The Sentry range of Consumer Units from MK Electric has been stylishly designed to blend in with its environment. The curved lines and slim-line appearance mean it won’t look out of place when installed in hallways, lounges or kitchens of new properties. The range expanded includes a 21-module unit for larger installations and also a 4-module unit to cater for small one-off installations and extensions to existing ones.

**Attractive design**
Curved lines, low profile appearance and magnolia colour let the unit blend with its environment. Available in 4 to 21 module sizes

**Flush mounting versions**
Flush mounting available for even neater installations

**Protective lid**
Opaque and downward opening lid conceals protective devices and unsightly labelling

**Floating busbar system**
Gives maximum installation flexibility

**Broad selection of pre-assembled split load units available**
Suits a variety of applications and saves installation time

**Stacking options**
For larger installations dual rail 24, 32 and 42 module units possible in both insulated and metal
STEP 1 Determine the type of consumer unit configuration required. e.g Split Load, Dual Tariff, Standard or combination of split load / dual tariff. For each Switch Disconnector or RCD to be used allow 2 modular ways.

STEP 2 Determine the number of outgoing circuits required. e.g Cooker, Lighting, Ring Main etc. For each circuit to be protected by an MCB or RCBO allow 1 modular way.

STEP 3 Determine what control products are required. e.g Bell Transformer, Time Delay Switch, contactors, timeswitches etc.

STEP 4 Determine the number of ‘spare’ modular ways required for future upgrades. For each ‘spare’ modular way select 1 Sentry blank module – 5544s or K5545s (cover mounted blanks supplied with consumer units. See page 227).

STEP 5 Now add together the total number of modular ways required.

STEP 6 Select from our range of Insulated, Metal, Flush or stacked consumer units (using standard consumer units plus stacking kits). Choose the type and size most appropriate for your requirements.
BACKED OUT AND CAPTIVE COMBI-HEAD SCREWS
Allows speedy installation

OFFSET INCOMER
Provides additional wiring space making mains input connections easier

AMPLE WIRING SPACE

COLOUR CODED EARTH AND NEUTRAL TERMINAL LOCATED AT TOP OF UNIT FOR EASE OF WIRING

AMPLE 360° KNOCK-OUTS FOR CABLE ROUTING
Open cable entry at rear plus optional rear knock-outs

EASILY REMOVABLE DIN-RAIL
Improves first fix

RAISED DIN-RAIL
For improved cable routing

FLOATING BUSBAR SYSTEM
For maximum installation flexibility including acceptance of control modules

FIXING HOLES
Allow tripod fixing to cope with uneven surfaces. Hole locations allow access for cordless drills and power drivers
A full range of pre-assembled units are available, however if they do not fit your requirements, Sentry Consumer units can be configured to numerous split-load or multi-incomer configurations, by cutting the floating busbar and removing the “U” links between the terminal bars.

The maximum number of switched or RCD ways available to a Consumer unit is dependent on the neutral terminal bar arrangement. e.g. K5621s can become a split-load board by removing one “U” link between neutral bars and having up to 14 ways switched and up to 3 ways protected by the RCD, or up to 17 ways protected and up to 3 ways switched.

*SPLIT-LOAD CONFIGURATION*

<table>
<thead>
<tr>
<th>TERMINAL BAR CONFIGURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>List no</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Insulated</td>
</tr>
<tr>
<td>K5604s</td>
</tr>
<tr>
<td>K5608s</td>
</tr>
<tr>
<td>K5612s</td>
</tr>
<tr>
<td>K5616s</td>
</tr>
<tr>
<td>K5621s</td>
</tr>
<tr>
<td>Metal</td>
</tr>
<tr>
<td>K5504s</td>
</tr>
<tr>
<td>K5508s, K6508s</td>
</tr>
<tr>
<td>K5512s, K6512s</td>
</tr>
<tr>
<td>K5516s, K6516s</td>
</tr>
<tr>
<td>K5521s, K6521s</td>
</tr>
</tbody>
</table>

|†* available early 2004|

* Combined number of circuits must not exceed number in total column. ** Dependant on which U link is removed. *** Separate blocks connected by removable U links.
TO BUILD A SPLIT-LOAD CONSUMER UNIT
e.g. 4+4 split-load

Requires:
- K5612s: Insulated Consumer unit, 12 mod
- K5563s: Split-load cable kit
- 5500s: Switch Disconnector
- 5780s: RCD, 80A 30mA

Select up to 8 MCBs.

TO BUILD A MULTI-INCOMER CONSUMER UNIT

Requires:
- K5512s: Metal Consumer Unit, 12 mod
- K5565s: Multi-Incomer cable-kit
- 2 x 5500s: Switch Disconnector, 100A

CABLE KITS DIAGRAM

Split-load configuration

Multi-Incomer configuration

Note: Only suitable as standalone devices, in Sentry four module enclosures and Commando Combi
All units are magnolia coloured.

All units feature an enclosure box of welded construction finished in a tough coating of polyester epoxy paint containing ample knockouts in top, bottom, side and rear surfaces.

The units have an impact resistant, flame retardant, thermoplastic cover and lid.

Dual rail units are available for the 12, 16 and 21 module units to enable single tariff and split load (up to 80A) using Stacking Kits K6061s, K6062s and K6063s respectively in between the units.

Degree of Protection to BS EN 60529 to IP2X C

Precautions must be taken to maintain the IP rating, e.g. use of cable glands and knockouts.


Assembly using a stacking kit
Consumer Units

**INSULATED SURFACE**

**K5604s**
- Accepts 4 one module products (1 integral neutral bar)

**K5608s**
- Accepts 8 one module products (1 integral neutral bar)

**K5612s**
- Accepts 12 one module products (1 integral neutral bar)

**K5616s**
- Accepts 16 one module products (2 integral neutral bars fitted with link)

**K5621s**
- Accepts 21 one module products (3 integral neutral bars fitted with links)

**K6508s**
- Accepts 8 one module products (1 integral neutral bar)

**K6512s**
- Accepts 12 one module products (2 integral neutral bars fitted with link)

**K6516s**
- Accepts 16 one module products (2 integral neutral bars fitted with link)

**K6521s**
- Accepts 21 one module products (3 integral neutral bars fitted with links)

All units are magnolia coloured.

DIMENSIONS:

- **K5604s**: Width 140 x Height 230 x Depth 110mm
- **K5608s**: Width 234 x Height 230 x Depth 110mm
- **K5612s**: Width 306 x Height 230 x Depth 110mm
- **K5616s**: Width 378 x Height 230 x Depth 110mm
- **K5621s**: Width 468 x Height 230 x Depth 110mm

Main incomer maximum rating: K5604s and K5604s: 63A

All other consumer units: 100A

---

**FACTORY BUILT SERVICE**

MK can save you time and money by pre-assembling Consumer units with your required Sentry components.

Cover mounted blanks are supplied with all consumer units (2 off x 1 for 4, 8 and 12 module and 2 off x 2 for 16 and 21 module).

---

**FLUSH**

**K6508s**
- Accepts 8 one module products (1 integral neutral bar)

**K6512s**
- Accepts 12 one module products (2 integral neutral bars fitted with link)

**K6516s**
- Accepts 16 one module products (2 integral neutral bars fitted with link)

**K6521s**
- Accepts 21 one module products (3 integral neutral bars fitted with links)

DIMENSIONS:

- **K6508s**: Width 234 x Height 230 x Depth 106.5mm
- **K6512s**: Width 306 x Height 230 x Depth 106.5mm
- **K6516s**: Width 378 x Height 230 x Depth 106.5mm
- **K6521s**: Width 468 x Height 230 x Depth 106.5mm

Flush frame adds 38mm per side to the unit.

WALL CAVITY DIMENSIONS:

- **K6508s**: Width 245 x Height 235 x Depth (min) 68mm
- **K6512s**: Width 315 x Height 235 x Depth 68mm
- **K6516s**: Width 390 x Height 235 x Depth 68mm
- **K6521s**: Width 480 x Height 235 x Depth 68mm

Depth of flush consumer unit visible on wall: 50mm

Degree of protection to BS EN 60529 to IP2XC.

Precautions must be taken to maintain the IP rating, e.g., use of cable glands and knockouts.

## Consumer Units

### WITH SPLIT-LOAD ARRANGEMENTS
#### METAL SURFACE

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5582s</td>
<td>100A SWITCH DISCONNECTOR AND 63A 30mA RCD. ACCEPTS A FURTHER 8 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/6 AND 6/1</td>
<td>Width: 306 x 230 x 110mm</td>
</tr>
<tr>
<td>K5566s</td>
<td>100A SWITCH DISCONNECTOR AND 63A 30mA RCD. ACCEPTS A FURTHER 12 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/8 AND 8/1</td>
<td>Width: 378 x 230 x 110mm</td>
</tr>
</tbody>
</table>

All units are magnolia coloured.

### WITH TIME DELAY SPLIT-LOAD ARRANGEMENTS
#### METAL SURFACE

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5586s</td>
<td>100A SWITCH DISCONNECTOR AND 80A 30mA RCD. ACCEPTS A FURTHER 12 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/6 AND 6/1</td>
<td>Width: 306 x 230 x 110mm</td>
</tr>
<tr>
<td>K5581s</td>
<td>100A SWITCH DISCONNECTOR AND 80A 30mA RCD. ACCEPTS A FURTHER 17 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/4 AND 14/1</td>
<td>Width: 378 x 230 x 110mm</td>
</tr>
</tbody>
</table>

#### Insulated SURFACE

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5582s</td>
<td>100A SWITCH DISCONNECTOR AND 63A 30mA RCD. ACCEPTS A FURTHER 8 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/6 AND 6/1</td>
<td>Width: 306 x 230 x 110mm</td>
</tr>
<tr>
<td>K5566s</td>
<td>100A SWITCH DISCONNECTOR AND 63A 30mA RCD. ACCEPTS A FURTHER 12 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/8 AND 8/1</td>
<td>Width: 378 x 230 x 110mm</td>
</tr>
<tr>
<td>K5581s</td>
<td>100A SWITCH DISCONNECTOR AND 80A 30mA RCD. ACCEPTS A FURTHER 17 ONE MODULE PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED AND UNPROTECTED CIRCUITS BETWEEN 1/4 AND 14/1</td>
<td>Width: 378 x 230 x 110mm</td>
</tr>
</tbody>
</table>

### Additional Information

- All units are magnolia coloured.
- All units are pre-fitted with a switch disconnector and RCD together with all necessary split-load cabling.
- The flexibility of design allows the RCD to be positioned to suit the required configuration, subject to the rating of either the switch or RCD not being exceeded.

#### Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Width x Height x Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5582s</td>
<td>306 x 230 x 110mm</td>
</tr>
<tr>
<td>K5566s</td>
<td>378 x 230 x 110mm</td>
</tr>
<tr>
<td>K5586s</td>
<td>306 x 230 x 110mm</td>
</tr>
<tr>
<td>K5581s</td>
<td>378 x 230 x 110mm</td>
</tr>
</tbody>
</table>

#### Precautions

- Degree of Protection: BS EN 60529 to IP2X C
- Precautions must be taken to maintain the IP rating e.g. use of cable glands and knockouts.

