

# Product Catalog



# Power Management Systems

## Medium Voltage Switchboard

A higher quality medium voltage switchboard through experience and technology  
Specific marine application to LNG ships and large-size container ships



## Main Switchboard

Incorporating the latest power management system, ensuring safety and reliability  
Suitable for a variety of vessels from bulk carriers to LNG ships



# Power Management Systems

## Starter Panel

### Group Starter Panel

Incorporating high performance, compact, multi-function control units  
Advanced control monitoring system by the adoption of expanded functions and an optimized network



### Draw-out Type Starter Panel

Achieved by the pursuit of easy maintenance  
utilizing JRCS original draw-out structure



### Individual Starter Panel



## Generator Plant Control & Power Management System

Easy maintenance in the case of failure by the adoption of a fully distributed independent generator plant monitoring and control system



# Power Management Systems

---

Emergency Switchboard

---



Battery Charging & Discharging Board

---



UPS (Uninterruptible Power Supply) System

---



Shore Connection Box

---



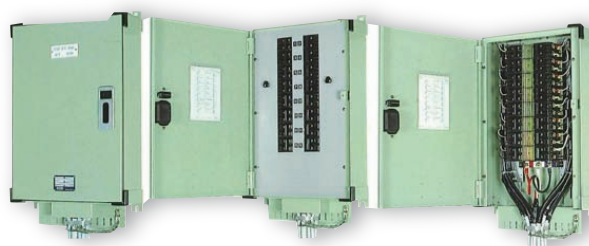
Test Panel

---



Distribution Board

---



# Power Management Systems

## Low Voltage Switchboard & Group Starter Panel

The world's smallest switchboard with higher reliability gained through experience



## Cold Ironing System



Providing shore-side electrical power to a ship at berth while a diesel generator is not operating  
Positive reduction of air pollution by eliminating environmental pollutants caused by a ship in harbor



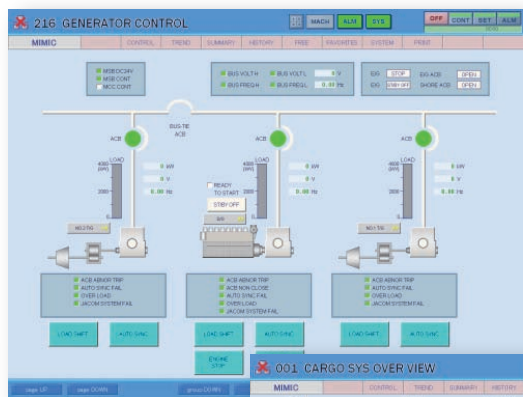
# Automation Systems

## Integrated Automation System (IAS)

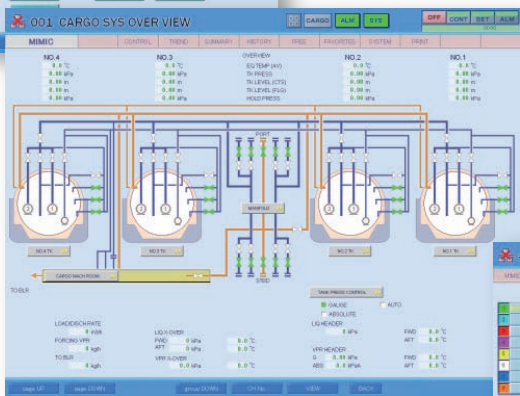
### OASIS (Operationally Advanced Super Integrated System)



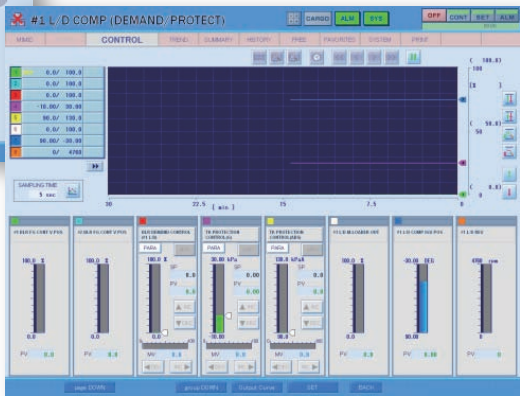
Designed for high-grade vessels such as LNG ships  
User-friendly monitoring and control functions using graphic display screens  
Easy and secure operation by the use of a large-size color LCD with a touch panel



