ELECTRIC VEHICLE CHARGING

Drive into the future with our EV Charging solutions. Our advanced charging stations and accessories are designed to provide efficient and reliable charging for electric vehicles. Whether for residential, commercial, or public use, our EV charging solutions support the growing demand for sustainable and eco-friendly transportation.

ACDC DYNAMICS

THINK ELECTRICAL

EV CHARGING

Charging Coupler Types

Car makers have come up with different standards for the type of plugs used to charge their electric cars.

Electric Cars Plug Types

Type 1 Plug Asia/USA

Single-phase plug used in car models from the Asian region

Type 2 Plug Europe

Three-phase plug considered to be the STD model in Europe

GB-T Plug China

Similar to the Type 2 plug but with additional male connectors

CCS2 Combination Plugs USA/Europe

Enhanced version of Type 2 plug, with add. power contacts for quick charging

Chademo Plugs Japan

Quick charging system developed in Japan

Electric Vehicles (BEV's)

Battery EVs (BEV's) have no combustion engine, only an on-board battery which provides energy to an electric motor. BEVs are charged from an external electricity supply, typically plugging in to an EV charge point. When required, energy is drawn from the electric-cells and converted to motive power by the use of one or more electric motors.

EV Charging Levels

Chargers are one of two types – AC or DC [Alternating or Direct Current]. Currently AC chargers are rated at up to 43 kW, while most Rapid DC units are at least 50 kW. DC Chargers will charge the majority of EVs to 80% in around 30-60 minutes (depending a battery capacity). Rapid DC chargers are fitted with a CCS2 or CHAdeMO connector.

AC chargers include those which provide power from 7 kW to 22 kW, which typically fully charge an EV in 3-4 hours (depending a battery capacity). Common connectors are a tethered Type 1 or a Type 2 socket.

Slow AC units (up to 3 kW) are best used for overnight charging and usually take between 6 and 12 hours for a pure-EV, or 2-4 hours for a PHEV. EVs charge on slow devices using a cable which connects the vehicle to a 3-pin or Type 2 socket.

Charging time for 100km of BEV Range	Power Supply	Power	Voltage	Max. Current
6–8 hours	Single phase	3.3 kW	230VAC	16A
3–4 hours	Single phase	7.4 kW	230VAC	32A
2–3 hours	Three phase	11 kW	400VAC	16A
1–2 hours	Three phase	22 kW	400VAC	32A
20–30 minutes	Three phase	43 kW	400VAC	63A
20–30 minutes	Direct current	50 kW	400–500VDC	100–125A
10 minutes	Direct current	120 kW	300–500VDC	300–350A

Further Influencers on the charge speed

Battery Pack Capacity
Larger battery packs can be charged faster using DC rapid chargers

State of Charge
Charge speed is controlled to prevent the battery cells from overheating

Battery Temp.
Heating or cooling systems keep the temperature constant

Battery Chemistry
New materials allow for faster charging and longer battery life

VDE Cable to charge Electrically Powered Vehicles

The EV Charge cable is a certified Power and Control cable, is halogen-free and flame retardent. The cable is also UV-resistant as well as Ozone-resistant, is cold flexible and water resistant, resistant to acids and has a high resistance to the usual vehicle chemicals and solutions. The cable should conform to VDE application rule VDE-AR-E 2283-5. The cores CP and PP are consecutively the control and the poximity pilot cores of the cable, the Control core allows for the communication enabling intergration into smart grid and checks compatibility of the connected EV.

Single Phase

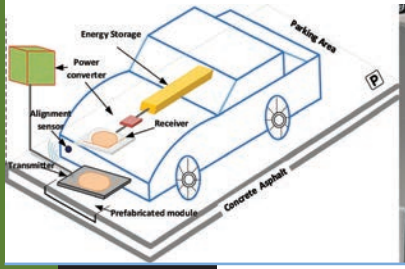
Three Phase

DC Charging Cable

Technical Data	16A	32A	63A	DC Charging
Working Temp.	-45°C ~+125°C	-45°C ~+125°C	-45°C ~+125°C	-45°C ~+125°C
Nominal Voltage	450/750VAC	450/750VAC	450/750VAC	250/1000VDC
Current Rating	16A	32A	63A	30 ~ 250A
Insulation	TPE	TPE	TPE	TPE
Outer Jacket mmø	20	20, ±0.5	23.8, ±0.5	23 ~ 45mm

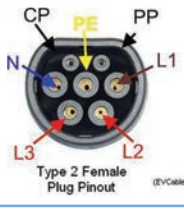
Plugless Power

Recent developments manufactured for charging of Electric Cars include the wireless parking charger or the Plugless Power inductive charger. This charger wirelessly delivers electrical power to the EV battery charger using Electromagnetic Induction without a physical connection to the vehicle. By fitting a Plugless Vehicle Adapter the vehicle can be charged when parked over inductive Parking Pad, thus eliminating the active need to plug in a cable.

