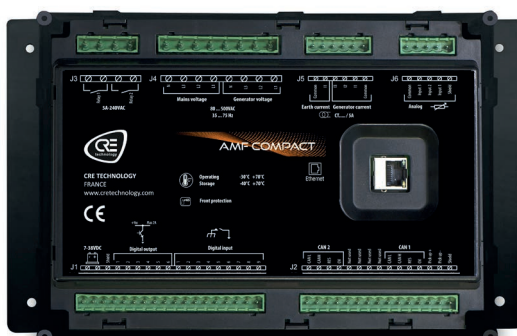The **AMF COMPACT** is dedicated to a large variety of standby diesel or gas generators, offering an automatic management of transfer switch on mains failure, as well as monitoring, control and protection of engine, alternator and power Bus bars. **AMF COMPACT** range offers flexibility and time saving thanks to its simple wiring, all features included (no option), and easy programming.

HARDWARE AND DISPLAY

AMF COMPACT is available in both switchboard panel mounted version with display, or core base mounted version and compatible with **i4GEN** touchscreen color display.

SOFTWARE

AMF COMPACT is configurable from its front panel display, from **i4GEN**, or through the free **CRE PC** software.

CORE BASE MOUNTED VERSION

SWITCHBOARD MOUNTED VERSION WITH DISPLAY

FEATURES

CONTROL AND MANAGEMENT

- Complete engine control of diesel, gasoline or gas generators (preheating, pre-glow, ignition, start/stop…).
- Alternative or consecutive multiple starter management.
- Warm-up and cool down at idle or nominal speed.
- Remote start and test mode available On/Off load.
- Compatible with all J1939 electronic engines.
- Mains failure detection and changeover with adjustable load transfer time.
- Override mode (protections inhibition + dedicated hour meter) following NFE 37-312 certification.
- Non-essential load control on overload.
- Battery boost management.
- Configurable maintenance cycle.
- 2 password levels.

DISPLAYED INFORMATIONS

- Engine parameters: oil pressure, coolant temperature, speed, hour run meters (normal and override), number of start attempts, battery voltage,… and all J1939 values available on ECUs.
- Generator electrical parameters:
  - Voltage (3 phases RMS, L-L and L-N)
  - Current (3 phases RMS)
  - Frequency
  - Active power (3 phases + total)
  - Reactive power (3 phases + total)
  - Power factor (3 phases + total)
  - Calculated active energy (KWh)
  - Calculated reactive energy (KWARh)
- Mains electrical parameters:
  - Voltage (3 phases RMS, L-L and L-N)
  - Frequency
  - Current (1 phase RMS)
  - Active and reactive power
  - Power factor
- Log of alarms/faults with timestamp and real-time value.
- Configurable event logger and info pages.

EVENTS LOGGER

- 1350 logged events with timestamp and real-time value, on a non volatile memory.
- The last 30 logged alarms/faults and 15 active alarms/faults are available on front panel display.

ELECTRICAL PROTECTIONS

- Generator electrical protections:
  - <F, >F: ANSI Code 81L, 81H
  - <U, >U: ANSI Code 27, 59
  - >I, >>I, >In, Ig: ANSI Code 50, 51, 50N, 51G
  - <KW, >KW: ANSI Code 37P, 32P
  - <KVAR, >KVAR: ANSI Code 37Q, 32Q
- Mains electrical protections:
  - <F, >F: ANSI Code 81L, 81H
  - <U, >U: ANSI Code 27, 59
  - <KW, >KW: ANSI Code 37P, 32P
  - <KVAR, >KVAR: ANSI Code 37Q, 32Q

BREAKERS CONTROL

- Adjustable pulses or latched contact for breaker closing.
- Adjustable pulses or latched contact for breaker opening.
- MN/MX coil management.

PROGRAMMING FEATURES

- Alternative selection: up to 16 parameters values can be modified by triggering any digital input or Modbus TCP variable.
- Scheduler: specific functions or modes (ex: auto start, test mode, Boost…) can be programmed on scheduled operation (cyclic or one-time).
- Easyflex®:
  - 50 lines of programming with logic and arithmetic operators and conditions.
  - All inputs/outputs and variables available.
- Generic filling feature:
  - High and low set point from digital or analog input.
  - Up or down direction configurable.

AUTOMATIC FIRMWARE UPDATE

When module is connected to **CRE PC** software, you will automatically be asked for a firmware update to the latest version if applicable.

MODBUS TCP SLAVE COMMUNICATION PORT

- All data are accessible by Modbus TCP locally or remotely (web, GPRS).
- Read and write functions + 300 free Modbus TCP address available for custom mapping.