#### Cover mounted blanks are supplied with:

(2 off x 1 for 4, 8 and 12 module and 2 off x 2 for 16 and 21 module)
WITH TIME DELAY
SPLIT-LOAD
ARRANGEMENTS
INSULATED
SURFACE

K5686s
100A SWITCH DISCONNECTOR AND
63A 30mA RCD. ACCEPTS A FURTHER 12
ONE MODULE PRODUCTS IN ANY
CONFIGURATION OF RCD PROTECTED &
UNPROTECTED CIRCUITS BETWEEN 1/8 AND 8/1

K5632s
100A 100mA TIME DELAY RCD.
ACCEPTS A FURTHER 8 ONE MODULE
PRODUCTS IN ANY CONFIGURATION OF RCD
PROTECTED & UNPROTECTED CIRCUITS
BETWEEN 1/6 AND 6/1

K5636s
100A 100mA TIME DELAY RCD.
ACCEPTS A FURTHER 12 ONE MODULE
PRODUCTS IN ANY CONFIGURATION OF RCD
PROTECTED & UNPROTECTED CIRCUITS BETWEEN 1/8 AND 8/1

K5626s
100A 100mA TIME DELAYED RCD.
ACCEPTS A FURTHER 17 ONE MODULE
PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED &
UNPROTECTED CIRCUITS BETWEEN 1/14 AND 14/1

K5636s
100A 100mA TIME DELAY RCD.
ACCEPTS A FURTHER 12 ONE MODULE
PRODUCTS IN ANY CONFIGURATION OF RCD
PROTECTED & UNPROTECTED CIRCUITS BETWEEN 1/8 AND 8/1

K5631s
100A 100mA TIME DELAY RCD.
ACCEPTS A FURTHER 17 ONE MODULE
PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED &
UNPROTECTED CIRCUITS BETWEEN 1/14 AND 14/1

K5556s
METAL CONSUMER UNIT
ONE 63A SWITCH DISCONNECTOR
TWO 100A SWITCH DISCONNECTORS
AND 3 INTEGRAL NEUTRAL BARS
ACCEPTS A FURTHER 10
ONE MODULE PRODUCTS

K5681s
100A 100mA TIME DELAY RCD.
ACCEPTS A FURTHER 17 ONE MODULE
PRODUCTS IN ANY CONFIGURATION OF RCD PROTECTED &
UNPROTECTED CIRCUITS BETWEEN 1/14 AND 14/1

DIMENSIONS:
WIDTH HEIGHT DEPTH
K5686s: 351 x 230 x 110mm
K5632s: 351 x 230 x 110mm
K5636s: 378 x 230 x 110mm
K5626s: 468 x 230 x 110mm
K5631s: 468 x 230 x 110mm
Degree of protection to BS 60529: 1992
IP2X
Precautions must be taken to maintain the
IP rating, e.g. correct use of cable glands and
knockouts

K5681s
351 x 230 x 110mm
K5632s
351 x 230 x 110mm
K5636s
378 x 230 x 110mm
K5626s
468 x 230 x 110mm
Degree of protection to BS 60529: 1992
IP2X
Precautions must be taken to maintain the
IP rating, e.g. correct use of cable glands and
knockouts

DIMENSIONS:
WIDTH HEIGHT DEPTH
K5686s: 351 x 230 x 110mm
K5632s: 351 x 230 x 110mm
K5636s: 378 x 230 x 110mm
K5626s: 468 x 230 x 110mm
K5631s: 468 x 230 x 110mm
Degree of protection to BS 60529: 1992
IP2X
Precautions must be taken to maintain the
IP rating, e.g. correct use of cable glands and
knockouts

Cover mounted blanks are supplied with
ALL consumer units
(2 off x 1 for 4, 8 and 12 module and
2 off x 2 for 16 and 21 module)

FACTORY BUILT SERVICE
MK can save you time and money by
pre-assembling Consumer units
with your required Sentry components
Skeleton Units

FOR MOUNTING IN A MANTEL/CLIFTON TYPE ENCLOSURE

Enclosures

IP65 WEATHERPROOF ENCLOSURE

IP30 ENCLOSURE

Switch Disconnectors Double Pole

TWO MODULE

MCBs Single Pole

ONE MODULE

Suitable for installation in Sentry Consumer Units and two or four module enclosures. Accepts direct to busbar or cable-in / cable-out connection. Category of duty: AC22A for switching of resistive and inductive loads.

Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)

DIMENSIONS:
81 x 36 x 76mm

CABLE CAPACITY:
50mm²

BS EN 60947-3: 1992

Suitable for installation in Sentry Consumer Units and two or four module enclosures.

Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)

DIMENSIONS:
81 x 36 x 76mm

CABLE CAPACITY:
3, 6, 10, 16A: 35mm²

Short-circuit breaking capacity: 6kA

BS EN 60898: 1991
**RCBOs**

With Solid Neutral

**Single Pole**

---

**TYPE C**

**ONE MODULE**

- Suitable for installation in Sentry Consumer Units and two or four module enclosures.
- Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)
- **DIMENSIONS:** 83 x 18 x 74mm
- **CABLE CAPACITY:** 3, 6, 10, 16A: 35mm²
- Short-circuit breaking capacity: 6KA
  - BS EN 60898: 1991

---

**TYPE B**

**ONE MODULE**

- Suitable for installation in Sentry Consumer Units and two or four module enclosures.
- Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)
- **DIMENSIONS:** 112 x 18 x 73mm
- **CABLE CAPACITY:** Live 25mm², Neutral 16mm²
- Pulsating d.c. fault current sensitive
  - Short circuit breaking capacity: 6KA
  - BS EN 60898: 1991

---

**Sentry Consumer Units**

- Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)
- **DIMENSIONS:** 83 x 18 x 74mm

**CABLE CAPACITY:**
- 3, 6, 10, 16A: 35mm²
- Short-circuit breaking capacity: 6KA
  - BS EN 60898: 1991

---

**RCBOs Specifications**

<table>
<thead>
<tr>
<th>Type</th>
<th>Module</th>
<th>Current</th>
<th>CABLE CAPACITY</th>
<th>TRIPPING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5920s</td>
<td>20A</td>
<td>230V</td>
<td>3A 230V</td>
<td></td>
</tr>
<tr>
<td>5932s</td>
<td>32A</td>
<td>230V</td>
<td>6A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>5940s</td>
<td>40A</td>
<td>230V</td>
<td>10A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>5945s</td>
<td>45A</td>
<td>230V</td>
<td>16A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>5950s</td>
<td>50A</td>
<td>230V</td>
<td>20A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
</tbody>
</table>

---

**RCBOs Specifications**

<table>
<thead>
<tr>
<th>Type</th>
<th>Module</th>
<th>Current</th>
<th>CABLE CAPACITY</th>
<th>TRIPPING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8703s</td>
<td>3A</td>
<td>230V</td>
<td>6A 230V</td>
<td></td>
</tr>
<tr>
<td>8706s</td>
<td>6A</td>
<td>230V</td>
<td>10A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>8710s</td>
<td>10A</td>
<td>230V</td>
<td>16A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>8716s</td>
<td>16A</td>
<td>230V</td>
<td>20A 230V</td>
<td>30mA TRIPPING CURRENT</td>
</tr>
</tbody>
</table>

---

**RCBOs Specifications**

<table>
<thead>
<tr>
<th>Type</th>
<th>Module</th>
<th>Current</th>
<th>CABLE CAPACITY</th>
<th>TRIPPING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6932s</td>
<td>6A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6933s</td>
<td>10A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6934s</td>
<td>16A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6935s</td>
<td>20A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6936s</td>
<td>32A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6937s</td>
<td>40A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6938s</td>
<td>45A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
<tr>
<td>6939s*</td>
<td>50A</td>
<td>230V</td>
<td>30mA TRIPPING CURRENT</td>
<td></td>
</tr>
</tbody>
</table>

*Available early 2004
MCB Retrofit Kit

For use when installing MCBs into old Sentry Consumer Units with fork style busbar (non ‘s’ suffix or ‘K’ prefix).

Kit contains a busbar, extension terminal (5562s), a 100A rated cable and a 25mm² capacity spade connector terminal with clamp screw.

May be used to fit up to 3 new Sentry MCBs. If more need to be installed please use 5511s busbar with kit.

RCDs Double Pole

Suitable for installation in Sentry Consumer Units and two or four module enclosures.

Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)

DIMENSIONS: 85 x 36 x 75mm

CABLE CAPACITY: 50mm²

BS EN 61008:1995

<table>
<thead>
<tr>
<th>AMP</th>
<th>Module</th>
<th>TRIPPING CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>5516s</td>
<td>10mA</td>
</tr>
<tr>
<td>32</td>
<td>5716s</td>
<td>30mA</td>
</tr>
<tr>
<td>40</td>
<td>5740s</td>
<td>30mA</td>
</tr>
<tr>
<td>63</td>
<td>5760s</td>
<td>100mA</td>
</tr>
<tr>
<td>60</td>
<td>6016s</td>
<td>10mA 110V</td>
</tr>
<tr>
<td>67</td>
<td>6730s</td>
<td>30mA 230V</td>
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<tr>
<td>60</td>
<td>6032s</td>
<td>30mA 110V</td>
</tr>
<tr>
<td>67</td>
<td>6730s</td>
<td>30mA 110V</td>
</tr>
<tr>
<td>57</td>
<td>5740s</td>
<td>30mA 230V</td>
</tr>
<tr>
<td>57</td>
<td>5760s</td>
<td>30mA 230V</td>
</tr>
<tr>
<td>58</td>
<td>5860s</td>
<td>300mA</td>
</tr>
</tbody>
</table>

For installation in Sentry Consumer Units and two or four module enclosures.

Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)

DIMENSIONS: 85 x 36 x 72mm

CABLE CAPACITY: 50mm²

BS EN 61008:1995
RCDs
Pulsating D.C.
Fault Current Sensitive
Double Pole

RCDs
Time Delayed
Double Pole

Suitable for installation in Sentry Consumer Units and two or four module enclosures.
Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)

DIMENSIONS:
85 x 36 x 75mm
CABLE CAPACITY:
50mm²
BS EN 61008:1995

FACTORY BUILT SERVICE
MK can save you time and money by pre-assembling Consumer units with your required Sentry components.
### RCDs

#### Four Pole

<table>
<thead>
<tr>
<th>Amp</th>
<th>Module Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>FOUR MODULE</td>
<td>25A 230/400V 30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>40</td>
<td>FOUR MODULE</td>
<td>40A 230/400V 30mA TRIPPING CURRENT</td>
</tr>
<tr>
<td>63</td>
<td>FOUR MODULE</td>
<td>63A 230/400V 100mA TRIPPING CURRENT</td>
</tr>
</tbody>
</table>

**6425s**
- Suitable for installation in Sentry four module enclosures and Commando Combi.
- Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)
- Dimensions: 85 x 72 x 75mm
- Cable capacity: 50mm
- BS EN 61008: 1995

**6440s**
- Suitable for installation in Sentry Consumer Units and two or four module enclosures.
- Offers time delay control for complete circuits of either tungsten or fluorescent lighting with any number of standard push switches. It can also be used to control fans in bathrooms without a window. Delay setting can be overridden by setting to 'Perm-on' mode, or by fitting a remote overriding switch. Switch has a switching capacity of 16A Resistive loads (upf).
- Fluorescent lamps uncompensated / Series compensated 1300W
- Parallel compensated 480W
- Incandescent lamps 2000W
- Neon glow lamp load (locating lamp for Push Switch) 50mA max.
- Voltage rating: 230V 50Hz
- Dimensions: 84 x 18 x 70mm
- Cable capacity: 1 x 4mm² or 2 x 1.5mm²

**6463s**
- Suitable for installation in Sentry four module enclosures and Commando Combi.
- Positive contact status indication in accordance with 16th Edition IEE Wiring Regulations (537-02-03 and 537-03-02)
- Dimensions: 85 x 72 x 75mm
- Cable capacity: 50mm
- BS EN 61008: 1995

**6640s**
- Suitable for installation in Sentry Consumer Units and two or four module enclosures.
- Offers time delay control for complete circuits of either tungsten or fluorescent lighting with any number of standard push switches. It can also be used to control fans in bathrooms without a window. Delay setting can be overridden by setting to 'Perm-on' mode, or by fitting a remote overriding switch. Switch has a switching capacity of 16A Resistive loads (upf).
- Fluorescent lamps uncompensated / Series compensated 1300W
- Parallel compensated 480W
- Incandescent lamps 2000W
- Neon glow lamp load (locating lamp for Push Switch) 50mA max.
- Voltage rating: 230V 50Hz
- Dimensions: 84 x 18 x 70mm
- Cable capacity: 1 x 4mm² or 2 x 1.5mm²

**5650s**
- Suitable for installation in Sentry Consumer Units and two or four module enclosures.
- Offers time delay control for complete circuits of either tungsten or fluorescent lighting with any number of standard push switches. It can also be used to control fans in bathrooms without a window. Delay setting can be overridden by setting to 'Perm-on' mode, or by fitting a remote overriding switch. Switch has a switching capacity of 16A Resistive loads (upf).
- Fluorescent lamps uncompensated / Series compensated 1300W
- Parallel compensated 480W
- Incandescent lamps 2000W
- Neon glow lamp load (locating lamp for Push Switch) 50mA max.
- Voltage rating: 230V 50Hz
- Dimensions: 84 x 18 x 70mm
- Cable capacity: 1 x 4mm² or 2 x 1.5mm²
**Contactors**

**Suitable for installation in Sentry Consumer Units and two or four module enclosures. Automatically switches higher loads than possible with a time switch e.g., off peak tariffs.**

A manual override enables the temporary setting of the contactor in either the on or off position in addition to normal automatic operation. When a contactor is mounted alongside an MCB of greater than 10 amp current rating or two contactors are mounted alongside an MCB or side by side, it is necessary to insert a blank module between them (list No.5544s).

