



SYNCHRO COMPACT

Synchronizing and protection controllers

The **SYNCHRO COMPACT** offers synchronizing and protections. The **SYNCHRO COMPACT** offers flexibility and time saving thanks to its simple wiring, all features included (no option), and easy programming.

HARDWARE AND DISPLAY

The **SYNCHRO COMPACT** is a generator controller range available in both switchboard panel mounted version with display, or core base mounted version and compatible with **i4Gen** touchscreen color display.

SOFTWARE

The **SYNCHRO COMPACT** is configurable from its front panel display, from **i4Gen**, or through the free **i4Gen Suite** software (version 2.5.0 must be used).



CORE BASE DIN RAIL
MOUNTED VERSION



SWITCHBOARD MOUNTED VERSION
WITH DISPLAY

FEATURES

CONTROL AND MANAGEMENT

- Compatible with all engines ECUs in J1939, speed governors, alternators and AVR/DVRs voltage regulators.
- Synchronization and dead Bus management.
- Dynamic synchronization: Frequency, Phase and Voltage synchronization (Synch display available on screen). Synch check (ANSI 25) + Phase sequence protection.
- New optimized PID loop with exceptional performance in synchronization.
- 2 password levels.
- Automatic clock synchronization by CANbus.

DISPLAYED INFORMATIONS

Generator electrical parameters:

- Voltage (3 phases RMS, L-L and L-N)
- Frequency

Bus electrical parameters:

- Frequency
- Active and reactive power (calculated)
- Synchroscope and synch check relay authorization values.
- Log of alarms and faults with timestamps and real-time values.
- 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

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).
- Easy Flex:
 - 50 lines of programming with logic and arithmetic operators and conditions

- All inputs/outputs and variables available

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-SYNCH-10-A:** SYNCHRO COMPACT core base version
- A56-SYNCH-00-A:** SYNCHRO COMPACT switchboard version

RELATED PRODUCTS AND CABLES

- i4Gen Touchscreen color display – Ref A56Vxx
- I/O Expansion – Ref KL1488 + KL2408 ...
- PC Connection Ethernet cable – Ref A53W1
- CANbus J1939/CRE/CANopen communication cable – Ref A40xx





SPECIFICATIONS

ELECTRICAL SYSTEM

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

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 Bus/ mains. Neutral terminal does not need to be connected.
- 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 inputs 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 outputs expansion via CANopen.
- 2 x Relay outputs (breaker control): 5A, 240VAC.
- 2 x Analog outputs: Speed/Frequency and Voltage control: +/-10VDC isolated output with adjustable span and offset.
- Magnetic pick up input: Frequency from 50Hz...10kHz, Voltage 0.5...40VAC.

COMMUNICATION PORTS

2 isolated com ports are available:

- 1 CANbus: I/O extensions.

- 1 Ethernet: PC communication/ModBus TCP.

FREQUENCY AND KW CONTROL

- Configurable +/-10VDC analog output.
- Pulses outputs control (+/-f).
- J1939 CANbus port for Caterpillar, Cummins, Detroit, Deutz, Iveco, John Deere, MTU, Perkins, Scania, Volvo electronic engine...
- Protection of speed control output abnormal deviation.

VOLTAGE CONTROL

- Configurable +/-10VDC analog output.
- Pulses outputs control (+U/-U).
- Compatible with: AEM, AVK, Basler Electric, Caterpillar, Kia, Leroy Sommer, Marathon, Marelli Motori, Meccalte, Sincro, Stamford...
- Protection of volt control output abnormal deviation.

ENVIRONMENT

- Operating temperature: -30... 70°C (-22...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 (1.50 x 2.75in).
- Pixels: 256x128. Back light: 50cd/m² typical, configurable.
- Contrast: adjustable.

LANGUAGES

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

WIRING DIAGRAM

