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Design 50
Power through design

Home is where the heart is,
and its heartbeat is the consumer unit

In every home, memories are created within those bricks and mortar. In today's modern world where everything is documented on electronic devices, the consumer unit provides the power to capture these memories.

With the demand for new homes higher than ever, we have created a consumer unit to provide a solution to the challenges faced in the modern home.

The latest innovation to our Design range, Design 50 offers the complete solution to housebuilder and homeowner. It has been created with aesthetics at its heart, whilst still conforming to the latest regulations (BS 7671:2008 Amendment 3).

A flush fitting, easy to install consumer unit which sits cleanly to the wall, with smooth lines and curves, and options to be decorated in any RAL colour or bespoke artwork means it can be positioned at lower levels to meet the needs of Part M and still fit seamlessly into any home.

Design 50
the consumer unit for tomorrow, today

Amendment 3 to the Wiring Regulations and Part M of the Building Regulations have provided new challenges to overcome. Design 50 answers these challenges by being encased in a steel back box, whilst having an aesthetically pleasing, smoothly curved metal front cover. Designed to be installed at the usually busy lower levels in a home, without becoming an obtrusion to the homeowner.

Aesthetics were a key driver when creating our Design 50. Its smooth edges and curves allow it to sit flush to the wall and not interfere with a homes interior.

Design 50's innovation lies in its adjustable chassis which ensures that the cover of the unit will always fit correctly to the nominated wall, whilst allowing the internal devices to sit perfectly within the unit's front cover.
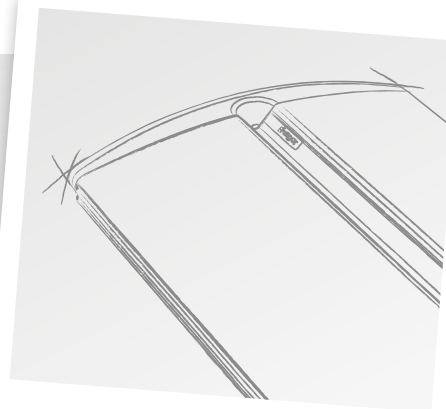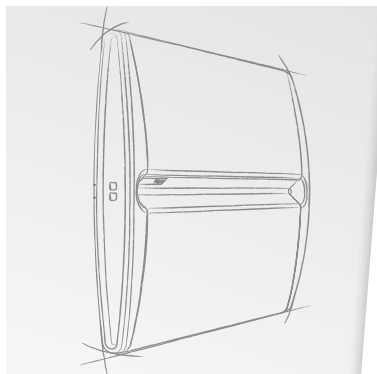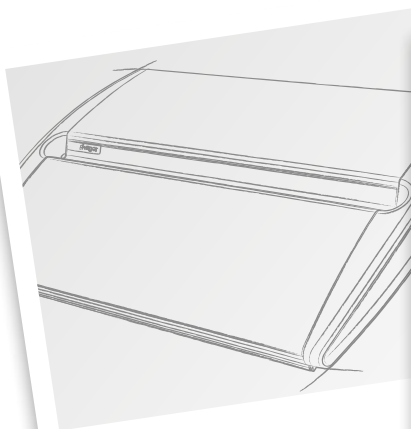
The back box of the unit can be installed as part of the first fix phase of construction. Removing the chassis during the plastering stage guarantees that there is no possible contamination of the devices or terminals from building debris. Thereby ensuring excellent performance, and the absence of future potential issues following the completion of the construction.

1450mm

Part M installed height

Centre line
of switches

1350mm

The ease of installation at both first and second fix stages has been proven to save up to twenty minutes in installation time. This means focus for the installer can be put on other areas of the home.

A locking device is also available to purchase as an accessory. The lock keeps the unit secure during a buildings construction, and allows for a non electrical tradesperson to remove the lock prior to handover, leaving no trace that it was utilised.

As an addition to our Design range, Design 50 has the same hallmark features you would expect from Design 30, such as a cable clamp to allow incoming meter tails to be safely secured, a rear cable protection plate, a full metal DIN rail, ample cable space for fitting RCBO's and grommet strip included, ensuring that Design 50 does not only stand apart in aesthetics, but in ease and safety of installation too.