**CONTACTOR RATINGS:**

<table>
<thead>
<tr>
<th>List no</th>
<th>6220s</th>
<th>6420s</th>
<th>6720s</th>
<th>7240s</th>
<th>7440s</th>
<th>7263s</th>
<th>7463s</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATED CURRENT (A)</td>
<td>20A</td>
<td>40A</td>
<td>63A</td>
<td>40A</td>
<td>63A</td>
<td>63A</td>
<td>63A</td>
</tr>
<tr>
<td>HEATING: Single phase 230V</td>
<td>5.4kW</td>
<td>8.6kW</td>
<td>11.6kW</td>
<td>26kW</td>
<td>41kW</td>
<td>41kW</td>
<td>41kW</td>
</tr>
<tr>
<td>Three phase 400V</td>
<td>1.1kW</td>
<td>2.2kW</td>
<td>4kW</td>
<td>7.5kW</td>
<td>11kW</td>
<td>11kW</td>
<td>11kW</td>
</tr>
<tr>
<td>MOTORS: Single phase 230V</td>
<td>2.800W</td>
<td>4.200W</td>
<td>6.300W</td>
<td>7,000W</td>
<td>10,000W</td>
<td>10,000W</td>
<td>10,000W</td>
</tr>
<tr>
<td>Three phase 400V</td>
<td>10,000W</td>
<td>11,000W</td>
<td>13,000W</td>
<td>13,600W</td>
<td>13,600W</td>
<td>13,600W</td>
<td>13,600W</td>
</tr>
<tr>
<td>LIGHTING: Incandescent and Halogen lamps: Fluorescent Lamps: Electronic Ballast</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
</tr>
<tr>
<td>VOLTAGE RATING: (coil)</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
<td>230V 50Hz</td>
</tr>
<tr>
<td>CABLE CAPACITY: BS EN 61095</td>
<td>6mm² rigid</td>
<td>25mm² rigid</td>
<td>25mm² rigid</td>
<td>25mm² rigid</td>
<td>25mm² rigid</td>
<td>25mm² rigid</td>
<td>25mm² rigid</td>
</tr>
</tbody>
</table>

**Bell Transformer**

**Suitable for installation in Sentry Consumer Units and two or four module enclosures.**

**DIMENSIONS:**

<table>
<thead>
<tr>
<th>5711s</th>
<th>88 x 36 x 67mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>7302s</td>
<td>1 x 2.5mm</td>
</tr>
<tr>
<td>7301s</td>
<td>220 – 240V A.C.50Hz</td>
</tr>
</tbody>
</table>

**Note:** When installed in a consumer unit, ensure that output cables inside the enclosures are suitable for a 230V environment, either by sleeving the bell wire to BS 2848 or using 230V cable.

Complete with terminal covers. Also suitable for surface mounting.

**CABLE CAPACITY:** 1 x 2.5mm

**EN 61558-2-8**
Sentry

**CIRCUIT PROTECTION**

**DIGITAL**

**TWO CHANNEL**

**TWO MODULE**

Pre-programmed with UK time and automatic summer/winter adjustment.
Provides 42 programming selections. Freely selectable day grouping facility. Manual override, winter/summer time adjustment, holiday programme and random generator are standard facilities.
Power reserve of 150 hours.
Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
240V 50/60Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 2.5A
- Tungsten lamps 5A (1000W)
- Fluorescent lamps 1000W

**DIMENSIONS:**
- 85 x 36 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**ONE CHANNEL**

**TWO MODULE**

Pre-programmed with UK time and automatic summer/winter adjustment.
Provides 20 programming selections. Freely selectable day grouping facility. Manual override, winter/summer time adjustment.
Power reserve of 150 hours.
Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
240V 50/60Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 2.5A
- Tungsten lamps 5A (1000W)
- Fluorescent lamps 1000W

**DIMENSIONS:**
- 85 x 36 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**ONE CHANNEL**

**ONE MODULE**

Pre-programmed with UK time and automatic summer/winter adjustment.
Provides 42 programming selections. Freely selectable day grouping facility. Manual override, winter/summer time adjustment, holiday programme and random generator are standard facilities.
Power reserve of 150 hours.
Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
240V 50Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 4A
- Tungsten lamps 6A (1350W)
- Fluorescent lamps 1350W

**DIMENSIONS:**
- 85 x 54 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**ONE CHANNEL**

**ONE MODULE**

Pre-programmed with UK time and automatic summer/winter adjustment.
Provides 20 programming selections. Freely selectable day grouping facility. Manual override, winter/summer time adjustment.
Power reserve of 150 hours.
Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
240V 50Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 4A
- Tungsten lamps 6A (1350W)
- Fluorescent lamps 1350W

**DIMENSIONS:**
- 90 x 18 x 74mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**TWO CHANNEL**

**TWO MODULE**

Pre-programmed with UK time and automatic summer/winter adjustment.
Provides 42 programming selections. Freely selectable day grouping facility. Manual override, winter/summer time adjustment.
Power reserve of 3 years.
Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
220-240V a.c. 50Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 4A
- Tungsten lamps 6A (1350W)
- Fluorescent lamps 1350W

**DIMENSIONS:**
- 85 x 54 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**ONE CHANNEL**

**THREE MODULE**

Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
220-240V a.c. 50Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 4A
- Tungsten lamps 6A (1350W)
- Fluorescent lamps 1350W

**DIMENSIONS:**
- 85 x 54 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**ONE CHANNEL**

**THREE MODULE**

Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
220-240V a.c. 50Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 4A
- Tungsten lamps 6A (1350W)
- Fluorescent lamps 1350W

**DIMENSIONS:**
- 85 x 54 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993

**DIGITAL**

**ONE CHANNEL**

**SYNCHRONOUS**

**THREE MODULE**

Suitable for DIN rail mounting in Sentry Consumer Units and two or four module enclosures.

**VOLTAGE RATING:**
220-240V a.c. 50Hz

**CURRENT RATING:**
- Resistive load 16A
- Inductive load 4A
- Tungsten lamps 6A (1350W)
- Fluorescent lamps 1350W

**DIMENSIONS:**
- 85 x 54 x 68mm
  - CABLE CAPACITY: 2 x 2.5mm² or 4 x 1.5mm²
  - EN 60730-2-7: 1993
**Consumer Unit Cable Kits**

- **K5563s** new ‘K’ series SPLIT-LOAD KIT
  Consists of all necessary split load cabling (complete with terminals/ferrules), circuit identification labelling.

- **K5564s** new ‘K’ series MAIN SWITCH AND 2 X RCD CABLE KIT
  Consists of all necessary split load cabling and 2 x RCDs with innomarkings.

- **K5565s** new ‘K’ series MULTI-INCOMER KIT
  Consists of a black flexible cable with pre-fitted terminal for the neutral return from switch or RCD to second or third neutral bar.

**Accessories**

- **K562s** EXTENSION TERMINAL
  For use when assembling a consumer unit as a distribution board. Enables direct connection of cables to the neutral bar. Consists of a 25mm² capacity terminal with clamp screw.

- **8000s** PADLOCK
  For use when locking the Sentry consumer unit cover, where there are unused modules.

- **K8041s** LOCKING DEVICE
  For use when locking a Sentry MCB, RCBO, RCD or switch disconnector. Supplied with two keys.

- **K544s** MCB BLANK – GREY
  Designed to fill unused modules in Sentry Consumer Units and small enclosures. DIN-rail mounted.

- **K5545s** COVER MOUNTED BLANK
  For filling spaces in the 'K' series Sentry consumer unit cover, where there are unused modules.

- **K5511s** new ‘K’ series BUSBAR
  11 module.

- **K5590s** new ‘K’ series BUSBAR
  20 module.

- **KAX26s** new ‘K’ series BUSBAR COVER
  Suitable for insulating the busbars K5511s and K5590s 20 module.

- **K5593s** BARREL LOCK AND KEY KIT
  Suitable for securing ‘K’ series Sentry Consumer Unit lids.

- **K5599s** CONSUMER UNIT LABELS
  Additional printed and blank labels, for identifying devices and circuits.

- **K5802s** RCD INSULATION KIT
  For use when an RCD is installed in a metal enclosure in an area of high earth loop impedence.

- **K5511s** old non ‘K’ series BUSBAR
  Featuring 10 MCB ways and one main incomer finger.

- **K5590s** old non ‘K’ series BUSBAR
  Featuring 20 MCB ways and one main incomer finger.

- **K5563s** old non ‘K’ series SPLIT-LOAD KIT
  Consists of all necessary split load cabling (complete with terminals/ferrules) busbar and circuit identification labelling.

- **K5565s** old non ‘K’ series MULTI-INCOMER KIT
  For use when assembling a consumer unit in a multi incomer arrangement with separate supply to each incomer.

These kits must be used to ensure compliance with BS EN 60439-3.
MK offer a service to provide fully assembled consumer units.

**FACTORY BUILT ASSEMBLY (FBA)**
Using standard Sentry components we can build and supply fully assembled units to an agreed design. E.g. Have your split-load boards supplied with all the devices fitted, busbars cut and fitted with neutral and live cables terminated.

**SPECIALS**
To provide fully assembled custom built boards with standard and non-standard components.

- Ideal for housing developers, or any application requiring typically more than ten units.
- Quick installation time for Contractors.
- Short manufacturing lead time.
- Fast quotation, design turnaround.
- The process is simple:
  1. Discuss the application with your Novar Business Development Manager.
  2. Agree the design with Novar Technical Services.
  3. Agree the price and delivery date.

MK Electric – Technical Services
Tel: (+44) 01268 563720
Fax: (+44) 01268 563064
Sentrysocket provides a high level of protection against electrocution and is available in eight MK wiring device ranges to suit most applications.

IMPORTANT

ACTIVE CONTROL CIRCUIT

This version of Sentrysocket incorporates a ‘RE-SET’ mechanism and is mains failure sensitive i.e. it will function under all normal conditions expected of an RCD but it will also trip in the event of a power cut or a dramatic reduction in mains voltage. This makes it ideal for use where hazardous situations could occur due to equipment such as rotating machinery and heat developing apparatus becoming suddenly energised after a power cut.

PASSIVE CONTROL CIRCUIT

This version of Sentrysocket incorporates a ‘STAY-SET’ mechanism and is mains failure proof i.e. it will function under all normal conditions expected of an RCD but will not trip in the event of a power cut. This makes it suitable for freezers or use in inaccessible or unmanned locations.

ALL SENTRY SOCKETS ARE PULSATING D.C. AND A.C. FAULT CURRENT SENSITIVE PRODUCTS

RCD Protected Switchsocket Outlets

13 AMP
LOGIC PLUS
FLUSH

ALBANY PLUS
FLUSH

K6100 WHI
1 GANG, 10mA RATED, TRIPPING CURRENT, ACTIVE CONTROL CIRCUIT

K6300 WHI
1 GANG, 30mA RATED, TRIPPING CURRENT, ACTIVE CONTROL CIRCUIT

K6303 WHI
1 GANG, 30mA RATED, TRIPPING CURRENT, PASSIVE CONTROL CIRCUIT

K6211 WHI
2 GANG, 10mA RATED, TRIPPING CURRENT, ACTIVE CONTROL CIRCUIT

K6231 WHI
2 GANG, 30mA RATED, TRIPPING CURRENT, ACTIVE CONTROL CIRCUIT

K6233 WHI
2 GANG, 30mA RATED, TRIPPING CURRENT, PASSIVE CONTROL CIRCUIT

K6101 MCO
1 GANG, 10mA RATED TRIPPING CURRENT, ACTIVE CONTROL CIRCUIT

K6301 MCO
1 GANG, 30mA RATED TRIPPING CURRENT, ACTIVE CONTROL CIRCUIT

K6304 MCO
1 GANG, 30mA RATED TRIPPING CURRENT, PASSIVE CONTROL CIRCUIT

MOUNTING BOXES
FLUSH: 886 ZIC - 35mm deep
MOUNTING BOXES
SURFACE: K2140 WHI, 30mm deep

These a.c. and pulsating d.c. fault current sensitive products have up to 15mm thick templates and are suitable for 35mm deep boxes and supply voltages of 240V a.c., 50Hz.

Boxes must have a minimum depth of 30mm
A 25mm deep box (862 ZIC) can be used but conduit entry is restricted.

Refer to Sentrysocket section for more information on active and passive control circuits.

DIMENSIONS: 86 x 146mm
FIXING CENTRES: 120.6mm
BS.7288: 1990
It is important to ensure that the correct control circuit, active or passive, is selected for each application.

Suitable for supply voltage of 240V a.c., 50Hz.

DIMENSIONS: 86 x 147 x 54mm

KNOCKOUTS: 7 x 20mm.
Three in top side, two in bottom side, and one in each end.

