFF		
1536	Q>	Fail class	F1...F5	Warning (F2)		

2.2.11 Busbar unbalance voltage

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1620 BB unbalance U						
1621	BB unbalance U	Set-point	0.0 % 50.0%	6.0 %	Designer's Reference Handbook GCU 113	Settings relate to average actual voltage.The alarm and fail class are activated when the difference between the max. reading and the min. reading of the 3 measured busbar voltages has been continuously above the programmed value during the program- med delay.
1622	BB unbalance U	Timer	0.1 s 100.0 s	10.0 s		
1623	BB unbalance U	Relay output A	Not used Relay... Limit	Not used		
1624	BB unbalance U	Relay output B	Not used Relay... Limit	Not used		
1625	BB unbalance U	Enable	OFF ON	OFF		
1626	BB unbalance U	Fail class	F1...F5	Warning (F2)		

2.3 Breaker control parameters

2.3.1 Breaker alarms

No.	Setting		Min. Max.	Factory setting	Ref.	Description
1980 Breaker Ext trip						
1981	GB ext. trip	Enable	OFF ON	ON	Designer's Reference Handbook GCU 113/112	The generator breaker or the tie breaker has been tripped by an external device.
1982	GB ext. trip	Fail class	F1...F5	Warning (F2)		
1983	TB ext. trip	Enable	OFF ON	On		
1984	TB ext. trip	Fail class	F1...F5	Warning (F2)		
2110 Sync. blackout						
2111	Black-outdf-Max		0…5 Hz	3 Hz		Synchronization can only happen if the frequency is within the setting.
2112	Black-outdU-Max		2…20%	5%		Synchronization can only happen if the voltage is within the setting.
2150 Phase seq error						
2151	Phase seq error	Relay output A	Not used Relay... Limit	Not used	Designer's Reference Handbook GCU 113/112	Prior to closing a breaker, the unit checks that the phase sequence is correct, depending on the chosen phase direction in parameter 2154: "Phase rotation". If it is incorrect (reversed), an alarm will be issued and the breaker in question will not be closed.
2152	Phase seq error	Relay output B	Not used Relay... Limit	Not used		
2153	Phase seq error	Fail class	F1…F5	Block (F1)		
2154	Phase rotation	Set-point	L1L2L3 L1L3L2	L1L2L3		
2160 GB open fail						
2161	GB open fail	Timer	1.0 s 10.0 s	2.0 s	Designer's Reference Handbook GCU 113/112	The breaker open failure will occur if the unit has transmitted a breaker open signal and the breaker feedback has not changed position from ON to OFF within the time delay.
2162	GB open fail	Relay output A	Not used Relay... Limit	Not used		
2163	GB open fail	Relay output B	Not used Relay... Limit	Not used		
2164	GB open fail	Enable	OFF ON	ON		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
2165	GB open fail	Fail class	F1…F5	Warning (F2)		
2170 GB close fail						
2171	GB close fail	Timer	1.0 s 900.0 s	2.0 s	Designer's Reference Handbook GCU 113/112	The breaker close failure will occur if the unit has transmitted a breaker close signal and the breaker feedback has not changed position from OFF to ON within the time delay.
2172	GB close fail	Relay output A	Not used Relay... Limit	Not used		
2173	GB close fail	Relay output B	Not used Relay... Limit	Not used		
2174	GB close fail	Enable	OFF ON	ON		
2175	GB close fail	Fail class	F1…F5	Warning (F2)		
2180 GB pos fail						
2181	GB pos fail	Timer	1.0 s 5.0 s	1.0 s	Designer's Reference Handbook GCU 113/112	This alarm will occur if the breaker feedbacks for ON and OFF are both missing or active for more than the time delay.
2182	GB pos fail	Relay output A	Not used Relay... Limit	Not used		
2183	GB pos fail	Relay output B	Not used Relay... Limit	Not used		
2184	GB pos fail	Enable	OFF ON	ON		
2185	GB pos fail	Fail class	F1…F5	Warning (F2)		
2200 TB open fail						
2201	TB open fail	Timer	1.0 s 10.0 s	2.0 s	Designer's Reference Handbook GCU 113	The breaker open failure will occur if the unit has transmitted a breaker open signal and the breaker feedback has not changed position from ON to OFF within the time delay.
2202	TB open fail	Relay output A	Not used Relay... Limit	Not used		
2203	TB open fail	Relay output B	Not used Relay... Limit	Not used		
2204	TB open fail	Enable	ON	ON		
2205	TB open fail	Fail class	F1…F5	Warning (F2)		
2210 TB close fail						

No.	Setting		Min. Max.	Factory setting	Ref.	Description
2211	TB close fail	Timer	1.0 s 5.0 s	2.0 s	Designer's Reference Handbook GCU 113	The breaker close failure will occur if the unit has transmitted a breaker close signal and the breaker feedback has not changed position from OFF to ON within the time delay.
2212	TB close fail	Relay output A	Not used Relay... Limit	Not used		
2213	TB close fail	Relay output B	Not used Relay... Limit	Not used		
2214	TB close fail	Enable	ON	ON		
2215	TB close fail	Fail class	F1…F5	Warning (F2)		
2220 TB pos fail						
2221	TB pos fail	Timer	1.0 s 5.0 s	1.0 s	Designer's Reference Handbook GCU 113	This alarm will occur if the breaker feedbacks for ON and OFF are either missing or active for more than the time delay.
2222	TB pos fail	Relay output A	Not used Relay... Limit	Not used		
2223	TB pos fail	Relay output B	Not used Relay... Limit	Not used		
2224	TB pos fail	Enable	ON	ON		
2225	TB pos fail	Fail class	F1…F5	Warning (F2)		

2.4 Control parameter,regulation

2.4.1 Regulation

No.	Setting		Min. Max.	Factory setting	Ref.	Description
2770 EIC speed control						
2771	Scania control	Droop	0.0% 25.0%	0.0%	Designer's Reference Handbook GCU 113/112	Setting of speed control via engine communication interface.
2772	Scania control	Rpm	User 1500 RPM 1800Rpm Low idle	User		
2773	Cummins gain	Kp	0.00 10.00	5.00		
2790 EIC speed demand switch						
2791	EIC speed dem. sw.	Local norm sw.	Ana. CAN Up/Down ECU Up/Down CAN Ana. ECU Ana. ECU rel. Frequency	Ana. CAN		
2792	EIC speed dem. sw.	Local Emerg sw.	Ana. CAN Up/Down ECU Up/Down CAN Ana. ECU Ana. ECU rel. Frequency	Ana. CAN		
2793	EIC speed dem. sw.	Remote norm sw.	Ana. CAN Up/Down ECU Up/Down CAN Ana. ECU Ana. ECU rel. Frequency	Ana. CAN	Designer's Reference Handbook GCU 113/112	

No.	Setting		Min. Max.	Factory setting	Ref.	Description
2794	EIC speed dem. sw.	Remote Emerg sw.	Ana. CAN Up/Down ECU Up/Down CAN Ana. ECU Ana. ECU rel. Frequency	Ana. CAN		
2800 PID 1						
2811	PID 1 control Ana/EIC	Kp	0.00 60.0	0.50	Designer's Reference Handbook GCU 113/112	The breaker open failure will occur if the unit has transmitted a breaker open signal and the breaker feedback has not changed position from ON to OFF within the time delay.
2812	PID 1 control Ana/EIC	Ti	0.00s 60.00s	5.00s		

2.5 Input/output parameters, digital input setup

2.5.1 Digital input 10-15 setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
3000 Digital input 10						
3001	Dig. input 10	Timer	0.0 s 100.0 s	10.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The input is configurable and can have different functions in different units.
3002	Dig. input 10	Relay output A	Not used Relay... Limit	Not used		
3003	Dig. input 10	Relay output B	Not used Relay... Limit	Not used		
3004	Dig. input 10	Enable	OFF ON	OFF		
3005	Dig. input 10	Fail class	F1…F5	Warning (F2)		
3006	Dig. input 10	High Alarm	OFF ON	ON		

The same settings apply to inputs 11-15, menus 3010 to 3050.

2.5.2 Emergency stop

No.	Setting		Min. Max.	Factory setting	Ref.	Description
3490 Emergency stop						
3491	Emer. stop	Timer	0.0 s 60.0 s	0.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Emergency stop input is intended for a normally closed contact.
3492	Emer. stop	Relay output A	Not used Relay... Limit	Not used		
3493	Emer. stop	Relay output B	Not used Relay... Limit	Not used		
3494	Emer. stop	Enable	OFF ON	ON		
3495	Emer. stop	Fail class	F1…F5	Shut-down (F5)		

2.5.3 M-Logic alarm 1-5 setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
3570 M-Logic alarm 1						
3570	M-Logic alarm 1	Timer	0.0 s 100.0 s	10.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The input is configurable.
3571	M-Logic alarm 1	Relay output A	Not used Relay... Limit	Not used		
3572	M-Logic alarm 1	Relay output B	Not used Relay... Limit	Not used		
3573	M-Logic alarm 1	Enable	OFF ON	OFF		
3574	M-Logic alarm 1	Fail class	F1…F5	Warning (F2)		
3575	M-Logic alarm 1	High Alarm	OFF ON	ON		

The same settings apply to alarm inputs 2-5, menus 3580 to 3610.

