ECOMOBILITY GENERAL CATALOGUE

ECOMOBILITY

SCAME electrical solutions

2016-2017

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Scame: a tradition of innovation

IN FIFTY YEARS WE HAVE WRITTEN A STORY OF INNOVATION THAT HAS ALWAYS PRESERVED THE SPIRIT OF ITS ORIGINS.

Scame was founded amidst the enthusiasm of the Italian economic boom of the 60's and has always pursued its raison d'être in thriving by improving. Today it is an international industrial group of about 800 people employed in 20 subsidiary and associated companies operating under the parent company headquartered in Parre (Bergamo) in Alta Valle Seriana. Scame has a capillary presence throughout Italy with its own sales agencies and operates worldwide with branches and loyal distributors.

SCAME in the world

SCAME electrical solutions

Italy
Parre (Bergamo)

SCAME ARGENTINA
Argentina

SCAME CHILE
Chile

SCAME-CZ
Czech Republic

SCAME-SEE
Bosnia Herzegovina

SCAME-TOP
China

SOBEM SCAME
France

SCAME BRASIL
Brazil

SCAME-HR
Croatia

SCAME INDIA
India

SCAME POLSKA
Poland

SCAME PORTUGAL
Portugal

SCAME-RO
Romania

SCAME-SK
Slovakia

SCAME IBERICA
Spain

SCAME MIDDLE EAST
U.A.E.

SCAME-UK
United Kingdom

SCAME-UY
Uruguay

SCAME-UA
Ukraine

Technical and sales service

SEND AN E-MAIL TO infotech@scame.com AND YOU'LL RECEIVE THE ANSWERS TO ALL YOUR QUESTIONS ABOUT TECHNICAL ASPECTS, INSTALLATION PROCEDURES AND CONFORMITY WITH THE STANDARDS .

Scame technical information centre is able to promptly provide clear and complete answers to all your questions regarding the Scame products. The leading distributors of electrical material, with the support of our sales agencies and technical promoters, represent an additional capillary reference network. Information and updates can be found in the Info-point section of the internet site and in the newsletter sent periodically to the registered users.

infotech@scame.com

There is a great effort behind this project.

The world changes. It is inevitable. It is often a steady evolution, but at times sudden changes occur that lead to new scenarios in just a short time. The introduction of electric vehicles on the market entails the creation of new habits, new structures, and new needs. In such an evolving context, it is important to establish points of reference that guide the change; in this case, the more qualified, and thus credible, figure becomes the main player. SCAME did not hesitate for a second to offer a tangible and functional contribution in order to achieve sustainable choices from a technological, economic and environmental standpoint.

A considerable commitment, which SCAME has gladly been devoted to for many years, with the aim of providing tomorrow's drivers with practical and safe instruments.

We aim to build on good ideas.

In Europe, there are many technicians with experience and skills, but in order to make the most of this wealth it was necessary to find a way to coordinate the work being carried out, channel choices and share objectives. SCAME, in conjunction with other manufacturers strive to ensure compliance of connections used to supply electrical vehicles with IEC/CENELEC standards. All the efforts were geared towards setting up a European connecting standard capable of guaranteeing the highest levels of safety.

1
CONNECTORS

We set only one possible choice for ourselves:

total safety!

European standards define possible cases for electric vehicle connection to the source of power. Within the standardization activities, SCAME has elected to develop its products by presenting original and ground-breaking solutions on the topic of safety that have been appreciated and considered as reference standards at the European level. SCAME thus received proper recognition for the valuable expertise gained while developing its range of products with innovative spirit and designing ability.

IPXXD PROTECTION

Paragraph 11.3.2 of standard IEC/EN 61851-1 requires IPXXD protection (entry test of wire with 1-mm diameter) against accidental contact for connected and unconnected plugs in case of two-way energy transfer.
This requirement is especially important as it prevents users not trained in the use of these connectors from coming in contact with potentially live parts; moreover, it is required by most European countries.

The LIBERA Series connectors satisfy this requirement thanks to the adoption of pins and contact-tubes protected by shutters that can be opened only after the plug is inserted into the socket, as it has been for years now for domestic connectors. As the shutters satisfy the IPXXD degree of protection, the LIBERA Series connectors do not require additional sectioning devices in order to achieve an equivalent degree of protection.

Closed shutters.

Plug shutter opening.

Socket shutter opening.

Complete insertion.

Our solution is simple. And efficient.

IEC/EN 61851-1: CHARGING METHODS

The reference standard for EV charging stations is the IEC/EN 61851-1, which describes four charging modes:

MODE 1

Connection of the EV to the a.c. mains using domestic connectors up to 16 A, type A 30 mA RCD (Residual Current Device) protection in upstream.

MODE 2

Connection of the EV to the a.c. mains using domestic or industrial connectors up to 32 A, type A 30 mA RCD protection, control device on the cable (ICCB In-Cable Control Box).

MODE 3

Connection of the EV to the a.c. mains with dedicated connectors, type A 30 mA RCD protection, control device in the charging station.

MODE 4

Connection of the EV to the a.c. mains with off-board battery charger.

Moreover, depending on the type of cable connection, there are three different possible cases:

CASE A

EV connection to the a.c. mains using a supply cable and plug permanently attached to the EV.

CASE B

EV connection to the a.c. mains using a detachable cable equipped with plug and socket.

CASE C

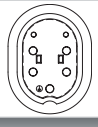
EV connection to the a.c. mains using cable and socket permanently attached to the charging station.

IEC/EN 62196-1 AND IEC/EN 62196-2: MODE 3 CONNECTORS

The reference standards for Mode 3 connectors are the IEC/EN 62196-1 and 2, and they describe three different types of connection:

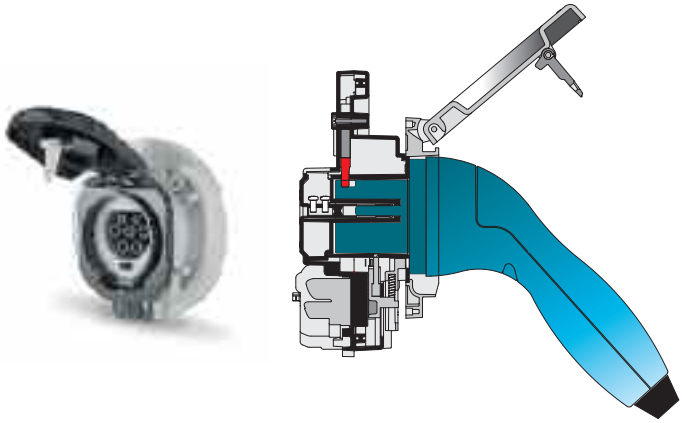
CONNECTIONS

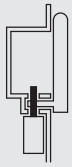
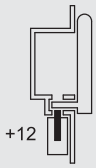
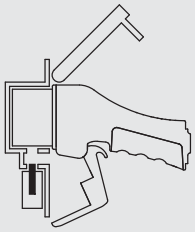
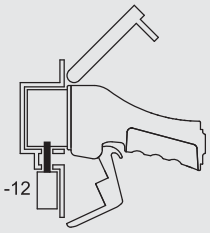
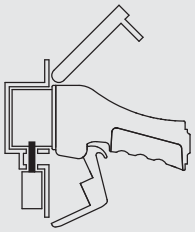
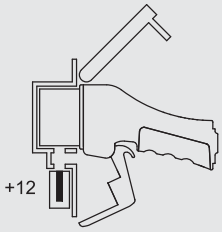
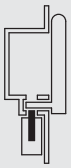
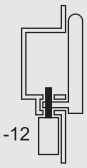
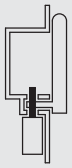
VEHICLE	Type 1	Type 2
Circuit	Single-phase	Single/three-phase
Current	32 A	70 A (single-phase) 63 A (three-phase)
Max. voltage	250 V	480 V
No. of contacts	5	7
Connector		

STATION	Type 2	Type 3A	Type 3C
Circuit	Single/three-phase	Single-phase	Single/three-phase
Current	70 A (single-phase) 63 A (three-phase)	16 A	63 A
Max. voltage	480 V	250 V	480 V
No. of contacts	7	4	7
Connector			

LATCHING SYSTEM

The flush-mounting socket-outlets of the LIBERA Series are also available in the optional version with built-in latching system in order to avoid accidental or intentional extraction of the plug in charging stations located in unsupervised places, such as squares and roads. The locking function is achieved by means of a pin, operated by a bi-stable actuator that also blocks the opening of the cover in the resting position.
For proper system management, the socket also provides the position status of the lock (inserted/not inserted) and of the cover (closed) by means of 3 built-in micro switches. All plugs included in the LIBERA Series are also equipped with a hole in the bottom part of the body in which the pin is housed.
Sockets with the locking function are supplied with no actuator piloting systems, consequently the operating principle shown in the figures at the side presupposes coupling to an external control system supplied by Scame in the case of assembled systems.



1. Idle. 	2. User identification (RFID). Lock opening. 	3. Cover opening. Plug insertion. 	4. User identification (RFID). Lock closing. 	5. Charging. 
6. User identification (RFID). Lock opening. 	7. Plug removal. Cover closing. 	8. Lock closing. 	9. Idle. 	

CONNECTORS FOR ELECTRIC VEHICLES

TYPE 2 CONNECTOR WITH SHUTTERS

The current standard type 2 connector provides a IPXXB degree of protection for socket outlets installed on charging stations. Since this degree of protection is unsuitable for the concerned application, type 2 must be joined with a device upstream that ensures complete isolation.
The SCAME solution using the shutters, as already done for the type 3A, 3C and domestic connectors, can upgrade the degree of protection to IPXXD, ensuring protection against direct contact with potentially live parts.
The type 2 connector with shutters, apart from meeting the expectations of the European Commission, also fulfils the safety requirements for domestic environments required by the regulations and laws of most European Union member states.

REFERENCE STANDARDS

EN 62196-1 (2012)

Plugs, socket-outlets, vehicle couplers and vehicle inlets.

Conductive charging of electric vehicles.

Part 1: General requirements.

EN 62196-2 (2012)

Plugs, socket-outlets and vehicle couplers.

Conductive charging of electric vehicles.

Part 2: Dimensional interchangeability requirements for a.c. pin and contact-tube accessories.

TECHNICAL CHARACTERISTICS

Rated current:	32 A
Rated voltage:	380-480 V AC
Frequency:	50-60 Hz
Insulation voltage:	500 V
Protection degree:	IP55 (mated) (IPXXD)
Operating temperature:	-30°C to +50°C
Material:	Engineering plastic
Glow Wire test:	850°C-960°C
IK Grade at 20°C:	IK08
Colour:	Black
Number of poles:	L1-L2-L3-N-PE-CP-PP
Size of conductors:	2.5 to 10 mm^2
Saline solution:	Resistant
UV rays:	Resistant

TYPE 2 WITHOUT SHUTTERS

Type 2 connector is designed for electric vehicles with charging power greater than 3 kW, such as cars. It was adopted by German manufacturers and selected by the European Commission as a standard solution on the infrastructure-side.
As the 3C-type connector can be wired in both single-phase and three-phase, it has the same contacts arrangement (CP and PP contacts).
Since the type 2 connector cannot be disconnected under load,the SCAME type 2 socket already provides an interlocking mechanism that blocks the plug during the charging and that closes the lid when the socket is not engaged.The latching device is operated by a single 2-position actuator.

EV READY APPROVED

ASEFA, International Body for electrical equipment, attested the compliance of SCAME Type 2 socket-outlets with the EV37 requirements of the EV READY Technical Reference.

Advantages of SCAME Type 2 socket-outlets with built-in shutters (200.23266S)

Regardless of the various national regulations/standards/laws, the Type 2 socket with built-in shutters, when not connected and with the lid open, offers degree of protection IPXXD, consequently it complies with the international standard in force IEC 61851-1 2nd Edition, as well as with the 3rd Edition soon to be published, with no need for additional accessories.
For manufacturers of charging stations, this translates into a "simpler" control system (there is no need for high-performance contactors, monitoring systems, welded contacts, release coils, etc.), and lower costs.
For the users, it means improved safety level, typical of domestic sockets, with no impact on their habits: the built-in shutter opens automatically when the plug is inserted, with no special additional manoeuvres needed (see the competition's rotating lids).

Advantages of the SCAME Type 2 socket-outlets with built-in shutters and vandal-proof flange (200.23266SB)

In addition to the above, the Type 2 socket-outlet with built-in shutters and vandal-proof flange offers the advantage of being able to close the socket when not engaged thanks to the same device used to block the plug inserted in the socket during the charging phase (mandatory for type 2 sockets in order to avoid disconnections while charging).
Moreover, the special shape of the sliding recessed lid reduces the possibility of vandals damaging the lid itself.
For the manufacturers of charging stations, this makes the control system even "simpler" (the socket is also equipped with suitable micro-switches for detecting the status of the block and closing of the lid), for cost reduction and greater sturdiness.
For the users, it does not imply any changes to their habits: the built-in over opens automatically upon inserting the plug (obviously only after its opening has been authorised) with no particular additional manoeuvres (see the competition's rotating lids) and with no need for a second hand.

TYPE 3C CONNECTOR

MODE 3

Type 3C connector is designed for electric vehicles with charging power greater than 3 kW, such as cars, promoted by the EV Plug Alliance, as a single European solution, infrastructure-side. Derived from type 3A connector, it keeps the same protection characteristics against indirect contact as well as the additional contact used to check continuity of the protective conductor.
The evolution consisting in the possibility to have both single-phase and three-phase wiring, higher rated current, introduction of the shutters on the plug side (a necessary requirement in the case of "Smart Grid") and the additional PP (Proximity Plug) contact for cable size identification. Due to the heavy-duty operating conditions, special attention was taken in the choice of materials in order to guarantee proper resistance to heat, chemical agents and mechanical stress, in compliance with the strict parameters set by the automotive industry.

REFERENCE STANDARDS

EN 62196-1 (2012)

Plugs, socket-outlets, vehicle couplers and vehicle inlets.

Conductive charging of electric vehicles.

Part 1: General requirements.

EN 62196-2 (2012)

Plugs, socket-outlets and vehicle couplers.

Conductive charging of electric vehicles.

Part 2: Dimensional interchangeability requirements for a.c. pin and contact-tube accessories.

TECHNICAL CHARACTERISTICS

Rated current:	32 A
Rated voltage:	380-480 V AC
Frequency:	50-60 Hz
Insulation voltage:	500 V
Protection degree:	IP44 - IP54 (sockets with interlock) (IPXXD)
Operating temperature:	-30°C to +50°C
Material:	Technopolymer
Glow Wire test:	850°C 850°C-960°C (sockets with interlock)
IK degree at 20°C:	IK08
Colour:	Grey
Number of poles:	L1-L2-L3-N-PE-CP-PP
Size of conductors:	1.5 to 6 mm² (plugs with screw terminals) 2.5 to 6 mm² (plugs with crimped terminals) 1.5 to 10 mm² (flush-mounting sockets)
Saline solution:	Resistant
UV rays:	Resistant

LABORATORY TESTING

RESISTANCE TESTS






RESISTANCE TO CHEMICAL AGENTS

Saline solution	Acids		Base		Solvents				Mineral oil	UV rays
	Concentrated	Diluted	Concentrated	Diluted	Hexane	Benzol	Acetone	Alcohol		
Resistant	Limited resistance	Resistant	Limited resistance	Resistant	Not resistant	Not resistant	Not resistant	Limited resistance	Resistant	Resistant

TYPE 3A CONNECTOR

MODE 3

Type 3A connector was launched in Italy in 2000 as the unique connection system for Mode 3 charging electric vehicles in environments open to third parties. Featuring a design derived from the SCAME IEC 309 socket-outlets,
it adopted the quick snap-on device and it uses an additional CP contact for the control pilot circuit to verify the continuity of the protective conductor, in accordance with standard CEI 69-6. Given its small size, it is the preferred connector for small vehicles, such as scooters and motorcycles, with charging power lower than 3 kW. Thanks to the adaptors, it is also possible to use 3A plugs to charge in environments closed to third parties, such as private garages, in mode 1.

N.B.: The IPXXD degree of protection, and consequently the shutters, are not necessary for type 3A plugs as the vehicles for which they are designed don't require them.

REFERENCE STANDARDS

EN 62196-1 (2012)

Plugs, socket-outlets, vehicle couplers and vehicle inlets.