SPARE BOX K897 ALM
BS 7288: 1990
BS 1363 Pt.2: 1995
Sentrysocket

Compliance with EC Directives, Standards and approvals

All Sentrysockets comply with the following EC Directives and are CE marked:
- Low Voltage Directive (73/23/EEC)
Sentrysocket RCD Single Sockets comply with the requirements of the following standards:
- BS 7288: 1990 (1993)
- BS 2011 Part 2.1 Db (Damp Heat - cyclic)
- BS 2011 Part 2.1 Ka (Salt mist)
- BS EN 50082-1
Sentrysocket RCD Double Socket also complies with the requirements of BS EN 61543: 1996

Description

Sentrysocket provides a high level of protection against electrocution and gives further protection when used with appliances vulnerable to insulation damage, particularly when they are in damp environments or outdoors. These Sentrysocket units are not suitable for mounting in damp environments or outdoors.

Active control circuits

Incorporate a 'Re-set' mechanism and are mains failure sensitive, i.e. they will function under all the normal conditions expected of an RCD, but will also trip in the event of a power cut or a sudden, dramatic reduction in mains voltage. This makes them ideal for use where it would be hazardous for equipment to suddenly energise after return of mains power, such as use with rotating machinery and heat developing apparatus.

Passive control circuits

Incorporate a 'Stay-set' mechanism and is mains failure proof, i.e. it will function under all the normal conditions expected of an RCD and will not trip in the event of a power cut. This makes it suitable for use with freezers or in inaccessible or unmanned locations.

Technical specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage:</td>
<td>240V a.c.</td>
</tr>
<tr>
<td>Current rating:</td>
<td>13A resistive</td>
</tr>
<tr>
<td>Rated tripping current</td>
<td>30mA and 10mA versions</td>
</tr>
<tr>
<td>Terminal capacity:</td>
<td>3 x 4mm² for 1 gang, 2 x 4mm² for 2 gang</td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td></td>
</tr>
<tr>
<td>Ambient operating temperature:</td>
<td>-5°C to +40°C</td>
</tr>
<tr>
<td>IP rating:</td>
<td>IP4X</td>
</tr>
<tr>
<td>Max. installation altitude:</td>
<td>2000 metres</td>
</tr>
</tbody>
</table>

Single socket Sentrysockets are only suitable for use in TN-S system where the Supply Neutral Connection is connected to the Supply Earth.

They are not suitable for connection across two lines of a 127V line to Neutral Voltage System.

Features

- Suitable for most residential, commercial and light industrial applications
- Active and passive control circuit applications
- Comply fully with current Wiring Regulations
- Double pole switching
- Flexible and versatile in use
- Ideal for use with equipment subject to wet weather or high humidity
- Part of a complete range of MK circuit protection devices
- They are a.c. and pulsating d.c. sensitive for residual current

Dimensions (mm)

<table>
<thead>
<tr>
<th>Single socket</th>
<th>Double socket</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>146</td>
<td>146</td>
</tr>
<tr>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>120.6</td>
<td>120.6</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Cable management

Decorative finish Sentrysockets can be mounted in a variety of MK trunking systems.

Installation

Flush mounting steel wall box

It should be noted that some of the conduit entries may be restricted, depending upon their positions and the depth of box used.
No 1 West India Quay is a £220 million, 36-storey mixed development comprising more than 150 luxury private apartments and a 4.5-star Marriott Hotel, which has over 300 guest rooms and 47 serviced apartments. The hotel occupies the first twelve floors. The developers are MWB Group plc and Manhattan Loft Corporation, and the main contractor Multiplex Construction UK Ltd. The £21 million contract for the building services was awarded to Shepherd Engineering Services (SES).

In addition to a number of MK wiring devices and consumer units, MK timeclocks have been installed to control the apartments' air conditioning saving considerably on wiring, as they are able to take their power directly from the MK Sentry consumer units.
Consumer Units and Enclosures

Standards and approvals

All Sentry consumer units are designed to fully comply with the requirements of BS EN 60439-3.

Weatherproof enclosures are designed to fully comply with the requirements of EN 60670.

Technical specification

Electrical

Maximum current rating:

All Sentry consumer units have a maximum rating of 100A except K5504s, K5604s, which are rated at 63A

Terminal capacity: 16mm² earth and neutral

Rated frequency: 50Hz

Rated operational voltage:

Consumer unit: 220-250V
2 module enclosure: 220-250V
4 module enclosure: 220-415V

Rated insulation voltage:

Consumer unit: 300V
2 module enclosure: 300V
4 module enclosure: 660V

Short circuit withstand:

16kA rms (based on the use of a BS 1361 Type 2 fuse of rating not exceeding 100A)

Earthing system:

Suitable for use with TN-S, TN-C-S and TT systems

Split load

Split load units are supplied with a pre-fitted switch, RCD and suitable cables.

The following versions are offered:

<table>
<thead>
<tr>
<th>Main Incomer</th>
<th>RCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5682s</td>
<td>100A Switch 63A</td>
</tr>
<tr>
<td>K5662s</td>
<td>100A Switch 80A</td>
</tr>
<tr>
<td>K5632s</td>
<td>100A TD RCD 63A</td>
</tr>
<tr>
<td>K5666s</td>
<td>100A Switch 63A</td>
</tr>
<tr>
<td>K5686s</td>
<td>100A Switch 80A</td>
</tr>
<tr>
<td>K5636s</td>
<td>100A TD RCD 80A</td>
</tr>
<tr>
<td>K5681s</td>
<td>100A Switch 80A</td>
</tr>
<tr>
<td>K5631s</td>
<td>100A TD RCD 80A</td>
</tr>
<tr>
<td>K5626s</td>
<td>100A TD RCD 63A</td>
</tr>
<tr>
<td>K5582s</td>
<td>100A Switch 63A</td>
</tr>
<tr>
<td>K5566s</td>
<td>100A Switch 63A</td>
</tr>
<tr>
<td>K5586s</td>
<td>100A Switch 80A</td>
</tr>
<tr>
<td>K5581s</td>
<td>100A Switch 80A</td>
</tr>
<tr>
<td>K5531s</td>
<td>100A TD RCD 80A</td>
</tr>
</tbody>
</table>

For a full range of corresponding products, see pages 216–220 in the product selector.

Description

Sentry consumer units and enclosures are available in various surface metal, surface insulated and flush metal types, designed on a modular basis, with 2 to 21 module enclosures in the range, to accommodate the range of MK modular protection and control products. In addition 24, 32, 42 module surface metal and insulated dual rail consumer units can be assembled using a suitable stacking kit.

Surface insulated units provides an all insulated housing. Metal units provide a housing with facility for earthing the metal box.

The enclosures are provided with ample wiring space and cable entry points. The lids can be locked with a barrel lock & key (accessory K5593s).

Colours / finishes

All insulated and metal consumer units have a textured magnolia cover and lid. The surface metal consumer unit bases are in magnolia (powder coated paint). The flush bases are of galvanized steel. All 2 and 4 module and weatherproof enclosures are available in light grey.

Certain models are provided with a pre-assembled split load arrangement with switch and RCD. The range is complemented by a versatile selection of small, two and four module enclosures suitable for housing RCDs or other combinations of Sentry products. A 2 module enclosure K5592s is suitable for housing the one module RCBO.

All Sentry Consumer Units have neutral and earth terminal bars with 16mm² capacity for solid stranded copper cables.

For enquiries where large number of similarly designed consumer units i.e. specified. MK can provide complete pre-assembled factory built units, subject to certain conditions. For further information please contact the MK Technical Sales Services Department.

Features

- Attractive styling
- Modular design
- Suitable for most residential, commercial and light industrial applications
- Fully comply with British and European Harmonised Standards
- Available as an empty enclosure or pre-fitted with switch disconnecter and RCD
- Factory built options available
Technical specification

Electrical (weatherproof enclosures only)

Maximum current rating:
- 5702s: 2 pole devices up to 100A
- 5704s: 4 pole devices up to 63A

Note:
- 5702s – Can accept up to 4 module ways with removal of moulded blanks.
- 5704s – Can accept up to 8 module ways with removal of moulded blanks.

Terminal capacity:
- 5702s: 4 x 6mm² earth and neutral
- 5704s: 2 x 6mm² and 6 x 4mm² earth and neutral

Rated operational voltage: 220-415V

Rated insulation voltage: 660V

Technical specification

Physical

Ambient operating temperature:
- –5°C to +40°C (not to exceed an average of more than +35°C in any 24 hour period)

IP ratings: (see also ‘Service Conditions’, below)
- Consumer unit IP2XC
- 2 module enclosure 5502s: IP3X
- 2 module enclosure 5702s: IP65
- 2 module enclosure K5592s: IP30
- 4 module enclosure 5504s: IP3X
- 4 module enclosure 5604s: IP3X
- 4 module enclosure 5704s: IP65

Max. installation altitude: 2000m

Dimensions (mm)

Note: Knockout details on following page

Consumer unit

Surface insulated K5604s to K5686s

Flush metal, K6508s to K6521s

Flush-mount cavity dimensions, K6508s to K6521s

<table>
<thead>
<tr>
<th>Units</th>
<th>Modules</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Surface Insulated</td>
<td>4</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>306</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>378</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>468</td>
</tr>
<tr>
<td>Surface Metal</td>
<td>4</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>306</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>378</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>468</td>
</tr>
</tbody>
</table>

Flush metal K6508s to K6521s

Flush metal K6508s to K6521s

Flush metal K6508s to K6521s

Flush metal K6508s to K6521s

*Depth does not apply if panel-mounted

Stacked assemblies K5504s to K5586s

Dual Rail (Insulated or Metal) using stacking kits K6061s, K6062s and K6063s.

See page 216 for details.
**Dimensions (mm)**

**Two module enclosures**

5502s

**Four module enclosures**

5504s

*Fixing centre for mounting

5604s

**IP65 enclosures**

5702s  \( L = 123 \)

5704s  \( L = 195 \)

**Dimensions (mm)**

**Knockout details for Surface and Flush-Mount Sentry Ranges**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Top Face</th>
<th>Bottom Face</th>
<th>Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 module</td>
<td>2 x 20mm, 1 x 32mm</td>
<td>3 x 20mm, 1 x 32mm</td>
<td>1 x 32mm per side</td>
</tr>
<tr>
<td>8 module</td>
<td>5 x 20mm, 1 x 32mm</td>
<td>5 x 20mm, 1 x 32mm</td>
<td>1 x 32mm per side</td>
</tr>
<tr>
<td>12 module</td>
<td>7 x 20mm, 1 x 32mm</td>
<td>7 x 20mm, 1 x 32mm</td>
<td>1 x 32mm per side</td>
</tr>
<tr>
<td>16 module</td>
<td>10 x 20mm, 1 x 32mm</td>
<td>10 x 20mm, 1 x 32mm</td>
<td>1 x 32mm per side</td>
</tr>
<tr>
<td>21 module</td>
<td>12 x 20mm, 1 x 32mm</td>
<td>12 x 20mm, 1 x 32mm</td>
<td>1 x 32mm per side</td>
</tr>
</tbody>
</table>
Installation

Consumer units
The Consumer units are provided with internal busbar shields or covers.
Front covers have lockable lid (using barrel lock & key accessory K5593s), which masks the front cover retaining screw. Removal of the front cover for internal access requires the use of tools.

Cover mounted blanks are provided with each Sentry Consumer unit to fill unused ways.

4, 8 and 12 module – 1 off x 2
16 and 21 module – 2 off x 2

If additional unused ways are required, the DIN rail mounted blank 5544s or cover mounted blank K5544s must be used to complete the installation.

Skeleton units
The Skeleton unit is a spine backplate assembly designed to fit the majority of Mantel / Clifton enclosures, as used in Local Authority housing.

The Skeleton unit is provided with an internal busbar shield.
Removal of the front cover for internal access requires the use of tools.
If any unused ways are required the DIN rail mounted blank 5544s must be used to complete the installation.

Two / four module enclosures
Front covers require tools to enable removal and gain internal access. 5604s has provision for tamper-proofing.

If there are any unused ways required the DIN rail mounted blank 5544s must be used to complete the installation. 5604s, 5702s, 5704s are provided with moulded blanks.
Note: Only the K5592s enclosure will accept the one module RCBOs.

Service conditions
Wiring of these products must comply with current IEE regulations.
Consumer units and two and four module enclosures are intended for indoor use in dry conditions and are not suitable for locations where high humidity and/or high temperatures may be experienced.