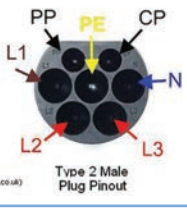


**We recommend that installation cabling be designed to carry 22kW charging power (5-core Cable) irrespective of the Charging Station or the Electric Car. Advantage: Less effort will be required to increase Charging Power at a later Stage. (When Higher charging power and battery capacities become standard in the future)

IEC 62196-2 Type 2 & Combination CCS Type 2 Connector Layout

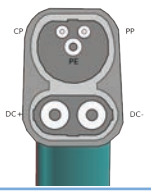


Type 2 Female Plug Pinout



Type 2 Male Plug Pinout

CCS DC Combination Type 2 to IEC 62196



CCS AC/DC Plug Combination Type 2 to IEC 62196

NEW

DOMESTIC EV CHARGING - AC

Portable EV Chargers Mode 2

Makes it easy to charge anywhere. Just plug it into a wall socket, and adjust charging current. Conforms to IEC 62196-2 (Type 2) and the highest safety requirements. Complete with overcurrent and under / over voltage protection, grounding and surge protection.

Code	Description	Power Supply	Output Power	Connection Input	Connection Output
Q20-3.5KW-16A-1P	Plug-in EV Charger c/w LED Display (Wall-mounted,Portable)	230VAC 1 Phase	3.5kW (6-16A Adjust)	16A SA	Type 2 5m Cable
Q20-7KW-32A-1P	Plug-in EV Charger c/w LCD Display (Wall-mounted,Portable)	230VAC 1 Phase	7kW (6-32A Adjust)	32A 2P+E	Type 2 5m Cable

Kit include Plug holder + Hanger + Carry Bag

EV Smart Home Chargers Mode 3

NORA-7KW-1P-S

Code	Description	Power Supply	Output Power	Connection Input	Connection Output
NORA-7KW-1P-S	Plug-in EV Charger c/w LED Status Indication (Wall-mounted,Portable)	230VAC 1 Phase	7kW (up to 32A Adjust)	32A 2P+E	Type 2 Socket Outlet
NORA-7KW-1P-T5	Plug-in EV Charger c/w LED Status Indication (Wall-mounted,Portable)	230VAC 1 Phase	7kW (up to 32A Adjust)	32A 2P+E	Type 2 5m Tethered Cable

Kit include wall mounting bracket and hardware, 2 X RFID cards

NORA-7KW-1P-T5

Features

Stress-free Installation : Plug and Play. Plug into the CEE socket or hardwire connection without opening box.
Flexible Load Protection : Flexible setting of power to ensure load safety and prevent tripping
Smart Home Charging with APP (Full control of your wallbox with RAEDIAN App):

- Schedule Charging (Schedule off-peak charging to lower charging cost)
- InstaCharge (Start charging immediately at the maximum available current)
- Charging Record (Review and filter charging history,one tap to export record via email)
- Share Your Charger (One tap to share limited charging access with your family and friends)

Domestic EV Chargers - Mode 3

Code	Description	Power Supply	Output Power	Connection Type
NEO-7KW-1P-T5-S	Domestic EV charger -Wall mount, Tethered	230VAC 1 Phase	7kW (32A)	Type 2 c/w 5m Cable
NEO-7KW-1P-SS-S	Domestic EV charger -Wall mount with socket	230VAC 1 Phase	7kW (32A)	Type 2 Socket Outlet
NEO-11KW-3P-T5-S	Domestic EV charger -Wall mount, Tethered	400VAC 3 Phase	11kW (16A)	Type 2 c/w 5m Cable

- With a wiring backplate and one clip installed main body, and plug and charge commission-free setup, one electrician can complete the installation with ease.
- Integrated OLED Display will present device status, operation mode, energy delivered, meter value in plain sight, and error code if anything goes wrong, making diagnosis easy.
- Dynamic load management with full protection of electrical safety
- Built in Wifi / Bluetooth and RFID