Conductive charging of electric vehicles.

Part 1: General requirements.

EN 62196-2 (2012)

Plugs, socket-outlets and vehicle couplers.

Conductive charging of electric vehicles.

Part 2: Dimensional interchangeability requirements for a.c. pin and contact-tube accessories.

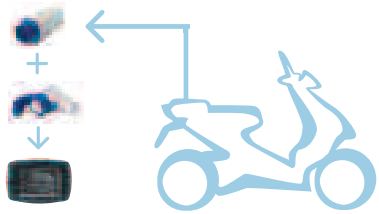
CEI 69-6 (2001)

Standardization sheet of plug and socket-outlet for the connection of electric road vehicles to the supply network.

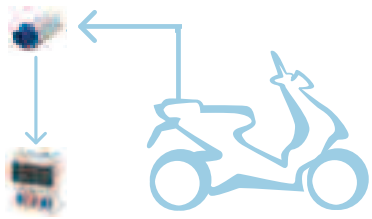
TECHNICAL CHARACTERISTICS

Rated current:	16 A
Rated voltage:	200-250 V AC
Frequency:	50-60 Hz
Insulation voltage:	250 V
Protection degree:	IP44 - IP54 (sockets with interlock) IPXXD (sockets)
Operating temperature:	-30°C to +50°C
Glow Wire test:	850°C 850°C-960°C (sockets with interlock)
Material:	Technopolymer
IK Grade at 20°C:	IK07 – IK08 (sockets with interlock)
Colour:	Grey
Number of poles:	L1-N-PE-CP
Size of conductors:	1 to 2.5 mm² (plugs and connectors) 1 to 4 mm² (flush-mounting sockets)
Saline solution:	Resistant
UV rays:	Resistant

MODE 1 – CHARGING OF EV WITHOUT PWM IN ENVIRONMENTS CLOSED TO THIRD PARTIES
Vehicle connection to the AC mains using standardized connectors up to 16 A.



SIMPLIFIED MODE 3 – CHARGING OF EV WITHOUT PWM IN ENVIRONMENTS OPEN TO THIRD PARTIES
Vehicle connection to the AC mains using specific connectors, control pilot circuit .



MODE 3 CHARGING OF EV WITH PWM IN ENVIRONMENTS OPEN TO THIRD PARTIES
Vehicle connection to the AC mains using specific connectors, control pilot circuit .

DOMESTIC CONNECTORS MODE 1

There are several electric vehicles on the market today that, due to their construction, do not fall within the charging modes covered by standard EN61851 - 1 (e.g., scooters/ bike with off-board battery charger) .
For these vehicles, SCAME has developed special versions of its domestic connectors that have the same technical features of mode 3 connectors to be 'exploited' (such as inserted plug detection and anti-extraction lock system), so that they can be used in SCAME's charging infrastructure.

N.B.: Please note remember that in Italy, domestic connectors are not suited for charging electric vehicles in mode 1 in environments open to third parties.

REFERENCE STANDARDS

EN 60884-I

Plugs and socket-outlets for household and similar purposes.

Part 1: General requirements.

TECHNICAL CHARACTERISTICS

Rated current:	16 A
Rated voltage:	200 - 250 V AC
Frequency:	50-60 Hz
Insulation voltage:	250 V
Protection degree:	IP54 (IPXXD)
Operating temperature:	-25°C to +35°C -30°C to +50°C (sockets with interlock)
Material:	Technopolymer
Glow Wire test:	650°C-750°C 850-960 / (sockets with interlock)
IK grade at 20°C:	IK08
Colour:	Grey / Light blue
Number of poles:	L1-N-PE-CP
Size of conductors:	1 to 4 mm²
Saline solution:	Resistant
UV rays:	Resistant

UNEL SOCKET-OUTLET WITH INTERLOCK

The flush-mounting socket-outlets of the LIBERA Series are also available in the UNEL version with built-in plug locking device for a charging system in mode 1 having the same features as the socket-outlets with lock in mode 3.
In this case, however, the anti-extraction function is obtained by locking the lid opening even when the plug is inserted.
The use of this socket-outlet is allowed only in areas where mode 3 is not mandatory. The socket-outlet is supplied without the external actuator. Operation is guaranteed only with the UNEL plug.

TYPE 2 CONNECTORS - SINGLE/THREE-PHASE 16A - 32 A 400 V~ 3P+N+PE+CP+PP

	DESCRIPTION	PACK.	CODE
	Recessed socket-outlet with interlock system (plug and lid) IP54 without shutters IPXXB	1/10	**200.23264B**
	Recessed socket-outlet with shutters IPXXD IP55 (mated) IP55 (with lid)	1/12	**200.23266S** (WITHOUT DRAINAGE) **200.23267S** (WITH DRAINAGE)
	Recessed socket-outlet without shutters IPXXB IP55 (mated) IP55 (with lid)	1/12	**200.23266** (WITHOUT DRAINAGE) **200.23267** (WITH DRAINAGE)
	Recessed socket-outlet without shutters IPXXB (compact version) IP54 (mated) IP55 (with lid)	1/12	**200.23265**

	DESCRIPTION	PACK.	CODE
	Standard lid IP55 for: 200.23266S 200.23266	12/120	**200.23260CS**
	Compact lid IP55 for: 200.23266S 200.23266 200.23265	12/120	**200.23260CC**
	Top plug locking with rotary activator and 2 switches for locking detection for: 200.23266S 200.23266 200.23265	12/120	**200.23260BS**
NEW 	Vandal-proof flange with interlock system (plug and lid) IP55 (mated) IP54 (with lid)	1/1	**200.23267SB** (WITH SHUTTER) **200.23267B** (WITHOUT SHUTTER)

DOMOPLUS Series

For domestic use
IP66 with inserted plug

For additional information, please refer to our general catalogue

3C TYPE CONNECTORS - SINGLE/THREE-PHASE 16 A - 32 A 400 V~ 3P+N+PE+CP+PP - IP44

	DESCRIPTION	PACK.	CODE
	Plug with screw terminals 1.5 to 6 mm²	10/40	**200.33233**
	Plug with crimped terminals 2.5 mm²	10/40	**200.33233C2(*)**
	Plug with crimped terminals 4 mm²	10/40	**200.33233C4(*)**
	Plug with crimped terminals 6 mm²	10/40	**200.33233C6(*)**
	Plug with crimped terminals 2.5 mm²	1	**200.33234C2(*)**
	Plug with crimped terminals 4 mm²	1	**200.33234C4(*)**

	DESCRIPTION	PACK.	CODE
	Crimped pin kit 2.5 mm²	10/100	**200.332KITC2**
	Crimped pin kit 4 mm²	10/100	**200.332KITC4**
	Crimped pin kit 6 mm²	10/100	**200.332KITC6**
	Flush-mounting socket-outlet with flange 70x87 mm	10/60	**200.33263**
	Flush-mounting socket-outlet with interlock IP54	1/20	**200.33263B**

(*) Cable to be defined at the time of the order.

OMNIAPLUS Series

For domestic use
IP56 with inserted plug
with lock device

For additional information, please refer to our general catalogue

3A TYPE CONNECTORS - SINGLE-PHASE 16 A 230 V~ 1P+N+PE+CP - IP44

	DESCRIPTION	PACK.	CODE
	Plug	10/100	**200.01633**
	Angled plug	10/100	**200.01633A**
	Fixed plug with flange 70x87mm	10/40	**200.01693**
	Straight outlet	10/100	**200.01643**

	DESCRIPTION	PACK.	CODE
	Flush-mounting socket-outlet with flange 70x87 mm	10/60	**200.01663**
	Flush-mounting socket-outlet with interlock IP54	1/20	**200.01663B**
	Italian plug adaptor P17	10/100	**200.01623**
	French-German plug adaptor	10/100	**200.01624**

DOMESTIC CONNECTORS - SINGLE-PHASE 16 A 230 V~ 1P+N+PE - MODE 1

	DESCRIPTION	PACK.	CODE
	UNEL IP54 flush-mounting socket-outlet with flange 70x87 mm (with switch)	10/100	**570.4062-SW**

	DESCRIPTION	PACK.	CODE
	UNEL IP54 flush-mounting socket-outlet with interlock	1/10	**200.4007B**

CORD SET

MODE 3

The cord-set is used to connect the vehicle to the charging station. It consists of a plug for infrastructure-side connection, a connector (movable socket) for the vehicle side, a cable with adequate cross-section and polarity suited to mobile use, particularly resistant to operating conditions.
Compared to case A (cord-set fixed to the vehicle) and case C (cord-set fixed to the charging station), case B is the more versatile one thanks to the compatibility that can be achieved between the various standards in use today in the international scenario of connections.

TECHNICAL CHARACTERISTICS

Rated current:	16 A / 20 A / 32 A
Rated voltage:	200-250 V AC / 380-480 V AC
Frequency:	50-60 Hz
Insulation voltage:	250/500 V
Protection degree:	IP44
Operating temperature:	-30°C to +50°C
Material:	Technopolymer
Saline solution:	Resistant
UV rays:	Resistant

REFERENCE STANDARDS

EN 62196-1 (2012)

Plugs, socket-outlets, vehicle couplers and vehicle inlets.

Conductive charging of electric vehicles.

Part 1: General requirements.

EN 62196-2 (2012)

Plugs, socket-outlets and vehicle couplers.

Part 2: Dimensional interchangeability requirements for a.c. pin and contact-tube accessories.

CEI 69-6 (2001)

Standardization sheet of plug and socket-outlet for the connection of electric road vehicles to the supply network.

SAE J1772 (2012)

Electric vehicle and plug in hybrid electric vehicles conductive charge coupler.

CABLE

Rated voltage:	300/500 V
Wire insulation/sheath:	TPE / TPE
Maximum temperature:	+105°C

CORD SET

	PLUG	CABLE	CONNECTOR	PACK.	CODE
	Type 3A 16 A 1P	3x2.5+1x0.5 mm² - 5 m	Type 1 20 A 1P	1/5	**200.CS3A1T11**
	Type 3A 16 A 1P	3x2.5+1x0.5 mm² - 5 m	Type 3A 16 A 1P	1/5	**200.CS3A13A1**
	Type 3A 16 A 1P	3x2.5+1x0.5 mm² - 5 m	Type 2 20 A 1P	1/5	**200.CS3A1T21**
	Type 3C 32 A 3P	3x2.5+1x0.5 mm² - 5 m	Type 1 20 A 1P	1/5	**200.CS3C1T11**
	Type 3C 32 A 3P	3x6+1x0.5 mm² - 5 m	Type 1 32 A 1P	1/5	**200.CS3C1T12**
	Type 3C 32 A 3P	5x2.5+1x0.5 mm² - 5 m	Type 2 20 A 3P	1/5	**200.CS3C1T22**
	Type 3C 32 A 3P	5x6+1x0.5 mm² - 5 m	Type 2 32 A 3P	1/5	**200.CS3C1T24**
	Type 2 20 A 1P	3x2.5+1x0.5 mm² - 5 m	Type 1 20 A 1P	1/5	**200.CST21T11**
	Type 2 32 A 1P	3x6+1x0.5 mm² - 5 m	Type 1 32 A 1P	1/5	**200.CST23T12**
	Type 2 20 A 1P	3x2.5+1x0.5 mm² - 5 m	Type 2 20 A 1P	1/5	**200.CST21T21**
	Type 2 32 A 1P	3x6+1x0.5 mm² - 5 m	Type 2 32 A 1P	1/5	**200.CST23T23**
	Type 2 32 A 3P	5x6+1+0.5 mm² - 5 m	Type 2 32 A 3P	1/5	**200.CST24T24**

2

AC CHARGING STATIONS


SCAME

The legislative scenario is complex

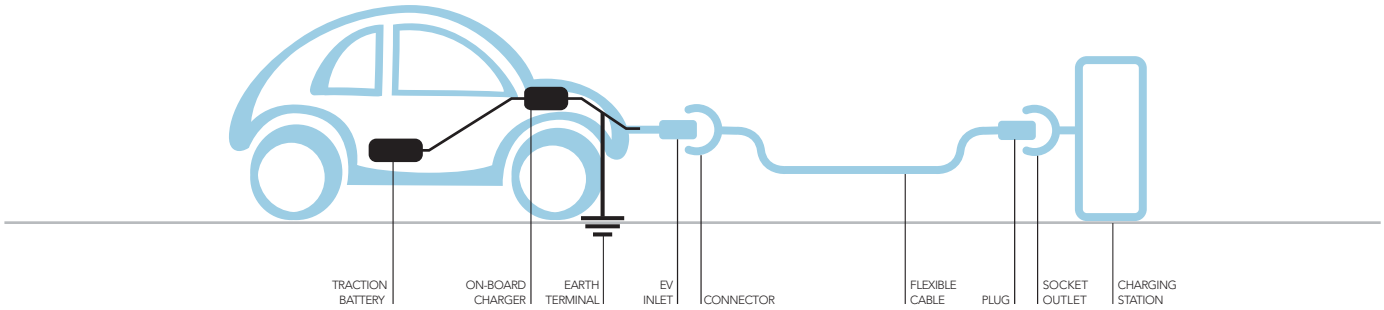
While contributing to defining the new standards, SCAME put technology at the service of common sense, with the aim of pursuing practical and intelligent design choices. Indeed, the choices made when defining connection methods and designing the relevant equipment have led to the offer of simple and safe products. This means that the utilization methods are perfectly suited to the user, that production costs are low and that safety is ensured.

The connection developed by Scame

CHARGING MODE 3

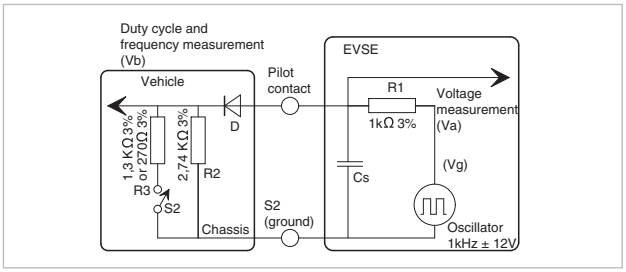
SCAME's charging stations use charging mode 3, in accordance with IEC / EN 61851-1.
Charging mode 3 consists in connecting the vehicle to the AC mains using specific connectors and with a control pilot circuit inside the charging station to verify continuity of the protective conductor between vehicle and grid during the charging.

This check is necessary to ensure proper operation of protections against indirect contacts, hence to prevent any dangerous voltage from being discharged through accidental contact with unaware persons; it is usually mandatory for vehicles with power above 3 kW, and, in Italy, for public or private environments open to third parties. The control circuit also arranges for communication between charging station and vehicle (PWM Circuit) and for cable size identification (Resistor Coding).



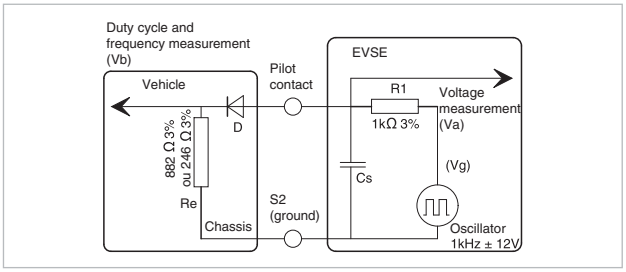
MODE 3 PWM CIRCUIT (PULSE WIDTH MODULATION)

PWM circuit operation is described in Annex A of standard IEC/EN 61851-1. This circuit arranges for communication between charging station and electric vehicle: the station communicates the supply network availability to the vehicle through a frequency-modulated signal, the vehicle adjusts the load returning its status through a voltage value.



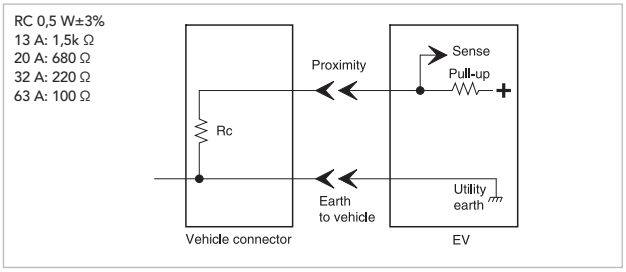
"SIMPLIFIED" MODE 3

In the case of vehicles without PWM, the circuit operates in "simplified mode", measuring the earth resistance value only and limiting the charging current to 16 A (10 A in the future).



