

## Kohler APM403 Controller

### General Description and Function

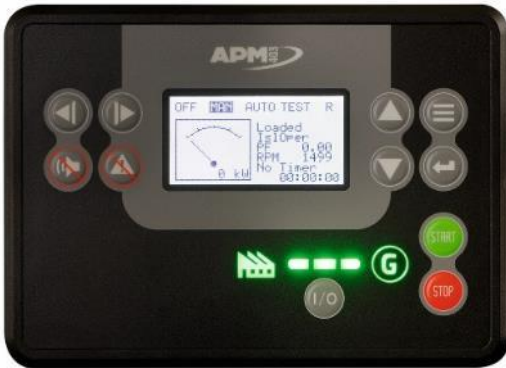
The APM403 controller is simple to use and comes with built in intuitive configurations to cater to different backup system setups.

It is available in 2 different models; APM403S and APM403P. The APM403S is specially design to offer the best command and control capabilities for a single generator set operation. The APM403P offers the additional versatility of paralleling multiple generator sets together or even parallel together with the mains.

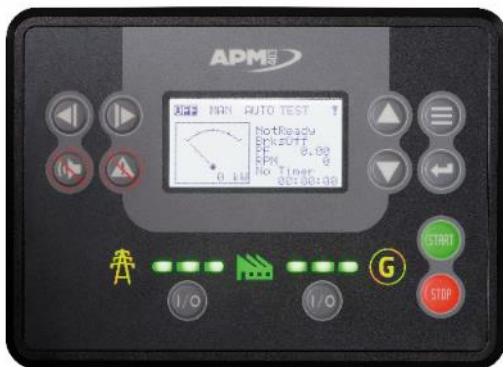
The APM403 controller is designed for low voltage (LV) industrial diesel generator sets and its remote management and supervision functions allow monitoring and even operation of the generator sets at anytime, anywhere. Added geolocation function using GPS allows the operator to accurately locate the installation sites of generator sets and manage a pool of generator sets over a large area.

Standard features include:

- Manual or automatic mode
- Basic control for speed and voltage
- Mechanical and electrical measurements and display
- Single generator set control or parallel with up to 8 generator sets (APM403P only)
- Built in Generator and engine protection features
- Power supply available in 12V or 24V
- Auto start and stop depending on load requirement
- Offers real time monitoring and even control of a single or multiple generator sets
- Communication tools (CAN USB Host, RS485, SNMP, MODBUS protocol)
- User language is selectable:
  - English
  - French
  - Spanish
  - Italian
  - Dutch
  - German
  - Brazilian
  - Portuguese
  - Turkish
  - Norwegian
  - Polish
  - Chinese
  - Russian



**APM403S Controller**



**APM403P Controller**

## Operating Screen



## Controller Specifications

- Power Supply Requirements: 12V or 24V
- Operating Temperature: - 20°C to 60°C
- Storage Temperature: - 30°C to 70°C
- EMC Certification: CE / UL
- Electromagnetic compatibility directive: 2014/30/UE
- Low voltage directive: 2014/35/UE
- Frequency: 50Hz / 60Hz
- Nominal voltage range: 86.6 at 480VAC phase / phase
- Nominal current range: In = 5A
- Battery range: 8 at 36V

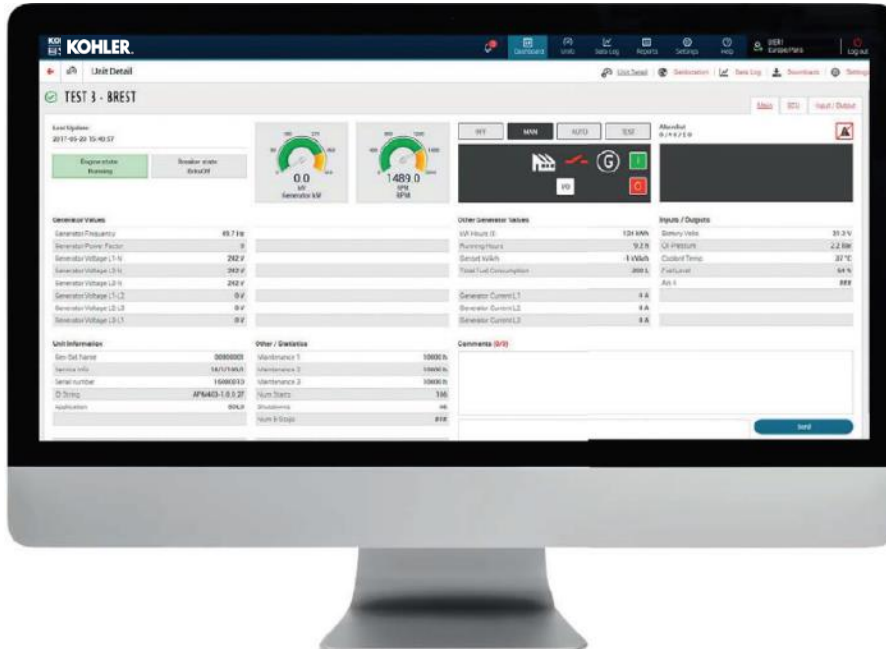
## Control

- Basic:
  - Speed
  - Voltage
  - Active Power
  - Reactive Power
  - PF
- Automatic equipment start and stop depending on the load required

