Modular
Circuit Protection

Safe and simple

for all applications

:hager

ADC9 Onekombo: Single module RCBO for all applications

Our single module RCBOs, ADC9 fits perfectly into any installation.

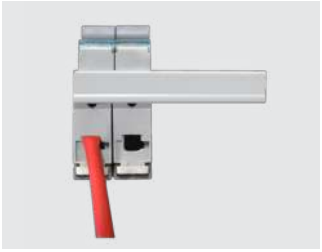
It is compact in size for ease of installation. It also comes with a neutral-in one metre long fly lead, and two connection terminals (cage and busbar slot), to make sure it is the most versatile device in the market.

Our ADC9 onekombo offers the best solution for your renovations and new builds.

New range

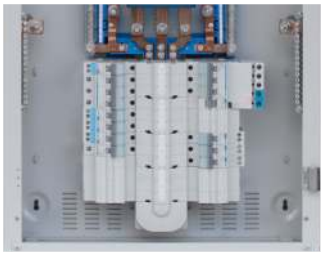
ADC9xxT

Keep good habits



Bi-connect terminals enable supply from either cables in the cage or busbars in the slot; allowing full connection capacity.

Equipped with a Neutral-in 1 metre long fly lead, the 1 module RCBO has one less cable to connect, reducing installation time.



Fits in our DIN enclosures and Invicta panelboards.

Easier, safer, faster

01
Extra space when wiring
Compact for more wiring space in the enclosure

02
Electrically Bi-directional

03
Switched Neutral

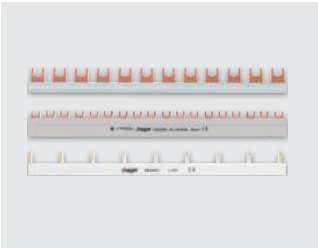
04
Insulation resistance test is fast to perform

05
Built in fault trip indicator

onekonekt system
easier, faster, safer

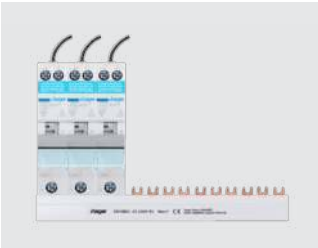
With bi-connect terminals, bi-stable DIN clip, and neutral flying lead, our ADC9 fits perfectly into the onekonekt system. Its reduced size makes it the perfect replacement for an MCB.

All Hager Modular Protection Devices can be connected with either a single phase or a three phase busbar.



Single phase or 3 phase 80A busbar simplifies the board connection and drastically decreases the number of cables.

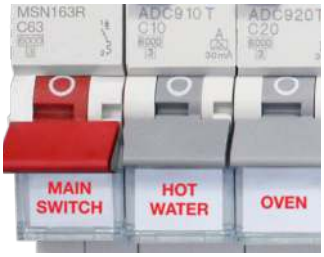
Bi-connect terminals enable supply from either cables in the cage or busbars in the slot; allowing full connection capacity.



Busbar is held in position prior to tightening terminals with our unique clip system, leaving one hand free.

Our RCCBs, 2 module and 4 module RCBOs, have a fully insulated neutral busbar slot so there is no need to cut the forks off the bar.

Unused forks can remain in-situ for future use. Busbar and endcaps ensure IP2x insulation - no direct contact with live parts, even with an open board.



Identification of circuits reflects your professional touch. The label holders are a neat and durable protection for the labels.

The bi-stable DIN clip ensures easy removal of a single product on the fork busbar without disconnecting other devices or wiring.

Single module RCBO
Specific Applications

Our Onekombo range has 10mA (Type I) and D curve products for a wider range of applications.

Switched Neutral Applications

Accommodate the requirement for switched neutral applications with a smaller footprint. Our extended range offers you full compatibility with our Onekonekt system. Examples include:

- Construction sites (temporary boards)
- Transportable structures (demountable, caravans, motorhomes etc)
- Patient areas
- Shows and carnivals
- EVCS
- Solar (PV) installations

10mA Applications (Type I)*

Suitable for medical applications, socket outlets in homecare scenarios and patient care environments are required to be protected by Type I RCDs. Examples include:

- Homecare applications (e.g. protecting the socket for home dialysis machines)
- Socket outlets of patient areas (e.g. medical centres, pathologies, optometries etc.)