Testing
Site assembled consumer units using MK components comply fully with BS EN 60439-3 so do not require further site testing other than normal routine installation tests.

Split load and multi-incomer arrangements
Such assemblies must utilise the relevant Sentry kit in order to comply with BS EN 60439-3 and to avoid the need for additional testing.

Stacking kits
Accessory kits (stacking frame, fittings and earth cable) can be used to produce stacked dual rail units in the insulated and surface metal ranges for the 12, 16 and 21 module units.

K6061s – for 12 module units to create 24 module dual rail consumer unit.
K6062s – for 16 module units to create 32 module dual rail consumer unit.
K6063s – for 21 module units to create 42 module dual rail consumer unit.

Weatherproof enclosures
The weatherproof enclosures may be used for outdoor applications up to the level of the IP65 rating.

The cable entry position on the top and bottom of the enclosure is at the discretion of the installer and can be achieved with suitable tools. Knockouts/cutouts are provided for side entry.

Precautions must be taken to maintain the IP rating, e.g. correct use of cable glands and knockouts. The caps provided must be used to cover the mounting screws.

Note: IP65 rating only achieved with lid in the closed position. These enclosures will not accept the one module RCBOs.
Switch Disconnectors

Standards and approvals

Sentry switch disconnectors are designed to fully comply with the requirements of BS EN 60947-3.

They feature positive contact status indication in accordance with the 16th edition IEE Wiring Regulations 537-02-03 and 537-03-02. The Sentry switch disconnectors may therefore be used as an isolating switch.

Technical specification

Electrical

| Category of duty: AC22A
| Load type capability: Both resistive and inductive
| Operating voltage: 240V a.c.
| Operating frequency: 50Hz |

<table>
<thead>
<tr>
<th>5500s</th>
<th>5560s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated operational current Ie</td>
<td>63A</td>
</tr>
<tr>
<td>Rated duty</td>
<td>Uninterrupted</td>
</tr>
<tr>
<td>Rated making capacity I</td>
<td>189A rms</td>
</tr>
<tr>
<td>Rated breaking capacity</td>
<td>189A rms</td>
</tr>
<tr>
<td>Rated short time withstand current Icw</td>
<td>2kA rms for 1 sec</td>
</tr>
<tr>
<td>Rated short circuit making capacity Icm</td>
<td>3kA peak</td>
</tr>
<tr>
<td>Rated conditional short circuit current</td>
<td>6kA rms prospective</td>
</tr>
</tbody>
</table>

Physical

Ambient operating temperature: -5°C to +40°C

IP rating: Front face IP3X, screw IP2X
Max installation altitude: 2000 metres

Rating specification

<table>
<thead>
<tr>
<th>Switch disconnector</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500s</td>
<td>100A</td>
</tr>
<tr>
<td>5560s</td>
<td>63A</td>
</tr>
</tbody>
</table>

Description

The Sentry range offers a choice of switch disconnectors rated at either 100A or 63A.

The operating dolly is capable of being locked in either the ON or OFF position. When locked in the ON position it will no longer operate as an isolator. Positive indication of the opening of the contacts is only given when the green stripe can be seen on the dolly.

The terminals are of a tunnel design and offer a generous cable capacity of 50mm² for solid stranded conductors and 35mm² for flexible conductors, on both current ratings.

Category of duty

The Sentry switch disconnector is capable of switching both resistive and inductive loads and has a category of duty of AC22A.

Features

- Meet BS EN and IEE Wiring Regulation requirements
- Choice of current ratings
- Tunnel design terminals for ease of wiring
- Generous cable capacity
- Lockable operating dolly
- Make first, break last on neutral

Dimensions (mm)

<table>
<thead>
<tr>
<th>36</th>
<th>48</th>
<th>16</th>
<th>72</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Installation

The Sentry switch disconnector is designed to accept both cable-in/cable-out and direct-to-busbar connections.

The terminal screws are touch-proof to IP2X, captive and feature combination heads.

For a full range of corresponding products, see page 214 & 220 in the product selector.
Miniature Circuit Breakers (MCBs)

Standards and approvals
Sentry MCBs are designed to fully comply with the relevant requirements of BS EN 60898: 1991.
The MCBs feature positive contact status indication in accordance with 16th edition IEE Wiring regulations (537-02-03 and 537-03-02).

Technical specification

**Electrical**
- Voltage rating: 230V/400V a.c.
- Operating frequency: 50Hz
- Rated short circuit capacity Icn: 6000A
- Service short circuit capacity Ics: 6000A
- When backed up by a BS 1361, 100A fuse, then the breaking capacity of the MCB is increased to 16,000A.
- Energy limiting class: E

**Physical**
- Ambient operating temperature: –5°C to +40°C
- Calibration temperature: +30°C
- IP rating: Front face IP4X, screw IP2X
- Terminal capacity: 35mm²
- Tightening torque: 3Nm
- Max. installation altitude: 2000 metres

Description
Sentry MCBs are of the thermo-magnetic, current limiting type and are available with either Type B or Type C operating characteristics.

The operating dolly may be locked in either the ON or OFF position without affecting the ability of the trip mechanism to operate. The contacts themselves are manufactured from carefully chosen materials, selected specifically for their low electrical resistance and low propensity to weld under fault conditions.

Positive contact status indication
When the green indicator is visible, then a contact gap of 4mm has been achieved. Sentry MCBs may therefore be used as single pole isolating switches where appropriate.

Terminals
The Sentry MCB features tunnel terminals of 35mm² capacity on all ratings. The terminal screws are touch proof to IP2X, captive and feature combination heads.

Retrofit kit 5567s
The Sentry MCB/RCBO retrofit kit is designed for use when installing MCBs/RCBOs into old Sentry Consumer Units with fork style busbar (non ‘s’ suffix or ‘K’ prefix). The kit contains a busbar extension terminal (5562s), a 100A rated cable and a 25mm² capacity spade connector terminal with clamp screw. It may be used to fit up to 3 Sentry MCBs/RCBOs. If more need to be installed, then use the 5511s busbar with kit.

Modes of operation
The mechanism of the Sentry MCB has been carefully designed and engineered using thermal and magnetic elements to detect overcurrents due to both overload and fault currents. The MCB will operate and interrupt the supply to prevent damage to the installation.

The thermal component is a carefully calibrated, thermally operated bi-metal element. Larger overloads and fault current situations are dealt with using the magnetic tripping mode of the MCB. This acts very quickly, overriding the thermal operation.

BS EN 60898 requires the tripping to occur within 100 milliseconds and the design of the Sentry MCB allows fault currents of up to 6000A (M6) to be safely interrupted well within this time scale.
Description (continued)

Operating characteristics

TYPE B
The magnetic operating limits are between 3 and 5 times the current rating of the MCB. Under these conditions the mechanism of a 10A MCB will operate between 30A and 50A in an overcurrent situation.

TYPE C
In the case of Type C MCBs, the magnetic operating limits are between 5 and 10 times the current rating of the MCB. Under these conditions the mechanism of a 10A MCB will operate between 50A and 100A in an overcurrent situation.

Type C devices are capable of supplying the majority of inductive and capacitive loads such as motors, transformers and tungsten or fluorescent lighting.

Time/Current and Energy let through characteristics of Sentry MCBs are shown graphically on the Time current characteristics chart (See separate document).

TYPE D
The Type D MCB is suitable for applications involving equipment generating very high inrush currents, e.g. x-ray equipment, transmitters and computer power supplies. The magnetic operating limits are between 10 and 20 times the current rating of the MCB. (For Modular Combi use only)

Features

- Meet BS EN and IEE Wiring Regulation requirements
- ‘Trip-free’ mechanism
- Positive contact status indicator
- Tunnel type, touch-proof, captive terminals
- Generous terminal capacity
- Can be used as single pole isolating switch

Installation

Selection of the most suitable MCB should take into account the following considerations:

1. Operating voltage and frequencies
It is possible to use the Sentry MCB on other voltages than 230/400V a.c. 50Hz, but it should be noted that this takes the MCB outside the scope of BS EN 60898.

2. Type of load

RESISTIVE
No derating is required in the case of resistive loads.

INDUCTIVE
In the case of inductive loads from direct-on-line motors, the surge on energisation can produce up to 5 times full load current, which may be present for several seconds. It is therefore recommended that Type C MCBs are used for such circuits.

When using assisted start motors, the usually quoted figures are 2.5 times the full load current, for periods generally longer than those for direct-on-line starters. It is thus important to establish the degree of inrush current in order to select a suitable MCB. In all instances, reference should be made to both the motor manufacturer’s curves and MK’s circuit breaker curves in order to select the compatible miniature circuit breaker.

CAPACITIVE
Surges on energisation, for example with discharge lighting, may well reach 25 times the rated current of the device, but only for very short duration. Type B devices will often be adequate, but for more specialised circuits, a Type C may be required. The lighting fitting manufacturer’s recommendations should be observed.
Miniature Circuit Breakers (MCBs)

3. Fault breaking capacity
All Sentry MCBs have a short circuit breaking capacity of 6,000A (M6).

For applications where the prospective fault current is in excess of this, a BS 1361, 100A (maximum) fuse should be used upstream of the MCB to provide a system breaking capacity of 16,000A (in accordance with BS EN 60439-3).

4. Discrimination
A Sentry MCB consumer unit will normally be supplied via an HRC fuse. The HRC in such instances will be the major device and remain unaffected by any fault current which causes the MCB to operate.

The level of fault current up to which this can be assured is determined by comparing the I²t characteristics of the two devices. Discrimination will theoretically occur up to the level at which the value of the total operating I²t of the MCB is below the minimum pre-arcing I²t of the fuse, although in practice, discrimination will be achieved at higher levels than this.

5. Cable protection
The current carrying capacity of the cable should always exceed the current rating of the MCB to prevent damage.

However, should this not be the case, a further calculation may show that the MCB can still interrupt the current in a sufficiently short time to prevent overheating of the cable insulation. Although this will prevent mechanical damage to the cables, further overload protection should be provided by a separate device, e.g. a motor overload relay.

In case of doubt please contact the MK Technical Sales and Service Department.

Dimensions (mm)

![Diagram](image)
**Miniature Circuit Breaker Time Current Characteristics**

**Sentry miniature circuit breaker**
Type: B and C to BS EN 60898 Ref. calib. temp 30°C
(Type D shown for reference only)

**Curve B**
- 3 In: $0.1 < t < 45s$ for $I_n \leq 32A$
- $0.1 < t < 90s$ for $I_n > 32A$

**Curve C**
- 5 In: $0.1 < t < 15s$ for $I_n \leq 32A$
- $0.1 < t < 30s$ for $I_n > 32A$

**Curve D**
- 10 In: $t < 0.1s$

---

**Reference values for time current operating characteristics, BS EN 60898**

<table>
<thead>
<tr>
<th>Steady Current Value Int</th>
<th>Current Time Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.13 I_n: t &gt; 1h</td>
<td>5 In: $0.1 &lt; t &lt; 15s$ for $I_n \leq 32A$</td>
</tr>
<tr>
<td>1.45 I_n: t &lt; 1h</td>
<td>6 In: $t &lt; 0.1s$</td>
</tr>
<tr>
<td>2.55 I_n: t &lt; 1m</td>
<td>7 In: $0.1 &lt; t &lt; 15s$ for $I_n &gt; 32A$</td>
</tr>
<tr>
<td>2.55 I_n: t &gt; 1s</td>
<td>8 In: $t &lt; 0.1s$</td>
</tr>
<tr>
<td>5 In: 0.1 &lt; t &lt; 45s</td>
<td>9 In: $0.1 &lt; t &lt; 4s$ for $I_n \leq 32A$</td>
</tr>
<tr>
<td>5 In: 0.1 &lt; t &lt; 90s</td>
<td>10 In: $0.1 &lt; t &lt; 8s$ for $I_n &gt; 32A$</td>
</tr>
</tbody>
</table>
$I^2t$ curves

**B Curve**

- $\leq 63A$
- $< 40A$
- $< 32A$
- $< 16A$
- $\leq 6A$

**C Curve**

- $\leq 63A$
- $< 40A$
- $< 32A$
- $< 16A$
- $\leq 6A$
Residual Current Breakers with Overcurrent Protection (RCBOs)

Standards and approvals
All Sentry RCBOs are designed to fully comply with the relevant requirements of BS EN 61009-1, BS IEC 61009-2-2, BS 61543 for EMC.
The RCBOs feature positive contact status indication in accordance with 16th edition IEE Wiring Regulations (537-02-03 and 537-03-02).