RESISTOR CODING

Resistor Coding operation is described in Annex B.5 of standard IEC / EN 61851-1 and it is mandatory in the case of 3C type connectors, type 1 and type 2, when it is possible to wire the plug using cables with different cross-sections and current carrying capability. Depending on the max charging current, a resistance is positioned between the PP contact and the earth, with a value that identifies cable size. The PWM circuit then checks that the charging current does not exceed the maximum drawable current.



AC CHARGING STATIONS

WALL BOX

MODE 3

The Wall Box is a wall-mounted charging station with the same features as the UB versions, yet featuring a dedicated design that makes it suitable for installation in domestic or similar environments.

TECHNICAL CHARACTERISTICS

Rated current:	16 A / 32 A
rated voltage:	230 V AC / 400 V
Frequency:	50-60 Hz
Insulation voltage:	250 V / 500 V
Protection degree:	IP54
Operating temperature:	-25°C to +40°C
Material:	Technopolymer
Glow Wire test:	650°C
IK grade at 20°C:	IK08
Colour:	Grey
Installation:	Wall-mounted
Saline solution:	Resistant
UV rays:	Resistant

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirements.

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

Part 1: General requirement.

FEATURES

- Mode 3 charging with PWM pilot circuit
- Identification of connected cable size
- Protection against overloads and indirect contacts
- Measurement of power output and current drawn
- Control of proper contactor opening
- Identification of users authorized to the charging
- Management of plug interlock system
- Operation in free stand-alone or personal mode
- Set up for serial communication
- Power management

APPLICATION EXAMPLES

DW DUAL WALL BOX

MODE 3

The Dual Wall Box is a charging station with the same features as the CA and CB charging columns, but characterised by a highly resistant plastic structure and the possibility of wall mounting. Recommended for rooms where the base solution is not possible (e.g., underground garage), it can be equipped with 1 or 2 flush-mounted sockets with anti-removal block Type 2, 3A, 3C.

TECHNICAL CHARACTERISTICS

Rated current:	16 A - 32 A - 50 A - 63 A
Rated voltage :	230 V AC / 400 V AC
Frequency:	50-60 Hz
Insulating voltage:	250 V / 500 V
Protection degree:	IP54
Operating temperature:	-25°C to +40°C
Material:	Technopolymer
Glow Wire test:	650°C
IK grade at 20°C:	IK10
Colour:	Grey
Installation:	Wall-mounted
Saline solution:	Resistant
UV rays:	Resistant

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirements.

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

Part 1: General requirement.

FEATURES

- Mode 3 charging with PWM pilot circuit
- Identification of connected cable size
- Protection against overloads and indirect contacts
- Measurement of power output and current drawn
- Control of proper contactor opening
- Identification of users authorized to the charging
- Management of plug interlock system
- Operation in free stand-alone or personal mode
- Set up for serial communication
- Power management

APPLICATION EXAMPLES

UB DOMINO UNITS

MODE 3

UB switchboards are wall-mounted charging stations using the modular composition possibilities offered by the SCAME Domino Series switchboards.

TECHNICAL CHARACTERISTICS

Rated current:	16 A / 32 A
Rated voltage:	230 V AC / 400 V AC
Frequency:	50-60 Hz
Insulation voltage:	250 V / 500 V
Protection degree:	IP44 - IP54
Operating temperature:	-25°C to +40°C
Material:	Technopolymer
Glow Wire test:	650°C
IK grade at 20°C:	IK07
Colour:	Grey
Installation:	Wall-mounted
Saline solution:	Resistant
UV rays:	Resistant

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirements.

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

Part 1: General requirement.

FEATURES

- Mode 3 charging with PWM pilot circuit
- Identification of the connected cable size
- Protection against overloads and indirect contacts
- Measurement of power output and current drawn
- Control of proper contactor opening
- Identification of users authorized to the charging
- Management of cover locking and plug interlock system
- Management of charging in case of power failure (optional)
- Operation in free stand-alone or personal mode
- Set up for serial communication

APPLICATION EXAMPLES

CA CHARGING STATION MODE 3

The CA charging column is a free-standing, two-sided charging station made of painted steel sheet that can be equipped with type 2, 3A, 3C and domestic socket-outlets having a built-in antiextraction locking system and with movable outlets with permanently connected cable (case C connection). Suited for private or public open areas, these columns feature removable front panels in Plexiglas that allow quick and easy customization.

TECHNICAL CHARACTERISTICS

Rated current:	16 A - 32 A - 50 A - 63 A
Rated voltage :	230 V AC / 400 V AC
Frequency:	50-60 Hz
Insulating voltage:	250 V / 500 V
Protection degree:	IP54
Operating temperature:	-25°C to +40°C
Material:	Steel sheet
Glow Wire test:	-
IK grade at 20°C:	IK10
Colour:	Grey
Installation:	Free-standing
Saline solution:	Resistant
UV rays:	Resistant

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirements.

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

Part 1: General requirement.

FEATURES

- Mode 3 charging with PWM pilot circuit
- Identification of the connected cable
- Protection against overloads and indirect contacts
- Measurement of power output and current drawn
- Control of proper contactor opening
- Identification of user authorized to the charging
- Management of cover locking and plug interlock system
- Management of charging in case of power failure
- Operation in free stand-alone or personal mode
- Set up for serial communication

APPLICATION EXAMPLES

Head with LED indications

LED display with RFID reader

Customizable front panel

Compartment protected by door with lock

Separating plate for cable entry

Free-standing base with separating chamber

CB CHARGING STATION

MODE 3

The CB charging column is a free-standing, two-sided charging station with the same features as the CA column but made of stainless steel sheet instead and with a smart design.
Suited for private and public open areas and for environments requiring greater corrosion resistance.

TECHNICAL CHARACTERISTICS

Rated current:	**16 A – 32 A**
Rated voltage:	**400 V AC**
Frequency:	**50-60 Hz**
Insulation voltage:	**500 V**
Protection degree:	**IP54**
Operating temperature:	**-25°C to +40°C**
Material:	**AISI 304 steel**
Glow Wire test:	**-**
IK grade at 20°C:	**IK10**
Colour:	**Satin-finished**
Installation:	**Free standing**
Saline solution:	**Resistant**
UV rays:	**Resistant**

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirement..

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

Part 1: General requirement.

FEATURES

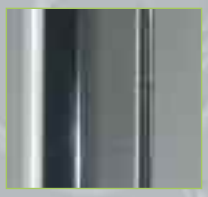
- Mode 3 charging with PWM pilot circuit
- Identification of the connected cable size
- Protection against overloads and indirect contacts
- Measurement of power output and current drawn
- Control of proper contactor opening
- Identification of user authorized to the charging
- Management of cover locking and plug interlock system
- Management of charging in case of power failure
- Operation in free stand-alone or personal mode
- Set up for serial communication

APPLICATION EXAMPLES

Head with LED indications

LED display with RFID reader

Flush-mounting outlet with door



Compartment protected by door with lock

Separating plate

Free-standing with separating chamber

CR-CL RES (OURCE) CHARGING STATION MODE 3

RES(ource) is more than just an equipment device used to charge electric vehicles. RES(ource) is also a source of energy, communication and services. A successful blend of design and functionality, it expresses through its shape and colours the vocation to fit in historical, architectural and valuable landscapes, typical of the Italian scenery.

TECHNICAL CHARACTERISTICS

Rated current:	32 A
rated voltage:	400 V AC
Frequency:	50-60 Hz
Insulation voltage:	500 V
Protection degree:	IP54
Operating temperature:	-25°C to +40°C
Material:	Corten steel - Steel sheet
Glow Wire test:	-
IK grade at 20°C:	IK10
Colour:	Oxidized (rust-like) - Grey
Installation:	Free-standing
Saline solution:	Resistant
UV rays:	Resistant

FEATURES

- Mode 3 charging with PWM pilot circuit
- Identification of the connected cable size
- Protection against overloads and indirect contacts
- Measurement of power output and current drawn
- Control of proper contactor opening
- Management of service based on the available credit
- Management of cover locking and plug interlock system
- Management of charging in case of power failure
- Operation in free stand-alone or personal mode
- Set up for serial communication

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirements.

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

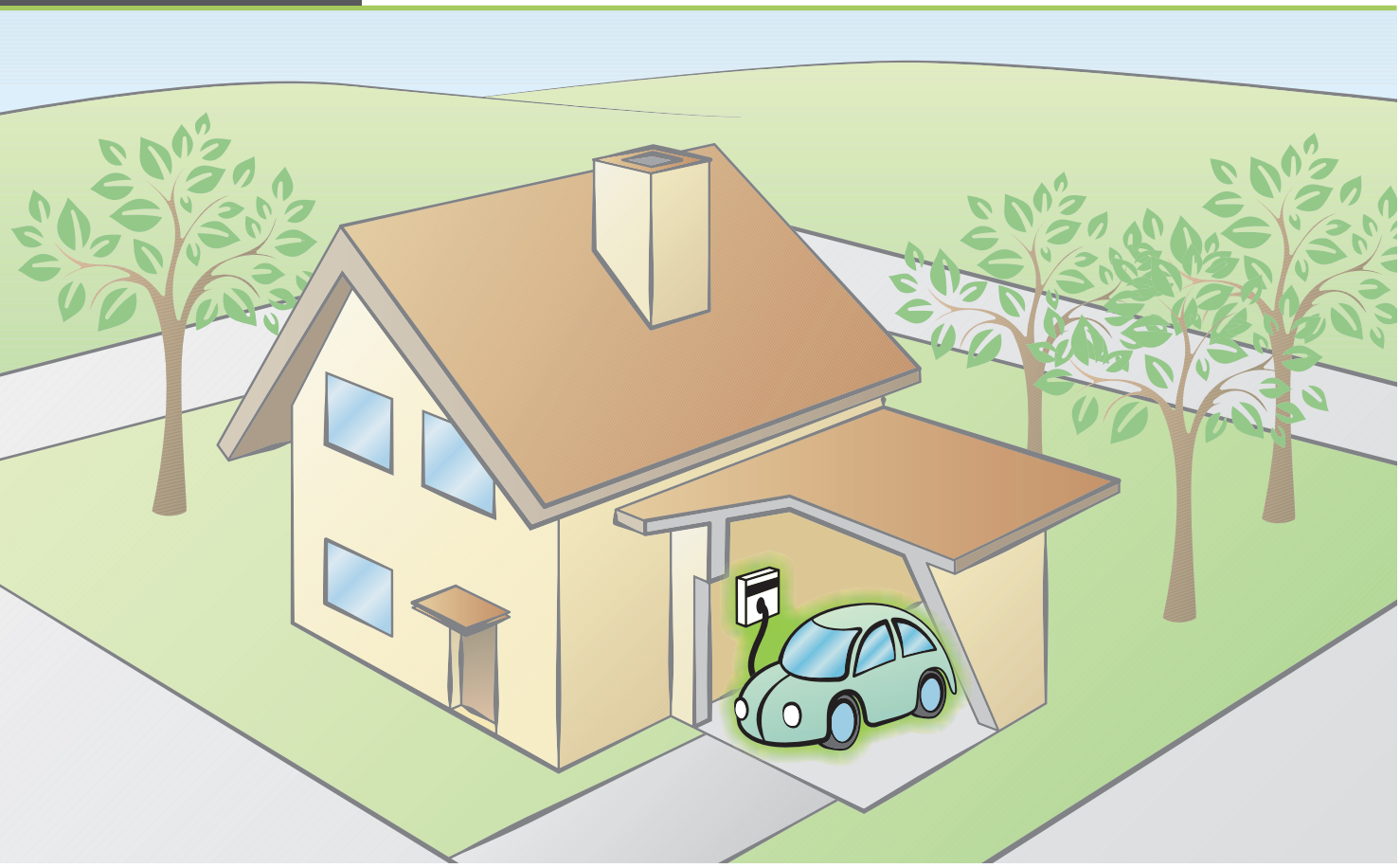
Part 1: General requirement.

APPLICATION EXAMPLES

Scame Solutions for charging systems: 1. single-family home

POWER SUPPLY AND ENERGY MANAGEMENT:
- connection to the distribution board in the flat;
- connection to an electrical board inside the garage;
- connection to a meter dedicated to power the charging station.

IN A PRIVATE GARAGE



WB-E WALL BOX WITHOUT RFID, PROTECTION AND ENERGY METER

	DESCRIPTION	PACK.	CODE
	No. 1 socket-outlet Type 3C – 3.5 kW	1/1	204.WB11E-3C
	No. 1 socket-outlet Type 3C – 7 kW	1/1	204.WB11E-3C32
	No. 1 socket-outlet Type 3C – 22 kW	1/1	204.WB13E-3C
	No. 1 socket-outlet Type 2 – 3.5 kW	1/1	204.WB11E-T2
	No. 1 socket-outlet Type 2 – 7 kW	1/1	204.WB11E-T232
	No. 1 socket-outlet Type 2 – 22 kW	1/1	204.WB13E-T2
	No. 1 socket-outlet Type 3A – 3.5 kW	1/1	204.WB11E-3A
	No. 1 cable+connector Type 1 – 3.5 kW	1/1	204.WB11E-T11
	No. 1 cable+connector Type 1 – 7 kW	1/1	204.WB11E-T12
	No. 1 cable+connector Type 2 – 3.5 kW	1/1	204.WB11E-T21
	No. 1 cable+connector Type 2 – 7 kW	1/1	204.WB11E-T23

WB-L WALL BOX WITHOUT RFID, PROTECTIONS AND ENERGY METER

	DESCRIPTION	PACK.	CODE
	No. 1 socket-outlet Type 3C – 3.5 kW	1/1	204.WB11L-3C
	No. 1 socket-outlet Type 3C – 7 kW	1/1	204.WB11L-3C32
	No. 1 socket-outlet Type 2 – 3.5 kW	1/1	204.WB11L-T2
	No. 1 socket-outlet Type 2 – 7 kW	1/1	204.WB11L-T232
	No. 1 socket-outlet Type 3A – 3.5 kW	1/1	204.WB11L-3A
	No. 1 cable+connector Type 1 – 3.5 kW	1/1	204.WB11L-T11
	No. 1 cable+connector Type 1 – 7 kW	1/1	204.WB11L-T12
	No. 1 cable+connector Type 2 – 3.5 kW	1/1	204.WB11L-T21
	No. 1 cable+connector Type 2 – 7 kW	1/1	204.WB11L-T23

WB-LS, WB-RS WALL BOX WITH POWER MANAGEMENT

NEW	DESCRIPTION	PACK.	CODE
	Wall box without RFID and protection No. 1 socket-outlet Type 2 – 3.5 kW	1/1	204.WB11LS-T2
	Wall box without RFID and protection No. 1 socket-outlet Type 2 – 7 kW	1/1	204.WB11LS-T232
	Wall box with RFID and protection No. 1 socket-outlet Type 2 – 3.5 kW	1/1	204.WB11RS-T2
	Wall box with RFID and protection No. 1 socket-outlet Type 2 – 7 kW	1/1	201.WB11RS-T232

The "POWER MANAGEMENT" function allows to automatically limit the current intended for vehicle charging in relation to the user's contractual power and to the power used up by home appliances (washing machine, television, oven, etc.) in order to avoiding untimely tripping of the meter.

