



POWER MANAGEMENT SYSTEM (Based on DEIF PPM-3 Protection and Power management system)

Main features



- All breakers can be synchronised by choice
- Load-dependent start/stop operation
- Priority selection of gen-sets
- Redundant communication between the controllers
- Plant divided into sections for individual functionality
- Load transfer.
- Heavy consumer management
- Non-essential loads control
- Multi-master system for the following applications:
  - Diesel generator operation.
  - Shaft generator operation.
  - Shore connection operation.
  - Split busbar(s) operation.
  - Emergency/harbour generator operation.



POWER GENERATION INCOMERS

Number of generators	2 generator sets (1)
Generator capacity range	<u>BW02-250</u> : 35kVA-175kVA @ 3ph+N/400VAC (2) <u>BW02-630</u> : 175kVA-425kVA @ 3ph+N/400VAC (2) <u>BW02-1600</u> : 425kVA-1100kVA @ 3ph+N/400VAC (2)
Control mode of generators	4-20mA/0-5V/0-10V speed control, Droop/Isochronous configurable
Shore power connection	Shore power converter with seamless transfer between gens. (3)
Shore power capacity range	<u>BW02-250</u> : Up to 175kVA <u>BW02-630</u> : Up to 425kVA <u>BW02-1600</u> : up to 100kVA @ 3ph+N/400VAV (2)
Main protection of incomers	- Under-voltage - Overload/Reverse Power - Loss of excitation/Over-excitation - Overcurrent - Voltage-dependent overcurrent - Overvoltage - Current/Voltage imbalance - Over/Under-frequency



- (1) Additional generator sets /emergency generator offered as an option.
- (2) Consult factory for other voltages and frequencies.
- (3) Isolation transformer with seamless transfer offered as an option.



POWER DISTRIBUTION. (utilising SmartWiring system)

Local Motor and Pumps ON/OFF actuation	8 Local motor and pump connections available in control cabinet (1)
Remote ON/OFF buttons for pumps and motors	8 Remote ON/OFF buttons connected to the smart wire loop through the smart wire loop (1)
Busbar configuration	Manual bus tie breaker actuation
Distribution Breakers	- Up to 7 power distribution breakers for loads and distribution panels. - Optional supply for emergency switchboards



- (1) Additional motor and pump actuators could be installed within the SmartWiring network upon request.
- (2) Other configurations upon request. Expandable via additional distribution boards.

MECHANICAL

Volume	<u>BW02-250:</u> 0,336m³ <u>BW02-630:</u> 0,443m³ <u>BW02-1600:</u> 0,720m³
Weight (based up steel enclosures)	<u>BW02-250:</u> 160kg <u>BW02-630:</u> 180kg <u>BW02-1600:</u> 200kg
Control cabinet sizes (H x W x D)	(80cm x 60cm x 30cm)
Incomers and busbar cabinets (H x W x D)	<u>BW02-250:</u> (80cm x 80cm x 30cm) <u>BW02-630:</u> (90cm x 95cm x 35cm) <u>BW02-1600:</u> (120cm x 120cm x 40cm)

USER INTERFACE and COMMUNICATION CAPABILITIES.

LOCAL HMI	26Inch marine touchscreen (1)
Monitoring and control from external systems.	Modbus/TCP (2)
Remote troubleshooting and supervision	Connection to the internet is required.



- (1) Additional touch screens can be installed upon request.
- (2) Other protocols upon request.

AVAILABLE OPTIONS

- Easy Integration with any monitoring system
- Emergency generator and emergency switchboard integration
- Additional integration of sensors and actuation in the SmartWiring system
- Isolation transformer incomer with seamless transfer
- Bus tie breaker synch and control
- Pulse Handrail indicating system status

MAIN STANDARDS AND CERTIFICATIONS



Pending (estimated beginning 2015)