HIMOINSA
A YANMAR COMPANY

CC2-1000

Automatic Transfer Switch Panel

MAIN FEATURES	
ATS Model	CC2*
Amperage	1000 A
Controller Model	CEC7
Switching Type	Four-pole motorized changeover switch
Dimensions LxWxH (mm)	1800 x 1000 x 600
Weight (kg)	220
Degree of protection	IP55, NEMA 12
In Accordance With	2004/108/CE 2008/95/CE 2002/96/CE IEC60947-1 IEC60947-3 IEC60947-6-1 RoHS

* Zero at mains return

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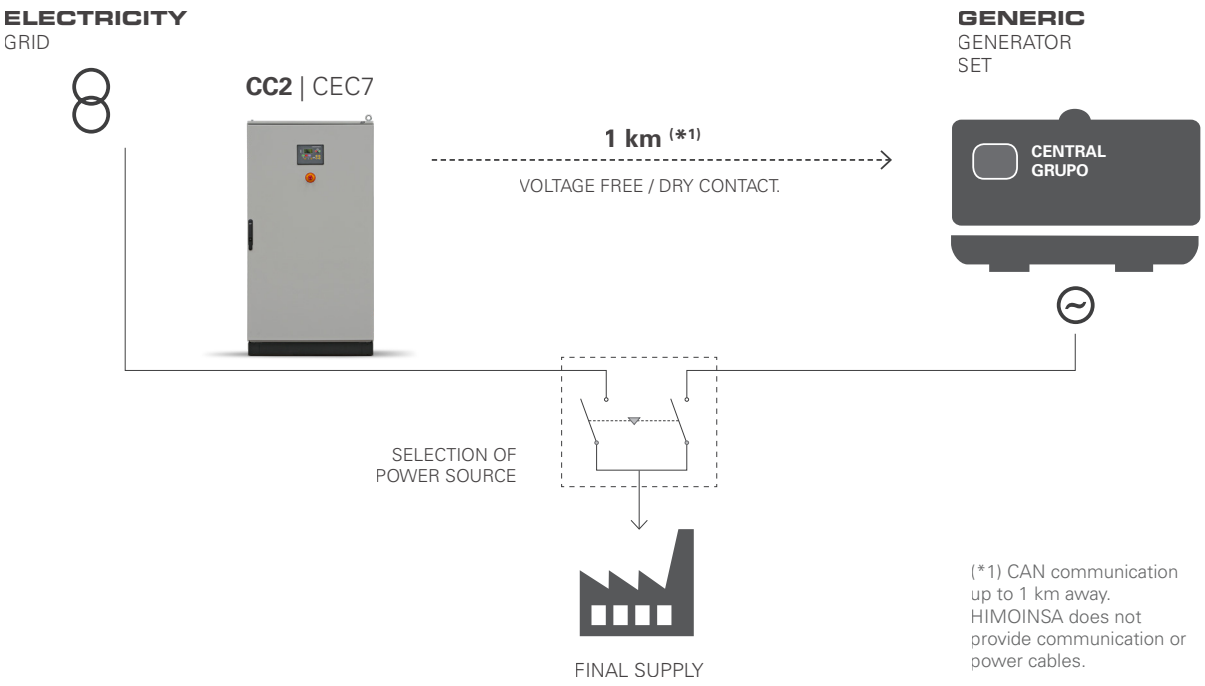
SWITCHING DIAGRAM



For communications of over 100 metres a supplemental power supply is necessary, which is equipped with an auxiliary battery that maintains the power supply in both modules, from the time when a power failure occurs until the generator set starts up.

This battery supplies two modules of the panel:

1- The power module, Inputs and outputs of change-over PHR7.
2- CEC7 switching control unit.

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MAIN COMPONENTS

1) **Metal cabinet.** Made from high-quality sheet metal. IP55 protection rating which guarantees sealing and insulation levels.

2) **CEC7 Control unit.** y 3) **Measurements module**. The control unit and the measurements module are responsible for monitoring the quality of the grid signal; they are able to order the start-up of an external generator set and manage its shutdown once the grid supply is re-established. It has a 4-line graphic display with language selection to view the status of the generator set.

4) **Manual Emergency stop button.**

5) **Key for manual transfer switch.**

6) **Motorised changeover switch.** (see table pg. 4 - 4 Pole changeover switches characteristics)

7) **Grounding line connection.** Ground connection electrical installation with connection ready for ground spike (not supplied)**.**

8) **Plinth for cabinets > 800A**.