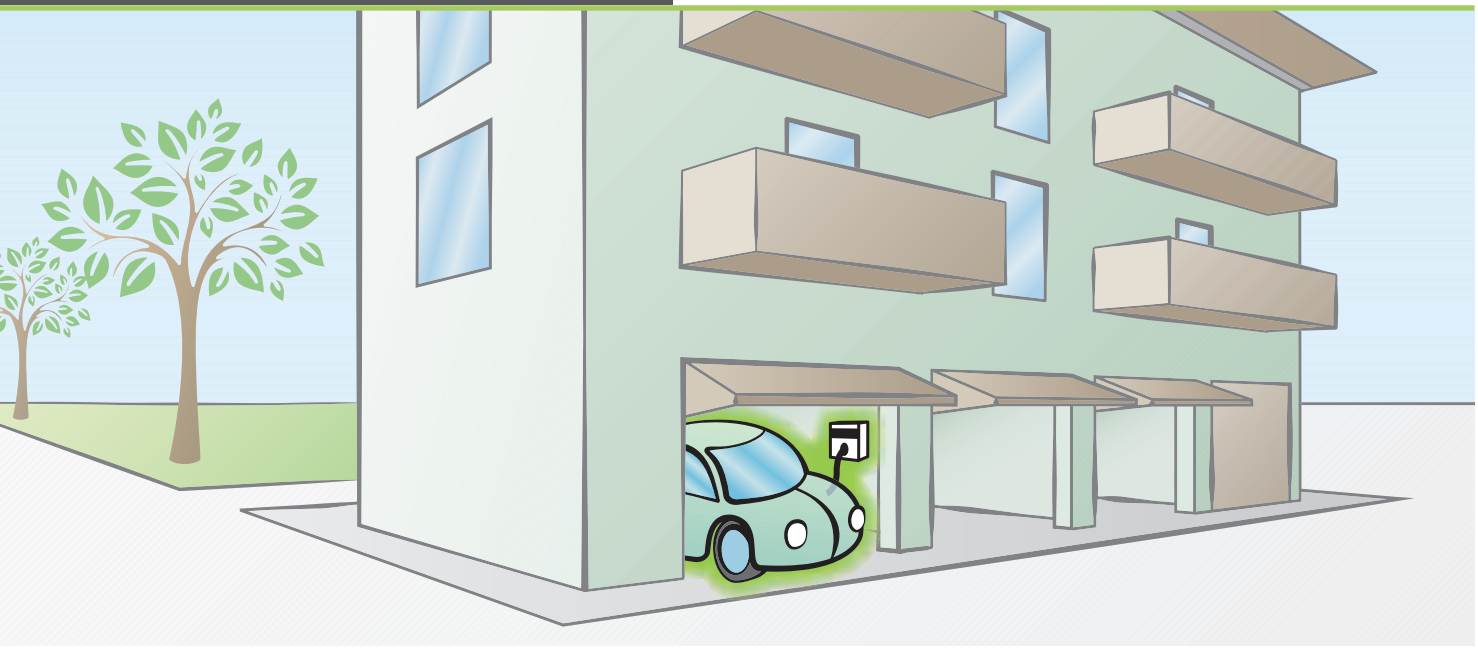
UB-L CONSUMER UNIT WITHOUT RFID AND PROTECTIONS

	DESCRIPTION	PACK.	CODE
	No. 1 socket-outlet Type 3C – 3.5 kW	1/1	204.UB11L-3C
	No. 1 socket-outlet Type 3A – 3.5 kW	1/1	204.UB11L-3A

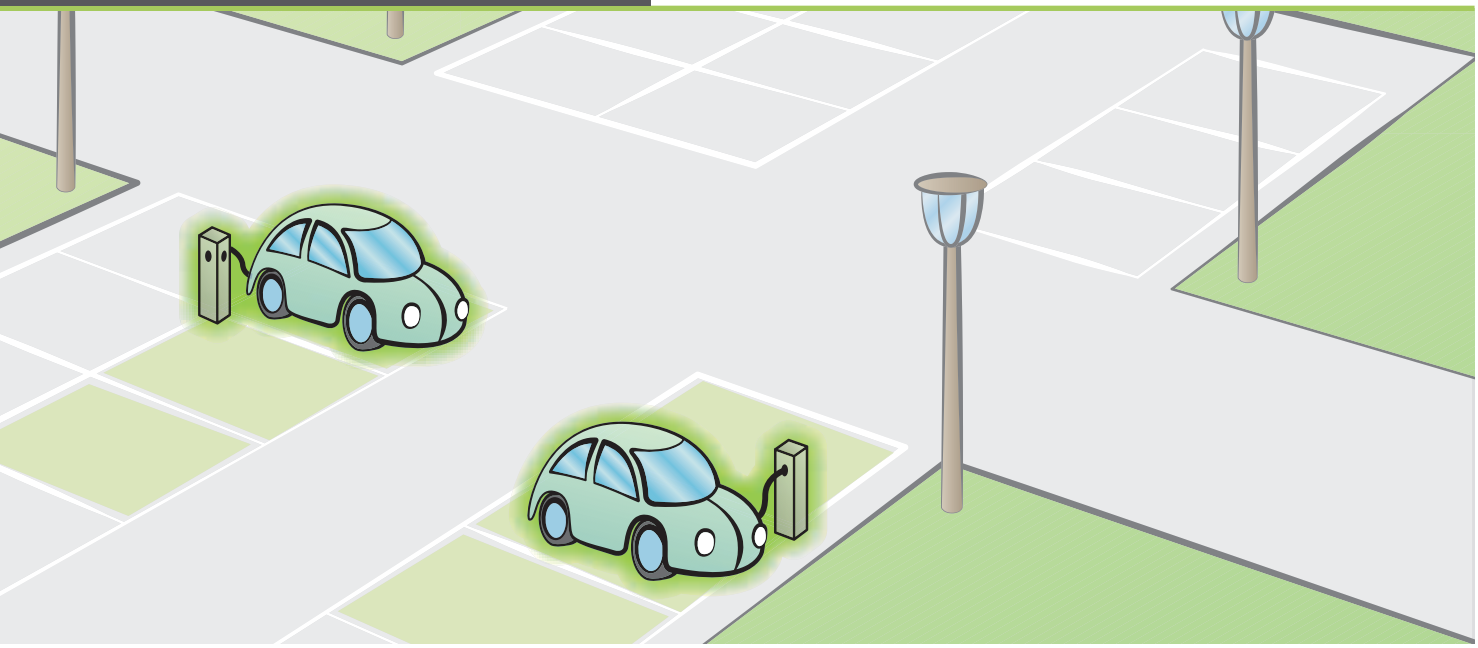
2. Apartment buildings and parking lots

POWER SUPPLY AND ENERGY MANAGEMENT:
- connection to the existing electrical system for communal areas;
- connection to an individual electrical system;
- connection to an energy meter dedicated to EV charging;
- option to use an RFID badge;
- option to lock the socket-outlet cover.

IN THE PRIVATE GARAGE OF A CONDOMINIUM



IN A CONDOMINIUM PARKING LOT



UB-R CONSUMER UNIT WITH RFID, PROTECTIONS AND ENERGY METER

DESCRIPTION	PACK.	CODE
No. 1 socket-outlet type 3C with RFID – 3.5 kW	1/1	204.UB11R-3C
No. 1 socket-outlet type 3A with RFID – 3.5 kW	1/1	204.UB11R-3A
No. 1 socket-outlet UNEL with RFID – 3.5 kW	1/1	204.UB11R-UN
No. 2 socket-outlets type 3C with RFID – 3.5 kW	1/1	204.UB21R-3C3C
No. 1 socket-outlet Type 3A with RFID - 3.5 kW No. 1 socket-outlet Type 3C with RFID - 3.5 kW	1/1	204.UB21R-3C3A
No. 1 socket-outlet Type 3C with RFID - 3.5 kW No. 1 socket-outlet UNEL with RFID - 3.5 kW	1/1	204.UB21R-3CUN
No. 2 socket-outlets Type 3A with RFID – 3.5 kW	1/1	204.UB21R-3A3A
No. 1 socket-outlet Type 3A with RFID - 3.5 kW No. 1 socket-outlet UNEL 3A with RFID - 3.5 kW	1/1	204.UB21R-3AUN
No. 2 socket-outlets UNEL with RFID- 3.5 kW	1/1	204.UB21R-UNUN

WB-P WALL BOX WITHOUT RFID, WITH PROTECTION, WITHOUT ENERGY METER

NEW

DESCRIPTION	PACK.	CODE
No. 1 socket-outlet Type 3C – 3.5 kW	1/1	204.WB11P-3C
No. 1 socket-outlet Type 3C – 7 kW	1/1	204.WB11P-3C32
No. 1 socket-outlet Type 2 – 3.5 kW	1/1	204.WB11P-T2
No. 1 socket-outlet Type 2 – 7 kW	1/1	204.WB11P-T232
No. 1 socket-outlet Type 3A – 3.5 kW	1/1	204.WB11P-3A
No. 1 cable+connector Type 1 – 3.5 kW	1/1	204.WB11P-T11
No. 1 cable+connector Type 1 – 7 kW	1/1	204.WB11P-T12
No. 1 cable+connector Type 2 – 3.5 kW	1/1	204.WB11P-T21
No. 1 cable+connector Type 2 – 7 kW	1/1	204.WB11P-T23

WB-R WALL BOX WITH RFID, PROTECTIONS AND ENERGY METER

NEW

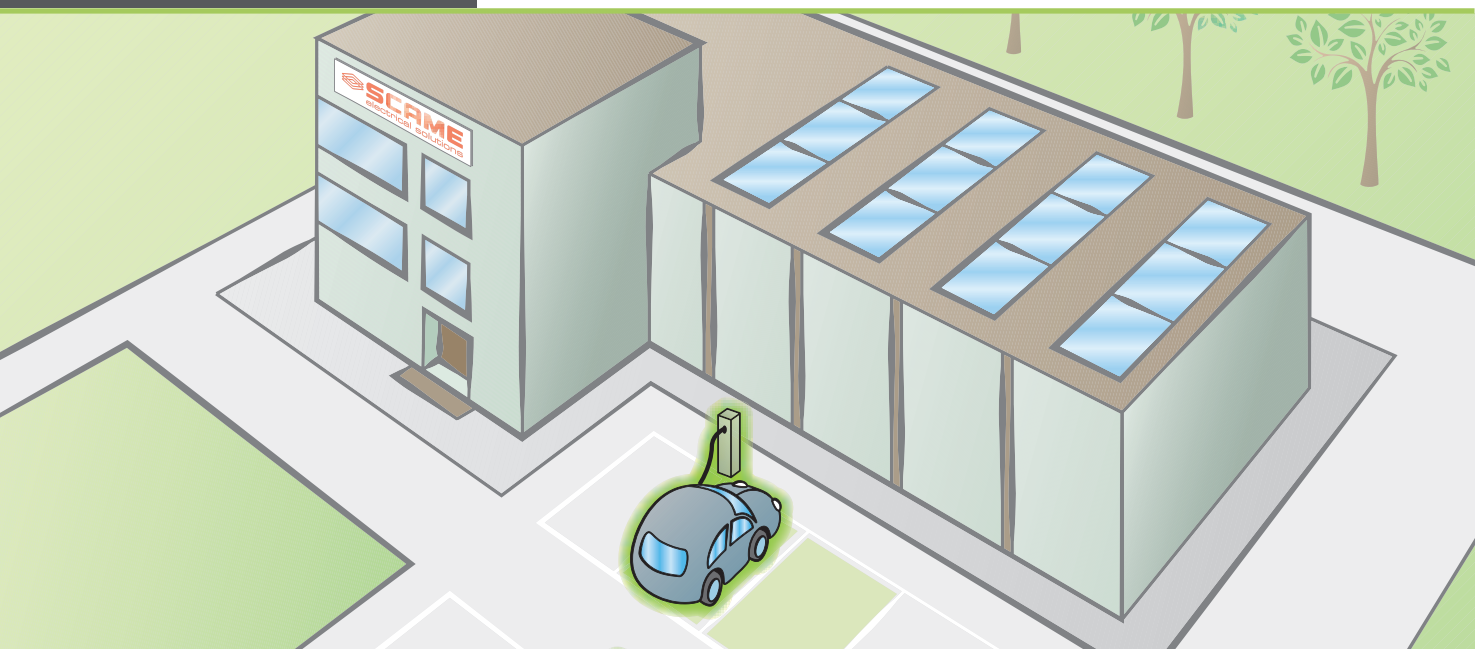
DESCRIPTION	PACK.	CODE
No. 1 socket-outlet Type 3C with RFID – 3.5 kW	1/1	204.WB11R-3C
No. 1 socket-outlet Type 3C with RFID – 7 kW	1/1	204.WB11R-3C32
No. 1 socket-outlet Type 2 with RFID – 3.5 kW	1/1	204.WB11R-T2
No. 1 socket-outlet Type 2 with RFID – 7 kW	1/1	204.WB11R-T232
No. 1 socket-outlet Type 3A with RFID – 3.5 kW	1/1	204.WB11R-3A
No. 1 cable+connector Type 1 – 3.5 kW	1/1	204.WB11R-T11
No. 1 cable+connector Type 1 – 7 kW	1/1	204.WB11R-T12
No. 1 cable+connector Type 2 – 3.5 kW	1/1	204.WB11R-T21
No. 1 cable+connector Type 2 – 7 kW	1/1	204.WB11R-T23

3. Parking lots for collective use

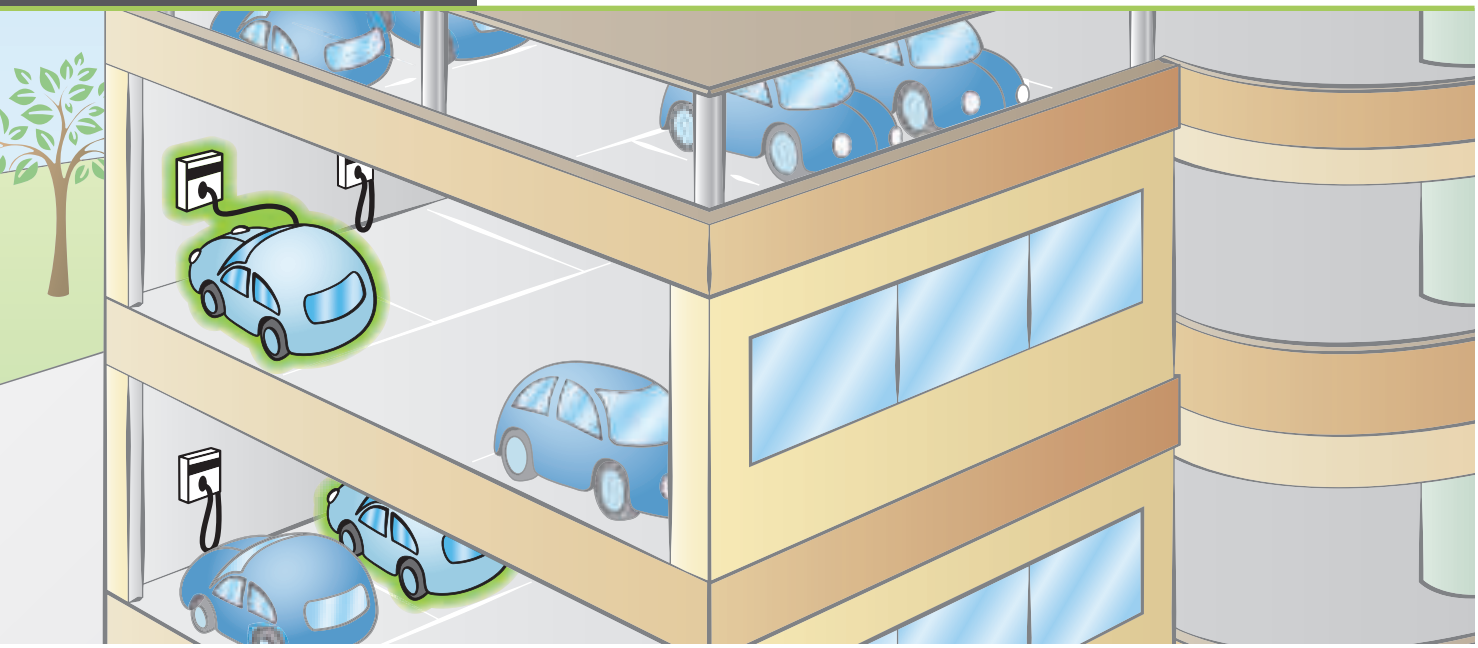
Shopping centres, hotels, companies and public parking lots

POWER SUPPLY AND ENERGY MANAGEMENT:
- connection to the power distribution board at the facility;
- connection to an energy meter dedicated to EV charging;
- option to use an RFID badge;
- option to lock the socket-outlet cover;
- option to install a charging station management system via LAN network or WEB Server.