2.6 Multi-functional analogue input setup

2.6.1 Multi-input no. 6

The available menus for multi-input no. 6 depend on the input type configured in the PC utility software (menu 10980).

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4120 4-20 mA 6.1						
4121	4-20 mA 6.1	Setpoint	4 mA 20 mA	10 mA	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as 4-20 mA.
4122	4-20 mA 6.1	Timer	0.0 s 999.0 s	120.0 s		
4123	4-20 mA 6.1	Relay output A	Not used Relay... Limit	Not used		
4124	4-20 mA 6.1	Relay output B	Not used Relay... Limit	Not used		
4125	4-20 mA 6.1	Enable	OFF ON	OFF		
4126	4-20 mA 6.1	Fail class	F1…F5	Warning (F2)		
4130 4-20 mA 6.2						
4131	4-20 mA 6.2	Setpoint	4 mA 20 mA	10 mA	Designer's Reference Handbook GCU 113/112/111 and ECu 100	The multi-input 6 has been configured as 4-20 mA.
4132	4-20 mA 6.2	Timer	0.0 s 999.0 s	120.0 s		
4133	4-20 mA 6.2	Relay output A	Not used Relay... Limit	Not used		
4134	4-20 mA 6.2	Relay output B	Not used Relay... Limit	Not used		
4135	4-20 mA 6.2	Enable	OFF ON	OFF		
4136	4-20 mA 6.2	Fail class	F1…F5	Warning (F2)		
4160 PT 6.1						
4161	PT 6.1	Setpoint	-49 482	+80	Designer's Reference Handbook GCU 113/112/111 and ECu 100	The multi-input 6 has been configured as PT 1000.
4162	PT 6.1	Timer	0.0 s 999.0 s	5.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4163	PT 6.1	Relay output A	Not used Relay... Limit	Not used		
4164	PT 6.1	Relay output B	Not used Relay... Limit	Not used		
4165	PT 6.1	Enable	OFF ON	OFF		
4166	PT 6.1	Fail class	F1…F5	Warning (F2)		
4167	PT 6.1	Offset	0.0ohm 5.0ohm	0.0ohm		
4170 PT 6.2						
4171	PT 6.2	Setpoint	-49 482	+80	Designer's Reference Handbook GCU 113/112/111 and ECu 100	The multi-input 6 has been configured as PT 1000.
4172	PT 6.2	Timer	0.0 s 999.0 s	10.0 s		
4173	PT 6.2	Relay output A	Not used Relay... Limit	Not used		
4174	PT 6.2	Relay output B	Not used Relay... Limit	Not used		
4175	PT 6.2	Enable	OFF ON	OFF		
4176	PT 6.2	Fail class	F1…F5	Warning (F2)		
4180 RMI oil 6.1						
4181	RMI oil 6.1	Setpoint	0.0 400.0	4.0	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as RMI oil pressure. Oil pressure setpoint can be in Bar or PSI, dependent on the unit selection (menu 10970).
4182	RMI oil 6.1	Timer	0.0 s 999.0 s	5.0 s		
4183	RMI oil 6.1	Relay output A	Not used Relay... Limit	Not used		
4184	RMI oil 6.1	Relay output B	Not used Relay... Limit	Not used		
4185	RMI oil 6.1	Enable	OFF ON	OFF		
4186	RMI oil 6.1	Fail class	F1…F5	Warning (F2)		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4190 RMI oil 6.2						
4191	RMI oil 6.2	Setpoint	0.0 400.0	5.0	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as RMI oil pressure. Oil pressure setpoint can be in Bar or PSI, dependent on the unit selection (menu 10970).
4192	RMI oil 6.2	Timer	0.0 s 999.0 s	5.0 s		
4193	RMI oil 6.2	Relay output A	Not used Relay... Limit	Not used		
4194	RMI oil 6.2	Relay output B	Not used Relay... Limit	Not used		
4195	RMI oil 6.2	Enable	OFF ON	OFF		
4196	RMI oil 6.2	Fail class	F1…F5	Warning (F2)		
4200 RMI water 6.1						
4201	RMI water 6.1	Setpoint	-49 482	100	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as RMI water temperature. Water temperature setpoint can be in deg. C or F, dependent on the unit selection (menu 10970).
4202	RMI water 6.1	Timer	0.0 s 999.0 s	5.0 s		
4203	RMI water 6.1	Relay output A	Not used Relay... Limit	Not used		
4204	RMI water 6.1	Relay output B	Not used Relay... Limit	Not used		
4205	RMI water 6.1	Enable	OFF ON	OFF		
4206	RMI water 6.1	Fail class	F1…F5	Warning (F2)		
4210 RMI water 6.2						
4211	RMI water 6.2	Setpoint	-49 482	110	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as RMI water temperature. Water temperature setpoint can be in deg. C or F, dependent on the unit selection (menu 10970).
4212	RMI water 6.2	Timer	0.0 s 999.0 s	5.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4213	RMI water 6.2	Relay output A	Not used Relay... Limit	Not used		
4214	RMI water 6.2	Relay output B	Not used Relay... Limit	Not used		
4215	RMI water 6.2	Enable	OFF ON	OFF		
4216	RMI water 6.2	Fail class	F1…F5	Warning (F2)		
4220 RMI fuel level 6.1						
4221	RMI fuel 6.1	Setpoint	0% 100%	10%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as RMI fuel level.
4222	RMI fuel 6.1	Timer	0.0 s 999.0 s	10.0 s		
4223	RMI fuel 6.1	Relay output A	Not used Relay... Limit	Not used		
4224	RMI fuel 6.1	Relay output B	Not used Relay... Limit	Not used		
4225	RMI fuel 6.1	Enable	OFF ON	OFF		
4226	RMI fuel 6.1	Fail class	F1…F5	Warning (F2)		
4230 RMI fuel level 6.2						
4231	RMI fuel 6.2	Setpoint	0% 100%	5%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 6 has been configured as RMI fuel level.
4232	RMI fuel 6.2	Timer	0.0 s 999.0 s	10.0 s		
4233	RMI fuel 6.2	Relay output A	Not used Relay... Limit	Not used		
4234	RMI fuel 6.2	Relay output B	Not used Relay... Limit	Not used		
4235	RMI fuel 6.2	Enable	OFF ON	OFF		
4236	RMI fuel 6.2	Fail class	F1…F5	Warning (F2)		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4240 Wire fail 6						
4241	W. fail 6	Relay output A	Not used Relay... Limit	Not used	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The wire break fault detection is activated.
4242	W. fail 6	Relay output B	Not used Relay... Limit	Not used		
4243	W. fail 6	Enable	OFF ON	OFF		
4244	W. fail 6	Fail class	F1…F5	Warning (F2)		

2.6.2 Multi-input no. 7

The available menus for multi-input no. 7 depend on the input type configured in the PC utility software (menu 10990).

No.	Setting		Min. Max.	Factory setting	Notes	Ref.	Description
4250 4-20 mA 7.1							
4251	4-20 mA 7.1	Set-point	4 mA 20 mA	10 mA		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as 4-20 mA.
4252	4-20 mA 7.1	Timer	0.0 s 999.0 s	120.0 s			
4253	4-20 mA 7.1	Relay output A	Not used Relay... Limit	Not used			
4254	4-20 mA 7.1	Relay output B	Not used Relay... Limit	Not used			
4255	4-20 mA 7.1	Enable	OFF ON	OFF			
4256	4-20 mA 7.1	Fail class	F1…F5	Warning (F2)			
4260 4-20 mA 7.2							
4261	4-20 mA 7.2	Set-point	4 mA 20 mA	10 mA		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as 4-20 mA.
4262	4-20 mA 7.2	Timer	0.0 s 999.0 s	120.0 s			
4263	4-20 mA 7.2	Relay output A	Not used Relay... Limit	Not used			
4264	4-20 mA 7.2	Relay output B	Not used Relay... Limit	Not used			
4265	4-20 mA 7.2	Enable	OFF ON	OFF			
4266	4-20 mA 7.2	Fail class	F1…F5	Warning (F2)			
4290 PT 7.1							
4291	PT 7.1	Set-point	-49 482	+80		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as PT 1000.
4292	PT 7.1	Timer	0.0 s 999.0 s	10.0 s			

No.	Setting		Min. Max.	Factory setting	Notes	Ref.	Description
4293	PT 7.1	Relay output A	Not used Relay... Limit	Not used			
4294	PT 7.1	Relay output B	Not used Relay... Limit	Not used			
4295	PT 7.1	Enable	OFF ON	OFF			
4296	PT 7.1	Fail class	F1…F5	Warning (F2)			
4296	PT 7.1	Offset	0.0ohm 5.0ohm	0.0ohm			
4300 PT 7.2							
4301	PT 7.2	Set-point	-49 482	+80		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as PT 1000.
4302	PT 7.2	Timer	0.0 s 999.0 s	5.0 s			
4303	PT 7.2	Relay output A	Not used Relay... Limit	Not used			
4304	PT 7.2	Relay output B	Not used Relay... Limit	Not used			
4305	PT 7.2	Enable	OFF ON	OFF			
4306	PT 7.2	Fail class	F1…F5	Warning (F2)			
4330 RMI water 7.1							
4331	RMI water 7.1	Set-point	-49 482	100		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as RMI water temperature. Water temperature set-point can be in deg. C or F, dependent on the unit selection (menu 10970).
4332	RMI water 7.1	Timer	0.0 s 999.0 s	5.0 s			
4333	RMI water 7.1	Relay output A	Not used Relay... Limit	Not used			
4334	RMI water 7.1	Relay output B	Not used Relay... Limit	Not used			