NEW

COMPLETE CHARGING CABLES

Type 2 with Coiled Cable

Type 1 with Straight Cable

Type 2 Charging Cables - 5m Length

Code	Charger Side	Vehicle Side	Rated Current	Rated Voltage	Phase	Max Capacity
BS-CHC001*	Type 2	Type 2	16A	230VAC	1 phase	3.6kW
BS-CHC002	Type 2	Type 2	16A	400VAC	3 phase	11kW
BS-CHC003*	Type 2	Type 2	32A	230VAC	1 phase	7.2kW
BS-CHC004	Type 2	Type 2	32A	400VAC	3 phase	22kW
Type 2 to Type 1 Charging Cable - 5m Length						
BS-CHC007*	Type 2	Type 1	16A	230VAC	1 phase	3.6kW
BS-CHC008*	Type 2	Type 1	32A	230VAC	1 phase	7.2kW

*Add **-S** for coiled cable (up to 7.2kW only)

NEW

VIARIS EV CHARGERS

Viaris UNI IP54 - Private/Domestic AC EV Charger

App for managing the VIARIS UNI and VIARIS COMBI + Smart Charging Station from a Smartphone or tablet. Real-time display of grid or solar supply as well as instantaneous home and EV charging station consumption.

Code	OB94U220HA1	OB94U2COHA1
Charging Socket	Type 2 with 5m cable	Type 2 Outlet with Shutter
Installation Type	Wall Mounted	
Rated Voltage	230V	230V
Maximum Current	32A	32A
Maximum Power	7.4kW	7.4kW
Human Interface	LED and App	LED and App
Charging Activation	Touch or RFID or App	Touch or RFID or App
Communication Protocol	OCPP 1.6	OCPP 1.6
Communication	WiFi	

Viaris Combi + IP54 - Public/Commercial AC EV Charger

c/w Built-in Protection Equipment:
1) Overload and short-circuit protection (MCB) "C" curve
5) AC Residual-Current device (RCD) Type A
6) DC Residual -Current protection

Code	OB94P2209A2	OB94P2CO9A2	OB94P720HA2	OB94P7COHA2
Charging Socket	Type 2 with 5m cable	Type 2 Outlet with Shutter	Type 2 with 5m Cable	Type 2 Outlet with Shutter
Installation Type	Wall Mounting			
Rated Voltage	230V/1Phase	230V/1Phase	400V/3Phase	400V/3Phase
Maximum Current	32A	32A	3x32A	3x32A
Maximum Power	7.4kW	7.4kW	22kW	22kW
Human Interface	LED and App	LED and App	LED and App	LED and App
Charging Activation	Touch or RFID or App	Touch or RFID or App	Touch or RFID or App	Touch or RFID or App
Communication Protocol	OCPP 1.6	OCPP 1.6	OCPP 1.6	OCPP 1.6
Communication	WiFi/Ethernet/RS485 Modbus			

Features

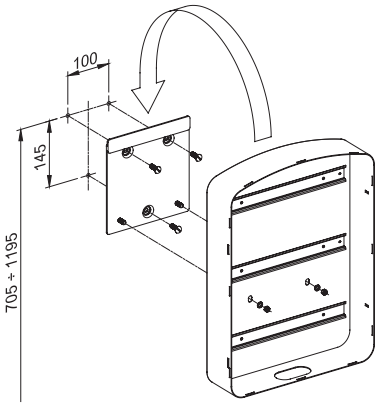
- Charge power modulator to achieve the highest recharge in shortest possible time without exceeding the maximum installation capacity and depending on the instantaneous consumption of other electrical appliances.
- Multi-device function for power modulation of several chargers connected to the same power line of up to 100 amps per phase up to 3 chargers.
- DC current leakage detector for the protection of people against electrical risk.
- Compatible with VIARIS SOLAR for integration with PV power generation.
- WiFi communication for configuration and control from the VIARIS App.
- Control of schedules and limitation of consumption power to take advantage of electricity rates.

NEW

VIARIS EV CHARGERS

Viaris City

Ideal for Electric Vehicle Charging with Type 2 connection up to 40kW as per IEC 62196-2. The Charger is able to supply information about the charging status and allows for all payment systems through the mobile APP Varis Combi, cards or other communication accessories. Compatible with OCPP protocol.