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4 POLE CHANGEOVER SWITCHES CHARACTERISTICS

Characteristics according to IEC 60947-3 an IEC60947-6-1		
Thermal current 1_{th} at 40ºC		1000 A
Frame size		B6
Rated insulation voltage U_i (V) (power circuit)		1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)		12
Rated insulation voltage U_i (V) (operation circuit)		300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit)		4
Rated operational currents I_e (A) according to IEC 60947-6-1		
Rated voltage	**Utilisation category**	**A/B (1)**
415 VAC	AC-31 B	1000
415 VAC	AC-32 B	1000
415 VAC	AC-33 B	800
Rated operational currents I_e (A) according to IEC 60947-3		
Rated voltage	**Utilisation category**	**A/B (1)**
415 VAC	AC-20 A / AC-20 B	1000/1000
415 VAC	AC-21 A / AC-21 B	1000/1000
415 VAC	AC-22 A / AC-22 B	1000/1000
415 VAC	AC-23 A / AC-23 B	1000/1000
500 VAC	AC-20 A / AC-20 B	1000/1000
500 VAC	AC-21 A / AC-21 B	1000/1000
500 VAC	AC-22 A / AC-22 B	800/800
500 VAC	AC-23 A / AC-23 B	630/630
690 VAC	AC-20 A / AC-20 B	1000/1000
690 VAC	AC-21 A / AC-21 B	1000/1000
690 VAC	AC-22 A / AC-22 B	800/800
690 VAC	AC-23 A / AC-23 B	630/630
220 VDC(2)	DC-20 A / DC-20 B	1000/1000
220 VDC(2)	DC-21 A / DC-21 B	1000/1000
220 VDC(2)	DC-22 A / DC-22 B	1000/1000
220 VDC(2)	DC-23 A / DC-23 B	1000/1000
440 VDC(2)	DC-20 A / DC-20 B	1000/1000
440 VDC(2)	DC-21 A / DC-21 B	1000/1000
440 VDC(2)	DC-22 A / DC-22 B	1000/1000
440 VDC(2)	DC-23 A / DC-23 B	1000/1000

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 4-pole device with 2 poles in series by polarity.
(3) Value for coordination with any circuit-breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

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Characteristics according to IEC 60947-3 an IEC60947-6-1	
Fuse protected short-circuit withstand as per IEC 60947-3 at 690 VAC	
Prospective short-circuit current (kA rms)	100
Associate fuse rating (A)	1000
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s (3)	
Intensidad de corta duración admisible 0,3s. I_{cw} (kA ef.)	64
Rated short-circuit withstand without protection	
Rate short-time withstan current 60ms 1_{cw} (kA rms) as per 1EC 60947-6-1 at 415 VAC	20
Rate short-time withstan current 1ms 1_{cw} (kA rms) as per 1EC 60947-3 at 690 VAC	35
Rate peak withstan current (kA peak) as per 1EC 60947-3 at 690 VAC	55
Connection	
Maximum Cu cable cross-section (mm^2)	2 x 240
Minimum Cu busbar cross-section (mm^2)	2 x 50 x 5
Maximum Cu cable cross-section (mm^2)	4 x 185
Maximum Cu busbar width (mm)	63
Tightening torque mini / maxi (Nm)	20/26
Switching time (Standard setting)	
I - 0 or II - 0 (ms)	2.6
I - II or II - I (ms)	1.6
Duration of "electrical blackout" 1 - 11 (s)	1.5
Power supply	
min. / max. (VAC)	166/332
Control supply power demand	
Power supply 230 VAC inrush / nominal (VA)-ATyS	460/184
Power supply 230 VAC inrush / nominal (VA) - ATyS,t,g,p	482/206
Mechanical characteristics	
Durability (number of operating cycles)	4000
Weight ATyS 3/4 P (kg)	32.9
Weight ATyS 3/4 P (kg)	33.5
Weight ATyS r, t, g, p 3/4 P (kg)	34.0

(1) Categoría con índice A = Operación frecuente - Categoría con índice B = Operación infrecuente.
(2) Dispositivo 4-polos con 2 polos en serie por polaridad.
(3) Valor para coordinación con cualquier interruptor automático que asegura el corte en 0,3s. Valor para coordinación con cualquier interruptor automático que asegura el corte en 0,3 s. Para una coordinación con referencias de interruptores automáticos conocidas, es posible obtener valores de intensidad de cortocircuito superiores. Consúltenos.