Technical specification

Electrical
- Operating voltage: 230V a.c.
- Operating frequency: 50Hz
- Rated short circuit capacity Icn: 6,000A
- Service short circuit capacity Ics: 6,000A
- When backed up by a BS 1361, 100A fuse, then the breaking capacity of the RCBO is increased to 16,000A.
- Type A (a.c. as well as pulsating d.c.)

Physical
- Ambient operating temperature: -25°C to +40°C
- IP rating: Front face IP4X, screw IP2X
- Terminal capacity: Line in 25mm², Line and neutral 16mm²
- Tightening torque: Load line and neutral 1.5Nm, Supply 2.5Nm
- Max. installation altitude: 2000 metres

Description
The Sentry range features solid neutral type single pole RCBOs in one module format.
The one module Sentry RCBOs are a combination of a Type B MCB and a Residual Current Device. This enables both overcurrent protection and earth fault current protection to be provided by a single unit.
This combination allows earth fault protection to be restricted to a single circuit, thus ensuring that only the circuit with the fault is interrupted. (When groups of circuits are protected by an RCD, all circuits would be interrupted under fault conditions, which may cause unnecessary inconvenience).
The operating dolly on all Sentry RCBOs may be locked in either the ON or OFF position without affecting the ability of the trip mechanism to operate.
The Sentry RCBO features tunnel terminals of generous capacity, with 25mm² for live supply and 10mm² for live and neutral load terminals. The neutral supply (blue) and earth supply (white/cream) are provided via flying leads.

Mode of operation
As the RCBO is a combination of an MCB and RCD, reference should be made to the relevant technical information regarding these devices.

Features
- Single module
- Meet BS EN and IEE Wiring Regulation requirements
- Allows both overcurrent and earth fault protection and detection
- Available in a range of current ratings
- Tunnel type terminals
- Generous terminal capacity
- Positive contact status indication

For a full range of corresponding products, see page 214 & 221 in the product selector.
Residual Current Breakers with Overcurrent Protection (RCBOs)

### Installation

The Sentry RCBOs may be installed anywhere along the length of the busbar and will occupy one outgoing way.

Selection of the most suitable RCBO should take into account the following considerations:

1. **Operating voltage and frequencies**
2. **Fault breaking capacity**
3. **Cable protection**

   For applications where the prospective fault current is in excess of this, a BS 1361, 100A (maximum) fuse should be used upstream of the RCBO to provide a system breaking capacity of 16,000A.

   The current carrying capacity of the cable should always exceed the current rating of the RCBO, to prevent damage. However, should this not be the case, a further calculation may show that the RCBO can still interrupt the current in a sufficiently short time to prevent overheating of the cable insulation. Although this will prevent mechanical damage to the cables, further overload protection should be provided by a separate device, e.g. a motor overload relay.

In case of doubt please contact the Technical Sales and Service Department.

### Rating specification

<table>
<thead>
<tr>
<th>Rating RCBO</th>
<th>Tripping Current</th>
<th>List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A, 230V</td>
<td>30mA</td>
<td>6932s</td>
</tr>
<tr>
<td>10A, 230V</td>
<td>30mA</td>
<td>6933s</td>
</tr>
<tr>
<td>16A, 230V</td>
<td>30mA</td>
<td>6934s</td>
</tr>
<tr>
<td>20A, 230V</td>
<td>30mA</td>
<td>6935s</td>
</tr>
<tr>
<td>32A, 230V</td>
<td>30mA</td>
<td>6936s</td>
</tr>
<tr>
<td>40A, 230V</td>
<td>30mA</td>
<td>6937s</td>
</tr>
<tr>
<td>45A, 230V</td>
<td>30mA</td>
<td>6938s</td>
</tr>
<tr>
<td>50A, 230V</td>
<td>30mA</td>
<td>6939s*</td>
</tr>
</tbody>
</table>

* Available early 2004
Residual Current Devices (RCDs)

Standards and approvals

All Sentry RCDs are designed to fully comply with the requirements of BS EN 61008: 1995. IEC 1008:1990

They all feature positive contact status indication in accordance with 16th edition IEE Wiring Regulations (537-02-03 and 537-03-02).

Technical specification

Electrical

Rated making and breaking capacity \( \text{Im} \):
- 16 - 40A = 500A
- 63 - 80A = 800A
- 100A = 1000A

Rated short-circuit current \( \text{Isc} \):
- 16 - 80A = 10,000A (100A fuse)
- 100A = 6,000A (125A fuse)

Rated residual short-circuit current \( \text{Ic} \):
- 16 - 80A = 10,000A
- 100A = 6,000A

Rated voltages:
- 2 pole devices, 110V and 230V
- 4 pole devices, 230V to 440V

Operating voltages:
- 2 pole devices, 110V - 100V to 250V
- 230V - 100V to 250V
- 4 pole devices, 185V - 440V

Tripping Time:
- 1 x \( \text{Ic} \) ≤ 300ms
- 5 x \( \text{Ic} \) ≤ 40ms
- Time delay version
  - 1 x \( \text{Ic} \) = 350-500ms

Physical

Ambient operating temperature:
- \(-25^\circ\text{C} \text{ to } +40^\circ\text{C}\)

IP rating:
Front face after installation of enclosure IP40

Terminal capacity:
- Solid standard - 1 x 1.5 - 50mm²
- Flexible with female - 1 x 1.5 - 35mm²

Tightening torque:
3Nm

Max. installation altitude:
2000 metres

Description

The Sentry range of RCDs offers a comprehensive selection of devices designed to meet most residential, commercial and light industrial requirements.

The range includes two and four pole, a.c., d.c. fault current sensitive and time delayed models and a selection of current ratings from 16 to 100A is available in a variety of tripping sensitivities.

When in the OFF position a contact gap of 4mm is present, enabling Sentry RCDs to be used as isolating switches where appropriate.

Positive indication of the opening of the contacts is only given when contact status indicator shows green.

The operating dolly may be locked in either the ON or OFF position without affecting the ability of the trip mechanism to operate, i.e. the RCD is ‘trip-free’. It is not possible to hold the contacts closed when a fault condition exists.

All Sentry RCDs incorporate a filtering device to provide protection against transient surges in the supply to the unit, thus reducing the occurrence of unwanted tripping.

Features

- Meet BS EN and IEE Wiring Regulation requirements
- Extensive range to suit all specifications
- Protect against unwanted tripping
- Positive contact status indication
- Suitable for most residential, commercial and light industrial applications
- Offer a high degree of protection against electrocution in accidental shock hazard situations
- Two module, double pole units available up to 100A
- Indication of earth fault, via central dolly position

For a full range of corresponding products, see pages 214–215 & 222–224 in the product selector.
Residual Current Devices (RCDs)

### Installation

Sentry RCDs must never be used as the sole method of direct contact protection, but are invaluable in providing supplementary protection in high risk environments where damage may occur.

### Application

The choice of the most suitable RCD for a particular application should take into account the following considerations:

1. **Sensitivity**
   - 10mA RCDs offer a high degree of protection against electrocution in an accidental shock hazard situation. They are of particular value in a high risk area where resistances external to the body are likely to restrict the earth fault current flowing through the body to less than 30mA and where 110V supply is being used.
   - 30mA RCDs offer a high degree of protection in an accidental shock hazard situation and are by far the most popular sensitivity used in the United Kingdom. In a shock situation, the current flowing through the human body at 240V 50Hz could be between 80 and 240mA, depending on the resistance of the body in question. To ensure that there are no harmful physiological effects in such a situation, it is necessary for the RCD to operate within 300ms at 30mA and 40ms at 150mA. As the Sentry RCD typically operates well below these times, it clearly more than satisfies this requirement.
   - 100mA RCDs may, in some circumstances, provide protection against electrocution in an accidental shock hazard situation. However, it is important to note that there is a likelihood that the earth fault current may be below the sensitivity of the RCD. This becomes increasingly likely if additional resistances to that of the human body are in the current path.
   - 300mA RCDs provide protection against the risk of fire only. They do not provide protection against electrocution in an accidental shock hazard situation. A typical application would be lighting circuits where it is deemed that the risk of electric shock is small.

   It is important to note that a current of less than 500mA flowing in a high resistance path is sufficient to bring metallic parts to incandescence and, potentially, initiate a fire.

2. **Requirements of the IEE Wiring Regulations BS 7671**

   RCDs may be used to provide additional protection against both Indirect and Direct Contact.

   RCDs with residual tripping current in excess of 30mA should not be used to provide personal shock protection.

   **Indirect Contact**

   Defined as the “contact of persons or livestock with exposed conductive parts made live by a fault and which may result in electric shock”.

   Effective earthing in conjunction with automatic disconnection should always be employed to protect against the effects of indirect contact. The provision of a low resistance path back to the supply from the fault should ensure that the overcurrent device operates before damage occurs. This is the earth fault loop impedance.

   In circumstances where the earth fault loop impedance in the circuit is too high to ensure operation of the overcurrent device, then the IEE Wiring Regulations allow the installation of an RCD. To comply with the Regulations, the earth loop impedance of the circuit (in ohms), multiplied by the rated tripping current of the RCD (in amperes) must not produce a value greater than 50. With this in mind, the maximum values of earth loop impedance permissible when installing an MK Sentry RCD are as follows:

   \[
   Z_e \leq \frac{50}{I_{tr}} \leq \frac{50}{0.03} = 1666 \text{ ohms}
   \]

<table>
<thead>
<tr>
<th>Rated Tripping Current of RCD</th>
<th>Maximum Permissible Earth Fault Loop Impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mA</td>
<td>5000 ohms</td>
</tr>
<tr>
<td>30mA</td>
<td>1666 ohms</td>
</tr>
<tr>
<td>100mA</td>
<td>500 ohms</td>
</tr>
<tr>
<td>300mA</td>
<td>166 ohms</td>
</tr>
</tbody>
</table>

   (Regulations 413-02-15 and 16 apply). RCDs are further specified for protection against indirect contact on TT systems. (Regulations 413-02-19 and 20 apply.)
Residual Current Devices (RCDs)

Application (continued)

Direct Contact
Defined as “contact of persons or livestock with live parts which may result in electric shock”.

The Regulations recognise four main means of providing protection against direct contact which include enclosures and the use of extra low voltage systems.

However, the use of RCDs is specified by the Regulations in the following instances:

• A socket outlet rated at 32A or less which may reasonably be expected to supply portable equipment for use outdoors shall be protected by an RCD having the characteristics specified in Regulation 412-06-02. (Regulation 471-16-01 applies.)

• Where socket outlets are used to supply caravans on caravan sites, then they must be protected by an RCD having the characteristics specified in Regulation 412-06-02.

Regulation 412-06-02 stipulates among other things that where supplementary protection is provided by residual current devices, their rated residual operating current must not exceed 30mA and that they must trip within 40ms at 5 times rated operating current.

Although RCDs must never be used as the sole method of direct contact protection, they are invaluable in providing supplementary protection in high risk environments where damage may occur. Typical applications include situations where equipment may be used outside or fed by trailing sockets, equipment accessible to children or equipment used in wet areas. For these reasons RCDs are commonly found in schools, hospitals and residential installations.

3. Types of fault current
In an installation different types of fault current can occur. MK offer RCDs to suit these conditions.

Sentry Type AC RCDs are suitable for situations where there are residual sinusoidal alternating currents, whether applied suddenly or rising slowly. This is the most commonly used type of RCD in the UK.

Sentry Type A RCDs (i.e. pulsating d.c. fault current sensitive) are suitable for situations where there are residual sinusoidal alternating currents, whether suddenly applied or slowly rising. These situations can occur with the use of semiconductor devices in modern electrical and electronic equipment, such as computers, printers, plotters, televisions, video cassette recorders and hi-fi equipment, is growing.

Such devices may result in the normal sinusoidal a.c. waveform generated by the mains electrical supply being ‘modified’. for example, the waveform may be rectified or, as in asymmetric phase control devices, the waveform may be chopped. The resulting waveforms are said to contain a pulsating d.c. component as illustrated below.
Residual Current Devices (RCDs)

Application (continued)

Pulsating d.c. fault current sensitive RCDs

Should a waveform containing a pulsating d.c. component develop an earth fault, then it is possible that it
may not be detected by an “a.c. only” sensitive RCD. For this reason, the Sentry range contains RCDs
designed to be sensitive to pulsating d.c. fault currents thus maintaining the intended degree of protection.

Type B RCDs are suitable for situations where there are residual sinusoidal alternating currents, residual
pulsating direct currents and smooth d.c. and a.c. residual current of various frequencies, which would
not trip Type AC or A RCDs.

These situations can occur in 50Hz a.c. installations with electronic equipment, e.g. frequency converters,
UPS installations, power supply unit or high-frequency power converters.

