

# AUTOMATIC TRANSFER SWITCH

CC2 & AC5 CONTROL PANELS

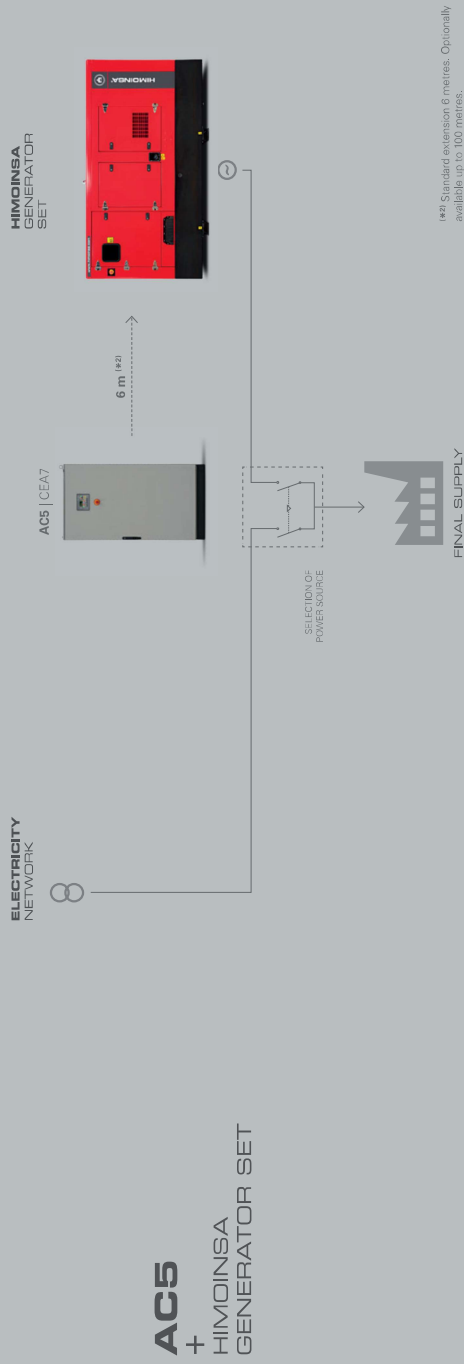
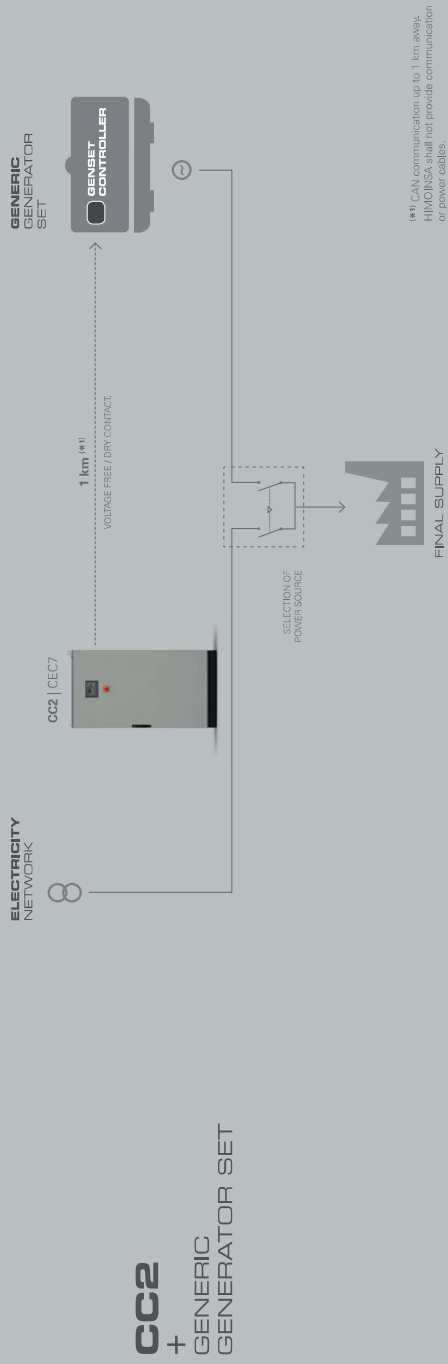