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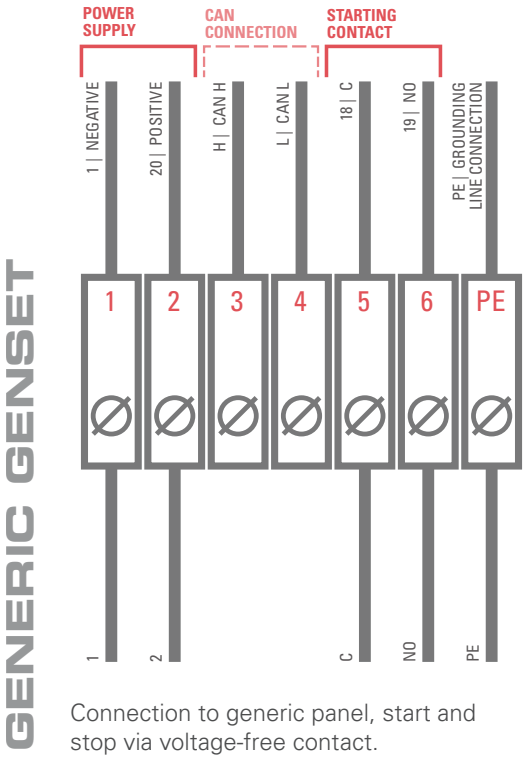
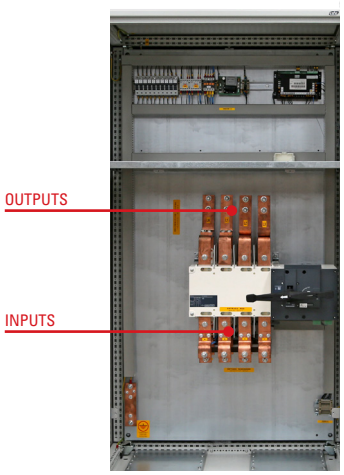
TERMINAL CONNECTION DIAGRAM



Connection to generic panel, start and stop via voltage-free contact.

POWER CIRCUIT DIAGRAM



	Connection Type	Max. no of cables per phase
MAINS INPUT	Copper bar	2
GENSET INPUT	Copper bar	2
POWER OUTPUT	Copper bar	2

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AUTOMATIC TRANSFER SWITCH BETWEEN GRID AND GENSET

The CEC7 control unit monitors the quality of the grid signal and can order an external generator set to start up and to then handle its close-down once the grid supply has been reinstated. It is possible to integrate the management of the genset by using the CEM7 (or CEM7G) control unit which allows you to view the status of the generator set (measurements, alarms, etc.) from the controller's interface. If you use any other control unit model in the generator set, the generator set start-up is ordered by free voltage contact. It has a 4-line graphic display with language selection to show the status of the generator set.

● Standard (O) Optional

CEC7	
Genset readings	
Voltage between phases	●
Voltage between phase and neutral	●
Currents	●
Frequency	●
Apparent power (kVA)	●
Active power (kW)	●
Reactive power (kVAr)	●
Power Factor	●
Mains Readings	
Voltage between phases	●
Voltage between phase and neutral	●
Currents	●
Frequency	●
THD	●
Engine Protection Devices	
Emergency Stop	●
Alternator Protection Devices	
High frequency	●
Low frequency	●
High voltage	●
Low voltage	●
Asymmetry among phases	●
Incorrect phases sequence	●
Unit signal failure	●
Counters	
Total hour counter	●
Partial hour counter	●
Kilowatt meter	●
Valid start-up counter	●
Unsuccessful start-up counter	●
Maintenance	●
Power (Mains)	●
Communications	
Modbus TCP	(O)
Modbus RS485	(O)
C2LAN Ethernet	(O)
Fleet Manager (C2CLOUD required)	(O)
C2CLOUD Modem GSM/3G	(O)
SNMP	(O)
PROFIBUS	(O)

CEC7	
Performance	
Alarm history (100 standard)	●
External start-up	●
Start-up inhibited	●
Start-up due to mains failure	●
Enabling the genset contactor	●
Mains and Genset breaker activation	●
Control of the transfer of fuel	● (CEM7)
Control of the engine temperature	● (CEM7)
Forced genset operation	● (CEM7)
Free programmable alarms	● (CEM7)
Genset start-up in test mode function	●
Genset in reserve	●
Start-up by load demand	●
Multilingual	●
Special Applications	
GPS location	(O) (CEM7)
RAM7	(O) (CEM7)
Repetitive panel	(O) (CEM7)
Timer	●

CEC7: feature available by adding CEC7 to the installation
Note: All the protections can be programmed to perform "Warning" or "Stop engine WITH or WITHOUT cooling".
The AS5+CC2 configuration will have all the functionality of the CEM7 control unit plus the grid readings of the CEC7 control unit.

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