No.	Setting		Min. Max.	Factory setting	Notes	Ref.	Description
4335	RMI water 7.1	Enable	OFF ON	OFF			
4336	RMI water 7.1	Fail class	F1…F5	Warning (F2)			
4340 RMI water 7.2							
4341	RMI water 7.2	Set-point	-49 482	110		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as RMI water temperature. Water temperature set-point can be in deg. C or F, dependent on the unit selection (menu 10970).
4342	RMI water 7.2	Timer	0.0 s 999.0 s	5.0 s			
4343	RMI water 7.2	Relay output A	Not used Relay... Limit	Not used			
4344	RMI water 7.2	Relay output B	Not used Relay... Limit	Not used			
4345	RMI water 7.2	Enable	OFF ON	OFF			
4346	RMI water 7.2	Fail class	F1…F5	Warning (F2)			
4350 RMI fuel level 7.1							
4351	RMI fuel 7.1	Set-point	0% 100%	10%		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as RMI fuel level.
4352	RMI fuel 7.1	Timer	0.0 s 999.0 s	10.0 s			
4353	RMI fuel 7.1	Relay output A	Not used Relay... Limit	Not used			
4354	RMI fuel 7.1	Relay output B	Not used Relay... Limit	Not used			
4535	RMI fuel 7.1	Enable	OFF ON	OFF			

No.	Setting		Min. Max.	Factory setting	Notes	Ref.	Description
4356	RMI fuel 7.1	Fail class	F1…F5	Warning (F2)			
4360 RMI fuel level 7.2							
4361	RMI fuel 7.2	Set-point	0% 100%	5%		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 7 has been configured as RMI fuel level.
4362	RMI fuel 7.2	Timer	0.0 s 999.0 s	10.0 s			
4363	RMI fuel 7.2	Relay output A	Not used Relay... Limit	Not used			
4364	RMI fuel 7.2	Relay output B	Not used Relay... Limit	Not used			
4365	RMI fuel 7.2	Enable	OFF ON	OFF			
4366	RMI fuel 7.2	Fail class	F1…F5	Warning (F2)			
4370 Wire fail 7							
4371	W. fail 7	Relay output A	Not used Relay... Limit	Not used		Designer's Reference Handbook GCU 113/112/111 and ECU 100	The wire break fault detection is activated.
4372	W. fail 7	Relay output B	Not used Relay... Limit	Not used			
4373	W. fail 7	Enable	OFF ON	OFF			
4374	W. fail 7	Fail class	F1…F5	Warning (F2)			

2.6.3 Multi-input no. 8

The available menus for multi-input no. 8 depend on the input type configured in the PC utility software (menu 11000).

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4380 4-20 mA 8.1						
4381	4-20 mA 8.1	Set-point	4 mA 20 mA	10 mA	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 8 has been configured as 4-20 mA.
4382	4-20 mA 8.1	Timer	0.0 s 999.0 s	120.0 s		
4383	4-20 mA 8.1	Relay output A	Not used Relay... Limit	Not used		
4384	4-20 mA 8.1	Relay output B	Not used Relay... Limit	Not used		
4385	4-20 mA 8.1	Enable	OFF ON	OFF		
4386	4-20 mA 8.1	Fail class	F1…F5	Warn-ing (F2)		
4390 4-20 mA 8.2						
4391	4-20 mA 8.2	Set-point	4 mA 20 mA	10 mA	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 8 has been configured as 4-20 mA.
4392	4-20 mA 8.2	Timer	0.0 s 999.0 s	120.0 s		
4393	4-20 mA 8.2	Relay output A	Not used Relay... Limit	Not used		
4394	4-20 mA 8.2	Relay output B	Not used Relay... Limit	Not used		
4395	4-20 mA 8.2	Enable	OFF ON	OFF		
4396	4-20 mA 8.2	Fail class	F1…F5	Warn-ing (F2)		
4440 RMI oil 8.1						
4441	RMI oil 8.1	Set-point	0.0 145.0	4.0	Designer's Reference Handbook	The multi-input 8 has been configured as RMI oil pressure.
4442	RMI oil 8.1	Timer	0.0 s 999.0 s	5.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4443	RMI oil 8.1	Relay output A	Not used Relay... Limit	Not used	GCU 113/112/111 and ECU 100	Oil pressure setpoint can be in Bar or PSI, dependent on the unit selection (menu 10970).
4444	RMI oil 8.1	Relay output B	Not used Relay... Limit	Not used		
4445	RMI oil 8.1	Enable	OFF ON	OFF		
4446	RMI oil 8.1	Fail class	F1…F5	Warn-ing (F2)		
4450 RMI oil 8.2						
4451	RMI oil 8.2	Set-point	0.0 145.0	5.0	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 8 has been configured as RMI oil pres-sure. Oil pressure setpoint can be in Bar or PSI, dependent on the unit selection (menu 10970).
4452	RMI oil 8.2	Timer	0.0 s 999.0 s	5.0 s		
4453	RMI oil 8.2	Relay output A	Not used Relay... Limit	Not used		
4454	RMI oil 8.2	Relay output B	Not used Relay... Limit	Not used		
4455	RMI oil 8.2	Enable	OFF ON	OFF		
4456	RMI oil 8.2	Fail class	F1…F5	Warn-ing (F2)		
4460 RMI water 8.1						
4461	RMI water 8.1	Set-point	-49 482	100	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 8 has been configured as RMI water tem-perature. Water temperature setpoint can be in deg. C or F, de-pendent on the unit selection (menu 10970).
4462	RMI water 8.1	Timer	0.0 s 999.0 s	5.0 s		
4463	RMI water 8.1	Relay output A	Not used Relay... Limit	Not used		
4464	RMI water 8.1	Relay output B	Not used Relay... Limit	Not used		
4465	RMI water 8.1	Enable	OFF ON	OFF		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4466	RMI water 8.1	Fail class	F1…F5	Warn-ing (F2)		
4470 RMI water 8.2						
4471	RMI water 8.2	Set-point	-49 482	110	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 8 has been configured as RMI water temperature. Water temperature setpoint can be in deg. C or F, dependent on the unit selection (menu 10970).
4472	RMI water 8.2	Timer	0.0 s 999.0 s	5.0 s		
4473	RMI water 8.2	Relay output A	Not used Relay... Limit	Not used		
4474	RMI water 8.2	Relay output B	Not used Relay... Limit	Not used		
4475	RMI water 8.2	Enable	OFF ON	OFF		
4476	RMI water 8.2	Fail class	F1…F5	Warn-ing (F2)		
4480 RMI fuel level 8.1						
4481	RMI fuel 8.1	Set-point	0% 100%	10%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The multi-input 8 has been configured as RMI fuel level.
4482	RMI fuel 8.1	Timer	0.0 s 999.0 s	10.0 s		
4483	RMI fuel 8.1	Relay output A	Not used Relay... Limit	Not used		
4484	RMI fuel 8.1	Relay output B	Not used Relay... Limit	Not used		
4485	RMI fuel 8.1	Enable	OFF ON	OFF		
4486	RMI fuel 8.1	Fail class	F1…F5	Warn-ing (F2)		
4490 RMI fuel level 8.2						
4491	RMI fuel 8.2	Set-point	0% 100%	5%	Designer's Reference Handbook	The multi-input 8 has been configured as RMI fuel level.