**HIMOINSA**

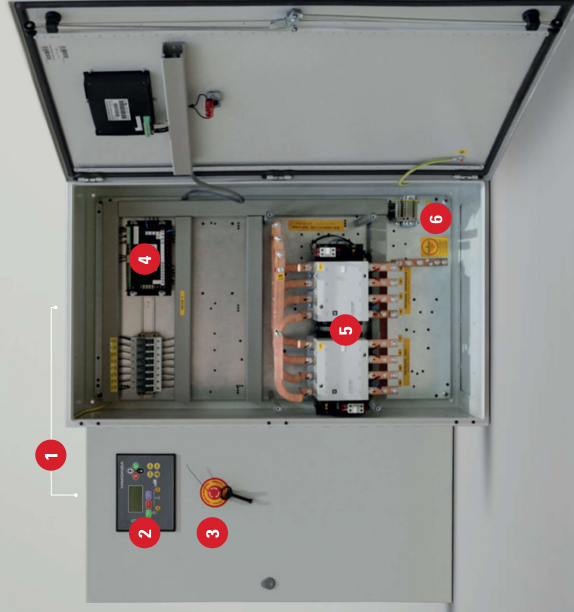
HIMOINSA MANUFACTURES AUTOMATIC TRANSFER SWITCH PANELS (ATS) WHICH TRANSFER POWER BETWEEN THE MAINS AND THE GENERATOR SET. A PIECE DESIGNED WITH A COMPREHENSIVE ELECTRICAL MECHANISM THAT ALLOWS A RAPID RESPONSE TO THE DEMAND FOR POWER ON THE STAND-BY MARKET.

HIMOINSA automatic transfer switch panels have a manual emergency stop and have been manufactured in compliance with required quality standards. With an amperage range of 30 to 3150 A, the HIMOINSA ATS has an IP65 protection rating which guarantees sealing and insulation levels.

# AUTOMATIC TRANSFER SWITCH DIAGRAMS



# CONTACTORS 30-250A



## MAIN COMPONENTS

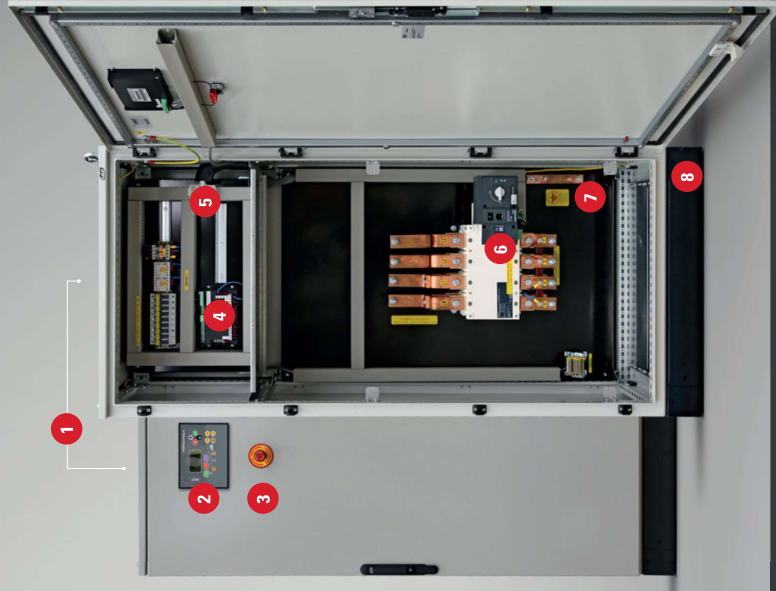
- 1 IP55 cabinet
- 2 Controller
- 3 Emergency stop
- 4 Measurements module
- 5 Contactors
- 6 Grounding line connection



AUTOMATIC TRANSFER SWITCH USING A PAIR OF MECHANICALLY INTERLOCKED CONTACTORS AND WITH STATUS AND WITH STATUS CONTACTS.