The following symbols are used on the front plate of the device to indicate the type of RCD.

- type AC RCD.
- type A RCD.
- type B RCD.

4. Temperature

All Sentry RCDs are suitable for use in the temperature range –25°C to +40°C. This is indicated on the
RCD by the symbol .

5. Time Delayed RCDs Type S (or selective)

When two or more Sentry RCDs are installed in series with one another, measures must be taken to
ensure that they discriminate properly. In event of an earth fault, only the RCD immediately upstream
from the fault should operate.

RCDs do not discriminate on rated tripping current alone, i.e. a 100mA rated RCD situated upstream
from a 30mA rated RCD, will not offer inherent discrimination.

In order to ensure that discrimination is achieved, a Sentry Time Delayed RCD should be used. The in-built
time delay period ensures that the downstream RCD opens the circuit before the upstream RCD starts to
operate.

The maximum tripping time of a Sentry Time Delayed RCD is 500ms. Typical applications are:

i) as main incomers on TT systems where all sockets are already protected by a 30mA instantaneous RCD,
but where unwanted tripping may become a problem.

ii) as the main incomer of split load consumer unit arrangement where all circuits are protected by a 10
or 30mA instantaneous RCD or otherwise comply with the direct and indirect contact protection
requirements of the Wiring Regulations.

The Sentry Time Delay RCDs are clearly identified with the internationally agreed representative symbol .

6. 3 phase, 3 wire systems

Sentry 4 pole RCDs may be used to provide earth fault protection on 3 phase, 3 wire systems, as the
current balance mechanism does not require a neutral to be connected in order to operate effectively.
Residual Current Devices (RCDs)

**Operation**

The RCD provides an indication of an earth fault and contact status as detailed below.

The operating dolly provides the following indication:

- **I** = Switched ON
- **+** = Switched OFF due to Earth Fault or test button operation
- **0** = Switched OFF

The contact status is shown through the window.

- Red = contact closed
- Green = contact open (RCD is switched off)

In the event of an Earth Fault in the installation or the operation of the test button, the dolly will move to the central position (+) and the contact status indicator shows green. To re-connect the supply the dolly must be reset by moving to the off position before switching on.

**Testing**

If an RCD is installed for additional protection against indirect contact, it is a requirement of the IEE Regulations that the effectiveness of the RCD be verified. This must be achieved by a test simulating an appropriate fault condition and be independent of any test facility incorporated in the RCD. The test currents to be applied are as follows:

<table>
<thead>
<tr>
<th>Test current</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 x I Δ n</td>
<td>RCD must not trip</td>
</tr>
<tr>
<td>1.0 x I Δ n</td>
<td>RCD must trip within 300mS</td>
</tr>
<tr>
<td>5.0 x I Δ n</td>
<td>RCD must trip within 40mS</td>
</tr>
</tbody>
</table>

Where I Δ n is the RCD’s rated tripping current in accordance with wiring regulations and product standard BS EN 61008.

For time delay RCD 1.0 x I Δ n RCD must trip between 350-500mS.
Residual Current Devices (RCDs)

Dimensions (mm)

![Diagram showing dimensions of RCDs]
Contactors

Standards and approvals

All Sentry contactors in the range are designed to fully comply with BS EN 61095

Rating specification

<table>
<thead>
<tr>
<th>Type</th>
<th>Width</th>
<th>List No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>20A, double pole</td>
<td>1 module</td>
<td>6220s</td>
</tr>
<tr>
<td>20A, double pole, with manual override</td>
<td>1 module</td>
<td>6720s</td>
</tr>
<tr>
<td>20A, four pole</td>
<td>2 module</td>
<td>6420s</td>
</tr>
<tr>
<td>40A, double pole</td>
<td>2 module</td>
<td>7240s</td>
</tr>
<tr>
<td>63A, double pole</td>
<td>2 module</td>
<td>7263s</td>
</tr>
<tr>
<td>40A, four pole</td>
<td>3 module</td>
<td>7440s</td>
</tr>
<tr>
<td>63A, four pole</td>
<td>3 module</td>
<td>7463s</td>
</tr>
<tr>
<td>Auxiliary Contact</td>
<td>1 module (including 1/2 module blank)</td>
<td>7301s</td>
</tr>
<tr>
<td>Suppression block</td>
<td>1 module</td>
<td>7302s</td>
</tr>
</tbody>
</table>

Description

Sentry contactors provide a method of remotely switching single and three phase loads. In this regard, they are particularly useful for switching heating, lighting and ventilation circuits, in particular when used in conjunction with REC supply off-peak tariffs.

The Auxiliary Contact is suitable for fitting to all Sentry Contactors and allows remote indication of contactor status, one normally open and one normally closed contact is provided. The Auxiliary Contact is a half module width, a half module blank is supplied to complete installation.

The suppression block is suitable where contractor controls are not bounce free and connects across the coil terminals. It can be used in conjunction with one or two contactors.

They are suitable for mounting on a standard DIN rail and are therefore fully compatible with all Sentry Consumer Units and small enclosures. (5504s, 5604s, 5704s, 5702s.)

Functions

CONTROL

Achieved by energising and de-energising the contactor coil, via an MK Time Switch or REC meter during 'off peak' hours as set by supply authorities. A coil status indicator is visible through the small window on the front of the contactor.

MANUAL OVERRIDE (6720s only)

An extra function is offered by the Sentry Contactor with manual override. This performs in the same way, but has a switch on the front face to give the following extra facilities:

1. AUTO START MODE
   This gives the same performance as above.

2. 'STOP' (0)
   In this position the user is able to switch the load off when required, eg during periods of absence. The load remains off until manually reset.

3. MANUAL START MODE (1)
   A manual override which allows the load to be energised outside the normal timed period when required. When the contactor is used via an MK Time Switch or by an REC supply meter, the override switch can either be reset manually or allowed to return to the 'auto' position at the commencement of the next timed period. During the 'manual' period, electricity will be used at the standard rate.

4. 'PERMANENTLY ON' MODE
   The manual override switch features a locking mechanism which allows the contactor to be fixed in a 'permanently on' state. Note: this will not now reset at the commencement of the next timed period.
Contactors

Features
- Compatible with all Sentry Consumer Units (single phase only) and the following Sentry enclosures: 5504s, 5604s, 5704s, 5702s (for single and three phase).
- Suitable for heating, lighting and ventilation circuits.
- Choice of functions.
- Ideal for use with REC supply off-peak tariffs.

Installation
a) When a contactor is mounted alongside an MCB of greater than 10 amp current rating, or two contactors are mounted alongside an MCB of any current rating, it is advisable to insert a module blank between them. (List No. 5544s.)

b) When mounting more than two contactors side by side, it is necessary to insert a module blank between every two contactors, to give ventilation.

c) When using dual rail consumer units, it is advisable to mount electronic products on the lower rail and contactors on the upper rail. If mounting in a single rail consumer unit, it is advisable to mount electronic products as far away as possible from contactors. As a minimum they should be spaced by a single module width blank.

d) Ensure the load to be controlled is protected against short circuit and overload conditions by a suitable rated Sentry MCB.

e) Contactors and Suppression Module are mounted into Sentry Consumer Units and enclosures, by clipping onto the DIN rail mounted in the base by means of the spring clip. If the contactor is required to be removed for any reason, unclip the contactor from the DIN rail by means of the spring clip on the contactor.

f) When using a single Auxiliary Contact, the half module blank supplied must be fitted to the DIN rail, to provide protection against access to the internal parts.

g) The suppression module can be used in conjunction with one or two contactors and should be fitted, in parallel with the contactor controls, when they are not bounce free. The module is suitable for 220/240A operation.

Technical specification

<table>
<thead>
<tr>
<th>List No.</th>
<th>6220s</th>
<th>6420s</th>
<th>6720s</th>
<th>7240s</th>
<th>7263s</th>
<th>7440s</th>
<th>7463s</th>
<th>7301s</th>
<th>7302s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Contactor</td>
<td>Contactor</td>
<td>Auxiliary Contact</td>
<td>Suppression Module</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contactor rating (A)</td>
<td>20A</td>
<td>20A</td>
<td>40A</td>
<td>63A</td>
<td>40A</td>
<td>63A</td>
<td>5A</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Includes manual override?</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>No. of poles (normally open only)</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Width in 18mm modules</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1 (incl. mod blank)</td>
<td>1</td>
</tr>
<tr>
<td>Rated Voltage (V)</td>
<td>500 250</td>
<td>500 415</td>
<td>500 250</td>
<td>500 250</td>
<td>500 415</td>
<td>500 415</td>
<td>500 250</td>
<td>500 250</td>
<td></td>
</tr>
<tr>
<td>Insulation (Ui)</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Max. operating (Ue)</td>
<td>250</td>
<td>415</td>
<td>250</td>
<td>250</td>
<td>415</td>
<td>415</td>
<td>250</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Average consumption of control circuit coil</td>
<td>15</td>
<td>3.8</td>
<td>34</td>
<td>4.6</td>
<td>15</td>
<td>3.8</td>
<td>53</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>– inrush</td>
<td>3.8</td>
<td>3.8</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>Terminal cable capacity (max.)</td>
<td>2 x 2.5mm² flexible</td>
<td>2 x 2.5mm² rigid</td>
<td>2 x 4mm² flexible</td>
<td>2 x 2.5mm² rigid</td>
<td>n/a</td>
<td>n/a</td>
<td>2.5mm² flexible</td>
<td>rigid</td>
<td></td>
</tr>
<tr>
<td>– Power</td>
<td>2 x 2.5mm² flexible</td>
<td>2 x 6mm² rigid</td>
<td>2 x 4mm² flexible</td>
<td>2 x 25mm² rigid</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Torque for terminals</td>
<td>1.4Nm</td>
<td>3.5Nm</td>
<td>1.4Nm</td>
<td>1.4Nm</td>
<td>1.4Nm</td>
<td>1.4Nm</td>
<td>1.4Nm</td>
<td>1.4Nm</td>
<td></td>
</tr>
</tbody>
</table>
Contactors

**Terminal Layout**

i) Contactor

a) The coil connections to control energisation should be made between terminals A1 and A2.
b) One normally open main contact is between terminals 1 and 2.
c) A second normally open main contact is between terminals 3 and 4.
d) In the case of four pole contactors, the other main contacts are between terminals 5 and 6, and 7 and 8 respectively.

Typical schematic layouts of modular contactors.

With Manual Override                                    Without Manual Override

![Schematic Diagram](image.png)

ii) Suppression module

The suppression module should be connected with suitable cable (1.5mm²) across the coil terminals A1 and A2 or A1¹ and A2¹.

![Schematic Diagram](image.png)

iii) Auxiliary contact

Connection of cables should be made between terminals of auxiliary contact.
a) Normally closed contact between terminals 21 and 22.
b) Normally open contact between terminals 13 and 14.
**Contactors**

**Applications and Maximum Ratings**

**LIGHTING – Maximum number of lamps**

Presentation of installations according to type of supply.

The maximum number of lamps which can be operated per phase is equal to the total number of lamps in the “Single-Phase 230V” table.

