Exploring the 17th Edition

An insight for selecting ABB consumer units

June 2008

ABB HOUSEMASTER CONSUMER UNITS

- **Flexibility to enable compliance with the new 17th Edition Wiring Regulations**
- **Available from a stockist near you**

Exploring the 17th edition wiring regulations

From 1st July 2008, a date we all have in our diaries, the new 17th edition wiring regulations become effective.

So how will these new regulations impact on our daily tasks when it comes to installing consumer units?

Fundamentally, circuits that have hitherto been protected by mcb's and or fuses will now have to comply with the new regulations ensuring both people and property are adequately protected in the event of an earth fault developing.

In this brief guide we explore some of the more commonly encountered examples of where the new regulations will have to be applied.

Understanding the requirements of the 17th edition Wiring Regulations.

The main changes:

- Changes to Chapter 41 – Protection against electric shock
- Chapter 52 – Selection & Erection of Wiring Systems
- Generator Sets Section 551.2
- New section 'Lighting & Luminaires' section 559
- Part 7 – special locations – includes

    - Harmonisation of of bathrooms – section 701
    - Swimming pools (702)
    - Rooms & Cabins containing Sauna Heater (703)
    - Construction Sites (704)
    - Agricultural & horticultural Premises (705)
    - Conductive Locations with restricted movements (706)
    - (707 not used)
    - Caravan & camping parks (708)
    - Marinas & similar locations (709) NEW
    - Exhibitions, shows & Stands (711) NEW
    - Solar photovoltaic power supply systems (712) NEW
    - Mobile or transportable Units (717) NEW
    - Caravans & Motor Caravans (721) (used to be part of 708)
    - Temporary Electrical installtions for structures, amusement devices & booths at fairgrounds, amusement parks & circuses (740) NEW

- New regulations for EMC requirements
- 7 New Appendices, total now 14

This brochure will concentrate on those regulations which affect domestic installations.

Part 1: Chapter 13 Fundamental Principles.

- There are two types of fault defined

    - ***Basic protection*** – formerly known as Direct contact i.e. protection against touching live parts

    - ***Fault protection*** – formerly known as Indirect contact i.e. protection against shock from conductive parts that have become live due to insulation breakdown or damage

Part 2: Definitions for the classification of persons

- The 17th edition identifies three categories of people
- A ***skilled person*** who has technical knowledge to enable them to avoid electrical dangers
- An ***instructed person*** who has been adequately advised or supervised to avoid electrical dangers – e.g. facilities manager
- An ***ordinary person*** – typically a member of the general public

Part 4: Chapter 41 RCD protection for socket outlets

- Regulation 411.3.3:

Socket outlets not exceeding 20A and intended for general use by *ordinary people* must be protected with 30mA RCDs.

Exceptions are permitted where the use of socket outlets is under the supervision of ***skilled*** or ***instructed*** people or if they are **specifically labelled or identified** for a particular item of equipment which is susceptible to leakage currents and may cause unwanted tripping of RCDs such as fridges, freezers or IT equipment

- **External sockets not exceeding 32A must also have 30mA RCD protection**

Part 5: Chapter 52: Cables in walls less than 50mm

- Section 522.6

RCD protection (30mA) or less now required for cables concealed in partition/ wall at a depth of less than 50 mm

Cables must be installed in the safe zones created by the position of the accessory as previously permitted under the 16th edition regulations

Exceptions are where the installation is under the supervision of ***skilled*** or ***instructed*** persons

OR

Traditional protection has been provided (earthed metallic conduit or equivalent protection from nails, screws, etc).