GENERATOR CONTROL



CARGO SYSTEM MIMIC



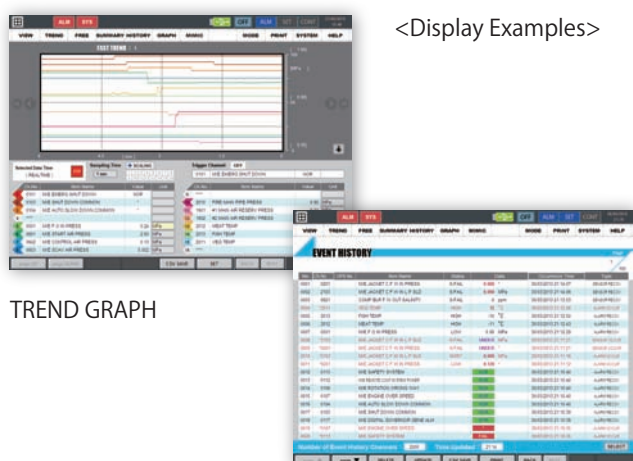
L/D COMPRESSOR CONTROL

<Display Examples>

# Automation Systems

## Alarm Monitoring & Control System

SMS-55



TREND GRAPH

EVENT HISTORY



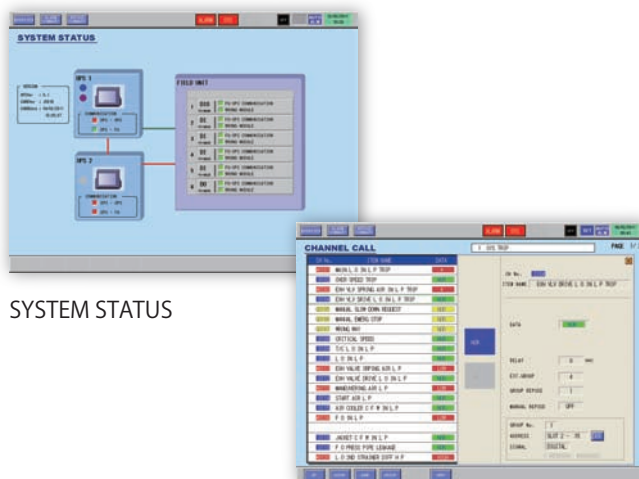
A large-size color LCD with a touch panel  
 Display of trend graphs and analog meters  
 Motor start/stop and valve on/off by touch operation  
 Saving of trend and history data to USB memory

## Alarm & Monitoring System

JMD-P



<Display Examples>



SYSTEM STATUS

CHANNEL CALL

Cost-saving engine monitoring system using a full color LCD  
 Simplistic instrument arrangement resulting in a compact panel  
 Uncomplicated system configuration applying only digital inputs

# Automation Systems

## Engine Control Console

Robust structure emphasizing resistance to the harsh environment of an engine room  
User-friendly engine monitoring and control



## Cargo Control Console

Secure and efficient cargo monitoring and control by optimal design focusing on operability during cargo handling



## Wheelhouse Group Panel



## Wheelhouse Control Console



## Simulator Training System



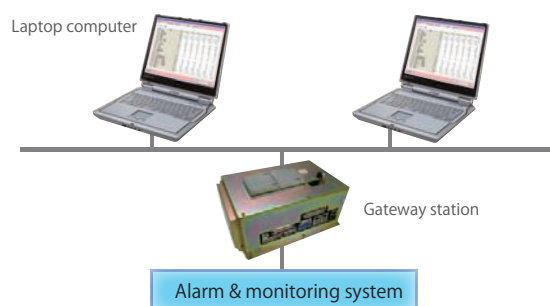
Simulation of at-sea conditions onboard  
Training for emergency situations unable to be carried out onboard



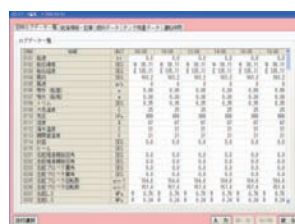
# Automation Systems

## Engine Data Acquisition System

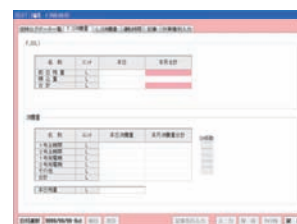
Using engine data collected from an alarm monitoring & control system by a personal computer in each cabin, the making of engine log books and display of regular logs and running hours is possible.