Part numbers:
A56-AMF-10-A Core base mounted version
A56-AMF-00-A Switchboard mounted version with display

RELATED PRODUCTS AND CABLES

i4GEN Touchscreen color display – Ref A56Vxx
I/O Expansion – Ref LC5100 + KL1488 + KL2408 …
PC Connection Ethernet cable – Ref A53W1
CANbus J1939/CRE/CANopen communication cable – Ref A40xx
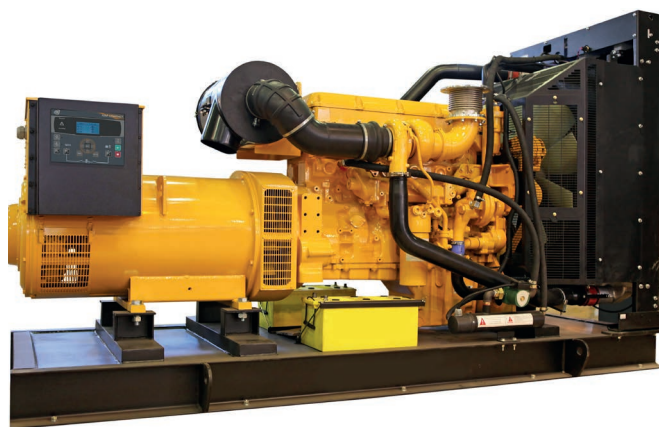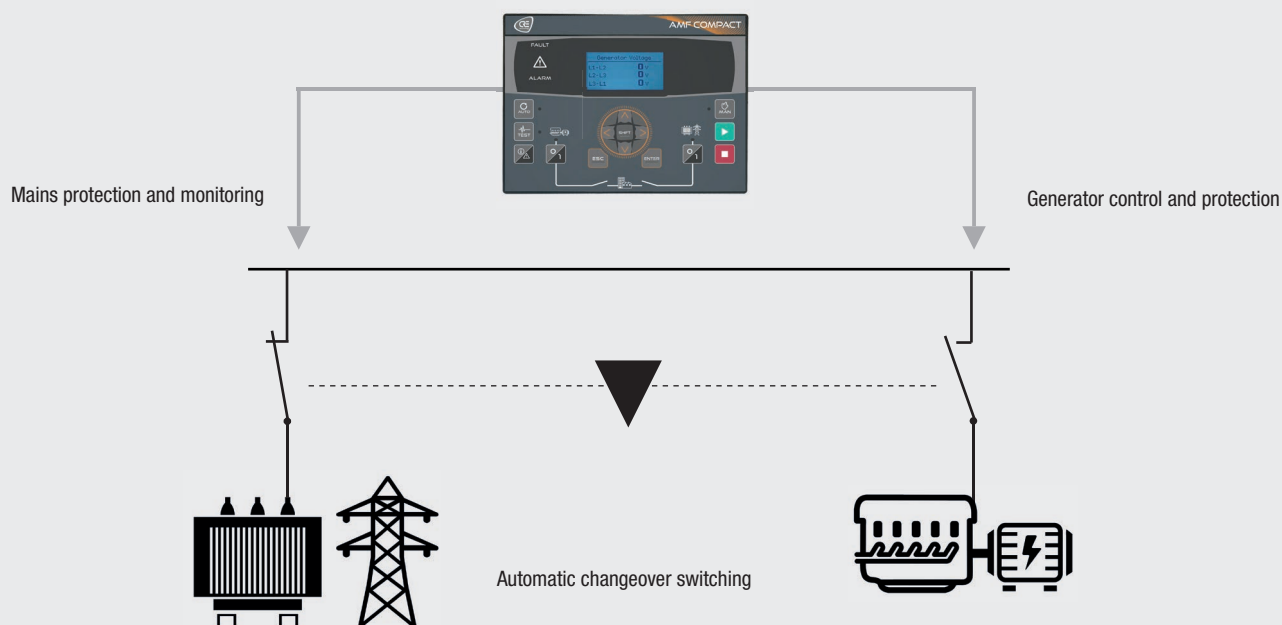Remote monitoring system BSD2.0 – Ref A61Y1

APPLICATIONS

AMF COMPACT is an Automatic Mains Failure unit, ensuring a complete management of standby generator in backup of mains supply, by continuously monitoring utility input and starting the generator in case of operator request or emergency. **AMF COMPACT** allow user control, test operation on schedule or from switchboard.

Its flexibility provides a large capability of features usable on the controller inputs/outputs or the 32 I/O expansions that can be connected on CANbus.

A Modbus TCP access is available on the Ethernet port, also used for PC connection.