A consumer unit which
blends into any home

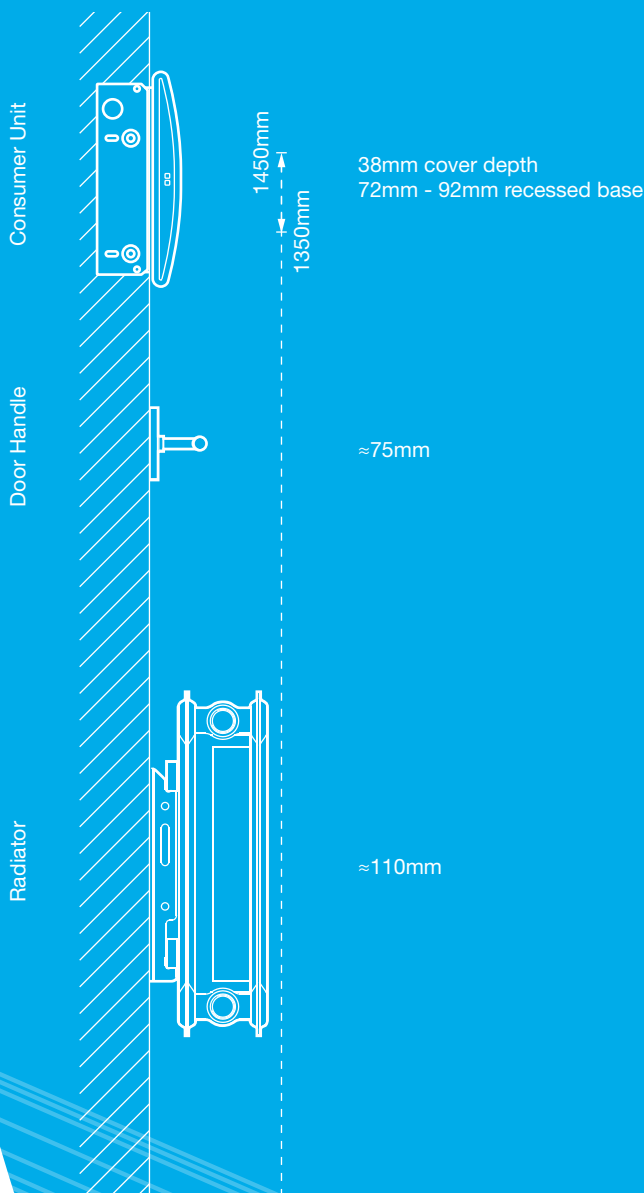### That was one of the key targets we set ourselves when creating Design 50.

Design 50 comes as standard in white, but additionally you can have a bespoke board with any RAL colour, or even a custom design can be vinyl wrapped onto the board to provide a truly individual unit for every home.

Furthermore, Design 50 is also available with anodised finishes to fit into the modern home environment. The Design 50 can be anodised to one of five different finishes; natural silver, pale umber, bronze, gold and black.

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421.1.201 & Part M

Consumer Unit

Door Handle

Radiator

1450mm

1350mm

38mm cover depth
72mm - 92mm recessed base

≈75mm

≈110mm

Part M at a Glance
Part M has prescribed that the installation height of a consumer unit should be between 1350 to 1450mm from the finished floor height.

This has provided obvious challenges when installing a surface mounted metal consumer unit which protrudes from the wall approximately 100mm, at shoulder height.

This can have an effect on the aesthetic of the area and introduces a risk of collision with both the fabric of the building and its occupants.

With the Design 50 being a recessed consumer unit and protruding only 38mm from the wall, this significantly reduces any risk of collision. Furthermore the curved edges help the unit to not only enhance the aesthetic of the home but minimise any risk.
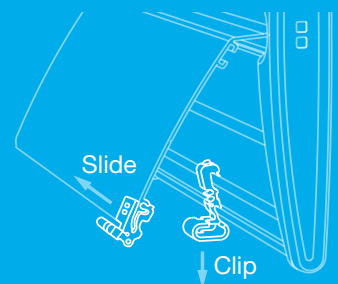
Safety Lock
To enhance the safety of contractors working in the premises the Design 50 can be fitted with a patented lock that prevents access to the devices within the consumer unit.