<Display Examples>



Log data list



F. O. consumption

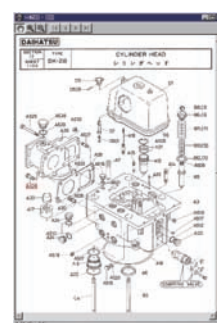
## Ships Maintenance Management System / Spare Parts Management System

Daily and regular maintenance schedules can automatically be created.  
By entering maintenance results, a maintenance report can automatically be created.  
Details of parts breakdown can be entered.

<Display Examples>



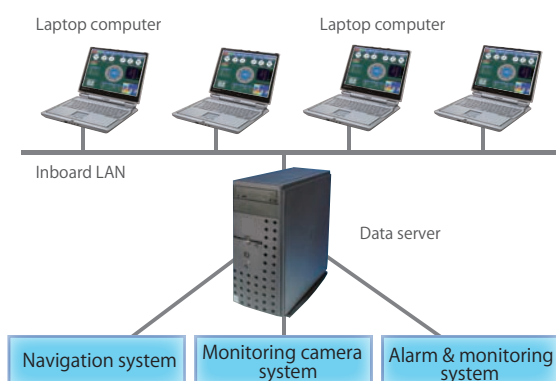
Daily inspection schedule



Parts breakdown diagram

## Ships Integrated Management System

Integrated data from an alarm monitoring & control system, ship's monitoring camera system and navigation system is collected in a server and displayed at terminals via the inboard LAN.



General information



Monitoring camera

# Offshore

## Medium Voltage Switchboard

Compact and simple panel arrangement utilizing a multi protection relay



## Generator Control Panel

Compact generator control panel designed for limited onboard space



## Miscellaneous

### Training Program

Training for high voltage switchboards, main switchboards, starter panels and engine control consoles

Theoretical courses using textbooks and drawings, hands-on training courses, and practical courses for troubleshooting and parts replacement

<Sample of training curriculum>

High Voltage Switchboards Training Schedule			
Day	Time	Description	
Day 1	09:30 ~ 9:40	Opening meeting	
	09:40 ~ 10:40	Orientation (Company Profile) Factory Tour	
	10:40 ~ 10:50	Break	
	10:50 ~ 12:00	Specialized Knowledge of High voltage switchboards	Classroom Lecture
	12:00 ~ 13:00	Lunch Break	
	13:00 ~ 13:30	Dangers of High voltage switchboards	Classroom Lecture
	13:30 ~ 15:10	Structure / Special equipment of High voltage switchboards Video viewing of the internal arc fault test	
	15:10 ~ 15:20	Break	
	15:20 ~ 16:30	Structure / Special equipment of High voltage switchboards	Simulator
	16:30 ~ 17:00	Q and A	
Day 2	~ 17:00	Closing meeting	
	09:30 ~ 10:00	Opening meeting	
	10:00 ~ 10:30	Maintenance of High voltage switchboards	Classroom Lecture
	10:30 ~ 10:40	Break	
	10:40 ~ 12:00	Multi-Function Protection Relay "VAMP" (General Information / Function / Operation) Each Protection Function / Operation, Replacement Procedure of Spare Parts	Simulator
	12:00 ~ 13:00	Lunch Break	
	13:00 ~ 15:10	VCB / VMC (General Information / Function) Interlock / Draw out / Insert Procedures Lifter operation, Bus Earthing Operation	Simulator
	15:10 ~ 15:20	Break	
	15:20 ~ 16:30	Vacuum Check Procedure of VCB / VMC	Simulator
	16:30 ~ 17:00	Q and A	
	~ 17:00	Closing meeting	

<Image of theoretical and practical courses>



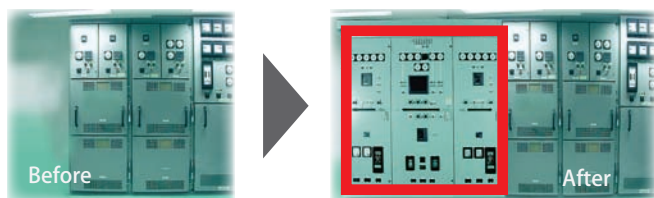
### System Retrofitting

#### Case 1 : Addition of a generator for FPSO

Due to an increase in the power load of FPSO, 2 sets of generator control panels and a synchronizing panel were added.