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4492	RMI fuel 8.2	Timer	0.0 s 999.0 s	10.0 s	GCU 113/112/111 and ECU 100	
4493	RMI fuel 8.2	Relay output A	Not used Relay... Limit	Not used		
4494	RMI fuel 8.2	Relay output B	Not used Relay... Limit	Not used		
4495	RMI fuel 8.2	Enable	OFF ON	OFF		
4496	RMI fuel 8.2	Fail class	F1…F5	Warn-ing (F2)		
4500 Wire fail 8						
4501	W. fail 8	Relay output A	Not used Relay... Limit	Not used	Designer’s Reference Handbook GCU 113/112/111 and ECU 100	The wire break fault detection is activated.
4502	W. fail 8	Relay output B	Not used Relay... Limit	Not used		
4503	W. fail 8	Enable	OFF ON	OFF		
4504	W. fail 8	Fail class	F1…F5	Warn-ing (F2)		

2.6.4 Speed and running feedback

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4510 Overspeed 1						
4511	Over-speed 1	Set-point	100.0% 150.0%	110.0%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The setpoint in percentage relates to nominal RPM.
4512	Over-speed 1	Timer	0.0 s 100.0 s	5.0 s		
4513	Over-speed 1	Relay output A	Not used Relay... Limit	Not used		
4514	Over-speed 1	Relay output B	Not used Relay... Limit	Not used		
4515	Over-speed 1	Enable	OFF ON	OFF		
4516	Over-speed 1	Fail class	F1…F5	Warning (F2)		
4520 Overspeed 2						
4521	Over-speed 2	Set-point	100.0% 150.0%	120.0%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The setpoint in percentage relates to nominal RPM.
4522	Over-speed 2	Timer	0.0 s 100.0 s	1.0 s		
4523	Over-speed 2	Relay output A	Not used Relay... Limit	Not used		
4524	Over-speed 2	Relay output B	Not used Relay... Limit	Not used		
4525	Over-speed 2	Enable	OFF ON	OFF		
4526	Over-speed 2	Fail class	F1…F5	Warning (F5)		
4530 Crank failure						
4531	Crank failure	Set-point	1 RPM 400 RPM	50 RPM	Designer's Reference Handbook GCU 113/112/111 and ECU 100	If MPU is chosen as the primary running feedback, this alarm will be raised if the specified RPM is not reached before the delay has expired.
4532	Crank failure	Timer	0.0 s 20.0 s	2.0 s		
4533	Crank failure	Relay output A	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4534	Crank failure	Relay output B	Not used Relay... Limit	Not used		
4535	Crank failure	Enable	OFF ON	OFF		
4536	Crank failure	Fail class	F1…F5	Warning (F2)		
4540 Running feedback failure						
4541	Run feedb. fail	Timer	0.0 s 20.0 s	2.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	If running is detected on the frequency (secondary), but the primary running feedback, e.g. digital input, has not detected running, this alarm will be raised after the adjusted delay time.
4542	Run feedb. fail	Relay output A	Not used Relay... Limit	Not used		
4543	Run feedb. fail	Relay output B	Not used Relay... Limit	Not used		
4544	Run feedb. fail	Enable	ON	ON		
4545	Run feedb. fail	Fail class	F1...F5	Warning (F2)		
4560 Hz/voltage failure						
4561	Hz/V failure	Timer	1.0 s 99.0 s	30.0 s	Designer's Reference Handbook GPU 113/112/111	If the frequency and voltage are not within the limits after the running feedback is received, this alarm will be raised when the delay time has expired. Limits are placed in menu 2110 (Sync. blackout).
4562	Hz/V failure	Relay output A	Not used Relay... Limit	Not used		
4563	Hz/V failure	Relay output B	Not used Relay... Limit	Not used		
4564	Hz/V failure	Enable	OFF ON	ON		
4565	Hz/V failure	Fail class	F1...F5	Shutdown (F5)		
4570 Start failure						
4571	Start failure	Relay output A	Not used Relay... Limit	Not used	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The start failure alarm occurs if the genset has not started after the number of start attempts.

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4572	Start failure	Relay output B	Not used Relay... Limit	Not used		
4573	Start failure	Fail class	F1…F5	Block (F1)		
4580 Stop failure						
4581	Stop failure	Timer	10.0 s 120.0 s	30.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	A stop failure alarm will appear if the primary running feedback or the generator voltage and frequency are still present after the delay time has expired.
4582	Stop failure	Relay output A	Not used Relay... Limit	Not used		
4583	Stop failure	Relay output B	Not used Relay... Limit	Not used		
4584	Stop failure	Enable	OFF ON	ON		
4585	Stop failure	Fail class	F1…F5	Shutdown (F5)		
4590 Underspeed 1						
4591	Underspeed	Setpoint	50.0% 100.0%	90.0%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The setpoint in percentage relates to nominal RPM.
4592	Underspeed	Timer	0.0 s 100.0 s	5.0 s		
4593	Underspeed	Relay output A	Not used Relay... Limit	Not used		
4594	Underspeed	Relay output B	Not used Relay... Limit	Not used		
4595	Underspeed	Enable	OFF ON	OFF		
4596	Underspeed	Fail class	F1…F5	Warning (F2)		

2.6.5 Differential measurement

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4600 Delta ana 1-2-3						
4601	Deltaana1 InpA	Setpoint	Multi-input 6EIC	Multi-input 6	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue Inp 1/2/3 setting.Choose between multi inputs, external analogue inputs and EIC values
4602	Deltaana1 InpB	Setpoint	Multi-input 6EIC	Multi-input 6		
4603	Deltaana2 InpA	Setpoint	Multi-input 6EIC	Multi-input 6		
4604	Deltaana2 InpB	Setpoint	Multi-input 6EIC	Multi-input 6		
4605	Deltaana3 InpA	Setpoint	Multi-input 6EIC	Multi-input 6		
4606	Deltaana3 InpB	Setpoint	Multi-input 6EIC	Multi-input 6		
4610 Delta ana 1 1						
4611	Delta Ana1.1	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 1.1
4612	Delta Ana1.1	Timer	0.0 s 999.0 s	5.0 s		
4613	Delta Ana1.1	Relay output A	Not used Relay... Limit	Not used		
4614	Delta Ana1.1	Relay output B	Not used Relay... Limit	Not used		
4615	Delta Ana1.1	Enable	OFF ON	OFF		
4616	Delta Ana1.1	Fail class	F1…F5	Warning (F2)		
4620 Delta ana 1 2						
4621	Delta Ana1.2	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 1.2
4622	Delta Ana1.2	Timer	0.0 s 999.0 s	5.0 s		
4623	Delta Ana1.2	Relay output A	Not used Relay... Limit	Not used		
4624	Delta Ana1.2	Relay output B	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4625	Delta Ana1.2	Enable	OFF ON	OFF		
4626	Delta Ana1.2	Fail class	F1…F5	Warning (F2)		
4630 Delta ana 2 1						
4631	Delta Ana2.1	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 2.1
4632	Delta Ana2.1	Timer	0.0 s 999.0 s	5.0 s		
4633	Delta Ana2.1	Relay output A	Not used Relay... Limit	Not used		
4634	Delta Ana2.1	Relay output B	Not used Relay... Limit	Not used		
4635	Delta Ana2.1	Enable	OFF ON	OFF		
4636	Delta Ana2.1	Fail class	F1…F5	Warning (F2)		
4640 Delata ana 2 2						
4641	Delta Ana2.2	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 2.2
4642	Delta Ana2.2	Timer	0.0 s 999.0 s	5.0 s		
4643	Delta Ana2.2	Relay output A	Not used Relay... Limit	Not used		
4644	Delta Ana2.2	Relay output B	Not used Relay... Limit	Not used		
4645	Delta Ana2.2	Enable	OFF ON	OFF		
4646	Delta Ana2.2	Fail class	F1...F5	Warning (F2)		
4650 Delta ana 3 1						
4651	Delta Ana3.1	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 3.1
4652	Delta Ana3.1	Timer	0.0 s 999.0 s	5.0 s		
4653	Delta Ana3.1	Relay output A	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4654	Delta Ana3.1	Relay output B	Not used Relay... Limit	Not used		
4655	Delta Ana3.1	Enable	OFF ON	OFF		
4656	Delta Ana3.1	Fail class	F1...F5	Warning (F2)		
4660 Delta ana 3 2						
4661	Delta Ana3.2	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 3.2
4662	Delta Ana3.2	Timer	0.0 s 999.0 s	5.0 s		
4663	Delta Ana3.2	Relay output A	Not used Relay... Limit	Not used		
4664	Delta Ana3.2	Relay output B	Not used Relay... Limit	Not used		
4665	Delta Ana3.2	Enable	OFF ON	OFF		
4666	Delta Ana3.2	Fail class	F1...F5	Warning (F2)		
4670 Delta ana 4-5-6						
4671	Deltaana4 InpA	Setpoint	Multi-input 6EIC	Multi-in- put 6	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue Inp 4/5/6 settingsChoose between mul- ti-inputs, external an- alogue in- puts and EIC values
4672	Deltaana4 InpB	Setpoint	Multi-input 6EIC	Multi-in- put 6		
4673	Deltaana5 InpA	Setpoint	Multi-input 6EIC	Multi-in- put 6		
4674	Deltaana5 InpB	Setpoint	Multi-input 6EIC	Multi-in- put 6		
4675	Deltaana6 InpA	Setpoint	Multi-input 6EIC	Multi-in- put 6		
4676	Deltaana6 InpB	Setpoint	Multi-input 6EIC	Multi-in- put 6		
4680 Delta ana 4 1						
4681	Delta ana4 1	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 4.1
4682	Delta ana4 1	Timer	0.0 s 999.0 s	5.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4683	Delta ana4 1	Relay output A	Not used Relay... Limit	Not used		
4684	Delta ana4 1	Relay output B	Not used Relay... Limit	Not used		
4685	Delta ana4 1	Enable	OFF ON	OFF		
4686	Delta ana4 1	Fail class	F1...F5	Warning (F2)		
4690 Delta ana 4 2						
4691	Delta ana4 2	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 4.2
4692	Delta ana4 2	Timer	0.0 s 999.0 s	5.0 s		
4693	Delta ana4 2	Relay A	Not used Relay... Limit	Not used		
4694	Delta ana4 2	Relay B	Not used Relay... Limit	Not used		
4695	Delta ana4 2	Enable	OFF ON	OFF		
4696	Delta ana4 2	Fail class	F1...F5	Warning (F2)		
4700 Delta ana 5 1						
4701	Delta ana5 1	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 5.1
4702	Delta ana5 1	Timer	0.0 s 999.0 s	5.0 s		
4703	Delta ana5 1	Relay output A	Not used Relay... Limit	Not used		
4704	Delta ana5 1	Relay output B	Not used Relay... Limit	not used		
4705	Delta ana5 1	Enable	OFF ON	OFF		
4706	Delta ana5 1	Fail class	F1...F5	Warning (F2)		
4710 Delta ana 5 2						