IN A COMPANY PARKING LOT



IN A PUBLIC PARKING GARAGE



CA-B PILLAR IN PAINTED STEEL WITH RFID, PROTECTIONS, ENERGY METER AND INTERLOCK

DESCRIPTION	PACK.	CODE
No. 1 socket-outlet Type 3C - 7 kW	1/1	204.CA11B-3C
No. 1 socket-outlet Type 3C - 22 kW	1/1	204.CA13B-3C
No. 1 socket-outlet Type 2 - 7 kW	1/1	204.CA11B-T2
No. 1 socket-outlet Type 2 - 22 kW	1/1	204.CA13B-T2
No. 1 cable+connector Type 2 - 44 kW	1/1	204.CA13R-T26
No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.CA11B-3A
No. 1 socket-outlet UNEL – 3.5 kW	1/1	204.CA11B-UN
No. 2 socket-outlets Type 3C - 7 kW	1/1	204.CA21B-3C3C
No. 1 socket-outlet Type 3C - 7 kW No. 1 socket-outlet Type 2 - 7 kW	1/1	204.CA21B-3CT2
No. 2 socket-outlets Type 2 - 7 kW	1/1	204.CA21B-T2T2
No. 1 socket-outlet Type 3C - 7 kW No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.CA21B-3C3A
No. 1 socket-outlet Type 3C - 7 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.CA21B-3CUN
No. 1 socket-outlet Type 2 - 7 kW No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.CA21B-T23A
No. 1 socket-outlet Type 2 - 7 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.CA21B-T2UN
No. 2 socket-outlets Type 3A - 3.5 kW	1/1	204.CA21B-3A3A
No. 1 socket-outlet Type 3A - 3.5 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.CA21B-3AUN
No. 2 socket-outlets UNEL – 3.5 kW	1/1	204.CA21B-UNUN
No. 2 cable+connector Type 1- 3.5 kW	1/1	204.CA21R-T11T11
No. 2 cable+connector Type 2- 3.5 kW	1/1	204.CA21R-T21T21
No. 1 socket-outlet Type 3C - 22 kW No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.CA22B-3C3A
No. 1 socket-outlet Type 3C - 22 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.CA22B-3CUN
No. 1 socket-outlet Type 2 - 22 kW No. 1 socket-outlet Type 3A - 3.5 kW k	1/1	204.CA22B-T23A
No. 1 socket-outlet Type 2 - 22 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.CA22B-T2UN
No. 2 socket-outlets Type 3C - 22 kW	1/1	204.CA23B-3C3C
No. 1 socket-outlet Type 3C - 22 kW No. 1 socket-outlet Type 2 - 22 kW	1/1	204.CA23B-3CT2
No. 2 socket-outlets Type 2 - 22 kW	1/1	204.CA23B-T2T2
No. 1 socket-outlet Type 3C - 7 kW No. 1 socket-outlet Type 2 - 7 kW No. 2 socket-outlets type 3A - 3.5 kW	1/1	204.CA41B-001
No. 2 socket-outlets Type 2 - 7 kW No. 2 socket-outlets Type 3A - 3.5 kW	1/1	204.CA41B-002

UB-B CONSUMER UNIT WITH RFID, PROTECTIONS, ENERGY METER AND INTERLOCK

	DESCRIPTION	PACK.	CODE
	No. 1 socket-outlet Type 3C - 3.5 kW	1/1	204.UB11B-3C
	No. 1 socket-outlet Type 3C - 7 kW type	1/1	204.UB11B-3C32
	No. 1 socket-outlet Type 3C - 22 kW	1/1	204.UB13B-3C
	No. 1 socket-outlet Type 2 - 3.5 kW	1/1	204.UB11B-T2
	No. 1 socket-outlet Type 2 - 7 kW	1/1	204.UB11B-T232
	No. 1 socket-outlet Type 2 - 22 kW	1/1	204.UB13B-T2
	No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.UB11B-3A
	No. 1 socket-outlet UNEL – 3.5 kW	1/1	204.UB11B-UN
	No. 2 socket-outlets Type 3C – 3.5 kW	1/1	204.UB21B-3C3C
	No. 1 socket-outlet Type 3C – 3.5 kW No. 1 socket-outlet Type 3A – 3.5 kW	1/1	204.UB21B-3C3A
	No. 2 socket-outlets Type 3A - 3.5 kW	1/1	204.UB21B-3A3A
	No. 1 socket-outlet Type 3C - 3.5 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.UB21B-3CUN
	No. 1 socket-outlet Type 3A - 3.5 kW No. 1 socket-outlet UNEL - 3.5 kW	1/1	204.UB21B-3AUN
	No. 2 socket-outlets UNEL – 3.5 kW	1/1	204.UB21B-UNUN

CB-B PILLAR IN STEEL WITH RFID, PROTECTIONS, ENERGY METER AND INTERLOCK

	DESCRIPTION	PACK.	CODE
	No. 2 socket-outlets Type 3C - 7 kW	1/1	204.CB21B-3C3C
	No. 1 socket-outlet Type 3C - 7 kW No. 1 socket-outlet Type 2 - 7 kW type	1/1	204.CB21B-3CT2
	No. 2 socket-outlets Type 2 - 7 kW	1/1	204.CB21B-T2T2
	No. 1 socket-outlet Type 3C - 7 kW No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.CB21B-3C3A
	No. 1 socket-outlet Type 2 - 7 kW No. 1 socket-outlet Type 3A - 3.5 kW	1/1	204.CB21B-T23A
	No. 2 socket-outlets Type 3A - 3.5 kW	1/1	204.CB21B-3A3A

WD-B DUAL WALL BOX WITH RFID, PROTECTIONS, ENERGY METER AND INTERLOCK

DESCRIPTION	PACK.	CODE
No. 1 socket-outlet Type 3C – 7 Kw	1/1	204.WD11B-3C
No. 1 socket-outlet Type 2 – 7 Kw	1/1	204.WD11B-T2
No. 1 socket-outlet Type 3A – 3.5 Kw	1/1	204.WD11B-3A
No. 1 socket-outlet Type 3C – 22 Kw	1/1	204.WD13B-3C
No. 1 socket-outlet Type 2 – 22 Kw	1/1	204.WD13B-T2
No. 2 socket-outlet Type 3C – 7 Kw	1/1	204.WD21B-3C3C
No. 2 socket-outlet Type 2 – 7 Kw	1/1	204.WD21B-T2T2
No. 1 socket-outlet Type 2 – 7 Kw No. 1 socket-outlet Type 3A – 3.5 Kw	1/1	204.WD21B-T23A
No. 2 socket-outlet Type 3A – 3.5 Kw	1/1	204.WD21B-3A3A
No. 1 socket-outlet Type 2 – 22 Kw No. 1 socket-outlet Type 3A – 3.5 Kw	1/1	204.WD22B-T23A
No. 2 socket-outlet Type 3C – 22 Kw	1/1	204.WD23B-3C3C
No. 2 socket-outlet Type 2 – 22 Kw	1/1	204.WD23B-T2T2

CR-B PILLAR IN CORTEN STEEL WITH COIN, TOUCH PANEL, PROTECTIONS, ENERGY METER AND INTERLOCK

DESCRIPTION	PACK.	CODE
No. 1 socket-outlet Type 3C – 7 kW No. 1 socket-outlet Type 2 – 7 kW No. 2 socket-outlets Type 3A – 3.5 Kw	1/1	204.CR41B-001
No. 2 socket-outlet Type 2 – 7 kW No. 2 socket-outlets Type 3A – 3.5 Kw	1/1	204.CR41B-002

CL-B PILLAR WITH COIN, RFID, PROTECTIONS, ENERGY METER AND INTERLOCK

DESCRIPTION	PACK.	CODE
No. 1 socket-outlet Type 2 – 7 kW No. 1 socket-outlet Type 3A – 3.5 Kw	1/1	204.CL21B-T23A
No. 2 socket-outlet Type 2 – 7 kW	1/1	204.CL21B-T2T2
No. 1 socket-outlet Type 2 – 22 kW No. 1 socket-outlet Type 3A – 3.5 kW	1/1	204.CL22B-T23A

ACCESSORIES

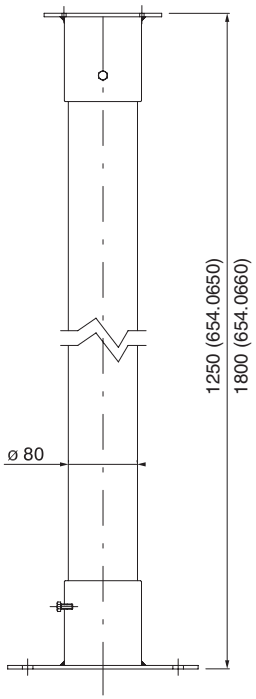
	DESCRIPTION		PACK.	CODE
	Tubular support in galvanized steel	UB1X - UB2X - WB1X	1/1	654.0650
		WD1X - WD2X	1/1	654.0660
	Fixing plate in galvanized steel	UB21R	1/4	654.0651
		UB11L - UB11R	1/4	654.0657
		UB11B - UB13B - UB21B	1/4	654.0652
		WD1X - WD2X	1/4	654.0659
	Fixing plate in galvanized steel	WB1X	1/1	654.0658
	Single-face hollow structure in painted steel sheet	UB11B - UB13B - UB21B	1/1	204.DA5010

(*) For Domino Series assemblies

APPLICATION EXAMPLES

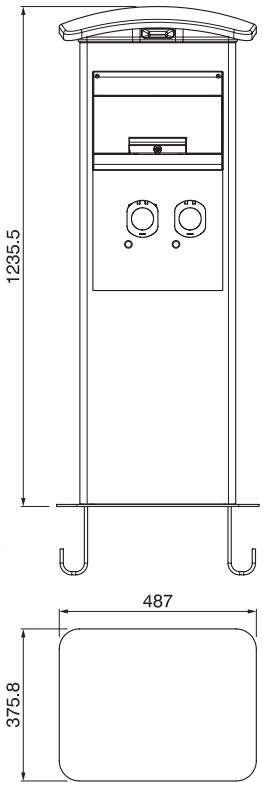
204.UB21R-3C3A + 654.0650 + 654.0651

654.0650



204.UB21B-3C3A + 204.DA5010

204.DA5010



- Head with twilight-sensor LED light.
- Pre-assembled versions available upon request.

ZE READY CERTIFICATION MODE 3

ZE READY LABEL is a quality brand owned by Renault that guarantees full compatibility of the charging infrastructure with ZE Renault vehicles.
When affixed, it ensures that the charging stations and their installation, are carried out in compliance with specific requirements established by the members of the ZE Ready workshop, which anticipate upcoming rules and regulations concerning the charging of electric vehicles in order to ensure their safety and performance.

ZE READY is a trademark granted by Renault to accredited partners. The right to use the trademark is only given to companies that have control over the product and its installation. SCAME stations have been tested and accredited in conformity with ZE READY 1.2 requirements, so any installer that wishes to successfully comply with ZE READY expectations can become SCAME's partner. For more information about SCAME products, the certification process and how to become a partner, please contact SCAME at **info@scame.com.**

ZE READY CERTIFICATION PROCEDURE
FOR POTENTIAL PARTNER

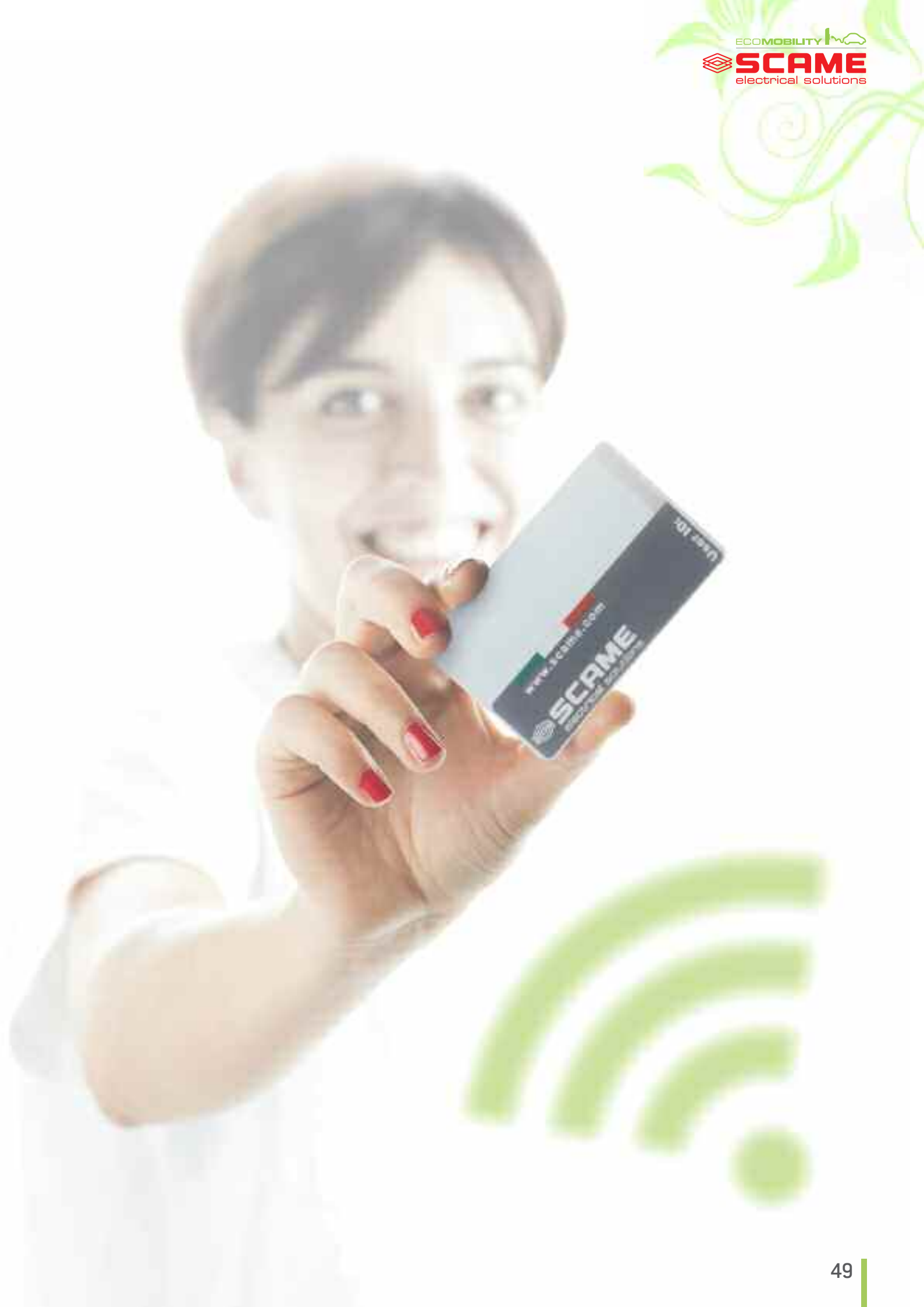
- Acceptance of the collaboration contract
- Participation in the technical course at SCAME covering the following topics:
  - Reference standards
  - Installation, configuration and use of SCAME charging stations
  - Additional ZE READY requirements
- Installation of products according to:
  - Current standards
  - Technical manual
  - ZE READY requirements
- Filling in the installation report
- Affixing the label.

EV READY CERTIFICATION

Since Renault issued new EV infrastructure requirements, ZE READY will be replaced by EV READY. The requirements and the procedure are quite similar but with EV READY Renault introduced the compulsory requirement for charging stations manufacturer and installer to be certified by third party. The certification of SCAME products is in progress at IMQ laboratories.

3

CONNECTION SOLUTIONS


SCAME

For the software we

A truly complete project cannot be limited to defining the technical characteristics of the equipment. In such a complex scenario such as the one that is evolving in this sector, it is crucial to provide for advanced utilization modes of the power supply system, taking advantage of plant management technologies that allow an optimization of equipment use.

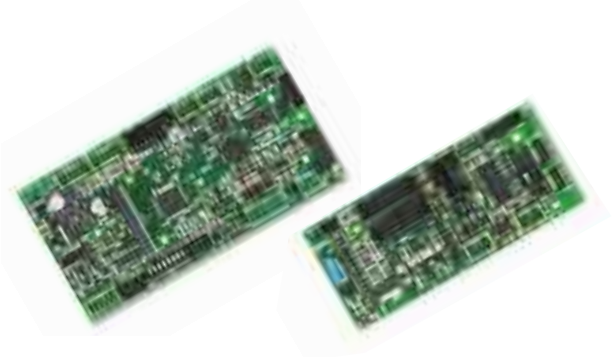
SCAME has provided for the interaction with sophisticated control and management tools, also developing an advanced software system that makes the SCAME world compatible with the most depending market requirements.