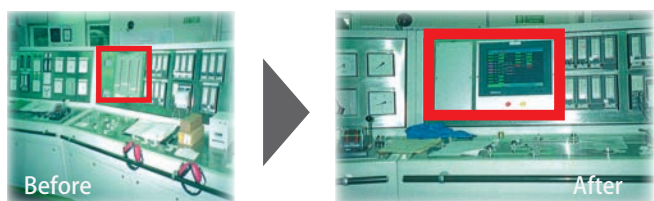
Using the existing 2 generator panels, in total 4 sets of generators are able to be controlled.

\*FPSO=Floating Production, Storage and Offloading System



#### Case 2: Retrofitting of automation system for LNG ship

The existing 20 year-old monitoring system (other maker) was replaced with JRCS alarm monitoring system.

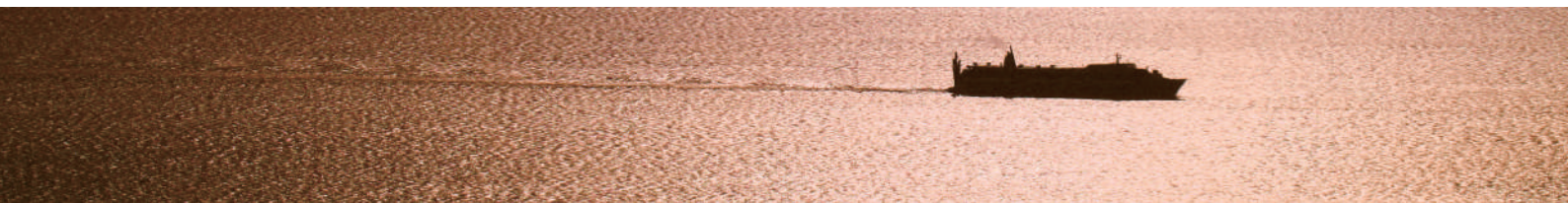


### Regular Maintenance

Reduction of repair cost due to unexpected trouble and safer operation of vessels

Prevention of potential trouble due to defect or wear-out of parts





## **JRCS** JRCS Co. Ltd.

### ■JRCS Shimonoseki (headquarters):

1-2-14 Higashiyamato-machi, Shimonoseki,  
Yamaguchi, 750-8515 Japan  
Tel: +81 (0)83 261 0200 Fax: +81 (0)83 261 0360  
E-mail : jrcs@jrcs.co.jp  
URL : www.jrcs.co.jp

### ■JRCS Tokyo (headquarters):

Nishishinbashi Yasuda Union Building 1F  
2-4-2 Nishishinbashi, Minato-ku, Tokyo, 105-0003 Japan  
Tel: +81 (0)3 5948 5952 Fax: +81 (0)3 5948 5953

### ■JRCS Toyoura:

2155 Kawatana, Toyoura-cho, Shimonoseki,  
Yamaguchi, 759-6301 Japan  
Tel: +81 (0)83 775 1100 Fax: +81 (0)83 775 1105

### ■The Netherlands Subsidiary: JRCS Euro Marine Service B.V.

Evert van de Beekstraat 1, Unit 104 1118 CL Schiphol, The Netherlands  
Tel : +31 (0)20 7991727  
E-mail : eu-service@jrcs.co.jp

### ■Singapore Subsidiary: JRCS Engineering Singapore Pte. Ltd.

26 Boon Lay Way #01-82 TradeHub 21, 609970 Singapore  
Tel : +65 6515 8286 Fax : +65 6515 9334  
E-mail : jrcs.engineering@jrcs.com.sg

### ■Shanghai Subsidiary: JRCS (Shanghai) Co.,Ltd.

No.1302 (12B), Suncome Liauw's Plaza (SHENGKANGLIAOSHI Building) ,  
No.738, Shangcheng Rd, Pudong Shanghai, 200120 China  
Tel : +86 (0)21 2022 0052 Fax : +86 (0)21 2022 0053  
E-mail : shanghai@jrcs-sh.com