Wall Mount

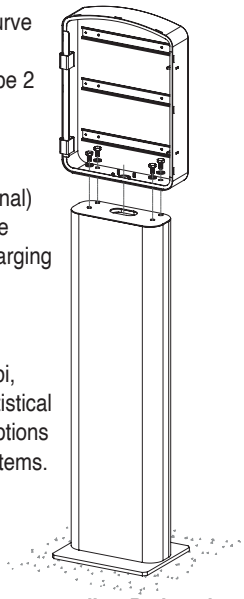
c/w Built-in Protection Equipment

1) Overload and short-circuit protection (MCB) "C" curve
2) Protection against overvoltages (POP)
3) Protection against Transient overvoltage (SPD) Type 2 Class II
5) Residual Current Circuit Breaker (RCCB) type A

The mild steel casing on a Stainless Steel pole (optional) offers a high degree of protection from vandalism. The Orbis charger range has all the facilities to enable charging in both commercial and private applications.

For Charging Station operators the charger offers: Prepaid Systems through the mobile App Viaris Combi, RFID Cards and others. Information collection for statistical purposes is also possible. Different communication options enable easy integration into commercial charging systems. Units come with WiFi & Ethernet communications as standard.

*Note operation of the Web Services does have an annual cost.



On floor-standing Pedestal
(to be ordered separately)

Code	Description	Power Supply	Output Power	Connection Type	Charge Mode
OB94T1116-1813	Public EV Charger. Wall Mounted. c/w 1 x Type 2 Outlet.	400VAC 3x16A, 3Phase	11kW	Type 2 no Cable	Mode 3
OB94T2232-1913	Public EV Charger. Wall Mounted. c/w 1 x Type 2 Outlet.	400VAC 3x32A, 3Phase	22kW	Type 2 no Cable	Mode 3
OB94T4363-201330	Public EV Charge. Wall Mounted. c/w 2 x Type 2 Outlets.	400VAC 3x63A, 3Phase	43kW/ 2 x 21.5kW	Type 2 no Cable	Mode 3

Accessories

Code	Description
OB940006	RFID Cards (Pack of 5)
OB940007	304 Stainless Steel floor stand textured finished in RAL 7035. Light Grey. Order stand separately.

NEW

AC CHARGING ACCESSORIES

Viaris Tester - EV Charger check tool to verify the charger by simulating the connection of an electric vehicle.Ensures correct operation of the charger before delivery to the customer

Code	Description
VIARIS TESTER	EV Charger Check Tool

Features

- Simulates the state of the vehicle (connected, disconnected, charging, etc.).
- Verifies phase presence and phase sequence.
- Fault simulator.
- Checking the electrical protections and grounding.
- Residual differential current test AC 30 mA (RCD).
- DC leakage current test 6 mA (RDC-DD).
- Valid for 13, 20, 32 and 64 A chargers.
- LED Display of status and measured values.

Viaris Solar

Allows the integration of **Viaris UNI** and **Viaris Combi** + Chargers in PV installation. Adaptable to any Single or Three phase PV installation with or without grid injection. It allows the selection of energy mix for EV charging.

Code	OB709800	OB709900
Description	Viaris Solar Single phase 100A	Viaris Solar Three Phase 3x80A

NEW

JOINON EV CHARGING RANGE

JOINON Range Electric Vehicle Charging Wallbox I-CON IP55

I-CON wallboxes are the JOINON solution designed to be integrated into private and semi-public contexts in compliance with international standard IEC 61851-1. It stands out for its elegant and compact design, special "one-hand recharge" functionality, smart load management.

	GWJ3002A 	GWJ3112A 	GWJ3004R 	GWJ3014W 
Code c/w Socket	**GWJ3002A**	**GWJ3102A**	**GWJ3004R**	**GWJ3004W**
Code Tethered	**GWJ3012A**	**GWJ3112A**	**GWJ3014R**	**GWJ3014W**
Charging Socket/Plug	Type 2	Type 2	Type 2	Type 2
Installation Type	Wall mounted (or floor with support)			
Rated Voltage	230V	230V	400V	400V
Maximum Current	32A	32A	32A	32A
Maximum Power	7.4kW	7.4kW	22kW	22kW
Human Interface	LED Indication	LED Indication	LED Indication	LED Indication
Charging Activation	Auto Start	Auto Start	RFID	RFID/APP
Connectivity	-	BLE(Setup app)	-	ETH/Router 4G
Communication	-	-	-	OCPP 1.6J

JOINON range electric vehicle charging I-ON IP55

I-ON (floor-mounting) and I-ON Wall (surface-mounting) charging stations are the JOINON solutions for public and semi-public access, designed to withstand impacts, stress, vandalism. The special hexagonal design allows the units to be adapted in any urban context and to any parking configuration.