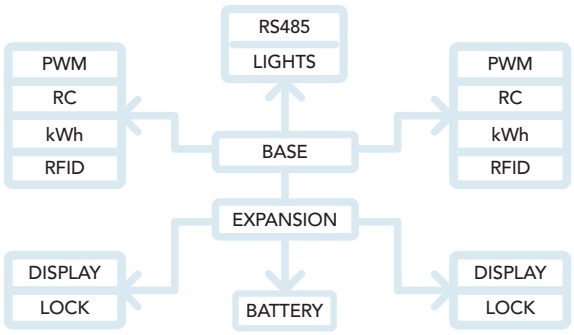
component have worked hard

CONTROL CARD

Scame's charging stations are equipped with a control card that was developed in cooperation with our partner, GENERALE SISTEMI, which supplies basic functions such as PWM circuit, resistor coding, energy measurement, RFID user identification, indicator lights and RS485 serial communication.

Depending on the versions, additional functions such as emergency power supply, display management, anti-extraction locking and lights command are provided by a special expansion module.





USER INTERFACE

204.CAXXX

204.CBXXX

204.UBXX

① GENERAL LIGHTS: if blue, charging in progress; if green, ready to charge; if red, there is a failure; is OFF there is no AC mains.

② LCD DISPLAY: provides the user with instructions on how to charge and displays information regarding the charging process and about any anomaly.

③ WHITE OPERATING LED: if ON it indicates normal operation; if flashing, control or programming is in progress.

④ BLUE OPERATING LED: if ON indicates charging is in progress; if flashing charging is suspended.

⑤ RFID READER: to enable/stop the charging or open the socket-outlet cover, the User Card must be placed over this area.

⑥ STOP CHARGE BUTTON (free mode)

⑦ SOCKET-OUTLET: depending on the version, can be type 1, type 2, type 3A, 3C or domestic, with or without interlocking device, complies with IEC 62196-1 and 2.

Three configurations for charging

STAND-ALONE

The charging stations are not connected together and operate independently. The station administrator can leave them in free charging mode (FREE) or limit the charge to authorized users (PERSONAL). Through the card programmer, the administrator can nevertheless control the charging depending on a specific time interval and/or the number of accesses.

ACTIVE CARD

Each User Card can be programmed by assigning an expiry date and/or a limited number of accesses through the 208.PROG programmer, to be connect to one's PC, and the supplied SLActive software.

Programmer and User Card in HF technology

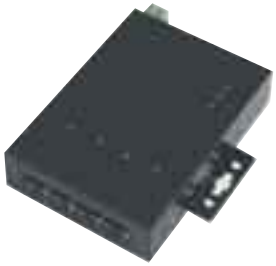
SLActive software

stations

NET

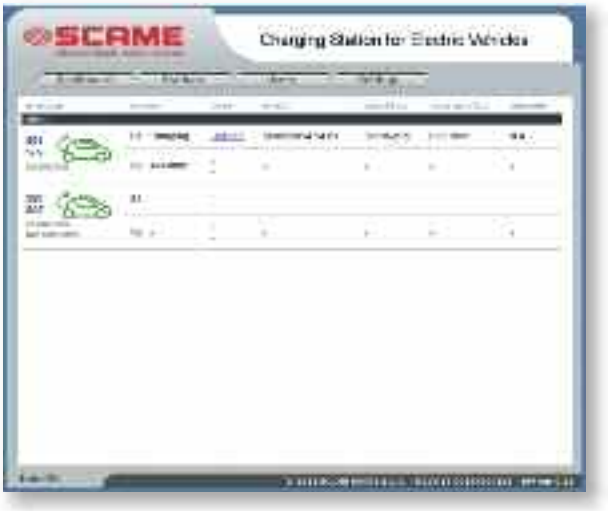
The charging stations are connected together and to a local server, which can only be accessed by the station administrator. In addition to being a data concentrator, the server contains the standard software developed in cooperation with our technological partner, GENERALE SISTEMI, through which it is possible to manage users, monitor and configure the charging stations, record consumptions, etc. Through the card programmer, the administrator can nevertheless control the charging depending on a specific time interval and/or the number of accesses.

The services are managed through a local server located nearby the columns.

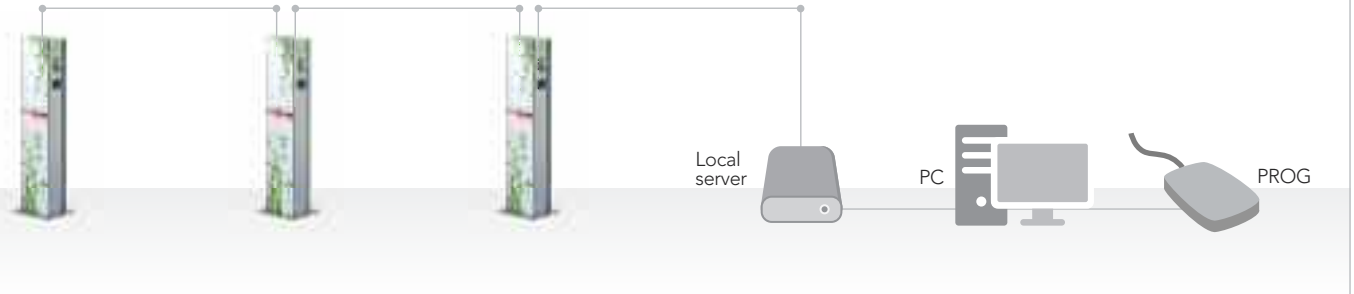


Local server with standard management software

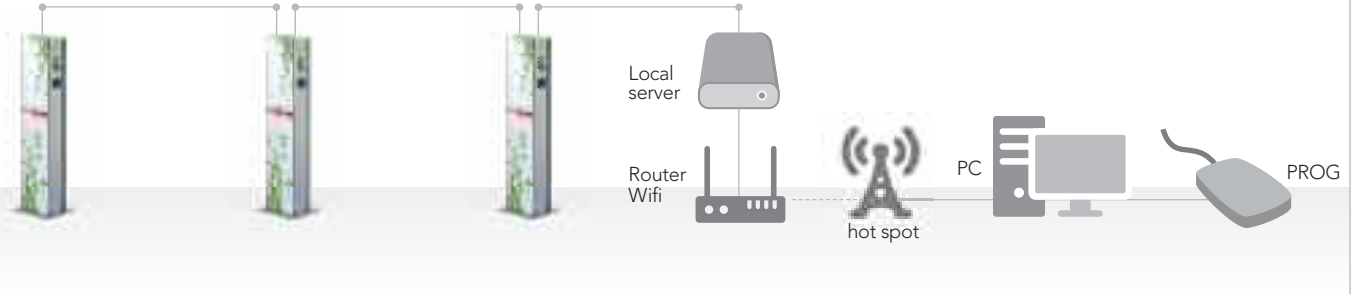
The system used to manage SCAME's charging stations does not require the installation of software in order to work, as the program is already installed on the server.
The operating status of the outlets of the connected stations is reported in real time on the web page shown here below.



LAN



WLAN



Three configurations for charging stations

OCPP

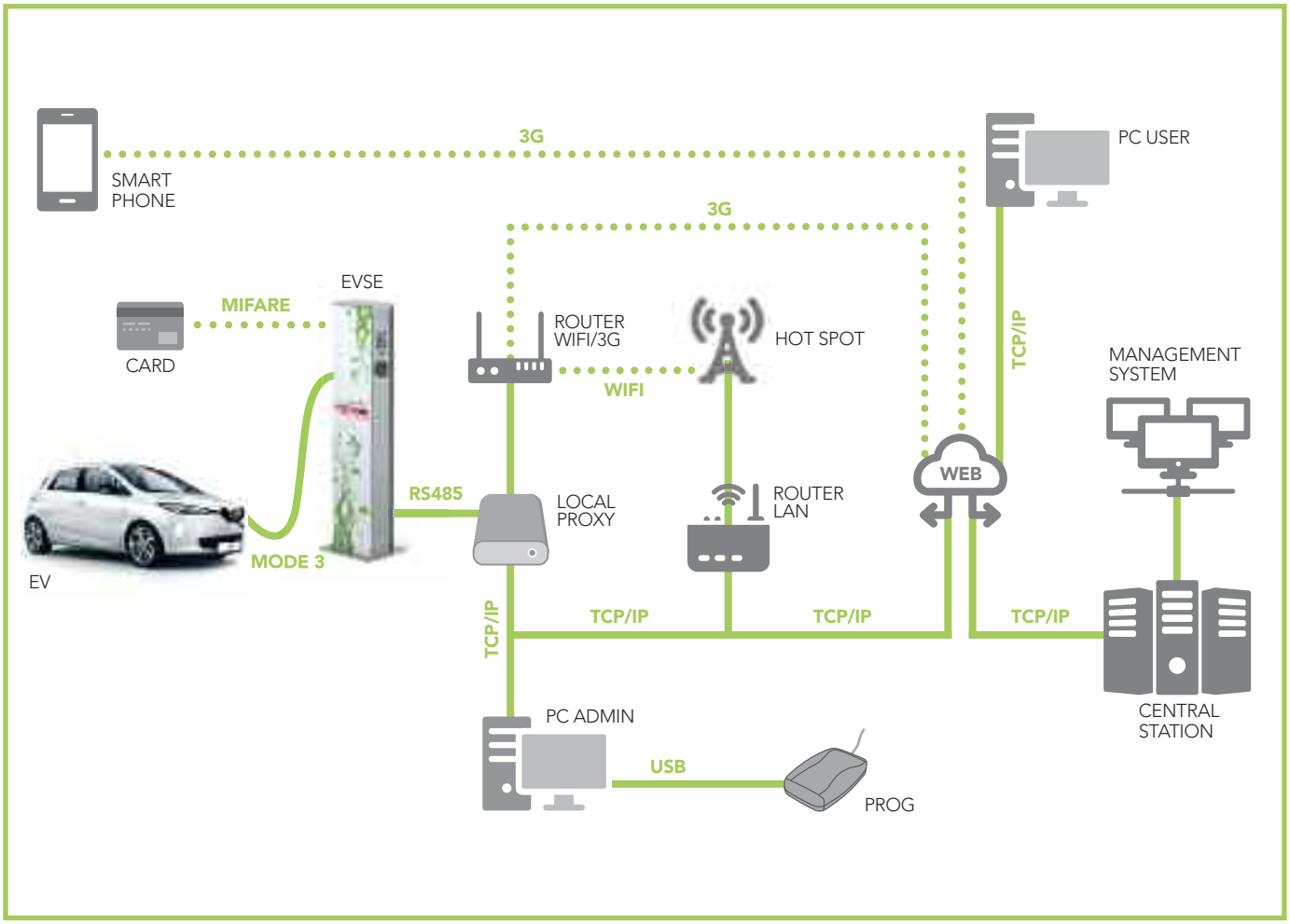
The purpose of the OCPP is to offer a standardised and acknowledged solution for the communication method between the recharging stations and the final customer's management system (Back-end system). The OCPP protocol entails a two-way exchange of information between the local stations (Charge Points) and the central server (Central Station).
The exchanged data may be the customer's identity, the station's identity, the electrical parameters (power, energy, current), diagnostics, operational statuses, availability of sockets, etc.

Through the OCPP, you can obtain interoperability between stations and systems of different producers/operators.

The stations are connected one to the other to a local server (Local Proxy) that contains the interface software with the OCPP 1.5 protocol, developed in collaboration with our partner, GENERALE SISTEMI.

Communication between the Local Proxies and the Central Station usually takes place via the Internet.

The Local Proxy can reach the web through a LAN network connected to the web (wired network or Wi-Fi router) or through a telephone network (with ADSL router) or through a mobile network (with 3G router and SIM M2M on board).



SYSTEM COMPONENTS

	DESCRIPTION	PACK.	CODE
	User card with HF technology	1/1	208.CARD
	User card programmer with HF technology	1/1	208.PROG
	Local server for the management of 16 charging stations in NET mode (technical assistance excluded)	1/1	208.SERV
	Local server for the management of 6 charging stations in OCPP mode (technical assistance excluded)	1/1	208.SERV-OCPP
	Wi-Fi/3G router pre-configured for connection to the local server (technical assistance excluded) (SIM data, data traffic, VPN service, if any, excluded)	1/1	208.ROUTER

ASSISTANCE

TECHNICAL ASSISTANCE AVAILABLE FOR ANALYSIS,
DEVELOPMENT CONFIGURATION, INSTALLATION AND START-UP,
TRAINING AND OPERATION OF PRODUCTS AND RELATIVE SOFTWARE.

PLEASE CONTACT: **infotech@scame.com**

4

DC CHARGING STATIONS


ECOMOBILITY
SCAME
electrical solutions
ECOMOBILITY

CHARGING STATIONS

MODE 4

To complete the product range, SCAME offers DC charging stations thanks to its partnership with EFACEC, a company leader in the production of "Fast Charge" stations.

Notes:
The term "Fast Charge" stands for the ability to charge the battery up to 80 % in 10/15 minutes.
The charge takes place in direct current (mode 4) using dedicated connector that also allows communication between vehicle and charging station.
There are various connections standards, the most common ones being:

- CHAdeMO: this is the name of a Japanese association that promotes use of this charging mode using a dedicated connector which, through a proprietary protocol, allows the charging process to be managed on a CAN bus channel.
- Combined Charging System (CCS) Type 2: also called COMBO 2, it supports both fast charge in direct currant and the standard AC charge AC on a single connector, vehicle side; station-vehicle communication takes place through a power line. COMBO 2 is a standard promoted by German carmakers. The European Commission has established for this type of connector to be the common standard, infrastructure side, at the EU level, in accordance with EN 62196.

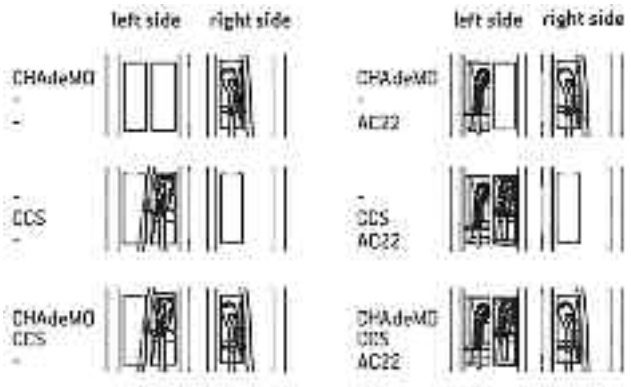
QC20

CHAdeMO connector

Combo 2 connector

Type 2 socket-outlet

CONFIGURATIONS



FEATURES

- Charge in mode 4 ChaDeMo standard up to 25kW
- Charge in mode 4 Combo2 standard up to 25Kw
- Charge in 3 with PWM pilot circuit up to 22kW
- Identification of user authorized to charge the vehicle
- Stand-alone operation
- Pre-set for network connection

TECHNICAL CHARACTERISTICS

Nominal Input	
Phases / lines	3 phases + neutral + PE
Voltage & frequency	400 Vac ± 10 %; 50 Hz
Nominal input current & power	32A, 22 kVA
Efficiency	> 94%
Power factor	0,98
AC Nominal Input (Optional)	
Phases / lines	1P or 3P + neutral + PE
Voltage & frequency	400 Vac ± 10 %; 50 Hz
Nominal input current & power Up to	32 A, 22 kVA
DC Output	
Voltage	50 Vdc to 500 Vdc
Current	0 to 50A
Nominal Power (@ 400V)	Up to 20 kW
Maximum power	25 kW
AC Output (optional)	
Voltage	230V or 400 V
Current	from 16 A up to 32 A
Nominal Power	from 3,7 kVA up to 22 kVA
General Specifications	
Equipment	Multi-standard DC outputs (Mode-4), with optional AC (Mode-3)
Communication with EV	JEVS G104 (CHAdeMO) IEC61851-23 PLC (CCS / Combo-2)
DC Plugs	JEVS G105 (CHAdeMO) Combo T2 (CCS / Combo-2)
AC Plug (or socket)	IEC62196 Type-2
Human Machine Interface Display RFID system Communication	By default 6.4" TFT Color screen Mifare (Classic, DesFire EV1) or others on request 3G (GSM or COMA) / LAN / Wi-Fi
Piace of installation	Indoor/Outdoor
Protection degree	IP54 / IK10
Operating Temperature	-25 °C to +50 °C
Noise Level	<55 dB in all directions