This ensures that if essential circuits are energised then no additional circuits can be powered up by unauthorised personnel.

Removal of the lock can be simply carried out by any authorised person.

Additionally once the lock is removed there is no evidence that it had been utilised, hence no requirement to fill holes or to replace parts of the enclosure.

Slide

Clip

Changing habits

Over the last couple of years the building industry has seen two significant changes to regulations specifically concerning consumer units and their location. These are BS 7671 regulation 421.1.201 and Part M of the Building Regulations.

The BS 7671 wiring regulations introduced regulation 421.1.201 as a result of concern over the performance of insulated consumer units in the event of an electrical fire occurring in a consumer unit as a result of a poor connection or a faulty device.

The London Fire Brigade cited a number of occasions where the consumer unit, instead of containing any fire actually became part of the fire which then spread to other parts of the dwelling.

421.1.201 states; within domestic (household) premises, consumer units and similar switchgear assemblies shall comply with BS EN 61439-3 and shall:

(i) *Have their enclosure manufactured from non-combustible material, or*

(ii) *Be enclosed in a cabinet or enclosure constructed of non-combustible material and complying with regulation 132.12*

Note 1: Ferrous metal, e.g. steel, is deemed to be an example of a non-combustible material.

Note 2: The implementation date for this regulation is the 1st January 2016, but does not preclude compliance with the regulation prior to that date.

This regulation is significant as it moves the manufacture of the consumer unit away from the thermoplastic material used in recent years, and forces the use of materials which perform better under conditions where high temperatures can exist for prolonged periods of time.
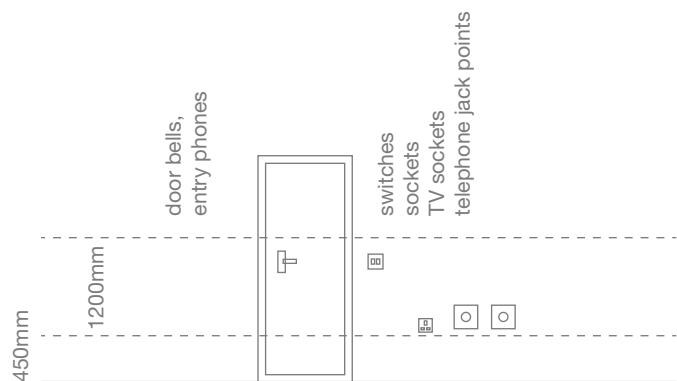
Note 1 gives steel as an example of the performance level the material should achieve to be classed as non-combustible. For this reason Hager test all of our consumer units utilising an industry accepted test where a fault is introduced to a consumer unit to simulate the type of fault created by a poor electrical connection, with the introduction of a glow wire in contact with internal cabling for a set period of time. This test will obviously cause damage to the internal cabling and some of the moulded parts within the enclosure. However, fire is contained within the enclosure with no damage caused to cables or containment outside of the consumer unit.

All of the metal Hager consumer units in the Design range have passed this test and conform to the requirements of regulation 421.1.201.

Approved document M of the building regulations 2010 was updated in October 2015 and had an additional line added to the services and controls section.

1.18 To assist people who have reduced reach, services and controls should comply with all of the following:

a. Switches and sockets, including door bells, entry phones, light switches, power sockets, TV aerials and telephone jacks, serving habitable rooms throughout the dwelling have their centre line 450-1200mm above floor level as shown in diagram 1.5.

b. Consumer units are mounted so that the switches are 1350-1450mm above floor level.

The impact of these changes has forced installers to position the consumer at the prescribed height (1350 to 1450mm above floor level) in an accessible position and for the new board to be manufactured from a non-combustible material, thus posing a number of challenges both aesthetically and practically with the location of the consumer unit.

Additional solutions to complement your new home

Sollysta

Sollysta is the wiring accessory choice for any home. Our range of unique products are ideal for a variety of applications, and come with hallmark installation features as standard. A neutral loop terminal, cable lead in's, backed off and captive terminal screws and a three pin shutter mechanism on the sockets for additional safety, are all include as standard (where applicable).