STANDBY GENERATOR WITH MAINS IN AUTOMATIC MAINS FAILURE

Mains protection and monitoring

Generator control and protection

Automatic changeover switching

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Phone : + 33 (0)4 .92.38.86.82 - www.cretechnology.com - info@cretechnology.com
AMF COMPACT RANGE_SALES DOCUMENTATION_EN_A2019

SPECIFICATIONS

ELECTRICAL SYSTEM

Compatible with 3 or 4 wires three-phase, or two-phase or single phase systems.

CURRENT, VOLTAGE AND FREQUENCY

- DC Power supply: 7...38VDC, Max voltage 45VDC during 15mn, current consumption at 24VDC = 130mA + the sum of maximum consumption of each logic output.
- AC Voltage inputs: 80...500VAC. Consumption = 100mA max. Accuracy: 1%. 3ph + N for generator / 3ph + N for mains. Neutral terminal does not need to be connected.
- AC Current inputs: 4 wires. (3ph) for generator / 2 wires (1ph) for mains or Earth. 0...5A; 1VA. Overload 15A during 10s. Accuracy: 0.5%.
- AC Frequency measurement: 35...75Hz; 15VAC minimum between phase and neutral.

INPUTS, OUTPUTS

- 9 x Digital inputs: NO or NC to ground. Adjustable timer On and Off.
- 32 x Digital input expansion via CANopen.
- 3 x Analog inputs: Resistive (0...500Ω) or 0...20mA (with external resistor). Could be used as digital input.
- 6 x Digital outputs: NE or ND. 1.8A, over-current protected.
- 32 x Digital output expansion via CANopen.

- 2 x Relay outputs (breaker control): 5A, 240VAC.
- Magnetic pick up input: Frequency 50Hz...10KHz, Voltage 0.5...40VAC.

COMMUNICATION PORTS

3 isolated com ports are available:
- 1 CANbus: J1939 electronic engine and I/O extensions.
- 1 CANbus available.
- 1 Ethernet: PC communication/Modbus TCP.

ENVIRONMENT

- Operating temperature: -20... 70°C (-4...158°F).
- Storage temperature: -40...70°C (-40...158°F).
- Humidity: 95% non-condensing.
- Altitude: Up to 4000m for 480VAC. Up to 5000m for 400VAC.
- IP Front: IP65/NEMA rating 4 - IP20/NEMA rating 1 for core base.
- IP Rear: IP20/NEMA rating 1.

DIRECTIVES

- EMC Directive 2014/30/UE - EMC General Requirements EN 61326-1: Immunity according with EN 61000-6-2 and Emission according with EN 61000-6-4.
- Electrical Safety Directive 2014/35/UE: According with EN 60950-1.

- Vibrations and shocks: According with EN(IEC) 60068-2-6 and IEC 60068-2-27.
- Temperature: EN(IEC) 60068-2-30; EN(IEC) 60068-2-1; EN(IEC) 60068-2-2; EN 60068-2-78.