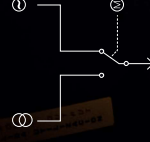
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# SWITCHES 400-3150A



## MAIN COMPONENTS

- 1 IP55 cabinet
- 2 Controller
- 3 Emergency stop
- 4 Measurements module
- 5 Key for manual transfer switch
- 6 Motorised switch
- 7 Grounding line connection
- 8 Plinth for cabinets >800A



AUTOMATIC TRANSFER SWITCH USING MOTORISED SWITCHES WITH MANUAL ACTIVATION OPTION.

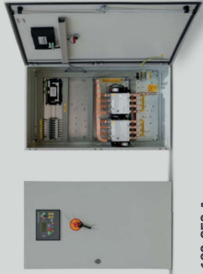
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# CC2 AUTOMATIC TRANSFER SWITCH PANELS



**30-125 A**  
4-pole contactors, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



**160-250 A**  
4-pole contactors, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



**400-630 A**  
Motorised switch, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



**800 A**  
Motorised 4-pole switch, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



**1000-1250 A**  
Motorised 4-pole switch, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



**1600 A**  
Motorised 4-pole switch, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



**2500-3150 A**  
Motorised 4-pole switch, CEC7 controller, Power failure detection, Emergency stop, Voltage measurement.



For communications of over 100 metres a supplemental power supply is necessary.



**POWER SUPPLY** The power supply 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 sets start.

MAXIMUM DISTANCE: 1000 m

## CC2 ATS PANELS

	CONTACTORS										SWITCHES									
	30	40	50	63	100	125	160	250	400	630	800	1000	1250	1600	2000	2500	3150			
Ampereage	A	30	40	50	63	100	125	160	250	400	630	800	1000	1250	1600	2000	2500	3150		
Weight	kg	27	27	28	28	30	31	54	55	128	135	164	220	245	347	385	450	486		
Height	mm	700	700	700	700	700	700	1000	1000	1200	1200	1750	1800	1800	2000	2000	2000	2000		
Length	mm	500	500	500	500	500	500	600	600	800	800	800	1000	1000	1200	1200	1200	1200		
Width	mm	250	250	250	250	250	250	300	300	400	400	400	600	600	600	800	800	800		

### POWER PANEL X3 TERMINAL CONNECTION DIAGRAMS



### HIMOINSA GENSSET

Connection to HIMOINSA AS5/M5 type panel with CEM7 control unit. Start and stop via CAN communication.



### GENERIC GENSSET

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

# CEC7 CONTROLLER



CEC7 CONTROLLER

## ALLOWS THE DETECTION OF ANY MAINS FAILURE AND MANAGES THE TRANSFER OF THE LOAD TO THE GENERATOR SET.

### ■ DISPLAY MODULE

The display module is responsible for carrying out the information tasks regarding the status of the device and allows actions to be performed by the user; through the display module the user is able to control the control unit, as well as program and configure the functions. Through the display module, access is given to a record of the last errors registered by the control unit.

### ■ MEASUREMENTS MODULE

The measurements module is responsible for performing the tasks of monitoring and control of the control unit. This module is located in the rear panel to reduce wiring and increase the control unit's immunity against electromagnetic noise. All the signal, sensor and actuators are connected to the measurements module.

### High protection

Protection from overvoltage, undervoltage asymmetry, overcurrent, overfrequency, underfrequency, overload, incorrect network phase sequence, incorrect genset phase sequence.

### Multiple starting methods

Starting in manual, automatic, due to mains failure, via voltage-free contact.

### Reading and control of parameters

The communication of the CEC7 control unit with HIMOINSA generator sets with CEM7 control unit, allows multiple electrical signal parameters

to be read, both those generated as well as the mains without adding instruments or external gauges.

Reading of parameters such as voltage, current, frequency, active, apparent and reactive mains power (current transformer option); also the mains power factor and cosine phi (current transformer option) and

instantaneous power (Kwh) and accumulated power (day, month and year) of the generator set.

**Easy programming and management**  
Possibility of customising the operation of the control unit to a specific application and programming the measurement parameters, thresholds,

times, alarms, adjustments. Allows the adjustment of measurements and levels such as the automatic filling of the fuel tank. The power outputs are protected.

Addressable and expandable modules. More than 64 nodes and up to 1,000 metres without the need for a repeater using the appropriate cable.