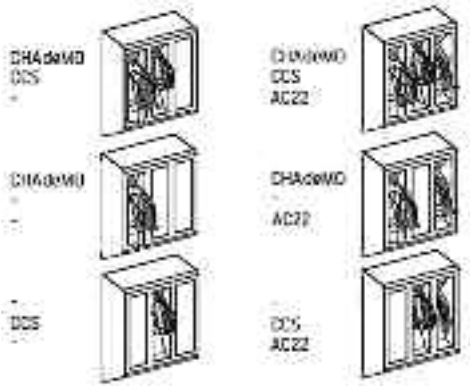
QC45

CHAdeMO connector

Combo 2 connector

Type 2 socket-outlet

CONFIGURATIONS



FEATURES

- Charge in mode 4 ChaDeMo standard up to 50kW
- Charge in mode 4 Combo2 standard up to 50kW
- Charge in 3 with PWM pilot circuit up to 22kW
- Identification of user authorized to charge the vehicle
- Stand-alone operation
- Pre-set for network connection

TECHNICAL CHARACTERISTICS

Nominal Input	
Phases / lines	3 phases + neutral + PE
Voltage & frequency	400 Vac ± 10 %; 50 Hz
Nominal input current & power	73A, 50 kVA
Efficiency	> 93%
Power factor	0,98
AC Nominal Input (Optional)	
Phases / lines	1P or 3P + neutral + PE
Voltage & frequency	400 Vac ± 10 %; 50 Hz
Nominal input current & power	Up to 32 A, 22 kVA
DC Output	
Voltage	50 Vdc to 500 Vdc
Current	0 to 120A
Nominal Power (@ 400V)	45 kW continuous / 50 kW peak
AC Output (optional)	
Voltage	230 V or 400 V
Current	from 16 A up to 63 A
Nominal Power	from 3,7 kVA up to 43 kVA
General Specifications	
Equipment	Multi-standard DC outputs (Mode-4), with optional AC (Mode-3)
Communication with EV	JEVS G104 (CHAdeMO) IEC61851-23 PLC (CCS / Combo-2) EC61851-1 (AC)
DC Plugs	JEVS G105 (CHAdeMO) Combo T2 (CCS / Combo-2)
AC Plug (or socket)	IEC62196 Type-2
Human Machine Interface Display RFID system Communication	By default 6.4" TFT Color screen Mifare (Classic, DesFire EV1) 3G (GSM or COMA) / LAN / Wi-Fi
Place of installation	Indoor/Outdoor
Protection degree	IP54 / IK10
Operating Temperature	-25 °C to +50 °C
Sound noise	<55 dB in all directions

APPLICATION EXAMPLES

EVOBIKE CHARGING STATION

DC

FEATURES

- Charging in DC standard EvoBike mode
- Protection against overloads and indirect contacts
- Identification of users authorized to the charging
- Management of cover locking and plug interlock system
- Operation in free stand-alone or personal mode

TECHNICAL CHARACTERISTICS

Rated current:	32 A
Rated voltage:	230 V AC
Frequency:	50-60 Hz
Insulation voltage:	250 V
Protection degree:	IP44
Operating temperature:	-25°C to +40°C
Material:	Steel sheet
Glow Wire test:	-
IK grade at 20°C:	IK10
Colour:	Anthracite
Installation:	Wall-mounted / free-standing
Saline solution:	Resistant
UV rays:	Resistant

To increase its product range, SCAME also offers charging stations in DC for vehicles that are equipped with an external battery charger and are therefore not covered by current standards.
This is a bar structure that can be easily integrated in a cantilever roof sheltering; it contains the control and identification electronic parts and can house the battery charger best suited for the vehicle to be charged (not included). The system also includes a connecting system which the vehicle must equip itself, based on a proprietary connector standard.

REFERENCE STANDARDS

EN 61851-1 (2011)

Electric vehicle conductive charging system.

Part 1: General requirements.

EN 61439-1 (2011)

Low-voltage switchgear and control gear assemblies.

Part 1: General requirement.

APPLICATION EXAMPLES

DC CHARGING STATION

DESCRIPTION	PACK.	CODE
No.1 cable+connector Chademo 20 kW	1/1	204.QC20-CH
No.1 cable+connector Combo2 20 kW	1/1	204.QC20-CC
No.1 cable+connector Chademo 20 kW No.1 cable+connector Combo2 20 kW	1/1 1/1	204.QC20-CHCC
No.1 cable+connector Chademo 20 kW No.1 cable+connector Type 2 22kW	1/1	204.QC20-CHT24
No.1 cable+connector Combo2 20 kW No.1 cable+connector Type 2 22kW	1/1	204.QC20-CCT24
No.1 cable+connector Chademo 20 kW No.1 cable+connector Combo2 20 kW No.1 cable+connector Type 2 22kW	1/1	204.QC20-CHCCT24
No.1 cable+connector Chademo 45 kW	1/1	204.QC45-CH
No.1 cable+connector Combo2 45 kW	1/1	204.QC45-CC
No.1 cable+connector Chademo 45 kW No.1 cable+connector Combo2 45 kW	1/1	204.QC45-CHCC
No.1 cable+connector Chademo 45 kW No.1 cable+connector Type 2 22kW	1/1	204.QC45-CHT24
No.1 cable+connector Combo2 45 kW No.1 cable+connector Type 2 22kW	1/1	204.QC45-CCT24
No.1 cable+connector Chademo 45 kW No.1 cable+connector Combo2 45 kW No.1 cable+connector Type 2 22kW	1/1	204.QC45-CHCCT24

EVOBIKE

DESCRIPTION	PACK.	CODE
Bar to charge bicycles with 4 outlets	1/1	204.EB41B-001
Pair of brackets for fixing to wall	1/1	204.EB-ST
Side pillar for fixing to ground	1/1	204.EB-CL
Central pillar for fixing to ground	1/1	204.EB-CC
Cable and bike charging kit	1/1	204.EB-SP

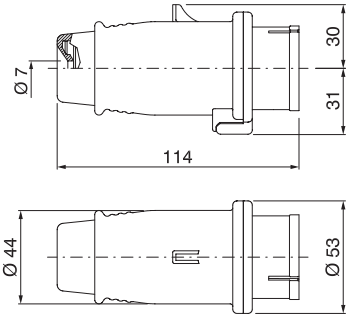
ECOMOBILITY

SCAME
electrical solutions

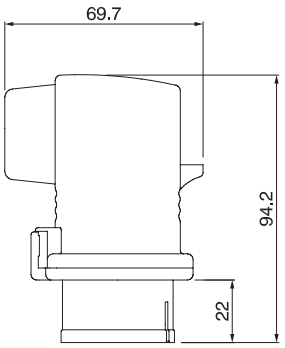
ECOMOBILITY GENERAL CATALOGUE 2016-2017 DIMENSIONS

DIMENSIONS

200.01633



200.01633A



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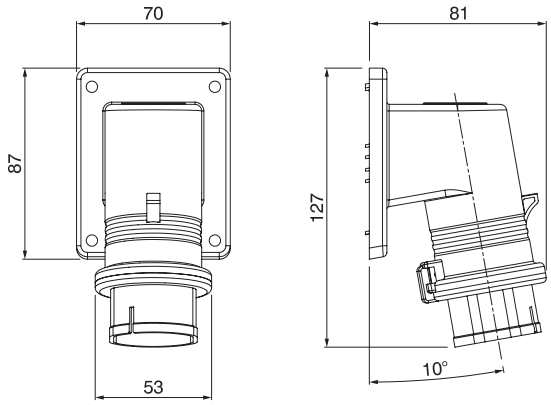

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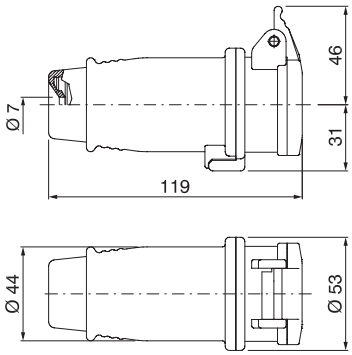

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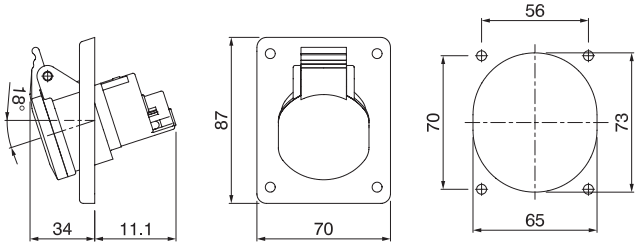

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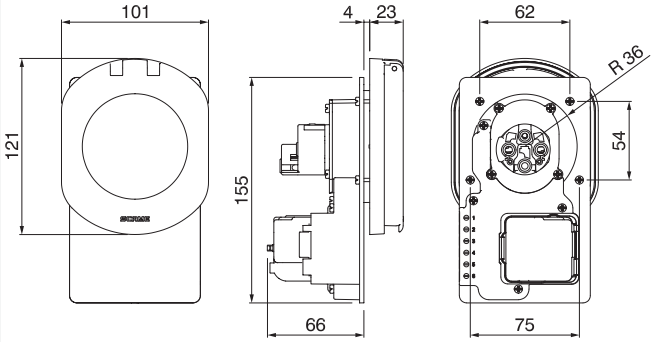

Dimensions in mm

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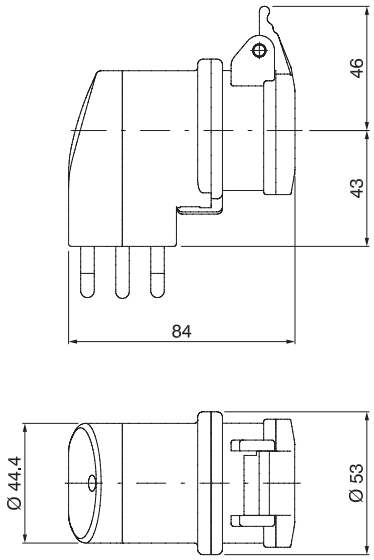

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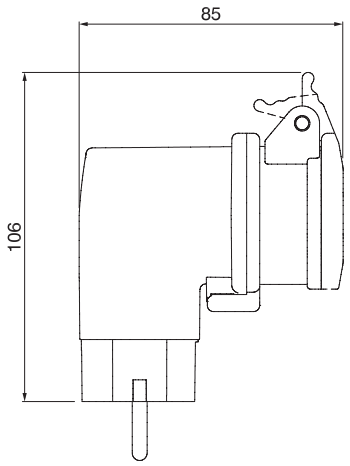

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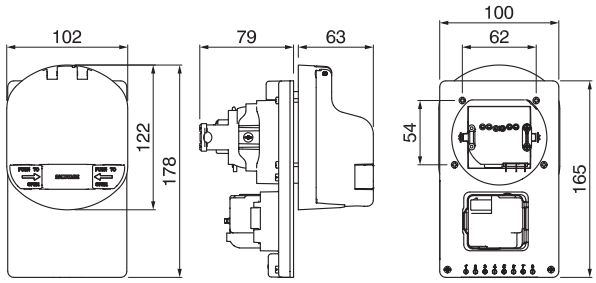

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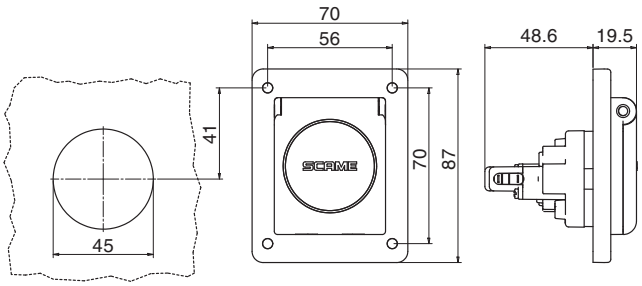

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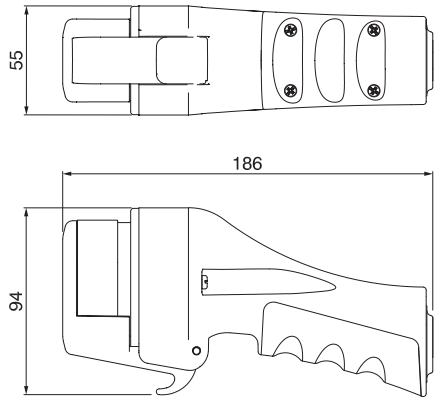
200.33233C4
200.33233C6



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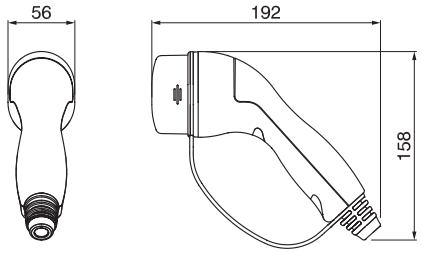

Dimensions in mm

DIMENSIONS

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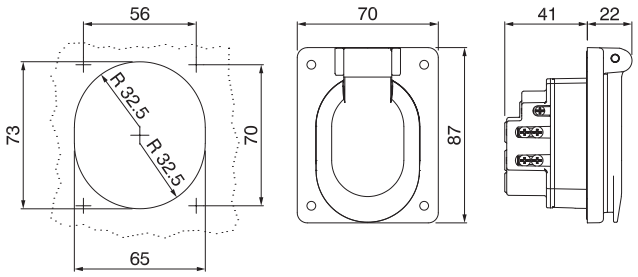

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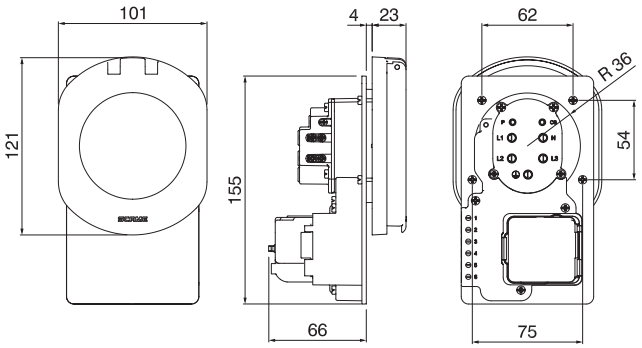

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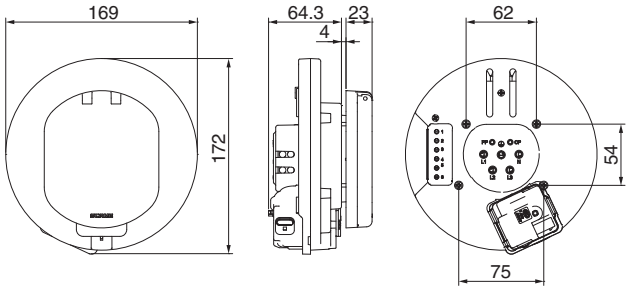

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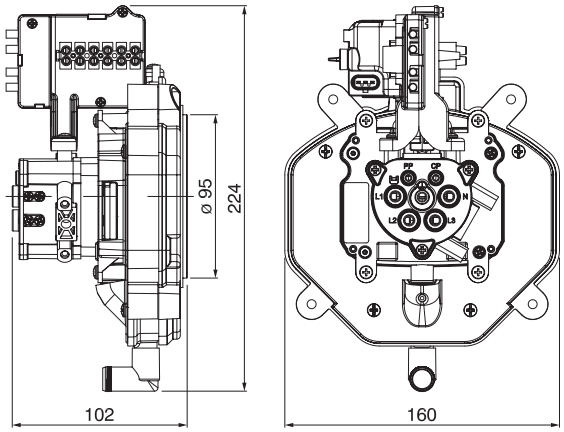