Decorative
Our stylish range of decorative wiring accessories come in high quality finishes that fit seamlessly into any setting. Available in both raised and flat plate options, our decorative range comes in brushed and polish steel, black nickel and polished brass. Colour insert options of white or black can also be added to suit the designer's preference.

IP66
Ideal for indoor and outdoor applications, IP66 is manufactured from tough and durable thermoplastic and is perfect for wiring accessories which may be vulnerable to the potentially harmful effects of dust or water ingress.

White Moulded
Sollysta White Moulded offers a complete range of wiring accessories including grid & euro modules, telephone, TV and lounge plates.

Ceiling Accessories

Our range of lampholders and pendant sets are the perfect addition to any ceiling.

Safety lampholders are available in bayonet and straight batten variants and the easy to access screws and terminals make wiring faster. All lampholders incorporate integral cord grips and twist-off sleeve caps for ease of installation.

A key feature of our lampholder range is that when the lamp is removed from the lamp holder body, the power is automatically disconnected at the contacts, ensuring that there is no risk of access to live parts.

Our safety pendants are available in traditional, low energy and safety cover versions which shield any live parts. This ensures that the pendant or baton holder is safe to work around. The outer cover screws neatly over the cover plate hiding any uneven edges or paint splashes.

Junction Boxes

Our junction box range offers a variety of solutions.

The award winning downlighter junction box has been designed to simplify your installation and comes with incoming and outgoing cable clamps, and three plate terminals with separate terminals for flexible cords.

Our maintenance free junction boxes also come with incoming and outgoing cable clamps and have three or four terminals each with four separate screwless connection points in each terminal.

Lastly, we have a wide range of traditional junction boxes which comply with BS EN 60670-22, supplied with solid machined brass terminals.

LED Floodlight and Decorative Lamp

LED floodlights and exterior LED lamps come equipped with an IR motion to detector allow the automatic control of light when movement is detected in the surveillance zone. They remain ON for a set period between 5sec and 15min if no further motion is detected. Based on the enhanced motion detectors and utilising the same features, the LED floodlights and LED lamps are perfect to provide night security for residential buildings.

Design matters
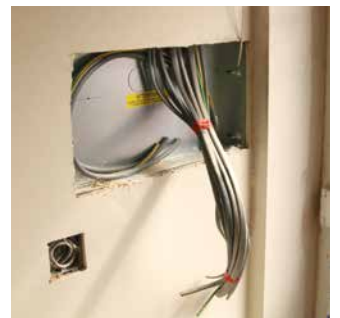## for William Davis Homes

William Davis Homes have chosen the Design 50, to be installed into their new development of over 700 homes at Copcut Rise in Droitwich.

William Davis Homes are a private house builder and have been owned by the Davis family for more than 80 years. Sharing the same strong family values that Hager embody, both companies have worked together for a number of years and have built a long standing relationship.

When plans for their latest development in Droitwich began, William Davis Homes wanted a consumer unit which was the perfect solution to meet their requirements.

Recent changes to the rules governing both the assembly and installation of consumer units had presented some new challenges to house builders. With William Davis Homes seeking an appropriate solution that not only offered safe and effective performance from the unit, but also delivered a smart and accessible finish to satisfy the new home owner.

Amendment 3 of the wiring regulations dictated that all consumer units now need to be manufactured from a non-combustible material. In addition to this, changes to Part M of Building Regulations decreed

Stephen, who is in charge of first and second fixes on site, also added: "We're saving a good 20 minutes when fitting the board. When you get to the second fix stage, you're ready to go and you can start working on it straight away.

They're easy to fit and look great. I would use them everywhere if I had the chance."

Ian Beech, Electrical Supervisor at William Davis Homes said: "Design 50 ticks all the boxes for us. It looks aesthetically pleasing, meets the regulations, it's easy to fit and there's plenty of room in it. Compared to the other competitors we spoke to when specifying for this project, Hager had the best board at the right price.