				
Code	**GWJ1003R**	**GWJ2103R**	**GWJ1003W**	**GWJ2103W**
Charging Socket	2 x Type 2	2 x Type 2	2 x Type 2	2 x Type 2
Installation Type	Floor-mounted	Wall or Support mounting	Floor-mounted	Wall or Support mounting
Rated Voltage	400V	400V	400V	400V
Maximum Current	32A + 32A	32A + 32A	32A + 32A	32A + 32A
Maximum Power	22kW + 22kW	22kW + 22kW	22kW + 22kW	22kW + 22kW
Human Interface	TFT Display	TFT Display	TFT Display	TFT Display
Charging Activation	RFID	RFID	RFID or APP	RFID or APP
Connectivity	-	-	-	-
Communication	-	-	OCPP 1.6J	OCPP 1.6J

JOINON DLM-Dynamic Load Management Accessories				JOINON Communication Accessories 	
Code	**GWD6812**	**GWD6817**	**GWJ8031**	**GWJ8011**	**GWJ8012**
Description	Single Phase Meter for DLM	3 Phase Meter for DLM	Site controller for DLM	JOINON Ethernet kit	JOINON Ethernet + 4G + antenna kit

JOINON Installation Accessories				
Code	**GWJ8102**	**GWJ8103**	**GW46551**	**GWJ3004W**
Description	I-CON Floor Support - Single Sided	I-CON Floor Support - Double Sided	I-ON pole support kit	I-ON ground fixing plate

NEW

COMMERCIAL EV CHARGING

	Public DC Charging IP54		Public AC Charger - Type 2	
c/w GPRS, Ethernet, Wifi, and RS485 Communication			c/w GPRS, Ethernet,Wifi, and RS485 Communication 	
Code	**SET450-100Y**	**SET450-40B**	**SET-AC22**	**SET380-AC22**
AC Input				
Input Power	50kW (±10%)	20kW (±10%)	22kW (±10%)	22kW (±10%)
Voltage	400VAC	400VAC	400VAC	400VAC
AC Output				
Output Power	22kW	-	2 x 11kW	22kW
Cable Type	Type 2	-	2 x Type 2 Sockets	2 x Type 2 Sockets
DC Output				
Output Power	50kW	20kW	-	-
Voltage Range	50-450VDC	50-450VDC	-	-
Cable Type	CHAdeMO / CCS2	CHAdeMO / CCS2	-	-
General				
Enclosure Protection	IK10	IK10	IP65	IP54
Charging Cable	5 Meter	5 Meter	2 x Type 2 Sockets	2 x Type 2 Sockets
Dimensions (WxHxD)	660 x 1750 x 660mm	940 x 640 x 480mm	1040 x 175 x 175mm	345 x 450 x 166
Display	7" LCD Touch Screen	7" LCD Touch Screen	LED Status Indicator	7" LCD
User Authentication	RFID and OCPP	RFID and OCPP	RFID and OCPP	RFID and OCPP

NEW

PORTABLE FAST CHARGERS

	20kW Mobile DC Fast Charger	30kW Mobile DC Fast Charger
		
Code	**SET450-40B-M**	**SET450-60B-M**
AC Input		
Input Rating	20kW (+-10%) /40A	30kW (+-10%) / 65A
Voltage	400VAC (+-10%) 3Phase	400VAC (+-10%) 3Phase
Frequency	50/60Hz +-10%	50/60Hz +-10%
Input Connector	63A CEE	125A CEE
DC Output		
Output Power	20KW	30kW (+-10%)
Voltage Range	50 - 500VDC	300 - 1000VDC
Cable Type	CCS2	CCS2
Dimensions (WxHxD)	650 x 450 x 260mm	610 x 600 x 410mm

NEW

EV CHARGING

Viaris Combi

A wall-mounted charging system for use in private settings, such as: garages in single-family homes or communal garages, offices, hotels, etc. It is easy to install and features an attractive design that makes it perfect for home charging.

