



Marine & Offshore

Certificate number: 23180/B0 BV

File number: ACE10/721/2

Product code: 2658H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

SELCO

Roskilde - DENMARK

for the type of product

GENERATOR CONTROL AND PROTECTION UNITS

Type: C6200 FlexGen.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 12 Feb 2023

For Bureau Veritas Marine & Offshore,

At BV FREDERICIA, on 12 Feb 2018,

Jesper Jensen



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarnb.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=gnnmqshojt>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The SELCO C6200 Generator Controller FlexGen Module provides protection functions for three phases systems.

1.1 - Specification:

Supply Voltage	10-36 V DC
Generator Voltage	63V to 690V directly connected, up to 32kV via transformers
Rated Frequency	50Hz or 60Hz
Generator max. current	Up to 30000A via 1A or 5A CT
Max. Contact load	230VAC /2A & 30VDC / 2A
External Communication	RS485 Modbus RTU
Operating Temperature	-20°C / +70°C
Number of programmable digital inputs	10
Number of programmable digital outputs	10
Number of programmable analogue outputs	2

Function	Model	
	FlexGen Basic	FlexGen Advanced
3 phase true RMS measurement	•	•
Frequency Control	•	•
Automatic synchronization	•	•
Active Load Sharing	•	•
Voltage Control/Voltage matching		•
Reactive load sharing		•
Reverse Power protection	•	•
Excitation loss protection		•
RoCof protection (df/dt)		•
Vector Shift Protection		•
Over current protection ($I >$) and Over load protection ($P >$)		•
Short circuit protection ($I >>$)		•
Over voltage ($U >$)	•	•
Under voltage ($U <$)	•	•
Over frequency ($F >$)	•	•
Under frequency ($F <$)	•	•
Dead bus monitoring /black out limiter	•	•
External circuit breaker trip		•
Engine error trip		•
Preferential load trip (PM)		•
Load depending start/stop (PM)		•
Large consumer control (PM)		•
Dynamic grid-parallel operation control		•
Analogue I/O		•
MODBUS RTU (RS485 interface)	•	•

1.2 - Firmware Version

Firmware Version: 1.1.77

2. DOCUMENTS AND DRAWINGS:

Product Description C6200
FlexGen Catalogue

For modification B0 version:

Firmware release history C6200 dated 13/Jun/2017 - 170613 Version 1.1.77.
 ISO 9001 certificate UK issued 08/May/2017.
 CCS Certificate C6200 issued 24/Oct/2016.
 C6200 FlexGen Generator Controller Configuration Manual by SELCO dated 20/10/2017.
 C6200 FlexGen Generator Controller Installations Manual by SELCO dated 03/06/2014.
 Software Quality Plan 2017.10.19.
 SELCO Quality Management System dated 02/May/2017.

3. TEST REPORTS:

C6200 and C6250 Test Report by DELTA dated 19/Jun./2008.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31.**
 4.4 - The equipment fulfils the EMC requirements for installation in General power Distribution Zones.
 4.5 - In case of AUT notations issuance, machinery protection required by the Rules and based on data processing techniques are to be duplicated by another and different system.
 4.6 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.
 4.7 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.
 4.8 - Only Hardware and Software and/or Firmware successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The SELCO C6200 Generator Controller FlexGen Module is to be supplied by **SELCO - DENMARK** in compliance with the type described in this certificate.
 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
 5.3 - **SELCO - DENMARK** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
 5.4 - For information, **SELCO - DENMARK** has declared to Bureau Veritas the following production site(s):

SELCO - DENMARK
Betonvej 11
DK-4000 Roskilde
DENMARK

6. MARKING OF PRODUCT:

- 6.1 - Maker's name or trade mark, Serial number of the units, Equipment type number or model identification under which it was type-tested.
 6.2 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.
 6.3 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

7. OTHERS:

- 7.1 - It is **SELCO - DENMARK's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
 7.2 - This certificate supersedes the Type Approval Certificate No. 23180/A0 BV issued on 06 Feb 2012 by the Society.

*** END OF CERTIFICATE ***