## Measurement and Display

- Mechanical
  - Levels
  - Temperature
  - Pressure
  - Speed
- Electrical
  - Genset and mains voltage
  - Current
  - Frequency
  - Power Factor
  - Power (kW and kVA)
  - Synchronization status
- Energy meters
- Metering and electrical & mechanical status
- Delay countdown
- Equipment status
- Events display
- Messages for alarms and faults
- Display of engine fault codes for engines fitted with an ECU

## Remote Management / Supervision



Remote Management Dashboard

### Web Interface

WebSupervisor is an add-on option that allows remote management and supervision web interface for the APM403.

Available as an option, it offers a range of options, from supervision of a single generating set to management of a complete group. The generating set operating parameters are sent to a server via GSM/3G/4G communication. This interface can be accessed from a PC, a tablet or a smart phone.

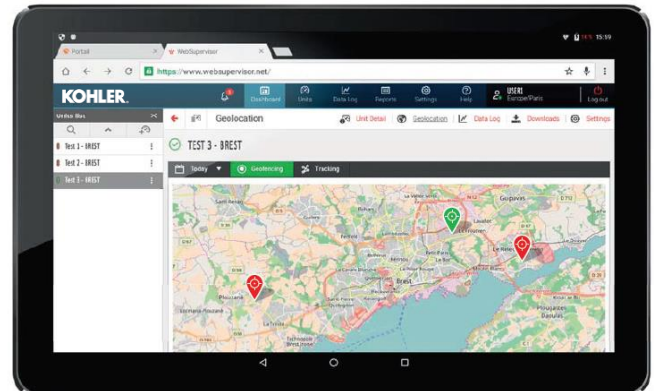
The interface also allows users to monitor and evaluate the operation of their equipment at any time and from anywhere.

Access to the application is secured by passwords, and allows user authorizations to be adjusted as required. Email alert messages can also be configured and sent in accordance with events predefined by the user.

Web supervisor offers the following possibilities:

- Remote management
  - Starting/stopping of the genset or installation
  - Opening/closing of the circuit breakers
  - Online parameter updating
- Supervision
  - Periodic dashboards displaying genset availability and associated production
  - Implementation of maintenance plans
  - Data archiving
  - Display of physical and mechanical values
  - Display of genset status
  - Display of genset events stack
  - Genset status notification

- Geolocation of installations (GPS option)



Geolocation Display on Tablet

## Available Configurations

Configuration	APM403S	APM403P
<b>A612:</b> Single generating set, without mains power, without coupling, without automatic transfer switch	●	●
<b>A622:</b> Single generating set, with mains power, without coupling, with automatic transfer switch controlled by the APM403		●
<b>A631:</b> Generating sets coupled as a power plant, without mains power, without automatic transfer switch, droop power distribution		●
<b>A633:</b> Generating sets coupled as a power plant, without mains power, without automatic transfer switch, regulation of active and reactive power by digital communication bus		●
<b>A651:</b> Single generating set, with mains power, with automatic transfer switch, short time paralleling on mains return		●
<b>A661:</b> Single generating set, with mains power, with automatic transfer switch, long time paralleling		●

## Genset Protection

Protection	ANSI
Monitoring of authorization for coupling two parts of the mains	ANSI 25
Protection for monitoring undervoltage	ANSI 27
Maximum active/reactive power	ANSI 32
Minimum active power	ANSI 37P
Protection against phase current imbalance	ANSI 46
Protection against reverse voltage and detection of reverse machine rotation	ANSI 47
Three-phase protection against short circuits between phases	ANSI 50
Three-phase protection against overloads and short circuits between phases	ANSI 51
Protection for monitoring overvoltage or undervoltage	ANSI 59
Protection against abnormally high frequency	ANSI 81H
Protection against abnormally low frequency	ANSI 81L
Protection against rapid uncoupling of two parts of the mains	ANSI 81R
Protection against uncoupling upon vector surge	ANSI 78

## Available Options

- **Slot BIO8**  
Current revision: V1.0.1.0  
PN: 31613802902
- **Slot CM-Ethernet**  
Current revision: V1.2.0.1  
PN: 31613811902
- **Slot CM-4G/GPS**  
Current revision: V1.0.0.4  
PN: 31613821301
- **Slot CM-GPRS**  
Current revision: V1.1.0.0  
PN: 31613821401
- **Module CAN IO8/8**  
Current revision: V1.2.0  
PN: 31613803002
- **Module CAN IO16/0**  
Current revision: V1.2.0  
PN: 31613814901
- **Module CAN AIN8**  
Current revision: V1.3.0  
PN: 31613803102

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