D Curve Applications

Designed for loads with high inrush currents. The new D curve overcurrent protection is ideal for ensuring continuity of service while offering RCD protection. Examples include:

- Heavy machinery
- Large pumps and motors
- Some EVCS

Manufacturer's instructions of relevant equipment should be consulted prior to installation. *Use in body protected areas and cardiac protected areas is to be in accordance with the relevant Standards (AS/NZS 3003, AS/NZS 2500, AS/NZS 3000).

Wiring rules: RCD Selection

What you need to know

Based on the waveform of the earth leakage currents they are sensitive to, the wiring rules AS/NZS 3000 references various types of RCDs.

General purpose use
Type AC

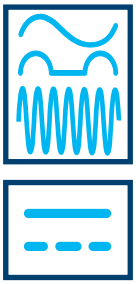
RCD can detect and respond to AC sinusoidal waves only.

Equipment incorporating electronic components
Type A

RCD can detect and respond as for type AC, PLUS pulsating DC components.

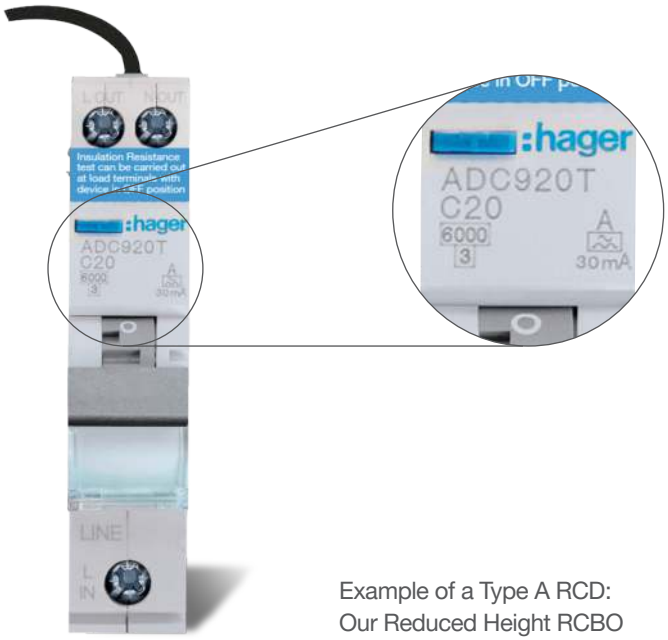
Equipment with frequency inverters
Type F

RCD can detect and respond as for Type A, PLUS mixed frequency residual current.



Variable speed drives, induction motors
Type B

RCD can detect and respond for Type F, PLUS smooth DC residual current.



Example of a Type A RCD:
Our Reduced Height RCBO

Due to the style of circuits, the nature of loads connected to these circuits and their frequent use of electronic equipment and switched mode power supplies, Hager believe that the majority of electrical circuits in residential applications will require a Type A RCD solution, at least.

RCD	Examples of type of equipment / load
Type AC	Resistive, Capacitive, Inductive loads generally without any electronic components, typically: - Oven/Hob with resistive heating elements (no electronic clock/timer etc.) - Class II ⧈ consumers: Hair dryer, etc. - Lights: Incandescent, Tungsten & halogen lighting
Type A	Leads with electronic components, typically: - Class I ⏚ appliances: IT and Multimedia equipment, washing machines - Single phase Solar inverter where any smooth DC fault current is less than 6mA - Electric vehicle (EV) charging where any smooth DC fault current is less than 6mA Type I is a special Type A, 10mA, with a tripping time less than 40ms: - Patient areas: medical equipment of Class I ⏚ permanently wired or plugged in socket-outlets **Type A is also suitable for Type AC applications.** **Hager offers a comprehensive range of Type A products which includes single module RCBO (ADC9...), 4P RCBO and RCCBs.**
Type F	Frequency controlled equipment / appliances including Single phase inverters, typically: - Some air conditioning systems featuring power inverter technology - Some heat pump hot water systems where any smooth DC fault current is less than 10mA - Some motor driven machinery **Type F is also suitable for Type AC and Type A applications.** **Hager offers 2P and 4P Type F RCCBs.**
Type B	Electronic equipment including multi-phase inverters, typically: - Variable speed drive - UPS - Electric Vehicle charging where any smooth DC fault current is greater than 6mA - Solar inverter where any smooth DC fault current is greater than 6mA - Industrial machines - Cranes and lifts **Type B is also suitable for Type AC, Type A and Type F applications.** **Hager offers 2P and 4P Type B RCCBs.**