	<b>Genset Readings</b>		<b>Counters</b>
	Voltage between phases		Total hour counter
	Voltage between phase and neutral		Partial hour counter
	Currents		Kilowatt meter
	Frequency		Valid start counter
	Apparent power (kVA)		Unsuccessful start counter
	Active power (KW)		Maintenances
	Reactive power (kVAh)		<b>Communications</b>
	Power Factor		RS232
			RS485
			Modbus
			Modbus IP
			Software for PC
			Analogue modem
			GSM/GPRS modem
			<b>Performance</b>
			Alarm history
			External start
			Start inhibited
			Starting due to mains failure
			Mains and Genset breaker activation
			Multilingual
			<b>Special Applications</b>
			Short term paralleling on utility return
			Repetitive panel
			10 (100 optional)

(\*) Available only with connection to CEM7 control unit | (\*\*) Alarm with engine stop | • Optional | ••••• Supplied to include optional communication.

# AC5 AMF CONTROL PANELS WITH ATS



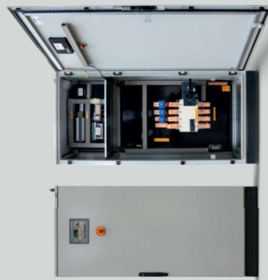
**30-125 A**  
4-pole contactors. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.



**160-250 A**  
4-pole contactors. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.



**400-630 A**  
Motorised switch. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.



**800 A**  
Motorised 4-pole switch. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.



**1000-1250 A**  
Motorised 4-pole switch. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.



**1600 A**  
Motorised 4-pole switch. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.



**2500-3150 A**  
Motorised 4-pole switch. CEAT7 controller. Detection of mains failure and genset control. Emergency stop. Current and voltage measurement.

◀ **AC5**  
AC5 control panels are only compatible with HIMOINSA gensets.



MAXIMUM DISTANCE: 100 m

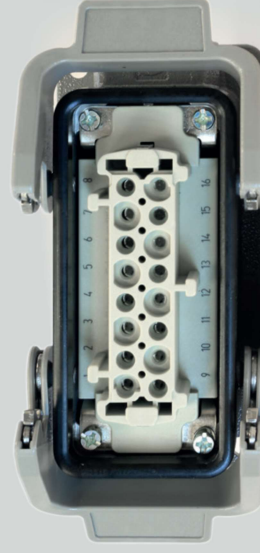
## AC5 CONTROL PANELS

	CONTACTORS										SWITCHES									
	30	40	50	63	100	125	160	250	400	630	800	1000	1250	1600	2000	2500	3150			
Amperage	A	30	40	50	63	100	125	160	250	400	630	800	1000	1250	1600	2000	2500	3150		
Weight	kg	49	49	49	49	49	49	56	57	130	137	166	222	247	349	387	452	488		
Height	mm	1000	1000	1000	1000	1000	1000	1000	1000	1200	1200	1750	1800	1800	1800	2000	2000	2000		
Length	mm	600	600	600	600	600	600	600	600	800	800	600	1000	1000	1200	1200	1200	1200		
Width	mm	300	300	300	300	300	300	300	300	400	400	400	400	600	600	800	800	800		

## MULTI-PIN QUICK CONNECTOR



▶ **FLEXIBLE CONNECTION, COMPACT HOSE, RESISTANT TO IMPACTS AND HYDROCARBONS.** Transmits information from the engine and the alternator to the control unit. The length of the standard hose supplied by HIMOINSA is 6 metres and is optionally available up to 100 metres.



▶ **CONNECTOR 16/24 PINS.** Robust and secure device used in our ATS with AC5 configuration.

# CEA7 CONTROLLER

## ALLOWS TOTAL CONTROL OF THE GENERATOR SET AND THE TRANSFER SWITCH WITH THE MAINS.

### ■ DISPLAY MODULE

Reports on the status of the device and allows interaction with the user, who can manage the control unit as well as program and configure its operation. It consists of a backlit display and various LEDs and pushbuttons used to monitor the control device.

### ■ MEASUREMENTS MODULE

Performs tasks of supervision and control of the generator set. It is located inside the panel to reduce the wiring and increase immunity of the control unit to electromagnetic noise. All the signals, sensors and actuators are connected to the measurements module. The connection between the measurements module and display module is performed via a CAN communications bus, enabling the interconnection of additional modules which ensures the versatility of the control unit.