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4711	Delta ana5 2	Setpoint	-9999 9999	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 5.2
4712	Delta ana5 2	Timer	0.0 s 999.0 s	5.0 s		
4713	Delta ana5 2	Relay output A	Not used Relay... Limit	Not used		
4714	Delta ana5 2	Relay output B	Not used Relay... Limit	Not used		
4715	Delta ana5 2	Enable	OFF ON	OFF		
4716	Delta ana5 2	Fail class	F1...F5	Warning (F2)		
4720 Delta ana 6 1						
4721	Delta ana6 1	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 6.1
4722	Delta ana6 1	Timer	0.0 s 999.0 s	5.0 s		
4723	Delta ana6 1	Relay output A	Not used Relay... Limit	Not used		
4724	Delta ana6 1	Relay output B	Not used Relay... Limit	Not used		
4725	Delta ana6 1	Enable	OFF ON	OFF		
4726	Delta ana6 1	Fail class	F1...F5	Warning (F2)		
4730 Delta ana 6 2						
4731	Delta ana6 2	Setpoint	-999.9 999.9	1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Delta analogue alarm setting 6.2
4732	Delta ana6 2	Timer	0.0 s 999.0 s	5.0 s		
4733	Delta ana6 2	Relay output A	Not used Relay... Limit	Not used		
4734	Delta ana6 2	Relay output B	Not used Relay... Limit	Not used		
4735	Delta ana6 2	Enable	OFF ON	OFF		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4736	Delta ana6 2	Fail class	F1...F5	Warning (F2)		

2.6.6 Aux. supply setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4950 U< aux. term. 1.2						
4951	U< aux. term. 1.2	Set Point	8.0V 32.0V	15.0V	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The power supply on terminal 1 and 2 has been continuously below the adjusted setpoint during the programmed delay.
4952	U< aux. term. 1.2	Timer	0.0 s 999.0 s	1.0 s		
4953	U< aux. term. 1.2	Relay output A	Not used Relay... Limit	Not used		
4954	U< aux. term. 1.2	Relay output B	Not used Relay... Limit	Not used		
4955	U< aux. term. 1.2	Enable	OFF ON	ON		
4956	U< aux. term. 1.2	Fail class	F1…F5	Warn-ing (F2)		
4960 U< aux. term. 1						
4961	U< aux. term. 1	Set-point	8.0V DC 32.0V DC	18.0V DC	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The power supply on terminal 1 and 2 has been continuously below the adjusted setpoint during the programmed delay.
4962	U< aux. term. 1	Timer	0.0 s 999.0 s	1.0 s		
4963	U< aux. term. 1	Relay output A	Not used Relay... Limit	Not used		
4964	U< aux. term. 1	Relay output B	Not used Relay... Limit	Not used		
4965	U< aux. term. 1	Enable	OFF ON	ON		
4966	U< aux. term. 1	Fail class	F1…F5	Warn-ing (F2)		
4970 U> aux. term. 1						

No.	Setting		Min. Max.	Factory setting	Ref.	Description
4971	U> aux. term. 1	Set-point	12.0V DC 36.0V DC	30.0V DC	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The power supply on terminal 1 and 2 has been continuously above the adjusted setpoint during the programmed delay.
4972	U> aux. term. 1	Timer	0.0 s 999.0 s	1.0 s		
4973	U> aux. term. 1	Relay output A	Not used Relay... Limit	Not used		
4974	U> aux. term. 1	Relay output B	Not used Relay... Limit	Not used		
4975	U> aux. term. 1	Enable	OFF ON	ON		
4976	U> aux. term. 1	Fail class	F1…F5	Warn-ing (F2)		

2.7 System parameters, general setup

2.7.1 Engine heater failure

No.	Setting		Min. Max.	Factory setting	Ref.	Descrip-tion
6330 Engine heater 1						
6331	Engine heater 1	Setpoint	10 deg 250 deg	40 deg	Designer's Reference Hand-book GCU 113/112/111 and ECU 100	
6332	Engine heater 1	Timer	1.0 s 300.0 s	10.0 s		
6333	Engine heater 1	Relay out-put A	Not used Relay... Limit	Not used		
6334	Engine heater 1	Relay out-put B	Not used Relay... Limit	Not used		
6335	Engine heater 1	Enable	OFF ON	OFF		
6336	Engine heater 1	Fail class	F1…F5	Warning (F2)		

2.7.2 Battery tests

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6410 Battery test						
6411	Battery test	Setpoint	8.0 V 32.0 V	18.0 V	Designer's Reference Handbook GCU 113/112/111 and ECU 100	If the battery voltage drops below setpoint during crank test the alarm activates.
6412	Battery test	Timer	1 s 300 s	20 s		
6413	Battery test	Type	Power supply Multi-input 6 Multi-input 7 Multi-input 8	Power supply		
6414	Battery test	Relay output A	Not used Relay... Limit	Not used		
6415	Battery test	Enable	OFF ON	OFF		
6416	Battery test	Fail class	F1…F5	Warning (F2)		
6420 Auto battery test						
6421	Auto batt test	Enable	On Off	Off	Designer's Reference Handbook GCU 113/112/111	Automatic battery test time setting.
6422	Auto batt test	Day	Monday Sunday	Monday		
6423	Auto batt test	Hours	0 h 23 h	10h		
6424	Auto batt test	Week	1 52	52		
6425	Auto batt test	Relay output A	Not used Relay... Limit	Not used		

2.7.3 Not in auto/Not in remote

No.	Setting		Min. Max.	Factory setting	Ref.	Descrip-tion
6540 Not in auto / Not in remote						
6541	Not in auto Not in remote	Timer	10.0 s 900.0 s	300.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
6542	Not in auto Not in remote	Relay output A	Not used Relay... Limit	Not used		
6543	Not in auto Not in remote	Relay output B	Not used Relay... Limit	Not used		
6544	Not in auto Not in remote	Enable	OFF ON	OFF		
6545	Not in auto Not in remote	Fail class	F1…F5	Warning (F2)		

2.7.4 Avg U BB

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7480 Avg U BB > 1						
7481	Avg U BB> 1	Setpoint	100.0% 120.0%	110.0%	Designer's Reference Handbook GCU 113	
7482	Avg U BB> 1	Timer	0.1 s 3200.0 s	10.0 s		
7483	Avg U BB> 1	Relay output A	Not used Relay... Limit	Not used		
7484	Avg U BB> 1	Enable	OFF ON	OFF		
7485	Avg U BB> 1	Fail class	F1...F5	Trip tB (F6)		
7486	Avg U BB> 1	AVG timer	30.0 s 900.0 s	600.0 s		
7490 Avg U BB > 2						
7491	Avg U BB> 2	Setpoint	100.0% 120.0%	110.0%	Designer's Reference Handbook GCU 113	
7492	Avg U BB> 2	Timer	0.1 s 3200.0 s	10.0 s		
7493	Avg U BB> 2	Relay output A	Not used Relay... Limit	Not used		
7494	Avg U BB> 2	Enable	OFF ON	OFF		
7495	Avg U BB> 2	Fail class	F1...F5	Trip TB (F6)		
7496	Avg U BB> 2	AVG timer	30.0 s 900.0 s	600.0 s		

2.8 System parameters, communication

2.8.1 External communication error

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7520 External communication error						
7521	Ext. comm. error	Delay	1.0 s 100.0 s	10.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Supervision of the external communication line. The alarm will occur when there has not been any communication during the time delay.
7522	Ext. comm. error	Relay output A	Not used Relay... Limit	Not used		
7523	Ext. comm. error	Relay output B	Not used Relay... Limit	Not used		
7524	Ext. comm. error	Enable	OFF ON	OFF		
7525	Ext. comm. error	Fail class	F1…F5	Warning (F2)		