![Diagram of single-phase circuit, 230V](image1.png)

![Diagram of 3-phase circuit, 400V (with neutral)](image2.png)

**SINGLE-PHASE 230V TABLE**

<table>
<thead>
<tr>
<th>Type of lighting application (AC5a and AC5b categories)</th>
<th>6220s/6420s/6720s Maximum No. of lamps</th>
<th>7240s/7440s Maximum No. of lamps</th>
<th>7263s/7463s Maximum No. of lamps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incandescent and halogen lamps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 W</td>
<td>57</td>
<td>115</td>
<td>172</td>
</tr>
<tr>
<td>60 W</td>
<td>45</td>
<td>85</td>
<td>125</td>
</tr>
<tr>
<td>100W</td>
<td>28</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td>Halogen lamps used with transformer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 W</td>
<td>14</td>
<td>27</td>
<td>40</td>
</tr>
<tr>
<td>80 W</td>
<td>12</td>
<td>23</td>
<td>35</td>
</tr>
<tr>
<td>Fluorescent lamp with starter (single fitting with parallel correction)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 W</td>
<td>20</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>20 W</td>
<td>20</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>40 W</td>
<td>20</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Fluorescent lamp with starter (single fitting non-corrected)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 W</td>
<td>30</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td>20 W</td>
<td>30</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td>40 W</td>
<td>28</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td>Electronic ballast (fluorescent lamp single setting)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 W</td>
<td>111</td>
<td>222</td>
<td>333</td>
</tr>
<tr>
<td>36 W</td>
<td>58</td>
<td>117</td>
<td>176</td>
</tr>
<tr>
<td>Electronic compact lamp (low consumption)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 W</td>
<td>200</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>11 W</td>
<td>120</td>
<td>240</td>
<td>360</td>
</tr>
<tr>
<td>15 W</td>
<td>88</td>
<td>176</td>
<td>264</td>
</tr>
<tr>
<td>20 W</td>
<td>66</td>
<td>132</td>
<td>200</td>
</tr>
<tr>
<td>MOTORS – Maximum Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of small motor application (AC1 – AC7a categories)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>220/240V single phase with capacitor</td>
<td>1.1kW</td>
<td>2.2kW</td>
<td>4.2kW</td>
</tr>
<tr>
<td>400V three phase motor</td>
<td>4kW</td>
<td>7.5kW</td>
<td>11kW</td>
</tr>
<tr>
<td>HEATING – Maximum Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of small heating application (AC7b category)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of operating cycles</td>
<td>230V Single Ph 400V 3 Ph</td>
<td>230V Single Ph 400V 3 Ph</td>
<td>230V Single Ph 400V 3 Ph</td>
</tr>
<tr>
<td>100,000,000</td>
<td>5.4kW</td>
<td>8.6kW</td>
<td>13.6kW</td>
</tr>
<tr>
<td>150,000</td>
<td>4.6kW</td>
<td>7.4kW</td>
<td>11.6kW</td>
</tr>
<tr>
<td>200,000</td>
<td>3.5kW</td>
<td>5.6kW</td>
<td>8.8kW</td>
</tr>
<tr>
<td>500,000</td>
<td>1.6kW</td>
<td>2.6kW</td>
<td>4kW</td>
</tr>
<tr>
<td>1,000,000</td>
<td>1.2kW</td>
<td>1.9kW</td>
<td>3kW</td>
</tr>
<tr>
<td>ELECTRICAL ENDURANCE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC1 and AC7a categories</td>
<td>250,000 operations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For a full range of corresponding products, see pages 225 in the product selector.
Contactors

Dimensions (mm)

For a full range of corresponding products, see page 226 in the product selector.
Bell Transformer

Standards and approvals
The Sentry Bell Transformer is designed to comply fully with the requirements of EN 60558-2-8.

Technical specification

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary voltage:</td>
<td>220V/240V a.c. 50Hz</td>
</tr>
<tr>
<td>Secondary voltage:</td>
<td>8V a.c.</td>
</tr>
<tr>
<td>Rated output current:</td>
<td>1A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width:</td>
<td>2 modules (36mm)</td>
</tr>
<tr>
<td>Terminal capacity:</td>
<td>1 x 2.5mm²</td>
</tr>
<tr>
<td>Ambient operating temp:</td>
<td>–5°C to +40°C</td>
</tr>
<tr>
<td>IP rating:</td>
<td>Front face IP4X</td>
</tr>
<tr>
<td>Max installation altitude:</td>
<td>2000 metres</td>
</tr>
</tbody>
</table>

Description

The Bell Transformer is of the safety isolating, fail safe type. The construction is all insulated, Class II. It may be mounted within a Sentry Consumer Unit within 2 or 4 module enclosures alongside MCBs, RCDs and RCBOs or surface mounted.

Installation

The Sentry Bell Transformer should always be connected in series with an MCB or other type of protective device of rating not exceeding 6A.

When installed in a 230V environment, i.e. inside a consumer unit, the cables used to connect the bell or chime to the transformer must have a 230V rated voltage. If bell wire is used, suitable sleeving must be provided to increase its insulation rating to 230V.

Dimensions (mm)

Terminal Covers (supplied fitted)
Electromechanical & Digital Timeswitches & Time Delay Switch

**Standards and approvals**

EN 60730-1, EN 60730-2-7

**Features**

- Ideal for independent programmable control of lighting, heating and other functions
- Can be mounted in Sentry Consumer Units and appropriate Sentry enclosures, or surface mounted
- Integral resistance to normal electrical interference
- Manual override of programmed commands
- Display indication of switch position for each Channel, i.e. ON or OFF (Digital only)
- Simple summer time to winter time (and vice versa) adjustment facility (Digital only)
- Random and holiday setting programme (5733s only)

**Description**

Sentry electromechanical and digital timeswitches enable pre-programmed commands to be executed on a given circuit. The Sentry time delay switches can be installed on circuits to energise suitable equipment for between 1 to 7 minutes.

**Note:** Inductive loads, particularly fluorescent lamps or energy saving lamps, place a heavy stress on the switching contacts. If in doubt about the ability of the timeswitches to directly switch a particular load it is advisable to install the timeswitch in conjunction with a suitable relay or contactor. If in doubt please consult the Technical Sales and Service Department for assistance.

**Electromechanical**

All Sentry electromechanical timeswitches are suitable for DIN rail mounting in Sentry Consumer Units and appropriate Sentry enclosures.

Quartz controlled units (5807s, 5824s) contain a power reserve of 150 hrs for accurate time keeping in the event of a mains failure.

3 module timeswitches have an additional insulated ‘parking’ terminal for earth or other connections.

24 hr units have a minimum switching time of 30 mins and 7 day units 3 hrs.

**Digital**

All Sentry digital timeswitches are suitable for DIN rail mounting in Sentry Consumer Units and 2 and 4 module Sentry enclosures.

Sentry digital timeswitches are available in both 1 and 2 module widths.

The 1 channel 1 module digital timeswitch (5733s) provides 42 programming selections, with random and holiday options. A simple summer to winter time (and vice versa) adjustment facility is provided. The timeswitch contains a power reserve of 150 hrs for accurate time keeping in the event of mains failure.

The two module digital timeswitches are available in both one channel (5731s) and 2 channel (5732s) versions. The units are supplied pre-programmed to UK time, and will automatically change from winter to summer time. The integral battery (with a 3 year power reserve) maintains the settings until the mains supply is connected. This feature will allow programming of switching commands prior to installation, if required.

The 1 channel 2 module digital timeswitch (5731s) provides for 20 programming selections.

The 2 channel 2 module digital timeswitch (5732s) provides a facility for independent control of two circuits. A maximum of 30 switching commands can be programmed for each channel.

All digital timeswitches have a minimum programming time of 1 minute and a manual override. Commands can be programmed for individual days or for groups of days.

**Time delay**

The Sentry time delay switch (5650s) is suitable for mounting in Sentry Consumer units and 2 and 4 module Sentry enclosures. The unit offers time delay control of complete circuits within the range of 1 to 7 minutes in increments of 15 seconds.

**Note:** The time delay switch is not applicable for control of low energy lamps.

Override of the time delay function is only possible by the use of the switch provided on the device and should not be achieved by remote ‘switches’.

The use of PIR is not a recommended method of activating the time delay switch.

The time delay switch may be used to switch on an extractor fan if the fan does not have an over-run facility.
### Technical specification

<table>
<thead>
<tr>
<th>Electromechanical</th>
<th>5707s</th>
<th>5724s</th>
<th>5833s</th>
<th>5807s</th>
<th>5824s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply voltage</strong></td>
<td>220-240 V a.c. 50Hz</td>
<td>220-240 V a.c. 50Hz</td>
<td>220-240 V a.c. 50Hz</td>
<td>220-240 V a.c. 50-60Hz</td>
<td>220-240 V a.c. 50-60Hz</td>
</tr>
<tr>
<td><strong>Maximum power consumption</strong></td>
<td>1 VA</td>
<td>1 VA</td>
<td>1 VA</td>
<td>1 VA</td>
<td>1 VA</td>
</tr>
<tr>
<td><strong>Switching capacity per channel</strong></td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
</tr>
<tr>
<td>– Resistive</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td></td>
</tr>
<tr>
<td>– Inductive</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td></td>
</tr>
<tr>
<td>– Fluorescent</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td>16A 4A (Cos.Ø 0.6) 1350W</td>
<td></td>
</tr>
<tr>
<td><strong>Switching arrangement</strong></td>
<td>1 x c/o</td>
<td>1 x c/o</td>
<td>1 x n/o</td>
<td>1 x c/o</td>
<td>1 x c/o</td>
</tr>
<tr>
<td><strong>No. of switching commands</strong></td>
<td>56</td>
<td>48</td>
<td>48</td>
<td>56</td>
<td>48</td>
</tr>
<tr>
<td><strong>Minimum programme time</strong></td>
<td>3 hrs</td>
<td>30 mins</td>
<td>30 mins</td>
<td>3 hrs</td>
<td>30 mins</td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>–25°C to +55°C</td>
<td>–25°C to +55°C</td>
<td>–25°C to +55°C</td>
<td>–20°C to +55°C</td>
<td>–20°C to +55°C</td>
</tr>
<tr>
<td><strong>Running reserve</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>*150 hrs</td>
<td>–</td>
</tr>
<tr>
<td><strong>Width of unit</strong></td>
<td>54mm (3 mods)</td>
<td>54mm (3 mods)</td>
<td>18mm (1 mod)</td>
<td>54mm (3 mods)</td>
<td>54mm (3 mods)</td>
</tr>
<tr>
<td><strong>Terminal capacity</strong></td>
<td>2 x 2.5mm²</td>
<td>2 x 2.5mm²</td>
<td>2 x 4mm²</td>
<td>2 x 2.5mm²</td>
<td>2 x 2.5mm²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digital and Time delay</th>
<th>5731s</th>
<th>5732s</th>
<th>5733s</th>
<th>5650s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply voltage</strong></td>
<td>220-240 V a.c. 50-60Hz</td>
<td>220-240 V a.c. 50-60Hz</td>
<td>220-240 V a.c. 50-60Hz</td>
<td>220-240 V a.c. 50Hz</td>
</tr>
<tr>
<td><strong>Maximum power consumption</strong></td>
<td>1 VA</td>
<td>1 VA</td>
<td>5 VA</td>
<td>–</td>
</tr>
<tr>
<td><strong>Switching capacity per channel</strong></td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td>16A 2A (Cos.Ø 0.6) uncompensated = 1300W, Parallel compensated = 480W</td>
</tr>
<tr>
<td>– Resistive</td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Inductive</td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Fluorescent</td>
<td>16A 2.5A (Cos.Ø 0.6) 1000W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Switching arrangement</strong></td>
<td>1 x c/o</td>
<td>2 x c/o</td>
<td>1 x c/o</td>
<td>1 x c/o</td>
</tr>
<tr>
<td><strong>No. of switching commands</strong></td>
<td>20</td>
<td>30</td>
<td>42</td>
<td>–</td>
</tr>
<tr>
<td><strong>Programme options</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>R/H</td>
</tr>
<tr>
<td><strong>Minimum programme time</strong></td>
<td>1 min</td>
<td>1 min</td>
<td>1 min</td>
<td>15 sec</td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>–25°C to +55°C</td>
<td>–25°C to +55°C</td>
<td>–10°C to +55°C</td>
<td>–10°C to +55°C</td>
</tr>
<tr>
<td><strong>Operating accuracy @ 20°C</strong></td>
<td>2.5 sec/day</td>
<td>2.5 sec/day</td>
<td>2.5 sec/day</td>
<td>2.5 sec/day</td>
</tr>
<tr>
<td><strong>Running reserve</strong></td>
<td>3 years from factory</td>
<td>3 years from factory</td>
<td>*150 hrs</td>
<td>–</td>
</tr>
<tr>
<td><strong>Width of unit</strong></td>
<td>36mm (2 mods)</td>
<td>36mm (2 mods)</td>
<td>18mm (1 mod)</td>
<td>18mm (1 mod)</td>
</tr>
<tr>
<td><strong>Terminal capacity</strong></td>
<td>2 x 2.5mm²</td>
<td>2 x 2.5mm²</td>
<td>2 x 4mm²</td>
<td>1 x 4mm²</td>
</tr>
<tr>
<td><strong>Summer/winter changeover</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>–</td>
</tr>
<tr>
<td><strong>Neon indicator lamp load</strong></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>50mA max</td>
</tr>
</tbody>
</table>

**Dimensions (mm)**

<table>
<thead>
<tr>
<th>5707/5724/5807/5824s</th>
<th>5833s</th>
</tr>
</thead>
<tbody>
<tr>
<td>53.8</td>
<td>17.8</td>
</tr>
<tr>
<td>68</td>
<td>60</td>
</tr>
<tr>
<td>85</td>
<td>5</td>
</tr>
<tr>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>10</td>
<td>16</td>
</tr>
</tbody>
</table>

**RM = Random/holiday  C/O = Changeover switch  N/O = Normally open contact  * = after 140hr charging time**