- This same regulation applies to cables in metal framed walls (irrespective of depth of installation) if not otherwise protected by earthed metallic covering etc

Part 7 – Special Locations

- Part 7 addresses the particular risks that occur in various special locations.
- Many of the sections have been modified to fall in line with European Harmonised Documents

Section 701 Rooms containing a Bath or Shower

- The changes from the 16th Edition are substantial
- Introduced due to the increasing use of en-suite facilities within domestic properties
- Zone 3 as defined in the 16th Edition is now removed
- Other Zone extents have been modified
- All circuits supplying equipment in bathrooms to be protected by 30mA RCD
- All cables buried in walls surrounding bathrooms – ***regardless of the points they are serving*** – must be protected by 30mA RCD
- Supplementary Bonding is no longer required providing the main bonding of services within the property is in place and the metallic pipework can be proved by testing to be continuous
- SELV sockets are permitted outside Zone 1
- 230V Socket outlets are now permitted provided they are more than 3 metres from Zone 1 (Large Bathrooms!!)

Part 3: Section 314: Division of Installation

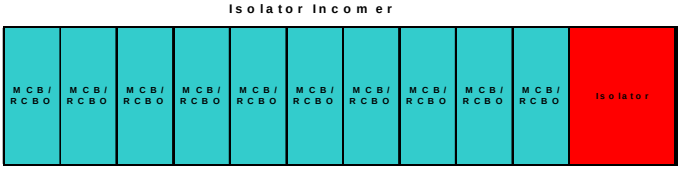
Consideration needs to be given to how circuits are divided in an installation. In a domestic situation the main concerns should be:

1. To avoid hazards and minimise inconvenience in the event of a fault
2. Take into account the danger caused by failure of a single circuit such as a lighting circuit
3. Reduce the possibility of unwanted tripping of an RCD

For this reason ABB have developed a range of consumer units to enable the electrical contractor to minimise costs yet comply fully with this section.

How do we choose the right solution?

Isolator Controlled



■ Advantages:

Allows the use of both mcb's and/or rcbo's on all circuits
Flexibility, any circuit requirement can be met
Lowest risk of unwanted tripping

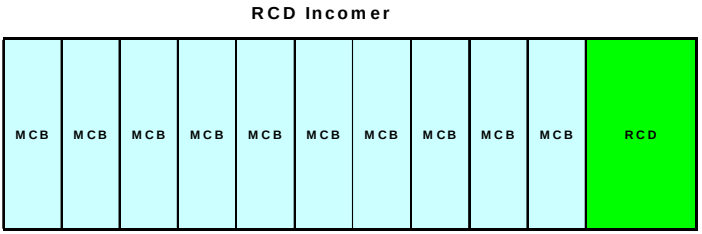
■ Disadvantages:

Possibly none with the exception of cost

■ Housemaster Part Codes (Moulded plastic enclosure):

HMMS4C	4 ways off the isolator
HMMS6C	6 ways off the isolator
HMMS10C	10 ways off the isolator
HMMS14C	14 ways off the isolator
HMMS18C	18 ways off the isolator

RCD Controlled



- Advantages:

  Could be used as an additional distribution board fed from the main consumer unit i.e. for garages and extensions

- Disadvantages:

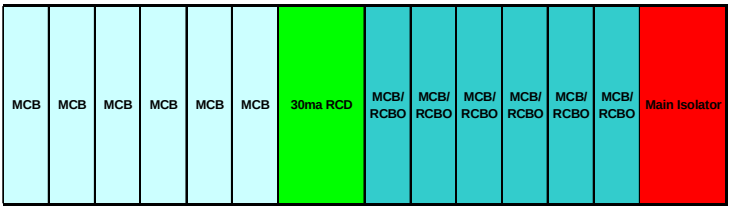
  An earth fault will isolate all the circuits in this type of consumer unit. This means that this type of board will not be suitable as the only consumer unit in an installations

- Housemaster Part Codes (Moulded plastic enclosure):

HMRC4C	4 ways off the RCD
HMRC6C	6 ways off the RCD
HMRC10C	10 ways off the RCD
HMRC14C	14 ways off the RCD
HMRS18C	18 ways off the RCD

Split – Load

Split - Load



■Advantages:

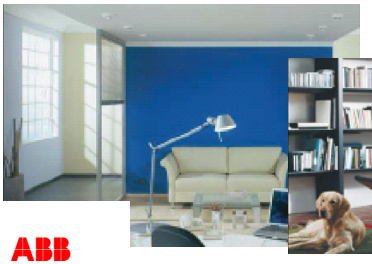
Allows a good compromise both electrically and commercially
Both mcb's and rcbo's can be used on the isolator side giving greater flexibility
There is a reduction in the possibility of unwanted tripping
Non-protected ways are available off the isolator for dedicated mcb/rcbo's e.g. circuits supplying smoke detectors where BS5839-6 : 2004 applies