2.8.2 Engine interface communication alarms

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7570 EI comm. error						
7571	EI comm. error	Timer	0.0 s 100.0 s	0.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Supervision of the EIC communication line. The alarm will occur when there has not been any communication during the time delay.
7572	EI comm. error	Relay output A	Not used Relay... Limit	Not used		
7573	EI comm. error	Relay output B	Not used Relay... Limit	Not used		
7574	EI comm. error	Enable	OFF ON	ON		
7575	EI comm. error	Fail class	F1…F5	Warning (F2)		
7580 EIC warning						
7581	EIC warning	Timer	0.0 s 100.0 s	0.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7582	EIC warning	Relay output A	Not used Relay... Limit	Not used		
7583	EIC warning	Relay output B	Not used Relay... Limit	Not used		
7584	EIC warning	Enable	OFF ON	ON		
7585	EIC warning	Fail class	F1…F5	Warning (F2)		
7590 EIC shutdown						
7591	EIC shutdown	Timer	0.0 s 100.0 s	0.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7592	EIC shutdown	Relay output A	Not used Relay... Limit	Not used		
7593	EIC shutdown	Relay output B	Not used Relay... Limit	Not used		
7594	EIC shutdown	Enable	OFF ON	OFF		
7595	EIC shutdown	Fail class	F1…F5	Shutdown (F5)		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7600 EIC overspeed						
7601	EIC over-speed	Setpoint	100.0% 150.0%	110.0%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7602	EIC over-speed	Timer	0.0 s 100.0 s	5.0 s		
7603	EIC over-speed	Relay output A	Not used Relay... Limit	Not used		
7604	EIC over-speed	Relay output B	Not used Relay... Limit	Not used		
7605	EIC over-speed	Enable	OFF ON	OFF		
7606	EIC over-speed	Fail class	F1…F5	Warning (F2)		
7610 EIC coolant temp. 1						
7611	EIC coolant t. 1	Setpoint	-40 deg 410 deg	100 deg	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7612	EIC coolant t. 1	Timer	0.0 s 100.0 s	5.0 s		
7613	EIC coolant t. 1	Relay output A	Not used Relay... Limit	Not used		
7614	EIC coolant t. 1	Relay output B	Not used Relay... Limit	Not used		
7615	EIC coolant t. 1	Enable	OFF ON	OFF		
7616	EIC coolant t. 1	Fail class	F1…F5	Warning (F2)		
7620 EIC coolant temp. 2						
7621	EIC coolant t. 2	Setpoint	-40 deg 410 deg	110 deg	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7622	EIC coolant t. 2	Timer	0.0 s 100.0 s	5.0 s		
7623	EIC coolant t. 2	Relay output A	Not used Relay... Limit	Not used		
7624	EIC coolant t. 2	Relay output B	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7625	EIC coolant t. 2	Enable	OFF ON	OFF		
7626	EIC coolant t. 2	Fail class	F1…F5	Warning (F2)		
7630 EIC oil pressure 1						
7631	EIC oil press. 1	Setpoint	0.0 bar 145.0 bar	2.0 bar	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7632	EIC oil press. 1	Timer	0.0 s 100.0 s	5.0 s		
7633	EIC oil press. 1	Relay output A	Not used Relay... Limit	Not used		
7634	EIC oil press. 1	Relay output B	Not used Relay... Limit	Not used		
7635	EIC oil press. 1	Enable	OFF ON	OFF		
7636	EIC oil press. 1	Fail class	F1…F5	Warning (F2)		
7640 EIC oil pressure 2						
7641	EIC oil press. 2	Setpoint	0.0 bar 145.0 bar	1.0 bar	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7642	EIC oil press. 2	Timer	0.0 s 100.0 s	5.0 s		
7643	EIC oil press. 2	Relay output A	Not used Relay... Limit	Not used		
7644	EIC oil press. 2	Relay output B	Not used Relay... Limit	Not used		
7645	EIC oil press. 2	Enable	OFF ON	OFF		
7646	EIC oil press. 2	Fail class	F1…F5	Shutdown (F5)		
7650 EIC oil temp 1						
7651	EIC oil temp. 1	Setpoint	0 deg 410 deg	40 deg	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7652	EIC oil temp. 1	Timer	0.0 s 100.0 s	5.0 s		
7653	EIC oil temp. 1	Relay output A	Not used Relay... Limit	Not used		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7654	EIC oil temp. 1	Relay output B	Not used Relay... Limit	Not used		
7655	EIC oil temp. 1	Enable	OFF ON	OFF		
7656	EIC oil temp. 1	Fail class	F1…F5	Warning (F2)		
7660 EIC oil temp 2						
7661	EIC oil temp. 2	Setpoint	0 deg 410 deg	50 deg	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7662	EIC oil temp. 2	Timer	0.0 s 100.0 s	5.0 s		
7663	EIC oil temp. 2	Relay output A	Not used Relay... Limit	Not used		
7664	EIC oil temp. 2	Relay output B	Not used Relay... Limit	Not used		
7665	EIC oil temp. 2	Enable	OFF ON	OFF		
7666	EIC oil temp. 2	Fail class	F1…F5	Shutdown (F5)		
7670 EIC coolant level 1						
7671	EIC coolant level 1	Setpoint	0% 100%	20%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7672	EIC coolant level 1	Timer	0.0 s 100.0 s	5.0 s		
7673	EIC coolant level 1	Relay output A	Not used Relay... Limit	Not used		
7674	EIC coolant level 1	Relay output B	Not used Relay... Limit	Not used		
7675	EIC coolant level 1	Enable	OFF ON	OFF		
7676	EIC coolant level 1	Fail class	F1...F5	Warning (F2)		
7680 EIC coolant level 2						
7681	EIC coolant level 2	Setpoint	0% 100%	10%	Designer's Reference Handbook	
7682	EIC coolant level 2	Timer	0.0 s 100.0 s	5.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7683	EIC coolant level 2	Relay output A	Not used Relay... Limit	Not used	GCU 113/112/111 and ECU 100	
7684	EIC coolant level 2	Relay output B	Not used Relay... Limit	Not used		
7685	EIC coolant level 2	Enable	OFF ON	OFF		
7686	EIC coolant level 2	Fail class	F1...F5	Shutdown (F5)		
7690 EIC Cyl diff. 1						
7691	EIC Cyl diff. 1	Setpoint	0 C 9999 C	100 C	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7692	EIC Cyl diff. 1	Timer	0.0 s 100.0 s	5.0 s		
7693	EIC Cyl diff. 1	Relay output A	Not used Relay... Limit	Not used		
7694	EIC Cyl diff. 1	Relay output B	Not used Relay... Limit	Not used		
7695	EIC Cyl diff. 1	Enable	OFF ON	OFF		
7700 EIC Cyl diff. 2						
7701	EIC Cyl diff. 2	Setpoint	0 C 9999 C	100 C	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7702	EIC Cyl diff. 2	Timer	0.0 s 100.0 s	5.0 s		
7703	EIC Cyl diff. 2	Relay output A	Not used Relay... Limit	Not used		
7704	EIC Cyl diff. 2	Relay output B	Not used Relay... Limit	Not used		
7705	EIC Cyl diff. 2	Enable	OFF ON	OFF		

3. Parameter list

3.1 General information about the parameter list

3.1.1 Parameter list settings

The parameter list contains settings for regulators and other non-alarm-related settings.

3.2 Control parameter, regulation

3.2.1 Regulation

No.	Setting		Min. Max.	Factory setting	Ref.	Description
2770 EIC speed control						
2771	Scania control	Droop	0.0% 25.0%	0.0%	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Setting of speed control via engine communication interface.
2772	Scania control	rpm	User 1500 RPM 1800 RPM Low idle	User		
2773	Cummins Gain	Kp	0.00 10.00	5.00		
2790 EIC speed demand switch						
2791	EIC speed dem. sw.	Local norm sw.	Analog CAN Up/Down ECU Up/Down CAN Analog ECU Ana. ECU rel. Frequency	Ana. CAN	Designer's Reference Handbook GCU 113/112/111 end ECU 100	
2792	EIC speed dem. sw.	Local Emerg sw.	Analog CAN Up/Down ECU Up/Down CAN Analog ECU Ana. ECU rel. Frequency	Ana. CAN		
2793	EIC speed dem. sw.	Remote norm sw.	Analog CAN Up/Down ECU Up/Down CAN Analog ECU Ana. ECU rel. Frequency	Ana. CAN		
2794	EIC speed dem. sw.	Remote Emerg sw.	Ana. CAN Up/Down ECU Up/Down CAN Ana. ECU Ana. ECU rel. Frequency	Ana. CAN		

3.3 Control parameters, output setup

3.3.1 Digital output setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
5000 Output						
5001	Relay 03	Function	Alarm relay ND Alarm relay NE	Horn relay	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5002	Relay 03	OFF delay	0.0 s 999.9 s	5.0 s		
5010 Relay 21						
5011	Relay 21	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5012	Relay 21	OFF delay	0.0 s 999.9 s	5.0 s		
5020 Relay 22						
5021	Relay 22	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5022	Relay 22	OFF delay	0.0 s 999.9 s	5.0 s		
5030 Relay 23						
5031	Relay 23	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5032	Relay 23	OFF delay	0.0 s 999.9 s	5.0 s		
5040 Relay 24						
5041	Relay 24	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5042	Relay 24	OFF delay	0.0 s 999.9 s	5.0 s		
5050 Relay 26						

No.	Setting		Min. Max.	Factory setting	Ref.	Description
5051	Relay 26	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5052	Relay 26	OFF delay	0.0 s 999.9 s	5.0 s		
5060 Relay 45						
5061	Relay 45	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5062	Relay 45	OFF delay	0.0 s 999.9 s	5.0 s		
5070 Relay 47						
5071	Relay 47	Function	Alarm relay ND Alarm relay NE	Alarm relay ND	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Function selections: - Alarm relay ND - Limit relay - Horn relay - Alarm relay NE
5072	Relay 47	OFF delay	0.0 s 999.9 s	5.0 s		

3.4 System parameters

These menus include parameters for the system setup.