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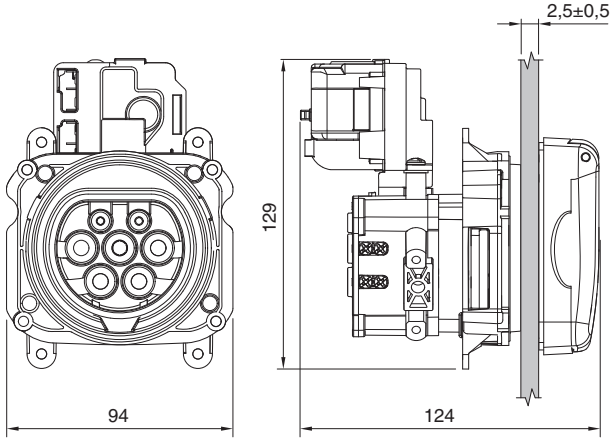
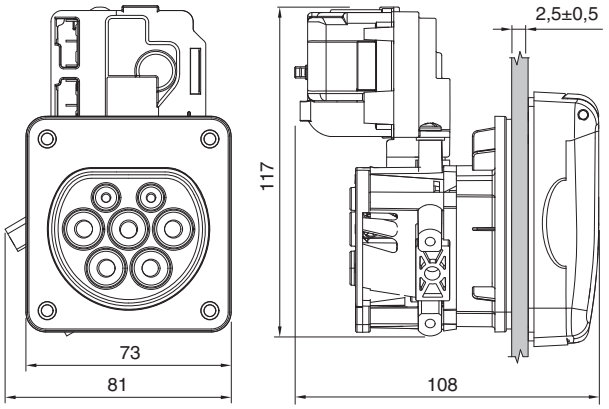
200.23266 - 200.23260BS



200.23265 - 200.23260BS



Dimensions in mm

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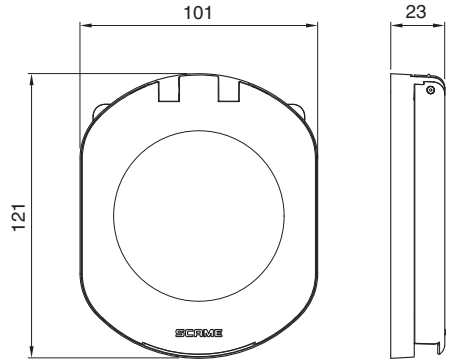

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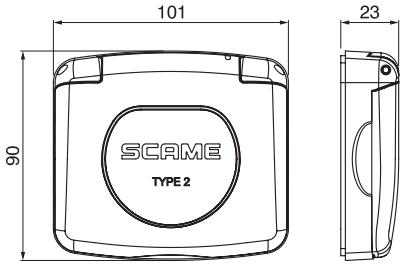

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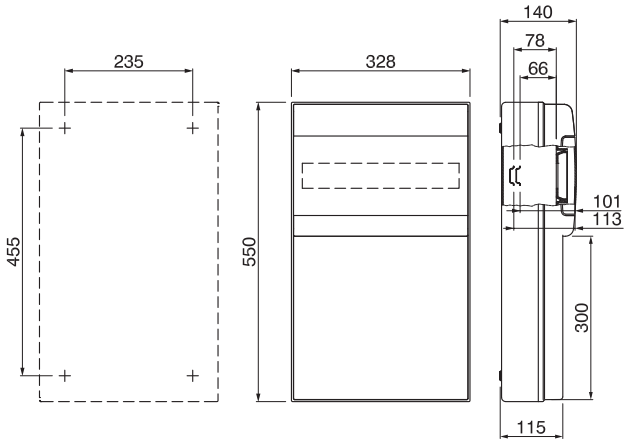
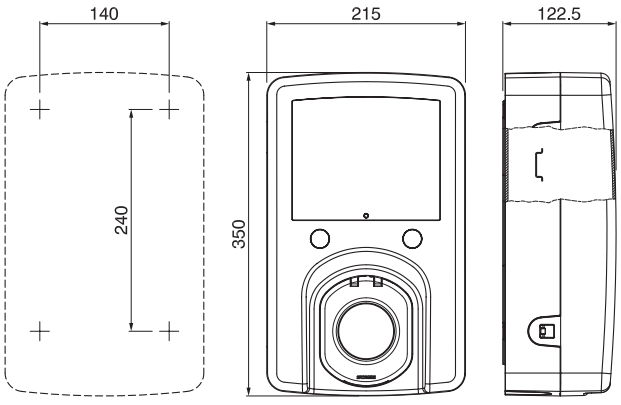
204.UB21B



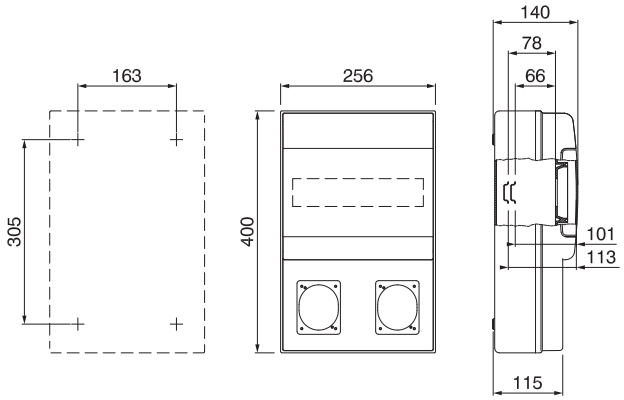
204.WB11L - 204.WB11E
204.WB11R - 204.WB11P



Dimensions in mm

DIMENSIONS

204.UB11L
204.UB11R



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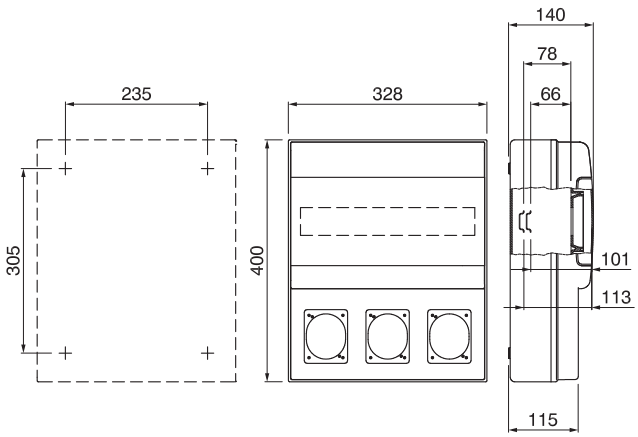

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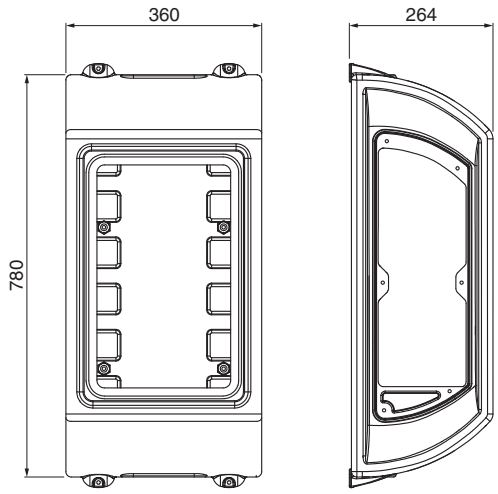
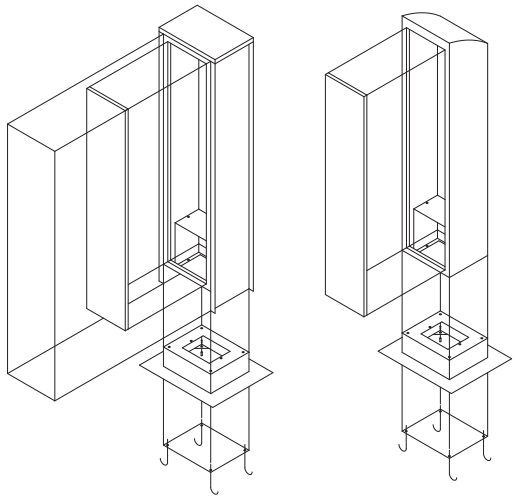
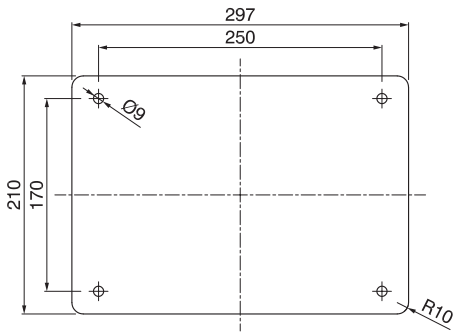


Dimensions in mm

DIMENSIONS

CHARGING PILLARS CA/CB





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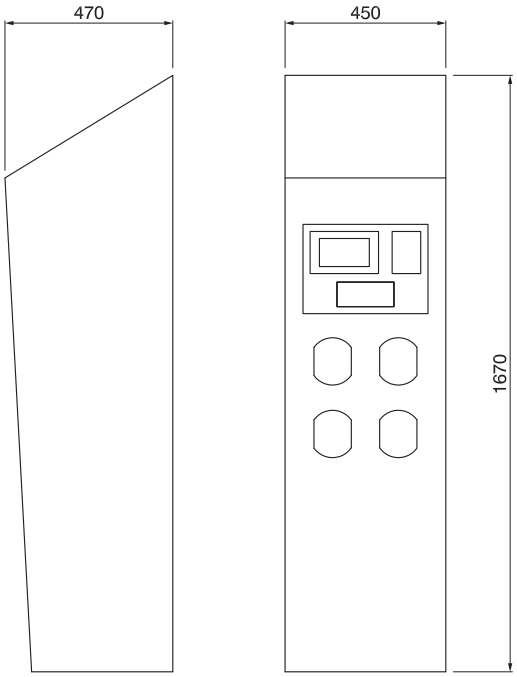

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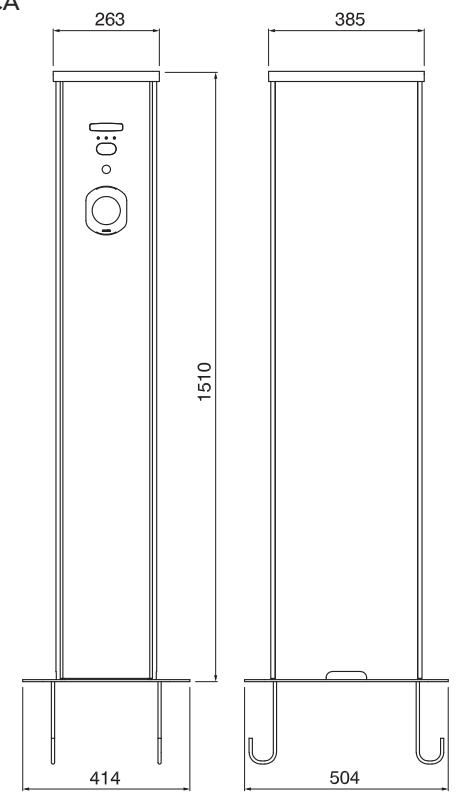

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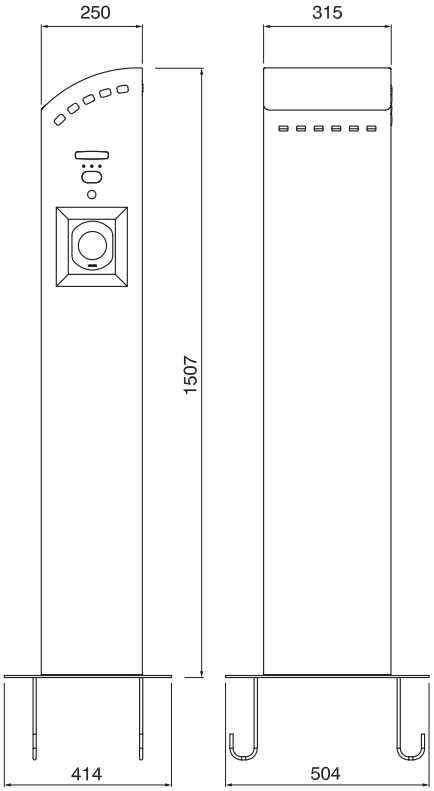

Dimensions in mm

DIMENSIONS

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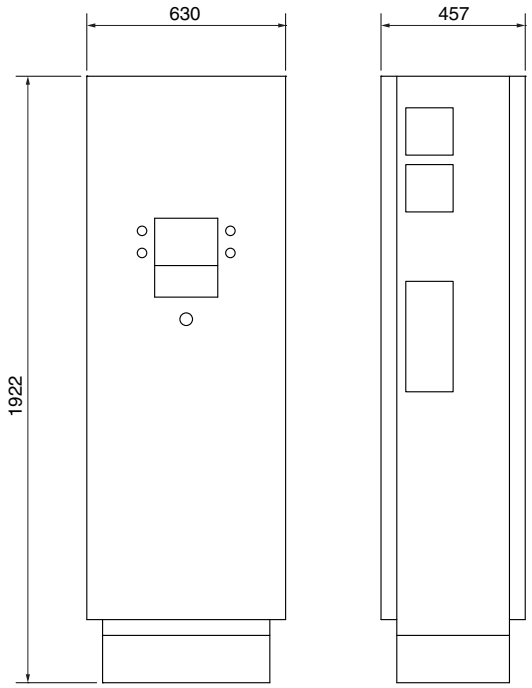

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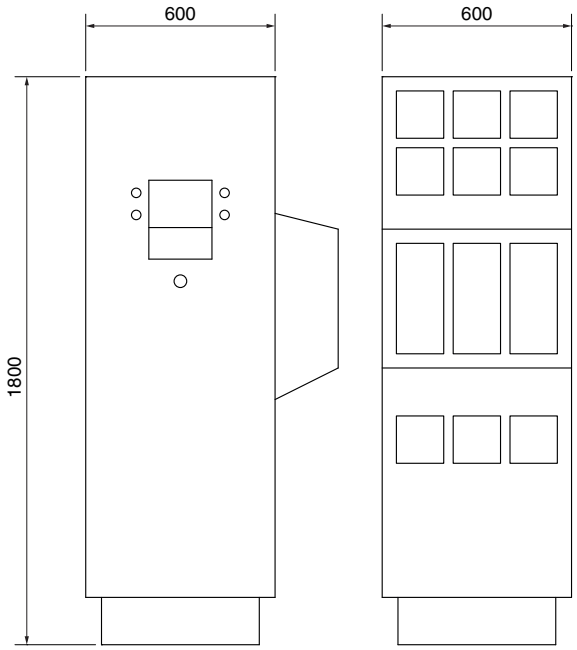

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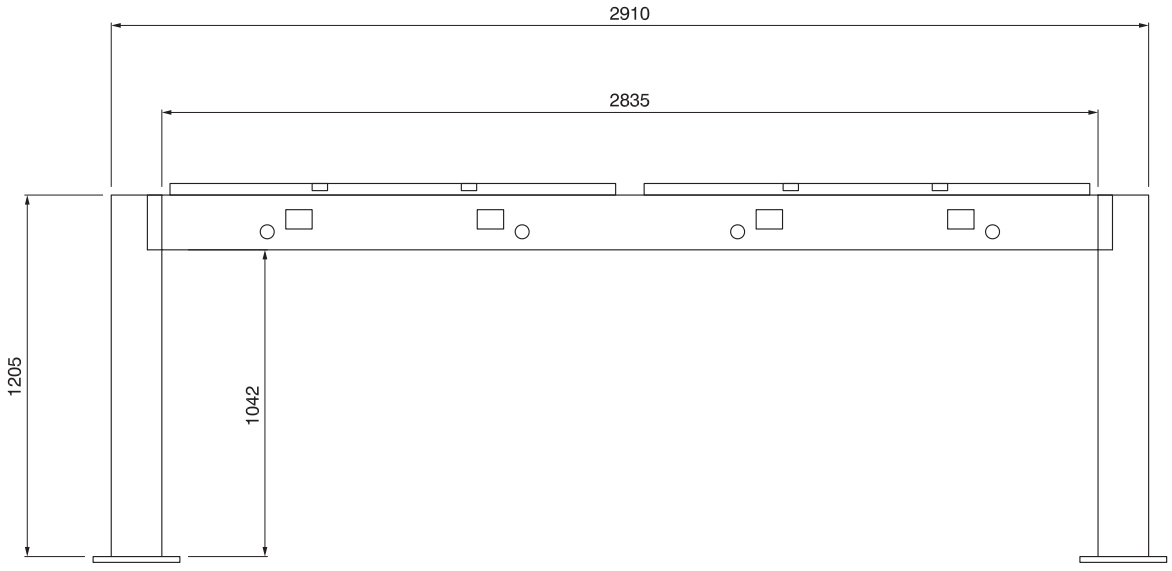

Dimensions in mm

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Note

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