Note: Refer to the Wiring Rules and manufacturer's instructions for more information.

RCDs
Applications

Address any specification with Hager's comprehensive range of RCDs.

Photovoltaic installations

Photovoltaic cells are becoming increasingly popular with end users. During connection of the solar inverter to the switchboard, the cable layout will dictate the protection requirement. When installed behind the building surface, Type A RCDs with switched neutral are suitable to substitute the mechanical protection of the cable.

Home care and medical applications

Due to the critical nature of medical installations, RCDs with high sensitivity and fast trip times are required (Type I). Home care medical installations now must also comply with the same installation rules as for patient areas (AS/NZS 3003).

Guidance on the safe use of electricity in patient care is given in AS/NZS 2500.

Note: Refer to the Wiring Rules and manufacturer's instructions for more information.

Home Appliances

Type A RCDs are adequate for protecting circuits with whitegoods such as air conditioners. However, with newer inverter driven motors and compressors in appliances, there is a possibility of having mixed frequency leakage currents. In this scenario, a Type F RCD maybe used to increase the safety of the installation.

Electrical vehicle charging stations

With increased adoption of electric vehicles, choosing the right protection for charging systems is required. Each connecting point should be protected by its own switched neutral RCD of at least Type A (30mA).

Where the EVCS is equipped with a socket outlet or vehicle connector, protective measures against DC fault current should be taken. In some cases, a Type B RCD maybe required.

Note: Refer to the Wiring Rules and manufacturer's instructions for more information.

RCBOs
mounted on DIN rail

Single phase

Cat ref.	**ACC9xxT**	**ADC9xxT**	**ADD9xxT**	**ADA9xxT**	**AEA9xxT**
Earth fault wave form	Type A	Type A	Type A	Type A	Type A
Overcurrent trip characteristic	C curve	C curve	D curve	C curve	C curve
Breaking capacity	6kA	6kA	6kA	6kA	6kA
Current rating	6A to 32A	6A to 32A	6A to 25A	6A to 40A	6A to 40A
Residual current (I△n)	10mA Type I	30mA	30mA	30mA	100mA
Poles	1P+N	1P+N	1P+N	1P+N	1P+N
I.R. test facility*	Yes	Yes	Yes	Yes	Yes
Fork busbar	1P/3P	1P/3P	1P/3P	1P/3P	1P/3P

Three phase

Cat ref.	**ADA5xxT**	**ADM4xxT**	**AEM4xxT**	**ADX4xxT**	**AEX4xxT**
Earth fault wave form	Type A	Type A	Type A	Type A	Type A
Overcurrent trip characteristic	C curve	C curve	C curve	C curve	C curve
Breaking capacity	10kA	6kA	6kA	10kA	10kA
Current rating	6A to 32A	6A to 40A	6A to 40A	6A to 40A	6A to 40A
Residual current (I△n)	30mA	30mA	100mA	30mA	100mA
Poles	1P+N	4P	4P	4P	4P
I.R. test facility*	Yes	Yes	Yes	Yes	Yes
Fork busbar	2P	3P	3P	3P	3P

*Insulation Resistance test can be carried out without disconnecting outgoing conductors.