Steve Matner, National Residential Specification Manager at Hager said "We are delighted that William Davis Homes have chosen the Design 50 to be installed in over 700 of its homes at this exciting new development. This project has shown the strength in the working relationships we have, not just with William Davis Homes, but with all of our customers. We work closely with our customers to provide products and services that meet their needs."

that future consumer unit installations should be 'accessible' by being mounted around shoulder height and very often fitted in parts of the home with high traffic, such as the hallway.

The combined result of both changes has led to consumer units being housed within a metal box and installed at lower levels within new build properties. The associated issues of safety (accidentally colliding with a hard metal box in the home) and aesthetics (the unit could be one of the first items observed when entering the new property) laid down challenges to both consumer unit manufacturers and house builders looking to devise workable and effective solutions.

When William Davis Homes began their research, they reached out to Hager. Hager worked closely with them to understand their requirements, including at the concept and design phases, and provided a solution which delivered on the personal preferences and requirements they had in mind.

Aesthetics were a key driver for William Davis Homes and Design 50 offered the perfect solution. Design 50 is a flush fitting consumer unit which sits cleanly to the wall, and has the smooth lines and curves to fit seamlessly into the modern home whilst remaining compliant with the latest regulations.

Additionally, Design 50 can be supplied in any RAL colour along with anodised finishes, ensuring that it can blend seamlessly into any home.
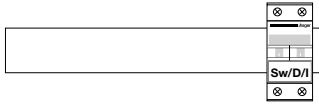
A revolutionary locking system can also be purchased as an accessory with Design 50 which keeps the unit secure during a buildings development and allows for a non electrical tradesperson to remove the lock prior to handover, reducing inconvenience for the new occupants.

Stephen Phillips of Butco Electrical, on site electrician for William Davis Homes in Copcut Rise was impressed with Design 50. He said: "The boards are incredibly easy to fit compared to others on the market, especially at the first fix stage.
The boards we have installed previously weren't recessed, so you were always struggling with all the cables, especially if it was a larger consumer unit. But as the Design 50 is recessed, it's already there and fitted so all you need to do is put the removable chassis in, wire up the unit and screw the cover on."

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VSR114

Switch Disconnector

Metal switch disconnector incomer enclosures, single row from 10 to 20 outgoing ways.

Enclosures come supplied with a full metal DIN rail, 100A switch disconnector incomer and full complement of earth and neutral

terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.

Recommended for use with TT systems when utilising RCBO on outgoing circuits.

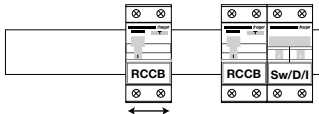Conforms to BS EN 61439-3 including Annex ZB (16kA rating).

Adjustable depth in wall 72mm-92mm.

All boards contain rear, top & bottom cable entry knockouts.

Description	Size	Cat ref.
10 Way 100A Switch Disconnector Incomer	4	**VSR110**
14 Way 100A Switch Disconnector Incomer	5	**VSR114**
20 Way 100A Switch Disconnector Incomer	7	**VSR120**

VSR710C

Split Load

Metal split load and configurable enclosures, single row from 10 to 16 outgoing ways.

Enclosures come supplied with a full metal DIN rail and 2 RCCBs and full complement of earth

and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.

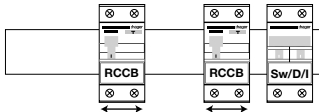Conforms to BS EN 61439-3 including Annex ZB (16kA rating).

Adjustable depth in wall 72mm-92mm.

All boards contain rear, top & bottom cable entry knockouts.

Description	Size	Cat ref.
10 Way Configurable 100A Switch 2*63A 30mA RCCB	5	**VSR710C**
12 Way Configurable 100A Switch 2*63A 30mA RCCB	6	**VSR712C**
16 Way Configurable 100A Switch 2*63A 30mA RCCB	7	**VSR716C**
10 Way Configurable 100A Sw 2*80A 30mA RCCB	5	**VSR810C**
12 Way Configurable 100A Sw 2*80A 30mA RCCB	6	**VSR812C**
16 Way Configurable 100A Sw 2*80A 30mA RCCB	7	**VSR816C**

VSR810CU

High Integrity

Metal split load and configurable enclosures with ability to protect selected circuits with RCBOs and remainder of circuits split across two RCCBs. Single row from 10 to 16 outgoing ways.