3.5 System parameters, general setup

3.5.1 General setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6000 Nominal settings 1						
6001	Nom. settings	Frequency	48.0 Hz 62.0 Hz	50.0 Hz	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The selection of nominal settings to be used is set in menu 6006. A binary input or selection in M-logic can also be used.
6002	Nom. settings	Power	10 kW 20000 kW	480 kW		
6003	Nom. settings	Current	0 A 9000 A	867 A		
6004	Nom. settings	Voltage	100 V 25000 V	400 V		
6005	Nom. settings	RPM	100 RPM 4000 RPM	1500 RPM		
6006	Nom. settings	Setting	1 2	1		
6010 Nominal settings 2						
6011	Nom. settings 2	Frequency	48.0 Hz 62.0 Hz	50.0 Hz	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
6012	Nom. settings 2	Power	10 kW 20000 kW	230 kW		
6013	Nom. settings 2	Current	0 A 9000 A	345 A		
6014	Nom. settings 2	Voltage	100 V 25000 V	480 V		
6015	Nom. settings 2	RPM	100 RPM 4000 RPM	1500 RPM		
6040 Gen A transformer						
6041	G transformer	U primary	100 V 25000 V	400 V	Designer's Reference Handbook GCU 113/112/111	If no voltage transformer is present, the primary and secondary side values are set to generator nominal value.
6042	G transformer	U secondary	100 V 480 V	400 V		
6043	G transformer	I primary	5 A 9000 A	1000 A		
6044	G transformer	I secondary	1 A 5 A	1A		
6050 Busbar settings						

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6051	BB transformer	U primary	100 V 25000 V	400 V	Designer's Reference Handbook GCU 113/112	If no voltage transformer is present, the primary and secondary side values are set to generator nominal value.
6052	BB transformer	U secondary	100 V 480 V	400 V		
6053	BB transformer	Nominal U 1	100 V 25000 V	400 V		
6054	BB transformer	Bus nom. set	Param set 1 Param set 2	Param set 1		
6060 Busbar settings 2						
6061	BB transformer	U primary	100 V 25000 V	400 V	Designer's Reference Handbook GCU 113/112	If no voltage transformer is present, the primary and secondary side values are set to generator nominal value.
6062	BB transformer	U secondary	100 V 480 V	400 V		
6063	BB transformer	Nominal U 2	100 V 25000 V	400 V		
6080 Language						
6081	Language		English Language 11	English	Designer's Reference Handbook GCU 113/112/111	The master language is English. Additionally, 11 different languages can be configured with the PC utility software.

3.5.2 Counters and timers

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6100 Counters						
6101	Counters	Running hour	0 hrs 999 hrs	0 hrs	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Setting 6105 resets the kWh counter to 0. It automatically reverts to OFF after being set ON.
6102	Counters	Running, Hrs x 1000	0 th. hrs 999 th. hrs	0 th. hrs		
6103	Counters	GB operations	0 20000	0		
6104	Counters	TB operations	0 20000	0		
6105	Counters	kWh reset	OFF ON	OFF		
6106	Counters	Start attempt	0 20000	0		
6110 Service timer 1						
6111	Service timer 1	Enable	OFF ON	ON	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The timer is reset by enabling menu 6116. The menu automatically goes OFF.
6112	Service timer 1	Running hours	0 hrs 9000 hrs	500 hrs		
6113	Service timer 1	Days	1 days 1000 days	365 days		
6114	Service timer 1	Fail class	F1...F5	F2 (Warning)		
6115	Service timer 1	Output A	Not used Relay... Limit	Not used		
6116	Service timer 1	Reset	OFF ON	OFF		
6120 Service timer 2						
6121	Service timer 2	Enable	OFF ON	ON	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The timer is reset by enabling menu 6126. The menu automatically goes OFF.
6122	Service timer 2	Running hours	0 hrs 9000 hrs	500 hrs		
6123	Service timer 2	Days	1 days 1000 days	365 days		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6124	Service timer 2	Fail class	F1...F5	F2 (Warn-ing)		
6125	Service timer 2	Relay output A	Not used Relay... Limit	Not used		
6126	Service timer 2	Reset	OFF ON	OFF		

3.5.3 Alarm horn

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6130 Alarm horn						
6131	Alarm horn	ON time	0.0 sec 990.0 sec	20.0 sec	Designer's Reference Handbook GCU 113/112/111 and ECU 100	If the setting is adjusted to 0 s, the horn relay will be activated continuously until the alarm is acknowledged.

3.5.4 Run coil setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6150 Run coil setup						
6151	Run coil setup	ON time	0.0 sec 600.0 sec	1.0 sec	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
6152	Run coil setup	Type	Pulse Continuous	Pulse	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Pulse: reset for each start attempt. Continuous: high throughout all start attempts.

3.5.5 Running, start and stop

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6160 Run status						
6161	Run status	Timer	0.0 s 300.0 s	5.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	If a relay output is used, the relay in question must be set to "limit".
6162	Run status	Relay output A	Not used Relay... Limit	Not used		
6163	Run status	Relay output B	Not used Relay... Limit	Not used		
6164	Run status	Enable	OFF ON	OFF		
6170 Running detection						
6171	Running detect.	No. of teeth	0 teeth 500 teeth	0 teeth	Designer's Reference Handbook GCU 113/112/111 and ECU 100	If menu 6171 is set to 0, the magnetic pickup input is not active. If menu 6175 is set to 0.0, the oil pressure running detection is OFF.
6172	Running detect.	Type	- Digital input - MPU input - Frequency - EIC (Engine comm.) - Multi-input 6 - Multi-input 7 - Multi-input 8	Frequency		
6173	Running detect.	Running RPM	0 RPM 4000 RPM	1000 RPM		
6174	Running detect.	Remove starter	1 RPM 2000 RPM	400 RPM		
6175	Running detect.	Pressure level	0.0 bar 150.0 bar	0.0 bar		
6180 Starter						
6181	Starter	Start prepare	0.0 s 600.0 s	5.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Menu 6185 and 6186 relate to using oil pressure as running feedback.
6182	Starter	Ext. prepare	0.0 s 600.0 s	0.0 s		

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6183	Starter	Start ON time	1.0 s 600.0 s	5.0 s		If menu 6186 is set to 0.0, the oil pressure (or what's chosen) running feedback is deregarded.
6184	Starter	Start OFF time	1.0 s 99.0 s	5.0 s		
6185	Starter	Input type	Multi-input 6 Multi-input 7 Multi-input 8	Multi-input 6		
6186	Starter	Setpoint	0.0 bar 300.0 bar	0.0 bar		
6190 Start attempts						
6191	Start attempts	Setpoint	1 100	3	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Number of start attempts.
6210 Stop						
6211	Stop	Cooling down	0.0 s 9900.0 s	240.0 s	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The extended stop timer starts when the running feedback disappears. During the delay time it is not possible to start the engine.
6212	Stop	Extended stop	1.0 s 300.0 s	5.0 s		
6213	Stop	TYPE	Multi-input 6 Multi-input 7 Multi-input 8 M-Logic EIC	Multi-input 6		
6214	Stop	Setpoint	0 deg. 482 deg.	0 deg.		
6220 Hz/V OK						
6221	HZ/V OK	Timer	1.0 s 99.0 s	0.0 s	Designer's Reference Handbook GCU 113/112/111	The voltage and frequency have to be continuously within the limits during the delay timer before the breaker can be closed.

3.5.6 GB Breaker control

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6230						
6231	GB control	Close delay	0.0 s 30.0 s	2.0 s	Designer's Reference Handbook GCU 113/112	Menu 6232 is for compact breakers (need to charge spring before closing).
6232	GB control	Load time	0.0 s 30.0 s	0.0 s		
6233	GB control	Breaker type	Pulse Continuous Compact	Pulse		

3.5.7 Idle running

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6290 Idle running						
6291	Idle start	Start timer	0.0 min. 999.0 min.	300.0 min.	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
6292	Idle start	Enable start	OFF ON	OFF		
6293	Idle stop	Stop timer	0.0 min. 999.0 min.	300.0 min.		
6294	Idle stop	Enable stop	OFF ON	OFF		
6295	Idle active	Relay output A	Not used Relay... Limit	Not used		
6296	Idle active	Enable	OFF ON	OFF		

3.5.8 Engine heater

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6320 Engine heater						
6321	Engine heater	Set-point	20 deg. 250 deg.	40 deg.	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Heater function for stand-still. Type: - Multi-input 6 - Multi-input 7 - Multi-input 8 - EIC
6322	Engine heater	Relay output A	Not used Relay... Limit	Not used		
6323	Engine heater	Type	Multi-input 6 Multi-input 7 Multi-input 8 EIC	Multi-inp 6		
6324	Engine heater	Hyste-resis	1 deg. 70 deg.	3 deg.		
6325	Engine heater	Enable	OFF ON	OFF		

3.5.9 Fuel transfer pump logic

No.	Setting		Min. Max.	Factory setting	Notes	Ref.	De-scrip-tion
6550 Fuel pump logic							
6551	Fuel pump logic	Setpoint start	0% 100%	20%		Designer's Reference Handbook GCU 113/112/111 and ECU 100	
6552	Fuel pump logic	Setpoint stop	0% 100%	80%			
6553	Fuel pump logic	Fill check time	0.1 s 999.9 s	60.0 s			
6554	Fuel pump logic	Relay out-put A	Not used Relay.. Limit	Not used			
6555	Fuel pump logic	Setpoint	Multi-inp 6 Multi-inp 7 Multi-inp 8	Multi-inp 6			
6556	Fuel pump logic	Fail class	F1…F5	Warning (F2)			

3.5.10 Alarm jump

No.	Setting		Min. Max.	Factory setting	Ref.	Description
6900 Alarm jump						
6901	Alarm jump	Enable	OFF ON	ON	Designer's Reference Handbook	Selection of jump to alarm list view on the display if an alarm appears (ON), or stay at present view (OFF).