RCCBs
mounted on DIN rail

Single phase

Cat ref.	**CDA2xxT**	**CDA5xxT**	**CEA5xxT**	**CDF5xxT**	**CDB5xxT**
Earth fault wave form	Type A	Type A	Type A	Type F	Type B
Current rating	25A to 63A	80A to 100A	25A to 100A	40A to 63A	25A to 63A
Residual current (I△n)	30mA	30mA	100mA	30mA	30mA
Short circuit withstand (Inc)	6kA	10kA	10kA	10kA	10kA
Poles	2P	2P	2P	2P	2P
I.R. test facility*	Yes	Yes	Yes	Yes	No
Fork busbar	1P	1P	1P	1P	No

Three phase

Cat ref.	**CDA4xxT**	**CDA6xxT**	**CEA6xxT**	**CDF6xxT**	**CDB6xxT**
Earth fault wave form	Type A	Type A	Type A	Type F	Type B
Current rating	25A to 63A	80A to 100A	25A to 100A	40A to 63A	25A to 63A
Residual current (I△n)	30mA	30mA	100mA	30mA	30mA
Short circuit withstand (Inc)	6kA	10kA	10kA	10kA	10kA
Poles	4P	4P	4P	4P	4P
I.R. test facility*	Yes	Yes	Yes	Yes	No
Fork busbar	3P	3P	3P	3P	No

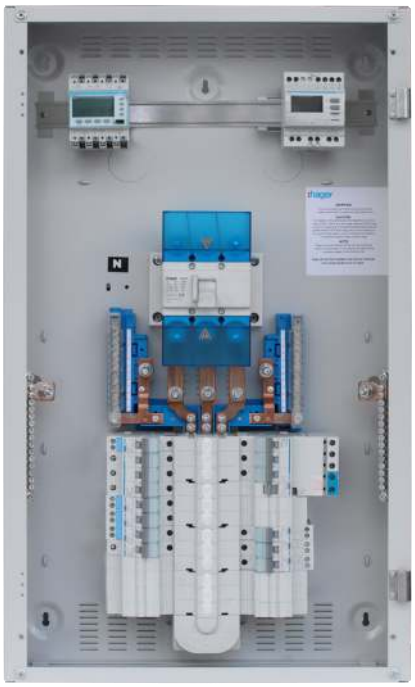
The use of RCCBs is not recognised as a safe means of protection and must always be used in conjunction with an overcurrent protection device such as a circuit breaker.

*Insulation Resistance test can be carried out without disconnecting outgoing conductors.

RCBOs
for Invicta panelboards

Single phase

Cat ref.	**ACC9xxT**	**ADC9xxT**	**ADD9xxT**
Earth fault wave form	Type A	Type A	Type A
Overcurrent trip characteristic	C curve	C curve	D curve
Breaking capacity	6kA	6kA	6kA
Current rating	6A to 32A	6A to 32A	6A to 25A
Residual current (I△n)	10mA Type I	30mA	30mA
Poles	1P+N	1P+N	1P+N
I.R. test facility*	Yes	Yes	Yes
Features	- invicta panelboards - reduced height		



Invicta Panelboard

Performa Panelboard

*Insulation Resistance test can be carried out without disconnecting outgoing conductors.

RCBOs, Add-on Block for Invicta and Performa panelboards

Single phase Cat ref.	**ADA1xxT**	**AD1xxB**	**ACA1xxT**	**AC1xxB**
Earth fault wave form	Type A	Type A	Type A	Type A
Overcurrent trip characteristic	C curve	C curve	C curve	C curve
Breaking capacity	6kA	10kA	6kA	10kA
Current rating	6A to 45A	6A to 32A	6A to 32A	6A to 32A
Residual current (I△n)	30mA	30mA	10mA General Purpose	10mA General Purpose
Poles	1P	1P	1P	1P
I.R. test facility*	No	No	No	No
Features	- performa panelboards - unswitched neutral and earth lead			

Three phase Cat ref.	**BD163T**	**BE163T**	**BF163T**
Earth fault wave form	Type A	Type A	Type A
Current rating	63A	63A	63A
Residual current (I△n)	30mA	100mA	300mA
Short circuit withstand (Inc)	6kA	6kA	6kA
Poles	3P	3P	3P
I.R. test facility*	No	No	No
Features	- invicta panelboards - performa panelboards - unswitched neutral		

*Insulation Resistance test can be carried out without disconnecting outgoing conductors.

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