Genset Readings	
Voltage between phases.	
Voltage between phase and neutral	
Currents	
Frequency	
Apparent power (kVA)	
Active power (kW)	
Reactive power (kVAr)	
Power Factor	
Calculation of harmonics up to order 20	
Mains Readings	
Voltage between phases.	
Voltage between phase and neutral	
Currents	
Frequency	
Apparent power	
Active power	
Reactive power	
Power Factor	
Calculation of harmonics up to order 20	
Engine Readings	
Coolant temperature	
Fuel level	
Battery voltage	
RPM	
Battery charging alternator voltage	

Engine Protection Devices	
High water temperature	
High water temperature by sensor	
Low engine temperature by sensor	
Low oil pressure	
Low oil pressure by sensor	
Low water level	
Unexpected stop	
Fuel reserve	
Fuel reserve by sensor	
Stop failure	
Battery voltage failure	
Battery charging alternator failure	
Overspeeding	
Underfrequency	
Starting failure	
Emergency stop	
Alternator Protection Devices	
High frequency	
Low frequency	
High voltage	
Low voltage	
Short Circuit	
Asymmetry between phases	
Incorrect phases sequence	
Reverse Power	
Overload	
Unit signal failure	

Counters	
Total hour counter	
Partial hour counter	
Kilowatt meter	
Valid start counter	
Unsuccessful start counter	
Maintenance	
Communications	
RS232	
RS485	
Modbus IP	
Modbus	
Software for PC	
Analogue modem	
GSM/GPRS modem	
J1939 bus communication	
Performance	
Alarm history	
External start	
Start inhibited	
Starting due to mains failure	
Mains and Genset breaker activation	
Multilingual	

CEA7  
CONTROLLER



### High protection

Protection from overvoltage, undervoltage asymmetry, overcurrent, overfrequency, underfrequency, overload, incorrect network phase sequence, incorrect genset phase sequence.

### Reading and control of parameters

Reading parameters such as voltage, current, frequency, fuel level, tachometer (revolution counter), current power consumption, battery voltage, engine temperature, oil pressure, cos phi per phase, measurements of total energy consumed (per day, month and year), alarm control.

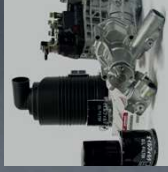
### Easy programming and management

Possibility of customising the operation of the control unit to a specific application and programming the measurement parameters, thresholds, times, alarms, adjustments... Allows the adjustment of measurements and levels such as the automatic filling of the fuel tank. The power outputs are protected. Addressable and expandable modules. More than 64 nodes and up to 1,000 metres without the need for a repeater using the appropriate cable.

• Optional

# TECHNICAL SERVICE AND SPARE PARTS

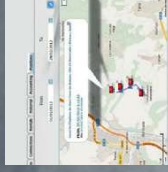
**TECHNICAL SERVICE**  
Comprehensive technical support through qualified professionals and authorised technical centres.



**INTELLIGENT CONTROL**  
Intelligent storage centres allowing automatic searches and selection of spare parts.



**FLEET MANAGER**  
Provides information on the location and status of the rented product.



**24/7 ONLINE SPARE PARTS**  
24-hour service for online purchasing of replacement parts.



HIMOINSA provides its customers with a fast and efficient technical service through a technical assistance network, distributed worldwide.

The spare parts department supplies original replacement parts for every component of the genset through a centralised system.

**Personalised Assistance.**

Technical experts provide the customer with a wide range of solutions throughout the lifetime of the product.

**Quality Assurance.**

After-sales service guarantees the investment made in purchasing the product through the extensive network of authorised support centres, distributors and the technical service.







**FACTORIES:**

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**SUBSIDIARIES:**

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ARGENTINA | ANGOLA | SOUTH AFRICA

**HEADQUARTERS:**

Ctra. Murcia - San Javier, km 23.6  
30730 SAN JAVIER (Murcia) SPAIN  
TLF. +34 968 19 11 28 | +34 902 19 11 28  
Fax +34 968 19 12 17 | Export Fax +34 968 33 43 03