■ Disadvantages:

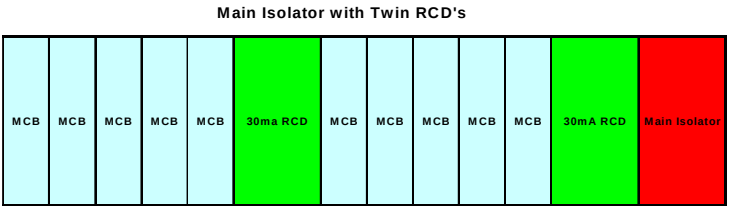
All the circuits on the rcd side could be lost in the event of an earth fault

■ Housemaster Part Codes (Moulded plastic enclosure):

HMSL4+4C	4+4	4 ways available on both the isolator and rcd
HMSL6+6C	6+6	6 ways available on both the isolator and rcd
HMSL8+8C	8+8	8 ways available on both the isolator and rcd



Isolator plus Twin RCD



- Advantages:

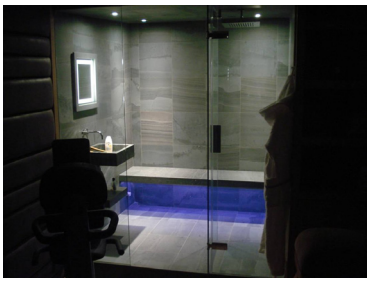
  Two separate rcd protected sections.
  Allows segregation of circuits so that there is a reduction in unwanted tripping

- Disadvantages:

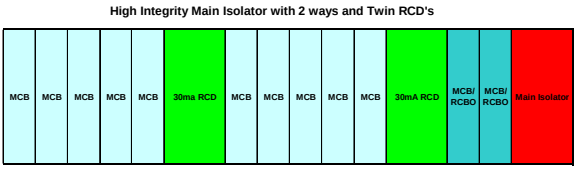
  There is still a possibility that either rcd could be affected by an earth fault thus isolating all circuits controlled by that rcd

- Housemaster Part Codes (Moulded plastic enclosure):

HMSL552C	5+5	5 mcb ways available off each rcd
HMSL772C	7+7	7 mcb ways available off each rcd



High Integrity Isolator plus Twin RCD



- Advantages:

  Non-protected ways are available off the isolator for dedicated mcb/rcbo's e.g. circuits supplying smoke detectors where BS5839-6 : 2004 applies
  Two separate rcd protected sections
  Allows segregation of circuits so that there is a reduction in unwanted tripping

- Disadvantages:

  There is still a possibility that either rcd could be affected by an earth fault thus isolating all circuits controlled by that rcd, leaving only the remaining circuits operational

- Part Codes (Moulded plastic enclosure):

HMSL552	5+5	Can be configured to include 2 High Integrity ways
HMSL772	7+7	Can be configured to include 2 High Integrity ways

IMPORTANT

- Installations complying with previous editions of the IEE wiring regulations are NOT unsafe for continued use and do not need to be upgraded

- Periodic testing should continue to comply with the wiring regulation requirements in force when the installation was completed

This guide to Consumer Units has been compiled in order to assist in understanding the new UK Wiring Regulations. However it is not intended to be a substitute for BS7671:2008 which should always be consulted in order to ensure that all installations are constructed in accordance with these regulations.

For full details on the range of ABB Consumer Units and associated products as well as our complete offering for the Electrical Contractor, please contact us on 02476 368500 or email marketing.info@gb.abb.com and ask for publication No 1TXD000001P0207

ABB Ltd
Tower Court
Foleshill Enterprise Park
Courtaulds Way
Coventry
CV6 5NX

Tel 02476 368500
Fax 02476 364499
Email info@gb.abb.com
Web: www.abb.com/lowvoltage