



RCCB Types A & AC

Residual current circuit breakers
for single and three phase AC applications

THIS GUIDE MUST BE LEFT
WITH THE UNIT FOR
FUTURE REFERENCE



Current rating	mA trip	Part No 2P Type AC	Part No 2P Type A	Part No 4P Type AC
25A	30mA	25/30/2	-	25/30/4
40A		40/30/2	-	40/30/4
63A		63/30/2	63/30/2A	63/30/4
80A		80/30/2	80/30/2A	80/30/4
80A	100mA	80/100/2	-	80/100/4
80A	100mA selective	80/100/2/S	-	80/100/4/S
100A		100/100/2/S	-	100/100/4/S
100A	300mA	-	-	100/300/4

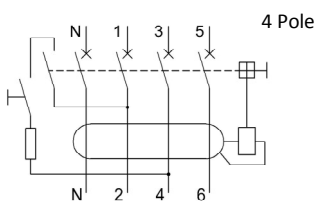
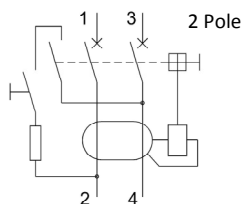
General Information

The Control Gear range of circuit protection devices are designed and tested for use with Control Gear branded distribution boards.

This device must be installed by a qualified electrician in accordance with the latest edition of the IET wiring regulations for electrical installations BS7671

Technical Data	
Reference standard	IEC /BS EN61008-1
Rated residual current ($I_{\Delta n}$)	30 or 100mA
Rated Voltage (U_n)	230-240V / 400-415V AC
No. of poles	2 / 4
Rated Current (I_n)	25-100A
Rated Frequency (f_n)	50/60Hz
Rated conditional short circuit current (I_{sc})	6000A
Rated conditional residual breaking current ($I_{\Delta c}$)	6000A
Rated impulse withstand (U_{imp})	4kV
Rated making & breaking capacity	630A
Types available	A or AC
Neutral pole	Switched
Terminals line/load	1-35mm ²
Terminal tightening torque	2.5Nm
Width dimension	2x 18mm module 4x 18mm module
Operating temperature	-5 to +40°C

Connection diagrams



Protection against overcurrent

RCCBs do not provide protection against overload or short circuits. They must be used in conjunction with MCB devices to provide circuit protection against overloads and short circuit faults.

Power supply polarity

Type A & AC RCCBs are not polarity sensitive. The devices can be mains fed from either the upper or lower terminal sets.

On 2 pole devices, Line and Neutral connections can be transposed to either to the left or right (e.g. Line IN/OUT can be made on either pole 1-2 or 3-4)

On 4 pole devices, Line and Neutral connections must be strictly terminated according to the terminal markings on the device.

4P devices are suitable for use in circuits with and without a neutral supply connection (3 and 4 wire systems), due to the integral test circuit being connected between two of the phases.

Earth system

RCCBs are suitable for use in TN-S, TN-C-S, & TT network systems.

Where used within a split load consumer unit installed in domestic premises forming part of a TT network, the double pole main switch of the consumer unit should incorporate an S type time delayed RCCB, e.g. 100mA S type RCCB.

Types of RCCB

RCCBs are available in various forms, and react differently in the presence of DC components.

Appliance manufacturers instructions must be considered when selecting the appropriate RCCB for a particular item of equipment

Type	Protection level
AC 	Provides protection against AC earth fault currents, whether suddenly applied or slowly increasing
AC S 	Provides protection against AC earth fault currents, whether suddenly applied or slowly increasing. Used in applications where RCCBs are connected in series with each other, in order to achieve discrimination between upstream & downstream devices.
A 	Provides protection against AC earth fault currents and pulsating DC currents, whether suddenly applied or slowly increasing

RCCB (Type A or AC) 30 & 100mA		Test Result
$0.5 \times I_{\Delta n}$		RCCB will not trip
$1.0 \times I_{\Delta n}$	0 & 180°	RCCB must trip within 300ms
$5.0 \times I_{\Delta n}$	0 & 180°	RCCB must trip within 40ms

Type S (Selective) RCCB 100mA		Test Result
$0.5 \times I_{\Delta n}$		RCCB will not trip
$1.0 \times I_{\Delta n}$	0 & 180°	RCCB must trip within 130-500ms
$5.0 \times I_{\Delta n}$	0 & 180°	RCCB must trip within 50-150ms

Testing of the installation

After completion of the installation, it is essential that it is tested in accordance with the latest edition of the IET wiring regulations for electrical installations (BS7671)

Maintenance

The RCCB should be tested on a regular basis (at least every 6 months) by pressing the TEST button (T) in accordance with the latest edition of the IET wiring regulations for electrical installations (BS7671)

What to do if an RCCB trips

Reset the RCCB to the ON position. If device trips again, switch off all MCBs protected by the RCCB. Switch on RCCB (which should now stay ON without further tripping) Switch on one MCB at a time to see which circuit trips the RCCB. Once the faulty circuit has been identified, disconnect all appliances connected to this circuit.

Reconnect one appliance at a time to see which one trips the RCCB

In all cases, once the faulty appliance has been identified, do not continue to use the item until it has been checked.