3.6 System parameters, busbar setup

3.6.1 Test

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7040 Test running						
7042	Test	Test time	0.5 min. 999.0 min.	5.0 min.	Designer’s Reference Handbook GCU 113/112/111 and ECU 100	
7043	Test	Return mode	Manuel mode Auto mode/ Local Remote	Auto mode/ Remote		
7044	Test	Test type	Simple test Full test	Simple test		

3.6.2 Emergency diesel generator control

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7080 TB control						
7082	TB control	TB close delay	0.0 s 30.0 s	0.5 s	Designer's Reference Handbook GCU 113	
7085	TB control	Load time	0.0 s 30.0 s	0.0 s		
7086	TB control	Breaker type	- Pulse - Continuous NO - Compact - Continuous NC	Pulse		
7100 Blackout						
7101	Blackout	Fail delay timer	0.5 s 990 s	5 s	Designer's Reference Handbook GCU 113	
7102	Blackout	Ok delay timer	10 s 9900 s	60 s		
7103	Blackout	Blackout level	0% 100%	20%		

3.7 System parameters external communication

3.7.1 External communication

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7510 External communication						
7511	Ext. communication	ID	1 247	3	Designer's Reference Handbook GCU 113/112/111 and ECU 100	The mode ASCII is used for modem communication (ASCII: 7 data bit, RTU: 8 data bit).
7512	Ext. communication	Baud rate	9600 19200	9600	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
7513	Ext. communication	Mode	RTU Mode ASCII Mode	RTU	Designer's Reference Handbook GCU 113/112/111 and ECU 100	

3.8 System Parameters, engine interface communication

3.8.1 Engine interface communication

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7560 Engine I/F						
7561	Engine I/F	Engine type	OFF DDEC EMR JDEC Iveco Perkins Caterpillar Volvo Penta Volvo Penta EMS 2 Scania EMS Scania EMS 2 MDEC 2000/4000 M. 302 MDEC 2000/4000 M. 303 MTU ADEC Cummins Generic J1939 MTU J1939 Smart Connect	OFF	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Choose MDEC 2000/4000 M. 303 when M.201 or M.304 is required. Menu 7562 is only applicable when MTU ADEC is selected as engine type.Menu 7563 is for enabling the EIC commands transmission. Menu 7564: When set to "ON", up to 19 extra views (of 3 lines) are added to the 15 original V1 views (of 3 lines). These extra views are displaying all the present engine com. values broadcasted on this CAN communica- tion when this function is set to "ON". Menu 7565: "Caterpillar CDVR" will not work if MTU protocols are selected in menu 7561.
7562	CAN-open ID	Node ID	0 255	0		
7563	EIC Controls	Enable	OFF ON	ON		
7564	EIC Auto view	Enable	OFF ON	OFF		
7840 CAN prot Select						
7841	Protocol A	Setpoint	OFF H 5 EIC	OFF	Designer's Reference Handbook	

No.	Setting		Min. Max.	Factory setting	Ref.	Description
7842	Protocol B	Setpoint	OFF AOP-2	OFF	GCU 113/112/111 and ECU 100	

3.9 System parameters, external I/O communication setup

3.9.1 External I/O communication setup

No.	Setting		Min. Max.	Factory setting	Ref.	Description
911x Password						
9111	User password	Setting	Customer	2000	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
9112	Service password	Setting	Service	2001		
9113	Master password	Setting	Master	2002		

3.9.2 AC configuration

This menu is used to choose the AC configuration.

No.	Setting		Ref.	Description
9130 AC configuration				
9130	AC config.	Setting	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Selections: ● 3 phase L1L2L3 ● 2 phase L1L3 ● 2 phase L1L2 ● 1 phase L1

No.	Setting		Description
9150 Backlight dim			
9150	Backlight dim		Sets the light intensity for the display.

3.10 System parameters, utility software

3.10.1 GSM settings

GSM settings are only accessible in the utility software.

No.	Setting		Min. Max.	Factory setting	Ref.	Descrip-tion
10320 GSM Pin code						
10320	GSM Pin code	Function	0 9999	0	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
10330 Telephone no. 1						
10330	Telephone 1	Function	0 99999999999	+1234567890	Designer's Reference Handbook GCU 113/112/111 and ECU 100	

Telephone numbers 2-5 are available in menus 10340-10373.

3.11 System parameters, RMI inputs

3.11.1 RMI 6

RMI 6 settings are only accessible in the utility software.

No.	Setting	Min. Max.	Factory setting	Ref.	Description
10460 RMI 1 type					
10460	RMI 1 type	Sensor type 1 Sensor type 2 Sensor type 3 Sensor type 4 Configurable RMI	Sensor type 1	Designer's Reference Handbook GCU 113/112/111 and ECU 100	
10470 RMI 1 input setpoint 1					
10470	RMI 1 input setup 1	0 Ohm 2500 Ohm	10 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10480 RMI 1 output setpoint 1					
10480	RMI 1 output setup 1	-49 482	40	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10490 RMI 1 input setpoint 2					
10490	RMI 1 input setup 2	0 Ohm 2500 Ohm	44.9 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10500 RMI 1 output setpoint 2					
10500	RMI 1 output setup 2	-49 482	50	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10510 RMI 1 input setpoint 3					
10510	RMI 1 input setup 3	0 Ohm 2500 Ohm	81 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10520 RMI 1 output setpoint 3					

No.	Setting	Min. Max.	Factory setting	Ref.	Description
10520	RMI 1 output setup 3	-49 482	60	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10530 RMI 1 input setup 4					
10530	RMI 1 input setup 4	0 Ohm 2500 Ohm	134.7 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10540 RMI 1 output 4					
10540	RMI 1 output setup 4	-49 482	80	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10550 RMI 1 input setpoint 5					
10550	RMI 1 input setup 5	0 Ohm 1800 Ohm	184 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10560 RMI 1 output setpoint 5					
10560	RMI 1 output setup 5	-49 482	100	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10570 RMI 1 input setpoint 6					
10570	RMI 1 input setup 6	0 Ohm 1800 Ohm	200 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10580 RMI 1 output setpoint 6					
10580	RMI 1 output setup 6	-49 482	110	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10590 RMI 1 input setpoint 7					

No.	Setting	Min. Max.	Factory setting	Ref.	Description
10590	RMI 1 input setup 7	0 Ohm 2500 Ohm	210 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10600 RMI 1 output setpoint 7					
10600	RMI 1 output setup 7	-49 482	115	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10610 RMI 1 input setpoint 8					
10610	RMI 1 input setup 8	0 Ohm 2500 Ohm	220 Ohm	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.
10620 RMI 1 output setpoint 8					
10620	RMI 1 output setup 8	-49 482	120	Designer's Reference Handbook GCU 113/112/111 and ECU 100	Configurable RMI curve.

3.11.2 RMI 7

RMI 7 settings are only accessible in the utility software.

Menus 10630-10790 equal the settings for RMI 6 (10460-10620).

3.11.3 RMI 8

RMI 8 settings are only accessible in the utility software.

Menus 10800-10960 equal the settings for RMI 6(10460-10620).

3.11.4 Multi-input selections

No.	Setting	Min. Max.	Factory setting	Ref.	Description
10970 Engineering units					
10970	Engineering units	Bar/Celsius Psi/Fahrenheit	Bar/Celsius		
10980 Multi-input configuration 6					
10980	Multi-inp. conf. 6	4-20 mA Binary			Possible selections: 4-20 mA Pt 000 RMI oil pressure RMI water temp RMI fuel level Binary
10990 Multi-input configuration 7					
10990	Multi-inp. conf. 7	4-20 mA Binary			Possible selections: 4-20 mA Pt 000 RMI oil pressure RMI water temp RMI fuel level Binary
11000 Multi-input configuration 8					
11000	Multi-inp. conf. 8	4-20 mA Binary			Possible selections: 4-20 mA RMI oil pressure RMI water temp RMI fuel level Binary

3.11.5 4-20 mA input scaling

No.	Setting		Min. Max.	Factory setting	Ref.	Description
11010 4-20 mA input scale 6						
	4-20 mA input scale 6	Setpoint	None 1/1 Ohm 1/10 Etc.	mA 1/1		Selecting "Enable" and writing the new set-point will scale the associated min., max. and value automatically. Choose between several units and up to 2 decimals
	4-20 mA input scale 6	Enable	None 1/1 Ohm 1/10 Etc.	mA 1/1		

The same settings apply to menus 11010-11030.