Enclosures come supplied with a full metal DIN rail and 2 RCCBs and full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.

Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).

Adjustable depth in wall 72mm-92mm.

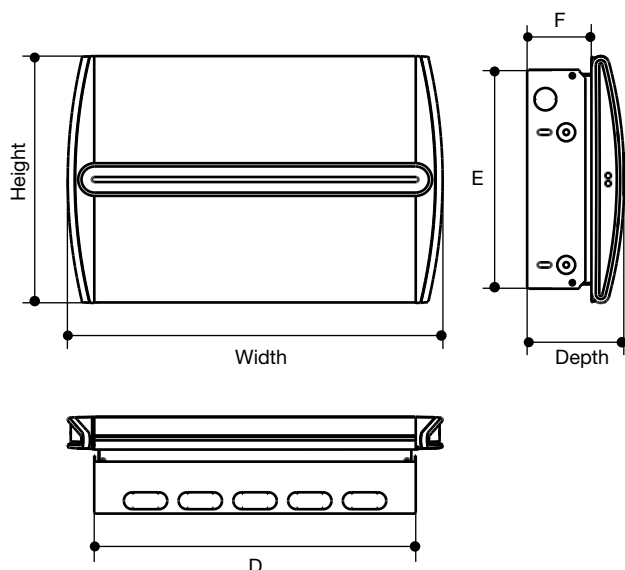All boards contain rear, top & bottom cable entry knockouts.

| Description	Size	Cat ref.
10 Way High Integrity Split Load Configurable 100A Switch 2x 63A 30mA RCCB	5	**VSR710CU**
12 Way High Integrity Split Load Configurable 100A Switch 2x 63A 30mA RCCB	6	**VSR712CU**
16 Way High Integrity Split Load Configurable 100A Switch 2x 63A 30mA RCCB	7	**VSR716CU**
10 Way High Integrity Split Load Configurable 100A Switch 2x 80A 30mA RCCB	5	**VSR810CU**
12 Way High Integrity Split Load Configurable 100A Switch 2x 80A 30mA RCCB	6	**VSR812CU**
16 Way High Integrity Split Load Configurable 100A Switch 2x 80A 30mA RCCB	7	**VSR816CU**

VSRHBL

Accessories

Description	Cat ref.
Design 50 Safety Lock (Pack of 6*)	**VSRHBL**
*Padlock (accessory for lock pack, sold individually)	**JK25A**
Design 50 Door Key Lock	**VSRLOCK**

	SIZE 4	SIZE 5	SIZE 6	SIZE 7
	12 Mod	16 Mod	18 Mod	22 Mod
Height	284	284	284	284
Width	359	431	467	539
Depth	110	110	110	110
D	298	370	406	478
E	252	252	252	252
F	72	72	72	72

Torque Settings

	Pz No.	(mm)	(mm)		Cables >1.5mm² Tightening torque (N.m)		Cables ≤1.5mm² Tightening torque (N.m)		Cable Stripping (mm)
					Single Cable	Multi Cables	Single Cable	Multi Cable	
Consumer unit terminals									
Earth and neutral terminal bars	2	6.5	-	-	2	2	1.5	1.5	10
Isolation									
SB switch disconnectors	2	6.5	-	-	3.6	3.6	3.6	3.6	15
Circuit protection									
MTN MCB	2	6.5	-	-	2.8	2.8	2.8	2.8	13
NBN/NCN/NDN MCB	2	6.5	-	-	2.8	2.8	2.8	2.8	13
RCBO	2	5.5	-	-	2.1	2.1	2.1	2.1	13
RCCB	2	5.5	-	-	2.8	2.8	2.8	2.8	13

Colours and Finishes

For further information or a quote on the full range of colours, anodised finishes and vinyl wrap options please contact the estimation team on **01952 675600**, or **estimation@hager.co.uk** for a quote.

Anodised finishes available:
• Natural
• Analok B1
• Analok B3
• Analok Black
• Analok Dark Gold

Adjustable Depth Base

The base assembly is adjustable from 72mm to 92mm. At 72mm this allows for a 60mm studwork and 12mm of plasterboard.

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