c/w Built-in Protection Equipment

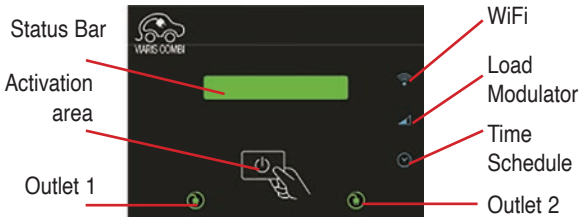
1) Overload and short-circuit protection (MCB) "C" curve
2) Protection against overvoltages (POP)
3) Protection against Transient overvoltage (SPD) Type 2 Class II
5) Residual Current Circuit Breaker (RCCB) type A

A charge modulator monitors the home's energy consumption and adjusts power demand to optimise the highest charge within the shortest possible period without exceeding the supply capacity. On the two-outlet VIARIS COMBI versions, the charge modulator distributes the available power between both outlets.

Features

- Easy installation, trouble free operation and attractive design for the home
- Tactile sensor for Charge Activation/Deactivation
- WiFi communication
- Load Modulator, manages & monitors the homes energy consumption.
- Built-in Protection equipment against Surge and Insulation failures

Mobile App



Code	Description	Power Supply	Output Power	Connection Type	Charge Mode
OB94DM3716BT2-08	Domestic/Private Car Charger c/w Load Monitor and built in protection items 1+2+3+5 plus Wi-Fi	230VAC 16A, 1Phase	3.7kW	Type 2 no Cable	Mode 3

Electric Car EV Charging Station

16/32A Single/Three Phase EV Home Charger, Supporting Wifi APP and with LCD Display for home or private use. Fix onto the wall or on the optional mountning pole.

BS-B10-BA

BS-B10-BC

BS-B10-BC POLE

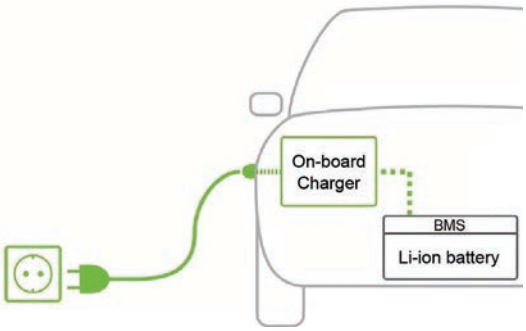
Application

EV Charging Stations - Electric Car Home EV Charger with Type 2 Socket outlet, RCD and Lightning Protection

Code	Description	Power Supply	Output Power	Connection Type	Charge Mode
BS-B10-BA-3.6KW-2	Home/Private EV Charging Station	230VAC, 16A, 1 Phase	3.6kW	Type 2 Socket Outlet	Mode 3
BS-B10-BA-7.2KW-2	Home/Private EV Charging Station	230VAC, 32A, 1 Phase	7.2kW	Type 2 Socket Outlet	Mode 3

Portable EV Chargers Mode 2

Makes it easy to charge anywhere. Just plug it into a wall socket. Conforms to IEC 62196-2 (Type 2) and the highest safety requirements. Complete with overcurrent and overvoltage protection lightning and short circuit protection.



Code	Description	Power Supply	Output Power	Connection Type - EV Type
BS-PCD040-2	Portable EV Charger, **c/w LCD display** c/w CEE form 32A plug (Wall side) + 5m cable	230VAC, 32A, 1 Phase	7.2kW	Type 2 5m Cable

Leading manufacturer, importer, and distributor of high-quality electrical and solar products tailored for both industrial and residential sectors. With an extensive network of distributors and franchises spanning across South Africa, we ensure superior service and widespread availability of our products, that meets the highest standards of performance and innovation.

LONGMEADOW
26 Nguni Drive
Longmeadow Business Estate West, Edenvale
Gauteng
010 202 3300
info@acdc.co.za

GERMISTON
Sharland Street
Driehoek
Germiston
Gauteng
011 418 9600
germiston@acdc.co.za

RIVERHORSE
6 Riverhorse Close
Riverhorse Valley Business Estate
Durban
031 492 4800
rvh@acdc.co.za

PINETOWN
Unit 10
Pine Industrial Estate
Pineside Road
New Germany
031 700 4215
kzn@acdc.co.za

CAPE TOWN
3(b) Richmond Southern Close, Lenie Adams Ave
Richmond Park
021 492 2000
cape@acdc.co.za

National Sales Centre: **010 202 3400** | Technical: **010 202 3500** | Solar Hotline: **010 045 8002**

www.acdc.co.za

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ACDC DYNAMICS

THINK ELECTRICAL