

## TYPE APPROVAL CERTIFICATE

**Certificate No.** : CPH16186-AC004                      **Initial Approval** : 22nd February, 2007.  
**Product** : Generator Protection, Control and Power Management System  
**Manufacturer** : SELCO A/S  
                    Betonvej 10, DK-4000, Roskilde, Denmark

**Product Description** : Integrated Generator Protection, Control and Monitoring System  
Type : SIGMA S6000, SIGMA S6100, SIGMA S6500 & SIGMA S6600,  
          SIGMA S6610  
" See Appendix 1 "

**Approval Condition** : " See Appendix 1 "

**THIS IS TO CERTIFY** that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment".

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 21st February, 2017.

Issued at Daejeon, Korea on 7th August, 2012.



KOREAN REGISTER OF SHIPPING

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General Manager of  
Materials and Equipment Team

*Note :1 : The approval will be automatically suspended and the Certificate become invalid from the expiry date of the Certificate in the event that the extension has not been granted or the renewal of the Certificate is not underway.*

*2 : The manufacturer should notify this Society of any modification or changes that may affect the validity of this Certificate.*

## Appendix 1

# Product Description and/or Approval Condition

Certificate No : CPH16186-AC004

Date of Issue : 7th August, 2012.

### Product Description ;

1. SIGMA S6000 : Input/Output & Protection Module (IO/P Module)
  - Voltage Range : 63 ~ 690 V AC (nominal)
  - Current Range : 1 or 5 A (nominal)
  - Functions :
    - Short Circuit, Over Current, Reverse Power, Overload, Excitation Loss, Voltage Established, Non Essential Load Trips with Two Individual Levels
    - System Response Time for Short Circuit : 100 msec ~ 1000 msec
    - Aux. Voltage : Primary Supply + 24 V DC, Backup Supply + 24 V DC
    - Communication Ports : RS232, RS485, CAN BUS
    - Software Version : 3-2-X
2. SIGMA S6100 : Synchronization & Load Sharing Module (S/LS Module)
  - Voltage Range : 63 ~ 690 V AC (nominal)
  - Functions :
    - Frequency Stabilization, Voltage Stabilization, Voltage Matching, Auto-Synchronization, Active Load Sharing, Reactive Load Sharing, Governor/Frequency Control
    - Aux. Voltage : Primary Supply + 24 V DC, Backup Supply + 24 V DC
    - Communication Ports : RS232, RS485, CAN BUS
    - Software Version : 3-5-X
3. SIGMA S6500 : User Interface (UI Module)
  - Functions : Configuration and Display Module for SIGMA S6100 S/LS and SIGMA 6000 IO/P
    - 4 x20 Characters Display (Backlit)
    - IP54 at Front (Flush Mount Installation)
  - Aux. Voltage : Primary Supply + 24 V DC, Backup Supply + 24 V DC
  - Communication Ports : RS232, CAN BUS
  - Software Version : 1-4-X
4. SIGMA S6600 : Power Manager Module (PM Module)
  - Functions : Configuration and Display Module for SIGMA S6100 S/LS and SIGMA 6000 IO/P
    - Load Depending Start/Stop and Large Consumer Request
    - 4 x20 Characters Display (Backlit)
    - IP54 at Front (Flush Mount Installation)
  - Aux. Voltage : Primary Supply + 24 V DC, Backup Supply + 24 V DC
  - Communication Ports : RS232, CAN BUS
  - Software Version : 1-6-X
5. SIGMA S6610 : Power Manager Module (PM Module), Improved Version of the S6600
  - Improvements of S6610 compared to S6600 :
    - Large consumer request functionality which allows 5 separate LC inputs
    - Load feedback of large consumers and non essential load trip
  - Software Version : 1-0-X

### Approval Condition ;

1. This approval is granted on the basis of the test report No. DANAK-197219, DANAK-198449 issued by DELTA.
2. The manufacturer should inform this Society of all kinds of revisions of the approved softwares. If the changes are recognized to affect functionality of the approved product, Type Test to confirm the reliability of the revised software may be performed in the presence of our surveyor.
3. The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.
4. In case where this system is installed on board, the system drawings for individual vessel are to be approved by this society.
5. Individual Product Certification is required.

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