SIZE AND WEIGHT

- Switchboard mounted version with display:
  - Dimensions: 245x182x40mm (9.64x7.16x1.57in).
  - Panel cut out: 220x160mm (8.7x6.3in).
- Core base mounted version:
  - Dimensions: 260x157x44mm (10.24x6.18x1.73in). (depth with connectors).
  - Fixing dimensions (4 screws): 238x129mm (9.37x5.08in). Fixing hole: Ø5.24mm (0.21in).
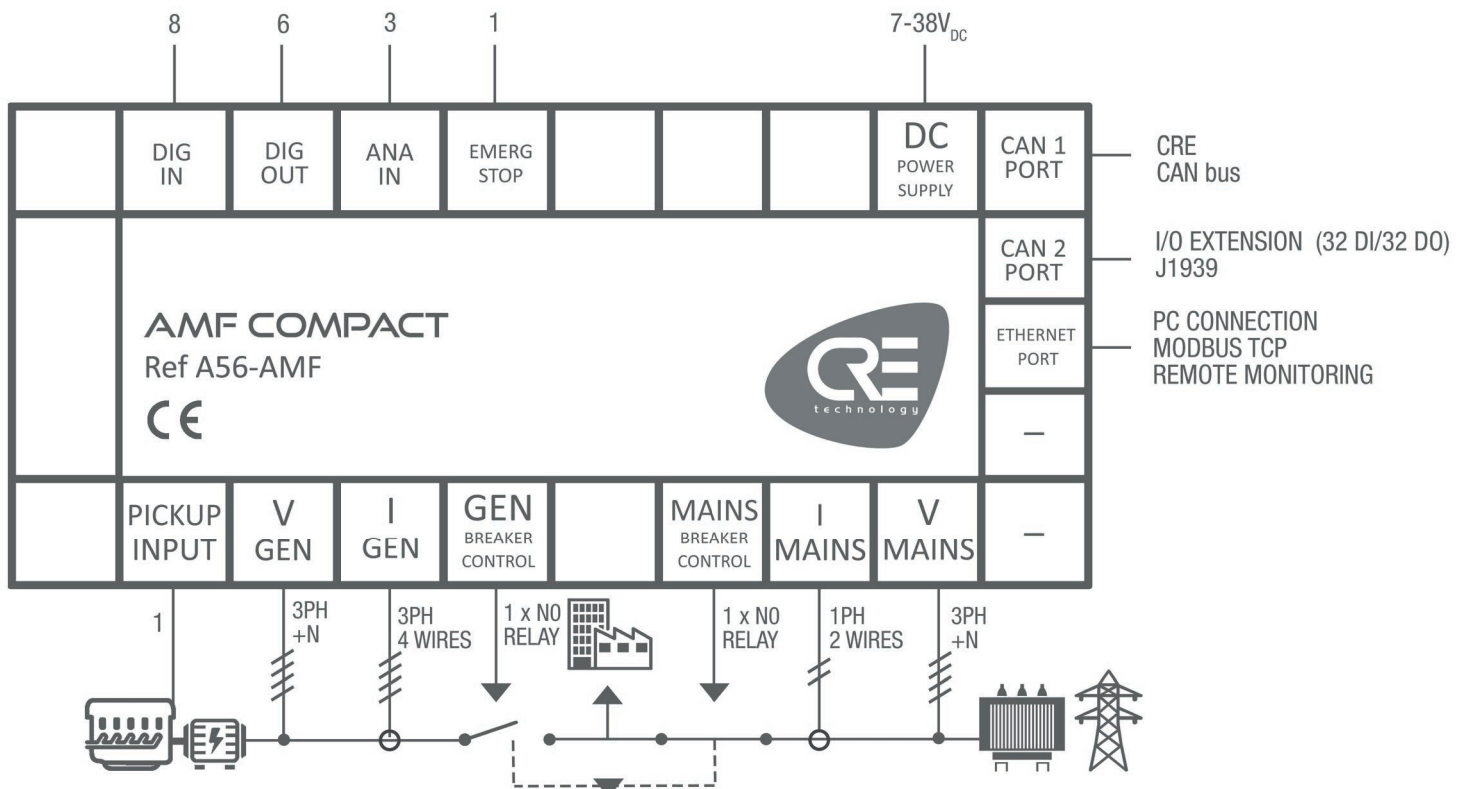 - Optional DIN rail mounting.
- Weight: 0.7kg (1.54lb).

LCD DISPLAY CHARACTERISTICS

- Size: 40x70mm (1.50x2.75in).
- Pixels: 256x128. Back light: 50cd/m² typical, configurable.
- Contrast: adjustable.

LANGUAGES

English, French, Italian, Spanish in standard. Custom languages available on request.

WIRING DIAGRAM

AMF COMPACT

Enhanced Auto Mains Failure generator controller

ASSOCIATED MULTI-TOUCHSCREEN DISPLAY AND FEATURES HIGHLIGHTS

I4GEN   WIFI   3G/4G   CRE TECHNOLOGY SUPPORT

INTERNET

i4GEN
Up to 4 displays units

ETHERNET

AMF COMPACT
switchboard or
core version

- • The i4GEN touchscreen and color display is available for AMF COMPACT.
- • i4GEN offers configuration, control, monitoring and logging (parameters, measures, events) of CRE TECHNOLOGY controllers.
- • i4GEN display can be duplicated on computer locally by LAN or remotely by internet or GPRS.
- • Thanks to its WIFI option, i4GEN offers also the capability of remote service and support by connecting your smartphone in connection sharing.

EASY FLEX® PROGRAMMING EXAMPLE

It is possible to customize your application by programming specific features with **Easy Flex®**, available directly from **CRE PC** software. **Easy Flex®** allow user to write up to 50 lines of equation trough an intuitive editor, giving the opportunity to fit with any specific application and to extend standard features. Ex: Programmable relays, timers, sensor treatment, dynamic modification…

Easy flex

Equations

Input			Output			Line execution condition	
Value 1	Operator	Value 2	Variable	Forward/Reverse	Delay (s)	Variable	
Generator volt	Greater or eq	Nominal volta	Digital output	Forward	1.5	Remote start c	Not equal 0
Remote start v	Equal	1	Remote alarm	Reverse	0	Emergency sto	Equal 0